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STELLAR ENVIRONMENTAL SOLUTIONS, INC.
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TRANSMITTAL MEMORANDUM	
TO: ALAMEDA COUNTY HEALTH CARE SERVICES - ENVIRONMENTAL HEALTH DEPT. - LOCAL OVERSIGHT PROGRAM 1131 HARBOR BAY PKWY, SUITE 250 ALAMEDA, CA 94502	DATE: OCTOBER 1, 2004 <div style="text-align: center; transform: rotate(-45deg); opacity: 0.5;"> Alameda County Environmental Health OCT 1 2004 </div>
ATTENTION: MR. BARNEY CHAN <i>DH</i>	FILE: SES 2003-41
SUBJECT: FORMER RUSS ELLIOTT FACILITY 2526 WOOD STREET OAKLAND, CALIFORNIA FUEL LEAK CASE NO. RO00040	
WE ARE SENDING: <input checked="" type="checkbox"/> HEREWITH	<input type="checkbox"/> UNDER SEPARATE COVER
<input checked="" type="checkbox"/> VIA MAIL	<input type="checkbox"/> VIA
THE FOLLOWING: THIRD QUARTER 2004 GROUNDWATER MONITORING REPORT (DATED SEPTEMBER 30, 2004)	
<input type="checkbox"/> AS REQUESTED	<input type="checkbox"/> FOR YOUR APPROVAL
<input type="checkbox"/> FOR REVIEW	<input checked="" type="checkbox"/> FOR YOUR USE
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COPY TO: ELLIOTT FAMILY TRUST (c/o VALVA REALTY - REPRESENTATIVE FOR PROPERTY OWNER) (2 COPIES)	BY: BRUCE RUCKER BR

**THIRD QUARTER 2004
GROUNDWATER
MONITORING REPORT**

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

Prepared for

**ELLIOTT FAMILY TRUST
SAN LEANDRO, CALIFORNIA**

September 2004

September 30, 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

Alameda County
09/05/2004
Environmental Health

Subject: Third Quarter 2004 Groundwater Monitoring Report
Former Russ Elliott, Inc. Facility
2526 Wood Street, Oakland, California

Dear Mr. Chan:

This report documents the third consecutive groundwater monitoring event (Q3 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.

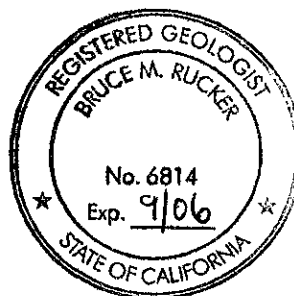
Continued groundwater monitoring is warranted to evaluate plume stability over time.

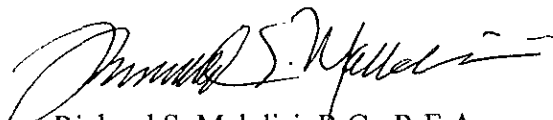
Please contact us at (510) 644-3123 if you have any questions.

Sincerely,



Bruce 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

**THIRD 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**

September 30, 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.

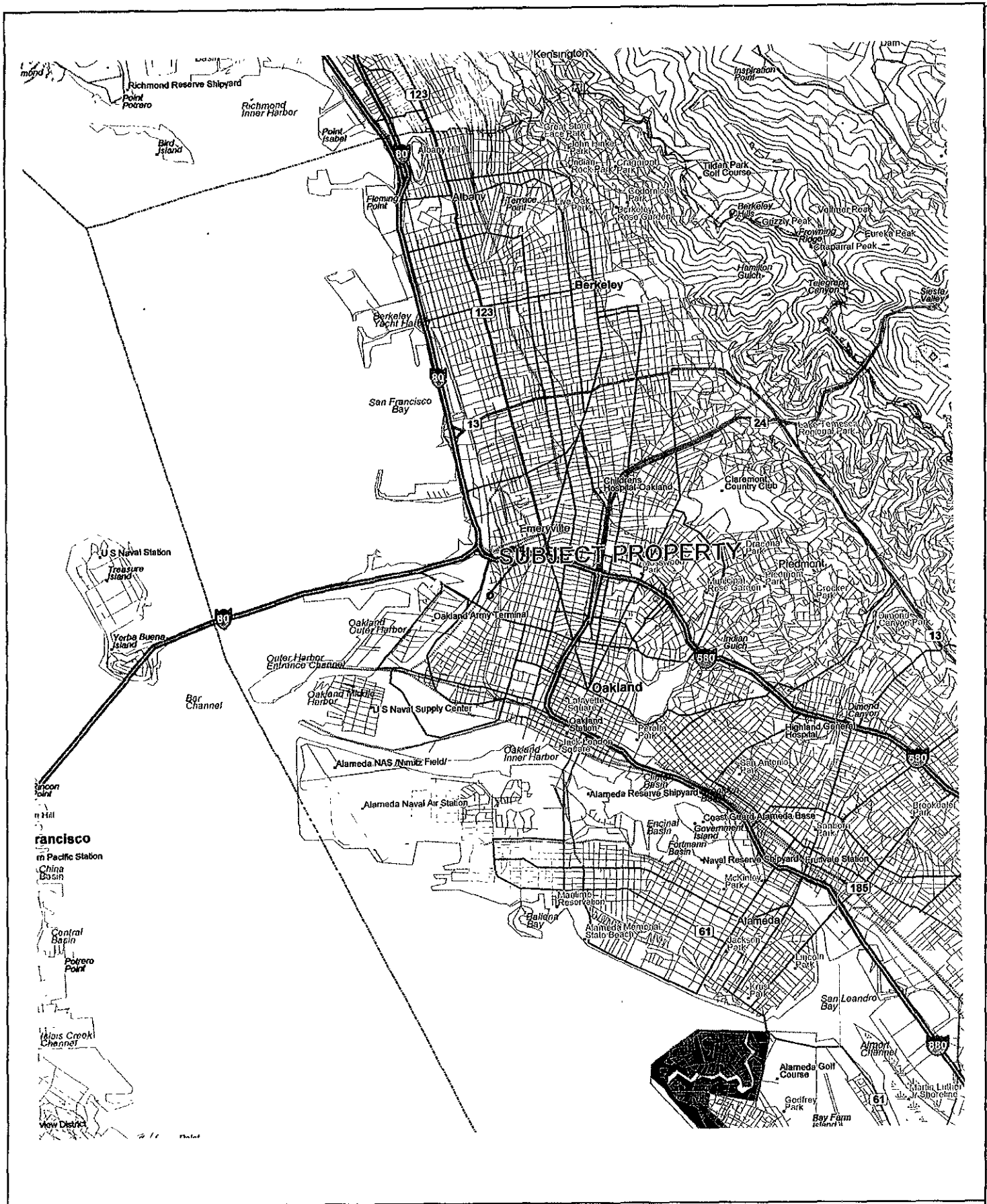
The property is approximately 380 feet long (between Wood Street and Willow Street) by approximately 120 feet wide. The long axis of the site (parallel to 26th Street) is oriented approximately northeast to southwest. Figure 1 is a site location map. Figure 2 shows the location of the former site UFSTs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



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

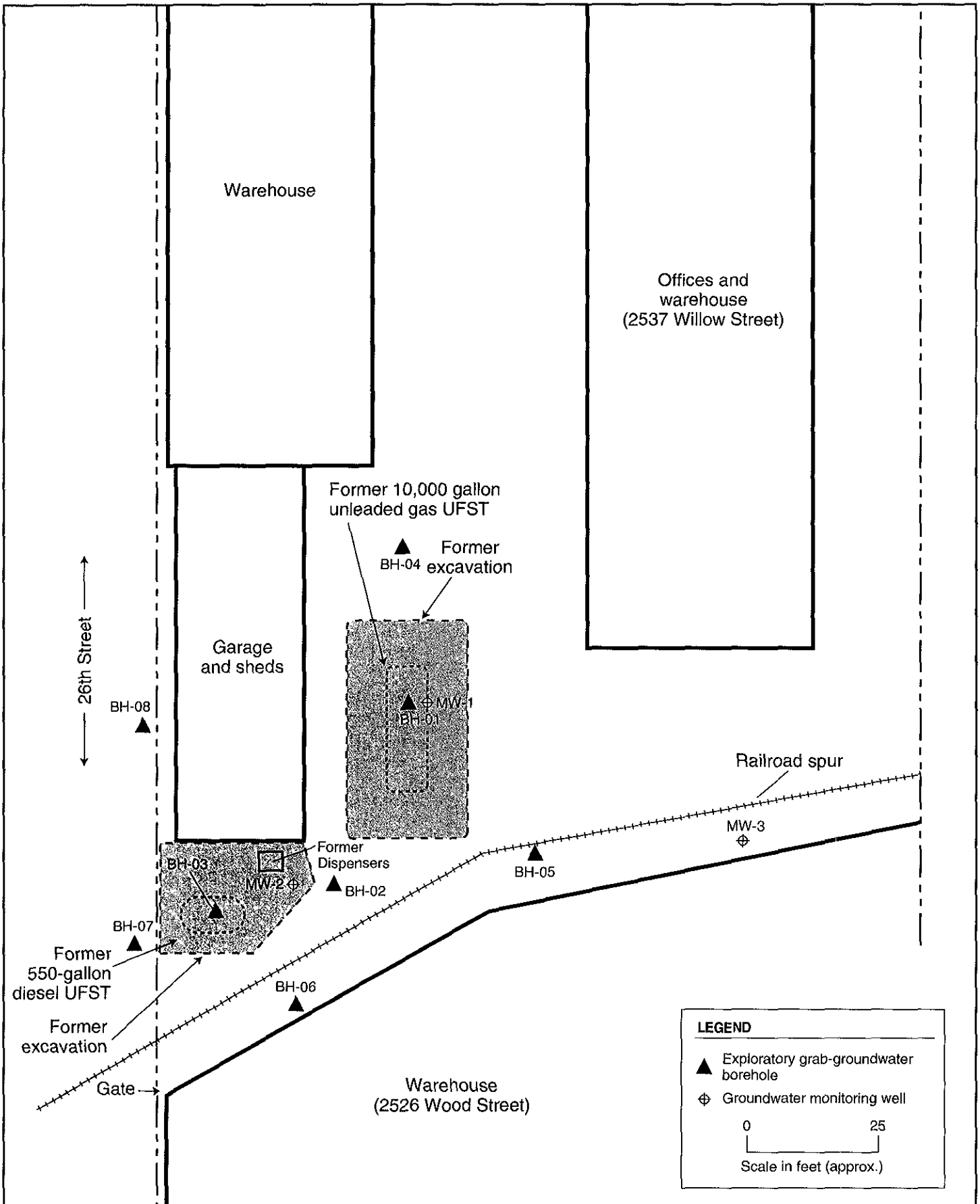
2526 Wood Street
Oakland, CA

By: MJC

JULY 2003

Figure 1

2003-36-01



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 third 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 AUGUST 2004 GROUNDWATER MONITORING AND 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 August 12, 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
August 12, 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	4.90	1.97
MW-2	20	5 to 20	6.29	7.80	-1.51
MW-3	20	5 to 20	6.94	4.95	1.99

Notes:

^(a) All elevations are expressed as feet above mean sea level.

^(b) Depths are in feet below ground surface, adjacent to the well.

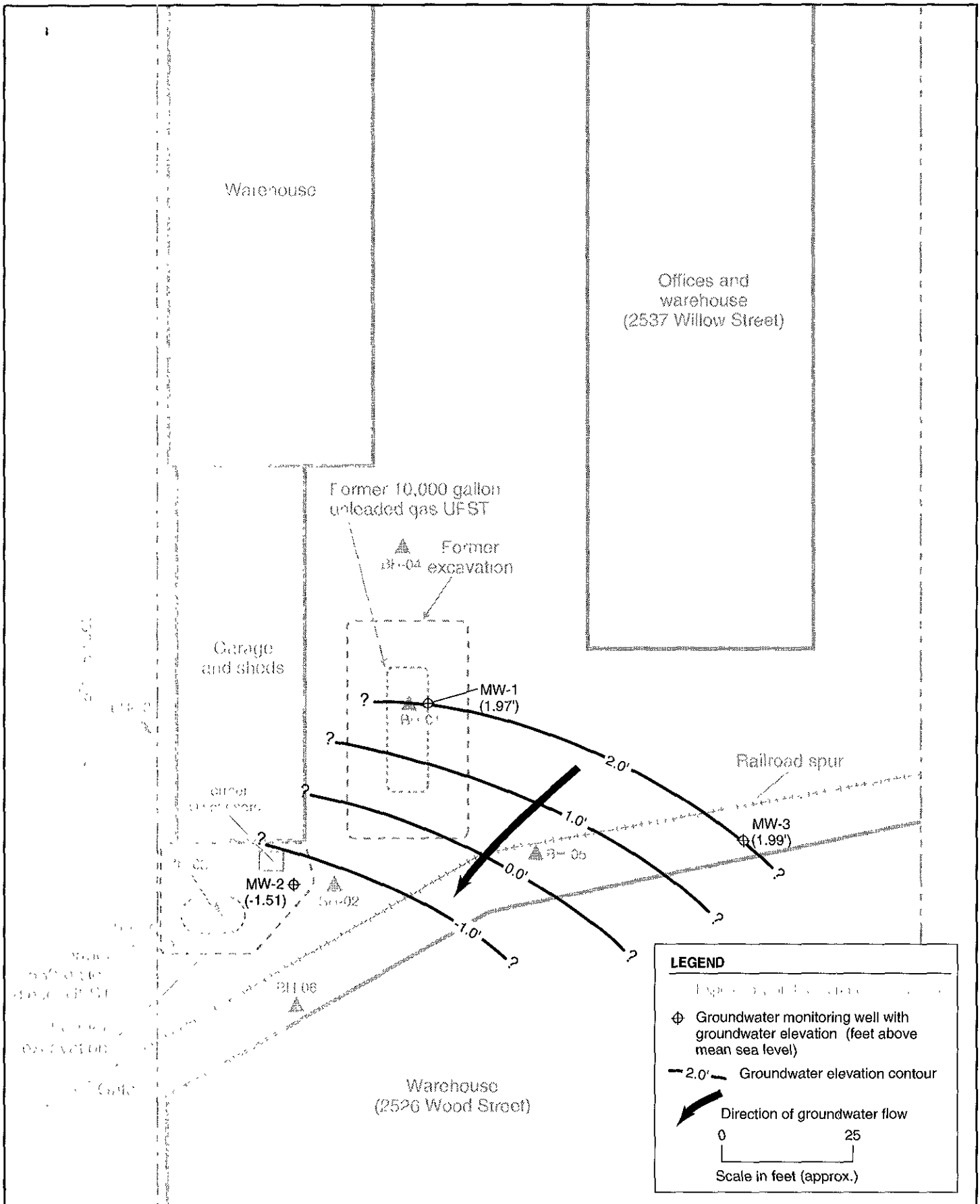
TOC = Top of casing.

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 entered 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.

Depth to groundwater (equilibrated in wells) in the current monitoring event ranged from approximately 4.9 to 7.80 feet below grade, slightly greater than a ½-foot decrease in elevation in wells MW-1 and MW-3, and a 3.3 foot decrease in elevation in well MW-2. Figure 3 is a groundwater elevation and contour map for the current event. The water level decreases in wells MW-1 and MW-3 relative to the previous event were expected, due to the small amount of precipitation since the previous event; however, the substantial drop in water level in well MW-2 relative to the previous was significantly more than expected. Direct infiltrating recharge during winter rains and lithologic control on the water levels is suggested. During this event, the water level change was greatest in MW-2, which is installed (and screened) within more permeable backfill material (the former UFST excavations). During the previous event, following the winter rainy season, water levels dropped further 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. During this current event, the water level in well MW-1 remained relatively unchanged relative to the previous event.



GROUNDWATER ELEVATION MAP — AUGUST 12, 2004

2526 Wood Street
Oakland, CA

By: MJC

AUGUST 2004

Figure 3

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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 (i.e., the UFSTs and obviously-contaminated backfill material) has been removed. 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 CURRENT EVENT ANALYTICAL RESULTS AND DISCUSSION

This section discusses the 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 (aquitarde).

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.

Apparent local groundwater flow direction in the August 2004 event was to the west (see Figure 3), consistent with the flow direction observed in the previous May 2004 event. During this event, the hydraulic gradient (approximately 0.039 feet/foot) was substantially greater than the previous May 2004 event (approximately 0.008 feet/foot). The significant increase in the hydraulic gradient is due to the substantial drop in the water level elevation in well MW-2. This observed flow direction during the current event and the previous (May 2004) event and the gradient are not consistent with the observed flow direction during the February 2004 event (to the south-southeast, an approximately 90 degree change in direction). However, as discussed in previous reports, the geometry of the contaminant plume suggests that historical flow direction was also to the south. Groundwater flow direction will continue to be evaluated in future groundwater monitoring events.

Q3 2004 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.

Table 2 summarizes the groundwater sample analytical results from the August 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

No gasoline (TVHg) was detected above the laboratory lower detection limit (<50 µg/L) in any of the three onsite monitoring wells during this monitoring event.

Table 2
August 12, 2004 Groundwater Analytical Results
2526 Wood Street, Oakland, California ^(a)

Sample ID.	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	1,210	TAME = 3 TBA = 78
MW-2	<50	< 50	<0.5	<0.5	<0.5	<1.00	769	TAME = 6 TBA = 81
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 µg/L.

^(b) Table reports only detected fuel oxygenates and lead scavengers. Full list of analytes is included in Appendix D.

MTBE = Methyl tertiary-butyl ether.

TAME = Tertiary-amyl methyl ether.

TBA = Tertiary-butyl alcohol.

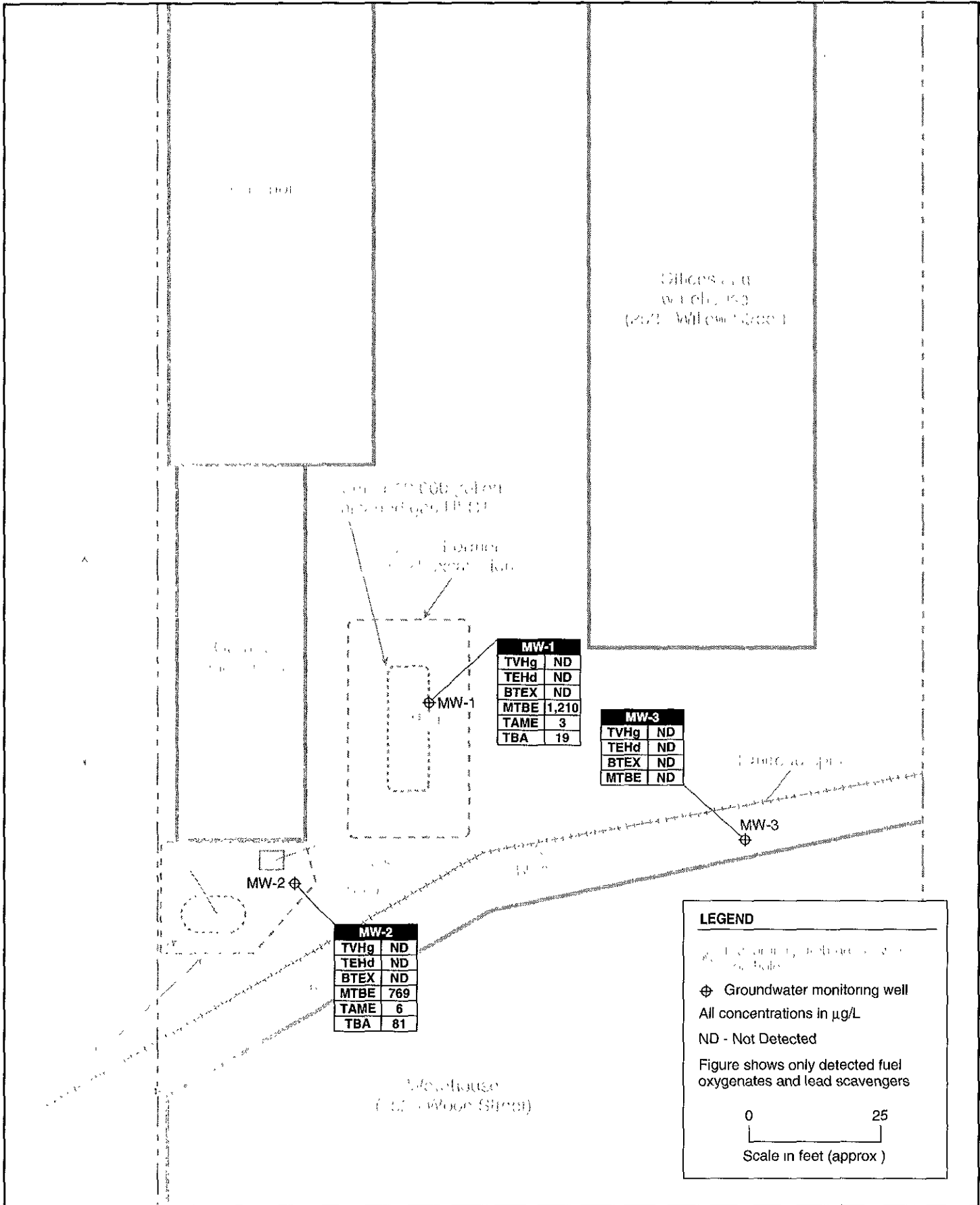
TEHd = Total extractable hydrocarbons – diesel range.

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.



MW-1	
TVHg	ND
TEHd	ND
BTEX	ND
MTBE	1,210
TAME	3
TBA	19

MW-3	
TVHg	ND
TEHd	ND
BTEX	ND
MTBE	ND

MW-2	
TVHg	ND
TEHd	ND
BTEX	ND
MTBE	769
TAME	6
TBA	81

LEGEND

⊕ Groundwater monitoring well

All concentrations in µg/L

ND - Not Detected

Figure shows only detected fuel oxygenates and lead scavengers

0 25

Scale in feet (approx)

AUGUST 2004 GROUNDWATER ANALYTICAL RESULTS

2526 Wood Street
Oakland, CA

By: MJC

AUGUST 2004

Figure 4

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Methyl tertiary-Butyl Ether

MTBE was detected in wells MW-1 and MW-2, at 1,210 $\mu\text{g/L}$ and 769 $\mu\text{g/L}$, respectively. MW-1 exhibited a substantial increase from 399 $\mu\text{g/L}$ MTBE in the previous event; however, MW-2 exhibited a decrease from 1,230 $\mu\text{g/L}$ 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 and TBA—at 3 $\mu\text{g/L}$ and 78 $\mu\text{g/L}$, respectively, in well MW-1, and at 6 $\mu\text{g/L}$ and 81 $\mu\text{g/L}$, respectively, in well MW-2. DIPE was not detected in any site wells in any of the site monitoring wells during this event. 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

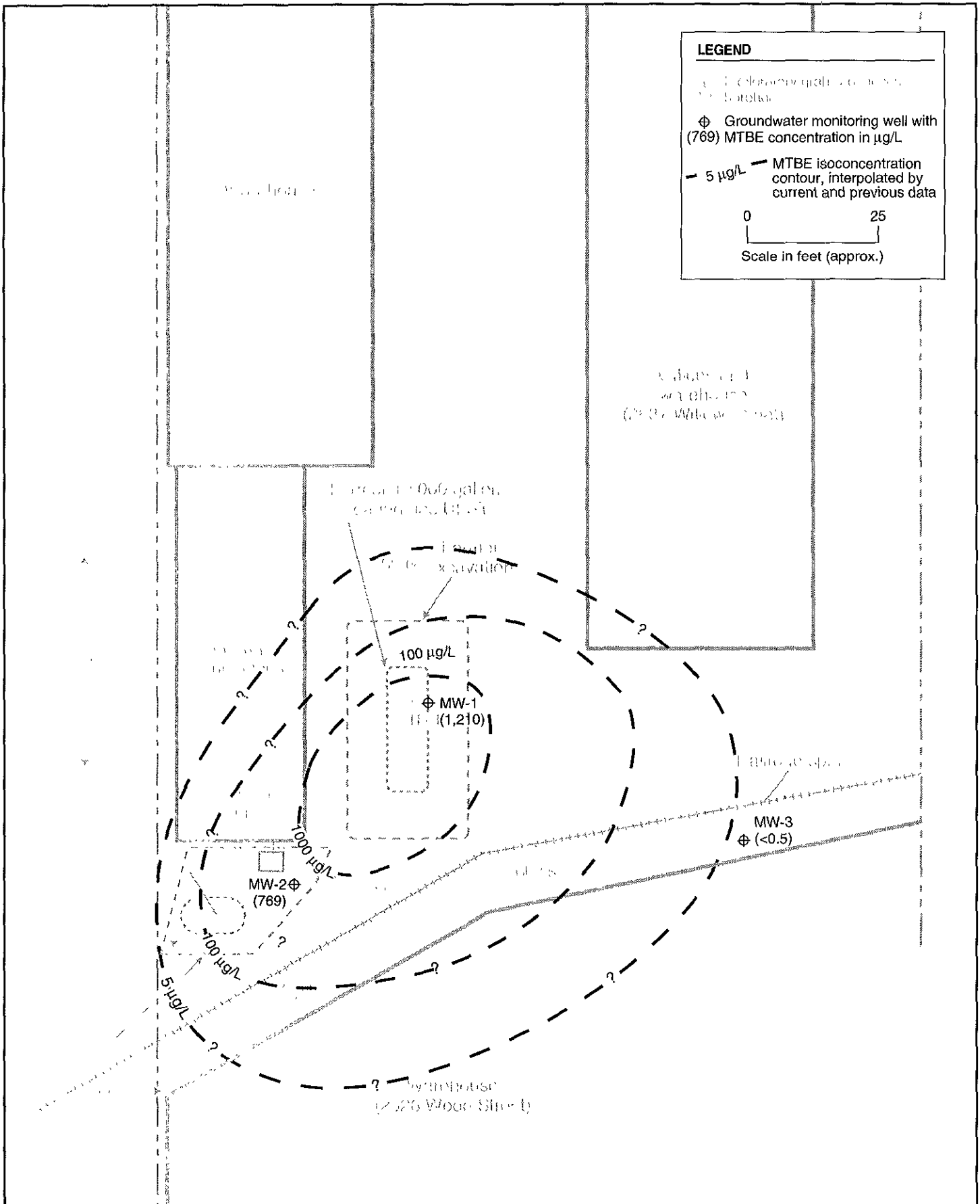
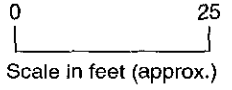
The variations in groundwater contaminant concentrations and distribution between the current and previous events, most notably for MTBE in wells MW-1 and MW-2, are likely due to the apparent seasonal differences in water level elevations. In the February 2004 (wet weather, high water level conditions) event, maximum groundwater contamination was centered at upgradient UFST backfill well MW-1, with the elliptical contaminant plume aligned mainly north-south along that event's groundwater flow direction. During the May 2004 (dry season, low water level conditions) event, maximum 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.

During the Q3 2004 groundwater monitoring event, maximum contaminant concentrations were observed in well MW-1, at the former location of the 10,000-gallon gasoline UFST. However, well MW-2, downgradient of MW-1 and located near the former 650 gallon diesel UFST, also exhibited significant contaminant concentrations. During the Q3 2004 event, the contaminant plume also appeared to be oriented principally east-west, consistent with this event's groundwater flow direction.

LEGEND

- ⊕ Groundwater monitoring well with (769) MTBE concentration in µg/L

— 5 µg/L — MTBE isoconcentration contour, interpolated by current and previous data



AUGUST 2004 MTBE ISOCONCENTRATION CONTOURS

2526 Wood Street
Oakland, CA

By: MJC

AUGUST 2004

Figure 5

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2003-41-34



The site data collected to date, including the hydropunch data, suggest that: 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 south and west.

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-to-west 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 and 17.5 feet bgs. Monitoring well MW-1, installed in the backfill area of the former 10,000-gallon gasoline UFST, shows the highest concentration of MTBE during this monitoring event. Monitoring well MW-2—installed in the backfill area near the former dispensers and downgradient of the former 10,000-gallon gasoline UFST area—also shows a significant concentration of MTBE; however, the MTBE concentration in MW-2 has decreased slightly since the May 2004 event, when it was the highest concentration of the three onsite wells. 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.

5.0 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 UFSTs 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 third 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 was measured to the west-southwest, with a fairly steep hydraulic gradient, which may be influenced at MW-1 by the backfill. This flow direction coincides with the direction measured during the May 2004 event; however, it contrasts with the south-southeast direction measured during the February 2004 event. The hydraulic gradient during this event is significantly greater than the previous two events. This was caused by a substantial decrease in the water level of well MW-2 during this event. 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 may be historically dominant over a westward flow.

- 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 August 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 extend offsite to the west.
- The distribution and magnitude of groundwater contamination, particularly gasoline and MTBE, has varied greatly in the three monitoring events. 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 groundwater contamination appears to be constrained onsite to the south, 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, particularly with regard to plume stability. If future monitoring indicate offsite migration of contamination, additional assessment activities—i.e., sensitive receptor; vicinity well survey; RBCA study; and/or additional exploratory boreholes/groundwater monitoring wells—will be considered.
- The property owner will continue to pursue reimbursement of eligible incurred corrective action costs from the California UST Cleanup Fund.

6.0 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, 2004c. Second Quarter 2004 Groundwater Monitoring Report – Russ Elliott, Inc. Facility, 2526 Wood Street, Oakland, California. July 1.
- 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.

7.0 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 ID.	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.

MTBE = Methyl tertiary-butyl ether.

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 ID.	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.

MTBE = Methyl tertiary-butyl ether.

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 ID.	Sample Depth (feet)	TEHd	TVHg	Benzene	Toluene	Ethylbenzene	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; third 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; third 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
August 2004 Event								
MW-1	<50	< 50	<0.5	<0.5	<0.5	<1.00	1,210	TAME = 3 TBA = 78
MW-2	<50	< 50	<0.5	<0.5	<0.5	<1.00	769	TAME = 6 TBA = 81
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; third 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: 08-12-04

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

Technician: KIAN ATKINSON Method: ELECTRONIC

Well	Depth to Water (feet)	Depth to Product (feet)	Product Thickness (feet)	Total Well Depth (feet)	Comments
MW-1	4.90			16.70	@ 0930
MW-2	7.80			15.25	@ 0925
MW-3	4.95			18.20	@ 0915

NORTH STATE LABS

WELL PURGING/SAMPLING DATA

Project Number: _____ Date: 05.12.04

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

Sampler/Technician: KIAN ATKINSON

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

Well No. <u>MW-1</u>	Well No. <u>MW-2</u>																																																																																										
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>A. Total Well Depth</td><td>16.70</td></tr> <tr><td>B. Depth To Water</td><td>4.90</td></tr> <tr><td>C. Water Height (A-B)</td><td>11.80</td></tr> <tr><td>D. Well Casing Diameter</td><td>2</td></tr> <tr><td>E. Casing Volume</td><td>.2</td></tr> <tr><td>F. Single Case Volume (Cx E)</td><td>2.36</td></tr> <tr><td>G. 3 Case Volume(s) (Cx Ex 3)</td><td>7.08</td></tr> <tr><td>H. 80% Recharge Level</td><td>7.26</td></tr> </table>	A. Total Well Depth	16.70	B. Depth To Water	4.90	C. Water Height (A-B)	11.80	D. Well Casing Diameter	2	E. Casing Volume	.2	F. Single Case Volume (Cx E)	2.36	G. 3 Case Volume(s) (Cx Ex 3)	7.08	H. 80% Recharge Level	7.26	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>A. Total Well Depth</td><td>15.25</td></tr> <tr><td>B. Depth To Water</td><td>7.80</td></tr> <tr><td>C. Water Height (A-B)</td><td>7.45</td></tr> <tr><td>D. Well Casing Diameter</td><td>2</td></tr> <tr><td>E. Casing Volume</td><td>.2</td></tr> <tr><td>F. Single Case Volume (Cx E)</td><td>1.49</td></tr> <tr><td>G. 3 Case Volume(s) (Cx Ex 3)</td><td>4.47</td></tr> <tr><td>H. 80% Recharge Level</td><td>9.29</td></tr> </table>	A. Total Well Depth	15.25	B. Depth To Water	7.80	C. Water Height (A-B)	7.45	D. Well Casing Diameter	2	E. Casing Volume	.2	F. Single Case Volume (Cx E)	1.49	G. 3 Case Volume(s) (Cx Ex 3)	4.47	H. 80% Recharge Level	9.29																																																										
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NORTH STATE LABS

WELL PURGING/SAMPLING DATA

Project Number: _____ Date: 08-12-04

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

Sampler/Technician: KIAN ATKINSON

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	18.20
B. Depth To Water	4.95
C. Water Height (A-B)	13.25
D. Well Casing Diameter	2
E. Casing Volume	2
F. Single Case Volume (CxEx)	2.65
G. Case Volume(s)(CxEx)	7.95
H. 80% Recharge Level	7.60

Purge Event	
Start Time:	0945
Finish Time:	0955
Purge Volume:	6
Recharge	
Depth to Water:	7.38
Time Measured:	1130

Well Fluid Parameters:				
Gals	0	2.5	5.5	8
pH	6.69	6.78	6.76	6.72
T (°C)	22.5	20.7	19.8	19.5
Cond.	1401	1600	1684	1680
DO mg/L	0.44			
DO %	5.5			
Turbidity	131.3	TD HIGH	139.1	69.4
ORP				

Summary Data:	
Total Gallons Purged:	6
Purge device:	DC-60
Sampling Device:	DMP. BAWER
Sample Collection Time:	1130
Sample Appearance/Odor:	

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 (CxEx)	
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:				
Gals.				
pH				
T (°C)				
Cond.				
DO mg/L				
DO %				
Turbidity				
ORP				

Summary Data:	
Total Gallons Purged:	
Purge device:	
Sampling Device:	
Sample Collection Time:	
Sample Appearance/Odor:	

Chain of Custody Record

04-128 T

Laboratory North State Environmental
 Address 80 South Spire Suite V
50 San Francisco CA
650-266-4563
 Project Owner Mrs. Jeannette 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) _____

Lab job no. _____
 Date _____
 Page _____ of _____

SEP

Filtered			No. of Containers				Analysis Required				Remarks			
			TVA - 99solinc (80ISM)	TEN-bed (80ISM)	STEX (EPA 803)	Fuel Oxygens (EPA 803)	Lead Scavengers (*)	MTBE (EPA 8060)						
1	MW-1	12/04	1200	H ₂ O	VOAs + 1-Lamber	Yes	HCl in VOAs	No	5	X	X	X	X	
2	MW-2	↓	1140	↓	" "	↓	↓	↓	↓	X	X	X	X	
3	MW-3	↓	1130	↓	" "	↓	↓	↓	↓	X	X	X	X	
														Provide a COELT document (EDD) as well as hard-copy report.

Relinquished by: _____ Signature: _____ Printed: <u>KIM JOHNSON</u> Company: <u>N.S.L.</u>	Date: <u>5/13/04</u> Time: <u>1700</u>	Received by: _____ Signature: _____ Printed: <u>Erin Cunniffe</u> Company: <u>NS Labs</u>	Date: _____ Time: _____	Relinquished by: _____ Signature: _____ Printed: _____ Company: _____	Date: _____ Time: _____	Received by: _____ Signature: _____ Printed: _____ Company: _____	Date: _____ Time: _____
Turnaround Time: <u>2 week</u>				Relinquished by: _____ Signature: _____ Printed: _____ Company: _____			
Comments: <u>* Fuel Oxygens to include: TAME, ETBE, DIPE + TBA (only)</u>				Received by: _____ Signature: _____ Printed: _____ Company: _____			
<u>* Lead Scavengers include EDB + EDC (only)</u>				Relinquished by: _____ Signature: _____ Printed: _____ Company: _____			

2000-00-01

Laboratory Report Project Overview

EDF 1.2a

Laboratory:	North State Environmental, South San Francisco, CA
Lab Report Number:	04-1287
Project Name:	#2003-41/2526 WOOD ST.
Work Order Number:	04-1287
Control Sheet Number:	NA

Case Narrative

North State Environmental, South San Francisco, CA

Report Date: 08/25/2004
Report Number: 04-1287

Project: #2003-41/2526 WOOD ST.
Order #: 04-1287

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. The LCS/LCSD results were reported instead of MS/MSD for gasoline/8021B analyses due to lack of sample volume supplied and for GC/MS due to matrix effects.

Approved by: _____



Date: _____

8/25/04

Report Summary

Labreport	Sampid	Labsampid	Mtrx	QC	Anmcode	Exmcode	Logdate	Extdate	Anadate	Lablotcti	Run Sub
04-1287	MW-1	04-1287-01	W	CS	8260FA	SW5030B	08/12/200	08/24/200	08/24/200	08244MLIST	1
							4	4	4		
04-1287	MW-1	04-1287-01	W	CS	CATFH	SW3510	08/12/200	08/23/200	08/23/200	08234TPHDW	1
							4	4	4		
04-1287	MW-1	04-1287-01	W	CS	SW8020F	SW5030B	08/12/200	08/23/200	08/23/200	08234GBXW3	1
							4	4	4		
04-1287	MW-2	04-1287-02	W	CS	8260FA	SW5030B	08/12/200	08/24/200	08/24/200	08244MLIST	1
							4	4	4		
04-1287	MW-2	04-1287-02	W	CS	CATFH	SW3510	08/12/200	08/23/200	08/23/200	08234TPHDW	1
							4	4	4		
04-1287	MW-2	04-1287-02	W	CS	SW8020F	SW5030B	08/12/200	08/23/200	08/23/200	08234GBXW3	1
							4	4	4		
04-1287	MW-3	04-1287-03	W	CS	8260FA	SW5030B	08/12/200	08/24/200	08/24/200	08244MLIST	1
							4	4	4		
04-1287	MW-3	04-1287-03	W	CS	CATFH	SW3510	08/12/200	08/23/200	08/23/200	08234TPHDW	1
							4	4	4		
04-1287	MW-3	04-1287-03	W	CS	SW8020F	SW5030B	08/12/200	08/23/200	08/23/200	08234GBXW3	1
							4	4	4		
		04-1284-01	W	NC	CATFH	SW3510	//	08/23/200	08/23/200	08234TPHDW	1
								4	4		
		LCSD	W	BD1	8260FA	SW5030B	//	08/23/200	08/24/200	08244MLIST	1
								4	4		
		LCSD	W	BD1	SW8020F	SW5030B	//	08/23/200	08/24/200	08234GBXW3	1
								4	4		
		LCS	W	BS1	8260FA	SW5030B	//	08/23/200	08/24/200	08244MLIST	1
								4	4		
		LCS	W	BS1	SW8020F	SW5030B	//	08/23/200	08/24/200	08234GBXW3	1
								4	4		
		BLK	W	LB1	8260FA	SW5030B	//	08/23/200	08/24/200	08244MLIST	1
								4	4		
		BLK	W	LB1	SW8020F	SW5030B	//	08/23/200	08/23/200	08234GBXW3	1
								4	4		
		WBLK	W	LB1	CATFH	SW3510	//	08/23/200	08/23/200	08234TPHDW	1
								4	4		
		1284-01MS	W	MS1	CATFH	SW3510	//	08/23/200	08/23/200	08234TPHDW	1
								4	4		
		1284-01MSD	W	SD1	CATFH	SW3510	//	08/23/200	08/23/200	08234TPHDW	1
								4	4		

Lab Report No.: 04-1287 Date: 08/25/2004

Page: 1

Project Name: #2003-41/2526 WOOD		Analysis: Volatile Organic Compounds by GC/MS Fuel				
Project No: 04-1287		Method: 8260FA				
		Prep Meth: SW5030B				
Field ID: MW-1	Lab Samp ID: 04-1287-01					
Descr/Location: MW-1	Rec'd Date: 08/13/2004					
Sample Date: 08/12/2004	Prep Date: 08/24/2004					
Sample Time: 1200	Analysis Date: 08/24/2004					
Matrix: Water	QC Batch: 08244MLIST					
Basis: Wet	Notes:					
Analyte	Det Limit	Rep Limit	Note	Result	Units	Pvc Dil
Methyl-tert-butyl ether (MTBE)	0.314	0.5 PQL	EL	1210	UG/L	1
Ethyl tert-butyl ether (ETBE)	0.201	1. PQL		ND	UG/L	1
tert-Amyl methyl ether (TAME)	0.284	1. PQL		3	UG/L	1
Di-isopropyl ether (DIPE)	0.189	0.5 PQL		ND	UG/L	1
tert-Butyl alcohol (TBA)	4.956	10. PQL		78	UG/L	1
1,2-Dichloroethane	0.167	1. PQL		ND	UG/L	1
1,2-Dibromoethane	0.216	0.5 PQL		ND	UG/L	1
SURROGATE AND INTERNAL STANDARD RECOVERIES:						
4-Bromofluorobenzene		78-121 SLSA		102%		1
Toluene-d8		72-119 SLSA		98%		1
Dibromofluoromethane		67-129 SLSA		86%		1
1,2-Dichloroethane-d4		85-115 SLSA		99%		1
EL: Compound quantitated at a 100x dilution factor						

Approved by: _____

Date: _____

Lab Report No.: 04-1287 Date: 08/25/2004

Page: 2

Project Name: #2003-41/2526 WOOD		Analysis: Volatile Organic Compounds by GC/MS Fuel					
Project No: 04-1287		Method: 8260FA					
		Prep Meth: SW5030B					
Field ID: MW-2		Lab Samp ID: 04-1287-02					
Descr/Location: MW-2		Rec'd Date: 08/13/2004					
Sample Date: 08/12/2004		Prep Date: 08/24/2004					
Sample Time: 1140		Analysis Date: 08/24/2004					
Matrix: Water		QC Batch: 08244MLIST					
Basis: Wet		Notes:					
Analyte	Det Limit	Rep Limit	Note	Result	Units	Pvc Dil	
Methyl-tert-butyl ether (MTBE)	0.314	0.5 PQL	EJ	769.	UG/L	1	
Ethyl tert-butyl ether (ETBE)	0.201	1. PQL		ND	UG/L	1	
tert-Amyl methyl ether (TAME)	0.284	1. PQL		6	UG/L	1	
Di-isopropyl ether (DIPE)	0.189	0.5 PQL		ND	UG/L	1	
tert-Butyl alcohol (TBA)	4.956	10. PQL		81.	UG/L	1	
1,2-Dichloroethane	0.167	1. PQL		ND	UG/L	1	
1,2-Dibromoethane	0.216	0.5 PQL		ND	UG/L	1	
SURROGATE AND INTERNAL STANDARD RECOVERIES:							
4-Bromofluorobenzene		78-121 SLSA		106%		1	
Toluene-d8		72-119 SLSA		100%		1	
Dibromofluoromethane		67-129 SLSA		118%		1	
1,2-Dichloroethane-d4		85-115 SLSA		97%		1	
EJ: Compound quantitated at a 20x dilution factor							

Approved by: _____

Date: _____

Lab Report No.: 04-1287 Date: 08/25/2004

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Project Name: #2003-41/2526 WOOD	Analysis: Volatile Organic Compounds by GC/MS Fuel
Project No: 04-1287	Method: 8260FA
	Prep Meth: SW5030B

Field ID: MW-3	Lab Samp ID: 04-1287-03
Descr/Location: MW-3	Rec'd Date: 08/13/2004
Sample Date: 08/12/2004	Prep Date: 08/24/2004
Sample Time: 1130	Analysis Date: 08/24/2004
Matrix: Water	QC Batch: 08244MLIST
Basis: Wet	Notes:

Analyte	Det Limit	Rep Limit	Note	Result	Units	Pvc Dil
Methyl-tert-butyl ether (MTBE)	0.314	0.5	PQL	ND	UG/L	1
Ethyl tert-butyl ether (ETBE)	0.201	1.	PQL	ND	UG/L	1
tert-Amyl methyl ether (TAME)	0.284	1.	PQL	ND	UG/L	1
Di-isopropyl ether (DIPE)	0.189	0.5	PQL	ND	UG/L	1
tert-Butyl alcohol (TBA)	4.956	10.	PQL	ND	UG/L	1
1,2-Dichloroethane	0.167	1.	PQL	ND	UG/L	1
1,2-Dibromoethane	0.216	0.5	PQL	ND	UG/L	1

SURROGATE AND INTERNAL STANDARD RECOVERIES:						
4-Bromofluorobenzene		78-121	SLSA	108%		1
Toluene-d8		72-119	SLSA	100%		1
Dibromofluoromethane		67-129	SLSA	125%		1
1,2-Dichloroethane-d4		85-115	SLSA	102%		1

Approved by: _____

Date: _____

Lab Report No.: 04-1287 Date: 08/25/2004

Page: 4

Project Name: #2003-41/2526 WOOD		Analysis: CA LUFT Method for Total Fuel Hydrocarbons				
Project No: 04-1287		Method: CATFH				
		Prep Meth: SW3510				
Field ID: MW-1	Lab Samp ID: 04-1287-01					
Descr/Location: MW-1	Rec'd Date: 08/13/2004					
Sample Date: 08/12/2004	Prep Date: 08/23/2004					
Sample Time: 1200	Analysis Date: 08/23/2004					
Matrix: Water	QC Batch: 08234TPHDW					
Basis: Wet	Notes:					
Analyte	Det Limit	Rep Limit	Note	Result	Units	Pvc Dil
Diesel Fuel #2	0.033	0.05 PQL		ND	MG/L	1

Approved by: _____ Date: _____

Lab Report No.: 04-1287 Date: 08/25/2004

Page: 5

Project Name: #2003-41/2526 WOOD		Analysis: CA LUFT Method for Total Fuel Hydrocarbons				
Project No: 04-1287		Method: CATFH				
		Prep Meth: SW3510				
Field ID: MW-2	Lab Samp ID: 04-1287-02					
Descr/Location: MW-2	Rec'd Date: 08/13/2004					
Sample Date: 08/12/2004	Prep Date: 08/23/2004					
Sample Time: 1140	Analysis Date: 08/23/2004					
Matrix: Water	QC Batch: 08234TPHDW					
Basis: Wet	Notes:					
Analyte	Det Limit	Rep Limit	Note	Result	Units	Pvc Dil
Diesel Fuel #2	0.033	0.05 PQL		ND	MG/L	1

Approved by: _____

Date: _____

Lab Report No.: 04-1287 Date: 08/25/2004

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Project Name: #2003-41/2526 WOOD		Analysis: CA LUFT Method for Total Fuel Hydrocarbons				
Project No: 04-1287		Method: CATFH				
		Prep Meth: SW3510				
Field ID: MW-3	Lab Samp ID: 04-1287-03					
Descr/Location: MW-3	Rec'd Date: 08/13/2004					
Sample Date: 08/12/2004	Prep Date: 08/23/2004					
Sample Time: 1130	Analysis Date: 08/23/2004					
Matrix: Water	QC Batch: 08234TPHDW					
Basis: Wet	Notes:					
Analyte	Det Limit	Rep Limit	Note	Result	Units	Pvc Dil
Diesel Fuel #2	0.033	0.05 PQL		ND	MG/L	1

Approved by: _____

Date: _____

Lab Report No.: 04-1287 Date: 08/25/2004

Page: 7

Project Name: #2003-41/2526 WOOD	Analysis: BTEX/Gasoline Range Organics (SW8020/8015)
Project No: 04-1287	Method: SW8020F
	Prep Meth: SW5030B

Field ID: MW-1	Lab Samp ID: 04-1287-01
Descr/Location: MW-1	Rec'd Date: 08/13/2004
Sample Date: 08/12/2004	Prep Date: 08/23/2004
Sample Time: 1200	Analysis Date: 08/23/2004
Matrix: Water	QC Batch: 08234GBXW3
Basis: Wet	Notes:

Analyte	Det Limit	Rep Limit	Note	Result	Units	Pvc Dil
Gasoline Range Organics	4.066	50. PQL		ND	UG/L	1
Benzene	0.076	0.5 PQL		ND	UG/L	1
Toluene	0.160	0.5 PQL		ND	UG/L	1
Ethylbenzene	0.215	0.5 PQL		ND	UG/L	1
Xylenes	0.211	1.0 PQL		ND	UG/L	1

Approved by: _____

Date: _____

Project Name: #2003-41/2526 WOOD	Analysis: BTEX/Gasoline Range Organics (SW8020/8015)
Project No: 04-1287	Method: SW8020F
	Prep Meth: SW5030B

Field ID: MW-2	Lab Samp ID: 04-1287-02
Descr/Location: MW-2	Rec'd Date: 08/13/2004
Sample Date: 08/12/2004	Prep Date: 08/23/2004
Sample Time: 1140	Analysis Date: 08/23/2004
Matrix: Water	QC Batch: 08234GBXW3
Basis: Wet	Notes:

Analyte	Det Limit	Rep Limit	Note	Result	Units	Pvc Dil
Gasoline Range Organics	4.066	50. PQL		ND	UG/L	1
Benzene	0.076	0.5 PQL		ND	UG/L	1
Toluene	0.160	0.5 PQL		ND	UG/L	1
Ethylbenzene	0.215	0.5 PQL		ND	UG/L	1
Xylenes	0.211	1.0 PQL		ND	UG/L	1

Approved by: _____

Date: _____

Lab Report No.: 04-1287 Date: 08/25/2004

Page: 9

Project Name: #2003-41/2526 WOOD	Analysis: BTEX/Gasoline Range Organics (SW8020/8015)
Project No: 04-1287	Method: SW8020F
	Prep Meth: SW5030B

Field ID: MW-3	Lab Samp ID: 04-1287-03
Descr/Location: MW-3	Rec'd Date: 08/13/2004
Sample Date: 08/12/2004	Prep Date: 08/23/2004
Sample Time: 1130	Analysis Date: 08/23/2004
Matrix: Water	QC Batch: 08234GBXW3
Basis: Wet	Notes:

Analyte	Det Limit	Rep Limit	Note	Result	Units	Pvc Dil
Gasoline Range Organics	4.066	50. PQL		ND	UG/L	1
Benzene	0.076	0.5 PQL		ND	UG/L	1
Toluene	0.160	0.5 PQL		ND	UG/L	1
Ethylbenzene	0.215	0.5 PQL		ND	UG/L	1
Xylenes	0.211	1.0 PQL		ND	UG/L	1

Approved by: _____

Date: _____

QA/QC Report Method Blank Summary

North State Environmental, South San Francisco, CA

Lab Report No.: 04-1287 Date: 08/25/2004

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QC Batch: 08234GBXW3	Analysis: BTEX/Gasoline Range Organics
Matrix: Water	Method: SW8020F
Lab Samp ID: BLK	Prep Meth: SW5030B
Analysis Date: 08/23/2004	Prep Date: 08/23/2004
Basis: Wet	Notes:

Analyte	Det Limit	Rep Limit	Note	Result	Units	Pvc Dil
Gasoline Range Organics	4.066	50. PQL		ND	UG/L	1
Benzene	0.076	0.5 PQL		ND	UG/L	1
Toluene	0.160	0.5 PQL		ND	UG/L	1
Ethylbenzene	0.215	0.5 PQL		ND	UG/L	1
Xylenes	0.211	1.0 PQL		ND	UG/L	1

QA/QC Report
Blank Spike/Duplicate Blank Spike Summary

North State Environmental, South San Francisco, CA

Lab Report No.: 04-1287 Date: 08/25/2004

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QC Batch: 08234GBXW3													
Matrix: Water													
Lab Samp ID: LCS													
Analyte	Analysis Method	Spike Level		Spike Result		Units		% Recoveries			Acceptance Criteria		
		LCS	LCD	LCS	LCD			LCS	LCD	RPD	%Rec	RPD	
Benzene	SW8020F	100.	100.	113.	109.	UG/L	ww	113	109	3.6	123-59	MSA	21MSP
Ethylbenzene	SW8020F	100.	100.	98.7	97.3	UG/L	ww	98.7	97.3	1.4	130-76	MSA	15MSP
Gasoline Range Organics	SW8020F	1000.	1000.	993.	947.	UG/L	ww	99.3	94.7	4.7	133-64	MSA	25MSP
Toluene	SW8020F	100.	100.	114.	109.	UG/L	ww	114	109	4.5	119-75	MSA	11MSP
Xylenes	SW8020F	300.	300.	347.	327.	UG/L	ww	116	109	6.2	129-78	MSA	11MSP

QA/QC Report Method Blank Summary

North State Environmental, South San Francisco, CA

Lab Report No.: 04-1287 Date: 08/25/2004

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QC Batch: 08234TPHDW	Analysis: CA LUFT Method for Total Fuel
Matrix: Water	Method: CATFH
Lab Samp ID: WBLK	Prep Meth: SW3510
Analysis Date: 08/23/2004	Prep Date: 08/23/2004
Basis: Wet	Notes:

Analyte	Det Limit	Rep Limit	Note	Result	Units	Pvc Dil
Diesel Fuel #2	0.033	0.05 PQL		ND	MG/L	1

QA/QC Report
Matrix Spike/Duplicate Matrix Spike Summary

North State Environmental, South San Francisco, CA

Lab Report No.: 04-1287 Date: 08/25/2004

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QC Batch: 08234TPHDW Matrix: Water Lab Samp ID: 1284-01MS Basis: Wet	Project Name: Lab Generated or Non COE Sample Project No.: Lab Generated or Non COE Sample Field ID: Lab Generated or Non COE Sample Lab Ref ID: 04-1284-01
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Analyte	Analysis Method	Spike Level		Sample Result	Spike Result		% Recoveries			Acceptance Criteria				
		MS	DMS		MS	DMS	MS	DMS	RPD	% Rec	RPD			
Diesel Fuel #2	CATFH	2.50	2.50	ND	2.18	2.19	MG/L	ww	87.2	87.6	0.46	115-64	MSA	25MSP

QA/QC Report Method Blank Summary

North State Environmental, South San Francisco, CA

Lab Report No.: 04-1287 Date: 08/25/2004

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QC Batch: 08244MLIST Matrix: Water Lab Samp ID: BLK Analysis Date: 08/24/2004 Basis: Wet	Analysis: Volatile Organic Compounds by GC/MS Fuel Method: 8260FA Prep Meth: SW5030B Prep Date: 08/23/2004 Notes:					
Analyte	Det Limit	Rep Limit	Note	Result	Units	Pvc Dil
Methyl-tert-butyl ether (MTBE)	0.314	0.5	PQL	ND	UG/L	1
Ethyl tert-butyl ether (ETBE)	0.201	1.	PQL	ND	UG/L	1
tert-Amyl methyl ether (TAME)	0.284	1.	PQL	ND	UG/L	1
Di-isopropyl ether (DIPE)	0.189	0.5	PQL	ND	UG/L	1
tert-Butyl alcohol (TBA)	4.956	10.	PQL	ND	UG/L	1
Benzene	0.176	0.5	PQL	ND	UG/L	1
Toluene	0.478	0.5	PQL	ND	UG/L	1
Chlorobenzene	0.101	1.	PQL	ND	UG/L	1
1,1-Dichloroethene	0.139	0.5	PQL	ND	UG/L	1
Trichloroethene (TCE)	0.120	0.5	PQL	ND	UG/L	1
SURROGATE AND INTERNAL STANDARD RECOVERIES:						
4-Bromofluorobenzene		78-121	SLSA	98%		1
Toluene-d8		72-119	SLSA	96%		1
Dibromofluoromethane		67-129	SLSA	76%		1
1,2-Dichloroethane-d4		85-115	SLSA	94%		1

QA/QC Report
 Blank Spike/Duplicate Blank Spike Summary
 North State Environmental, South San Francisco, CA

Lab Report No.: 04-1287 Date: 08/25/2004

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QC Batch: 08244MLIST													
Matrix: Water													
Lab Samp ID: LCS													
Analyte	Analysis Method	Spike Level		Spike Result		Units	% Recoveries			Acceptance Criteria			
		LCS	LCD	LCS	LCD		LCS	LCD	RPD	%Rec	RPD		
1,1-Dichloroethene	8260FA	20.	20.	16.3	16.1	UG/L ww	81.5	80.5	1.2	128-61	MSA	25MSP	
Benzene	8260FA	20.	20.	24.1	23.4	UG/L ww	121	117	3.4	135-74	MSA	21MSP	
Chlorobenzene	8260FA	20.	20.	26.	25.	UG/L ww	130	125	3.9	139-70	MSA	19MSP	
Toluene	8260FA	20.	20.	24.2	23.8	UG/L ww	121	119	1.7	141-61	MSA	19MSP	
Trichloroethene (TCE)	8260FA	20.	20.	24.6	23.8	UG/L ww	123	119	3.3	129-69	MSA	20MSP	
1,2-Dichloroethane-d4	8260FA	100.	100.	100.	100.	PERCENT ww	100	100	0.00	115-85	SLSA	25SLSP	
4-Bromofluorobenzene	8260FA	100.	100.	99.	101.	PERCENT ww	99.0	101	2.0	121-78	SLSA	19SLSP	
Dibromofluoromethane	8260FA	100.	100.	79.	82.	PERCENT ww	79.0	82.0	3.7	129-67	SLSA	21SLSP	
Toluene-d8	8260FA	100.	100.	99.	98.	PERCENT ww	99.0	98.0	1.0	119-72	SLSA	16SLSP	



Case Narrative

Client: Stellar Environmental Solutions

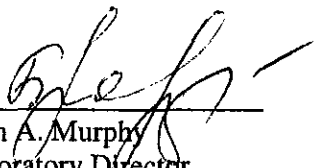
Project: #2003-41 / 2526 WOOD ST., OAKLAND

Lab No: 04-1287

Date Received: 08/13/2004

Date reported: 08/25/2004

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. The LCS/LCSD results were reported instead of MS/MSD for gasoline/8021B analyses due to lack of sample volume supplied and for GC/MS due to matrix effects.



John A. Murphy
Laboratory Director



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

Job Number: 04-1287
Client : Stellar Env. Solutions
Project : #2003-41/2526 WOOD ST. OAKLAND

Date Sampled : 08/12/2004
Date Analyzed: 08/24/2004
Date Reported: 08/25/2004

Fuel Oxygenates by Method 8260B

Laboratory Number	04-1287-01	04-1287-02	04-1287-03
Client ID	MW-1	MW-2	MW-3
Matrix	W	W	W
Analyte	UG/L	UG/L	UG/L
Methyl-tert-butyl ether	1210	769	ND<0.5
Ethyl tert-butyl ether	ND<1	ND<1	ND<1
tert-Amyl methyl ether	3	6	ND<1
Di-isopropyl ether (DIPE)	ND<0.5	ND<0.5	ND<0.5
tert-Butyl alcohol	78	81	ND<10
1,2-Dichloroethane	ND<1	ND<1	ND<1
1,2-Dibromoethane	ND<0.5	ND<0.5	ND<0.5
Ethanol	ND<100	ND<100	ND<100
SUR-Dibromofluoromethane	86	118	125
SUR-Toluene-d8	98	100	100
SUR-4-Bromofluorobenzene	102	106	108
SUR-1,2-Dichloroethane-d4	99	97	102

Comments:



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

Job Number: 04-1287
Client : Stellar Env. Solutions
Project : #2003-41/2526 WOOD ST. OAKLAND

Date Sampled : 08/12/2004
Date Analyzed: 08/24/2004
Date Reported: 08/25/2004

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

Table with columns: Laboratory Number, Client ID, Matrix, Analyte, Results, %Recoveries, MS/MSD, RPD, Recovery Limit, RPD Limit. Lists various analytes like Ethanol, Benzene, and Chlorobenzene with their respective recovery data.

Reviewed and Approved

Signature of John A. Murphy
John A. Murphy
Laboratory Director



North State Labs

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CA ELAP# 1753

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

Lab Number: 04-1287
Client: Stellar Env. Solutions
Project: #2003-41/2526 WOOD ST. OAKLAND

Date Reported: 08/25/2004

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

Analyte	Method	Result	Unit	Date Sampled	Date Analyzed
Sample: 04-1287-01 Client ID: MW-1				08/12/2004	W
Benzene	SW8020F	ND<0.5	UG/L		08/23/2004
Ethylbenzene	SW8020F	ND<0.5	UG/L		08/23/2004
Gasoline Range Organics	SW8020F	ND<50	UG/L		08/23/2004
Toluene	SW8020F	ND<0.5	UG/L		08/23/2004
Xylenes	SW8020F	ND<1.0	UG/L		08/23/2004
Diesel Fuel #2	CATFH	ND<0.05	MG/L		08/23/2004
Sample: 04-1287-02 Client ID: MW-2				08/12/2004	W
Benzene	SW8020F	ND<0.5	UG/L		08/23/2004
Ethylbenzene	SW8020F	ND<0.5	UG/L		08/23/2004
Gasoline Range Organics	SW8020F	ND<50	UG/L		08/23/2004
Toluene	SW8020F	ND<0.5	UG/L		08/23/2004
Xylenes	SW8020F	ND<1.0	UG/L		08/23/2004
Diesel Fuel #2	CATFH	ND<0.05	MG/L		08/23/2004
Sample: 04-1287-03 Client ID: MW-3				08/12/2004	W
Benzene	SW8020F	ND<0.5	UG/L		08/23/2004
Ethylbenzene	SW8020F	ND<0.5	UG/L		08/23/2004
Gasoline Range Organics	SW8020F	ND<50	UG/L		08/23/2004
Toluene	SW8020F	ND<0.5	UG/L		08/23/2004
Xylenes	SW8020F	ND<1.0	UG/L		08/23/2004
Diesel Fuel #2	CATFH	ND<0.05	MG/L		08/23/2004



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

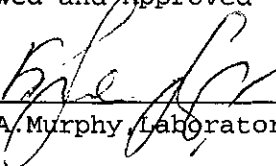
ab Number: 04-1287
Client: Stellar Env. Solutions
Project: #2003-41/2526 WOOD ST. OAKLAND

Date Reported: 08/25/2004
Gasoline and BTEX by Methods 8015M/8021B
Diesel Range Hydrocarbons by Method 8015M

Analyte	Method	Reporting Unit	Blank	Avg MS/MSD	RPD
		Limit		Recovery	
Gasoline Range Organics	SW8020F	50 UG/L	ND	99/95	4
Benzene	SW8020F	0.5 UG/L	ND	113/109	4
Toluene	SW8020F	0.5 UG/L	ND	114/109	4
Ethylbenzene	SW8020F	0.5 UG/L	ND	99/97	2
Xylenes	SW8020F	1.0 UG/L	ND	116/109	6
Diesel Fuel #2	CATFH	0.05 MG/L	ND	87/88	1

ELAP Certificate NO:1753

Reviewed and Approved


John A. Murphy, Laboratory Director