8/3/89

WEISS ASSOCIATES
Consulting in Geology & Geohydrology
2938 McClure Street, Oakland, CA 94609
415-465-1100

June 29, 1989

Peter J. Pugnale
Shell Oil Company
P.O. Box 4848
Anaheim, CA 92803

Re: Shell Service Station
WIC #204438003
318 South Livermore Avenue
Livermore, California
WA Job #81-428-01

Dear Mr. Pugnale:

The current site status and past underground tank closure activities are summarized below for the Shell service station at 318 South Livermore Avenue in Livermore, California. California Administrative Code Title 23 Waters, Chapter 3, Subchapter 16, Article 5, Section 2652.d requires quarterly reporting of:

- The results of all previous site subsurface investigations pertaining to the closure of the former waste oil tank,
- The status of site remediation, and
- The disposal of any hazardous materials released from the waste oil tank.

This letter is submitted to satisfy these quarterly reporting requirements. Included below are:

- A description of the site setting and background,
- A summary of previous site activities including tabulated chemical analytic results,
- Descriptions of activities performed during the second quarter 1989 (April 1 through June 30, 1989), and
- Proposed future work.

EXECUTIVE SUMMARY

A 550 gallon waste oil tank was removed from the subject property in August 1987. The tank removal was apparently conducted in accordance with tank closure regulations existing at the time. The tank was approximately 25 years old, and was in apparently poor condition when it was removed. Analytic results for two soil samples collected from the tank excavation following the tank removal indicated 87 parts per million (ppm) Oil and Grease in a sample collected at 8 ft depth and 48 ppm Oil and Grease, and 140 parts per billion (ppb) 1,1,1-trichloroethane (TCA) in a sample collected at 11 ft depth. Analytic results for a composite sample of material excavated from the tank pit during the tank removal indicated 6.1 ppm soluble lead and 69 ppm total lead. The soluble lead analytic result exceeds the California Department of Health Services (DHS) Soluble Threshold Limit Concentration (STCC) of 5.0 ppm.

BACKGROUND

The subject station is located about 1,700 ft north of Arroyo Mocho, a perennial stream, on the northeastern corner of the intersection of Third Street and Livermore Avenue in Livermore, California. The operating station retails gasoline from two 5,000 gallon, and two 8,000 gallon steel storage tanks located in the eastern portion of the site adjacent to South Livermore Avenue. The former waste oil tank was buried immediately west of the station building adjacent to East 3rd Street. A site map showing the location of the former waste oil tank is presented as Attachment A.

PREVIOUS SITE ACTIVITIES

Shell Oil Company records indicate that a steel 550-gallon waste oil tank was removed from the site in August 1987 by Petroleum Engineering, of Santa Rosa, California, and was replaced with a 550-gallon fiberglass tank. The removed steel tank was apparently installed in 1965.

Following the tank removal, Blaine Tech Services of San Jose, California observed and documented the tank condition and collected soil samples from stockpiles of soil excavated from the tank pit and from beneath the former tank location. Two of the native soil samples

from beneath the tank were submitted to Sequoia Analytical Laboratory of Redwood City, California (SAL). SAL analyzed the soil samples for Oil and Grease by EPA Methods 3550/503E, solvent extraction with gravimetric quantitation, for Total Petroleum Hydrocarbons as diesel (TPH) by EPA Method 8015, gas chromatography/flame ionization detection (GC/FID), for aromatic hydrocarbons, including, benzene, toluene, ethylbenzene and xylenes (BETX) by EPA Method 8020, gas chromatography with photoionization detection (GC/PID), and for halogenated hydrocarbons by EPA Methods 8010, gas chromatography/"Hall" detection (GC/Hall). The stockpile soil samples were analyzed for flashpoint and for total and organic lead to characterize the stockpile for disposal. The SAL analytic results are presented in Table 1.

TABLE 1. Analytic Results for Ground Water, Shell Service Station WIC #20443800303, Livermore, California

Sample ID	Depth	Sample Type	Sampled By	Date Sampled	Analytic Lab	Analytic Method	TPH	B	E	T	X	TOG	VOCs	Total Lead	Soluble Lead
							<----------parts per million---------->								
Soil #1	8 ft	Native	BT	8-20-87	SAL	3550/8010/8015 8020/503E	<1.0	<0.050	<0.050	<0.050	NA	87	ND	NA	NA
Soil #2	11 ft	Native	BT	8-20-87	SAL	3550/8010/8015 8020/503E	<1.0	<0.050	<0.050	<0.050	NA	48	*1	NA	NA
Soil #3	---	Stockpile Composite	BT	8-20-87	SAL	3050/7421	NA	NA	NA	NA	NA	NA	NA	69	NA
Soil #3	---	Stockpile Composite	BT	8-20-87	SAL	WET/7421	NA	NA	NA	NA	NA	NA	NA	NA	6.1

Abbreviations:

TPH = Total Petroleum Hydrocarbons as diesel
B = Benzene
E = Ethylbenzene
T = Toluene
X = Xylenes
TOG = Total Oil and Grease
VOCs = Volatile Organic Compounds
NA = Not Assayed
ND = Not detected at detection limits between 0.005 and 0.020 ppm
BT = Blaine Tech Services, San Jose, CA
SAL = Sequoia Analytical Group, Redwood City, CA

Analytic Method:

3550 = Sonification Extraction
8010 = Gas Chromatography with "Hall" Detector
8020 = Gas Chromatography with Photoionization Detector
8015 = Gas Chromatography with Flame Ionization
503E = Gravimetric Quantitation of Non-volatile Hydrocarbons
3050 = Acid digestion
7421 = Atomic Absorption Quantitation
WET = DHS Waste Extraction Test

Footnotes

*1 = 1,1,1-trichloroethane detected at 140 ppb.

According to Blaine Tech tank removal records, no ground water was encountered in the excavation and the steel tank was rusted and pitted had but no obvious holes when it was removed. Documentation reviewed by Weiss Associates does not describe the disposal of the backfill material excavated from the tank pit during the tank removal nor indicate whether native soil was removed from the excavation following the tank removal.

SECOND QUARTER 1989 ACTIVITIES

Work performed by WA during the reporting period April 1, 1989 to July 1, 1989 included:

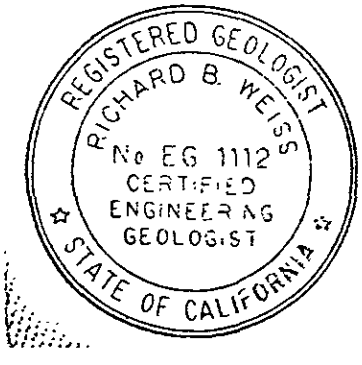
- Reviewing Shell Oil, tank removal contractor and regulatory agency project files,
- Determining local and state tank closure requirements, and
- Evaluating the current project status with respect to tank closure requirements.

FUTURE WORK

Shell Oil has retained WA to:

- Evaluate the current project status with respect to the tank closure requirements, and to
- Recommend additional work that may be required to achieve tank closure.

We are pleased to provide hydrogeologic consulting services to Shell Oil and trust this submittal meets your needs. Please call if you have any questions or comments.



Sincerely,
Weiss Associates,

Joseph P. Theisen
Project Geologist

Richard B. Weiss
Principal Hydrogeologist

RBW/JPT:db
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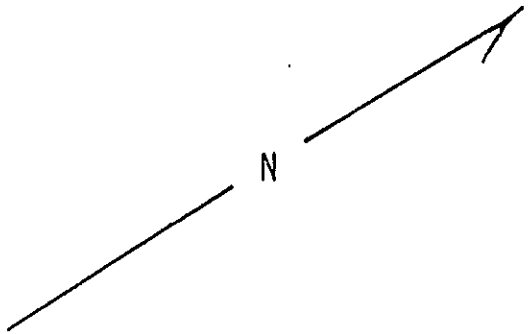
Attachment A - Site Map

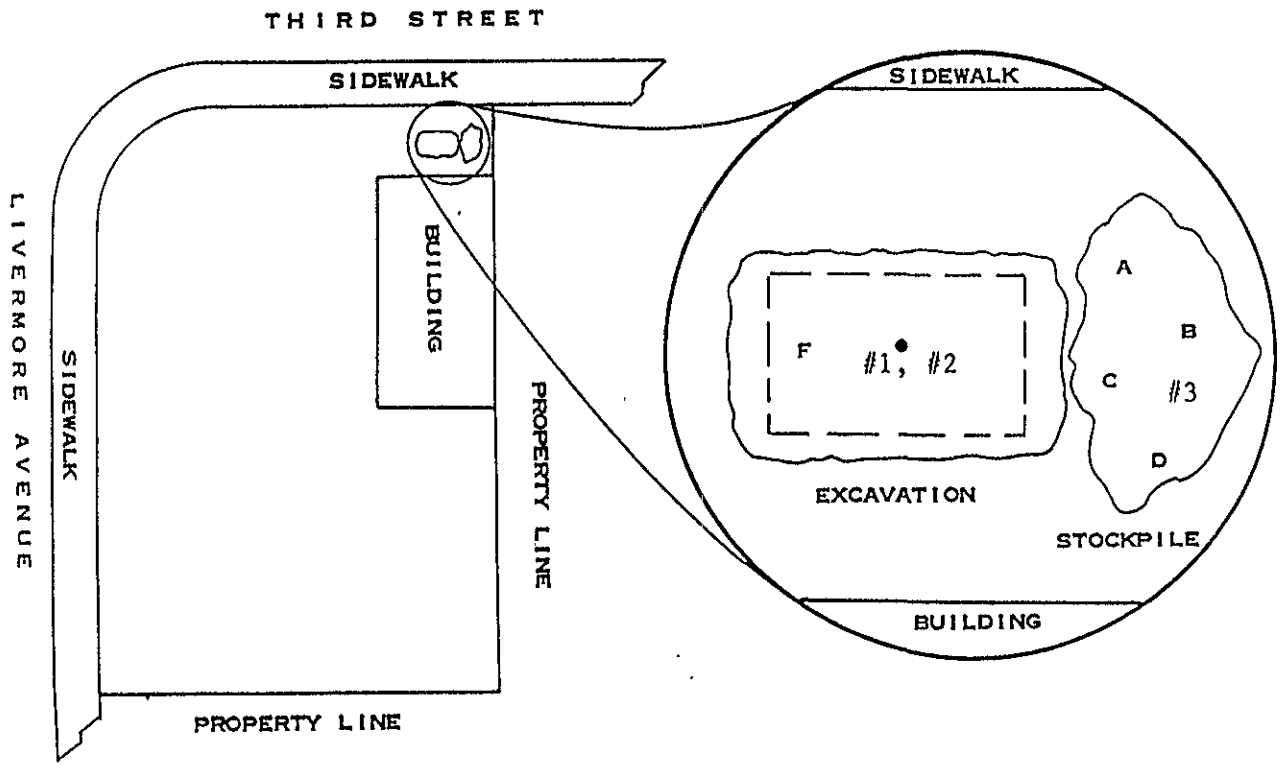
BLAINE
TECH SERVICES

SAMPLING REPORT 87232C1 8-20-87 SHELL STATION, 318 SOUTH LIVERMORE AVENUE, LIVERMORE, CA.

MAP REF: THOMAS BROS., ALAMEDA COUNTY PG. 40 E-7



SCALE: 0' 20' 40'



#1 SOIL FROM 8'

50 PPM VAPOR

ANALYSIS FOR TOTAL OIL AND GREASE (TOC
TOTAL PETROLEUM HYDROCARBONS (TPH) -
HIGH BOILING FRACTION (HBF), AND
EPA 8010 AND EPA 8020 AT
SEQUOIA ANALYTICAL LABORATORY
SEQUOIA LAB NO. 7081426

#2 SOIL FROM 11'

75 PPM VAPOR

ANALYSIS FOR TOG, TPH - (HBF) AND
EPA 8010 AND EPA 8020
SEQUOIA LAB NO. 7081428

#3 STOCKPILE SOIL COMPOSITE AT
SAMPLE POINTS A-D
ANALYSIS FOR TOG, TPH - (HBF) AND
EPA 8010 AND EPA 8020
SEQUOIA LAB NO.

SAMPLING PERFORMED BY STEVE CARTER
DIAGRAM PREPARED BY BRENT E. ADAMS