

**QUARTERLY GROUNDWATER  
MONITORING AND SAMPLING  
AT THE PROPERTY  
LOCATED AT 5175 BROADWAY STREET  
OAKLAND, CALIFORNIA  
MARCH 20, 1998**

**PREPARED FOR:  
MR. MOHAMMAD MEHDIZADEH  
150 RANDOM WAY  
PLEASANT HILL, CALIFORNIA 94523**

**BY:  
SOIL TECH ENGINEERING, INC.  
1761 JUNCTION AVENUE  
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**SOIL TECH ENGINEERING, INC.**

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March 20, 1998

File No. 8-90-420-GI

**Mr. Mohammad Mehdizadeh**  
150 Random Way  
Pleasant Hill, California 94523

**SUBJECT: QUARTERLY GROUNDWATER MONITORING  
AND SAMPLING AT THE PROPERTY**  
Located at 5175 Broadway Street, in  
Oakland, California

Dear Mr. Mehdizadeh:

This report presents the results of quarterly groundwater monitoring and sampling conducted on January 27, 1998, by Soil Tech Engineering, Inc. (STE), at the subject site located at 5175 Broadway Street, in Oakland, California (Figure 1).

Five monitoring wells (MW-1 through MW-3, STMW-4 and STMW-5) located on-site (Figure 2) were monitored for presence of sheen and/or odor, sampled and analyzed for the presence of Total Petroleum Hydrocarbons as diesel and gasoline (TPHd and TPHg), Benzene, Toluene, Ethylbenzene, Total Xylenes (BTEX), Methyl Tertiary Butyl Ether (MTBE) and Total Lead (Pb).

This quarterly monitoring and sampling was conducted in accordance with STE's work plan dated October 5, 1994 and October 10, 1996 letter from Alameda County Health Department requesting immediate initiation of quarterly monitoring program.

If you have any questions or require additional information, please feel free to contact our office at (408) 441-1881 at your convenience.

Sincerely,

***SOIL TECH ENGINEERING, INC.***

  
FRANK HAMED-FARD  
GENERAL MANAGER

  
LAWRENCE KOO, P. E.  
C. E. #34928

## **SITE DESCRIPTION AND BACKGROUND:**

The site is located at 5175 Broadway Street, in Oakland, California. The area in the vicinity of the site consists mainly of residential and light commercial (Figure 1).

In January 1990, Tank Protect Engineering, Inc. (TPE), was retained to supervise the removal of underground fuel tanks and to conduct soil sampling, soil excavation, soil treatment and disposal. In addition, TPE installed three monitoring wells on-site.

Initial analytical results of soil samples collected from the tank excavation area showed moderate levels of Total Petroleum Hydrocarbons as Gasoline (TPHg) in two locations. The rest of the samples showed TPHg ranging from non-detected to less than 120 parts per million (ppm). Due to the presence of elevated levels of TPHg detected in the excavation, TPE installed three on-site monitoring wells (MW-1 to MW-3), as required by state and local regulatory agencies (Figure 2). TPE's preliminary groundwater assessment also indicated that the shallow groundwater had been impacted.

The Alameda County Health Department (ACHD) requested the property owner to conduct further investigation in order to define the extent of dissolved hydrocarbons contamination in the groundwater.

Soil Tech Engineering, Inc. (STE), was retained in September 1990 to conduct monitoring and sampling of the on-site monitoring wells. The objective of the quarterly groundwater sampling program was to monitor seasonal and long-term variations in the conditions of the shallow aquifer beneath the site and to assess the direction of groundwater flow for further investigation.

STE sampled the three on-site groundwater monitoring wells (MW-1 to MW-3) on September 26, 1990, and January 14, 1991. The sampling was conducted in accordance with ACHD and California Regional Water Quality Control Board (CRWQCB) guidelines and STE's Standard Operating Procedures (SOP) included in Appendix "C".

The three on-site wells contained moderate to high levels of dissolved hydrocarbons. A comparison of the September 1990 sampling with TPE's analytical results of April 1990 showed an increase in dissolved hydrocarbons in wells MW-1 and MW-2. In well MW-3 (the down-gradient well), TPHg and Toluene levels decreased, whereas Benzene, Ethylbenzene and Total Xylenes increased slightly.

The analytical results for groundwater samples collected on January 14, 1991, showed an increase in TPH and BTEX levels in well MW-2 compared to those reported in September 1990. Well MW-1 also showed a slight increase in TPH and Benzene, but showed a decrease in Toluene, Ethylbenzene and Xylenes levels. Well MW-3 showed a substantial decrease in TPH and BTEX.

The Alameda County Health Department (ACHD) in a letter dated March 29, 1991, requested additional investigation to define the extent of dissolved hydrocarbon plume. STE installed two additional monitoring wells STMW-1 (STMW-4) and STMW-2 (STMW-5) on June 21, 1991. The July 3, 1991, water sampling results showed low levels of dissolved Total Petroleum Hydrocarbons as gasoline (TPHg) and Benzene, Toluene, Ethylbenzene and Xylenes (BTEX) in all five wells. The presence of low levels of TPHg and BTEX in the up-gradient well, STMW-1 (STMW-4), (located on the east corner of the property) indicated a potential off-site source. Based on the water level data, the groundwater direction was west to southwest on July 3, 1991. The detail of this investigation is summarized in STE's report dated July 23, 1991. STE recommended a quarterly monitoring and sampling of five on-site wells for at least a year.

The second quarterly sampling was conducted in November 1991. The detail of the sampling is described in STE's report dated November 22, 1991. The quarterly monitoring and samplings conducted by STE are described in STE's report dated March 10, 1992, June 1992, October 1992 and January 1993.

The last quarterly monitoring and sampling was conducted by STE on August 15, 1994, details in STE report dated September 20, 1994. STE prepared a work plan proposal for additional soil and groundwater investigation of the property dated October 5, 1994 but no further activity on the subject site was authorized by the owner. Hence, there was a discontinuation of quarterly monitoring and sampling activity.

Since November 17, 1996, quarterly monitoring and sampling of the subject site was resumed without interruption.

### **SCOPE OF PRESENT WORK:**

The scope of work for this sampling was to:

- 1) Measure the depth-to-groundwater and monitor the presence of dissolved hydrocarbons in the five on-site wells.
- 2) Collect groundwater samples from the on-site wells for analyses of Total Petroleum Hydrocarbons as diesel and gasoline (TPHd and TPHg), Benzene, Toluene, Ethylbenzene, Total Xylenes (BTEX), Methyl Tertiary Butyl Ether (MTBE) and Total Lead (Pb) and submit to a State-Certified laboratory.
- 3) Update the database for water level, dissolved hydrocarbon level and groundwater field observation data.
- 4) Review analytical results and prepare a report.

### **CURRENT FIELD WORK:**

On January 27, 1998, the five on-site wells were monitored, purged and sampled in accordance with STE's Standard Operating Procedures (SOP) (Appendix "C"), which comprise state and local guidelines.



***GROUNDWATER MONITORING:***

During field observation, no sheen or odor were detected in monitoring wells MW-1, MW-2, MW-3 and STMW-4. Only light sewerage odor was detected in monitoring well STMW-5. Table 1 summarizes the groundwater monitoring data and laboratory analytical results.

***GROUNDWATER SAMPLING:***

Following groundwater monitoring, the on-site wells were purged at least five well volumes and sampled. The water samples were collected in glass vials and amber bottles with Teflon-lined caps, labeled and placed in an ice-cooled chest for transportation to Priority Environmental Labs, a State-Certified laboratory with appropriate chain-of-custody record.

The water samples were analyzed for TPHg, TPHd, BTEX and MTBE and Total Lead.

**GROUNDWATER FLOW DIRECTION:**

Groundwater elevation data was used to determine the direction of groundwater flow. Groundwater flow was approximately in a southwesterly direction as of January 27, 1998.

**LABORATORY ANALYTICAL RESULTS:**

Monitoring wells MW-1 and MW-2 detected TPHd, TPHg and BTEX below laboratory detection limit. Monitoring well MW-3 detected TPHd at 0.56 mg/L; TPHg at

0.38 mg/L and BTEX at (0.0057 mg/L, 0.0041 mg/L, 0.0017 mg/L and 0.0091 mg/L), respectively. Monitoring well STMW-4 detected TPHd at 0.3 mg/L; TPHg at 3 mg/L and BTEX at 0.06 mg/L; 0.017 mg/L; 0.012 mg/L and 0.049 mg/L. Monitoring well STMW-5 detected low levels of TPHd at 1.1 mg/L, TPHg at 0.34 mg/L and BTEX at 0.002 mg/L; 0.0018 mg/L; 0.0016 mg/L and 0.0082 mg/L, respectively. All five monitoring wells detected MTBE and Total Lead concentrations below laboratory detection limit. Table 1 summarizes the water sample analytical results.

### **RECOMMENDATIONS:**

Since dissolved hydrocarbons continue to be present in the wells and some of the hydrocarbon constituents decreased and some have increased in the wells, STE recommends the continuation of monitoring and sampling of the five monitoring wells. In addition, STE recommends a meeting with ACEHD and the Regional Water Quality Control Board to discuss the results and obtain a sense of direction as to the additional investigation(s) necessary for the site.

A copy of this report should be sent to the Alameda County Health Department (ACHD) and the California Regional Water Quality Control Board (CRWQCB).

### **LIMITATIONS:**

This report and the associated work has been provided in accordance with the general principles and practices currently employed in the environmental consulting profession. The contents of this report reflect the conditions of the site at this particular time. The findings of this report are based on:

- 1) The observations of field personnel.
- 2) The results of laboratory analyses performed by a state-certified laboratory.

It is possible that variations in the soil and groundwater could exist beyond the points explored in this investigation. Also, changes in groundwater conditions of a property can occur with the passage of time due to variations in rainfall, temperature, regional water usage and other natural processes or the works of man on this property or adjacent properties.

This report is issued with the understanding that it is the responsibility of the owner or his her representative to ensure that the information and recommendations contained herein are called to the attention of the Local Environmental Agency.

Services performed by STE have been in accordance with generally accepted environmental professional practices for the nature and conditions of the work completed in the same or similar localities at the time the work was performed. This report is not meant to represent a legal opinion. No other warranty, express or implied is made.

**A P P E N D I X "A"**

**SOIL TECH ENGINEERING, INC.**

**TABLE 1**  
**GROUNDWATER MONITORING DATA (feet)**  
**AND ANALYTICAL RESULTS (mg/L)**

Date	Well No./ Elevation	Depth of Well	Perf. Length	Depth to Water	GW Elev.	Well Observation	TPHg	TPHd	B	T	E	X	MTBE
4/30/89	MW-1 (97.71)	23	10	N/A	N/A	No sheen or odor	0.2	NA	0.018	0.005	0.002	0.012	NA
5/17/90				9.26	88.45	N/A	NA	NA	NA	NA	NA	NA	NA
9/26/90				9.92	87.79	No sheen/Mild petroleum odor	1.3	NA	0.055	0.031	0.12	0.1	NA
1/14/91				9.54	88.17	No sheen/Mild petroleum odor	3.1	NA	0.35	0.083	0.086	0.13	NA
7/03/91	(102.04) resurveyed			9.42	92.62	No sheen/Light petroleum odor	0.58	NA	0.032	0.041	0.04	0.055	NA
11/11/91				9.45	92.59	No sheen/Mild petroleum odor	0.33	NA	0.02	0.002	0.002	0.011	NA
3/04/92	(101.83) resurveyed			7.93	93.90	No sheen/Light petroleum odor	0.81	NA	0.011	0.005	0.01	0.023	NA
6/01/92				8.98	92.85	No sheen/Mild sewerage odor	2.2	NA	0.093	0.032	0.04	0.12	NA
9/28/92				9.29	92.54	No sheen/Mild sewerage odor	2.9	NA	0.024	0.0078	0.019	0.037	NA
1/11/93				7.56	94.27	No sheen/Light sewerage odor	1.7	NA	0.0057	0.006	0.011	0.028	NA
8/15/94				9.19	92.64	No sheen/Mild sewerage odor	2.0	NA	0.12	0.003	0.006	0.016	NA
11/07/96	(97.50) Resurveyed			8.73	88.77	No sheen/Light sewerage odor	1.2	0.27	0.003	0.0011	0.0015	0.0038	ND
2/12/97				7.92	89.58	No sheen/Light sewerage odor	1.8	ND	0.013	0.0057	0.0048	0.017	ND

**TABLE 1 CONT'D**  
**GROUNDWATER MONITORING DATA (feet)**  
**AND ANALYTICAL RESULTS (mg/L)**

Date	Well No./ Elevation	Depth of Well	Perf. Length	Depth to Water	GW Elev.	Well Observation	TPHg	TPHd	B	T	E	X	MTBE
6/16/97	MW-1 (97.50)	23	10	9.04	88.46	No sheen/Very light sewerage odor	0.33	ND	0.0027	ND	ND	0.0012	ND
9/30/97				7.56	89.94	No sheen or odor	ND	ND	ND	ND	ND	ND	ND
1/27/98				7.96	89.54	No sheen or odor	ND	ND	ND	ND	ND	ND	ND
4/30/89	MW-2 (97.78)	23	15	N/A	N/A	No sheen or odor	0.23	NA	0.039	0.018	0.005	0.023	NA
5/17/90				10.00	87.78	N/A	NA	NA	NA	NA	NA	NA	NA
9/26/90				10.83	86.95	No sheen/Mild petroleum odor	0.85	NA	0.94	0.005	0.025	0.047	NA
1/14/91				10.63	87.15	No sheen or odor	3.1	NA	0.35	0.083	0.086	0.13	NA
7/03/91	(102.02) resurveyed			10.08	91.94	No sheen/Light petroleum odor	1.59	NA	0.03	0.052	0.024	0.034	NA
11/11/91				10.21	91.81	No sheen/Mild petroleum odor	0.96	NA	0.32	0.015	0.004	0.029	NA
3/04/92	(101.67) resurveyed			8.70	92.97	No sheen/Light petroleum odor	1.5	NA	0.0095	0.0084	0.0098	0.022	NA
6/01/92				9.52	92.15	No sheen Mild sewerage odor	2.8	NA	0.084	0.041	0.059	0.095	NA
9/28/92				10.09	91.58	No sheen Mild sewerage odor	1.6	NA	0.047	0.020	0.047	0.097	NA
1/11/93				8.52	93.15	No sheen Light sewerage odor	2.5	NA	0.0086	0.01	0.017	0.032	NA
8/15/94				9.91	91.76	No sheen/Light petroleum odor	6.0	NA	0.45	0.06	0.1	0.095	NA

**TABLE 1 CONT'D**  
**GROUNDWATER MONITORING DATA (feet)**  
**AND ANALYTICAL RESULTS (mg/L)**

Date	Well No./ Elevation	Depth of Well	Perf. Length	Depth to Water	GW Elev.	Well Observation	TPHg	TPHd	B	T	E	X	MTBE
11/07/96	MW-2 (97.49) Resurveyed	23	15	10.02	87.47	No sheen/Very light sewerage odor	4.2	0.78	0.025	0.0049	0.0081	0.014	ND
2/12/97				8.91	88.58	No sheen/Very light sewerage odor	1.8	5.7	0.016	0.0031	0.0034	0.0088	ND
6/16/97				9.75	87.74	No sheen/Very light sewerage odor	2.5	ND	0.022	0.0051	0.0078	0.011	ND
9/30/97				7.98	89.51	No sheen or odor	ND	ND	ND	ND	ND	ND	ND
1/27/98				8.38	89.11	No sheen or odor	ND	ND	ND	ND	ND	ND	ND
4/30/90	MW-3 (98.14)	27	20	N/A	N/A	No sheen/Mild petroleum odor	56	NA	3.6	8.6	1.3	7.2	NA
5/17/90				12.42	85.72	N/A	NA	NA	NA	NA	NA	NA	NA
9/26/90				13.50	84.64	No sheen/Mild petroleum odor	54	NA	5.1	0.42	1.6	8.0	NA
1/14/91				12.58	85.56	Light sheen/Strong petroleum odor	35	NA	2.6	6.6	1.5	5.7	NA
7/03/91	(102.46) resurveyed			12.08	90.38	Rainbow sheen Strong petroleum odor	33	NA	4.12	4.3	1.4	4.8	NA
11/11/91				12.29	90.17	V. light rainbow sheen Mild petroleum odor	57	NA	3.9	8.4	2.1	14	NA
3/04/92	(102.18) resurveyed			10.26	91.92	Brown sheen/Strong petroleum odor	57	NA	0.72	0.87	0.81	3.1	NA
6/01/92				11.40	90.78	Rainbow sheen/Mild petroleum odor	50	NA	0.24	0.24	0.22	0.74	NA
9/28/92				12.64	89.54	Rainbow sheen spots Strong petroleum odor	64	NA	0.11	0.093	0.097	0.25	NA

**TABLE 1 CONT'D**  
**GROUNDWATER MONITORING DATA (feet)**  
**AND ANALYTICAL RESULTS (mg/L)**

Date	Well No./ Elevation	Depth of Well	Perf. Length	Depth to Water	GW Elev.	Well Observation	TPHg	TPHd	B	T	E	X	MTBE
1/11/93	MW-3 (97.94) Resurveyed	27	20	10.10	92.08	Rainbow sheen/Mild petroleum odor	68	NA	0.21	0.28	0.36	0.99	NA
8/15/94				12.20	89.98	Brown sheen spots Mild petroleum odor	50	NA	0.87	1.2	1.3	3	NA
11/07/96				12.40	85.54	Very thin layer of brown sheen/Light petroleum odor	68	0.47	0.033	0.027	0.063	0.12	ND
2/12/97				10.23	87.71	Brown sheen spots Light petroleum odor	25	3.5	0.039	0.043	0.015	0.091	ND
6/16/97				11.79	86.15	Light brown sheen spots/Very light petroleum odor	9.7	ND	0.026	0.029	0.045	0.081	ND
9/30/97				9.40	88.54	No sheen or odor	6	1.6	0.043	0.036	0.012	0.11	ND
1/27/98				9.80	88.14	No sheen or odor	0.38	0.56	0.0057	0.0041	0.0017	0.0091	ND
7/03/91	STMW-1 (103.58)	19.5	11.5	11.00	92.58	Light rainbow sheen Mild petroleum odor	3.1	NA	0.61	0.062	0.039	0.15	NA
11/11/91	STMW-4 (renamed)			11.08	92.5	Light rainbow sheen Strong pet. odor	3.6	NA	0.99	0.015	0.0026	0.18	NA
3/04/92	(103.08) resurveyed			9.44	93.64	Brown sheen spots Mild petroleum odor	5.0	NA	0.035	0.02	0.022	0.071	NA



**TABLE 1 CONT'D**  
**GROUNDWATER MONITORING DATA (feet)**  
**AND ANALYTICAL RESULTS (mg/L)**

Date	Well No./ Elevation	Depth of Well	Perf. Length	Depth to Water	GW Elev.	Well Observation	TPHg	TPHd	B	T	E	X	MTBE
6/01/92	STMW-4 (98.80) Resurveyed	19.50	11.50	10.32	92.76	No sheen Light petroleum odor	13	NA	0.14	0.045	0.063	0.21	NA
9/28/92				10.76	92.32	Brown sheen spots Mild petroleum odor	40	NA	0.035	0.02	0.048	0.11	NA
1/11/93				9.28	93.80	Brown sheen spots Mild petroleum odor	24	NA	0.026	0.088	0.092	0.28	NA
8/15/94				10.54	92.54	Light rainbow sheen spots/Light petroleum odor	9	NA	0.5	0.034	0.046	0.13	NA
11/07/96				10.37	88.43	Rainbow sheen spots Very light petroleum odor	13	0.18	0.04	0.0029	0.0078	0.019	ND
2/12/97				9.36	89.44	Rainbow sheen spots Very light petroleum odor	5.3	5.7	0.095	0.0053	0.0059	0.018	ND
6/16/97				10.40	88.40	No sheen/Very light sewerage odor	5.3	ND	0.037	0.0062	0.0017	0.011	ND
9/30/97				8.50	90.30	No sheen or odor	2.7	ND	0.042	0.0077	0.0057	0.026	ND
1/27/98				8.90	89.90	No sheen or odor	3	0.3	0.06	0.017	0.012	0.049	ND
7/03/91	STMW-2 (101.99)	24	16	13.92	88.07	No sheen or odor	0.69	NA	0.099	0.081	0.019	0.098	NA
11/11/91	STMW-5 (renamed)			14.00	87.99	No sheen/Very light petroleum odor	0.41	NA	0.061	0.0024	0.0014	0.02	NA
3/04/92	(101.36) resurveyed			11.80	89.56	No sheen/Very light petroleum odor	0.46	NA	0.013	0.0065	0.011	0.018	NA

**TABLE 1 CONT'D**  
**GROUNDWATER MONITORING DATA (feet)**  
**AND ANALYTICAL RESULTS (mg/L)**

Date	Well No./ Elevation	Depth of Well	Perf. Length	Depth to Water	GW Elev.	Well Observation	TPHg	TPHd	B	T	E	X	MTBE
6/01/92	STMW-5 (101.36) Resurveyed	24	16	13.06	88.30	No sheen Mild petroleum odor	1.8	NA	0.027	0.02	0.021	0.043	NA
9/28/92				14.04	87.32	No sheen Mild sewerage odor	1.5	NA	0.014	0.0061	0.018	0.022	NA
1/11/93				11.61	89.75	No sheen Light sewerage odor	0.8	NA	0.0018	0.003	0.0031	0.0094	NA
8/15/94				13.85	87.51	No sheen Mild sewerage odor	3	NA	0.32	0.062	0.034	0.22	NA
11/07/96	(97.14) Resurveyed			13.67	87.51	Rainbow sheen spots Very light pet. odor	1.2	0.33	0.011	0.0017	0.0044	0.013	ND
2/12/97				12.07	85.07	Rainbow sheen spots Very light pet. odor	1.0	3.7	0.011	0.0017	0.0017	0.0097	ND
6/19/97				13.33	83.81	No sheen/Very light sewerage odor	0.95	2.3	0.0074	0.001	0.001	0.0072	ND
9/30/97				11.24	85.90	No sheen Light sewerage odor	0.71	1.1	0.0058	0.004	0.001	0.011	ND
1/27/98				11.64	85.50	No sheen Light sewerage odor	0.34	1.1	0.002	0.0018	0.0016	0.0082	ND

**TPHd** - Total Petroleum Hydrocarbons as diesel  
**BTEX** - Benzene, Toluene, Ethylbenzene, Total Xylenes  
**GW Elev.** - Groundwater Elevation  
**ND** - Not Detected  
**N/A** - Not Applicable

**TPHg** - Total Petroleum Hydrocarbons as gasoline  
**MTBE** - Methyl Tertiary Butyl Ether  
**Perf.** - Perforation  
**NA** - Not Analyzed

**TABLE 2**  
**GROUNDWATER SAMPLES ANALYZED**  
**FOR TOTAL LEAD (Pb) IN mg/L**

<b>Date</b>	<b>Sample Number</b>	<b>Lead (Pb) Results</b>
11/07/96	MW-1	Not Detected
	MW-2	Not Detected
	MW-3	Not Detected
	STMW-4	Not Detected
	STMW-5	Not Detected
2/12/97	MW-1	Not Detected
	MW-2	Not Detected
	MW-3	Not Detected
	STMW-4	Not Detected
	STMW-5	Not Detected
6/16/97	MW-1	Not Detected
	MW-2	Not Detected
	MW-3	Not Detected
	STMW-4	Not Detected
	STMW-5	Not Detected
9/30/97	MW-1	Not Detected
	MW-2	Not Detected
	MW-3	Not Detected
	STMW-4	Not Detected
	STMW-5	Not Detected
1/27/98	MW-1	Not Detected
	MW-2	Not Detected
	MW-3	Not Detected
	STMW-4	Not Detected
	STMW-5	Not Detected

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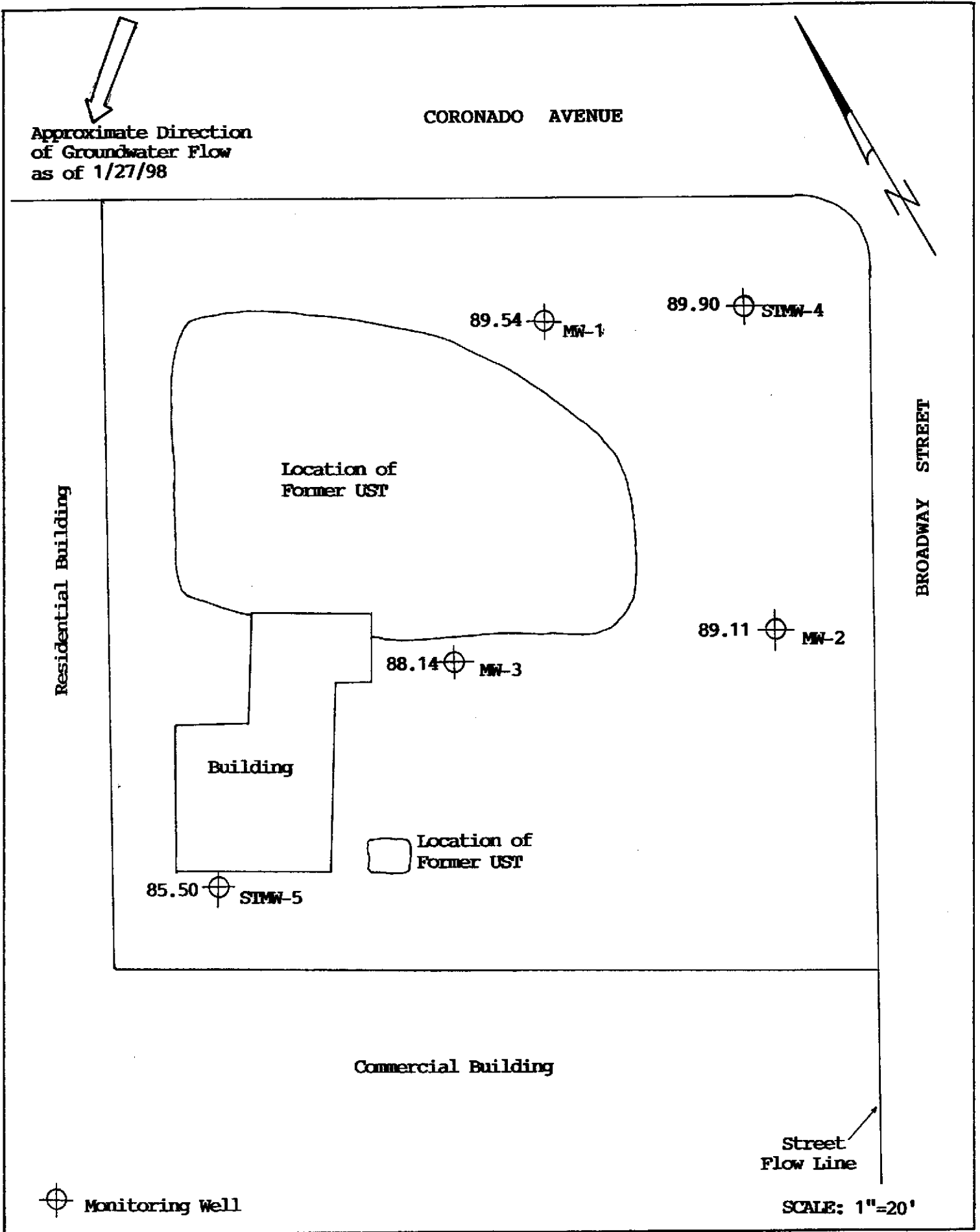
**A P P E N D I X "B"**

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Figure 1



Approximate Direction  
of Groundwater Flow  
as of 1/27/98

CORONADO AVENUE

BROADWAY STREET

Residential Building

Location of  
Former UST

89.54 MW-1

89.90 SIMW-4

89.11 MW-2

88.14 MW-3

Building

Location of  
Former UST

85.50 SIMW-5

Commercial Building

Street  
Flow Line

Monitoring Well

SCALE: 1"=20'

Figure 2

**A P P E N D I X "C"**

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## **GROUNDWATER SAMPLING PROCEDURE**

Prior to collection of groundwater samples, all of the sampling equipment (i.e. bailer, cables, bladder pump, discharge lines and etc...) was cleaned by pumping TSP water solution followed by distilled water.

Prior to purging, the well "Water Sampling Field Survey Forms" were filled out (depth to water and total depth of water column were measured and recorded). The well was then bailed or pumped to remove four to ten well volumes or until the discharged water temperature, conductivity and pH stabilized. "Stabilized" is defined as three consecutive readings within 15% of one another.

The groundwater sample was collected when the water level of the well recovered to 80% of its static level.

Forty milliliter (ml) glass volatile organic analysis (VOA) vials with Teflon septa were used as sample containers. The groundwater sample was decanted into each VOA vial in such a manner that there was a meniscus at the top. The cap was quickly placed over the top of the vial and securely tightened. The VOA vial was then inverted and tapped to see if air bubbles were present. If none were present, the sample was labeled and refrigerated for delivery under chain-of-custody to the laboratory. The label information would include a sample identification number, job identification number, date, time, type of analysis requested and the sampler's name.

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SOP1



**A P P E N D I X "D"**

**SOIL TECH ENGINEERING, INC.**



# PRIORITY ENVIRONMENTAL LABS

Precision Environmental Analytical Laboratory

February 04, 1998

PEL # 9802016

SOIL TECH ENGINEERING

Attn: Frank Hamedi

Re: Five water samples for Gasoline/BTEX with MTBE and Diesel analyses.


Project name: 5175 Broadway St., - Oakland  
Project number: 8-90-420-GI

Date sampled: Jan 27, 1998  
Date extracted: Jan 28-31, 1998

Date submitted: Jan 28, 1998  
Date analyzed: Jan 28-31

### RESULTS:

SAMPLE I.D.	Gasoline (ug/L)	Diesel (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl Benzene (ug/L)	Total Xylene (ug/L)	MTBE (ug/L)
MW-1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
MW-2	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
MW-3	380	560	5.7	4.1	1.7	9.1	N.D.
STMW-4	3000	300	60	17	12	49	N.D.
STMW-5	340	1100	2.0	1.8	1.6	8.2	N.D.
Blank	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Spiked Recovery	83.1%	90.2%	86.3%	89.4%	90.1%	100.6%	---
Detection limit	50	50	0.5	0.5	0.5	0.5	0.5
Method of Analysis	5030 / 8015	3510 / 8015	602	602	602	602	602

  
David Duong  
Laboratory Director



# PRIORITY ENVIRONMENTAL LABS

Precision Environmental Analytical Laboratory

Feb.04,1998

PEL # 9802016

SOIL TECH ENGINEERING

Attn: Frank Hamedi

Re: Five water samples for total Lead analysis.

Project name: 5175 Broadway st. - Oakland.

Project number: 8-90-420-GI

Date sampled: Jan.27,1998

Date submitted: Jan.28,1998

Date extracted: Feb.02-03,1998

Date analyzed: Feb.02-03,1998

## RESULTS:

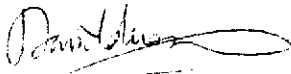
SAMPLE I.D.	Lead (mg/L)
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MW - 1	N.D.
MW - 2	N.D.
MW - 3	N.D.
STMW - 4	N.D.
STMW - 5	N.D.

Blank	N.D.
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Detection limit	0.50
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Method of Analysis	7420
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David Duong  
Laboratory Director

PROJ. NO. 8-90-420-GI NAME 5175 Broadway St., Oakland

SAMPLERS: (Signature) *Richard Mander*

CON-TAINER

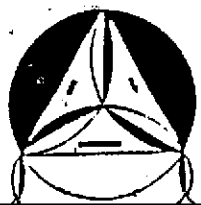
ANALYSES REQUESTED  
 TPH & BTX  
 TPH  
 MTBE  
 Pb

REMARKS

PEL # 9802016  
 INV # 28189

NO.	DATE	TIME	SOIL	WATER	LOCATION	CON-TAINER	ANALYSES REQUESTED	ANALYSES REQUESTED	ANALYSES REQUESTED	ANALYSES REQUESTED
1	1/27/98	10 <sup>00</sup>		✓	MW-1	2	✓	✓	✓	✓
2	1	11 <sup>00</sup>		✓	MW-2	2	✓	✓	✓	✓
3	1	13 <sup>10</sup>		✓	MW-3	2	✓	✓	✓	✓
4	1	15 <sup>30</sup>		✓	STMW-4	2	✓	✓	✓	✓
5	1	17 <sup>00</sup>		✓	STMW-5	2	✓	✓	✓	✓

Relinquished by: (Signature) <i>Richard Mander</i>	Date / Time 1/28/98	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time 1/28/98	Received by: (Signature) <i>Thostan</i>	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature) <i>T.L.</i>	Date / Time	Remarks PEL	



# SOIL TECH ENGINEERING

Environmental and Geotechnical Engineers

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