STELLAR ENVIRONMENTAL SOLUTIONS, INC.
2198 SIXTH STREET, SUITE 201, BERKELEY, CA 94710
TEL: 510.644.3123 FAX: 510.644.3859

MAR 18 2004
ENVIRONMENTAL HEALTH

TRANSMITTAL MEMORANDUM	
TO: ALAMEDA COUNTY HEALTH CARE SERVICES - ENVIRONMENTAL HEALTH DEPT. - LOCAL OVERSIGHT PROGRAM 1131 HARBOR BAY PKWY, SUITE 250 ALAMEDA, CA 94502	**DATE:** MARCH 17, 2004
ATTENTION: MR. BARNEY CHAN	**FILE:** SES 2003-41
SUBJECT: FORMER RUSS ELLIOTT FACILITY 2526 WOOD STREET OAKLAND, CALIFORNIA FUEL LEAK CASE NO. RO00040	
WE ARE SENDING: ☒ HEREWITH	☐ UNDER SEPARATE COVER
☒ VIA MAIL	☐ VIA
THE FOLLOWING: GROUNDWATER MONITORING WELL INSTALLATION AND BASELINE GROUNDWATER MONITORING REPORT (DATED MARCH 15, 2004)	
☐ AS REQUESTED	☐ FOR YOUR APPROVAL
☐ FOR REVIEW	☒ FOR YOUR USE
☐ FOR SIGNATURE	☐ FOR YOUR FILES
COPY TO: ELLIOTT FAMILY TRUST (PROPERTY OWNER) (2 COPIES)	**BY:** BRUCE RUCKER BNR

R040

GROUNDWATER MONITORING WELL INSTALLATION AND BASELINE GROUNDWATER MONITORING REPORT

FORMER RUSS ELLIOTT, INC. FACILITY
2526 WOOD STREET
OAKLAND, CALIFORNIA

Prepared for

ELLIOTT FAMILY TRUST
SAN LEANDRO, CALIFORNIA

March 2004

★ Stellar Environmental Solutions Geoscience & Engineering Consulting

★ **Stellar Environmental Solutions**

2198 Sixth Street, Suite 201, Berkeley, CA 94710
Tel: (510) 644-3123 • Fax: (510) 644-3859
Geoscience & Engineering Consulting

Alameda County
MAR 18 2004
Environmental Health
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March 15, 2004

Mr. Barney Chan, Hazardous Materials Specialist
Alameda County Health Care Services Agency
Department of Environmental Health
Local Oversight Program
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502

Subject: Groundwater Monitoring Well Installation and Baseline Groundwater Monitoring Report – Former Russ Elliott, Inc. Facility
2526 Wood Street, Oakland, California

Dear Mr. Chan:

This report documents groundwater monitoring well installation and sampling activities conducted in February 2004 by Stellar Environmental Solutions, Inc. (SES) at the referenced site. The scope of work was conducted in accordance with the lead regulatory agency-approved technical workplan. The work tasks included: 1) installing three shallow groundwater monitoring wells in the vicinity of two former UFSTs (gasoline and diesel); 2) well development and surveying; and 3) conducting the initial groundwater sampling event.

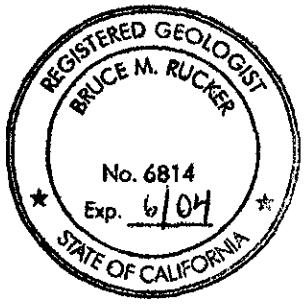
The data indicate that shallow groundwater has been impacted by gasoline, benzene, MTBE, and TBA at concentrations exceeding regulatory agency screening level criteria; however, groundwater contamination appears to be constrained onsite. Continued groundwater monitoring is warranted to evaluate plume stability over time.

Please contact us at (510) 644-3123 if you have any questions.

Sincerely,

Bruce M. Rucker

Bruce Rucker, R.G., R.E.A.
Project Manager and Senior Geologist



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

cc: Ms. Jeannette Elliott – Elliott Family Trust representative

GROUNDWATER MONITORING WELL INSTALLATION AND BASELINE GROUNDWATER MONITORING REPORT

FORMER RUSS ELLIOTT, INC. FACILITY
2526 WOOD STREET
OAKLAND, CALIFORNIA

Prepared for:

ELLIOTT FAMILY TRUST
1744 SKYVIEW DRIVE
SAN LEANDRO, CALIFORNIA 94577

Prepared by:

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

March 15, 2004

Project No. 2003-41

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1.0 INTRODUCTION

PROJECT BACKGROUND

Stellar Environmental Solutions, Inc. (SES) was retained by the Elliott Family Trust (as property owner) to conduct groundwater monitoring well installation and sampling activities at 2526 Wood Street in Oakland, California. This work follows the removal of a diesel site underground fuel storage tank (UFST) in 1995 and a gasoline UFST in 2002, and a Preliminary Site Assessment (PSA) in October 2003. Previous site corrective actions and investigations are summarized later in this report. The Alameda County Department of Environmental Health (ACDEH) is the lead regulatory agency for the investigation, and has assigned the site as Fuel Leak Case No. RO000040.

SITE AND VICINITY DESCRIPTION

The project site is a former roofing company (Russ Elliott, Inc.) located at 2526 Wood Street, Oakland, Alameda County, California (site). The business ceased operations at the site in January 2004.

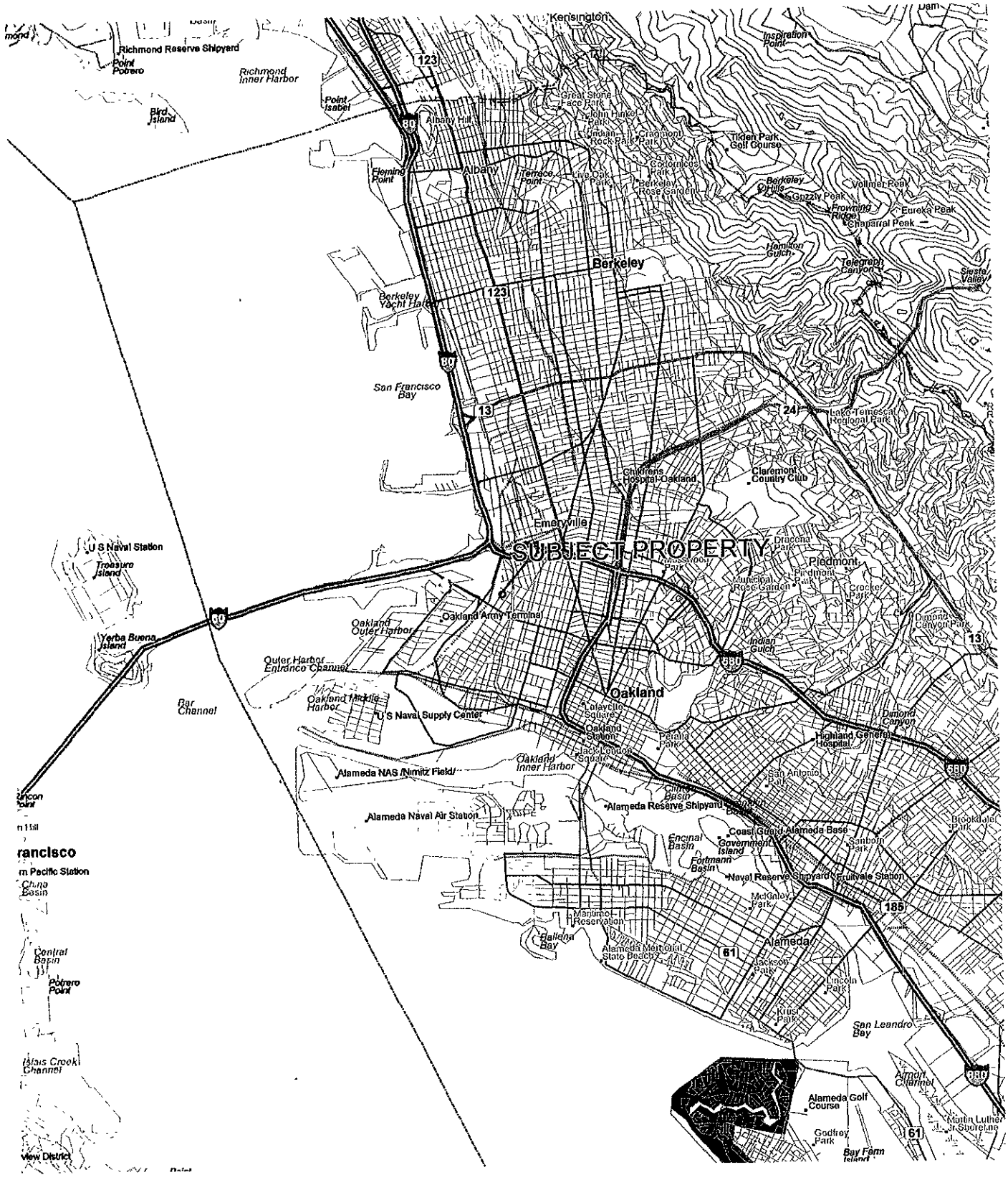
The site is approximately 380 feet long (between Wood Street and Willow Street) by approximately 120 feet wide. The long axis of the property (parallel to 26th Street) is oriented approximately northeast to southwest. Figure 1 is a site location map. Figure 2 shows the location of the former site underground fuel storage tanks (UFSTs) in relation to the site buildings and adjacent streets.

The former UFSTs and current area of investigation are in the largely-unpaved service yard near the western border of the subject property (near 26th Street). Access to this area is through a chain-link gate on 26th Street. The area available for exterior drilling is limited by adjacent buildings and an active railroad spur that services an adjacent parcel. Nearby land use is wholly commercial and light industrial (i.e., there is no residential or other sensitive land uses in the immediate vicinity).

PREVIOUS INVESTIGATIONS

UFST Removals

Two UFSTs were located near the western border of the subject property (near 26th Street), approximately 40 feet from each other. Both UFSTs were utilized for fueling company vehicles, and



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SITE LOCATION ON U.S.G.S. TOPOGRAPHIC MAP

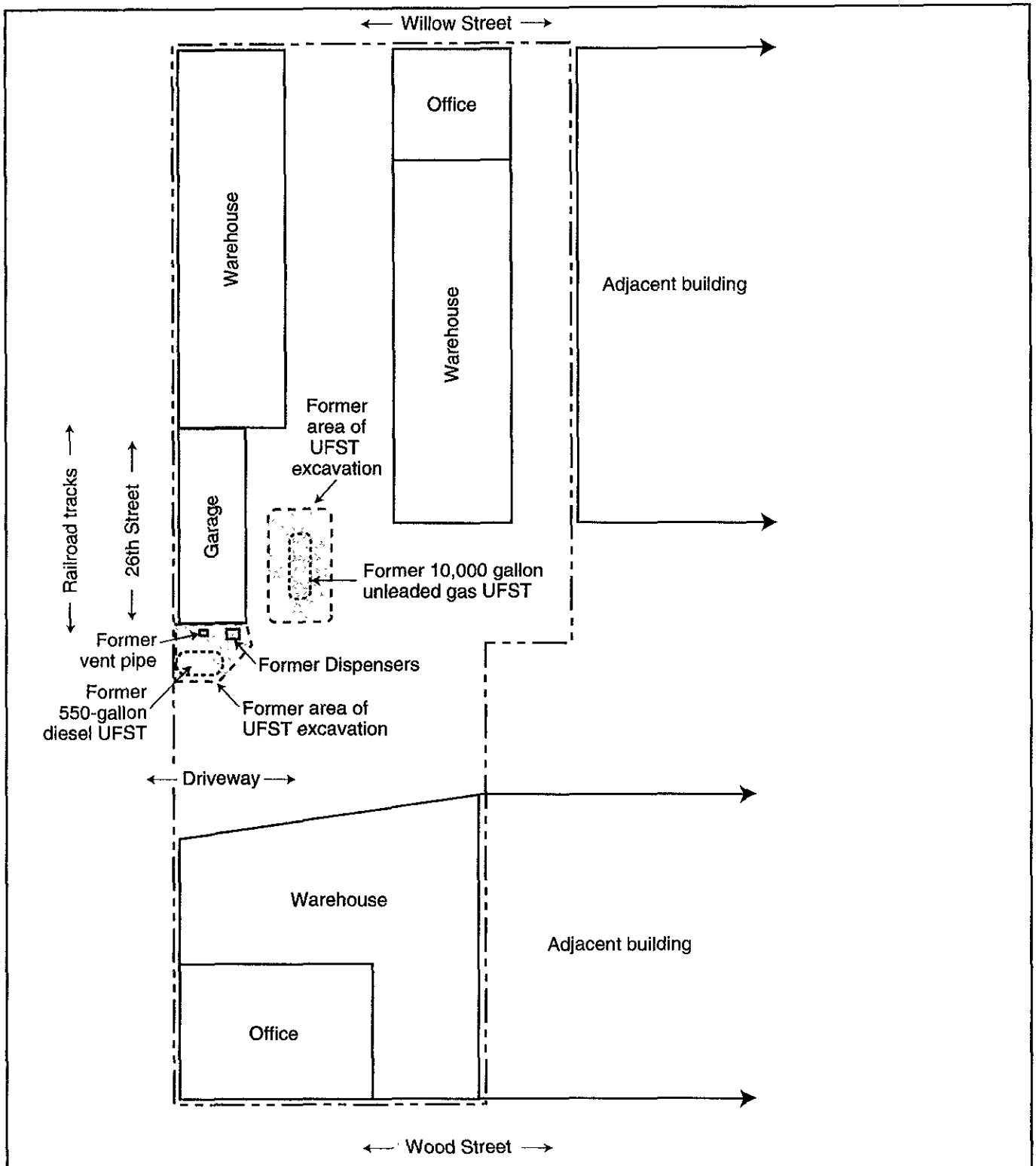
2526 Wood Street
Oakland, CA

By: MJC

JULY 2003

Figure 1

2003-36-01



Note: See Figure 3 for detail of UFST area

SITE PLAN—RUSS ELLIOTT FACILITY, INC.

2526 Wood Street
Oakland, CA

By: MJC | MARCH 2004

Figure 2

Stellar Environmental Solutions, Inc.
Geoscience & Engineering Consulting

2003-41-02

shared a common dispenser island located between them. Both UFSTs were removed under permit and regulatory oversight. Historical soil and analytical results for the UFST removals are included in Appendix A.

The 550-gallon diesel UFST was removed in 1995. Elevated concentrations (above current regulatory agency screening levels) of gasoline, diesel, ethylbenzene, and xylenes were detected in the south sidewall sample. Following over-excavation, no residual soil contamination was detected at this location (including MTBE). No contamination was detected in the October 1995 pit water sample. The available data suggest an historical leak in the UFST and/or piping. The absence of contamination in the overexcavation (final) confirmation samples suggests that all unsaturated zone soil contamination was removed at this location, and the absence of concurrent groundwater contamination suggests that groundwater had not been impacted by the release. No closure documentation report was submitted for this UFST removal by the contractor that conducted the removal, although the analytical results were transmitted to ACDEH.

The 10,000-gallon gasoline UFST was removed in 2002. The only contaminant detected in residual (excavation sidewall or dispenser base) or stockpiled soil samples was MTBE. The maximum MTBE concentration was 0.24 mg/kg in one of the excavation sidewall samples. Lead was at background concentrations (11 mg/kg or less). Gasoline, BTEX, and MTBE were all detected in the pit water sample at elevated concentrations. Dissolved lead was not detected in that water sample.

The available data suggest an historical leak in the UFST and/or piping. While MTBE was detected in two of the four confirmation soil samples, the absence of gasoline and BTEX soil contamination indicates that the majority of residual soil contamination was removed from this location. The data suggest that groundwater was impacted before soil corrective action was implemented. No UFST closure documentation report was submitted for this UFST removal by the contractor that conducted the removal.

A UFST closure documentation report discussing both UFST removals was prepared and submitted to the Oakland Fire Department and ACDEH by SES (SES, 2003a).

2003 Preliminary Site Assessment

Concurrent with the UFST closure documentation report, SES submitted to ACDEH a technical workplan implementation of, a Preliminary Site Assessment (exploratory borehole drilling and sampling) to evaluate the potential for residual contamination (SES, 2003b). The ACDEH approved the technical workplan (ACDEH, 2003a). That investigation was conducted in 2003, and included advancing and sampling (soil and groundwater) eight exploratory boreholes. A PSA documentation report was submitted to ACDEH (SES 2003c). Groundwater contaminants detected above

screening-level criteria include diesel, gasoline, benzene, MTBE, and TBA. The only soil contaminant detected above screening-level criteria was MTBE; that contamination was confined to the immediate vicinity of the former gasoline UFST. No soil contamination was detected beneath the upper water-bearing zone.

On behalf of the property owner, SES submitted to ACDEH a technical workplan for a program of groundwater monitoring well installation, sampling, and reporting (SES, 2004a). The ACDEH subsequently approved the well installation workplan with one technical revision: the minor relocation of one borehole (ACDEH, 2004).

OBJECTIVES AND SCOPE OF WORK

This current phase of the investigation was conducted to provide "permanent" groundwater monitoring points (wells) to allow for periodic monitoring of the contaminant plume, and to provide additional data on site hydrogeology and lithologic conditions.

2.0 WELL INSTALLATIONS

This section summarizes the installation, development, and surveying of three shallow groundwater monitoring wells conducted by SES at the subject property in February 2004. Figure 3 (in Section 5.0) shows the area of the former UFST as well as previous borehole locations. Appendix B contains the Alameda County Public Works Agency drilling permit and California Department of Water Resources (DWR) Well Completion Reports. Appendix C contains photodocumentation of the investigation field activities. Drilling, sampling, and well installation was conducted on February 18, 2004. Drilling was conducted by HEW Drilling (C-57 License No. 604987) under the direct supervision of a SES California Registered Geologist. Prior to drilling, Underground Service Alert (USA) was contacted with regard to potential underground utilities (none were encountered during drilling).

The primary objectives of the well installation program were to:

- Provide "permanent" groundwater monitoring points to evaluate the magnitude of groundwater contamination and to evaluate groundwater flow direction; and
- Provide additional information on site lithology and soil contaminant concentrations.

Three groundwater monitoring wells were installed:

- MW-1—through the center of the former diesel UFST (within 2 feet of previous BH-03).
- MW-2—on the eastern edge of the former diesel UFST (within several feet of previous BH-02) (this well had to be moved slightly to the east, relative to our workplan, because of overhead electrical power lines).
- MW-3—to the south-southeast of the former UFSTs, the direction indicated by previous results (previous BH-05) to have the greatest contamination away from the former source area.

The boreholes were drilled with truck-mounted, hollow-stem augers (8-inch-diameter). During drilling, continuous soil cores were collected (for geologic logging and screening for evidence of contamination) by advancing into undisturbed soil a 4-foot-long steel sampling barrel lined with acetate sampling sleeves. Borehole geologic logs are included in Appendix D. One soil sample was collected from each borehole for laboratory analysis, to supplement the previous UFST removal and

PSA soil samples. In MW-1, the soil sample was collected at 19.5 feet bgs (in the clay unit below the overlying water-bearing zone). In MW-2, the soil sample was collected at 14.5 feet bgs, just above the water-bearing gravel unit. In MW-3, the soil sample was collected at 4.5 feet bgs, just above first occurrence of groundwater (inferred to be a perched zone).

Soil samples were field-screened with a calibrated, portable photoionization detector (PID) for evidence of contamination, to assist in the selection of soil samples for laboratory analysis and to provide additional (qualitative) data on the extent of contamination. The PID readings are shown on the borehole geologic logs in Appendix D. No samples displayed evidence of contamination—either by PID, appearance, or odor. Soil samples selected for laboratory analysis were sealed within an approximately 6-inch length of the acetate sampling sleeve, capped with non-reactive plastic caps, labeled, chilled, and shipped to the analytical laboratory under chain-of-custody documentation.

Monitoring wells were constructed in accordance with California Environmental Protection Agency (Cal/EPA) guidelines for sampling dissolved petroleum products in groundwater. There is no anticipated use of the wells for groundwater extraction; therefore, the wells were constructed with 2-inch-diameter casing. Well construction included the following:

- 15 feet of 2-inch-diameter PVC factory-slotted well screen (0.010 inch slots) from the base of the well (5 to 20 feet bgs);
- Annular sand pack from total well depth to 2 feet above the top of the well screen, overlain by 2 feet of hydrated bentonite pellets, overlain by neat Portland cement grout slurry;
- 2-inch-diameter PVC blank casing from top of well screen to surface with locking well caps; and
- Surface completion with flush-mounted, Christy-type, traffic-rated well boxes with locking caps.

On February 20, 2004, the wells were developed by surging and pumping to set the annular sand pack and to reduce the potential for fine-grained native materials to infiltrate the sand pack. Approximately 100 gallons of well development purge water was generated and containerized onsite (see below). Appendix E contains the well development field records.

On February 24, 2003, the horizontal coordinates and vertical elevations of the well casing tops were surveyed by a licensed California land surveyor, in accordance with California "GeoTracker" requirements. The "Geo Survey" data for this surveying event were uploaded as an Electronic Data Deliverable (EDD) to the California GeoTracker on-line database. Appendix F contains the well surveyor's report.

Waste soil from the well installations was combined with the waste soil from the October 2003 PSA in two labeled, steel 55-gallon drums. Following all drilling, a composite sample ("Soil Comp.") from the drums was collected for laboratory analysis, for the purpose of profiling the soil for disposal. Appendix G contains the certified analytical laboratory report and chain-of-custody record for that sample. The analytical results demonstrated that the soil is non-hazardous, and amenable for disposal at a permitted Class III or II landfill. On behalf of the property owner, SES is currently coordinating the waste soil profiling (landfill acceptance request); the waste will be transported offsite for disposal in the near future. Documentation of the soil transport and landfill acceptance will be included in the Second Quarter 2004 groundwater monitoring report.

Wastewater from well development and equipment decontamination rinseate was containerized in labeled, steel 55-gallon drums. As a cost-savings measure, wastewater from future groundwater monitoring events will continue to be accumulated and stored at the site, and will be properly profiled and disposed of at a permitted non-hazardous liquids treatment facility at a later date.

3.0 FEBRUARY 2004 GROUNDWATER WELL SAMPLING

This section presents the groundwater monitoring and sampling methods for the baseline groundwater sampling event. Analytical results are discussed in a subsequent section. Activities included:

- Measuring static water levels with an electric water level indicator;
- Purging wells to obtain representative formation water (and collecting aquifer stability parameters between each purging); and
- Collecting post-purge groundwater samples for laboratory analysis.

Groundwater monitoring well water level measurements, purging, and sampling were conducted on February 20, 2004 by North State Environmental under the supervision of SES personnel. Sampling was conducted immediately following well development (discussed in previous Section 3.0). Table 1 shows the well construction and groundwater elevation data. Appendix F contains the groundwater monitoring field records for the sampling event.

Table 1
Groundwater Monitoring Well Construction and Groundwater Elevation Data
2526 Wood Street, Oakland, California

Well	Well Depth	Screened Interval	TOC Elevation	Groundwater Elevation (2/20/04)
MW-1	20	5 to 20	6.87	4.27
MW-2	20	5 to 20	6.29	4.04
MW-3	20	5 to 20	6.94	3.69

Notes:

TOC = Top of casing.
All wells are 2-inch-diameter.
All elevations are feet above mean sea level.

As the first task of the monitoring event, static water levels were measured using an electric water level indicator. Because the wells were sampled immediately following well development (which included purging ten casing volumes and measuring aquifer stability parameters between each

purged casing), additional purging was not conducted prior to sampling. No separate-phase petroleum product nor sheen were noted during well purging/sampling.

The "Geo Well" data for this event (water levels) were uploaded as an Electronic Data Deliverable (EDD) to the California GeoTracker on-line database.

4.0 REGULATORY CONSIDERATIONS

REGULATORY STATUS

The lead regulatory agency for petroleum contamination cases in the City of Oakland is ACDEH, which is a Local Oversight Program (LOP) for the State Water Resources Control Board [covering the Region 2 Regional Water Quality Control Board (RWQCB)]. As such, ACDEH directly oversees soil and groundwater investigations/remediation on UFST sites (with or without RWQCB guidance) until determining that case closure is appropriate, at which time ACDEH recommends case closure to the RWQCB. Alameda County Health Care Services has designated the case as Fuel Leak Case No. RO00040. The site is listed in the RWQCB's GeoTracker database of reported releases from petroleum USTs (RWQCB Case No. 01-2294). Based on the date of the database entry (1995), the case citation is likely for the removal of the diesel UFST rather than the gasoline UFST.

RESIDUAL CONTAMINATION REGULATORY CONSIDERATIONS

The most applicable published numerical criteria governing residual soil and groundwater contamination at this site are the RWQCB's Environmental Screening Levels (ESLs) (RWQCB, 2003). These are screening-level criteria used to evaluate if additional investigation and/or remediation is warranted. Criteria to be considered in using the ESLs include: contamination limited to surface soil (less than 10 feet deep) or to subsurface soil; fine-grained vs. coarse-grained soil; residential or commercial/industrial land use; and whether groundwater is or is not a known or potential drinking water source. For the detected site contaminants, the ESL values are the same for surface soil and subsurface soil.

The appropriate ESLs for this site are for coarse-grained soil (a conservative assumption, since grain-size analysis has not been conducted) and commercial/industrial land use (because the owner has no plans to redevelop the property with residential land use). Qualifying for the (usually higher) ESL values for sites where groundwater is not a current or potential drinking water source requires obtaining a site-specific variance from the RWQCB. The RWQCB completed an East Bay Beneficial Use Study (RWQCB, 1999) that covers the Richmond-to-Hayward East Bay Basin Area and, based on multiple technical criteria, divided the Basin into three zones:

- Zone A (significant drinking water resource);
- Zone B (groundwater unlikely to be used as drinking water source); and
- Zone C (shallow groundwater proposed for redesignation as Municipal Supply Beneficial Use). This classification indicates that groundwater could not reasonably be expected to serve a public water supply; however, it does not specifically address private water supply wells that might be used for drinking water. In accordance with State Water Resources Control Board Resolution 92-49, pollution sites within this zone must not pose a potential impact to human health or ecologic receptors, and the groundwater contamination plume must be stable or reducing.

The subject site falls within Zone C. The most conservative assumption for the site is that there is a potential for private drinking water wells to be impacted. However, the site location (with no residential downgradient land use) suggests that the less conservative ESLs of "a potential or current drinking water source is not threatened" may be appropriate when the site is considered for case closure. Until case closure is considered, this report (and future reports) will discuss residual soil and groundwater contamination in the context of the more conservative ESL criteria.

SITE CLOSURE CRITERIA

The ACDEH and RWQCB generally require that the following criteria be met before issuing regulatory closure of petroleum release cases:

1. The contaminant source has been removed (i.e., the UFSTs and obviously-contaminated backfill material). This criterion has been met, and the available soil analytical results indicate that the residual MTBE soil contamination in the immediate vicinity of the former UFSTs will not be an appreciable long-term source of groundwater contamination.
2. The groundwater contaminant plume is stable or reducing (i.e., groundwater contamination is not increasing in concentration or lateral extent). This criterion has not yet been met, and will be evaluated based on the proposed quarterly groundwater sampling program.
3. If residual contamination (soil or groundwater) exists, there is no reasonable risk to sensitive receptors (i.e., contaminant discharge to surface water or water supply wells) or to site occupants. This criterion is generally met by conducting a sensitive receptor survey and/or a Risk-Based Corrective Action (RBCA) assessment that models the fate and transport of residual contamination in the context of potential impacts to sensitive receptors. This task is generally conducted after the previous two criteria have been met. Based on the apparent absence of benzene (the probable "risk driver" compound for this site) at elevated concentrations and the likely absence of sensitive receptors, if one eliminates private wells as potential receptors, the site would likely pass the RBCA assessment.

5.0 ANALYTICAL RESULTS AND FINDINGS DISCUSSION

This section discusses the findings of the baseline data associated with this well installation program, including a discussion of the site lithology and hydrogeology and the distribution of hydrocarbon contamination in the soil and groundwater based on the analytical results.

LITHOLOGY AND HYDROGEOLOGY

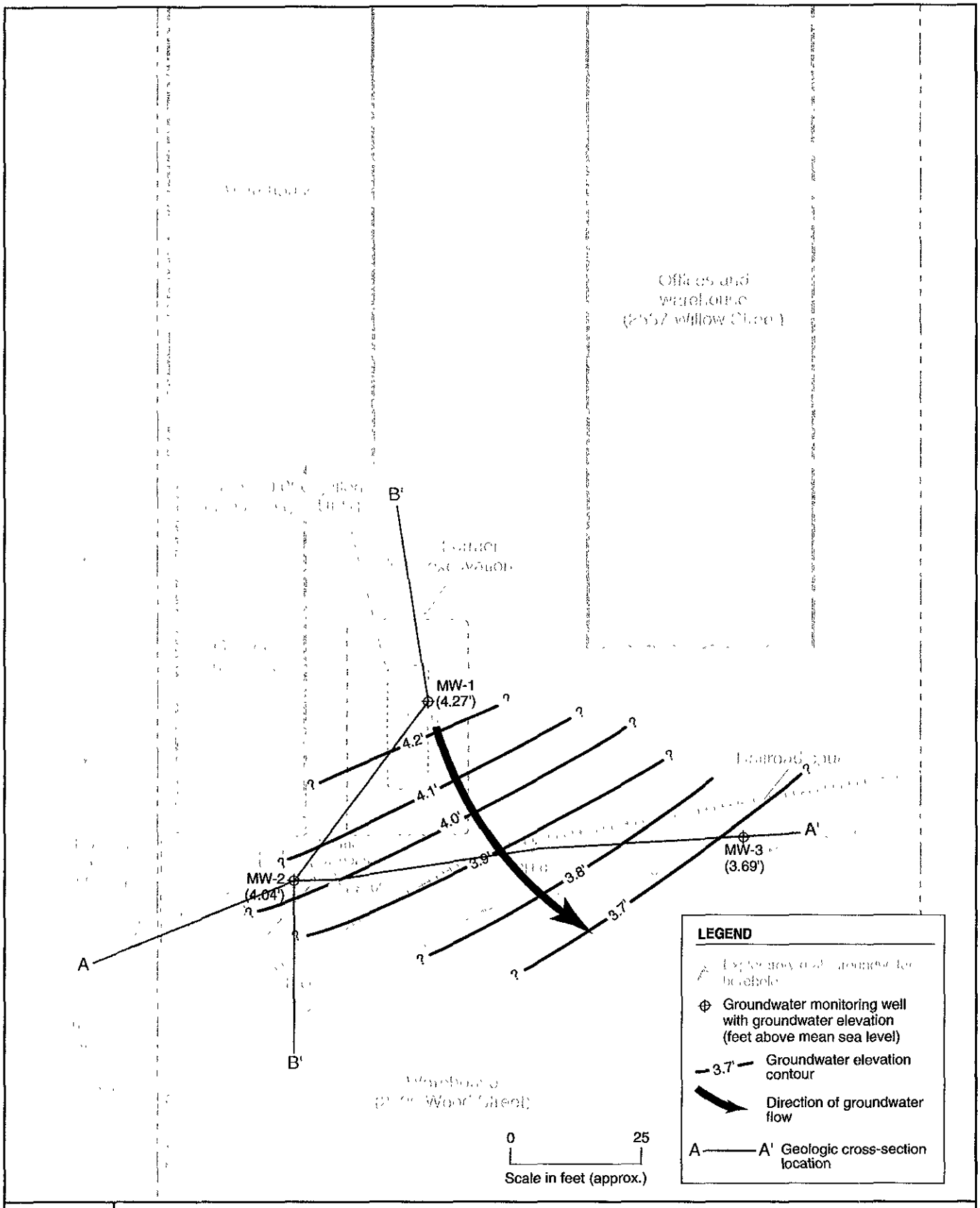
Including the three well installation boreholes advanced in the current investigation, a total of 11 exploratory boreholes at the subject property have been geologically logged by a California Registered Geologist using the visual method of the Unified Soils Classification System. Three of the boreholes were advanced through the former UFST excavations, and the remainder were advanced through native soil. Borehole logs for the current investigation are included in Appendix D. Figure 4 shows two geologic cross-sections for the site, one along the longitudinal axis of the plume (approximately east-west) and one perpendicular to the plume axis (approximately north-south). Cross-section locations are shown on Figure 3.

The majority of site boreholes have been advanced to 20 feet below ground surface (bgs). That interval includes the upper water-bearing zone and the underlying low-permeability non-water-bearing zone (aquitard).

Lithology

In general, native soil consists primarily of clay (often silty), with interbedded sandy and gravelly zones. The upper 2 to 3 feet is dry, gravelly, sandy fill material. In the majority of the boreholes, this is underlain by a sand (often silty and clayey) varying in thickness from 1 to 6 feet, in which water was encountered (see below). This is underlain by a clay unit, occasionally with interbedded sand stringers. In some of the boreholes, this clay unit extends to total depth. In other boreholes, this clay unit is underlain by a sand unit, which in turn is underlain by a low-permeability clay (often gravelly).

The shallow site lithology is typical of alluvial fan and stream depositional environments in this area, with lower-permeability (clay and silt) overbank deposits, and higher-permeability (sand and gravel) channel deposits, with significant lateral and depth variation over short distances.



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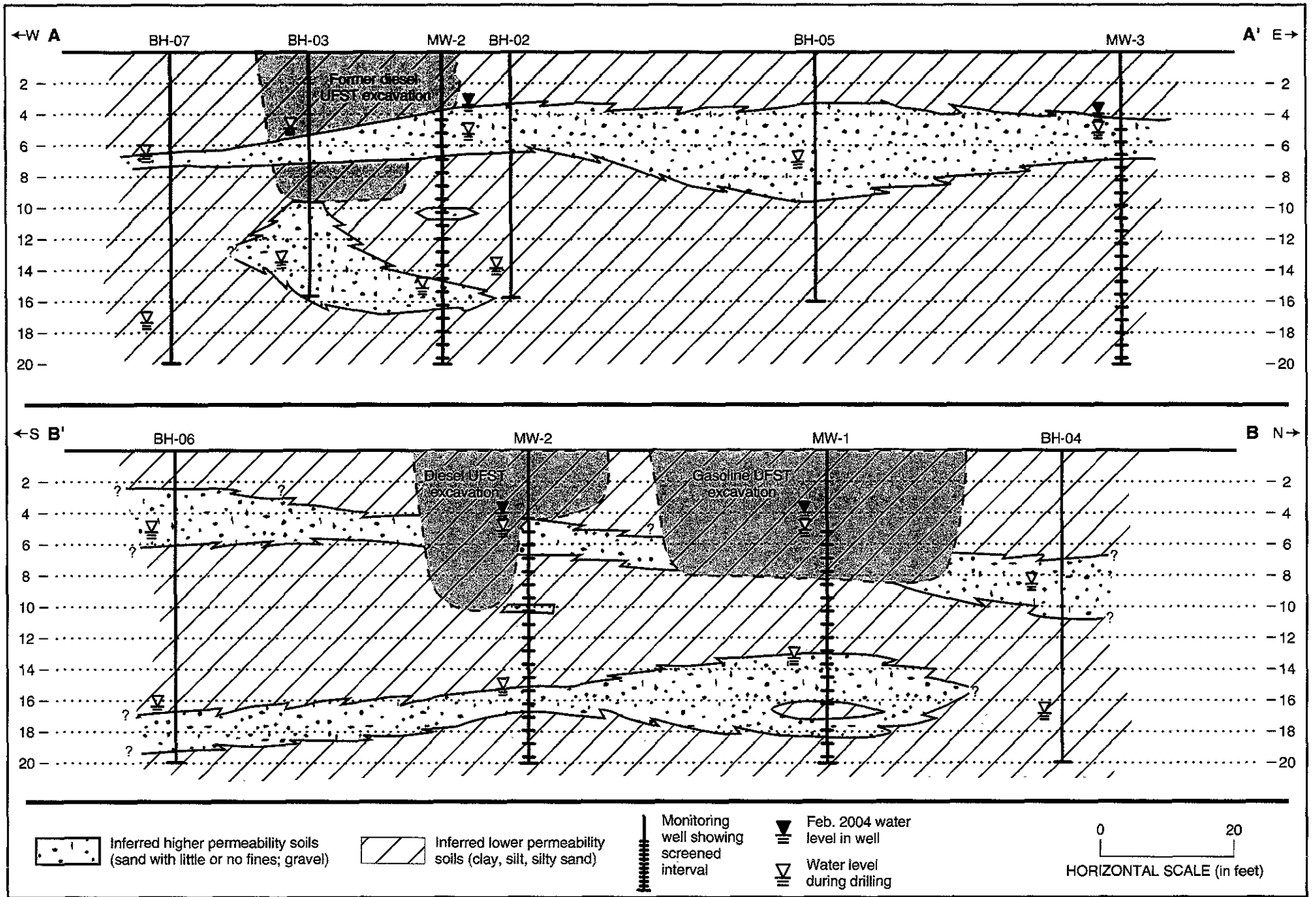
GROUNDWATER ELEVATION MAP — FEBRUARY 20, 2004

2526 Wood Street Oakland, CA	By: MJC	MARCH 2004	★ Stellar Environmental Solutions, Inc. Geoscience & Engineering Consulting
	Figure 3		

2003-41-25



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Geoscience & Engineering Consulting

GEOLOGIC CROSS SECTIONS A–A' AND B–B'

2526 Wood Street, Oakland, CA

Figure 4

by: MJC | MARCH 2004

2003-41-28

Boreholes BH-01, BH-03, MW-1, and MW-2 were advanced through the former UFST excavations. These boreholes encountered fill material (mixture of clay, sand, and gravel) to depths between 8 and 10 feet bgs, underlain by native soil. The MW-2 borehole was advanced on the edge of the UFST excavation (where the dispensers were located), and encountered fill material to approximately 5 feet, then native soil. This suggests that the base of the excavation beneath the dispensers was at 5 feet, and deepened beneath the UFSTs.

Groundwater Hydrology

Two shallow water-bearing zones were encountered in native soils in the majority of site boreholes. The top of the upper zone (possibly a perched water zone) was encountered at depths between approximately 4 and 8 feet bgs, in a sandy zone. Water was then encountered again at depths between approximately 13.5 and 17.5 feet bgs. In some of the boreholes, this deeper water was encountered at the top of the sand zone (when present); in other boreholes, it was within the lower clay unit.

Depth to groundwater (equilibrated in wells) in the February 2004 monitoring event ranged from approximately 2.3 to 3.3 feet below grade. These equilibrated water levels in the wells were approximately 1 to 2 feet above first occurrence of saturated cuttings in boreholes, indicating that groundwater at the site occurs under confining or semi-confining conditions. The direction of local groundwater flow in this event was to the east-southeast, with a relatively flat hydraulic gradient (0.009 feet/foot) (see Figure 3).

ANALYTICAL RESULTS AND EXTENT AND MAGNITUDE OF RESIDUAL CONTAMINATION

All soil and groundwater samples in the well installation and initial groundwater sampling activities were analyzed for:

- Total volatile hydrocarbons – gasoline range (TVHg), by modified EPA Method 8015;
- Total extractable hydrocarbons – diesel range (TEHd), by modified EPA Method 8015;
- BTEX, by EPA Method 8020F; and
- MTBE, fuel oxygenates (TAME, ETBE, DIPE, and TBA), and lead scavengers (EDB and EDC), by EPA Method 8260.

All current investigation soil and groundwater samples were analyzed by North State Environmental (South San Francisco, California), which maintains current ELAP certifications for all of the analytical methods utilized in this investigation. Appendix G contains the certified analytical

laboratory reports and chain-of-custody records for the February 2004 borehole soil and well monitoring groundwater samples.

Residual Soil Contamination

Tables A-1 and A-3 (Appendix A) summarize the historical (UFST removal and PSA) soil sampling analytical results. Table 2 summarizes the soil sample analytical results from the February 2004 well installation boreholes. The only analyte detected in the monitoring well installation soil samples was MTBE (at approximately 0.1 mg/kg and 0.2 mg/kg), in the boreholes adjacent to or within the former UFSTs excavations.

As shown on the borehole geologic logs (Appendix D), soil samples were field-screened with a PID for evidence of contamination, to aid in the selection of soil samples for offsite laboratory analysis. None of the PID readings were indicative of soil contamination.

Soil contaminants detected in residual soils (including both the UFST excavations and the October 2003 and February 2004 borehole programs) include diesel, MTBE, and TBA. Gasoline, ethylbenzene, and total xylenes were detected in initial soil samples from the 1995 diesel UFST excavation, but those sampling locations were subsequently over-excavated, and confirmation samples did not contain detectable concentrations.

The only residual soil contaminant detected in excess of current ESL criteria is MTBE, detected in the MW-2 borehole (immediately adjacent to the former diesel UFST), and in the 2002 gasoline UFST excavation and immediately-adjacent boreholes BH-02, BH-05, and MW-1.

These data indicate that residual soils do not contain an appreciable mass of fuel contamination.

Residual Groundwater Contamination

Tables A-2 and A-4 (Appendix A) summarize the historical (UFST removal and PSA) "grab groundwater" sampling analytical results. Table 3 summarizes the groundwater sample analytical results from the February 2004 well sampling event. Figure 5 shows groundwater analytical results.

All three well samples contained gasoline, ranging from 58 µg/L (MW-3) to 172 µg/L (MW-1). Benzene was detected in only one well (1.2 mg/L in MW-1). Toluene was also detected in only one well (0.6 mg/L in MW-3). The only fuel oxygenates detected were TAME and TBA (at 3 µg/L and 19 µg/L, respectively), in well MW-1. Contaminants analyzed for and not detected in any well included: ethylbenzene, xylenes, lead scavengers (EDB and EDC), and diesel.

The maximum detected gasoline concentration in wells was one order of magnitude lower than concentrations detected during the October 2003 borehole program. The maximum MTBE

Table 2
February 2004 Borehole Soil Analytical Results
2526 Wood Street, Oakland, California [a]

Sample I.D.	Sample Depth (feet)	TEHd	TVHg	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	Fuel Oxygenates and Lead Scavengers [b]
MW-1-19.5'	19.5	*<1*	*<0.5*	*<0.005*	*<0.005*	*<0.005*	*<0.010*	**0.190**	*ND*
MW-2-4.5'	4.5	*<1*	*<0.5*	*<0.005*	*<0.005*	*<0.005*	*<0.010*	**0.108**	*ND*
MW-3-14.5'	14.5	*<1*	*<0.5*	*<0.005*	*<0.005*	*<0.005*	*<0.010*	*<0.005*	*ND*
	Soil ESLs	100	100	0.044	2.9	3.3	1.5	0.023	Not applicable
Soil Composition (drum profile)		*<1*	*<0.5*	*<0.005*	*<0.005*	*<0.005*	**0.011**	**0.039**	*ND*

Notes:

[a] All concentrations in mg/kg.
[b] Full list of fuel oxygenates and lead scavengers is included in Appendix G.

TEHd = Total extractable hydrocarbons- diesel range
TVHg = Total volatile hydrocarbons- gasoline range.
MTBE = Methyl tertiarybutyl ether.

ESLs = Regional Water Quality Control Board, San Francisco Bay Region Environmental Screening Levels (RWQCB, 2003).

ND = Not detected above method reporting limits.

Table 3
February 2004 Groundwater Analytical Results
2526 Wood Street, Oakland [a]

Sample I.D.	TEHd	TVHg	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE [b]	Fuel Oxygenates and Lead Scavengers [b]
MW-1	*<50*	**172**	**1.2**	*<0.5*	*<0.5*	*<1.00*	**578**	**TAME = 3 | TBA = 19**
MW-2	*<50*	**72**	*<0.5*	*<0.5*	*<0.5*	*<1.00*	**16.4**	*ND*
MW-3	*<50*	**58**	*<0.5*	**0.6**	*<0.5*	*<1.00*	*<0.5*	*ND*
Groundwater ESLs	100	100	1.0	40	30	13	5.0	TAME = NLP | TBA = 12

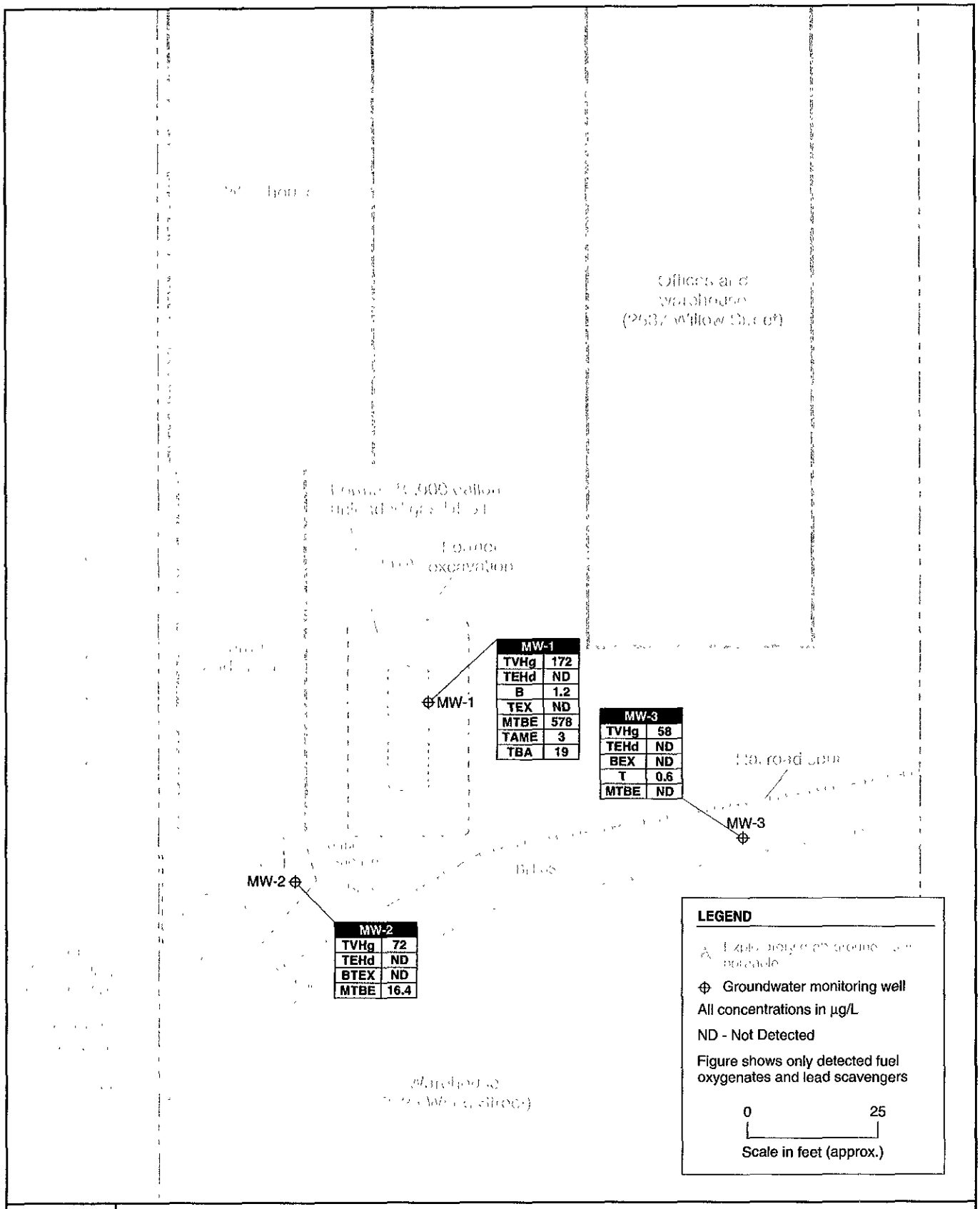
Notes:

[a] All concentrations are in mg/L.
[b] Table reports only detected fuel oxygenates and lead scavengers. Full list of analytes is included in Appendix G.

TEHd = Total extractable hydroarbons – diesel range.
TVHg = Total volatile hydrocarbons- gasoline range.
MTBE = Methyl tertiarybutyl ether.
TAME = Tertiary-amyl methyl ether.
TBA = Tertiary-butyl alcohol.

ESLs = Regional Water Quality Control Board, San Francisco Bay Region Environmental Screening Levels (RWQCB, 2003).

ND = Not detected above method reporting limits.
NLP = No level published.



FEBRUARY 2004 GROUNDWATER ANALYTICAL RESULTS

2526 Wood Street Oakland, CA	By: MJC	MARCH 2004	★ Stellar Environmental Solutions, Inc. Geoscience & Engineering Consulting
	Figure 5		

2003-41-24

concentration in the February 2004 well samples was approximately half the maximum detected in the October 2003 boreholes. This could be explained by the common observation that borehole "grab groundwater" samples commonly exhibit greater concentrations than samples collected from constructed monitoring wells (because the "grab groundwater" samples can be turbid and contain appreciable contamination that is adsorbed onto suspended solids).

Groundwater contaminants detected in the February 2004 groundwater samples in excess of ESL criteria include gasoline, benzene, MTBE, and TBA. The data indicate that groundwater contamination above ESL criteria likely does not extend offsite.

NATURE AND EXTENT OF GROUNDWATER CONTAMINATION

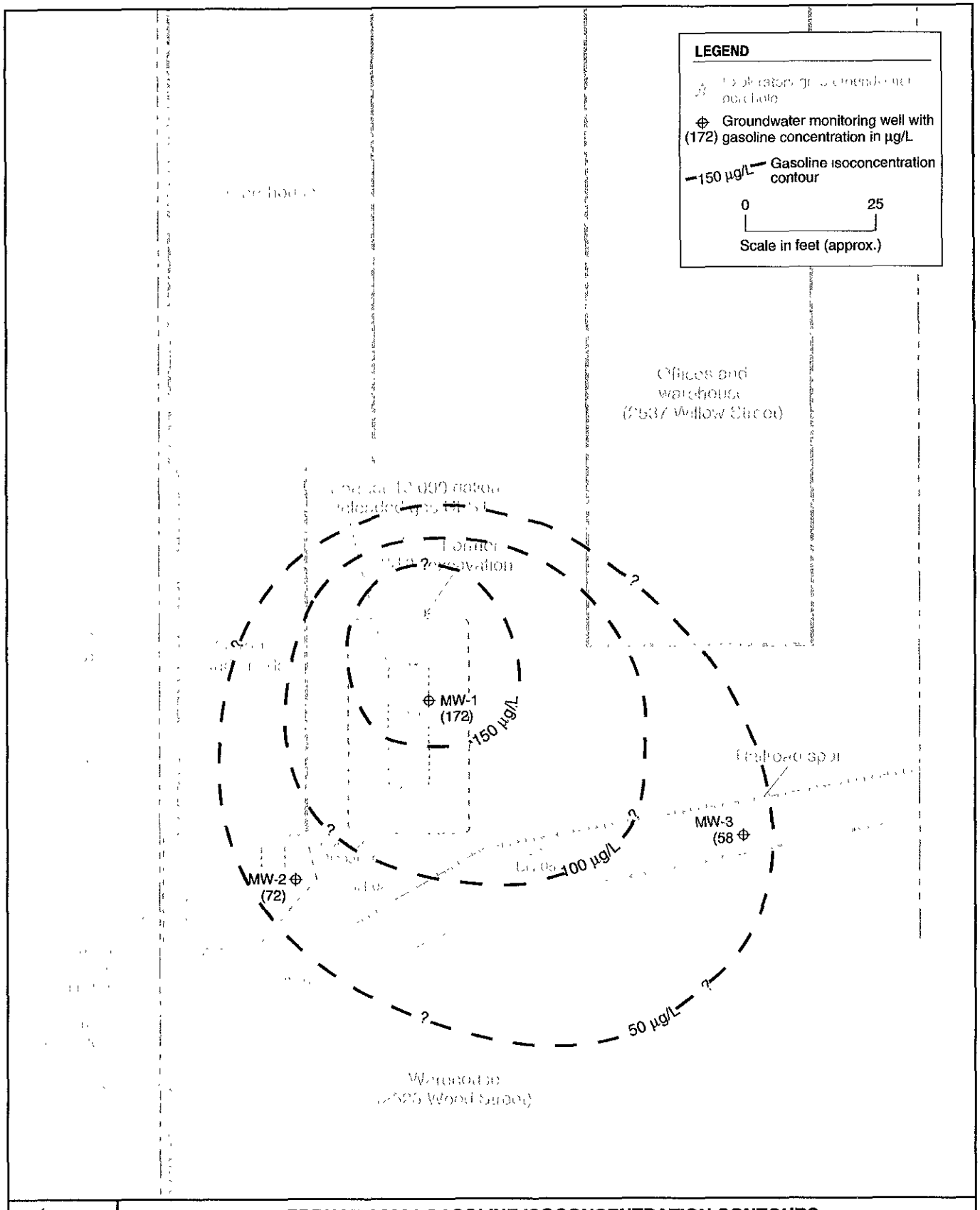
Plume Geometry

The well and borehole data indicate that the center of mass of groundwater contamination is within or immediately adjacent to the former gasoline UFST. Figures 6 and 7 are isconcentration maps for gasoline and MTBE, respectively, the two primary site contaminants of concern. The distribution pattern shows a residual plume of gasoline-based fuel and MTBE. The gasoline plume is estimated to be approximately 120 feet long and 90 feet wide, using 50 µg/L as the outside isoconcentrations contour. The MTBE plume shows a slightly smaller projected footprint of approximately 90 feet long by 75 feet wide, using 5 µg/L as the outside isoconcentrations contour. Both the groundwater flow and contaminant plume flow direction are to the south. Given the plume concentration decrease downgradient of MW-1, it appears to be wholly contained on the subject property and is not projected to migrate beneath Wood Street to the south.

Natural Attenuation

Numerous field and laboratory studies have concluded that the subsurface behavior of petroleum hydrocarbons is significantly impacted by their high capacity to undergo relatively rapid biodegradation (McDonald and Kavanaugh, 1994; McAllister and Chiang, 1994; Wilson et. al., 1994; Lawrence Livermore National Laboratory, 1995).

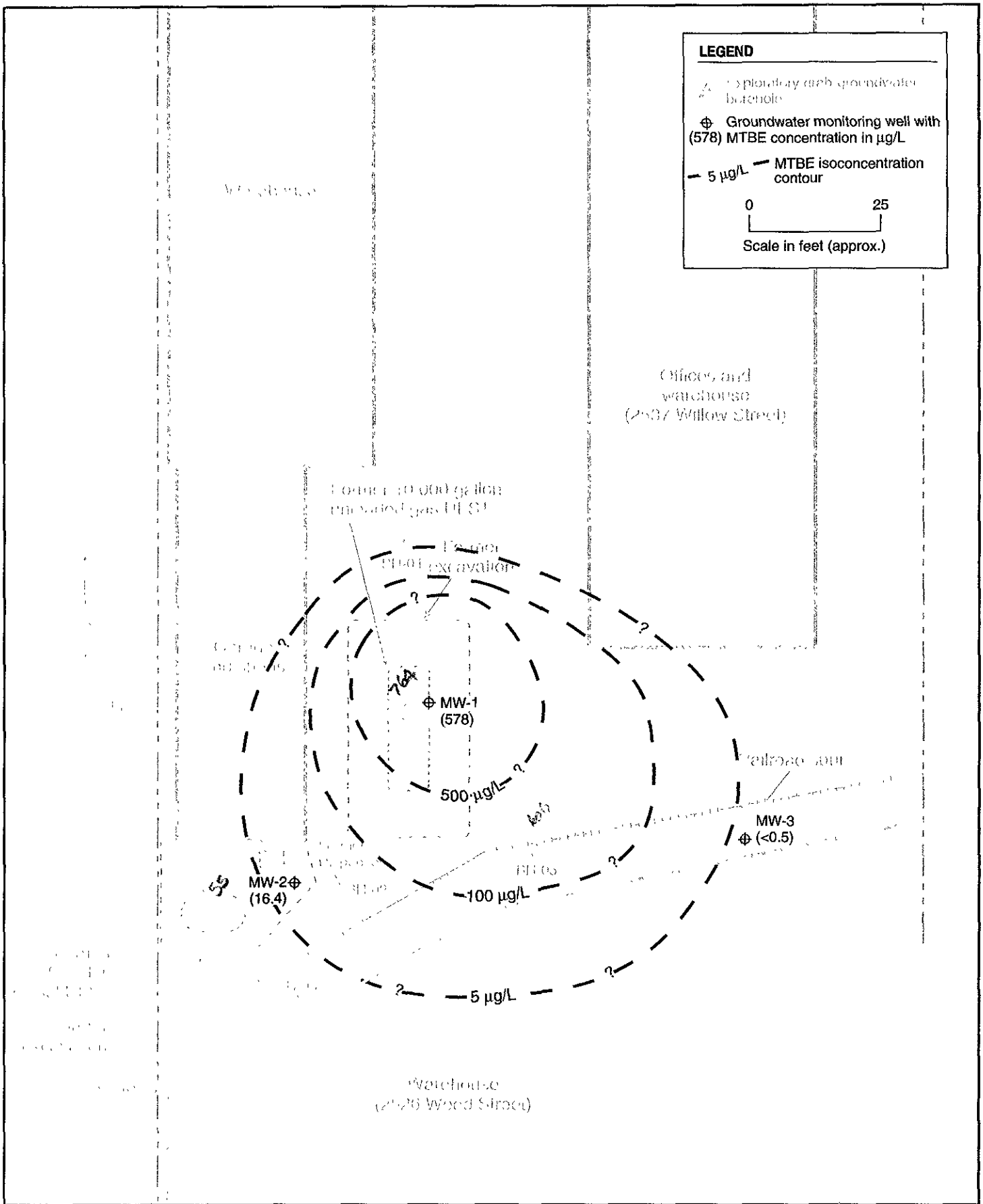
Petroleum hydrocarbons require molecular oxygen for breakdown of the ring structure of specific constituents. Accordingly, although biodegradation of hydrocarbons can occur under anaerobic conditions, hydrocarbon biodegradation is greatest under aerobic conditions. As a result of the demonstrated degradability of petroleum hydrocarbons, Remediation by Natural Attenuation (RNA) has been a viable option for addressing many hydrocarbon plumes, replacing the need for active remediation, when source area remediation has been effective in removing a significant amount of the original mass of contamination released into the environment. Specifically, biodegradation of



FEBRUARY 2004 GASOLINE ISOCONCENTRATION CONTOURS

2526 Wood Street Oakland, CA	By: MJC	MARCH 2004	★ Stellar Environmental Solutions, Inc. Geoscience & Engineering Consulting
	Figure 6		

2003-41-26



FEBRUARY 2004 MTBE ISOCONCENTRATION CONTOURS			
2526 Wood Street Oakland, CA	By: MJC	MARCH 2004	★ Stellar Environmental Solutions, Inc. Geoscience & Engineering Consulting
	Figure 7		

2003-41-27

petroleum hydrocarbons in groundwater has a significant role in creating a stable plume, minimizing groundwater plume configuration and concentrations over time. The 1995 Lawrence Livermore National Laboratory study, which collected data on the lengths of hundreds of hydrocarbon plumes, found significant attenuation of concentration die-out within approximately 300 feet of the source. Hydrocarbon biodegradation and presence of a stable plume have subsequently become the basis for application of risk-based methodologies in support of site closure (RWQCB, 1996).

As Figures 6 and 7 show, the gasoline and MTBE plume, the main residual constituents, appear to attenuate within approximately 100 feet of well MW-1.

Plume Stability

One groundwater monitoring event has been completed in three site wells. Future monitoring will determine the stability of the plume.

Potential for Surface Water Contamination

There are no nearby surface water bodies that could be impacted by the plume associated with this site.

Groundwater Impacts and Beneficial Uses

In general, as discussed in Section 4, impacts of groundwater contamination by petroleum products are evaluated on a case-by-case basis by the regulators, in consideration of all applicable ARARs, local geography, location of sensitive receptors, etc. The subject site falls within Zone C, where the most conservative assumption for the site is the potential for private drinking water wells to be impacted. However, the site location (with no residential downgradient land use) suggests that the less conservative ESLs of "a potential or current drinking water source is not threatened" may be appropriate when the site is considered for case closure, and the baseline data suggest that the residual plume is remaining within the site boundaries.

6.0 SUMMARY, CONCLUSIONS, OPINION, AND RECOMMENDATIONS

SUMMARY AND CONCLUSIONS

The available data support the following findings and conclusions:

- Two UFSTs containing gasoline and diesel were removed from the site in 2002 and 1995, respectively. Excavation confirmation soil samples indicated that MTBE was the sole contaminant of concern in soil, although pit water samples contained elevated levels of diesel, gasoline, and MTBE. A UFST closure documentation report discussing both UFST removals was submitted to the appropriate regulatory agencies in 2003.
- A Preliminary Site Assessment (exploratory borehole drilling and sampling program) was conducted in October 2003; activities included advancing and sampling eight exploratory boreholes to a maximum depth of 25 feet below grade.
- Three site shallow groundwater monitoring wells were installed, developed, and surveyed in February 2004.
- Site lithology ranges from low-permeability silts and clays to higher-permeability (and water-bearing) sands and gravels. There are two shallow water bearing zones: the top of the upper zone (potentially a seasonally-perched zone) is encountered at depths between 4 and 8 feet; the top of the second zone is encountered at depths between approximately 13.5 and 17.5 feet bgs. The lower water-bearing zone is underlain by a low-permeability, non-water-bearing zone. The direction of groundwater flow at the site, measured in February 2004, was to the south-southeast, with a relatively flat hydraulic gradient.
- The only soil contaminant detected above ESL criteria in residual soils (including UFST removal, borehole, and well installation phases) is MTBE, at locations within 15 feet of the former UFST excavations.
- Groundwater contaminants detected above ESL criteria in the UFST removal and October 2003 borehole samples included gasoline, diesel, benzene, toluene, xylenes, and MTBE. Groundwater contaminants detected above ESL criteria in the February 2004 well sampling event included gasoline, benzene, MTBE, and TBA. The maximum gasoline and MTBE concentrations in the well samples were appreciably lower than the previous borehole

samples, likely due to the filtering effect of the wells' annual pack material. Groundwater contamination above ESL criteria appears to be constrained onsite.

- The distribution of groundwater contamination is consistent with the measured groundwater flow direction (to the south). The current monitoring wells are adequate to define groundwater flow direction and to evaluate site-sourced hydrochemistry.
- The geometry of the gasoline and MTBE plume, the main residual constituents, appear to attenuate within approximately 100 feet of well MW-1, located in the main source area.
- Based on the baseline monitoring event, the residual gasoline and MTBE plume contained within the site boundaries is likely to fully attenuate before reaching Wood Street along the downgradient property boundary.
- The baseline groundwater monitoring event has been completed in the three site wells. Future monitoring will determine the stability of the plume.
- The available data indicate that neither diesel, lead, nor lead scavengers are likely to be site contaminants of concern.
- The property owner is pursuing reimbursement from the State of California Underground Storage Tank Cleanup Fund (Fund) for regulatory agency-directed corrective action and investigation costs. The initial Claim Application was submitted to the Fund in February 2004.
- All required electronic uploads for previous work have been made to the California GeoTracker on-line database system.

PROPOSED ACTIONS

- The property owner proposes to continue the quarterly groundwater monitoring well monitoring and sampling program, in accordance with the technical workplan approved by ACDEH. This will include electronic uploads of water level and groundwater contamination data for future monitoring events to the California GeoTracker system.
- Based on the absence of the lead scavengers EDB and EDC, the property owner proposes no longer testing for these contaminants in future groundwater monitoring events.
- The property owner will continue to pursue reimbursement of eligible incurred corrective action costs from the California UST Cleanup Fund.

7.0 REFERENCES

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SES, 2003b. Workplan for Preliminary Site Assessment – Russ Elliott, Inc. Facility, 2526 Wood Street, Oakland, California. August 20.

SES, 2003c. Preliminary Site Assessment Report – Russ Elliott, Inc. Facility, 2526 Wood Street, Oakland, California. November 19.

Wilson, J.T., F.M. Pfeffer, J.W., Weaver, D.H. Kampbell, R.S. Kerr, T.H. Wiedemeir, J.E. Hansen, and R.N. Miller, 1994. Intrinsic Bioremediation of JP-4 Jet Fuel, Proc. Symposium on Intrinsic Bioremediation of Groundwater, Denver Colorado. August 30-September 1.

8.0 LIMITATIONS

This report has been prepared for the exclusive use of Mr. Jeannette Elliott, Elliot Family Trust, their authorized representatives, and the regulatory agencies. 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 on a review of previous investigators' findings at the site, as well as site investigations conducted by SES since 2003. This report has been prepared in accordance with generally accepted methodologies and standards of practice. The SES personnel who performed this limited remedial investigation 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.

The findings of this report are valid as of the present. Site conditions may change with the passage of time, natural processes, or human intervention, which can invalidate the findings and conclusions presented in this report. As such, this report should be considered a reflection of the current site conditions as based on the activities completed.

Table A-1
1995-1996 Diesel UFST Removal Sampling Analytical Results
2526 Wood Street, Oakland, California

Sample I.D.	Sample Depth (feet)	TEHd	TVHg	Benzene	Toluene	Ethyl benzene	Total Xylenes	MTBE	Total Lead
July 1995 Excavation Confirmation Samples (concentrations in mg/kg) (sample locations subsequently overexcavated)									
S-1 (south sidewall)	3	**310**	**1,900**	*2.6*	*<1.4*	**26**	**100**	NA	NA
S-2 (north sidewall)	4	*< 1*	*< 0.5*	*<0 005*	*<0.005*	*<0.005*	**0.0054**	NA	NA
June 1996 Excavation Confirmation Soil Samples (concentrations in mg/kg)									
VS-1	3	*<1*	*<1*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.05*	NA
VS-2	4	*<1*	*<1*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.05*	NA
VS-3	5	*<1*	*<1*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.05*	NA
VS-4	4	*<1*	*<1*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.05*	NA
VS-5	4	*<1*	*<1*	*<0.005*	*<0.005*	*<0 005*	*<0.005*	*<0.05*	NA
	Soil ESLs	100 / 500	100 / 400	0.044 / 0.38	2.9 / 9.3	3.3 / 4.7	1.5 / 1.5	0.023 / 5.6	750 / 750
July 1995 Stockpiled Soil Sample (concentrations in mg/lg)									
SP1 (A-D) [a]	—	**340**	**960**	*<0.005*	*<0.005*	*<0.005*	*<0.015*	NA	NA
June 1996 Stockpiled Soil Sample (concentrations in mg/kg)									
STK (A-D)	—	*< 25*	**340**	**0.80**	**1.2**	**0.71**	*<0.005*	*<0.05*	NA
October 1995 Pit Water Sample (concentration in µg/L)									
W-1	4.5	*<50*	*<50*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	NA	NA
	Groundwater ESLs	100 / 640	100 / 500	1.0 / 46	40 / 130	30 / 290	13 / 13	5.0 / 18,000	2.5 / 2.5

Notes:

[a] 4-point composite sample

TEHd = total extractable hydrocarbons- diesel range; TVHg = total volatile hydrocarbons gasoline range; NA = sample not analyzed for this constituent

ESLs = Regional Water Quality Control Board, San Francisco Bay Region "Environmental Screening Levels" for commercial/industrial sites. First value is for sites where groundwater is a potential or current drinking water source. Second value is for sites where groundwater is not a potential or current drinking water source.

Table A-2
April 2002 Gasoline UFST Removal Sampling Analytical Results
2526 Wood Street, Oakland, California

Sample I.D.	Sample Depth (feet)	TEHd	TVHg	Benzene	Toluene	Ethyl benzene	Total Xylenes	MTBE	Total Lead
Excavation Confirmation Soil Samples (concentrations in mg/kg)									
S-1 (west sidewall)	7'	*NA*	*<1.0*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	**0.24**	**8.5**
S-2 (east sidewall)	7'	*NA*	*<1.0*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.05*	*<3.0*
B-1 (UFST base)	10'	*NA*	*<1.0*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	**0.078**	**3.1**
D-1 (below dispenser)	3.5'	*NA*	*<1.0*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.05*	**11**
	Soil ESLs	100 / 500	100 / 400	0.044 / 0.38	2.9 / 9.3	3.3 / 4.7	1.5 / 1.5	0.023 / 5.6	750 / 750
Stockpiled Soil Sample (concentrations in mg/kg)									
STK 1A-1D	—	NA	< 1.0	*<0.005*	*<0.005*	*<0.005*	*<0.005*	**0.15**	**9.9**
Pit Water Sample (concentration in µg/L)									
W-1	7'	NA	**790**	**48**	**120**	**14**	**88**	**810**	*ND* [a]
	Groundwater ESLs	100 / 640	100 / 500	1.0 / 46	40 / 130	30 / 290	13 / 13	5.0 / 18,000	2.5 / 2.5

Notes:

[a] Not Detected– method reporting limit not specified in lab report.

TEHd = total extractable hydrocarbons- diesel range; TVHg = total volatile hydrocarbons gasoline range; NA = sample not analyzed for this constituent.

ESLs = Regional Water Quality Control Board, San Francisco Bay Region "Environmental Screening Levels" for commercial/industrial sites. First value is for sites where groundwater is a potential or current drinking water source. Second values for sites where groundwater is not a potential or current drinking water source.

Table A-3
October 2003 Borehole Soil Analytical Results
2526 Wood Street, Oakland, California

Sample I.D.	Sample Depth (feet)	TEHd	TVHg	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE [a]	Fuel Oxygenates [b]
BH-01-4'	4	*< 10.0*	*< 3.0*	*< 0.005*	*< 0.005*	*< 0.005*	*< 0.015*	*< 0.035* / **0.0017**	*ND*
BH-02-6.5'	6.5	*< 1.0*	*< 3.0*	*< 0.005*	*< 0.005*	*< 0.005*	*< 0.015*	**0.095 / 0.135**	**TBA = 0.061**
BH-02-16'	16	*< 1.0*	*< 3.0*	*< 0.005*	*< 0.005*	*< 0.005*	*< 0.015*	*<0.035 / < 0.005*	*ND*
BH-03-4.5'	4.5	*< 1.0*	*< 3.0*	*< 0.005*	*< 0.005*	*< 0.005*	*< 0.015*	*<0 035 / < 0.005*	*ND*
BH-03-15'	15	*< 1.0*	*< 3.0*	*< 0.005*	*< 0.005*	*< 0.005*	*< 0.015*	*<0.035 / < 0.005*	*ND*
BH-04-7'	7	*< 1.0*	*< 3.0*	*< 0.005*	*< 0.005*	*< 0.005*	*< 0.015*	*<0.035*	*NA*
BH-04-18'	18	**2.0**	*< 3.0*	*< 0.005*	*< 0.005*	*< 0.005*	*< 0.015*	*<0.035*	*NA*
BH-05-6'	6	**2.0**	*< 3.0*	*< 0.005*	*< 0.005*	*< 0.005*	*< 0.015*	**0.094 / 0.026**	*NA*
BH-05-15.5'	15.5	*< 1.0*	*< 3.0*	*< 0.005*	*< 0.005*	*< 0.005*	*< 0.015*	**0.046 / 0.0025**	*NA*
BH-06-8.5'	8.5	**1.3**	*< 3.0*	*< 0.005*	*< 0.005*	*< 0.005*	*< 0 015*	*<0.035*	*NA*
BH-06-15.5'	15.5	*< 1.0*	*< 3.0*	*< 0.005*	*< 0.005*	*< 0.005*	*< 0.015*	*<0.035*	*NA*
BH-06-19.5'	19.5	*< 1.0*	*< 3.0*	*< 0.005*	*< 0.005*	*< 0 005*	*< 0.015*	*<0.035*	*NA*
BH-07-6'	6	**2.2**	*< 3.0*	*< 0.005*	*< 0.005*	*< 0.005*	*< 0.015*	*<0.035*	*NA*
BH-07-15.5'	15.5	*< 1.0*	*< 3.0*	*< 0.005*	*< 0.005*	*< 0.005*	*< 0 015*	*<0 035*	*NA*
BH-08-10'	10	*< 1.0*	*< 3.0*	*< 0.005*	*< 0.005*	*< 0.005*	*< 0.015*	*<0.035*	*NA*
BH-08-19.5'	19.5	**2.0**	*< 3.0*	*< 0.005*	*< 0.005*	*< 0.005*	*< 0.015*	*<0.035*	*NA*
	Soil ESLs	100 / 500	100 / 400	0.044 / 0.38	2.9 / 9.3	3.3 / 13	1.5 / 1.5	0.023 / 5.6	TBA = 0.073 / 110

Notes:

[a] First value is quantification by EPA Method 8021b; second value is confirmation quantification by EPA Method 8260B.
[b] Table reports only detected fuel oxygenates Full list of analytes is included in Appendix D

TEHd = total extractable hydrocarbons- diesel range; TVHg = total volatile hydrocarbons gasoline range, TBA = tertiary butyl alcohol;
ND = not selected above method reporting limits; NA = not analyzed for these constituents.

All concentrations are in mg/kg.

Table A-4
October 2003 Borehole Groundwater Analytical Results
2526 Wood Street, Oakland

Sample I.D.	TEHd	TVHg	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE [a]	Fuel Oxygenates [b]
BH-01-GW	**120**	**2,960**	*< 0.30*	*< 0.30*	*< 0.30*	*< 0.60*	**1,020 / 764**	**TAME = 4.7** **TBA = 93**
BH-02-GW	**160**	**107**	*< 0.30*	*< 0.30*	*< 0.30*	*< 0.60*	**103 / 84**	*ND*
BH-03-GW	**470**	**437**	**1.0**	**1.9**	**16**	**4.1**	**69 / 55**	**TBA = 10**
BH-04-GW	*< 100*	*< 50*	*<0.30*	*< 0.30*	*< 0.30*	*< 0.60*	**5.0 / 1.1**	*NA*
BH-05-GW	*< 100*	**1,370**	*<0.30*	*< 0.30*	*< 0.30*	*< 0.60*	**737 / 606**	*NA*
BH-06-GW	*< 100*	**92**	*<0.30*	*< 0.30*	*< 0.30*	*< 0.60*	**70 / 59**	*NA*
BH-07-GW	*< 100*	**52**	*<0.30*	*< 0.30*	*< 0.30*	*< 0.60*	**12 / 8.0**	*NA*
BH-08-GW	*< 100*	*< 50*	*<0.30*	*< 0.30*	*< 0.30*	*< 0.60*	*< 5.0*	*NA*
Groundwater ESLs	100 / 640	100 / 500	1.0 / 46	40 / 130	30 / 290	13 / 13	5.0 / 18,000	TAME = NLP TBA = 12 / 18,000

Notes:

[a] First value is quantified by EPA Method 8021b; second value is quantified by EPA Method 8260B.
[b] Table reports only detected fuel oxygenates. Full list of analytes is included in Appendix D.

TEHd = total extractable hydrocarbons – diesel range; TVHg = total volatile hydrocarbons gasoline range; TAME = tertiaryamylmethylether; TBA = tertiary butyl alcohol; ND = not selected above method reporting limits; NA = not analyzed for these constituents; NLP = no level published.

All concentrations are in mg/L.

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
399 ELMHURST ST. HAYWARD CA. 94544-1395
PHONE (510) 670-6633 James Yoo
FAX (510) 782-1939

APPLICANTS: PLEASE ATTACH A SITE MAP FOR ALL DRILLING PERMIT APPLICATIONS
DESTRUCTION OF WELLS OVER 45 FEET REQUIRES A SEPARATE PERMIT APPLICATION

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

OCATION OF PROJECT Russ Elliott Inc.
25226 WOOD STREET
OAKLAND CA 94607

LIENT
ame JEANETTE ELLIOTT
ddress 1744 SKYVIEW DRIVE Phone 510/351-3326
ity SAN LEANDRO Zip 94577

PPLICANT
ame STELLAR ENVIRONMENTAL SOLUTIONS
(BRUCE RUCKER) Fax 510/644-3859
ddress 2198 SIXTH STREET #201 Phone 510/644-3123
ity BERKELEY Zip 94710

YPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection	•	General	•
Water Supply	•	Contamination	•
(Monitoring)	•	Well Destruction	•

ROPOSED WATER SUPPLY WELL USE

New Domestic	•	Replacement Domestic	•
Municipal	•	Irrigation	•
Industrial	•	Other _____	•

DRILLING METHOD:

Mud Rotary	•	Air Rotary	•	(Auger)	•
Cable	•	Other	•		

DRILLER'S NAME HEW DRILLING COMPANY Inc.

DRILLER'S LICENSE NO. 604987

WELL PROJECTS
Drill Hole Diameter 8 in. Maximum
Casing Diameter 2 in. Depth 20 ft.
Surface Seal Depth 5 ft. Owner's Well Number MW-1

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

STARTING DATE Feb 15 2004

COMPLETION DATE Feb 15 2004

FOR OFFICE USE
PERMIT NUMBER W04-026
WELL NUMBER _____
APN _____

PERMIT CONDITIONS
Circled Permit Requirements Apply

(A.) **GENERAL**
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
2. Submit to ACPWA within 60 days after completion of permitted original Department of Water Resources-Well Completion Report.
3. Permit is void if project not begun within 90 days of approval date

B. WATER SUPPLY WELLS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

(C.) **GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS**
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet

D. GEOTECHNICAL
Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings.

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

F. WELL DESTRUCTION
Send a map of work site. A separate permit is required for wells deeper than 45 feet.

(G.) **SPECIAL CONDITIONS** DRW# 1

NOTE: One application must be submitted for each well or well destruction. Multiple borings on one application are acceptable for geotechnical and contamination investigations.

APPROVED _____ DATE 2-11-04

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

APPLICANT'S SIGNATURE B. M. Rucker DATE 2/16/04

PLEASE PRINT NAME Bruce Rucker

Rev.9-18-02

P.02 ENVIRONMENTAL 501 510 644 3859

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
399 ELMHURST ST. HAYWARD CA. 94544-1395
PHONE (510) 670-6633 James Yoo
FAX (510) 782-1939
APPLICANTS: PLEASE ATTACH A SITE MAP FOR ALL DRILLING PERMIT APPLICATIONS
DESTRUCTION OF WELLS OVER 45 FEET REQUIRES A SEPARATE PERMIT APPLICATION

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

OCATION OF PROJECT Russ Elliott Inc.
2526 WOOD STREET
OAKLAND CA 94607

LIENT
ame JEANETTE ElliOTT
ddress 1744 SKYVIEW DRIVE Phone 510/351-3356
ity SAN LEANDRO Zip 94577

PPLICANT
ame STELLAR ENVIRONMENTAL SOLUTIONS
(BRUCE RUCKER) Fax 510/644-3859
ddress 2198 SIXTH STREET #201 Phone 510/644-3123
ity BERKELEY Zip 94710

YPE OF PROJECT
Well Construction • Geotechnical Investigation •
Cathodic Protection • General •
Water Supply • Contamination •
(Monitoring) • Well Destruction •

ROPOSED WATER SUPPLY WELL USE
New Domestic • Replacement Domestic •
Municipal • Irrigation •
Industrial • Other ______ •

RILLING METHOD:
Mud Rotary • Air Rotary • (Auger) •
Cable • Other •

RILLER'S NAME HEW DRILLING COMPANY INC
RILLER'S LICENSE NO. 604987

VELL PROJECTS
Drill Hole Diameter 8 in. Maximum
Casing Diameter 2 in. Depth 20 ft. MW-2
Surface Seal Depth 5 ft. Owner's Well Number ______

EOTECHNICAL PROJECTS
Number of Borings ______ Maximum
Hole Diameter ______ in. Depth ______ ft.

TARTING DATE Feb 17 2004
OMPLETION DATE Feb 17 2004

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

PPLICANT'S SIGNATURE [signature] DATE 2/6/04
LEASE PRINT NAME BRUCE RUCKER Rev.9-18-02

FOR OFFICE USE
PERMIT NUMBER W04-0127
WELL NUMBER ______
APN ______

PERMIT CONDITIONS
Circled Permit Requirements Apply

(A.) **GENERAL**
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
(2.) Submit to ACPWA within 60 days after completion of permitted original Department of Water Resources-Well Completion Report.
3. Permit is void if project not begun within 90 days of approval date

B. WATER SUPPLY WELLS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

(C.) **GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS**
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. GEOTECHNICAL
Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings.

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

F. WELL DESTRUCTION
Send a map of work site. A separate permit is required for wells deeper than 45 feet.

(G.) **SPECIAL CONDITIONS** MW#1

NOTE: One application must be submitted for each well or well destruction. Multiple borings on one application are acceptable for geotechnical and contamination investigations.

APPROVED [signature] DATE 2-11-04

12:18P Stellar environmental sol 510 644 3859 p.02

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
399 ELMHURST ST. HAYWARD CA. 94544-1395
PHONE (510) 670-6633 James Yoo
FAX (510) 782-1939

APPLICANTS: PLEASE ATTACH A SITE MAP FOR ALL DRILLING PERMIT APPLICATIONS
DESTRUCTION OF WELLS OVER 45 FEET REQUIRES A SEPARATE PERMIT APPLICATION

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

OCATION OF PROJECT Russ Elliott Inc
2526 WOOD STREET
OAKLAND CA 94607

LIENT
ame JEANETTE ELLIOTT
ddress 1744 SKYVIEW DRIVE Phone 510/351-3318
ity SAN LEANDRO Zip 94577

PPLICANT
ame STELLAR ENVIRONMENTAL SOLUTIONS
(BRUCE RUKER) Fax 510/644-3859
ddress 2198 SIXTH STREET #201 Phone 510/644-3123
ity BERKELEY Zip 94710

YPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection	•	General	•
Water Supply	•	Contamination	•
(Monitoring)	•	Well Destruction	•

ROPOSED WATER SUPPLY WELL USE

New Domestic	•	Replacement Domestic	•
Municipal	•	Irrigation	•
Industrial	•	Other _____	•

RILLING METHOD:

Mud Rotary	•	Air Rotary	•	(Auger)	•
Cable	•	Other	•		

RILLER'S NAME NEW DRILLING COMPANY INC

RILLER'S LICENSE NO. 604987

VELL PROJECTS
Drill Hole Diameter 8 in. Maximum
Casing Diameter 2 in. Depth 20 ft.
Surface Seal Depth 5 ft. Owner's Well Number MW-3

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

TARTING DATE Feb 14 2004

OMPLETION DATE Feb 14 2004

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

APPLICANT'S SIGNATURE B. M. Ruker DATE 2/6/04

PLEASE PRINT NAME BRUCE RUKER

Rev.9-18-02

FOR OFFICE USE
PERMIT NUMBER W04-0128
WELL NUMBER
APN

PERMIT CONDITIONS
Circled Permit Requirements Apply

(A.) GENERAL
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
(2.) Submit to ACPWA within 60 days after completion of permitted original Department of Water Resources-Well Completion Report.
3. Permit is void if project not begun within 90 days of approval date

B. WATER SUPPLY WELLS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved

(C.) GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. GEOTECHNICAL
Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings.

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

F. WELL DESTRUCTION
Send a map of work site. A separate permit is required for wells deeper than 45 feet.

(G.) SPECIAL CONDITIONS - MW#1

NOTE: One application must be submitted for each well or well destruction. Multiple borings on one application are acceptable for geotechnical and contamination investigations.

APPROVED _____ DATE 2-11-04

Feb-06-04 12:18p stellar environmental sol 510 644 3859 p.02

ALAMEDA COUNTY PUBLIC WORKS AGENCY
WATER RESOURCES SECTION
399 ELMHURST ST. HAYWARD, CA. 94544-1395
PHONE (510) 670-6633 James Yoo FAX (510) 782-1939

PERMIT NO. W04-0126-0128

WATER RESOURCES SECTION
GROUNDWATER PROTECTION ORDINANCE
MW#1-GENERAL CONDITIONS: MONITIORING WELL

1. Prior to installation of any monitoring wells into 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.

2. The minimum surface seal thickness two inches of cement grout placed by tremie. 3' seal depth verbally approved by James Yoo on 2/13/04.

3. All monitoring wells shall have a minimum surface cement seal depth of five (5) feet or the maximum depth practicable or twenty (20) feet.

4. 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 dostroyed immediately (through permit process). No well(s) shall be left in a manner to act as a conduit at any time.

5. 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 statues regulating such. In no case shall these materials and/or waters be allowed to enter, or potentially enter, on-or off site storm sewers, dry wells, or waterways or be allowed to move off the property where work is being completed.

6. No changes in construction procedures or well type shall change, as described on this permit application. This permit may be voided if it contains incorrect information.

7. Drilling Permit(s) can be voided/ canceled only in writing. It is the applicants responsibilities to notify Alameda County Public Works Agency, Water Resources Section in writing for an extension or to cancel the drilling permit application. No drilling permit application(s) shall be extended beyond ninety (90) days from the original start date. **Permit is valid from February 18 to February 18, 2004.** Applicants may not cancel a drilling permit application after the completion date of the permit issued has passed.

8. Compliance with the above well-sealing specifications shall not exempt the well-sealing contractor from complying with appropriate State reporting-requirements related to well 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.**

9. 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.

STELLAR ENVIRONMENTAL SOLUTIONS, INC.
2198 SIXTH STREET, BERKELEY, CA 94710
TEL: 510.644.3123 FAX: 510.644.3859

TRANSMITTAL MEMORANDUM	
TO: ALAMEDA COUNTY PUBLIC WORKS AGENCY 399 ELMHURST STREET HAYWARD, CA 94544-1395	**DATE:** FEBRUARY 23, 2004
ATTENTION: WATER RESOURCES SECTION	FILE: SES-2003-41
SUBJECT: **FORMER RUSS ELLIOTT, INC. SITE** 2526 WOOD STREET OAKLAND, CA	
WE ARE SENDING: ☒ HEREWITH	☐ UNDER SEPARATE COVER
☒ VIA MAIL	☐ VIA
THE FOLLOWING: (3) DWR WELL COMPLETION REPORTS (ORIGINAL FORMS) FOR WELLS MW-1, MW-2 & MW-3, WITH BOREHOLE LOG/WELL SCHEMATICS AND LOCATION MAP	
☐ AS REQUESTED	☒ FOR YOUR APPROVAL
☐ FOR REVIEW	☐ FOR YOUR USE
☐ FOR SIGNATURE	☐ FOR YOUR FILES
COPIES TO:	**BY:** Bruce Rucker BNR
REMARKS: PER JAMES YOO'S INSTRUCTIONS, WE HAVE ENCLOSED THE "ORIGINAL" DWR FORMS, AND WE UNDERSTAND THAT ACPWA WILL FORWARD A COPY OF THE PACKAGE TO DWR, AS NECESSARY.	

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

CONFIDENTIAL

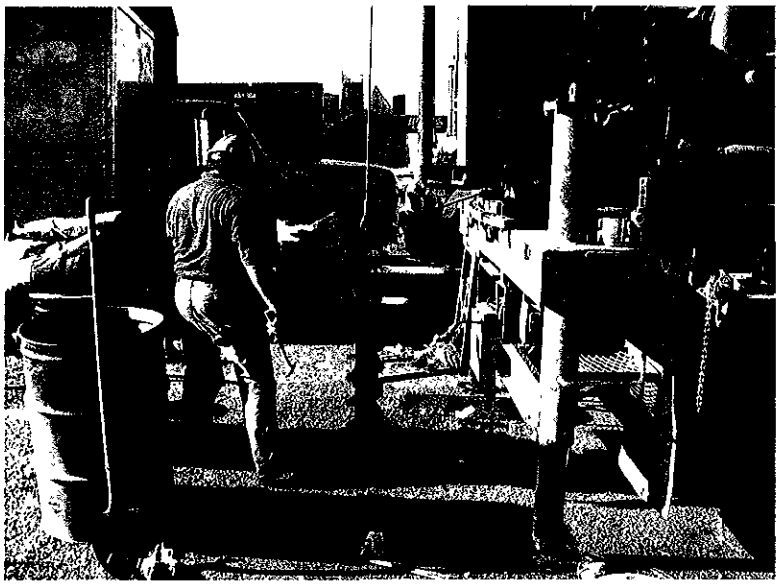
STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

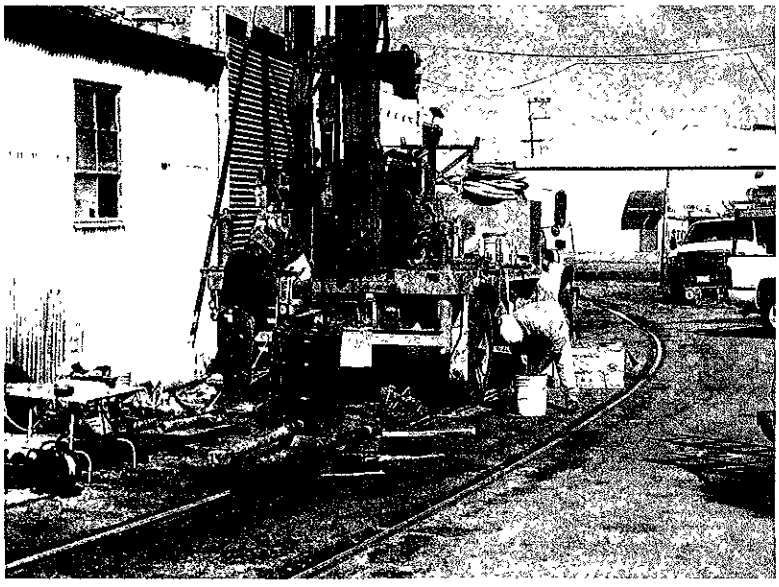
CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

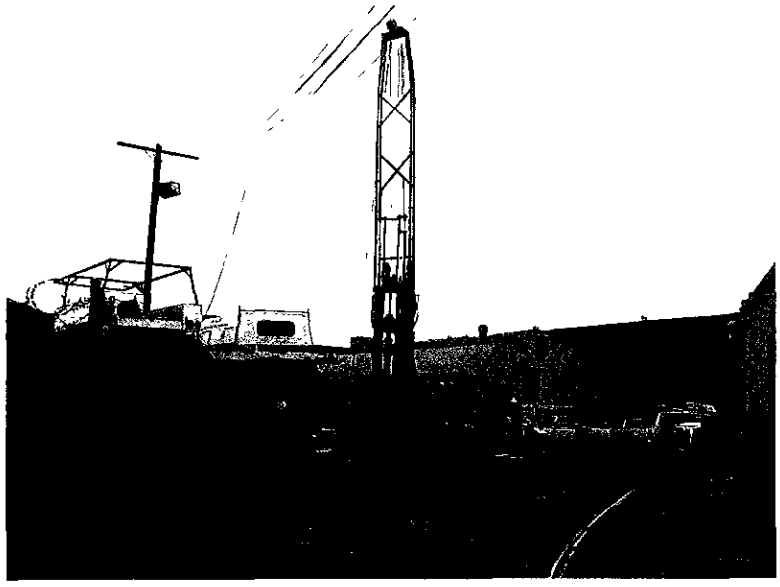
REMOVED



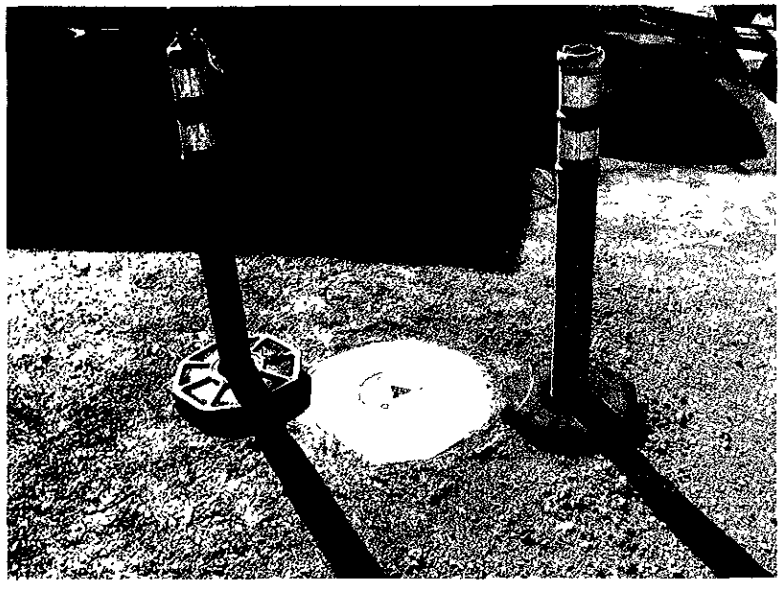
Subject: Constructing well MW-1 showing placement of annular pack material.	
Site: 2526 Wood Street, Oakland, California	
Date Taken: February 18, 2004	Project No.: SES 2003-41
Photographer: B. Rucker	Photo No.: 01



Subject: Constructing well MW-3 showing placement of annular pack material.	
Site: 2526 Wood Street, Oakland, California	
Date Taken: February 18, 2004	Project No.: SES 2003-41
Photographer: B. Rucker	Photo No.: 02



Subject: Hollow stem auger drill rig at well MW-2.	
Site: 2526 Wood Street, Oakland, California	
Date Taken: February 18, 2004	Project No.: SES 2003-41
Photographer: B. Rucker	Photo No.: 03



Subject: Surface completion of well MW-1.	
Site: 2526 Wood Street, Oakland, California	
Date Taken: February 18, 2004	Project No.: SES 2003-41
Photographer: B. Rucker	Photo No.: 04

Stellar Environmental Solutions, Inc.
2198 Sixth Street, Berkeley, CA 94710
Geoscience & Engineering Consulting

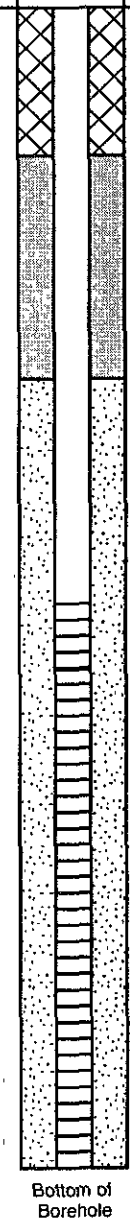
Soil Boring and Well Construction Log

BORING NUMBER MW-1 Page 1 of 2

PROJECT Former Russ Elliott, Inc. Facility
OWNER Mrs. Jeanette Elliott
LOCATION 2526 Wood St. Oakland, CA
PROJECT NUMBER 2003-41
TOTAL DEPTH 20'
BOREHOLE DIA. 8-inch
SURFACE ELEV. 7.17' amsl
WATER FIRST ENCOUNTERED ~5' & 13'
DRILLING COMPANY HEW Drilling
DRILLING METHOD hollow-stem auger
DRILLER Jorge
GEOLOGIST B. Rucker/J. Dinan
DATE DRILLED 2/18/04

DEPTH (feet)	GRAPHIC LOG	SAMPLE INTERVAL/ RECOVERY	INSTRUMENT READING	DESCRIPTION/SOIL CLASSIFICATION	REMARKS
0	Fill			Former UFST excavation backfill: black, clayey gravel (per previous borehole at this location and from cuttings)	"Instrument" is a photo-ionization detector (PID)
1				No recovery 0'-3' (shoe clogged)	"Readings" are in parts per million per volume air (ppmv)
2					
3					Continuous core soil sampling conducted throughout
4					
5			<1	Saturated at 5', no cohesion, gravel is small-medium	▼
6					
7	Fill				
8				8'-13' no recovery (sample falling out of shoe)	
9	Sand and gravel			Previous log at this location showed gravel to 8' then sand to 10', then clayey gravel to 11.5', then drilling refusal	
10					

WELL CONSTRUCTION



2003-41-16

Well Construction Legend: 2≤ PVC screen (0.010-in. slots); Hydrated bentonite pellets; #2/12 Monterey Sand; Portland cement & water grout; ▼ Groundwater encountered

Stellar Environmental Solutions, Inc.
2198 Sixth Street, Berkeley, CA 94710
Geoscience & Engineering Consulting

Soil Boring and Well Construction Log

BORING NUMBER MW-1 Page 2 of 2

PROJECT Former Russ Elliott, Inc. Facility
OWNER Mrs. Jeanette Elliott
LOCATION 2526 Wood St. Oakland, CA
PROJECT NUMBER 2003-41
TOTAL DEPTH 20'
BOREHOLE DIA. 8-inch
SURFACE ELEV. 7.17' amsl
WATER FIRST ENCOUNTERED ~5' & 13'
DRILLING COMPANY HEW Drilling
DRILLING METHOD hollow-stem auger
DRILLER Jorge
GEOLOGIST B. Rucker/J. Dinan
DATE DRILLED 2/18/04

DEPTH (feet)	GRAPHIC LOG	SAMPLE INTERVAL/ RECOVERY	INSTRUMENT READING	DESCRIPTION/SOIL CLASSIFICATION	REMARKS	WELL CONSTRUCTION MW-1
10				No recovery		
11						
12						
13	?—?—?			?—?—?—?—?—?—?—?	▼	
14			<1	Dark grey clayey sand (SC), sl. cohesive, saturated, medium-grained sand (poorly sorted)		
15			<1	Dark grey clayey gravel (GC), wet, v. cohesive, gravel is small-med., 15' color change to tan-buff, dense, moist		
16				15' color change to tan-buff, dense, moist		
17			<1	Tan-buff gravelly clay (CL), stiff, cohesive, moist 16.5' gravel absent, mod. stiff		
18				Tan-buff clayey sand (SC), stiff, sl. moist, sand is fine-grained		
19				*Tan-buff silty clay (CL), stiff,* cohesive, sl. moist		
20		Soil sample MW-1-19.5'	<1	Bottom of borehole = 20'		Bottom of Borehole

2003-41-17

Well Construction Legend: 2≤ PVC screen (0.010-in. slots); Hydrated bentonite pellets; #2/12 Monterey Sand; Portland cement & water grout; ▼ Groundwater encountered

Stellar Environmental Solutions, Inc.
2198 Sixth Street, Berkeley, CA 94710
Geoscience & Engineering Consulting

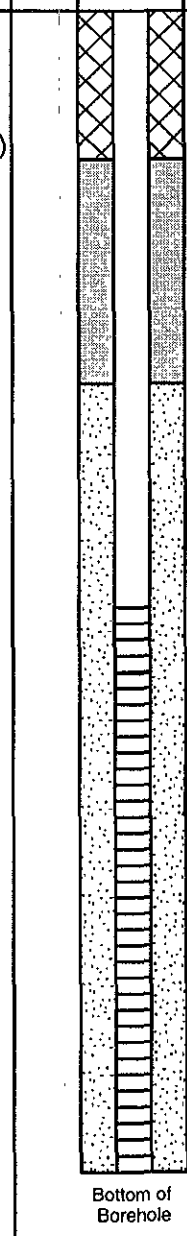
Soil Boring and Well Construction Log

BORING NUMBER MW-2 Page 1 of 2

PROJECT Former Russ Elliott, Inc. Facility
OWNER Mrs. Jeanette Elliott
LOCATION 2526 Wood St. Oakland, CA
PROJECT NUMBER 2003-41
TOTAL DEPTH 20'
BOREHOLE DIA. 8-inch
SURFACE ELEV. 6.66' amsl
WATER FIRST ENCOUNTERED ~5' & 15'
DRILLING COMPANY HEW Drilling
DRILLING METHOD hollow-stem auger
DRILLER Jorge
GEOLOGIST B. Rucker/J. Dinan
DATE DRILLED 2/18/04

DEPTH (feet)	GRAPHIC LOG	SAMPLE INTERVAL/ RECOVERY	INSTRUMENT READING	DESCRIPTION/SOIL CLASSIFICATION	REMARKS
0–5	Fill			Former UFST excavation backfill: black, clayey gravel (per previous borehole at this location and from cuttings) No recovery 0'-4.5' (sample falling out of samples)	"Instrument" is a photo-ionization detector (PID) "Readings" are in parts per million per volume air (ppmv) Continuous core soil sampling conducted throughout
5–6			<1	Brown clayey sand (SC), wet, sl. cohesive 6'-6.5' small-med. gravel, ~40%	
6–10			<1	Blue grey clay (CH), soft, wet, cohesive, much organic fragments	

WELL CONSTRUCTION



2003-41-18

Well Construction Legend: 2≤ PVC screen (0.010-in. slots); Hydrated bentonite pellets; #2/12 Monterey Sand; Portland cement & water grout; Groundwater encountered

Stellar Environmental Solutions, Inc.
2198 Sixth Street, Berkeley, CA 94710
Geoscience & Engineering Consulting

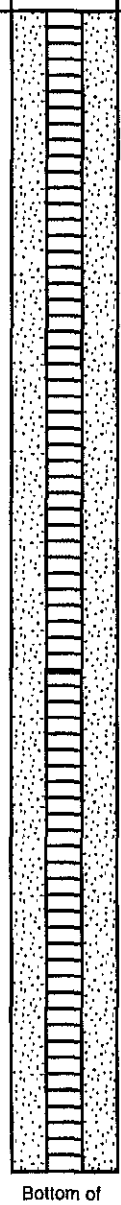
Soil Boring and Well Construction Log

BORING NUMBER MW-2 Page 2 of 2

PROJECT Former Russ Elliott, Inc. Facility
OWNER Mrs. Jeanette Elliott
LOCATION 2526 Wood St. Oakland, CA
PROJECT NUMBER 2003-41
TOTAL DEPTH 20'
BOREHOLE DIA. 8-inch
SURFACE ELEV. 6.66' amsl
WATER FIRST ENCOUNTERED ~5' & 15'
DRILLING COMPANY HEW Drilling
DRILLING METHOD hollow-stem auger
DRILLER Jorge
GEOLOGIST B. Rucker/J. Dinan
DATE DRILLED 2/18/04

DEPTH (feet)	GRAPHIC LOG	SAMPLE INTERVAL/ RECOVERY	INSTRUMENT READING	DESCRIPTION/SOIL CLASSIFICATION	REMARKS
10			1.8 ppm	Blue grey sand (SP), med.-grained, wet, sl. cohesive	
11				Blue grey silty clay (CH), soft, wet, cohesive	
12			<1		
13					
14					
15		Soil sample MW-2-14.5'		Blue grey/green gravelly sandy clay (CL), stiff, sl. moist	▼
			1.3 ppmv	Brown, clayey gravel (GC), wet, sl. cohesive, gravel is small	
16					
17			<1	Tan silty clay (CL), sl. moist, stiff, cohesive	
18					
19					
20				Bottom of borehole = 20'	

WELL CONSTRUCTION



2003-41-19

Well Construction Legend: 2≤ PVC screen (0.010-in. slots); Hydrated bentonite pellets; #2/12 Monterey Sand; Portland cement & water grout; ▼ Groundwater encountered

Stellar Environmental Solutions, Inc.
2198 Sixth Street, Berkeley, CA 94710
Geoscience & Engineering Consulting

Soil Boring and Well Construction Log

BORING NUMBER MW-3 Page 1 of 2

PROJECT Former Russ Elliott, Inc. Facility
OWNER Mrs. Jeanette Elliott
LOCATION 2526 Wood St. Oakland, CA
PROJECT NUMBER 2003-41
TOTAL DEPTH 20'
BOREHOLE DIA. 8-inch
SURFACE ELEV. 7.28' amsl
WATER FIRST ENCOUNTERED 5'
DRILLING COMPANY HEW Drilling
DRILLING METHOD hollow-stem auger
DRILLER Jorge
GEOLOGIST B. Rucker/J. Dinan
DATE DRILLED 2/18/04

DEPTH (feet)	GRAPHIC LOG	SAMPLE INTERVAL/ RECOVERY	INSTRUMENT READING	DESCRIPTION/SOIL CLASSIFICATION	REMARKS
0–2	Fill			Asphalt, then base rock, then gravelly sandy fill	"Instrument" is a photo-ionization detector (PID). "Readings" are in parts per million per volume air (ppmv). Continuous core soil sampling conducted throughout. ▼
2–4			<1	Blue-grey silty clay (CL), cohesive, moist, mod. stiff. 3' color change to tan	
4–5		Soil sample MW-3-4.5'	<1	Tan sand (SW), moist, friable, sl. cohesive, fine-med. grained	
5–7				Grey clayey sand (SC), wet, loose	
7–10			<1	Blue-grey clay (CH), wet, soft, cohesive, much organic fragments	

WELL CONSTRUCTION — MW-3

Bottom of Borehole

2003-41-20

Well Construction Legend: 2≤ PVC screen (0.010-in. slots); Hydrated bentonite pellets; #2/12 Monterey Sand; Portland cement & water grout; Groundwater encountered

Stellar Environmental Solutions, Inc.
2198 Sixth Street, Berkeley, CA 94710
Geoscience & Engineering Consulting

Soil Boring and Well Construction Log

BORING NUMBER MW-3 Page 2 of 2

PROJECT Former Russ Elliott, Inc. Facility
OWNER Mrs. Jeanette Elliott
LOCATION 2526 Wood St. Oakland, CA
PROJECT NUMBER 2003-41
TOTAL DEPTH 20'
BOREHOLE DIA. 8-inch
SURFACE ELEV. 7.28' amsl
WATER FIRST ENCOUNTERED ~5'
DRILLING COMPANY HEW Drilling
DRILLING METHOD hollow-stem auger
DRILLER Jorge
GEOLOGIST B. Rucker/J. Dinan
DATE DRILLED 2/18/04

DEPTH (feet)	GRAPHIC LOG	SAMPLE INTERVAL/ RECOVERY	INSTRUMENT READING	DESCRIPTION/SOIL CLASSIFICATION	REMARKS	WELL CONSTRUCTION MW-3
10				10' becomes moist		
11						
12			<1			
13						
14				Blue-grey silty clay (CL), stiff, minor small gravel, sl. moist		
15			<1			
16				16' color change to tan. Becomes sandy, gravel <10%, sl. friable		
17			<1	17' gravel absent 17' to 20': Increasingly stiff with decreasing moisture		
18						
19						
20				Bottom of borehole = 20'		Bottom of Borehole

2003-41-21

Well Construction Legend: 2≤PVC screen (0.010-in. slots); Hydrated bentonite pellets; #2/12 Monterey Sand; Portland cement & water grout; Groundwater encountered

NORTH STATE LABS

FLUID-LEVEL MONITORING DATA

Project No: 2003-41 Date: FEB 20 2004

Project/Site Location: 2526 WOOD ST OAKLAND CA

Technician: IAN ATKINSON Method: ELECTRONIC

Boring/ Well	Depth to Water (feet)	Depth to Product (feet)	Product Thickness (feet)	Total Well Depth (feet)	Comments
MW-1	2.60			15.00	@ 1020
MW-2	2.25			15.00	@ 1015
MW-3	3.25			19.65	@ 1025

Measurements referenced to top of well casing. NORTH

Page 1 of 1

NORTH STATE LABS

WELL PURGING/SAMPLING DATA

PROJECT NUMBER: 2003-41	DATE: FEB 20 2004
PROJECT LOCATION: RUSS ELLIOTT 2526 WOOD ST OAKLAND CA	FIELD TECHNICIAN: KURT ATKINSON

CASING DIAMETER (inches)	0.75	2	4	6
CASING VOLUMES (gallons)	0.02	0.2	0.7	1.5

WELL ID. MW-1

SURGE FOR 15 MIN

A. TOTAL WELL DEPTH: 18.00 FT.(TOC)	B. DEPTH TO WATER: 2.60 FT.
C. WATER HEIGHT (A-B): 15.40 FT.	D. WELL CASING DIAMETER: 2 IN.
E. CASING VOLUME: .2	F. ONE (1) CASE VOLUME (CxE): 3.08
G. 10 CASE VOLUMES (CxEx 10): 30.80	H. 80% RECHARGE(B+F): 5.68
START TIME: 1120 / FINISH TIME: 1215	PURGE DEVICE: DC-60 / GALS PURGED: 31.5
SAMPLE COLLECTION TIME: 1245	DEPTH TO WATER: 2.65

GALS	pH	T (C)	COND.	D.O.	TURBIDITY	ORP
0	9.58	15.1	1267	1.11/11.5 %	-.161	
3.5	9.09	15.3	1486	%	-.132	
7	8.39	15.6	1667	%	16.15	
10.5	7.96	15.5	1707	%	7200	
14	7.88	15.6	1715	%	7200	
17.5	7.64	15.7	1738	%	7200	
21	7.54	16.0	1740	%	185.5	
24.5	7.46	15.8	1860	%	144.3	
28	7.58	15.9	1743	%	139.2	
31.5	7.54	16.1	1756	1.12/12.4 %	128.8	

WELL ID. MW-2

SURGE FOR 15 MIN

A. TOTAL WELL DEPTH: 18.00 FT.(TOC)	B. DEPTH TO WATER: 2.25 FT.
C. WATER HEIGHT (A-B): 15.75 FT.	D. WELL CASING DIAMETER: 2 IN.
E. CASING VOLUME: .2	F. ONE (1) CASE VOLUME (CxE): 3.15
G. 10 CASE VOLUMES (CxEx 10):	H. 80% RECHARGE(B+F): 5.40
START TIME: 1030 / FINISH TIME: 1110	PURGE DEVICE: DC-60 / GALS PURGED: 31.5
SAMPLE COLLECTION TIME: 1230	DEPTH TO WATER: 5.01

GALS	pH	T (C)	COND.	D.O.	TURBIDITY	ORP
0	7.08	15.2	786	.71/7.20 %	-.152	
3.5	7.34	15.7	1189	%	-.147	
7	7.31	15.7	1420	%	3.50	
10.5	7.30	15.6	1755	%	55.4	
14	7.32	15.8	2215	%	58.6	
17.5	7.46	15.7	2229	%	57.5	
21	7.38	15.9	2258	%	96.3	
24.5	7.41	15.9	2271	%	100.5	
28	7.29	16.1	2301	%	101.3	
31.5	7.28	16.1	2302	2.26/22.6%	101.9	

NORTH STATE LABS

WELL PURGING/SAMPLING DATA

PROJECT NUMBER: 2003-41	DATE: FEB 20 2004
PROJECT LOCATION: RUSS ELLIOTT 2526 WOOD ST OAKLAND CA	FIELD TECHNICIAN: KAN ATKINSON

CASING DIAMETER (inches)	0.75	2	4	6
CASING VOLUMES (gallons)	0.02	0.2	0.7	1.5

WELL ID. MW-3

*SURGE FOR 15 MIN *

A. TOTAL WELL DEPTH: 19.65 FT.(TOC)	B. DEPTH TO WATER: 3.25 FT.
C. WATER HEIGHT (A-B): 16.40 FT.	D. WELL CASING DIAMETER: 2 IN.
E. CASING VOLUME: .2	F. ONE (1) CASE VOLUME (CxE): 3.26
G. 10 CASE VOLUMES (CxEx 10): 32.60	H. 80% RECHARGE(B+F): 6.53
START TIME: 1315 / FINISH TIME: 1400	PURGE DEVICE: DC-60 / GALS PURGED: 33
SAMPLE COLLECTION TIME: 1405	DEPTH TO WATER: 3.30

GALS	pH	T (C)	COND.	D.O.	TURBIDITY	ORP
0	7.08	14.6	1659	2.03/20.5 %	-.57	
3.5	6.94	15.7	1565	%	-.53	
7	6.94	17.0	1955	%	4.08	
10.5	6.94	17.9	1757	%	12.16	
14	6.92	17.2	TO HIGH	%	15.14	
17.5	7.01	16.3	1559	%	9.53	
21	7.09	16.8	1703	%	47.60	
24.5	7.07	17.2	1716	%	52.18	
28	7.10	16.4	1596	%	56.12	
33	7.03	16.1	1601	2.46/25.18 %	56.08	

WELL ID._____

A TOTAL WELL DEPTH: FT.(TOC)	B. DEPTH TO WATER: FT.
C. WATER HEIGHT (A-B): FT.	D. WELL CASING DIAMETER: IN.
E. CASING VOLUME:	F. ONE (1) CASE VOLUME (CxE):
G. CASE VOLUMES (CxEx):	H. 80% RECHARGE(B+F):
START TIME: / FINISH TIME:	PURGE DEVICE: / GALS PURGED:
SAMPLE COLLECTION TIME:	DEPTH TO WATER:

GALS	pH	T (C)	COND.	D.O.	TURBIDITY	ORP
				%		
				%		
				%		
				%		
				%		
				%		
				%		
				%		
				%		
				%		

Virgil Chavez Land Surveying
312 Georgia Street, Suite 225
Vallejo, California 94590-5907
(707) 553-2476 • Fax (707) 553-8698

March 1, 2004
Project No.: 2324-01

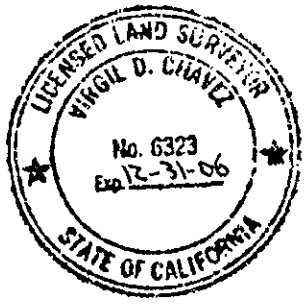
Bruce Rucker
Stellar Environmental Solutions, Inc.
2198 Sixth Street
Berkeley, CA 94710

Subject: Monitoring Well Survey
2526 Wood Street
Oakland, CA

Dear Bruce:

This is to confirm that we have proceeded at your request to survey the ground water monitoring wells located at the above referenced location. The survey was completed on February 24, 2004. The benchmark for this survey was a Port of Oakland benchmark "TP11". The latitude, longitude and coordinates are for top of casings and are based on the California State Coordinate System, Zone III (NAD83).
Benchmark Elevation = 11.24 feet (NGVD 29).

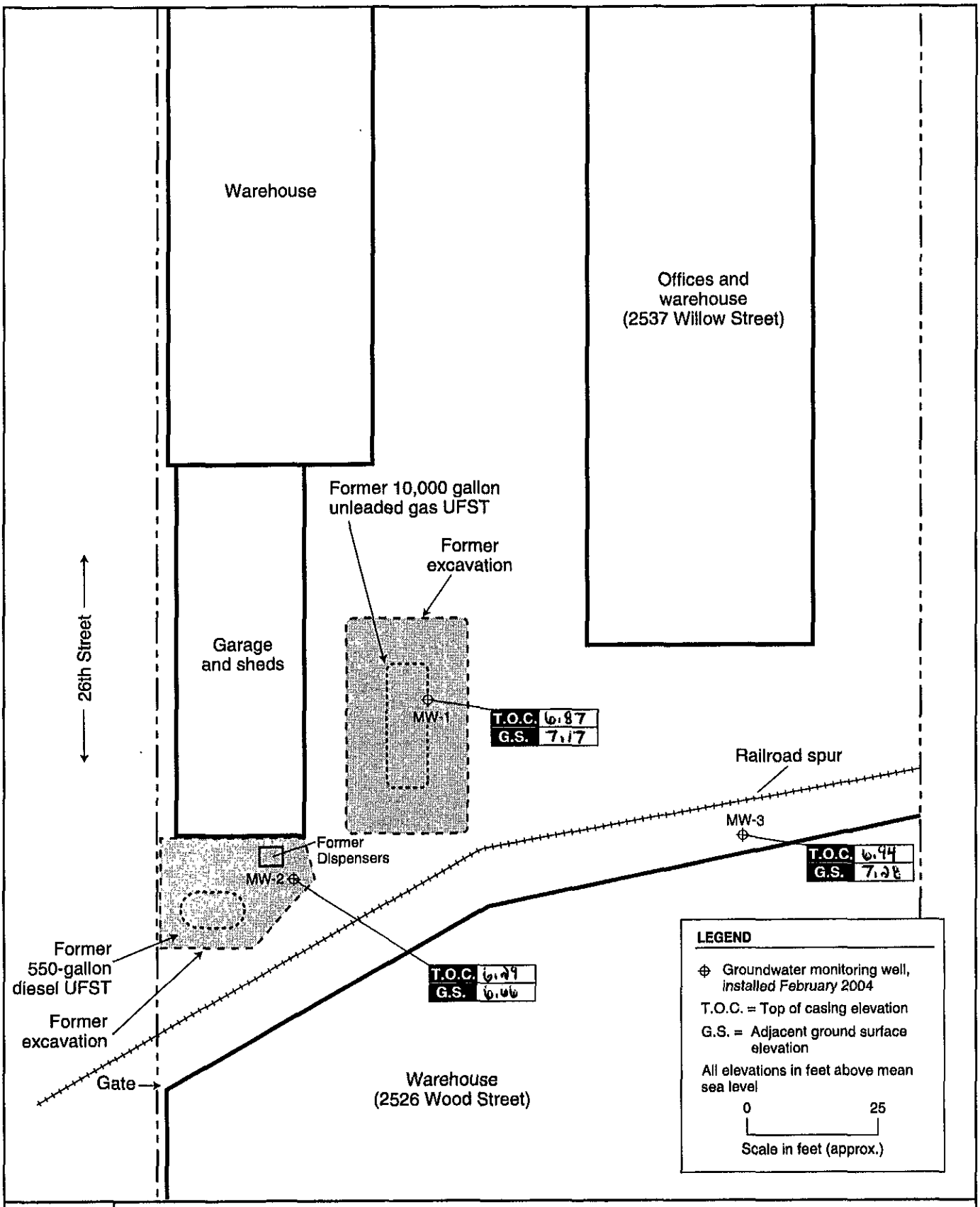
Latitude	Longitude	Northing	Easting	Elev.	Desc.
				7.17	RIM MW-1
37.8211821	-122.2906317	2126420.81	6044489.06	6.87	TOC MW-1
				6.66	RIM MW-2
37.8212971	-122.2907018	2126463.08	6044469.62	6.29	TOC MW-2
				7.28	RIM MW-3
37.8210769	-122.2907988	2126383.42	6044440.06	6.94	TOC MW-3



Sincerely,

Virgil D. Chavez

Virgil D. Chavez, PLS 6323



GROUNDWATER MONITORING WELL SURVEY ELEVATIONS

2526 Wood Street Oakland, CA	By: MJC	FEBRUARY 2004	Stellar Environmental Solutions, Inc. Geoscience & Engineering Consulting

2003-41-23

North State Labs

CA ELAP # 1753

90 South Spruce Avenue, Suite V • South San Francisco, CA 94080 • **(650) 266-4563** • FAX (650) 266-4560

Case Narrative

Client: Stellar Environmental Solutions
Project: #2003-41 / 2526 WOOD ST. OAKLAND
Lab No: 04-0249
Date Received: 02/23/2004 Date reported: 03/01/2004

Three water samples were received under chain of custody on 02/23/04 and analyzed for gasoline and diesel range hydrocarbons by method 8015M, BTEX by method 8021B and fuel additives by GC/MS method 8260B. The QC/QA results were within acceptance limits. No MS/MSD were analyzed for 8015M/8021B due to insufficient amount of sample. The LCS/LCD results were reported. No errors found during analysis.

John A. Murphy
Laboratory Director

Chain of Custody Record

Lab job no. _____

Date _____

04-0249 Page _____ of _____

Laboratory North State Environmental
Address 80 South Spruce Suite V
So. San Francisco CA
650-266-4563
Project Owner Mrs. Jeanette Elliott
Site Address 2526 Wood Street
Oakland CA
Project Name Former Russ Elliott, Inc
SES Project Number 2003-41

Method of Shipment hand delivered
Shipment No. —
Airbill No. —
Cooler No. —
Project Manager Bruce Rucker
Telephone No. (510) 644-3123
Fax No. (510) 644-3859
Samplers: *(Signature)*

Field Sample Number	Location/ Depth	Date	Time	Sample Type	Type/Size of Container	Preservation: Cooler	Preservation: Chemical	Filtered	No. of Containers	TVH-gasoline (8015M)	TEH-diesel (8015M)	BTEX (EPA 8021)	Fuel Oxygenates (*)	Lead Scavengers *	MTBE (EPA 8260)	Remarks
1 MW-1	—	2/23/04	1245	H_2O	VOAs + 1-Lamber	Yes	HCl in VOAs	No	4	X	X	X	X			
2 MW-2	—	↓	1230	↓	" "	↓	↓	↓	4	X	X	X	X			
3 MW-3	—	↓	1415	↓	" "	↓	↓	↓	4	X	X	X	X			
																Provide a GOELT document (EDD) as well as hard-copy report.

Relinquished by:	Date	Received by:	Date
Signature	2/23/04	Signature Steven Sabillon	2/23/04
Printed KIAN ATKINSON	Time	Printed Steven Sabillon	Time
Company NORTH STATE LABS	1245	Company North State Labs	1245

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: 1 week

Comments: * Fuel Oxygenates to include: TAME, ETBE, DIPE + TBA (only)

* Lead Scavengers include EDB + EDC (only)

2000-00-01

North State Labs
CA ELAP # 1753
90 South Spruce Avenue, Suite V • South San Francisco, CA 94080 • (650) 266-4563 • FAX (650) 266-4560

CERTIFICATE OF ANALYSIS

Lab Number: 04-0249
Client: Stellar Env. Solutions
Project: #2003-41 2526 WOOD ST. OAKLAND

Date Reported: 03/01/2004

Gasoline and BTEX by Methods 8015M/8021B
Diesel Range Hydrocarbons by Method 8015M

Analyte	Method	Result	Unit	Date Sampled	Date Analyzed
Sample: 04-0249-01 Client ID: MW-1				02/20/2004	W
Benzene	SW8020F	1.2	UG/L		02/24/2004
Ethylbenzene	SW8020F	ND<0.5	UG/L		02/24/2004
Gasoline Range Organics	SW8020F	172	UG/L		02/24/2004
Toluene	SW8020F	ND<0.5	UG/L		02/24/2004
Xylenes	SW8020F	ND<1.0	UG/L		02/24/2004
Diesel Fuel #2	CATFH	ND<0.05	MG/L		02/27/2004
Sample: 04-0249-02 Client ID: MW-2				02/20/2004	W
Benzene	SW8020F	ND<0.5	UG/L		02/24/2004
Ethylbenzene	SW8020F	ND<0.5	UG/L		02/24/2004
Gasoline Range Organics	SW8020F	72	UG/L		02/24/2004
Toluene	SW8020F	ND<0.5	UG/L		02/24/2004
Xylenes	SW8020F	ND<1.0	UG/L		02/24/2004
Diesel Fuel #2	CATFH	ND<0.05	MG/L		02/27/2004
Sample: 04-0249-03 Client ID: MW-3				02/20/2004	W
Benzene	SW8020F	ND<0.5	UG/L		02/24/2004
Ethylbenzene	SW8020F	ND<0.5	UG/L		02/24/2004
Gasoline Range Organics	SW8020F	58	UG/L		02/24/2004
Toluene	SW8020F	0.6	UG/L		02/24/2004
Xylenes	SW8020F	ND<1.0	UG/L		02/24/2004
Diesel Fuel #2	CATFH	ND<0.05	MG/L		02/27/2004

North State Labs
CA ELAP # 1753
90 South Spruce Avenue, Suite V • South San Francisco, CA 94080 • **(650) 266-4563** • FAX (650) 266-4560

C E R T I F I C A T E O F A N A L Y S I S

Quality Control/Quality Assurance

Lab Number: 04-0249
Client: Stellar Env. Solutions
Project: #2003-41 2526 WOOD ST. OAKLAND

Date Reported: 03/01/2004
Gasoline and BTEX by Methods 8015M/8021B
Diesel Range Hydrocarbons by Method 8015M

Analyte	Method	Reporting Limit	Unit	Blank	Avg MS/MSD Recovery	RPD
Gasoline Range Organics	SW8020F	50	UG/L	ND	122/126	3
Benzene	SW8020F	0.5	UG/L	ND	107/108	1
Toluene	SW8020F	0.5	UG/L	ND	109/112	3
Ethylbenzene	SW8020F	0.5	UG/L	ND	103/106	3
Xylenes	SW8020F	1.0	UG/L	ND	108/112	4
Diesel Fuel #2	CATFH	0.05	MG/L	ND	96/90	6

ELAP Certificate NO:1753
Reviewed and Approved

John A. Murphy, Laboratory Director

North State Labs
CA ELAP # 1753
90 South Spruce Avenue, Suite V • South San Francisco, CA 94080 • (650) 266-4563 • FAX (650) 266-4560

C E R T I F I C A T E O F A N A L Y S I S

Job Number: 04-0249
Client : Stellar Env. Solutions
Project : #2003-41 2526 WOOD ST. OAKLAND

Date Sampled : 02/20/2004
Date Analyzed: 02/27/2004
Date Reported: 03/01/2004

Fuel Oxygenates by Method 8260B

Laboratory Number	04-0249-01	04-0249-02	04-0249-03
Client ID	MW-1	MW-2	MW-3
Matrix	W	W	W
Analyte	UG/L	UG/L	UG/L
Methyl-tert-butyl ether	578	16.4	ND<0.5
Ethyl tert-butyl ether	ND<1	ND<1	ND<1
tert-Amyl methyl ether	3	ND<1	ND<1
Di-isopropyl ether (DIPE)	ND<0.5	ND<0.5	ND<0.5
tert-Butyl alcohol	19	ND<10	ND<10
1,2-Dichloroethane	ND<1	ND<1	ND<1
1,2-Dibromoethane	ND<0.5	ND<0.5	ND<0.5
SUR-Dibromofluoromethane	101	103	103
SUR-Toluene-d8	101	101	101
SUR-4-Bromofluorobenzene	91	92	92
SUR-1,2-Dichloroethane-d4	88	89	89

Comments:

North State Labs
CA ELAP # 1753
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C E R T I F I C A T E O F A N A L Y S I S

Job Number: 04-0249
Client : Stellar Env. Solutions
Project : #2003-41 2526 WOOD ST. OAKLAND

Date Sampled : 02/20/2004
Date Analyzed: 02/27/2004
Date Reported: 03/01/2004

Fuel Oxygenates by Method 8260B
Quality Control/Quality Assurance Summary

Laboratory Number	04-0249	MS/MSD	RPD	Recovery	RPD
Client ID	Blank	Recovery		Limit	Limit
Matrix	W	W			
Analyte	Results UG/L	%Recoveries			
Methyl-tert-butyl ether	ND<0.5				
Di-isopropyl ether (DIPE)	ND<0.5				
tert-butyl Alcohol	ND<10				
Ethyl tert-butyl ether	ND<1				
tert-Amyl methyl ether	ND<1				
1,1-Dichloroethene	ND<0.5	127/110	14	61-128	25
1,2-Dichloroethane	ND<1				
Benzene	ND<0.5	122/123	1	74-135	21
1,2-Dibromoethane	ND<0.5				
Trichloroethene	ND<0.5	98/100	2	69-129	20
Toluene	ND<0.5	119/121	2	61-141	19
Chlorobenzene	ND<1	115/115	0	70-139	19
SUR-Dibromofluoromethane	108	104/105	1	67-129	21
SUR-Toluene-d8	103	102/103	1	72-119	16
SUR-4-Bromofluorobenzene	96	92/92	0	78-121	19
SUR-1,2-Dichloroethane-d4	95	89/91	2	85-115	25

Reviewed and Approved

John A. Murphy
Laboratory Director

North State Labs
CA ELAP # 1753
90 South Spruce Avenue, Suite V • South San Francisco, CA 94080 • **(650) 266-4563** • FAX (650) 266-4560

Case Narrative

Client: Stellar Environmental Solutions
Project: #2003-41 / 2526 WOOD ST. OAKLAND
Lab No: 04-0251
Date Received: 02/20/2004 Date reported: 02/27/2004

Four soil samples were received under chain of custody on 02/20/04 and analyzed for gasoline and diesel range hydrocarbons by method 8015M, BTEX by method 8021B and fuel additives by GC/MS method 8260B. The QC/QA results within acceptance limits. No errors occurred during analysis.

John A. Murphy
Laboratory Director

Chain of Custody Record

Lab job no. _____
Date _____
Page 1 of 1

04-0251

Laboratory North State Environmental
Address 80 South Spruce Suite V
So. San Francisco CA
650-266-4563

Project Owner Mrs. Jeanette Elliott
Site Address 2526 Wood Street
Oakland CA

Project Name Former Russ Elliott, Inc
Project Number 2003-41

Method of Shipment hand delivered
Shipment No. —
Airbill No. —
Cooler No. —
Project Manager Bruce Rucker
Telephone No. (510) 644-3123
Fax No. (510) 644-3859
Samplers: (Signature) Joseph Dinan

Field Sample Number	Location/ Depth	Date	Time	Sample Type	Type/Size of Container	Preservation: Cooler	Preservation: Chemical	Filtered	No. of Containers	TVH-gasoline (8015M)	TEH-diesel (8015M)	BTEX (EPA 8021)	Fuel Oxygenates (*)	Lead Scavengers (*)	MTBE (EPA 8260)	Remarks
1 MW-1-19.5	19.5'	2/19/04	940	Soil	Acetate Sleeve	Yes	None		1	X	X	X	X			
2 MW-3-4.5	4.5'		1120			Yes			1	X	X	X	X			
3 MW-2-14.5	14.5'		1445			Yes			1	X	X	X	X			
4 Soil Comp	—		1515		16 oz Glass Jar	Yes			2	X	X	X	X			Provide a COELT document (EDD) as well as hard-copy report.

Relinquished by:	Date	Received by:	Date
Signature	2/20/04	Signature	2/21/04
Printed Joseph Dinan	Time 1000	Printed	Time 1000
Company Stellar Env. Solutions		Company	

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: 2 week

Comments: * Fuel Oxygenates to include: TAME, ETBE, DIPE + TBA (only)

* Lead Scavengers include EDB + EDC (only)

2000-00-01

North State Labs

CA ELAP # 1753

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C E R T I F I C A T E O F A N A L Y S I S

Lab Number: 04-0251
Client: Stellar Env. Solutions
Project: #2003-41 2526 WOOD ST. OAKLAND

Date Reported: 02/27/2004

Gasoline and BTEX by Methods 8015M/8021B
Diesel Range Hydrocarbons by Method 8015M

Analyte	Method	Result	Unit	Date Sampled	Date Analyzed
Sample: 04-0251-01	Client ID: MW-1-19.5			02/18/2004	SO
Benzene	SW8020F	ND<5	UG/KG		02/26/2004
Ethylbenzene	SW8020F	ND<5	UG/KG		02/26/2004
Gasoline Range Organics	SW8020F	ND<500	UG/KG		02/26/2004
Toluene	SW8020F	ND<5	UG/KG		02/26/2004
Xylenes	SW8020F	ND<10	UG/KG		02/26/2004
Diesel Fuel #2	CATFH	ND<1	MG/KG		02/26/2004
Sample: 04-0251-02	Client ID: MW-3-4.5			02/18/2004	SO
Benzene	SW8020F	ND<5	UG/KG		02/26/2004
Ethylbenzene	SW8020F	ND<5	UG/KG		02/26/2004
Gasoline Range Organics	SW8020F	ND<500	UG/KG		02/26/2004
Toluene	SW8020F	ND<5	UG/KG		02/26/2004
Xylenes	SW8020F	ND<10	UG/KG		02/26/2004
Diesel Fuel #2	CATFH	ND<1	MG/KG		02/26/2004
Sample: 04-0251-03	Client ID: MW-2-14.5			02/18/2004	SO
Benzene	SW8020F	ND<5	UG/KG		02/26/2004
Ethylbenzene	SW8020F	ND<5	UG/KG		02/26/2004
Gasoline Range Organics	SW8020F	ND<500	UG/KG		02/26/2004
Toluene	SW8020F	ND<5	UG/KG		02/26/2004
Xylenes	SW8020F	ND<10	UG/KG		02/26/2004
Diesel Fuel #2	CATFH	ND<1	MG/KG		02/26/2004

North State Labs
CA ELAP # 1753
90 South Spruce Avenue, Suite V • South San Francisco, CA 94080 • **(650) 266-4563** • FAX (650) 266-4560

C E R T I F I C A T E O F A N A L Y S I S

Lab Number: 04-0251
Client: Stellar Env. Solutions
Project: #2003-41 2526 WOOD ST. OAKLAND

Date Reported: 02/27/2004

Gasoline and BTEX by Methods 8015M/8021B
Diesel Range Hydrocarbons by Method 8015M

nalyte	Method	Result	Unit	Date Sampled	Date Analyzed
ample: 04-0251-04	Client ID: SOIL COMP			02/18/2004	SO
enzene	SW8020F	ND<5	UG/KG		02/26/2004
thylbenzene	SW8020F	ND<5	UG/KG		02/26/2004
asoline Range Organics	SW8020F	ND<500	UG/KG		02/26/2004
oluene	SW8020F	ND<5	UG/KG		02/26/2004
ylenes	SW8020F	11	UG/KG		02/26/2004
iesel Fuel #2	CATFH	ND<1	MG/KG		02/26/2004

North State Labs
CA ELAP # 1753
90 South Spruce Avenue, Suite V • South San Francisco, CA 94080 • **(650) 266-4563** • FAX (650) 266-4560

C E R T I F I C A T E O F A N A L Y S I S

Quality Control/Quality Assurance

ab Number: 04-0251
ient: Stellar Env. Solutions
oject: #2003-41 2526 WOOD ST. OAKLAND

te Reported: 02/27/2004
Gasoline and BTEX by Methods 8015M/8021B
Diesel Range Hydrocarbons by Method 8015M

nalyte	Method	Reporting Limit	Unit	Blank	Avg MS/MSD Recovery	RPD
asoline Range Organics	SW8020F	500	UG/KG	ND	80/78	3
nzene	SW8020F	5	UG/KG	ND	100/93	7
luene	SW8020F	5	UG/KG	ND	108/106	2
thylbenzene	SW8020F	5	UG/KG	ND	111/110	1
lenes	SW8020F	10	UG/KG	ND	116/116	0
iesel Fuel #2	CATFH	1	MG/KG	ND	108/104	4

LAP Certificate NO:1753
Reviewed and Approved

John A. Murphy, Laboratory Director

North State Labs
CA ELAP # 1753
90 South Spruce Avenue, Suite V • South San Francisco, CA 94080 • **(650) 266-4563** • FAX (650) 266-4560

C E R T I F I C A T E O F A N A L Y S I S

Job Number: 04-0251
Client : Stellar Env. Solutions
Project : #2003-41 2526 WOOD ST. OAKLAND

Date Sampled : 02/18/2004
Date Analyzed: 02/26/2004
Date Reported: 02/27/2004

Fuel Oxygenates by Method 8260B

Laboratory Number	04-0251-01	04-0251-02	04-0251-03	04-0251-04
Client ID	MW-1-19.5	MW-3-4.5	MW-2-14.5	SOIL COMP
Matrix	SO	SO	SO	SO
Analyte	UG/KG	UG/KG	UG/KG	UG/KG
Methyl-tert-butyl ether	190	ND<5	108	39
Ethyl tert-butyl ether	ND<5	ND<5	ND<5	ND<5
tert-Amyl methyl ether	ND<5	ND<5	ND<5	ND<5
Di-isopropyl ether (DIPE)	ND<5	ND<5	ND<5	ND<5
tert-Butyl alcohol	ND<250	ND<250	ND<250	ND<250
1,2-Dichloroethane	ND<5	ND<5	ND<5	ND<5
1,2-Dibromoethane	ND<5	ND<5	ND<5	ND<5
SUR-Dibromofluoromethane	90	93	91	96
SUR-Toluene-d8	103	99	101	99
SUR-4-Bromofluorobenzene	98	102	99	98
SUR-1,2-Dichloroethane-d4	103	101	103	111

Comments:

North State Labs

CA ELAP # 1753

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C E R T I F I C A T E O F A N A L Y S I S

Job Number: 04-0251
Client : Stellar Env. Solutions
Project : #2003-41 2526 WOOD ST. OAKLAND

Date Sampled : 02/18/2004
Date Analyzed: 02/26/2004
Date Reported: 02/27/2004

Fuel Oxygenates by Method 8260B
Quality Control/Quality Assurance Summary

Laboratory Number	04-0251	MS/MSD	RPD	Recovery	RPD
Client ID	Blank	Recovery		Limit	Limit
Matrix	SO	SO			
Analyte	Results UG/KG	%Recoveries			
Methyl-tert-butyl ether	ND<5				
Di-isopropyl ether (DIPE)	ND<5				
Tert-Butyl alcohol	ND<250				
Ethyl tert-butyl ether	ND<5				
Tert-Amyl methyl ether	ND<5				
1,2-Dichloroethane	ND<5				
1,2-Dibromoethane	ND<5				
1,1-Dichloroethene	ND<5	61/58	5	54-155	27
Benzene	ND<5	105/106	1	72-122	22
Trichloroethene	ND<5	109/107	2	68-122	20
Toluene	ND<5	118/119	1	73-125	21
Chlorobenzene	ND<10	111/111	0	80-135	21
SUR-Dibromofluoromethane	90	96/95	1	54-145	23
SUR-Toluene-d8	102	99/101	2	81-108	14
SUR-4-Bromofluorobenzene	96	98/93	5	82-118	18
SUR-1,2-Dichloroethane-d4	95	109/108	1	70-125	25

Reviewed and Approved

John A. Murphy
Laboratory Director