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Alameda County  
SEP 08 2004  
Environmental Health

**Letter of Transmittal**

To: Alameda County Health Care Services Agency Date: 9/1/2004  
Environmental Health Services  
1131 Harbor Bay Parkway, Suite 250 Job No: SJ31-8LI-P  
Alameda, CA 94502-6577  
Attn: Mr. Robert Schultz

We are sending the following items:

Date	Copies	Description
26-Aug-04	1	Excavation Work Plan
		Former Shell Service Station
		318 Livermore Avenue
		Livermore, California

These are transmitted:

- For your Information   
  For action specified below   
  For review and comment   
  For your use   
  As requested

**Remarks**

Copies to:

By: R. Lee Dooley

Title: Senior Hydrogeologist

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August 26, 2004  
Project No. SJ31-8LI-P

Mr. Robert Schultz  
Alameda County Health Care Services Agency  
Environmental Health Services  
1131 Harbor Bay Parkway, Suite 250  
Alameda, California 94502-6577

Re: **Excavation Work Plan**  
**Former Shell Service Station**  
**318 Livermore Ave.**  
**Livermore, California**

Dear Ms. Petryna,

Delta Environmental Consultants, Inc. (Delta) has prepared this work plan for excavation of a small area of soil containing lead above background concentrations at the former Shell-branded service station referenced above (Figure 1). Lead was detected at above background levels in two soil samples collected in December 2003 during station decommissioning.

## BACKGROUND

The site is located on the eastern corner of South Livermore Avenue and Third Street in Livermore, California (Figure 1). The site was formerly the location of a Shell-branded service station. The former service station consisted of a building containing vehicle service bays and a small convenience store, five fuel dispensers, three 12,000-gallon fuel underground storage tanks (USTs), and one 550-gallon waste oil UST. The former station plan is presented on Figure 2.

In December 2003, the station USTs, fuel dispensers, associated piping, and oil/water separator were removed. Delta was retained by Shell Oil Products US (Shell) to collect soil samples from beneath the former fuel system components and the oil/water separator. Soil analytical results were presented to Mr. Paul M. Smith, Hazardous Materials Inspector for the Livermore -- Pleasanton Fire Department in a report titled *Underground Storage Tank, Product Piping, and Dispenser Removals Report, Former Shell Service Station, 318 Livermore Avenue, Livermore, California* dated January 16, 2004. A summary of soil

analytical data is presented on the attached Table 1.

Analytical data indicated minimal petroleum hydrocarbon impact of soil beneath the site. Total petroleum hydrocarbons as gasoline (TPH-G) were detected in only one soil sample (4.9 milligrams per kilogram (mg/kg)). Benzene was not detected in any soil sample.

The limited impact of petroleum hydrocarbons has been confirmed by analytical data from the on-site groundwater monitoring program. Groundwater analysis for petroleum hydrocarbons and methyl tert-butyl ether (MTBE) is performed on a quarterly basis utilizing the four on-site monitoring wells (MW-5 through MW-8). The most recent monitoring event was performed on July 21, 2004. The only analytical parameter detected in any of the four samples was methyl tert-butyl ether at 1.8 micrograms per liter (ug/l) in Well MW-8.

### **LEAD CONCENTRATIONS IN SOIL**

Soil analytical data from December 2003, indicates that the background total lead (EPA Method 7420) concentration in shallow soil beneath the site ranges from <5.0 mg/kg to 10 mg/kg (see Table 1). Total lead exceeding background concentrations was detected in two soil samples. Total lead was detected at 380 mg/kg in the soil sample collected at a depth of 2.5 feet beneath fuel dispenser designated P1 on Figure 2. Total lead was detected at 54 mg/kg in the soil sample collected approximately 1.5 feet beneath the base of the site oil/water separator.

The California Regional Water Quality Control Board, San Francisco Bay Region has developed Risk Based Screening Levels (RBSLs) for use in evaluating the presence of contaminants detected in soil and groundwater. The RBSLs for lead in soil to a depth of 10 feet below grade (3 meters) are 200 mg/kg for residential land use and 750 mg/kg for commercial land use. The California Department of Toxic Substance Control has established a Preliminary Remediation Goal (PRG) of 150 mg/kg for residential sites.

### **SOIL EXCAVATION**

Delta proposes to excavate lead impacted soil in the area former dispenser site P1 (Figure 2), the only area of the site with lead detected above 150 mg/kg. An excavator will be utilized to remove soil from an area approximately 20 feet long and 10 feet wide. Soil will be removed to a depth of approximately 10 feet below grade. Two soil samples will be collected from the base of the excavation by pushing a brass tube into soil collected within the excavator bucket. The brass tubes will then be removed, sealed with Teflon sheeting and a tight fitting plastic cap, and clearly labeled. Samples will be analyzed for total lead by Severn Trent Laboratories (STL) in Pleasanton, California utilizing EPA Method 7420. Excavated soil will be transported off-site for disposal at the Forward Landfill in Stockton, California.

### **CASE CLOSURE**

Upon removal of lead impacted soil, Delta will submit a report to the Alameda County Health Care Services Agency containing confirmation lead soil analytical data and a request for case closure. Case closure is warranted based on the removal from the site of all potential sources of petroleum hydrocarbons and fuel oxygenates, minimal petroleum hydrocarbon impacts detected in soil samples collected in December 2003, the removal of soil with lead concentrations above 150 mg/kg, the lack of petroleum hydrocarbons in groundwater, and the lack of MTBE in groundwater above 5 ug/l, the secondary Maximum Contaminate Level (MCL).

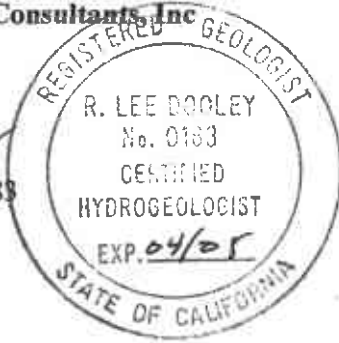
If you have any questions regarding this site, please contact Debbie Arnold (Delta) at (408) 224-4724.

Sincerely,

**Delta Environmental Consultants, Inc**



R. Lee Dooley, CHG 183  
Senior Hydrogeologist



**ATTACHMENTS:**

Table 1 – Summary of Soil Analytical Data

Figure 1 – Site Location Map

Figure 2 – Soil Sample Location Map

Cc.s

Mr. Dennis Johnson, Shell Oil Products US, 15925 Lemolo Shore Drive, Poulsbo, WA 98370

Mr. Paul M. Smith, Hazardous Materials Inspector, Livermore – Pleasanton Fire Department, 3560 Nevada Street, Pleasanton, CA 94566

Ms. Karen Petryna, Shell Oil Products US - 20945 S. Wilmington Avenue Carson, CA 90810

**Table 1**  
**Summary of Soil Analytical Data**  
Former Shell Service Station  
318 South Livermore Avenue  
Livermore, California

Sample Designation	Date Sampled	Depth (feet)	PID reading (ppmv)	TPH-D (mg/kg)	TPH-G (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl benzene (mg/kg)	Xylene (mg/kg)	MTBE (mg/kg)	TBA (mg/kg)	Total Lead (mg/kg)	Total Oil and Grease (mg/kg)
<b>Tank Pit Samples</b>													
1A	12/10/03	16	NM	NA	<1.0	<0.002	<0.005	<0.005	<0.005	<0.005	<0.01	6.3	NA
1B	12/10/03	16	NM	NA	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	5.3	NA
2A	12/10/03	16	NM	NA	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005	0.016	6.3	NA
2B	12/10/03	16	NM	NA	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	3.7	NA
3A	12/10/03	16	NM	NA	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	6.0	NA
3B	12/10/03	16	NM	NA	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	3.9	NA
<b>Waste Oil Tank Sample</b>													
4A	12/10/03	10	NM	<1.0	<1.0	<0.005	0.0070	<0.005	0.0078	<0.005	<0.01	3.9	<50
<b>Dispenser Samples</b>													
P1	12/11/03	2.5	NM	NA	<1.0	<0.002	<0.005	<0.005	<0.005	<0.005	<0.01	380 *	NA
P4	12/11/03	2.5	NM	NA	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<5.0 *	NA
P5	12/11/03	2.2	NM	NA	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<5.0 *	NA
<b>Piping Trench Samples</b>													
P2	12/11/03	3.75	NM	NA	4.9	<0.025	0.200	0.110	0.840	<0.025	<0.041	<5.0 *	NA
P3	12/11/03	3.6	86.1	NA	<1.0	<0.005	<0.005	<0.005	0.007	<0.005	<0.01	<5.0 *	NA
P3 @ 100"	12/11/03	8.3	0.9	NA	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<5.0 *	NA
<b>Oil and Water Separator Samples</b>													
SUMP EAST	1/12/04	3.75	1.5	45**	<0.01	<0.005	<0.005	<0.005	0.038	NA	NA	54	56
SUMP WEST	1/12/04	3.75	0.4	23**	<0.01	<0.005	<0.005	<0.005	<0.005	NA	NA	9.6	<50
<b>Stockpile Samples</b>													
Stockpile 1	12/10/03	-	NM	NA	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	6.4	NA
Stockpile 2	12/10/03	-	NM	NA	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	29.0	NA
Stockpile 3	12/10/03	-	NM	NA	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	6.0	NA
Waste Oil Stockpile	12/10/03	-	NM	5.1***	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	17.0	54.0

**Notes:**

mg/kg = milligrams per kilogram

TPH-G = Total petroleum hydrocarbons as gasoline

TPH-D = Total petroleum hydrocarbons as diesel

MTBE = Methyl tert-butyl ether

TBA = tert-Butyl alcohol

NA = not analyzed

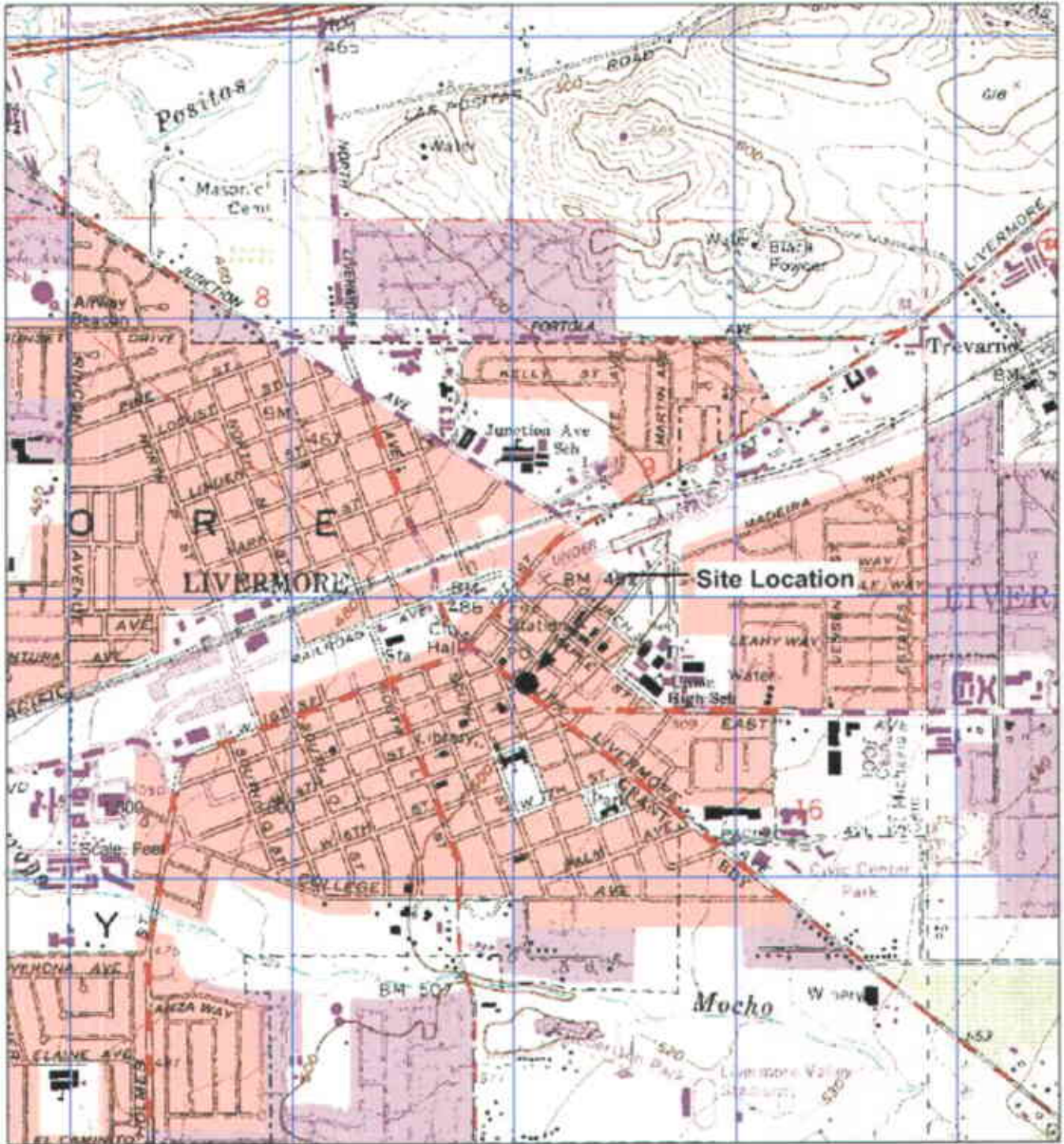
NM = not measured

\* Indicates higher reporting limits due to lead analysis performed by method 7420

\*\* Hydrocarbon reported is in the late Diesel range, and does not match the laboratory Diesel standard

\*\*\* Hydrocarbon reported does not match the pattern of the laboratory Diesel standard

For complete results of analysis done by methods 8260B, 1664A, 8015M, 8270C, 6010B, 8021B and 7420 please see Certified Analytical Results in Attachment A.



GENERAL NOTES:  
 Base Map from: DeLorme Yarmouth, ME 04096  
 Source Data: USGS



FIGURE 1  
 SITE LOCATION MAP

FORMER SHELL-BRANDED SERVICE STATION  
 318 South Livermore Avenue  
 Livermore, CA

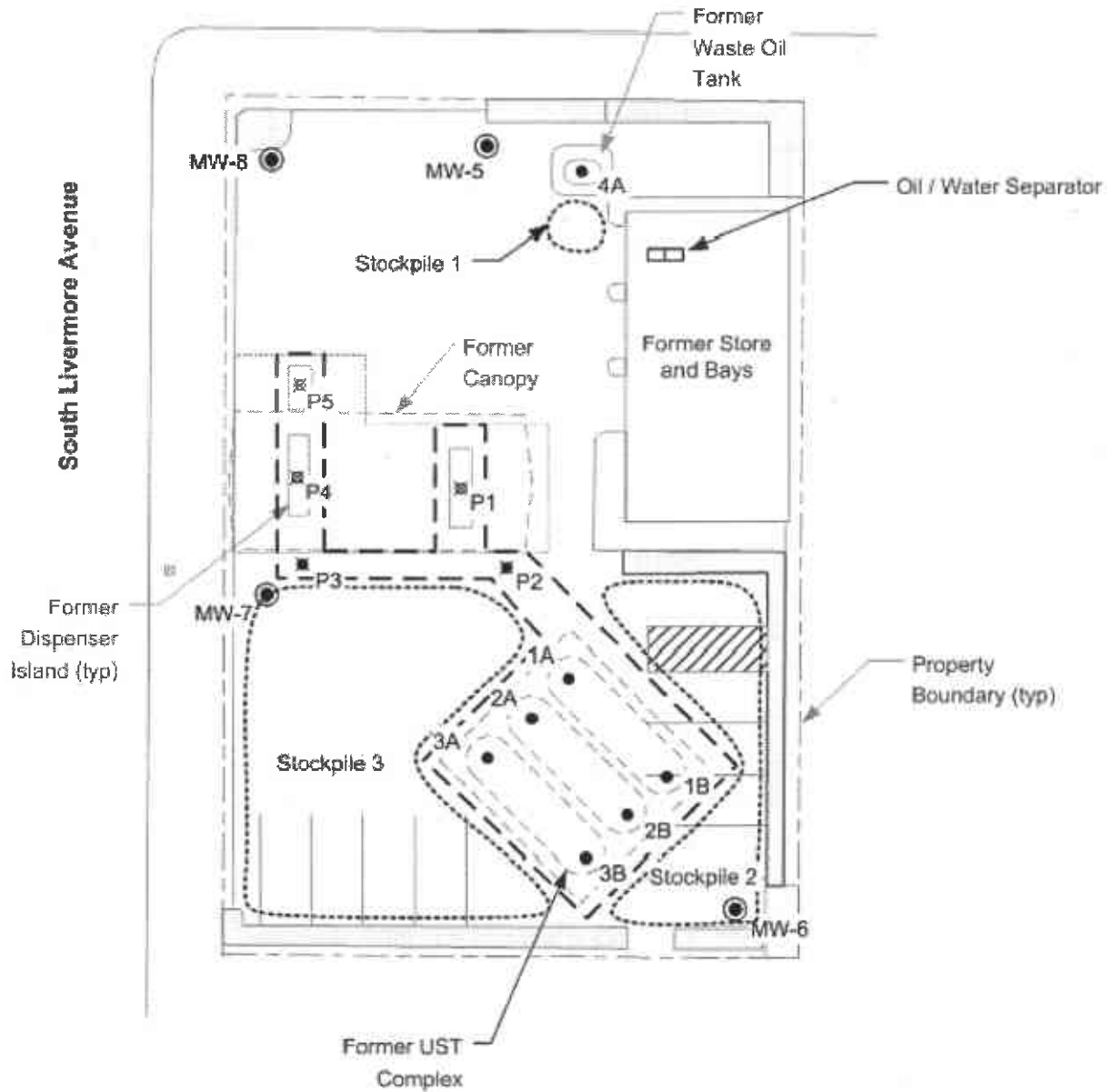
PROJECT NO SJ31-SLJ-1 2004	DRAWN BY VF 9/25/03
FILE NO SJ31-SLJ-1 2004	PREPARED BY VF
REVISION NO 2	REVIEWED BY












Third Street

South Livermore Avenue



**LEGEND**

- MW-6  **EXISTING GROUNDWATER MONITORING WELL**
-  **PLANTER**
- 2A  **TANK PIT SOIL SAMPLE LOCATION AND ID**
- P3  **PIPING TRENCH SOIL SAMPLE LOCATION AND ID**
- P4  **DISPENSER SOIL SAMPLE LOCATION AND ID**
-  **EXTENT OF STOCKPILE**
-  **EXTENT OF EXCAVATION**



**FIGURE 2**  
**SOIL SAMPLE LOCATION MAP**  
**FORMER SHELL-BRANDED SERVICE STATION**  
**318 South Livermore Avenue**  
**Livermore, California**

PROJECT NO. SJ31-SLI-1-2004 FILE NO. SJ31-SLI-2004 REVISION NO. 2	DRAWN BY VF 1/13/04 PREPARED BY VF REVIEWED BY
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