7-13-89

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

July 13, 1989

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

Re: Shell Service Station
WIC #204-007-205
2160 Otis Drive,
Alameda, California
WA Job #81-429-01

Dear Mr. Pugnale:

Current site status and past underground tank closure activities are summarized below for the Shell service station at 2160 Otis Drive in Alameda, California. For sites with identified releases, 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 release,
- The status of site remediation, and
- The disposal of any hazardous materials resulting from the release.

This letter is submitted to satisfy these quarterly reporting requirements for the former waste oil tank at the site. 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.

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Site: AUA 2160
Proj. ☐ Rem. ☐ Rpt. ☑ Bill ☐
1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐

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Dear Mr. Pugnale:

This letter presents recommendations for additional work to achieve closure of a former waste oil tank excavation located at the Shell service station at 2160 Otis Drive in Alameda, California. As outlined in your May 1, 1989 letter, our scope of work for this phase of the project is to:

1) Review Shell Oil and regulatory agency project files,
2) Summarize the site history,
3) Determine local and state tank closure requirements,
4) Evaluate the current project status with respect to tank closure requirements, and
5) Recommend additional work to achieve waste oil tank closure.

Detailed descriptions of the site history, including the current site status and prior activities, are included under separate cover in the Second Quarter 1989 status report dated July 13, 1989. A summary of the site history, and detailed results of the remaining tasks are described below.

RECORDS REVIEW

No pertinent information on this site was found in the files of the California Regional Water Quality Control Board - (WQCB) San Francisco Bay Region or Alameda County Health Department - Hazardous Materials Management Division, the local implementing agency.

EXECUTIVE SUMMARY

A 550 gallon waste oil tank was removed from the subject property in June 1987. Ground water was encountered in the tank excavation following the tank removal. Analysis of soil samples collected from the tank excavation following the tank removal indicated 11,700 parts per million (ppm) Total Oil and Grease (TOG) in a sample from the floor of the excavation at 7.0 ft depth and 47 ppm TOG in a sample from the excavation sidewall at 3.0 ft depth. The 7.0 ft depth soil sample was also analyzed for Total Petroleum Hydrocarbons as diesel (TPH), Volatile Organic Compounds (VOCs) and aromatic hydrocarbons including Benzene, Ethylbenzene, Toluene, and Xylenes (BETX). This sample contained TPH, VOC and BETX below the method detection limits. The analytic results for a ground water sample from the excavation indicated less than the detection limit of 5 ppm TOG. No information has been located concerning the tank condition at the time of its removal.

A ground water monitoring well was installed in September 1987 adjacent to the southeastern side of the waste oil tank, apparently to satisfy California Regional Water Quality Control Board-San Francisco Bay Region (WQCB) requirements for ground water monitoring. Ground water was first encountered at a depth of about 8 ft and stabilized at about 5 ft. Analytic results for soil samples collected from the boring for the monitoring well indicated 1,600 ppm TOG at about 5 ft depth and over 300 ppm TOG at about 20 ft depth. A water sample collected from the monitoring well contained 7 parts per billion (ppb) of an unknown alcohol and 270 ppb acetone but no other detectable VOCs or BETX. The water sample was not analyzed for TPH or TOG.

BACKGROUND

The subject station is located about 1000 feet east of San Francisco Bay, on the south side of Otis Drive between Willow Street and Park Street, in Alameda, California. The operating station retails gasoline from three 10,000 gallon fiberglass storage tanks located in the eastern portion of the site adjacent to Otis Drive. The former waste oil tank was buried immediately southwest of the station building. A site map showing the location of the tanks is presented as Attachment A.

The results of a subsurface investigation conducted at the site in September 1987 indicate that immediately adjacent to the waste oil tank, the site is underlain by silt and sand containing occasional interbeds of clay to a depth of 20.5 ft. Water level data from a ground

water monitoring well installed at the site suggests that the ground water depth at the site is about 5 ft.

PREVIOUS SITE ACTIVITIES

Shell Oil Company records indicate that a steel 550-gallon waste oil tank was removed from the site in June 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 1975.

Following the tank removal, Blaine Tech Services of San Jose, California collected soil and ground water samples from beneath the former tank location. Documentation of the condition of the tank and excavation at the time of removal is not currently available. Two soil and one ground water sample from the excavation were submitted to Sequoia Analytical Laboratories of Redwood City, California (SAL). SAL analyzed both soil samples and the ground water sample for Total Oil and Grease (TOG) by EPA Method 3550/American Public Health Association Standard Method 503E, solvent extraction with gravimetric detection. In addition, the deeper soil sample was analyzed for TPH by EPA Method 5020/8015, headspace extraction with gas chromatography/flame ionization (GC/FID) detection, for VOCs by EPA Method 8010, gas chromatography with "Hall" detection (GC/Hall) and for aromatic hydrocarbons, including BETX, by EPA Method 8020, gas chromatography/photoionization quantitation (GC/PID). The SAL analytic results are presented in Table 1.

TOG - 5032

TPH - 5020/8015

8010 & 8020

TABLE 1. Analytic Results for Ground Water, Shell Service Station WIC #204007205, Alameda, California

Sample ID	Depth ft	Date Sampled	Sampled By	Analytic Lab	Analytic Method	TPH-D	TPH-O/JF	B	E	T	X	TOG	VOCs
						<----------parts per million---------->							
Excavation Soil #2	7	6-15-87	BT	SAL	3550/503E/8015/ 8010/8020	<1.0	NA	<0.050	<0.050	<0.050	NA	1,700	ND
Excavation Soil #3	3.5	6-15-87	BT	SAL	3550/503E	NA	NA	NA	NA	NA	NA	47	NA
Excavation Water	-	6-15-87	BT	SAL	3550/503E	NA		NA	NA	NA	NA	<5	NA
Soil Boring Soil #S1-1	51	9-04-87	PEG	IT	3550/503E/8015	<35	385	NA	NA	NA	NA	1,600	NA
Soil Boring Soil #S1-2	10	9-04-87	PEG	IT	8240/3550/ 503E/8015	<10	108	<0.005	<0.005	<0.005	<0.005	460	ND
Soil Boring Soil #S1-3	15	9-04-87	PEG	IT	3550/503E/8015	<10	16	NA	NA	NA	NA	70	NA
Soil Boring Soil #S1-4	20	9-04-87	PEG	IT	3550/503E/8015	<10	87	NA	NA	NA	NA	320	NA
Ground Water	-	9-04-87	PEG	IT	624	NA	NA	<0.005	<0.005	<0.005	<0.005	NA	1*

Abbreviations

TPH-D = Total Petroleum Hydrocarbons as Diesel
TPH-O/JF = Total Petroleum Hydrocarbons as Oil and Jet Fuel
B = Benzene
E = Ethylbenzene
T = Toluene
X = Xylenes
TOG = Total Oil and Gas
VOCs = Volatile Organic Compounds
ppm = parts per million or μ/kg
NA = Not Analyzed
BT = Blaine Tech Services, San Jose, California
PEG = Pacific Environmental Group Inc., Santa Clara, California
SAL = Sequoia Analytical Labs, Redwood City, California
IT = International Technology Corp., Santa Clara, California
ND = Not detected at detection limits between 0.005 and 0.05 ppm

Footnotes

1* = Unknown Alcohol detected at 7 ppb, and Acetone detected at 270 ppb

Analytic Methods

3550 = EPA Method 3550, Sonification Extraction
503E = American Public Health Association Standard Method 503E, Gravimetric Quantitation
8015 = EPA Method 8015, Gas Chromatography with Flame Ionization Detection
8010 = EPA Method 8010, Gas Chromatography with Hall Detection
8020 = EPA Method 8020, Gas Chromatography with Photo Ionization Detection
8240 = EPA Method 8240, Gas Chromatography Mass Spectroscopy (GC/MS)
624 = EPA Method 624, Purge and Trap - GC/MS

Documentation regarding the disposal of the backfill material excavated from the tank pit during the tank removal and the removal of ground water and/or native soil from the excavation following the tank removal is not available at this time.

A subsurface investigation, conducted at the site in September 1987 by Pacific Environmental Group of Santa Clara, California (PEG), consisted of drilling one soil boring to a depth of 20.5 ft, installing a ground water monitoring well in the boring and analyzing soil and ground water samples. The boring was drilled adjacent to the southwest side of the waste oil tank pit. Ground water was encountered in the borehole at about 8 ft depth and stabilized in the monitoring well at about 5 ft depth. Soil samples collected from the boring at depths of about 5, 10, 15, and 20 ft were submitted by PEG to International Technology Corporation of Santa Clara, California (IT) for TOG analysis by American Public Health Association Standard Method 503E and for TPH analysis by EPA Method 8015 using diesel, jet fuel and oil as standards. The 10 ft sample was also analyzed by IT for VOCs by EPA Method 8240 Gas Chromatography/Mass Spectroscopy (GC/MS).

The monitoring well was screened from about 1 ft above the static ground water level to 19 ft depth and was sampled after it was checked for free product. No floating product was measured in the monitoring well. The ground water sample collected from the monitoring well by PEG was analyzed by IT for VOCs by EPA Method 624, GC/MS. The IT analytic results are presented in Table 1.

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

- Summarizing the current site status.

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. The results of these tasks will be forwarded to you by July 15, 1989.

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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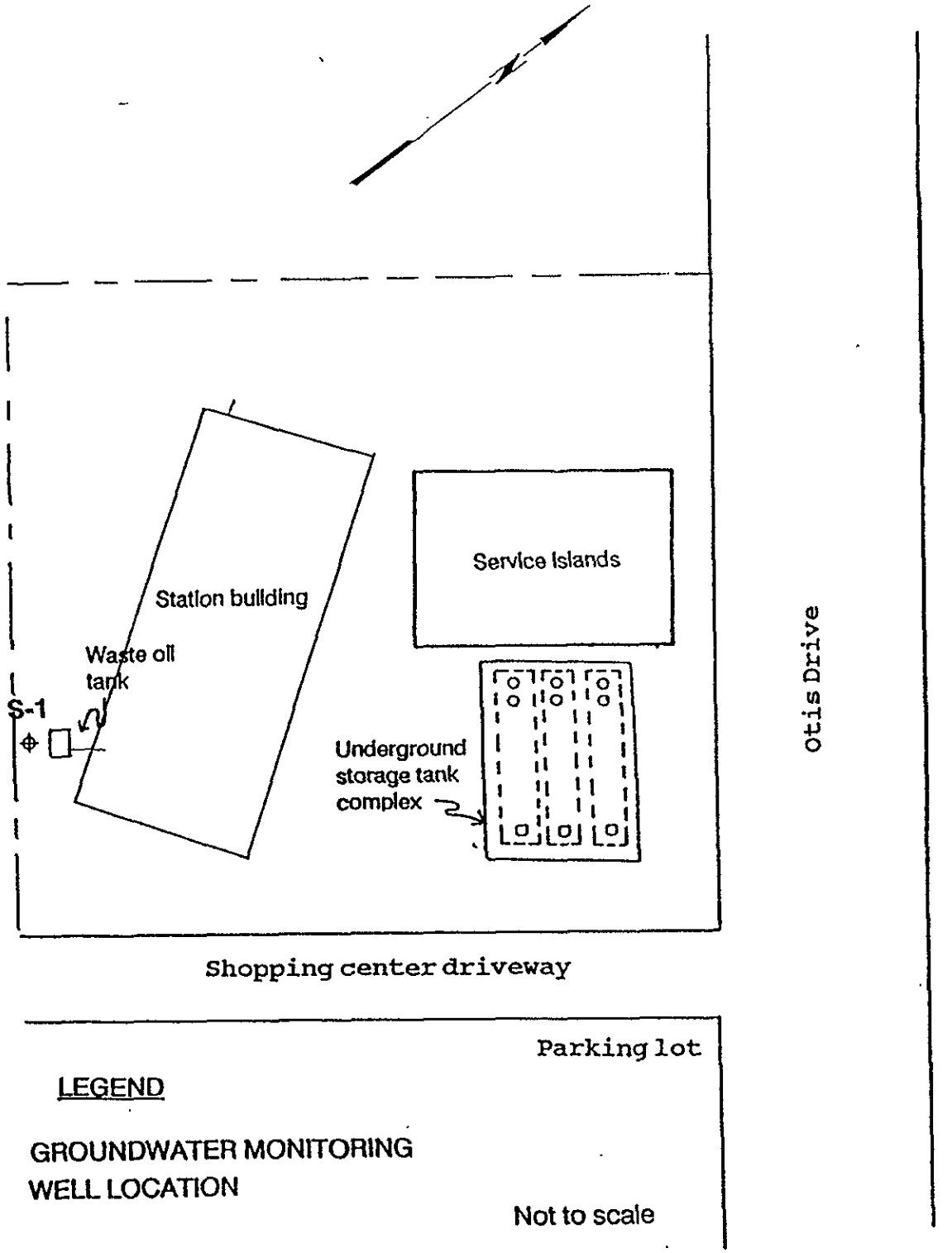
Attachment A - Site Map



Shell Service Station
2160 Otis Drive
Alameda, California

SITE PLAN

FIGURE
1
PROJECT NO.
100-85.01