STELLAR
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GEOSCIENCE & ENGINEERING CONSULTING

March 23, 2005

Mr. Don Hwang - Hazardous Materials Specialist
Alameda County Health Care Services Agency
Environmental Health – Environmental Protection
Local Oversight Program
1131 Harbor Bay Parkway
Alameda, California 94502-6577

Subject: Groundwater Monitoring Well Installation and Sampling Specifications
Benner Automotive – 488 25th Street, Oakland, California
Alameda County Health Fuel Leak Case No. RO0002518

Dear Mr. Hwang:

INTRODUCTION

On behalf of the property owner (Mr. Michael J. Benner), Stellar Environmental Solutions, Inc. (SES) is submitting to the Alameda County Environmental Health Department (Alameda County Health) this workplan for installation and sampling of groundwater monitoring wells to evaluate UFST-sourced contamination. This workplan will implement the recommendations made in the SES August 9, 2004 Site Characterization report. On March 16, 2005 you provided us with verbal approval to proceed with the well installations, and we will be installing the wells in approximately mid-April 2005. Your March 16, 2005 letter requested the specific information provided herein. Therefore this submittal supercedes our March 18, 2005 similar submittal to you.

SCOPE OF INVESTIGATION

The technical scope of work includes the following elements: Pre- Field Work Planning; Monitoring Well Installation and Development; Monitoring Well Surveying; Monitoring Well Quarterly Sampling; Laboratory Analyses; and Report Preparation and GeoTracker Compliance.

Pre-Field Work Planning and Permitting

This task encompasses the pre-field work elements of the project, including:

- Site marking for Underground Service Alert (USA) utility clearance; and

- Applying and paying for the requisite borehole drilling permit from Alameda County Public Works Agency, and encroachment permit from the City of Oakland for working in the public roadway.

Monitoring Well Installation and Development

As previously communicated, the SES workplan proposes to install three groundwater monitoring wells: one inside the building and two on the south side of 25th Street. Figure 1 is a site location map and Figure 2 shows the proposed well locations. The wells will be used to collect (quarterly) water elevations and samples for laboratory analysis.

The overhead access inside the building is less than 20 feet, which precludes using conventional hollow-stem auger drilling method. Therefore we propose to utilize a limited-access (direct direct-push) type technology to drill the boreholes and install the wells. So that all site wells are comparably installed, all three monitoring wells will be drilled and installed using this technology. This is now a common permanent well installation technique, and has the added advantage of generating less waste soil and groundwater than the hollow-stem auger technique. The well installation and sampling will be completed using an SES licensed drilling subcontractor under SES's direction. Downhole sampling and well installation equipment will be decontaminated between boreholes.

Borehole Installation and Sampling

The boreholes will be advanced with a direct-push (i.e. GeoProbe™ or equivalent) rig. The initial borehole at each well location will be advanced with approximately 2-inch diameter sampling rods for collecting continuous core soil samples. All boreholes will be geologically logged (continuous core soil sampling) by SES.

From each borehole we will collect an estimated four soil samples for laboratory analysis at depths of approximately 10' (corresponding to the soil/water interface) and at approximately 15', 20' and 25'. Soil sampling depths will be modified from these "program" depth intervals if significant lithology changes or evidence of contamination are noted. At the proposed exterior well adjacent to former borehole BH-06, we will advance the borehole deeper than the planned well installation depth, to obtain lithologic soil data. This will be done to close the existing data gap (previous boreholes have not determined the total depth of the water-bearing unit at this location). We will likely collect one additional soil sample for laboratory analysis from the lower non-water-bearing

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

488 25th Street Oakland, CA	By: MJC	JANUARY 2003	Stellar Environmental Solutions Geoscience & Engineering Consulting
	Figure 1		

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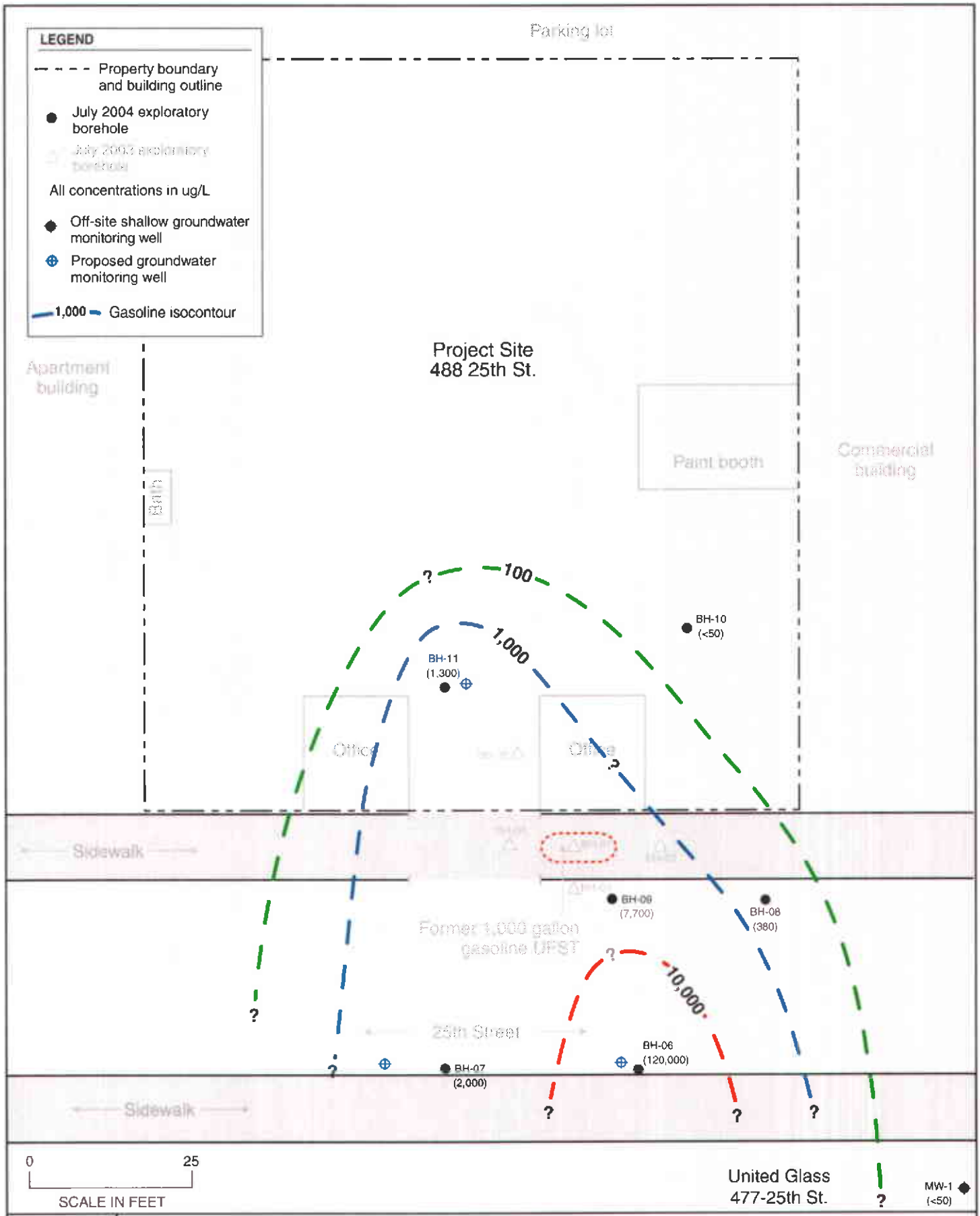


JULY 2004 GASOLINE ISOCONTOURS AND PROPOSED MONITORING WELLS

Benner Auto Repair **488-25th St., Oakland, CA**	By: MJC	MARCH 2005	★ Stellar Environmental Solutions, Inc. Geoscience & Engineering Consulting
	Figure 2		

2002-55-46

zone, estimated to be at 30' (for a total of 5 in this borehole). Bentonite chips will be added and hydrated to seal the lower portion of the borehole, up to the total depth of the completed well.

Soil and groundwater samples will be securely sealed in appropriate containers, placed in an ice chest with ice at approximately 4 degrees C., and transported to the analytical laboratory under chain-of-custody record.

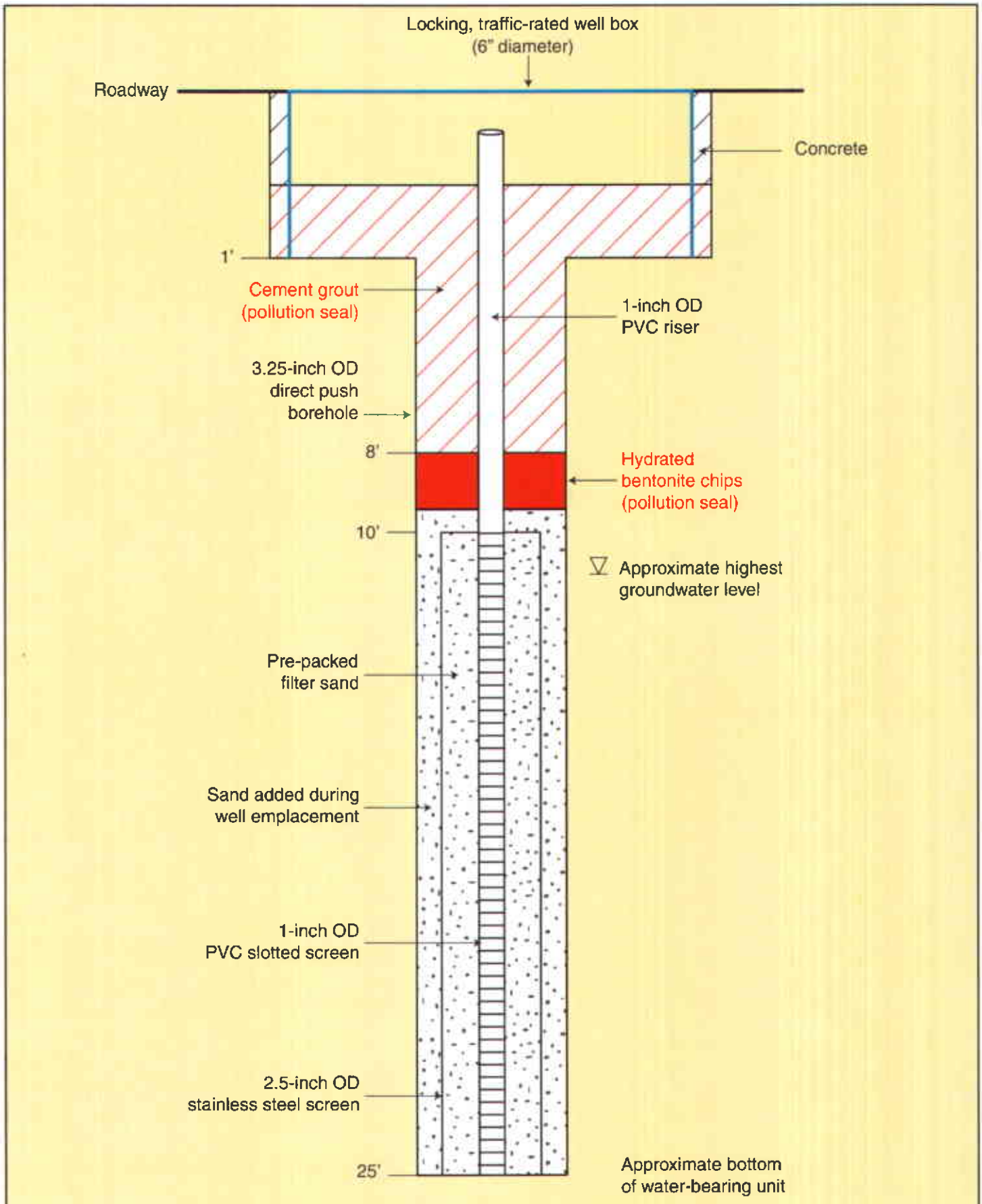
Well Completion

Following borehole drilling, each borehole will be converted to a permanent groundwater monitoring well. The approximately 2-inch diameter sampling rods will be removed from the borehole. An approximately 3.25-inch diameter blind (closed) drive rod will then be advanced to the total depth of the well. Previous geologic logging has shown the upper aquifer unit to be an approximately 5 foot-thick sand and gravel unit present at depths between approximately 19 and 24 feet. In both previous sampling events (in July 2003 and July 2004), water was encountered beginning at depths of between 11' and 16' in silty/clayey soils. This suggests that the aquifer has sufficient vertical head to force groundwater into the overlying less-permeable sediments. To ensure that representative water samples are collected from this aquifer, we propose to screen each well 15' across the upper water-bearing zone (depths between 10' and 25').

The well emplacement procedure will be as follows:

- 2-inch continuous core sampling rods are withdrawn after sampling
- 3.25-inch OD "blind" (closed with sacrificial tip) drive rods are driven over the 2-inch borehole, to well completion depth, and the sacrificial tip is dropped
- The pre-packed well is emplaced inside the drive rods and supplemental sand is added to fill the annular space around the pre-packed screens, and to cover the top of the well screens approximately 0.5 foot, and the sand is wetted
- Bentonite chips are added on top of the sand and hydrated
- Portland cement grout slurry is brought to near ground surface, and the well box is installed.

The attached Figure 3 shows the proposed well construction schematic. The following are key construction specifications:



SCHEMATIC OF PROPOSED PRE-PACKED GROUNDWATER MONITORING WELL

488-25th St. Oakland, CA	By: MJC | MARCH 2005 **FIGURE 3**	★ Stellar Environmental Solutions, Inc. Geoscience & Engineering Consulting

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- Well screen and filter pack ("pre-packed): 15' feet long of 2.5-inch OD stainless steel mesh, enclosing 0.75-inch thick #20/40 sand, around 1-inch ID (0.010-inch slotted) Schedule 40 PVC screen
- Well riser: 1-inch ID Schedule 40 PVC
- Pollution seal: 2 foot thick bentonite chips (hydrated) from 9.5' to 7.5', overlain by Portland cement grout slurry to near ground surface (total seal from 9.5' to ground surface)
- Surface completion: Christy-type flush-mount box and locking well casing cap

This well completion, including the specified pollution seal, has been verbally approved by Alameda County Public Works Agency (the well permitting agency) and we are in the process of obtaining their well permits.

Well Development

Between 2-3 days following well installations, each well will be developed by purging standing water in the well casings. Ten casing volumes will be purged, and aquifer stability parameters (temperature, pH and electrical conductivity) will be measured between each purged volume. An estimated 10 casing volumes of standing water will be purged from each well.

Monitoring Well Surveying

Following well installations, the horizontal coordinates and vertical elevations of the wells will be surveyed by a licensed land surveyor, in accordance with GeoTracker requirements. The elevation precision will be to 0.01 feet relative to an established benchmark datum.

Monitoring Well Quarterly Sampling

This proposal assumes conducting four consecutive quarterly groundwater monitoring events, the minimum number required by regulatory agencies. The first sampling event will likely be conducted immediately following well development. Each sampling event will consist of:

- Measuring equilibrated water levels in wells using an electric water level meter, and checking for free-product petroleum with an oil-water interface probe (no free-product petroleum is anticipated based on previous site sampling results).

- Purging each well (with a peristaltic pump) of a minimum of 3 casing volumes and a maximum of 5 casing volumes, and measuring aquifer stability parameters (pH, temperature and electrical conductivity) before purging and after each purged volume
- Collecting post-purge groundwater samples for laboratory analysis.
- Delivering the samples to the analytical laboratory.

Groundwater monitoring and sampling will be conducted by an SES subcontractor under supervision of SES personnel.

Management of Investigation-Derived Waste

Soil

The small amount of soil cuttings from the continuous core sampling will be combined with previous site investigation waste soils in a steel 55-gallon drum. The soil will be sampled, profiled and disposed of at a permitted non-hazardous landfill.

Water

Well development and purge water, and equipment decontamination rinseate, will be containerized onsite in labeled, 55-gallon drum(s). For cost savings, this non-hazardous water will be stored onsite until the drum is full, or no more more water will be generated, at which time it will be properly sampled, profiled and disposed of at a permitted wastewater treatment facility.

Laboratory Analyses

A California-certified analytical laboratory will complete the laboratory analyses. The analytical results will be performed at a standard turnaround (1-2 weeks). Previous site borehole sampling have shown the site contaminants of concern to be limited to:

- Total volatile hydrocarbons – gasoline range (TVHg) by EPA Method 8015M;
- The aromatic hydrocarbons toluene, ethylbenzene, xylenes and MTBE

Potential contaminants analyzed for and not detected (in either soil or groundwater samples) include: benzene, lead scavengers and fuel oxygenates

Based on the previous sampling, we propose to analyze future soil and groundater samples for the following site chemicals of concern:

- Total volatile hydrocarbons – gasoline range (TVHg) by EPA Method 8015M;
- BTEX and MTBE by EPA Method 8260; and
- Two lead scavengers (EDB and EDC) and fuel oxygenates (TAME, ETBE, DIPE, TBA, and ethanol) by EPA Method 8260 (only for the quarterly groundwater samples).

If the initial groundwater sampling event does not detect lead scavengers or fuel oxygenates, SES will petition Alameda County Health to delete these analytes from future groundwater monitoring.

We anticipate the following samples to be analyzed:

- Well installation soil samples: 17
- Well installation waste soil profile sample: 1
- Quarterly sampling event groundwater samples: 12 (3 samples in each of 4 quarterly events)

Standard laboratory quality assurance/quality control (AQ/QC) procedures will be utilized, and all QA/QC results will be included in the analytical laboratory reports. If warranted, laboratory narratives will be created to discuss any QA/QC issues. All samples will be managed under standard chain-of-custody procedurees.

Report Preparation and GeoTracker Compliance

We will prepare the following four technical documentation reports related to the proposed scope of work.

Well Installation and First Quarterly Sampling Report

This report will discuss the activities and findings of the well installation and first quarterly sampling event, and will include the following elements:

- Investigation scope and objectives
- Site description

- Summary of previous UFST removal and PSA activities and findings
- Protocols for drilling, sampling, well installation and analyses
- Site map delineating well locations
- Discussion of analytical results in the context of regulatory agency guidelines/criteria
- Determination of groundwater gradient (flow direction) including a groundwater elevation contour map
- Discussion of the fate and transport mechanisms of the constituents of concern in the groundwater and their potential migrational pathways, including a discussion of site lithologic and hydrogeologic conditions
- Conclusions and, where appropriate, recommendations
- Technical appendices

Second and Third Quarterly Groundwater Sampling Reports

These two reports will focus specifically on the activities and findings of the second and third quarterly sampling events.

Fourth Quarterly Sampling and Annual Summary Report

This report will be prepared following the fourth quarterly sampling event. In addition to a discussion of the sampling activities and findings for the fourth event, the report will evaluate hydrochemical and groundwater flow direction trends. The report will also evaluate the potential for site closure, and the need to conduct any additional site characterization activities to close data gaps (if appropriate).

In accordance with GeoTracker requirements, the technical reports will be electronically uploaded to the GeoTracker database (no hard copy reports are required to be provided to regulatory agencies).

GeoTracker Compliance

As required by the State of California, we will perform uploads of Electronic Data Deliverables (EDD) to the State of California's GeoTracker database, including:

- Borehole/well field point names (one upload)

- Well survey data (one upload)
- Laboratory analytical reports (one upload for each of the well installation and 4 quarterly groundwater sampling events);
- Water level data (one upload for each of the 4 quarterly groundwater sampling events);
- A revised site plan showing borehole locations (one upload); and
- Electronic copies of the four investigation reports.

ADDITIONAL ALAMEDA COUNTY HEALTH TECHNICAL COMMENTS

Comment #2 – Extended Offsite Map

Figure 4 is an extended map (on an aerial photo overlay) showing the site and the area to the south (likely groundwater flow direction). This figure is based on a recent (2004) aerial photograph and our March 21, 2004 vicinity reconnaissance. We have determined the following regarding potential downgradient drilling locations.

Public-Accessible Areas

There are no public-accessible areas for drilling between the southern edge of 25th Street and the northern edge of 24th Street (approximately 250 feet).

Potential Private Exterior Areas

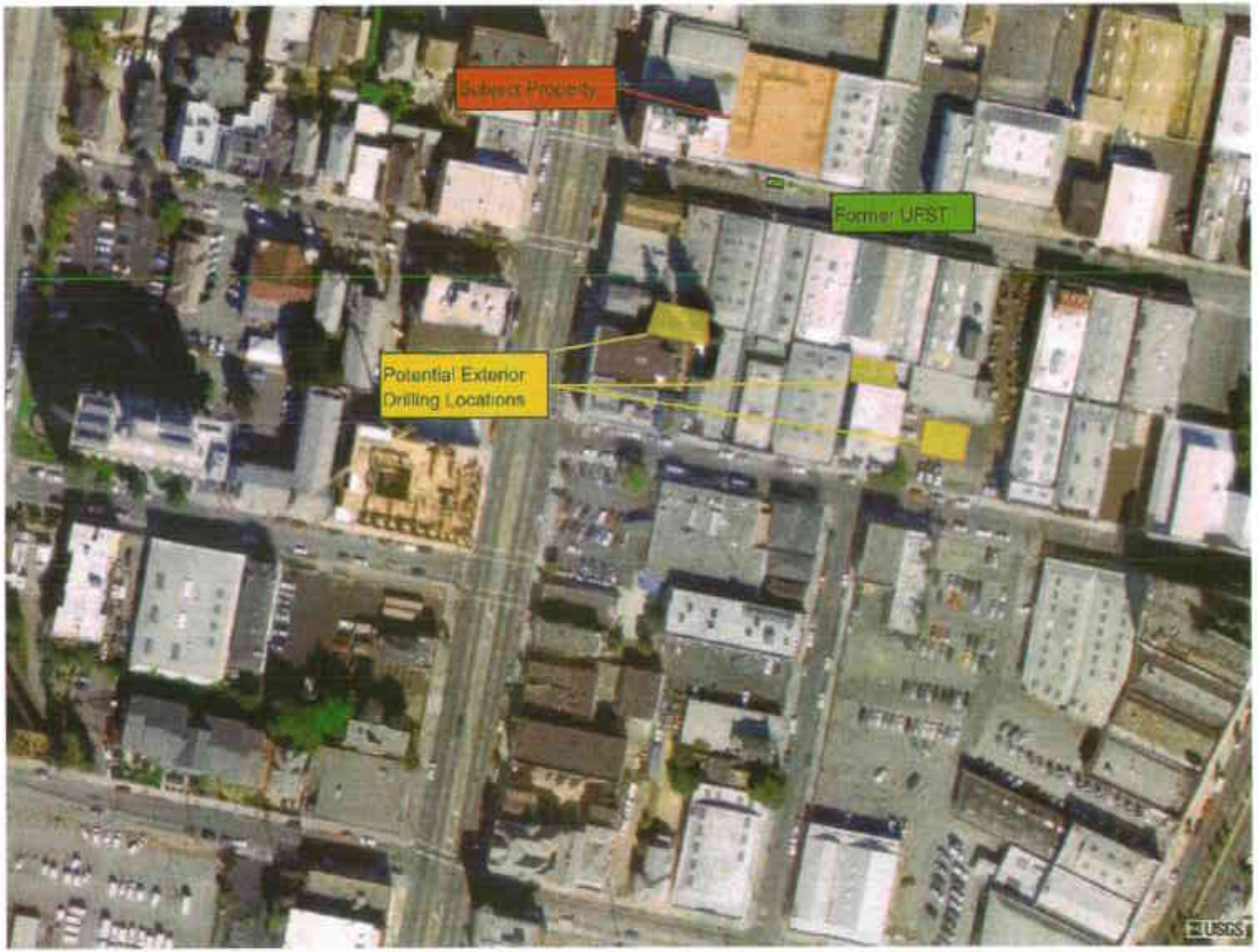
We identified three potential exterior areas (both privately-owned) in the downgradient direction:

1) The backyard of the 2424 Telegraph Avenue property, located approximately 200 feet south-southwest of the subject property

2) The rear of 466 24th Street apartment building, located approximately 225 feet southeast of the subject property.

3) A paved parking lot, located approximately 300 feet southeast of the subject property.

The first two areas were on private property, and we could not access the properties to determine if drilling would in fact be feasible.



★ Stellar Environmental Solutions, Inc. Geoscience & Engineering Consulting	**POTENTIAL EXTERIOR DRILLING LOCATIONS** **488-25th St., Oakland, CA**	**Figure 4** by: MJC | MARCH 2005

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We propose to further evaluate the need for downgradient sampling based on the results of the initial groundwater monitoring/sampling event (i.e. when hydraulic gradient and contaminant concentrations have been determined).

Comment #3 – Upgradient Contamination

The contamination detected at BH-11 is likely due to "back flow" of contamination (i.e. against the inferred southerly groundwater flow direction) resulting from the relatively flat hydraulic gradient. Proposed upgradient well MW-1 will be located in this area to further evaluate this contamination. There are no known potential (historical or current) onsite sources of petroleum contamination other than the former UFST.

Comment #4 – Downgradient Contamination

In our professional opinion, higher contamination is present downgradient of the former UFST than adjacent to the former UFST due to:

- The UFST excavation (with more permeable backfill material) may be acting as a hydraulic sink, where groundwater/infiltrating surface water are preferentially entering the former excavation, and causing dilution.
- The center of contaminant mass has moved downgradient due since the UFST release.

The proposed groundwater monitoring program will allow for a more definitive evaluation of site-sourced contaminant geometry.

ESTIMATED SCHEDULE

We propose to install the wells in approximately mid-April 2005. Each technical report will be uploaded to the GeoTracker system within approximately 30 days following completion of field activities.

We trust that this submittal meets your agency's needs. Please contact the undersigned directly if you have any questions. Otherwise we will assume that the proposed activities meet with Alameda County Health's approval and we will proceed.

Sincerely,

Stellar Environmental Solutions, Inc.

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

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