GROUNDWATER REMEDIATION RELATED TO A FORMER HEATING OIL UFST

387 ORANGE STREET
OAKLAND, CALIFORNIA

Prepared for:

MS. MARY KRANZ
(EXECUTOR OF THE ESTATE OF DAVID ULIBARRI)
10106 CORONADO AVENUE NE
ALBUQUERQUE, NEW MEXICO

December 2008

STELLAR
ENVIRONMENTAL SOLUTIONS, INC.
GEOSCIENCE & ENGINEERING CONSULTING

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STELLAR ENVIRONMENTAL SOLUTIONS, INC.
2198 SIXTH STREET, SUITE 201
BERKELEY, CALIFORNIA 94710

December 11, 2008

STELLAR
ENVIRONMENTAL SOLUTIONS, INC.
2198 SIXTH STREET, SUITE 201·BERKELEY, CA 94710
TEL: (510)644-3123 · FAX: (510)644-3859
GEOSCIENCE & ENGINEERING CONSULTING

December 11, 2008

Mr. Steven Plunkett
Hazardous Material Specialist
Alameda County Health Care Services Agency
Department of Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Subject: Groundwater Remediation Related to a Former Heating Oil UFST
387 Orange Street, Oakland, California (Fuel Leak Case No. RO0002921)

Dear Mr. Plunkett:

Stellar Environmental Solutions, Inc. (SES) is pleased to submit this technical documentation report of findings for the recent remedial activities at the referenced site on behalf of the property executor (Ms. Mary Kranz). The objective of the work was to implement the SES remedial workplan dated February 11, 2008 incorporating the Alameda County Health Care Services technical comments in their letter dated July 8, 2008. The workplan was developed to address residual soil and potential groundwater contamination associated with the former 1,000-gallon home heating underground storage tank beneath the sidewalk that fronts the subject property.

I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report are true and correct to the best of my knowledge. If you have any questions regarding this report, please contact me at (510) 644-3123.

Sincerely,

Henry Pietropaoli, R.G., R.E.A.
Project Manager

Richard S. Makdisi, R.G., R.E.A.
Principal

cc: Ms. Mary Kranz

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1.0 INTRODUCTION

SCOPE OF WORK AND OBJECTIVE

The scope of work for the October 2008 investigation implemented the SES workplan dated February 11, 2008, and incorporated technical comments from the workplan review letter by Alameda County Health Care Services Agency, Department of Environmental Health (ACEH), dated July 14, 2008.

The objective of the work was to remediate documented groundwater contamination associated with a 1,000-gallon home heating underground fuel storage tank (UFST) that was located beneath the sidewalk in front of the subject property. The UFST was removed under permit in September 2007.

SUBJECT PROPERTY UNDERGROUND STORAGE TANK HISTORY

The subject site UFST is typical of historical UFSTs which supplied fuel to a boiler to heat a residential unit before on-demand natural gas became widely used. Such fuel UFSTs were commonly buried beneath the sidewalk near the driveway, as in the case of the subject site UFST. The size of the UFST, 1,000 gallons, is also typical for residential heating oil UFSTs.

The regulatory history of this UFST evaluation project began in approximately October 2005, during the due diligence phase of the sale of the property located at 385 and 387 Orange Street (properties owned by the Ulibarri Estate). A fuel UFST (located between the 385 and 387 Orange Street residences), which was associated with historical fueling of a boiler located within the 387 Orange Street residence, was discovered beneath the sidewalk. As part of the real estate agreement, it was stipulated that the Ulibarri Estate would be responsible for the regulatory closure of the UFST.

In February 2006, Ms. Mary Kranz, executor of the estate of David Ulibarri, retained Clearwater Group to initiate the environmental closure of the historical UFST. While Clearwater Group was originally retained to remove the UFST, the stringent site constraints prompted an application to the Oakland Fire Prevention Bureau to "Abandon/Close in Place" the UFST (Tank Permit Number T-06-0008, granted on February 28, 2006). The closure in-place required that

subsurface sampling be conducted to document if any residual contamination remained at concentrations of potential regulatory concern.

An initial site investigation by Clearwater Group in March 2006 documented soil contamination, including a maximum of 15,000 milligrams per kilogram (mg/kg) of total extractable hydrocarbons as diesel (TEHd) and trace amounts of ethylbenzene and total xylenes at a depth of 13.5-14 feet below ground surface (bgs). The ACEH requested in a letter dated December 20, 2006 that the extent of soil contamination and potential groundwater contamination be investigated.

SES was retained by Ms. Mary Kranz and submitted a technical workplan dated January 31, 2007 to address the ACEH concerns. SES implemented the workplan in April 2007. Analytical results from the investigation revealed maximum contaminant concentrations of 100 mg/kg of TEHd in soil at a depth of approximately 18 feet bgs. In groundwater, samples taken from 21-23 feet bgs, immediately adjacent to the presumed location of the UFST and below the fill port and service line end of the UFST, 2,400,000 micrograms per liter (µg/L) of TEHd in groundwater was detected. As in the March 2006 Clearwater Group investigation (in which the maximum concentration in soil was 15,000 mg/kg) the SES April 2007 investigation revealed that soil samples collected adjacent to the UFST fill port had the highest contaminant concentrations.

The results from both of these investigations suggested a localized contaminant source with a steep vertical gradient, as evidenced by the absence of extensive lateral soil contamination and supported by the high level of TEHd detected in groundwater. Lithologic observations indicate moderately permeable soil ranging from fine sand to clayey silt that could promote a steep gradient. The contamination likely resulted from faulty piping, as the highest detected contamination was in borings closest to the fill port and service line in both the April 2007 and previous March 2006 investigations.

The April 2007 SES investigation concluded that the contaminant source may have entirely moved into groundwater, or if concealed beneath the UFST, would comprise an area of soil estimated to be 20 cubic yards or less. SES recommended that the UFST be removed, along with any associated contaminated soil, and a temporary groundwater monitoring well (extraction point) be installed to remove the contaminant source. This is a key requirement for closure in which significant residual contamination exists above the regulatory Regional Water Quality Control Board (Water Board) Environmental Screening Limits (ESLs), which is the case with the subject property. SES recommended that the UFST and fill piping be removed, and that any contaminated soil beneath it be excavated to the extent possible.

In September 2007, the primary contaminant source (the UFST) and secondary source (the contaminated soil) were removed to the extent practical. A pod of hydrocarbon-impacted soil,

estimated to be 10 to 20 cubic yards, located beneath the footprint of the UFST (between 15 and 21 feet bgs) was left in place. This soil could not be directly accessed without disconnecting and temporarily rerouting existing overhead communication and electrical services to many of the neighborhood residences, and utilizing larger excavation equipment.

The soil sample data (with the exception of the one sample showing 15,000 mg/kg of TEHd collected during the 2006 Clearwater Group investigation) suggested that the majority of hydrocarbon contamination had passed through the soil to the underlying groundwater (encountered at about 21 feet bgs). The high TEHd detection in soil appears anomalous, as evidenced by a total of four other soil samples that were collected in an area within two feet of this sample during the UFST removal and previous two boring investigations, which showed TEHd ranging from 2.7 mg/kg to 100 mg/kg.

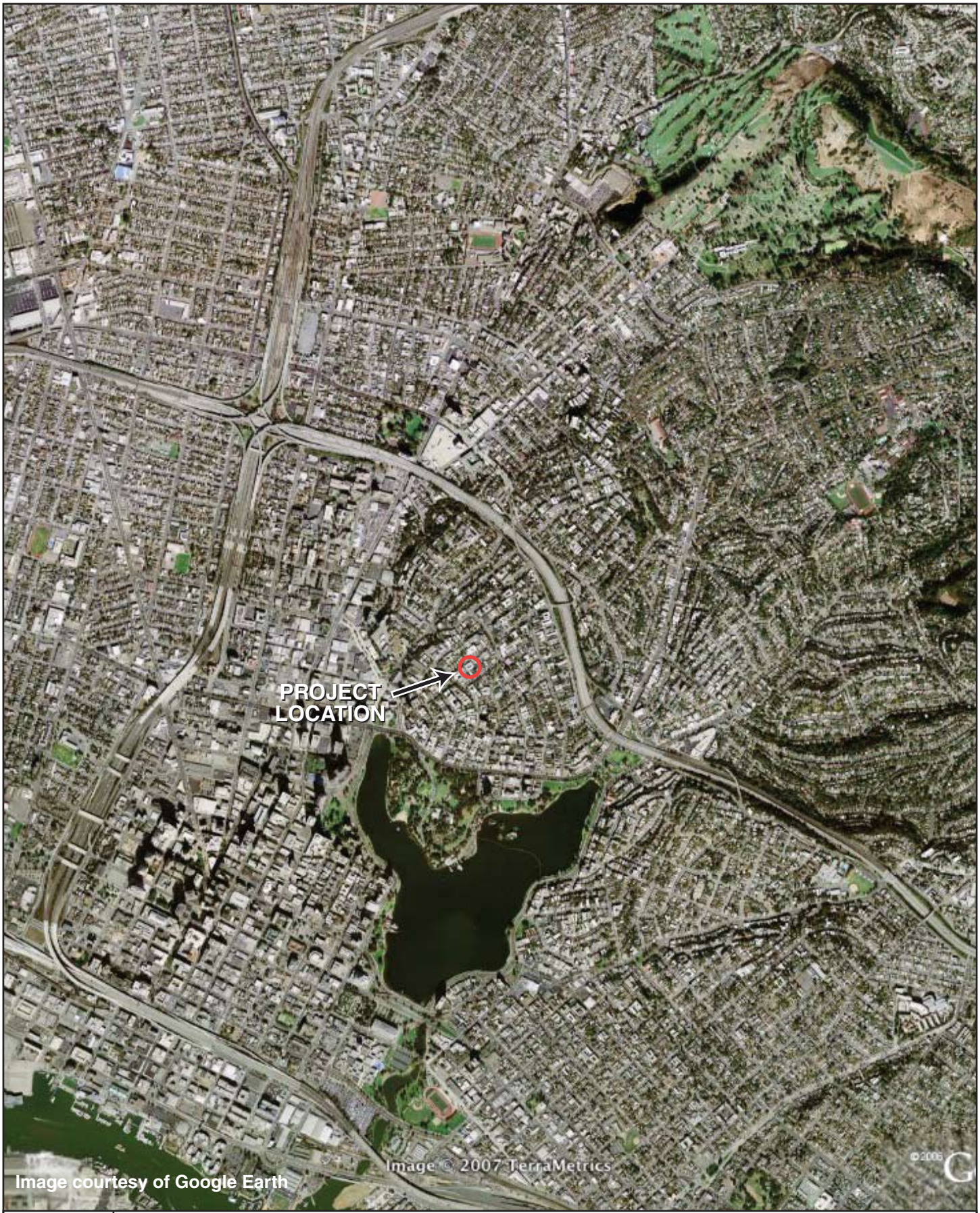
Based on previously documented groundwater impact from the UFST, and discussions with ACEH, an effort must be made to recover the documented high concentrations of dissolved, and possibly free-floating, product that appears to be in a very limited zone. This report is the documentation of that recovery effort.

Figure 1 shows the site location. Figure 2 is a site plan showing the locations of the borings and UFST. Appendix A contains photographic documentation of investigation activities.

REGULATORY STATUS

ACEH has assigned the site to its fuel leak case system (RO#0002921), and a case officer has been appointed. The case has also been assigned global identification number T06019730058 in the State Water Resources Control Board's GeoTracker system. Electronic uploads of required data/reports will be submitted to both of these agencies.

An application for reimbursement from the California Underground Storage Tank Cleanup Fund (Fund) has been approved and the site has been assigned Claim No. 19085. The first reimbursement request for costs associated with contaminant investigation and remediation will be submitted to the Fund upon receipt of a "Letter of Commitment" from the Fund.



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SITE LOCATION ON AERIAL PHOTO

385-387 Orange St. Oakland, CA	By: MJC	SEPTEMBER 2007
	Figure 1	

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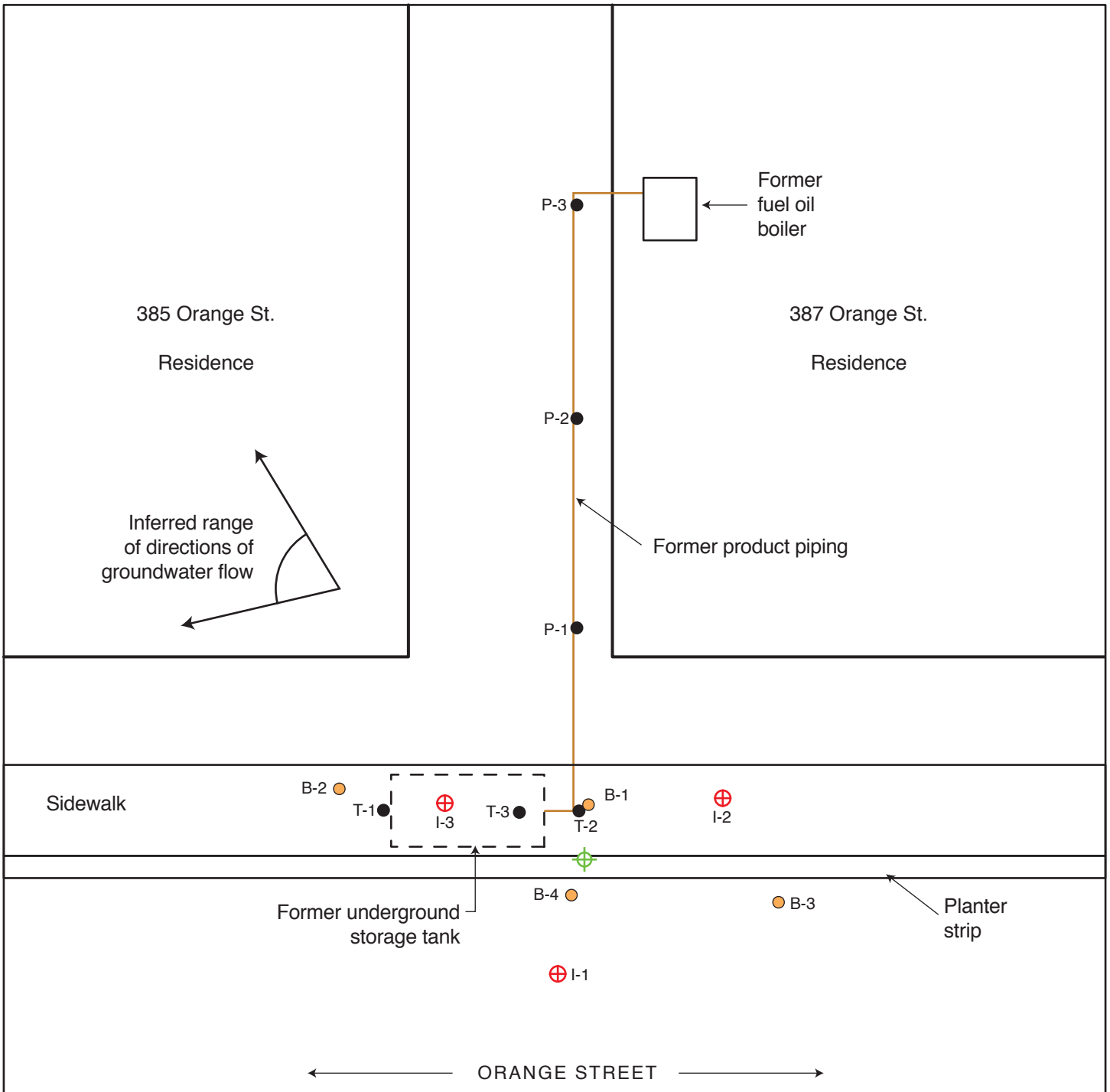
2007-09-01



LEGEND

- I-1 Location of ORC injection point (SES 2008)
- MW-1 Location of monitoring well (SES 2008)
- T-2 Clearwater Group tank sample (2006)
- P-2 Clearwater Group pipeline sample (2006)
- B-1 SES boring (2007)
- Location of former UST (CWG, 2006; SES, 2007)

TPHd=Total petroleum hydrocarbons as diesel concentrations in µg/L

0 10

APPROX. SCALE IN FEET

Modified from original source: Clearwater Group

SITE PLAN SHOWING LOCATIONS OF BORINGS AND MONITORING WELL

387 Orange St. Oakland, CA	By: MJC	DECEMBER 2008
	Figure 2	

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2007-09-17

2.0 PHYSICAL SETTING

TOPOGRAPHY AND SURFACE WATER DRAINAGE

The mean elevation of the subject property is approximately 105 feet above mean sea level (amsl). The subject property is in a moderately hilly area with a local downward sloping topographic gradient to the north-northwest. The nearest surface water body is Glen Echo Creek, a northeast-southwest trending creek located approximately 1,500 feet west-northwest of the subject property. The creek becomes culverted prior to emptying into Lake Merritt, located about 0.5 mile south-southwest of the site.

LITHOLOGY AND HYDROGEOLOGY

The site is underlain by Late Pleistocene alluvium that generally consist of weakly consolidated slightly weathered poorly sorted irregularly interbedded clay, silt, sand, and gravel. Local heterogeneities in shallow lithology and groundwater levels are typical of the alluvial deposits in this area. Shallow site lithology was determined during this and previous investigations by the visual method of the Unified Soils Classification System (USCS) using continuous core soil samples from the two borehole programs. The lithology encountered in boreholes B-1 and B-2 consisted of light brown clayey silt from the ground surface that extended from 6 to 9 feet below ground surface (bgs); this was underlain by light brown silty clay to clay with occasional zones of interbedded fine sands that persisted to the bottom of the borings (which ranged from 22 to 24 feet bgs). In B-4, a clay interval was encountered from near surface to 6 feet bgs; this was underlain by clayey silt that extended to 11 feet bgs, at which depth it was underlain by the silty clay encountered in borings B-1 and B-2.

This hydrologic sub-area, similar to much of the East Bay plains region, consists of a sequence of alluvial fans downslope of upland hill and estuarine muds at the San Francisco Bay margins. Groundwater was encountered during the April 2007 investigation in borings B-1 and B-2 at approximately 22-23 feet bgs, and appeared to exist under unconfined conditions. During drilling and installation, there was some initial perched groundwater encountered in fill at the base of the former UFST excavation at approximately 15 feet bgs. This was likely a result from the heavy rainfall that had occurred two weeks before the investigation. Groundwater was again encountered at 24 feet bgs and persisted to the 30 foot depth of the boring. The groundwater level in the newly installed well was recorded on November 17, 2008 at approximately 18 feet bgs and the equilibrated groundwater was recorded two days later on November 19th at 26.11 feet bgs. The well was subsequently purged dry and did not recharge significantly after one

week, suggesting that groundwater encountered between 15 feet and the total well depth was perched.

3.0 MONITORING WELL INSTALLATION, DEVELOPMENT, PURGING, AND SAMPLING

Monitoring well drilling and installation was conducted on November 17, 2008 by Resonant Sonic International Drilling (RSI) (CA-57 License No. 802334), under the direct supervision of an SES Registered Geologist. A Geoprobe Trackstar limited access 8-inch hollow-stem auger rig was used for drilling and installation of the monitoring well.

Prior to drilling, SES marked the locations with white paint and reported the planned drilling activities to Underground Services Alert (USA) North, which is responsible for notifying local utility companies to conduct a site-specific survey and mark underground utilities.

Soil samples were collected for geologic logging using the visual method of USCS. Soil was visually examined and periodically screened with a photoionization detector (PID), the results of which are included on the geologic log in Appendix C. PID measurements collected during drilling ranged between 0 and 15 parts per million by volume (ppmv).

Mr. James Lowrie from the City of Oakland conducted a construction site inspection during drilling activities on November 24, 2008. Ms. Vicky Hamlin of Alameda County Public Works (ACPW) inspected the installation of the monitoring well sanitary seal on November 17th and grouting of the injection bores on November 24, 2008.

The location of the monitoring well is shown on Figure 2. Appendix A contains photodocumentation of the drilling activities. Copies of the ACEH and City of Oakland permits are contained in Appendix B. The geologic log and monitoring well construction detail is contained in Appendix C. Groundwater sampling field notes are contained in Appendix E. Waste Disposal documentation is contained in Appendix F.

PRE-FIELD WORK PLANNING

Prior to drilling, the following fieldwork activities were conducted:

- Obtained an ACPW Drilling and Well Permit (Permit # W2008-0607 and 0608);
- Prepared a Traffic Control Plan per the City of Oakland requirements;

- Obtained a City of Oakland (Public Works) Excavation Permit (Permit No. XO802264);
- Obtained a City of Oakland (Public Works) Obstruction Permit (Permit No. OB080930); and
- Obtained a City of Oakland (Public Works) Encroachment Permit (Permit No.ENM108179);

In addition to obtaining the permits, SES competed the following as part of the pre-field work elements:

- Site Health and Safety Plan;
- Site visit to mark drilling locations, then notified USA North;
- Provided neighborhood notifications, barricaded the work area, and placed placards for detouring on the sidewalk as required by City of Oakland; and
- Procured necessary analytical laboratory, concrete coring contractor, well purging and sampling contractor, contaminated soil and groundwater disposal facility, drilling contractor and supplies to accomplish the project.

Rationale for Groundwater Monitoring Well Location

The monitoring well was placed in the closest possible location to bore B1, located in the sidewalk, where the maximum contaminant concentration was detected in groundwater in April 2007. The well could not be placed immediately adjacent to B1 as the city of Oakland Department of Public Works regulations do not allow for "permanent" monitoring wells to be placed in the sidewalk. The closest location to bore B1 was in the sidewalk planter strip approximately three feet away from the 2007 bore B1. This well will be used for potential product recovery and to monitor the effectiveness of the Advanced Oxygen Release Compound (ORC®) injection remediation. The monitoring well location was selected in concurrence with the ACEH.

GROUNDWATER MONITORING WELL CONSTRUCTION

The well emplacement was conducted as follows:

- Six-inch hollow-stem auger was used to drill to the desired well depth.
- The PVC well casing was then placed inside the auger, and filter sand (350 pounds of No. three size) was added to fill the annular space around the screened PVC. Additional

sand was then added to approximately 0.5 foot above the top of the well screens. The sand was then wetted.

- One and a half feet of bentonite chips were added on top of the sand and hydrated.
- Portland cement grout slurry was brought to near ground surface, and a flush-mounted well box was installed with concrete.

The following are key construction specifications:

- Well screen and filter pack: 5-feet-long, 2-inch outside diameter (OD), schedule 40 PVC with 0.010-inch slotted screen from 20-30 feet bgs.
- Well riser: 20-feet long, 2-inch OD, and schedule 40 PVC.
- Pollution seal: 1-foot-thick bentonite chips (hydrated) overlain by Portland cement grout slurry to near ground surface.
- Surface completion: Christy-type flush-mount box and locking well casing cap.
- The finished top of the casing was approximately 1 foot below the top of the adjacent concrete sidewalk.

GROUNDWATER PURGING AND SAMPLING

One baseline grab-groundwater sample was collected immediately after the well installation on November 17, 2008, after purging approximately 1.5 gallons of groundwater. An attempt to slowly purge the well (approximately one gallon or less per minute) was conducted by Blaine Tech Services on November 19, 2008 to recover potential fuel product; however, groundwater recharge was too slow (< 0.25 feet per hour) to be practical and only 1.17 gallons was evacuated from the well before it went dry. A post-purge groundwater sample was immediately collected for laboratory analysis. Because the well went dry, sufficient volume for collecting a TEHd sample could not be obtained, and SES returned to the site on November 21st to collect this sample. Groundwater sampling field notes are contained in Appendix E. The analytical methods and results are discussed in a subsequent section.

The following procedures were used at the well:

- Measured the equilibrated water level in the well using an electric water level meter.
- Purged the well with a peristaltic pump until it went dry. Aquifer stability parameters (pH, temperature, and electrical conductivity) were taken before purging and after each purged volume. In addition, as requested by ACEH, the natural attenuation parameters of dissolved oxygen, iron ions, and oxidation-reduction potential (ORP) were measured during development and purging.
- Collected a post-purge groundwater sample for laboratory analysis.

- Delivered the samples to the analytical laboratory.

Groundwater samples were collected and placed in an ice chest with ice at approximately 4°C and transported to the analytical laboratory under chain-of-custody the same day. Laboratory analysis was conducted by Curtis and Tompkins, Ltd. (of Berkeley, California), an analytical laboratory certified by the State of California Environmental Laboratory Accreditation Program (ELAP).

DECONTAMINATION PROCEDURES AND BORE ABANDONMENT

All downhole equipment utilized for drilling and sampling equipment and injection was brushed off and rinsed with water before entering the subsurface or well. All surfaces of the sampling equipment and materials were washed with water until all visible dirt, grime, and grease were rinsed from the equipment.

Following completion of drilling activities (the same day), the boreholes were grouted to surface with a slurry of neat Portland cement and potable water as specified by the ACPW Inspector.

WASTE DISPOSAL

Soil from drilling, groundwater from development and sampling, and water from equipment decontamination were placed in labeled, covered, 55-gallon drums, which were subsequently removed from the site by Evergreen Disposal and Recycling Services on November 24, 2008. The waste disposal documentation is included in Appendix F.

4.0 CORRECTIVE ACTION ORC® INJECTION

This section discusses the ORC® remedial application that was accomplished by RSI utilizing a Geoprobe® 6400 rig under the direct supervision of SES personnel. The locations of the ORC® injection points are shown on the Figure 2 site plan. Appendix A contains photodocumentation of the injection activities. Copies of the ACEH drilling permit and City of Oakland permits are contained in Appendix B. The ORC® product specifications are contained in Appendix D.

DISCUSSION FOR ORC® INOCULATION AND LOCATION OF INJECTION POINTS

As discussed in detail in the SES June 2007 Corrective Action Investigation Report, SES identified contaminated groundwater (at approximately 21-23 feet bgs) in bore B1 with a TEHd concentration of 2,400 mg/L. This suggested the presence of small pocket of light non-aqueous phase liquid (LNAPL) or free-phase petroleum (diesel) product located directly below the location of the former UFST. The extent of the "bore B1 hotspot or pocket" was defined by nearby bore B2 having 490 µg/L TEHd in groundwater. Bore B2 was located approximately 20 feet away in the assumed downgradient direction from the UFST source on the basis of topography. Thus the previous 2007 nearby data point had demonstrated that this "pocket" of higher contamination was limited, with a decrease in concentration on the scale of four orders of magnitude.

The newly installed monitoring well (MW-1), had to be located in the planter strip adjacent to the sidewalk, three feet south of bore B1. This was based on the City of Oakland Department of Public Works' regulation which does not allow for a "permanent" fixture to be placed in the sidewalk without an application for a special variance. The significant decrease in the concentration of hydrocarbons (from 2,400 mg/L at B1 in 2007 to 7.5 mg/L in well MW-1 in 2008) just 3 feet south of the bore B1 corroborates previous data that the "pocket" of hydrocarbons appears very limited, and not mobile. It is also possible that the sample collected at B1 was not really representative of what was in the environment, being biased as a grab-groundwater sample that had some spike from soil or colloidal particles that was misrepresented in the analyses.

Following the product recovery (discussed in the previous section), ORC® was injected to inoculate the groundwater where the highest historical "hot spot" of contamination was found.

This passive remedial technique creates a highly oxygenated zone in areas where natural attenuation is limited by oxygen availability.

The ORC® injection should be effective in reducing the toxicity of the plume by accelerating the biodegradation significantly within the first 12 months or so. The effectiveness of the ORC® is more pronounced along the lower contaminant concentration zone (concentration levels of less than 10 mg/L hydrocarbons) such as is evident within less than five feet of the 2007 bore B-1. The mobility of the plume will likewise be reduced in the area; although nearby bore data suggests that the B-1 "hotspot" area exhibits low mobility of the contaminants due to other, possibly lithologic reasons. The volume of dissolved hydrocarbons within the "hot spot" area will likely be reduced within the first six to nine months by 50 percent or more—according to the manufacturer's data. The ORC® product will continue to break down petroleum compounds and associated daughter products for up to two years. Post-injection monitoring described in the SES workplan will determine the effectiveness; and future additional groundwater monitoring, pumping, and/or removal of LNAPL might be appropriate if site conditions or data results warrant it.

ORC® INJECTION ACTIVITY

Three injection points were situated approximately 10 feet away from bore B1 in a triangular pattern around the bore. The locations of the injection points are shown on Figure 2. A total of approximately 75 pounds of ORC® was delivered to the site (25 pounds ORC® mixed with approximately seven gallons of water per bore) and was injected to create an approximately 32 percent slurry mix. The ORC® manufacturer design and specifications for the injection spacing are contained in Appendix D.

After setting up at the injection point, the drill rods were advanced through an injector tip to a depth of 25 feet bgs and then retracted to expose a 5 foot length of screen across the target interval of 20 to 25 feet bgs. The product was mixed separately in a mixing tank just prior to injection, at which point it was pumped through the drill rods to the target depth. The treatment entailed injecting approximately seven gallons (52.4 pounds) of water mixed with 25 lbs of ORC® product through the drill rods. This procedure delivered approximately 25 pounds of ORC® product per boring at a pressure of approximately 200 psi. A short time was allowed to elapse (usually 5 to 10 minutes) before the injector rods, manifold, and hoses were disconnected to allow the system to pressure down to prevent extrusion of product to the surface. In the three injection points advanced, no product was extruded or wasted to the surface. Radial penetration of the ORC® is estimated to average about 10 feet, according to the manufacturer, given the site lithology.

The injection system equipment used at the site consisted of:

- Direct-push Geoprobe® rig,
- Drive rods (typically 1½-inch OD) and injection tooling with fluid delivery sub-assembly,
- Geoprobe® DP-2000 injection pump rated to deliver 3-5 gpm from 200 psi for sandy formations to 2000 psi for clay formations,
- Injection hosing and a pressure relief valve with a bypass,
- Clear hosing between mixing tank/drum and pump,
- Pressure gauges,
- Power drill paint stirrer (3-inch-diameter or smaller propeller tip),
- 5-amp sump pump (such as Little Giant) and hose,
- One 55-gallon drum or similarly sized mixing tanks for ORC® mixing,
- Granular bentonite, quick-set grout concrete for closing and sealing injection holes,
- Water supply, and
- Electrical generator.

The injection specifications were:

- The saturated thickness of the treatment zone (including capillary fringe) is five feet, from 20 to 24 feet below ground surface (bgs),
- The treatment area is irregular due to the site constraints, but the projected "hot spot" area was estimated to be no greater than approximately 20 by 20 feet,
- The oxidant loading was approximately five pounds per foot,
- Delivery injection point spacing is approximately 10 feet, and
- A total of three injection points were drilled using direct-push technology to a depth of 25 feet.

5.0 REGULATORY CONSIDERATIONS

REGULATORY CONSIDERATIONS AND SCREENING LEVELS

The Water Board has established ESLs for evaluating the likelihood of environmental impact. ESLs are conservative screening-level criteria for soil and groundwater, designed to be generally protective of both drinking water resources and aquatic environments; they incorporate both environmental and human health risk considerations. ESLs are not cleanup criteria (i.e., health-based numerical values or disposal-based values). Rather, they are used as a preliminary guide in determining whether additional remediation and/or investigation may be warranted. Exceedance of ESLs suggests that additional investigation and/or remediation is warranted.

Different ESLs are published for commercial/industrial vs. residential land use, for sites where groundwater is a potential drinking water resource vs. is not a drinking water resource, and the type of receiving water body. A Water Board-published map of the East Bay shows areas where groundwater is, and is not, a potential drinking water resource.

In our professional opinion, the appropriate ESLs for the subject site are based on:

- Residential land use.
- Groundwater <u>is</u> a potential drinking water resource. In our professional opinion, the appropriate ESLs for the subject site are *residential land use* and *groundwater is a potential drinking water resource.* This is based on both the property zoning status and the designation of this area of Oakland as "Zone A – Significant Drinking Water Resource (Water Board, 1999).
- The receiving body for groundwater discharge is an estuary (San Francisco Bay).

The State of California has also promulgated drinking water standards (Maximum Contaminant Levels [MCLs]) for some of the site contaminants. Drinking water standards may also be utilized by regulatory agencies to evaluate the potential risk associated with groundwater contamination. For the site contaminants, MCLs are generally the same as the ESLs (except that there is no MCL for gasoline).

Once ESLs or drinking water standards are exceeded, the need for and type of additional investigative and corrective actions are generally driven by the potential risk associated with the

contamination. Minimum regulatory criteria generally applied to fuel leak cases in groundwater include:

- The contaminant source has been removed, including reasonably accessible contaminated soils that pose a long-term impact to groundwater.

This has been achieved at the site with the removal of the UFST and associated contaminated soil, and the recent treatment of the residual mass in the groundwater through the injection of ORC®.

- The extent of residual contamination has been fully characterized, to obtain sufficient lithologic and hydrogeologic understanding (generally referred to as a Site Conceptual Model).

This is considered to have been achieved through the various investigations to date.

- Groundwater wells have been installed and are monitored periodically to evaluate groundwater contaminant concentrations and hydrochemical trends.

This has not been achieved as yet. To date, one groundwater well has been installed and baseline samples collected which showed concentration above regulatory ESLs.

- The stability of the contaminant plume has been evaluated to determine whether it is moving or increasing in concentration.

This is considered to have been achieved. The data collected to date suggests a residual hotspot that is very limited in extent and immobile.

- A determination has been made as to whether the residual contamination poses an unacceptable risk to sensitive receptors.

This is considered to have been achieved. The contamination does contain benzene, toluene, ethyl benzene, xylenes, or other compounds that would create a concern for contaminant vapor intrusion, and there are no downgradient sensitive receptors known.

As stated above, ESLs are used as a preliminary guide in determining whether additional remediation or other action is warranted. Exceedance of ESLs may warrant additional actions, such as monitoring plume stability to demonstrate no risk to sensitive receptors in the case of sites where drinking water is not threatened.

GROUNDWATER IMPACTS AND BENEFICIAL USES

How much groundwater contamination impacts the current and projected beneficial use of the groundwater? In general, impacts of contamination on the environment by petroleum products are evaluated on a case-by-case basis by the regulators, with consideration given to Water Board ESLs.

There are no known immediate impacts to the groundwater that affect current beneficial use, although the area of immediate site area is within the "Zone A" designation by Water Board "East Bay Plain Groundwater Basin Beneficial Use Evaluation Report" (Water Board, 1999). The Zone A designation defines the groundwater as a "significant drinking water resource."

Surface Water

The nearest surface water body is Glen Echo Creek, a northeast-southwest trending creek located approximately 1,500 feet northwest to west of the subject property where it becomes culverted prior to emptying into Lake Merritt (located about 0.5 mile south-southwest of the site).

6.0 ANALYTICAL RESULTS, NATURAL ATTENUATION INDICATORS AND HYDROCHEMICAL TRENDS

This section presents the field and laboratory analytical results of the recent sampling event. Table 1 summarizes the contaminant analytical results and Table 2 summarizes natural attenuation indicator results from the current sampling events. Appendix G contains the certified analytical laboratory report and chain-of-custody records.

LABORATORY ANALYSES

The previous ACEH required analyses that included the fuel oxygenates, lead scavengers, and ethanol have been dropped because they were not detected. Groundwater samples were analyzed in accordance with current ACEH requirements for the following:

- Total extractable hydrocarbons – diesel range (TEHd) by EPA Method 8015M;
- Benzene, toluene, ethlybenzene and xylenes (BTEX) and methyl tertiary butyl ether (MTBE) by EPA Method 8260;
- Nitrates and sulfates by EPA Method 300.0 (requested by ACEH); and
- Methane by EPA Method RSK-175 (requested by ACEH).

The samples were placed in an ice chest with ice at approximately 4°C and transported to the analytical laboratory under chain-of-custody. Laboratory analysis was conducted by Curtis and Tompkins, Ltd. (of Berkeley, California), an analytical laboratory certified by the State of California Environmental Laboratory Accreditation Program.

ANALYTICAL RESULTS

TEHd was detected in groundwater samples above the regulatory ESL of 100 µg/L, for residential properties where groundwater is considered a potential drinking water resource, in both the pre-purge (11,000 µg/L) and the post-purge (7,500 µg/L) sample collected during this investigation.

Table 1 summarizes the current and historical groundwater analytical results. The distribution of TEHd in groundwater samples collected during this and previous investigation is shown on Figure 3. Appendix G contains the certified analytical laboratory reports and chain-of-custody records for the groundwater samples.

Table 1
Current and Historical Groundwater Analytical Results
387 Orange Street, Oakland, California
November 2008

Sample ID	TEHd	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE
April 2007 Hydropunch Grab-Groundwater Samples						
B1	**2,400,000**	ND	ND	ND	ND	NA
B2	**460**	ND	ND	ND	ND	NA
November 2008 Baseline Groundwater Sample						
MW-1	**11,000**	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<2.0*
November 2008 Post-Purge Sample						
MW-1	**7,500**	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<2.0*
ESLs	100	1.0	40	30	20	5.0

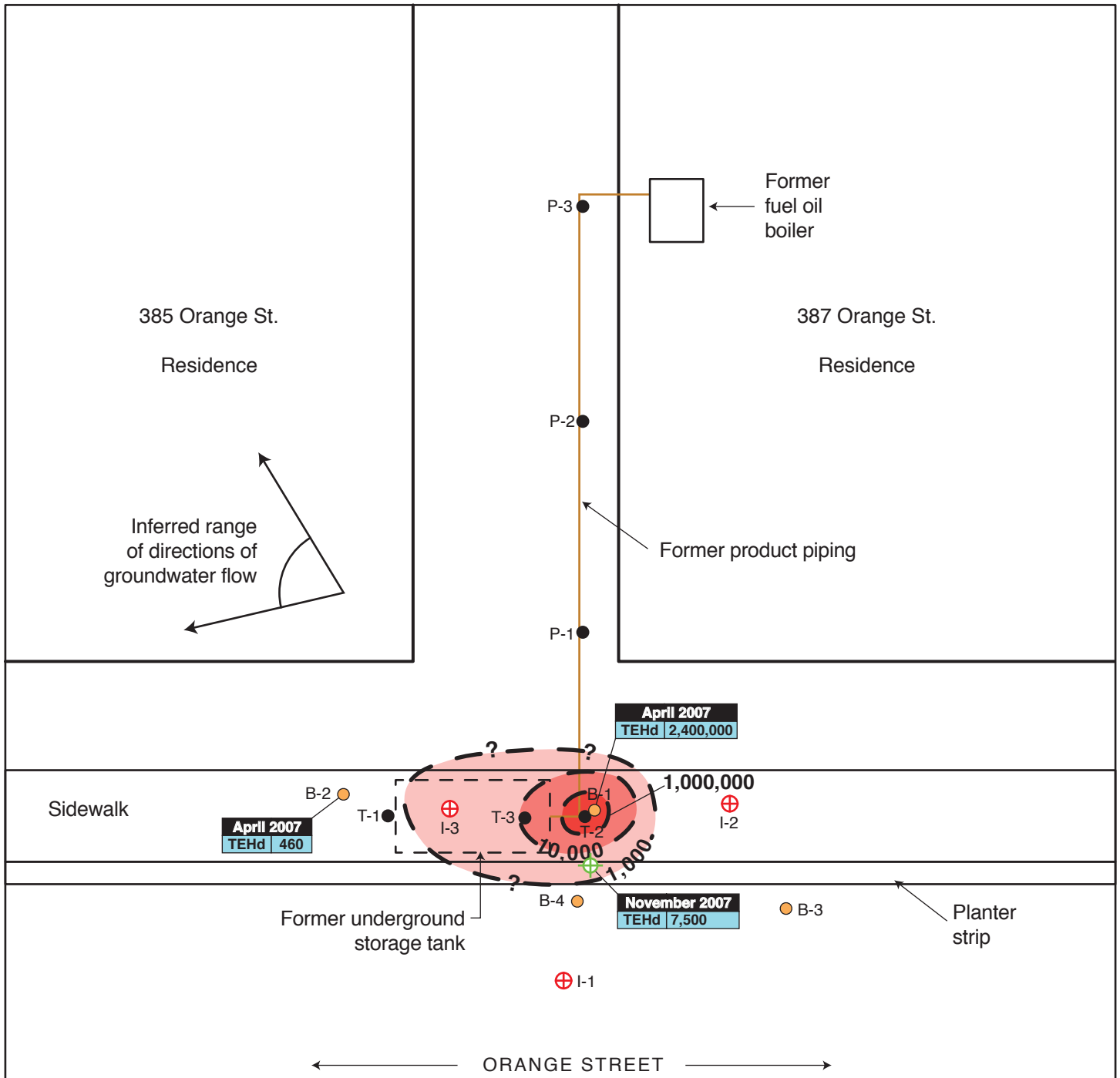
Notes:

Groundwater concentrations are reported in micrograms per liter (µg/L).
MTBE = methyl tertiary-butyl ether
TEHd = total extractable hydrocarbons as diesel
ND = none detected above laboratory reporting limit
NA = not analyzed
ESLs = Water Board Environmental Screening Levels for residential sites where groundwater is a potential drinking water resource (Water Board, 2008)
Post-purge = after purging well dry, removal of approximately 1.17 gallons from monitoring well
Samples in **bold-face** type equal or exceed the ESL criteria.

Table 2
Groundwater Well Sample Analytical Results
Natural Attenuation Indicators – November 2008
387 Orange Street, Oakland, California

Sample I.D.	Nitrate (as Nitrogen)	Sulfate	Methane	Dissolved Oxygen (a)	Ferrous Iron (a)	Redox Potential (milliVolts) (a)
Baseline Results - November 17, 2008						
MW-1	2.8	59	*<0.005*	8.06	1.13	48.4
Post-Purge Results – November 19, 2008						
MW-1	3.4	110	0.077	3.13	0.02	250

Notes:
(a) = measurement collected in field
All groundwater concentrations are reported in milligrams per liter (mg/L) unless otherwise stated.



LEGEND

- I-1 Location of ORC injection point (SES 2008)
- MW-1 Location of monitoring well (SES 2008)
- T-2 Clearwater Group tank sample (2006)
- P-2 Clearwater Group pipeline sample (2006)
- B-1 SES boring (2007)
- Location of former UST (CWG, 2006; SES, 2007)

TPHd=Total petroleum hydrocarbons as diesel concentrations in µg/L

Modified from original source: Clearwater Group

0 10
APPROX. SCALE IN FEET

DISTRIBUTION OF TEH-DIESEL IN GROUNDWATER

387 Orange St. Oakland, CA	By: MJC	DECEMBER 2008
	Figure 3	

STELLAR ENVIRONMENTAL SOLUTIONS, INC
GEOSCIENCE & ENGINEERING CONSULTING

2007-09-18

DISCUSSION OF NATURAL ATTENUATION AND INDICATORS

Pre-purge and post-purge groundwater samples from the newly installed monitoring well were collected and analyzed for indicators of natural biodegradation of the hydrocarbon contamination or "natural attenuation." Petroleum hydrocarbons require molecular oxygen to efficiently break down the ring structure of specific constituents. Although biodegradation of hydrocarbons can occur under anaerobic conditions, hydrocarbon biodegradation is greatest under aerobic conditions. Aerobic and anaerobic biodegradation processes vary greatly, but frequently the final product of organic chemical degradation is carbon dioxide, methane, or ammonia.

As a result of the demonstrated degradability of petroleum hydrocarbons, remediation by natural attenuation has been found to be a viable option for addressing many hydrocarbon plumes. Under favorable conditions, this approach has the potential to eliminate the need for active remediation. However, such natural attenuation only occurs if the concentration of hydrocarbons is low enough to facilitate the infiltration of natural oxygen through the interstitial space around the contamination, supporting the microorganisms for which the contamination is a food source (thus "attenuating" it).

Most hydrocarbon plume conceptual models show biodegradation of petroleum hydrocarbons in groundwater as having a significant role in creating a stable plume and minimizing groundwater plume configuration and concentrations over time (Lawrence Livermore National Laboratory, 1995). Conditions that can render natural attenuation an infeasible or unacceptable remedial strategy include: a nearby sensitive receptor, sufficient residual contamination (in soil or groundwater) such that it is a continued input to groundwater contamination, unfavorable conditions for microbial activity, and/or insufficient distance for the plume to stabilize before migrating to a receptor of concern.

In general, natural attenuation of petroleum in groundwater is very likely occurring, unless petroleum concentrations are sufficient to overwhelm the biodegradation process (i.e. in the high-concentration area of bore B1 at this site). The LNAPL fuel product discovered in bore B1 in April 2007 does not appear to be substantial as evidenced by the low contaminant detections in monitoring MW-1 during this investigation. In these areas, biodegradation progresses occur until one of the process-limiting factors (usually oxygen) is depleted to the point at which biodegradation is not supported. The concentration in soil or groundwater above which natural attenuation is unlikely to take place is still the subject of various research studies.

Biodegradation was likely to have been enhanced following excavation and removal of the UFST and associated contaminated soil, and replacement with more permeable backfill material. In addition, the application of the ORC® product during this investigation will further increase the available oxygen for aerobic biodegradation.

Evidence of the historical occurrence and potential for future occurrence of biodegradation can be obtained from analysis of groundwater for biodegradation-indicator parameters that include dissolved oxygen, oxidation-reduction potential (ORP), methane, sulfate, nitrate and ferrous iron analyses.

Dissolved Oxygen

Dissolved oxygen (DO) is the most thermodynamically-favored electron acceptor used in aerobic biodegradation of hydrocarbons. Active aerobic biodegradation of petroleum hydrocarbon compounds requires at least one to two mg/L of DO in groundwater. During aerobic biodegradation, DO levels are reduced in the hydrocarbon plume as respiration occurs. Therefore, DO levels that vary inversely to hydrocarbon concentrations are consistent with the occurrence of aerobic biodegradation.

Pre-purge DO concentrations ranged from 8.06 mg/L to 9.6 mg/L, and the post-purge concentration of DO measured 3.13 mg/L. This indicates conditions favorable to aerobic biodegradation. The elevated DO concentration in this well may be a function of localized saturation resulting from the August 2007 excavation and backfilling with more permeable material. As this is the first sampling event, no trend or correlation between DO and hydrocarbon concentrations can be made.

Oxidation-Reduction Potential

The oxidation-reduction potential (ORP, or redox potential) of groundwater is a measure of electron activity, and is an indicator of the relative tendency of a solute species to gain or lose electrons. The ORP of groundwater generally ranges from -400 millivolts (mV) to +800 mV. In oxidizing (aerobic) conditions, the ORP of groundwater is typically positive; in reducing (anaerobic) conditions, the ORP is typically negative (or less positive).

During the November 17th baseline sampling event of the newly installed monitoring well (located approximately 3 feet from the historically high TEHd concentration of 2,400,000 µg/L), ORP values ranged from +48.4 mV to +60 mV. Subsequent measurement of the monitoring well after purging on November 19th showed an ORP value of +250 mV indicating that aerobic conditions likely exist that are favorable to biodegradation of the hydrocarbon contamination. In addition, the post-purge increase in ORP showed the expected general inverse correlation with a decrease in hydrocarbon concentrations in the post purge sample.

Ferrous Iron, Nitrate, and Sulfate

The presence of nitrate, sulfate, and ferrous iron in monitoring well MW-1 is generally consistent with the DO and ORP data, supporting the conclusion that oxygen is currently enhancing the aerobic biodegradation process. These results indicate that some degree of aerobic degradation is likely occurring at the site; however, no comparable data is yet available to show a discernable trend and/or correlation to hydrocarbon concentration.

Methane

Methanogenesis is often indicative of the anaerobic biodegradation of hydrocarbons. The presence of methane was not detected in the baseline sample and only a trace detection in the post-purge groundwater sample suggests that anaerobic biodegradation is not likely occurring at this site.

QUALITY CONTROL SAMPLE ANALYTICAL RESULTS

Laboratory QC samples (e.g., method blanks, matrix spikes, surrogate spikes, etc.) were analyzed by the laboratory in accordance with requirements of each analytical method. All laboratory QC sample results and sample holding times were within the acceptance limits of the methods (see Appendix C).

CONTAMINANT TRANSPORT CONCEPTUAL MODEL

The site conceptual model suggests that the onsite soil and groundwater contamination originated from a leak(s) in the UFST fill pipe. The highest concentration of soil contamination was detected very close (within 2 feet) around the UFST fill port and service line, suggesting leakage from that area. The April 2007 investigation detected a pooled zone of free-floating LNAPL product and high concentration of hydrocarbon contamination directly beneath the former UFST fill port and service line at the location of bore B1. The dissolved concentration dropped off four orders of magnitude within a relatively short distance (25 feet) in the presumed downgradient direction between bores B1 and B2. This November 2008 investigation showed the TEHd concentration drops off two orders of magnitude within three feet between bore B1 and monitoring well MW-1. This further suggests the LNAPL discovered in bore B1 in April 2007 is not laterally extensive.

- As suggested by the groundwater contamination detected in boring B1 and monitoring well MW-1, the petroleum product moved almost vertically downward through relatively uniform fine sand and silt stratigraphy, until it reached the groundwater layer where it traveled downgradient and laterally at least 25 feet to the west (location of bore B2). Topographic evidence suggests that the downgradient direction is to the west-southwest.

- The high concentrations of TEHd and lack of the more volatile BTEX components indicate that sufficient time has passed for the BTEX components to have volatilized.
- There is no indication of significant residual site soil contamination. Though one sample collected during the 2006 Clearwater Group investigation showed 15,000 mg/kg of TEHd. However, a total of four other soil samples that were collected in an area within two feet of this sample during two subsequent boring investigations only detected TEHd ranging from 2.7 mg/kg to 100 mg/kg. In addition, soil represented by these samples was all excavated and disposed of during the UFST removal in August 2007.

PROJECTED FUTURE TRENDS AND POTENTIAL EXPOSURE PATHWAYS

Projected Future Groundwater Plume Trends

The hydrocarbon groundwater plume contaminants detected in previous borings and monitoring well MW-1 will remain stable or will diminish over the long term once the main source of contamination has been remediated in both the soil and groundwater. While there was no indication of a strong lithologic contrast showing a clay-rich trap to explain the high concentration, the area of higher residual hydrocarbons concentration around bore B1 does appear to be limited. This is demonstrated by the apparent limited extent of the contamination hotspot, the numerous bore data around that area, and the significant concentration reduction from 11,000 µg/L to 7,500 µg/L from the interim remedy of flush pumping from monitoring well MW-1. Remediation during the November 2008 corrective action event appears effective in reducing elevated TEHd concentrations in groundwater to levels at which biodegradation is supported.

Soil Vapor Intrusion Potential

Based on the absence of detectable volatile petroleum components (benzene, toluene, ethylbenzene, and xylenes), and the depth to groundwater, there is no credible potential for vapor intrusion via off-gassing from dissolved contaminants in groundwater.

7.0 SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

SUMMARY AND CONCLUSIONS

- This November 2008 site remedial corrective action follows preliminary site investigations conducted in March 2006, April 2007 and the UFST removal in August 2007 which showed significant diesel contamination in groundwater beneath the fill port and service piping of the former UFST.
- Site soil and groundwater have been contaminated by diesel grade (heating oil) hydrocarbons. Soil analytical results show that soil contamination began at a depth of approximately 18 feet, and extended to the first occurrence of groundwater at 21 -23 feet.
- This and previous investigations have not revealed a significant mass of soil contamination, indicating that much of the contaminant source in soil has migrated into the underlying groundwater.
- Topographic evidence suggests that the downgradient direction is to the west-southwest. While groundwater flow direction has not been precisely determined at the site, it is likely toward the west-southwest (toward Glen Echo Creek and Lake Merritt, following local topography).
- The newly installed monitoring well MW-1 showed limited recharge. This suggests that groundwater encountered during drilling to the 30-foot depth of the well may have been perched.
- The highest contaminant concentration encountered at this site was during the April 2007 investigation in groundwater, directly below the UFST fill port, at 2,400,000 µg/L TEHd. Concentrations exceeding a value of 1,000,000 µg/L are generally considered indicative of LNAPL. However, nearby bores show this “hotspot” to be immobile with an order of magnitude reduction within 3 feet of bore B-1.
- The April 2007 investigation indicated that groundwater contamination attenuated by a magnitude of four within 25 feet in the presumed downgradient direction of bore B2. This suggests it is unlikely that the groundwater contamination extends far offsite.
- This November 2008 investigation indicates the LNAPL in groundwater discovered in bore B1 in April 2007 is likely not as extensive as evidenced by the lower detection of 11,000 µg/L TEHd detected during the baseline sampling of monitoring MW-1, located

just three feet away. In addition, subsequent post-purging produced limited volume, and post-purge sampling of monitoring well MW-1 showed an additional decrease in TEHd to 7,500 µg/L.

- Three boreholes were drilled and utilized for the injection of ORC® product in a triangular pattern surrounding the contaminant "hotspot" at a depth interval of 20-25 feet bgs. The ORC® was injected into the subsurface after purging of the monitoring well was conducted. Approximately 75 pounds of product (25 pounds per bore) was introduced to the subsurface for a product treatment design area 20 feet long by 20 feet wide, and 5 feet thick.
- The volume of dissolved hydrocarbons within the "hot spot" area will likely be reduced within the first six to nine months by 50 percent or more, according to the manufacturer's data. The ORC® product will continue to break down petroleum compounds and associated daughter products for up to two years.
- The distribution of contamination detected during this and previous investigations suggest that the ORC® injection array should be more than adequate to remediate this site.
- The absence of light fraction volatile organic compound contamination suggests biodegradation has occurred with only the heaviest residual diesel range hydrocarbons remaining.
- Natural attenuation indicators (including DO, ORP, nitrate, sulfate and ferrous iron) indicate favorable conditions for continued biodegradation of hydrocarbon contaminants.

RECOMMENDATIONS

- SES recommends following up with ACEH after its receipt of this report to discuss the requirements to achieve regulatory closure. Per ACEH requirements, this technical report and data will be electronically uploaded to the ACEH system and the State Water Resources Control Board's GeoTracker system.
- To evaluate the effectiveness of the ORC® application, ACEH requires subsequent verification sampling. SES proposes to collect a groundwater sample from the monitoring well after one quarter (three months), and measure for the same water quality parameters. The sample will be submitted for laboratory analysis by the same methods used in the baseline groundwater sampling event. The results will be submitted to ACEH in a brief letter report that discusses site contaminant concentration trends in the context of case closure.

8.0 REFERENCES

Alameda County Health Care Services Agency, Department of Environmental Health (ACEH), 2008a. Letter requesting technical workplan for 387 Orange Street, Oakland, California. January 29.

Alameda County Health Care Services Agency, Department of Environmental Health (ACEH), 2008b. Letter with technical comments approving SES technical workplan, dated February 11, 2008 for 387 Orange Street, Oakland, California. July 14.

Burke, D.B., E.J. Helley, and K.R. LaJoie, 1974. Geologic Map of the Flatland Deposits of the Northwestern Part of the San Francisco Bay Region. U.S. Geological Survey.

Clearwater Group, 2006. Interim Underground Storage Tank Investigation Report, 385-387 Orange Street, Oakland, California. March 14.

Lawrence Livermore National Laboratory, 1995. California Leaking Underground Fuel Tank Historical Case Analyses (UCRL-AR-121762).

Regional Water Quality Control Board – San Francisco Bay Region (Water Board), 2008. Environmental Screening Levels for shallow soils and groundwater for residential or commercial areas where groundwater is a potential drinking water source. November 2007, revised May.

Regional Water Quality Control Board – San Francisco Bay Region (Water Board), 1999. East Bay Plains Beneficial Use Study, San Francisco Bay. June 15.

Stellar Environmental Solutions, Inc. (SES), 2007a. Soil and Groundwater Investigation Related to an Existing Heating Oil UST, 387 Orange Street, Oakland, California (Fuel Leak Case No. RO0002921), May 31.

Stellar Environmental Solutions, Inc. (SES), 2007b. Underground Heating Oil Storage Tank Removal Documentation Report, 387 Orange Street, Oakland, California (Fuel Leak Case No. RO0002921). September 26.

Stellar Environmental Solutions, Inc. (SES), 2008. Workplan for Further Investigation and Interim Remediation Related to Underground Fuel Storage Tank, 387 Orange Street, Oakland, California (Fuel Leak Case No. RO0002921). February 11.

Stellar Environmental Solutions, Inc. (SES), 2008. Workplan for Further Investigation and Interim Remediation Related to Underground Fuel Storage Tank-387 Orange Street, Oakland, California (Fuel Leak Case No. RO0002921). February 11

U.S. Geological Survey (USGS), 1959. Oakland West 7.5-minute Quadrangle, 1:24000 Scale, photorevised 1959.

9.0 LIMITATIONS

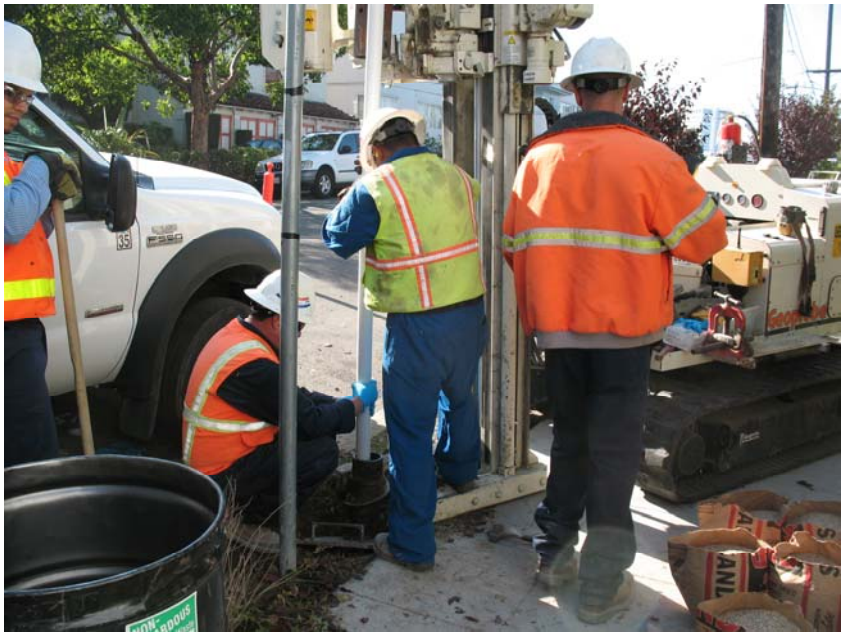
This report has been prepared for the exclusive use of Ms. Mary Kranz (executor of the Estate of David Ulibarri, subject property), the regulatory agencies, and their authorized assigns and/or representatives. No reliance on this report shall be made by anyone other than those for whom it was prepared.

The findings and conclusions presented in this report are based solely on the findings of the investigations discussed herein. This report has been prepared in accordance with generally accepted methodologies and standards of practice of the area. The personnel performing this assessment are qualified to perform such investigations and have accurately reported the information available, but cannot attest to the validity of that information. No warranty, expressed or implied, is made as to the findings, conclusions, and recommendations included in the report.

APPENDIX A

Photodocumentation

Subject: Limited Access drill rig set up onsite	
Site: 387 Orange Street, Oakland, CA	
Date Taken: November 17, 2008	Project No.: SES 2007-09
Photographer: H. Pietropaoli	Photo No.: 01



Subject: Building monitoring well MW-1	
Site: 387 Orange Street, Oakland, CA	
Date Taken: November 17, 2008	Project No.: SES 2007-09
Photographer: H. Pietropaoli	Photo No.: 02

Subject: Injecting ORC product into injection point I-2	
Site: 387 Orange Street, Oakland, CA	
Date Taken: November 24, 2008	Project No.: SES 2007-09
Photographer: H. Pietropaoli	Photo No.: 03

Subject: Surface completion of monitoring well in planter strip	
Site: 387 Orange Street, Oakland, CA	
Date Taken: November 17, 2008	Project No.: SES 2007-09
Photographer: H. Pietropaoli	Photo No.: 04

Subject: Injecting ORC product into injection point I-1	
Site: 387 Orange Street, Oakland, CA	
Date Taken: November 24, 2008	Project No.: SES 2007-09
Photographer: H. Pietropaoli	Photo No.: 05

Subject: Injection point grouted in sidewalk	
Site: 387 Orange Street, Oakland, CA	
Date Taken: November 24, 2008	Project No.: SES 2007-09
Photographer: H. Pietropaoli	Photo No.: 06

APPENDIX B

Regulatory Notifications and Permits

17/24

Office of Planning and Building

EXCAVATION PERMIT

TO EXCAVATE IN STREETS OR OTHER SPECIFIED WORK

CIVIL ENGINEERING

Permit valid for 90 days from date of issuance

PERMIT NUMBER: X08 02264	SITE ADDRESS/LOCATION: 387 Orange St. Oakland, CA
APPROX. START DATE: Nov 14, 2008 / APPROX. END DATE: Nov. 24 2008	24-HOUR EMERGENCY PHONE NUMBER: (Permit not valid without 24-Hour number) 510 926-9416
CONTRACTOR'S LICENSE # AND CLASS: 802334 C57 A	CITY BUSINESS TAX #: Oakland # 2649225

ATTENTION

1- State law requires that the contractor/owner call Underground Service Alert (USA) two working days before excavating. This permit is not valid unless applicant has secured an inquiry identification number issued by USA. The USA telephone number is 1-800-642-2444. Underground Service Alert (USA) # _____

2- 48 hours prior to starting work, you MUST CALL (510) 238-3651 to schedule an inspection.

3- 48 hours prior to re-paving, a compaction certificate is required (waived for approved slurry backfill).

OWNER/BUILDER

I hereby affirm that I am exempt from the Contractor's License Law for the following reason: (Sec. 7031.5 Business and Professions Code: Any city or county which requires a permit to construct, alter, improve, demolish, or repair any structure, prior to its issuance, also requires the applicant for such permit to file a signed statement that he is licensed pursuant to the provisions of the Contractor's License Law (Chapter 9 (commencing with Sec. 7000) of Division 3 of the Business and Professions Code) or that he is exempt therefrom, and the basis for the alleged exemption. Any violation of Section 7031.5 by any applicant for a permit, subjects the applicant to a civil penalty of not more than $500.):

☐ I, as an owner of the property, or my employees with wages as their sole compensation, will do the work, and the structure is not intended or offered for sale (Sec. 7044, Business and Professions Code: The Contractor's License Law does not apply to an owner of property who builds or improves thereon, and who does such work himself or through his own employees, provided that such improvements are not intended or offered for sale. If, however, the building or improvement is sold within one year of completion, the owner-builder will have the burden of proving that he did not build or improve for the purpose of sale.).

☐ I, as owner of the property, am exempt from the sale requirements of the above due to: (1) I am improving my principal place of residence or appurtenances thereto, (2) the work will be performed prior to sale, (3) I have resided in the residence for the 12 months prior to completion of the work, and (4) I have not claimed exemption on this subdivision on more than two structures more than once during any three-year period. (Sec. 7044 Business and Professions Code).

☐ I, as owner of the property, am exclusively contracting with licensed contractors to construct the project. (Sec. 7044, Business and Professions Code: The Contractor's License Law does not apply to an owner of property who builds or improves thereon, and who contracts for such projects with a contractor(s) licensed pursuant to the Contractor's License Law).

☐ I am exempt under Sec. _____, B&PC for this reason: _____

WORKER'S COMPENSATION

☐ I hereby affirm that I have a certificate of consent to self-insure, or a certificate of Worker's Compensation Insurance, or a certified copy thereof (Sec. 3700, Labor Code).

Policy # _____ Company Name _____

☐ I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the Worker's Compensation Laws of California (not required for work valued at one hundred dollars ($100) or less).

NOTICE TO APPLICANT: If, after making this Certificate of Exemption, you should become subject to the Worker's Compensation provisions of the Labor Code, you must forthwith comply with such provisions or this permit shall be deemed revoked. This permit is issued pursuant to all provisions of Title 12 Chapter 12.12 of the Oakland Municipal Code. It is granted upon the express condition that the permittee shall be responsible for all claims and liabilities arising out of work performed under the permit or arising out of permittee's failure to perform the obligations with respect to street maintenance. The permittee shall, and by acceptance of the permit agrees to defend, indemnify, save and hold harmless the City, its officers and employees, from and against any and all suits, claims, or actions brought by any person for or on account of any bodily injuries, disease or illness or damages to persons and/or property sustained or arising in the construction of the work performed under the permit or in consequence of permittee's failure to perform the obligations with respect to street maintenance. This permit is void 90 days from the date of issuance unless an extension is granted by the Director of the Office of Planning and Building.

I hereby affirm that I am licensed under provisions of Chapter 9 of Division 3 of the Business and Professions Code and my license is in full force and effect (if contractor), that I have read this permit and agree to its requirements, and that the above information is true and correct under penalty of law.

X _____ 11/7/08

Signature of Permittee ☒ Agent for ☐ Contractor ☐ Owner — Date

DATE STREET LAST RESURFACED	SPECIAL PAVING DETAIL REQUIRED ☐ YES ☐ NO	HOLIDAY RESTRICTION (NOV 1 - JAN 1) ☐ YES ☐ NO	LIMITED OPERATION AREA? (9 AM-3 PM & 4 PM-6 PM) ☐ YES ☐ NO
ISSUED BY:		DATE ISSUED:	

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: 08/27/2008 By jamesy

Permit Numbers: W2008-0607 to W2008-0608
Permits Valid from 11/17/2008 to 11/17/2008

Application Id: 1218755503662
City of Project Site: Oakland
Site Location: 387 Orange Street, Oakland
Project Start Date: 09/08/2008
Completion Date: 09/12/2008
Requested Inspection: 09/12/2008
Scheduled Inspection: 09/12/2008 at 2:00 PM (Contact your inspector, Vicky Hamlin at (510) 670-5443, to confirm.)
Extension Start Date: 11/17/2008
Extension End Date: 11/17/2008
Extension Count: 1
Extended By: vickyh1

Applicant:	Stellar Environmental Solutions - Teal Glass 2198 6th Street, Suite 201, Berkeley, CA 94710	**Phone:** 510-644-3123 x14
Property Owner:	Luella Penserga 387 Orange Street, #2, Oakland, CA 94610	**Phone:** --
Client:	Mary Kranz 10106 Coronado Avenue, NE, Albequerque, NM 87122	**Phone:** 505-816-1890
Contact:	Teal Glass	**Phone:** 510-644-3123 x14 **Cell:** --

Total Due: $575.00
Receipt Number: WR2008-0302 **Total Amount Paid:** $575.00
Payer Name : Richard Makdisi Paid By: CHECK **PAID IN FULL**

Works Requesting Permits:

Well Construction-Monitoring-Monitoring - 1 Wells
Driller: RSI Drilling - Lic #: 802334 - Method: hstem **Work Total: $345.00**

Specifications

Permit #	Issued Date	Expire Date	Owner Well Id	Hole Diam.	Casing Diam.	Seal Depth	Max. Depth
W2008-0607	08/27/2008	12/07/2008	MW-1	6.00 in.	2.00 in.	18.00 ft	30.00 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. Permitte, 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.

Borehole(s) for Investigation-Environmental/Monitorinig Study - 3 Boreholes
Driller: RSI Drilling - Lic #: 802334 - Method: DP **Work Total: $230.00**

Specifications

Permit Number	Issued Dt	Expire Dt	# Boreholes	Hole Diam	Max Depth
W2008-0608	08/27/2008	12/07/2008	3	2.50 in.	25.00 ft

Specific Work Permit Conditions

1. Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings. All cuttings remaining or unused shall be containerized and hauled off site. The containers shall be clearly labeled to the ownership of the container and labeled hazardous or non-hazardous.

2. Boreholes shall not be left open for a period of more than 24 hours. All boreholes left open more than 24 hours will need approval from Alameda County Public Works Agency, Water Resources Section. All boreholes shall be backfilled according to permit destruction requirements and all concrete material and asphalt material shall be to Caltrans Spec or County/City Codes. No borehole(s) shall be left in a manner to act as a conduit at any time.

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

4. Applicant shall contact 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.

5. Copy of approved drilling permit must be on site at all times. Failure to present or show proof of the approved permit application on site shall result in a fine of $500.00.

6. 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.

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

6. 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.

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

CITY OF OAKLAND • Community and Economic Development Agency
250 Frank H. Ogawa Plaza, 2nd Floor, Oakland, CA 94612 • Phone (510) 238-3443 • Fax (510) 238-2263

Applications for which no permit is issued within 180 days shall expire by limitation. No refund after 180 days when expired.

Appl# OB080930 Job Site 387 ORANGE ST Parcel# 010 -0794-006-00

Reserve in front of parcel only for construction. Permit Issued 11/12/08
Post 72 hours prior. Ref TSD-08-0135 NON-CONSECUTIVE DAYS
Allow one monitoring well on Orange St no fee for s/w

NON-CONSECUTIVE DAYS

Nbr of days: 2 Linear feet: 75
Effective: 11/17/08 Expiration: 11/24/08

SHORT TERM NON-METERED

		Applcnt	Phone#	Lic#	--License Classes--
Owner	LUELLA PENSERGA,MICHAEL RABANA		(415)377-8558		
Contractor	RESONANTSONIC	X	(530)668-2424	802334	C57 A
Arch/Engr					
Agent	STELLAR/ H PIETROPAOLI		(510)644-3123		
Applic Addr	220 N EAST ST., WOODLAND CA, 95776				

JOB SITE

$187.61 TOTAL FEES PAID AT ISSUANCE

$66.00 Applic	$97.50 Permit
$.00 Process	$15.53 Rec Mgmt
$.00 Gen Plan	$.00 Invstg
$.00 Other	$8.58 Tech Enh

ADDRESS:

DIST:

TCP needs to be approved by Transportation Services every 30 days or whenever deviated from the previously approved plan.

Applicant: Hey Pietropaoli 11/12/08

Issued by: _____

CITY OF OAKLAND

PAID
11/12/08

CITY OF OAKLAND • Community and Economic Development Agency
250 Frank H. Ogawa Plaza, 2nd Floor, Oakland, CA 94612 • Phone (510) 238-3443 • Fax (510) 238-2263

Applications for which no permit is issued within 180 days shall expire by limitation.

Appl# ENMI08179 Job Site 387 ORANGE ST Parcel# 010 -0794-006-00

Descr Allow one monitoring well on Orange St Filed 09/02/08

Insurance Required? YES Carrier Expires

Setareh Sarrafan

		Applcnt	Phone#	Lic#	--License Classes--
Owner	LUELLA PENSERGA,MICHAEL RABANA		(415)377-8558		
Contractor					
Arch/Engr					
Agent	STELLAR/ T GLASS	X	(510)644-3123		
Applic Addr					

$1,014.39	TOTAL FEES PAID AT FILING			$.00 TOTAL FEES PAID AT ISSUANCE
$66.00	Applic	$.00	Permit	
$818.00	Process	$83.98	Rec Mgmt	
$.00	Gen Plan	$.00	Invstg	
$.00	Other	$46.41	Tech Enh	

JOB SITE

ADDRESS:

DIST:

CITY OF OAKLAND

PAID 9/17/08 sm

CITY OF OAKLAND

PUBLIC WORKS AGENCY • 250 FRANK H. OGAWA PLAZA • SUITE 4344 • OAKLAND, CALIFORNIA 94612-2033

Transportation Services Division

Office (510) 238-3466
FAX (510) 238-7415
TDD (510) 839-6451

Traffic Engineering Services Analysis Fee Invoice

Date: August 29, 2008

TSD Invoice # : 08-0135

To: Miles Makdisi
Company: Stellar Environmental Solutions
Address: 2198 Sixth Street, Ste 201
Phone: 510-644-3859

Created/Received By: Joe Watson

Date Charged
From 9-08-08 to 9-12-08
to 11-14-08 to 11-24-08

Location	Description of Work	Project Name / Permit #	# of Hours *
387 Orange Street	Sidewalk Closure		1

Total Hours	**1**
TSD Service Rate	**$ 123.00**
Total Fee	**$ 123.00**

* - minimum 1 hour service

FOR CITY USE ONLY	
Cost Center No.	W659
Organization No.	88363
Account No.	45119
Fund No.	1750

Cc: Rosalie

RECEIVED
CEDA
TRANSPORTATION SERVICES
08 AUG 18 AM 9:12

$123 he

APPLICATION FOR TRAFFIC CONTROL PLAN

Transportation Services Fee: ~~$100~~/hour
(Check or Money Order Only)

Public Works Agency
Transportation Services Division

Check the box that apply:
- [x] **New Application** (Utility, Excavation)
- [ ] **Renewal Application**
- [ ] **New Development w/ Mgmt Plan**
- [ ] **City of Oakland Project**

Please read the following:

1. Processing time for a Traffic Control Application is a minimum of 10 working days.
2. Traffic Control review is scheduled only on Tuesdays and Thursdays from 8:30am thru 11:30am by appointment only.
3. A scheduled appointment by phone or email with a TSD staff member is necessary to discuss any and all traffic control application and plans.
4. Please call ahead to confirm that the traffic control application is ready for pickup @ 510-238-3467.
5. Businesses and residences adjacent to the work area must be provided 72 hour advance notice.
6. A completed traffic control application may be faxed to (510) 238-7415.
7. Incomplete traffic control applications will not be processed and will be returned to applicant.
8. The initial approval for a traffic control plan is 1 month, the renewal submittal may be approved up to 3 months.
9. The traffic control provision dates cannot be changed or extended if work has already commenced.
10. Upon receiving TSD approval of the traffic control plan, the applicant (or contractor) shall proceed to the Building Services Division of CEDA to obtain an "Obstruction Permit." CEDA is located at 250 Frank Ogawa Plaza, 2nd Floor, Oakland, CA 94612.

Contact Person: Teal Glass Phone: 510-644-3123

Name of Company: Stellar Env Solutions Fax 510-644-3859

Address of Company: 2198 6th Street, Suite 201, Berkeley, CA 94710

Describe type of work to be performed: We will be installing a groundwater monitoring well as well as advancing three borings into the sidewalk. The three borings will be grouted the same day.

Location of work: 387 Orange Street Between* Pearl Street And* Perkins Street
Between* And*

* Name the streets that are the boundaries of your work area.

Work date (s): 9-8-08 to 9-12-08 [x] Mon-Fri [ ] Sat-Sun Work Hours: 8am to 3pm
11/14/08 to 11/24/08 [ ] Mon-Fri [ ] Sat-Sun to
C.A.F. (DATES CHANGED)

Please Follow These Steps to Complete a Traffic Control Plan:

A. **Drawing Area:** The full width of all streets adjacent to the site MUST be included in the drawing. Include the entire block in which your work is located for every street that is adjacent to your site.

B. **Include Street Names, Direction of Traffic on the Street, and North Arrow**

C. **Show Existing Number of Lanes in all Directions** (with any pavement arrows)

D. **Check the Box(s) that Apply:** All checked items MUST be shown on the drawing

- [ ] Lane Closure
- [ ] Street Closure (must provide detour plan)
- [ ] Use of Median
- [ ] Use Parking Lane
- [x] Sidewalk Closure (must provide pedestrian walk way)

E. **Show All Dimensions** of street widths (curb to curb), lane widths, sidewalk widths, and work area dimension.
(Note: Traffic Control Application / Plans missing the above information will not be accepted or processed.)

F. **Show the Name and Locations** of all advanced warning devices, flaggers, delineators, warning and construction signs to be used.

RENEWAL PROCESS: Resubmit a completed Traffic Control Application with the old approved plan (with the necessary modifications / changes to the plans).

FOR HELP in constructing a traffic control plan please refer to the "WATCH" hand book or chapter 6 of the MUTCD manual available online at: http://www.dot.ca.gov/hq/traffops/signtech/signdel/chp5/chap6.htm

For our Website: http://www.oaklandpw.com/transportation/traffic_control_plan.htm

SPECIAL PROVISION 7-10.1 TRAFFIC REQUIREMENTS

Project Name: _____
Project Number: TSD-08-0135
Reviewed By: J.Watson
Date: 8/29/2008_
Permit good from 9/08/2008
to 9/12/2008 C.AF
11-14-08 to 11-24-08

ADD NEW SUBSECTION TO READ:
SP 7-10.1.4 Vehicular Traffic

Attention is directed to Section 7-10. Public Convenience and Safety, of the City of Oakland Standard Specification for Public Works Construction, 2000 Edition (Include this paragraph for p-jobs, excavation permits or obstruction permits).

The Contractor shall conduct its work in such a manner as to provide public convenience and safety and according to the provisions in this subsection. The provisions shall not be modified or altered without written approval from the Engineer.

Standard traffic control devices shall be placed at the construction zone according to the latest edition of the Work Area Traffic Control Handbook or Manual on Uniform Traffic Control Devices (MUTCD), Chapter 6 – "Traffic Controls for Construction and Maintenance Work Zone," or as directed by the Engineer.

All trenches and excavations in any public street or roadway shall be back filled and opened to traffic, or covered with suitable steel plates securely placed and opened to traffic at all times except during actual construction operations unless otherwise permitted by the Engineer.

Each section of work shall be completed or temporarily paved and open to traffic in not more than 5 days after commencing work unless otherwise permitted in writing by the Engineer.

Where construction encroaches into the sidewalk area, a minimum of 5 ½ feet of unobstructed sidewalk shall be maintained at all times for pedestrian use. Pedestrian barricades, shelter, and detour signs per Caltrans standards may be required.

The contractor shall conduct its operation in such a manner as to leave the following traffic lanes unobstructed and in a condition satisfactory for vehicular travel during the Obstruction Period. At all times traffic lanes will be restricted and reopened to travel. Emergency access shall be provided at all times.

Street Name Limits	Obstruction Period	North Bound	South Bound	East Bound	West Bound
Orange Street between Perkins Street and Pearl Street	Mon. – Fri. 8am – 4pm	N/A	N/A	N/A	Sidewalk Closure

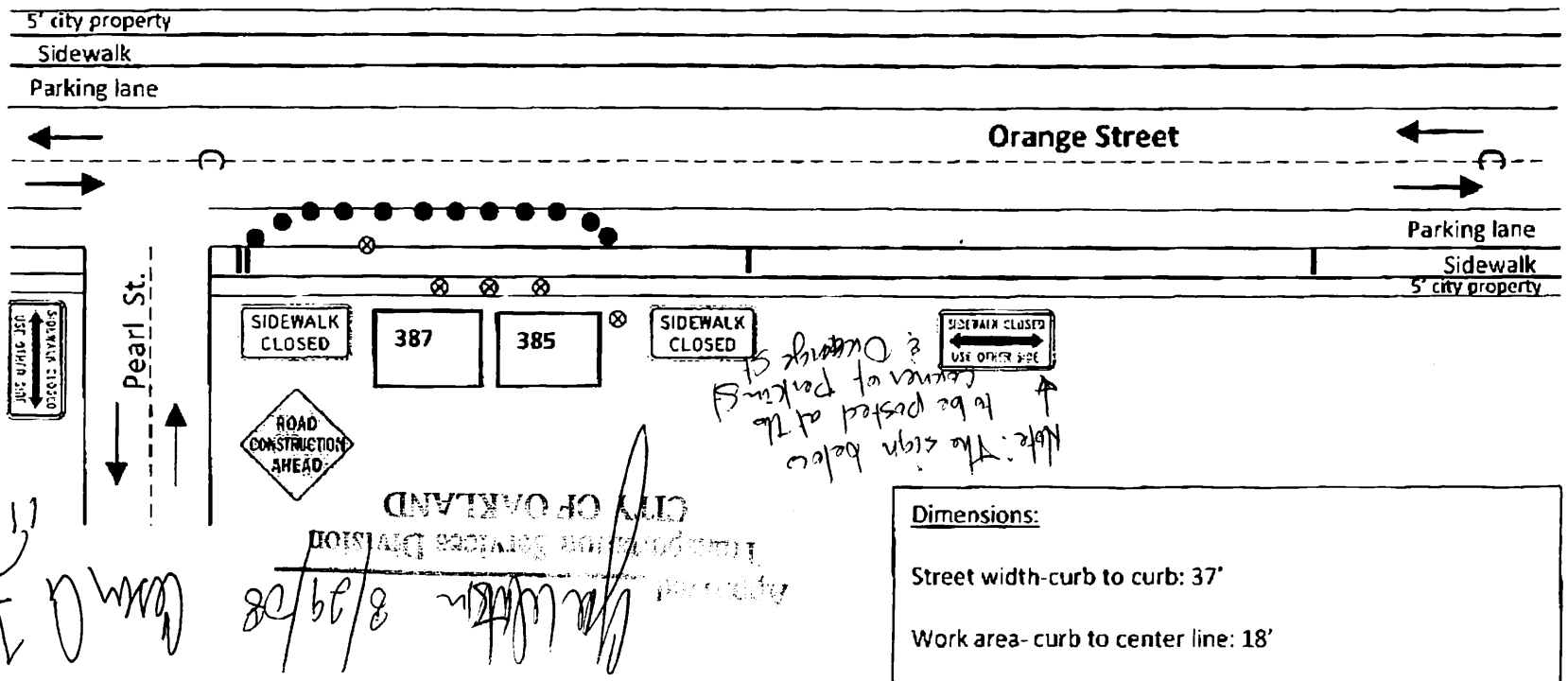
The Contractor Shall Also include all check item:

1. ☐ Design a construction traffic control plan and submit (2) copies to the Engineer for approval prior to starting any work.
2. ☒ Replace all signs, pavement markings, and traffic detector loops damaged or removed due to construction within 3 days of completion of work or the final pavement lift.
3. ☒ Provide advance notice to Oakland Police at (510) 777-3333 (24-hrs) and Oakland Fire at (510) 238-3331 (2-rhs) when a single lane of traffic or less is provided on any street.
4. ☒ Provide 72-hour advance notice to AC Transit at (510) 891-4909 when affecting a bus stop.
5. ☒ For Caltrans roadways, ramps, or maintained facilities, the Contractor shall obtain appropriate permits and notify the Traffic Management Center 24 hours in advance of any work.
6. ☐ Flagger control is required. Certified Flagger is required.
7. ☐ Pedestrian walkway by K-rail, Canopy or Plywood is required. (See detour plan)
8. ☒ Pedestrian traffic shall be maintained and guided through the project at all times.
9. ☒ Provide advance notice to Business and Residence within 72-hours.
10. ☒ Allow all traffic movement at intersection.

Nothing specified herein shall prohibit emergency work and/or repair necessary to ensure public health and safety.

Traffic Control Plan

Orange Street



Legend	
⊗	- Proposed temporary boring
●	-Traffic cones

Dimensions:

Street width-curb to curb: 37'

Work area- curb to center line: 18'

Curb side landscaping: 3'

Sidewalk width: 6'

Sidewalk work area-joint to joint: 14'

Distance between houses: 17'

Property Owners
387 Orange Street, Oakland, CA 94607

September 9, 2008

City Engineer
Community and Economic Development
250 Frank H. Ogawa Plaza, Suite 2340
Oakland, CA 94612

Subject: Encroachment Permit for one (1) monitoring well located in the sidewalk at 387 Orange Street, Oakland, CA.

Dear City Engineer,

We are the owners of the property located at 387 Orange Street, Oakland, California. We are being directed by the Alameda County Environmental Health Department to install one groundwater monitoring well in the sidewalk in front of our property at 387 Orange Street. We are hereby requesting that the City of Oakland issue an encroachment permit for the well installation, which application is being coordinated by the environmental consultant (Stellar Environmental Solutions, Inc.). Attached are the other documents specified in the permit application package:

- Dimensioned scale drawing showing the well locations and surrounding area.
- The well will be flush-mounted in the sidewalk.
- Fee for minor encroachment permit ($1.014.39).
- A copy of the property Grant Deed with legal description of the property.
- Detailed site plan and drawing of the well construction, including surface completion.
- Insurance certificate covering the property.

Work is scheduled for the latter part of September and we therefore would like to complete the permitting process as soon as possible.

We trust that this meets the needs of your agency. If you have any questions, please contact us the designated consultant, Stellar Environmental Solutions, Inc., at 510-644-3123.

Sincerely.

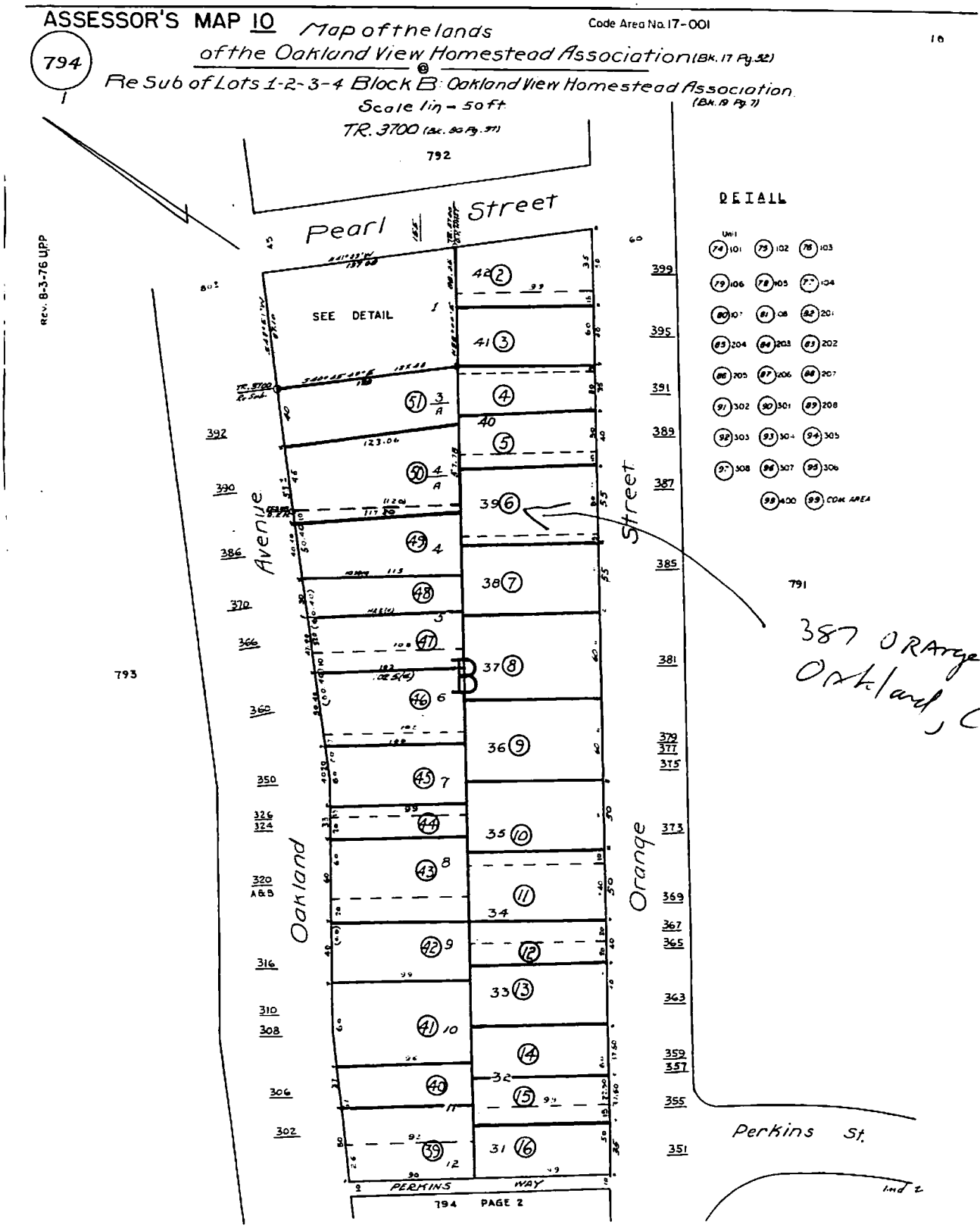
Ms Luella Penserga

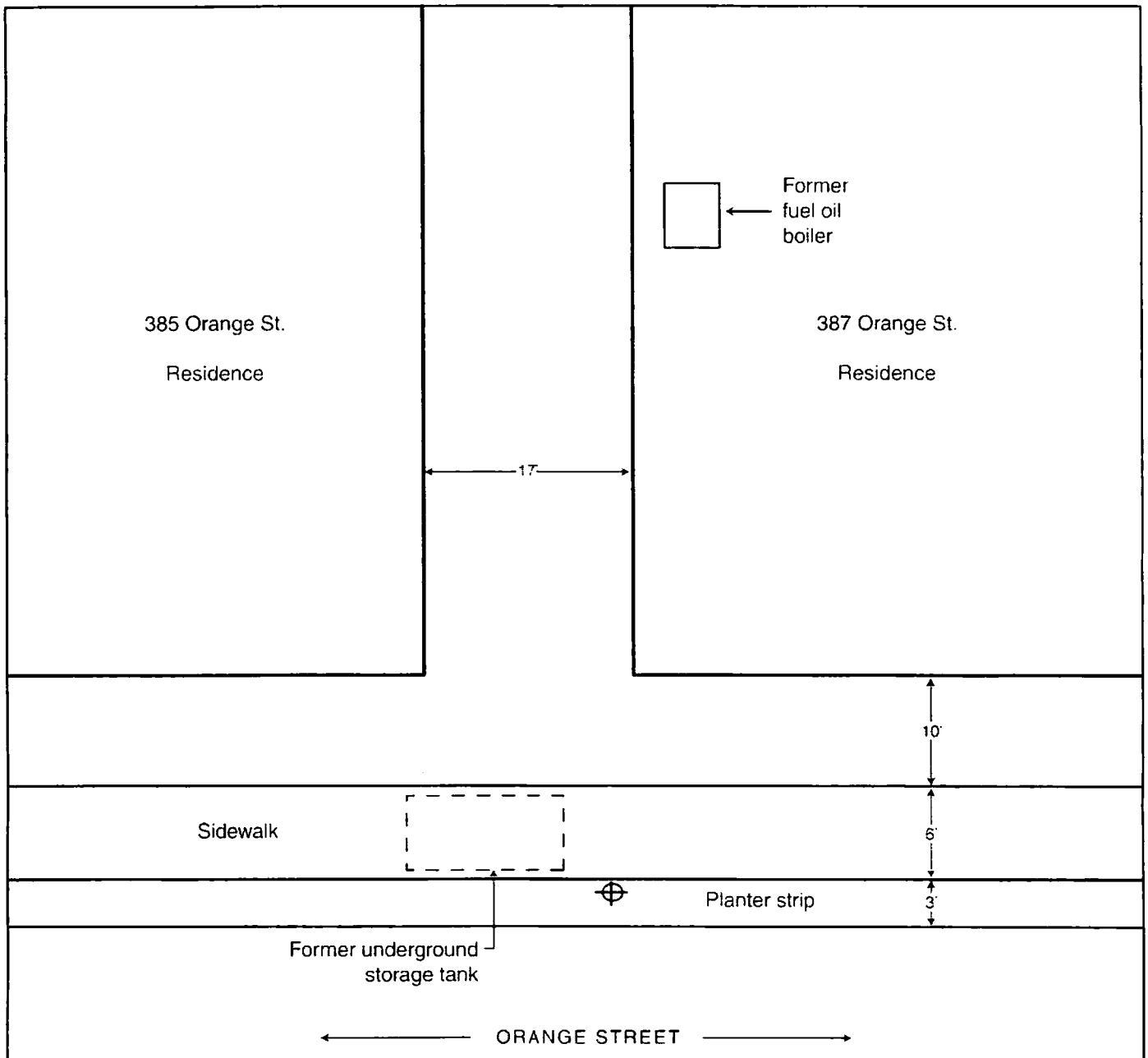
Mr. Michael ~~Ragana~~ RABANAL

Mr. ~~Sethreh Serrafan~~ SETAREH SARRAFAN

Telephone No's. (510) 917-0836 (415) 377-8558 (510) 917-0773

For Assessment Use Only





LEGEND

- Proposed location of monitoring well (10-inch diameter flush-mounted well access box)
- Former location of UST (CWG, 2006; SES, 2007)

0 — 10

APPROX. SCALE IN FEET

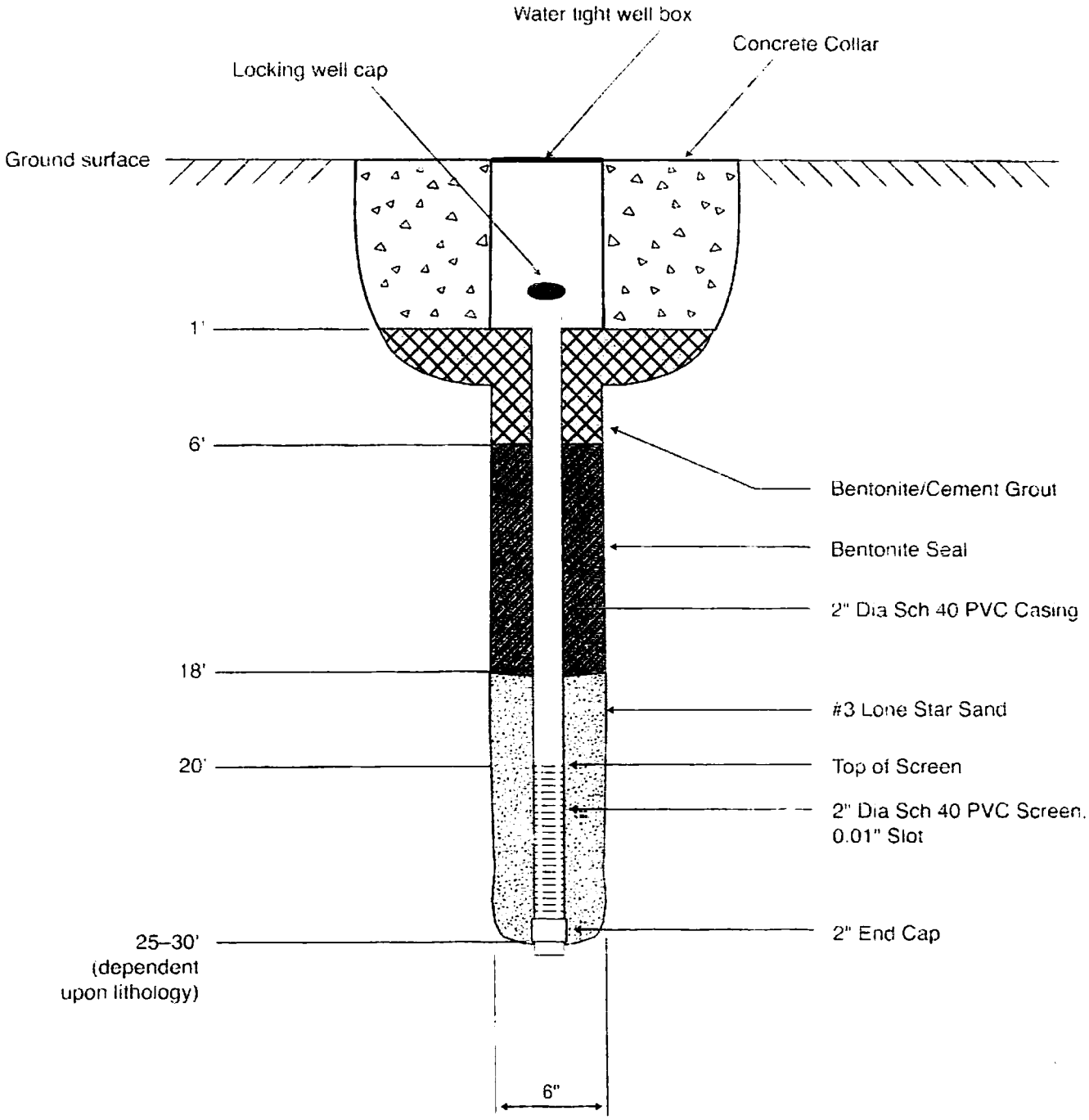
Modified from original source: Clearwater Group

PROPOSED LOCATION OF MONITORING WELL

387 Orange St. Oakland, CA	By: MJC	SEPTEMBER 2008
	Figure 2	

STELLAR
ENVIRONMENTAL SOLUTIONS, INC
GEOSCIENCE & ENGINEERING CONSULTING

2007-09-14



NOT TO SCALE

PROPOSED CONSTRUCTION DETAILS FOR MW-1		
387 Orange St. Oakland, CA	By: MJC	SEPTEMBER 2008
	Figure 2	

STELLAR
ENVIRONMENTAL SOLUTIONS, INC
GEOSCIENCE & ENGINEERING CONSULTING

ACKNOWLEDGMENT

State of California
County of San Francisco)

On 3.04.2008 before me, Ira Komar notary public
(insert name and title of the officer)

personally appeared Luella Penserga, Michael Rabanal, Setareh Sarrafan
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) ~~is~~/are subscribed to the within instrument and acknowledged to me that ~~he/she~~/they executed the same in ~~his/her~~/their authorized capacity(ies), and that by ~~his/her~~/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature _____ **(Seal)**

ESI1 IRA KOMAR
COMM. #1682741
Notary Public-California
SAN FRANCISCO COUNTY
My Comm. Exp. July 21, 2010 ESI1

APPENDIX C

Geologic Log
and
Monitoring Well Construction Detail

STELLAR
ENVIRONMENTAL SOLUTIONS, INC
GEOSCIENCE & ENGINEERING CONSULTING

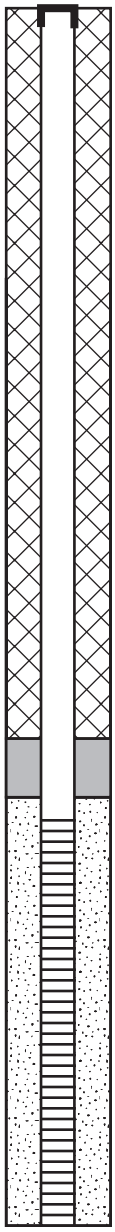
Soil Boring and Well Construction Log

WELL NUMBER MW-1 Page 1 of 1

PROJECT Orange Cleaners
OWNER Ulibarry Estate
LOCATION 387 Orange Street, Oakland, CA
PROJECT NUMBER 2007-09
TOTAL DEPTH 30 feet (bgs)
BOREHOLE DIA. 8 inch
SURFACE ELEV. 105 feet (ansl)
WATER FIRST ENCOUNTERED 24 feet (bgs)
DRILLING COMPANY RSI Drilling
DRILLING METHOD HSA TRAC Geoprobe
DRILLER Norman
GEOLOGIST H. Pietropaoli
DATE DRILLED 11/17/08

DEPTH (feet)	GRAPHIC LOG	PID	DESCRIPTION/SOIL CLASSIFICATION	REMARKS
0				
		0	GM, Greyish brown sandy gravel fill, moist, loose, 30% angular gravel	
5		0		
10				
15			Bottom of former UST excavation	
		2	ML, olive brown clayey silt, moist, slightly plastic, slight fuel odor	
20		8		
25		6	▽ First groundwater encountered; material as above ▼	Notes: PID = Photoionization Detector "Readings" are in parts per million per volume air (ppmv)
30		0	Bottom of boring	

WELL CONSTRUCTION — MW-1



2″ PVC screen (0.020-in. slots) | Hydrated bentonite pellets | No. 3 Monterey Sand | Portland cement & water grout | ▽ First encountered groundwater | ▼ Equilibrated groundwater level | Flush-mounted well box

2007-09-16

APPENDIX D

ORC® Product Specifications

Oxygen Release Compound – Advanced (ORC *Advanced*™)
MATERIAL SAFETY DATA SHEET (MSDS)

Last Revised: March 13, 2007

Section 1 - Material Identification

Supplier:

REGENESIS

1011 Calle Sombra
San Clemente, CA 92673

Phone:	949.366.8000
Fax:	949.366.8090
E-mail:	info@regenesis.com

Chemical Description:	A mixture of Calcium OxyHydroxide [$CaO(OH)_2$] and Calcium Hydroxide [$Ca(OH)_2$].
Chemical Family:	Inorganic Chemical
Trade Name:	Advanced Formula Oxygen Release Compound (ORC *Advanced*™)
Chemical Synonyms	Calcium Hydroxide Oxide; Calcium Oxide Peroxide
Product Use:	Used to remediate contaminated soil and groundwater (environmental applications)

Section 2 – Composition

CAS No.	Chemical
682334-66-3	Calcium Hydroxide Oxide [$CaO(OH)_2$]
1305-62-0	Calcium Hydroxide [$Ca(OH)_2$]
7758-11-4	Dipotassium Phosphate (HK_2O_4P)
7778-77-0	Monopotassium Phosphate (H_2KO_4P)

Section 3 – Physical Data	
Form:	Powder
Color:	White to Pale Yellow
Odor:	Odorless
Melting Point:	527 °F (275 °C) – Decomposes
Boiling Point:	Not Applicable (NA)
***Flammability*/Flash Point:**	NA
Auto- Flammability:	NA
Vapor Pressure:	NA
Self-Ignition Temperature:	NA
Thermal Decomposition:	527 °F (275 °C) – Decomposes
Bulk Density:	0.5 – 0.65 g/ml (Loose Method)
Solubility:	1.65 g/L @ 68° F (20° C) for calcium hydroxide.
Viscosity:	NA
pH:	11-13 (saturated solution)
***Explosion Limits* % by Volume:**	Non-explosive
Hazardous Decomposition Products:	Oxygen, Hydrogen Peroxide, Steam, and Heat
Hazardous Reactions:	None

Section 5 – Regulations (cont)

SARA, Title III, Section 313 (40 CFR Part 372 – Toxic Chemical Release Reporting: Community Right-To-Know

Extremely Hazardous Substance:	No	
WHMIS Classification:	C	Oxidizing Material Poisonous and Infectious Material
	D	Material Causing Other Toxic Effects – Eye and Skin Irritant
Canadian Domestic Substance List:	Not Listed	

Section 6 – Protective Measures, Storage and Handling

Technical Protective Measures

Storage:	Keep in tightly closed container. Store in dry area, protected from heat sources and direct sunlight.
Handling:	Clean and dry processing pipes and equipment before operation. Never return unused product to the storage container. Keep away from incompatible products. Containers and equipment used to handle this product should be used exclusively for this material. Avoid contact with water or humidity.

Section 6 – Protective Measures, Storage and Handling (cont)

Personal Protective Equipment (PPE)

Engineering Controls:	Calcium Hydroxide ACGIH® TLV® (2000) 5 mg/m^3 TWA OSHA PEL Total dust–15 mg/m^3 TWA Respirable fraction– 5 mg/m^3 TWA NIOSH REL (1994) 5 mg/m^3
Respiratory Protection:	For many conditions, no respiratory protection may be needed; however, in dusty or unknown atmospheres use a NIOSH approved dust respirator.
Hand Protection:	Impervious protective gloves made of nitrile, natural rubbber or neoprene.
Eye Protection:	Use chemical safety goggles (dust proof).
Skin Protection:	For brief contact, few precautions other than clean clothing are needed. Full body clothing impervious to this material should be used during prolonged exposure.
Other:	Safety shower and eyewash stations should be present. Consultation with an industrial hygienist or safety manager for the selection of PPE suitable for working conditions is suggested.
Industrial Hygiene:	Avoid contact with skin and eyes.
Protection Against Fire & Explosion:	NA

Section 7 – Hazards Identification

Emergency Overview:	Oxidizer – Contact with combustibles may cause a fire. This material decomposes and releases oxygen in a fire. The additional oxygen may intensify the fire.
Potential Health Effects:	Irritating to the mucous membrane and eyes. If the product splashes in ones face and eyes, treat the eyes first. Do not dry soiled clothing close to an open flame or heat source. Any

	clothing that has been contaminated with this product should be submerged in water prior to drying.
Inhalation:	High concentrations may cause slight nose and throat irritation with a cough. There is risk of sore throat and nose bleeds if one is exposed to this material for an extended period of time.
Eye Contact:	Severe eye irritation with watering and redness. There is also the risk of serious and/or permanent eye lesions.
Skin Contact:	Irritation may occur if one is exposed to this material for extended periods.
Ingestion:	Irritation of the mouth and throat with nausea and vomiting.

Section 8 – Measures in Case of Accidents and Fire

After Spillage/Leakage/Gas Leakage:	Collect in suitable containers. Wash remainder with copious quantities of water.
Extinguishing Media:	See next.
Suitable:	Large quantities of water or water spray. In case of fire in close proximity, all means of extinguishing are acceptable.
Further Information:	Self contained breathing apparatus or approved gas mask should be worn due to small particle size. Use extinguishing media appropriate for surrounding fire. Apply cooling water to sides of transport or storage vessels that are exposed to flames until the fire is extinguished. Do not approach hot vessels that contain this product.
First Aid:	After contact with skin, wash immediately with plenty of water and soap. In case of contact with eyes, rinse immediately with plenty of water and seek medical attention. Consult an opthalmologist in all cases.

Section 8 – Measures in Case of Accidents and Fire

Eye Contact:	Flush eyes with running water for 15 minutes, while keeping the eyelids wide open. Consult with an ophthalmologist in all cases.
Inhalation:	Remove subject from dusty environment. Consult with a physician in case of respiratory symptoms.

Ingestion:	If the victim is conscious, rinse mouth and admnister fresh water. DO NOT induce vomiting. Consult a physician in all cases.
Skin Contact:	Wash affected skin with running water. Remove and clean clothing. Consult with a physician in case of persistent pain or redness.
Special Precautions:	Evacuate all non-essential personnel. Intervention should only be done by capable personnel that are trained and aware of the hazards associated with this product. When it is safe, unaffected product should be moved to safe area.
Specific Hazards:	Oxidizing substance. Oxygen released on exothermic decomposition may support combustion. Confined spaces and/or containers may be subject to increased pressure. If product comes into contact with flammables, fire or explosion may occur.

Section 9 – Accidental Release Measures

Precautions:	Observe the protection methods cited in Section 3. Avoid materials and products that are incompatible with product. Immediately notify the appropriate authorities in case of reportable discharge (> 100 lbs).
Cleanup Methods:	Collect the product with a suitable means of avoiding dust formation. All receiving equipment should be clean, vented, dry, labeled and made of material that this product is compatible with. Because of the contamination risk, the collected material should be kept in a safe isolated place. Use large quantities of water to clean the impacted area. See Section 12 for disposal methods.

Section 10 – Information on Toxicology

Toxicity Data

Acute Toxicity:	Oral Route, LD_{50}, rat, > 2,000 mg/kg (powder 50%) Dermal Route, LD_{50}, rat, > 2,000 mg/kg (powder 50%) Inhalation, LD_{50}, rat, > 5,000 mg/m^3 (powder 35%)
Irritation:	Rabbit (eyes), severe irritant

Sensitization:	No data
Chronic Toxicity:	In vitro, no mutagenic effect (Powder 50%)
Target Organ Effects:	Eyes and respiratory passages.

Section 11 – Information on Ecology

Ecology Data	
	10 mg $Ca(OH)_2$/L: pH = 9.0
	100 mg $Ca(OH)_2$/L: pH = 10.6
Acute Exotoxicity:	Fishes, Cyprinus carpio, LC_{50}, 48 hrs, 160 mg/L
	Crustaceans, Daphnia sp., EC_{50}, 24 hours, 25.6 mg/L
	(Powder 16%)
Mobility:	Low Solubility and Mobility
	Water – Slow Hydrolysis.
	Degradation Products: Calcium Hydroxide
Abiotic Degradation:	Water/soil – complexation/precipitation. Carbonates/sulfates present at environmental concentrations.
	Degradation products: carbonates/sulfates sparingly soluble
Biotic Degradation:	NA (inorganic compound)
Potential for Bioaccumulation:	NA (ionizable inorganic compound)

Section 11 – Information on Ecology (cont)

Comments:	Observed effects are related to alkaline properties of the product. Hazard for the environment is limited due to the product properties of: • No bioaccumulation • Weak solubility and precipatation as carbonate or sulfate in an aquatic environment. Diluted product is rapidly neutralized at environmental pH.
Further Information:	NA

Section 12 – Disposal Considerations

Waste Disposal Method:	Consult current federal, state and local regulations regarding the proper disposal of this material and its emptied containers.

Section 13 – Shipping/Transport Information

D.O.T Shipping Name:	Oxidizing Solid, N.O.S [A mixture of Calcium OxyHydroxide [$CaO(OH)_2$] and Calcium Hydroxide [$Ca(OH)_2$].
UN Number:	1479
Hazard Class:	5.1
Label(s):	5.1 (Oxidizer)
Packaging Group:	II
STCC Number:	4918717

Section 14 – Other Information

HMIS® Rating	Health – 2 Flammability – 0	Reactivity – 1 PPE - Required

HMIS® is a registered trademark of the National Painting and Coating Association.

NFPA® Rating	Health – 2 Flammability – 0	Reactivity – 1 OX

NFPA® is a registered trademark of the National Fire Protection Association.

Reason for Issue: Update toxicological and ecological data

Section 15 – Further Information

The information contained in this document is the best available to the supplier at the time of writing, but is provided without warranty of any kind. Some possible hazards have been determined by analogy to similar classes of material. The items in this document are subject to change and clarification as more information become available.

APPENDIX E

Groundwater Sampling Field Notes

WEL DEVELOPMENT DATA S.EET

Project #: C811A-MT1	Client: Stellar
Developer: MT	Date Developed: 11-19-08
Well I.D. MW-1	Well Diameter: (circle one) (2) 3 4 6
Total Well Depth: Before 29.11 After 29.96	Depth to Water: Before 26.98 After
Reason not developed:	If Free Product, thickness:
Additional Notations:	

Volume Conversion Factor (VCF):	Well dia.		VCF
{12 x (d^2/4) x π} /231	2"	=	0.16
where	3"	=	0.37
12 = in / foot	4"	=	0.65
d = diameter (in.)	6"	=	1.47
π = 3.1416	10"	=	4.08
231 = in 3/gal	12"	=	6.87

.34	X	—	=	ATTEMPT OVER PURGE (200 gal)
1 Case Volume		Specified Volumes		gallons

Purging Device:

- ☒ Bailer
- ☐ Suction Pump
- ☐ Electric Submersible
- ☐ Positive Air Displacement

Type of Installed Pump —

Other equipment used _____

TIME	TEMP (F)	pH	Cond. (mS or µS)	TURBIDITY (NTUs)	VOLUME REMOVED:	NOTATIONS:
9:48	18.1	7.14	1948	71000	.34	Brown/milky very silty
9:51	18.3	7.42	1781	71000	.68	" "
9:54	18.3	7.72	1951	71000	1.02	" " DTW: 29.30 DTB: 29.96
1003	Dewatered after removing 1/2		CV		1.17	" DTW 29.73
1017	→	→				DTW 29.46
1032	→	→				29.19
1038	DO: 3.13 mg/L	FE: .02 mg/L	ORP: 250 mV			
1046	16.9	8.12	2236	71000	—	
COLLECTED	SAMPLE	FOR	BTEX/MTBE/METHANE/NITRATE/SULFATE			
CLIENT TO COLLECT	TPH-D	SAMPLE	AT	LATER	DATE	

Did Well Dewater? yes	If yes, note above.	Gallons Actually Evacuated:	1.17

Soil or Purge Water Drum Log

Client: Stellar

Site Address: 387 Orange St, Oakland

STATUS OF DRUM(S) UPON ARRIVAL						
Date	11.19.09					
Number of drum(s) empty:						
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:	4					
Total drum(s) on site:	4					
Are the drum(s) properly labeled?	yes					
Drum ID & Contents:	soil					
If any drum(s) are partially or totally filled, what is the first use date:	—					

- 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						
Number of drums empty:						
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:	4					
Total drum(s) on site:	4					
Are the drum(s) properly labeled?	yes					
Drum ID & Contents:	soil					

LOCATION OF DRUM(S)
Describe location of drum(s): Left side of house

FINAL STATUS						
Number of new drum(s) left on site this event	0					
Date of inspection:	11.19.09					
Drum(s) labelled properly:	yes					
Logged by BTS Field Tech:	MT					
Office reviewed by:	by					

WELL MONITORING DATA SHEET

Project #: Orange St	Client:
Sampler: HP	Start Date: ~~11/17/08~~ 11/17/08
Well I.D.: MW-1	Well Diameter: (circle one) 2 3 4 6 ___
Total Well Depth: /	Depth to Water: /
Before / After	Before 18.5 After 21.2
Depth to Free Product: 0	Thickness of Free Product (feet):
Measurements referenced to: (PVC TOC) Grade	Other:

Well Diameter	VCF	Well Diameter	VCF
1"	0.04	6"	1.47
(2")	0.16	8"	2.61
3"	0.37	10"	4.08
4"	0.65	12"	5.87
5"	1.02	16"	10.43

6 vol sample x _____ = _____ gallons

1 Case Volume | Specified Volumes

Purging: (Bailer)
Disposable Bailer
Middleburg
Electric Submersible
Extraction Pump
Other_____

Sampling: Bailer
Disposable Bailer
Extraction Port
Other_____

TIME	TEMP. (F)	pH	COND.	~~TURBIDITY~~: Fe 2+ / Total Fe	VOLUME REMOVED:	OBSERVATIONS: DO	ORP
1230	19.84	9.24	2513	1.13 / 1.65	0.5 gal	8.06	48.4
1240	19.15	8.11	2803	2.10 / 3.08	1.0	9.60	55.2

Did Well Dewater? If yes, gals. Gallons Actually Evacuated: 1.5

Sampling Time: 1230 Sampling Date: 11/17/08

Sample I.D.: MW-1 Laboratory: C+T

Analyzed for: TPH-G (BTEX) (TPH-D) OTHER:
(Circle)
MTBE, Sulfate, Nitrate, Methane

Duplicate I.D.: Cleaning Blank I.D.:

Analyzed for: TPH-G BTEX TPH-D OTHER:
(Circle)

APPENDIX F

Waste Disposal Documentation

NON-HAZARDOUS WASTE MANIFEST

EES19

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.

Manifest Document No. NH 4464

2. Page 1 of 1

3. Generator's Name and Mailing Address
STELLAR ENVIRONMENTAL SOLUTIONS
2198 SIXTH ST STE 201
OAKLAND CA 94710

4. Generator's Phone 510) 644-3123

5. Transporter 1 Company Name
EVERGREEN ENVIRONMENTAL SERVICES

6. US EPA ID Number
CAD982413262

A. State Transporter's ID

B. Transporter 1 Phone 510 795-4400

7. Transporter 2 Company Name

8. US EPA ID Number

C. State Transporter's ID

D. Transporter 2 Phone

9. Designated Facility Name and Site Address
EVERGREEN OIL, INC.
6880 Smith Avenue
Newark, CA 94560

10. US EPA ID Number
CAD980887418

E. State Facility's ID

F. Facility's Phone
510 795-4400

GENERATOR

11. WASTE DESCRIPTION	12. Containers No.	Type	13. Total Quantity	14. Unit Wt./Vol.
a. ~~Non-Hazardous waste, liquid~~ M S	~~M S 001~~	~~M S~~	[redacted] M S	~~M S G~~
b. NON HAZARDOUS WASTE. SOLID (SOIL, TRACE HYDROCARBONS)	3	DM	900	P
c.				
d.				

G. Additional Descriptions for Materials Listed Above
387 Orange Street Oakland CA 94610

H. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
Profile # _____
Do not ingest
Wear protective clothing
In case of emergency call: CHEMTREC 800-424-9300
DOT ERG 171

Invoice: 35562
Sales Order:

NON-HAZARDOUS WASTE

16. **GENERATOR'S CERTIFICATION:** I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name	Signature	Date Month	Day	Year
X H. Pretzyna for Estate	X [signature] for Estate	11	24	08

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date Month	Day	Year
Malcolm Smith	Malcolm Smith	11	24	08

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date Month	Day	Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.

Printed/Typed Name	Signature	Date Month	Day	Year

APPENDIX G

Certified Analytical Laboratory Reports and Chain-of-Custody Documentation

Chain of Custody Record

Lab job no. 207870

Date

Page 1 of 1

Laboratory Curtis and Tompkins, Ltd.
Address 2323 Fifth Street
Berkeley, California 94710
510-486-0900

Method of Shipment Hand Delivery
Shipment No.
Airbill No.
Cooler No.

Project Owner Ulibarri Estate/Ms. Mary Krantz
Site Address 387 Orange Street
Oakland,CA

Project Manager Richard Makdisi
Telephone No. (510) 644-3123
Fax No. (510) 644-3859

Project Name Orange Street
Project Number 2007-08

Samplers: (Signature)

Field Sample Number	Location/ Depth	Date	Time	Sample Type	Type/Size of Container	Preservation: Cooler	Preservation: Chemical	Filtered	No. of Containers	TPH diesel	MBTEX	Nitrate (300.0)	Sulfate (300.0)	methane (RSK-175)	Remarks
mw-1	–	11/17/08	1210	H_2O	6-40ml VOA	yes	HCL	No	6		X			X	
"	–	"	1210	"	100ml plastic	"	no	"	1			X	X		
"	–	"	1210	"	1 l amber	"	no	"	1	X					

Relinquished by:	Date	Received by:	Date
Signature	11/17/08	Signature	
Printed Pietropaoli	Time 1400	Printed Lisa Procter	Time
Company Stellar Environmental		Company CET 11/17/08 1400	

Relinquished by:	Date	Received by:	Date
Signature		Signature	
Printed	Time	Printed	Time
Company		Company	

Relinquished by:	Date	Received by:	Date
Signature		Signature	
Printed	Time	Printed	Time
Company		Company	

Turnaround Time: 5 Day TAT

Comments: Samples on ice

2000-00-01

COOLER RECEIPT CHECKLIST

Curtis & Tompkins, Ltd

Login # 707870 Date Received 11-14-07 Number of coolers 1
Client Stellar Environmental Solutions Project Orange Street

Date Opened 11-14-07 By (print) J. Rasmussen (sign)
Date Logged in 11/17/8 By (print) S. Evans (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., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

Laboratory Job Number 207870
ANALYTICAL REPORT

Stellar Environmental Solutions	Project : 2007-08
2198 6th Street	Location : Orange Street
Berkeley, CA 94710	Level : II

Sample ID	Lab ID
MW-1	207870-001

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 signatures. 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: 12/01/2008
Project Manager

Signature: _____ Date: 12/03/2008
Senior Program Manager

Curtis & Tompkins, Ltd.

CASE NARRATIVE

Laboratory number:	**207870**
Client:	**Stellar Environmental Solutions**
Project:	**2007-08**
Location:	**Orange Street**
Request Date:	**11/17/08**
Samples Received:	**11/17/08**

This data package contains sample and QC results for one water sample, requested for the above referenced project on 11/17/08. The sample was received cold and intact.

TPH-Purgeables and/or BTXE by GC (EPA 8021B):
No analytical problems were encountered.

TPH-Extractables by GC (EPA 8015B):
No analytical problems were encountered.

Dissolved Gases by GC/FID (RSK-175):
No analytical problems were encountered.

Ion Chromatography (EPA 300.0):
No analytical problems were encountered.

Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	207870	Location:	Orange Street
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2007-08	Analysis:	EPA 8021B
Field ID:	MW-1	Batch#:	145054
Matrix:	Water	Sampled:	11/17/08
Units:	ug/L	Received:	11/17/08
Diln Fac:	1.000	Analyzed:	11/18/08

Type: SAMPLE Lab ID: 207870-001

Analyte	Result	RL
MTBE	ND	2.0
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

Surrogate	%REC	Limits
Trifluorotoluene (PID)	102	52-143
Bromofluorobenzene (PID)	113	56-141

Type: BLANK Lab ID: QC471210

Analyte	Result	RL
MTBE	ND	2.0
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

Surrogate	%REC	Limits
Trifluorotoluene (PID)	107	52-143
Bromofluorobenzene (PID)	112	56-141

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Curtis & Tompkins Laboratories Analytical Report

Lab #:	207870	Location:	Orange Street
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2007-08	Analysis:	EPA 8021B
Matrix:	Water	Batch#:	145054
Units:	ug/L	Analyzed:	11/18/08
Diln Fac:	1.000		

Type: BS Lab ID: QC471211

Analyte	Spiked	Result	%REC	Limits
MTBE	20.00	20.30	102	61-143
Benzene	20.00	18.60	93	80-120
Toluene	20.00	17.97	90	77-120
Ethylbenzene	20.00	17.71	89	79-123
m,p-Xylenes	20.00	18.84	94	78-123
o-Xylene	20.00	18.08	90	78-122

Surrogate	%REC	Limits
Trifluorotoluene (PID)	106	52-143
Bromofluorobenzene (PID)	115	56-141

Type: BSD Lab ID: QC471212

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
MTBE	20.00	17.77	89	61-143	13	32
Benzene	20.00	17.65	88	80-120	5	20
Toluene	20.00	16.96	85	77-120	6	20
Ethylbenzene	20.00	16.99	85	79-123	4	20
m,p-Xylenes	20.00	17.96	90	78-123	5	21
o-Xylene	20.00	17.46	87	78-122	3	20

Surrogate	%REC	Limits
Trifluorotoluene (PID)	106	52-143
Bromofluorobenzene (PID)	112	56-141

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	207870	Location:	Orange Street
Client:	Stellar Environmental Solutions	Prep:	EPA 3520C
Project#:	2007-08	Analysis:	EPA 8015B
Field ID:	MW-1	Sampled:	11/17/08
Matrix:	Water	Received:	11/17/08
Units:	ug/L	Prepared:	11/18/08
Diln Fac:	1.000	Analyzed:	11/19/08
Batch#:	145078		

Type: SAMPLE Lab ID: 207870-001

Analyte	Result	RL
Diesel C10-C24	11,000	50

Surrogate	%REC	Limits
Hexacosane	119	58-127

Type: BLANK Lab ID: QC471310

Analyte	Result	RL
Diesel C10-C24	ND	50

Surrogate	%REC	Limits
Hexacosane	120	58-127

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Total Extractable Hydrocarbons

Lab #:	207870	Location:	Orange Street
Client:	Stellar Environmental Solutions	Prep:	EPA 3520C
Project#:	2007-08	Analysis:	EPA 8015B
Matrix:	Water	Batch#:	145078
Units:	ug/L	Prepared:	11/18/08
Diln Fac:	1.000	Analyzed:	11/20/08

Type: BS
Lab ID: QC471311
Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	2,500	2,299	92	52-120

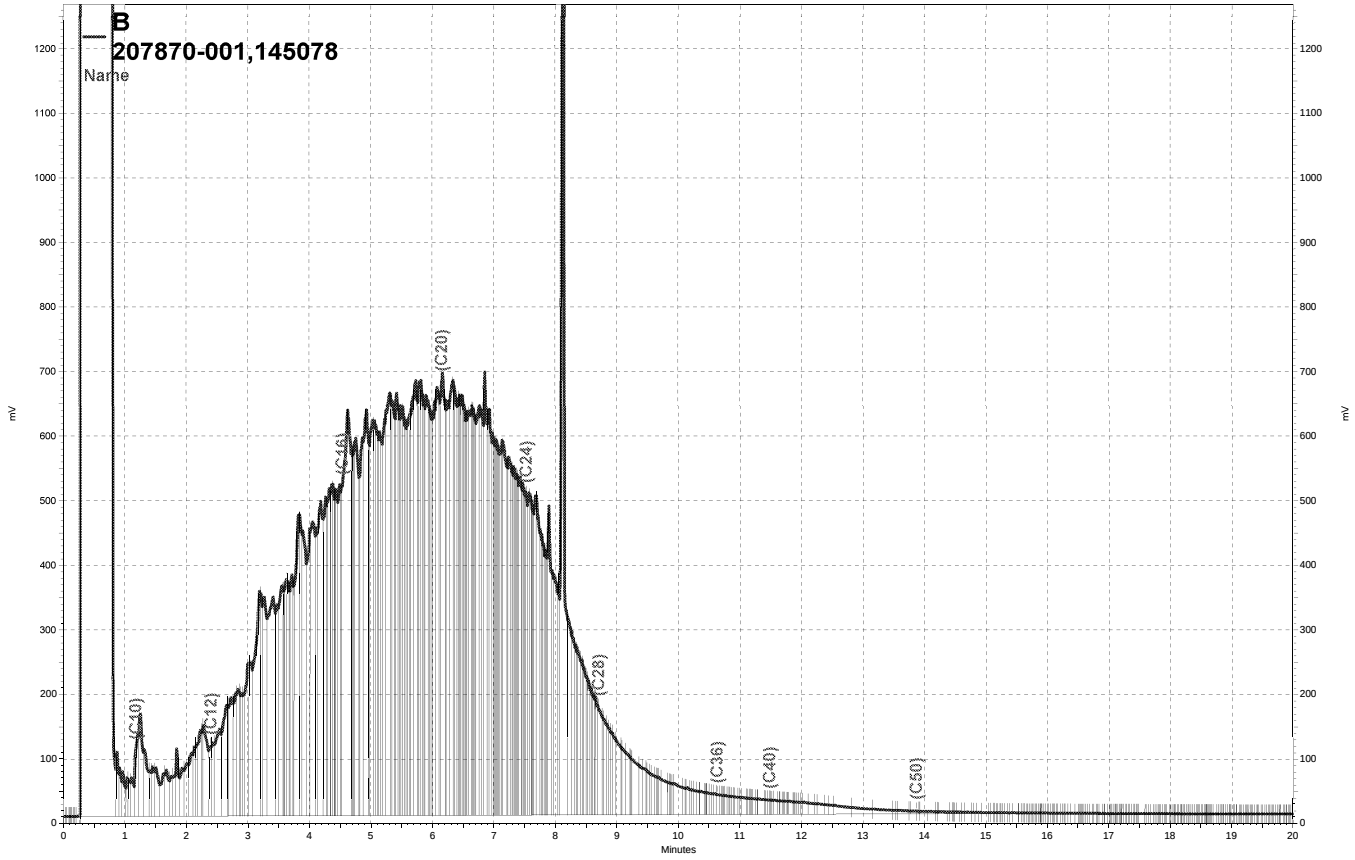
Surrogate	%REC	Limits
Hexacosane	104	58-127

Type: BSD
Lab ID: QC471312
Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	2,500	2,398	96	52-120	4	30

Surrogate	%REC	Limits
Hexacosane	111	58-127

RPD= Relative Percent Difference



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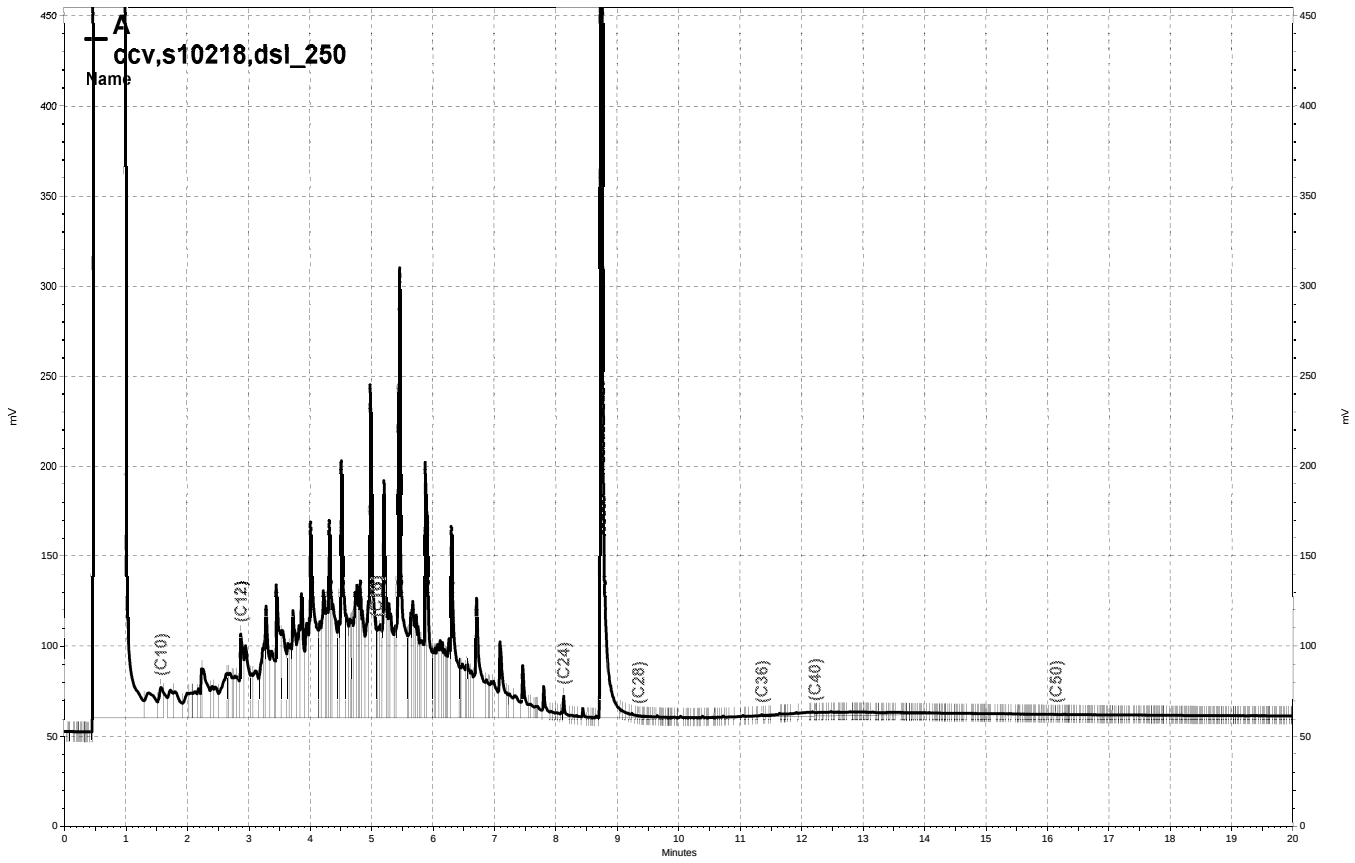

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Curtis & Tompkins, Ltd.

Dissolved Gases

Lab #:	207870	Location:	Orange Street
Client:	Stellar Environmental Solutions	Prep:	METHOD
Project#:	2007-08	Analysis:	RSK-175
Analyte:	Methane	Batch#:	145247
Field ID:	MW-1	Sampled:	11/17/08
Matrix:	Water	Received:	11/17/08
Units:	mg/L	Analyzed:	11/21/08
Diln Fac:	1.000		

Type	Lab ID	Result	RL
SAMPLE	207870-001	ND	0.005
BLANK	QC472029	ND	0.005

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Dissolved Gases

Lab #:	207870	Location:	Orange Street
Client:	Stellar Environmental Solutions	Prep:	METHOD
Project#:	2007-08	Analysis:	RSK-175
Analyte:	Methane	Diln Fac:	1.000
Matrix:	Water	Batch#:	145247
Units:	mg/L	Analyzed:	11/21/08

Type	Lab ID	Spiked	Result	%REC	Limits	RPD	Lim
BS	QC472027	0.6544	0.6737	103	80-120		
BSD	QC472028	0.6544	0.6502	99	80-120	4	20

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	207870	Location:	Orange Street
Client:	Stellar Environmental Solutions	Prep:	METHOD
Project#:	2007-08	Analysis:	EPA 300.0
Field ID:	MW-1	Batch#:	145031
Matrix:	Water	Sampled:	11/17/08 12:10
Units:	mg/L	Received:	11/17/08

Type: SAMPLE Lab ID: 207870-001

Analyte	Result	RL	Diln Fac	Analyzed
Nitrogen, Nitrate	2.8	0.05	1.000	11/18/08 14:36
Sulfate	59	1.0	2.000	11/19/08 02:53

Type: BLANK Diln Fac: 1.000
Lab ID: QC471135 Analyzed: 11/18/08 10:28

Analyte	Result	RL
Nitrogen, Nitrate	ND	0.05
Sulfate	ND	0.50

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Curtis & Tompkins Laboratories Analytical Report

Lab #:	207870	Location:	Orange Street
Client:	Stellar Environmental Solutions	Prep:	METHOD
Project#:	2007-08	Analysis:	EPA 300.0
Matrix:	Water	Diln Fac:	1.000
Units:	mg/L	Batch#:	145031

Type: BS Analyzed: 11/18/08 10:46
Lab ID: QC471136

Analyte	Spiked	Result	%REC	Limits
Nitrogen, Nitrate	1.000	0.9901	99	80-120
Sulfate	10.00	10.08	101	80-120

Type: BSD Analyzed: 11/18/08 11:03
Lab ID: QC471137

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Nitrogen, Nitrate	1.000	0.9677	97	80-120	2	20
Sulfate	10.00	10.11	101	80-120	0	20

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Curtis & Tompkins Laboratories Analytical Report

Lab #:	207870	Location:	Orange Street
Client:	Stellar Environmental Solutions	Prep:	METHOD
Project#:	2007-08	Analysis:	EPA 300.0
Field ID:	ZZZZZZZZZZ	Diln Fac:	10.00
MSS Lab ID:	207885-004	Batch#:	145031
Matrix:	Water	Sampled:	11/17/08 11:16
Units:	mg/L	Received:	11/17/08

Type: MS Analyzed: 11/19/08 00:33
Lab ID: QC471138

Analyte	MSS Result	Spiked	Result	%REC	Limits
Nitrogen, Nitrate	<0.01445	5.000	4.904	98	80-120
Sulfate	18.56	50.00	69.64	102	80-120

Type: MSD Analyzed: 11/19/08 00:51
Lab ID: QC471139

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Nitrogen, Nitrate	5.000	4.481	90	80-120	9	20
Sulfate	50.00	66.53	96	80-120	5	20

RPD= Relative Percent Difference

207975 ~~207955~~ MN

Chain of Custody Record

Lab job no. 208119-MT1
Date 11-19-08
Page 1 of 1

Laboratory Curtis and Tompkins, Ltd.
Address 2323 Fifth Street
Berkeley, California 94710
510-486-0900

Project Owner Ulibarri Estate/Ms. Mary Krantz
Site Address 387 Orange Street
Oakland,CA

Project Name Orange Street
Project Number 2007-08

Method of Shipment Hand Delivery
Shipment No.
Airbill No.
Cooler No.
Project Manager Richard Makdisi
Telephone No. (510) 644-3123
Fax No. (510) 644-3859
Samplers: *(Signature)* MT

Field Sample Number	Location/ Depth	Date	Time	Sample Type	Type/Size of Container	Preservation: Cooler	Preservation: Chemical	Filtered	No. of Containers	TPH diesel	BTEX	Nitrate (300.0)	Sulfate (300.0)	methane (RSK-175)	Remarks
~~MW-1~~		~~11-19-08~~ 1046	W	6 HCl VOAs, 1 NP Amber, 250 NP poly		yes	~~HCl~~/NP	No	8	X	X	X	X	X	
MW-1		11-19-08 1046	W	6 HCl VOAs 250 NP poly		yes	HCl/NP	NO	7		X	X	X	X	

Relinquished by:	Date	Received by:	Date	Relinquished by:	Date	Received by:	Date
Signature	11-19-08	Signature	11-19-08	Signature	11-19-08	Signature	11/19/08
Printed Max Todi	Time 1355	Printed Max Todi (sample custodian)	Time 1355	Printed M. Todi	Time 1450	Printed Ricky Gams	Time 1450
Company Stellar Environmental		Company BTS		Company BTS		Company CET	

Turnaround Time: 5 Day TAT
Comments: Samples on ice

Relinquished by:	Date	Received by:	Date
Signature		Signature	
Printed	Time	Printed	Time
Company		Company	

2000-00-01

★ Stellar Environmental Solutions

2198 Sixth Street #201, Berkeley, CA 94710

ntact cobd Rc

COOLER RECEIPT CHECKLIST

Curtis & Tompkins, Ltd

Login # 207955 Date Received 11/19/08 Number of coolers 1

Client SES Project OLI BARRI ESTATE

Date Opened 11/19/08 By (print) M. VILLANUEVA (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., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

Laboratory Job Number 207975
ANALYTICAL REPORT

Stellar Environmental Solutions	Project : 2007-08
2198 6th Street	Location : Orange Street
Berkeley, CA 94710	Level : II

Sample ID	Lab ID
MW-1	207975-001

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 signatures. 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: 12/01/2008
Project Manager

Signature: _____ Date: 12/03/2008
Senior Program Manager

Curtis & Tompkins, Ltd.

CASE NARRATIVE

Laboratory number:	**207975**
Client:	**Stellar Environmental Solutions**
Project:	**2007-08**
Location:	**Orange Street**
Request Date:	**11/19/08**
Samples Received:	**11/19/08**

This data package contains sample and QC results for one water sample, requested for the above referenced project on 11/19/08. The sample was received cold and intact.

TPH-Purgeables and/or BTXE by GC (EPA 8021B):
No analytical problems were encountered.

Dissolved Gases by GC/FID (RSK-175):
No analytical problems were encountered.

Ion Chromatography (EPA 300.0):
No analytical problems were encountered.

Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	207975	Location:	Orange Street
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2007-08	Analysis:	EPA 8021B
Field ID:	MW-1	Batch#:	145178
Matrix:	Water	Sampled:	11/19/08
Units:	ug/L	Received:	11/19/08
Diln Fac:	1.000	Analyzed:	11/20/08

Type: SAMPLE Lab ID: 207975-001

Analyte	Result	RL
MTBE	ND	2.0
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

Surrogate	%REC	Limits
Trifluorotoluene (PID)	98	52-143
Bromofluorobenzene (PID)	100	56-141

Type: BLANK Lab ID: QC471707

Analyte	Result	RL
MTBE	ND	2.0
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

Surrogate	%REC	Limits
Trifluorotoluene (PID)	98	52-143
Bromofluorobenzene (PID)	100	56-141

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Curtis & Tompkins Laboratories Analytical Report

Lab #:	207975	Location:	Orange Street
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2007-08	Analysis:	EPA 8021B
Matrix:	Water	Batch#:	145178
Units:	ug/L	Analyzed:	11/20/08
Diln Fac:	1.000		

Type: BS Lab ID: QC471709

Analyte	Spiked	Result	%REC	Limits
MTBE	10.00	10.00	100	61-143
Benzene	10.00	8.854	89	80-120
Toluene	10.00	9.354	94	77-120
Ethylbenzene	10.00	10.20	102	79-123
m,p-Xylenes	10.00	10.72	107	78-123
o-Xylene	10.00	10.81	108	78-122

Surrogate	%REC	Limits
Trifluorotoluene (PID)	99	52-143
Bromofluorobenzene (PID)	103	56-141

Type: BSD Lab ID: QC471710

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
MTBE	10.00	9.921	99	61-143	1	32
Benzene	10.00	8.771	88	80-120	1	20
Toluene	10.00	9.284	93	77-120	1	20
Ethylbenzene	10.00	9.773	98	79-123	4	20
m,p-Xylenes	10.00	10.05	100	78-123	6	21
o-Xylene	10.00	10.31	103	78-122	5	20

Surrogate	%REC	Limits
Trifluorotoluene (PID)	100	52-143
Bromofluorobenzene (PID)	105	56-141

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Dissolved Gases

Lab #:	207975	Location:	Orange Street
Client:	Stellar Environmental Solutions	Prep:	METHOD
Project#:	2007-08	Analysis:	RSK-175
Analyte:	Methane	Batch#:	145314
Field ID:	MW-1	Sampled:	11/19/08
Matrix:	Water	Received:	11/19/08
Units:	mg/L	Analyzed:	11/24/08
Diln Fac:	1.000		

Type	Lab ID	Result	RL
SAMPLE	207975-001	0.077	0.005
BLANK	QC472305	ND	0.005

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Dissolved Gases

Lab #:	207975	Location:	Orange Street
Client:	Stellar Environmental Solutions	Prep:	METHOD
Project#:	2007-08	Analysis:	RSK-175
Analyte:	Methane	Diln Fac:	1.000
Matrix:	Water	Batch#:	145314
Units:	mg/L	Analyzed:	11/24/08

Type	Lab ID	Spiked	Result	%REC	Limits	RPD	Lim
BS	QC472303	0.6544	0.7373	113	80-120		
BSD	QC472304	0.6544	0.7395	113	80-120	0	20

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	207975	Location:	Orange Street
Client:	Stellar Environmental Solutions	Prep:	METHOD
Project#:	2007-08	Analysis:	EPA 300.0
Field ID:	MW-1	Batch#:	145122
Matrix:	Water	Sampled:	11/19/08 10:46
Units:	mg/L	Received:	11/19/08

Type: SAMPLE Lab ID: 207975-001

Analyte	Result	RL	Diln Fac	Analyzed
Nitrogen, Nitrate	3.4	0.05	1.000	11/19/08 19:32
Sulfate	110	5.0	10.00	11/19/08 16:47

Type: BLANK Diln Fac: 1.000
Lab ID: QC471509 Analyzed: 11/19/08 12:16

Analyte	Result	RL
Nitrogen, Nitrate	ND	0.05
Sulfate	ND	0.50

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Curtis & Tompkins Laboratories Analytical Report

Lab #:	207975	Location:	Orange Street
Client:	Stellar Environmental Solutions	Prep:	METHOD
Project#:	2007-08	Analysis:	EPA 300.0
Matrix:	Water	Diln Fac:	1.000
Units:	mg/L	Batch#:	145122

Type: BS Analyzed: 11/19/08 15:38
Lab ID: QC471510

Analyte	Spiked	Result	%REC	Limits
Nitrogen, Nitrate	1.000	1.009	101	80-120
Sulfate	10.00	10.13	101	80-120

Type: BSD Analyzed: 11/19/08 13:40
Lab ID: QC471511

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Nitrogen, Nitrate	1.000	0.9485	95	80-120	6	20
Sulfate	10.00	9.866	99	80-120	3	20

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Curtis & Tompkins Laboratories Analytical Report

Lab #:	207975	Location:	Orange Street
Client:	Stellar Environmental Solutions	Prep:	METHOD
Project#:	2007-08	Analysis:	EPA 300.0
Field ID:	ZZZZZZZZZZ	Diln Fac:	10.00
MSS Lab ID:	207976-006	Batch#:	145122
Matrix:	Water	Sampled:	11/19/08 11:48
Units:	mg/L	Received:	11/19/08

Type: MS Analyzed: 11/20/08 05:07
Lab ID: QC471512

Analyte	MSS Result	Spiked	Result	%REC	Limits
Nitrogen, Nitrate	0.8590	5.000	5.411	91	80-120
Sulfate	62.73	50.00	106.8	88	80-120

Type: MSD Analyzed: 11/20/08 05:24
Lab ID: QC471513

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Nitrogen, Nitrate	5.000	5.488	93	80-120	1	20
Sulfate	50.00	105.6	86	80-120	1	20

RPD= Relative Percent Difference

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

Laboratory Job Number 208046
ANALYTICAL REPORT

Stellar Environmental Solutions	Project : 2007-09
2198 6th Street	Location : Orange Street
Berkeley, CA 94710	Level : II

Sample ID	Lab ID
MW-1	208046-001

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 signatures. 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: 12/09/2008
Project Manager

Signature: _____ Date: 12/09/2008
Senior Program Manager

Curtis & Tompkins, Ltd.

CASE NARRATIVE

Laboratory number:	**208046**
Client:	**Stellar Environmental Solutions**
Project:	**2007-09**
Location:	**Orange Street**
Request Date:	**11/21/08**
Samples Received:	**11/21/08**

This data package contains sample and QC results for one water sample, requested for the above referenced project on 11/21/08. The sample was received intact.

TPH-Extractables by GC (EPA 8015B):

Low recovery was observed for diesel C10-C24 and hexacosane in the BS for batch 145539. High RPD was also observed for diesel C10-C24 in the BS/BSD for batch 145539. The low recovery in the BS is an outlier not affecting the rest of the data in the batch. No other analytical problems were encountered.

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	208046	Location:	Orange Street
Client:	Stellar Environmental Solutions	Prep:	EPA 3520C
Project#:	2007-09	Analysis:	EPA 8015B
Field ID:	MW-1	Batch#:	145539
Matrix:	Water	Sampled:	11/21/08
Units:	ug/L	Received:	11/21/08
Diln Fac:	1.000	Prepared:	12/02/08

Type: SAMPLE Analyzed: 12/05/08
Lab ID: 208046-001

Analyte	Result	RL
Diesel C10-C24	7,500 Y	210

Surrogate	%REC	Limits
Hexacosane	111	58-127

Type: BLANK Analyzed: 12/04/08
Lab ID: QC473296

Analyte	Result	RL
Diesel C10-C24	ND	50

Surrogate	%REC	Limits
Hexacosane	116	58-127

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 #:	208046	Location:	Orange Street
Client:	Stellar Environmental Solutions	Prep:	EPA 3520C
Project#:	2007-09	Analysis:	EPA 8015B
Matrix:	Water	Batch#:	145539
Units:	ug/L	Prepared:	12/02/08
Diln Fac:	1.000	Analyzed:	12/04/08

Type: BS
Lab ID: QC473297
Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	2,500	533.4	21 *	52-120

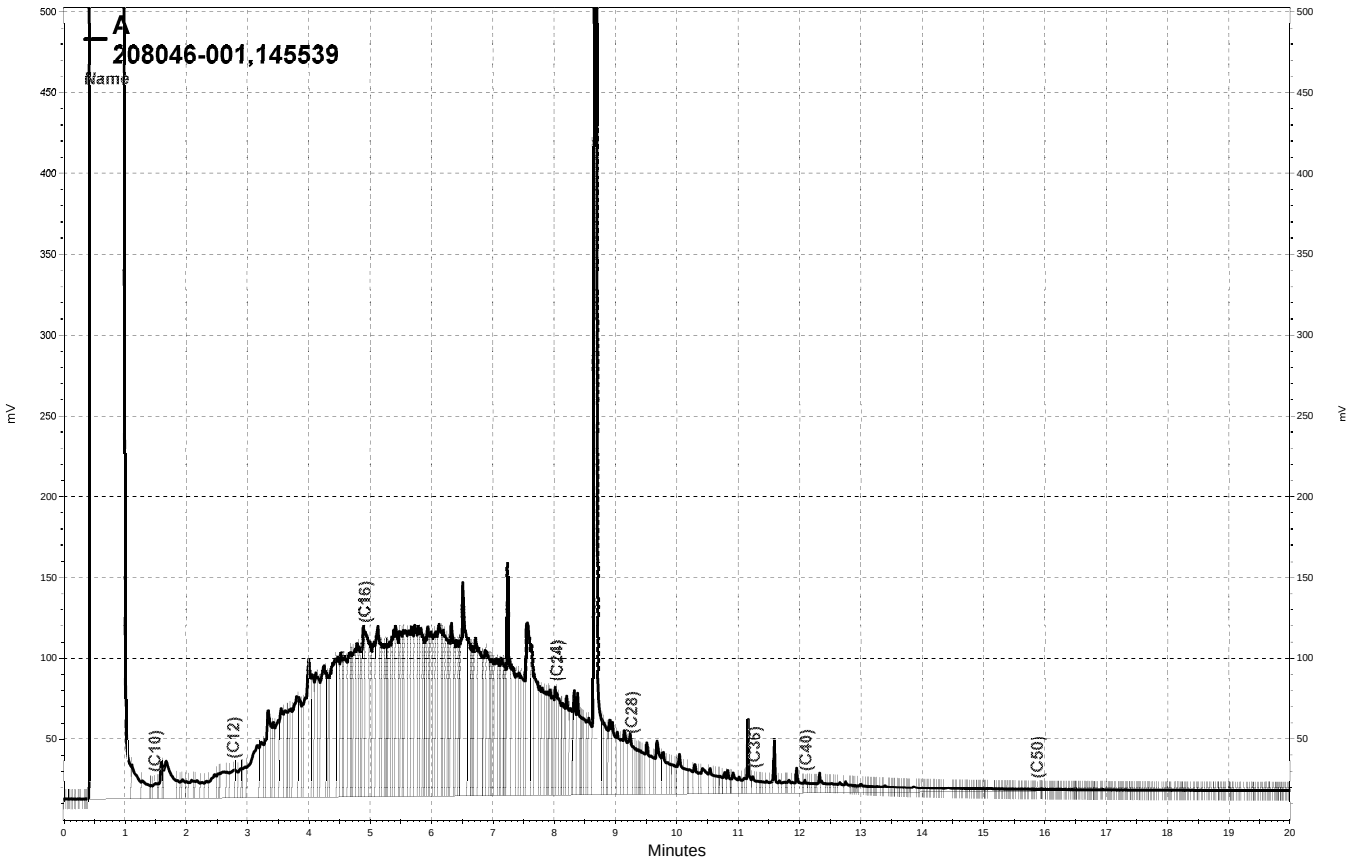
Surrogate	%REC	Limits
Hexacosane	23 *	58-127

Type: BSD
Lab ID: QC473298
Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	2,500	1,954	78	52-120	114 *	30

Surrogate	%REC	Limits
Hexacosane	91	58-127

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



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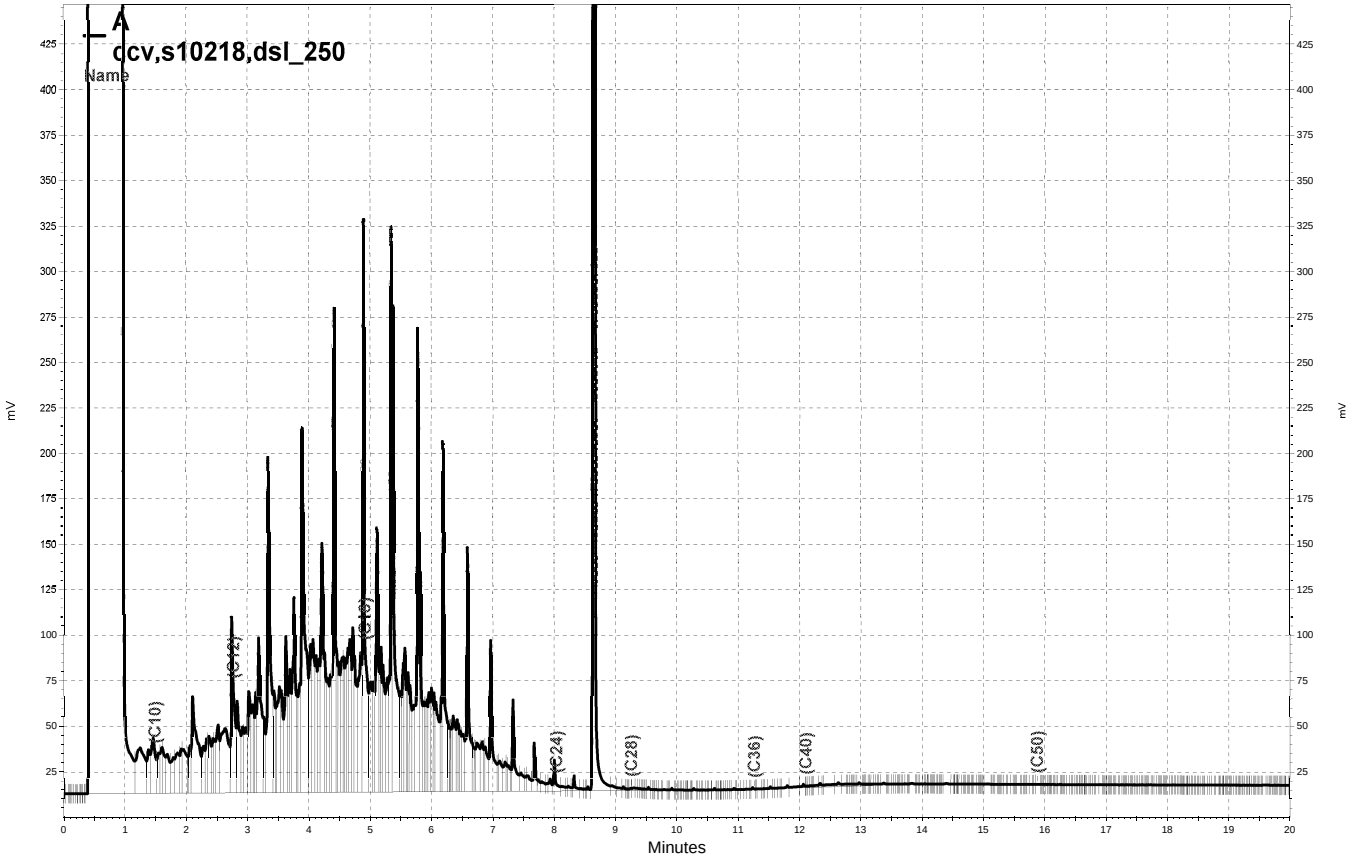

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Chain of Custody Record

Lab job no. _____

Date _____

Page 1 of 1

Laboratory: Curtis and Tompkins, Ltd.
Address: 2323 Fifth Street, Berkeley, California 94710, 510-486-0900

Project Owner: Ulibarri Estate/Ms. Mary Krantz
Site Address: 387 Orange Street, Oakland,CA

Project Name: Orange Street
Project Number: 2007-09

Method of Shipment: Hand Delivery
Shipment No. _____
Airbill No. _____
Cooler No. _____
Project Manager: Richard Makdisi
Telephone No.: (510) 644-3123
Fax No.: (510) 644-3859
Samplers: *(Signature)* [signature]

Field Sample Number	Location/ Depth	Date	Time	Sample Type	Type/Size of Container	Preservation: Cooler	Preservation: Chemical	Filtered	No. of Containers	Analysis Required: TEH diesel	Remarks
MW-1	—	11/21/08	1230	H_2O	3-40ml VOA	yes	HCl	No	3	X	

Relinquished by:	Date	Time	Received by:	Date	Time
Signature: [signature]	11/21/08		Signature: [signature]	11/21/08	
Printed: Pietropaoli			Printed: Pat González		
Company: Stellar Environmental		1230	Company: Curtis & Tompkins		1725

Relinquished by:	Date	Time	Received by:	Date	Time
Signature:			Signature:		
Printed:			Printed:		
Company:			Company:		

Relinquished by:	Date	Time	Received by:	Date	Time
Signature:			Signature:		
Printed:			Printed:		
Company:			Company:		

Turnaround Time: 5 Day TAT

Comments: Samples on ice

2000-00-01