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

TRANSMITTAL MEMORANDUM	
TO: **ALAMEDA COUNTY HEALTH CARE SERVICES -** **ENVIRONMENTAL HEALTH DEPT. -** **LOCAL OVERSIGHT PROGRAM** **1131 HARBOR BAY PKWY, SUITE 250** **ALAMEDA, CA 94502**	**DATE:** **JUNE 30, 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: SECOND QUARTER 2004 GROUNDWATER MONITORING REPORT (DATED JULY 1, 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 B.M. Rucker

SECOND QUARTER 2004 GROUNDWATER MONITORING REPORT

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

Prepared for

ELLIOTT FAMILY TRUST
SAN LEANDRO, CALIFORNIA

July 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

July 1, 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: Second Quarter 2004 Groundwater Monitoring Report
Former Russ Elliott, Inc. Facility
2526 Wood Street, Oakland, California

Dear Mr. Chan:

This report documents the second consecutive groundwater monitoring event (Q2 2004) conducted in May 2004 by Stellar Environmental Solutions, Inc. (SES) at the referenced site. Three site groundwater monitoring wells were installed and first sampled in February 2004 to evaluate impacts from two former onsite underground fuel storage tanks. The scope of work was conducted in accordance with the Alameda County Health-approved technical workplan.

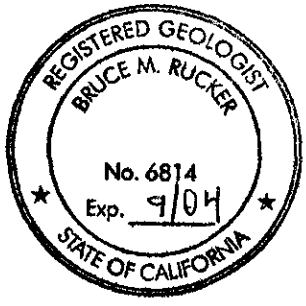
Continued groundwater monitoring is warranted to evaluate plume stability over time.

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

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

cc: Ms. Jeannette Elliott – Elliott Family Trust representative

SECOND QUARTER 2004 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

July 1, 2004

Project No. 2003-41

SECOND QUARTER 2004 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

July 31, 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 ongoing groundwater monitoring and sampling activities at 2526 Wood Street in Oakland, California. The work is designed to evaluate impacts from previous onsite underground fuel storage tanks (UFSTs). Previous site corrective actions and investigations are summarized later in this report. The Alameda County Department of Environmental Health (Alameda County Health) 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 early 2004.

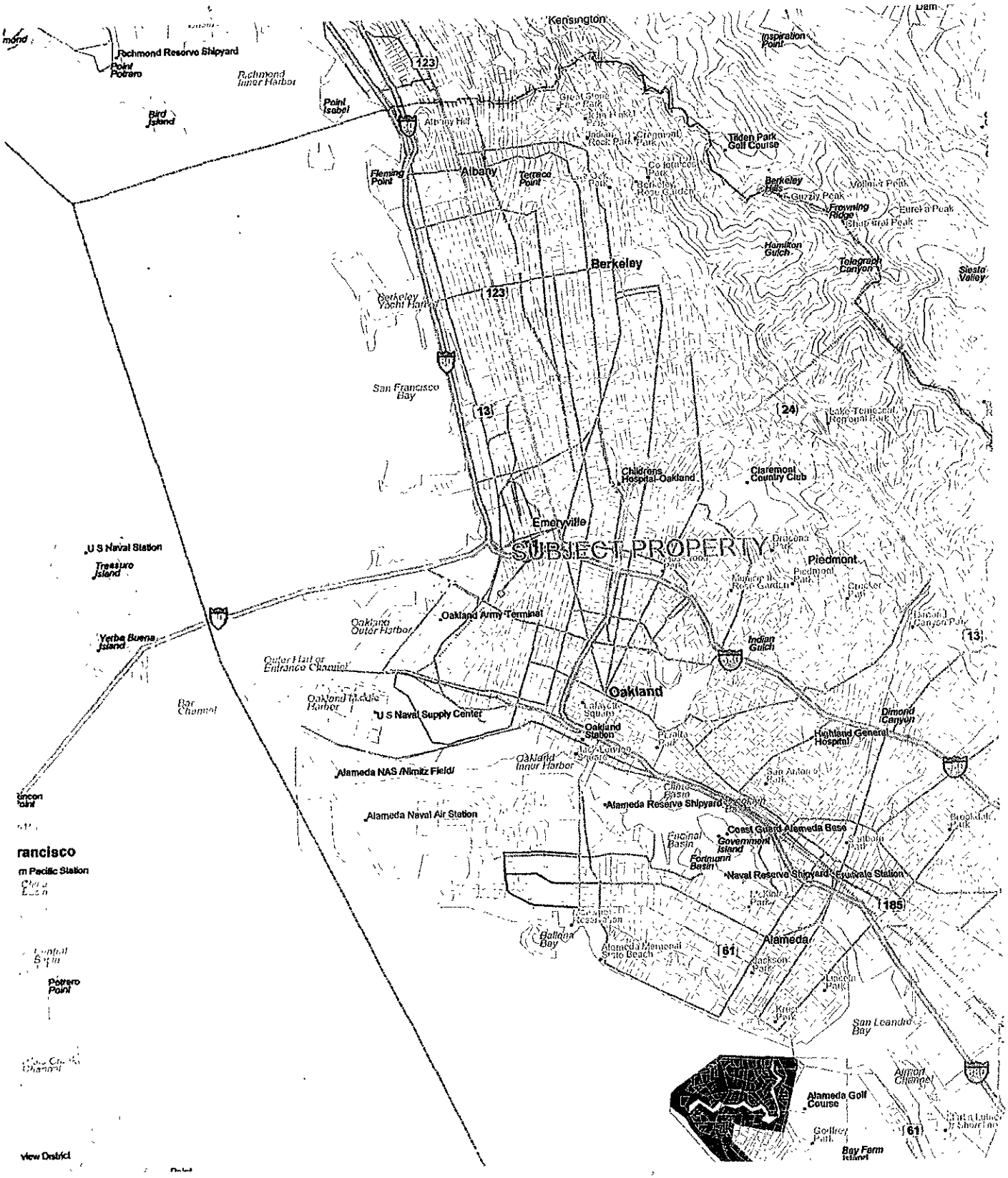
The property is approximately 380 feet long (between Wood Street and Willow Street) by approximately 120 feet wide. The long axis of the site (parallel to 26th Street) is oriented approximately northeast to southwest. Figure 1 is a site location map. Figure 2 shows the location of the former site UFSTs 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 are 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, sharing a common dispenser island that was located between them. Both UFSTs were removed



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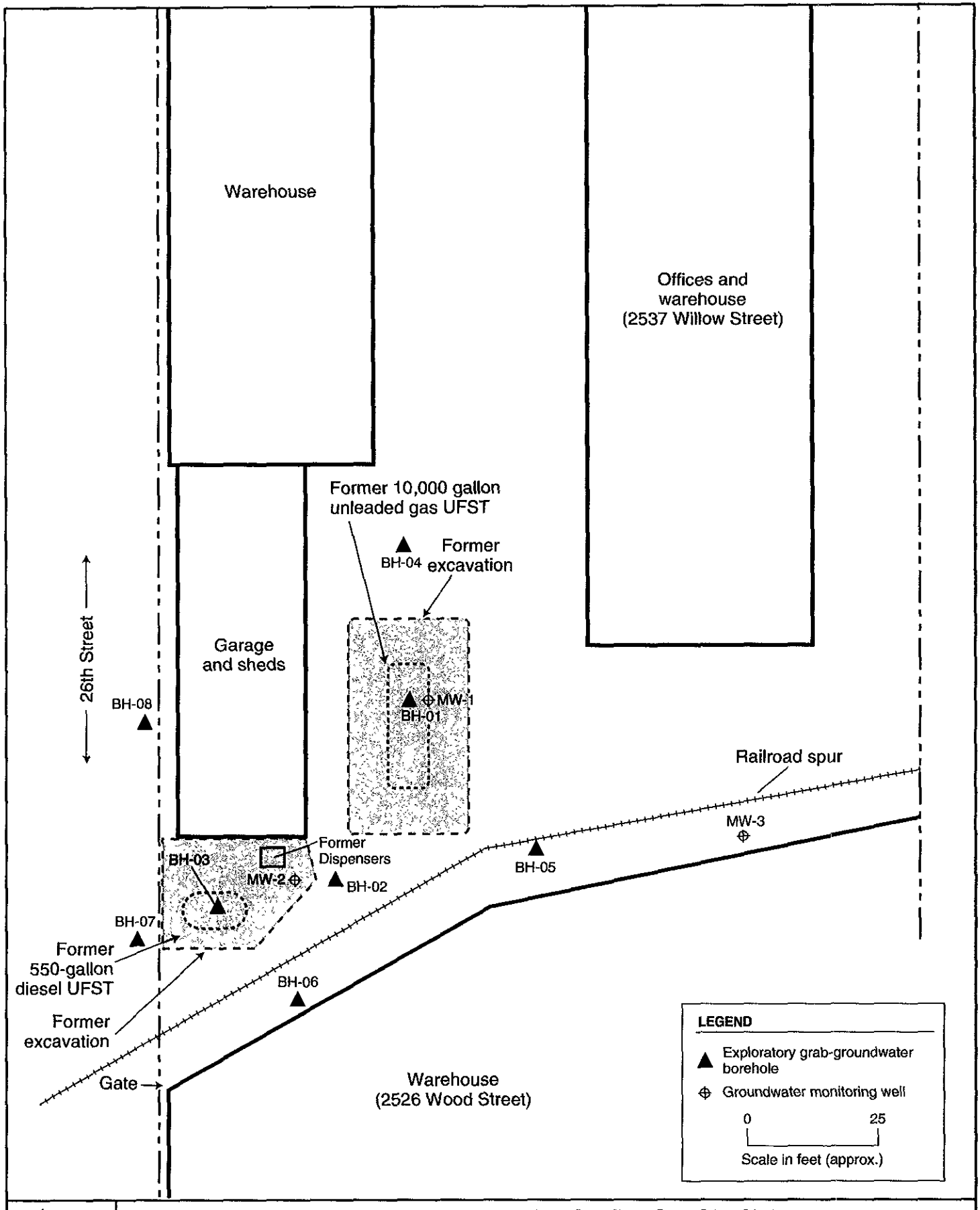
SITE LOCATION ON U.S.G.S. TOPOGRAPHIC MAP

2526 Wood Street
Oakland, CA

By: MJC

JULY 2003

Figure 1



SITE PLAN AND HISTORICAL SAMPLING LOCATIONS

2526 Wood Street Oakland, CA	By: MJC	JUNE 2004
	Figure 2	

Stellar Environmental Solutions, Inc.
Geoscience & Engineering Consulting

2003-41-22

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, and the 10,000-gallon gasoline UFST was removed in 2002. Confirmation soil and water sampling during UFST removals suggested an historical leak in the UFST and/or piping. 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 Alameda County Health by SES (SES, 2003a).

2003 Preliminary Site Assessment

Concurrent with the UFST closure documentation report, SES submitted to Alameda County Health a technical workplan for a Preliminary Site Assessment (PSA) (consisting of exploratory borehole drilling and sampling) to evaluate the potential for residual contamination (SES, 2003b). Alameda County Health subsequently approved the technical workplan (Alameda County Health, 2003). The investigation, conducted in 2003, included advancing and sampling (soil and groundwater) from eight exploratory boreholes. A PSA documentation report was submitted to Alameda County Health (SES 2003c). Groundwater contaminants detected above screening-level criteria include diesel, gasoline, benzene, methyl tertiary-butyl ether (MTBE), and tertiary-butyl alcohol (TBA). The only soil contaminant detected above screening-level criteria was MTBE; however, that contamination was confined to the immediate vicinity of the former gasoline UFST. No soil contamination was detected beneath the upper water-bearing zone.

Groundwater Monitoring Well Installation

On behalf of the property owner, SES submitted to Alameda County Health a technical workplan for a program of groundwater monitoring well installation, sampling, and reporting (SES, 2004a). Alameda County Health subsequently approved the well installation workplan (Alameda County Health, 2004). Three groundwater monitoring wells were installed, developed, surveyed, and sampled in February 2004 (SES, 2004b). This event represents the second consecutive quarterly groundwater monitoring event at the site.

OBJECTIVES AND SCOPE OF WORK

This current phase of the investigation is quarterly groundwater monitoring, sampling, and reporting to evaluate contaminant plume stability. We anticipate that a total of four quarterly groundwater monitoring events will be conducted (through November 2004). The Year 2004 Annual Summary Report will evaluate hydrochemical trends and evaluate the potential for site closure.

2.0 MAY 2004 GROUNDWATER WELL SAMPLING

This section presents the groundwater monitoring and sampling methods for the current groundwater monitoring/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.

On May 18, 2004, groundwater monitoring well water level measurements, purging, and sampling activities were conducted by North State Environmental (South San Francisco, CA), under the supervision of SES personnel. Table 1 shows the well construction and groundwater elevation data. Appendix B contains the groundwater monitoring field records for the sampling event.

Table 1
Groundwater Monitoring Well Construction and Groundwater Elevation Data
May 18, 2004 Monitoring Event
2526 Wood Street, Oakland, California

Well	Well Depth	Screened Interval	TOC Elevation [a]	Groundwater Depth [b]	Groundwater Elevation [a]
MW-1	20	5 to 20	6.87	4.30	2.57
MW-2	20	5 to 20	6.29	4.50	1.79
MW-3	20	5 to 20	6.94	4.41	2.53

Notes:

[a] All elevations are expressed as feet above mean sea level.
[b] Depths are in feet below ground surface, adjacent to the well.

TOC = Top of casing.
All wells are 2-inch-diameter.

As the first task of the monitoring event, static water levels were measured using an electric water level indicator. Each well was then purged (with a downhole pump) of three wetted casing volumes. Aquifer stability parameters were measured between each purged casing volume to ensure that representative formation water was entering the well before sampling. Neither separate-phase petroleum product nor sheen was observed 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.

3.0 REGULATORY CONSIDERATIONS

REGULATORY STATUS

The lead regulatory agency for petroleum contamination cases in the City of Oakland is Alameda County Health, which is a Local Oversight Program (LOP) for the State Water Resources Control Board (covering Regional Water Quality Control Board [RWQCB], Region 2). As such, Alameda County Health 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 Alameda County Health recommends case closure to the RWQCB. Alameda County Health has designated the subject property 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).

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, 2004). ESLs are screening-level criteria used to evaluate whether additional investigation and/or remediation are warranted. Criteria to be considered in using the ESLs include:

- contamination is limited to surface soil (less than 10 feet deep) or to subsurface soil;
- soil is fine-grained or coarse-grained;
- land use is residential or commercial/industrial; and
- 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, as 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, divides 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

Alameda County Health and the 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 ongoing 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 private wells are eliminated as potential receptors, the site would likely pass the RBCA assessment.

4.0 WASTE SOIL DISPOSAL

Three 55-gallon drums of waste soil (from drilling) were generated during the October 2003 PSA and the February 2004 groundwater monitoring well installations. A composite sample of that soil contained low concentrations of petroleum compounds. The analytical laboratory report for that sample was included in the previous SES well installation report (SES, 2004b). The soil was transported offsite on March 16, 2004 by North State Environmental for disposal at the DK Environmental facility in Los Angeles, California. Documentation of the waste soil transport, not available for inclusion in the previous report, is included in Appendix C of this report.

5.0 ANALYTICAL RESULTS AND DISCUSSION

This section the discusses findings of the current sampling event and previous site data collected to build a conceptual model of the spatial extent and magnitude of the dissolved hydrocarbon plume. The site lithology, hydrogeology, and hydrochemistry are all examined to assess corroborating data that define the likely geometry of the plume.

LITHOLOGY AND HYDROGEOLOGY

A detailed discussion of site lithology and hydrogeology was provided in the well installation report (SES, 2004a). The following summarizes site conditions. 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. 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.

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. Water levels in wells MW-1 and MW-2 (installed in the former UFST backfill areas) also are likely influenced by direct infiltration during winter recharge events due to the surrounding unpaved surface.

Depth to groundwater (equilibrated in wells) in the current monitoring event ranged from approximately 4.3 to 4.5 feet below grade, approximately 1 to 2 feet deeper than the previous event. Figure 3 is a groundwater elevation and contour map for the current event. The water level decreases relative to the previous event were expected, due to the small amount of precipitation since the previous event. Direct infiltrating recharge during winter rains and lithologic control on the water levels is suggested. The water level changes were greatest in MW-1 and MW-2, which are both installed (and screened) within more permeable backfill material (the former UFST excavations). Following the winter rainy season, water levels dropped more in backfill wells MW-1 and MW-2 due to the permeable backfill material, and less in well MW-3 which is installed in native (less permeable) soil.

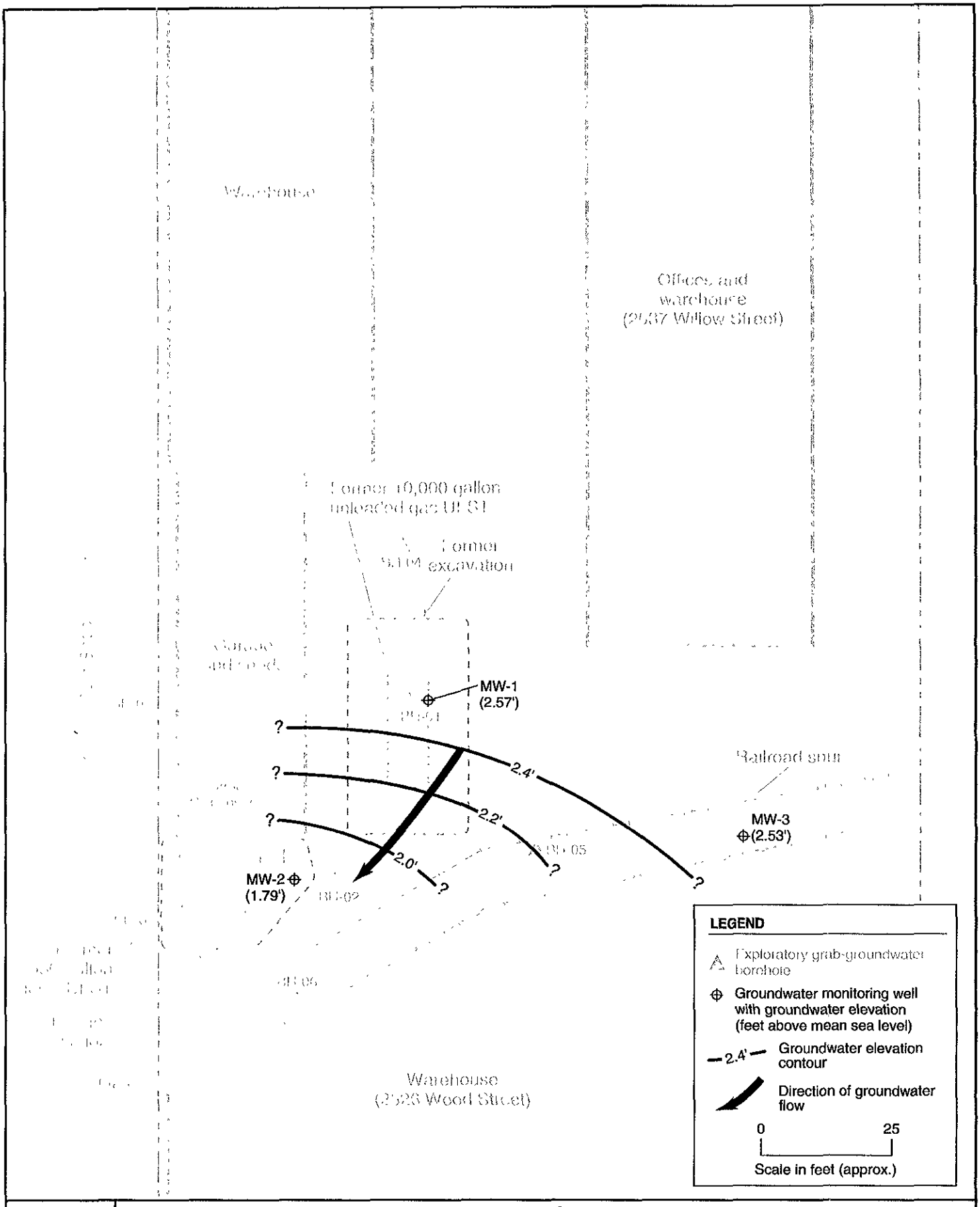
Apparent local groundwater flow direction in the February 2004 event was to the south-southeast, and in the May 2004 event was to the west, a difference of approximately 90 degrees. In both events the hydraulic gradient was similar (approximately 0.008 feet/foot). While the current quarter change in groundwater elevations translates to an apparent change in groundwater flow direction relative to the previous event, it is unlikely that the actual local groundwater flow direction has changed. As discussed in the following subsection, the contaminant plume geometry suggests that the dominant flow direction is to the south. Groundwater flow direction will continue to be evaluated in future groundwater monitoring events.

CURRENT EVENT ANALYTICAL RESULTS

All groundwater samples in the current sampling event 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;
- Benzene, toluene, ethylbenzene, and xylenes (BTEX), by EPA Method 8020; and
- MTBE and fuel oxygenates (tertiary-amyl methyl ether [TAME]; di-isopropyl ether [DIPE]; and TBA), by EPA Method 8260.

All groundwater samples were analyzed by North State Environmental, which maintains current ELAP certifications for all of the analytical methods utilized in this investigation. Appendix D contains the certified analytical laboratory report and chain-of-custody record for this event.



GROUNDWATER ELEVATION MAP — MAY 18, 2004

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

2003-41-30

Table 2 summarizes the groundwater sample analytical results from the May 2004 well sampling event. Figure 4 displays the groundwater analytical results on the site plan. Appendix A contains historical site analytical results (for soil and groundwater).

Gasoline

The gasoline concentration in well MW-1 showed a significant difference in the current event (less than 50 µg/L) relative to the previous event (172 µg/L). Gasoline concentrations in wells MW-2 and MW-3 in the current event were comparable to the previous event.

MTBE

MTBE was detected in wells MW-1 and MW-2 at 399 µg/L and 1,230 µg/L, respectively. MW-1 exhibited a decrease from 578 µg/L MTBE in the previous event; however, MW-2 exhibited a substantial increase from 16.4 µg/L in the previous event. MTBE was not detected in well MW-3 in either this or the previous event. Figure 5 shows MTBE interpolated isoconcentration contours for the current event. The contoured values are informed by the previously collected data, including the October 2003 hydropunch sample results.

Other Site Contaminants

Detected fuel oxygenates include TAME, DIPE, and TBA (at 52 µg/L, 0.6 µg/L, and 243 µg/L, respectively), in well MW-2. This was the first time that DIPE was detected in any site wells. TAME was also detected in well MW-1 at 2 µg/L. The fuel oxygenate concentrations (and distribution) varied substantially relative to the previous event.

Groundwater contaminants detected in the current event in excess of ESL criteria include MTBE and TBA.

Neither BTEX constituents, lead scavengers, nor diesel were detected in any of the wells during this event.

Discussion

The variations in groundwater contaminant concentrations and distribution between the current and previous events, most notably for gasoline and MTBE in well MW-2, are likely due to the apparent seasonal differences in water level elevations. In the previous (wet weather, high water level conditions) event, maximum groundwater contamination was centered at upgradient UFST backfill well MW-1, with the elliptical contaminant plume aligned north-south along that event's groundwater flow direction. In the current (dry season, low water level conditions) event, maximum

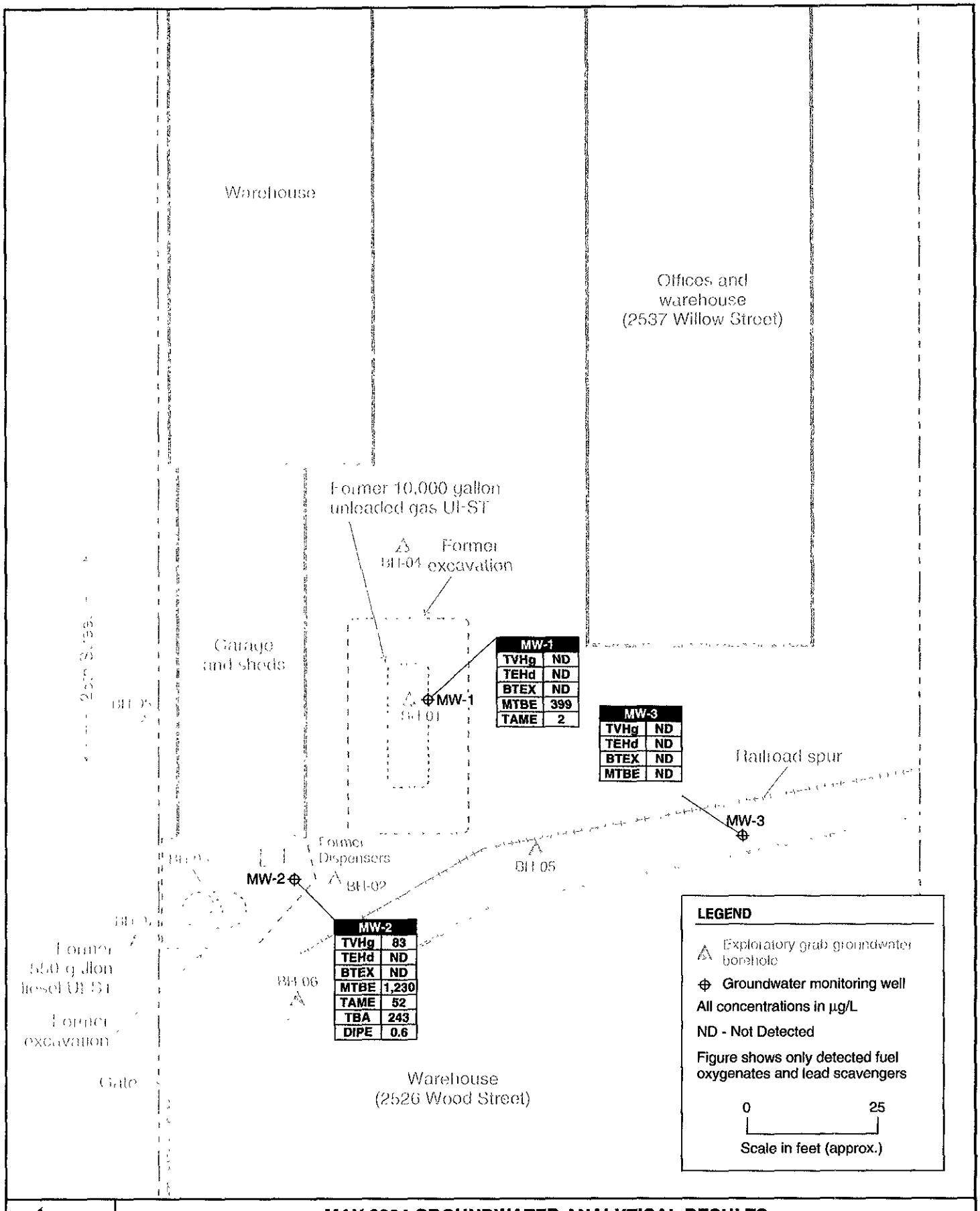
Table 2
May 18, 2004 Groundwater Analytical Results
2526 Wood Street, Oakland [a]

Sample I.D.	TEHd	TVHg	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE [b]	Fuel Oxygenates and Lead Scavengers [b]
MW-1	*<50*	*< 50*	*<0.5*	*<0.5*	*<0.5*	*<1.00*	**399**	**TAME = 2**
MW-2	*<50*	**83**	*<0.5*	*<0.5*	*<0.5*	*<1.00*	**1,230**	**TAME = 52 | DIPE = 0.6 TBA = 243**
MW-3	*<50*	*< 50*	*<0.5*	*<0.5*	*<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 D.

DIPE = Di-isopropyl ether.
MTBE = Methyl tertiary-butyl ether.
TAME = Tertiary-amyl methyl ether.
TBA = Tertiary-butyl alcohol.
TEHd = Total extractable hydrocarbons – diesel range.
TVHg = Total volatile hydrocarbons – gasoline range.
ESLs = Regional Water Quality Control Board, San Francisco Bay Region, Environmental Screening Levels (RWQCB, 2004).
ND = Not detected above method reporting limits.
NLP = No level published.



MAY 2004 GROUNDWATER ANALYTICAL RESULTS

2526 Wood Street **Oakland, CA**	**By: MJC**	**JUNE 2004**
	Figure 4	

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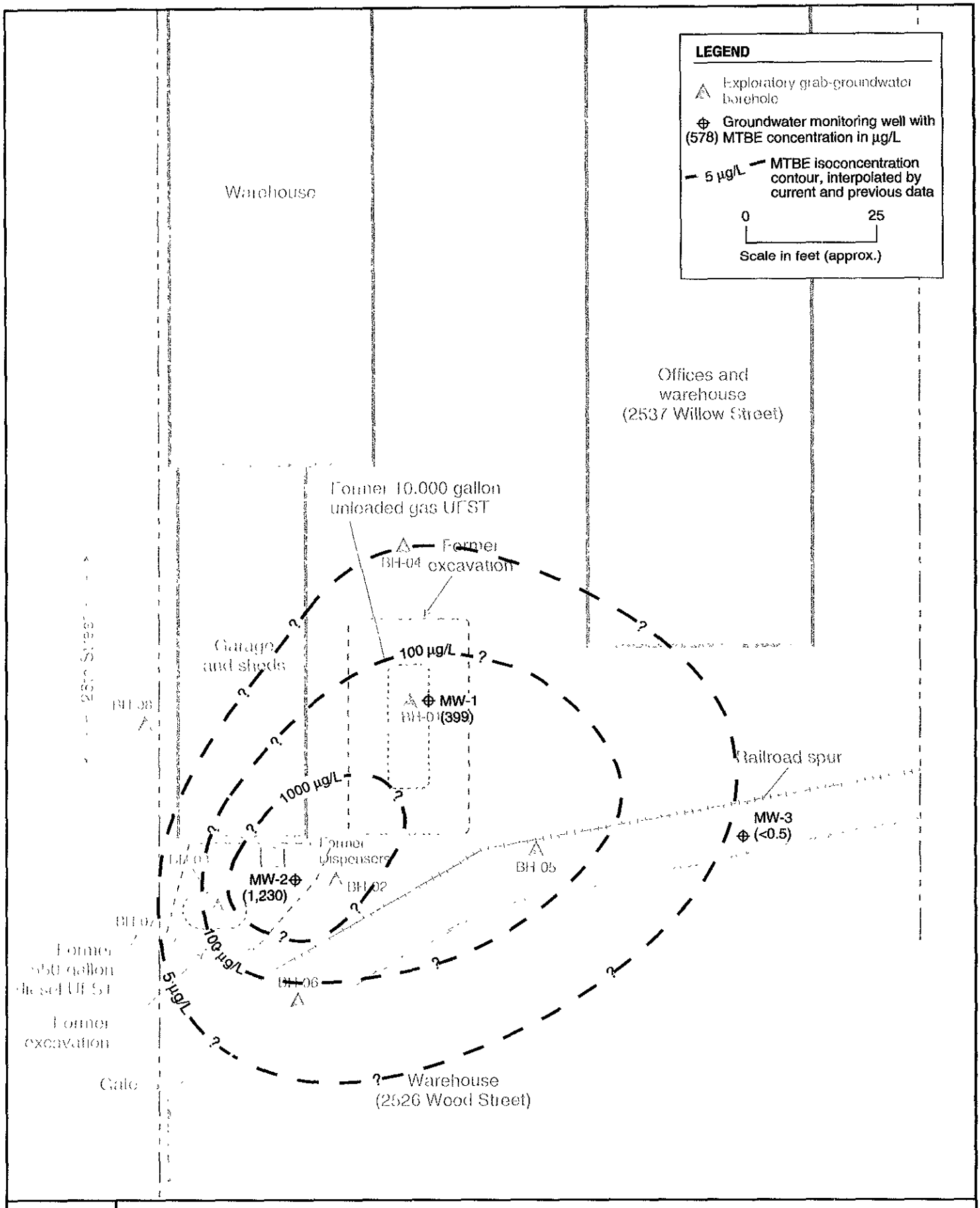

MAY 2004 MTBE ISOCONCENTRATION CONTOURS

2526 Wood Street **Oakland, CA**	**By: MJC**	**JUNE 2004**
	Figure 5	

★ Stellar Environmental Solutions, Inc.
Geoscience & Engineering Consulting

2003-41-31

groundwater contaminant concentrations were found in downgradient UFST backfill well MW-2, with the contaminant plume oriented east-west, consistent with that event's groundwater flow direction. The site data collected to date, including the hydropunch data, suggest: 1) the two UFST excavations exert a seasonal hydrologic control on contaminant distribution due to infiltration; 2) there may be a source of contamination (i.e., residual soil contamination in the unsaturated zone) immediately east of well MW-2 (between the two UFST excavations) that desorbs during high water level conditions and migrates downgradient of the area of MW-2; and 3) plume migration appears to be dominantly to the south.

PLUME GEOMETRY AND MIGRATION INDICATIONS

Based on data collected to date, the emerging conceptual model of the plume consists of: two centers around the former UFST areas, subject to seasonal fluxes of contaminant flow in a south-by-southwest direction. Changes in well water levels and plume geometry suggest that groundwater recharge by direct infiltration into the unpaved ground surface is a controlling factor. The backfill area of the former UFST fills up during winter rainfall events. The infiltrated water comes in contact with the residual contamination in the UFST backfill areas until the winter recharge water pulses the contaminated groundwater to migrate dominantly to the south. The plume appears to flow within the water-bearing unit between 13.5 feet bgs to 17.5 feet bgs. Monitoring well MW-2, installed in UFST backfill area near the former dispensers and downgradient of the former 10,000-gallon gasoline UFST area, shows the highest concentrations. Well MW-1 shows relatively minor contamination compared to the adjacent "grab" groundwater borehole data collected in that area in October 2003. Well MW-3 appears to define the lateral southern boundaries of the plume. Examination of results from the October 2003 hydropunch sampling show that, outside of the UFST boreholes, the western and southern boreholes BH-02, BH-05, and BH-06 have the highest residual concentration of contaminants, while BH-07 and BH-08 along 26th Street showed trace to non-detected hydrocarbons. The plume conceptual model will be updated as needed based on future data.

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. Hydrocarbon contamination was most pronounced in samples from the areas of the two former UFST areas and south-southwest of them.
- 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 has varied from south-southeast (February 2004) to west (May 2004), with a relatively flat hydraulic gradient. The inferred seasonal variations in water levels likely result from direct infiltration through the unpaved surface during winter recharge and the lithologic differences between well locations (higher-permeability UFST backfill vs. lower-permeability native soil). Examination of the flow directions and hydrochemical data from both the wells and "grab" groundwater sampling completed suggest that southern flow is dominant.

- 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 May 2004 well sampling event included only MTBE and TBA. Current groundwater contamination above ESL criteria appears to be constrained onsite, with the exception of MTBE and TBA, which may to extend offsite to the west.
- The distribution and magnitude of groundwater contamination has varied greatly in the two monitoring events, especially gasoline and MTBE. This variation is attributed to seasonal recharge mobilizing residual contamination in the areas of the former UFSTs, suggesting localized plume instability that warrants continued groundwater monitoring. Surface paving of the site area around the former UFSTs would result in less direct infiltration, and could result in a more stable plume.
- The distribution of groundwater contamination has generally correlated with the measured groundwater flow direction. Groundwater contamination appears to be constrained onsite, although the current event MTBE concentrations above 5 mg/L may extend offsite to the west.
- The current monitoring wells appear adequate to define local groundwater flow direction and to evaluate site-sourced hydrochemistry, although continued groundwater monitoring is warranted to ensure that groundwater contamination above regulatory agency levels of concern is not migrating offsite.
- 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 Alameda County Health. This will include electronic uploads of water level and groundwater contamination data for future monitoring events to the California GeoTracker system.

- The focus of continued groundwater monitoring will be to evaluate the magnitude and extent of groundwater contamination, especially with regard to regards plume stability. Should future monitoring indicate offsite migration of contamination, additional assessment activities will be considered (i.e., sensitive receptor; vicinity well survey; risk-based corrective action [RBCA] study; and/or additional exploratory boreholes/groundwater monitoring wells).
- The property owner will continue to pursue reimbursement of eligible incurred corrective action costs from the California UST Cleanup Fund.

7.0 REFERENCES

Alameda County Health Care Services – Department of Environmental Health (Alameda County Health), 2004. Letter approving Stellar Environmental Solutions' January 8, 2004 technical workplan for groundwater characterization at 2526 Wood Street, Oakland, California. January 26.

Alameda County Health, 2003. Letter approving Stellar Environmental Solutions' August 20, 2003 PSA workplan for 2526 Wood Street, Oakland, California. September 29.

Regional Water Quality Control Board, San Francisco Bay Region (RWQCB), 2004. Screening for Environmental Concerns at Sites With Contaminated Soil and Groundwater. February.

RWQCB, 1999. East Bay Plain Groundwater Basin Beneficial Use Evaluation Report. June.

Stellar Environmental Solutions, Inc. (SES), 2004a. Workplan for Groundwater Characterization – Russ Elliott, Inc. Facility, 2526 Wood Street, Oakland, California. January 8.

SES, 2004b. Groundwater Monitoring Well Installation and Baseline Groundwater Monitoring Report – Russ Elliott, Inc. Facility, 2526 Wood Street, Oakland, California. March 15.

SES, 2003a. Underground Fuel Storage Tanks Closure Documentation and Assessment Report, Russ Elliott, Inc. – 2526 Wood Street, Oakland, California. August 15.

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.

8.0 LIMITATIONS

This report has been prepared for the exclusive use of Ms. Jeannette Elliott, the 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 date of this report. 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 (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 (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	100	0.044	2.9	3.3	1.5	0.023	750
July 1995 Stockpiled Soil Sample (concentrations in mg/Kg)									
SP1 (A-D) [a]	—	**340**	**960**	*<0.005*	*<0.005*	*<0.005*	*<0.015*	*NA*	*NA*
June 1996 Stockpiled Soil Sample (mg/Kg)									
STK (A-D)	—	*<25*	**340**	**0.80**	**1.2**	**0.71**	*<0.005*	*<0.05*	*NA*
October 1995 Pit Water Sample (µg/L)									
W-1	4.5	*<50*	*<50*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*NA*	*NA*
Groundwater ESLs (µg/L)		100	100	1.0	40	30	13	5.0	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 where groundwater is 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 (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	100	0.044	2.9	3.3	1.5	0.023	750
Stockpiled Soil Sample (mg/Kg)									
STK 1A-1D	—	*NA*	*<1.0*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	**0.15**	**9.9**
Pit Water Sample (µg/L)									
W-1	7'	*NA*	**790**	**48**	**120**	**14**	**88**	**810**	*ND*
	Groundwater ESLs (µg/L)	100	100	1.0	40	30	13	5.0	2.5

Notes:

TEHd = Total extractable hydrocarbons – diesel range; TVHg = Total volatile hydrocarbons – gasoline range.

NA = Sample not analyzed for this constituent.
ND = Not Detected – method reporting limit not specified in lab report.

ESLs = Regional Water Quality Control Board, San Francisco Bay Region "Environmental Screening Levels" for commercial/industrial sites where groundwater is a potential or current drinking water source.

Table A-3
Borehole Soil Analytical Results (mg/Kg)
2526 Wood Street, Oakland, California

Sample I.D.	Sample Depth (feet)	TEHd	TVHg	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE [a]	Fuel Oxygenates and Lead Scavengers [b]
October 2003 Boreholes									
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*
February 2004 Monitoring Well Installation Boreholes									
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	TBA = 0.073

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 and lead scavengers.

TEHd = Total extractable hydrocarbons – diesel range; TVHg = Total volatile hydrocarbons – gasoline range; MTBE = Methyl tertiary-butyl ether; TBA = Tertiary-butyl alcohol.

ND = Not selected above method reporting limits; NA = Not analyzed for these constituents.

ESLs = Regional Water Quality Control Board, San Francisco Bay Region "Environmental Screening Levels" for commercial/industrial sites where groundwater is a potential or current drinking water source.

Table A-4
October 2003 Borehole Groundwater Analytical Results (µg/L)
2526 Wood Street, Oakland

Sample I.D.	TEHd	TVHg	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE [a]	Fuel Oxygenates and Lead Scavengers [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	100	1.0	40	30	13	5.0	TAME = NLP | TBA = 12 DIPE = NLP

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 and lead scavengers.

TEHd = Total extractable hydrocarbons – diesel range; TVHg = Total volatile hydrocarbons – gasoline range; TAME = Tertiary-amyl methyl ether; MTBE = Methyl tertiary-butyl ether; TBA = Tertiary butyl alcohol; DIPE = Di-isopropyl ether.

ND = Not selected above method reporting limits; NA = Not analyzed for these constituents; NLP = No level published.

ESLs = Regional Water Quality Control Board, San Francisco Bay Region "Environmental Screening Levels" for commercial/industrial sites where groundwater is a potential or current drinking water source.

Table A-5
Historical Groundwater Monitoring Well Groundwater Analytical Results (µg/L)
2526 Wood Street, Oakland

Sample I.D.	TEHd	TVHg	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE [a]	Fuel Oxygenates [b]
February 2004 Event								
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*
May 2004 Event								
MW-1	*<50*	*< 50*	*<0.5*	*<0.5*	*<0.5*	*<1.00*	**399**	**TAME = 2**
MW-2	*<50*	**83**	*<0.5*	*<0.5*	*<0.5*	*<1.00*	**1,230**	**TAME = 52 | DIPE = 0.6 TBA = 243**
MW-3	*<50*	*< 50*	*<0.5*	*<0.5*	*<0.5*	*<1.00*	*<0.5*	*ND*
Groundwater ESLs	100	100	1.0	40	30	13	5.0	TAME = NLP | TBA = 12 DIPE = NLP

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 and lead scavengers. Full list of analytes is included in Appendix D.

TEHd = Total extractable hydrocarbons – diesel range; TVHg = Total volatile hydrocarbons – gasoline range; TAME = Tertiary-amyl methyl ether; MTBE = Methyl tertiary-butyl ether; TBA = Tertiary butyl alcohol; DIPE = Di-isopropyl ether

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

ESLs = Regional Water Quality Control Board, San Francisco Bay Region "Environmental Screening Levels" for commercial/industrial sites where groundwater is a potential or current drinking water source.

NORTH STATE LABS

FLUID-LEVEL MONITORING DATA

Project No: _____ Date: 05.18.04

Project/Site Location: PW55 ELLIOTT 2526 WOOD ST OAKLAND CA

Technician: KURT ATKINSON Method: ELECTRONIC

Boring/ Well	Depth to Water (feet)	Depth to Product (feet)	Product Thickness (feet)	Total Well Depth (feet)	Comments
MW-1	4.30			15.95	@ 1105
MW-2	4.50			15.15	@ 1100
MW-3	4.41			18.15	@ 1055

Measurements referenced to top of well casing. NORTH

NORTH STATE LABS

WELL PURGING/SAMPLING DATA

Project Number: _____ Date: 05.18.04

Project / Site Location: RUSS ELLIOTT
2526 WOOD ST
OAKLAND CA

Sampler/Technician: RYAN ATKINSON / SCOTT

Casing Diameter (inches)	0.75	2	4	6
Casing Volumes (gallons/foot)	0.02	0.2	0.7	1.52

Well No. MW-1

A. Total Well Depth	15.95
B. Depth To Water	4.30
C. Water Height (A-B)	11.65
D. Well Casing Diameter	2
E. Casing Volume	.2
F. Single Case Volume (CxE)	2.33
G. 3 Case Volume(s)(CxEx3)	6.99
H. 80% Recharge Level	6.63

Purge Event
Start Time: 1210
Finish Time: 1225
Purge Volume: 7.00
Recharge
Depth to Water: 4.55
Time Measured: 1300

Well Fluid Parameters:

Casing Volumes

VOL	0	1	2	3
pH	7.67	7.50	7.41	7.38
T (°F)	19.7	19.0	18.8	18.8
Cond.	2230	2223	2222	2224
DO	1.97/21.0%			
Turbidity				
ORP				

Summary Data:
Total Gallons Purged: 7
Purge device: DC-60
Sampling Device: DISP. BAILER
Sample Collection Time: 1300
Sample Appearance:

Well No. MW-2

A. Total Well Depth	15.15
B. Depth To Water	4.50
C. Water Height (A-B)	10.65
D. Well Casing Diameter	2
E. Casing Volume	.2
F. Single Case Volume (CxE)	2.13
G. 3 Case Volume(s)(CxEx3)	6.39
H. 80% Recharge Level	6.63

Purge Event
Start Time: 1150
Finish Time: 1200
Purge Volume: 7.00
Recharge
Depth to Water: 5.10
Time Measured: 1252

Well Fluid Parameters:

Casing Volumes

VOL	0	1	2	3
pH	7.13	7.14	7.12	7.13
T (°F)	20.4	20.0	19.5	19.6
Cond.	1382	1334	1379	1405
DO	2.67/33.4%			
Turbidity				
ORP				

Summary Data:
Total Gallons Purged: 7
Purge device: DC-60
Sampling Device: DISP. BAILER
Sample Collection Time: 1252
Sample Appearance:

Drums Remaining Onsite: _____ *Total Volume:* _____ *Gals. (Show Location on Site Plan)*

NORTH STATE LABS

WELL PURGING/SAMPLING DATA

Project Number: _____ Date: 05.18.04

Project / Site Location: RUSS ELLIOTT
2526 WOOD ST
OAKLAND CA

Sampler/Technician: ISAAN ATKINSON / SCOTT

Casing Diameter (inches)	0.75	2	4	6
Casing Volumes (gallons/foot)	0.02	0.2	0.7	1.52

Well No. MW-3

A. Total Well Depth	18.15
B. Depth To Water	4.41
C. Water Height (A-B)	13.74
D. Well Casing Diameter	2
E. Casing Volume	.2
F. Single Case Volume (CxE)	2.75
G.3 Case Volume(s)(CxEx3)	8.25
H. 80% Recharge Level	12.66

Purge Event
Start Time: 1120
Finish Time: 1140
Purge Volume: 8.5
Recharge
Depth to Water: 4.55
Time Measured: 1235

Well Fluid Parameters:				
Casing Volumes				
VOL	0	1	2	3
pH	6.88	6.94	6.94	6.99
T (°F)	72.1	20.2	19.1	19.3
Cond.	2290	23.91	2424	0.2.
DO	1.78	15.11		
Turbidity				
ORP				
Summary Data:				
Total Gallons Purged: 8.5				
Purge device: DC-60				
Sampling Device: DISP. BAILER				
Sample Collection Time: 1235				
Sample Appearance:				

Well No. _____

A. Total Well Depth	
B. Depth To Water	
C. Water Height (A-B)	
D. Well Casing Diameter	
E. Casing Volume	
F. Single Case Volume (CxE)	
G. Case Volume(s)(CxEx)	
H. 80% Recharge Level	

Purge Event
Start Time:
Finish Time:
Purge Volume:
Recharge
Depth to Water:
Time Measured:

Well Fluid Parameters:					
Casing Volumes					
pH					
T (°F)					
Cond.					
DO					
Turbidity					
ORP					
Summary Data:					
Total Gallons Purged:					
Purge device:					
Sampling Device:					
Sample Collection Time:					
Sample Appearance:					

Drums Remaining Onsite: _____ *Total Volume:* _____ *Gals. (Show Location on Site Plan)*

APPENDIX C

Well Installation Waste Soil Disposal Documentation

NON-HAZARDOUS WASTE MANIFEST

Please print or type (Form designed for use on elite (12 pitch) typewriter)

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. N/A

Manifest Document No. N750112

2. Page 1 of

3. Generator's Name and Mailing Address SITE=SAME
JEANETTE ELLIOTT
1744 SKYVIEW DRIVE SAN LEANDRO, CA 94577

4. Generator's Phone 510) 351-3358

5. Transporter 1 Company Name
NORTH STATE ENVIRONMENTAL

6. US EPA ID Number

A. State Transporter's ID

B. Transporter 1 Phone

7. Transporter 2 Company Name

8. US EPA ID Number

C. State Transporter's ID

D. Transporter 2 Phone

9. Designated Facility Name and Site Address
DK ENVIRONMENTAL
3650 EAST 26TH STREET, LOS ANGELES, CA 90223

10. US EPA ID Number

E. State Facility's ID

F. Facility's Phone
(323) 268-5056

11. WASTE DESCRIPTION	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt./Vol.
a. NON-HAZARDOUS WASTE, SOLID (SOIL)	3	DM	1500	P
b.				
c.				
d.				

G. Additional Descriptions for Materials Listed Above
A. 340305-08

H. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

GENERATOR

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

Printed/Typed Name: Bruce Tucker — Signature: Bruce Tucker — Date: Month 3 Day 16 Year 04

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: [illegible] — Signature: [illegible] — Date: Month 3 Day 16 Year 04

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name — Signature — Date: Month Day Year

FACILITY

19. Discrepancy Indication Space

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

Printed/Typed Name — Signature — Date: Month Day Year

NON-HAZARDOUS WASTE

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: 04-0721
Date Received: 05/21/2004 Date reported: 06/03/2004

Three water samples were analyzed for gasoline and diesel by 8015M, BTEX by method 8021B and fuel oxygenates by GC/MS method 8260B. No errors occurred during analysis. QC/QA results were within acceptance limits. LCS/LCSD results were reported instead of MS/MSD for diesel analysis due to lack of sample volume supplied.

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

Lab Number: 04-0721
Client: Stellar Env. Solutions
Project: RUSS ELLIOTT/ 2526 WOOD ST., OAKLAND

Date Reported: 06/01/2004

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

Analyte	Method	Result	Unit	Date Sampled	Date Analyzed
Sample: 04-0721-01 Client ID: MW-1				05/18/2004	W
Benzene	SW8020F	ND<0.5	UG/L		05/27/2004
Ethylbenzene	SW8020F	ND<0.5	UG/L		05/27/2004
Gasoline Range Organics	SW8020F	ND<50	UG/L		05/27/2004
Toluene	SW8020F	ND<0.5	UG/L		05/27/2004
Xylenes	SW8020F	ND<1.0	UG/L		05/27/2004
Diesel Fuel #2	CATFH	ND<0.05	MG/L		05/28/2004
Sample: 04-0721-02 Client ID: MW-2				05/18/2004	W
Benzene	SW8020F	ND<0.5	UG/L		05/27/2004
Ethylbenzene	SW8020F	ND<0.5	UG/L		05/27/2004
Gasoline Range Organics	SW8020F	83	UG/L		05/27/2004
Toluene	SW8020F	ND<0.5	UG/L		05/27/2004
Xylenes	SW8020F	ND<1.0	UG/L		05/27/2004
Diesel Fuel #2	CATFH	ND<0.05	MG/L		05/28/2004
Sample: 04-0721-03 Client ID: MW-3				05/18/2004	W
Benzene	SW8020F	ND<0.5	UG/L		05/27/2004
Ethylbenzene	SW8020F	ND<0.5	UG/L		05/27/2004
Gasoline Range Organics	SW8020F	ND<50	UG/L		05/27/2004
Toluene	SW8020F	ND<0.5	UG/L		05/27/2004
Xylenes	SW8020F	ND<1.0	UG/L		05/27/2004
Diesel Fuel #2	CATFH	ND<0.05	MG/L		05/28/2004

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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

Quality Control/Quality Assurance

ab Number: 04-0721
lient: Stellar Env. Solutions
roject: RUSS ELLIOTT/ 2526 WOOD ST., OAKLAND

te Reported: 06/01/2004
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	50	UG/L	ND	113/112	1
enzene	SW8020F	0.5	UG/L	ND	105/104	1
oluene	SW8020F	0.5	UG/L	ND	109/110	1
thylbenzene	SW8020F	0.5	UG/L	ND	112/114	2
ylenes	SW8020F	1.0	UG/L	ND	115/115	0
iesel Fuel #2	CATFH	0.05	MG/L	ND	105/109	4

LAP Certificate NO:1753
Reviewed and Approved

John A. Murphy, Laboratory Director

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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: 04-0721
Client : Stellar Env. Solutions
Project : RUSS ELLIOTT/ 2526 WOOD ST., OAKLAND

Date Sampled : 05/18/2004
Date Analyzed: 05/28/2004
Date Reported: 06/01/2004

Fuel Oxygenates by Method 8260B

Laboratory Number	04-0721-01	04-0721-02	04-0721-03
Client ID	MW-1	MW-2	MW-3
Matrix	W	W	W
Analyte	UG/L	UG/L	UG/L
Methyl-tert-butyl ether	399	1230	ND<0.5
Ethyl tert-butyl ether	ND<1	ND<1	ND<1
tert-Amyl methyl ether	2	52	ND<1
Di-isopropyl ether (DIPE)	ND<0.5	0.6	ND<0.5
tert-Butyl alcohol	ND<10	243	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	110	109	107
SUR-Toluene-d8	104	108	106
SUR-4-Bromofluorobenzene	87	89	89
SUR-1,2-Dichloroethane-d4	92	89	95

Comments:

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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: 04-0721
Client : Stellar Env. Solutions
Project : RUSS ELLIOTT/ 2526 WOOD ST., OAKLAND

Date Sampled : 05/18/2004
Date Analyzed: 05/28/2004
Date Reported: 06/01/2004

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

Laboratory Number	04-0721	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	87/80	8	61-128	25
1,2-Dichloroethane	ND<1				
Benzene	ND<0.5	124/119	4	74-135	21
1,2-Dibromoethane	ND<0.5				
Trichloroethene	ND<0.5	105/100	5	69-129	20
Toluene	ND<0.5	125/120	4	61-141	19
Chlorobenzene	ND<1	120/115	4	70-139	19
SUR-Dibromofluoromethane	102	107/110	3	67-129	21
SUR-Toluene-d8	101	106/104	2	72-119	16
SUR-4-Bromofluorobenzene	88	90/90	0	78-121	19
SUR-1,2-Dichloroethane-d4	85	96/99	3	85-115	25

Reviewed and Approved

John A. Murphy
Laboratory Director

Chain of Custody Record

#04-0721

Lab job no. _____
Date _____
Page _____ of _____

Laboratory: North State Environmental
Address: 80 South Spire Suite V
So. San Francisco CA
650-366-4563

Project Owner: Mrs. Jeanette Elliott
Site Address: 3526 Wood Street
Oakland CA

Project Name: Francis Russ Elliott, Inc
525 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 (5)	Lead Scavengers (2)	MTBE (EPA 8260)	Remarks
MW-1	—	5/18	1300	H2O	VOA's + 1L AMBER	Yes	HCl in VOAs	NO	5	X	X	X	X			
MW-2	—	↓	1252	↓	↓	↓	↓	↓	↓	X	X	X	X			
MW-3	—	↓	1235	↓	↓	↓	↓	↓	↓	X	X	X	X			
																Provide a COELT document (EDD) file as well as hard-copy report.

Relinquished by:	Date	Received by:	Date	Relinquished by:	Date	Received by:	Date
Signature	5/18	Signature	5/18	Signature		Signature	
Printed: KIAN H. ATKINSON	Time	Printed: MARK DYKSTRA	Time	Printed	Time	Printed	Time
Company: NORTH STATE LABS	1345	Company: NORTH STATE LABS	1345	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

★ Stellar Environmental Solutions

2198 Sixth Street #201, Berkeley, CA 94710