

RECEIVED

By Alameda County Environmental Health at 11:28 am, Jan 23, 2013

Mr. Jerry Wickham
Alameda County
Environmental Health Department
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94602-6577

Re: B&C Gas Mini Mart, 2008 First Street, Livermore, California
(ACEHD Case No. RO0000278)

Dear Mr. Wickham:

Stratus Environmental, Inc. (Stratus) has recently prepared a document titled *Well Installation and Destruction Report* on my behalf. The report was prepared in regards to Alameda County Fuel Leak Case No. RO0000278, located at 2008 First Street, Livermore, California.

I have reviewed a copy of this report, sent to me by representatives of Stratus, and "I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge."

Sincerely,


Balaji Angle
B&C Gas Mini Mart

1/24/13



3330 Cameron Park Drive, Ste 550
Cameron Park, California 95682
(530) 676-6004 ~ Fax: (530) 676-6005

January 21, 2013
Project No. 2146-2008-01

Mr. Jerry Wickham
Alameda County Environmental Health Department
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502

Re: Well Installation and Destruction Report
B&C Gas Mini Mart
2008 First Street
Livermore, California

Dear Mr. Wickham:

On behalf of Mr. Balaji Angle, Stratus Environmental, Inc. (Stratus) has prepared this *Well Installation and Destruction Report* for the B&C Gas Mini Mart, located at 2008 First Street, Livermore, California (see Figures 1 and 2). Petroleum hydrocarbon impact to the soil and groundwater has previously been documented at the subject property, and Alameda County Environmental Health Department (ACEHD) currently oversees an environmental case for the site. In January 2009, a previous company representing Mr. Angle (Golder Associates) prepared a Corrective Action Plan (CAP) that included a proposal to perform soil vapor extraction (SVE) remedial efforts at the site, and continuation of ozone injection (OI) into the shallow saturated zone. Although the CAP was approved, SVE remediation was never implemented to supplement OI remedial efforts, in part due to increases in groundwater levels in the timeframe following approval of the CAP.

On June 28, 2012, ACEHD issued a letter directing that subsurface site conditions be re-evaluated to assess the current viability of implementing SVE. The letter also requested that a damaged well (MW-6) be overdrilled and replaced, and that a proposal to expand the OI remedial system be developed. After reviewing the June 2012 letter, Stratus prepared a document titled *Work Plan for Supplemental Remediation*, dated August 28, 2012, on behalf of Mr. Angle. This *Work Plan* recommended that expansion of the OI remedial system be postponed, and that SVE be implemented on an intermittent basis, at times of 'relatively low water table levels'. After reviewing the *Work Plan*, ACEHD personnel issued a letter, dated October 15, 2012, approving the proposed scope of work.

This report documents the installation of two dual completion remediation wells that can be used for extraction of soil vapors at times when SVE is implemented, and monitoring of groundwater conditions at times when vapor extraction is not being performed. One of the two dual completion remediation wells was constructed within the former MW-6 well boring, following overdrilling of this well. In addition, the completion of a third vapor extraction well, and soil analytical results for samples collected during drilling work, are documented in this report.

SCOPE OF WORK

The objectives of the proposed scope of work were to:

- Install wells necessary to allow for implementation of SVE at times of ‘relatively low water table levels’, and improved monitoring of groundwater near existing OI wells at times of higher water table levels.
- Further assess soil types and the distribution of fuel contaminants in the subsurface.
- Properly destroy a damaged well.

To accomplish these objectives, Stratus implemented the following work activities:

- Overdrilled well MW-6 to total depth (about 40 feet below ground surface [bgs]) using hollow stem augers. After overdrilling, the borehole was extended to allow for construction of well SVE-3A/B.
- Drilled and installed one additional dual completion well (SVE-4A/B) and one single completion well (SVE-2) using hollow stem augers.
- Collected soil samples during the advancement of borings SVE-2 and SVE-4A/B for lithologic evaluation and chemical analysis.

Prior to implementation of field activities, an encroachment permit was obtained from the City of Livermore and a drilling permit was obtained from Zone 7 Water Agency. Drilling locations were marked 48 hours prior to fieldwork. Underground Service Alert, the City of Livermore, Mr. Angle, and Zone 7 Water Agency were notified 48 hours prior to beginning work activities. Standard field practices and procedures for field work tasks performed during drilling work are described in Appendix A. All work was conducted under the direct supervision of a State of California Professional Geologist. Copies of the drilling permit and encroachment permit are provided in Appendix B.

Field Activities

Soil Borings

A Stratus geologist was onsite to oversee All Well Abandonment, Inc. (C-57 #848359) complete the drilling activities between December 17 and 27, 2012. The well borings were advanced using a truck mounted drilling rig equipped with 8-inch or 10-inch diameter hollow stem augers. Each boring was converted to a remediation well, as described below. The approximate locations of each well are depicted on Figure 2.

The initial 5 feet of well borings SVE-2 and SVE-4A/B were advanced with hand tools to reduce the possibility of damaging underground utilities. Soil samples were collected from these boreholes using a California-type split-spoon sampler equipped with three pre-cleaned brass tubes. The ends of the brass sleeves were lined with Teflon™ sheets, capped, and sealed. Each sample was labeled, placed in a resealable plastic bag, and stored in an ice-chilled cooler. Strict chain-of-custody procedures were followed from the time the samples were collected until the time the samples were relinquished to the laboratory. Soils were classified onsite using the Unified Soil Classification System. Boring logs detailing soil lithologies encountered during this investigation are presented in Appendix C. Soil boring logs have also been uploaded to the State of California's Geotracker database; documentation to confirm uploading of these boring logs is included in Appendix E.

MW-6 Well Destruction and SVE-3A/B Well Installation

Well MW-6 was overdrilled to total depth (about 40 feet bgs) using 10-inch diameter hollow stem augers. Drilling rods were used to ensure that the hollow stem augers remained centered on the borehole during overdrilling. After reaching 40 feet bgs, the borehole was extended to approximately 60 feet bgs to allow for installation of well SVE-3A/B.

Well SVE-3A/B was constructed using two 2-inch diameter schedule 80 PVC well casings and 0.02-inch diameter factory slotted well screen, situated from approximately 43 to 58 feet bgs (SVE-3B) and 25 to 40 feet bgs (SVE-3A). A filter pack of #3 graded sand was placed from approximately 42 to 60 feet bgs and 23 to 40.5 feet bgs, around the well screen. Bentonite was placed from 40.5 feet bgs to 42 feet bgs and 21 to 23 feet bgs. Neat cement was subsequently used to backfill around the well casing from surface grade to approximately 21 feet bgs. A well construction diagram for SVE-3A/B is provided in Appendix C. A well destruction notice for well MW-6, and a well construction notice for well SVE-3A/B, were filed with the Department of Water Resources (DWR).

Installation of Wells SVE-2 and SVE-4A/B

Well SVE-2 was constructed through 8-inch diameter hollow stem augers using 2-inch diameter schedule 40 PVC and 20 feet of 0.02-inch diameter factory slotted well screen, situated from about 30 to 50 feet bgs. A filter pack of #3 graded sand was backfilled around the well screen, from approximately 28 to 50 feet bgs. Bentonite was placed on top of the filter pack sand from approximately 26 to 28 feet bgs and hydrated with clean water to provide a transition seal for the well. The remaining annular space was subsequently backfilled with neat cement. A traffic rated vault box was installed over the well, and a watertight locking cap was placed on top of the well casing. The boring log for SVE-2 includes a diagram of the well construction details for this well (Appendix C). A well construction notice for well SVE-2 was filed with DWR.

Well SVE-4 A/B was constructed through 10-inch diameter hollow stem augers using two 2-inch diameter schedule 80 PVC well casings and 0.02-inch diameter factory slotted well screen, situated from approximately 43 to 58 feet bgs (SVE-4B) and 25 to 40 feet bgs (SVE-4A). A filter pack of #3 graded sand was placed from approximately 42 to 58 feet bgs and 23 to 40.5 feet bgs, around the well screen. Bentonite was placed from 40.5 feet bgs to 42 feet bgs and 21 to 23 feet bgs. Neat cement was subsequently used to backfill around the well casing from surface grade to approximately 21 feet bgs. Well construction details for SVE-4A/B are included on the geologic log for this borehole (Appendix C). A well construction notice for well SVE-4A/B was filed with DWR.

Well Development

Stratus personnel developed wells SVE-3A/B and SVE-4A/B on January 9, 2013. The wells were developed by surging and bailing, followed by groundwater pumping. Development continued until the extracted water appeared free of suspended sediment.

Waste Management

Soil and wastewater generated during the drilling and well development work was containerized in steel drums and stored onsite pending disposal. A sample of the soil cuttings was collected and chemically analyzed in order to determine an appropriate disposal facility for the waste material. A licensed contractor (Integrated Wastestream Management) has been retained to transport the soil and wastewater for offsite disposal.

Analytical Methods

Soil samples were forwarded to Alpha Analytical, Inc., a California state-certified laboratory (ELAP #2019), for chemical analysis under strict chain-of-custody procedures. The soil samples were analyzed for gasoline range organics (GRO) using

EPA Method 8015, and for benzene, toluene, ethylbenzene, and total xylenes (BTEX compounds), and methyl tertiary butyl ether (MTBE) using EPA Method 8260. Soil analytical results are summarized on Table 1, and certified analytical reports and chain-of-custody documentation are provided in Appendix D. The certified analytical reports prepared by Alpha Analytical have been uploaded to the GeoTracker database (see Appendix E for documentation).

Findings

Soil Analytical Results

In both the SVE-2 and SVE-4 boreholes, the highest concentrations of petroleum hydrocarbons in soil were detected in samples collected from approximately 30 feet bgs. GRO, benzene, and MTBE were reported at levels of 26 milligrams per kilogram (mg/Kg), 0.67 mg/Kg, and 5.6 mg/Kg, respectively, in the 30-foot depth sample collected from SVE-2. At boring SVE-4, GRO was detected at a level of 230 mg/Kg in the 30 foot depth sample. Low levels of petroleum hydrocarbons were reported in samples collected from boring SVE-2 at 35 and 40 feet bgs. No petroleum hydrocarbons or fuel oxygenates were detected in a sample collected near the base of boring SVE-4 (sample at 55 feet bgs).

DISCUSSION

Stratus has begun the process of performing work that will allow for initiation of SVE remediation at the site, in particular applying for a 3-phase electrical service connection with Pacific Gas and Electric Company (PG&E). Stratus will provide periodic updates regarding the status of this work to ACEHD personnel in the future.

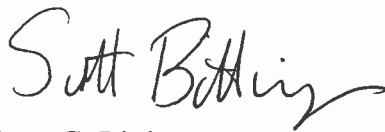
LIMITATIONS

This report was prepared in general accordance with accepted standards of care that existed at the time this work was performed. No other warranty, expressed or implied, is made. Conclusions and recommendations are based on field observations and data obtained from this work and previous investigations. It should be recognized that definition and evaluation of geologic conditions is a difficult and somewhat inexact science. Judgments leading to conclusions and recommendations are generally made with an incomplete knowledge of the subsurface conditions present. More extensive studies may be performed to reduce uncertainties. This report is solely for the use and information of our client unless otherwise noted.

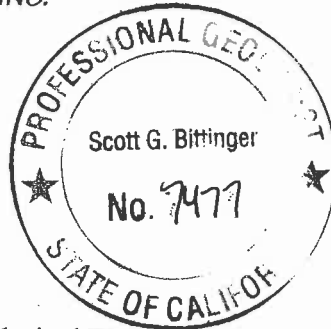
If you have any questions or comments concerning this *Report*, please contact Scott Bittinger at (530) 676-2062.

Sincerely,

STRATUS ENVIRONMENTAL, INC.



Scott G. Bittinger, P.G.
Project Manager



Attachments:

Table 1	Soil Analytical Results
Figure 1	Site Location Map
Figure 2	Site Plan
Appendix A	Field Practices and Procedures
Appendix B	Encroachment Permit and Drilling Permit
Appendix C	Boring Logs and Well Details
Appendix D	Certified Analytical Reports and Chain-of-Custody Records
Appendix E	Geotracker Data Upload Confirmation Sheets

cc: Mr. Balaji Angle, B&C Gas Mini Mart

TABLE 1
SOIL ANALYTICAL RESULTS
Former B&C Gas Mini Mart
2008 First Street, Livermore, California

Sample ID	Sample Depth (feet bgs)	Date Collected	GRO (mg/Kg)	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Total Xylenes (mg/Kg)	MTBE (mg/Kg)
Boring SVE-2								
SVE-2-30	30	12/17/2012	26	0.67	<0.005	0.85	0.42	5.6
SVE-2-35	35	12/17/2012	2.4	0.025	<0.01*	0.018	0.01	0.25
SVE-2-40	40	12/17/2012	4.0	<0.005	<0.005	<0.005	<0.005	0.0053
Boring SVE-4								
SVE-4-30	30	12/27/2012	230	<0.25*	<0.25*	1.6	7.65	<0.25*
SVE-4-55	55	12/27/2012	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005

Explanation

GRO = Gasoline range organics / total petroleum hydrocarbons as gasoline

BTEX = Benzene, toluene, ethylbenzene, and xylenes

MTBE = Methyl tertiary butyl ether

bgs = below ground surface

mg/Kg = milligrams per kilogram

* = Reporting limits increased due to high concentrations of target analytes

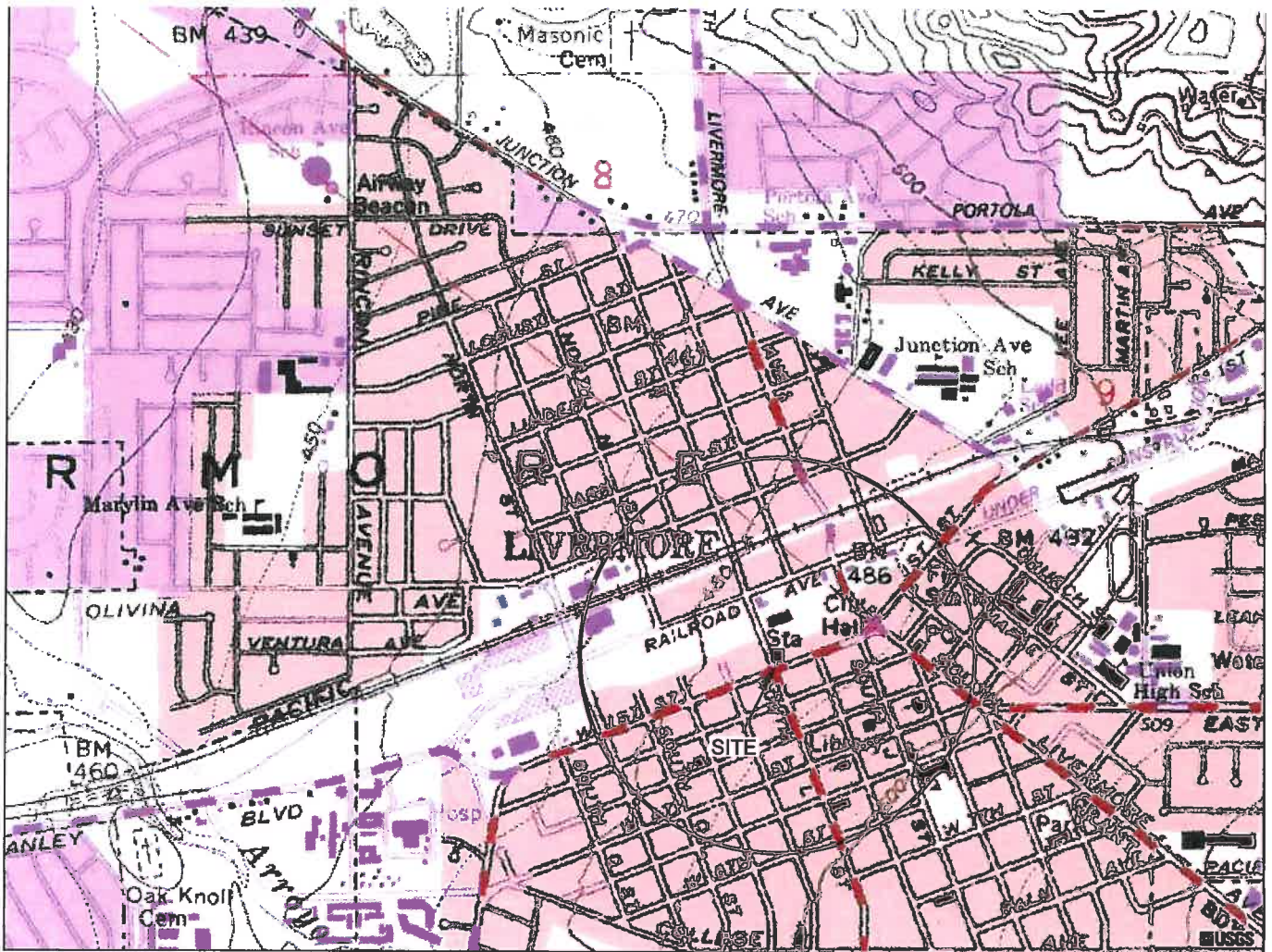
Analytical Laboratory

Alpha Analytical, Inc. (ELAP #2019)

Analytical Methods

GRO analyzed using EPA Method SW8015B

BTEX and MTBE analyzed using EPA Method SW8260B



GENERAL NOTES:
 BASE MAP FROM U.S.G.S.
 LIVERMORE, CA.
 7.5 MINUTE TOPOGRAPHIC
 PHOTOREVISED 1999



QUADRANGLE LOCATION



APPROXIMATE SCALE

STRATUS
 ENVIRONMENTAL, INC.

B & C GAS MINI MART
 2008 FIRST STREET
 LIVERMORE, CALIFORNIA

SITE LOCATION MAP

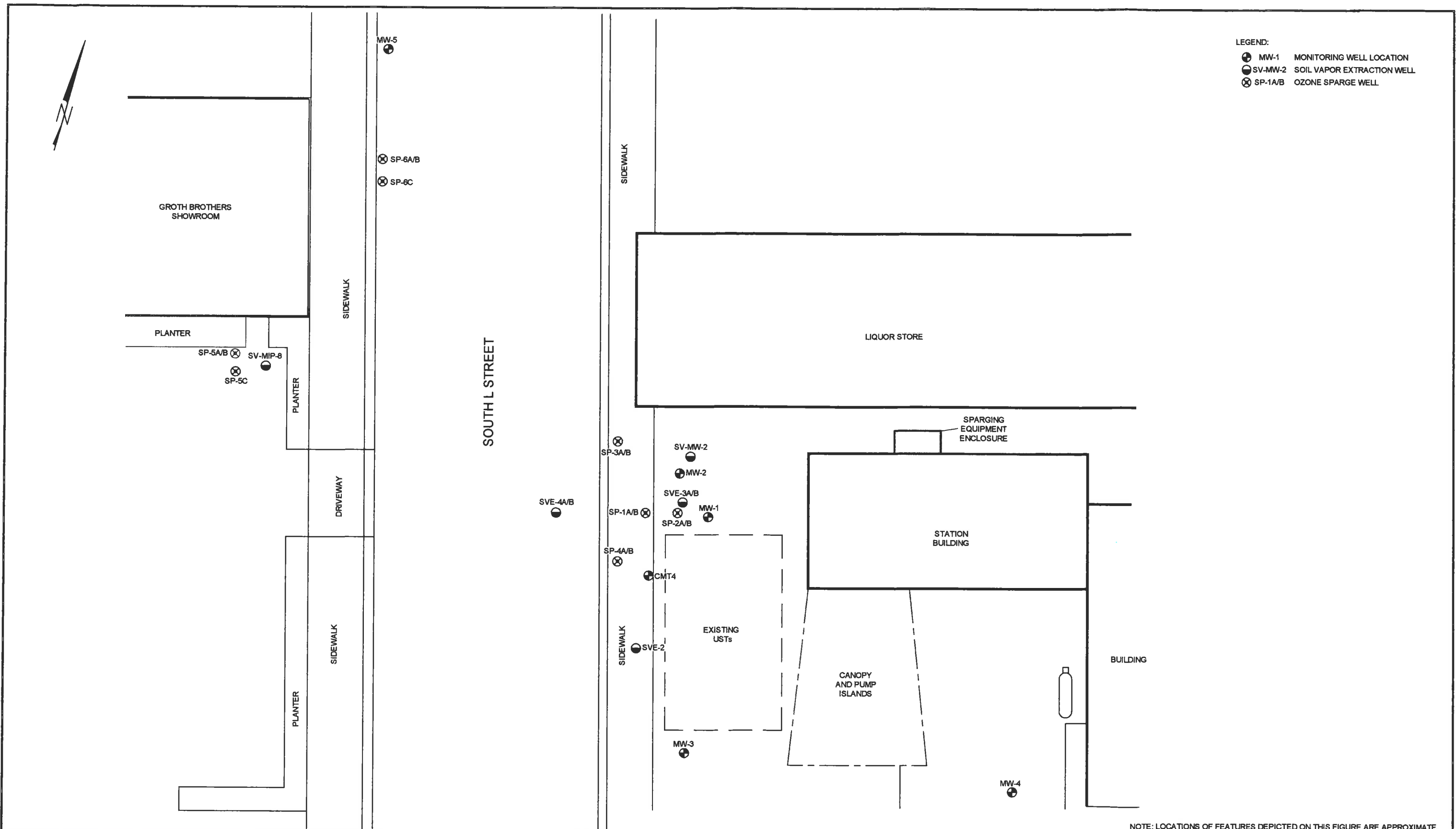
FIGURE

1

PROJECT NO.
 2146-2008-01



- LEGEND:
- MW-1 MONITORING WELL LOCATION
 - SV-MW-2 SOIL VAPOR EXTRACTION WELL
 - ⊗ SP-1A/B OZONE SPARGE WELL



NOTE: LOCATIONS OF FEATURES DEPICTED ON THIS FIGURE ARE APPROXIMATE.



B & C GAS MINI MART
2008 1st STREET
LIVERMORE, CALIFORNIA

SITE PLAN

FIGURE
2
PROJECT NO.
2146-2008-01

APPENDIX A
FIELD PRACTICES AND PROCEDURES

FIELD PRACTICES AND PROCEDURES

General procedures used by Stratus in site assessments for drilling exploratory borings, collecting samples, and installing monitoring wells are described herein. These general procedures are used to provide consistent and reproducible results; however, some procedure may be modified based on site conditions. A California state-registered geologist supervises the following procedures.

PRE-FIELD WORK ACTIVITIES

Health and Safety Plan

Field work performed by Stratus at the site is conducted according to guidelines established in a Site Health and Safety Plan (SHSP). The SHSP is a document which describes the hazards that may be encountered in the field and specifies protective equipment, work procedures, and emergency information. A copy of the SHSP is at the site and available for reference by appropriate parties during work at the site.

Locating Underground Utilities

Prior to commencement of any work that is to be below surface grade, the location of the excavation, boring, etc., is marked with white paint as required by law. An underground locating service such as Underground Service Alert (USA) is contacted. The locating company contacts the owners of the various utilities in the vicinity of the site to mark the locations of their underground utilities. Any invasive work is preceded by hand augering to a minimum depth of five feet below surface grade to avoid contact with underground utilities.

FIELD METHODS AND PROCEDURES

Exploratory Soil Borings

Soil borings will be drilled using a truck-mounted, hollow stem auger drill rig. Soil samples for logging will be obtained from auger-return materials and by advancing a modified California split-spoon sampler equipped with brass or stainless steel liners into undisturbed soil beyond the tip of the auger. Soils will be logged by a geologist according to the Unified Soil Classification System and standard geological techniques. Drill cuttings will be screened using a portable photoionization detector (PID) or a flame ionization detector (FID). Exploratory soil borings not used for monitoring well installation will be backfilled to the surface with a bentonite-cement slurry pumped into the boring through a tremie pipe.

Soil sampling equipment will be cleaned with a detergent water solution, rinsed with clean water, and equipped with clean liners between sampling intervals. Augers and

samplers will be steam cleaned between each boring to reduce the possibility of cross contamination. Steam cleaning effluent will be contained in 55-gallon drums and temporarily stored on site. The disposal of the effluent will be the responsibility of the client.

Drill cuttings generated during the drilling procedure will be stockpiled on site. Stockpiled drill cuttings will be placed on and covered with plastic sheeting. The stockpiled soil is typically characterized by collecting and analyzing composite samples from the stockpile. Stratus Environmental will recommend an appropriate method for disposition of the cuttings based on the analytical results. The client will be responsible for disposal of the drill cuttings.

Soil Sample Collection

During drilling, soil samples will be collected in cleaned brass, two by six inch tubes. The tubes will be set in an 18-inch-long split-barrel sampler. The sampler will be conveyed to bottom of the borehole attached to a wire-line hammer device on the drill rig. When possible, the split-barrel sampler will be driven its entire length, either hydraulically or by repeated pounding a 140-pound hammer using a 30-inch drop. The number of drops (blows) used to drive the sampler will be recorded on the boring log. The sampler will be extracted from the borehole, and the tubes containing the soil samples will be removed. Upon removal, the ends of the lowermost tube will be sealed with Teflon sheets and plastic caps. Soil samples for chemical analysis will be labeled, placed on ice, and delivered to a state-certified analytical laboratory, along with the appropriate chain-of-custody documentation.

Soil Classification

As the samples are obtained in the field, they will be classified by the field geologist in accordance with the Unified Soil Classification System. Representative portions of the samples will be retained for further examination and for verification of the field classification. Logs of the borings indicating the depth and identification of the various strata and pertinent information regarding the method of maintaining and advancing the borehole will be prepared.

Soil Sample Screening

Soil samples selected for chemical analysis will be determined from a head-space analysis using a PID or an FID. The soil will be placed in a Ziploc[®] bag, sealed, and allowed to reach ambient temperature, at which time the PID probe will be inserted into the Ziploc[®] bag. The total volatile hydrocarbons present are detected by the PID and reported in parts per million by volume (ppmv). The PID will be calibrated to an isobutylene standard.

Generally two soil samples from each soil boring will be submitted for chemical analysis unless otherwise specified in the scope of work. Soil samples selected for analysis typically represent the highest PID reading recorded for each soil boring and the sample just above first-encountered groundwater.

Stockpiled Drill Cuttings and Soil Sampling

Soil generated during drilling operations will be stockpiled on-site. The stockpile will be set on and covered by plastic sheeting in a manner to prevent rain water from coming in contact with the soil. Prior to collecting soil samples, Stratus personnel will calculate the approximate volume of soil in the stockpile. The stockpile will then be divided into sections, if warranted, containing the predetermined volume sampling interval. Soil samples will be collected at 0.5 to 2 feet below the surface of the stockpile. Four soil samples will be collected from the stockpile and composited into one sample by the laboratory prior to analysis. The soil samples will be collected in cleaned brass, two by six inch tubes using a hand driven sampling device. To reduce the potential for cross-contamination between samples, the sampler will be cleaned between each sampling event. Upon recovery, the sample container will be sealed at each end with Teflon sheeting and plastic caps to minimize the potential of volatilization and cross-contamination prior to chemical analysis. The soil sample will be labeled, placed on ice, and delivered to a state-certified analytical laboratory, along with the appropriate chain-of-custody documentation.

Direct Push Technology, Soil Sampling

GeoProbe™ is a drilling method of advancing small diameter borings without generating soil cuttings. The GeoProbe™ system consists of a 2-inch diameter, 5-foot long, stainless steel soil sampling tool that is hydraulically advanced into subsurface soils by a small, truck-mounted rig. The sampling tool is designed similar to a California-modified split-spoon sampler, and lined with a 5-foot long, clear acrylic sample tube that enables continuous core sampling.

To collect soil samples, the sampler is advanced to the desired sampling depth. The mouth of the sampling tool is plugged to prevent soil from entering the sampler. Upon reaching the desired sampling depth, the plug at the mouth of the sample tool is disengaged and retracted, the sampler is advanced, and the sampler is filled with soil. The sample tool is then retrieved from the boring, and the acrylic sample tube removed. The sample tool is then cleaned, a new acrylic tube is placed inside and the sampling equipment is advanced back down the borehole to the next sample interval.

The Stratus geologist describes the entire interval of soil visible in the acrylic tube. The bottom-most 6-inch long section is cut off and retained for possible chemical analysis. The ends of the chemical sample are lined with Teflon™ sheets, capped, labeled, and placed in an ice-chilled cooler for transport to California Department of Health Services-certified analytical laboratory under chain-of-custody.

Direct Push Technology, Water Sampling

A well known example of direct push technology for water sampling is the Hydropunch[®]. For the purpose of this field method the term hydropunch will be used instead of direct push technology for water sampling.

The hydropunch is typically used with a drill rig. A boring is drilled with hollow stem-augers to just above the sampling zone. In some soil conditions the drill rig can push directly from the surface to the sampling interval. The hydropunch is conveyed to the bottom of the boring using drill rods. Once on bottom the hydropunch is driven a maximum of five feet. The tool is then opened by lifting up the drill rod no more than four feet. Once the tool is opened, water enters and a sample can be collected with a bailer or tubing utilizing a peristaltic pump. Soil particles larger than silt are prevented from entering the tool by a screen within the tool. The water sample is collected, labeled, and handled according to the Quality Assurance Plan.

Monitoring Well Installation

Monitoring wells will be completed by installing 2 to 6 inch-diameter Schedule 40 polyvinyl chloride (PVC) casing. The borehole diameter for a monitoring well will be a minimum of four inches larger than the outside diameter of the casing. The 2-inch-diameter flush-threaded casing is generally used for wells dedicated for groundwater monitoring purposes.

A monitoring well is typically cased with threaded, factory-perforated and blank Schedule 40 PVC. The perforated interval consists of slotted casing, generally with 0.01 or 0.02 inch-wide by 1.5-inch-long slots, with 42 slots per foot. The screened sections of casing are factory machine slotted and will be installed approximately 5 feet above and 10 feet below first-encountered water level. The screened interval will allow for seasonal fluctuation in water level and for monitoring floating product. A threaded or slip PVC cap is secured to the bottom of the casing. The slip cap can be secured with stainless steel screws or friction; no solvents or cements are used. Centering devices may be fastened to the casing to ensure even distribution of filter material and grout within the borehole annulus. The well casing is thoroughly washed and/or steam cleaned, or may be purchased as pre-cleaned, prior to completion.

A filter pack of graded sand will be placed in the annular space between the PVC casing and the borehole wall. Sand will be added to the borehole through the hollow stem of the augers to provide a uniform filter pack around the casing and to stabilize the borehole. The sand pack will be placed to a maximum of 2 feet above the screens, followed by a minimum 1-foot seal consisting of bentonite pellets.

Cement grout containing 5 percent bentonite or concrete will be placed above the bentonite seal to the ground surface. A concrete traffic-rated vault box will be installed over the monitoring well(s). A watertight locking cap will be installed over the top of the

well casing. Reference elevations for each monitoring well will be surveyed when more than two wells will be located on site. Monitoring well elevations will be surveyed by a California licensed surveyor to the nearest 0.01-foot relative to mean sea level (MSL). Horizontal coordinates of the wells will be measured at the same time.

Exploratory boring logs and well construction details will be prepared for the final written report.

APPENDIX B
ENCROACHMENT PERMIT AND DRILLING PERMIT

City of Livermore

Community Development Department
1052 S. Livermore Avenue
Livermore, CA 94550
(925) 960-4500

Encroachment
Permit No. EN120396
Type: Other

ADD

PERMIT TO DO WORK IN ACCORDANCE WITH CHAPTER 12.08 OF THE LIVERMORE MUNICIPAL CODE AND SPECIFICATIONS AS ADOPTED BY THE CITY OF LIVERMORE AND ANY SPECIAL REQUIREMENTS SHOWN OR LISTED HEREIN.

Applicant/Permittee:

Name: Stratus Environmental Inc
Address: 3330 Cameron Park Drive, Suite 550
Cameron Park, Ca., 95682
Phone: 530-676-6004

Permit Fee: \$90.00
Inspection Fee: \$1,000.00
Bond: \$0.00

Total: \$1,090.00

Contractor:

Name: All Well Abandonment
Address: 9245 Beatty Drive, Suite A
Sacramento Ca. 95826
Phone: 916-363-9355

PLEASE READ THIS PERMIT CAREFULLY. KEEP IT AT THE WORK SITE. TO ARRANGE FOR AN INSPECTION, PHONE (925) 960-4500 AT LEAST 24 HOURS BEFORE YOU START WORK.

JOB LOCATION: 2008 First Street ****

DESCRIPTION OF WORK: Installation of two (2) Monitoring wells to 20 to 25 FBG . In the locations adjacent to above referenced site. Well lid to be flush with existing sidewalk/pavement and lid to be locking type. See attached plan with proposed well location.

Length of Excavation: _ L.F. Width: _ L.F. Depth: _ L.F.


Attention is directed to the General Provisions printed on the reverse side of this permit and to the attached special requirements (to be determined as needed by the Engineering Division).

Prosecution of Work: All work authorized by the permit shall be performed in a workmanlike, diligent, and expeditious manner, and must be completed to the satisfaction of the City Engineer.

Liability and Damages: The permittee shall be responsible for all liability imposed by law for personal injury or property damage which may arise out of the work permitted and done by permittee under this permit, or which may arise out of the failure on the part of the permittee to perform his obligations under said permit in respect to maintenance and encroachment. The permittee shall protect and indemnify the City of Livermore, its officers and employees, and save them harmless in every way from all action at law for damage or injury to persons or property that may arise out of or be occasioned in any way because of his operations as provided in this permit.

Hold Harmless and Indemnification Agreement: Stratus Environmental Inc agrees to defend, indemnify and hold the City of Livermore, elected officials, officers, directors, employees, agents and volunteers harmless from and against any and all loss, liability, damage, including reasonable attorney and expert fees and/or court costs, arising out of or in connection with this agreement, except for the gross negligence and willful misconduct of the City of Livermore, its elected officials, officers, directors, employees, agents and volunteers.

Stratus Environmental Inc
Signature of Permittee:


By: Carl Schulte 

Title: Stratus Geologist

Date: 12/13/12

Date Work Completed: _____

City Engineer

By: 

Date of Issue: 11-28-12

Inspector: _____

CITY OF LIVERMORE GENERAL PROVISIONS

1. The permittee shall begin work as authorized under this permit within 45 days from the date of issuance, unless a different date is stated in the permit. If the work is not begun within 45 days or the time stated in the permit, the permit shall become void. The permit shall be valid for a term of 6 months from the date of issuance, or as otherwise stated on the permit, unless discontinued by the use or removal of the encroachment for which the permit was issued.
2. This permit is issued only for that portion of work in the City of Livermore public right-of-way.
3. All construction shall be in accordance with City Standard Details and Specifications.
4. Permittee shall notify Underground Service Alert (U.S.A.) at 800-227-2600 prior to excavation. All underground contractors must have U.S.A. inquiry identification number.
5. Permittee is hereby cautioned that unless otherwise noted herein, traffic signal detector loops, wiring, etc., shall not be disturbed. Request marking from the City of Livermore Street Maintenance Dept. at 960-8020.
6. All excavations shall conform to the requirement of the State of California Division of Occupational Safety and Health.
7. Permittee shall furnish all safeguards and post warning signs in advance of work area for vehicular traffic and shall clear the roadway of any obstructions or debris at the end of each work day. All safety devices shall conform to the latest edition of the State of California "Manual of Warning Signs, Lights, and Devices for Use in Performance of Work Upon Highways".
8. No public road under the jurisdiction of the City Engineer shall be closed to travel by the general public without special permission, in writing, from the City Engineer (Sec. 12.08.180 Livermore Municipal Code). No lane closures will be allowed between 6:00 a.m. and 9:00 a.m. or between 3:30 p.m. and 6:30 p.m. At other times, at least one lane of traffic shall be kept open to the general public.
9. No more than 300 linear feet of continuous excavation shall be opened at one time. Excavate only that length of trench which can be backfilled and compacted to specified requirements the same day. Temporary pavement must be placed the same day.
10. Backfill shall be placed in accordance with the current City Standard Detail G-1.
11. Metal plates of sufficient thickness for legal load traffic or temporary paving, 1½" minimum thickness and coated with a "non-skid" material, shall be placed over any unpaved areas at the end of each work day. Temporary pavement must be placed around all edges of said plates. Sidewalk construction areas shall be left in a safe condition.
12. Material excavated from within the City road right-of-way under this permit shall be removed from within the right-of-way and disposed of in a legal manner. (Sec. 12.08.170 Livermore Municipal Code)
13. The right-of-way shall be left clean and orderly daily to the satisfaction of the City Engineer or his representative. The permittee shall give particular attention to maintaining the project in a dust-free condition while performing the various items of work and during non-working periods, including weekends.
14. Job sites left in an unsafe condition will be secured by City personnel and the permittee will be billed for all expenses incurred by the City.
15. Final asphalt concrete surfacing shall be placed within 14 days of completion of each 300 linear feet of excavation. If the edges of the trench have been ravelled prior to final surfacing, the edges shall be re-sawn.
16. Where concrete is placed in a planter strip, score lines, construction joints and expansion joints shall be continued across entire sidewalk area. Where curb, gutter and sidewalk are placed monolithically, the "back edge" of the curb shall be scored.
17. No culverts or storm drains are to be cut or disturbed. Direction of flow and capacity of existing surface water drainage facilities shall not be materially changed.
18. Access to public and private properties adjacent to the public road in which work is authorized shall not be denied by reason of such work. Special measures shall be taken to insure passage for emergency vehicles over and at the site of work at all times.
19. In the event that any future improvement of the road right-of-way necessitates the relocation of the encroachment for which this permit is issued, the permittee shall relocate same at his sole expense.
20. Priority shall be given to operations performed under this contract let by the City of Livermore for certain work at this location. Coordination shall be effected through said Contractor and the Project Representative for the City.
21. Any existing facilities damaged or removed in the course of the work shall be replaced in kind or better, including ground and pavement surfaces, signs, striping, markers, curb, gutter, survey monuments, trees and other vegetation, etc., to the satisfaction of the owner of said facility.
22. In accordance with the Livermore Municipal Code, a cash deposit or surety bond may be required. The deposit placed for this work will be held for 90 days after the final inspection.

**PERMITTEE SHALL NOTIFY CITY INSPECTOR AT 960-4500
WITHIN THREE (3) DAYS AFTER WORK IS COMPLETED.**

**FAILURE TO COMPLY WITH THESE PROVISIONS WILL RESULT IN
THE CITY'S TAKING WHATEVER MEASURES NECESSARY
TO CONFORM TO PERMIT CONDITIONS AND
THE PERMITTEE WILL BE BILLED FOR ALL EXPENSES INCURRED.**

City of Livermore

Encroachment Permit No. EN120396

Community Development Department
1052 S. Livermore Avenue
Livermore, CA 94550
(925) 960-4500

SPECIAL REQUIREMENTS APPLICABLE TO WORK ASSOCIATED WITH

JOB LOCATION:

2008 First Street ****

DESCRIPTION OF WORK: Installation of two (2) Monitoring wells to 20 to 25 FBG . In the locations adjacent to above referenced site. Well lid to be flush with existing sidewalk/pavement and lid to be locking type. See attached plan with proposed well location.

- 1: See Attached Drawing/Plans
- 2: Traffic control shall be completed per Cal Trans Standards and any additional requirements deemed necessary by the City Engineer.
- 3: All work shall be completed between the hours of 9 a.m. and 3 p.m.
- 4: All lane closures/ traffic control shall be done per Cal Trans Standards.
- 5: Contractor shall repair/replace all curb, gutter and sidewalk damaged as a result of current work being completed per the City Livermore Standard Details.
- 6: Pedestrian access must be maintained at all times, including if necessary, escorting pedestrians through the work area.
- 7: All trenchwork and small excavations in the street shall be completed per City Std Detail G-1.

CITY OF LIVERMORE GENERAL PROVISIONS

1. The permittee shall begin work as authorized under this permit within 45 days from the date of issuance, unless a different date is stated in the permit. If the work is not begun within 45 days or the time stated in the permit, the permit shall become void. The permit shall be valid for a term of 6 months from the date of issuance, or as otherwise stated on the permit, unless discontinued by the use or removal of the encroachment for which the permit was issued.
2. This permit is issued only for that portion of work in the City of Livermore public right-of-way.
3. All construction shall be in accordance with City Standard Details and Specifications.
4. Permittee shall notify Underground Service Alert (U.S.A.) at 800-227-2600 prior to excavation. All underground contractors must have U.S.A. inquiry identification number.
5. Permittee is hereby cautioned that unless otherwise noted herein, traffic signal detector loops, wiring, etc., shall not be disturbed. Request marking from the City of Livermore Street Maintenance Dept. at 960-8020.
6. All excavations shall conform to the requirement of the State of California Division of Occupational Safety and Health.
7. Permittee shall furnish all safeguards and post warning signs in advance of work area for vehicular traffic and shall clear the roadway of any obstructions or debris at the end of each work day. All safety devices shall conform to the latest edition of the State of California "Manual of Warning Signs, Lights, and Devices for Use in Performance of Work Upon Highways".
8. No public road under the jurisdiction of the City Engineer shall be closed to travel by the general public without special permission, in writing, from the City Engineer (Sec. 12.08.180 Livermore Municipal Code). No lane closures will be allowed between 6:00 a.m. and 9:00 a.m. or between 3:30 p.m. and 6:30 p.m. At other times, at least one lane of traffic shall be kept open to the general public.
9. No more than 300 linear feet of continuous excavation shall be opened at one time. Excavate only that length of trench which can be backfilled and compacted to specified requirements the same day. Temporary pavement must be placed the same day.
10. Backfill shall be placed in accordance with the current City Standard Detail G-1.
11. Metal plates of sufficient thickness for legal load traffic or temporary paving, 1½" minimum thickness and coated with a "non-skid" material, shall be placed over any unpaved areas at the end of each work day. Temporary pavement must be placed around all edges of said plates. Sidewalk construction areas shall be left in a safe condition.
12. Material excavated from within the City road right-of-way under this permit shall be removed from within the right-of-way and disposed of in a legal manner. (Sec. 12.08.170 Livermore Municipal Code)
13. The right-of-way shall be left clean and orderly daily to the satisfaction of the City Engineer or his representative. The permittee shall give particular attention to maintaining the project in a dust-free condition while performing the various items of work and during non-working periods, including weekends.
14. Job sites left in an unsafe condition will be secured by City personnel and the permittee will be billed for all expenses incurred by the City.
15. Final asphalt concrete surfacing shall be placed within 14 days of completion of each 300 linear feet of excavation. If the edges of the trench have been ravelled prior to final surfacing, the edges shall be re-sawn.
16. Where concrete is placed in a planter strip, score lines, construction joints and expansion joints shall be continued across entire sidewalk area. Where curb, gutter and sidewalk are placed monolithically, the "back edge" of the curb shall be scored.
17. No culverts or storm drains are to be cut or disturbed. Direction of flow and capacity of existing surface water drainage facilities shall not be materially changed.
18. Access to public and private properties adjacent to the public road in which work is authorized shall not be denied by reason of such work. Special measures shall be taken to insure passage for emergency vehicles over and at the site of work at all times.
19. In the event that any future improvement of the road right-of-way necessitates the relocation of the encroachment for which this permit is issued, the permittee shall relocate same at his sole expense.
20. Priority shall be given to operations performed under this contract let by the City of Livermore for certain work at this location. Coordination shall be effected through said Contractor and the Project Representative for the City.
21. Any existing facilities damaged or removed in the course of the work shall be replaced in kind or better, including ground and pavement surfaces, signs, striping, markers, curb, gutter, survey monuments, trees and other vegetation, etc., to the satisfaction of the owner of said facility.
22. In accordance with the Livermore Municipal Code, a cash deposit or surety bond may be required. The deposit placed for this work will be held for 90 days after the final inspection.

**PERMITTEE SHALL NOTIFY CITY INSPECTOR AT 960-4500
WITHIN THREE (3) DAYS AFTER WORK IS COMPLETED.**

**FAILURE TO COMPLY WITH THESE PROVISIONS WILL RESULT IN
THE CITY'S TAKING WHATEVER MEASURES NECESSARY
TO CONFORM TO PERMIT CONDITIONS AND
THE PERMITTEE WILL BE BILLED FOR ALL EXPENSES INCURRED.**



ZONE 7 WATER AGENCY

100 NORTH CANYONS PARKWAY, LIVERMORE, CALIFORNIA 94551 VOICE (925) 454-5000 FAX (925) 245-9306
E-MAIL whong@zone7water.com

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

FOR OFFICE USE

LOCATION OF PROJECT immediately adjacent (west of)
2508 1st Street, Livermore

PERMIT NUMBER 2012132
WELL NUMBER 3S/2E-8R44 (SVE-2)
APN 097-0001-024-01

Coordinates Source Google Earth ft. Accuracy ft.
LAT: 37° 40' 52.17" N ft. LONG: 121° 46' 16.50" W ft.
APN

PERMIT CONDITIONS
(Circled Permit Requirements Apply)

CLIENT Name Balaji Anjali
Address 35504 Commercial Lane Phone 510-522-4822
City Fremont Zip 94536

- A. GENERAL
 1. A permit application should be submitted so as to arrive at the Zone 7 office five days prior to your 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 (DWR Form 188), signed by the driller.
 3. Permit is void if project not begun within 90 days of approval date.
 4. Notify Zone 7 at least 24 hours before the start of work.

APPLICANT Name Stabus Environmental, Inc.
Email stabus@stabusinc.net Fax 570-676-6005
Address 3370 Cameron Park Dr. #550 Phone 530-676-2502
City Cameron Park Zip 95682

- B. WATER SUPPLY WELLS
 1. Minimum surface seal diameter is four inches greater than the well casing diameter.
 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.
 3. Grout placed by tremie.
 4. An access port at least 0.5 inches in diameter is required on the wellhead for water level measurements.
 5. A sample port is required on the discharge pipe near the wellhead.

TYPE OF PROJECT:
Well Construction Geotechnical Investigation
Well Destruction Contamination Investigation
Cathodic Protection Other

PROPOSED WELL USE:
Domestic Irrigation
Municipal Remediation
Industrial Groundwater Monitoring
Dewatering Other

DRILLING METHOD:
Mud Rotary Air Rotary Hollow Stem Auger
Cable Tool Direct Push Other

DRILLING COMPANY All Well Abandonment

DRILLER'S LICENSE NO. B49399

- C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
 1. Minimum surface seal diameter is four inches greater than the well or piezometer casing diameter.
 2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.
 3. Grout placed by tremie.

WELL SPECIFICATIONS:
Drill Hole Diameter 8 in. Maximum 50 ft.
Casing Diameter 2 in. Depth 50 ft.
Surface Seal Depth ft. Number SVE-2

SOIL BORINGS:
Number of Borings Maximum
Hole Diameter in. Depth ft.

ESTIMATED STARTING DATE mid-late November 2012
ESTIMATED COMPLETION DATE mid-late November 2012

- D. 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.
- E. CATHODIC. Fill hole above anode zone with concrete placed by tremie.
- F. WELL DESTRUCTION. See attached.

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE [Signature] Date 10-19-12

Approved [Signature] Date 11/16/12
Wyman Hong

ATTACH SITE PLAN OR SKETCH



ZONE 7 WATER AGENCY

100 NORTH CANYONS PARKWAY, LIVERMORE, CALIFORNIA 94551 VOICE (925) 454-5000 FAX (925) 245-9308
E-MAIL whong@zone7water.com

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

FOR OFFICE USE

LOCATION OF PROJECT 2008 1st St., Livermore

PERMIT NUMBER 2012133
WELL NUMBER 3S/2E-8R23 (MW-6)
APN 097-0001-024-01

Coordinates Source Google Earth ft. Accuracy: _____ ft.
LAT: 37° 40' 58.5" N ft. LONG: 121° 46' 16.44" W ft.
APN 97-1-24-1

PERMIT CONDITIONS
(Circled Permit Requirements Apply)

CLIENT Name Balaji Anke
Address 35584 Canyon Lane Phone 510-522-4922
City Fremont Zip 94536

- A. GENERAL
 1. A permit application should be submitted so as to arrive at the Zone 7 office five days prior to your 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 (DWR Form 188), signed by the driller.
 3. Permit is void if project not begun within 90 days of approval date.
 4. **Notify Zone 7 at least 24 hours before the start of work.**

APPLICANT Name Stratus Environmental, Inc.
Email skittagen@stratusinc.net Fax 530-676-6005
Address 3330 Canyon Park Dr. #550 Phone 530-676-2062
City Canyon Park Zip 94587

- B. WATER SUPPLY WELLS
 1. Minimum surface seal diameter is four inches greater than the well casing diameter.
 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.
 3. Grout placed by tremie.
 4. An access port at least 0.5 inches in diameter is required on the wellhead for water level measurements.
 5. A sample port is required on the discharge pipe near the wellhead.

TYPE OF PROJECT:

Well Construction	_____	Geotechnical Investigation	_____
Well Destruction	<u>Mult</u> <input checked="" type="checkbox"/>	Contamination Investigation	_____
Cathodic Protection	_____	Other	_____

PROPOSED WELL USE:

Domestic	_____	Irrigation	_____
Municipal	_____	Remediation	_____
Industrial	_____	Groundwater Monitoring	<u>___</u>
Dewatering	_____	Other	_____

DRILLING METHOD:

Mud Rotary	_____	Air Rotary	_____	Hollow Stem Auger	<u>X</u>
Cable Tool	_____	Direct Push	_____	Other	_____

- C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
 1. Minimum surface seal diameter is four inches greater than the well or piezometer casing diameter.
 2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.
 3. Grout placed by tremie.

DRILLING COMPANY All Well Abandonment
DRILLER'S LICENSE NO. 948351

- D. 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.

WELL SPECIFICATIONS:

Drill Hole Diameter	<u>10</u> in.	Maximum	<u>60</u> ft.
Casing Diameter	<u>4</u> in.	Depth	<u>60</u> ft.
Surface Seal Depth	_____ ft.	Number	<u>25000 Mult</u>

- E. CATHODIC. Fill hole above anode zone with concrete placed by tremie.

SOIL BORINGS:

Number of Borings	_____	Maximum	_____ ft.
Hole Diameter	_____ in.	Depth	_____ ft.

- F. WELL DESTRUCTION. See attached.

ESTIMATED STARTING DATE Mid - late November 2012
ESTIMATED COMPLETION DATE mid - late November 2012

- G. SPECIAL CONDITIONS. Submit to Zone 7 within 60 days after completion of permitted work the well installation report including all soil and water laboratory analysis results.

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE Scott Poley Date 10-19-12

Approved Wyma Hong Date 11/19/12
Wyma Hong

ATTACH SITE PLAN OR SKETCH



ZONE 7 WATER AGENCY

100 NORTH CANYONS PARKWAY, LIVERMORE, CALIFORNIA 94551 VOICE (925) 454-5000 FAX (925) 245-9306
E-MAIL whong@zone7water.com

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

FOR OFFICE USE

LOCATION OF PROJECT 2008 1st St., Livermore

PERMIT NUMBER 2012136
WELL NUMBER 3S/2E-8R45 to 8R48 (SVE-3A/B & SVE-4A/B)
APN 097-0001-024-01

Coordinates Source Google Earth ft. Accuracy _____ ft.
LAT: 37° 40' 58.5" N ft. LONG: 121° 46' 16.44" W ft.
APN 97-1-24-1

PERMIT CONDITIONS (Circled Permit Requirements Apply)

CLIENT Name Balaji Anke
Address 35584 Concession Lane Phone 510-522-4927
City Fremont Zip 94536

- A. GENERAL**
 1. A permit application should be submitted so as to arrive at the Zone 7 office five days prior to your 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 (DWR Form 188), signed by the driller.
 3. Permit is void if project not begun within 90 days of approval date.
 4. Notify Zone 7 at least 24 hours before the start of work.

APPLICANT Name Stratus Environmental, Inc.
Email shiffinger@stratusenv.net Fax 530-476-6005
Address 3330 Canyon Park Dr. #550 Phone 530-476-2062
City Canyon Park Zip 94587

- B. WATER SUPPLY WELLS**
 1. Minimum surface seal diameter is four inches greater than the well casing diameter.
 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.
 3. Grout placed by tremie.
 4. An access port at least 0.5 inches in diameter is required on the wellhead for water level measurements.
 5. A sample port is required on the discharge pipe near the wellhead.

TYPE OF PROJECT: Well Construction SVE-3A/B Geotechnical Investigation _____
Well Destruction _____ Contamination Investigation _____
Cathodic Protection _____ Other _____

- C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS**
 1. Minimum surface seal diameter is four inches greater than the well or piezometer casing diameter.
 2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.
 3. Grout placed by tremie.

PROPOSED WELL USE:
Domestic _____ Irrigation _____
Municipal _____ Remediation
Industrial _____ Groundwater Monitoring _____
Dewatering _____ Other _____

- D. 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.

DRILLING METHOD:
Mud Rotary _____ Air Rotary _____ Hollow Stem Auger
Cable Tool _____ Direct Push _____ Other _____

- E. CATHODIC.** Fill hole above anode zone with concrete placed by tremie.

DRILLING COMPANY All Well Abandonment

- F. WELL DESTRUCTION.** See attached.

DRILLER'S LICENSE NO. 948334

- G. SPECIAL CONDITIONS.** Submit to Zone 7 within 60 days after completion of permitted work the well installation report including all soil and water laboratory analysis results.

WELL SPECIFICATIONS:
Drill Hole Diameter 10 in. Maximum 60 ft.
Casing Diameter 2 1/2 in. Depth _____ ft.
Surface Seal Depth _____ ft. Number 1

SOIL BORINGS: construct SVE-3A/B
Number of Borings _____ Maximum SVE-4A/B
Hole Diameter _____ in. Depth _____ ft.

ESTIMATED STARTING DATE mid-late November 2012
ESTIMATED COMPLETION DATE mid-late November 2012

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE Scott Kelly Date 10-19-12

Approved Wyman Hong Date 11/30/12
Wyman Hong

ATTACH SITE PLAN OR SKETCH

November 19, 2012

**Zone 7
Water Resources Engineering
Groundwater Protection Ordinance**

**B & C Gas Mini Mart
2008 - 1st Street
Livermore
Well 3S/2R-8R23 (MW-6)
Permit 2012133**

Destruction Requirements:

1. Sound the well as deeply as practicable and record for your report.
2. Drill out the well so that the casing, seal, and gravel pack are removed to the bottom of the well.
3. Two soil vapor extraction wells (2 in. dia.) will be installed in the borehole.

APPENDIX C
BORING LOGS AND WELL DETAILS

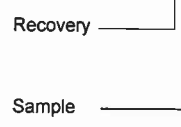
SOIL BORING LOG

Boring No. SVE-2

Sheet: 1 of 3

Client	B&C Gas	Date	December 17, 2012
Address	2008 First Street Livermore, CA	Drilling Co.	All Well Abandonment Rig Type: LAR
Project No.	2146-2008-01	Driller	Rob Slagle
Logged By:	Carl Schulze	Method	Hollow Stem Auger Hole Diameter: 8 inches
Well Pack	grout: 0 ft. to 26 ft. bent.: 26 ft. to 28 ft. sand: 28 ft. to 50 ft.	Sampler:	18" length California-type split spoon
Well Construction	Casing Material: Schedule 40 PVC	Screen Interval:	30 ft. to 50 ft.
	Casing Diameter: 2 in.	Screen Slot Size:	0.020-in.
Depth to GW:	▽ first encountered	static	▼

Sample Type	Sample No.	Blow Count	Sample		Well Details	Depth Scale	Lithologic Column	Descriptions of Materials and Conditions	PID (PPM)
			Time	Recov.					
						1		Concrete surface	
						2			
						3			
						4			
						5			
						6			
						7			
						8			
						9			
S	SVE-2-10	50/2"	1015	100/2"		10	SM	SILTY SAND with GRAVEL, dark brown, 55% fine grained sand, 40% silt, 5% gravel, dry	N/A
						11			
						12			
						13			
						14			
S	SVE-2-15	50/4"	1025	0		15		NO RECOVERY	N/A
						16			
						17			
						18			
						19			
						20	SM		



Comments: Drilled to 50 feet bgs. Set well at 50 feet bgs.



SOIL BORING LOG

Boring No. SVE-2

Sheet: 2 of 3

Client	B&C Gas	Date	December 17, 2012
Address	2008 First Street Livermore, CA	Drilling Co.	All Well Abandonment Rig Type: LAR
Project No.	2146-2008-01	Driller	Rob Slagle
Logged By:	Carl Schulze	Method	Hollow Stem Auger Hole Diameter: 8 inches
		Sampler:	18" length California-type split spoon

Sample		Blow Count	Sample		Well Details	Depth Scale	Lithologic Column	Descriptions of Materials and Conditions	PID (PPM)
Type	No.		Time	Recov.					
S	SVE-2-20	22 24 27	1032	50		21	SM	SILTY SAND with GRAVEL, grayish brown, 45% fine grained sand, 30% silt, 15% coarse grained sand, 10% gravel, dry	N/A
						22			
						23			
						24			
S	SVE-2-25	50/4"	1038	100/4"		25	SC	CLAYEY GRAVELLY SAND, olive gray, 50% medium/coarse grained sand 30% clay, 20% gravel, dry	2
						26			
						27			
						28			
						29			
S	SVE-2-30	35 50/5"	1045	100/18"		30	SC	SAME AS ABOVE 30'-30.2'	
						31	ML	SILT with CLAY 30.2'-31.2', olive gray, 90% silt, 10% clay, moist CLAYEY SILT 31.2'-31.5', olive, 60% silt, 40% clay, moist	195
						32			
						33			
						34		odor	
						35			
S	SVE-2-35	16 20 27	1051	80		36	ML	SAME AS ABOVE, trace fine/medium grained sand increasing downward	66
						37			
						38			
						39			
						40	SC		

Comments:



SOIL BORING LOG

Boring No. SVE-2

Sheet: 3 of 3

Client	<u>B&C Gas</u>	Date	<u>December 17, 2012</u>
Address	<u>2008 First Street</u>	Drilling Co.	<u>All Well Abandonment</u> Rig Type: <u>LAR</u>
	<u>Livermore, CA</u>	Driller	<u>Rob Slagle</u>
Project No.	<u>2146-2008-01</u>	Method	<u>Hollow Stem Auger</u> Hole Diameter: <u>8 inches</u>
Logged By:	<u>Carl Schulze</u>	Sampler:	<u>18" length California-type split spoon</u>

Sample		Blow Count	Sample		Well Details	Depth Scale	Lithologic Column	Descriptions of Materials and Conditions	PID (PPM)
Type	No.		Time	Recov.					
S	SVE-2-40	50/5"	1057	100/5"		40	SC	CLAYEY SAND, olive brown, 85% well graded sand, 15% clay, wet	29
						41			
						42			
						43			
						44			
						45			
S	SVE-2-45	37 50/5"	1105	60/11"		46	SC	SAME AS ABOVE, with gravel material	27
						47			
						48			
						49			
S	SVE-2-50	50/4"	1115	0	50		NO RECOVERY	N/A	
					51				
					52				
					53				
					54				
					55				
					56				
					57				
					58				
					59				
					60				

Comments:

STRATUS
ENVIRONMENTAL, INC.

NESTED REMEDIATION WELL DETAILS

BORING/WELL NO.: SVE-3 A/B
 PROJECT NUMBER: 2146-2008-01
 PROJECT NAME: Former B & C Gas Mini Mart
 LOCATION: 2008 1st Street, Livermore, California
 WELL PERMIT NO.: 2012136

Top of Casing Elevation, Shallow Well: _____
 Top of Casing Elevation, Deep Well: _____
 GROUND SURFACE ELEV.: _____
 DATUM _____
 INSTALLATION DATE: December 26, 2012

EXPLORATORY BORING

a. TOTAL DEPTH 60 ft.
 b. DIAMETER 10 in.
 DRILLING METHOD Hollow Stem Auger

WELL CONSTRUCTION

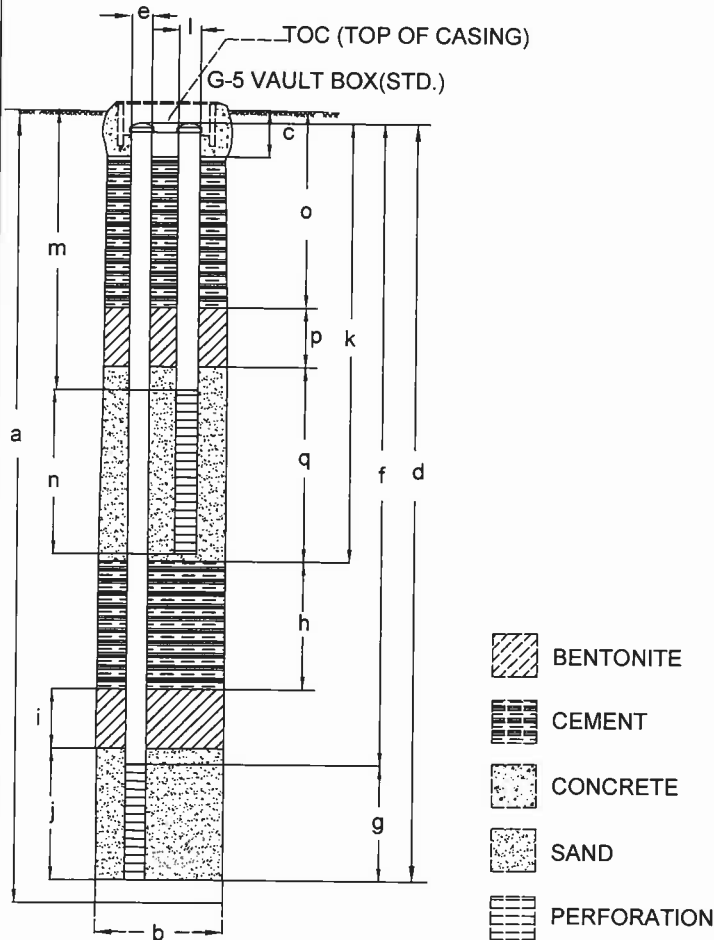
c. SURFACE SEAL 0 - 6"
 SEAL MATERIAL Concrete

Deep Well

d. TOTAL CASING LENGTH 58 ft.
 MATERIAL Schedule 80 PVC
 e. DIAMETER 2 in.
 f. DEPTH TO TOP PERFORATIONS 43 ft.
 g. PERFORATED
 INTERVAL FROM 43 TO 58 ft.
 PERFORATION TYPE Milled Slots
 PERFORATION SIZE 0.02 in.
 h. BACKFILL _____ ft.
 BACKFILL MATERIAL NA
 i. SEAL 40.5 - 42 ft.
 SEAL MATERIAL Bentonite
 j. FILTER PACK 42 - 60 ft.
 FILTER PACK MATERIAL #3 Sand

Shallow Well

k. TOTAL CASING LENGTH 40 ft.
 MATERIAL Schedule 80 PVC
 l. DIAMETER 2 in.
 m. DEPTH TO TOP PERFORATIONS 25
 n. PERFORATED
 INTERVAL FROM 25 TO 40 ft.
 PERFORATION TYPE Milled Slots
 PERFORATION SIZE 0.02 in.
 o. BACKFILL 0 - 21 ft.
 BACKFILL MATERIAL Neat Cement
 p. SEAL 21 - 23 ft.
 SEAL MATERIAL Bentonite
 q. FILTER PACK 23 - 40.5 ft.
 FILTER PACK MATERIAL #3 Sand



PREPARED BY _____ DATE _____

REVIEWED BY _____ DATE _____

SOIL BORING/WELL CONSTRUCTION LOG

Boring No. SVE-4A/B

Sheet: 1 of 3

Client	B&C GAS	Date	December 27, 2012
Address	2008 First Street Livermore, CA	Drilling Co.	All Well Abandonment rig type: LAR
Project No.	2146-2008-01	Driller	Rob Slagle
Logged By:	Carl Schulze	Method	Hollow-Stem Augers Hole Diameter: 10"
Well Pack	grout: 0 ft. to 21 ft. bent.: 21 ft. to 23 ft. sand: 23 ft. to 40.5 ft. bent.: 40.5 ft. to 42 ft. sand: 42 ft. to 58 ft.	Well Construction	Casing Material: Schedule 80 PVC Casing Diameter: 2 in. Depth to GW: <input checked="" type="checkbox"/> first encountered: 35 feet bgs <input type="checkbox"/> Static:
			Screen A interval: 25 to 40 ft. Screen B interval: 43 to 58 ft. Screen A type: 0.020-inch slotted PVC Screen B type: 0.020-inch slotted PVC

Sample		Blow Count	Sample		Well Details		Depth Scale	Lithologic Column	Descriptions of Materials and Conditions	PID (PPM)
Type	No.		Time	Recov.	A	B				
							1	Asphalt surface		
							2			
							3			
							4			
							5			
							6			
							7			
							8			
							9			
S	SVE-4-10	50/3"	0940	0			10	NO RECOVERY	N/A	
							11			
							12			
							13			
							14			
		5					15			
S	SVE-4-15	5 6	0955	65			16	CL SILTY CLAY, dark yellowish brown (10YR, 4/4), 60% clay, 38% silt, trace sand (2%), dry	0	
							17			
							18			
							19			
							20	CL		

Recovery _____
Sample _____

Comments: Color descriptions from Munsell Color Chart. Drilled to 58 feet bgs. Set well at 58 feet bgs.



SOIL BORING/WELL CONSTRUCTION LOG

Boring No. SVE-4A/B

Sheet: 2 of 3

Client	B&C GAS	Date	December 27, 2012
Address	2008 First Street Livermore, CA	Drilling Co.	All Well Abandonment rig type: LAR
Project No.	2146-2008-01	Driller	Rob Siagle
Logged By:	Carl Schulze	Method	Hollow-Stem Augers Hole Diameter: 10"
		Sampler:	18" length California-type split spoon

Sample Type	Sample No.	Blow Count	Sample		Well Details		Depth Scale	Lithologic Column	Descriptions of Materials and Conditions	PID (PPM)
			Time	Recov.	A	B				
S	SVE-4-20	11					CL	SANDY CLAY with GRAVEL, dark yellowish brown (10YR, 3/4), 55% clay, 40% well graded sand, 5% gravel, dry	0	
		22								
		27	1007	65						
S	SVE-4-25	50/4"	1020	0			CL	NO RECOVERY	N/A	
		8								
		14								
S	SVE-4-30	17	1030	55			CL	CLAY with SILT, olive brown (2.5Y, 4/3), 85% clay, 13% silt, trace sand (2%), moist, odor	254	
S	SVE-4-35	50/5"	1042	20			SC	CLAYEY SAND, olive (5Y, 5/3), 70% well graded sand, 30% clay, wet	27	
							SW-SC			

Recovery _____
Sample _____

Comments:



SOIL BORING/WELL CONSTRUCTION LOG

Boring No. SVE-4A/B

Sheet: 3 of 3

Client	B&C GAS	Date	December 27, 2012
Address	2008 First Street	Drilling Co.	All Well Abandonment rig type: LAR
	Livermore, CA	Driller	Rob Slagle
Project No.	2146-2008-01	Method	Hollow-Stem Augers Hole Diameter: 10"
Logged By:	Carl Schulze	Sampler:	18" length California-type split spoon

Sample Type	Sample No.	Blow Count	Sample		Well Details	Depth Scale	Lithologic Column	Descriptions of Materials and Conditions	PID (PPM)	
			Time	Recov.						
S	SVE-4-40	50/4"	1104	20		40	SW-SC	SAND with fines, olive (5Y, 5/4), 90% well graded sand, 10% fines, wet	7	
						41				
							42			
							43			
							44			
S	SVE-4-45	50/6"	1116	15		45	SW-SC	SAME AS ABOVE	7	
						46				
						47				
						48				
						49				
S	SVE-4-50	50/5"	1132	100/6"		50	SC	SAND with FINES, olive (5Y, 5/4), 85% fine grained sand, 15% fines, wet	N/A	
						51				
						52				
						53				
						54				
S	SVE-4-55	50/2"	1150	100/18"		55	SC	SAME AS ABOVE 55'-55.5'		
						56	CL	CLAY with SAND 55.5'-56.5', light olive brown (2.5Y, 5/4), 95% clay, 5% fine grained sand	22	
						57				
						58				
						59				
						60				

Recovery _____
Sample _____

Comments:



APPENDIX D

**CERTIFIED ANALYTICAL REPORTS
AND CHAIN-OF-CUSTODY RECORDS**



Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778
(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

ANALYTICAL REPORT

Stratus Environmental
3330 Cameron Park Drive
Cameron Park, CA 956828861

Attn: Scott Bittinger
Phone: (530) 676-2062
Fax: (530) 676-6005
Date Received : 12/19/12

Job: 2146-2008-01/B & C Gas

Total Petroleum Hydrocarbons - Purgeable (TPH-P) EPA Method SW8015B / SW8260B
Volatile Organic Compounds (VOCs) EPA Method SW8260B

Parameter	Concentration	Reporting Limit	Date Extracted	Date Analyzed	
Client ID : SVE-2-30					
Lab ID : STR12121946-01A	TPH-P (GRO)	26,000	1,000 µg/Kg	12/19/12	12/20/12
Date Sampled 12/17/12 10:45	Methyl tert-butyl ether (MTBE)	5,600	5.0 µg/Kg	12/19/12	12/20/12
	Benzene	670	5.0 µg/Kg	12/19/12	12/20/12
	Toluene	ND	5.0 µg/Kg	12/19/12	12/20/12
	Ethylbenzene	850	5.0 µg/Kg	12/19/12	12/20/12
	m,p-Xylene	420	5.0 µg/Kg	12/19/12	12/20/12
	o-Xylene	ND	5.0 µg/Kg	12/19/12	12/20/12
Client ID : SVE-2-35					
Lab ID : STR12121946-02A	TPH-P (GRO)	2,400	2,000 µg/Kg	12/19/12	12/20/12
Date Sampled 12/17/12 10:51	Methyl tert-butyl ether (MTBE)	250	10 µg/Kg	12/19/12	12/20/12
	Benzene	25	10 µg/Kg	12/19/12	12/20/12
	Toluene	ND	10 µg/Kg	12/19/12	12/20/12
	Ethylbenzene	18	10 µg/Kg	12/19/12	12/20/12
	m,p-Xylene	10	10 µg/Kg	12/19/12	12/20/12
	o-Xylene	ND	10 µg/Kg	12/19/12	12/20/12
Client ID : SVE-2-40					
Lab ID : STR12121946-03A	TPH-P (GRO)	4,000	1,000 µg/Kg	12/19/12	12/24/12
Date Sampled 12/17/12 11:05	Methyl tert-butyl ether (MTBE)	5.3	5.0 µg/Kg	12/19/12	12/24/12
	Benzene	ND	5.0 µg/Kg	12/19/12	12/24/12
	Toluene	ND	5.0 µg/Kg	12/19/12	12/24/12
	Ethylbenzene	ND	5.0 µg/Kg	12/19/12	12/24/12
	m,p-Xylene	ND	5.0 µg/Kg	12/19/12	12/24/12
	o-Xylene	ND	5.0 µg/Kg	12/19/12	12/24/12

Gasoline Range Organics (GRO) C4-C13

V = Reporting Limits were increased due to high concentrations of target analytes.

Sample results were calculated on a wet weight basis.

ND = Not Detected

Reported in micrograms per Kilogram, per client request.

Roger Scholl *Randy Gardner* *Walter Hinchman*
 Roger L. Scholl, Ph.D., Laboratory Director • Randy Gardner, Laboratory Manager • Walter Hinchman, Quality Assurance Officer
 Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 281-4848 / Carson, CA • (714) 386-2901 / info@alpha-analytical.com
 Alpha Analytical, Inc. certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

Statement of Data Authenticity: Alpha Analytical, Inc. attests that the data reported has not been altered in any way.

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.

[Signature]
 12/27/12

Report Date



Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778
(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

Date:
27-Dec-12

QC Summary Report

Work Order:
12121946

Method Blank

File ID: 12122434.D

Type: MBLK Test Code: EPA Method SW8015B/C / SW8260B

Batch ID: MS15S0135B

Analysis Date: 12/24/2012 20:47

Sample ID: MBLK MS15S0135B

Units: µg/Kg

Run ID: MSD_15_121221A

Prep Date: 12/19/2012 13:05

Analyte

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
TPH-P (GRO)	ND	1000								
Surr: 1,2-Dichloroethane-d4	216		200		108	70	130			
Surr: Toluene-d8	194		200		97	70	130			
Surr: 4-Bromofluorobenzene	200		200		99.8	70	130			

Laboratory Control Spike

File ID: 12122125.D

Type: LCS Test Code: EPA Method SW8015B/C / SW8260B

Batch ID: MS15S0135B

Analysis Date: 12/21/2012 20:29

Sample ID: LCS MS15S0135B

Units: µg/Kg

Run ID: MSD_15_121221A

Prep Date: 12/19/2012 13:05

Analyte

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
TPH-P (GRO)	20200	2000	16000		126	63	148			
Surr: 1,2-Dichloroethane-d4	401		400		100	70	130			
Surr: Toluene-d8	385		400		96	70	130			
Surr: 4-Bromofluorobenzene	404		400		101	70	130			

Sample Matrix Spike

File ID: 12122126.D

Type: MS Test Code: EPA Method SW8015B/C / SW8260B

Batch ID: MS15S0135B

Analysis Date: 12/21/2012 20:51

Sample ID: 12121921-06AGS

Units: µg/Kg

Run ID: MSD_15_121221A

Prep Date: 12/19/2012 13:05

Analyte

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
TPH-P (GRO)	93400	10000	80000	56750	46	35	166			
Surr: 1,2-Dichloroethane-d4	2090		2000		105	70	130			
Surr: Toluene-d8	2040		2000		102	70	130			
Surr: 4-Bromofluorobenzene	2130		2000		107	70	130			

Sample Matrix Spike Duplicate

File ID: 12122127.D

Type: MSD Test Code: EPA Method SW8015B/C / SW8260B

Batch ID: MS15S0135B

Analysis Date: 12/21/2012 21:13

Sample ID: 12121921-06AGSD

Units: µg/Kg

Run ID: MSD_15_121221A

Prep Date: 12/19/2012 13:05

Analyte

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
TPH-P (GRO)	96000	10000	80000	56750	49	35	166	93430	2.7(33)	
Surr: 1,2-Dichloroethane-d4	2030		2000		102	70	130			
Surr: Toluene-d8	1990		2000		99.7	70	130			
Surr: 4-Bromofluorobenzene	2110		2000		106	70	130			

Comments:

Calculations are based off of raw (non-rounded) data. However, for reporting purposes, all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.

Reported in micrograms per Kilogram, per client request.



Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778
(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

Date:
27-Dec-12

QC Summary Report

Work Order:
12121946

Method Blank

File ID: 12122434.D

Type: MBLK Test Code: EPA Method SW8260B

Batch ID: MS15S0135A

Analysis Date: 12/24/2012 20:47

Sample ID: MBLK MS15S0135A

Units: µg/Kg

Run ID: MSD_15_121221A

Prep Date: 12/19/2012 13:05

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Methyl tert-butyl ether (MTBE)	ND	5								
Benzene	ND	5								
Toluene	ND	5								
Ethylbenzene	ND	5								
m,p-Xylene	ND	5								
o-Xylene	ND	5								
Surr: 1,2-Dichloroethane-d4	216		200		108	70	130			
Surr: Toluene-d8	194		200		97	70	130			
Surr: 4-Bromofluorobenzene	200		200		99.8	70	130			

Laboratory Control Spike

File ID: 12122122.D

Type: LCS Test Code: EPA Method SW8260B

Batch ID: MS15S0135A

Analysis Date: 12/21/2012 19:24

Sample ID: LCS MS15S0135A

Units: µg/Kg

Run ID: MSD_15_121221A

Prep Date: 12/19/2012 13:05

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Methyl tert-butyl ether (MTBE)	438	10	400		110	61	147			
Benzene	443	10	400		111	70	138			
Toluene	434	10	400		108	70	137			
Ethylbenzene	443	10	400		111	70	138			
m,p-Xylene	462	10	400		116	70	145			
o-Xylene	425	10	400		106	70	145			
Surr: 1,2-Dichloroethane-d4	393		400		98	70	130			
Surr: Toluene-d8	386		400		96	70	130			
Surr: 4-Bromofluorobenzene	412		400		103	70	130			

Sample Matrix Spike

File ID: 12122123.D

Type: MS Test Code: EPA Method SW8260B

Batch ID: MS15S0135A

Analysis Date: 12/21/2012 19:46

Sample ID: 12121403-01AMS

Units: µg/Kg

Run ID: MSD_15_121221A

Prep Date: 12/19/2012 13:05

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Methyl tert-butyl ether (MTBE)	453	10	400	0	113	42	157			
Benzene	436	10	400	0	109	53	150			
Toluene	423	10	400	0	106	51	149			
Ethylbenzene	436	10	400	0	109	54	150			
m,p-Xylene	436	10	400	0	109	50	161			
o-Xylene	412	10	400	0	103	35	177			
Surr: 1,2-Dichloroethane-d4	1720		1600		107	70	130			
Surr: Toluene-d8	1540		1600		96	70	130			
Surr: 4-Bromofluorobenzene	1690		1600		106	70	130			

Sample Matrix Spike Duplicate

File ID: 12122124.D

Type: MSD Test Code: EPA Method SW8260B

Batch ID: MS15S0135A

Analysis Date: 12/21/2012 20:08

Sample ID: 12121403-01AMSD

Units: µg/Kg

Run ID: MSD_15_121221A

Prep Date: 12/19/2012 13:05

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Methyl tert-butyl ether (MTBE)	416	10	400	0	104	42	157	453.2	8.5(32)	
Benzene	415	10	400	0	104	53	150	435.7	4.9(26)	
Toluene	377	10	400	0	94	51	149	422.5	11.4(26)	
Ethylbenzene	402	10	400	0	101	54	150	436.2	8.1(29)	
m,p-Xylene	393	10	400	0	98	50	161	436.3	10.4(38)	
o-Xylene	386	10	400	0	97	35	177	411.6	6.4(40)	
Surr: 1,2-Dichloroethane-d4	1720		1600		108	70	130			
Surr: Toluene-d8	1480		1600		93	70	130			
Surr: 4-Bromofluorobenzene	1700		1600		106	70	130			



Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778
(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

Date:
27-Dec-12

QC Summary Report

Work Order:
12121946

Comments:

Calculations are based off of raw (non-rounded) data. However, for reporting purposes, all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.

Billing Information :

CHAIN-OF-CUSTODY RECORD

Alpha Analytical, Inc.
 255 Glendale Avenue, Suite 21 Sparks, Nevada 89431-5778
 TEL: (775) 355-1044 FAX: (775) 355-0406

CA

WorkOrder : STR12121946
Report Due By : 5:00 PM On : 27-Dec-12

Client:
 Stratus Environmental
 3330 Cameron Park Drive
 Suite 550
 Cameron Park, CA 95682-8861

Report Attention	Phone Number	E Mail Address
Scott Bittinger	(530) 676-2062 x	sbittinger@stratusinc.net

EDD Required : Yes

Sampled by : Carl Schulze


PO :
 Client's COC # : 59155 Job : 2146-2008-01/B & C Gas

Cooler Temp	Samples Received	Date Printed
0 °C	19-Dec-12	19-Dec-12

QC Level : S3 = Final Rpt, MBLK, LCS, MS/MSD With Surrogates

Alpha Sample ID	Client Sample ID	Collection Matrix	Collection Date	No. of Bottles			Requested Tests							Sample Remarks			
				Alpha	Sub	TAT	TPHP_S	VOC_S									
STR12121946-01A	SVE-2-30	SO	12/17/12 10:45	1	0	5	GAS-C	BTXE/M_C									
STR12121946-02A	SVE-2-35	SO	12/17/12 10:51	1	0	5	GAS-C	BTXE/M_C									
STR12121946-03A	SVE-2-40	SO	12/17/12 11:05	1	0	5	GAS-C	BTXE/M_C									

Comments: Security seals intact. Frozen ice. :

Signature	Print Name	Company	Date/Time
	Sumit Neri	Alpha Analytical, Inc.	12/19/12 1138

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense.
 The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for the report.
 Matrix Type : AQ(Aqueous) AR(Air) SO(Soil) WS(Waste) DW(Drinking Water) OT(Other) Bottle Type: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other



Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778
(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

ANALYTICAL REPORT

Stratus Environmental
3330 Cameron Park Drive
Cameron Park, CA 956828861

Attn: Scott Bittinger
Phone: (530) 676-2062
Fax: (530) 676-6005
Date Received : 12/29/12

Job: 2146-2008-01/B & C Gas

Total Petroleum Hydrocarbons - Purgeable (TPH-P) EPA Method SW8015B / SW8260B
Volatile Organic Compounds (VOCs) EPA Method SW8260B

	Parameter	Concentration	Reporting Limit	Date Extracted	Date Analyzed
Client ID :	SVE-4-30				
Lab ID :	TPH-P (GRO)	230,000	50,000 µg/Kg	01/02/13	01/04/13
Date Sampled	Methyl tert-butyl ether (MTBE)	ND V	250 µg/Kg	01/02/13	01/04/13
	Benzene	ND V	250 µg/Kg	01/02/13	01/04/13
	Toluene	ND V	250 µg/Kg	01/02/13	01/04/13
	Ethylbenzene	1,600	250 µg/Kg	01/02/13	01/04/13
	m,p-Xylene	7,400	250 µg/Kg	01/02/13	01/04/13
	o-Xylene	250	250 µg/Kg	01/02/13	01/04/13
Client ID :	SVE-4-55				
Lab ID :	TPH-P (GRO)	ND	1,000 µg/Kg	01/02/13	01/04/13
Date Sampled	Methyl tert-butyl ether (MTBE)	ND	5.0 µg/Kg	01/02/13	01/04/13
	Benzene	ND	5.0 µg/Kg	01/02/13	01/04/13
	Toluene	ND	5.0 µg/Kg	01/02/13	01/04/13
	Ethylbenzene	ND	5.0 µg/Kg	01/02/13	01/04/13
	m,p-Xylene	ND	5.0 µg/Kg	01/02/13	01/04/13
	o-Xylene	ND	5.0 µg/Kg	01/02/13	01/04/13

Gasoline Range Organics (GRO) C4-C13

V = Reporting Limits were increased due to high concentrations of target analytes.

Sample results were calculated on a wet weight basis.

ND = Not Detected

Reported in micrograms per Kilogram, per client request.

Roger Scholl *Randy Gardner* *Walter Hinckman*

Roger L. Scholl, Ph.D., Laboratory Director • Randy Gardner, Laboratory Manager • Walter Hinckman, Quality Assurance Officer
Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 281-4848 / Carson, CA • (714) 386-2901 / info@alpha-analytical.com

Alpha Analytical, Inc. certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

Statement of Data Authenticity : Alpha Analytical, Inc. attests that the data reported has not been altered in any way.

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.

1/8/13

Report Date



Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778
(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

Date:
08-Jan-13

QC Summary Report

Work Order:
12123120

Method Blank

File ID: 13010408.D

Type: MBLK Test Code: EPA Method SW8015B/C / SW8260B

Batch ID: MS12S0191B

Analysis Date: 01/04/2013 13:28

Sample ID: MBLK MS12S0191B

Units: µg/Kg

Run ID: MSD_12_130104B

Prep Date: 01/04/2013 13:28

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
TPH-P (GRO)	ND	1000								
Surr: 1,2-Dichloroethane-d4	181		200		90	70	130			
Surr: Toluene-d8	229		200		114	70	130			
Surr: 4-Bromofluorobenzene	314		200		157	70	130			S55

Laboratory Control Spike

File ID: 13010412.D

Type: LCS Test Code: EPA Method SW8015B/C / SW8260B

Batch ID: MS12S0191B

Analysis Date: 01/04/2013 14:59

Sample ID: GLCS MS12S0191B

Units: µg/Kg

Run ID: MSD_12_130104B

Prep Date: 01/04/2013 14:59

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
TPH-P (GRO)	14000	2000	16000		88	63	149			
Surr: 1,2-Dichloroethane-d4	333		400		83	70	130			
Surr: Toluene-d8	471		400		118	70	130			
Surr: 4-Bromofluorobenzene	481		400		120	70	130			

Sample Matrix Spike

File ID: 13010413.D

Type: MS Test Code: EPA Method SW8015B/C / SW8260B

Batch ID: MS12S0191B

Analysis Date: 01/04/2013 15:22

Sample ID: 12123120-02AGS

Units: µg/Kg

Run ID: MSD_12_130104B

Prep Date: 01/04/2013 15:22

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
TPH-P (GRO)	12500	2000	16000	0	78	36	164			
Surr: 1,2-Dichloroethane-d4	331		400		83	70	130			
Surr: Toluene-d8	476		400		119	70	130			
Surr: 4-Bromofluorobenzene	464		400		116	70	130			

Sample Matrix Spike Duplicate

File ID: 13010414.D

Type: MSD Test Code: EPA Method SW8015B/C / SW8260B

Batch ID: MS12S0191B

Analysis Date: 01/04/2013 15:45

Sample ID: 12123120-02AGSD

Units: µg/Kg

Run ID: MSD_12_130104B

Prep Date: 01/04/2013 15:45

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
TPH-P (GRO)	11800	2000	16000	0	74	36	164	12510	5.9(40)	
Surr: 1,2-Dichloroethane-d4	325		400		81	70	130			
Surr: Toluene-d8	464		400		116	70	130			
Surr: 4-Bromofluorobenzene	480		400		120	70	130			

Comments:

Calculations are based off of raw (non-rounded) data. However, for reporting purposes, all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.

S55 = Surrogate recovery was above laboratory acceptance limits.

Reported in micrograms per Kilogram, per client request.



Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778
(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

Date:
08-Jan-13

QC Summary Report

Work Order:
12123120

Method Blank

File ID: 13010408.D

Type: MBLK Test Code: EPA Method SW8260B

Batch ID: MS12S0191A

Analysis Date: 01/04/2013 13:28

Sample ID: MBLK MS12S0191A

Units: µg/Kg

Run ID: MSD_12_130104B

Prep Date: 01/04/2013 13:28

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Methyl tert-butyl ether (MTBE)	ND	5								
Benzene	ND	5								
Toluene	ND	5								
Ethylbenzene	ND	5								
m,p-Xylene	ND	5								
o-Xylene	ND	5								
Surr: 1,2-Dichloroethane-d4	181		200		90	70	130			
Surr: Toluene-d8	229		200		114	70	130			
Surr: 4-Bromofluorobenzene	314		200		157	70	130			S55

Laboratory Control Spike

File ID: 13010708.D

Type: LCS Test Code: EPA Method SW8260B

Batch ID: MS12S0191A

Analysis Date: 01/07/2013 14:17

Sample ID: LCS MS12S0191A

Units: µg/Kg

Run ID: MSD_12_130104B

Prep Date: 01/07/2013 14:17

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Methyl tert-butyl ether (MTBE)	393	10	400		98	65	145			
Benzene	420	10	400		105	70	137			
Toluene	449	10	400		112	70	139			
Ethylbenzene	462	10	400		115	70	137			
m,p-Xylene	416	10	400		104	70	145			
o-Xylene	406	10	400		102	70	145			
Surr: 1,2-Dichloroethane-d4	316		400		79	70	130			
Surr: Toluene-d8	458		400		114	70	130			
Surr: 4-Bromofluorobenzene	462		400		115	70	130			

Sample Matrix Spike

File ID: 13010709.D

Type: MS Test Code: EPA Method SW8260B

Batch ID: MS12S0191A

Analysis Date: 01/07/2013 14:40

Sample ID: 12123120-02AMS

Units: µg/Kg

Run ID: MSD_12_130104B

Prep Date: 01/07/2013 14:40

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Methyl tert-butyl ether (MTBE)	338	10	400	0	84	45	155			
Benzene	368	10	400	0	92	52	151			
Toluene	407	10	400	0	102	47	154			
Ethylbenzene	431	10	400	0	108	52	154			
m,p-Xylene	389	10	400	0	97	51	162			
o-Xylene	377	10	400	0	94	52	162			
Surr: 1,2-Dichloroethane-d4	310		400		78	70	130			
Surr: Toluene-d8	462		400		116	70	130			
Surr: 4-Bromofluorobenzene	458		400		115	70	130			

Sample Matrix Spike Duplicate

File ID: 13010411.D

Type: MSD Test Code: EPA Method SW8260B

Batch ID: MS12S0191A

Analysis Date: 01/04/2013 14:36

Sample ID: 12123120-02AMSD

Units: µg/Kg

Run ID: MSD_12_130104B

Prep Date: 01/04/2013 14:36

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Methyl tert-butyl ether (MTBE)	473	10	400	0	118	45	155	337.6	33.4(32)	R5
Benzene	474	10	400	0	119	52	151	367.8	25.3(30)	
Toluene	493	10	400	0	123	47	154	406.7	19.3(28)	
Ethylbenzene	514	10	400	0	128	52	154	430.5	17.6(37)	
m,p-Xylene	448	10	400	0	112	51	162	388.6	14.2(34)	
o-Xylene	437	10	400	0	109	52	162	377.1	14.7(40)	
Surr: 1,2-Dichloroethane-d4	333		400		83	70	130			
Surr: Toluene-d8	450		400		113	70	130			
Surr: 4-Bromofluorobenzene	477		400		119	70	130			



Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778

(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

Date:

08-Jan-13

QC Summary Report

Work Order:

12123120

Comments:

Calculations are based off of raw (non-rounded) data. However, for reporting purposes, all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.

R5 = MS/MSD RPD exceeded the laboratory control limit. Recovery met acceptance criteria.

S55 = Surrogate recovery was above laboratory acceptance limits.

Billing Information :

CHAIN-OF-CUSTODY RECORD

CA

Alpha Analytical, Inc.
 255 Glendale Avenue, Suite 21 Sparks, Nevada 89431-5778
 TEL: (775) 355-1044 FAX: (775) 355-0406

WorkOrder : STR12123120
Report Due By : 5:00 PM On : 08-Jan-13

Client:
 Stratus Environmental
 3330 Cameron Park Drive
 Suite 550
 Cameron Park, CA 95682-8861

Report Attention	Phone Number	EEmail Address
Scott Bittinger	(530) 676-2062 x	sbittinger@stratusinc.net

EDD Required : Yes

Sampled by : Carl Schulze

PO :
 Client's COC # : 59157 Job : 2146-2008-01/B & C Gas
 Cooler Temp Samples Received Date Printed
 0 °C 29-Dec-12 31-Dec-12

QC Level : S3 = Final Rpt, MBLK, LCS, MS/MSD With Surrogates

Alpha Sample ID	Client Sample ID	Collection Matrix	No. of Bottles Date	Alpha	Sub	TAT	Requested Tests						Sample Remarks	
							TPHP_S	VOC_S						
STR12123120-01A	SVE-4-30	SO	12/27/12 10:30	1	0	5	GAS-C	BTXE/M_C						
STR12123120-02A	SVE-4-55	SO	12/27/12 11:50	1	0	5	GAS-C	BTXE/M_C						

Comments: Security seals intact. Frozen ice. Saturday delivery. Samples kept cold and secure until login on Monday .

Signature	Print Name	Company	Date/Time
<i>K Murray</i>	K Murray	Alpha Analytical, Inc.	12/31/12 0920

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense.
 The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for the report.
 Matrix Type : AQ(Aqueous) AR(Air) SO(Soil) WS(Waste) DW(Drinking Water) OT(Other) Bottle Type: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other

Billing Information:

Company Name Stratus Environmental
 Attn: _____
 Address 3330 Cameron Park Dr.
 City, State, Zip Cameron Park, CA
 Phone Number _____ Fax _____



Alpha Analytical, Inc.
 255 Glendale Avenue, Suite 21
 Sparks, Nevada 89431-5778
 Phone (775) 355-1044
 Fax (775) 355-0406

59157



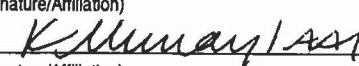
Samples Collected From Which State?

AZ _____ CA NV _____ WA _____ DOD Site _____
 ID _____ OR _____ OTHER _____ Page # _____ of _____

Time Sampled		Date Sampled	Matrix* See Key Below	P.O. #	Lab ID Number <small>(Office Use Only)</small>	Sample Description	TAT	Field Filtered	# Containers**	Analyses Required				Data Validation Level: III or IV
										GRO	BTEX	MTBE		
1030	12/27/12	SO			STR12123120-01	SVE-4-30	std		1B	x	x	x		EDD / EDF? YES <input checked="" type="checkbox"/> NO _____ Global ID # T0600100930
1150	12/27/12	SO			FOR 02	SVE-4-55	std		1B	x	x	x		
LAB USE ONLY														

ADDITIONAL INSTRUCTIONS:

I, (field sampler), attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action. Sampled By: Carl Schulze

Relinquished by: (Signature/Affiliation) 	Received by: (Signature/Affiliation) 	Date: <u>12.28.12</u>	Time: <u>1430</u>
Relinquished by: (Signature/Affiliation)	Received by: (Signature/Affiliation) 	Date: <u>12/31/12</u>	Time: <u>0910</u>
Relinquished by: (Signature/Affiliation)	Received by: (Signature/Affiliation)	Date:	Time:

*Key: AQ - Aqueous SO - Soil WA - Waste OT - Other AR - Air **; L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this coc. The liability of the laboratory is limited to the amount paid for the report.

APPENDIX E
GEOTRACKER DATA UPLOAD CONFIRMATION SHEETS

STATE WATER RESOURCES CONTROL BOARD
GEOTRACKER ESI

UPLOADING A EDF FILE

SUCCESS

Processing is complete. No errors were found!
Your file has been successfully submitted!

<u>Submittal Type:</u>	EDF
<u>Report Title:</u>	Well Installation and Destruction Report
<u>Report Type:</u>	Well Installation Report
<u>Facility Global ID:</u>	T0600100930
<u>Facility Name:</u>	DESERT PETROLEUM #795
<u>File Name:</u>	12121946_EDF.zip
<u>Organization Name:</u>	Stratus Environmental, Inc.
<u>Username:</u>	STRATUS NOCAL
<u>IP Address:</u>	12.186.106.98
<u>Submittal Date/Time:</u>	1/8/2013 2:55:50 PM
<u>Confirmation Number:</u>	3332442522

[VIEW QC REPORT](#)

[VIEW DETECTIONS REPORT](#)

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STATE WATER RESOURCES CONTROL BOARD
GEOTRACKER ESI

UPLOADING A EDF FILE

SUCCESS

Processing is complete. No errors were found!
Your file has been successfully submitted!

<u>Submittal Type:</u>	EDF
<u>Report Title:</u>	Well Installation and Destruction Report
<u>Report Type:</u>	Well Installation Report
<u>Facility Global ID:</u>	T0600100930
<u>Facility Name:</u>	DESERT PETROLEUM #795
<u>File Name:</u>	12123120_EDF.zip
<u>Organization Name:</u>	Stratus Environmental, Inc.
<u>Username:</u>	STRATUS NOCAL
<u>IP Address:</u>	12.186.106.98
<u>Submittal Date/Time:</u>	1/15/2013 9:52:44 AM
<u>Confirmation Number:</u>	4913787126

[VIEW QC REPORT](#)

[VIEW DETECTIONS REPORT](#)

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STATE WATER RESOURCES CONTROL BOARD
GEOTRACKER ESI

UPLOADING A GEO_BORE FILE

SUCCESS

Your GEO_BORE file has been successfully submitted!

<u>Submittal Type:</u>	GEO_BORE
<u>Facility Global ID:</u>	T0600100930
<u>Field Point:</u>	SVE-2
<u>Facility Name:</u>	DESERT PETROLEUM #795
<u>File Name:</u>	SKMBT_C35313011112470.pdf
<u>Organization Name:</u>	Stratus Environmental, Inc.
<u>Username:</u>	STRATUS NOCAL
<u>IP Address:</u>	12.186.106.98
<u>Submittal Date/Time:</u>	1/11/2013 11:58:40 AM
<u>Confirmation Number:</u>	4590396940

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STATE WATER RESOURCES CONTROL BOARD
GEOTRACKER ESI

UPLOADING A GEO_BORE FILE

SUCCESS

Your GEO_BORE file has been successfully submitted!

<u>Submittal Type:</u>	GEO_BORE
<u>Facility Global ID:</u>	T0600100930
<u>Field Point:</u>	SVE-4A/B
<u>Facility Name:</u>	DESERT PETROLEUM #795
<u>File Name:</u>	SKMBT_C35313011112471.pdf
<u>Organization Name:</u>	Stratus Environmental, Inc.
<u>Username:</u>	STRATUS NOCAL
<u>IP Address:</u>	12.186.106.98
<u>Submittal Date/Time:</u>	1/11/2013 11:59:21 AM
<u>Confirmation Number:</u>	2948484301

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