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December 22, 2005

Ms. Donna Drogos – Supervisor
Alameda County Health Care Services Agency
Department of Environmental Health
Local Oversight Program
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502

Subject: Workplan for Corrective Action Investigation
2836 Union Street, Oakland, California

Dear Ms. Drogos:

INTRODUCTION AND BACKGROUND

On behalf of the property owner (Mr. Larry Wadler), Stellar Environmental Solutions, Inc. (SES) is providing to Alameda County Environmental Health Department (Alameda County Health) this workplan for a corrective action investigation at the referenced property. A summary of the history of previous environmental work includes:

- One 10,000-gallon gasoline UST was removed from the property in July 1998 under oversight by the City of Oakland Fire Services Agency (Oakland Fire). Soil and groundwater contamination was detected during UST removal, and limited soil removal and groundwater pumping was conducted. We understand that Oakland Fire did not transfer the case to Alameda County Health.
- In preparation for a potential property sale, the property owner elected to evaluate residual contamination, and contacted Oakland Fire to obtain their input. Oakland Fire requested that an initial site characterization be conducted, and if residual contamination were confirmed, they would formally transfer the case to Alameda County Health.
- The initial site characterization was conducted in November 2005, and confirmed elevated levels of soil and groundwater contamination associated with the former UST. The data indicate significant soil contamination in the area of the former dispenser, and a groundwater contaminant plume in the immediate vicinity of the former UST. A

technical documentation report was prepared that recommended a second drilling investigation to evaluate corrective action options and to further evaluate groundwater contamination (the work proposed herein). The report was submitted to Oakland Fire with a request to transfer the case to Alameda County Health. We also submitted a copy of the report to Alameda County Health.

- Based on the initial data we have obtained from the property owner on UST permit compliance, it appears that the site may be eligible for reimbursement by the California Underground Storage Tank Cleanup Fund (Fund). That process begins with preparing and submitting a formal application. Corrective action work will be conducted under oversight by Alameda County Health to ensure maximum potential for reimbursement by the Fund.

Attachment A contains tabular summaries of previous analytical results, and figures showing the former UST, sampling locations and key analytical results.

TECHNICAL OBJECTIVES AND PROPOSED SCOPE OF WORK

The objective of the proposed work is to address two of the generally-required regulatory criteria for site closure: 1) removing the contaminant source (in this case residual contaminated soil that will act as a continued impact to groundwater); and 2) characterizing residual soil and/or groundwater contamination.

The proposed scope of work is specifically designed to: 1) evaluate whether residual soil contamination warrants corrective action (i.e. excavation); and 2) provide additional data on the extent and magnitude of groundwater contamination.

Pre-Field Work Planning and Permits

SES will conduct the following the pre-field work planning and permitting elements for the proposed borehole program, including:

- Obtain workplan concurrence from Alameda County Health, or proceed with the proposed investigation if Alameda County Health does not respond within the 60-day lead agency review period stipulated by California Code of Regulations, Title 23, Division 3, Chapter 16, Underground Tank Regulations.

- Obtain a borehole drilling permit from Alameda County Public Works Agency;
- Obtain from the City of Oakland an “Excavation Permit” which is required for the proposed boreholes drilled in Union Street; and
- Make a site visit to mark drilling locations, then notify Underground Service Alert.

Borehole Drilling and Sampling

The drilling and sampling will be completed using a licensed drilling subcontractor under SES’s direction. The boreholes will be advanced with a Geoprobe™ (direct-push) rig that advances approximately 2-inch diameter sampling rods. Attachment A contains detailed technical specifications for the proposed drilling and sampling.

We propose to advance and sample 8 exploratory boreholes, to supplement the data from the initial 4 boreholes, as shown on the attached Figure 1:

The borehole locations will be as follows:

- Four boreholes will be located within 8’ of the former dispenser location, to evaluate potential residual soil contamination in the context of corrective action options
- One borehole will be located between the former UST and previous borehole BH-02 (maximum groundwater contamination) to be sampled for groundwater only, to refine the location of the center of groundwater contaminant mass.
- One borehole will be located in the front yard of the adjacent (to the north) residential property owned by Mr. Wadler, to be sampled for groundwater only, to evaluate the extent and magnitude of groundwater contamination along the north side of the groundwater contaminant plume.
- 2 boreholes in the front of the subject property (along Union Street), to be sampled for groundwater only, to evaluate the extent and magnitude of groundwater contamination on the downgradient portion of the plume.

Boreholes will likely be advanced to a depth of approximately 10 feet below grade, into the shallow groundwater. We will collect the following soil (10) and groundwater (4) samples:

- Soil from 2’ and 5’ depths (in the 4 boreholes near the former dispenser)

- Soil from 7' depth (in 2 of the 4 boreholes near the former dispenser)
- Grab-groundwater (only) from the other 4 boreholes, as residual soil contamination was not detected in previous boreholes more proximal to the source area.

In the dispenser-related boreholes, continuous core soil samples will be geologically logged and samples will be screened with a field photoionization detector (PID) for evidence of contamination. Following sampling, each borehole will be tremie-grouted to surface with a cement slurry. 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 the same day they are collected.

Waste soil from the drilling will be containerized in a labeled 55-gallon steel drum that will be temporarily stored onsite (and combined with the previous investigation drill cuttings). As a cost-savings measure, we recommend, and this proposal assumes, that sampling and disposal of this soil be postponed until it is known that no further drilling work is required (i.e. after groundwater monitoring well installation).

Task 4: Laboratory Analyses

All soil (10) and water (4) samples will be analyzed by a California-certified analytical laboratory. The analytical results will be performed at a standard turnaround (2 weeks). All samples will be analyzed for the following site chemicals of concern:

- Total volatile hydrocarbons –gasoline range (TVH-g) by EPA method 8015M
- Aromatic hydrocarbons (BTEX), MTBE, four fuel oxygenates, and two lead scavengers, by EPA Method 8260

Task 5 – Technical Report Preparation

We will prepare a comprehensive technical documentation report that will discuss the implementation of the borehole drilling program. Report elements will include:

- Summary of historical UFST removal and sampling activities, and initial site characterization results
- Technical objectives of the borehole program

- Discussion of borehole drilling and sampling protocols and methods
- Tabular summary of analytical results
- Figure(s) showing borehole locations
- Evaluation of site hydrogeologic conditions
- Discussion of analytical results in the context of contaminant distribution, focusing on whether soils corrective action is appropriate/practical and the optimum locations to install groundwater monitoring wells.
- Technical appendices (e.g. lab reports, borehole logs, permits, photodocumentation, etc.)

A hard copy of the report will be submitted to Alameda County Health.

Task 6 – Electronic Data Reporting

Once Alameda County Health formally assigns the case to its fuel leak database (assigns it an “RO” number), the site will be subject to the California Water Board’s GeoTracker requirements, for electronic uploads of investigation data and reports. The following GeoTracker electronic uploads will be made, for both the recent and proposed borehole programs:

- We will electronically request that the site be assigned to SES (for uploads)
- “Field Point IDs” – borehole names
- “GeoMap” – site plan showing all sampling locations
- “GeoBore” – borehole geologic logs (previous and proposed)
- “Geo Report” – electronic format of previous and proposed borehole drilling.
- Electronic Data Deliverable (EDD) – analytical laboratory report for previous and proposed borehole soil and groundwater samples

The site will also be subject to the separate Alameda County Health electronic upload system (“ftp”) that requires upload of the previous and proposed borehole sampling reports to their system. We will make those uploads and provide notification to Alameda County Health when they have been uploaded.

ESTIMATED SCHEDULE

The property owner would like to proceed the work as soon as practical. We anticipate conducting the drilling in mid- to late-January 2006. This is predicated on receiving Alameda County Health's concurrence with this workplan. If Alameda County Health concurrence is not received within 60 days of workplan receipt, we will proceed with the drilling at the soonest possible time thereafter, and will notify Alameda County Health of the drilling date as soon as it is determined. Analytical laboratory results will be completed on normal turnaround (10 working days). The documentation report will be submitted within approximately 1 week following SES' receipt of analytical results.

TEAM QUALIFICATIONS

Stellar Environmental Solutions, Inc. has completed dozens of similar projects, including numerous projects under oversight of Alameda County Health. Our team will consist of the following:

- Stellar Environmental Solutions, Inc. (owner's consultant responsible for overall project coordination, geologic evaluation, sampling, data evaluation, and report certification by a California Registered Geologist);
- Borehole driller with a current C-57 license; and
- Analytical laboratory with a current California ELAP certification.

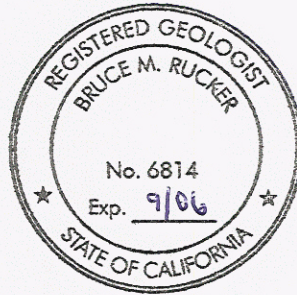
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We trust that this submittal meets your agency's needs. We will contact you in the near future to confirm your receipt of this workplan. In the interim, please contact the undersigned directly if you have any questions.

Sincerely,

Bruce M. Rucker

Bruce M. Rucker, R.G., R.E.A.
Project Manager



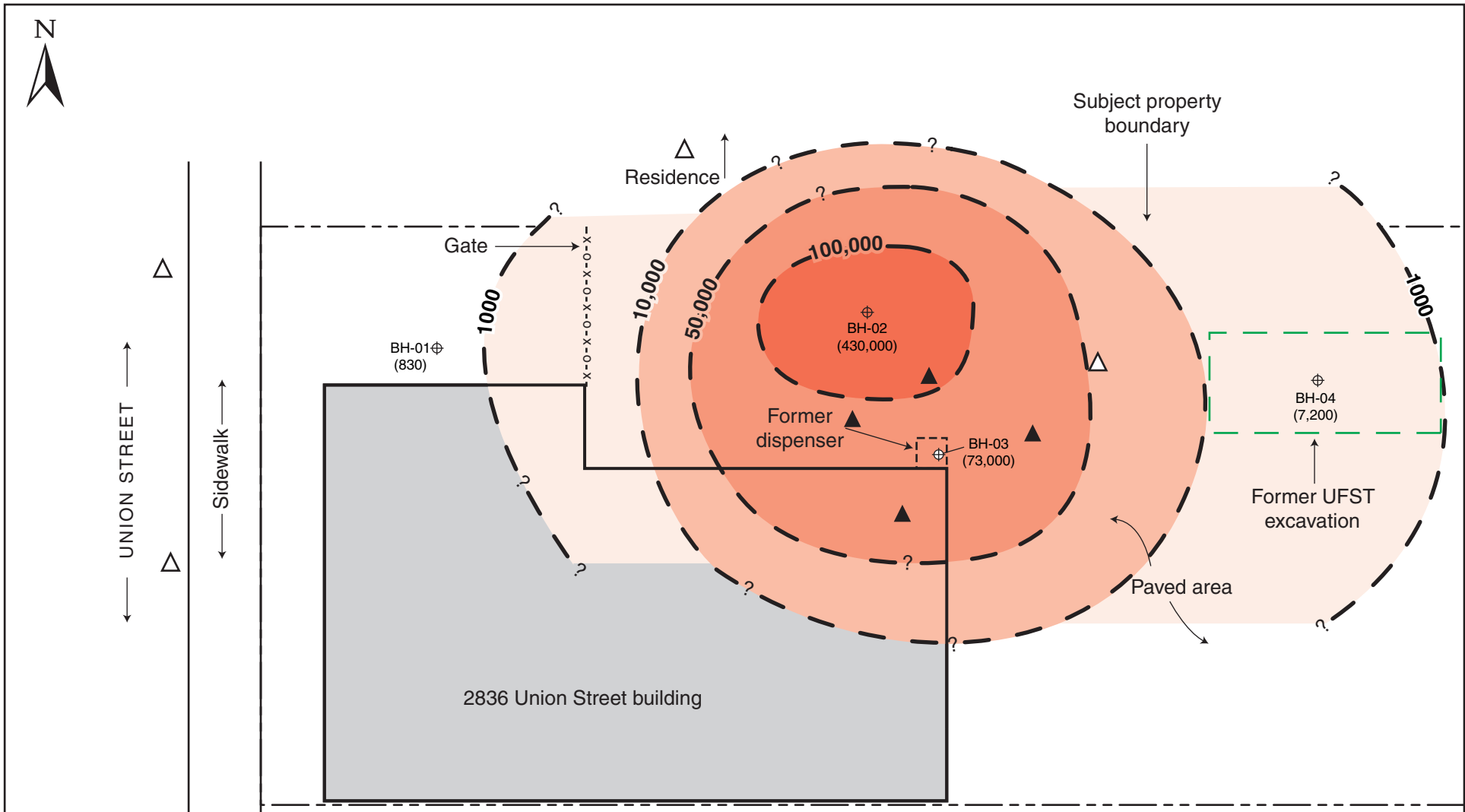
Richard S. Makdisi

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

Attachments: Figures showing UST layout, previous and proposed sampling locations
 Tables of previous analytical results
 Drilling & sampling methods and protocols

cc: Mr. Larry Wadler – property owner

**FIGURES AND PREVIOUS
ANALYTICAL RESULTS**



LEGEND

- ⊕ BH-01 November 2005 borehole
- 1000— Gasoline isoconcentration contour (µg/L)
- ▲ Proposed borehole (soil sampling only)
- △ Proposed borehole (groundwater sampling only)

0 10
SCALE IN FEET (approx.)

PROPOSED CORRECTIVE ACTION BOREHOLES
2836 Union Street, Oakland, CA

Figure 1

by: MJC

DECEMBER 2005

Table 1
Historical and Current Soil Analytical Results
2836 Union Street, Oakland, California

Sample ID	Sample Location	Sample Depth (feet)	TVHg	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE
<i>July 1998 UFST Removal Excavation Soil Samples</i>								
7751-E	sidewall	8.5	< 0.5	< 0.005	< 0.005	< 0.005	< 0.01	< 0.005
7751-W	sidewall	8.5	7.2	< 0.005	0.012	0.065	0.021	< 0.005
7751-DISP	dispenser	2.0	2,100	2.8	16	15	93	5.1
<i>November 2005 Borehole Soil Samples</i>								
BH-01-8'	unsaturated zone	8'	< 1.0	< 0.005	< 0.005	< 0.005	< 0.01	< 0.021
BH-01-17'	clay aquitard	17'	< 1.0	< 0.005	< 0.005	< 0.005	< 0.01	< 0.021
BH-02-8.5'	unsaturated zone	8.5'	31	0.093	< 0.005	0.75	0.55	< 0.022
BH-02-13.5'	clay aquitard	13.5'	3.0	0.012	< 0.005	0.057	0.134	0.024
BH-03-2.5'	unsaturated zone	2.5'	220	0.47	6.7	3.1	17.9	< 0.26
BH-03-7'	unsaturated zone	7'	920	1.8	19	16	81	< 0.66
BH-03-14.5'	clay aquitard	14.5'	< 1.0	< 0.005	< 0.005	0.019	0.021	< 0.02
BH-04-10.5'	saturated zone	10.5'	< 0.93	< 0.005	< 0.005	< 0.005	0.007	< 0.019
BH-04-14.5'	clay aquitard	14.5'	< 1.0	< 0.005	< 0.005	< 0.005	< 0.01	< 0.02
<i>ESLs^(a)</i>			<i>100</i>	<i>0.044</i>	<i>2.9</i>	<i>3.3</i>	<i>1.5</i>	<i>0.023</i>

Notes:

^(a) ESLs = Water Board Environmental Screening Levels for commercial/industrial sites where groundwater is a potential drinking water resource.

TVHg = total volatile hydrocarbons as gasoline

MTBE = methyl tertiary-butyl ether

All concentrations are in milligrams per kilogram (mg/kg). Samples in **bold-face type** exceed the ESL criterion.

Table 2
Historical and Current Groundwater Analytical Results
2836 Union Street, Oakland, California

Sample ID	TVHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE
<i>July 1998 UFST Removal Excavation Grab-Groundwater Sample</i>						
7561-GW ^(a)	4,200	15	4.0	140	170	150
<i>November 2005 Borehole Groundwater Samples</i>						
BH-01-GW	830	0.76	< 0.50	< 0.50	< 0.50	24
BH-02-GW	430,000	6,700	350	14,000	31,000	< 200
BH-03-GW	73,000	530	440	4,400	5,540	< 200
BH-04-GW	7,200	< 0.5	< 0.5	18	1.2	< 2.0
<i>ESLs ^(b)</i>	<i>100</i>	<i>1.0</i>	<i>40</i>	<i>30</i>	<i>13</i>	<i>5.0</i>

Notes:

^(a) This sample had no detectable lead (< 0.05 mg/L).

^(b) ESLs = Water Board Environmental Screening Levels for commercial/industrial sites where groundwater is a potential drinking water resource.

TVHg = total volatile hydrocarbons as gasoline

MTBE = methyl tertiary-butyl ether

All concentrations are in micrograms per liter (µg/L). Samples in **bold-face type** exceed the ESL criterion.

ATTACHMENT A

Drilling & Sampling Methods and Protocols

ATTACHMENT A
DRILLING & SAMPLING METHODS AND PROTOCOLS

The boreholes will be advanced with a Geoprobe™ (direct-push) or equivalent rig that advances approximately 2-inch-diameter sampling rods into undisturbed soil. Soil samples are collected in either acetate or metal sleeves inside the sampling rods. The sleeves selected for off-site laboratory analysis are then capped (with non-reactive plastic caps) and labeled. Depth-specific “grab” groundwater samples will be collected by advancing into undisturbed soil a stainless steel sampling rod with a sacrificial tip and integral well screen. Upon reaching the water table, the sampling string will be raised by approximately 1 foot, dropping the sacrificial tip and exposing the screen interval. The sample will then be collected through new Tygon™ tubing connected to a vacuum pump. The water will then be transferred directly to the appropriate sampling containers. Alternatively, grab-groundwater samples will be collected by inserting temporary PVC casing into the open borehole, then withdrawing groundwater with a clean bailer or plastic tubing connected to a peristaltic pump.

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.

Waste soil (unused samples) will be temporarily containerized on-site in labeled, 5-gallon plastic pails with sealing tops. This soil will be appropriately profiled and disposed of when it has been determined that no further waste soil will be generated, or will be combined with any future generated waste soil from subsequent investigation phases.