RECEIVED

4:09 pm, Dec 14, 2010

Alameda County
Environmental Health

PCC Precision Castparts Corp.

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

Sincerely,

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:

THE SOURCE GROUP, INC.

1962 Freeman Avenue
Signal Hill, CA 90755

October 8, 2010

Prepared By:

P.G. 5485 for,

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

Reviewed By:

REGISTERED GEOLOGIST
Paul Parmentier
No. 3915
STATE OF CALIFORNIA

Paul Parmentier, P.G., C.HG.
Principal Hydrogeologist

TABLE OF CONTENTS

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDICES

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 µg/L. Soil gas samples from the three most westerly wells (E-2, E-3, and E-7) contained less than 10 µg/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 (µg/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 µg/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 semi-annual 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 pre- and 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 post-extraction 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 µg/L) and E-11 (1,800 to 268 µg/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 µg/L (31,000 µg/L in the duplicate sample). Since the previous sampling event on November 6, 2009, TPHg concentrations have decreased in wells AS-1S (3,800 µg/L to 1,630 µg/L), ASMW-2S (18,000 µg/L to 8,330 µg/L), and MW-6 (4,500 µg/L to 3,810 µg/L). TPHg was also detected in well MW4 at 186 µg/L (previously not detected in November 2009). TPHd was detected in seven samples with concentrations ranging from 53.4 µg/L (J-flag) to 699 µg/L (722 µg/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 µg/L to 1,740 µg/L), ASMW-2S (4,700 µg/L to 416 µg/L), MW-6 (1,300 µg/L to 484 µg/L), and AS-1S (950 µg/L to 202 µg/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 µg/L in November 2009 to 12.3 µg/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 µg/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 (CalEPA, 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/cm^3). 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
Depth Below Grade to Water Table	L_{WT}	274 cm (9 feet)
SCS Soil Type Directly Above Water Table	- -	Clay (C)
Average Soil/Groundwater Temperature (default)	T_s	24°C
Average Vapor Flow Rate into Building (default)	Q_{soil}	5 L/min
Vadose Zone Soil Vapor Permeability (default)	k_v	1.00E-08 cm^2
Vadose Zone SCS Soil Type	- -	Clay (C)
Vadose Zone Soil Dry Bulk Density	ρ_b	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	AT_C	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 CalEPA (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.

A summary of uncertainties is presented in the following table.

Item	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.

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 6×10^{-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	6×10^{-6}	0.02
Ethylbenzene	7×10^{-8}	0.00008
Toluene	NE	0.002
Total Xylenes	NE	0.002
tert-Butylbenzene	NE	0.00001
1,2-Dichloroethane	2×10^{-8}	0.000007
Isopropylbenzene (Cumene)	NE	0.003
Naphthalene	3×10^{-7}	0.008
n-Propylbenzene	NE	0.0003
1,2,4-Trimethylbenzene	NE	0.04
1,3,5-Trimethylbenzene	NE	0.01
Total	$\mathbf{6 \times 10^{-6}}$	**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

California Environmental Protection Agency (CalEPA). 2005. Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air. Department of Toxic Substances Control. February 7.

California Environmental Protection Agency (CalEPA). 2009. DTSC Screening-Level Model for Groundwater Contamination. Department of Toxic Substances Control. Last Modified February 4.

California Regional Water Quality Control Board (CRWQCB). 1995. Water Quality Control Plan for the San Francisco Bay Basin. June.

California Regional Water Quality Control Board (CRWQCB). 1999. East Bay Plain Groundwater Basin Beneficial Use Evaluation Report, Alameda and Contra Costa Counties, California. June.

Department of Water Resources. 1991. California Well Standards. Bulletin 74-90. June.

ERAS Environmental Inc (ERAS), 2008, "Workplan for Paco Pumps Facility), January 16

ERAS Environmental Inc. (ERAS), 2008, "Subsurface Investigation and Groundwater Monitoring Report, Quarter 2, 2008, Former Paco Pumps Facility, 9201 San Leandro Street, Oakland, California" July 31

Johnson, P.C. and R.A. Ettinger. 1991. Heuristic Model for Predicting the Intrusion Rate of Contaminant Vapors into Buildings. Environmental Science and Technology. Vol. 25, No. 8, pp. 1445-52

Jonas and Associates Inc. (Jonas), 1991, "Soil Characterization Report, Soil Excavation Area", October 30

Jonas and Associates Inc. (Jonas), 1992, "Site Characterization Report, PACO Pumps Facility, 9201 San Leandro Street in Oakland, California," October 16

Jonas and Associates Inc. (Jonas), 1994, "Groundwater Monitoring Report, Sampling Rounds 1 to 4", April 5

Jonas and Associates Inc. (Jonas), 1997, "Soil and Groundwater Results" (Letter Report), April

Jonas and Associates Inc. (Jonas), 1998, "B3 and B4 Groundwater Sampling Results" (Letter Report), March 11

LFR Inc, 2008 "Workplan to conduct Investigation and Remedial Activities", Nov 14

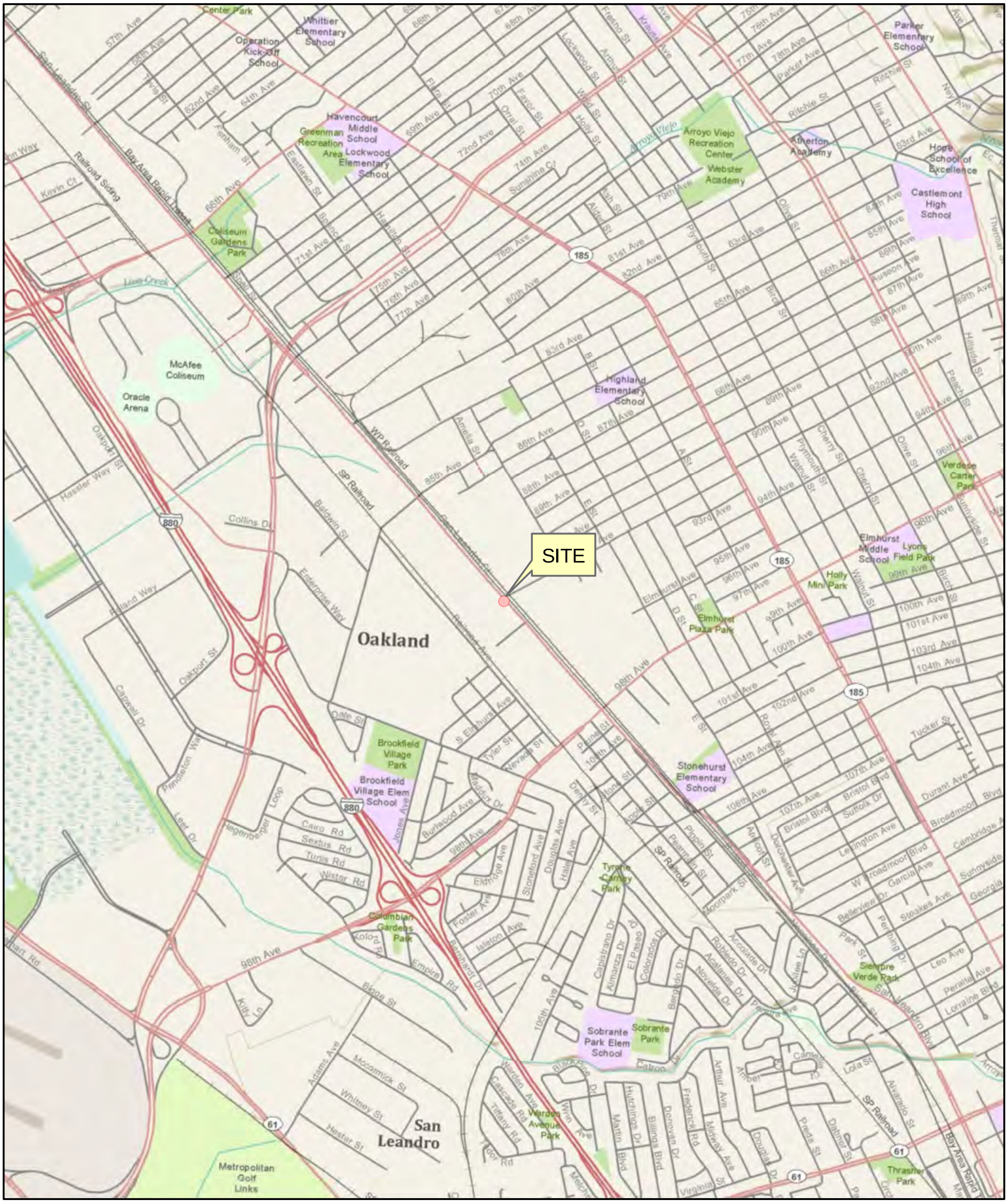
LFR Inc, 2009 "Investigation and Remediation Activities Report", May 15

SGI Inc, 2009 "Former Paco Pumps Oakland Facility, Remediation Work Plan, Area 4", Oct 30

U.S. Environmental Protection Agency (USEPA). 1989. Risk Assessment Guidance for Superfund, Human Health Evaluation Manual, Part A. Interim Final. Solid Waste and Emergency Response. December.

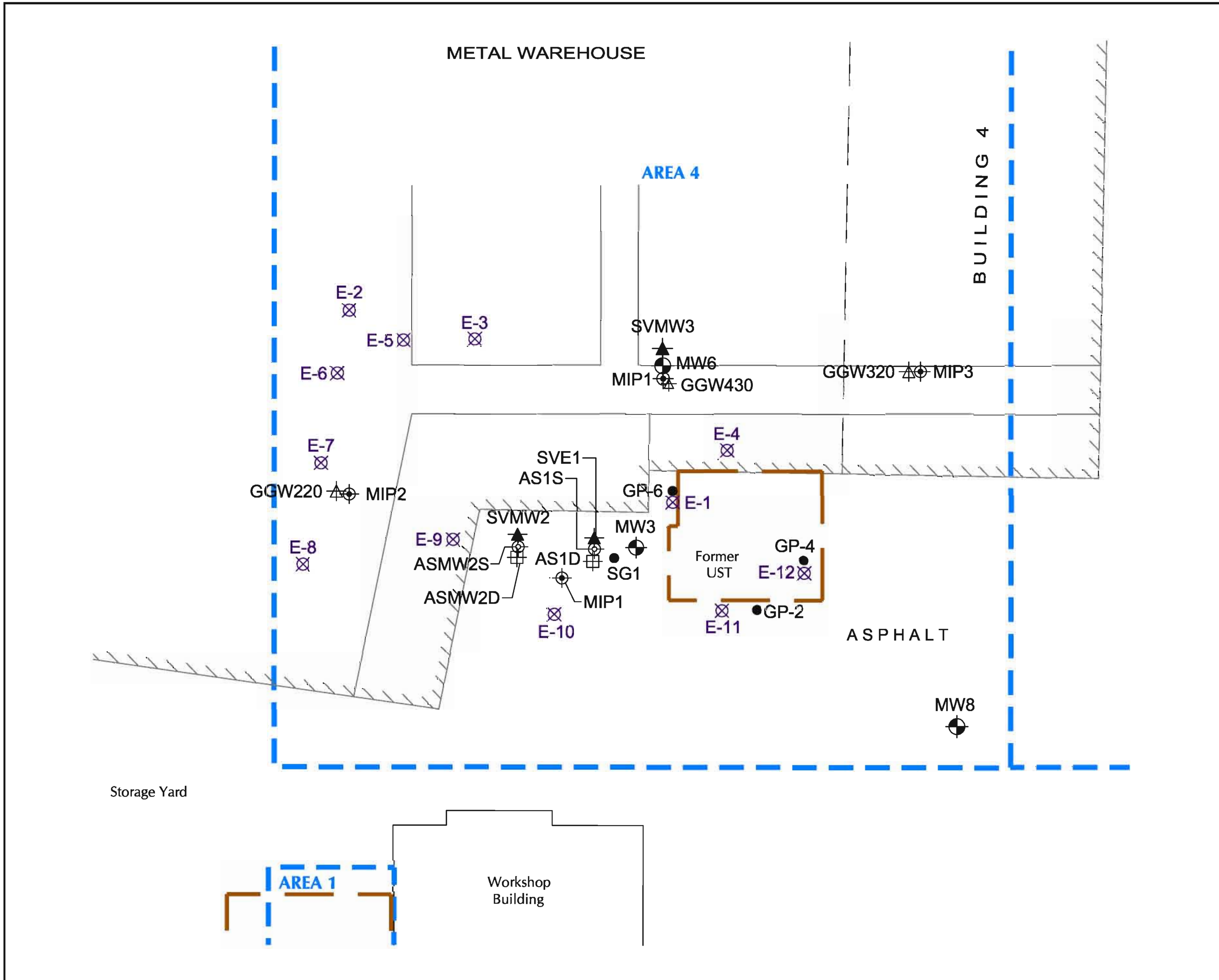
U.S. Environmental Protection Agency (USEPA). 1992. Guidance on Risk Characterization for Risk Managers and Risk Assessors, F.H. Habicht II, Memorandum. February.

FIGURES



SOURCE: 7.5 MINUTE USGS TOPOGRAPHIC MAP FROM ARCGIS MAP SERVICE

SGI environmental THE SOURCE GROUP, INC. 1962 FREEMAN AVE. SIGNAL HILL, CA 90755	PROJECT NO.: 04-PFT-001	DATE: 10/14/2009	DR.BY: AC	APP.BY: SS	SCALE 1:24,000 (0, 875, 1,750, 3,500 Feet)	N
	FORMER PACO PUMPS FACILITY 9201 SAN LEANDRO STREET OAKLAND, CALIFORNIA				SITE LOCATION MAP	FIGURE 1



LEGEND

- Site Boundary
- Project areas of concern
- Groundwater contours November 6, 2009.
- AS1D — Deep groundwater air injection or air injection monitoring well by LFR January 2009
- AS1S — Shallow groundwater air injection or air injection monitoring well LFR January 2009
- SVMW3 — Vadose well by LFR January 2009
- MW6 — Groundwater monitoring well
- MIP3 — Membrane interface probe by LFR January 2009
- GGW320 — Grab groundwater sample location by LFR January 2009
- E-3 — Recently Installed groudnwater extraction well
- Area of 2009 excavation

0 20 40

APPROXIMATE SCALE IN FEET

N

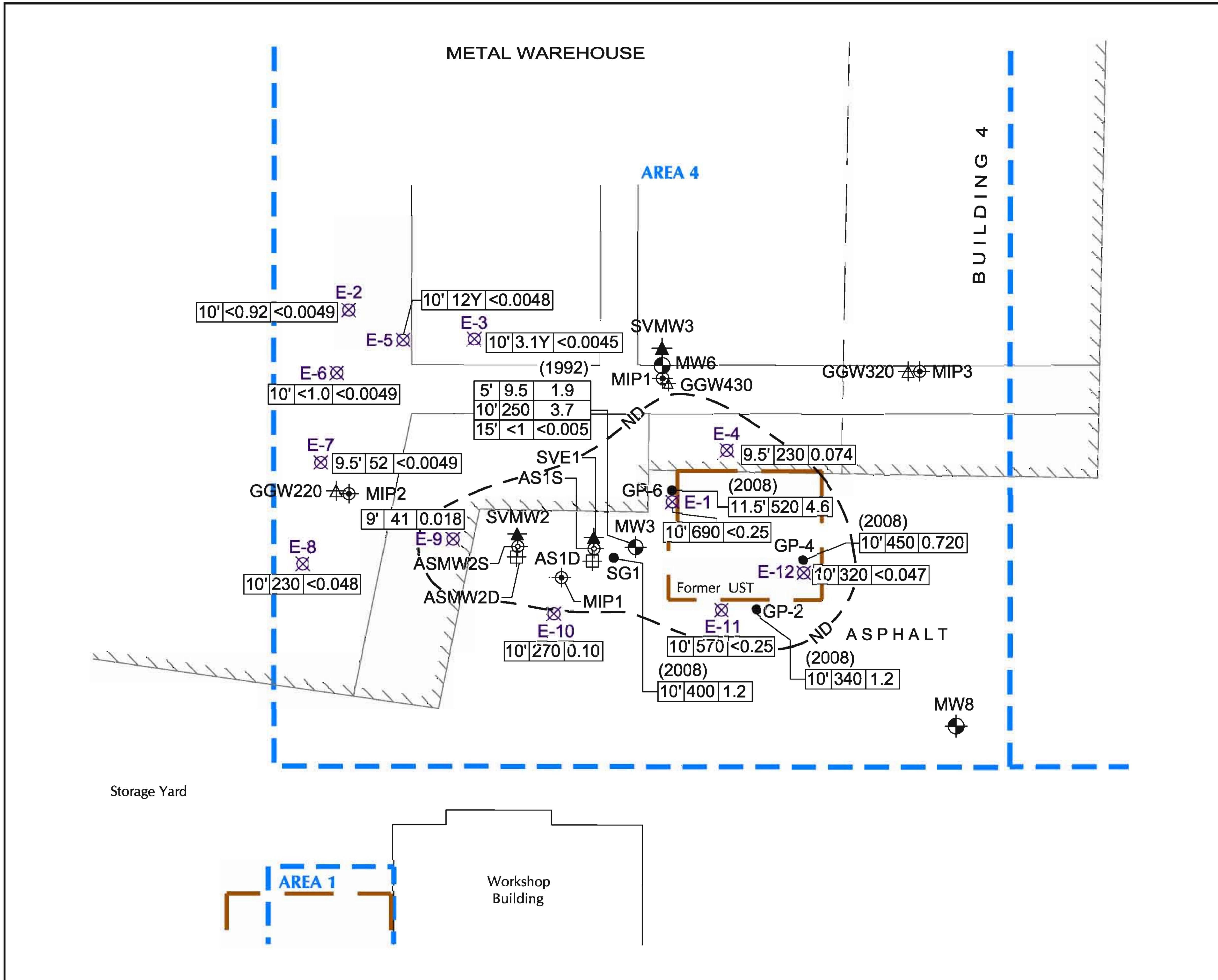
DATE:	FILE NAME:	SOURCE:
9/2010	PCC-BCSG.DWG	LFR, MAY 2009

SITE PLAN WITH WELL LOCATIONS

9201 SAN LEANDRO STREET
OAKLAND, CALIFORNIA

SGI environmental — THE SOURCE GROUP, INC.

FIGURE 2



LEGEND

- Site Boundary
- Project areas of concern
- Groundwater contours November 6, 2009.
- AS1D — Deep groundwater air injection or air injection monitoring well by LFR January 2009
- AS1S — Shallow groundwater air injection or air injection monitoring well LFR January 2009
- SVMW3 — Vadose well by LFR January 2009
- MW6 — Groundwater monitoring well
- MIP3 — Membrane interface probe by LFR January 2009
- GGW320 — Grab groundwater sample location by LFR January 2009
- E-3 — Recently Installed groudnwater extraction well
- GP-2 — Soil Boring Locations
- Area of 2009 excavation
- 10' 270 0.10
  - Benzene Concentrations in Soil Matrix (mg/kg)
  - TPHg Concentrations in Soil Matrix (mg/kg)
  - Sample Depth (feet bgs.)
- ND — Isoconcentrations in Soil Matrix (mg/kg)
- Y — Sample Exhibits Chromatographic Pattern Which does not Resemble Standard.

0 20 40

APPROXIMATE SCALE IN FEET

N

DATE:	FILE NAME:	SOURCE:
9/2010	PCC-BCSG.DWG	LFR, MAY 2009

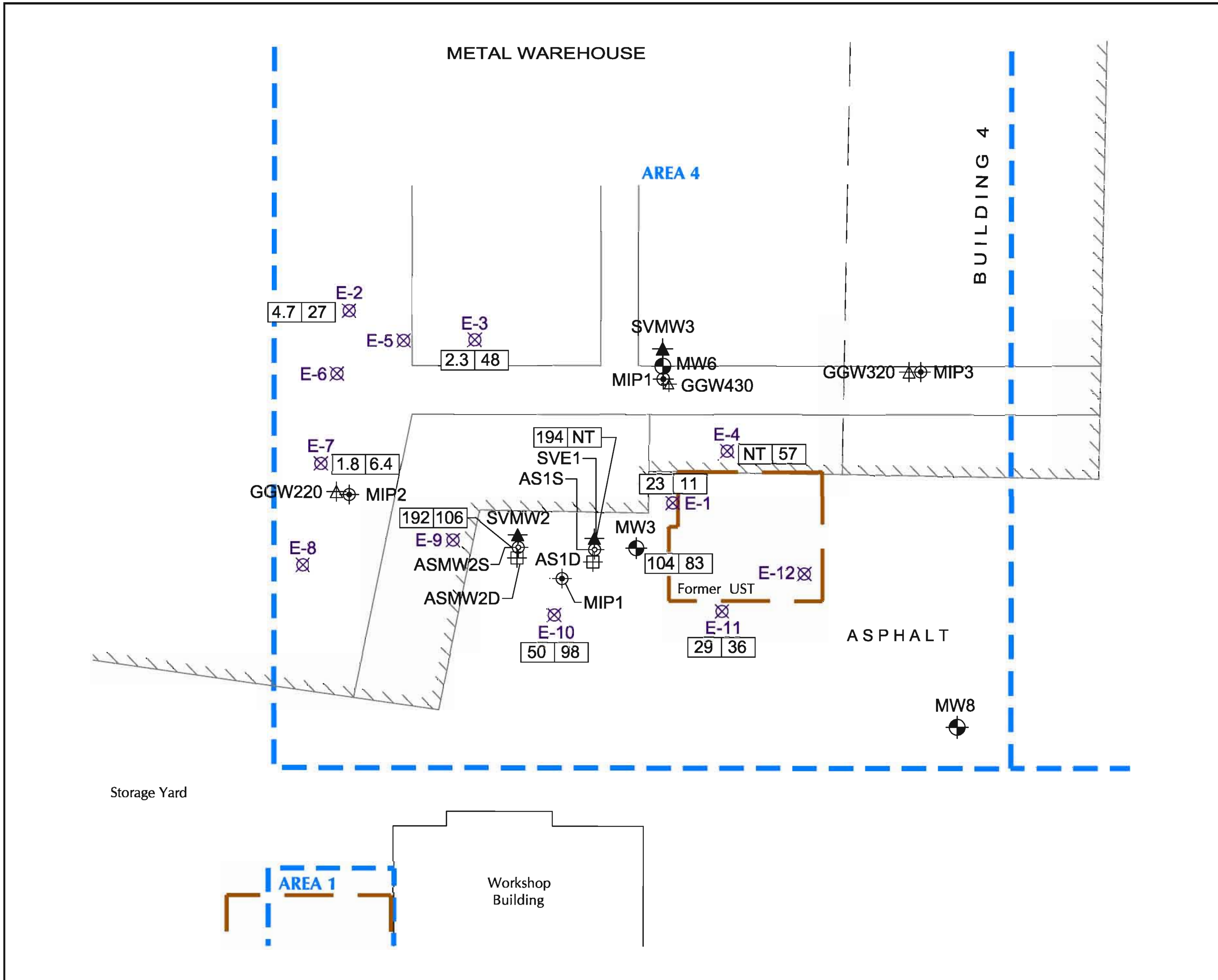
AREA 4 TPHg & BENZENE CONCENTRATION IN SOIL MATRIX

9201 SAN LEANDRO STREET
OAKLAND, CALIFORNIA

SGI environmental THE SOURCE GROUP, INC.

FIGURE

3



LEGEND

- Site Boundary
- Project areas of concern
- Groundwater contours November 6, 2009.
- AS1D — Deep groundwater air injection or air injection monitoring well by LFR January 2009
- AS1S — Shallow groundwater air injection or air injection monitoring well LFR January 2009
- SVMW3 — Vadose well by LFR January 2009
- MW6 — Groundwater monitoring well
- MIP3 — Membrane interface probe by LFR January 2009
- GGW320 — Grab groundwater sample location by LFR January 2009
- E-3 — Recently Installed groudnwater extraction well
- Area of 2009 excavation
- NT — Not Taken
- 29 | 36 — Benzene Concentrations in Soil Gas (μg/L) Pre And Post Extraction

0 20 40

APPROXIMATE SCALE IN FEET

N

DATE:	FILE NAME:	SOURCE:
9/2010	PCC-BCSG.DWG	LFR, MAY 2009

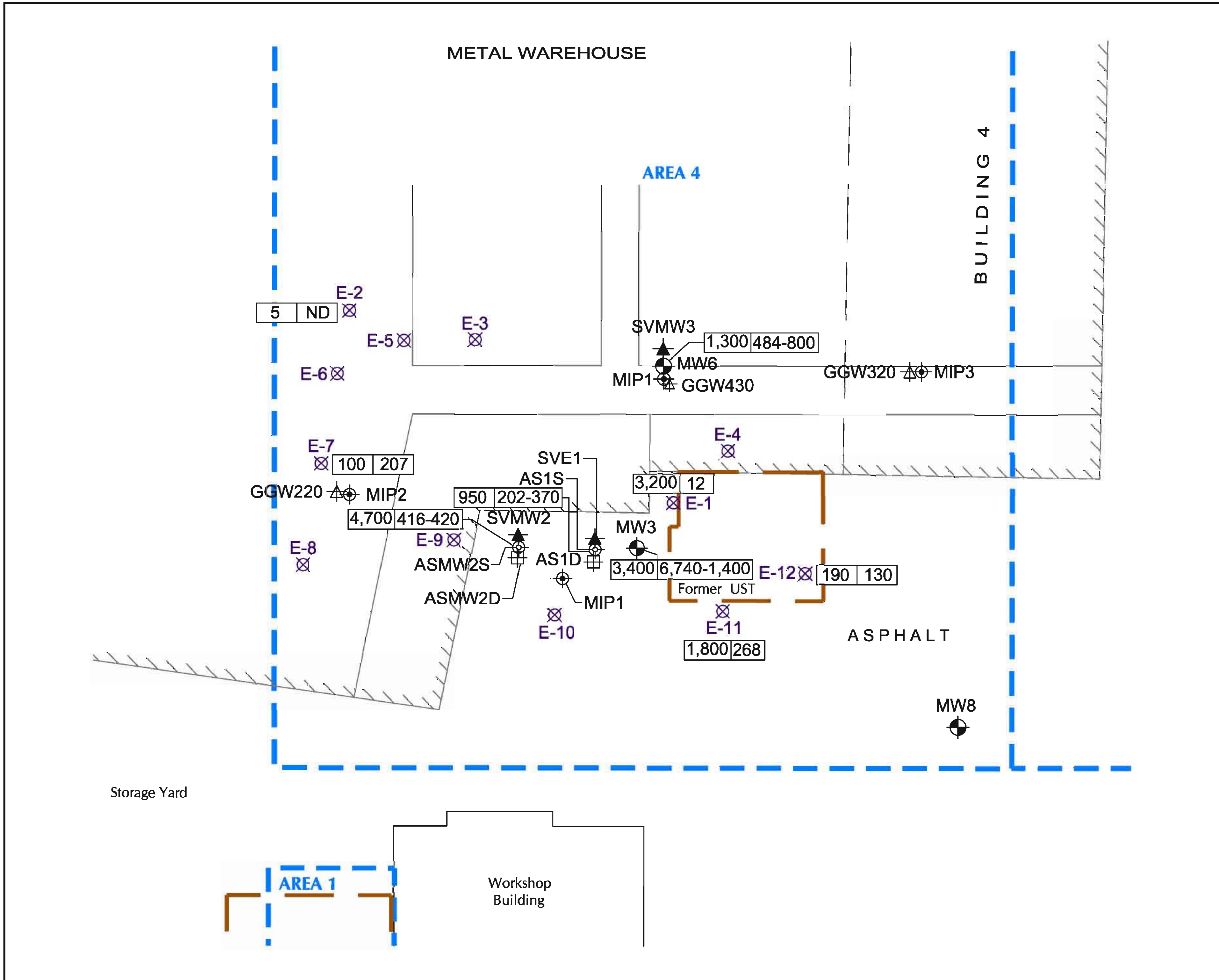
AREA 4 BENZENE CONCENTRATION IN SOIL GAS PRE AND POST EXTRACTION

9201 SAN LEANDRO STREET
OAKLAND, CALIFORNIA

SGI environmental — THE SOURCE GROUP, INC.

FIGURE

4



LEGEND

- Site Boundary
- Project areas of concern
- Groundwater contours November 6, 2009.
- AS1D — Deep groundwater air injection or air injection monitoring well by LFR January 2009
- AS1S — Shallow groundwater air injection or air injection monitoring well LFR January 2009
- SVMW3 — Vadose well by LFR January 2009
- MW6 — Groundwater monitoring well
- MIP3 — Membrane interface probe by LFR January 2009
- GGW320 — Grab groundwater sample location by LFR January 2009
- E-3 — Recently Installed groudnwater extraction well
- Area of 2009 excavation
- ND — Non Detectable
- 950 | 202-370 — Benzene Concentrations in Groundwater (µg/L) Pre And Post Extraction (June 2010 and August 2010)

0 20 40
APPROXIMATE SCALE IN FEET

N

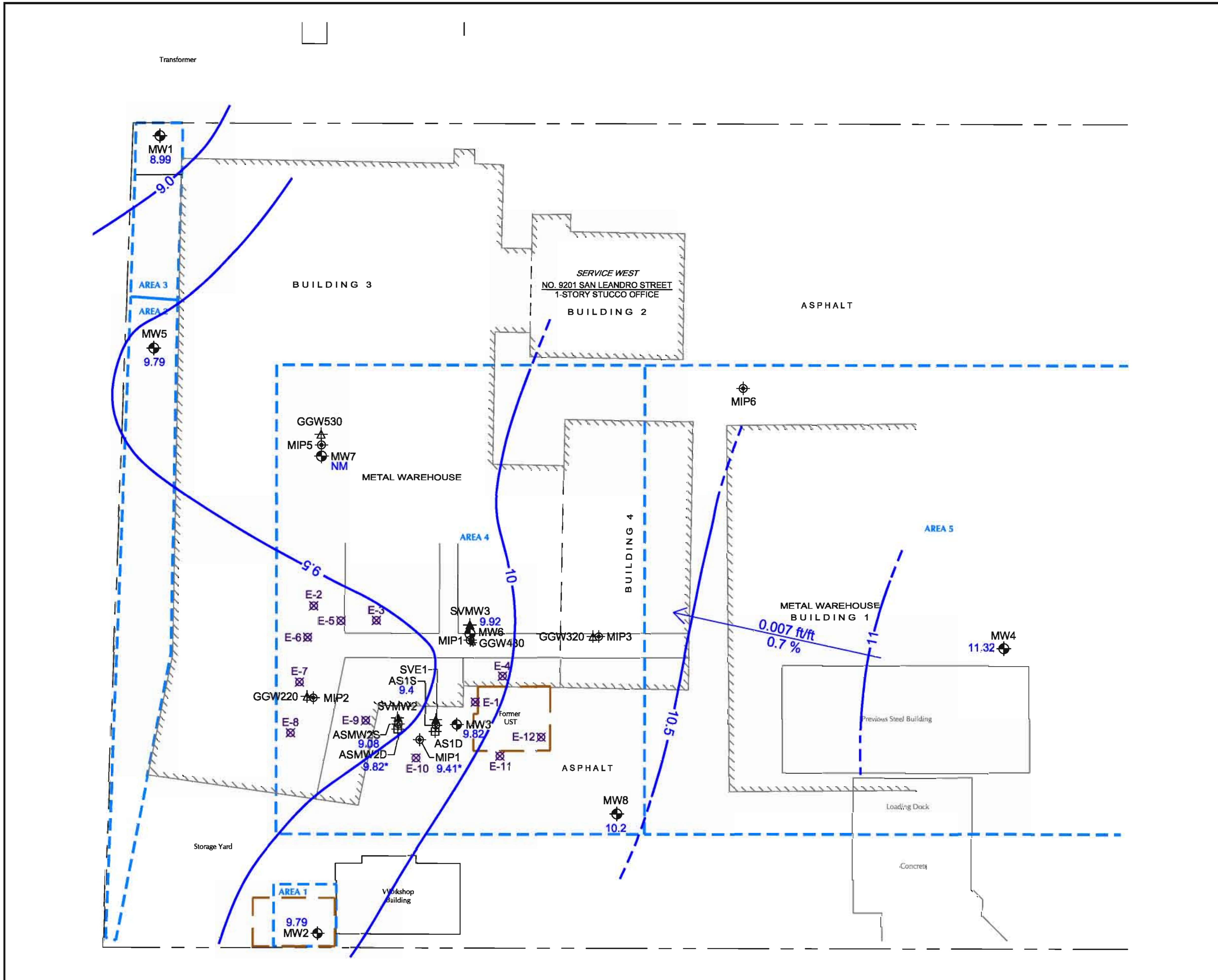
DATE:	FILE NAME:	SOURCE:
9/2010	PCC-BCSG.DWG	LFR, MAY 2009

AREA 4 BENZENE CONCENTRATION IN GROUNDWATER PRE AND POST EXTRACTION

9201 SAN LEANDRO STREET
OAKLAND, CALIFORNIA

SGI environmental
THE SOURCE GROUP, INC.

FIGURE
5



LEGEND

- Site Boundary
- Project areas of concern
- Groundwater contours November 6, 2009.
- AS1D — Deep groundwater air injection or air injection monitoring well by LFR January 2009
- AS1S — Shallow groundwater air injection or air injection monitoring well LFR January 2009
- SVMW3 — Vadose well by LFR January 2009
- MW6 — Groundwater monitoring well
- MIP3 — Membrane interface probe by LFR January 2009
- GGW320 — Grab groundwater sample location by LFR January 2009
- Area of 2009 excavation
- 0.007 ft/ft 0.7 % — Groundwater gradient feet per foot and percent
- 11.37 — Groundwater elevation measured November 6, 2009.
- NM — Not Measured
- * — Groundwater elevation in deeper well not used in contour

0 40 80

APPROXIMATE SCALE IN FEET

N

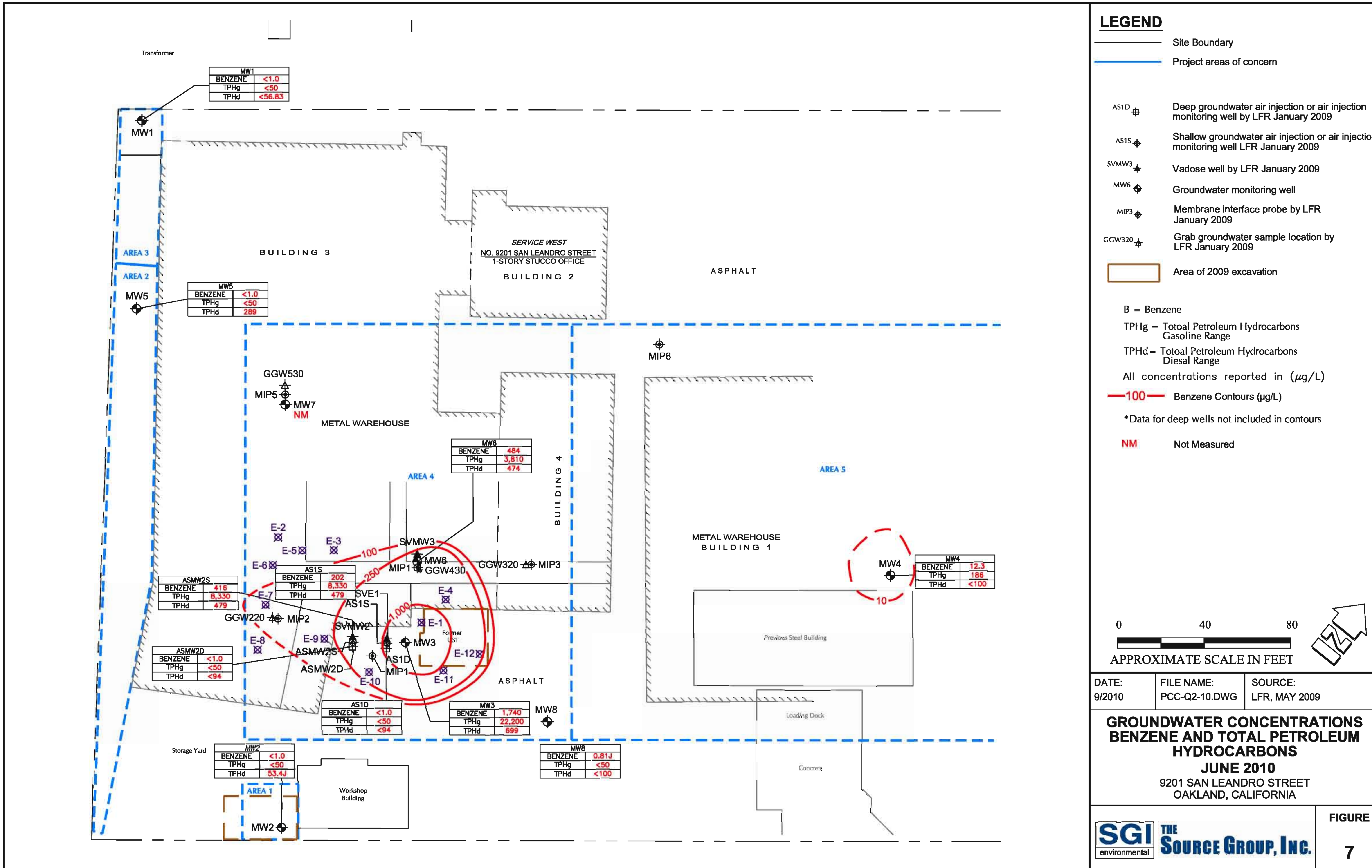
DATE:	FILE NAME:	SOURCE:
9/2010	PCC-Q2-10.DWG	LFR, MAY 2009

GROUNDWATER GRADIENT MAP JUNE 2010

9201 SAN LEANDRO STREET
OAKLAND, CALIFORNIA

SGI environmental — THE SOURCE GROUP, INC.

FIGURE 6



DATE:	FILE NAME:	SOURCE:
9/2010	PCC-Q2-10.DWG	LFR, MAY 2009

GROUNDWATER CONCENTRATIONS BENZENE AND TOTAL PETROLEUM HYDROCARBONS

JUNE 2010

9201 SAN LEANDRO STREET
OAKLAND, CALIFORNIA

SGI environmental — THE SOURCE GROUP, INC.

FIGURE 7

TABLES

Table 1a
Extraction Test and Monitoring of Depth to Water
Paco Pumps
9201 San Leandro Street
Oakland, California

Date/Time		Vapor Inlet Concentration (ppmv)	Well Under Extraction	Wells Screened in Groundwater					Vadose Wells		Cumulative Water Extracted Volume (gallons)	Comments
				MW-3 Screened 20 - 5 ft	AS-1S Screened 17-14 ft - 10 ft from MW-3 DTW (ft)	AS-1D Screened 33-30 ft - 10 ft from MW-3 DTW (ft)	ASMW-2S Screened 17- 11 ft - 27 ft from MW-3 DTW (ft)	ASWM-2D Screened from 33-23 ft - 27 ft from MW-3 DTW (ft)	SVMW-2 Screened 9 to 5 ft - 27 ft from MW-3 DTW (ft)	SVE-1 Screened 9 to 5 ft - 10 ft from MW-3 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 extraction of MW-3 to evaluate impact in nearby and deeper groundwater wells
4/9/10 20:00	22	709	(MW-3)	Stinger at 19 ft depth	8.74	8.65	8.71	8.85	Dry	5.14	375	
4/10/10 0:00	22	638	(MW-3)		8.84	8.76	8.77	8.94	Dry	4.75	999	
4/10/10 8:00	22	599	(MW-3)		8.94	8.87	8.94	9.07	Dry	4.31	1,670	
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-		Short-Term Tests of vadose wells									2,060	

Notes:
DTW: Depth to Water

Table 1b
Vapor Extraction Tests and Monitoring of Vacuum
Paco Pumps
9201 San Leandro Street
Oakland, California

Date/Time	Unit Vacuum (" Hg)	Air Flow (cfm)	Vapor Inlet Concentration	Well under extraction	Wells Screened in Groundwater					Vadose Wells		Comments
			ppmv inlet		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-3	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	
4/9/10 15:00	22	37	732	MW-3	Sampled Influent	0*	0*	0*	0.01*	0.00	0.00	MW-3 Extraction
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			0.01*	0.01*	0.01*	0.02*	0.01	0.01	
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	AS-1S		Extraction ON & Sampled						Stinger in AS-1S at 16 ft
4/10/10 9:30	23	38	120			Extraction ON						
4/10/10 10:00	23	38	290			Extraction OFF						
4/10/10 10:00	23	43	13100	ASMW-2S			Extraction ON & Sampled					Stinger in AS-MW-2S at 16 ft
4/10/10 10:30	23	40	12360				Extraction ON					
4/10/10 11:00	23	39	10290				Extraction ON					
4/10/10 11:30	23	39	9730				Extraction OFF					
4/10/10 11:30	23	42	9310	SVMW-2						Extraction ON & Sampled		Stinger in SVMW-2 at 8 ft
4/10/10 12:00	23	42	9360							Extraction ON		
4/10/10 12:30	23	42	9170							Extraction ON		
4/10/10 13:00	23	37	9020							Extraction OFF		
4/10/10 13:10	-	-	430	SVE-1							Extraction ON & Sampled	Stinger in SVE-1 at 8 ft

Notes:
* Screen interval wholly submerged

Table 1c

Initial Extraction Test: Vapor Sample Results

Paco Pumps

9201 San Leandro Street

Oakland, 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 2
Soil Analytical Results
Paco Pumps
9201 San Leandro Street
Oakland, California

Sample Location	Date Collected	Depth feet bgs	TPHd	TPHg	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	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 3
CalClean High-vacuum DPE Summary
Former paco Pumps Facility
9201 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	n/a
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	
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-Gasoline		Benzene		Toluene		Ethylbenzene		Xylenes		MTBE	
	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-Gasoline		Benzene	
	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

<u>Notes:</u>
Pre-extraction samples collected on 6/16/2010
Post-extraction samples collected on 6/30/2010
TPH = total petroleum hydrocarbons

Well	TPH-Gasoline			Benzene		
	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

<u>Notes:</u>
Pre-extraction samples collected on 11/6/09
Post-extraction samples collected on 6/28/10 and 8/10/10

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-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 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)
	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		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		NM	NM
	6-Nov-09		8.00	11.37
	28-Jun-10		8.05	11.32
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	MTBE	Other Fuel Additives
LFR Area 1 - Southwestern Corner of the Site, west of the "workshop 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
LFR Area 2 - Area South of the Warehouse Storage Area Building Adjacent to the Southern Property Boundary												
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
LFR Area 4 - Former UST near Groundwater Monitoring Well MW-3												
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
LFR Area 4 - Former UST near Groundwater Monitoring Well MW-3 (continued)												
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

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 - Suspected Former UST near Groundwater Monitoring Well 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
ESL's Groundwater *is* current or potential drinking water source			100	100	100	100	1	40	30	20	5	0.5 (1,2-DCA), 12 (TBA)
ESL's Groundwater *is not* current or potential drinking water source			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	Isopropyl-benzene	Naphthalene	n-Propyl-benzene	1,2,4-Trimethyl-benzene	1,3,5-Trimethyl-benzene
LFR Area 4 - Former UST Area																
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 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

Chemical of Potential Concern	Groundwater		Indoor Air	Cancer Risk	Hazard Quotient
	MDC (µg/L)	EPC (C_{gw})[1] (µg/L)	EPC ($C_{building}$)[2] (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.
µg/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

NON-HAZARDOUS Waste Hauler Document Daily Field Ticket No. 70355 77640

GENERATOR
Name: PCC Flow tech
EPA #
Address: 9201 San Leandro st
oakland
Order Placed: Order Date:

DESIGNATED TSD FACILITY
Name: Onstrat
EPA #
Address: 1105 C Airport Rd
Rio Vista CA

ALTERNATE TDS FACILITY
Name:
EPA #
Address:

WASTE ☐ - DRILLING MUD ☐ - GASWELL WATER ☒ - OTHER purge water
Weight/Volume 1800 Units Gal Container: ☐ - Dump Truck ☒ Tank Truck

This material is nonhazardous 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 toxic materials from natural sources, or 2) is a sulfur-dioxide scrubber solution from a sodium hydroxise or sodium carbonate oil field boiler scrubber system, and possesses no characteristics that would require its handling as a hazardous waste.

SIGNATURE OF AUTHORIZED AGENT [signature] DATE 4/21/10

TRANSPORTER
Warren E. Gomes Exc., Inc.
P. O. Box 369
Rio Vista, CA 94571
(707) 374-2881
EPA # CAD076557370

Job No. Service Group
Unit No. 26
Pick-Up Date 4-20-10
SIGNATURE OF BUYER [signature]

TSD FACILITY
Name Instrat
EPA #
QTY Measured 1800 GALS
☐ - BBL ☐ - TONS ☐ - OTHER

Method of Disposal:
- ☐ - Injection Well
- ☐ - Landfill
- ☐ - Land Treatment
- ☐ - Surface Impoundment
- ☒ Other G.A.C

SIGNATURE OF AUTHORIZED AGENT [signature] DATE 4-21-10

04-PFT-003

TSDF TO GENERATOR

NO. 687541

NON-HAZARDOUS WASTE DATA FORM

BESI # 182714

GENERATOR

Generator's Name and Mailing Address
PCC FlowTech, INC.
4650 Macadam
Portland, OR 97230-4202

Generator's Site Address (if different than mailing address)
PACO PUMPS
9201 SAN LEANDRO STREET
OAKLAND, CA 94603

Generator's Phone:

Container type removed from site: ☒ Drums ☐ Vacuum Truck ☐ Roll-off Truck ☐ Dump Truck ☐ Other

Quantity 7

Container type transported to receiving facility: ☐ Drums ☒ Vacuum Truck ☐ Roll-off Truck ☐ Dump Truck ☐ Other

Quantity 1 Volume 385 gallons

WASTE DESCRIPTION NON-HAZARDOUS WATER

GENERATING PROCESS WELL PURGING / DECON WATER

	COMPONENTS OF WASTE	PPM	%		COMPONENTS OF WASTE	PPM	%
1.	WATER		99-100%	3.			
2.	TPH		<1%	4.			

Waste Profile

PROPERTIES: pH 7-10 ☐ SOLID ☒ LIQUID ☐ SLUDGE ☐ SLURRY ☐ OTHER

HANDLING INSTRUCTIONS:

Generator Printed/Typed Name	Signature	Month	Day	Year
Kirsten Littrell		7	20	10

The Generator certifies that the waste as described is 100% non-hazardous

TRANSPORTER

Transporter 1 Company Name: BELSHIRE
Phone#: 949-460-5200

Transporter 1 Printed/Typed Name	Signature	Month	Day	Year
Luis Navarro		7	20	10

Transporter Acknowledgment of Receipt of Materials

Transporter 2 Company Name: NIETO & SONS TRUCKING, INC.
Phone#: 714-990-6855

Transporter 2 Printed/Typed Name	Signature	Month	Day	Year
Luis Jecuna		7	23	10

Transporter Acknowledgment of Receipt of Materials

RECEIVING FACILITY

Designated Facility Name and Site Address
DEMENNO KERDOON
2000 N. ALAMEDA ST.
COMPTON, CA 90222
9201SANL
601775

Phone#: 310-537-7100

Printed/Typed Name	Signature	Month	Day	Year
Fernando Marquez		07	23	10

Designated Facility Owner or Operator: Certification of receipt of materials covered by this data form.

Manifest

TPST Soil Recyclers of CA
Non-Hazardous Soils

↓ Manifest # ↓

Date of Shipment:	Responsible for Payment:	Transporter Truck #:	Facility #:	Given by TPST:	Load #
7 27 10		393 1476	A07	35692	0011

Generator's Name and Billing Address:
Pcc FlowTech, INC.
4650 Macadam
Portland, OR 97230-4202

Generator's Phone #:
Person to Contact:
FAX#:
Generator's US EPA ID No.
Customer Account Number with TPST:

Consultant's Name and Billing Address:

Consultant's Phone #:
Person to Contact:
FAX#:
Customer Account Number with TPST:

Generation Site (Transport from): *(name & address)*
PACO PUMPS
9201 SAN LEANDRO STREET
OAKLAND, CA 94603

Site Phone #:
Person to Contact:
FAX#:
BTEX Levels
TPH Levels
AVG. Levels

Designated Facility (Transport to): *(name & address)*
TPST SOIL RECYCLERS OF CALIFORNIA
12328 HIBISCUS AVENUE
ADELANTO, CA 92301

Facility Phone #: (800) 862-8001
Person to Contact: DELLENA JEFFREY
FAX#: (760) 246-8004
Facility Permit Numbers

Transporter Name and Mailing Address:
BELSHIRE
25971 TOWNE CENTRE DRIVE
FOOTHILL RANCH, CA 92610
BESI: 182714

Transporter's Phone #: 949-460-5200
Person to Contact: LARRY MOOTHART
FAX#: 949-460-5210
Transporter's US EPA ID No.: CAR000183913
Transporter's DOT No.: 460647
Customer Account Number with TPST:

Description of Soil	Moisture Content	Contaminated by:	Approx. Qty:	Description of Delivery	Gross Weight	Tare Weight	Net Weight
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐	24	soil	49200	37610	11590
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐					5.76

List any exception to items listed above:
Scale Ticket# 82619

Generator's and/or consultant's certification: I/We certify that the soil referenced herein is taken entirely from those soils described in the Soil Data Sheet completed and certified by me/us for the Generation Site shown above and nothing has been added or done to such soil that would alter it in any way.

Print or Type Name: Kristine Tidwell Generator ☐ Consultant ☐
Signature and date: [signature] Month 07 Day 20 Year 10

Transporter's certification: I/We acknowledge receipt of the soil described above and certify that such soil is being delivered in exactly the same condition as when received. I/We further certify that this soil is being directly transported from the Generation Site to the Designated Facility without off-loading, adding to, subtracting from or in any way delaying delivery to such site.

Print or Type Name: Luis Navarro
Signature and date: [signature] Month 7 Day 20 Year 10

Discrepancies: 9201SANL 599518

PLEASE INCLUDE COPY OF WEIGH TICKET WITH SIGNED MANIFEST

Recycling Facility certifies the receipt of the soil covered by this manifest except as noted above:

Print or Type Name: D. JEFFREY/J. PROVANSAL
Signature and date: [signature] 7/27/10

Generator and/or Consultant — Transporter — Recycling Facility

Please print or type.

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: 1274803154148
Site Location: 9201 San Leandro, Oakland, CA
Project Start Date: 06/08/2010
Assigned Inspector: Contact Vicky Hamlin at (510) 670-5443 or vickyh@acpwa.org

City of Project Site: Oakland
Completion Date: 07/30/2010

Applicant: The Source Group, Inc - Paul Parmentier
1962 Freeman Ave, Signal Hill, CA 90755
Phone: 562-597-1055

Property Owner: 9201 San Leandro LLC
9201 San Leandro, Oakland, CA 94621
Phone: --

Client: The Source Group, Inc
1962 Freeman Ave, Signal Hill, CA 90755
Phone: 562-597-1055

Contact: Paul Parmentier
Phone: 562-597-1055
Cell: 714-519-1218

Receipt Number: WR2010-0189
Payer Name : The Source Group, Inc

Total Due: $265.00
Total Amount Paid: $265.00
Paid By: CHECK **PAID IN FULL**

Works Requesting Permits:

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

Work Total: $265.00

Specifications

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

Specific Work Permit Conditions

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

and save the Alameda County Public Works Agency, its officers, agents, and employees free and harmless from any and all expense, cost, liability in connection with or resulting from the exercise of this Permit including, but not limited to, properly damage, personal injury and wrongful death.

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

3. 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 Construction-Monitoring-Monitoring - 0 Wells
Driler: Gregg Drilling - Lic #: 485165 - Method: auger

Work Total: ** $0.00
**** Cancelled Work. Total amount adjusted. ****

Specifications

Permit #	Issued Date	Expire Date	Owner Well Id	Hole Diam.	Casing Diam.	Seal Depth	Max. Depth
* 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: 1275518104742
City of Project Site: Oakland
Site Location: 9201 San Leandro, Oakland, CA
Project Start Date: 06/08/2010
Completion Date: 07/30/2010
Assigned Inspector: Contact Vicky Hamlin at (510) 670-5443 or vickyh@acpwa.org

Applicant: The Source Group, Inc - Paul Parmentier
1962 Freeman Ave, Signal Hill, CA 90755
Phone: 562-597-1055

Property Owner: 9201 San Leandro LLC
9201 San Leandro, Oakland, CA 94621
Phone: --

Client: The Source Group, Inc
1962 Freeman Ave, Signal Hill, CA 90755
Phone: 525-597-1055

Contact: Paul Parmentier
Phone: 562-597-1055
Cell: 714-519-1218

Total Due: $397.00
Receipt Number: WR2010-0190 **Total Amount Paid:** $397.00
Payer Name : The Source Group, Inc Paid By: CHECK **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 Id	Hole Diam.	Casing Diam.	Seal Depth	Max. Depth
W2010-0375	06/02/2010	09/06/2010	MW-8	11.00 in.	4.00 in.	5.00 ft	20.00 ft

Specific Work Permit Conditions

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

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

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

4. Compliance with the well-sealing specifications shall not exempt the well-sealing contractor from complying with appropriate State reporting-requirements related to well construction or destruction (Sections 13750 through 13755

(Division 7, Chapter 10, Article 3) of the California Water Code). Contractor must complete State DWR Form 188 and 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

SGI environmental THE SOURCE GROUP, INC.

		BORING/WELL ID:	**E-1**
PROJECT NAME AND ADDRESS:	9201 San Leandro Street		**Project No. 04-PFT-003**
BORING LOCATION (AT SITE):	In Former Tank Pit		**Logged By:** Kristene Tidwell
CONTRACTOR AND EQUIPMENT:	WDC Drilling/ CME-55 Limited Access Drilling Rig		
SAMPLING METHOD:	Macrocore	**MONITORING DEVICE:**	NA
START DATE/ (TIME):	6/10/10 11:10	**FINISH DATE/ TIME**	6/10/2010 13:00:00 AM
FIRST WATER (BGS):	9 feet	**STABILIZED WATER LEVEL:**	9.4 feet
SURFACE ELEVATION:		**CASING TOP ELEVATION:**	
TOTAL BORING DEPTH(S):	18 feet	**BORING DIAMETER/DEPTH:**	8-inch/18-feet

Time	Water Level	Sample Interval	Recovery (%)	Depth (feet)	Stratigraphy	LITHOLOGIC DESCRIPTION (classification, color, moisture, density, grain size/plasticity, other) ALL PERCENTAGES ARE APPROXIMATE UNLESS OTHERWISE STATED	Well construction details
				0		Borehole cuttings logged	
11:10						Tank backfill to 10 feet bgs	
				1			
				2		Portland Neat Cement	
				3		Fill	
				4		Hydrated Bentonite Seal	
				5			
				6		Schedule 40 PVC Blank	
				7		2/12 Monterey Sand	
				8			
				9			
12:10				10		CLAY (80% clay, 20% silt), greenish brown, moist, high plasticity, low estimated permeability	
				11			
				12		Schedule 40 PVC 0.010	
				13			
				14			
				15			
				16			
				17			
				18		Bottom of boing - 18 feet bgs	
				19			
				20			

THE SOURCE GROUP, INC.

BORING/WELL ID:	**E-12**		
PROJECT NAME AND ADDRESS:	Paco Pumps - 9201 San Leandro Street - Oakland, CA		**Project No. 04-PFT-003**
BORING LOCATION (AT SITE):	Near Former Tank Pit		**Logged By:** Kristene Tidwell
CONTRACTOR AND EQUIPMENT:	WDC Drilling/ CME-55 Limited Access Drilling Rig		
SAMPLING METHOD:	Macrocore	**MONITORING DEVICE:**	NA
START DATE/ (TIME):	6/10/10 13:35	**FINISH DATE/ TIME**	6/10/10 14:40
FIRST WATER (BGS):	9 feet	**STABILIZED WATER LEVEL:**	8.76 feet
SURFACE ELEVATION:		**CASING TOP ELEVATION:**	
TOTAL BORING DEPTH(S):	18 feet	**BORING DIAMETER/DEPTH:**	8-inch/18-feet

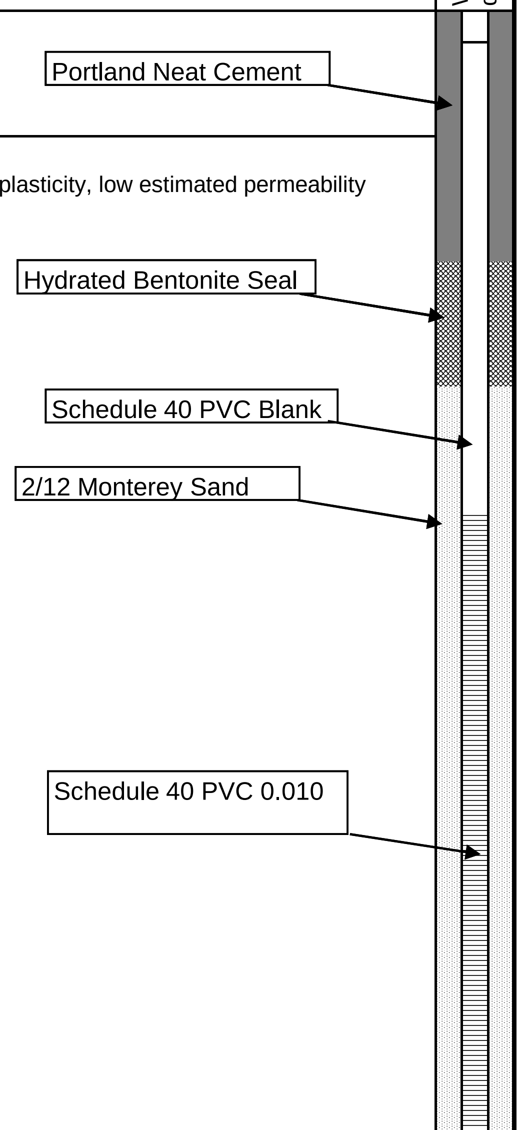
Time	Water Level	Sample Interval	Recovery (%)	Depth (feet)	Stratigraphy	LITHOLOGIC DESCRIPTION (classification, color, moisture, density, grain size/plasticity, other) ALL PERCENTAGES ARE APPROXIMATE UNLESS OTHERWISE STATED	Well construction details
				0		Borehole cuttings logged	
13:35						Fill to 2 feet bgs	Portland Neat Cement
				1			
				2			
						CLAY (80% clay, 20% silt), greyish brown, dry, high plasticity, low estimated permeability	
				3			
				4			Hydrated Bentonite Seal
				5			
				6			Schedule 40 PVC Blank
				7			2/12 Monterey Sand
				8			
				9		Moist	
14:00				10		Strong hydrocarbon odor	
				11			
				12			Schedule 40 PVC 0.010
				13			
				14			
				15			
				16			
				17			
				18		**Bottom of boing - 18 feet bgs**	
				19			
				20			

THE SOURCE GROUP, INC. (SGI environmental)

		BORING/WELL ID:	**E-2**
PROJECT NAME AND ADDRESS:	Paco Pumps - 9201 San Leandro Street - Oakland, CA		**Project No. 04-PFT-003**
BORING LOCATION (AT SITE):	Inside Building		**Logged By:** Kristene Tidwell
CONTRACTOR AND EQUIPMENT:	WDC Drilling/ CME-55 Limited Access Drilling Rig		
SAMPLING METHOD:	Macrocore	**MONITORING DEVICE:**	NA
START DATE/ (TIME):	6/11/10 9:00	**FINISH DATE/ TIME**	6/11/10 11:20
FIRST WATER (BGS):	9 feet	**STABILIZED WATER LEVEL:**	9.6 feet
SURFACE ELEVATION:		**CASING TOP ELEVATION:**	
TOTAL BORING DEPTH(S):	18 feet	**BORING DIAMETER/DEPTH:**	8-inch/18-feet

Time	Water Level	Sample Interval	Recovery (%)	Depth (feet)	Stratigraphy	LITHOLOGIC DESCRIPTION (classification, color, moisture, density, grain size/plasticity, other) ALL PERCENTAGES ARE APPROXIMATE UNLESS OTHERWISE STATED
				0		Borehole cuttings logged
11:10						Fill to 2 feet bgs
				1		
				2		
						CLAY (80% clay, 20% silt), greyish brown, dry, high plasticity, low estimated permeability
				3		
				4		
				5		
				6		
				7		
				8		
				9		Moist
12:10				10		Moderate hydrocarbon odor
				11		
				12		
				13		
				14		
				15		
				16		
				17		
				18		**Bottom of boing - 18 feet bgs**
				19		
				20		

Well construction details



THE SOURCE GROUP, INC. SGI environmental

		BORING/WELL ID:	**E-3**
PROJECT NAME AND ADDRESS:	Paco Pumps - 9201 San Leandro Street - Oakland, CA		**Project No. 04-PFT-003**
BORING LOCATION (AT SITE):	Inside Building		**Logged By:** Kristene Tidwell
CONTRACTOR AND EQUIPMENT:	WDC Drilling/ CME-55 Limited Access Drilling Rig		
SAMPLING METHOD:	Macrocore	**MONITORING DEVICE:**	NA
START DATE/ (TIME):	6/11/10 12:00	**FINISH DATE/ TIME**	6/11/10 13:00
FIRST WATER (BGS):	9 feet	**STABILIZED WATER LEVEL:**	9.55 feet
SURFACE ELEVATION:		**CASING TOP ELEVATION:**	
TOTAL BORING DEPTH(S):	18 feet	**BORING DIAMETER/DEPTH:**	8-inch/18-feet

Time	Water Level	Sample Interval	Recovery (%)	Depth (feet)	Stratigraphy	LITHOLOGIC DESCRIPTION (classification, color, moisture, density, grain size/plasticity, other) ALL PERCENTAGES ARE APPROXIMATE UNLESS OTHERWISE STATED	Well construction details
12:00				0		Borehole cuttings logged Fill to 2 feet bgs	Portland Neat Cement
				1			
				2		CLAY (80% clay, 20% silt), greyish brown, dry, high plasticity, low estimated permeability	
				3			
				4			Hydrated Bentonite Seal
				5			
				6			Schedule 40 PVC Blank
				7			2/12 Monterey Sand
	▽			8			
	▼			9		Moist	
12:50		■		10		Strong hydrocarbon odor	
				11			
				12			Schedule 40 PVC 0.010
				13			
				14			
				15			
				16			
				17			
				18		**Bottom of boing - 18 feet bgs**	
				19			
				20			

THE SOURCE GROUP, INC.				BORING/WELL ID: E-4
PROJECT NAME AND ADDRESS:	Paco Pumps - 9201 San Leandro Street - Oakland, CA			**Project No. 04-PFT-003**
BORING LOCATION (AT SITE):	Inside Building - South of Tank Pit			**Logged By:** Kristene Tidwell
CONTRACTOR AND EQUIPMENT:	WDC Drilling/ CME-55 Limited Access Drilling Rig			
SAMPLING METHOD:	Macrocore	**MONITORING DEVICE:**		NA
START DATE/ (TIME):	6/11/10 8:30	**FINISH DATE/ TIME**		6/11/10 10:15
FIRST WATER (BGS):	9 feet	**STABILIZED WATER LEVEL:**		9.51 feet
SURFACE ELEVATION:		**CASING TOP ELEVATION:**		
TOTAL BORING DEPTH(S):	18 feet	**BORING DIAMETER/DEPTH:**		8-inch/18-feet

Time	Water Level	Sample Interval	Recovery (%)	Depth (feet)	Stratigraphy	LITHOLOGIC DESCRIPTION (classification, color, moisture, density, grain size/plasticity, other) ALL PERCENTAGES ARE APPROXIMATE UNLESS OTHERWISE STATED	Well construction details
				0		Borehole cuttings logged	
8:30						Fill to 2 feet bgs	Portland Neat Cement
				1			
				2			
						CLAY (80% clay, 20% silt), greyish brown, dry, high plasticity, low estimated permeability	
				3			
				4			Hydrated Bentonite Seal
				5			
				6			Schedule 40 PVC Blank
				7			2/12 Monterey Sand
				8			
	▽ ▼			9		Moist	
9:15				10		Very strong hydrocarbon odor	
				11			
				12			Schedule 40 PVC 0.010
				13			
				14			
				15			
				16			
				17			
				18		**Bottom of boing - 18 feet bgs**	
				19			
				20			

THE SOURCE GROUP, INC. SGI environmental

PROJECT NAME AND ADDRESS:	Paco Pumps - 9201 San Leandro Street - Oakland, CA		**Project No. 04-PFT-003**
BORING LOCATION (AT SITE):	Inside Building		**Logged By:** Kristene Tidwell
CONTRACTOR AND EQUIPMENT:	WDC Drilling/ CME-55 Limited Access Drilling Rig		
SAMPLING METHOD:	Macrocore	**MONITORING DEVICE:**	NA
START DATE/ (TIME):	6/9/10 10:30	**FINISH DATE/ TIME**	6/10/10 9:00
FIRST WATER (BGS):	9 feet	**STABILIZED WATER LEVEL:**	9.6 feet
SURFACE ELEVATION:		**CASING TOP ELEVATION:**	
TOTAL BORING DEPTH(S):	18 feet	**BORING DIAMETER/DEPTH:**	8-inch/18-feet

BORING/WELL ID: **E-5**

Time	Water Level	Sample Interval	Recovery (%)	Depth (feet)	Stratigraphy	LITHOLOGIC DESCRIPTION (classification, color, moisture, density, grain size/plasticity, other) ALL PERCENTAGES ARE APPROXIMATE UNLESS OTHERWISE STATED	Well construction details
				0		Borehole cuttings logged	
10:30						Fill to 2 feet bgs	
				1			
				2			
						CLAY (80% clay, 20% silt), greyish brown, dry, high plasticity, low estimated permeability	
				3			
				4			
				5			
				6			
				7			
				8			
	▽ ▼			9		Moist	
11:00		■		10		Moderate hydrocarbon odor	
				11			
				12			
				13			
				14			
				15			
				16			
				17			
				18		**Bottom of boing - 18 feet bgs**	
				19			
				20			

Well construction labels:

- Portland Neat Cement
- Hydrated Bentonite Seal
- Schedule 40 PVC Blank
- 2/12 Monterey Sand
- Schedule 40 PVC 0.010

SGI environmental — THE SOURCE GROUP, INC.

BORING/WELL ID: **E-6**

PROJECT NAME AND ADDRESS:	Paco Pumps - 9201 San Leandro Street - Oakland, CA		**Project No. 04-PFT-003**
BORING LOCATION (AT SITE):	Inside Building		**Logged By:** Kristene Tidwell
CONTRACTOR AND EQUIPMENT:	WDC Drilling/ CME-55 Limited Access Drilling Rig		
SAMPLING METHOD:	Macrocore	**MONITORING DEVICE:**	NA
START DATE/ (TIME):	6/9/10 13:30	**FINISH DATE/ TIME**	6/10/10 9:00
FIRST WATER (BGS):	9 feet	**STABILIZED WATER LEVEL:**	9.5 feet
SURFACE ELEVATION:		**CASING TOP ELEVATION:**	
TOTAL BORING DEPTH(S):	18 feet	**BORING DIAMETER/DEPTH:**	8-inch/18-feet

Time	Water Level	Sample Interval	Recovery (%)	Depth (feet)	Stratigraphy	LITHOLOGIC DESCRIPTION (classification, color, moisture, density, grain size/plasticity, other) ALL PERCENTAGES ARE APPROXIMATE UNLESS OTHERWISE STATED	Well construction details
				0		Borehole cuttings logged	
13:30						Fill to 2 feet bgs	
				1			
				2			
						CLAY (80% clay, 20% silt), greyish brown, dry, high plasticity, low estimated permeability	
				3			
				4			
				5			
				6			
				7			
				8			
	▽ ▼			9		Moist	
14:15		■		10		Some hydrocarbon odor	
				11			
				12			
				13			
				14			
				15			
				16			
				17			
				18		**Bottom of boing - 18 feet bgs**	
				19			
				20			

Portland Neat Cement

Hydrated Bentonite Seal

Schedule 40 PVC Blank

2/12 Monterey Sand

Schedule 40 PVC 0.010

THE SOURCE GROUP, INC.

BORING/WELL ID:	**E-7**		
PROJECT NAME AND ADDRESS:	Paco Pumps - 9201 San Leandro Street - Oakland, CA		**Project No. 04-PFT-003**
BORING LOCATION (AT SITE):	Inside Building		**Logged By:** Kristene Tidwell
CONTRACTOR AND EQUIPMENT:	WDC Drilling/ CME-55 Limited Access Drilling Rig		
SAMPLING METHOD:	Macrocore	**MONITORING DEVICE:**	NA
START DATE/ (TIME):	6/10/10 12:15	**FINISH DATE/ TIME**	6/10/10 14:15
FIRST WATER (BGS):	9 feet	**STABILIZED WATER LEVEL:**	9.65 feet
SURFACE ELEVATION:		**CASING TOP ELEVATION:**	
TOTAL BORING DEPTH(S):	18 feet	**BORING DIAMETER/DEPTH:**	8-inch/18-feet

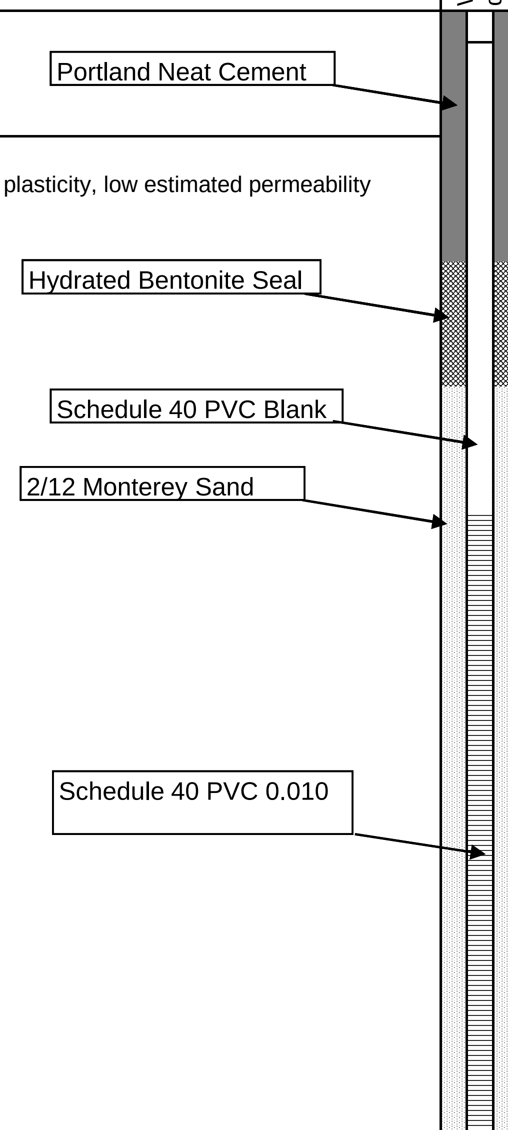
Time	Water Level	Sample Interval	Recovery (%)	Depth (feet)	Stratigraphy	LITHOLOGIC DESCRIPTION (classification, color, moisture, density, grain size/plasticity, other) ALL PERCENTAGES ARE APPROXIMATE UNLESS OTHERWISE STATED	Well construction details
				0		Borehole cuttings logged	
12:15						Fill to 2 feet bgs	Portland Neat Cement
				1			
				2			
						CLAY (80% clay, 20% silt), greyish brown, dry, high plasticity, low estimated permeability	
				3			
				4			Hydrated Bentonite Seal
				5			
				6			Schedule 40 PVC Blank
				7			2/12 Monterey Sand
				8			
	▽ ▼			9		Moist	
12:40				10		Moderate hydrocarbon odor	
				11			
				12			Schedule 40 PVC 0.010
				13			
				14			
				15			
				16			
				17			
				18		**Bottom of boing - 18 feet bgs**	
				19			
				20			

THE SOURCE GROUP, INC.

BORING/WELL ID:	**E-8**		
PROJECT NAME AND ADDRESS:	Paco Pumps - 9201 San Leandro Street - Oakland, CA		**Project No. 04-PFT-003**
BORING LOCATION (AT SITE):	Inside Building		**Logged By:** Kristene Tidwell
CONTRACTOR AND EQUIPMENT:	WDC Drilling/ CME-55 Limited Access Drilling Rig		
SAMPLING METHOD:	Macrocore	**MONITORING DEVICE:**	NA
START DATE/ (TIME):	6/10/10 14:30	**FINISH DATE/ TIME**	6/10/10 15:50
FIRST WATER (BGS):	9 feet	**STABILIZED WATER LEVEL:**	9.55 feet
SURFACE ELEVATION:		**CASING TOP ELEVATION:**	
TOTAL BORING DEPTH(S):	18 feet	**BORING DIAMETER/DEPTH:**	8-inch/18-feet

Time	Water Level	Sample Interval	Recovery (%)	Depth (feet)	Stratigraphy	LITHOLOGIC DESCRIPTION (classification, color, moisture, density, grain size/plasticity, other) ALL PERCENTAGES ARE APPROXIMATE UNLESS OTHERWISE STATED
				0		Borehole cuttings logged
14:30						Fill to 2 feet bgs
				1		
				2		
						CLAY (80% clay, 20% silt), greyish brown, dry, high plasticity, low estimated permeability
				3		
				4		
				5		
				6		
				7		
				8		
	▽ ▼			9		Moist
15:05		■		10		Moderate hydrocarbon odor
				11		
				12		
				13		
				14		
				15		
				16		
				17		
				18		**Bottom of boing - 18 feet bgs**
				19		
				20		

Well construction details



THE SOURCE GROUP, INC.

		BORING/WELL ID: **E-9**
PROJECT NAME AND ADDRESS:	Paco Pumps - 9201 San Leandro Street - Oakland, CA	**Project No. 04-PFT-003**
BORING LOCATION (AT SITE):	Near Building Door	**Logged By:** Kristene Tidwell
CONTRACTOR AND EQUIPMENT:	WDC Drilling/ CME-55 Limited Access Drilling Rig	

SAMPLING METHOD:	Macrocore	**MONITORING DEVICE:**	NA
START DATE/ (TIME):	6/9/10 15:30	**FINISH DATE/ TIME**	6/9/10 9:00
FIRST WATER (BGS):	9 feet	**STABILIZED WATER LEVEL:**	9.42 feet
SURFACE ELEVATION:		**CASING TOP ELEVATION:**	
TOTAL BORING DEPTH(S):	18 feet	**BORING DIAMETER/DEPTH:**	8-inch/18-feet

Time	Water Level	Sample Interval	Recovery (%)	Depth (feet)	Stratigraphy	LITHOLOGIC DESCRIPTION (classification, color, moisture, density, grain size/plasticity, other) ALL PERCENTAGES ARE APPROXIMATE UNLESS OTHERWISE STATED	Well construction details
				0		Borehole cuttings logged	
15:30						Fill to 2 feet bgs	Portland Neat Cement
				1			
				2		CLAY (80% clay, 20% silt), greyish brown, dry, high plasticity, low estimated permeability	
				3			
				4			Hydrated Bentonite Seal
				5			
				6			Schedule 40 PVC Blank
				7			2/12 Monterey Sand
				8			
	▽ ▼	■		9		Moist, strong hydrocarbon odor	
16:30				10			
				11			
				12			Schedule 40 PVC 0.010
				13			
				14			
				15			
				16			
				17			
				18		**Bottom of boing - 18 feet bgs**	
				19			
				20			

THE SOURCE GROUP, INC.

		BORING/WELL ID: **E-10**
PROJECT NAME AND ADDRESS:	Paco Pumps - 9201 San Leandro Street - Oakland, CA	**Project No. 04-PFT-003**
BORING LOCATION (AT SITE):	West of Tank Pit	**Logged By:** Kristene Tidwell
CONTRACTOR AND EQUIPMENT:	WDC Drilling/ CME-55 Limited Access Drilling Rig	

SAMPLING METHOD:	Macrocore	**MONITORING DEVICE:**	NA
START DATE/ (TIME):	6/10/10 9:40	**FINISH DATE/ TIME**	6/10/10 10:50
FIRST WATER (BGS):	9 feet	**STABILIZED WATER LEVEL:**	9.58 feet
SURFACE ELEVATION:		**CASING TOP ELEVATION:**	
TOTAL BORING DEPTH(S):	18 feet	**BORING DIAMETER/DEPTH:**	8-inch/18-feet

Time	Water Level	Sample Interval	Recovery (%)	Depth (feet)	Stratigraphy	LITHOLOGIC DESCRIPTION (classification, color, moisture, density, grain size/plasticity, other) ALL PERCENTAGES ARE APPROXIMATE UNLESS OTHERWISE STATED	Well construction details
				0		Borehole cuttings logged	
9:40						Fill to 2 feet bgs	Portland Neat Cement
				1			
				2			
						CLAY (80% clay, 20% silt), greyish brown, dry, high plasticity, low estimated permeability	
				3			
				4			Hydrated Bentonite Seal
				5			
				6			Schedule 40 PVC Blank
				7			2/12 Monterey Sand
				8			
	▽ ▼			9		Moist	
10:25		■		10		Strong hydrocarbon odor	
				11			
				12			Schedule 40 PVC 0.010
				13			
				14			
				15			
				16			
				17			
				18		**Bottom of boing - 18 feet bgs**	
				19			
				20			

THE SOURCE GROUP, INC.

BORING/WELL ID:			**E-11**
PROJECT NAME AND ADDRESS:	Paco Pumps - 9201 San Leandro Street - Oakland, CA		**Project No. 04-PFT-003**
BORING LOCATION (AT SITE):	Near Former Tank Pit		**Logged By:** Kristene Tidwell
CONTRACTOR AND EQUIPMENT:	WDC Drilling/ CME-55 Limited Access Drilling Rig		
SAMPLING METHOD:	Macrocore	**MONITORING DEVICE:**	NA
START DATE/ (TIME):	6/10/10 15:00	**FINISH DATE/ TIME**	6/10/10 16:30
FIRST WATER (BGS):	9 feet	**STABILIZED WATER LEVEL:**	9.09 feet
SURFACE ELEVATION:		**CASING TOP ELEVATION:**	
TOTAL BORING DEPTH(S):	18 feet	**BORING DIAMETER/DEPTH:**	8-inch/18-feet

Time	Water Level	Sample Interval	Recovery (%)	Depth (feet)	Stratigraphy	LITHOLOGIC DESCRIPTION (classification, color, moisture, density, grain size/plasticity, other) ALL PERCENTAGES ARE APPROXIMATE UNLESS OTHERWISE STATED	Well construction details
				0		Borehole cuttings logged	
15:00						Fill to 2 feet bgs	Portland Neat Cement
				1			
				2			
						CLAY (80% clay, 20% silt), greyish brown, dry, high plasticity, low estimated permeability	
				3			
				4			Hydrated Bentonite Seal
				5			
				6			Schedule 40 PVC Blank
				7			2/12 Monterey Sand
				8			
				9		Moist	
16:10				10		Strong hydrocarbon odor	
				11			
				12			Schedule 40 PVC 0.010
				13			
				14			
				15			
				16			
				17			
				18		**Bottom of boing - 18 feet bgs**	
				19			
				20			

THE SOURCE GROUP, INC.

		BORING/WELL ID:	**MW-8**
PROJECT NAME AND ADDRESS:	Paco Pumps - 9201 San Leandro Street - Oakland, CA		**Project No. 04-PFT-003**
BORING LOCATION (AT SITE):	Near Fence - South Side of Property		**Logged By:** Kristene Tidwell
CONTRACTOR AND EQUIPMENT:	WDC Drilling/ CME-55 Limited Access Drilling Rig		**Permit No:** W-2010 - 0374
SAMPLING METHOD:	Macro Core	**MONITORING DEVICE:**	N/A
START DATE/ (TIME):	6/11/10 7:30	**FINISH DATE/ TIME**	6/11/10 9:50
FIRST WATER (BGS):	9 feet	**STABILIZED WATER LEVEL:**	7.42
SURFACE ELEVATION:		**CASING TOP ELEVATION:**	
TOTAL BORING DEPTH(S):	18 feet	**BORING DIAMETER/DEPTH:**	10-inch/18-feet
CASING DIAMETER(S):	4"	**SCREEN INTERVAL(S):**	10"-18' **SLOT (IN):** 0.010
ANNULUS MATERIAL:	2/12 sand	**BORING ANGLE:**	Vertical

Time	Water Level	Sample Interval	Recovery (%)	Depth (feet)	Stratigraphy	Description	Well construction details
7:30				0		6 inches, Clay, brown - had auger to 5'	Portland Neat Cement
				1			
				2		Fill to 5 feet bgs	
				3			
				4			Hydrated Bentonite Seal
				5		(CL) Clay with silt (80% clay, 20% silt), light brown, moderate to light plasticity, dry, low est. k.	
				6			Schedule 40 PVC Blank
				7			2/12 Monterey Sand
				8			
				9			
				10			
				11		Slight increase silt, decrease clay	
				12			Schedule 40 PVC 0.010
				13		Slightly moist	
				14			
				15			
				16			
8:10				17			
				18		**Bottom of boing - 18 feet 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

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

Laboratory Job Number 220711
ANALYTICAL REPORT

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

Sample ID	Lab ID
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.

Signature: ______________________ Date: 06/23/2010
Project Manager

NELAP # 01107CA

Curtis & Tompkins, Ltd.

CASE NARRATIVE

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

CHAIN OF CUSTODY

Curtis & Tompkins Laboratories
ENVIRONMENTAL ANALYTICAL TESTING LABORATORY
In Business Since 1878
2323 Fifth Street
Berkeley, CA 94710
Phone (510) 486-0900
Fax (510) 486-0532

C&T LOGIN # 220141

Page 1 of 1

Chain of Custody # ____

Project No: 03-PFT-003

Project Name: Paco Pumps

EDD Format: Report Level: ☐ II ☐ III ☐ IV

Turnaround Time: ☐ RUSH ____ ☒ Standard

Sampler: Kristene Tidwell

Report To: Jon Philipp

Company: The Source group

Telephone: 925 944 2856

Email: jphilipp@thesourcegroup.net

Lab No.	Sample ID.	SAMPLING Date Collected	SAMPLING Time Collected	MATRIX Water	MATRIX Solid			# of Containers Sleeve	CHEMICAL PRESERVATIVE HCl	H2SO4	HNO3	NaOH	None	ANALYTICAL REQUEST TPH gas + TPH-diesel-8015	BTEX + MTBE + 7 Oxygenates 8260	Lead scavenger 8260
1	E-1 @ 10'	6/10/10	1210		X			1					X	X	X	X
2	E-2 @ 10'	6/11/10	~~1615~~													
3	E-3 @ 10'	6/11/10	1250													
4	E-4 @ 9.5'	6/11/10	0915													
5	E-5 @ 10'	6/9/10	1100													
6	E-6 @ 10'	6/9/10	1415													
7	E-7 @ 9.5'	6/10/10	1240													
8	E-8 @ 10'	6/10/10	1505													
9	E-9 @ 9'	6/9/10	1630													
10	E-10 @ 10'	6/10/10	1025													
11	E-11 @ 10'	6/10/10	1610													
12	E-12 @ 10'	6/10/10	1400													
13	MW-8 @ 17'	6/11/10	0805													

Notes:

SAMPLE RECEIPT
☐ Intact
☐ Cold
☒ On Ice
☐ Ambient

RELINQUISHED BY:	DATE:	TIME:	RECEIVED BY:	DATE:	TIME:
[signature]	6/11/10		Pat [signature]	6/11/10	6:25

COOLER RECEIPT CHECKLIST

Curtis & Tompkins, Ltd.

Login # 220711 Date Received 6-11-10 Number of coolers 1

Client THE SOURCE GROUP Project PACO PUMPS

Date Opened 6-11-10 By (print) S. EVANS (sign)

Date Logged in 6/14/10 By (print) (sign)

1. Did cooler come with a shipping slip (airbill, etc) YES NO

   Shipping info

2A. Were custody seals present? .... ☐ YES (circle) on cooler on samples ☒ NO

   How many Name Date

2B. Were custody seals intact upon arrival? YES NO N/A

3. Were custody papers dry and intact when received? YES NO

4. Were custody papers filled out properly (ink, signed, etc)? YES NO

5. Is the project identifiable from custody papers? (If so fill out top of form) YES NO

6. Indicate the packing in cooler: (if other, describe)

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

7. Temperature documentation:

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

   ☒ Samples Received on ice & cold without a temperature blank

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

8. Were Method 5035 sampling containers present? YES NO

   If YES, what time were they transferred to freezer?

9. Did all bottles arrive unbroken/unopened? YES NO

10. Are samples in the appropriate containers for indicated tests? YES NO

11. Are sample labels present, in good condition and complete? YES NO

12. Do the sample labels agree with custody papers? YES NO

13. Was sufficient amount of sample sent for tests requested? YES NO

14. Are the samples appropriately preserved? YES NO N/A

15. Are bubbles > 6mm absent in VOA samples? YES NO N/A

16. Was the client contacted concerning this sample delivery? YES NO

   If YES, Who was called? By Date:

COMMENTS

Total Volatile Hydrocarbons

Lab #:	220711	Location:	Paco Pumps
Client:	The Source Group, Inc.	Prep:	EPA 5030B
Project#:	04-PFT-003	Analysis:	EPA 8015B
Matrix:	Soil	Basis:	as received
Units:	mg/Kg	Received:	06/11/10

Field ID:	E-1@10'	Batch#:	164139
Type:	SAMPLE	Sampled:	06/10/10
Lab ID:	220711-001	Analyzed:	06/17/10
Diln Fac:	50.00		

Analyte	Result	RL
Gasoline C7-C12	690	50

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	109	57-146

Field ID:	E-2@10'	Batch#:	164044
Type:	SAMPLE	Sampled:	06/11/10
Lab ID:	220711-002	Analyzed:	06/15/10
Diln Fac:	1.000		

Analyte	Result	RL
Gasoline C7-C12	ND	0.92

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	95	57-146

Field ID:	E-3@10'	Batch#:	164100
Type:	SAMPLE	Sampled:	06/11/10
Lab ID:	220711-003	Analyzed:	06/16/10
Diln Fac:	1.000		

Analyte	Result	RL
Gasoline C7-C12	3.1 Y	0.99

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

Field ID:	E-4@9.5'	Batch#:	164139
Type:	SAMPLE	Sampled:	06/11/10
Lab ID:	220711-004	Analyzed:	06/17/10
Diln Fac:	25.00		

Analyte	Result	RL
Gasoline C7-C12	230	25

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	107	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

Curtis & Tompkins, Ltd.

Total Volatile Hydrocarbons

Lab #:	220711	Location:	Paco Pumps
Client:	The Source Group, Inc.	Prep:	EPA 5030B
Project#:	04-PFT-003	Analysis:	EPA 8015B
Matrix:	Soil	Basis:	as received
Units:	mg/Kg	Received:	06/11/10

Field ID:	E-5@10'	Batch#:	164100
Type:	SAMPLE	Sampled:	06/09/10
Lab ID:	220711-005	Analyzed:	06/17/10
Diln Fac:	1.000		

Analyte	Result	RL
Gasoline C7-C12	12 Y	1.1

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

Field ID:	E-6@10'	Batch#:	164044
Type:	SAMPLE	Sampled:	06/09/10
Lab ID:	220711-006	Analyzed:	06/15/10
Diln Fac:	1.000		

Analyte	Result	RL
Gasoline C7-C12	ND	1.0

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	99	57-146

Field ID:	E-7@9.5'	Batch#:	164139
Type:	SAMPLE	Sampled:	06/10/10
Lab ID:	220711-007	Analyzed:	06/17/10
Diln Fac:	5.000		

Analyte	Result	RL
Gasoline C7-C12	52	5.0

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	116	57-146

Field ID:	E-8@10'	Batch#:	164139
Type:	SAMPLE	Sampled:	06/10/10
Lab ID:	220711-008	Analyzed:	06/17/10
Diln Fac:	5.000		

Analyte	Result	RL
Gasoline C7-C12	230	5.0

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	178 *	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

Total Volatile Hydrocarbons

Lab #:	220711	Location:	Paco Pumps
Client:	The Source Group, Inc.	Prep:	EPA 5030B
Project#:	04-PFT-003	Analysis:	EPA 8015B
Matrix:	Soil	Basis:	as received
Units:	mg/Kg	Received:	06/11/10

Field ID:	E-9@9'	Batch#:	164044
Type:	SAMPLE	Sampled:	06/09/10
Lab ID:	220711-009	Analyzed:	06/15/10
Diln Fac:	1.000		

Analyte	Result	RL
Gasoline C7-C12	41	0.93

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	153 *	57-146

Field ID:	E-10@10'	Batch#:	164139
Type:	SAMPLE	Sampled:	06/10/10
Lab ID:	220711-010	Analyzed:	06/17/10
Diln Fac:	25.00		

Analyte	Result	RL
Gasoline C7-C12	270	25

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	110	57-146

Field ID:	E-11@10'	Batch#:	164139
Type:	SAMPLE	Sampled:	06/10/10
Lab ID:	220711-011	Analyzed:	06/17/10
Diln Fac:	50.00		

Analyte	Result	RL
Gasoline C7-C12	570	50

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	113	57-146

Field ID:	E-12@10'	Batch#:	164139
Type:	SAMPLE	Sampled:	06/10/10
Lab ID:	220711-012	Analyzed:	06/18/10
Diln Fac:	40.00		

Analyte	Result	RL
Gasoline C7-C12	320	40

Surrogate	%REC	Limits
Bromofluorobenzene (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

Curtis & Tompkins, Ltd.

Total Volatile Hydrocarbons

Lab #:	220711	Location:	Paco Pumps
Client:	The Source Group, Inc.	Prep:	EPA 5030B
Project#:	04-PFT-003	Analysis:	EPA 8015B
Matrix:	Soil	Basis:	as received
Units:	mg/Kg	Received:	06/11/10

Field ID:	MW-8@17'	Batch#:	164100
Type:	SAMPLE	Sampled:	06/11/10
Lab ID:	220711-013	Analyzed:	06/17/10
Diln Fac:	1.000		

Analyte	Result	RL
Gasoline C7-C12	ND	1.0

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	95	57-146

Type:	BLANK	Batch#:	164044
Lab ID:	QC548675	Analyzed:	06/15/10
Diln Fac:	1.000		

Analyte	Result	RL
Gasoline C7-C12	ND	0.20

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	92	57-146

Type:	BLANK	Batch#:	164100
Lab ID:	QC548889	Analyzed:	06/16/10
Diln Fac:	1.000		

Analyte	Result	RL
Gasoline C7-C12	ND	0.20

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	94	57-146

Type:	BLANK	Batch#:	164139
Lab ID:	QC549049	Analyzed:	06/17/10
Diln Fac:	1.000		

Analyte	Result	RL
Gasoline C7-C12	ND	0.20

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	94	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

Curtis & Tompkins, Ltd.

Batch QC Report

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:	QC548676	Batch#:	164044
Matrix:	Soil	Analyzed:	06/15/10
Units:	mg/Kg		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1.000	0.9327	93	77-123

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

Curtis & Tompkins, Ltd.

Batch QC Report

Total Volatile Hydrocarbons

Lab #:	220711	Location:	Paco Pumps
Client:	The Source Group, 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

Type: MS Lab ID: QC548677

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	0.1649	9.709	7.074	71	38-120

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	99	57-146

Type: MSD Lab ID: QC548678

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	9.174	6.353	67	38-120	5	56

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

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

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		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1.000	0.9856	99	77-123

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

Curtis & Tompkins, Ltd.

Batch QC Report

Total Volatile Hydrocarbons

Lab #:	220711	Location:	Paco Pumps
Client:	The Source Group, Inc.	Prep:	EPA 5030B
Project#:	04-PFT-003	Analysis:	EPA 8015B
Field ID:	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	Analyzed:	06/17/10

Type: MS   Lab ID: QC548891

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	3.126	10.31	10.59	72	38-120

Surrogate	%REC	Limits
Bromofluorobenzene (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

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Total Volatile Hydrocarbons

Lab #:	220711	Location:	Paco Pumps
Client:	The Source Group, Inc.	Prep:	EPA 5030B
Project#:	04-PFT-003	Analysis:	EPA 8015B
Matrix:	Soil	Batch#:	164139
Units:	mg/Kg	Analyzed:	06/17/10
Diln Fac:	1.000		

Type: BS Lab ID: QC549051

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1.000	0.9485	95	77-123

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

Type: BSD Lab ID: QC549052

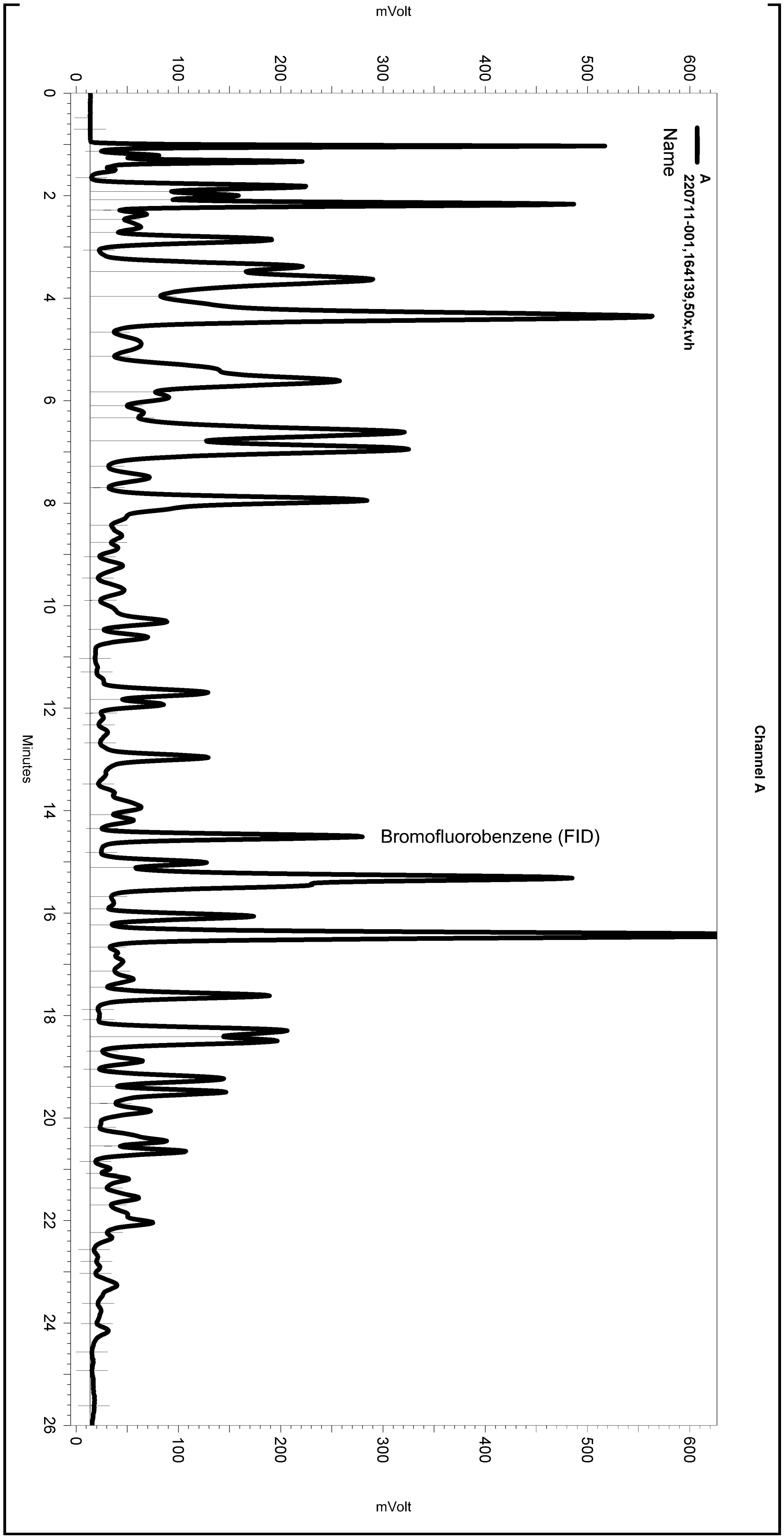
Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	2.000	2.027	101	77-123	7	26

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	109	57-146

RPD= Relative Percent Difference

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

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



---< General Method Parameters >-------------------------------------
----

No items selected for this section

---< A >---

No items selected for this section

Integration Events
==================

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50

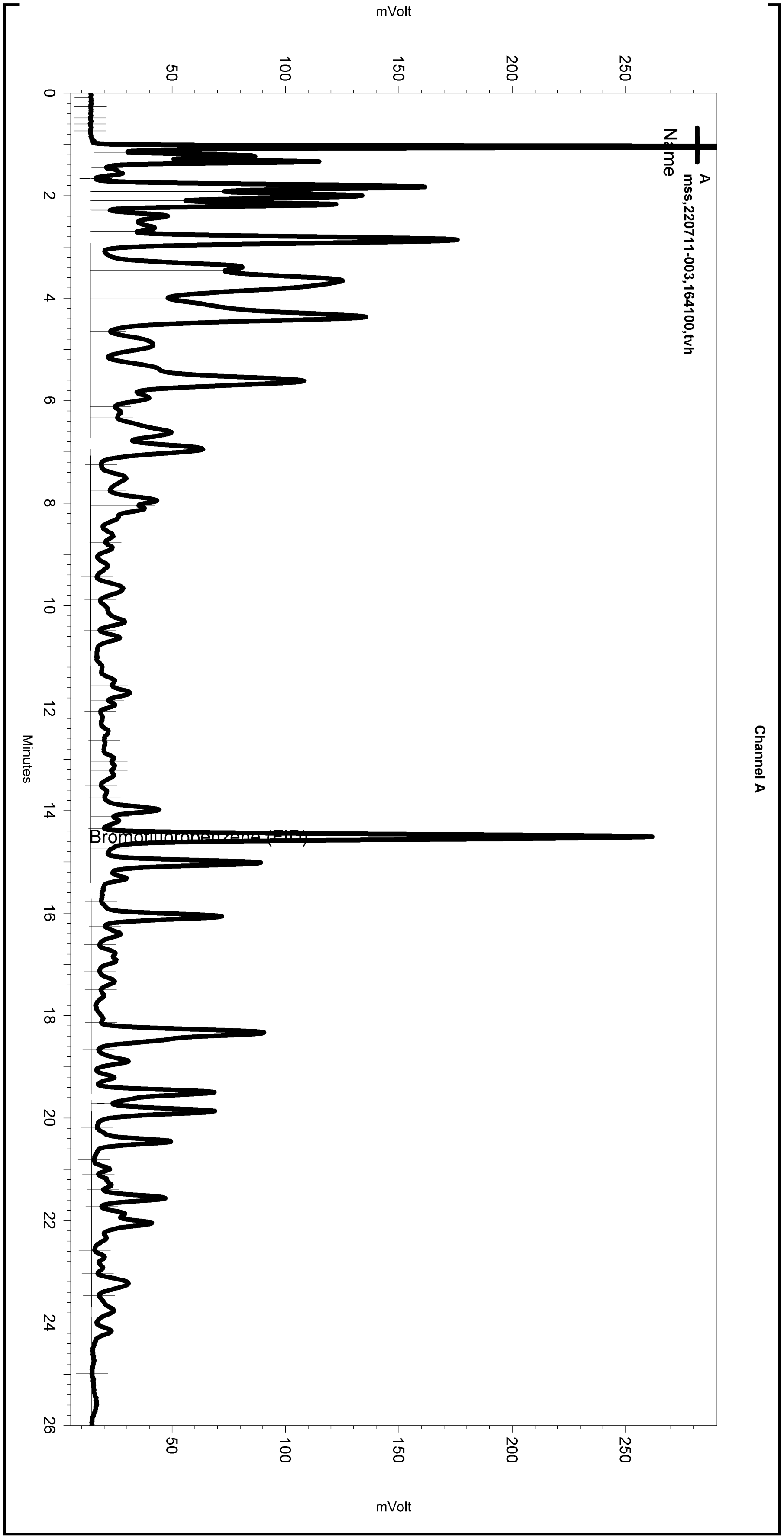
Manual Integration Fixes
========================

Data File: \\Lims\gdrive\ezchrom\Projects\GC04\Data\168_006

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

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
==================

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50

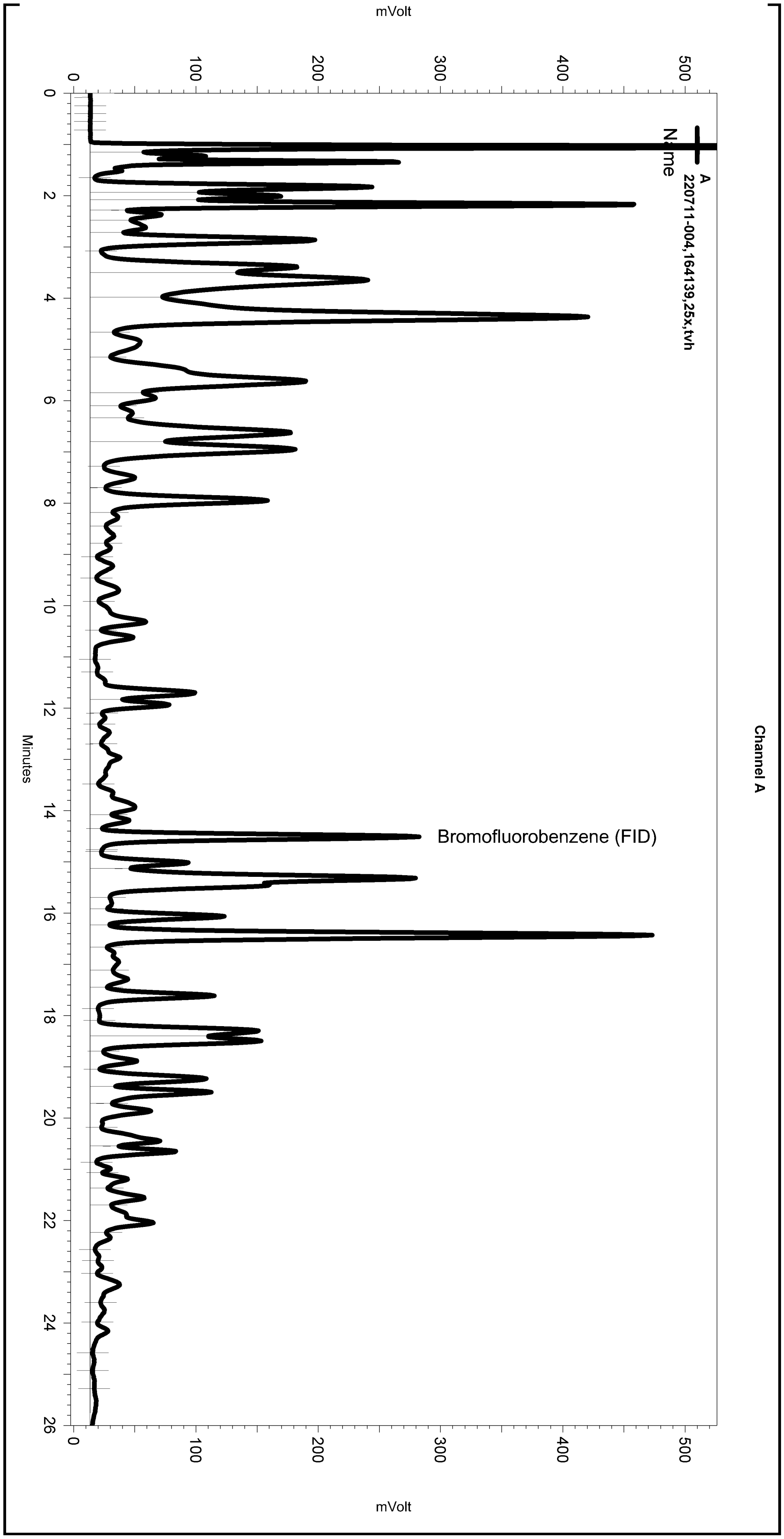
Manual Integration Fixes
========================

Data File: \\Lims\gdrive\ezchrom\Projects\GC04\Data\167_005

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

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC04\Sequence\168.seq**
Sample Name: **220711-004,164139,25x,tvh**
Data File: **\\Lims\gdrive\ezchrom\Projects\GC04\Data\168_007**
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 8:07:10 PM
Analysis Date: 6/18/2010 12:10:55 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

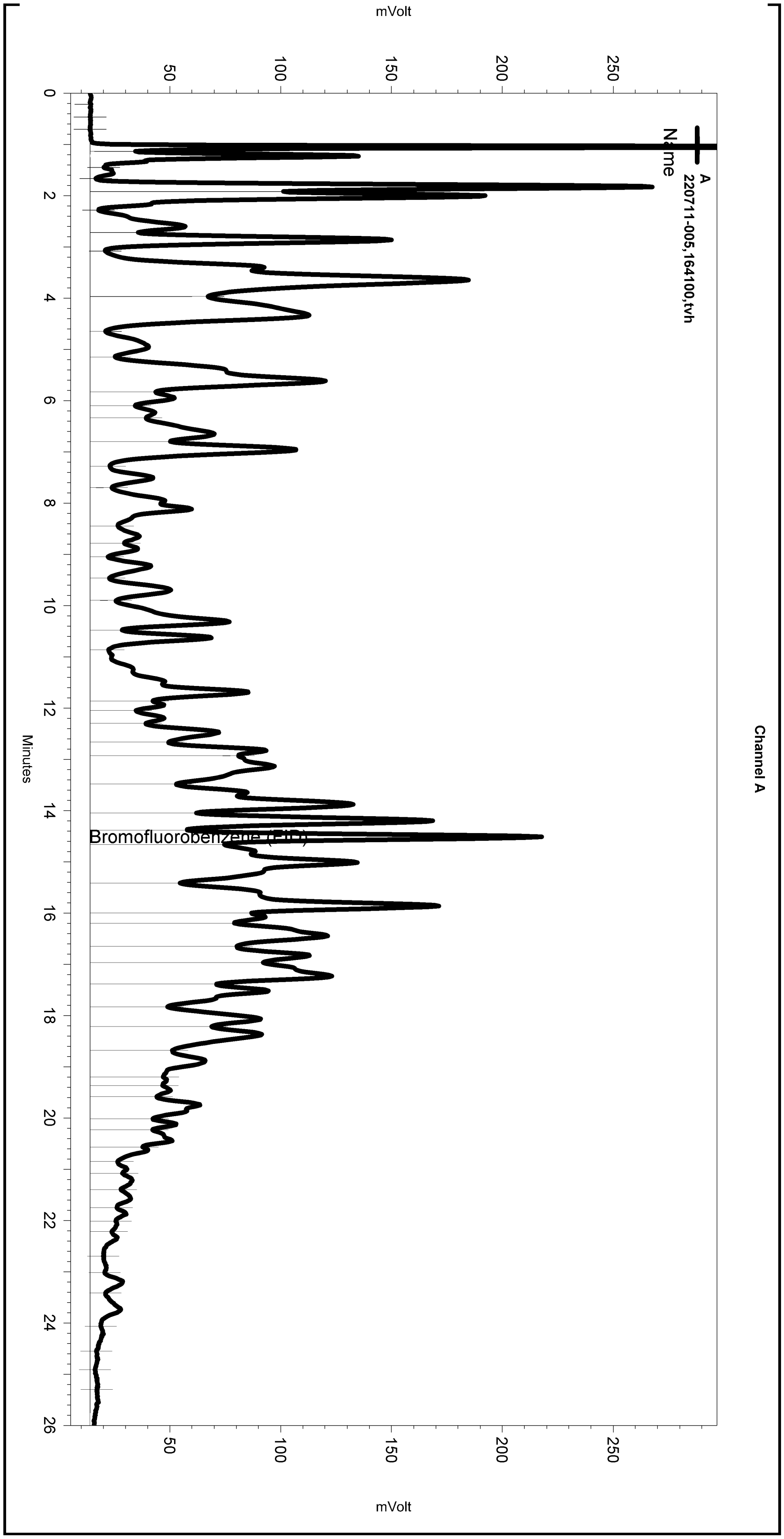
Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50

Manual Integration Fixes

Data File: \\Lims\gdrive\ezchrom\Projects\GC04\Data\168_007

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Lowest Point Horizontal Baseli	0	26.017	0
Yes	Split Peak	14.768	0	0

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC04\Sequence\167.seq** Sample Name: **220711-005,164100,tvh** Data File: **\\Lims\gdrive\ezchrom\Projects\GC04\Data\167_011** 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 12:45:06 AM Analysis Date: 6/18/2010 11:34:43 AM Sample Amount: 0.91 Multiplier: 0.91 Vial & pH or Core ID: a



---< General Method Parameters >---

No items selected for this section

---< A >---

No items selected for this section

Integration Events

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50

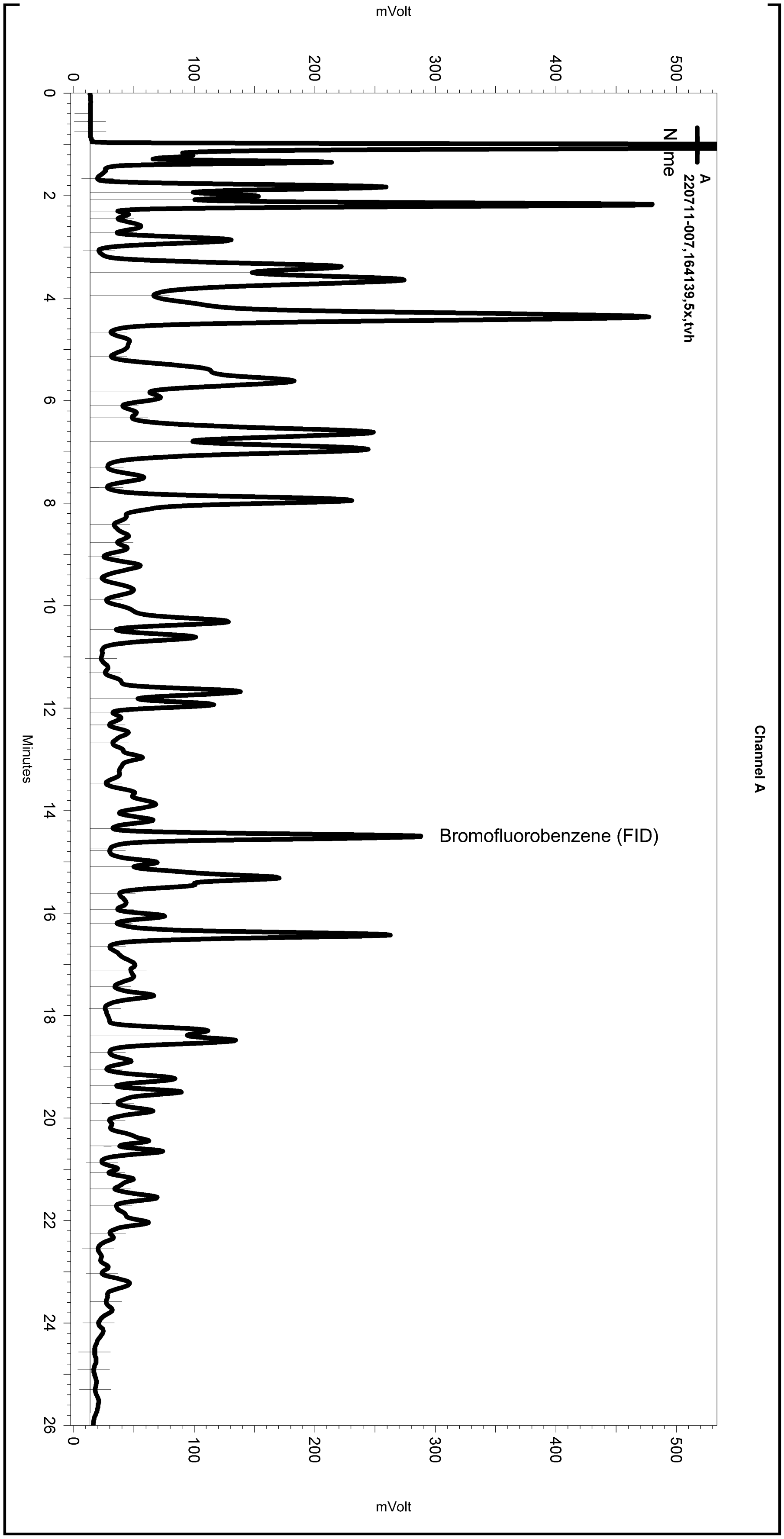
Manual Integration Fixes

Data File: \\Lims\gdrive\ezchrom\Projects\GC04\Data\167_011

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

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

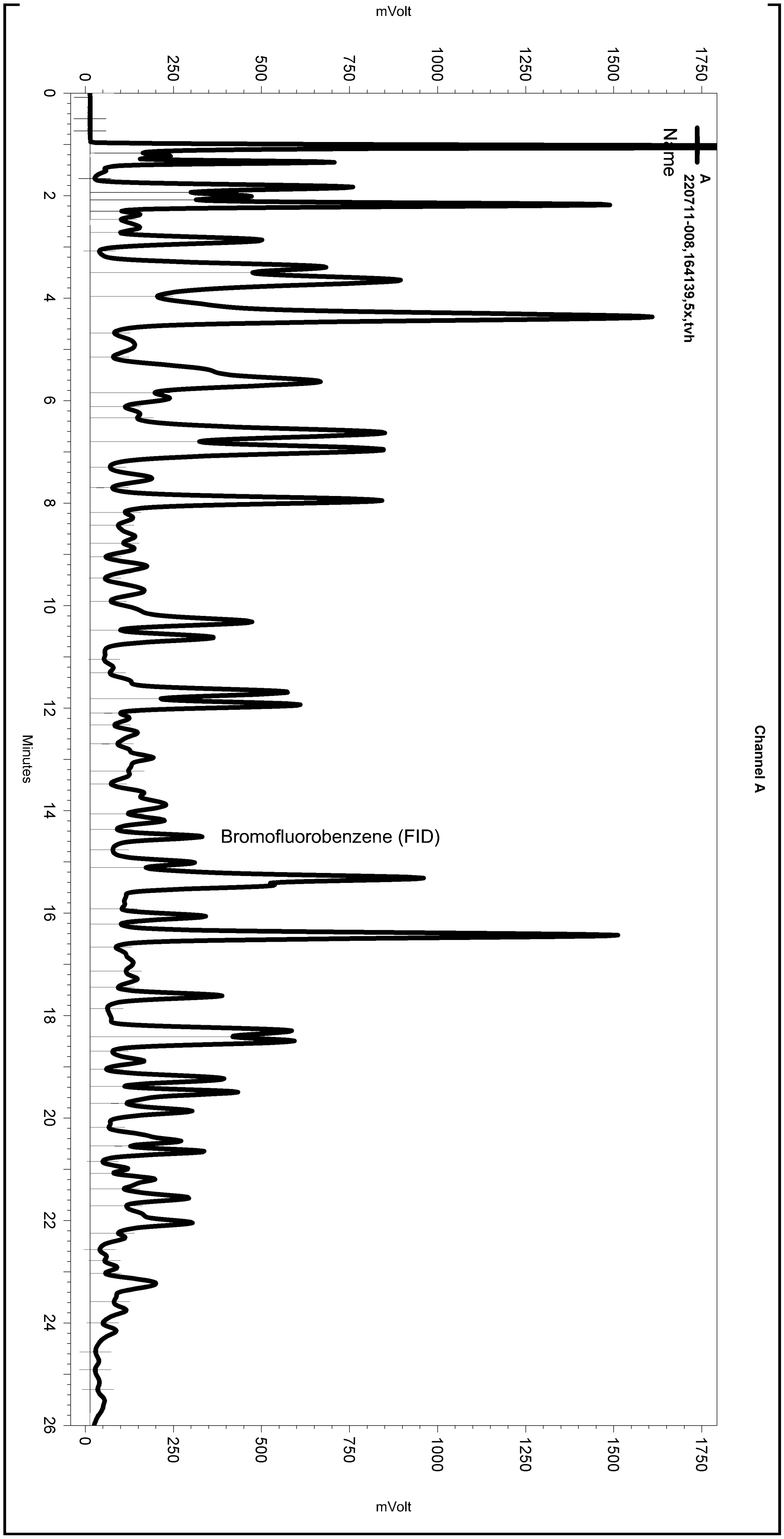
Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50

Manual Integration Fixes

Data File: \\Lims\gdrive\ezchrom\Projects\GC04\Data\168_008

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Lowest Point Horizontal Baseli	0	26.017	0
Yes	Split Peak	14.734	0	0

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



---< General Method Parameters >-------------------------------------

----

No items selected for this section

---< A >---

No items selected for this section

Integration Events
================

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50

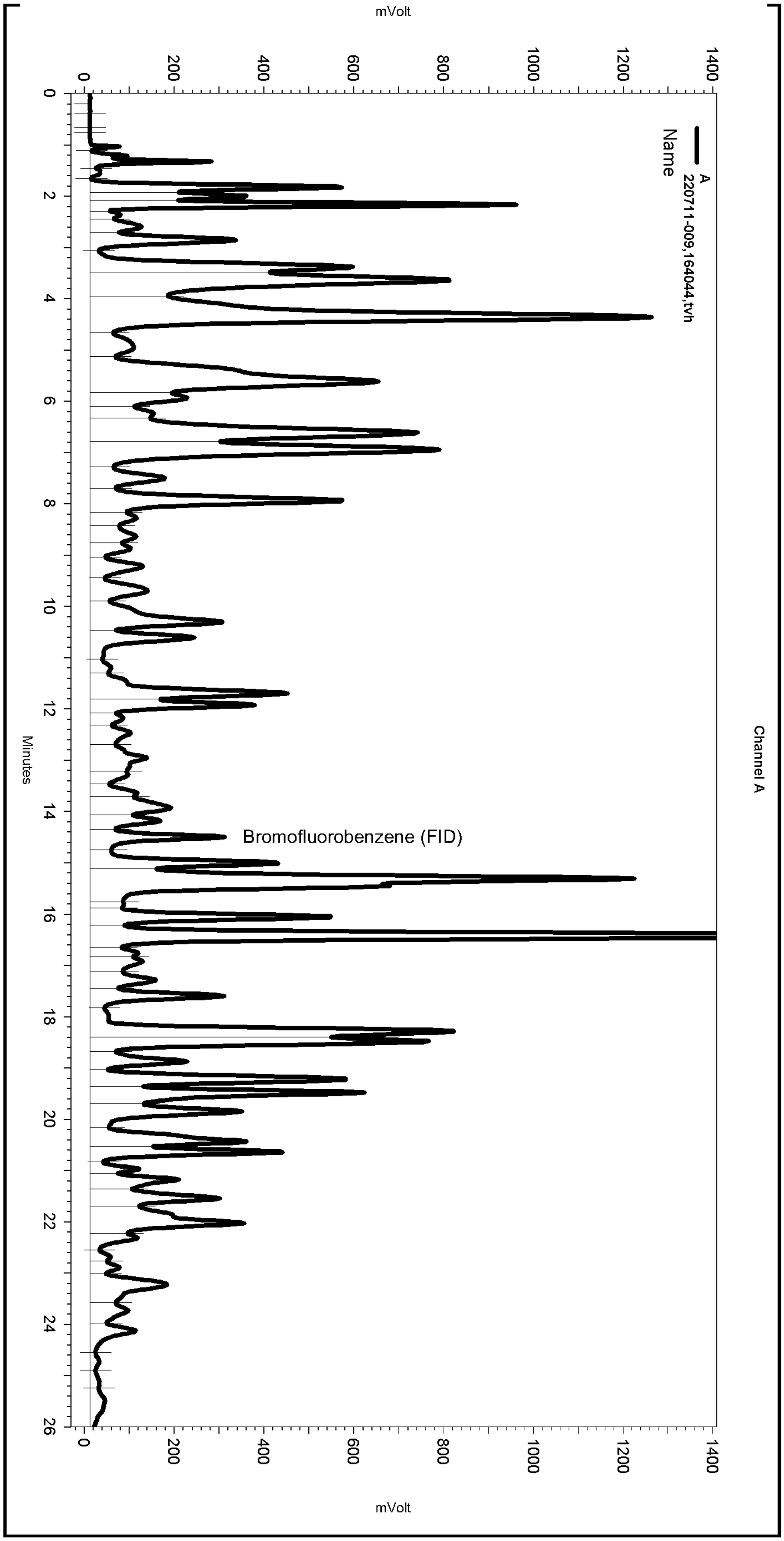
Manual Integration Fixes
=====================

Data File: \\Lims\gdrive\ezchrom\Projects\GC04\Data\168_009

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

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC04\Sequence\166.seq**
Sample Name: **220711-009,164044,tvh**
Data File: **\\Lims\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



---< General Method Parameters >---

No items selected for this section

---< A >---

No items selected for this section

Integration Events

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50

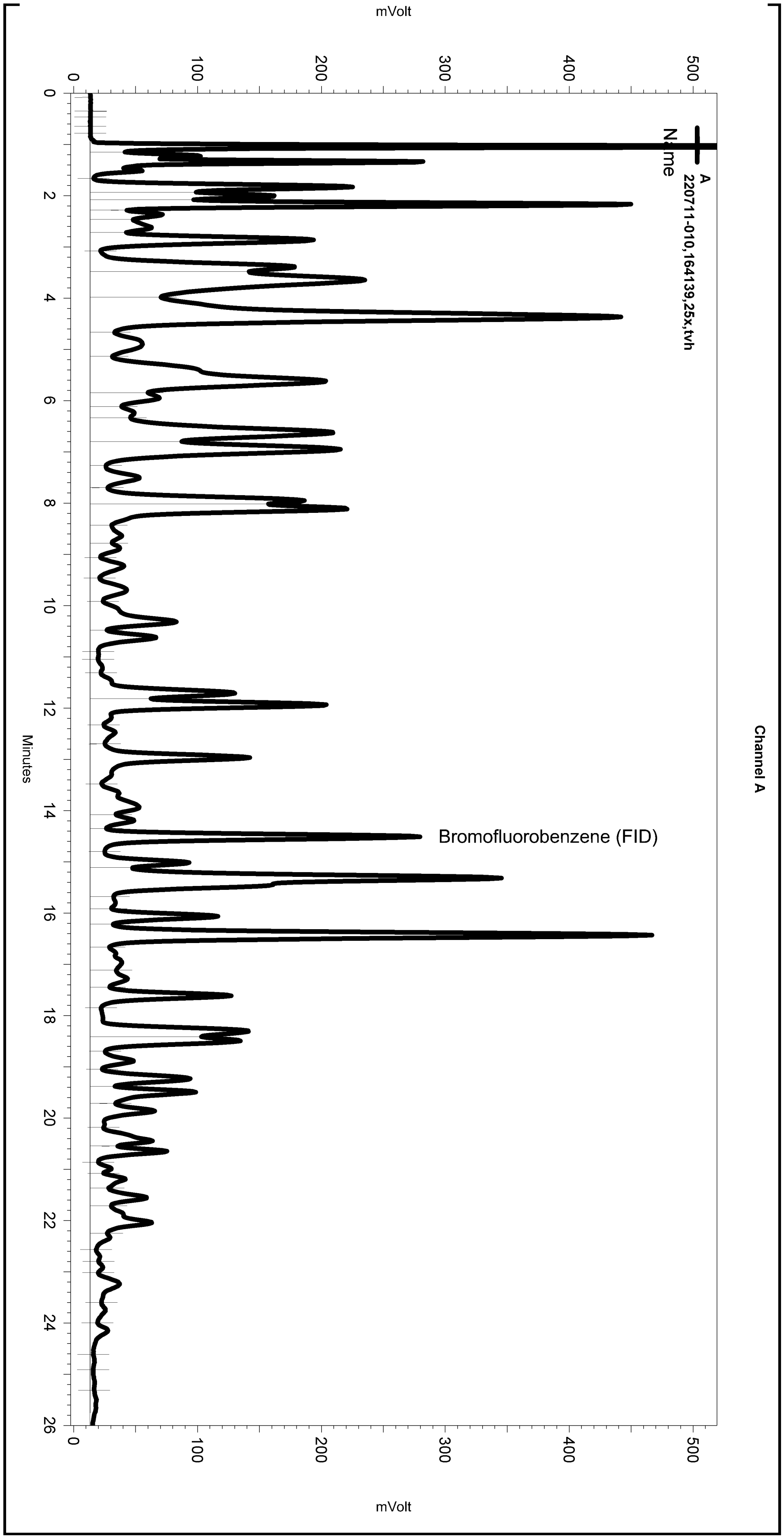
Manual Integration Fixes

Data File: \\Lims\gdrive\ezchrom\Projects\GC04\Data\166_018

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

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

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50

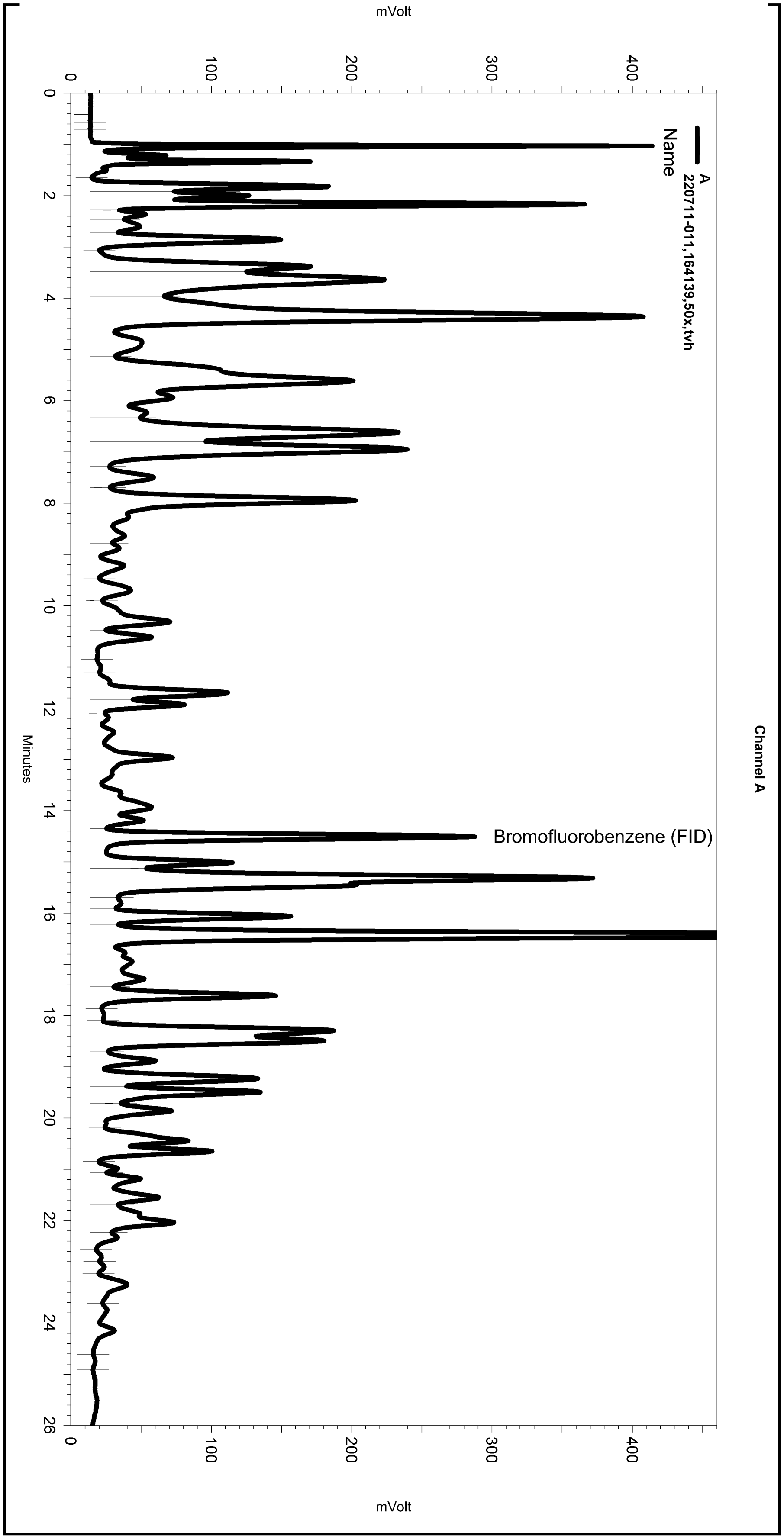
Manual Integration Fixes

Data File: \\Lims\gdrive\ezchrom\Projects\GC04\Data\168_010

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

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

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

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50

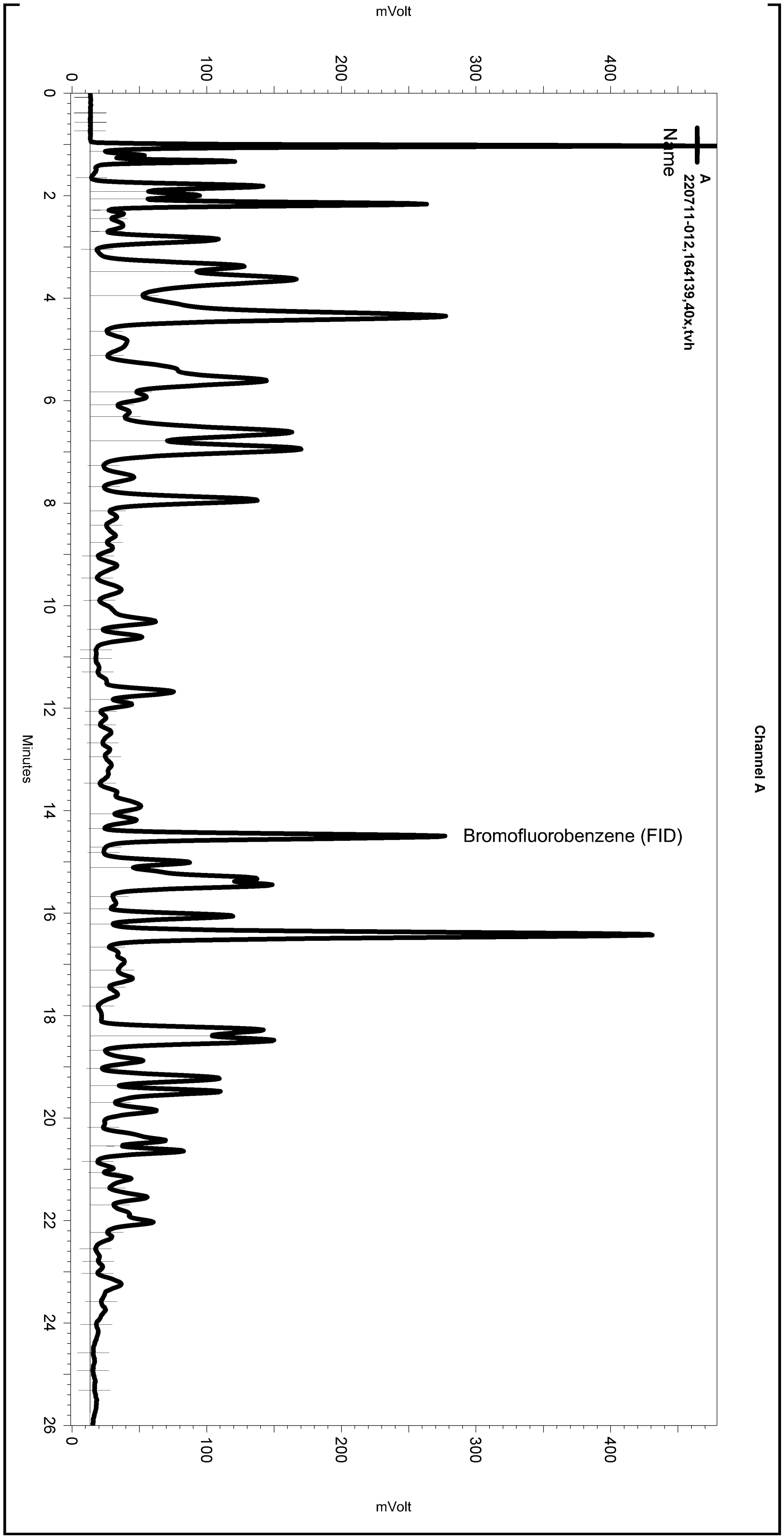
Manual Integration Fixes

Data File: \\Lims\gdrive\ezchrom\Projects\GC04\Data\168_011

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

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC04\Sequence\168.seq**
Sample Name: **220711-012,164139,40x,tvh**
Data File: **\\Lims\gdrive\ezchrom\Projects\GC04\Data\168_015**
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: 6/18/2010 1:09:20 AM
Analysis Date: 6/18/2010 12:11:55 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

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50

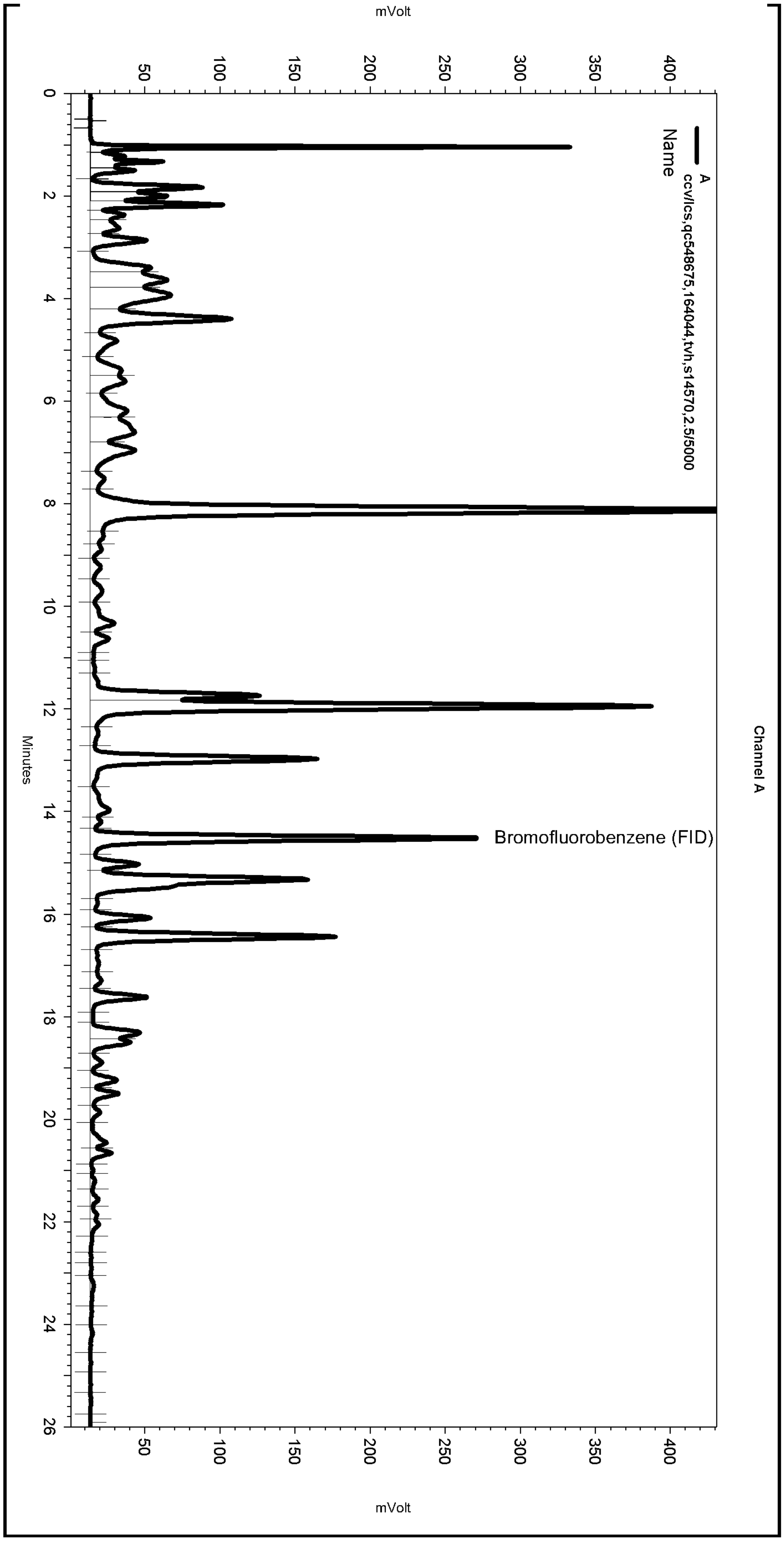
Manual Integration Fixes

Data File: \\Lims\gdrive\ezchrom\Projects\GC04\Data\168_015

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Lowest Point Horizontal Baseli	0	26.017	0
Yes	Split Peak	14.716	0	0

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

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50

Manual Integration Fixes

Data File: \\Lims\gdrive\ezchrom\Projects\GC04\Data\166_003

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
None				

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	220711	Location:	Paco Pumps
Client:	The Source Group, Inc.	Prep:	SHAKER TABLE
Project#:	04-PFT-003	Analysis:	EPA 8015B
Matrix:	Soil	Batch#:	164034
Units:	mg/Kg	Received:	06/11/10
Basis:	as received	Prepared:	06/15/10
Diln Fac:	1.000		

Field ID:	E-1@10'	Sampled:	06/10/10
Type:	SAMPLE	Analyzed:	06/15/10
Lab ID:	220711-001		

Analyte	Result	RL
Diesel C10-C24	140 Y	0.99

Surrogate	%REC	Limits
o-Terphenyl	99	45-130

Field ID:	E-2@10'	Sampled:	06/11/10
Type:	SAMPLE	Analyzed:	06/15/10
Lab ID:	220711-002		

Analyte	Result	RL
Diesel C10-C24	110 Y	0.99

Surrogate	%REC	Limits
o-Terphenyl	103	45-130

Field ID:	E-3@10'	Sampled:	06/11/10
Type:	SAMPLE	Analyzed:	06/16/10
Lab ID:	220711-003		

Analyte	Result	RL
Diesel C10-C24	330 Y	0.99

Surrogate	%REC	Limits
o-Terphenyl	89	45-130

Field ID:	E-4@9.5'	Sampled:	06/11/10
Type:	SAMPLE	Analyzed:	06/16/10
Lab ID:	220711-004		

Analyte	Result	RL
Diesel C10-C24	30 Y	1.0

Surrogate	%REC	Limits
o-Terphenyl	101	45-130

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

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	220711	Location:	Paco Pumps
Client:	The Source Group, Inc.	Prep:	SHAKER TABLE
Project#:	04-PFT-003	Analysis:	EPA 8015B
Matrix:	Soil	Batch#:	164034
Units:	mg/Kg	Received:	06/11/10
Basis:	as received	Prepared:	06/15/10
Diln Fac:	1.000		

Field ID:	E-5@10'	Sampled:	06/09/10
Type:	SAMPLE	Analyzed:	06/16/10
Lab ID:	220711-005		

Analyte	Result	RL
Diesel C10-C24	360 Y	1.0

Surrogate	%REC	Limits
o-Terphenyl	81	45-130

Field ID:	E-6@10'	Sampled:	06/09/10
Type:	SAMPLE	Analyzed:	06/16/10
Lab ID:	220711-006		

Analyte	Result	RL
Diesel C10-C24	7.8 Y	0.99

Surrogate	%REC	Limits
o-Terphenyl	111	45-130

Field ID:	E-7@9.5'	Sampled:	06/10/10
Type:	SAMPLE	Analyzed:	06/16/10
Lab ID:	220711-007		

Analyte	Result	RL
Diesel C10-C24	23 Y	0.99

Surrogate	%REC	Limits
o-Terphenyl	102	45-130

Field ID:	E-8@10'	Sampled:	06/10/10
Type:	SAMPLE	Analyzed:	06/16/10
Lab ID:	220711-008		

Analyte	Result	RL
Diesel C10-C24	100 Y	1.0

Surrogate	%REC	Limits
o-Terphenyl	104	45-130

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

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	220711	Location:	Paco Pumps
Client:	The Source Group, Inc.	Prep:	SHAKER TABLE
Project#:	04-PFT-003	Analysis:	EPA 8015B
Matrix:	Soil	Batch#:	164034
Units:	mg/Kg	Received:	06/11/10
Basis:	as received	Prepared:	06/15/10
Diln Fac:	1.000		

Field ID:	E-9@9'	Sampled:	06/09/10
Type:	SAMPLE	Analyzed:	06/16/10
Lab ID:	220711-009		

Analyte	Result	RL
Diesel C10-C24	22 Y	0.99

Surrogate	%REC	Limits
o-Terphenyl	95	45-130

Field ID:	E-10@10'	Sampled:	06/10/10
Type:	SAMPLE	Analyzed:	06/16/10
Lab ID:	220711-010		

Analyte	Result	RL
Diesel C10-C24	79 Y	0.99

Surrogate	%REC	Limits
o-Terphenyl	95	45-130

Field ID:	E-11@10'	Sampled:	06/10/10
Type:	SAMPLE	Analyzed:	06/16/10
Lab ID:	220711-011		

Analyte	Result	RL
Diesel C10-C24	110 Y	1.0

Surrogate	%REC	Limits
o-Terphenyl	103	45-130

Field ID:	E-12@10'	Sampled:	06/10/10
Type:	SAMPLE	Analyzed:	06/16/10
Lab ID:	220711-012		

Analyte	Result	RL
Diesel C10-C24	87 Y	0.99

Surrogate	%REC	Limits
o-Terphenyl	99	45-130

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

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	220711	Location:	Paco Pumps
Client:	The Source Group, Inc.	Prep:	SHAKER TABLE
Project#:	04-PFT-003	Analysis:	EPA 8015B
Matrix:	Soil	Batch#:	164034
Units:	mg/Kg	Received:	06/11/10
Basis:	as received	Prepared:	06/15/10
Diln Fac:	1.000		

Field ID:	MW-8@17'	Sampled:	06/11/10
Type:	SAMPLE	Analyzed:	06/15/10
Lab ID:	220711-013		

Analyte	Result	RL
Diesel C10-C24	ND	1.0

Surrogate	%REC	Limits
o-Terphenyl	98	45-130

Type:	BLANK	Analyzed:	06/15/10
Lab ID:	QC548635		

Analyte	Result	RL
Diesel C10-C24	ND	1.0

Surrogate	%REC	Limits
o-Terphenyl	115	45-130

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

Curtis & Tompkins, Ltd.

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
Type:	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

Curtis & Tompkins, Ltd.

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
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

Analyte	MSS Result	Spiked	Result	%REC	Limits
Diesel C10-C24	78.64	49.66	123.1	90	32-142

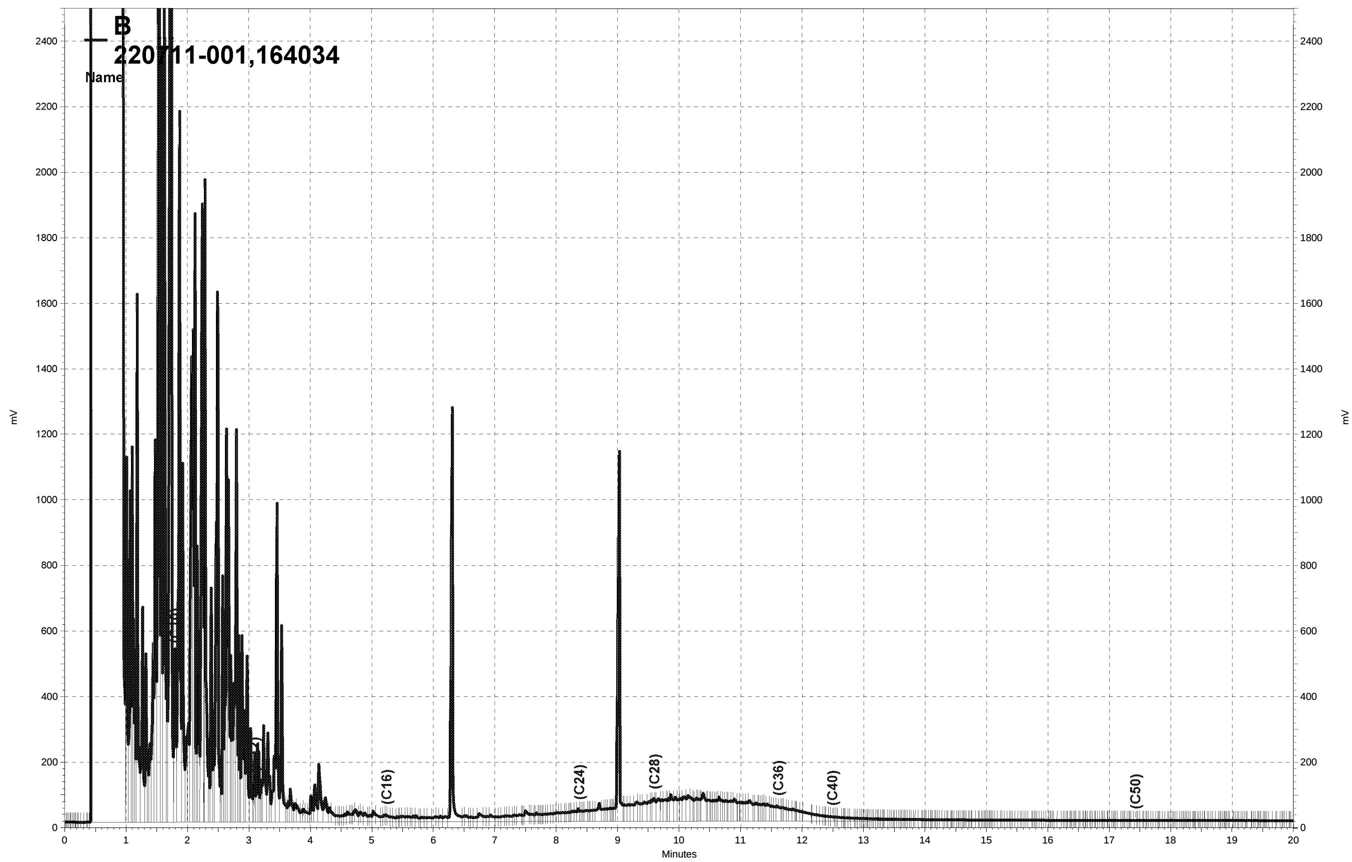
Surrogate	%REC	Limits
o-Terphenyl	97	45-130

Type: MSD   Lab ID: QC548638

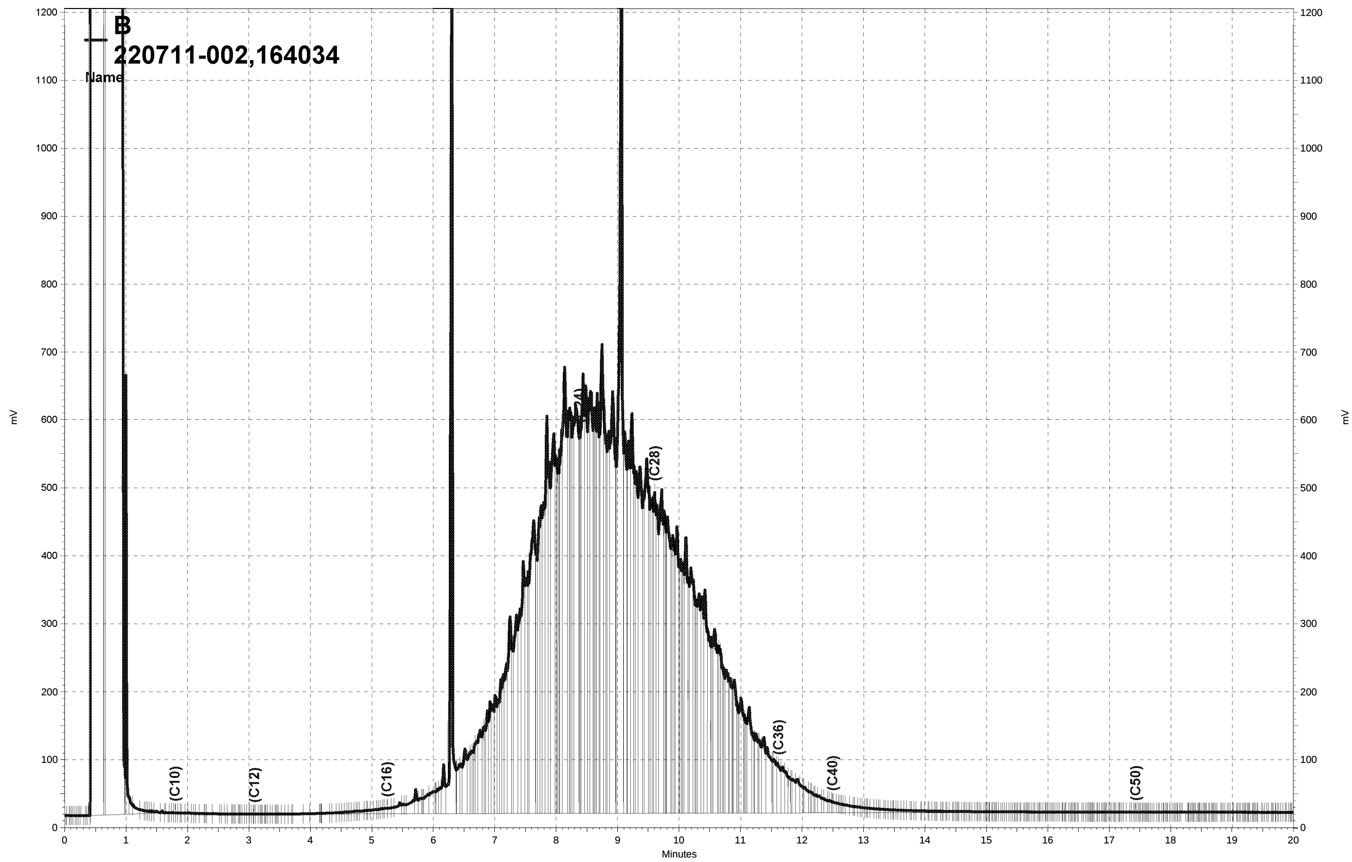
Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	50.00	109.3	61	32-142	12	55

Surrogate	%REC	Limits
o-Terphenyl	97	45-130

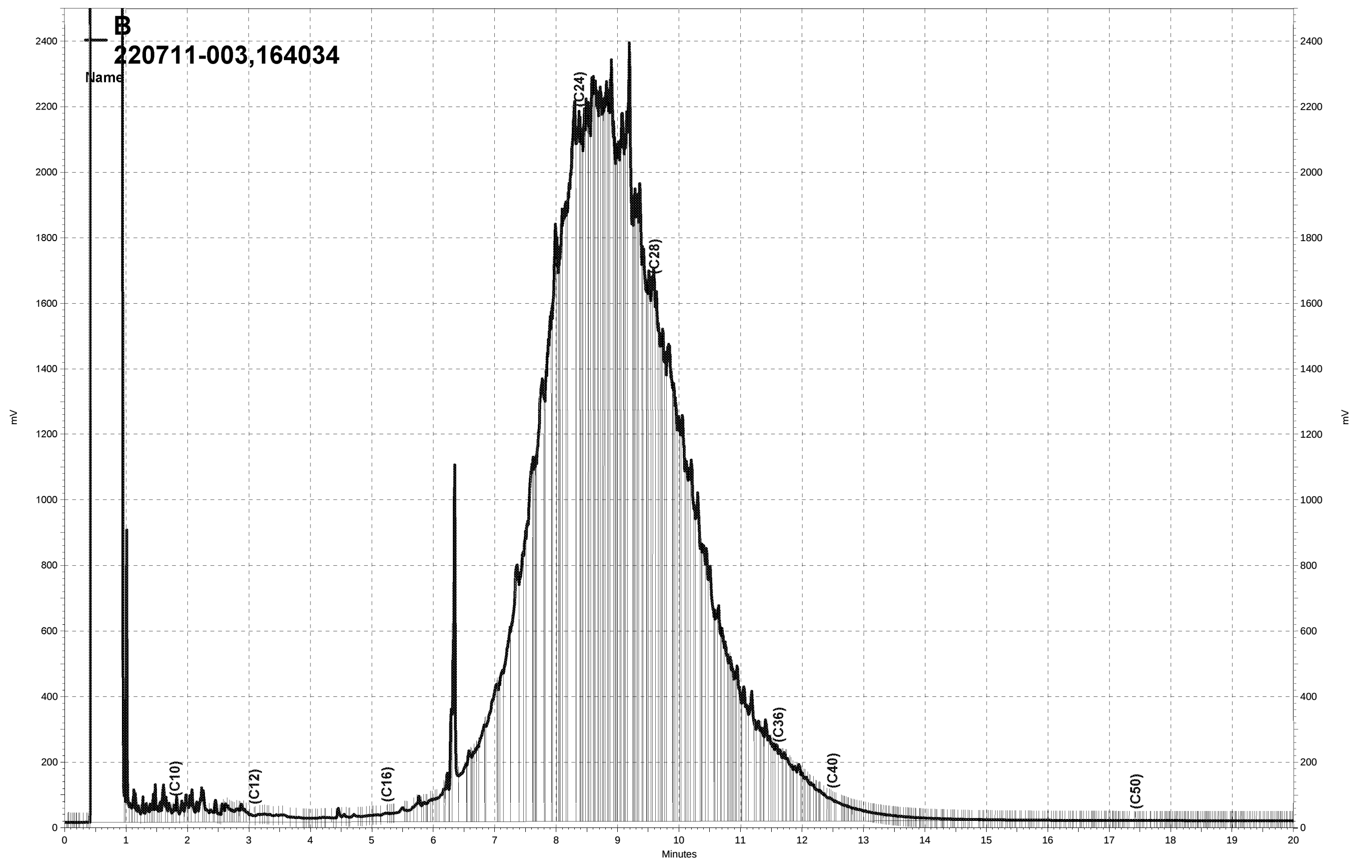
RPD= Relative Percent Difference



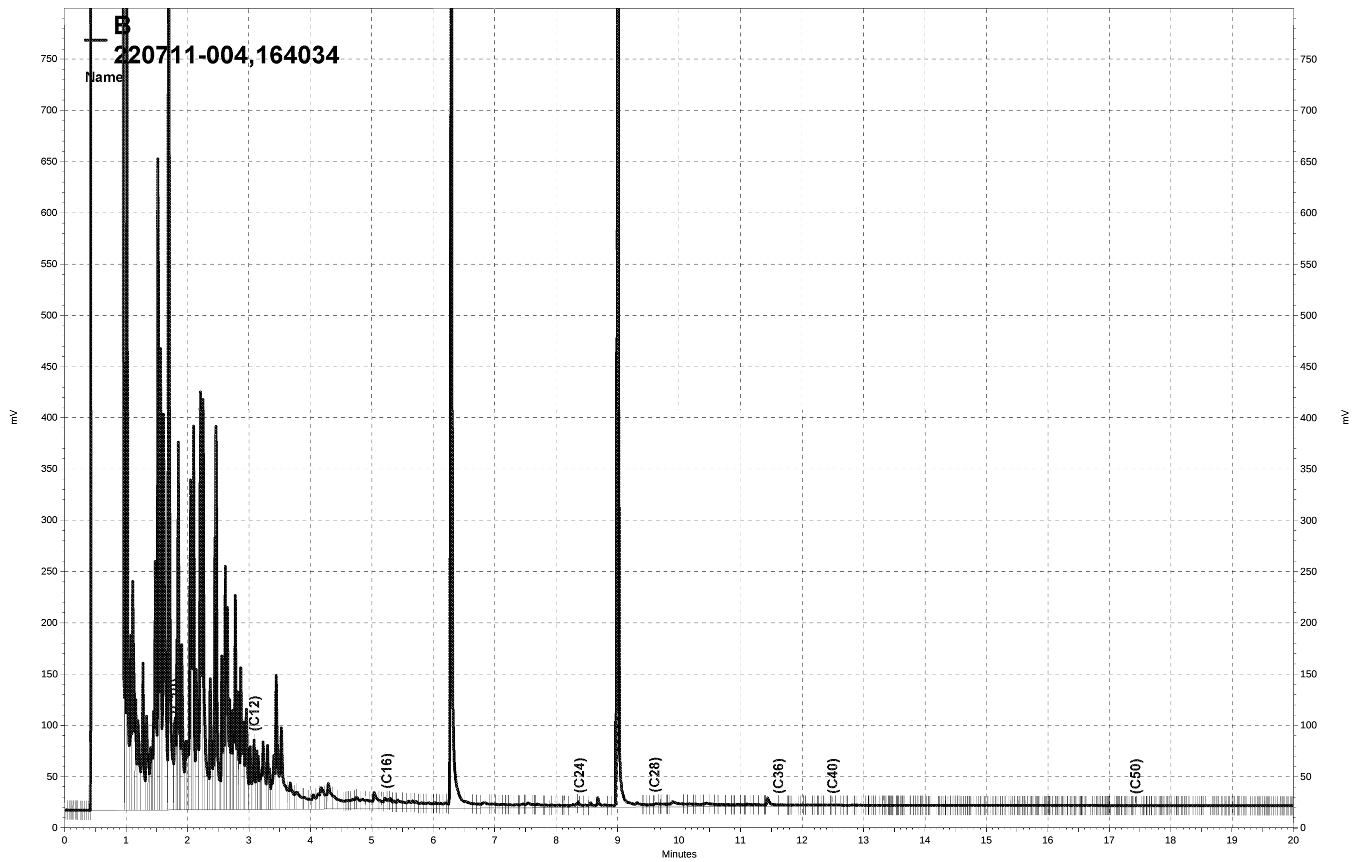
\\Lims\gdrive\ezchrom\Projects\GC14B\Data\166b024, B



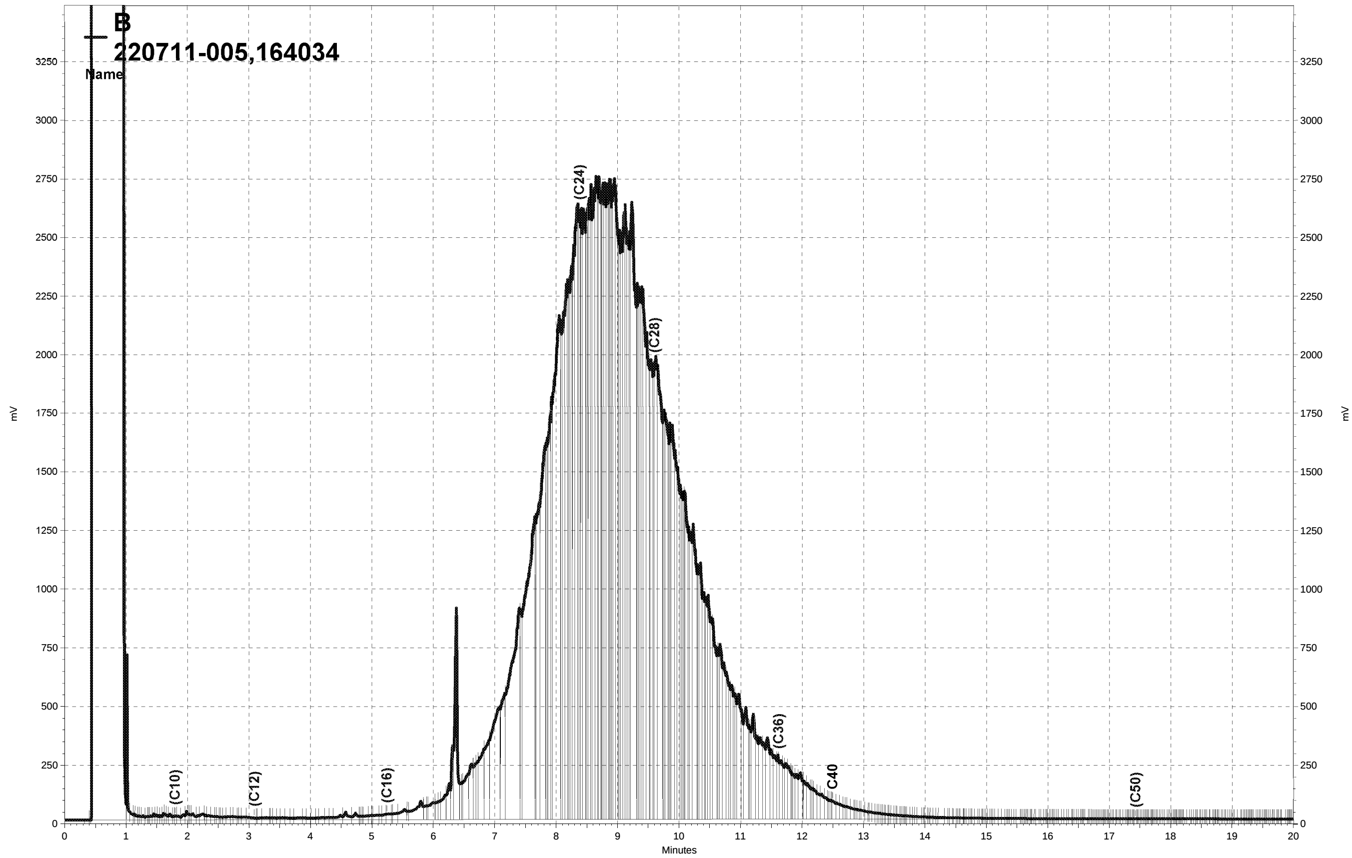
\\Lims\gdrive\ezchrom\Projects\GC14B\Data\166b018, B



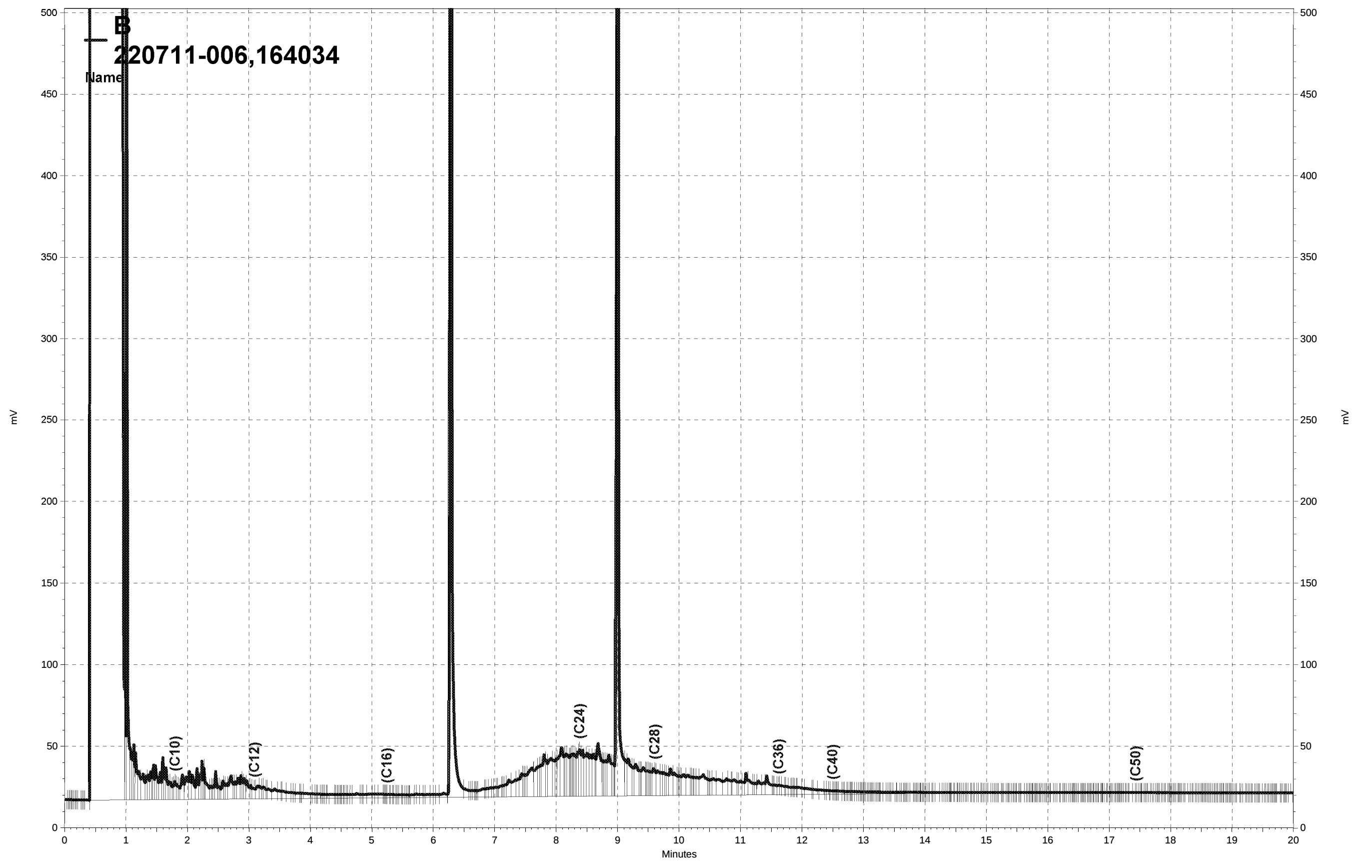
\\Lims\gdrive\ezchrom\Projects\GC14B\Data\166b025, B



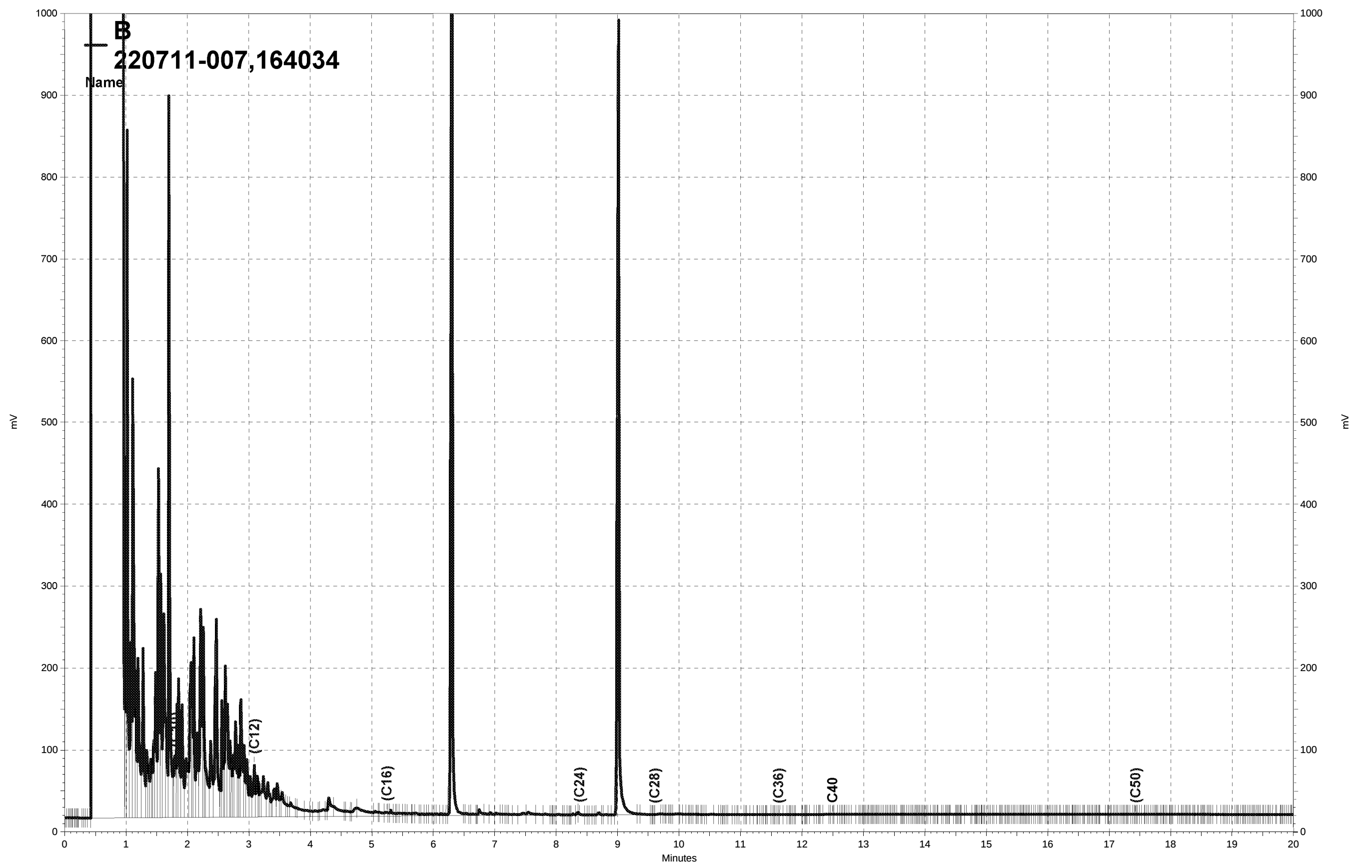
\\Lims\gdrive\ezchrom\Projects\GC14B\Data\166b026, B



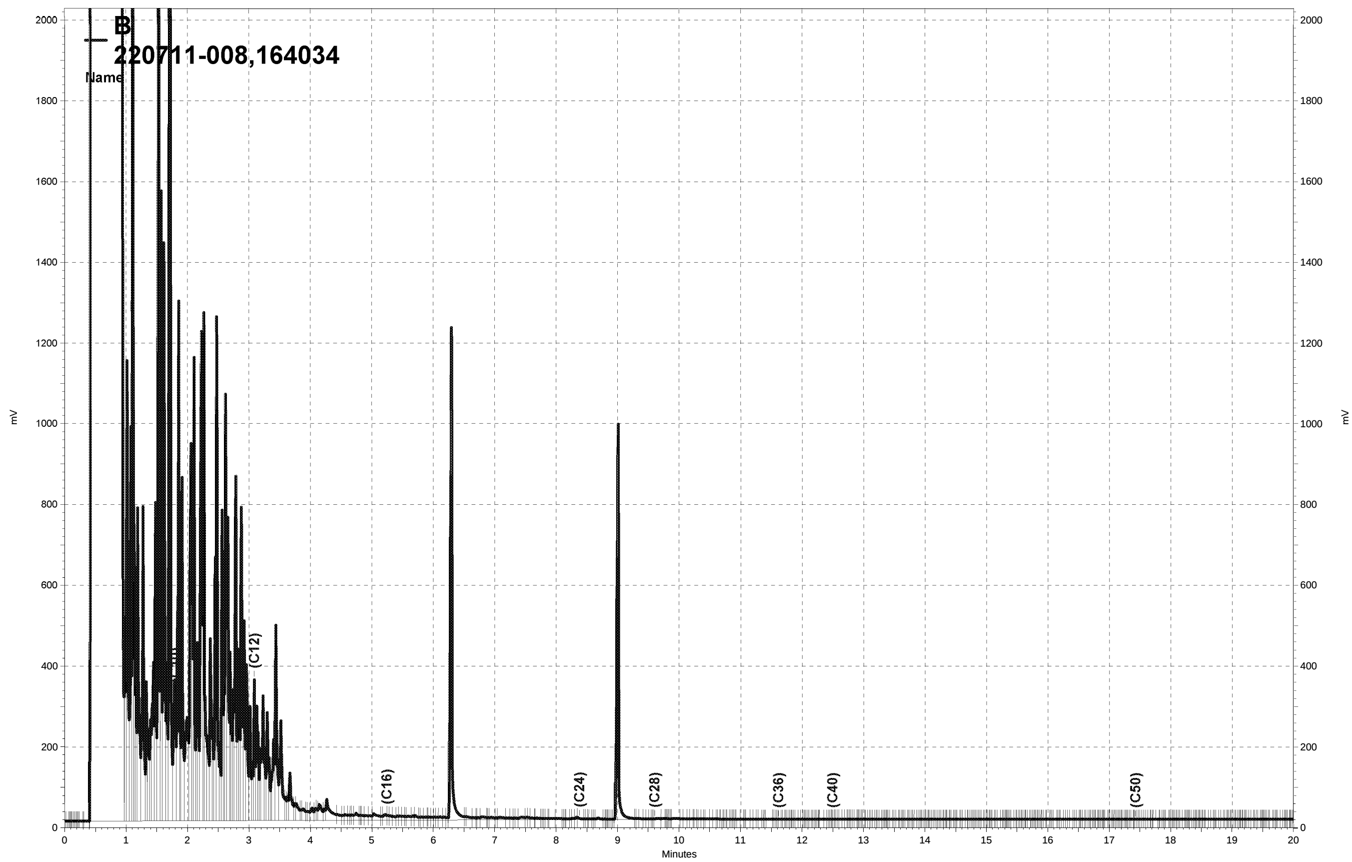
\\Lims\gdrive\ezchrom\Projects\GC14B\Data\166b027, B



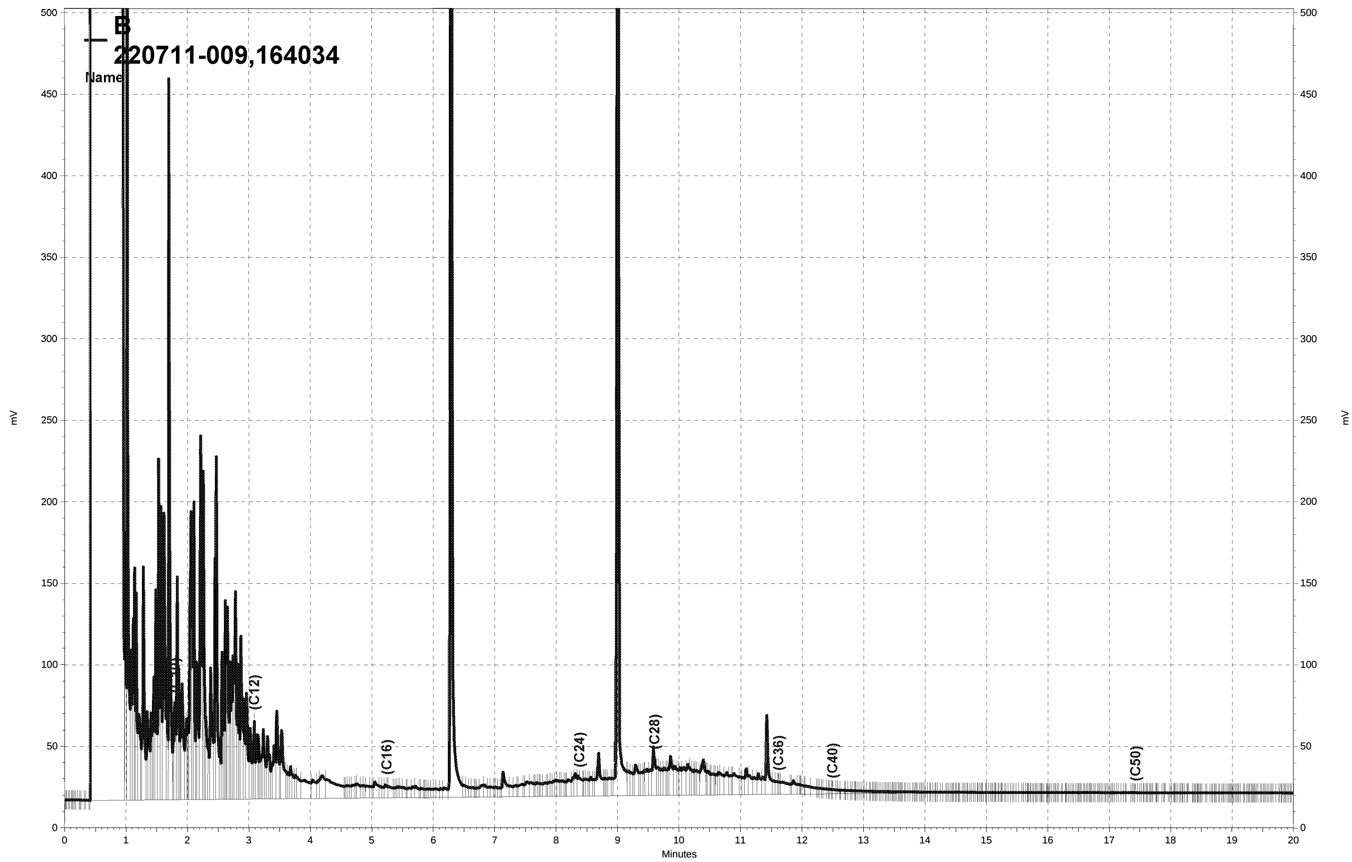
\\Lims\gdrive\ezchrom\Projects\GC14B\Data\166b028, B



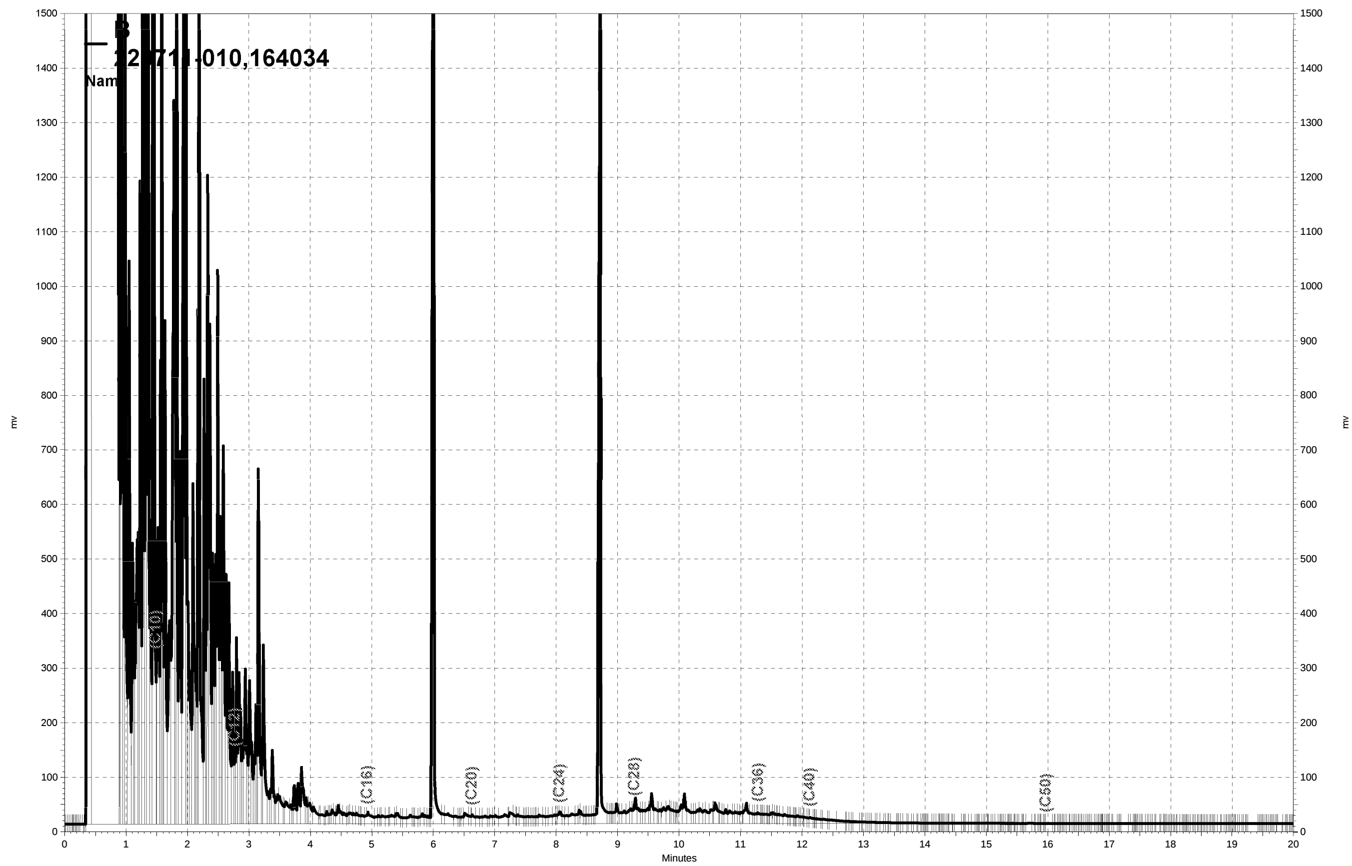
\\Lims\gdrive\ezchrom\Projects\GC14B\Data\166b029, B



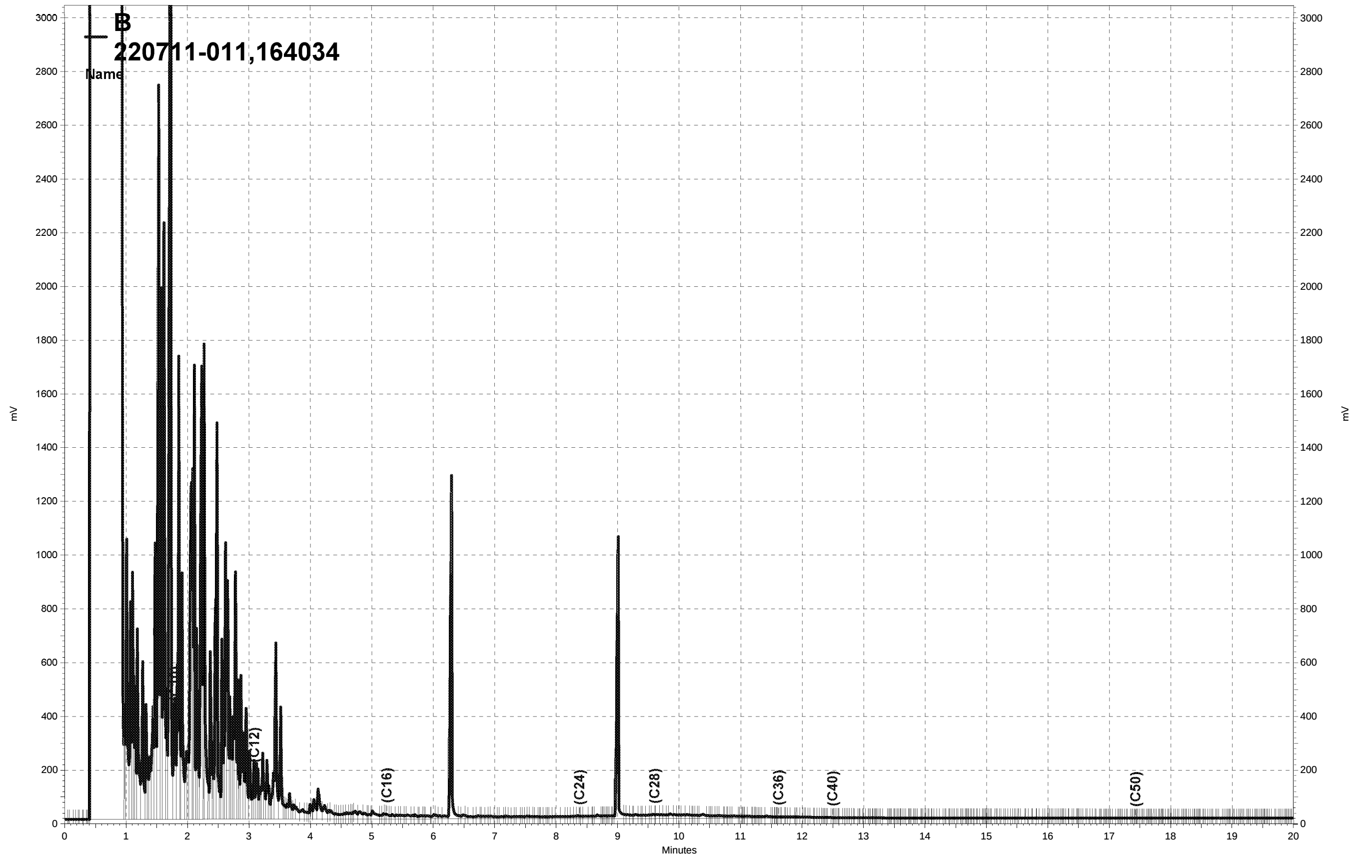
\\Lims\gdrive\ezchrom\Projects\GC14B\Data\166b030, B



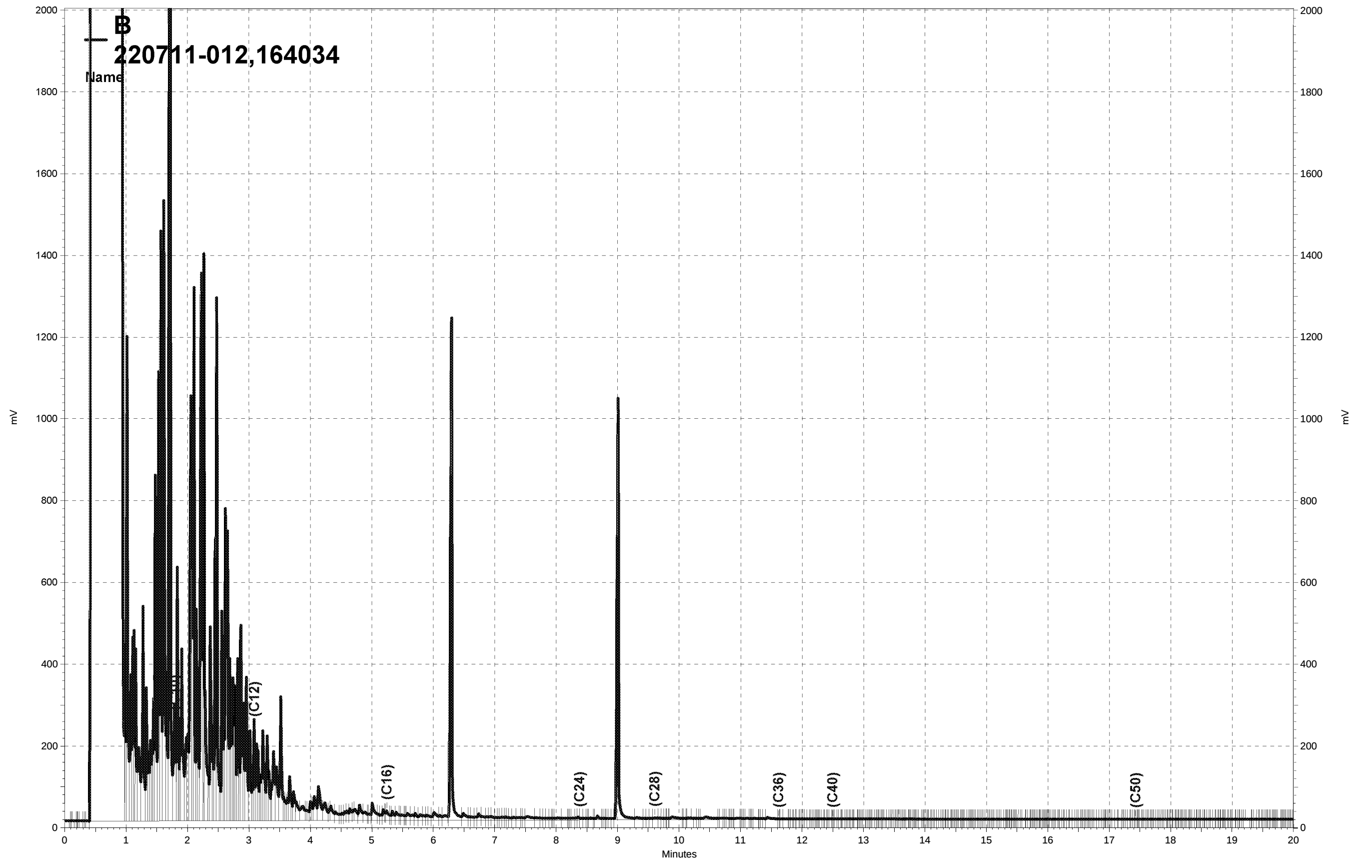
\\Lims\gdrive\ezchrom\Projects\GC14B\Data\166b031, B



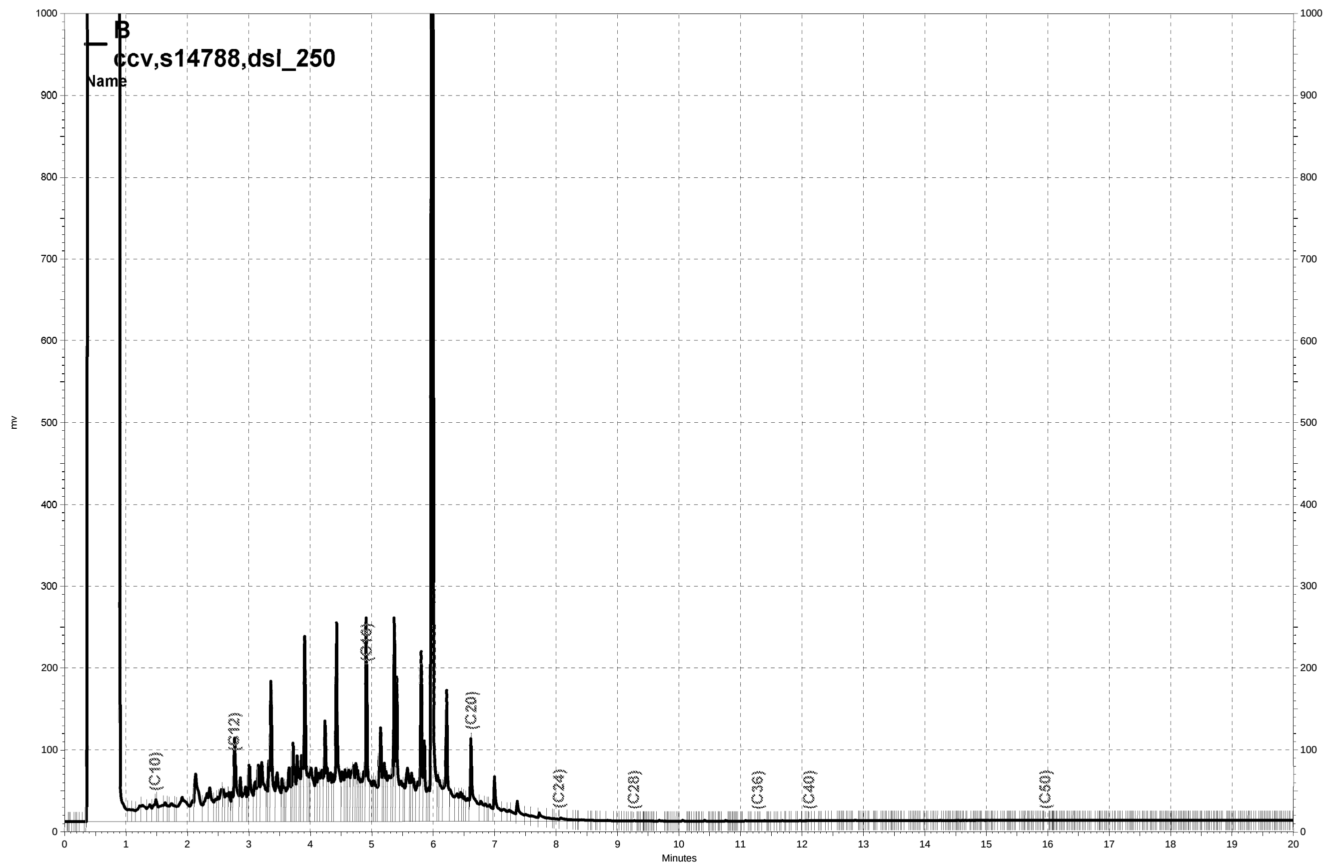
\\Lims\gdrive\ezchrom\Projects\GC15B\Data\167b006, B



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



\\Lims\gdrive\ezchrom\Projects\GC14B\Data\166b033, B



\\Lims\gdrive\ezchrom\Projects\GC15B\Data\166b012, B

Curtis & Tompkins, Ltd.

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-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

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

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'	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

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

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-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

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

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-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

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

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-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

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

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-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

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

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-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

Curtis & Tompkins, Ltd.

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-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

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

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-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

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

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-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

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

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-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

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

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-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	Result	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	47
m,p-Xylenes	560	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

ND= Not Detected
RL= Reporting Limit

BTXE & Oxygenates

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

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

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:	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

Curtis & Tompkins, Ltd.

Batch QC Report

BTXE & Oxygenates

Lab #:	220711	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:	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

Curtis & Tompkins, Ltd.

Batch QC Report

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: MS Diln Fac: 0.9823
Lab ID: 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
Bromofluorobenzene	96	76-132

Type: MSD Diln Fac: 0.9709
Lab ID: QC549187

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

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

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

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

Curtis & Tompkins, Ltd.

Batch QC Report

BTXE & Oxygenates

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

Type: BS   Lab ID: QC549406

Analyte	Spiked	Result	%REC	Limits
tert-Butyl Alcohol (TBA)	100.0	84.60	85	55-139
MTBE	20.00	19.39	97	66-124
Isopropyl Ether (DIPE)	20.00	20.33	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	17.63	88	80-122
Ethylbenzene	20.00	20.46	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: QC549407

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

Surrogate	%REC	Limits
Dibromofluoromethane	97	78-122
1,2-Dichloroethane-d4	93	68-152
Toluene-d8	105	80-120
Bromofluorobenzene	98	76-132

RPD= Relative Percent Difference

Batch QC Report

BTXE & Oxygenates

Lab #:	220711	Location:	Paco Pumps
Client:	The Source Group, Inc.	Prep:	EPA 5030B
Project#:	04-PFT-003	Analysis:	EPA 8260B
Field ID:	ZZZZZZZZZZ	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: MS Diln Fac: 0.9709
Lab ID: QC549420

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
Toluene-d8	102	80-120
Bromofluorobenzene	99	76-132

Type: MSD Diln Fac: 0.9940
Lab ID: QC549421

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

Surrogate	%REC	Limits
Dibromofluoromethane	93	78-122
1,2-Dichloroethane-d4	84	68-152
Toluene-d8	104	80-120
Bromofluorobenzene	100	76-132

RPD= Relative Percent Difference

ASSOCIATED LABORATORIES

806 North Batavia - Orange, California 92868 - 714/771-6900 ***FAX 714/538-1209***

CLIENT Calclean (9977)
ATTN: Noel Shenoi
3002 Dow Ave.
#142
Tustin, CA 92780

LAB REQUEST 256668

REPORTED 06/30/2010

RECEIVED 06/18/2010

PROJECT Paco 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.

Order No.	Client Sample Identification
1087987	E-1
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 S. Behare, Ph.D.
Vice President

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

TESTING & CONSULTING
Chemical
Microbiological
Environmental

Order #: 1087987 **Client:** Calclean
Matrix: AIR **Client Sample ID:** E-1
Date Sampled: 06/16/2010
Time Sampled: 17:00
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	

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

Analyte	Result	DF	DLR	Units	Date	Analyst
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	SW

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

Analyte	Result	DF	DLR	Units	Date	Analyst
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

Order #: 1087988 **Client:** Calclean
Matrix: AIR **Client Sample ID:** E-2
Date Sampled: 06/16/2010
Time Sampled: 17:15
Sampled By:

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

Analyte	Result	DF	DLR	Units	Date/Analyst	
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	SW
Xylene (total)	4.5	3	0.075	Vppm	06/22/10	SW

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

Analyte	Result	DF	DLR	Units	Date/Analyst	
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

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)

Analyte	Result	DF	DLR	Units	Date	Analyst
Benzene	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
Toluene	4.8	3	0.025	Vppm	06/22/10	SW
Xylene (total)	5.8	3	0.075	Vppm	06/22/10	SW

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

Analyte	Result	DF	DLR	Units	Date	Analyst
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

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	

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

Analyte	Result	DF	DLR	Units	Date	Analyst
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)

Analyte	Result	DF	DLR	Units	Date	Analyst
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

Order #: 1087991
Matrix: AIR
Date Sampled: 06/16/2010
Time Sampled: 18:40
Sampled By:

Client: Calclean
Client Sample ID: E-10

Analyte	Result	DF	DLR	Units	Date/Analyst	
8021B BTEX/MTBE in Air - (Vppm & ug/L)						
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)						
Gasoline	1870	25	125.0	Vppm	06/22/10	SW

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

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

Analyte	Result	DF	DLR	Units	Date/Analyst	

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

Analyte	Result	DF	DLR	Units	Date	Analyst
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

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

Analyte	Result	DF	DLR	Units	Date	Analyst
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

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/Analyst	
8021B BTEX/MTBE in Air - (Vppm & ug/L)						
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
8015B - Gasoline in Air - (Vppm & ug/L)						
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

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

Analyte	Result	DF	DLR	Units	Date/Analyst	

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

Analyte	Result	DF	DLR	Units	Date	Analyst
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

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

Analyte	Result	DF	DLR	Units	Date	Analyst
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

Order #: 1087995
Matrix: AIR
Date Sampled: 06/16/2010
Time Sampled: 19:50
Sampled By:

Client: Calclean
Client Sample ID: SVE-1

Analyte	Result	DF	DLR	Units	Date/Analyst	

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

Analyte	Result	DF	DLR	Units	Date	Analyst
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

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

Analyte	Result	DF	DLR	Units	Date	Analyst
Gasoline	13200	125	625.0	Vppm	06/22/10	SW

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

Order #: 1087996
Client: Calclean
Matrix: AIR
Client Sample ID: TOTAL INLET
Date Sampled: 06/16/2010
Time Sampled: 20:30
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	

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

Analyte	Result	DF	DLR	Units	Date	Analyst
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)

Analyte	Result	DF	DLR	Units	Date	Analyst
Gasoline	9120	125	625.0	Vppm	06/22/10	SW

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

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

Analyte	Result	DF	DLR	Units	Date/Analyst	

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

Analyte	Result	DF	DLR	Units	Date	Analyst
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)

Analyte	Result	DF	DLR	Units	Date	Analyst
Gasoline	ND	1	5.0	Vppm	06/21/10	SW

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

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

Test	Method	Sample Result	Sample 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

Test	Method	Sample Result	Sample 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%

Chain of Custody Record

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

A.L. Job No. 256668 | Page 1 of 1

Company	CalClean Inc. 3002 Dow, #142 Tustin, CA 92780	Phone	(714) 734-9137
Project Manager	NOEL SHENOI	Fax	(714) 734-9138
Project Name	PACO PUMPS	Project #	
Site Name and Address	9201 SAN LEANDRO OAKLAND, CA		

Analysis Requested: TPH-G (8015); BTEX/MTBE (8021); ~~BTEX/OXYS (8260B)~~

#	Sample ID	Lab ID	Date	Time	Matrix	Container Number/Size	Pres.	TPH-G (8015)	BTEX/MTBE (8021)	~~BTEX/OXYS (8260B)~~	Test Instructions & Comments
1	E-1		6/16/10	1700	AIR	TEDLAR	NONE	X	X		
2	E-2		↓	1715	↓	↓	↓	↓	↓		
3	E-3		↓	1725	↓	↓	↓	↓	↓		
4	E-7		↓	1805	↓	↓	↓	↓	↓		
5	E-10		↓	1840	↓	↓	↓	↓	↓		
6	E-11		↓	1850	↓	↓	↓	↓	↓		
7	MW-3		↓	1910	↓	↓	↓	↓	↓		
8	ASMW-2S		↓	1930	↓	↓	↓	↓	↓		
9	SVE-1		↓	1950	↓	↓	↓	↓	↓		
10	TOTAL INLET		↓	2030	↓	↓	↓	↓	↓		
11	STACK		↓	2035	↓	↓	↓	↓	↓		
12											EDF
13											T0600101592
14											AIR=PPMV
15											

Sample Receipt - To Be Filled By Laboratory

Total Number of Containers	11	Properly Cooled Y / N / NA	NA
Custody Seals Y / N / NA	NA	Samples Intact Y / N / NA	Y
Received in Good Condition Y / N	Y	Samples Accepted Y / N	Y

Turn Around Time

☒ Normal ☐ Rush ☐ Same Day ☐ 24 hrs. ☐ 48 hrs. ☐ 72 hrs.

	1.	2.	3.
Relinquished by	Sampler:		
Signature:	Noel Shenoi		
Printed Name:			
Date: / Time:	6/18/10 15:30		
Received By:	ASL		
Signature:	[signature]		
Printed Name:	Ivan Montoya		
Date: / Time:	6-18-10 15:30		

ASSOCIATED LABORATORIES
806 North Batavia - Orange, California 92868 - 714/771-6900 FAX 714/538-1209

CLIENT	Calclean (9977) ATTN: Noel Shenoi 3002 Dow Ave. #142 Tustin, CA 92780	LAB REQUEST	257219
		REPORTED	07/12/2010
		RECEIVED	06/30/2010

PROJECT Paco 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.

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, Ph.D.
Vice President

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

*TESTING & CONSULTING
Chemical
Microbiological
Environmental*

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

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

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

Analyte	Result	DF	DLR	Units	Date/Analyst	
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

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

Analyte	Result	DF	DLR	Units	Date/Analyst	
Gasoline	3430	100	500.0	Vppm	07/01/10	SW

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

Order #: 1091623

Matrix: AIR

Date Sampled: 06/25/2010

Time Sampled: 13:30

Sampled By:

Client: Calclean

Client Sample ID: E-10

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

Analyte	Result	DF	DLR	Units	Date/Analyst	
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

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

Analyte	Result	DF	DLR	Units	Date/Analyst	
Gasoline	4700	50	250.0	Vppm	07/01/10	SW

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

Order #: 1091624 **Client:** Calclean
Matrix: AIR **Client Sample ID:** E-4
Date Sampled: 06/25/2010
Time Sampled: 14:00
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	

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

Analyte	Result	DF	DLR	Units	Date	Analyst
Benzene	57	100	1.0	Vppm	07/01/10	SW
Ethyl benzene	18	100	1.0	Vppm	07/01/10	SW
Methyl t - butyl ether	56	100	10.0	Vppm	07/01/10	SW
Toluene	44	100	1.0	Vppm	07/01/10	SW
Xylene (total)	39	100	3.0	Vppm	07/01/10	SW

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

Analyte	Result	DF	DLR	Units	Date	Analyst
Gasoline	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

Order #: 1091625 **Client:** Calclean
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)

Analyte	Result	DF	DLR	Units	Date	Analyst
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)	27	50	1.5	Vppm	07/01/10	SW

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

Analyte	Result	DF	DLR	Units	Date	Analyst
Gasoline	4460	50	250.0	Vppm	07/01/10	SW

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

Order #: 1091626
Matrix: AIR
Date Sampled: 06/25/2010
Time Sampled: 15:00
Sampled By:

Client: Calclean
Client Sample ID: ASMW-2S

Analyte	Result	DF	DLR	Units	Date/Analyst	
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
Xylene (total)	29	50	1.5	Vppm	07/01/10	SW
8015B - Gasoline in Air - (Vppm & ug/L)						
Gasoline	5880	50	250.0	Vppm	07/01/10	SW

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

Order #: 1091627 **Client:** Calclean
Matrix: AIR **Client Sample ID:** E-1
Date Sampled: 06/25/2010
Time Sampled: 15:30
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	

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

Analyte	Result	DF	DLR	Units	Date	Analyst
Benzene	11	5	0.05	Vppm	07/02/10	SW
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)

Analyte	Result	DF	DLR	Units	Date	Analyst
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

Order #: 1091628
Matrix: AIR
Date Sampled: 06/25/2010
Time Sampled: 16:00
Sampled By:

Client: Calclean
Client Sample ID: E-11

Analyte	Result	DF	DLR	Units	Date/Analyst	
8021B BTEX/MTBE in Air - (Vppm & ug/L)						
Benzene	36	25	0.25	Vppm	07/01/10	SW
Ethyl benzene	3.1	25	0.25	Vppm	07/01/10	SW
Methyl t - butyl ether	123	25	2.5	Vppm	07/01/10	SW
Toluene	18	25	0.25	Vppm	07/01/10	SW
Xylene (total)	7.2	25	0.75	Vppm	07/01/10	SW
8015B - Gasoline in Air - (Vppm & ug/L)						
Gasoline	1980	25	125.0	Vppm	07/01/10	SW

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

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/Analyst	

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

Analyte	Result	DF	DLR	Units	Date	Analyst
Benzene	6.4	10	0.1	Vppm	07/01/10	SW
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

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

Analyte	Result	DF	DLR	Units	Date	Analyst
Gasoline	549	10	50.0	Vppm	07/01/10	SW

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

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

Order #: 1091631
Matrix: AIR
Date Sampled: 06/25/2010
Time Sampled: 17:30
Sampled By:

Client: Calclean
Client Sample ID: E-3

Analyte	Result	DF	DLR	Units	Date/Analyst	

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

Analyte	Result	DF	DLR	Units	Date	Analyst
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

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

Analyte	Result	DF	DLR	Units	Date	Analyst
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 Analytical Results Report

Order #: 1091632 **Client:** Calclean
Matrix: AIR **Client Sample ID:** TOTAL INLET 6/25/10
Date Sampled: 06/25/2010
Time Sampled: 18:00
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
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
8015B - Gasoline in Air - (Vppm & ug/L)						
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

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

Test	Method	Sample Result	Sample 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%

Chain of Custody Record

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

Company	CalClean Inc. 3002 Dow, #142 Tustin, CA 92780	Phone	(714) 734-9137
Project Manager	NOEL SHENOI	Fax	(714) 734-9138
Project Name	TACO PUMPS	Project #	
Site Name and Address	9201 SAN LEANDRO OAKLAND, CA		

A.L. Job No. 257219 Page 1 of 1

Analysis Requested: TPH-G (8015), BTEX/MTBE (8021), ~~BTEX/OXYS (8260B)~~

#	Sample ID	Lab ID	Date	Time	Matrix	Container Number/Size	Pres.	TPH-G (8015)	BTEX/MTBE (8021)	~~BTEX/OXYS (8260B)~~							Test Instructions & Comments
1	TOTAL INLET		6/21/10	0900	AIR	TEDLAR	NONE	X	X								
2	E-10		6/25/10	1330	↓	↓	↓	↓	↓								
3	E-4		↓	1400	↓	↓	↓	↓	↓								
4	MW-3		↓	1430	↓	↓	↓	↓	↓								
5	ASMW-2S		↓	1500	↓	↓	↓	↓	↓								
6	E-1		↓	1530	↓	↓	↓	↓	↓								
7	E-11		↓	1600	↓	↓	↓	↓	↓								
8	E-7		↓	1630	↓	↓	↓	↓	↓								
9	E-2		↓	1700	↓	↓	↓	↓	↓								
10	E-3		↓	1730	↓	↓	↓	↓	↓								
11	TOTAL INLET		↓	1800	↓	↓	↓	↓	↓								
12																	EDF
13																	T0600101592
14																	AIR=PPMV
15																	

Sample Receipt - To Be Filled By Laboratory

Total Number of Containers	11	Properly Cooled Y / N / NA	NA
Custody Seals Y / N / NA	NA	Samples Intact Y / N / NA	Y
Received in Good Condition Y / N	Y	Samples Accepted Y / N	Y

Turn Around Time

☒ Normal ☐ Rush ☐ Same Day ☐ 24 hrs. ☐ 48 hrs. ☐ 72 hrs.

Relinquished by Sampler: 1.	Relinquished by 2.	Relinquished by 3.
Signature: Noel Shenoi	Signature:	Signature:
Printed Name:	Printed Name:	Printed Name:
Date: 6/30/10 Time:	Date: Time:	Date: Time:
Received By: ASC 1.	**Received By:** 2.	**Received By:** 3.
Signature: [signature]	Signature:	Signature:
Printed Name: Juan Montoya	Printed Name:	Printed Name:
Date: 6-30-10 Time: 12:33	Date: Time:	Date: Time:

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

Northern California ACCUTEST Laboratories

IT'S ALL IN THE CHEMISTRY

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**

ACCREDITED IN ACCORDANCE WITH nelac

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.

Laurie Glantz-Murphy
Laboratory Director

Client Service contact: Anne Kathain 408-588-0200

ACCUTEST LABORATORIES 50 YEARS 1956-2006

Certifications: CA (08258CA) DoD/ISO/IEC 17025:2005 (L2242)

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

Table of Contents

-1-

Sample Summary

The Source Group

Job No: C11491

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

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

Sample Results

Report of Analysis

Accutest Laboratories

Report of Analysis

Client Sample ID:	COMBINED INLET INFLUENT		
Lab Sample ID:	C11491-1	**Date Sampled:**	06/21/10
Matrix:	AQ - Water	**Date Received:**	06/21/10
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	9201 San Leandro Street, Oakland CA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W13986.D	50	06/22/10	BD	n/a	n/a	VW490
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics, MTBE and GRO

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	326	50	15	ug/l	
108-88-3	Toluene	545	50	25	ug/l	
100-41-4	Ethylbenzene	163	50	15	ug/l	
1330-20-7	Xylene (total)	541	100	35	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	50	25	ug/l	
	TPH-GRO (C6-C10)	10400	2500	1300	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		60-130%
2037-26-5	Toluene-D8	107%		60-130%
460-00-4	4-Bromofluorobenzene	104%		60-130%

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

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

Northern California
ACCUTEST
Laboratories

CHAIN OF CUSTODY

2105 Lundy Ave, San Jose, CA 95131
(408) 588-0200 FAX: (408) 588-0201

FED-EX Tracking #	Bottle Order Control #
Accutest Quote #	Accutest NC Job #: C C11491

Client / Reporting Information

Company Name	SOURCE GROUP
Address	3451 C VINCENT RD
City / State / Zip	PLEASANT HILL 94523
Project Contact:	JOHN PHILIPP
Phone #	925 451-5262
Samplers's Name	GABE GEORGESCU

Project Information

Project Name:	PACO PUMPS
Street	9201 SAN LEANDRO ST
City / State	OAKLAND CA
Project #	
EMAIL:	
Client Purchase Order #	

Requested Analysis: 8260 Full List ☐ 624 ☐ TPH as Gasoline ☐; 8260Petro (includes BTEX / MIBE / TBA / EtBE / DIPE / TAME / 1,2-DCA / EDB) ☐ TPH as Gas ☐; 8270 ☐ PAHs only ☐ 625 ☐ +TICs ☐; TPH-Extractable - Diesel - Motor Oil - Other ☐ With Silica Gel Cleanup ☐; METALS: CAM-17☐ LUFT-5☐ RCRA-8☐ PPM-13☐; Pesticides-8081 ☐ PCBs-8082 ☐ 608 ☐; BTEX-MIBE-TPH as Gasoline by GC/PID-FID ☐; 8015 + 8021

Matrix Codes: WW- Wastewater; GW- Ground Water; SW- Surface Water; SO- Soil; OI-Oil; WP-Wipe; LIQ - Non-aqueous Liquid; AIR; DW- Drinking Water (Perchlorate Only)

Accutest Sample ID	Sample ID / Field Point / Point of Collection	Date	Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	NaHSO4	MEOH	ENCORE	8015 + 8021	LAB USE ONLY
-1	COMBINED INLET INFLUENT	6/21/10	1230	GG		3	3								X	

1 DAY

Turnaround Time (Business days)

- ☐ Standard TAT 15 Business Days
- ☐ 10 Day (Workload dependent)
- ☐ 5 Day (Workload dependent)
- ☐ 3 Day (125% markup)
- ☐ 2 Day (150% markup)
- ☒ 1 Day (200% markup)
- ☐ Same Day (300% markup)

Approved By:/ Date:

Emergency T/A data available VIA Lablink

Data Deliverable Information

- ☐ Commercial "A" - Results only
- ☐ Commercial "B" - Results with QC summaries
- ☐ Commerical "B+" - Results, QC, and chromatograms
- ☐ FULT1 - Level 4 data package
- ☐ EDF for Geotracker ☐ EDD Format
- Provide EDF Global ID
- Provide EDF Logcode:

Comments / Remarks

EMAIL COMING TO ANNE

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1	6/21/10 1405	1	2	6/21/10 1450	2
Relinquished by: 3	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
Relinquished by: 5	Date Time:	Received By: 5	Custody Seal #		

Appropriate Bottle / Pres Y / N; Headspace Y / N; On Ice Y / N; Cooler Temp. 3.2-0.1= 3.1°C °C
Labels match Coc Y / N; Separate Receipt Log Y / N

Accutest Laboratories Northern California
Sample Receiving Check List

Job# : C 11491
Sample Control Rep. Initial: [illegible]

Review Chain of Custody **Chain of Custody is to be complete and legible.**

- ☑ Are these regulatory (~~NPDES~~) samples? CWA — **Yes** / No
- ☑ Is pH requested? — Yes / **No**
  - ☑ 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**
- ☑ Are sample within hold time? — **Yes** / No
  - 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? — **Yes** / 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 PM

Review Coolers:

- ☑ Were Coolers temperatures measured at ≤6°C? Cooler # 1 Temp 3.1 °C
  - If cooler is outside the ≤6°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 RON
- □ 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? **Yes** / No
- ☑ Proper Preservatives? **Yes** / No Check pH on preserved samples except 1664, 625, 8270 and VOAs.
- ☑ Headspace-VOAs? **Greater than 6mm in diameter** Yes / **No**
  List sample ID and affected container

Client Sample ID	pH Check	Other Comments/Issues

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

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

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

Sample ID	Lab ID
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: ______________________
Project Manager

Date: 06/25/2010

NELAP # 01107CA

Curtis & Tompkins, Ltd.

CASE NARRATIVE

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

CHAIN OF COURSE

Page 1 of 1

Chain of Custody #

Curtis & Tompkins Laboratories
ENVIRONMENTAL ANALYTICAL TESTING LABORATORY
In Business Since 1878
2323 Fifth Street
Berkeley, CA 94710
Phone (510) 486-0900
Fax (510) 486-0532

C&T LOGIN # 220785

Project No: 04-PFT-003

Project Name: PACO Pumps

EDD Format:

Report Level: ☐ II ☐ III ☐ IV

Turnaround Time: ☐ RUSH ______ ☑ Standard

Sampler: Harlow Newton

Report To: Paul Parmentier

Company: Source Group Inc

Telephone: 925-944-2856

Email: pparmentier@thesourcegroup.net

Lab No.	Sample ID.	SAMPLING Date Collected	SAMPLING Time Collected	MATRIX Water	MATRIX Solid			# of Containers	CHEMICAL PRESERVATIVE HCl	H2SO4	HNO3	NaOH	None	ANALYTICAL REQUEST: TPHg (8015 or 8260)	BTEX (8260)	5 Fuel Oxygenates (8260)		Lead Scavengers (8260)
	E-12	6/16/10	0730	X				3	X					X	X	X		X
	E-11	↓	0740	X				↓	↓					↓	↓	↓		↓
	E-1	↓	0750	X				↓	↓					↓	↓	↓		↓
	E-2	↓	0800	X				↓	↓					↓	↓	↓		↓
	E-7	↓	1020	X				↓	↓					↓	↓	↓		↓

Notes:

SAMPLE RECEIPT
☐ Intact
☐ Cold
☑ On Ice
☐ Ambient

RELINQUISHED BY:			RECEIVED BY:		
[signature]	DATE: 6/16	TIME: 1440	[signature]	DATE: 6/16/10	TIME: 1440
	DATE:	TIME:		DATE:	TIME:
	DATE:	TIME:		DATE:	TIME:

COOLER RECEIPT CHECKLIST

Curtis & Tompkins, Ltd.

Login # 220785 Date Received 6-16-10 Number of coolers 1

Client THE SOURCE GROUP Project ARCO PUMPS

Date Opened 6-16-10 By (print) S. EVANS (sign) [signature]

Date Logged in 6-17-10 By (print) Elias Tsadik (sign) Elias Tsadik

1. Did cooler come with a shipping slip (airbill, etc) ________ YES **NO**
   Shipping info ________

2A. Were custody seals present? ... ☐ YES (circle) on cooler on samples ☒ NO
   How many ________ Name ________ Date ________

2B. Were custody seals intact upon arrival? ________ YES NO **N/A**

3. Were custody papers dry and intact when received? ________ **YES** NO

4. Were custody papers filled out properly (ink, signed, etc)? ________ **YES** NO

5. Is the project identifiable from custody papers? (If so fill out top of form) ________ **YES** NO

6. Indicate the packing in cooler: (if other, describe) ________

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

7. Temperature documentation:

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

☒ Samples Received on ice & cold without a temperature blank

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

8. Were Method 5035 sampling containers present? ________ YES **NO**
   If YES, what time were they transferred to freezer? ________

9. Did all bottles arrive unbroken/unopened? ________ **YES** NO

10. Are samples in the appropriate containers for indicated tests? ________ **YES** NO

11. Are sample labels present, in good condition and complete? ________ **YES** NO

12. Do the sample labels agree with custody papers? ________ **YES** NO

13. Was sufficient amount of sample sent for tests requested? ________ **YES** NO

14. Are the samples appropriately preserved? ________ **YES** NO N/A

15. Are bubbles > 6mm absent in VOA samples? ________ **YES** NO N/A

16. Was the client contacted concerning this sample delivery? ________ YES NO
   If YES, Who was called? ________ By ________ Date: ________

COMMENTS

Curtis & Tompkins, Ltd.

Gasoline by GC/MS

Lab #:	220785	Location:	Paco Pumps
Client:	The Source Group, Inc.	Prep:	EPA 5030B
Project#:	04-PFT-003	Analysis:	EPA 8260B
Field ID:	E-12	Batch#:	164317
Lab ID:	220785-001	Sampled:	06/16/10
Matrix:	Water	Received:	06/16/10
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

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Gasoline by GC/MS

Lab #:	220785	Location:	Paco Pumps
Client:	The Source Group, Inc.	Prep:	EPA 5030B
Project#:	04-PFT-003	Analysis:	EPA 8260B
Field ID:	E-11	Batch#:	164317
Lab ID:	220785-002	Sampled:	06/16/10
Matrix:	Water	Received:	06/16/10
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

Curtis & Tompkins, Ltd.

Gasoline by GC/MS

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

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

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Gasoline by GC/MS

Lab #:	220785	Location:	Paco Pumps
Client:	The Source Group, Inc.	Prep:	EPA 5030B
Project#:	04-PFT-003	Analysis:	EPA 8260B
Field ID:	E-2	Batch#:	164260
Lab ID:	220785-004	Sampled:	06/16/10
Matrix:	Water	Received:	06/16/10
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

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Gasoline by GC/MS

Lab #:	220785	Location:	Paco Pumps
Client:	The Source Group, Inc.	Prep:	EPA 5030B
Project#:	04-PFT-003	Analysis:	EPA 8260B
Field ID:	E-7	Batch#:	164317
Lab ID:	220785-005	Sampled:	06/16/10
Matrix:	Water	Received:	06/16/10
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

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

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: QC549534

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 Lab ID: QC549535

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-Dichloroethane-d4	116	71-140
Toluene-d8	101	80-120
Bromofluorobenzene	103	80-121

RPD= Relative Percent Difference

Batch QC Report

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: QC549537

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	750.0	814.2	109	80-120	4	20

Surrogate	%REC	Limits
Dibromofluoromethane	99	80-122
1,2-Dichloroethane-d4	118	71-140
Toluene-d8	101	80-120
Bromofluorobenzene	101	80-121

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

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

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

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

ND= Not Detected
RL= Reporting Limit

Batch QC Report

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: QC549760

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: QC549761

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	105	56-134	0	20
Ethyl tert-Butyl Ether (ETBE)	25.00	26.51	106	60-124	2	20
Methyl tert-Amyl Ether (TAME)	25.00	23.97	96	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

Surrogate	%REC	Limits
Dibromofluoromethane	108	80-122
1,2-Dichloroethane-d4	105	71-140
Toluene-d8	98	80-120
Bromofluorobenzene	94	80-121

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

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

Type: BSD Lab ID: QC549778

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	750.0	894.1	119	80-120	8	20

Surrogate	%REC	Limits
Dibromofluoromethane	105	80-122
1,2-Dichloroethane-d4	98	71-140
Toluene-d8	100	80-120
Bromofluorobenzene	103	80-121

RPD= Relative Percent Difference

Data File: \\Gcmsserver\DD\chem\MSVOA08.i\062310.b\HFN21TVH.D

Date : 23-JUN-2010 21:14

Client ID: DYNA P&T

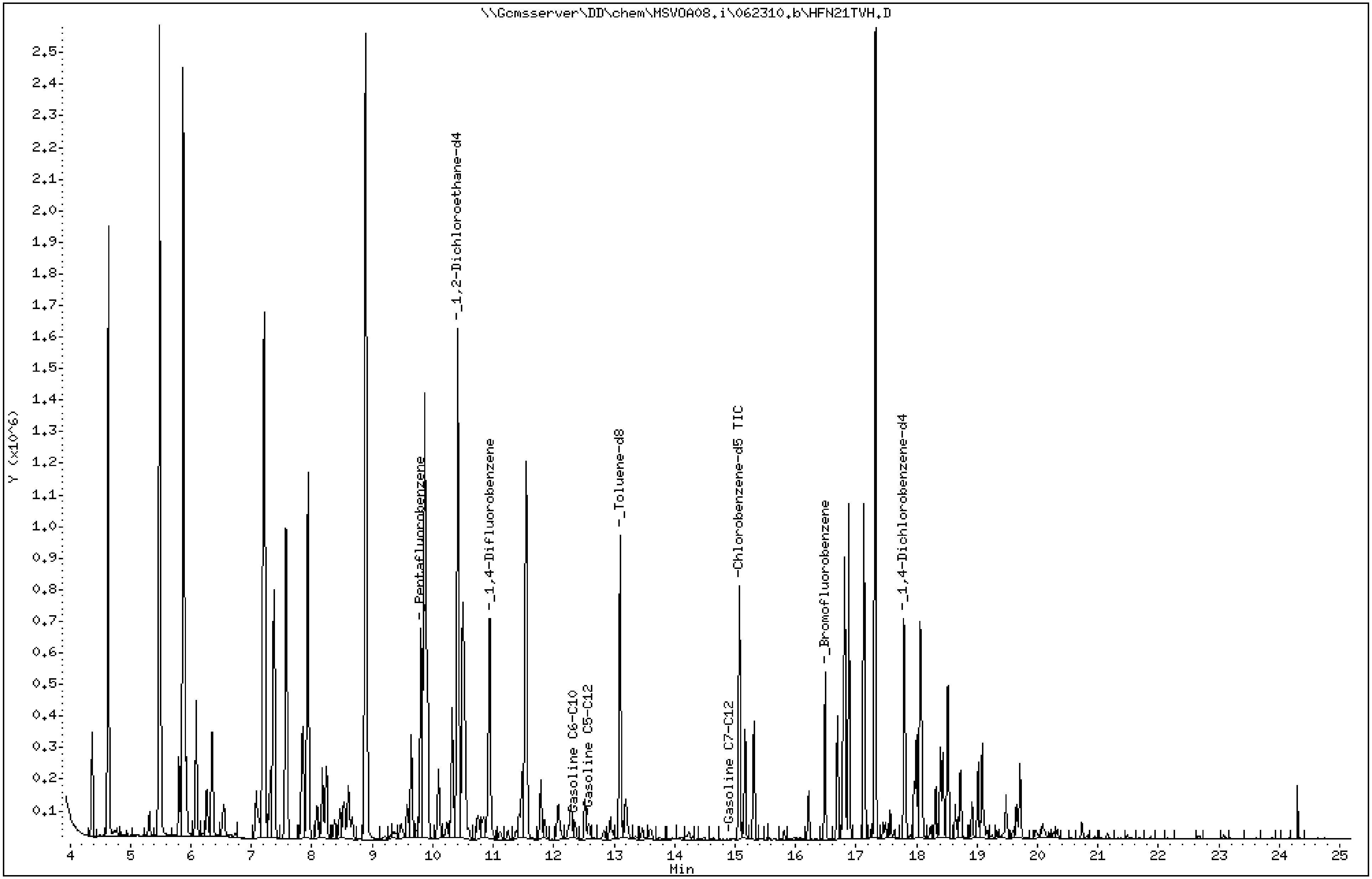
Instrument: MSVOA08.i

Sample Info: S,220785-001

Operator: VOC

Column phase:

Column diameter: 2.00



Data File: \\Gcmsserver\DD\chem\MSVOA08.i\062310.b\HFN22TVH.D

Date : 23-JUN-2010 21:51

Client ID: DYNA P&T

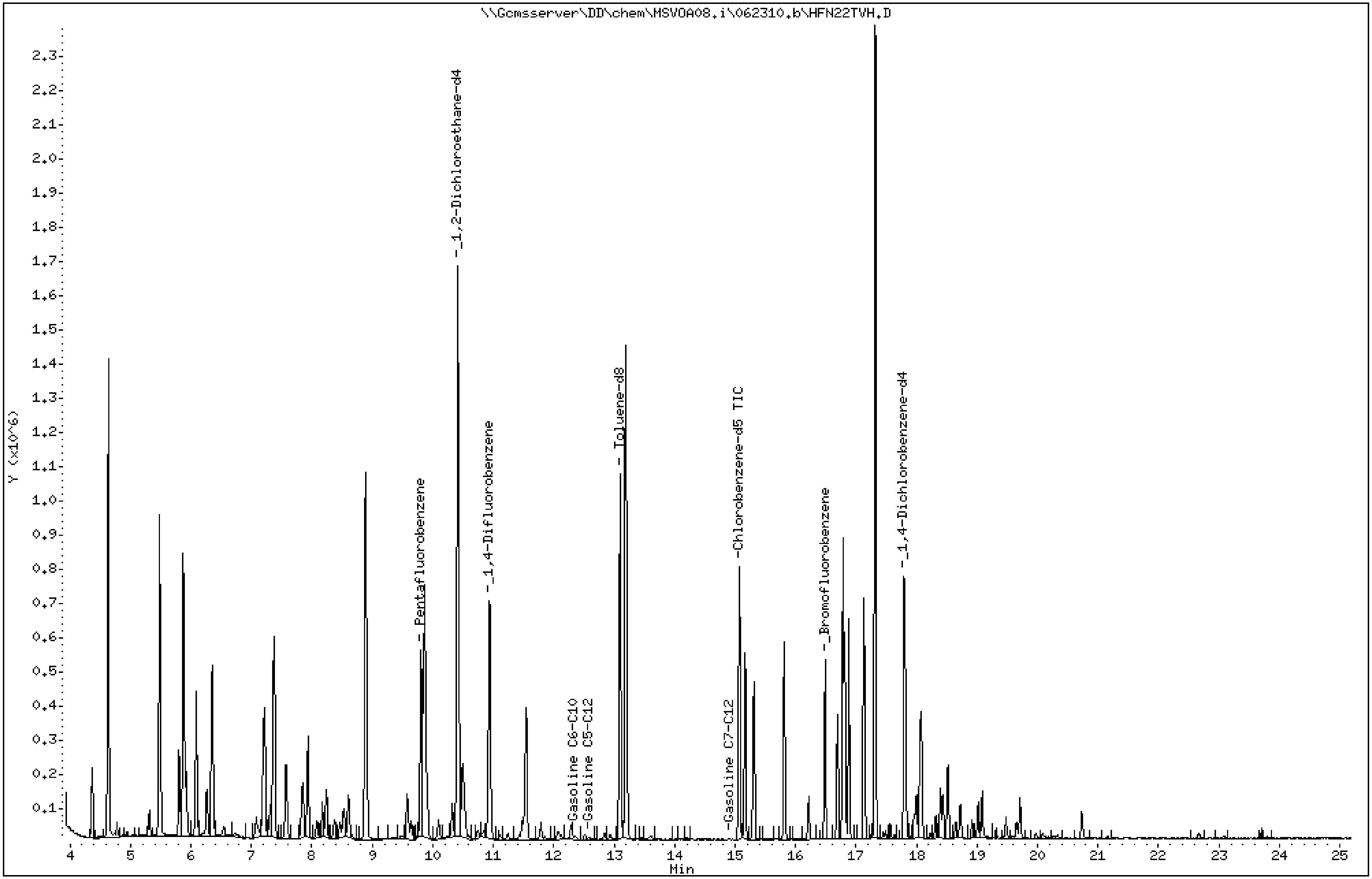
Instrument: MSVOA08.i

Sample Info: S,220785-002

Operator: VOC

Column phase:

Column diameter: 2.00



Data File: \\Gcmsserver\DD\chem\MSVOA08.i\062310.b\HFN23TVH.D

Date : 23-JUN-2010 22:28

Client ID: DYNA P&T

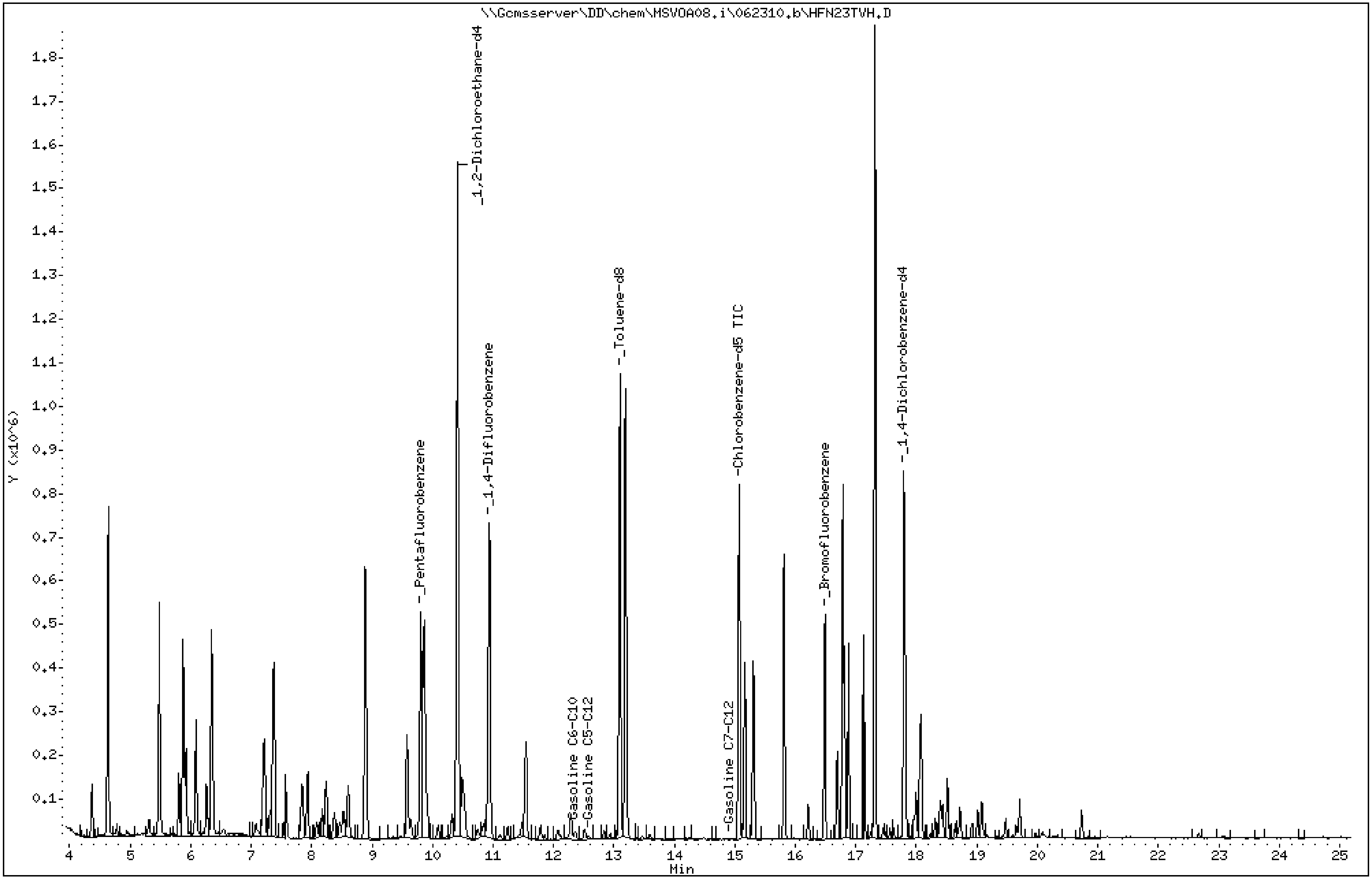
Instrument: MSVOA08.i

Sample Info: S,220785-003

Operator: VOC

Column phase:

Column diameter: 2.00



Data File: \\Gcmsserver\DD\chem\MSVOA10.i\062210.b\JFM23TVH.D

Date : 22-JUN-2010 20:27

Client ID: DYNA P&T

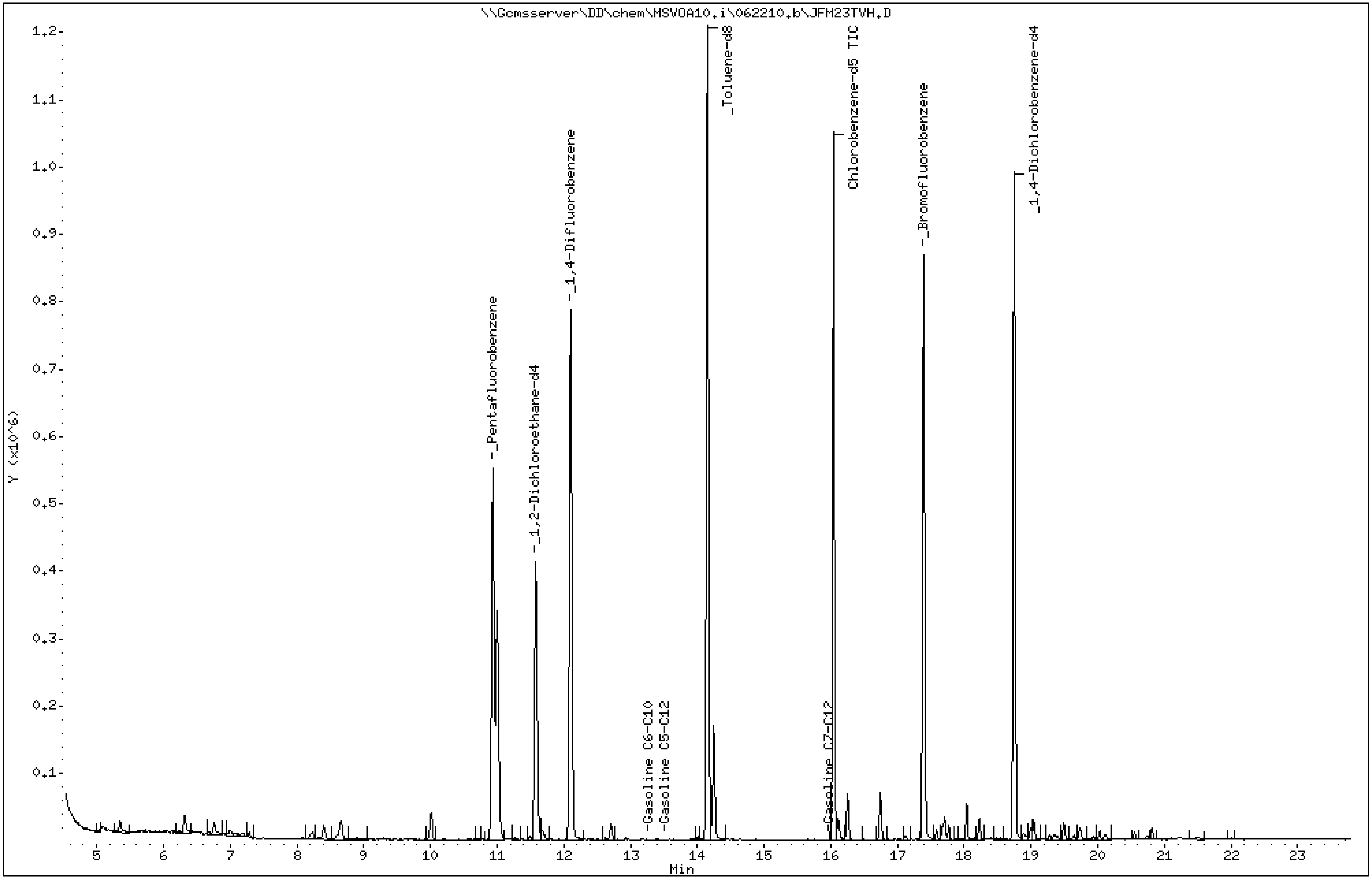
Instrument: MSVOA10.i

Sample Info: s,220785-004

Operator: VOA

Column phase:

Column diameter: 2.00



Data File: \\Gcmsserver\DD\chem\MSVOA08.i\062310.b\HFN24TVH.D

Date : 23-JUN-2010 23:06

Client ID: DYNA P&T

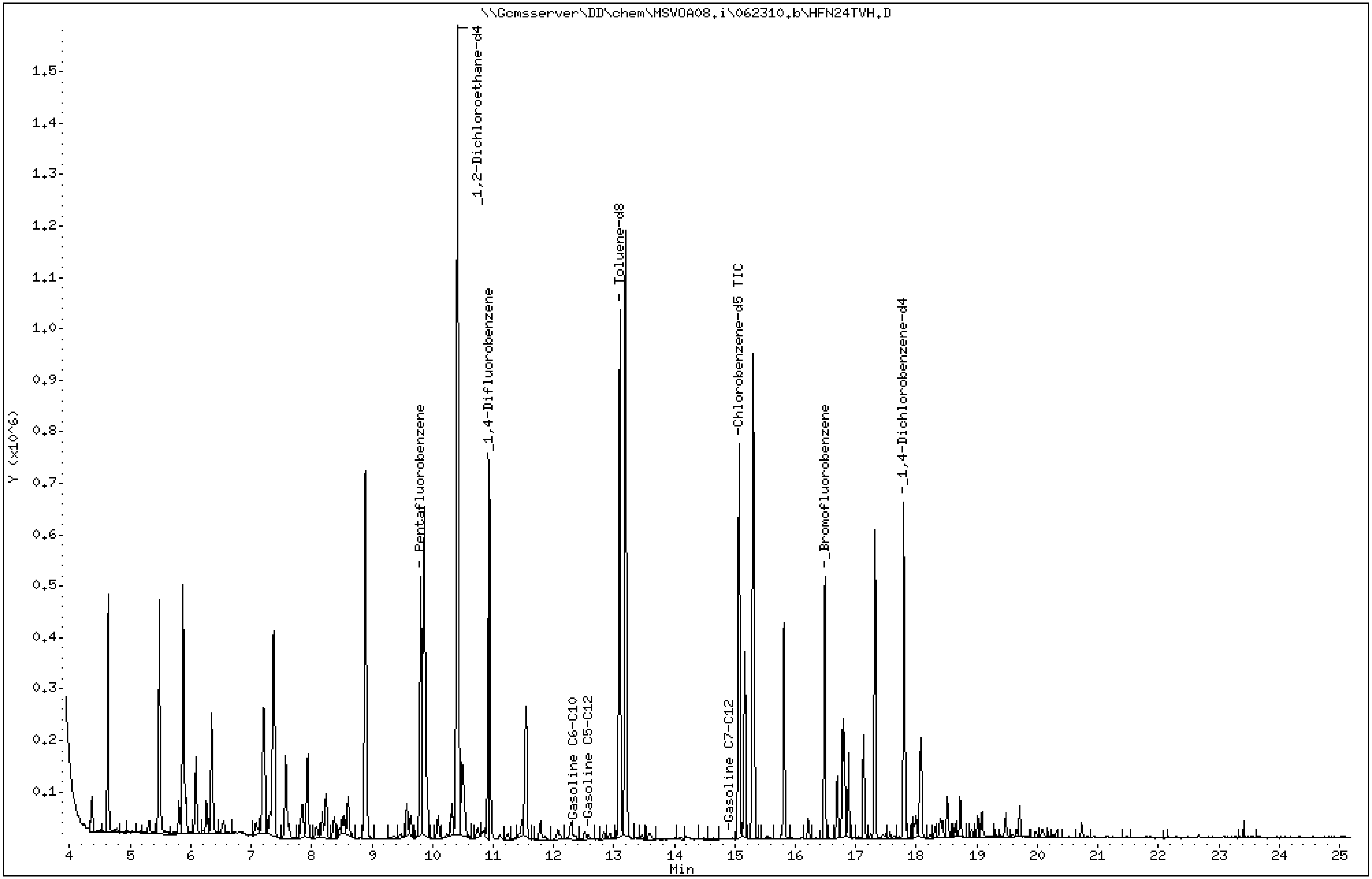
Instrument: MSVOA08.i

Sample Info: S,220785-005

Operator: VOC

Column phase:

Column diameter: 2.00



Data File: \\Gcmsserver\DD\chem\MSVOA08.i\062310.b\HFN09TVH.D
Page 2

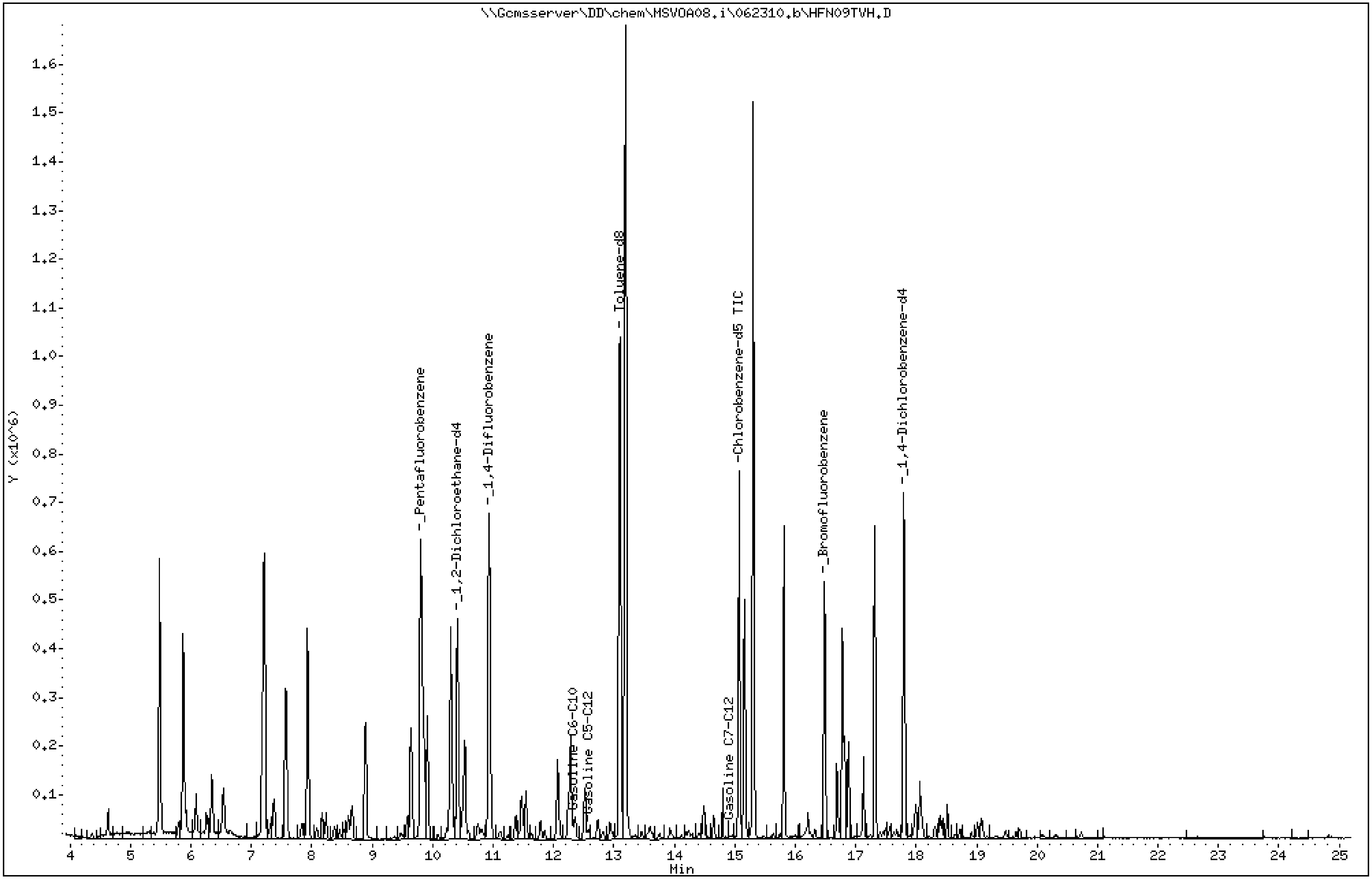
Date : 23-JUN-2010 13:45

Client ID: DYNA P&T
Instrument: MSVOA08.i

Sample Info: CCV/BS,QC549777,164317,S14540,7500X

Operator: VOC

Column phase:
Column diameter: 2.00



Northern California
ACCUTEST
Laboratories

IT'S ALL IN THE CHEMISTRY

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**

ACCREDITED IN ACCORDANCE WITH nelac

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.

Laurie Glantz-Murphy
Laboratory Director

Client Service contact: Anne Kathain 408-588-0200

Certifications: CA (08258CA) DoD/ISO/IEC 17025:2005 (L2242)

ACCUTEST LABORATORIES 50 YEARS 1956-2006

Table of Contents

-1-

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	Matrix Code	Type	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

Accutest Laboratories

Report of Analysis

Client Sample ID:	E-2		
Lab Sample ID:	C11612-1	**Date Sampled:**	06/30/10
Matrix:	AQ - Ground Water	**Date Received:**	06/30/10
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	9201 San Leandro Street, Oakland CA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M16025.D	1	07/02/10	XB	n/a	n/a	VM522
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

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	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	Limits
1868-53-7	Dibromofluoromethane	102%		60-130%
2037-26-5	Toluene-D8	104%		60-130%
460-00-4	4-Bromofluorobenzene	102%		60-130%

ND = Not detected   MDL - Method Detection Limit   J = Indicates an estimated value
RL = Reporting Limit   B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range   N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	E-7		
Lab Sample ID:	C11612-2	**Date Sampled:**	06/30/10
Matrix:	AQ - Ground Water	**Date Received:**	06/30/10
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	9201 San Leandro Street, Oakland CA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W14236.D	5	07/07/10	BD	n/a	n/a	VW498
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

BTEX, Oxygenates

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	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	88%		60-130%
2037-26-5	Toluene-D8	98%		60-130%
460-00-4	4-Bromofluorobenzene	95%		60-130%

ND = Not detected MDL - Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	E-11		
Lab Sample ID:	C11612-3	**Date Sampled:**	06/30/10
Matrix:	AQ - Ground Water	**Date Received:**	06/30/10
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	9201 San Leandro Street, Oakland CA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W14237.D	40	07/07/10	BD	n/a	n/a	VW498
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

BTEX, Oxygenates

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	Limits
1868-53-7	Dibromofluoromethane	87%		60-130%
2037-26-5	Toluene-D8	98%		60-130%
460-00-4	4-Bromofluorobenzene	96%		60-130%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	E-1		
Lab Sample ID:	C11612-4	**Date Sampled:**	06/30/10
Matrix:	AQ - Ground Water	**Date Received:**	06/30/10
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	9201 San Leandro Street, Oakland CA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M16026.D	1	07/03/10	XB	n/a	n/a	VM522
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

BTEX, Oxygenates

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.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	104%		60-130%
2037-26-5	Toluene-D8	104%		60-130%
460-00-4	4-Bromofluorobenzene	103%		60-130%

ND = Not detected   MDL - Method Detection Limit   J = Indicates an estimated value
RL = Reporting Limit   B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range   N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	E-12		
Lab Sample ID:	C11612-5	**Date Sampled:**	06/30/10
Matrix:	AQ - Ground Water	**Date Received:**	06/30/10
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	9201 San Leandro Street, Oakland CA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M16029.D	3.33	07/03/10	XB	n/a	n/a	VM522
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

BTEX, Oxygenates

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	Limits
1868-53-7	Dibromofluoromethane	102%		60-130%
2037-26-5	Toluene-D8	103%		60-130%
460-00-4	4-Bromofluorobenzene	103%		60-130%

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

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

CHAIN OF CUSTODY

ACCUTEST Laboratories

2235 Route 130, Dayton, NJ 08810
732-329-0200 FAX: 732-329-3499/3480

"SGRPCAPH2805"

FED-EX Tracking #	Bottle Order Control #
Accutest Quote #	Accutest Job # C11612

Client / Reporting Information

Company Name: Source Group Inc
Address: 3451-C Vincent Rd
City: Pleasant Hill State: CA Zip: 94523
Project Contact: Kristene Tidwell E-mail: ktidwell@thesourcegroup.net
Phone #: 925-944-2856
Samplers's Name: Harlow Newton

Project Information

Project Name: PACO Pumps
Street: 9201 San Leandro St
City: Oakland State: CA
Project #: 03-PFT-004
Fax #: 925-944-2859
Client Purchase Order #:

Requested Analysis: 8260 ☑ 624 ☐ 8021 ☐ 602 ☐ BTEX ☑ MTBE ☐ TBA ☐ NAP ☐; 8260 ☐ 624 ☐ TCL ☐ PPL ☐ STARS ☐ MTBE ☐ TBA ☐ NAP ☐ +10 ☐ +15 ☐; 8270 ☐ 625 ☐ TCL ☐ PPL ☐ STARS ☐ ABN ☐ AE ☐ BN ☐ PAH ☐ +TICs ☐; 5 Fuel oxygenates 8260; TPH-g 8015 or 8260; Lead Scavengers 8260

Accutest Sample #	Field ID / Point of Collection	SUMMA # / MEOH Vial #	Date	Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	NaHSO4	MEOH	ENCORE	8260/624/8021/602 BTEX MTBE TBA NAP	8260/624 TCL PPL STARS MTBE TBA NAP +10 +15	8270/625 TCL PPL STARS ABN AE BN PAH +TICs	5 Fuel oxygenates 8260	TPH-g 8015 or 8260	Lead Scavengers 8260	LAB USE ONLY
-1	E-2		6/30	0840	H.N.	H2O	3	X								X			X	X	X	
-2	E-7		↓	0850	↓	↓	↓	↓								↓			↓	↓	↓	
-3	E-11		↓	0900	↓	↓	↓	↓								↓			↓	↓	↓	
-4	E-1		↓	0910	↓	↓	↓	↓								↓			↓	↓	↓	
-5	E-12		↓	0920	↓	↓	↓	↓								↓			↓	↓	↓	

Matrix Codes: DW- Drinking Water; GW- Ground Water; WW- Water; SW- Surface Water; SO- Soil; SL-Sludge; OI-Oil; LIQ- Other Liquid; AIR- Air; SOL-Other Solid; WP-Wipe

Turnaround Time (Business days)

- [X] Std. 15 Business Days
- [ ] 10 Day *RUSH*
- [ ] 5 Day *RUSH*
- [ ] 3 Day *EMERGENCY*
- [ ] 2 Day *EMERGENCY*
- [ ] 1 Day *EMERGENCY*
- [ ] Other

Approved By:/ Date:

Emergency T/A data available VIA Lablink

Data Deliverable Information

- [X] ~~Commercial "A"~~
- [x] Commercial "B"
- [ ] NJ Reduced
- [ ] NJ Full
- [ ] Other
- [ ] FULL CLP
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] State Forms
- [ ] EDD Format

Commercial "A" = Results Only

Comments / Remarks

3-Vials(w/HCl) (x5)

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1 [signature]	6/30 0940	1	2	6/30/10 14:00	2 [signature]
Relinquished by: 3	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
Relinquished by: 5	Date Time:	Received By: 5	Custody Seal #	Preserved where applicable ☑	On Ice ☒ Cooler Temp. 1.6-0.1=1.5°C

C11612: Chain of Custody
Page 1 of 2

Accutest Laboratories Northern California
Sample Receiving Check List

Job# : C 11612
Sample Control Rep. Initial: EK | JM

SGRPCAPH2805

Review Chain of Custody Chain of Custody is to be complete and legible.

- ☑ Are these regulatory (~~NPDES~~) samples? ~~CWA~~ — Yes / No
- ☑ Is pH requested? — Yes / No
- N/A ☑ 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
- ☑ Are sample within hold time? — Yes / No
- 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? — Yes / 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 PM

Review Coolers:

- ☑ Were Coolers temperatures measured at ≤6°C? Cooler # 1 Temp 1.5 °C
  - If cooler is outside the ≤6°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 AC
- ☑ 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? Yes / No
- ☑ Proper Preservatives? Yes / No Check pH on preserved samples except 1664, 625, 8270 and VOAs
- ☑ Headspace-VOAs? **Greater than 6mm in diameter Yes / No**
  List sample ID and affected container

Client Sample ID	pH Check	Other Comments/Issues

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

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	By	Prep Date	Prep Batch	Analytical Batch
VM522-MB2	M16011.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	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%

Method Blank 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
VW498-MB	W14226.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	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	89%	60-130%
2037-26-5	Toluene-D8	98%	60-130%
460-00-4	4-Bromofluorobenzene	93%	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	By	Prep Date	Prep Batch	Analytical Batch
VM522-MB	M16003.D	1	07/02/10	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%

Blank Spike 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
VM522-BS	M16001.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	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	Limits
1868-53-7	Dibromofluoromethane	105%	60-130%
2037-26-5	Toluene-D8	100%	60-130%
460-00-4	4-Bromofluorobenzene	101%	60-130%

Blank Spike 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
VM522-BS	M16002.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	Spike ug/l	BSP ug/l	BSP %	Limits
	TPH-GRO (C6-C10)	125	120	96	60-130

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	103%	60-130%
2037-26-5	Toluene-D8	102%	60-130%
460-00-4	4-Bromofluorobenzene	101%	60-130%

Blank Spike 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
VW498-BS	W14222.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	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	Limits
1868-53-7	Dibromofluoromethane	90%	60-130%
2037-26-5	Toluene-D8	96%	60-130%
460-00-4	4-Bromofluorobenzene	97%	60-130%

Blank Spike 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
VW498-BS	W14225.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	Spike ug/l	BSP ug/l	BSP %	Limits
	TPH-GRO (C6-C10)	125	98.8	79	60-130

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	89%	60-130%
2037-26-5	Toluene-D8	98%	60-130%
460-00-4	4-Bromofluorobenzene	95%	60-130%

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	C11585-12 ug/l	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	C11585-12	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%

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	C11646-7 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND		20	19.6	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	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	101	67.0	112	10	60-130/25

CAS No.	Surrogate Recoveries	MS	MSD	C11646-7	Limits
1868-53-7	Dibromofluoromethane	91%	91%	89%	60-130%
2037-26-5	Toluene-D8	96%	97%	98%	60-130%
460-00-4	4-Bromofluorobenzene	97%	97%	93%	60-130%

Northern California ACCUTEST Laboratories

IT'S ALL IN THE CHEMISTRY

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

Total number of pages in report: **46**

ACCREDITED IN ACCORDANCE WITH nelac

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.

Laurie Glantz-Murphy
Laboratory Director

Client Service contact: Anne Kathain 408-588-0200

ACCUTEST LABORATORIES 50 YEARS 1956-2006

Certifications: CA (08258CA) DoD/ISO/IEC 17025:2005 (L2242)

Test results relate only to samples analyzed.

Table of Contents

Sample Summary

The Source Group

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

Job No: C11585

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	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	06/28/10	12:30 BTS	06/28/10	AQ	Ground Water	MW-4
C11585-10	06/28/10	10:00 BTS	06/28/10	AQ	Ground Water	MW-5
C11585-11	06/28/10	10:35 BTS	06/28/10	AQ	Ground Water	MW-6
C11585-12	06/28/10	11:35 BTS	06/28/10	AQ	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

Accutest Laboratories

Report of Analysis

Client Sample ID:	AS-1D		
Lab Sample ID:	C11585-1	**Date Sampled:**	06/28/10
Matrix:	AQ - Ground Water	**Date Received:**	06/28/10
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	9201 San Leandro Street, Oakland CA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M15982.D	1	07/01/10	XB	n/a	n/a	VM521
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

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	Limits
1868-53-7	Dibromofluoromethane	102%		60-130%
2037-26-5	Toluene-D8	103%		60-130%
460-00-4	4-Bromofluorobenzene	100%		60-130%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	AS-1D		
Lab Sample ID:	C11585-1	**Date Sampled:**	06/28/10
Matrix:	AQ - Ground Water	**Date Received:**	06/28/10
Method:	SW846 8015B M SW846 3510C	**Percent Solids:**	n/a
Project:	9201 San Leandro Street, Oakland CA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	HH7077.D	1	06/30/10	JH	06/29/10	OP2328	GHH307
Run #2							

	Initial Volume	Final Volume
Run #1	1060 ml	1.0 ml
Run #2		

TPH Extractable

CAS No.	Compound	Result	RL	MDL	Units	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%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	AS-1S		
Lab Sample ID:	C11585-2	**Date Sampled:**	06/28/10
Matrix:	AQ - Ground Water	**Date Received:**	06/28/10
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	9201 San Leandro Street, Oakland CA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M15987.D	3.33	07/01/10	XB	n/a	n/a	VM521
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

BTEX, Oxygenates

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	Limits
1868-53-7	Dibromofluoromethane	106%		60-130%
2037-26-5	Toluene-D8	104%		60-130%
460-00-4	4-Bromofluorobenzene	106%		60-130%

ND = Not detected MDL - Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	AS-1S		
Lab Sample ID:	C11585-2	**Date Sampled:**	06/28/10
Matrix:	AQ - Ground Water	**Date Received:**	06/28/10
Method:	SW846 8015B M SW846 3510C	**Percent Solids:**	n/a
Project:	9201 San Leandro Street, Oakland CA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	HH7078.D	1	06/30/10	JH	06/29/10	OP2328	GHH307
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

TPH Extractable

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C10-C28)	0.214	0.10	0.050	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
630-01-3	Hexacosane	50%		45-140%

ND = Not detected MDL - Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	ASMW-2D		
Lab Sample ID:	C11585-3	**Date Sampled:**	06/28/10
Matrix:	AQ - Ground Water	**Date Received:**	06/28/10
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	9201 San Leandro Street, Oakland CA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M15983.D	1	07/01/10	XB	n/a	n/a	VM521
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

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	Limits
1868-53-7	Dibromofluoromethane	107%		60-130%
2037-26-5	Toluene-D8	104%		60-130%
460-00-4	4-Bromofluorobenzene	102%		60-130%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	ASMW-2D		
Lab Sample ID:	C11585-3	**Date Sampled:**	06/28/10
Matrix:	AQ - Ground Water	**Date Received:**	06/28/10
Method:	SW846 8015B M SW846 3510C	**Percent Solids:**	n/a
Project:	9201 San Leandro Street, Oakland CA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	HH7079.D	1	06/30/10	JH	06/29/10	OP2328	GHH307
Run #2							

	Initial Volume	Final Volume
Run #1	1060 ml	1.0 ml
Run #2		

TPH Extractable

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C10-C28)	ND	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 J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	ASMW-2S		
Lab Sample ID:	C11585-4	**Date Sampled:**	06/28/10
Matrix:	AQ - Ground Water	**Date Received:**	06/28/10
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	9201 San Leandro Street, Oakland CA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M16023.D	33.3	07/02/10	XB	n/a	n/a	VM522
Run #2							

	Purge Volume
Run #1	10.0 ml
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	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		60-130%
2037-26-5	Toluene-D8	104%		60-130%
460-00-4	4-Bromofluorobenzene	101%		60-130%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	ASMW-2S		
Lab Sample ID:	C11585-4	**Date Sampled:**	06/28/10
Matrix:	AQ - Ground Water	**Date Received:**	06/28/10
Method:	SW846 8015B M SW846 3510C	**Percent Solids:**	n/a
Project:	9201 San Leandro Street, Oakland CA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	HH7099.D	5	06/30/10	JH	06/29/10	OP2328	GHH307
Run #2							

	Initial Volume	Final Volume
Run #1	980 ml	1.0 ml
Run #2		

TPH Extractable

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%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	MW-1			
Lab Sample ID:	C11585-5		**Date Sampled:**	06/28/10
Matrix:	AQ - Ground Water		**Date Received:**	06/28/10
Method:	SW846 8260B		**Percent Solids:**	n/a
Project:	9201 San Leandro Street, Oakland CA			

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M15984.D	1	07/01/10	XB	n/a	n/a	VM521
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

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	Limits
1868-53-7	Dibromofluoromethane	107%		60-130%
2037-26-5	Toluene-D8	104%		60-130%
460-00-4	4-Bromofluorobenzene	100%		60-130%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	MW-1		
Lab Sample ID:	C11585-5	**Date Sampled:**	06/28/10
Matrix:	AQ - Ground Water	**Date Received:**	06/28/10
Method:	SW846 8015B M SW846 3510C	**Percent Solids:**	n/a
Project:	9201 San Leandro Street, Oakland CA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	HH7081.D	1	06/30/10	JH	06/29/10	OP2328	GHH307
Run #2							

	Initial Volume	Final Volume
Run #1	1060 ml	1.0 ml
Run #2		

TPH Extractable

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C10-C28)	0.0568	0.094	0.047	mg/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
630-01-3	Hexacosane	64%		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

Accutest Laboratories

Report of Analysis

Client Sample ID:	MW-2		
Lab Sample ID:	C11585-6	**Date Sampled:**	06/28/10
Matrix:	AQ - Ground Water	**Date Received:**	06/28/10
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	9201 San Leandro Street, Oakland CA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M15985.D	1	07/01/10	XB	n/a	n/a	VM521
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

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	Limits
1868-53-7	Dibromofluoromethane	106%		60-130%
2037-26-5	Toluene-D8	106%		60-130%
460-00-4	4-Bromofluorobenzene	101%		60-130%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	MW-2		
Lab Sample ID:	C11585-6	**Date Sampled:**	06/28/10
Matrix:	AQ - Ground Water	**Date Received:**	06/28/10
Method:	SW846 8015B M SW846 3510C	**Percent Solids:**	n/a
Project:	9201 San Leandro Street, Oakland CA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	HH7082.D	1	06/30/10	JH	06/29/10	OP2328	GHH307
Run #2							

	Initial Volume	Final Volume
Run #1	990 ml	1.0 ml
Run #2		

TPH Extractable

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%

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

Accutest Laboratories

Report of Analysis

Page 1 of 1

Client Sample ID:	MW-3		
Lab Sample ID:	C11585-7	**Date Sampled:**	06/28/10
Matrix:	AQ - Ground Water	**Date Received:**	06/28/10
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	9201 San Leandro Street, Oakland 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 Volume
Run #1	10.0 ml
Run #2	

BTEX, Oxygenates

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	Limits
1868-53-7	Dibromofluoromethane	105%		60-130%
2037-26-5	Toluene-D8	104%		60-130%
460-00-4	4-Bromofluorobenzene	103%		60-130%

ND = Not detected MDL - Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	MW-3		
Lab Sample ID:	C11585-7	**Date Sampled:**	06/28/10
Matrix:	AQ - Ground Water	**Date Received:**	06/28/10
Method:	SW846 8015B M SW846 3510C	**Percent Solids:**	n/a
Project:	9201 San Leandro Street, Oakland CA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	HH7100.D	5	06/30/10	JH	06/29/10	OP2328	GHH307
Run #2							

	Initial Volume	Final Volume
Run #1	990 ml	1.0 ml
Run #2		

TPH Extractable

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C10-C28)	6.99	0.51	0.25	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
630-01-3	Hexacosane	97%		45-140%

ND = Not detected MDL - Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	MW-3-DUP		
Lab Sample ID:	C11585-8	**Date Sampled:**	06/28/10
Matrix:	AQ - Ground Water	**Date Received:**	06/28/10
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	9201 San Leandro Street, Oakland CA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M15989.D	50	07/01/10	XB	n/a	n/a	VM521
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

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	Limits
1868-53-7	Dibromofluoromethane	106%		60-130%
2037-26-5	Toluene-D8	102%		60-130%
460-00-4	4-Bromofluorobenzene	102%		60-130%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	MW-3-DUP		
Lab Sample ID:	C11585-8	**Date Sampled:**	06/28/10
Matrix:	AQ - Ground Water	**Date Received:**	06/28/10
Method:	SW846 8015B M SW846 3510C	**Percent Solids:**	n/a
Project:	9201 San Leandro Street, Oakland CA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	HH7092.D	10	06/30/10	JH	06/29/10	OP2328	GHH307
Run #2							

	Initial Volume	Final Volume
Run #1	990 ml	1.0 ml
Run #2		

TPH Extractable

CAS No.	Compound	Result	RL	MDL	Units	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%

ND = Not detected
MDL - Method Detection Limit
J = Indicates an estimated value
RL = Reporting Limit
B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	MW-4		
Lab Sample ID:	C11585-9	**Date Sampled:**	06/28/10
Matrix:	AQ - Ground Water	**Date Received:**	06/28/10
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	9201 San Leandro Street, Oakland CA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M15986.D	1	07/01/10	XB	n/a	n/a	VM521
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

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	Limits
1868-53-7	Dibromofluoromethane	106%		60-130%
2037-26-5	Toluene-D8	104%		60-130%
460-00-4	4-Bromofluorobenzene	103%		60-130%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	MW-4		
Lab Sample ID:	C11585-9	**Date Sampled:**	06/28/10
Matrix:	AQ - Ground Water	**Date Received:**	06/28/10
Method:	SW846 8015B M SW846 3510C	**Percent Solids:**	n/a
Project:	9201 San Leandro Street, Oakland CA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	HH7085.D	1	06/30/10	JH	06/29/10	OP2328	GHH307
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

TPH Extractable

CAS No.	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%

ND = Not detected MDL - Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	MW-5		
Lab Sample ID:	C11585-10	**Date Sampled:**	06/28/10
Matrix:	AQ - Ground Water	**Date Received:**	06/28/10
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	9201 San Leandro Street, Oakland CA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M16020.D	1	07/02/10	XB	n/a	n/a	VM522
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

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	Limits
1868-53-7	Dibromofluoromethane	106%		60-130%
2037-26-5	Toluene-D8	104%		60-130%
460-00-4	4-Bromofluorobenzene	100%		60-130%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	MW-5		
Lab Sample ID:	C11585-10	**Date Sampled:**	06/28/10
Matrix:	AQ - Ground Water	**Date Received:**	06/28/10
Method:	SW846 8015B M SW846 3510C	**Percent Solids:**	n/a
Project:	9201 San Leandro Street, Oakland CA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	HH7093.D	1	06/30/10	JH	06/29/10	OP2328	GHH307
Run #2							

	Initial Volume	Final Volume
Run #1	1060 ml	1.0 ml
Run #2		

TPH Extractable

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C10-C28)	0.289	0.094	0.047	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
630-01-3	Hexacosane	70%		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

Accutest Laboratories

Report of Analysis

Client Sample ID:	MW-6		
Lab Sample ID:	C11585-11	**Date Sampled:**	06/28/10
Matrix:	AQ - Ground Water	**Date Received:**	06/28/10
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	9201 San Leandro Street, Oakland CA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M16022.D	10	07/02/10	XB	n/a	n/a	VM522
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

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	Limits
1868-53-7	Dibromofluoromethane	105%		60-130%
2037-26-5	Toluene-D8	104%		60-130%
460-00-4	4-Bromofluorobenzene	101%		60-130%

ND = Not detected MDL - Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	MW-6		
Lab Sample ID:	C11585-11	**Date Sampled:**	06/28/10
Matrix:	AQ - Ground Water	**Date Received:**	06/28/10
Method:	SW846 8015B M SW846 3510C	**Percent Solids:**	n/a
Project:	9201 San Leandro Street, Oakland CA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	HH7086.D	1	06/30/10	JH	06/29/10	OP2328	GHH307
Run #2							

	Initial Volume	Final Volume
Run #1	1060 ml	1.0 ml
Run #2		

TPH Extractable

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C10-C28)	0.474	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 J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	MW-8		
Lab Sample ID:	C11585-12	**Date Sampled:**	06/28/10
Matrix:	AQ - Ground Water	**Date Received:**	06/28/10
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	9201 San Leandro Street, Oakland CA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M16007.D	1	07/02/10	XB	n/a	n/a	VM522
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

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

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	MW-8		
Lab Sample ID:	C11585-12	**Date Sampled:**	06/28/10
Matrix:	AQ - Ground Water	**Date Received:**	06/28/10
Method:	SW846 8015B M SW846 3510C	**Percent Solids:**	n/a
Project:	9201 San Leandro Street, Oakland CA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	HH7094.D	1	06/30/10	JH	06/29/10	OP2328	GHH307
Run #2							

	Initial Volume	Final Volume
Run #1	960 ml	1.0 ml
Run #2		

TPH Extractable

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C10-C28)	ND	0.10	0.052	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
630-01-3	Hexacosane	71%		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

Accutest Laboratories

Report of Analysis

Client Sample ID:	TB-1		
Lab Sample ID:	C11585-13	**Date Sampled:**	06/28/10
Matrix:	AQ - Trip Blank Water	**Date Received:**	06/28/10
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	9201 San Leandro Street, Oakland CA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M16012.D	1	07/02/10	XB	n/a	n/a	VM522
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

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

ND = Not detected   MDL - Method Detection Limit   J = Indicates an estimated value
RL = Reporting Limit   B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range   N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

BLAINE
TECH SERVICES, INC.

1680 ROGERS AVENUE
SAN JOSE, CALIFORNIA 95112-1105
FAX (408) 573-7771
PHONE (408) 573-0555

" SGRPCAPH 2805 "

CHAIN OF CUSTODY — BTS # 100628-JD1

CLIENT: The Source Group

SITE: 9201 San Leandro St.
Oakland, CA

CONDUCT ANALYSIS TO DETECT

LAB | DHS #

ALL ANALYSES MUST MEET SPECIFICATIONS AND DETECTION LIMITS SET BY CALIFORNIA DHS AND
☐ EPA ☐ RWQCB REGION
☐ LIA
☐ OTHER

SPECIAL INSTRUCTIONS

Invoice and Report to : The Source Group
Attn: Kristene Tidwell

C11585

C = COMPOSITE ALL CONTAINERS

SAMPLE I.D.	DATE	TIME	MATRIX (S= SOIL W=H_2O)	CONTAINERS TOTAL		TPH-GAS - 8260 *AMR	BTEX (8260)	TPH-D (8015)	OXYGENATES	1,2 DCA & EDB	ADD'L INFORMATION	STATUS	CONDITION	LAB SAMPLE #
AS-1D	6-28-10	1130	W	6	mixed	X	X	X	X	X				-1
AS-1S		1005				X	X	X	X	X	① of the Ambers is labled AS-1A time is 1005			-2
ASMW-2D		1155				X	X	X	X	X				-3
ASMW-2S		1130				X	X	X	X	X				-4
MW-1		0930				X	X	X	X	X				-5
MW-2		1105				X	X	X	X	X				-6
MW-3		0940				X	X	X	X	X				-7
MW-3-DUP		0945				X	X	X	X	X				-8
MW-4		1230				X	X	X	X	X				-9
MW-5		1000				X	X	X	X	X				-10

SAMPLING COMPLETED — DATE 6-28-10 — TIME 1230 — SAMPLING PERFORMED BY J. Ortiz B. Panell

RESULTS NEEDED NO LATER THAN: Standard TAT

RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME
[signature]	6-28-10	1454 1500	[signature]	6/28/10	1454
RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME
RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME

SHIPPED VIA	DATE SENT	TIME SENT	COOLER #	
Drop off From Blaine Tech			1	1.9 - 0.1 = 1.8°C
			2	1.1 - 0.1 = 1.0°C

4 vials each (w/HCL) (x12)
3 vials (w/HCL) (x1)
2 x 1L Ambers N/P (x12)

Page 1 of 2

C11585: Chain of Custody
Page 1 of 3

BLAINE
TECH SERVICES, INC.

1680 ROGERS AVENUE
SAN JOSE, CALIFORNIA 95112-1105
FAX (408) 573-7771
PHONE (408) 573-0555

CHAIN OF CUSTODY BTS # 100628-JO1

CLIENT: The Source Group

SITE: 9201 San Leandro St.
Oakland, CA

CONDUCT ANALYSIS TO DETECT

LAB | DHS #

ALL ANALYSES MUST MEET SPECIFICATIONS AND DETECTION LIMITS SET BY CALIFORNIA DHS AND
- ☐ EPA
- ☐ LIA
- ☐ OTHER
- ☐ RWQCB REGION

SPECIAL INSTRUCTIONS

Invoice and Report to : The Source Group
Attn: Kristene Tidwell

C11585

SAMPLE I.D.	DATE	TIME	MATRIX (S= SOIL W=H2O)	CONTAINERS TOTAL	CONTAINERS	C = COMPOSITE ALL CONTAINERS	TPH-GAS - 8260 *Annex K* (confirm in EMS)	BTEX (8260)	TPH-D (8015)	OXYGENATES	1,2 DCA & EDB				ADD'L INFORMATION	STATUS	CONDITION	LAB SAMPLE #
mw-6	6-28-10	1035	W	6	mixed		X	X	X	X	X							-11
mw-8	↓	1135	↓	↓	↓		X	X	X	X	X							-12
TB-1	↓	0930	W	3	VOAS		X	X		X	X							-13

SAMPLING COMPLETED | DATE 6-28-10 | TIME 1230 | SAMPLING PERFORMED BY J. Ortiz, B. Parnell

RESULTS NEEDED NO LATER THAN Standard TAT

RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME
[signature]	6-28-10	1454	[signature]	6/28/10	14:54
[signature]					

SHIPPED VIA: Drop off From Blane tech | DATE SENT | TIME SENT | COOLER #

page 2 of 2

Accutest Laboratories Northern California
Sample Receiving Check List

Job#: C11585
Sample Control Rep. Initial: EK | JM

SGRPCAPH2805

Review Chain of Custody Chain of Custody is to be complete and legible.

☑ Are these regulatory (~~NPDES~~) samples? CWA — Yes / No
☑ Is pH requested? — Yes / No
N/A ☐ 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
☑ Are sample within hold time? — Yes / No
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? — Yes / 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 AM

Review Coolers: 2 - coolers Recv'd.
☑ Were Coolers temperatures measured at ≤6°C? Cooler # — Temp — °C
- If cooler is outside the ≤6°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 walk In (BTS)
☑ 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? Yes / No
☑ Proper Preservatives? Yes / No Check pH on preserved samples except 1664, 625, 8270 and VOAs.
☑ Headspace-VOAs? Greater than 6mm in diameter Yes / No
List sample ID and affected container

Client Sample ID	pH Check	Other Comments/Issues
		Cooler #1 1.9 - 0.1 = 1.8°C
		Cooler #2 1.1 - 0.1 = 1.0°C

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

C11585: Chain of Custody
Page 3 of 3

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: SGRPCAPH The Source Group
Project: 9201 San Leandro Street, Oakland CA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VM521-MB	M15973.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	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	105%	60-130%
2037-26-5	Toluene-D8	105%	60-130%
460-00-4	4-Bromofluorobenzene	103%	60-130%

Method Blank 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-MB	M16003.D	1	07/02/10	XB	n/a	n/a	VM522

The QC reported here applies to the following samples: **Method:** SW846 8260B

C11585-12

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%

Method Blank 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-MB2	M16011.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, C11585-13

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%

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
VM521-BS	M15971.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	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	Limits
1868-53-7	Dibromofluoromethane	104%	60-130%
2037-26-5	Toluene-D8	100%	60-130%
460-00-4	4-Bromofluorobenzene	100%	60-130%

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
VM521-BS	M15972.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	Spike ug/l	BSP ug/l	BSP %	Limits
	TPH-GRO (C6-C10)	125	122	98	60-130

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	103%	60-130%
2037-26-5	Toluene-D8	104%	60-130%
460-00-4	4-Bromofluorobenzene	101%	60-130%

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 reported here applies to the following samples: **Method:** SW846 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	Limits
1868-53-7	Dibromofluoromethane	105%	60-130%
2037-26-5	Toluene-D8	100%	60-130%
460-00-4	4-Bromofluorobenzene	101%	60-130%

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	M16002.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

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	Limits
1868-53-7	Dibromofluoromethane	103%	60-130%
2037-26-5	Toluene-D8	102%	60-130%
460-00-4	4-Bromofluorobenzene	101%	60-130%

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	C11602-5	Limits
1868-53-7	Dibromofluoromethane	106%	103%	104%	60-130%
2037-26-5	Toluene-D8	102%	99%	102%	60-130%
460-00-4	4-Bromofluorobenzene	102%	99%	99%	60-130%

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

CAS No.	Compound	C11585-12 ug/l	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	C11585-12	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%

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 Source Group
Project: 9201 San Leandro Street, Oakland CA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP2328-MB	HH7074.D	1	06/30/10	JH	06/29/10	OP2328	GHH307

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	Result	RL	MDL	Units	Q
	TPH (C10-C28)	ND	0.10	0.050	mg/l	

CAS No.	Surrogate Recoveries		Limits
630-01-3	Hexacosane	82%	45-140%

Blank Spike/Blank 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
OP2328-BS	HH7075.D	1	06/30/10	JH	06/29/10	OP2328	GHH307
OP2328-BSD	HH7076.D	1	06/30/10	JH	06/29/10	OP2328	GHH307

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	BSD	Limits
630-01-3	Hexacosane	76%	70%	45-140%

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

Laboratory Job Number 221764
ANALYTICAL REPORT

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

Sample ID	Lab ID
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: ______________________ Date: 08/17/2010
Project Manager

NELAP # 01107CA

Curtis & Tompkins, Ltd.

CASE NARRATIVE

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

CHAIN OF CUSTODY

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

2323 Fifth Street
Berkeley, CA 94710

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

221764
C&T LOGIN #

Page 1 of 1
Chain of Custody #

Project No: 04-PFT-003
Project Name: PACO Pumps
Project P. O. No: 04-PFT-003 Task 4
EDD Format: Report Level ☐ II ☐ III ☐ IV
Turnaround Time: ☐ RUSH ☑ Standard

Sampler: Harlow Newton
Report To: Paul Parmentier
Company: Source Group Inc
Telephone: 925-944-2856
Email: pparmentier@thesourcegroup.net

Lab No.	Sample ID.	SAMPLING: Date Collected	SAMPLING: Time Collected	MATRIX: Water	MATRIX: Solid			# of Containers	CHEMICAL PRESERVATIVE: HCl	H2SO4	HNO3	NaOH	None	ANALYTICAL REQUEST: TPH, GRO, VOC's oxygenates 8260B → 8260GX
1	ASMW-2S	8/10/10	1025	X				3	X					X
2	MW-3		1130											
3	AS-1S		1200											
4	MW-6		1313											

Notes:

SAMPLE RECEIPT
~~☐ Intact~~
☑ ~~Cold~~
☑ ~~On Ice~~
☐ Ambient

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
[signature]	8-10-10	1430	[signature]	8/10/10	1430

COOLER RECEIPT CHECKLIST Curtis & Tompkins, Ltd.

Login # 221764 Date Received 8/10/10 Number of coolers 1
Client SOURCE GROUP Project PACO PUMPS

Date Opened 8/10/10 By (print) S. EVANS (sign)
Date Logged in ↓ By (print) ↓ (sign) ↓

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

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

7. Temperature documentation:

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

   ☒ Samples Received on ice & cold without a temperature blank

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

8. Were Method 5035 sampling containers present? YES NO
   If YES, what time were they transferred to freezer?
9. Did all bottles arrive unbroken/unopened? YES NO
10. Are samples in the appropriate containers for indicated tests? YES NO
11. Are sample labels present, in good condition and complete? YES NO
12. Do the sample labels agree with custody papers? YES NO
13. Was sufficient amount of sample sent for tests requested? YES NO
14. Are the samples appropriately preserved? YES NO N/A
15. Are bubbles > 6mm absent in VOA samples? YES NO N/A
16. Was the client contacted concerning this sample delivery? YES NO
   If YES, Who was called? By Date:

COMMENTS

Curtis & Tompkins, Ltd.

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:	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	Result	RL
Gasoline C7-C12	3,200	310
Freon 12	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	3.4	3.1
Benzene	420	3.1
Trichloroethene	ND	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	69	3.1
trans-1,3-Dichloropropene	ND	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	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

ND= Not Detected
RL= Reporting Limit

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:	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	Result	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	3.1
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	13
Naphthalene	41	13
1,2,3-Trichlorobenzene	ND	3.1

Surrogate	%REC	Limits
Dibromofluoromethane	89	80-122
1,2-Dichloroethane-d4	81	71-140
Toluene-d8	96	80-120
Bromofluorobenzene	98	80-121

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

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:	MW-3	Batch#:	165889
Lab ID:	221764-002	Sampled:	08/10/10
Matrix:	Water	Received:	08/10/10
Units:	ug/L	Analyzed:	08/13/10
Diln Fac:	25.00		

Analyte	Result	RL
Gasoline C7-C12	12,000	1,300
Freon 12	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	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

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

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:	MW-3	Batch#:	165889
Lab ID:	221764-002	Sampled:	08/10/10
Matrix:	Water	Received:	08/10/10
Units:	ug/L	Analyzed:	08/13/10
Diln Fac:	25.00		

Analyte	Result	RL
Propylbenzene	84	13
Bromobenzene	ND	13
1,3,5-Trimethylbenzene	190	13
2-Chlorotoluene	ND	13
4-Chlorotoluene	ND	13
tert-Butylbenzene	ND	13
1,2,4-Trimethylbenzene	1,000	13
sec-Butylbenzene	ND	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-Chloropropane	ND	50
1,2,4-Trichlorobenzene	ND	13
Hexachlorobutadiene	ND	50
Naphthalene	160	50
1,2,3-Trichlorobenzene	ND	13

Surrogate	%REC	Limits
Dibromofluoromethane	90	80-122
1,2-Dichloroethane-d4	80	71-140
Toluene-d8	98	80-120
Bromofluorobenzene	99	80-121

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

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:	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	Result	RL
Gasoline C7-C12	1,200	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	ND	2.5
Methylene Chloride	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

Curtis & Tompkins, Ltd.

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:	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	Result	RL
Propylbenzene	17	2.5
Bromobenzene	ND	2.5
1,3,5-Trimethylbenzene	2.6	2.5
2-Chlorotoluene	ND	2.5
4-Chlorotoluene	ND	2.5
tert-Butylbenzene	3.8	2.5
1,2,4-Trimethylbenzene	83	2.5
sec-Butylbenzene	ND	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	%REC	Limits
Dibromofluoromethane	91	80-122
1,2-Dichloroethane-d4	81	71-140
Toluene-d8	101	80-120
Bromofluorobenzene	100	80-121

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

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:	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	Result	RL
Gasoline C7-C12	4,600	630
Freon 12	ND	13
tert-Butyl Alcohol (TBA)	ND	130
Chloromethane	ND	13
Isopropyl Ether (DIPE)	ND	6.3
Vinyl Chloride	ND	6.3
Bromomethane	ND	13
Ethyl tert-Butyl Ether (ETBE)	ND	6.3
Chloroethane	ND	13
Methyl tert-Amyl Ether (TAME)	ND	6.3
Trichlorofluoromethane	ND	13
Acetone	ND	130
Freon 113	ND	25
1,1-Dichloroethene	ND	6.3
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

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:	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	Result	RL
Propylbenzene	54	6.3
Bromobenzene	ND	6.3
1,3,5-Trimethylbenzene	23	6.3
2-Chlorotoluene	ND	6.3
4-Chlorotoluene	ND	6.3
tert-Butylbenzene	ND	6.3
1,2,4-Trimethylbenzene	490	6.3
sec-Butylbenzene	ND	6.3
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	60	25
1,2,3-Trichlorobenzene	ND	6.3

Surrogate	%REC	Limits
Dibromofluoromethane	91	80-122
1,2-Dichloroethane-d4	78	71-140
Toluene-d8	96	80-120
Bromofluorobenzene	97	80-121

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

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:	ZZZZZZZZZZ	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		

Type: MS   Lab ID: QC555971

Analyte	MSS Result	Spiked	Result	%REC	Limits
tert-Butyl Alcohol (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-Dichloroethene	<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

Surrogate	%REC	Limits
Dibromofluoromethane	92	80-122
1,2-Dichloroethane-d4	82	71-140
Toluene-d8	99	80-120
Bromofluorobenzene	98	80-121

Type: MSD   Lab ID: QC555972

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
tert-Butyl Alcohol (TBA)	781.3	650.6	83	57-142	1	32
Isopropyl Ether (DIPE)	156.3	136.0	87	70-122	5	20
Ethyl tert-Butyl Ether (ETBE)	156.3	133.3	85	71-120	2	20
Methyl tert-Amyl Ether (TAME)	156.3	133.3	85	75-120	0	20
1,1-Dichloroethene	156.3	153.8	98	80-134	7	20
Benzene	156.3	146.9	94	80-121	2	20
Trichloroethene	156.3	545.9	72 *	77-126	2	20
Toluene	156.3	159.5	102	80-120	2	20
Chlorobenzene	156.3	156.9	100	80-120	4	20

Surrogate	%REC	Limits
Dibromofluoromethane	90	80-122
1,2-Dichloroethane-d4	84	71-140
Toluene-d8	102	80-120
Bromofluorobenzene	100	80-121

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

Batch QC Report

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:	BLANK	Diln Fac:	1.000
Lab ID:	QC555973	Batch#:	165889
Matrix:	Water	Analyzed:	08/13/10
Units:	ug/L		

Analyte	Result	RL
Gasoline C7-C12	ND	50
Freon 12	ND	1.0
tert-Butyl Alcohol (TBA)	ND	10
Chloromethane	ND	1.0
Isopropyl Ether (DIPE)	ND	0.5
Vinyl Chloride	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	1.0
Isopropylbenzene	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,2,3-Trichloropropane	ND	0.5

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

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:	BLANK	Diln Fac:	1.000
Lab ID:	QC555973	Batch#:	165889
Matrix:	Water	Analyzed:	08/13/10
Units:	ug/L		

Analyte	Result	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	%REC	Limits
Dibromofluoromethane	95	80-122
1,2-Dichloroethane-d4	94	71-140
Toluene-d8	102	80-120
Bromofluorobenzene	106	80-121

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

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: QC555975

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

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

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

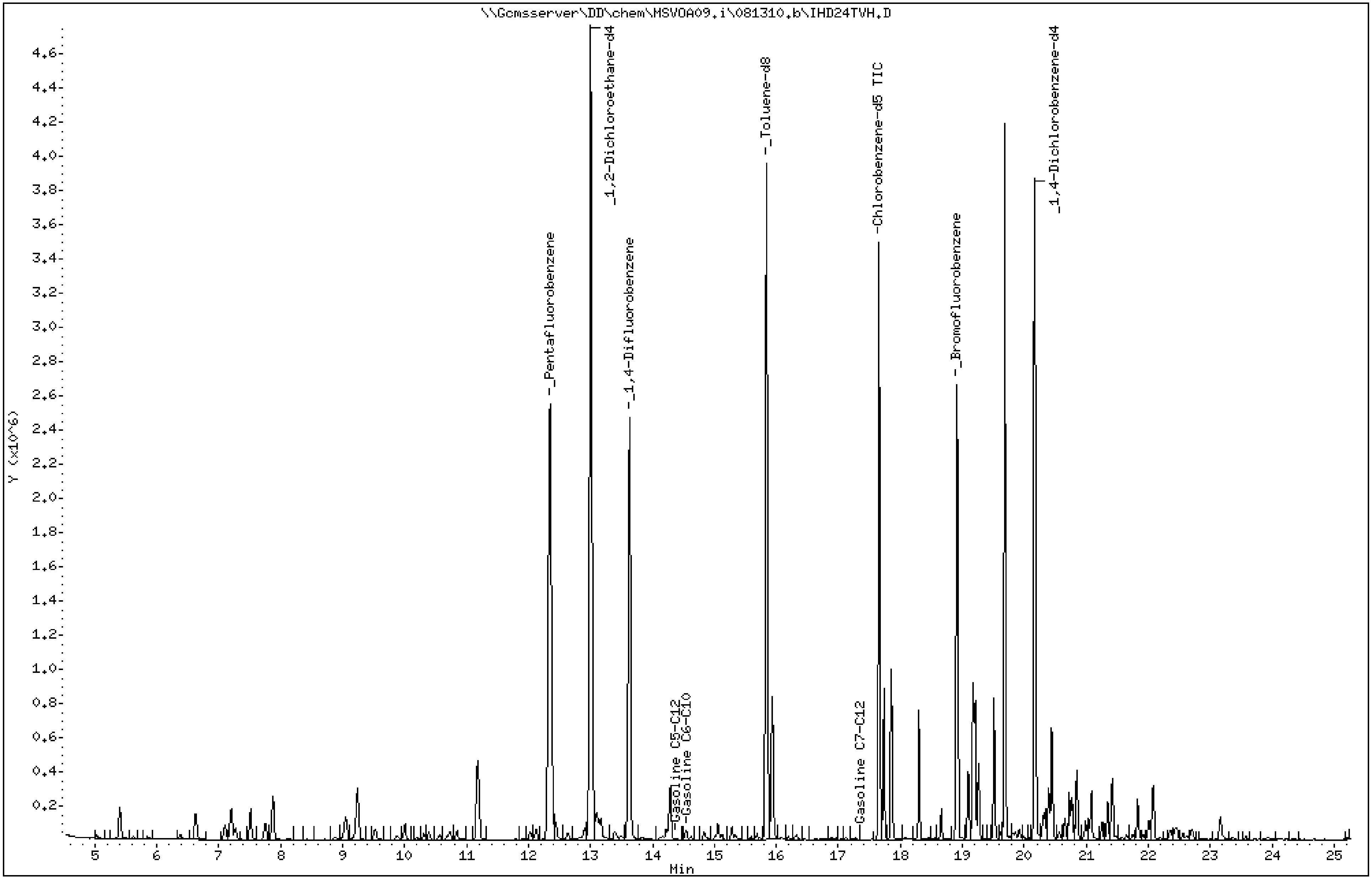
Instrument: MSVOA09.i

Sample Info: S,221764-001,

Operator: VOC

Column phase:

Column diameter: 2.00



Data File: \\Gcmsserver\DD\chem\MSVOA09.i\081310.b\IHD26TVH.D

Date : 13-AUG-2010 22:20

Client ID: DYNA P&T

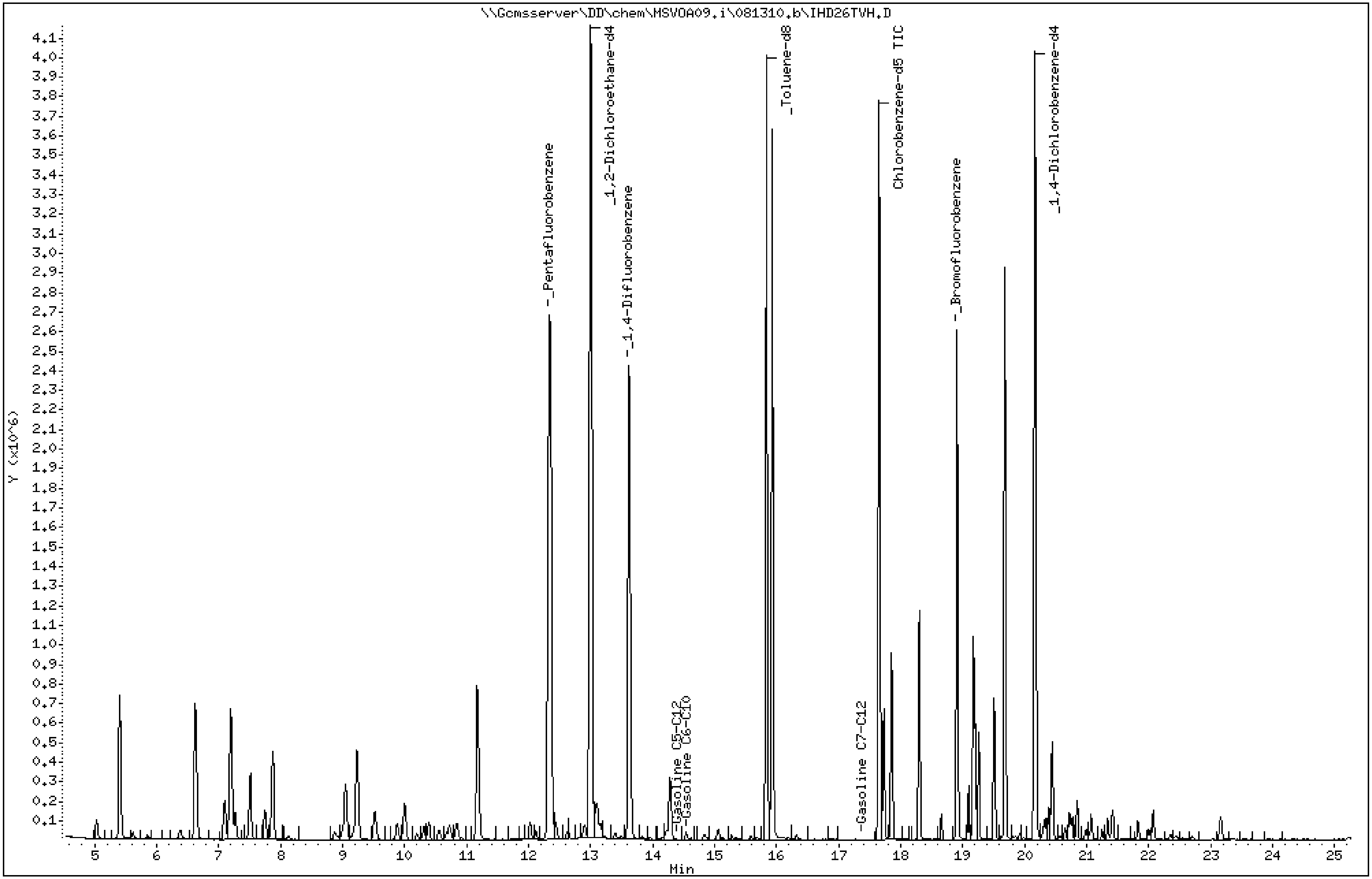
Sample Info: S,221764-002,

Instrument: MSVOA09.i

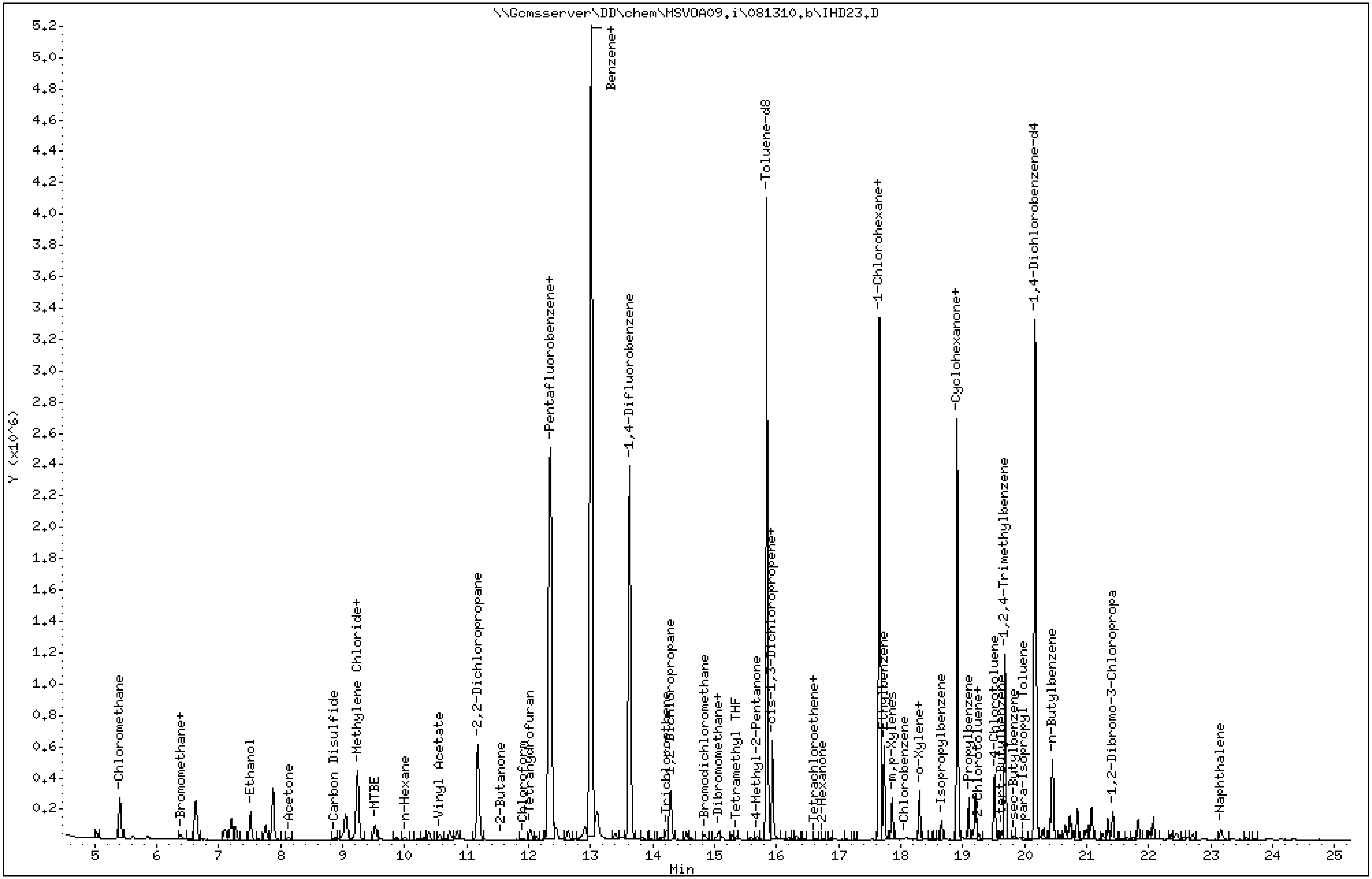
Operator: VOC

Column phase:

Column diameter: 2.00



Data File: \\Gcmsserver\DD\chem\MSVOA09.i\081310.b\IHD23.D
Date : 13-AUG-2010 20:36
Client ID: DYNA P&T
Instrument: MSVOA09.i
Sample Info: S,221764-003,
Purge Volume: 5.0
Operator: VOC
Column phase: RTx Volatiles
Column diameter: 0.25



Data File: \\Gcmsserver\DD\chem\MSVOA09.i\081310.b\IHD25TVH.D

Date : 13-AUG-2010 21:45

Client ID: DYNA P&T

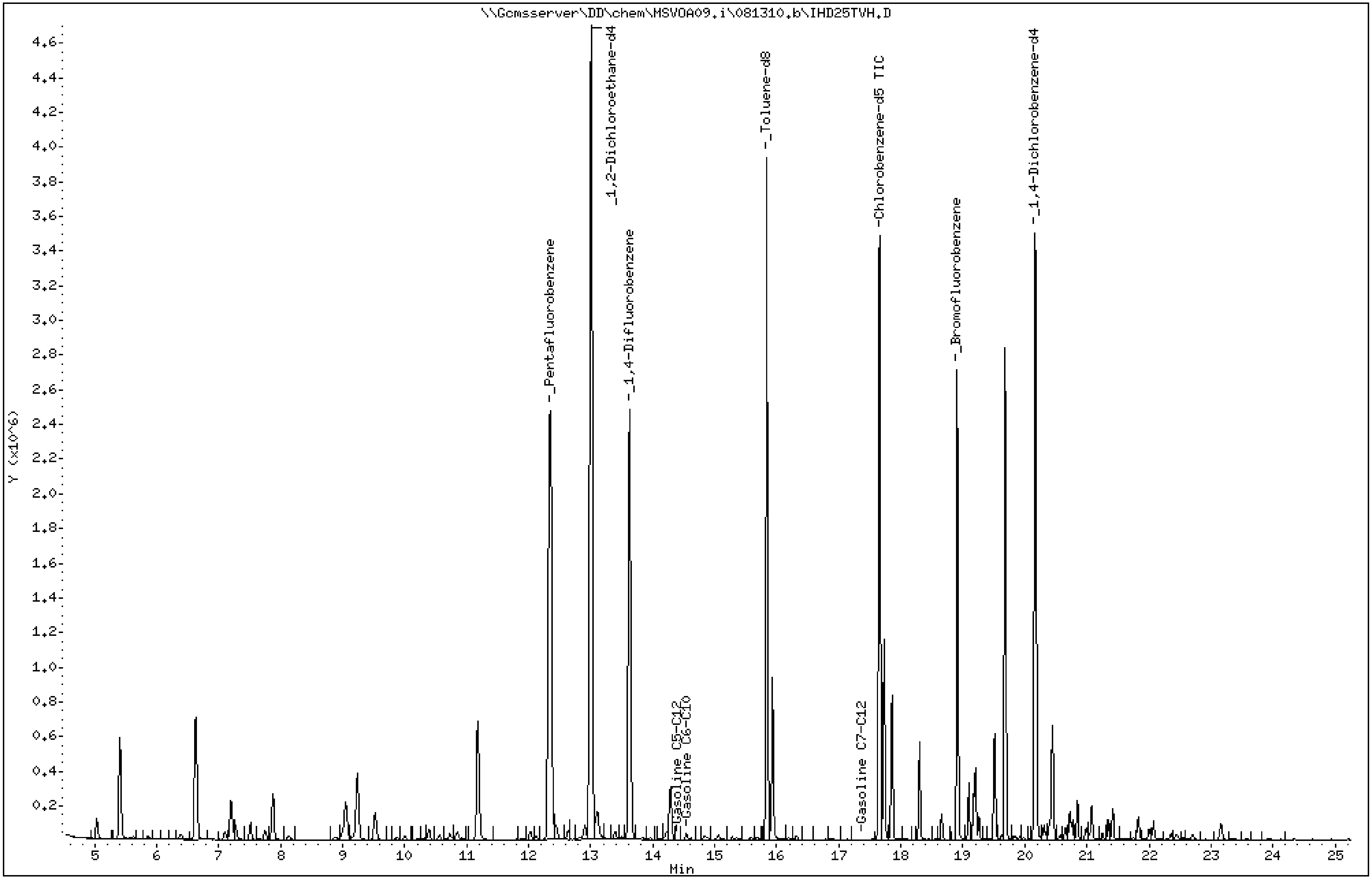
Instrument: MSVOA09.i

Sample Info: S,221764-004,

Operator: VOC

Column phase:

Column diameter: 2.00



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

Date : 13-AUG-2010 10:17

Client ID: DYNA P&T

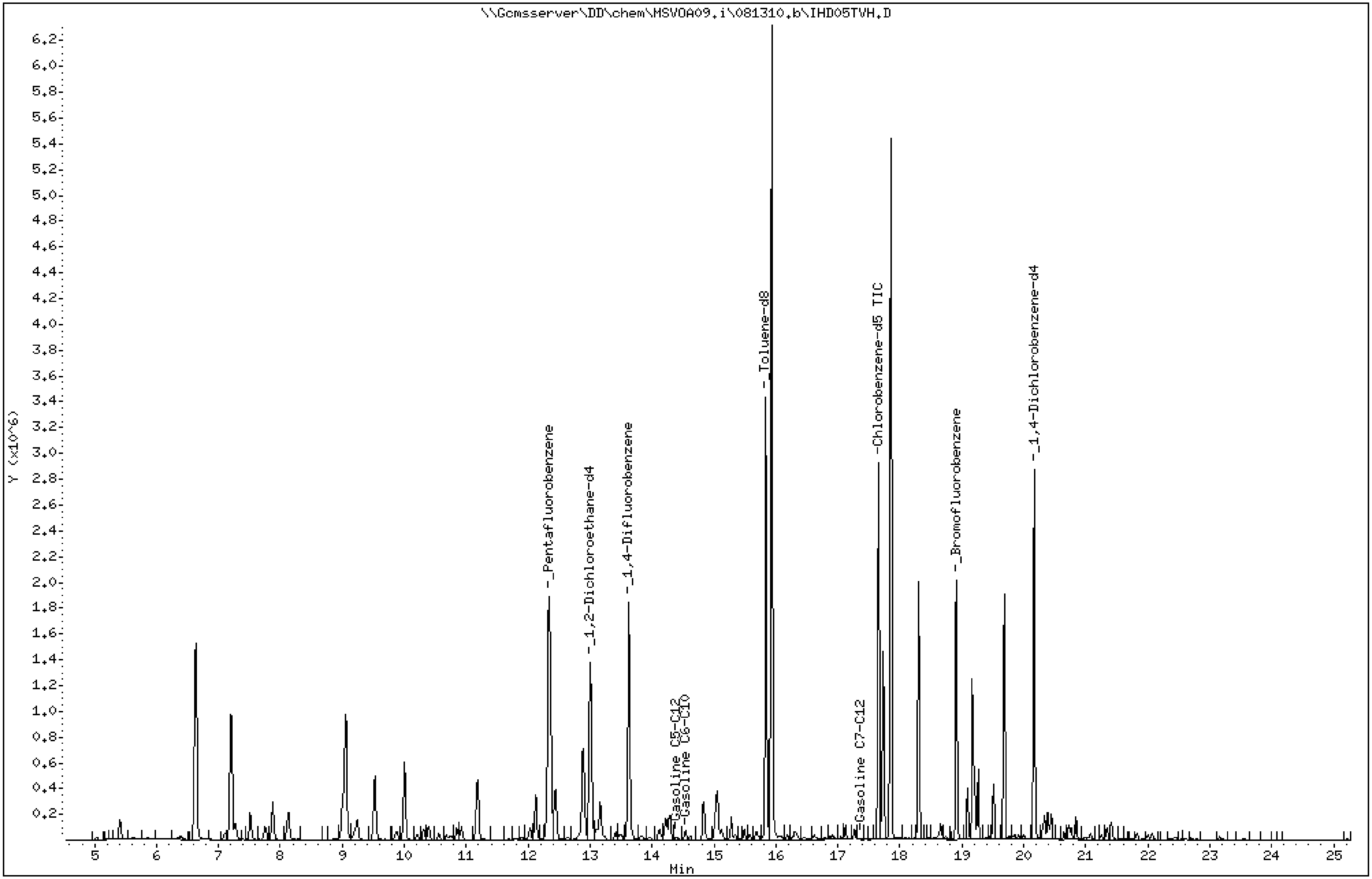
Instrument: MSVOA09.i

Sample Info: CCV/BS,QC555794,165889,S14540,

Operator: VOC

Column phase:

Column diameter: 2.00



APPENDIX E

WELL DEVELOPMENT FORMS

DAILY TOUR REPORT

WDC JOB #: 131014 LOCATION: Oakland Co. RIG #: 151 DATE: 6 19 10

FROM	TO	TOTAL	DESCRIPTION OF ACTIVITIES
5:30	6:00	.5	Pre trip
6:00	6:45	.75	travel to site
6:45	7:15	.5	meet with client, Safety meeting
7:15	8:30	1.25	unload rig set up mw-1 inside building
8:30	9:00	.5	Drill mw-1 0 to 10 ft
9:00	10:30	1.5	Stop drilling - to move [illegible] building - pick up [illegible]
10:30	12:30	2.0	Drill mw-1 10 ft to 18 ft, Sample at 10 ft, Set well at 18 ft
12:30	1:00	.5	Lunch
1:00			Set up drill mw-2 0 to 18 ft, Sample at 10 ft
	3:30	1.5	Set well at 18 ft
3:30	4:30	1.0	Set up mw-3 drill 0 to 18 ft, No Sample
4:30	5:00	.5	Clean up

MATERIALS

Record Materials Provided by WDC Exploration & Wells

Item	Unit	Quantity
Gravel Pack Sand	Sack/Foot	8 / 22
Transition Sand	Sack/Foot	/
Bentonite Pellets	Bucket/Feet	/
Cement	Sack/Foot	/
Bentonite Powder	Sack/Foot	/
Bentonite Chips	Sack/Foot	2 / 4
Volclay Grout	Sack/Foot	/
Sand Grout	Yard/Foot	/
Enhanced Grout	Sack/Foot	/
Centralizers	Each	
Threaded Cap	Each	3
Slip Cap	Each	
Expansion Plug	Each	2
Monument	Each	
Flush Cover	Each	
Asphalt	Sack	
Concrete	Sack	
Rapid Set Grout	Sack	
Lock	Each	
PVC Gloves	Pair	
Tyvek Suits	Each	
Sample Liners	Each	
Core Boxes	Each	
Drums	Each	
Visqueen	Roll	

EQUIPMENT SERVICE RECORD

Record At End Of Shift At The End Of Each Week

Description	Srvc Int.	Equip. #	Last Service	Hours/Miles
Carrier Engine	250 Hrs			
Deck Engine	250 Hrs			
Rig Tender	10000 Mi			
Support Truck	5000 Mis			
Forklift	250 Hrs			
Forklift	250 Hrs			
Compressor	250 Hrs			
Compressor	250 Hrs			
Shaker	250 Hrs			
Mud Pump	250 Hrs			
Mud Pump	250 Hrs			
Generator	250 Hrs			
Welder/Gen	100 Hrs			
Steamcleaner	100 Hrs			

SAFETY & MECHANICAL INSPECTION

Circle Item(s) in Need of Repair or Replacement

Windows Tires Gauges Lights Steps Cables Clamps Brakes
Rear Anchor Fall Device Safety Harness Safety Lopers Operating Labels
Equipment Guards Backup Alarms Safety Shutdowns
Relief Valves Hydraulic Hoses Water Hoses Mud Hoses Air Hoses
Breakout Tongs Pipe Wrenches Chain Tongs Drag Cutter Slips/Bowls
Emergency Energies Fire Extinguishers MSDS Book Safety Manual
Mud Pump Injection Pump Grout Pump 2" Transfer Pump Fuel Transfer Pump
Casing Hammer Sample Hammer Mini Dumpster Tooling Bit Subs

Equip. #	Action Needed

EXPLANATION OF STANDBY

RECORD OF INJURY/ACCIDENT/NEAR MISS

DAILY SAFETY TOPIC

Pat 03
Auger drilling

DAYS W/O LOST TIME IN 2009

DRILLING STATISTICS

Hole #	From	To	Total
MW-1	0	18	18
MW-2	0	18	18
MW-3	0	18	18

COMMENTS

Casing	Type	Schedule	Diameter	Feet	Misc.	Unit	Quan.
Blank	PVC MS SS HDPE	5 10 40 80	2	20	Per Diem	Plan Day	
Blank	PVC MS SS HDPE	5 10 40 80			Level C	Plan Day	
Screen	PVC MS SS HDPE	5 10 40 80	2	20			

CLIENT REP: [illegible]
CLIENT JOB #:
OPERATOR: [illegible]
RIG HAND: Steve H. RIG HAND: [illegible]

DAILY TOUR REPORT

WDC JOB #: 17104 LOCATION: Oakland Co RIG # 151 DATE: 6/10/10

FROM	TO	TOTAL	DESCRIPTION OF ACTIVITIES
7:00	7:15	.25	Safety meeting
7:15	8:00	.75	Set well mw 3 at 18'
8:00	11:15	3.25	Set up hand auger mw 7 - 3 Travs, Drill mw 4 at 18' [illegible]
11:15	12:45	1.5	Set up drill mw 5 0 to 18' no sample, set well at 18'
12:45	1:15	.5	Lunch
1:15	2:30	1.25	Set up drill mw 6 0 to 18' no sample set well at 18'
2:30			Set up mw 7 hand auger 2 Travs,
	4:00	1.5	Drill mw 7 0 to 18', no sample
4:00	5:00	1.0	grout wells mw-1 through mw-6

MATERIALS

Record Materials Provided by WDC Exploration & Wells

Item	Unit	Quantity
Silica Pack Sand	Sack/Foot	20 / 42
Transition Sand	Sack/Foot	/
Bentonite Pellets	Bucket/Feet	/
Cement	Sack/Foot	15 / 27
Bentonite Powder	Sack/Foot	/
Bentonite Chips	Sack/Foot	4 / 8
Holeplug Grout	Sack/Foot	/
Sand Grout	Yard/Foot	/
Enhanced Grout	Sack/Foot	/
Centralizers	Each	
Threaded Cap	Each	4
Slip Cap	Each	
Expansion Plug	Each	4
' Monument	Each	
' Flush Cover	Each	
Asphalt	Sack	
Concrete	Sack	
Hand Set Grout	Sack	
Lock	Each	
PVC Glove	Pair	
Tyvek Suits	Each	
Sample Liners	Each	
Core Boxes	Each	
Drums	Each	
Hydrogen	Roll	

EQUIPMENT SERVICE RECORD

Record At End Of Shift At The End Of Each Week

Description	Srvc Int.	Equip. #	Last Service	Hours/Miles
Carrier Engine	250 Hrs			
Deck Engine	250 Hrs			
Rig Tender	10000 Mls			
Support Truck	5000 Mls			
Forklift	250 Hrs			
Forklift	250 Hrs			
Compressor	250 Hrs			
Compressor	250 Hrs			
Shaker	250 Hrs			
Mud Pump	250 Hrs			
Mud Pump	250 Hrs			
Generator	250 Hrs			
Welder/Gen	100 Hrs			
Steam/Wash	100 Hrs			

SAFETY & MECHANICAL INSPECTION

Circle Item(s) in Need of Repair or Replacement

Windows Tires Gauges Lights Slings Cables Clamps Brakes

First Aid Kit Fall Ground Safety Harness Safety Labels Operating Labels

Equipment Guards Back Up Alarms Safety Shutdowns

Relief Valves Hydraulic Hoses Water Hoses Mud Hoses Air Hoses

Breakout Tongs Pipe Wrenches Chain Tongs Dog Collar Slips/Bowls

Emergency Triangles Fire Extinguishers MSDS Book Safety Manual

Mud Pump Injection Pump Grout Pump 2" Transfer Pump Foam Transfer Pump

Casing Hammer Sample Hammer Mini-Dumpster Tooling Bit Subs

Equip. #	Action Needed

EXPLANATION OF STANDBY

RECORD OF INJURY/ACCIDENT/NEAR MISS

DAILY SAFETY TOPIC

Use of Decorating Augers

DAYS W/O LOST TIME IN 2009

DRILLING STATISTICS

Hole #	From	To	Total
mw-4	0	18	18
mw-5	0	18	18
mw-6	0	18	18
mw-7	0	18	18

COMMENTS

Casing	Type	Schedule	Diameter	Feet	Misc.	Unit	Quan.
Blank	PVC MS SS HDPE	5 10 40 80			Per Diem	Man Day	
Blank	PVC MS SS HDPE	5 10 40 80			Level C	Man Day	
Screen	PVC MS SS HDPE	5 10 40 80					

CLIENT REP [illegible]

CLIENT JOB #

OPERATOR [illegible]

RIG HAND [illegible] RIG HAND [illegible]

DAILY TOUR REPORT

WDC JOB #: 17/014 LOCATION: Oakland RIG #: 15 DATE: 6/1/10

FROM	TO	TOTAL	DESCRIPTION OF ACTIVITIES
7:00	7:15	.25	Safety meeting
7:15	8:00	.75	Set well MW-7 at 18'
8:00	9:30	1.5	Set up MW-8 drill 0/0 18' No sample, set well at 18' w/ [illegible]
9:30	11:15	1.75	Set up MW-9 drill 0 to 18' No sample, set well at 18'
11:15	11:45	.5	Set up MW-10
11:45	12:15	.5	Lunch
12:15	2:00	1.75	Drill MW-10 0 to 18' set well at 18'
2:00			Grout wells, set well heads - 13
			Rig Hour End 2805

MATERIALS

Record Materials Provided by WDC Exploration & Wells

Item	Unit	Quantity
Gravel Pack Sand	Sack/Foot	20 / 34
Transition Sand	Sack/Foot	/
Bentonite Pellets	Bucket/Foot	/
Cement	Sack/Foot	10 / 16
Bentonite Powder	Sack/Foot	/
Bentonite Chips	Sack/Foot	4 / 8
Volclay Grout	Sack/Foot	/
Sand Grout	Yard/Foot	/
Enhanced Grout	Sack/Foot	/
Centralizers	Each	
Threaded Cap	Each	3 / 1
Slip Cap	Each	
Expansion Plug	Each	3 / 1
" Monument	Each	
8 " Flush Cover	Each	12
Asphalt	Sack	
Concrete	Sack	14
Rapid Set Grout	Sack	
Lock	Each	
PVC Gloves	Pair	
Tyvek Suits	Each	
Sample Liners	Each	
Core Boxes	Each	
Drums	Each	20
Visqueen	Roll	

EQUIPMENT SERVICE RECORD

Record At End Of Shift At The End Of Each Week

Description	Srvc Int.	Equip. #	Last Service	Hours/Miles
Carrier Engine	250 Hrs.			
Deck Engine	250 Hrs.			
Rig Tender	10000 Mls.			
Support Truck	5000 Mls.			
Forklift	250 Hrs.			
Forklift	250 Hrs.			
Compressor	250 Hrs.			
Compressor	250 Hrs.			
Mixer	250 Hrs.			
Mud Pump	250 Hrs.			
Mud Pump	250 Hrs.			
Generator	250 Hrs.			
Welder/Gen	100 Hrs.			
Steamcleaner	100 Hrs.			

SAFETY & MECHANICAL INSPECTION

Circle Item(s) in Need of Repair or Replacement

Windows Tires Gauges Lights Slings Cables Clamps Brakes
First Aid Kit Fall Device Safety Harness Safety Cables Operating Cables
Equipment Guards Back-Up Alarms Safety Shutdowns
Relief Valves Hydraulic Hoses Water Hoses Mud Hoses Air Hoses
Breakout Tongs Pipe Wrenches Chain Tongs Dog Collar Subs/Bowls
Emergency Triangles Fire Extinguishers MSDS Book Safety Manual
Mud Pump Injection Pump Grout Pump Tr. Transfer Pump Fuel Transfer Pump
Casing Hammer Sample Hammer Mini-Dumpster Tooling Bit Subs

Equip. #	Action Needed

EXPLANATION OF STANDBY

RECORD OF INJURY/ACCIDENT/NEAR MISS

DAILY SAFETY TOPIC

Weather
Cleaning equipment [illegible]

DAYS W/O LOST TIME IN 2009

DRILLING STATISTICS

Hole #	From	To	Total
MW-8	0	18	18
MW-9	0	18	18
MW-10	0	18	18

COMMENTS

1 - 12X12 Man Cover

Casing	Type	Schedule	Diameter	Feet	Misc.	Unit	Quan.
Blank	PVC MS SS HDPE	5 10 40 80			Per Diem	Pinit Day	
Blank	PVC MS SS HDPE	5 10 40 80			Lunch C	Pinit Day	
Screen	PVC MS SS HDPE	5 10 40 80					

CLIENT REP: [illegible]
CLIENT JOB #:
OPERATOR: [illegible]
RIG HAND: Steve H RIG HAND: [illegible]

DAILY TOUR REPORT

WDC JOB #: [illegible] LOCATION: [illegible] RIG #: 17 DATE: [illegible]

FROM	TO	TOTAL	DESCRIPTION OF ACTIVITIES
6:30	7:00		[illegible]
7:00	12:30		[illegible]
12:00	12:30		[illegible]
12:30	6:00		[illegible]
[illegible]			[illegible]

MATERIALS

Record Materials Provided by WDC Exploration & Wells

Item	Unit	Quantity
Gravel Pack Sand	Sack/Foot	[illegible]
Transition Sand	Sack/Foot	[illegible]
Bentonite Pellets	Bucket/Feet	/
Cement	Sack/Foot	/
Bentonite Powder	Sack/Foot	/
Bentonite Chips	Sack/Foot	/
[illegible] Grout	Sack/Foot	/
Sand Grout	Yard/Foot	/
Enhanced Grout	Sack/Foot	/
Centralizers	Each	
Threaded Cap	Each	
Slip Cap	Each	
Expansion Plug	Each	
* Monument	Each	
* Flush Cover	Each	
Asphalt	Sack	
Concrete	Sack	
[illegible] Set Grout	Sack	
Lock	Each	
PVC Glue	Pint	
Tyvek Suit	Each	
Sample Liners	Each	[illegible]
Core Boxes	Each	
Drums	Each	
Visqueen	Roll	

EQUIPMENT SERVICE RECORD

Record At End Of Shift At The End Of Each Week

Description	Srvc Int.	Equip. #	Last Service	Hours/Miles
Carrier Engine	250 Hrs.	171		[illegible]
Deck Engine	250 Hrs.			
Rig Tender	10000 Mi.			
Support Truck	5000 Mi.	[illegible]		[illegible]
Forklift	250 Hrs.			
Forklift	250 Hrs.			
Compressor	250 Hrs.			
Compressor	250 Hrs.			
Shaker	250 Hrs.			
Mud Pump	250 Hrs.			
Mud Pump	250 Hrs.			
Generator	250 Hrs.			
Welder/Gen	100 Hrs.			
Steamcleaner	100 Hrs.			

SAFETY & MECHANICAL INSPECTION

Circle Item(s) In Need of Repair or Replacement

Windows Tires Gauges Lights Wings Cables Clamps Brakes

First Aid Kit Fall Device Safety Harness Safety Ladder Operating Ladder

Equipment Guards Back-Up Alarms Safety Shutdowns

Relief Valves Hydraulic Hoses Water Hoses Mud Hoses Air Hoses

Breakout Tongs Pipe Wrenches Chain Tongs Dog Collar Stabilizers

Emergency Triangles Fire Extinguishers MSDS Book Safety Manual

Mud Pump Injection Pump Grout Pump Transfer Pump Fuel Transfer Pump

Casing Hammer Sample Hammer Mini Dumpster Towing Bit Subs

Equip. #	Action Needed

EXPLANATION OF STANDBY

RECORD OF INJURY/ACCIDENT/NEAR MISS

DAILY SAFETY TOPIC

DAYS W/O LOST TIME IN 2009

DRILLING STATISTICS

Hole #	From	To	Total

COMMENTS

Casing	Type	Schedule	Diameter	Feet	Misc.	Unit	Quan.
Blank	PVC MS SS HDPE	5 10 40 80			Per Diem	Per Day	
Blank	PVC MS SS HDPE	5 10 40 80			Lodging	Per Day	
Screen	PVC MS SS HDPE	5 10 40 80					

CLIENT REP: [illegible signature]

CLIENT JOB #:

OPERATOR: [illegible signature]

RIG HAND: [illegible] RIG HAND:

DAILY TOUR REPORT

WDC JOB #: 13C14 LOCATION: Oakland [illegible] RIG #: [illegible] DATE: [illegible] / 10 / 10

FROM	TO	TOTAL	DESCRIPTION OF ACTIVITIES
[illegible]	[illegible]	:30	[illegible] 13C14
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	1300	2:30	[illegible] 1 to 15 ft [illegible] 2 [illegible] well grout
1300	1330	:30	Lunch
1330	[illegible]	2:30	[illegible] well grout
[illegible]	[illegible]	:30	[illegible]
[illegible]	[illegible]	1:0	[illegible] 13C14

MATERIALS

Record Materials Provided by WDC Exploration & Wells

Item	Unit	Quantity
Gravel Pack Sand	Sack/Foot	/
Transition Sand	Sack/Foot	8 / 14
Bentonite Pellets	Bucket/Feet	/
Cement	Sack/Foot	6 / 14
Bentonite Powder	Sack/Foot	/
Bentonite Chips	Sack/Foot	2 / 2
Volclay Grout	Sack/Foot	/
Sand Grout	Yard/Foot	/
Enhanced Grout	Sack/Foot	/
Centralizers	Each	
Threaded Cap	Each	2
Slip Cap	Each	
Expansion Plug	Each	2
Monument	Each	
Flush Cover	Each	
Asphalt	Sack	
Concrete	Sack	
Rapid Set Grout	Sack	
Lock	Each	
PVC Gloves	Pair	
Tyvek Suits	Each	
Sample Liners	Each	4
Core Boxes	Each	
Drums	Each	3
Visqueen	Roll	

EQUIPMENT SERVICE RECORD

Record At End Of Shift At The End Of Each Week

Description	Srvc Int.	Equip. #	Last Service	Hours/Miles
Carrier Engine	250 Hrs			
Deck Engine	250 Hrs			
Rig Tender	10000 Mls	21		
Support Truck	5000 Mls	[illegible]		53606
Forklift	250 Hrs			
Forklift	250 Hrs			
Compressor	250 Hrs			
Compressor	250 Hrs			
Shaker	250 Hrs			
Mud Pump	250 Hrs			
Mud Pump	250 Hrs			
Generator	250 Hrs			
Welder/Gen.	100 Hrs			
Steamcleaner	100 Hrs			

SAFETY & MECHANICAL INSPECTION

Circle Items in Need of Repair or Replacement

Windows Tires Gauges Lights Slings Cables Clamps Brakes
First Aid Kit Fall Device Safety Harness Safety Labels Operating Labels
Equipment Guards Back-Up Alarms Safety Shutdowns
Relief Valves Hydraulic Hoses Water Hoses Mud Hoses Air Hoses
Breakout Tongs Pipe Wrenches Chain Tongs Dog Collar Slips/Bowls
Emergency Triangles Fire Extinguishers MSDS Book Safety Manual
Mud Pump Injection Pump Grout Pump 3" Transfer Pump Fuel Transfer Pump
Cutting Hammer Sample Hammer Mini-Dumpster Tooling Bit Subs

Equip. #	Action Needed

EXPLANATION OF STANDBY

RECORD OF INJURY/ACCIDENT/NEAR MISS

DAILY SAFETY TOPIC

DAYS W/O LOST TIME IN 2009

DRILLING STATISTICS

Hole #	From	To	Total
1	0	15	15
2	0	15	15

COMMENTS

Casing	Type	Schedule	Diameter	Feet	Misc.	Unit	Quan.
Blank	PVC MS SS HDPE	5 10 40 80			Per Diem	Per Day	
Blank	PVC MS SS HDPE	5 10 40 80			Level C	Per Day	
Screen	PVC MS SS HDPE	5 10 40 80					

CLIENT REP: [illegible]
CLIENT JOB #:
OPERATOR: [illegible]
RIG HAND: [illegible] RIG HAND

WDC FORM [illegible]

DAILY TOUR REPORT

WDC

WDC JOB #: [illegible] LOCATION: Oakland CA RIG #: [illegible] DATE: [illegible]

FROM	TO	TOTAL	DESCRIPTION OF ACTIVITIES
0600	0630	.50	safety
0630	0700	.30	Move to site
0700	0800	1.0	Air Excavating
0800	1230	4.30	Concrete Core 6 locations
1230	1300	.30	Lunch
1300	1500	2.0	Concrete Core 3 location
1500	1530	.30	Hand auger / continue [illegible]
1530	1700	1.0	Clean up site
1700	1730	.30	[illegible]

MATERIALS

Record Materials Provided by WDC Exploration & Wells

Item	Unit	Quantity
Gravel Pack Sand	Sack/Feet	/
Transition Sand	Sack/Feet	/
Bentonite Pellets	Bucket/Feet	/
Cement	Sack/Feet	/
Bentonite Powder	Sack/Feet	/
Bentonite Chips	Sack/Feet	/
Volclay Grout	Sack/Feet	/
Sand Grout	Yard/Feet	/
Enhanced Grout	Sack/Feet	/
Centralizers	Each	
Threaded Cap	Each	
Slip Cap	Each	
Expansion Plug	Each	
" Monument	Each	
" Flush Cover	Each	
Augers	Each	
Concrete	Sack	
Rapid Set Grout	Sack	
Lock	Each	
PVC Screen	Pair	
Tyvek Suits	Each	
Sample Liners	Each	
Core Boxes	Each	
Drums	Each	
Visqueen	Roll	

EQUIPMENT SERVICE RECORD

Record At End Of Shift At The End Of Each Week

Description	Srvc Int.	Equip. #	Last Service	Hours/Miles
Carrier Engine	250 Hrs			
Deck Engine	250 Hrs			
Rig Tender	10000 Mls			
Support Truck	5000 Mls	78/2		
Forklift	250 Hrs			
Forklift	250 Hrs			
Compressor	250 Hrs			
Compressor	250 Hrs			
Shaker	250 Hrs			
Mud Pump	250 Hrs			
Mud Pump	250 Hrs			
Generator	250 Hrs			
Welder/Gen.	100 Hrs			
Steam/Washer	100 Hrs			

SAFETY & MECHANICAL INSPECTION

Circle Item(s) in Need of Repair or Replacement

Windows Tires Gauges Lights Slings Cables Clamps Brakes

First Aid Kit Fall Device Safety Harness Safety Labels Operating Labels

Equipment Guards Back Up Alarms Safety Shutdowns

Relief Valves Hydraulic Hoses Water Hoses Mud Hoses Air Hoses

Breakout Tongs Pipe Wrenches Chain Tongs Dog Collar Slips/Bowls

Emergency Triangles Fire Extinguishers MSDS Book Safety Manual

Mud Pump Injection Pump Grout Pump 2" Transfer Pump Trash Transfer Pump

Casing Hammer Sample Hammer Mini-Dumpster Tooling Bit Subs

Equip. #	Action Needed

EXPLANATION OF STANDBY

RECORD OF INJURY/ACCIDENT/NEAR MISS

DAILY SAFETY TOPIC

[illegible]

DAYS W/O LOST TIME IN 2009

DRILLING STATISTICS

Hole #	From	To	Total
1	0	6	
2	0	6	
3	0	6	
4	0	6	
5	0	6	
6	0	6	

COMMENTS

[illegible]

Casing	Type	Schedule	Diameter	Feet	Misc.	Unit	Quan.
Riser	PVC MS SS HDPE	5 10 40 80			Per Diem	Pers Day	
Blank	PVC MS SS HDPE	5 10 40 80			Level C	Pers Day	
Screen	PVC MS SS HDPE	5 10 40 80					

CLIENT REF [illegible]

CLIENT JOB #

OPERATOR [illegible]

RIG HAND RIG HAND

WDC FORM [illegible]

DAILY TOUR REPORT

WDC JOB #: [illegible] LOCATION: [illegible] RIG #: [illegible] DATE: [illegible]

FROM	TO	TOTAL	DESCRIPTION OF ACTIVITIES
0600	0630	.30	Pretrip Load up
0630	0700	.30	Move to site
0700	0800	1.0	Rig up & walk site
0800	1200	4.0	Concrete core [illegible]
1200	1230	.30	Lunch
1230	1600	3.30	Concrete core [illegible]
1600	1630	.30	Move to shop
1630	1700	.30	Post trip

MATERIALS

Record Materials Provided by WDC Exploration & Wells

Item	Unit	Quantity
Silica Flint Sand	Sack/Foot	/
Transition Sand	Sack/Foot	/
Bentonite Pellets	Bucket/Foot	/
Cement	Sack/Foot	/
Bentonite Powder	Sack/Foot	/
Bentonite Chips	Sack/Foot	/
Volclay Grout	Sack/Foot	/
Sand Grout	Yard/Foot	/
Enhanced Grout	Sack/Foot	/
Centralizers	Each	
Threaded Cap	Each	
Slip Cap	Each	
Expansion Plug	Each	
Monument	Each	
Flush Cover	Each	
Hammer	Each	
Concrete	Sack	
Rapid Set Grout	Sack	
Lock	Each	
PVC Gloves	Pair	
Tyvek Suits	Each	
Sample Liners	Each	
Core Boxes	Each	
Drums	Each	1
Whipper	Pair	

EQUIPMENT SERVICE RECORD

Record At End Of Shift At The End Of Each Week

Description	Srvc Int.	Equip. #	Last Service	Hours/Miles
Carrier Engine	250 Hrs			
Deck Engine	250 Hrs			
Rig Truck	10000 Mls	[illegible]		[illegible]
Support Truck	5000 Mls			
Forklift	250 Hrs			
Forklift	250 Hrs			
Compressor	250 Hrs			
Compressor	250 Hrs			
Shaker	250 Hrs			
Mud Pump	250 Hrs			
Mud Pump	250 Hrs			
Generator	250 Hrs			
Welder/Gen	100 Hrs			
Steamcleaner	100 Hrs			

SAFETY & MECHANICAL INSPECTION

Circle Items in Need of Repair or Replacement

Windows Tires Gauges Lights Slings Cables Clamps Brakes
Hoist Assist Fall Device Safety Harness Safety Labels Operating Labels
Equipment Guards Back-up Alarms Safety Shutdowns
Relief Valves Hydraulic Hoses Water Hoses Mud Hoses Air Hoses
Breakout Tongs Pipe Wrenches Chain Tongs Hole Lines Subs/Bowls
Emergency Triangles Fire Extinguishers MSDS Book Safety Manual
Mud Pump Injection Pump Grout Pump 2" Transfer Pump Fuel Transfer Pump
Casing Hammer Sample Hammer Mini-Dumpster Tooling Bit Subs

Equip. #	Action Needed

EXPLANATION OF STANDBY

RECORD OF INJURY/ACCIDENT/NEAR MISS

DAILY SAFETY TOPIC

[illegible]

DAYS W/O LOST TIME IN 2009

DRILLING STATISTICS

Hole #	From	To	Total
1		6	
2		6	
3		6	
4		6	
5		15	
6		6	

COMMENTS

[illegible]

Casing	Type	Schedule	Diameter	Feet	Misc.	Unit	Quan.
Blank	PVC MS SS HDPE	5 10 40 80			Per Diem	Per Day	
Blank	PVC MS SS HDPE	5 10 40 80			Lave C	Per Day	
Screen	PVC MS SS HDPE	5 10 40 80					

CLIENT REP: [illegible]
CLIENT JOB #:
OPERATOR: [illegible]
RIG HAND: RIG HAND:

WDC

DAILY TOUR REPORT

WDC JOB #: [illegible] LOCATION: [illegible] RIG #: [illegible] DATE: [illegible]

FROM	TO	TOTAL	DESCRIPTION OF ACTIVITIES
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible] #2 [illegible]
			[illegible]
	[illegible]	[illegible]	[illegible] all [illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible] #6

MATERIALS

Record Materials Provided by WDC Exploration & Wells

Item	Unit	Quantity
Gravel Pack Sand	Sack/Foot	/
Transition Sand	Sack/Foot	/
Bentonite Pellets	Bucket/Foot	/
Cement	Sack/Foot	/
Bentonite Powder	Sack/Foot	/
Bentonite Chips	Sack/Foot	/
Volclay Grout	Sack/Foot	/
Sand Drop	Yard/Foot	/
Enhanced Grout	Sack/Foot	/
Centralizers	Each	
Threaded Cap	Each	
Slip Cap	Each	
Expansion Plug	Each	
Monument	Each	
Flush Cover	Each	
Asphalt	Sack	
Concrete	Sack	
Rapid Set Grout	Sack	
Lock	Each	
PVC Gloves	Pair	
Tyvek Suits	Each	
Sample Liners	Each	
Core Boxes	Each	
Drums	Each	
Visqueen	Roll	

EQUIPMENT SERVICE RECORD

Record At End Of Shift At The First Of Each Week

Description	Srvc Int.	Equip. #	Last Service	Hours/Miles
Carrier Engine	250 Hrs.			
Deck Engine	250 Hrs.			
Rig Tender	10000 Mls.			
Support Truck	5000 Mls.			
Forklift	250 Hrs.			
Forklift	250 Hrs.			
Compressor	250 Hrs.			
Compressor	250 Hrs.			
Shaker	250 Hrs.			
Mud Pump	250 Hrs.			
Mud Pump	250 Hrs.			
Generator	250 Hrs.			
Welder/Gen	100 Hrs.			
Steamcleaner	100 Hrs.			

SAFETY & MECHANICAL INSPECTION

Circle Item(s) in Need of Repair or Replacement

Windows Tires Gauges Lights Slings Cables Clamps Brakes

First Aid Kit Fall Device Safety Harness Safety Labels Operating Labels

Equipment Guards Back Up Alarms Safety Shutdowns

Relief Valves Hydraulic Hoses Water Hoses Mud Hoses Air Hoses

Breakout Tongs Pipe Wrenches Chain Tongs Csg Clamp [illegible]

Emergency Triangles Fire Extinguishers MSDS Book Safety Manual

Mud Pump Injection Pump Grout Pump [illegible] Transfer Pump Fuel Transfer Pump

Casing Hammer Sample Hammer Mini-Dumpster Tooling Bit Subs

Equip. #	Action Needed

EXPLANATION OF STANDBY

RECORD OF INJURY/ACCIDENT/NEAR MISS

DAILY SAFETY TOPIC

DAYS W/O LOST TIME IN 2009

DRILLING STATISTICS

Hole #	From	To	Total

COMMENTS

Casing	Type	Schedule	Diameter	Feet	Misc.	Unit	Quan.
Blank	PVC MS SS HDPE	5 10 40 80			Per Diem	Man Day	
Blank	PVC MS SS HDPE	5 10 40 80			Level C	Man Day	
Screen	PVC MS SS HDPE	5 10 40 80					

CLIENT REP: [illegible]

CLIENT JOB #:

OPERATOR: [illegible]

RIG HAND: RIG HAND:

DAILY TOUR REPORT

WDC JOB #: [illegible] LOCATION: [illegible] RIG #: [illegible] DATE: [illegible]

FROM	TO	TOTAL	DESCRIPTION OF ACTIVITIES
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

MATERIALS

Record Materials Provided by WDC Exploration & Wells

Item	Unit	Quantity
Filter Pack Sand	Sack/Foot	/
Transition Sand	Sack/Foot	/
Bentonite Pellets	Bucket/Feet	/
Cement	Sack/Foot	/
Bentonite Powder	Sack/Foot	/
Bentonite Chips	Sack/Foot	/
Volclay Grout	Sack/Foot	/
Sand Grout	Yard/Foot	/
Enhanced Grout	Sack/Foot	/
Centralizers	Each	
Threaded Cap	Each	
Slip Cap	Each	
Expansion Plug	Each	
" Monument	Each	
" Flush Cover	Each	
Asphalt	Sack	
Concrete	Sack	
Rapid Set Grout	Sack	
Lock	Each	
PVC Gloves	Pair	
Tyvek Suits	Each	
Sample Liners	Each	
Core Boxes	Each	
Drums	Each	
Visqueen	Roll	

EQUIPMENT SERVICE RECORD

Record At End Of Shift Or The End Of Each Week

Description	Srvc Int.	Equip. #	Last Service	Hours/Miles
Carrier Engine	250 Hrs			
Deck Engine	250 Hrs			
Rig Tender	10000 Mls			
Support Truck	5000 Mls			
Forklift	250 Hrs			
Forklift	250 Hrs			
Compressor	250 Hrs			
Compressor	250 Hrs			
Shaker	250 Hrs			
Mud Pump	250 Hrs			
Mud Pump	250 Hrs			
Generator	250 Hrs			
Welder/Gen.	100 Hrs			
Steamcleaner	100 Hrs			

SAFETY & MECHANICAL INSPECTION

Circle Items in Need of Repair or Replacement

Windows Tires Gauges Lights Slings Cables Clamps Brakes

First Aid Kit Fall Device Safety Harness Safety Ladder Operating Labels

Equipment Guards Back-Up Alarms Safety Shutdowns

Hand Winches Hydraulic Hoses Water Hoses Mud Hoses Air Hoses

Breakout Tongs Pipe Wrenches Chain Tongs Dog Collar Slips/Bowls

Emergency Triangles Fire Extinguishers MSDS Book Safety Manual

Mud Pump Injection Pump Grout Pump 2" Transfer Pump Fuel Transfer Pump

Casing Hammer Sample Hammer Mini-Dumpster Tooling Bit Subs

Equip. #	Action Needed

EXPLANATION OF STANDBY

RECORD OF INJURY/ACCIDENT/NEAR MISS

DAILY SAFETY TOPIC

DAYS W/O LOST TIME IN 2009

DRILLING STATISTICS

Hole #	From	To	Total

COMMENTS

Casing	Type	Schedule	Diameter	Feet	Misc.	Unit	Quan.
Blank	PVC MS SS HDPE	5 10 40 80			Per Diem	Man Day	
Blank	PVC MS SS HDPE	5 10 40 80			Level C	Man Day	
Screen	PVC MS SS HDPE	5 10 40 80					

CLIENT REP: [illegible]

CLIENT JOB #:

OPERATOR: [illegible]

RIG HAND: [illegible] RIG HAND:

DAILY TOUR REPORT

WDC JOB #: [illegible] LOCATION: [illegible] RIG #: [illegible] DATE: [illegible]

FROM	TO	TOTAL	DESCRIPTION OF ACTIVITIES
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]			
			[illegible] total

MATERIALS

Record Materials Provided by WDC Exploration & Wells

Item	Unit	Quantity
Gravel Pack Sand	Sack/Foot	/
Transition Sand	Sack/Foot	/
Bentonite Pellets	Bucket/Foot	/
Cement	Sack/Foot	/
Bentonite Powder	Sack/Foot	/
Bentonite Chips	Sack/Foot	/
Volclay Grout	Sack/Foot	/
Sand Grout	Yard/Foot	/
Enhanced Grout	Sack/Foot	/
Centralizers	Each	
Threaded Cap	Each	
Slip Cap	Each	
Expansion Plug	Each	
* Monument	Each	
* Flush Cover	Each	
Asphalt	Sack	
Concrete	Sack	
Poured Set Grout	Sack	
Lock	Each	
PVC Glues	Pair	
Tyvek Suits	Each	
Sample Liners	Each	
Core Boxes	Each	
Diflags	Each	[illegible]
Visqueen	Roll	

EQUIPMENT SERVICE RECORD

Record At End Of Shift At The End Of Each Week

Description	Srvc Int.	Equip. #	Last Service	Hours/Miles
Carrier Engine	250 Hrs			
Deck Engine	250 Hrs			
Rig Trailer	10000 Mls			
Support Truck	5000 Mls			
Forklift	250 Hrs			
Forklift	250 Hrs			
Compressor	250 Hrs			
Compressor	250 Hrs			
Shaker	250 Hrs			
Mud Pump	250 Hrs			
Mud Pump	250 Hrs			
Generator	250 Hrs			
Welder/Gen	100 Hrs			
Steamcleaner	100 Hrs			

SAFETY & MECHANICAL INSPECTION

Circle Item(s) in Need of Repair or Replacement

Windows Tires Gauges Lights Slings Cables Clamps Brakes
First Aid Kit Fall Device Safety Harness Safety Labels Operating Labels
Equipment Guards Back Up Alarms Safety Shutdowns
Relief Valves Hydraulic Hoses Water Hoses Mud Hoses Air Hoses
Breakout Tongs Pipe Wrenches Chain Tongs Dog Collar Slips/Bowls
Emergency Triangles Fire Extinguishers MSDS Book Safety Manual
Mud Pump Injection Pump Grout Pump 2" Transfer Pump Fuel Transfer Pump
Casing Hammer Sample Hammer Mini-Dumpster Tooling Bit Subs

Equip. #	Action Needed

EXPLANATION OF STANDBY

RECORD OF INJURY/ACCIDENT/NEAR MISS

DAILY SAFETY TOPIC

DAYS W/O LOST TIME IN 2009

DRILLING STATISTICS

Hole #	From	To	Total

COMMENTS

Casing	Type	Schedule	Diameter	Feet	Misc.	Unit	Quan.	
Blank	PVC MS SS HDPE	5 10 40 80			Per Diem	Man Day		CLIENT REP: [illegible]
Blank	PVC MS SS HDPE	5 10 40 80			Level C	Man Day		CLIENT JOB #
Screen	PVC MS SS HDPE	5 10 40 80						OPERATOR: [illegible]
								RIG HAND: [illegible] RIG HAND:

WDC EXPLORATION WELLS
WELL DEVELOPMENT DATA SHEET

WELL OR LOCATION E-1

PROJECT ______ EVENT ______ SAMPLER ______ DATE 6-14-10

Well type ______ (MW, EW, PZ, etc.)

Diameter ______

______ gal/ft. casing

Intake depth ______

SWL 9.40 (if above screen)

=TOP

SWL ______ (if in screen)

=BOP

Measured TD 18.06

=TD (as built)

ACTION	TIME	PUMP RATE (gpm)	DTW
Start Pump / Begin			
Stop			
Sampled			
Final IWL			

PURGE CALCULATION

.165 gal/ft. * 8.6 ~~29~~ ft. = 1.43 gals. X 3 ______ gals.
SWL to TD — one volume — purge volume - 3 casings

2" = 0.165 gal/ft 4" = 0.65 gal/ft 6" = 1.47 gal/ft

Equipment Used / Sampling Method / Description of Event:
213-223 Surge

Actual gallons purged ______

Actual volumes purged ______

Well Yield ⊕ ______

Gallons Purged *	Temp °C	EC (us / cm)	pH	Turbidity (NTU)	Other	
1. 1	24.5	1637	7.12	+	Bail	2:57
2. 5.5	20.8	1408	7.09	+		
3. 7	20.2	1311	7.06	+		
4. 8.5	19.3	1160	7.01	+		
5. 10	19.1	1227	7.05	+		
6. 11.5	19.0	1149	7.02	+		
7. 13	19.0	1106	7.02	862		2:51
8. 14.5	18.9	1136	7.02	546		
9. 16	18.9	1073	7.01	904		
10. 17.5	18.9	1057	7.0	842		
11. 19	18.8	1059	7.0	809		
12. 20.5	18.8	1065	7.02	618		
13. 22	18.9	1025	7.0	419		
14. 23.5	18.8	1039	7.0	455		
15. 25	18.9	1035	7.01	373		3:05

*Take measurement at approximately each casing volume purged. ⊕ HY-Minimal W.L. drop MY - WL drop - able to purge 3 volumes during one sitting by reducing pump rate or cycling pump LY - Able to purge 3 volumes by returning later or next day VLY - Minimal recharge - unable to purge 3 volumes

WDC EXPLORATION WELLS
WELL DEVELOPMENT DATASHEET

WELL OR LOCATION E-2

PROJECT ______ EVENT ______ SAMPLER ______ DATE 6-13-10

Well type ______
(MW, EW, PZ, etc.)

Diameter ______

______ gal/ft. casing

→ d ←

Intake depth ______

SWL 9.60
(if above screen)

=TOP

SWL ~~[illegible]~~
(if in screen)

=BOP

Measured TD 18.30

=TD
(as built)

ACTION	TIME	PUMP RATE (gpm)	DTW
Start Pump / Begin			
Stop			
Sampled			
Final IWL			

PURGE CALCULATION

______ gal/ft. * 29 ft. = ______ gals. X 3 ______ gals.
SWL to TD — one volume — purge volume - 3 casings

2" = 0.165 gal/ft. 4" = 0.65 gal/ft 6" = 1.47 gal/ft

Equipment Used / Sampling Method / Description of Event:

Actual gallons purged ______

Actual volumes purged ______

Well Yield ⊕ ______

Gallons Purged *	Temp °C	EC (us / cm)	pH	Turbidity (NTU)	Other	
1. 4	18.3	1797	6.96			
2. 6	18.1	1731	7.03			
3. 8	18.2	1785	7.06			
4. 10	18.2	1471	7.02	754		
5. 12	18.4	1462	6.99	376		
6. 14	18.3	1389	6.98	374		
7. 16	18.5	1320	6.99	42.69		
8.						
9.						
10.						
11.						
12.						
13.						
14.						
15.						

*Take measurement at approximately each casing volume purged. ⊕ HY-Minimal W.L. drop MY - WL drop - able to purge 3 volumes during one sitting by reducing pump rate or cycling pump LY - Able to purge 3 volumes by returning later or next day. VLY - Minimal recharge - unable to purge 3 volumes.

WDC EXPLORATION WELLS
WELL DEVELOPMENT DATASHEET

WELL OR LOCATION E-3

PROJECT ______ EVENT ______ SAMPLER ______ DATE ______

Well type ______
(MW, EW, PZ, etc.)

Diameter 2"

0.165 gal/ft casing

SWL 9.65

SWL

Measured TD

ACTION	TIME	PUMP RATE (gpm)	DTW
Start Pump / Begin			
Stop			
Sampled			
Final WL			

PURGE CALCULATION

0.165 gal/ft × [illegible] ft = 6.38 gals × 3 [illegible] gals

Equipment Used / Sampling Method / Description of Event

Actual gallons purged ______

Actual volumes purged ______

Well Yield

	Gallons Purged	Temp °C	EC (µS/cm)	pH	Turbidity (NTU)	Other
1	7	18.6	1186	7.38	+	
2	9	18.2	11[illegible]8	7.16	+	
3	11	18.4	1152	7.25	+	
4	13	18.3	1164	7.20	6.78	
5	15	18.[illegible]	1166	7.50	587	
6	17	18.4	1163	7.28	554	
7	20	18.[illegible]	1165	7.25	225	
8	22	18.1	1167	7.27	153	
9						
10						
11						
12						
13						
14						
15						

WDC EXPLORATION WELLS
WELL DEVELOPMENT DATASHEET

WELL OR LOCATION E-8 4

PROJECT	EVENT	SAMPLER MK	DATE 6-16-10

Well type EW
(MW, EW, PZ, etc.)

Diameter 2"

0.165 gal/ft. casing

ACTION	TIME	PUMP RATE (gpm)	DTW
Start Pump / Begin			
Stop			
Sampled			
Final IWL			

d

Intake depth

SWL 9.51
(if above screen)

TOP

SWL
(if in screen)

BOP

Measured TD 14.22

TD
(as built)

PURGE CALCULATION

0.165 gal/ft. × 8.71 ft = 1.44 gals. X 3 4.31 gals

SWL to TD — one volume — purge volume (3 casings)

0.165 gal/ft — 4" = 0.65 gal/ft — 6" = 1.47 gal/ft

Equipment Used / Sampling Method / Description of Event:
155-205 Surge

Actual gallons purged 19

Actual volumes purged 13.19

Well Yield ⊕

	Gallons Purged *	Temp °C	EC (us / cm)	pH	Turbidity (NTU)	Other	
1.	5	14.4	1182	7.27			1016
2.	7	14	1150	7.29			
3.	9	17.9	1026	7.25			
4.	11	17.9	986	7.18	≈700		
5.	13	18.0	965	7.16	≈500		
6.	15	18.1	956	7.13	≈200		
7.	17	18.0	950	7.12	≈100		
8.	19	18.0	945	7.12	<100		1027
9.							
10.							
11.							
12.							
13.							
14.							
15.							

*Take measurement at approximately each casing volume purged ⊕ HY-Minimal WL drop; MY - WL drop - able to purge 3 volumes during one sitting by reducing pump rate or cycling pump; LY - Able to purge 3 volumes by returning later or next day; VLY - Minimal recharge - unable to purge 3 volumes

WDC EXPLORATION WELLS
WELL DEVELOPMENT DATASHEET

WELL OR LOCATION E-5

PROJECT ______ EVENT ______ SAMPLER ______ DATE 6-15-10

Well type
(MW EW PZ etc.)

Diameter ______

______ gal/ft casing

d

SWL 9.60

TOP

BOP

Measured TD 18.31

ACTION	TIME	PUMP RATE (gpm)	DTW
Start Pump / Begin			
Stop			
Sampled			
Final IWL			

PURGE CALCULATION

gal/ft. * ______ 29 ft = ______ gals × 3 ______ gals

2" = 0.16 gal/ft 4" = 0.65 gal/ft 6" = 1.47 gal/ft

Equipment Used / Sampling Method / Description of Event

Actual gallons purged ______

Actual volumes purged ______

Well Yield ⊕ ______

	Gallons Purged *	Temp °C	EC (us / cm)	pH	Turbidity (NTU)	Other	
1	5.5	18.78	1687	7.08			
2	7	18.73	1631	7.10			
3	9	18.47	1431	7.04			
4	11	18.49	1352	7.03			
5	13	18.67	1391	7.05	124		
6	15	18.1	1330	7.07	675		
7	17	18.39	1262	6.93	670		
8	20	18.72	1243	7.00	535		
9	22	18.79	1229	7.01	324		
10	24	18.38	1242	6.99	299		
11	26	18.28	1243	6.98	195		
12							
13							
14							
15							

* Take measurement at approximately each casing volume purged

⊕ Well Yield: ... NP: Not able to purge 3 volumes during one sitting by reducing pump rate or cycling pump. ... Able to purge 3 volumes by returning later or next day. ... Unable to purge 3 volumes.

WDC EXPLORATION WELLS
WELL DEVELOPMENT DATASHEET

WDC

WELL OR LOCATION ti-6

PROJECT ______ EVENT ______ SAMPLER ______ DATE 6-15-10

Well type ______
(MW, EW, PZ, etc.)

Diameter ______

______ gal/ft. casing

→ d ←

Intake depth ______

SWL 9.50
(if above screen)

=TOP

SWL ______
(if in screen)

=BOP

Measured TD 18.17

=TD
(as built)

ACTION	TIME	PUMP RATE (gpm)	DTW
Start Pump / Begin			
Stop			
Sampled			
Final IWL			

PURGE CALCULATION

______ gal/ft. * 29 ft. (SWL to TD) = 1.43 gals. (one volume) X 3 14 gals. (purge volume - 3 casings)

2" = 0.165 gal/ft 4" = 0.65 gal/ft 6" = 1.47 gal/ft

Equipment Used / Sampling Method / Description of Event:

933-993

Actual gallons purged ______

Actual volumes purged ______

Well Yield ⊕ ______

Gallons Purged *	Temp °C	EC (us / cm)	pH	Turbidity (NTU)	Other	
1. 3.5	18.6	1438	7.24		Bailer	
2. 5	18.2	1432	7.21			
3. 7	18.1	1133	7.03			
4. 9	18.3	1117	7.17			
5. 11	18.4	1099	7.08	270		
6. 13	18.2	1087	7.12	92		
7. 15	18.1	1081	7.10	76		
8.						
9.						
10.						
11.						
12.						
13.						
14.						
15.						

*Take measurement at approximately each casing volume purged

⊕ HY-Minimal W.L. drop MY - WL drop - able to purge 3 volumes during one sitting by reducing pump rate or cycling pump LY - Able to purge 3 volumes by returning later or next day VLY - Minimal recharge - unable to purge 3 volumes.

WDC EXPLORATION WELLS
WELL DEVELOPMENT DATASHEET

WELL OR LOCATION E-7

PROJECT ____ EVENT ____ SAMPLER MK DATE 6-16

Well type EW
(MW, EW, PZ, etc.)

Diameter 2

0.165 gal/ft. casing

Intake depth

SWL 9.65
(if above screen)

=TOP

SWL
(if in screen)

=BOP

Measured TD 18.19

=TD (as built)

ACTION	TIME	PUMP RATE (gpm)	DTW
Start Pump / Begin			
Stop			
Sampled			
Final IWL			

PURGE CALCULATION

0.165 gal/ft × 8.54 ft = 1.41 gals. X 3 = 4.23 gals.
(SWL to TD) (one volume) (purge volume - 3 casings)

2" = 0.165 gal/ft 4" = 0.65 gal/ft 6" = 1.47 gal/ft

Equipment Used / Sampling Method / Description of Event:

Actual gallons purged 21

Actual volumes purged 14.89

Well Yield ⊕ ____

Gallons Purged *	Temp °C	EC (us / cm)	pH	Turbidity (NTU)	Other	
1. 3	17.8	2070	7.23	+		
2. 5	17.8	2074	7.36	+		
3. 7	17.9	2018	7.27			
4. 9	17.9	1456	7.12			
5. 11	18.0	1347	7.09			
6. 13	18.0	1616	7.19			
7. 15	18.1	1364	7.15	clearing	est 800	
8. 17	18.3	1180	7.10	≈400		
9. 19	18.3	1165	7.10	"		
10. 21	18.3	1130	7.07	<100		
11						
12						
13						
14						
15						

*Take measurement at approximately each casing volume purged ⊕ HY-Minimal W.L. drop MY- WL drop - able to purge 3 volumes during one sitting by reducing pump rate or cycling pump LY- Able to purge 3 volumes by returning later or next day VLY- Minimal recharge - unable to purge 3 volumes

WDC EXPLORATION WELLS
WELL DEVELOPMENT DATA SHEET

WELL OR LOCATION E-8

PROJECT ______ EVENT ______ SAMPLER MK DATE 6-16-10

Well type EW (MW, EW, PZ, etc.)

Diameter 2"

0.165 gal/ft. casing

Intake depth ______

SWL 4.55 (ft above screen)

SWL ______ (ft in screen)

Measured TD 1608

=TOP

=BOP

=TD (as built)

ACTION	TIME	PUMP RATE (gpm)	DTW
Start Pump / Begin			
Stop			
Sampled			
Final WL			

PURGE CALCULATION

0.165 gal/ft. × 8.53 ft = 1.41 gals. X 3 = 4.22 gals

(SWL × TD) (one volume) (purge volume - 3 casings)

2" = 0.165 gal/ft 4" = 0.65 gal/ft 6" = 1.47 gal/ft

Equipment Used / Sampling Method / Description of Event:

Actual gallons purged ______

Actual volumes purged ______

Well Yield ⊕ ______

	Gallons Purged *	Temp °C	EC (us / cm)	pH	Turbidity (NTU)	Other	
1	5	17.5	1537	7.23	+		930
2	7	17.5	1604	7.32	+		
3	9	17.7	1416	7.19	+		
4	11	17.8	1651	7.26	+		
5	13	18.0	1378	7.22	+		
6	15	18.4	1216	7.20	≈500		
7	17	18.5	1202	7.19	≥300		
8	19	14.5	1132	7.15	<100		1001
9							
10							
11							
12							
13							
14							
15							

*Take measurement at approximately each casing volume purged ⊕ HY Minimal W.L. drop MY - WL drop - able to purge 3 volumes during one sitting by reducing pump rate or cycling pump LY - Able to purge 3 volumes by returning later or next day VLY - Minimal recharge - unable to purge 3 volumes

WDC EXPLORATION WELLS
WELL DEVELOPMENT DATASHEET

WELL OR LOCATION E-9

PROJECT ______ EVENT ______ SAMPLER MK DATE 6-15-10

Well type EW
(MW, EW, PZ, etc.)

Diameter ______

0.165 gal/ft. casing

Intake depth ______

SWL 9.42
(if above screen)

=TOP

SWL ______
(if in screen)

=BOP

Measured TD 13.0

=TD
(as built)

ACTION	TIME	PUMP RATE (gpm)	DTW
Start Pump / Begin			
Stop			
Sampled			
Final IWL			

PURGE CALCULATION

0.165 gal/ft. * 3.58 ft = 1.42 gals. X 3 = 4.25 gals
(SWL to TD) (one volume) (purge volume - 3 casings)

2" = 0.165 gal/ft 4" = 0.65 gal/ft 6" = 1.47 gal/ft

Equipment Used / Sampling Method / Description of Event:
311-321 Surge

Actual gallons purged 23.5

Actual volumes purged 16.55

Well Yield ⊕

Gallons Purged *	Temp °C	EC (us / cm)	pH	Turbidity (NTU)	Other	
1. 7.5	19.0	1907	6.86	+		
2. 9.5	18.0	1925	6.96	+		
3. 11.5	17.7	1764	6.92	+		
4. 13.5	17.6	1597	6.88	+		
5. 15.5	17.5	1515	6.85	+		
6. 17.5	17.6	1478	6.86	+		
7. 19.5	17.6	1449	6.87	634		
8. 21.5	17.6	1439	6.87	399		
9. 23.5	17.7	1416	6.87	186		
10.						
11.						
12.						
13.						
14.						
15.						

*Take measurement at approximately each casing volume purged

⊕ HY - Minimal W.L. drop MY - WL drop - able to purge 3 volumes during one sitting by reducing pump rate or cycling pump LY - Able to purge 3 volumes by returning later or next day VLY - Minimal recharge - unable to purge 3 volumes

WDC EXPLORATION WELLS
WELL DEVELOPMENT DATASHEET

WELL OR LOCATION E/O

PROJECT ______ EVENT ______ SAMPLER MK DATE 6-14-10

Well type ______
(MW, EW, PZ, etc.)

Diameter 2

0.165 gal/ft. casing

d

Intake depth

SWL 9.58
(if above screen)

=TOP

SWL
(if in screen)

=BOP

Measured TD 18.10

=TD
(as built)

ACTION	TIME	PUMP RATE (gpm)	DTW
Start Pump / Begin			
Stop			
Sampled			
Final IWL			

PURGE CALCULATION

.165 gal/ft. * 8.52 ~~20~~ ft. = 1.41 gals. X 3 ______ gals.
SWL to TD; one volume; purge volume - 3 casings

2" = 0.165 gal/ft 4" = 0.65 gal/ft 6" = 1.47 gal/ft

Equipment Used / Sampling Method / Description of Event:
353.343

Actual gallons purged ______
Actual volumes purged ______
Well Yield ⊕ ______

Gallons Purged *	Temp °C	EC (us / cm)	pH	Turbidity (NTU)	Other	
1. 3	24.0	1997	6.95	+		3:55
2. 4.5	20.8	2180	6.99	+		
3. 6	19.7	1972	6.92	+		
4. 7.5	19.4	1961	6.91	+		
5. 9	19.4	1926	6.99	+		
6. 10.5	19.4	1567	6.94	+		
7. 12	19.5	1367	6.93	817		4:09
8. 13.5	19.5	1351	6.95	755		
9. 15	19.5	1302	6.96	316		
10. 16.5	19.6	1268	6.95	63		
11. 18	19.5	1253	6.95	335		
12. 19.5	19.6	1249	6.92	197		
13. 21	19.6	1236	6.91	57		
14. 22.5	19.5	1230	6.91	22		4:29
15.						

*Take measurement at approximately each casing volume purged ⊕ HY-Minimal W.L. drop MY - WL drop - able to purge 3 volumes during one sitting by reducing pump rate or cycling pump LY - Able to purge 3 volumes by returning later or next day VLY - Minimal recharge - unable to purge 3 volumes

WDC EXPLORATION WELLS
WELL DEVELOPMENT DATA SHEET

WELL OR LOCATION E-11

PROJECT ______ EVENT ______ SAMPLER MK DATE 6-14-10

Well type ______
(MW, EW, PZ, etc.)

Diameter 2"

0.165 gal/ft. casing

d

Intake depth

SWL 9.09
(if above screen)

=TOP

SWL
(if in screen)

=BOP

Measured TD 18.04

=TD
(as built)

ACTION	TIME	PUMP RATE (gpm)	DTW
Start Pump / Begin			
Stop			
Sampled			
Final IWL			

PURGE CALCULATION

.165 gal/ft. * 8.95 ft. = 1.48 gals. X 3 ______ gals.

SWL to TD — one volume — purge volume - 3 casings

2" = 0.165 gal/ft 4" = 0.65 gal/ft 6" = 1.47 gal/ft

Equipment Used / Sampling Method / Description of Event:
10:20 -

Actual gallons purged ______

Actual volumes purged ______

Well Yield ⊕ ______

Gallons Purged *	Temp °C	EC (us / cm)	pH	Turbidity (NTU)	Other	
1. 4.5	19	1280	7.13	+	Baked	11:00
2. 7	18.9	1548	7.19	+		11:10
3. 8.5	18.9	1526	7.19	+		
4. 10.0	18.6	1437	7.15	+		
5. 11.5	18.7	1345	7.11	+		
6. 13.0	18.6	1229	7.04	+		
7. 14.5	18.6	1211	7.06	+		
8. 16	18.6	1185	7.05	789		11:19
9. 17.5	20.5	1270	6.99	+		1137
10. 19	19.3	1033	6.96	+		
11. 20.5	19.0	1057	6.96	804		
12. 22	19.0	1043	6.96	502		
13. 23.5	19.0	1029	7.00	240		1148
14.						
15.						

*Take measurement at approximately each casing volume purged

⊕ HY-Minimal W.L. drop MY - WL drop - able to purge 3 volumes during one sitting by reducing pump rate or cycling pump LY - Able to purge 3 volumes by returning later or next day VLY - Minimal recharge - unable to purge 3 volumes

WDC

WDC EXPLORATION WELLS
WELL DEVELOPMENT DATA SHEET

WELL OR LOCATION E-12

PROJECT ______ EVENT ______ SAMPLER MK DATE 6-14-10

Well type ______ (MW, EW, PZ, etc.)

Diameter 2"

______ gal/ft. casing

Intake depth ______

SWL 8.76 (if above screen)

SWL ______ (if in screen)

Measured TD 17.49

=TOP

=BOP

=TD (as built)

ACTION	TIME	PUMP RATE (gpm)	DTW
Start Pump / Begin			
Stop			
Sampled			
Final IWL			

PURGE CALCULATION

0165 gal/ft. * 9.22 ft. = 1.52 gals. X 3 ______ gals.

SWL to TD — one volume — purge volume - 3 casings

2" = 0.165 gal/ft. 4" = 0.65 gal/ft 6" = 1.47 gal/ft

Equipment Used / Sampling Method / Description of Event:

12:47 - 12:57 Surge

Actual gallons purged ______

Actual volumes purged ______

Well Yield ⊕ ______

Gallons Purged *	Temp °C	EC (us / cm)	pH	Turbidity (NTU)	Other	
1. 3	22.4	Error	7.27	+	Bailed	1:10
2. 4.5	20.2	1295	7.15	+		
3. 6	19.9	1237	7.11	+		
4. 7.5	19.8	1210	7.11	+		
5. 9	19.7	1132	7.09	+		
6. 10.5	19.6	1179	7.11	+		
7. 12	19.5	1125	7.14	+		
8. 13.5	19.6	1150	7.15	+		
9. 15	19.7	1177	7.14	761		
10. 16.5	19.7	1145	7.13	518		
11. 18	19.7	1218	7.08	392		
12. 19.5	19.7	1150	7.09	307		
13. 21	19.7	1188	7.07	247		1:35
14.						
15.						

*Take measurement at approximately each casing volume purged

⊕ HY-Minimal W.L. drop — MY - WL drop - able to purge 3 volumes during one sitting by reducing pump rate or cycling pump — LY - Able to purge 3 volumes by returning later or next day — VLY - Minimal recharge - unable to purge 3 volumes

WDC

WDC EXPLORATION WELLS
WELL DEVELOPMENT DATA SHEET

WELL OR LOCATION MW-8

PROJECT ____ EVENT ____ SAMPLER MK DATE 6/14/10

Well type MW (MW, EW, PZ, etc.)

Diameter 4"

0.65 gal/ft. casing

Intake depth

SWL 7.42 (if above screen)

=TOP

SWL (if in screen)

=BOP

Measured TD 18.09

=TD (as built)

ACTION	TIME	PUMP RATE (gpm)	DTW
Start Pump / Begin			
start	900		
Stop			
Sampled			
Final IWL			

PURGE CALCULATION

0.65 gal/ft. * 10.67 ft. (SWL to TD) = 6.94 gals. (one volume) X 3 20.82 gals. (purge volume - 3 casings)

2" = 0.165 gal/ft. 4" = 0.65 gal/ft. 6" = 1.47 gal/ft.

Equipment Used / Sampling Method / Description of Event:
915 925 surge

Low Yield

Actual gallons purged 70

Actual volumes purged 10.08

Well Yield ⊕

Gallons Purged *	Temp °C	EC (µs/cm)	pH	Turbidity (NTU)	Other	
1. 8	14.6	1325	7.64	+		9:37
2. 16	14.3	1662	7.48	+		9:40
3. 20	18.3	1722	7.38	+	Baild	9:45
4. 25	19.1	985	7.16	325		507
5. 30	18.7	1034	7.22	503	13.09 DTW	511
6. 35	18.8	1098	7.22	394	15.23 DTW	515
7. 40	18.8	1028	7.21	584	Dry	519
8. 45	17.5	835	7.21	90		747
9. 50	18.0	956	7.29	er		
10. 55	18.4	912	7.21	er		
11. 60	18.4	870	7.05	er est 50		
12. 65	18.5	870	7.21	"		
13. 70	18.5	857	7.20	"		814
14.						
15.						

6-14-10

6-15-10

*Take measurement at approximately each casing volume purged ⊕

HY-Minimal W.L. drop

MY - WL drop - able to purge 3 volumes during one sitting by reducing pump rate or cycling pump

LY Able to purge 3 volumes by returning later or next day.

VLY - Minimal recharge - unable to purge 3 volumes

Project No	
Project Name	
Date	Data Entry
Category	

Daily Field Log

Site: Paco Pumps **Project #:** 04-PCT-003

Date: 6/9/10 **Page** 1 **of** 2

Weather: Cloudy, Overcast

Field Activities: Well Install

Report Prepared By: J Philipp, K Tidwell

Field Personnel on Site: K Tidwell, J Philipp, WDC Drilling

Notes: 7:00 Onsite

Site Inspection w/ driller. Service West associate expresses annoyance with number of WDC Trucks.

7:20 Site safety meeting

7:25 Service West says its okay to bring trucks back

0750 I (Kristene) arrive onsite, meet Jon

0850 Begin drilling E-5 inside bldg

0910 notice exhaust buildup in bldg - tell Jon we decide to stop work + have them pick up vent/funnel to attach to exhaust

1030 equipment arrives, resume work

1100 Soil Sample E-5 @ 10' - ~~[illegible]~~ visual & olfactory evidence of hydrocarbon impacts - strong odor + staining clay

1200 Finish well except grout - will grout tomorrow per Vicky Hamlin @ County

1215 - 13 - lunch

1310 will not tower up for E-3, need to move 9' closer to E-5. Call John to get alternate location for E-2

Project No	
Project Name	
Date	Data Entry
Category	

Daily Field Log

Site: Paco Pumps **Project #:** CA-PCT-003

Date: 6/9/10 **Page** 2 **of** 2

Weather: Overcast

Field Activities: install wells

Report Prepared By:

Field Personnel on Site:

Notes: 1330 start location E-6
- No stink soil - ~~mostly~~ looks like all silty clay, brn or black

1415 Take Soil Sample E6 @ 10'
no hydrocarbon odor,
1445 Finish building E-6
1450 try to most up on E-7, E-8
- nowhere in that bldg accessible -
not enough vertical clearance
1510 Call Jon - let him know about E-7, E-8
1530 start E-9 Hand augering -
encounter fill, concrete pieces @ 2.5
1615 Finish Hand augering
1630 Drill hole - leave augers in sample @ 9' stinky
ground & to build well in morning
1700 leave site
1800 arrive Pleasant Hill

Project No	
Project Name	
Date	Data Entry
Category	

Daily Field Log

Site: Paco Pumps **Project #:** 04-PCT-003

Date: 6/10/10 **Page** 1 **of** 3

Weather: Sunny

Field Activities: Install wells

Report Prepared By: K. Tidwell

Field Personnel on Site: K. Tidwell, WDC

Notes: 0640 leave PH

0730 arrive site - drillers setting E9, meet Jon

0740 Jon leaves

0800 ~~start~~ Finish sand/bentonite E-9,

Surge E-9, E-5, E-6

0830 start HA E-10,

0900 Hit obstruct @ 3', unable to finish HA,

move over try another hole

0903 Vicky Hamlin from county arrives

Grout E-9, E-5, E-6

0930 Vicky leaves site

0940 start HA second hole E-10, get

to 5'

1000 when drilling, obstruction @ 8',

possibly old tank or something like that

move over

1010 start HA third hole E-10

1020 Drill E-10

1025 Sample E10 @ 10 Stinky @ 8-10'

Clay

Project No. ____
Project Name ____
Date ____ Data Entry ____
Category ____

Daily Field Log

Site: ____ Project #: ____

Date: 6/10/10 Page 2 of 3

Weather: ____

Field Activities: ____

Report Prepared By: ____

Field Personnel on Site: ____

Notes: @ 1110 Start E-1 - Hand Auger
1130 Finish E-1 Hand Auger - second Geoprobe crew arrive
1210 Take E1 @ 10 sample
Tank backfill to 10', @
extremely smelly, strong hc odor
@ 10', clay
~~1210~~ take
1215 Geoprobe crew starts E-7
1240 take sample E-7 @ 9.5, clay
strong Hydrocarbon odor
1315 ~~S~~ Start hand auger E-12
1340 Start drill E-12
1400 take sample @ 10' - strong hydrocarbon
odor, clay
1440 Finish E-12 an grouting
1500 move to E-11
1505 Take sample from E-8 - @10'
strong Hc odor, clay

Project No	
Project Name	
Date	Data Entry
Category	

Daily Field Log

Site: Paco Pump Project #:

Date: 6/10/10 Page 3 of 3

Weather:

Field Activities:

Report Prepared By:

Field Personnel on Site:

Notes: 1:30 obstruction ~ 2ft - looks like flat metal
move over + try again
1555 ~~Fin~~ HA second hole -> 5', start drilling
1610 Take soil sample E-11@10
strong hydrocarbon odor @ 10', clay
1630 grout well, set boxes
1705 leave site

Project No	
Project Name	
Date	Data Entry
Category	

Daily Field Log

Site: [illegible] Pico Pumps **Project #:** 64-PCT-003

Date: 6/11/10 **Page** 1 **of** 1

Weather: Sunny

Field Activities: Install Ext. wells

Report Prepared By: K. Tidwell

Field Personnel on Site: K Tidwell, WDC Drilling

Notes: 0530 arrive office, plu paperwork, TS
0615 leave pleasant Hill
0700 arrive site
0730 Finish E-12, log + sample MW-8
Hole seemed clean - no odor
0830 drill + install MW-8, Geoprobe moves
to E-4
~~10~~ 0900 move to E-2 - drill to 10 (~~to~~ pre-cleared)
~~01~~ 1015 Take soil sample E-~~10~~ 2 @ 10'
Clay, little to no hydrocarbon odor
1120 Finish E-2
1200 ~~Drill~~ handauger E-3
1215 Drill E-3
1250 Take soil sample E-3 @ 10',
~~so~~ hydrocarbon odor, not as strong,
clay
1300 Grout wells, set boxes, cleanup.
1?50 [illegible]
1820 [illegible] sample[illegible]
1920 Arrive office

S:\TSG Forms\Daily Field_Log.doc

The Source Group, Inc.

Project No	
Project Name	
Date	Data Entry
Category	

Daily Field Log

Site: PACO Pumps Project #: 04-PFT-003

Date: 6-14-10 Page 1 of 1

Weather: sunny, hot

Field Activities: well development

Report Prepared By: H. Newton

Field Personnel on Site: H. Newton, K. Tidwell, Max (WDC)

Notes: 0715 leave for site

0750 arrive on site

0800 WDC is on site

0930 Start well development

1200 take lunch

1230 back from lunch

1235 continue well development

1745 leave site for the day

1830 back home

Project No.	
Project Name	
Date	Data Entry
Category	

Daily Field Log

Site: PACO Pumps Project #: 04-PFT-003

Date: 6-15-10 Page 1 of 1

Weather: sunny

Field Activities: well development

Report Prepared By: H. Newton

Field Personnel on Site: H. Newton, Max (WDC)

Notes: 0550 leave for site

0625 arrive on site

0630 Max from WDC is on site

0635 set up rig and hang plastic across to keep light ~~away~~ away from plants

0940 Start ~~well~~ developing wells

1140 Run pump for WDC

1215 take lunch

1245 back from lunch

1345 Rodrigo ~~[illegible]~~ from WDC is on site

1430 stop running pump for WDC

1600 finish well development for the day

1630 leave site for the day

1700 back at office

Project No	
Project Name	
Date	Data Entry
Category	

Daily Field Log

Site: Paco Pumps   Project #: 04-PFT-003

Date: 6-16-10   Page 1 of 1

Weather: sunny

Field Activities: well development, grab samples, Calclean extract set up

Report Prepared By: H. Newton

Field Personnel on Site: H. Newton

Notes:
0615 leave for site
0645 arrive on site
0700 WDC on site
0705 WDC continue well development
0900 Calclean on site
1230 WDC is finished with well development and off site
1345 leave site for the day
1440 arrive at Curtis & Tompkins labs
1600 back 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	Northing	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
				19.84	RIM E-3
37.7419714	-122.1856906	2097020.19	6074275.71	19.52	TOC E-3
				19.85	RIM E-4
37.7420236	-122.1855061	2097038.25	6074329.38	19.52	TOC E-4
				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
				19.76	RIM E-8
37.7418128	-122.1856693	2096962.35	6074280.82	19.59	TOC E-8
				19.84	RIM E-9
37.7418812	-122.1856039	2096986.91	6074300.18	19.49	TOC E-9
				19.64	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

Latitude	Longitude	Northing	Easting	Elev.	Desc.
				18.56	RIM MW-8
37.7419429	-122.1851593	2097007.07	6074429.14	18.27	TOC MW-8

LICENSED LAND SURVEYOR
VIRGIL D. CHAVEZ
No. 6323
Exp. 12-31-10
STATE OF CALIFORNIA

Sincerely,

Virgil D. Chavez, PLS 6323

APPENDIX G

DETAILED HVDPE SYSTEM OPERATIONAL DATA AND FIELD NOTES FROM CALCLEAN

HIGH VACUUM [ ] SVE or [X] DPE FIELD DATA SHEET

CALCLEAN INC.
(714) 734-9137

Project Location: 9201 SAN LEANDRO STREET City: OAKLAND Site #: PACO PUMPS Date: 4 / 10 / 2010 Page 1 of 2

Client: THE SOURCE GROUP Operator (s): VAL & DAMEAN

					EXTRACTION WELLS									OBSERVATION WELLS									
	Well I.D.				MW-3			AS-1S			ASMW-2S			ASMW-2D		AS-1D		SVMW-2		SVE-1		Water Meter Readings	Cumul. Water Extracted
	Screen Interval: From-To (ft)				8.76			8.35			8.78			8.82		8.66		Dry		5.75			
	Initial Depth To Water DTW (ft)				20.25			16.67			17.00			33.90		33.00		9.00		8.75			
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)	DTW (ft)	Stinger Depth (feet)	Vacuum "H_2O	DTW (ft)	Vacuum "H_2O	DTW (ft)	Vacuum "H_2O	DTW (ft)	Vacuum "H_2O	DTW (ft)	units	gals
					ON		19'															88320	0
1500	23	37	1402	732					0.00	8.35		0.00	8.78	0.00	8.82	0.01	8.66	0.00	Dry	0.00	5.75		
1530	23	39	1404	712					0.00	8.40		0.00	8.74	0.00	8.82	0.01	8.64	0.01	Dry	0.00	5.72		
[illegible]	23	32	1410	708					0.00	8.46		0.01	8.69	0.00	8.81	0.01	8.60	0.01	Dry	0.00	5.67	88,445	
[illegible]	23	36	1408	700					0.00	8.54		0.01	8.67	0.00	8.81	0.02	8.60	0.01	Dry	0.00	[illegible]		
1700	23	35	1410	698					0.00	8.66		0.01	8.65	0.00	[illegible]	0.02	8.59	0.01	Dry	0.00	5.50	88,444	
1730	23	32	1406	690					0.00	8.68		0.01	8.66	0.00	8.40	0.02	8.60	0.01	Dry	0.00	5.49		
1800	23	[illegible]	1408	688					0.00	8.70		0.01	8.67	0.01	8.82	0.02	8.60	0.01	Dry	0.01	5.38		
1900	22	33	1408	710					0.00	8.71		0.01	8.69	0.01	8.82	0.02	8.61	0.01		0.01	5.27	88694	
2000	22	37	1402	709					0.01	8.74		0.01	8.71	0.02	8.85	0.02	8.65	0.01		0.01	5.14		
2100	22	34	1401	673					0.01	8.79		0.01	8.72	0.01	8.87	0.02	8.68	0.01		0.00	5.01		
2200	22	39	1400	694					0.01	8.81		0.01	8.72	0.01	[illegible]	0.01	8.71	0.01		0.00	4.92	89,071	
2300	22	36	1402	652					0.02	8.83		0.01	8.74	0.01	8.93	0.03	8.73	0.01		0.00	4.87		
2400	22	34	1403	638					0.01	8.84		0.01	8.77	0.01	8.94	0.02	8.76	0.01		0.01	4.75	89319	

Comments: @1510 VAPOR SAMPLE OF MW-3. STACK SAMPLE @1515

HIGH VACUUM [ ] SVE or [X] DPE FIELD DATA SHEET

CALCLEAN INC.
(714) 734-9137

Project Location: 9201 SAN LEANDRO STREET City: OAKLAND Site #: PACO PUMPS Date: 4/9/2010

Client: THE SOURCE GROUP Operator (s): VAL & DAMEAN

					EXTRACTION WELLS									OBSERVATION WELLS									
	Well I.D.				MW-3			AS1s			MW-2S			ASMW-2D		AS-1D		SVMW-2		SVE-1		Water Meter Readings	Cumul. Water Extracted
	Screen Interval: From-To (ft)				9.76			8.35			8.78			8.82		8.66		DRY		5.75			
	Initial Depth To Water DTW (ft)				20.25			16.67			17.00			33.90		33.00		9.00		8.75			
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~~ VAC. (ft)	Stinger Depth (feet)	Off/On (ppmv)	DTW (ft)	Stinger Depth (feet)	Vacuum "H_2O	DTW (ft)	Vacuum "H_2O	DTW (ft)	Vacuum "H_2O	DTW (ft)	Vacuum "H_2O	DTW (ft)	units	gals
					ON		19'																
0100	22	33	1400	645					0.01	8.84		0.01	8.79	0.01	8.96	0.02	8.78	0.01		0.00	4.63		
0200	22	36	1401	631					0.02	8.85		0.01	8.82	0.01	8.97	0.02	8.79	0.01		0.01	4.54		
0300	22	39	1400	627					0.02	8.87		0.01	8.86	0.02	8.99	0.02	8.80	0.01		0.02	4.51		
0400	22	37	1401	622					0.01	8.89		0.01	8.86	0.01	9.00	0.02	8.80	0.02		0.00	4.46		
0500	22	35	1403	591					0.01	8.90		0.01	8.87	0.01	9.02	0.02	8.82	0.01		0.01	4.42		
0600	22	38	1401	586					0.01	8.90		0.01	8.90	0.01	9.04	0.02	8.84	0.01		0.02	4.40		
0700	22	34	[illegible]	[illegible]					0.02	[illegible]		0.01	8.93	0.01	[illegible]	0.02	8.85	0.01	Dry	0.03	4.38		
0800	[illegible]	[illegible]	[illegible]	[illegible]					0.02	8.94		0.01	8.94	0.03	9.07	0.02	8.87	0.01	DRY	0.00	4.31		
0900	22	35	1402	[illegible]	OFF	[illegible]50		ON	120	16'												89990	1670
0930	23	38	1402	[illegible]																			
1000	23	42	1401	13100				OFF	290		ON	13100	16'										
1030	23	40	1420	12360																			
1100	23	39	1410	10290																			
1130	23	39	1407	9730							OFF	9730						ON 9310	8'				
1200	23	39	1404	9360																			
1230	23	42	1401	9170																			
1300	23	37	1402	9020														OFF	9020	ON [illegible]	8'	[illegible]	
																						90380	2,060

Comments:

Chain of Custody Record

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

Company	CalClean Inc. 3002 Dow, #142 Tustin, CA 92780	Phone	(714) 734-9137
Project Manager	NOEL SHENOI	Fax	(714) 734-9138
Project Name	PACO PUMPS	Project #	
Site Name and Address	OAKLAND, CA		

A.L. Job No.

Page 1 of 1

Analysis Requested | Test Instructions & Comments

#	Sample ID	Lab ID	Date	Time	Matrix	Container Number/Size	Pres.	TPH-G (8015)	BTEX/MTBE (8021)		BTEX/OXYS (8260B)					Test Instructions & Comments
1	MW-3		4/9/10	1510	AIR	TEDLAR	NONE	X	X							
2	STACK		"	1515	↓	↓	↓	↓	↓							
3	AS-15		4/10/10	0930												
4	~~A~~SMW-2S		↓	1000												
5	SVMW-2			1140												
6	SVE-1		↓	1310	↓	↓	↓	↓	↓							
7																
8																
9																
10																
11																
12																EDF
13																T0600101592
14																AIR=PPMV
15																

Sample Receipt - To Be Filled By Laboratory

Total Number of Containers		Properly Cooled Y / N / NA	
Custody Seals Y / N / NA		Samples Intact Y / N / NA	
Received in Good Condition Y / N		Samples Accepted Y / N	

Turn Around Time

☒ Normal ☐ Rush ☐ Same Day ☐ 24 hrs. ☐ 48 hrs. ☐ 72 hrs.

Relinquished by Sampler: 1.	Relinquished by 2.	Relinquished by 3.
Signature: Noel Shenoi	Signature:	Signature:
Printed Name:	Printed Name:	Printed Name:
Date: 4/12/10 Time: 1334	Date: Time:	Date: Time:

Received By: 1.	Received By: 2.	Received By: 3.
Signature: M. Eckert	Signature:	Signature:
Printed Name:	Printed Name:	Printed Name:
Date: 4/12/10 Time: 13:34	Date: Time:	Date: Time:

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

HIGH VACUUM [ ] SVE or [X] DPE FIELD DATA SHEET

CALCLEAN INC.
(714) 734-9137

Project Location: 9201 SAN LEANDRO STREET City: OAKLAND Site #: PACO PUMPS Date: 6/16/2010 Page 1 of 7

Client: THE SOURCE GROUP Operator (s): ____________

					EXTRACTION WELLS									OBSERVATION WELLS									
	Well I.D.				E-1			E-2			E-3			E-4		E-5		E-6		E-7		Water Meter Readings	Cumul. Water Extracted
	Screen Interval: From-To (ft)																						
	Initial Depth To Water DTW (ft)				9.45			9.71			9.65			9.56		9.68		9.60		7.00			
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)	DTW (ft)	Stinger Depth (feet)	Vacuum "H_2O PPMV	DTW (ft)	Vacuum "H_2O PPMV	DTW (ft)	Vacuum "H_2O PPMV	DTW (ft)	Vacuum "H_2O PPMV	DTW (ft)	units	gals
																						147660	
1700					730																		
1715								207															
1725											231												
1735														114									
1745																194							
1755																		127					
1805																				188			

Comments: 6-16-10 E-1 VAPOR @ 1700 (730 PPMV). E-2 @ 1715 (207 PPMV). E-3 @ 1525 (231 PPMV). E-4 @ 1735 (114 PPMV). E-5 @ 1745 (194 PPMV). E-6 @ 1755 (127 PPMV). E-7 @ 1805 (188 PPMV). EFF. WATER @ 1730.

HIGH VACUUM [ ] SVE or [X] DPE FIELD DATA SHEET

CALCLEAN INC.
(714) 734-9137

Project Location: 9201 SAN LEANDRO STREET City: OAKLAND Site #: PACO PUMPS Date: 6/16/2010

Client: THE SOURCE GROUP Operator (s): ______

					EXTRACTION WELLS									OBSERVATION WELLS									
	Well I.D.				E-8			E-9			E-10			E-11		E-12		MW-3		AS-1S		Water Meter Readings	Cumul. Water Extracted
	Screen Interval: From-To (ft)																						
	Initial Depth To Water DTW (ft)				9.68			9.62			9.41			9.25		8.85		9.57		9.45			
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)	DTW (ft)	Stinger Depth (feet)	Vacuum "H_2O PPMV	DTW (ft)	Vacuum "H_2O PPMV	DTW (ft)	Vacuum "H_2O PPMV	DTW (ft)	Vacuum "H_2O PPMV	DTW (ft)	units	gals
6/16																							
1820					152																		
1830								1024															
1840											3870												
1850														1572									
1900																487							
1910																		9320					
1920																				575			

Comments: 6-16-10 VAPOR E-8 @ 1820 (152 PPMV). E-9 @ 1820 (1024 PPMV). E-10 @ 1840 (3870 PPMV). E-11 @ 1850 (1572 PPMV). E-12 @ 1900 (487 PPMV). MW-3 @ 1910 (9320 PPMV). AS-1S @ 1920 (575 PPMV).

HIGH VACUUM [ ] SVE or [X] DPE FIELD DATA SHEET

CALCLEAN INC.
(714) 734-9137

Project Location: 9201 SAN LEANDRO STREET City: OAKLAND Site #: PACO PUMPS Date: 6/16/2010 Page 3 of 7

Client: THE SOURCE GROUP Operator (s): ____________

					EXTRACTION WELLS									OBSERVATION WELLS									
	Well I.D.				ASMW-2S			MW-6			SVE-1			SVMW-2		SVMW-3							Cumul.
	Screen Interval: From-To (ft)																					Water Meter	Water
	Initial Depth To Water DTW (ft)				9.45			9.58			3.82			8.55		8.64						Readings	Extracted
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)	DTW (ft)	Stinger Depth (feet)	Vacuum "H_2O	DTW (ft)	Vacuum "H_2O	DTW (ft)	Vacuum "H_2O	DTW (ft)	Vacuum "H_2O	DTW (ft)	units	gals
6/16																							
1930					12310																		
1940								5580															
1950											9950												
2000														16650									
2010																2920							

Comments: 6-16-10 VAPOR ASMW-2S @ 1930 (12310 PPMV). MW-6 @ 1940 (5580 PPMV). SVE-1 @ 1950 (9950 PPMV). SVMW-2 @ 2000 (16650 PPMV). SVMW-3 @ 2010 (2920 PPMV)

HIGH VACUUM ☐ SVE or ☒ DPE FIELD DATA SHEET

CALCLEAN INC.
(714) 734-9137

Project Location: 9201 SAN LEANDRO STREET   City: OAKLAND   Site #: PACO PUMPS   Date: 6/16/2010   Page 4A of 7

Client: THE SOURCE GROUP   Operator (s): BERNARDO

					EXTRACTION WELLS									OBSERVATION WELLS									
	Well I.D.				MW-3			SVE-1			ASMW-2S			SVMW-2								Water Meter Readings	Cumul. Water Extracted
	Screen Interval: From-To (ft)																						
	Initial Depth To Water DTW (ft)				9.57			3.82			9.43			8.55									
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)	DTW (ft)	Stinger Depth (feet)	Vacuum "H_2O	DTW (ft)	Vacuum "H_2O	DTW (ft)	Vacuum "H_2O	DTW (ft)	Vacuum "H_2O	DTW (ft)	units 147660	gals
6/16					ON		19'	ON		8'	ON		16'	ON	8'								
2030	26	140	1510	15530																			
2100	26	137	1493	14760																			
2200	26	135	1471	13540																			
2300	26	140	1483	11270																			
[illegible]	26																						
6/17																							
0001	26	138	1469	9670																			
0400	26	143	1453	7560																			
0800	26	140	1456	6730	4620			2750			7470			4150								148660	1000
1200	25	143	1451	5910																			
1600	25	145	1450	5130																			
2000	25	144	1439	4750	3960			3110			6150			4320								150800	2140
6/18																							
0001	25	146	1418	4960																			
0400	25	145	1426	4750																			
0800	25	146	1430	5030	3680			[illegible]430			4790			3860								151750	4090
1200	25	144	1415	4800																			
1600	25	145	1436	5120																			
2000	25	146	1435	3180	3510			3660			4980			3420								154440	6780

Comments: 6-16-10 TOTAL INLET @ 2030 (15530 PPMV). STACK @ 2025 (1 PPMV).

HIGH VACUUM [ ] SVE or [X] DPE FIELD DATA SHEET

CALCLEAN INC.
(714) 734-9137

Project Location: 9201 SAN LEANDRO STREET　City: OAKLAND　Site #: PACO PUMPS　Date: 6/16/2010　Page 4B of 7

Client: THE SOURCE GROUP　Operator (s): ______

					EXTRACTION WELLS									OBSERVATION WELLS									
	Well I.D.				E-9			E-11			E-12			E-1		E-2		MW-8		MW-6		Water Meter Readings	Cumul. Water Extracted
	Screen Interval: From-To (ft)																						
	Initial Depth To Water DTW (ft)				9.62			9.25			8.85			9.45		9.71		7.86		9.66			
Time	Unit Vacuum ("Hg.)	Air Flowrate (cfm)	TOX Temp. (degF)	Vapor Inlet Conc. (ppmv)	Off/On VAC ~~(ppmv)~~	DTW (ft)	Stinger Depth (feet)	Off/On VAC ~~(ppmv)~~	DTW (ft)	Stinger Depth (feet)	Off/On VAC ~~(ppmv)~~	DTW (ft)	Stinger Depth (feet)	Vacuum "H2O	DTW (ft)	Vacuum "H2O	DTW (ft)	Vacuum "H2O	DTW (ft)	Vacuum "H2O	DTW (ft)	units	gals
6/16																							
2030																							
2100																							
2200					0.00	9.66		0.01	9.28		0.00	8.88		0.01	9.48	0.06	9.76	0.01	7.90	0.05	9.63		
2300																							
6/17																							
0001																							
0400																							
0800					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		
1200																							
1600																							
2000					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		
6/18																							
0001																							
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	9.84		
1200																							
1600																							
2000					0.31	10.16		0.04	9.56		0.00	9.18		0.00	9.92	0.04	10.16	0.00	8.14	0.24	10.00		

Comments:

HIGH VACUUM [ ] SVE or [X] DPE FIELD DATA SHEET

CALCLEAN INC.
(714) 734-9137

Project Location: 9201 SAN LEANDRO STREET   City: OAKLAND   Site #: PACO PUMPS   Date: 6/19/2010   Page 5A of 7

Client: THE SOURCE GROUP   Operator (s): BERNARDO/Gabe

					EXTRACTION WELLS									OBSERVATION WELLS									
	Well I.D.				MW-3			SVE-1			ASMW-2S			SVMW-2									Cumul.
	Screen Interval: From-To (ft)																						Water
	Initial Depth To Water DTW (ft)				9.57			3.82			9.43			8.55								Water Meter Readings	Extracted
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)	DTW (ft)	Stinger Depth (feet)	Vacuum "H_2O	DTW (ft)	Vacuum "H_2O	DTW (ft)	Vacuum "H_2O	DTW (ft)	Vacuum "H_2O	DTW (ft)	units 147660	gals
6/19					ON		19'	ON		8'	ON		18'	ON	8'								
0400																							
0800	25	145	1416	3380	3360			3700			5540			2230								157650	9990
1200	25	141	1423	3140																			
1600	25	142	1431	3030																			
2000	25	143	1421	2880	4020			3410			7390			2920								160990	13330
6/20																							
0400																							
0800	25	142	1428	2790	4800			3220			8220			3610								163660	16000
1200	25	148	1422	3240																			
1600	25	141	1428	3890																			
2000	25	136	1415	4480	5030			3930			9450			3280								166020	18360
6/21																							
0400																							
0800	25	142	1418	3190	4120			3210			6690			2360								168990	21330
1200	25	145	1433	4150																			
1600	25	146	1432	4080																			
2000	25	143	1438	4050	4010			3180			6570			2890								171510	23850

5490

Comments: 6/21 - Total inlet vapor sample taken @ 0900 (3860 ppmv). MW-3 vapor sample taken @ 0915 (3580 ppmv). SVE-1 vapor sample taken @ 0930 (3340 ppmv). ASMW-2S vapor sample taken @ 0945 (8990 ppmv). SVMW-2 vapor sample taken @ 1000 (7940 ppmv).

6/21 - Took Influent Water sample @ 1230.

HIGH VACUUM ☐ SVE or ☒ DPE FIELD DATA SHEET

CALCLEAN INC.
(714) 734-9137

Project Location: 9201 SAN LEANDRO STREET **City:** OAKLAND **Site #:** PACO PUMPS **Date:** 6/19/2010

Client: THE SOURCE GROUP **Operator (s):** BERNARD/Gabe

					EXTRACTION WELLS									OBSERVATION WELLS									
	Well I.D.				E-9			E-11			E-12			E-1		E-2		MW-8		MW-6		Water Meter Readings	Cumul. Water Extracted
	Screen Interval: From-To (ft)																						
	Initial Depth To Water DTW (ft)				9.62			9.25			8.85			9.45		9.71		7.86		9.60			
Time	Unit Vacuum ("Hg.)	Air Flowrate (cfm)	TOX Temp. (degF)	Vapor Inlet Conc. (ppmv)	Off/On VAC	DTW (ft)	Stinger Depth (feet)	Off/On VAC	DTW (ft)	Stinger Depth (feet)	Off/On VAC	DTW (ft)	Stinger Depth (feet)	Vacuum "H_2O	DTW (ft)	Vacuum "H_2O	DTW (ft)	Vacuum "H_2O	DTW (ft)	Vacuum "H_2O	DTW (ft)	units	gals
6/19																							
0400																							
0800					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		
1200																							
1600																							
2000					0.61	10.11		0.00	9.82		0.03	9.34		0.00	10.08	0.05	10.31	0.00	8.27	0.23	10.16		
6/20																							
0400																							
0800					0.50	10.06		0.04	9.85		0.00	9.30		0.00	10.01	0.03	10.32	0.00	8.34	0.25	10.10		
1200																							
1600																							
2000					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		
6/21																							
0400																							
0800					0.35	9.68		0.00	9.73		0.00	9.35		0.00	9.93	0.05	10.30	0.00	8.21	0.22	10.13		
1200																							
1600																							
2000					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		

Comments:

HIGH VACUUM [ ] SVE or [X] DPE FIELD DATA SHEET

CALCLEAN INC.
(714) 734-9137

Project Location: 9201 SAN LEANDRO STREET City: OAKLAND Site #: PACO PUMPS Date: 6/22/2010 Page 6A of 7

Client: THE SOURCE GROUP Operator (s): Gabe

					EXTRACTION WELLS									OBSERVATION WELLS									
	Well I.D.				MW-3			SVE-1			ASMW-25			SVMW-2		E-1		E-9		E-11		Water Meter Readings	Cumul. Water Extracted
	Screen Interval: From-To (ft)																						
	Initial Depth To Water DTW (ft)				9.57			3.82			9.43			8.55		9.45		9.62		9.25			
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)	DTW (ft)	Stinger Depth (feet)	[redacted] ppmv	DTW (ft)	[redacted] ppmv	DTW (ft)	[redacted] ppmv	DTW (ft)	[redacted] ppmv	DTW (ft)	units 147660	gals
6/22					ON		19'	ON		8'	ON		16'	ON	8'								
0400																							
0800	25	142	1439	3860	3840			3460			9590			2660								175250	27590
1200	25	139	1421	4030																			
1600	25	143	1425	3740																			
1630					OFF			OFF						OFF									
1730	25	141	1429	5480												ON	16'	ON	19'	ON	16'		
2000	25	147	1438	5390							9780					617		830		893		178380	30720
6/23																							
0400																							
0800	25	140	1431	2310							9530					530		720		750		180730	33070
1000																OFF		OFF		OFF			

Comments: 6/23 - Treated 13 water barrels.

HIGH VACUUM ☐ SVE or ☒ DPE FIELD DATA SHEET

CALCLEAN INC.
(714) 734-9137

Project Location: 9201 SAN LEANDRO STREET City: OAKLAND Site #: PACO PUMPS Date: 6/22/2010 Page 6B of 7

Client: THE SOURCE GROUP Operator (s): Gabe

					EXTRACTION WELLS									OBSERVATION WELLS									
	Well I.D.				E-9			E-11			E-12			E-1		E-2		MW-8		MW-6		Water Meter Readings	Cumul. Water Extracted
	Screen Interval: From-To (ft)																						
	Initial Depth To Water DTW (ft)				9.62			9.25			8.85			9.45		9.71		7.86		9.60			
Time	Unit Vacuum ("Hg.)	Air Flowrate (cfm)	TOX Temp. (degF)	Vapor Inlet Conc. (ppmv)	~~Off/On~~ VAC ~~(ppmv)~~	DTW (ft)	Stinger Depth (feet)	~~Off/On~~ VAC ~~(ppmv)~~	DTW (ft)	Stinger Depth (feet)	~~Off/On~~ VAC ~~(ppmv)~~	DTW (ft)	Stinger Depth (feet)	Vacuum "H_2O	DTW (ft)	Vacuum "H_2O	DTW (ft)	Vacuum "H_2O	DTW (ft)	Vacuum "H_2O	DTW (ft)	units	gals
6/22																							
0400																							
0800					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		
1200																							
1600																							
1630																							
1730																							
2000						—			—		0.00	8.97			—	0.00	9.79	0.00	8.01	0.00	9.51		
6/23																							
0400																							
0800						—			—		0.00	9.01			—	0.00	9.85	0.00	8.04	0.00	9.63		
1000																							

Comments:

HIGH VACUUM [ ] SVE or [X] DPE FIELD DATA SHEET

CALCLEAN INC.
(714) 734-9137

Project Location: 9201 SAN LEANDRO STREET City: OAKLAND Site #: PACO PUMPS Date: 6/23/2010

Client: THE SOURCE GROUP Operator (s): Gabe

					EXTRACTION WELLS									OBSERVATION WELLS								33070	
	Well I.D.				MW-3			ASMW-2S			E-4			E-10		E-3		E-5		E-7		Water Meter Readings	Cumul. Water Extracted
	Screen Interval: From-To (ft)																						
	Initial Depth To Water DTW (ft)				9.57			9.43			9.56			9.41		9.65		9.68		7.00			
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)	DTW (ft)	Stinger Depth (feet)	ppmv	DTW (ft)	ppmv	DTW (ft)	ppmv	DTW (ft)	ppmv	DTW (ft)	units 147660	gals
6/23					ON		19'	ON		16'	ON		19'	ON	16'								
1100	25	143	1429	7980	4120			9190			3820			5210									
1200	25	145	1438	8820																			
1600	25	141	1425	9930																			
2000	25	140	1438	11080	3740			8590			3670			4330								182230	34570
6/24																							
0400																							
0800	25	145	1434	8390	3680			8120			3410			4120								183750	36090
0900					OFF			OFF			OFF			OFF		ON	15'		15'		15'		
1000																645		ON					
1100																OFF		475		ON			
1200					ON		16'	ON		14'	ON		16'	ON	16'			OFF		580			
1230	25	147	1439	7460																OFF			
1600	25	144	1428	6130																			
2000	25	140	1436	5640	4080			8130			3910			4980								185650	37990
6/25																							
0800	25	147	1439	7120	4930			8190			4830			6540								185850	38190
1200	25	139	1428	6980																			
1300	25	135	1437	5440	4780			6440			3150			4590									
1600					OFF			OFF			OFF			OFF								188580	40920

Comments: 6/25 - Took total inlet vapor sample @1800 (5440 ppmv). Took E-10 vapor sample @1330 (4590 ppmv). Took E-4 vapor sample @1400 (3150 ppmv). MW-3 vapor sample @1430 (4780 ppmv) ASMW-2S vapor sample @1500 (6440 ppmv) E-1 @1530 (398 ppmv), E-11 @ 1600 (4190 ppmv), E-7 @ 1630 (ppmv), E-2 @ 1700 (1620 ppmv), E-3 @ 1730 (3040 ppmv) vapor sample

HIGH VACUUM [ ] SVE or [X] DPE FIELD DATA SHEET

CALCLEAN INC.
(714) 734-9137

Project Location: 9201 SAN LEANDRO STREET City: OAKLAND Site #: PACO PUMPS Date: 6/23/2010 Page 7B of 7

Client: THE SOURCE GROUP Operator (s): Gabe

					EXTRACTION WELLS									OBSERVATION WELLS									
	Well I.D.				E-9			E-11			E-12			E-1		E-2		MW-8		MW-6		Water Meter Readings	Cumul. Water Extracted
	Screen Interval: From-To (ft)																						
	Initial Depth To Water DTW (ft)				9.62			9.25			8.85			9.45		9.71		7.86		9.60			
Time	Unit Vacuum ("Hg.)	Air Flowrate (cfm)	TOX Temp. (degF)	Vapor Inlet Conc. (ppmv)	~~Off/On~~ VAC ~~(ppmv)~~	DTW (ft)	Stinger Depth (feet)	~~Off/On~~ VAC ~~(ppmv)~~	DTW (ft)	Stinger Depth (feet)	~~Off/On~~ VAC ~~(ppmv)~~	DTW (ft)	Stinger Depth (feet)	Vacuum "H_2O	DTW (ft)	Vacuum "H_2O	DTW (ft)	Vacuum "H_2O	DTW (ft)	Vacuum "H_2O	DTW (ft)	units	gals
6/23																							
1100																							
1200																							
1600																							
2000					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		
6/24																							
0400																							
0800					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		
0900																							
1000																							
1100																							
1200																							
1230																							
1600																							
2000					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		
6/25																							
0800					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		
1200																							
1600																							
2000					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		

Comments:

HIGH VACUUM ☐ SVE or ☒ DPE FIELD DATA SHEET

CALCLEAN INC.
(714) 734-9137

Project Location: 9201 SAN LEANDRO STREET City: OAKLAND Site #: PACO PUMPS Date: ____/___/ 2010 Page ____ of ____

Client: THE SOURCE GROUP Operator (s): ____________________

					EXTRACTION WELLS									OBSERVATION WELLS									
	Well I.D.																					Water Meter Readings	Cumul. Water Extracted
	Screen Interval: From-To (ft)																						
	Initial Depth To Water DTW (ft)																						
Time	Unit Vacuum ("Hg.)	Air Flowrate (cfm)	TOX Temp. (degF)	Vapor Inlet Conc. (ppmv)	Off/On (ppmv)	DTW (ft)	Stinger Depth (feet)	Off/On TDW (ppmv)	DTW (ft)	Stinger Depth (feet)	Off/On (ppmv)	DTW (ft)	Stinger Depth (feet)	Vacuum "H_2O	DTW (ft)	Vacuum "H_2O	DTW (ft)	Vacuum "H_2O	DTW (ft)	Vacuum "H_2O	DTW (ft)	units	gals
1			MW	8		7.86		18.12															
2			E	12		8.85		18.03															
3			E	11		9.25		18.08															
4			E	10		9.41		18.15															
5			E	9		9.62		18.05															
6			E	8		9.68		18.12															
7			E	7		7.00		18.53															
8			E	6		9.60		18.22															
9			E	5		9.68		18.35															
10			E	4		9.56		18.30															
11			E	3		9.65		18.35															
12			E	2		9.71		18.33															
13			E	1		9.45		18.11															
14			MW	8		7.86		18.12															
15			MW	6		9.58		16.41															
16			MW	3		9.57		20.25															
17			AS	1S		9.45		[illegible].64															
18		AS	MW	2S		9.43		17.00															
19																							
20		SV	MW	2		8.55		8.98															
21		SV	MW	3				8.64															

Comments: SVE -1 3.82 8.77

Chain of Custody Record

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

Company	CalClean Inc. 3002 Dow, #142 Tustin, CA 92780	Phone	(714) 734-9137
Project Manager	NOEL SHENOI	Fax	(714) 734-9138
Project Name	PACO PUMPS	Project #	
Site Name and Address	9201 SAN LEANDRO OAKLAND, CA		

A.L. Job No. | Page 1 of 1

Analysis Requested | Test Instructions & Comments

	Sample ID	Lab ID	Date	Time	Matrix	Container Number/Size	Pres.	TPH-G (8015)	BTEX/MTBE (8021)	~~BTEX/OXYS (8260B)~~							Test Instructions & Comments
1	E-1		6/16/10	1700	AIR	TEDLAR	NONE	X	X								
2	E-2			1715													
3	E-3			1725													
4	E-7			1805													
5	E-10			1840													
6	E-11			1850													
7	MW-3			1910													
8	ASMW-2S			1930													
9	SVE-1			1950													
10	TOTAL INLET			2030													
11	STACK			2035													
12																	EDF
13																	T0600101592
14																	AIR=PPMV
15																	

Sample Receipt - To Be Filled By Laboratory

Total Number of Containers	11	Properly Cooled Y / N / NA	
Custody Seals Y / N / NA		Samples Intact Y / N / NA	
Received in Good Condition Y / N		Samples Accepted Y / N	

Turn Around Time

☒ Normal ☐ Rush ☐ Same Day ☐ 24 hrs. ☐ 48 hrs. ☐ 72 hrs.

Relinquished by Sampler: 1.	Relinquished by 2.	Relinquished by 3.
Signature: Noel Shenoi	Signature:	Signature:
Printed Name:	Printed Name:	Printed Name:
Date: 6/18/10 Time: 15:30	Date: Time:	Date: Time:
Received By: ASL 1.	Received By: 2.	Received By: 3.
Signature: [signature]	Signature:	Signature:
Printed Name: Juan Montoya	Printed Name:	Printed Name:
Date: 6-18-10 Time: 15:30	Date: Time:	Date: Time:

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

Chain of Custody Record

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

Company	CalClean Inc. 3002 Dow, #142 Tustin, CA 92780
Phone	(714) 734-9137
Project Manager	NOEL SHENOI
Fax	(714) 734-9138
Project Name	PACO PUMPS
Project #	
Site Name and Address	9201 SAN LEANDRO OAKLAND, CA

A.L. Job No.

Page 1 of 1

	Sample ID	Lab ID	Date	Time	Matrix	Container Number/Size	Pres.	TPH-G (8015)	BTEX/MTBE (8021)	~~BTEX/OXYS (8260B)~~						Test Instructions & Comments
1	TOTAL INLET		6/21/10	0900	AIR	TEDLAR	NONE	X	X							
2	E-10		6/25/10	1330												
3	E-4			1400												
4	MW-3			1430												
5	ASMW-2S			1500												
6	E-1			1530												
7	E-11			1600												
8	E-7			1630												
9	E-2			1700												
10	E-3			1730												
11	TOTAL INLET			1800												
2																EDF
3																T0600101592
4																AIR=PPMV
5																

Sample Receipt - To Be Filled By Laboratory

Total Number of Containers	11	Properly Cooled Y / N / NA	
Custody Seals Y / N / NA		Samples Intact Y / N / NA	
Received in Good Condition Y / N		Samples Accepted Y / N	

Turn Around Time

☒ Normal ☐ Rush ☐ Same Day ☐ 24 hrs. ☐ 48 hrs. ☐ 72 hrs.

Relinquished by Sampler: 1.	Relinquished by 2.	Relinquished by 3.
Signature: Noel Shenoi	Signature:	Signature:
Printed Name:	Printed Name:	Printed Name:
Date: 6/30/10 Time:	Date: Time:	Date: Time:
Received By: AJC 1.	Received By: 2.	Received By: 3.
Signature:	Signature:	Signature:
Printed Name: Juan Montoya	Printed Name:	Printed Name:
Date: 6-30-10 Time: 12:33	Date: Time:	Date: Time:

Distribution: White - Laboratory Canary - Laboratory Pink - Project/Account Manager ...

HVDPE Data - Detailed
Former paco Pumps Facility,
9201 San Leandro Street, Oakland, California

					EXTRACTION WELLS									**OBSERVATION WELLS**			
				Well ID	**MW-3**			**SVE-1**			**ASMW-2S**			**SVMW-2**		**Water Meter Readings**	**Cumul. Water Extracted**
				Initial Depth to Water DTW *(feet)*	**9.57**			**3.82**			**9.43**			**8.55**			
Time	**Unit Vacuum** *("Hg)*	**Air Flowrate** *(cfm)*	**TOX Temp.** *(degF)*	**Vapor Inlet Concentration** *(ppmv)*	**Vacuum on/off** *(ppmv)*	**Depth to Water** *(feet)*	**Stinger Depth** *(feet)*	**Vacuum on/off** *(ppmv)*	**Depth to Water** *(feet)*	**Stinger Depth** *(feet)*	**Vacuum on/off** *(ppmv)*	**Depth to Water** *(feet)*	**Stinger Depth** *(feet)*	**Vacuum** *("H_2O)*	**Depth to Water** *(feet)*	**Units** **147660**	**Gallons**
June 16, 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, 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, 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

The Source Group, Inc.

HVDPE Data - Detailed
Former paco Pumps Facility,
9201 San Leandro Street, Oakland, California

					EXTRACTION WELLS									OBSERVATION WELLS									
				Well ID	**E-9**			**E-11**			**E-12**			**E-1**		**E-2**		**MW-8**		**MW-6**		**Water Meter Readings**	**Cumul. Water Extracted**
				Initial Depth to Water DTW *(feet)*	**9.62**			**9.25**			**8.85**			**9.45**		**9.71**		**7.86**		**9.60**			
Time	**Unit Vacuum** *("Hg)*	**Air Flowrate** *(cfm)*	**TOX Temp.** *(degF)*	**Vapor Inlet Concentration** *(ppmv)*	**Vacuum/ Vapor Conc.**	**Depth to Water** *(feet)*	**Stinger Depth** *(feet)*	**Vacuum/ Vapor Conc.**	**Depth to Water** *(feet)*	**Stinger Depth** *(feet)*	**Vacuum/ Vapor Conc.**	**Depth to Water** *(feet)*	**Stinger Depth** *(feet)*	**Vacuum** *("H_2O)*	**Depth to Water** *(feet)*	**Vacuum** *("H_2O)*	**Depth to Water** *(feet)*	**Vacuum** *("H_2O)*	**Depth to Water** *(feet)*	**Vacuum** *("H_2O)*	**Depth to Water** *(feet)*	**Units**	**Gallons**
June 16, 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, 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, 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					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		

HVDPE Data - Detailed
Former paco Pumps Facility,
9201 San Leandro Street, Oakland, California

					EXTRACTION WELLS									OBSERVATION WELLS			
				Well ID	MW-3			SVE-1			ASMW-2S			SVMW-2		Water Meter Readings	Cumul. Water Extracted
				Initial Depth to Water DTW *(feet)*	9.57			3.82			9.43			8.55			
Time	**Unit Vacuum** *("Hg)*	**Air Flowrate** *(cfm)*	**TOX Temp.** *(degF)*	**Vapor Inlet Concentration** *(ppmv)*	**Vacuum on/off** *(ppmv)*	**Depth to Water** *(feet)*	**Stinger Depth** *(feet)*	**Vacuum on/off** *(ppmv)*	**Depth to Water** *(feet)*	**Stinger Depth** *(feet)*	**Vacuum on/off** *(ppmv)*	**Depth to Water** *(feet)*	**Stinger Depth** *(feet)*	**Vacuum** *("H_2O)*	**Depth to Water** *(feet)*	**Units** **147660**	**Gallons**
June 19, 2010					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, 2010																	
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, 2010																	
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

HVDPE Data - Detailed
Former paco Pumps Facility,
9201 San Leandro Street, Oakland, California

					EXTRACTION WELLS									OBSERVATION WELLS									
				Well ID	E-9			E-11			E-12			E-1		E-2		MW-8		MW-6		Water Meter Readings	Cumul. Water Extracted
				Initial Depth to Water DTW *(feet)*	9.62			9.25			8.85			9.45		9.71		7.86		9.60			
Time	Unit Vacuum *("Hg)*	Air Flowrate *(cfm)*	TOX Temp. *(degF)*	Vapor Inlet Concentration *(ppmv)*	Vacuum/ Vapor Conc.	Depth to Water *(feet)*	Stinger Depth *(feet)*	Vacuum/ Vapor Conc.	Depth to Water *(feet)*	Stinger Depth *(feet)*	Vacuum/ Vapor Conc.	Depth to Water *(feet)*	Stinger Depth *(feet)*	Vacuum *("H_2O)*	Depth to Water *(feet)*	Vacuum *("H_2O)*	Depth to Water *(feet)*	Vacuum *("H_2O)*	Depth to Water *(feet)*	Vacuum *("H_2O)*	Depth to Water *(feet)*	Units	Gallons
June 19, 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, 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, 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		

HVDPE Data - Detailed

Former paco Pumps Facility,

9201 San Leandro Street, Oakland, California

					EXTRACTION WELLS									OBSERVATION WELLS									
				Well ID	**MW-3**			**SVE-1**			**ASMW-2S**			**SVMW-2**		**E-1**		**E-9**		**E-11**		**Water Meter Readings**	**Cumul. Water Extracted**
				Initial Depth to Water DTW *(feet)*	**9.57**			**3.82**			**9.43**			**8.55**		**9.45**		**9.62**		**9.25**			
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, 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, 2010																							
4:00																							
8:00	25	140	1431	2310							9530					530		720		750		180730	33070
10:00	.															OFF		OFF		OFF			

The Source Group, Inc.

HVDPE Data - Detailed
Former paco Pumps Facility,
9201 San Leandro Street, Oakland, California

					EXTRACTION WELLS									OBSERVATION WELLS									
				Well ID	E-9			E-11			E-12			E-1		E-2		MW-8		MW-6		Water Meter Readings	Cumul. Water Extracted
				Initial Depth to Water DTW *(feet)*	9.62			9.25			8.85			9.45		9.71		7.86		9.60			
Time	Unit Vacuum *("Hg)*	Air Flowrate *(cfm)*	TOX Temp. *(degF)*	Vapor Inlet Concentration *(ppmv)*	Vacuum/ Vapor Conc.	Depth to Water *(feet)*	Stinger Depth *(feet)*	Vacuum/ Vapor Conc.	Depth to Water *(feet)*	Stinger Depth *(feet)*	Vacuum/ Vapor Conc.	Depth to Water *(feet)*	Stinger Depth *(feet)*	Vacuum *("H_2O)*	Depth to Water *(feet)*	Vacuum *("H_2O)*	Depth to Water *(feet)*	Vacuum *("H_2O)*	Depth to Water *(feet)*	Vacuum *("H_2O)*	Depth to Water *(feet)*	Units	Gallons
June 22, 2010																							
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, 2010																							
4:00																							
8:00						--			--		0.00	9.01			--	0.00	9.85	0.00	8.04	0.00	9.63		
10:00																							

HVDPE Data - Detailed
Former paco Pumps Facility,
9201 San Leandro Street, Oakland, California

					EXTRACTION WELLS									OBSERVATION WELLS									
				Well ID	**MW-3**			**ASMW-2S**			**E-4**			**E-10**		**E-3**		**E-5**		**E-7**		**Water Meter Readings**	**Cumul. Water Extracted**
				Initial Depth to Water DTW *(feet)*	**9.57**			**9.43**			**9.56**			**9.41**		**9.65**		**9.68**		**7.0**			
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, 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, 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

The Source Group, Inc.

HVDPE Data - Detailed
Former paco Pumps Facility,
9201 San Leandro Street, Oakland, California

					EXTRACTION WELLS									OBSERVATION WELLS									
				Well ID	**E-9**			**E-11**			**E-12**			**E-1**		**E-2**		**MW-8**		**MW-6**		**Water Meter Readings**	**Cumul. Water Extracted**
				Initial Depth to Water DTW *(feet)*	**9.62**			**9.25**			**8.85**			**9.45**		**9.71**		**7.86**		**9.60**			
Time	**Unit Vacuum** *("Hg)*	**Air Flowrate** *(cfm)*	**TOX Temp.** *(degF)*	**Vapor Inlet Concentration** *(ppmv)*	**Vacuum/ Vapor Conc.**	**Depth to Water** *(feet)*	**Stinger Depth** *(feet)*	**Vacuum/ Vapor Conc.**	**Depth to Water** *(feet)*	**Stinger Depth** *(feet)*	**Vacuum/ Vapor Conc.**	**Depth to Water** *(feet)*	**Stinger Depth** *(feet)*	**Vacuum** *("H_2O)*	**Depth to Water** *(feet)*	**Vacuum** *("H_2O)*	**Depth to Water** *(feet)*	**Vacuum** *("H_2O)*	**Depth to Water** *(feet)*	**Vacuum** *("H_2O)*	**Depth to Water** *(feet)*	**Units**	**Gallons**
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, 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, 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 # 100628-401 Date 6-28-10 Client The source group

Site 9201 San Leandro St. Oakland CA

Well ID	Time	Well Size (in.)	Sheen / Odor	Depth to Immiscible Liquid (ft.)	Thickness of Immiscible Liquid (ft.)	Volume of Immiscibles Removed (ml)	Depth to water (ft.)	Depth to well bottom (ft.)	Survey Point: TOB or TOC	Notes
MW-2	0845	4					9.33	20.10		
MW-3	0848	4					9.60	20.20		
MW-8	0852	4					8.07	18.07		
MW-4	0858	4					8.05	20.00		
AS-1D	0900	2					9.90	32.90		
AS-1S	0902	2					9.90	16.60		
ASMW-2S	0904	2					10.30	16.97		
ASMW-2D	0906	2					9.70	33.78		
MW-6	0845	2					9.54	16.26		
MW-5	0902	4					8.42	19.97		
MW-1	0906	4					8.77	20.05		
MW-7	Unable to Access Covered									

WELLHEAD INSPECTION CHECKLIST

Date 6-28-10 Client The Source group

Site Address 9201 San Leandro St. Oakland CA

Job Number 100628-JO1 Technician JO/BP

Well ID	Well Inspected - No Corrective Action Required	Water Bailed From Wellbox	Wellbox Components Cleaned	Cap Replaced	Debris Removed From Wellbox	Lock Replaced	Other Action Taken (explain below)	Well Not Inspected (explain below)
MW-2							X	
MW-3							X	
MW-8	X					X		
MW-4								
AS-10	X							
AS-15	X							
ASMW-2S	X							
ASMW-2D	X							
MW-6	X							
MW-5							X	
MW-1							X	
MW-7	Unable	to access			covered			

NOTES: MW-2 1/2 Bolts missing, MW-3 cracked lid, MW-8 no lock
MW-4 Diamond plated lid, MW-5 1/2 Bolts missing, MW-1
2/2 Bolts missing

TEST EQUIPMENT CALIBRATION LOG

PROJECT NAME 9201 San Leandro St.				PROJECT NUMBER 100628-J01			
EQUIPMENT NAME	EQUIPMENT NUMBER	DATE/TIME OF TEST	STANDARDS USED	EQUIPMENT READING	CALIBRATED TO: OR WITHIN 10%:	TEMP.	INITIALS
2100P HACH Turbidimeter	08120 CO 33778	6/28/10 0836	0.1, 20, 100 800 NTU's	0, 23, 102 811 NTU's	yes	—	BP
MYRONL ULTRAMETER	6223839	6/28/10 0840	pH 7.00 10.00 4.00	7.10 10.08 4.06	yes	21.3	BP
			cond 3900 us	3896 us	yes	21.2	BP
myronL ultra meter II	6222814	6-28-10 08:10	PH 7, 10, 4 3900 us	7.02, 10.02, 4.01 3886 us	yes	21.2	SO
Hach turbidimeter	09020C040107	6-28-10 08 36	~~5~~ 50/800	5/48/802	yes	—	[illegible]

WELL MONITORING DATA SHEET

Project #: 100628-301	Client: The Source Group 9201 San Leandro St Oakland
Sampler: BP	Date: 6/28/10
Well I.D.: AS-1D	Well Diameter: 2 3 4 6 8 ____
Total Well Depth (TD): 32.90	Depth to Water (DTW): 9.90
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]: 14.50	

Purge Method: Bailer, Disposable Bailer, Positive Air Displacement, Electric Submersible, Waterra, Peristaltic, Extraction Pump, Other________

Sampling Method: Bailer, Disposable Bailer, Extraction Port, ~~Dedicated Tubing~~, Other: New tubing

WC: 23.0

3.7 (Gals.) X 3 = 11.1 Gals.
1 Case Volume, Specified Volumes, Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	$radius^2 * 0.163$

Time	Temp (°F or °C)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
1107	20.0	7.26	840.1	42	3.7	
1112	19.1	7.07	841.0	17	7.2	
1119	19.5	7.04	844.5	11	11.1	

Did well dewater? Yes No	Gallons actually evacuated: 11.1
Sampling Date: 6/28/10 Sampling Time: 1130	Depth to Water: 10.14
Sample I.D.: AS-1D	Laboratory: Kiff CalScience Other Accutest
Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5)	Other: SEE COC
EB I.D. (if applicable): @ Time	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

WELL MONITORING DATA SHEET

Project #: 100628-J01	Client: The Source group
Sampler: JO	Date: 6-28-10
Well I.D.: AS-1S	Well Diameter: 2 3 4 6 8 ____
Total Well Depth (TD): 16.60	Depth to Water (DTW): 9.90
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]: 11.24

Purge Method: Bailer, Disposable Bailer, Positive Air Displacement, Electric Submersible, Waterra, Peristaltic, Extraction Pump, Other ____

Sampling Method: Bailer, Disposable Bailer, Extraction Port, Dedicated Tubing, Other: ____

1.0 (Gals.) X 3 = 3.0 Gals.
1 Case Volume, Specified Volumes, Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	$radius^2 * 0.163$

Time	Temp (°F or °C)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
1000	18.9	7.62	1239	>1000	1.0	cloudy
1002	19.0	7.58	1221	>1000	2.0	"
1004	18.9	7.57	1218	>1000	3.0	"

Did well dewater? Yes No — Gallons actually evacuated: 3.0

Sampling Date: 6-28-10 Sampling Time: 1005 Depth to Water: 10.92

Sample I.D.: AS-1S Laboratory: Kiff CalScience Other Accutest

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other: See COC

EB I.D. (if applicable): @ Time 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

WELL MONITORING DATA SHEET

Project #: 100628-J01	Client: The Source Group 9201 San Leandro St. Oakland
Sampler: BP	Date: 6/28/10
Well I.D.: ASMW-2D	Well Diameter: 2 3 4 6 8 ____
Total Well Depth (TD): 33.78	Depth to Water (DTW): 9.70
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]: 14.51

Purge Method: Bailer, Disposable Bailer, Positive Air Displacement, Electric Submersible, Waterra, Peristaltic, Extraction Pump, Other ______

Sampling Method: Bailer, Disposable Bailer, Extraction Port, Dedicated Tubing, Other: New tubing

WC: 24.08

3.9 (Gals.) X 3 = 11.7 Gals.
1 Case Volume — Specified Volumes — Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	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	
1145	19.7	7.08	880.0	13	7.8	
1150	19.6	7.05	881.1	13	11.7	

Did well dewater? Yes No — Gallons actually evacuated: 11.7

Sampling Date: 6/28/10 — Sampling Time: 1155 — Depth to Water: 9.94

Sample I.D.: ASMW-2D — Laboratory: Kiff CalScience Other Accutest

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other: SEE COC

EB I.D. (if applicable): @ Time — Duplicate I.D. (if applicable):

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other:

	Pre-purge:		Post-purge:	
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

WELL MONITORING DATA SHEET

Project #: 100628-J01	Client: The Source group
Sampler: JO	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 (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]: 11.63

Purge Method: Bailer, Disposable Bailer, Positive Air Displacement, Electric Submersible, Waterra, Peristaltic, Extraction Pump, Other______

Sampling Method: Bailer, Disposable Bailer, Extraction Port, Dedicated Tubing, Other: ______

1.0 (Gals.) X 3 = 3.0 Gals.
1 Case Volume · Specified Volumes · Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	$radius^2 * 0.163$

Time	Temp (°F or °C)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
1021	19.1	7.34	1038	>1000	1.0	cloudy
1023	19.1	7.33	1012	>1000	2.0	" "
1025	19.2	7.28	1009	>1000	3.0	" "

Did well dewater? Yes No	Gallons actually evacuated: 3.0
Sampling Date: 6-28-10 Sampling Time: 1030	Depth to Water: 11.17
Sample I.D.: ASMW-2S	Laboratory: Kiff CalScience Other Accutest
Analyzed for: TPH-G BTEX MTBE TPH-D	Oxygenates (5) Other: See coc
EB I.D. (if applicable): @ Time	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

WELL MONITORING DATA SHEET

Project #: 100628-001	Client: The Source Group 9201 San Leandro St Oakland
Sampler: BP	Date: 6/28/10
Well I.D.: MW-1	Well Diameter: 2 3 4 6 8 ____
Total Well Depth (TD): 20.05	Depth to Water (DTW): 8.77
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]: 11.02	

Purge Method: Bailer, Disposable Bailer, Positive Air Displacement, Electric Submersible, Waterra, Peristaltic, Extraction Pump, Other________

Sampling Method: Bailer, Disposable Bailer, Extraction Port, Dedicated Tubing, Other: ________

WC: 11.28

7.3 (Gals.) X 3 = 21.9 Gals.
1 Case Volume, Specified Volumes, Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	$radius^2 * 0.163$

Time	Temp (°F or °C)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
0915	19.2	7.31	853.8	971	7.3	
0918	18.4	7.03	881.1	852	14.6	
0920	18.1	6.96	869.3	769	21.9	

Did well dewater? Yes No — Gallons actually evacuated: 21.9

Sampling Date: 6/28/10 Sampling Time: 0930 Depth to Water: 10.87

Sample I.D.: MW-1 Laboratory: Kiff CalScience Other Accutest

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other: SEE COC

EB I.D. (if applicable): @ Time 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

WELL MONITORING DATA SHEET

Project #: 100628-S01	Client: The Source group
Sampler: SD	Date: 6-28-10
Well I.D.: MW-2	Well Diameter: 2 3 4 6 8 ____
Total Well Depth (TD): 20.10	Depth to Water (DTW): 9.33
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]: 11.48	

Purge Method: Bailer, Disposable Bailer, Positive Air Displacement, Electric Submersible, Waterra, Peristaltic, Extraction Pump, Other ________

Sampling Method: Bailer, Disposable Bailer, Extraction Port, Dedicated Tubing, Other: ________

7.0 (Gals.) X 3 = 21.0 Gals.
1 Case Volume | Specified Volumes | Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	$radius^2 * 0.163$

Time	Temp (°F or °C)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
1050	19.4	7.52	1270	>1000	7.0	Brown / cloudy
1055	19.2	7.58	1296	>1000	14.0	" "
1100	19.3	7.57	1302	>1000	21.0	" "

Did well dewater? Yes No	Gallons actually evacuated: 21.0
Sampling Date: 6-28-10 Sampling Time: 1105	Depth to Water: 10.16
Sample I.D.: MW-2	Laboratory: Kiff CalScience Other Accutest
Analyzed for: TPH-G BTEX MTBE TPH-D	Oxygenates (5) Other: See COC
EB I.D. (if applicable): @ Time	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

WELL MONITORING DATA SHEET

Project #: 100628-JO1	Client: The source group
Sampler: JO	Date: 6-28-10
Well I.D.: MW-3	Well Diameter: 2 3 4 6 8 ____
Total Well Depth (TD): 20.20	Depth to Water (DTW): 9.60
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]: 11.72

Purge Method: Bailer, Disposable Bailer, Positive Air Displacement, Electric Submersible, Waterra, Peristaltic, Extraction Pump, Other____

Sampling Method: Bailer, Disposable Bailer, Extraction Port, Dedicated Tubing, Other: ____

6.9 (Gals.) X 3 = 20.7 Gals.
1 Case Volume — Specified Volumes — Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	$radius^2 * 0.163$

Time	Temp (°F or °C)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
0932	19.5	7.61	975.0	492	6.9	clear
0933	19.4	7.64	932.0	507	13.8	" "
0935	19.6	7.61	922.7	505	20.7	

Did well dewater? Yes No	Gallons actually evacuated: 20.7	
Sampling Date: 6-28-10	Sampling Time: 0940	Depth to Water: 11.00
Sample I.D.: MW-3	Laboratory: Kiff CalScience Other Accutest	
Analyzed for: TPH-G BTEX MTBE TPH-D	Oxygenates (5) Other: See COC	
EB I.D. (if applicable): @ Time	Duplicate I.D. (if applicable): MW-3-Dup@0945	
Analyzed for: TPH-G BTEX MTBE TPH-D	Oxygenates (5) Other: See COC	
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	

WELL MONITORING DATA SHEET

Project #: 100628-S01	Client: the Source group
Sampler: JD	Date: 6-28-10
Well I.D.: MW-4	Well Diameter: 2 3 4 6 8 ____
Total Well Depth (TD): 20.00	Depth to Water (DTW): 8.05
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]: 10.44

Purge Method: Bailer, Disposable Bailer, Positive Air Displacement, Electric Submersible, Waterra, Peristaltic, Extraction Pump, Other ____

Sampling Method: Bailer, Disposable Bailer, Extraction Port, Dedicated Tubing, Other: ____

7.7 (Gals.) X 3 = 23.1 Gals.
1 Case Volume, Specified Volumes, Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	$radius^2 * 0.163$

Time	Temp (°F or °C)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
1209	19.9	7.63	961.3	>1000	7.7	
1216	19.9	7.61	964.1	>1000	15.4	
1225	19.9	7.58	970.2	>1000	23.1	

Did well dewater? Yes No — Gallons actually evacuated: 23.1

Sampling Date: 6-28-10 Sampling Time: 1230 Depth to Water: 9.22

Sample I.D.: MW-4 Laboratory: Kiff CalScience Other Accutest

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other: See COC

EB I.D. (if applicable): @ Time 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

WELL MONITORING DATA SHEET

Project #: 100628-J01	Client: The Source Group 9201 San Leandro St Oakland
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 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]: 10.73	

Purge Method: Bailer, Disposable Bailer, Positive Air Displacement, Electric Submersible, Waterra, Peristaltic, Extraction Pump, Other____________

Sampling Method: Bailer, Disposable Bailer, Extraction Port, Dedicated Tubing, Other: ____________

WC: 11.55

7.5 (Gals.) X 3 = 22.5 Gals.
1 Case Volume — Specified Volumes — Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	$radius^2 * 0.163$

Time	Temp (°F or °C)	pH	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	503.2	349	22.5	

Did well dewater? Yes No	Gallons actually evacuated: 22.5
Sampling Date: 6/28/10 Sampling Time: 1000	Depth to Water: 10.56
Sample I.D.: MW-5	Laboratory: Kiff CalScience Other Accutest
Analyzed for: TPH-G BTEX MTBE TPH-D	Oxygenates (5) Other: SEE COC
EB I.D. (if applicable): @ Time	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

WELL MONITORING DATA SHEET

Project #: 100628-J01	Client: The Source Group 9201 San Leandro St Oakland CA
Sampler: BP	Date: 6/28/10
Well I.D.: MW-6	Well Diameter: 2 3 4 6 8 ___
Total Well Depth (TD): 16.26	Depth to Water (DTW): 9.54
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]: 10.88

Purge Method: Bailer, Disposable Bailer, Positive Air Displacement, Electric Submersible, Waterra, Peristaltic, Extraction Pump, Other________

Sampling Method: Bailer, Disposable Bailer, Extraction Port, Dedicated Tubing, Other: ________

WC: 6.72

1.1 (Gals.) X 3 = 3.3 Gals.
1 Case Volume — Specified Volumes — Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius^2 * 0.163

Time	Temp (°F or °C)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
1026	18.7	6.95	1378	>1000	1.1	odor
1028	17.9	6.85	1387	>1000	2.2	✓
1030	17.9	6.82	1365	>1000	3.3	

Did well dewater? Yes No	Gallons actually evacuated: 3.3
Sampling Date: 6/28/10 Sampling Time: 1035	Depth to Water: 10.65
Sample I.D.: MW-6	Laboratory: Kiff CalScience Other Accutest
Analyzed for: TPH-G BTEX MTBE TPH-D	Oxygenates (5) Other: SEE COC
EB I.D. (if applicable): @ Time	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

WELL MONITORING DATA SHEET

Project #: 100628-301	Client: The Source Group
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, Waterra, Peristaltic, Extraction Pump, Other ____

Sampling Method: Bailer, Disposable Bailer, Extraction Port, Dedicated Tubing, Other: ____

____ (Gals.) X ____ = ____ Gals.
1 Case Volume   Specified Volumes   Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	$radius^2 * 0.163$

Time	Temp (°F or °C)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
UNABLE TO ACCESS						
COVERED						

Did well dewater? Yes No   Gallons actually evacuated:

Sampling Date: ————   Sampling Time: Depth to Water:

Sample I.D.:   Laboratory: Kiff CalScience Other Accutest

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other: SEE COC

EB I.D. (if applicable): @ Time   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

WELL MONITORING DATA SHEET

Project #: 160628 JO	Client: The Source group
Sampler: JO	Date: 6-28-16
Well I.D.: MW-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 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]: 10.07	

Purge Method: Bailer, Disposable Bailer, Positive Air Displacement, Electric Submersible, Waterra, Peristaltic, Extraction Pump, Other___

Sampling Method: Bailer, Disposable Bailer, Extraction Port, Dedicated Tubing, Other: ___

6.5 (Gals.) X 3 = 19.5 Gals.
1 Case Volume — Specified Volumes — Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius^2 * 0.163

Time	Temp (°F or °C)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
1130	19.8	7.67	937.4	488	6.5	
1131	19.9	7.61	968.8	521	13.0	
1133	19.9	7.60	974.3	564	19.5	

Did well dewater? Yes No — Gallons actually evacuated: 19.5

Sampling Date: 6-28-16 — Sampling Time: 1135 — Depth to Water: 8.77

Sample I.D.: MW-8 — Laboratory: Kiff CalScience Other Accutest

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other: See COC

EB I.D. (if applicable): @ Time — 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

S[illegible] or Purge Water Drum Lo[illegible]

Client: SGI

Site Address: 9201 San Leandro Ave Oakland, CA

STATUS OF DRUM(S) UPON ARRIVAL

Date	11-6-09	6-28-10				
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:		NA				

- 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 DEPARTURE

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	BTS yes				
Drum ID & Contents:	Purge H_2O	Purge H_2O				

LOCATION OF DRUM(S)

Describe location of drum(s): Next to Building in alleyway. → 6-28-10 In Storage area Next to Well AS-15

FINAL STATUS

Number of new drum(s) left on site this event	3	0				
Date of inspection:	11-6-09	6-28-10				
Drum(s) labelled properly:	yes	yes				
Logged by BTS Field Tech:	JO	JD				
Office reviewed by:	[illegible]	[illegible]				

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.

<u>Drilling and Sampling Procedures</u>

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.

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:

Soil Properties

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

TPH-Gasoline and BTEX
Groundwater Results

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

Summary

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
Mark Jonas, R.G.
Project Manager

attachments: Drilling Permit, Figure 1 "Borehole Locations & Analytical Results", Chain-of-Custody Records, Laboratory Data Sheets.

cc: Distribution

rpt4-97.pc0

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

Lender
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

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

LOCATION OF PROJECT Former PACO Pumps
9201 San Leandro Street
Oakland, California 94603

CLIENT
Name Mr. John Lilla, Paco Pumps, Inc.
Address 301 Camp Craft RD. Phone (512)314-8500
City Austin, Texas Zip 94598

APPLICANT
Name Jonas & Associates Inc.
attn: Mark L. Jonas, R.G.
Address 2815 Mitchell Dr. su208 Phone (510)933-5360
City Walnut Creek, CA Zip 94598

TYPE OF PROJECT
Well Construction
Cathodic Protection ___
Water Supply ___
Monitoring ___
Geotechnical Investigation
General ___
Contamination X
Well Destruction ___

PROPOSED WATER SUPPLY WELL USE
Domestic ___ Industrial ___ Other ___
Municipal ___ Irrigation ___

DRILLING METHOD:
Mud Rotary ___ Air Rotary ___ Auger ___
Cable ___ Other Hydropunch or Ramset

DRILLER'S LICENSE NO. 485165

WELL PROJECTS
Drill Hole Diameter ___ in. Maximum
Casing Diameter ___ in. Depth ___ ft.
Surface Seal Depth ___ ft. Number ___

GEOTECHNICAL PROJECTS
Number of Borings 2 Maximum
Hole Diameter 2 in. Depth 12 ft.

ESTIMATED STARTING DATE Jan 31, 1997
ESTIMATED COMPLETION DATE Jan 31, 1997

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE Mark Jonas Date 1/22/97
Mark L. Jonas, R.G. FAX (510) 933-5362

FOR OFFICE USE

PERMIT NUMBER 97058
LOCATION NUMBER ___

PERMIT CONDITIONS

Circled Permit Requirements Apply

A. GENERAL
1. A permit application should be submitted so as to arrive at the Zone 7 office five days prior to proposed starting date.
2. Submit to Zone 7 within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well Projects, or drilling logs and location sketch for geotechnical projects.
3. Permit is void if project not begun within 90 days of approval date.

B. WATER WELLS, INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

C. GEOTECHNICAL. Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied cement grout shall be used in place of compacted cuttings.

D. CATHODIC. Fill hole above anode zone with concrete placed by tremie.

E. WELL DESTRUCTION. See attached.

Approved Wyman Hong Date 27 Jan 97
Wyman Hong

31992

Drawn by J.R.W. 2-27-1997

Drawing Number PCO220-1-97:F1

B1-5.5' (Soil)

January 31, 1997 sampling results:

Moisture Content	23.3%	Organic Content	2.9%
Dry Density	95.4 PCF	Specific Gravity	2.67
Porosity	42.1%		

B1-8.5' (Soil)

January 31, 1997 sampling results:

	(mg/Kg)		(mg/Kg)
TPH-Gasoline	ND(1.0)	Ethyl Benzene	ND(0.0050)
Benzene	0.012	Total Xylenes	ND(0.0050)
Toluene	ND(0.0050)		

B1-GW (Groundwater)

Febuary 3, 1997 sampling results:

	(ug/L)		(ug/L)
TPH-Gasoline	31,000	Ethyl Benzene	0.320
Benzene	7,100	Total Xylenes	1.400
Toluene	4.100		

B2-8.5' (Soil)

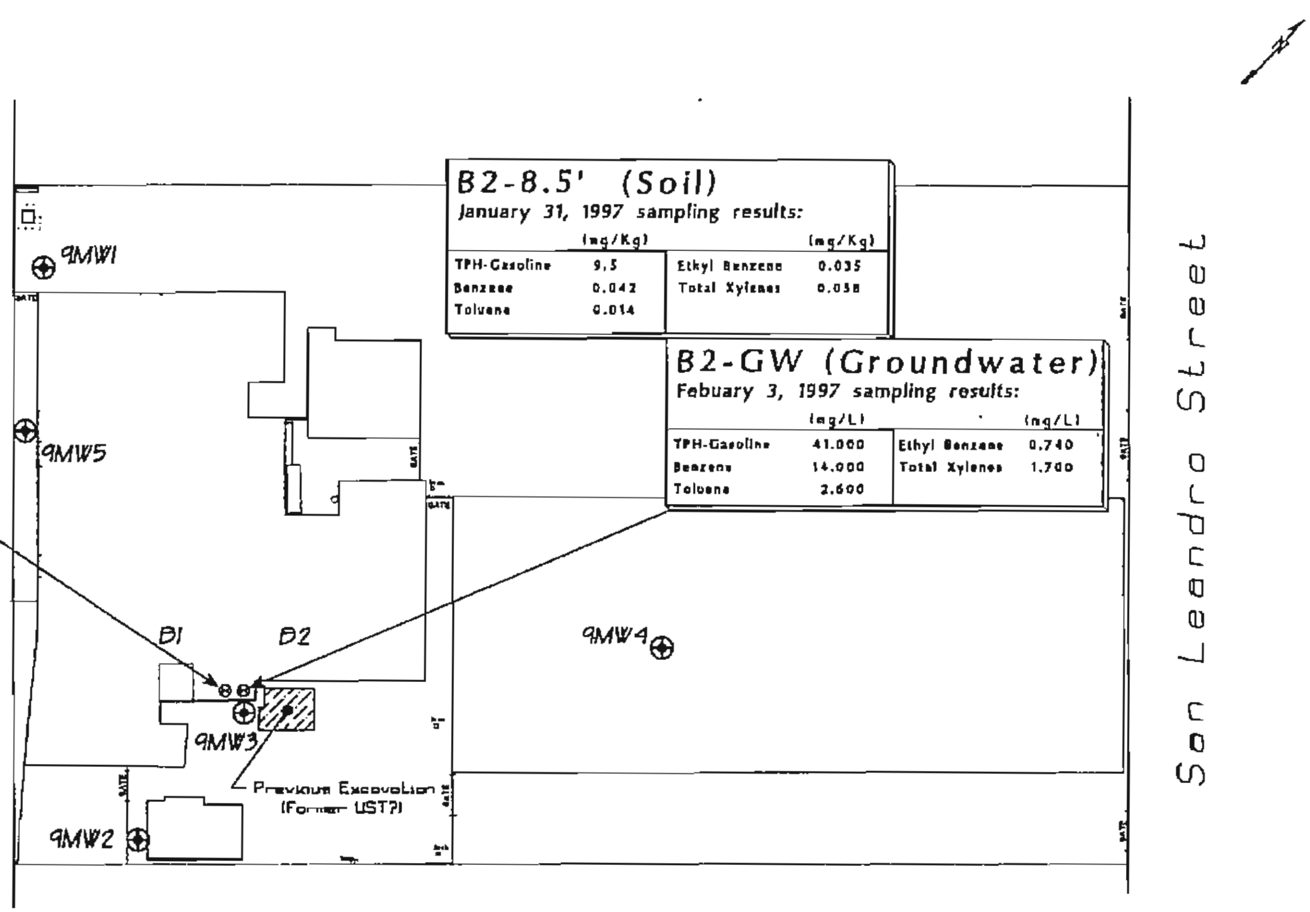
January 31, 1997 sampling results:

	(mg/Kg)		(mg/Kg)
TPH-Gasoline	9.5	Ethyl Benzene	0.035
Benzene	0.042	Total Xylenes	0.058
Toluene	0.014		

B2-GW (Groundwater)

Febuary 3, 1997 sampling results:

	(ug/L)		(ug/L)
TPH-Gasoline	41.000	Ethyl Benzene	0.740
Benzene	14.000	Total Xylenes	1.700
Toluene	2.600		



Legend:

⊕ Monitoring Well

• Borehole Locations

Scale

50 0 50 100 Feet

Borehole Locations & Analytical Results

Former PACO PUMPS
9201 San Leandro Street
Oakland, California

Prepared by

JONAS & ASSOCIATES INC.

Date: 2-27-1997 Locations Approx.	Figure 1	Drawing Number PCO220-2/97:F1

Figure 1

364/116286 - 116288

CHROMALAB, INC.

Environmental Services (SDB) (DOHS 1094)

SUBM #: 9701366 REP: GC
CLIENT: JONAS
DUE: 02/07/97
REF #:31857

31857

Chain of Custody

DATE 1-31-97 PAGE 1 OF 1

PROJ. MGR MARK JONAS
COMPANY Jonas & Associates Inc.
ADDRESS 2815 Mitchell Drive, Suite 209
Walnut Creek, CA 94598

SAMPLERS (SIGNATURE)
(PHONE NO.) (510) 933-5360
(FAX NO.) (510) 933-5362

ANALYSIS REPORT

SAMPLE ID.	DATE	TIME	MATRIX	PRESERV.	TPH - Gasoline (EPA 5030, 8015)	TPH - Gasoline (5030, 8015) w/BTEX (EPA 602, 8020)	TPH - Diesel, TEPH (EPA 3510/3550, 8015)	PURGEABLE AROMATICS BTEX (EPA 602, 8020)	PURGEABLE HALOCARBONS (EPA 601, 8010)	VOLATILE ORGANICS (EPA 624, 8240, 524.2)	BASE/NEUTRALS, ACIDS (EPA 625/627, 8270, 525)	TOTAL OIL & GREASE (EPA 5520, B+F, E+F)	PCB (EPA 608, 8080)	PESTICIDES (EPA 608, 8080)	TOTAL RECOVERABLE HYDROCARBONS (EPA 418.1)	(F.O.C) Bulk density moisture	LUFT METALS: Cd, Cr, Pb, Zn, Ni	CAM METALS (17)	PRIORITY POLLUTANT METALS (13)	TOTAL LEAD	EXTRACTION (TCLP, STLC)				NUMBER OF CONTAINERS
B2-8.5'	1-31-97	08:20	Soil			X																			1
B1-5.5'	1-31-97	0810	Soil													X									1
B1-8.5'	1-31-97	0815	Soil			X																			2

PROJECT INFORMATION

PROJECT NAME: PACO PUMPS
PROJECT NUMBER: PC0220
P.O. #

SAMPLE RECEIPT

TOTAL NO. OF CONTAINERS	4
HEAD SPACE	
REC'D GOOD CONDITION/COLD	
CONFORMS TO RECORD	

TAT	STANDARD 5-DAY			24	48	72	OTHER

SPECIAL INSTRUCTIONS/COMMENTS.
TAT 5 DAY
B1-5.5' test for (foc) fraction of organic carbon content, Bulk Density & moisture

RELINQUISHED BY 1.	RELINQUISHED BY 2	RELINQUISHED BY 3.
(SIGNATURE) (TIME) 13:17	(SIGNATURE) (TIME)	(SIGNATURE) (TIME)
(PRINTED NAME) Dana R White (DATE) 1-31-97	(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)
(COMPANY) Jonas & Associates Inc.	(COMPANY)	(COMPANY)

RECEIVED BY 1	RECEIVED BY 2.	RECEIVED BY (LABORATORY) 3
(SIGNATURE) (TIME)	(SIGNATURE) (TIME)	(SIGNATURE) Minnie Park (TIME) 1347
(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)	(PRINTED NAME) Minnie Park (DATE) 1/31/97
(COMPANY)	(COMPANY)	(LAB) Chromalab

007/ 11647Z - 11673

CHROMALAB, INC.

Environmental Services (SDB) (DOHS 1094)

SUBM #: 9702007 REP: GC
CLIENT: JONAS
DUE: 02/10/97
REF #:31891

3189.1

Chain of Custody

DATE 2-3-97 PAGE 1 of 1

PROJ MGR: Mark Jonas
COMPANY: Jonas & Associates Inc.
ADDRESS: 2815 Mitchell Drive, Suite 209, Walnut Creek, CA 94598
SAMPLERS (SIGNATURE)
(PHONE NO.) (510) 933-5360
(FAX NO.) (510) 933-5362

ANALYSIS REPORT

SAMPLE ID.	DATE	TIME	MATRIX	PRESERV.	TPH - Gasoline (EPA 5030, 8015)	TPH - Gasoline (5030, 8015) w/BTEX (EPA 602, 8020)	TPH - Diesel, TEPH (EPA 3510/3550, 8015)	PURGEABLE AROMATICS BTEX (EPA 602, 8020)	PURGEABLE HALOCARBONS (EPA 601, 8010)	VOLATILE ORGANICS (EPA 624, 8240, 524.2)	BASE/NEUTRALS, ACIDS (EPA 625/627, 8270, 525)	TOTAL OIL & GREASE (EPA 5520, B+F, E+F)	PCB (EPA 608, 8080)	PESTICIDES (EPA 608, 8080)	TOTAL RECOVERABLE HYDROCARBONS (EPA 418.1)		LUFT METALS: Cd, Cr, Pb, Zn, Ni	CAM METALS (17)	PRIORITY POLLUTANT METALS (13)	TOTAL LEAD	EXTRACTION (TCLP, STLC)				NUMBER OF CONTAINERS
B2-GW	2-3-97	9:50	WTR	HCL		X																			2
B1-GW	2-3-97	10:00	WTR	HCL		X																			2

PROJECT INFORMATION

PROJECT NAME: Paco Pumps
PROJECT NUMBER: PCO 220
P.O. #

SAMPLE RECEIPT

TOTAL NO. OF CONTAINERS	4
HEAD SPACE	
REC'D GOOD CONDITION/COLD	
CONFORMS TO RECORD	

TAT	STANDARD 5-DAY			24	48	72	OTHER

SPECIAL INSTRUCTIONS/COMMENTS:
TAT 5 Days

RELINQUISHED BY 1.	RELINQUISHED BY 2.	RELINQUISHED BY 3.
(SIGNATURE) (TIME) 14:50	(SIGNATURE) (TIME)	(SIGNATURE) (TIME) 1540
(PRINTED NAME) Bary R White (DATE) 2-3-97	(PRINTED NAME) (DATE)	(PRINTED NAME) B. Morrow (DATE) 2-3-97
(COMPANY) Jonas & Associates Inc.	(COMPANY)	(COMPANY) Chromalab
RECEIVED BY 1.	**RECEIVED BY 2.**	**RECEIVED BY (LABORATORY) 3**
(SIGNATURE) (TIME) 1450	(SIGNATURE) (TIME)	(SIGNATURE) Mimie Pak (TIME) 1540
(PRINTED NAME) B. Morrow (DATE) 2-3-97	(PRINTED NAME) (DATE)	(PRINTED NAME) Mimie Pak (DATE) 2/3/97
(COMPANY) Chromalab	(COMPANY)	(LAB) Chromalab

CHROMALAB, 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

Spl#	CLIENT SPL ID	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 recovery was outside QA/QC limits due to sample interference. See Surrogate Summary page.					
116287	B1-8.5'	N.D.	0.012	N.D.	N.D.	N.D.
Reporting Limits		1.0	0.0050	0.0050	0.0050	0.0050
Blank Result		N.D.	N.D.	N.D.	N.D.	N.D.
Blank Spike Result (%)		--	110	111	112	82.5

Kayvan Kimyai
Chemist

Marianne Alexander
Marianne Alexander
Gas/BTEX Supervisor

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

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 7, 1997

Spl# CLIENT SPL ID	Gasoline (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl Benzene (ug/L)	Total Xylenes (ug/L)
116473 B1-GW	31000	7100	4100	520	1400
Reporting Limits	6200	62	62	62	62
Blank Result	N.D.	N.D.	N.D.	N.D.	N.D.
Blank Spike Result (%)	109	120	116	120	114

Marianne Alexander
Gas/BTEX Supervisor

Chip Poalinelli
Operations Manager

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

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

Spl#	CLIENT SPL ID	Gasoline (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl Benzene (ug/L)	Total Xylenes (ug/L)
116472	B2-GW	41000	14000	2600	740	1700
Reporting Limits		10000	100	100	100	100
Blank Result		N.D.	N.D.	N.D.	N.D.	N.D.
Blank Spike Result (%)		109	120	116	120	114

Marianne Alexander
Gas/BTEX Supervisor

Chip Poalinelli
Operations Manager

KLEINFELDER
An employee owned company

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.

Sample I.D.	Moisture Content (%)	Dry Density (pcf)	Porosity (%)	Organic Content (%)	Specific Gravity
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

KLEINFELDER 7133 Koll Center Parkway, Suite 100, Pleasanton, CA 94566-3101 (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

CALCULATE RISK-BASED GROUNDWATER CONCENTRATION (enter "X" in "YES" box)

YES [ ]

OR

CALCULATE INCREMENTAL RISKS FROM ACTUAL GROUNDWATER CONCENTRATION
(enter "X" in "YES" box and initial groundwater conc. below)

YES [X]

DTSC
Vapor Intrusion Guidance
Interim Final 12/04
(last modified 2/4/09)

ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Initial groundwater conc., C_W (μg/L)	Chemical
71432	1.40E+03	Benzene

MORE ↓

ENTER Depth below grade to bottom of enclosed space floor, L_F (cm)	ENTER Depth below grade to water table, L_{WT} (cm)	ENTER SCS soil type directly above water table	ENTER Average soil/ groundwater temperature, T_S (°C)	ENTER Average vapor flow rate into bldg (Leave blank to calculate) Q_{soil} (L/m)
15	274	C	24	5

MORE ↓

ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined vandose zone soil vapor permeability, k_v (cm²)	ENTER Vadose zone SCS soil type (Lookup Soil Parameters)	ENTER Vadose zone soil dry bulk density, ρ_b^V (g/cm³)	ENTER Vadose zone soil total porosity, n^V (unitless)	ENTER Vadose zone soil water-filled porosity, θ_w^V (cm³/cm³)
		1.00E-08	C	1.53	0.428	0.387

MORE ↓

ENTER Target risk for carcinogens, TR (unitless)	ENTER Target hazard quotient for noncarcinogens, THQ (unitless)	ENTER Averaging time for carcinogens, AT_C (yrs)	ENTER Averaging time for noncarcinogens, AT_{NC} (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)
1.0E-06	1	70	25	25	250

Used to calculate risk-based groundwater concentration

INTERMEDIATE CALCULATIONS SHEET

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, $\theta_{a,cz}$ (cm^3/cm^3)	Water-filled porosity in capillary zone, $\theta_{w,cz}$ (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, $Q_{building}$ (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 (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	7,977	5.29E-03	2.17E-01	1.80E-04	2.20E-05	2.71E-05	2.34E-05

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/m^3)
259	15	3.04E+05	1.25	8.33E+01	2.20E-05	5.00E+03	#NUM!	2.66E-06	8.09E-01	2.9E-05	3.0E-02

RESULTS SHEET

RISK-BASED GROUNDWATER CONCENTRATION 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)
NA	NA	NA	1.79E+06	NA

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
5.7E-06	1.8E-02

MESSAGE SUMMARY BELOW:

END

]

DATA ENTRY SHEET

GW-SCREEN
Version 3.0, 04/03

Reset to Defaults

CALCULATE RISK-BASED GROUNDWATER CONCENTRATION (enter "X" in "YES" box)

YES [ ]

OR

CALCULATE INCREMENTAL RISKS FROM ACTUAL GROUNDWATER CONCENTRATION
(enter "X" in "YES" box and initial groundwater conc. below)

YES [X]

DTSC
Vapor Intrusion Guidance
Interim Final 12/04
(last modified 2/4/09)

ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Initial groundwater conc. C_W (µg/L)	Chemical
108883	1.20E+03	Toluene

MORE ↓

ENTER Depth below grade to bottom of enclosed space floor, L_F (cm)	ENTER Depth below grade to water table L_{WT} (cm)	ENTER SCS soil type directly above water table	ENTER Average soil/groundwater temperature T_S (°C)	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
15	274	C	24	5

MORE ↓

ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined vandose zone soil vapor permeability, k_v (cm^2)	ENTER Vadose zone SCS soil type	ENTER Vadose zone soil dry bulk density, ρ_b^V (g/cm^3)	ENTER Vadose zone soil total porosity, n^V (unitless)	ENTER Vadose zone soil water filled porosity θ_w^V (cm^3/cm^3)
		1.00E-08	C	1.53	0.426	0.387

Lookup Soil Parameters

MORE ↓

ENTER Target risk for carcinogens, TR (unitless)	ENTER Target hazard quotient for noncarcinogens, THQ (unitless)	ENTER Averaging time for carcinogens, AT_C (yrs)	ENTER Averaging time for noncarcinogens, AT_{NC} (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)
1.0E-06	1	70	25	25	250

Used to calculate risk-based groundwater concentration.

INTERMEDIATE CALCULATIONS SHEET

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, $\theta_{a,cz}$ (cm^3/cm^3)	Water-filled porosity in capillary zone, $\theta_{w,cz}$ (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, $Q_{building}$ (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} ($atm\text{-}m^3/mol$)	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	9,001	6.29E-03	2.58E-01	1.80E-04	1.91E-05	2.40E-05	2.04E-05

Diffusion path length, L_d (cm)	Convection path length, L_p (cm)	Source vapor conc., C_{source} ($\mu g/m^3$)	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., $C_{building}$ ($\mu g/m^3$)	Unit risk factor, URF $(\mu g/m^3)^{-1}$	Reference conc., RfC (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

RESULTS SHEET

RISK-BASED GROUNDWATER CONCENTRATION 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)
NA	NA	NA	5.26E+05	NA

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
NA	1.6E-03

MESSAGE SUMMARY BELOW:

END

DATA ENTRY SHEET

GW-SCREEN
Version 3.0, 04/03

Reset to Defaults

CALCULATE RISK-BASED GROUNDWATER CONCENTRATION (enter "X" in "YES" box)

YES [ ]

OR

CALCULATE INCREMENTAL RISKS FROM ACTUAL GROUNDWATER CONCENTRATION
(enter "X" in "YES" box and initial groundwater conc. below)

YES [X]

DTSC
Vapor Intrusion Guidance
Interim Final 12/04
(last modified 2/4/09)

ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Initial groundwater conc., C_W (µg/L)	Chemical
100414	1.90E+02	Ethylbenzene

MORE ↓

ENTER Depth below grade to bottom of enclosed space floor, L_F (cm)	ENTER Depth below grade to water table, L_{WT} (cm)	ENTER SCS soil type directly above water table	ENTER Average soil/groundwater temperature, T_S (°C)	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
15	274	C	24	5

MORE ↓

ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined vandose zone soil vapor permeability, k_v (cm²)	ENTER Vadose zone SCS soil type (Lookup Soil Parameters)	ENTER Vadose zone soil dry bulk density, ρ_b^V (g/cm³)	ENTER Vadose zone soil total porosity, n^V (unitless)	ENTER Vadose zone soil water-filled porosity, θ_w^V (cm³/cm³)
		1.00E-08	C	1.53	0.426	0.387

MORE ↓

ENTER Target risk for carcinogens, TR (unitless)	ENTER Target hazard quotient for noncarcinogens, THQ (unitless)	ENTER Averaging time for carcinogens, AT_C (yrs)	ENTER Averaging time for noncarcinogens, AT_{NC} (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)
1.0E-06	1	70	25	25	250

Used to calculate risk-based groundwater concentration.

INTERMEDIATE CALCULATIONS SHEET

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, $\theta_{a,cz}$ (cm^3/cm^3)	Water-filled porosity in capillary zone, $\theta_{w,cz}$ (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, $Q_{building}$ (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} ($atm\text{-}m^3/mol$)	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	9,994	7.43E-03	3.05E-01	1.80E-04	1.58E-05	2.00E-05	1.69E-05

Diffusion path length, L_d (cm)	Convection path length, L_p (cm)	Source vapor conc., C_{source} ($\mu g/m^3$)	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., $C_{building}$ ($\mu g/m^3$)	Unit risk factor, URF $(\mu g/m^3)^{-1}$	Reference conc., RfC (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

RESULTS SHEET

RISK-BASED GROUNDWATER CONCENTRATION 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)
NA	NA	NA	1.69E+05	NA

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
6.8E-08	7.6E-05

MESSAGE SUMMARY BELOW:

END

]

DATA ENTRY SHEET

GW-SCREEN
Version 3.0; 04/03

Reset to Defaults

CALCULATE RISK-BASED GROUNDWATER CONCENTRATION (enter "X" in "YES" box)

YES [ ]

OR

CALCULATE INCREMENTAL RISKS FROM ACTUAL GROUNDWATER CONCENTRATION
(enter "X" in "YES" box and initial groundwater conc below)

YES [X]

DTSC
Vapor Intrusion Guidance
Interim Final 12/04
(last modified 2/4/09)

ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Initial groundwater conc., C_W (μg/L)	Chemical
108383	6.40E+02	m-Xylene

MORE ↓

ENTER Depth below grade to bottom of enclosed space floor, L_F (cm)	ENTER Depth below grade to water table, L_{WT} (cm)	ENTER SCS soil type directly above water table	ENTER Average soil/ groundwater temperature, T_S (°C)	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
15	274	C	24	5

MORE ↓

ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	ENTER 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 density, ρ_b^V (g/cm^3)	ENTER Vadose zone soil total porosity, n^V (unitless)	ENTER Vadose zone soil water-filled porosity, θ_w^V (cm^3/cm^3)
		1 00E-08	C	1 53	0.428	0.387

MORE ↓

ENTER Target risk for carcinogens TR (unitless)	ENTER Target hazard quotient for noncarcinogens, THQ (unitless)	ENTER Averaging time for carcinogens, AT_C (yrs)	ENTER Averaging time for noncarcinogens, AT_{NC} (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)
1 0E-06	1	70	25	25	250

Used to calculate risk-based groundwater concentration

INTERMEDIATE CALCULATIONS SHEET

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, $\theta_{a,cz}$ (cm^3/cm^3)	Water-filled porosity in capillary zone, $\theta_{w,cz}$ (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, $Q_{building}$ (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 (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

Diffusion path length, L_d (cm)	Convection path length, L_p (cm)	Source vapor conc., C_{source} ($\mu g/m^3$)	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., $C_{building}$ ($\mu g/m^3$)	Unit risk factor, URF $(\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)
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

RESULTS SHEET

RISK-BASED GROUNDWATER CONCENTRATION 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)
NA	NA	NA	1.61E+05	NA

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
NA	2.3E-03

MESSAGE SUMMARY BELOW:

END

DATA ENTRY SHEET

GW-SCREEN
Version 3.0; 04/03

Reset to Defaults

CALCULATE RISK BASED GROUNDWATER CONCENTRATION (enter "X" in "YES" box)

YES [ ]

OR

CALCULATE INCREMENTAL RISKS FROM ACTUAL GROUNDWATER CONCENTRATION
(enter "X" in "YES" box and initial groundwater conc. below)

YES [X]

DTSC
Vapor Intrusion Guidance
Interim Final 12/04
(last modified 2/4/09)

ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Initial groundwater conc., C_W (ug/L)	Chemical
98066	3.80E+00	tert-Butylbenzene

MORE ↓

ENTER Depth below grade to bottom of enclosed space floor, L_F (cm)	ENTER Depth below grade to water table, L_{WT} (cm)	ENTER SCS soil type directly above water table	ENTER Average soil/ groundwater temperature, T_S (°C)	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
15	274	C	24	5

MORE ↓

ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined vandose zone soil vapor permeability, k_v (cm²)	ENTER Vadose zone SCS soil type (Lookup Soil Parameters)	ENTER Vadose zone soil dry bulk density, ρ_b^V (g/cm³)	ENTER Vadose zone soil total porosity, n^V (unitless)	ENTER Vadose zone soil water-filled porosity, θ_w^V (cm³/cm³)
		1.00E-08	C	1.53	0.428	0.387

MORE ↓

ENTER Target risk for carcinogens, TR (unitless)	ENTER Target hazard quotient for noncarcinogens, THQ (unitless)	ENTER Averaging time for carcinogens, AT_C (yrs)	ENTER Averaging time for noncarcinogens, AT_{NC} (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)
1.0E-06	1	70	25	25	250

Used to calculate risk-based groundwater concentration.

INTERMEDIATE CALCULATIONS SHEET

Source-building separation, L_T (cm)	Vadose zone soil air-filled porosity, θ_a^V (cm³/cm³)	Vadose zone effective total fluid saturation, S_{te} (cm³/cm³)	Vadose zone soil intrinsic permeability, k_i (cm²)	Vadose zone soil relative air permeability, k_{rg} (cm²)	Vadose zone soil effective vapor permeability, k_v (cm²)	Thickness of capillary zone, L_{cz} (cm)	Total porosity in capillary zone, n_{cz} (cm³/cm³)	Air-filled porosity in capillary zone, $\theta_{a,cz}$ (cm³/cm³)	Water-filled porosity in capillary zone, $\theta_{w,cz}$ (cm³/cm³)	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, $Q_{building}$ (cm³/s)	Area of enclosed space below grade, A_B (cm²)	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-m³/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} (cm²/s)	Total overall effective diffusion coefficient, D^{eff}_T (cm²/s)
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 path length, L_d (cm)	Convection path length, L_p (cm)	Source vapor conc., C_{source} (μg/m³)	Crack radius, r_{crack} (cm)	Average vapor flow rate into bldg., Q_{soil} (cm³/s)	Crack effective diffusion coefficient, D^{crack} (cm²/s)	Area of crack, A_{crack} (cm²)	Exponent of equivalent foundation Peclet number, $\exp(Pe^f)$ (unitless)	Infinite source indoor attenuation coefficient, α (unitless)	Infinite source bldg. conc., $C_{building}$ (μg/m³)	Unit risk factor, URF $(\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m³)
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

RESULTS SHEET

RISK-BASED GROUNDWATER CONCENTRATION 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)
NA	NA	NA	2.95E+04	NA

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
NA	1.2E-05

MESSAGE SUMMARY BELOW:

END

]

DATA ENTRY SHEET

GW-SCREEN
Version 3.0; 04/03

Reset to Defaults

CALCULATE RISK-BASED GROUNDWATER CONCENTRATION (enter "X" in "YES" box)

YES [ ]

OR

CALCULATE INCREMENTAL RISKS FROM ACTUAL GROUNDWATER CONCENTRATION
(enter "X" in "YES" box and initial groundwater conc. below)

YES [X]

DTSC
Vapor Intrusion Guidance
Interim Final 12/04
(last modified 2/4/09)

ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Initial groundwater conc., C_W (µg/L)	Chemical
107062	1.20E+01	1,2-Dichloroethane

MORE ↓

ENTER Depth below grade to bottom of enclosed space floor, L_F (cm)	ENTER Depth below grade to water table, L_{WT} (cm)	ENTER SCS soil type directly above water table	ENTER Average soil/groundwater temperature, T_S (°C)	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
15	274	C	24	5

MORE ↓

ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined vandose zone soil vapor permeability, k_v (cm²)	ENTER Vadose zone SCS soil type (Lookup Soil Parameters)	ENTER Vadose zone soil dry bulk density, ρ_b^V (g/cm³)	ENTER Vadose zone soil total porosity, n^V (unitless)	ENTER Vadose zone soil water-filled porosity, θ_w^V (cm³/cm³)
		1.00E-08	C	1.53	0.428	0.387

MORE ↓

ENTER Target risk for carcinogens, TR (unitless)	ENTER Target hazard quotient for noncarcinogens, THQ (unitless)	ENTER Averaging time for carcinogens, AT_C (yrs)	ENTER Averaging time for noncarcinogens, AT_{NC} (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)
1.0E-06	1	70	25	25	250

Used to calculate risk-based groundwater concentration.

INTERMEDIATE CALCULATIONS SHEET

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, $\theta_{a,cz}$ (cm^3/cm^3)	Water-filled porosity in capillary zone, $\theta_{w,cz}$ (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, $Q_{building}$ (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 (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	8,368	9.31E-04	3.82E-02	1.80E-04	7.36E-05	8.30E-05	7.63E-05

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/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

RESULTS SHEET

RISK-BASED GROUNDWATER CONCENTRATION 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)
NA	NA	NA	8.52E+06	NA

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
2.0E-08	6.8E-06

MESSAGE SUMMARY BELOW:

END

]

DATA ENTRY SHEET

GW-SCREEN
Version 3.0; 04/03

Reset to Defaults

CALCULATE RISK-BASED GROUNDWATER CONCENTRATION (enter "X" in "YES" box)

YES [ ]

OR

CALCULATE INCREMENTAL RISKS FROM ACTUAL GROUNDWATER CONCENTRATION
(enter "X" in "YES" box and initial groundwater conc. below)

YES [X]

DTSC
Vapor Intrusion Guidance
Interim Final 12/04
(last modified 2/4/09)

ENTER Chemical CAS No. (numbers only no dashes)	ENTER Initial groundwater conc., C_W (μg/L)	Chemical
98828	4.00E+01	Cumene

MORE ↓

ENTER Depth below grade to bottom of enclosed space floor, L_F (cm)	ENTER Depth below grade to water table, L_{WT} (cm)	ENTER SCS soil type directly above water table	ENTER Average soil/ groundwater temperature, T_S (°C)	ENTER Average vapor flow rate into bldg (Leave blank to calculate) Q_{soil} (L/m)
15	274	C	24	5

MORE ↓

ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	ENTER 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 density, ρ_b^V (g/cm^3)	ENTER Vadose zone soil total porosity, n^V (unitless)	ENTER Vadose zone soil water-filled porosity θ_w^V (cm^3/cm^3)
		1.00E-08	C	1.53	0.428	0.387

MORE ↓

ENTER Target risk for carcinogens TR (unitless)	ENTER Target hazard quotient for noncarcinogens, THQ (unitless)	ENTER Averaging time for carcinogens AT_C (yrs)	ENTER Averaging time for noncarcinogens, AT_{NC} (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)
1.0E-06	1	70	25	25	250

Used to calculate risk-based groundwater concentration

INTERMEDIATE CALCULATIONS SHEET

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, $\theta_{a,cz}$ (cm^3/cm^3)	Water-filled porosity in capillary zone, $\theta_{w,cz}$ (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, $Q_{building}$ (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 (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	12,447	1.08E+00	4.42E+01	1.80E-04	8.56E-06	1.18E-05	9.38E-06

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/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

RESULTS SHEET

RISK-BASED GROUNDWATER CONCENTRATION 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)
NA	NA	NA	6.13E+04	NA

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
NA	3.2E-03

MESSAGE SUMMARY BELOW:

END

]

DATA ENTRY SHEET

GW-SCREEN
Version 3.0; 04/03

Reset to Defaults

CALCULATE RISK-BASED GROUNDWATER CONCENTRATION (enter "X" in "YES" box)

YES [ ]

OR

CALCULATE INCREMENTAL RISKS FROM ACTUAL GROUNDWATER CONCENTRATION
(enter "X" in "YES" box and initial groundwater conc. below)

YES [X]

DTSC
Vapor Intrusion Guidance
Interim Final 12/04
(last modified 2/4/09)

ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Initial groundwater conc., C_W (µg/L)	Chemical
91203	1.60E+02	Naphthalene

MORE ↓

ENTER Depth below grade to bottom of enclosed space floor, L_F (cm)	ENTER Depth below grade to water table, L_{WT} (cm)	ENTER SCS soil type directly above water table	ENTER Average soil/groundwater temperature, T_S (°C)	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
15	274	C	24	5

MORE ↓

ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	ENTER 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 density, ρ_b^V (g/cm^3)	ENTER Vadose zone soil total porosity, n^V (unitless)	ENTER Vadose zone soil water-filled porosity, θ_w^V (cm^3/cm^3)
		1.00E-08	C	1.53	0.428	0.387

MORE ↓

ENTER Target risk for carcinogens, TR (unitless)	ENTER Target hazard quotient for noncarcinogens, THQ (unitless)	ENTER Averaging time for carcinogens, AT_C (yrs)	ENTER Averaging time for noncarcinogens, AT_{NC} (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)
1.0E-06	1	70	25	25	250

Used to calculate risk-based groundwater concentration.

INTERMEDIATE CALCULATIONS SHEET

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, $\theta_{a,cz}$ (cm^3/cm^3)	Water-filled porosity in capillary zone, $\theta_{w,cz}$ (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, $Q_{building}$ (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 (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	12,768	4.48E-04	1.84E-02	1.80E-04	1.02E-04	1.12E-04	1.05E-04

Diffusion path length, L_d (cm)	Convection path length, L_p (cm)	Source vapor conc., C_{source} ($\mu g/m^3$)	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., $C_{building}$ ($\mu g/m^3$)	Unit risk factor, URF $(\mu g/m^3)^{-1}$	Reference conc., RfC (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

RESULTS SHEET

RISK-BASED GROUNDWATER CONCENTRATION 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)
NA	NA	NA	3.10E+04	NA

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
2.9E-07	8.0E-03

MESSAGE SUMMARY BELOW:

END

]

DATA ENTRY SHEET

GW-SCREEN
Version 3.0, 04/03

Reset to Defaults

CALCULATE RISK-BASED GROUNDWATER CONCENTRATION (enter "X" in "YES" box)

YES [ ]

OR

CALCULATE INCREMENTAL RISKS FROM ACTUAL GROUNDWATER CONCENTRATION
(enter "X" in "YES" box and initial groundwater conc. below)

YES [X]

DTSC
Vapor Intrusion Guidance
Interim Final 12/04
(last modified 2/4/09)

ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Initial groundwater conc., C_W (μg/L)	Chemical
103651	8.40E+01	n-Propylbenzene

MORE ↓

ENTER Depth below grade to bottom of enclosed space floor, L_F (cm)	ENTER Depth below grade to water table L_{WT} (cm)	ENTER SCS soil type directly above water table	ENTER Average soil/groundwater temperature, T_S (°C)	ENTER Average vapor flow rate into bldg (Leave blank to calculate) Q_{soil} (L/m)
15	274	C	24	5

MORE ↓

ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined vandose zone soil vapor permeability k_v (cm^2)	ENTER Vadose zone SCS soil type	ENTER Vadose zone soil dry bulk density ρ_b^V (g/cm^3)	ENTER Vadose zone soil total porosity, n^V (unitless)	ENTER Vadose zone soil water-filled porosity θ_w^V (cm^3/cm^3)
		1.00E-08	C	1.53	0.428	0.387

Lookup Soil Parameters

MORE ↓

ENTER Target risk for carcinogens, TR (unitless)	ENTER Target hazard quotient for noncarcinogens, THQ (unitless)	ENTER Averaging time for carcinogens, AT_C (yrs)	ENTER Averaging time for noncarcinogens AT_{NC} (yrs)	ENTER Exposure duration ED (yrs)	ENTER Exposure frequency EF (days/yr)
1.0E-06	1	70	25	25	250

Used to calculate risk-based groundwater concentration

INTERMEDIATE CALCULATIONS SHEET

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, $\theta_{a,cz}$ (cm^3/cm^3)	Water-filled porosity in capillary zone, $\theta_{w,cz}$ (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, $Q_{building}$ (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 (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	11,186	1.00E-02	4.10E-01	1.80E-04	1.23E-05	1.56E-05	1.32E-05

Diffusion path length, L_d (cm)	Convection path length, L_p (cm)	Source vapor conc., C_{source} ($\mu g/m^3$)	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., $C_{building}$ ($\mu g/m^3$)	Unit risk factor, URF $(\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)
259	15	3.44E+04	1.25	8.33E+01	1.23E-05	5.00E+03	#NUM!	1.50E-06	5.17E-02	NA	1.4E-01

RESULTS SHEET

RISK-BASED GROUNDWATER CONCENTRATION 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)
NA	NA	NA	6.00E+04	NA

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
NA	2.5E-04

MESSAGE SUMMARY BELOW:

END

]

DATA ENTRY SHEET

GW-SCREEN
Version 3.0, 04/03

Reset to Defaults

CALCULATE RISK-BASED GROUNDWATER CONCENTRATION (enter "X" in "YES" box)

YES [ ]

OR

CALCULATE INCREMENTAL RISKS FROM ACTUAL GROUNDWATER CONCENTRATION
(enter "X" in "YES" box and initial groundwater conc. below)

YES [X]

DTSC
Vapor Intrusion Guidance
Interim Final 12/04
(last modified 2/4/09)

ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Initial groundwater conc., C_W (ug/L)	Chemical
95636	1.00E+03	1,2,4-Trimethylbenzene

MORE ↓

ENTER Depth below grade to bottom of enclosed space floor, L_F (cm)	ENTER Depth below grade to water table, L_{WT} (cm)	ENTER SCS soil type directly above water table	ENTER Average soil/ groundwater temperature, T_S (°C)	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
15	274	C	24	5

MORE ↓

ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined vandose zone soil vapor permeability, k_v (cm²)	ENTER Vadose zone SCS soil type	ENTER Vadose zone soil dry bulk density, ρ_b^V (g/cm³)	ENTER Vadose zone soil total porosity, n^V (unitless)	ENTER Vadose zone soil water-filled porosity, θ_w^V (cm³/cm³)
		1.00E-08	C	1.53	0.428	0.387

Lookup Soil Parameters

MORE ↓

ENTER Target risk for carcinogens, TR (unitless)	ENTER Target hazard quotient for noncarcinogens, THQ (unitless)	ENTER Averaging time for carcinogens, AT_C (yrs)	ENTER Averaging time for noncarcinogens, AT_{NC} (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)
1.0E-06	1	70	25	25	250

Used to calculate risk-based groundwater concentration

INTERMEDIATE CALCULATIONS SHEET

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, $\theta_{a,cz}$ (cm^3/cm^3)	Water-filled porosity in capillary zone, $\theta_{w,cz}$ (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, $Q_{building}$ (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 (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 length, L_d (cm)	Convection path length, L_p (cm)	Source vapor conc., C_{source} ($\mu g/m^3$)	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., $C_{building}$ ($\mu g/m^3$)	Unit risk factor, URF ($\mu g/m^3)^{-1}$	Reference conc., RfC (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

RESULTS SHEET

RISK-BASED GROUNDWATER CONCENTRATION 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)
NA	NA	NA	5.70E+04	NA

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
NA	4.4E-02

MESSAGE SUMMARY BELOW:

END

]

DATA ENTRY SHEET

GW-SCREEN
Version 3.0; 04/03

Reset to Defaults

CALCULATE RISK-BASED GROUNDWATER CONCENTRATION (enter "X" in "YES" box)

YES [ ]

OR

CALCULATE INCREMENTAL RISKS FROM ACTUAL GROUNDWATER CONCENTRATION
(enter "X" in "YES" box and initial groundwater conc. below)

YES [X]

OTSC
Vapor Intrusion Guidance
Interim Final 12/04
(last modified 2/4/09)

ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Initial groundwater conc. C_W (µg/L)	Chemical
108678	1.90E+02	1,3,5-Trimethylbenzene

MORE ↓

ENTER Depth below grade to bottom of enclosed space floor, L_F (cm)	ENTER Depth below grade to water table, L_{WT} (cm)	ENTER SCS soil type directly above water table	ENTER Average soil/groundwater temperature T_S (°C)	ENTER Average vapor flow rate into bldg (Leave blank to calculate) Q_{soil} (L/m)
15	274	C	24	5

MORE ↓

ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined vadose zone soil vapor permeability k_v (cm²)	ENTER Vadose zone SCS soil type (Lookup Soil Parameters)	ENTER Vadose zone soil dry bulk density ρ_b^V (g/cm³)	ENTER Vadose zone soil total porosity n^V (unitless)	ENTER Vadose zone soil water-filled porosity θ_w^V (cm³/cm³)
		1.00E-08	C	1.53	0.428	0.367

MORE ↓

ENTER Target risk for carcinogens, TR (unitless)	ENTER Target hazard quotient for noncarcinogens, THQ (unitless)	ENTER Averaging time for carcinogens, AT_C (yrs)	ENTER Averaging time for noncarcinogens, AT_{NC} (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency EF (days/yr)
1.0E-06	1	70	25	25	250

Used to calculate risk-based groundwater concentration

INTERMEDIATE CALCULATIONS SHEET

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, $\theta_{a,cz}$ (cm^3/cm^3)	Water-filled porosity in capillary zone, $\theta_{w,cz}$ (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, $Q_{building}$ (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 (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

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/m^3)
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

RESULTS SHEET

RISK-BASED GROUNDWATER CONCENTRATION 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)
NA	NA	NA	2.00E+03	NA

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
NA	1.0E-02

MESSAGE SUMMARY BELOW:

END

]