File No. 8-90-421-SI

QUARTERLY GROUNDWATER MONITORING AND SAMPLING FOR PLAZA CAR WASH PROPERTY LOCATED AT 400 SAN PABLO AVENUE ALBANY, CALIFORNIA MARCH 22, 1993

PREPARED FOR:
KAMUR INDUSTRIES
2351 SHORELINE DRIVE
ALAMEDA, CALIFORNIA 94501

BY:
SOIL TECH ENGINEERING, INC.
298 BROKAW ROAD
SANTA CLARA, CALIFORNIA 95050

SOIL TECH ENGINEERING, INC.

File No. 8-90-421-SI

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SOIL TECH ENGINEERING
Soil, Foundation and Geological Engineers
298 BROKAW ROAD, SANTA CLARA, CA 95050 ■ (408) 496-0265 OR (408) 496-0266

March 22, 1993

File No. 8-90-421-SI

Kamur Industries
2351 Shoreline Drive
Alameda, California 94501

ATTENTION: MR. MURRAY STEVENS

SUBJECT: QUARTERLY GROUNDWATER MONITORING AND SAMPLING FOR PLAZA CAR WASH PROPERTY Located at 400 San Pablo Avenue, in Albany, California

Dear Mr. Stevens:

This report presents the results of quarterly groundwater monitoring and sampling conducted by Soil Tech Engineering, Inc. (STE), on March 18, 1993, at the subject site (Figure 1).

BACKGROUND:

Currently there are four monitoring wells (MW-2, MW-3, STMW-1 and STMW-2) located on-site, and one well OTMW-5 is off-site (See Figure 2). Wells STMW-1 and STMW-2 were installed by STE, on-site wells MW-2, MW-3 and off-site wells OTMW-5 were installed by other consultants. This quarterly well monitoring and sampling was conducted in accordance with STE's recommendations made in the report

entitled "Report of Supplemental Subsurface Investigations", dated May 14, 1991. During this quarter's reporting period, the following field activities were performed:

- Monitored the depth-to-static groundwater for all on-site wells and one off-site well OTMW-5.

- Purged all on-site monitoring wells including well OTMW-5 prior to sampling.

- Submitted water samples to a state-certified laboratory to be analyzed for Total Petroleum Hydrocarbons as gasoline (TPHg) and for aromatic hydrocarbons: Benzene, Toluene, Ethylbenzene, and Total Xylenes (BTEX).

- Reviewed results and prepared a report of the investigation.

GROUNDWATER MONITORING:

On March 18, 1993, STE staff monitored the four on-site wells and one off-site well to measure water depth and check for the presence of free floating petroleum product (FFP) and/or petroleum odor. During monitoring of the wells, a light sewage odors were noted in wells MW-2 and OTMW-5, mild petroleum odors in wells STMW-1 and STMW-2, and strong petroleum odor in well MW-3 only. Light rainbow sheen were noted in purged water in wells STMW-1, STMW-2, and MW-3. After purging wells STMW-1, STMW-2, and MW-3, no sheen

was observed. Table 1 summarizes the depth-to-groundwater measurements and observations made. Static groundwater levels ranged from 5.11 to 7.11 feet below ground surface during the recent sampling event.

GROUNDWATER SAMPLING:

Following groundwater monitoring, the wells were purged at least four well volumes and sampled in accordance with STE's Standard Operating Procedures (see Appendix "B"), which follows state and local guidelines for sampling and monitoring wells. The samples were submitted for analysis to a California State-Certified laboratory, accompanied by chain-of-custody. The samples were analyzed for TPHg and for BTEX per modified EPA Methods 5030/8025 and 602.

GROUNDWATER FLOW:

The water elevation data were used to determine groundwater direction. Table 1 summarizes the groundwater elevations. The local groundwater flow direction was in north-northeasterly direction as of March 18, 1993 (Figure 2).

ANALYTICAL RESULTS:

All sampled wells continued to show the presence of low levels of petroleum hydrocarbon constituents analyzed. TPHg ranged from

0.57 milligrams per liter (mg/L) in the off-site well OTMW-5 to a maximum of 51 mg/L in on-site well MW-3; Benzene ranged from 0.006 mg/L in well OTMW-5 to a maximum 0.092 mg/L in well MW-3; Toluene concentration ranged from 0.0076 mg/L in well OTMW-5 to a maximum 0.13 mg/L in well MW-3; Ethylbenzene ranged from 0.011 mg/L in well OTMW-5 to a maximum 0.16 mg/L in well MW-3; and Total Xylenes ranged from 0.029 mg/L in well OTMW-5 to a maximum 0.59 mg/L in well MW-3, respectively.

The analytical results are presented in Table 2. The chain-of-custody records and certified analytical report are included in Appendix "C".

DISCUSSION:

A comparison of the recent analytical results with the December 10, 1992 results showed an increase in TPHg concentrations in well OTMW-5 (from 0.54 to 0.57 mg/L). TPHg concentrations decreased in wells STMW-1 (from 35 to 19 mg/L), STMW-2 (from 44 to 9.2 mg/L), MW-2 (from 7.2 to 1.4 mg/L) and MW-3 (from 94 to 51 mg/L).

Benzene concentrations decreased substantially in this quarter in wells STMW-1, STMW-2, MW-2 and MW-3, and slightly increased in well OTMW-5 (from 0.0047 to 0.006 mg/L). Toluene levels showed an increased in well OTMW-5, but decreased in wells STMW-1 (from 0.079 to 0.052 mg/L), STMW-2 (from 0.096 to 0.031 mg/L), MW-2 (from 0.023

to 0.011 mg/L), and MW-3 (from 0.41 to 0.13 mg/L). Ethylbenzene levels showed a minor increase in well OTMW-5, and decreased in wells STMW-1, STMW-2, MW-2, and MW-3. Total Xylenes showed an increase in well OTMW-5, where as wells STMW-1, STMW-2, MW-2 and MW-3 showed a moderate decrease.

RECOMMENDATION:

Quarterly monitoring of on-site and off-site wells should continue for one more quarter, until interim groundwater treatment is initiated. This quarterly report should be submitted to Alameda County Health Department (ACHD) and the Regional Water Quality Control Board (RWQCB).

LIMITATIONS:

This report and the associated work have 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.

The services that STE provided 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.

Per your request, this report will be submitted to ACEHD and RWQCB.

If you have any questions or require additional information, please feel free to contact our office at your convenience.

Sincerely,

SOIL TECH ENGINEERING, INC.

NOORODDIN AMELI
STAFF ENGINEER

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

FRANK HAMEDI-FARD
GENERAL MANAGER

File No. 8-90-421-SI

TABLE 1
GROUNDWATER MONITORING DATA
(Measured in Feet)

Well No./ Elevation	Date	Depth-to-Water	Groundwater Elevation	FFP Thickness	Petroleum Odor
STMW-1 (100.62)	3/11/91	5.29	95.33	None	None
	7/03/91	5.83	94.79	None	Mild
	11/04/91	5.83	94.79	None	Mild
	1/20/92	5.79	94.84	Light Sheen	Mild
	5/07/92	5.80	94.82	None	Mild
	8/17/92	5.77	94.85	None	Mild
	12/10/92	6.61	94.01	Light Sheen	Mild
	3/18/93	6.68	93.94	Light Sheen	Mild
STMW-2 (100.63)	3/11/91	5.25	95.38	None	Mild
	7/03/91	4.75	95.88	None	Mild
	11/04/91	5.92	94.71	None	Mild
	1/20/92	5.88	94.75	None	Mild
	5/07/92	5.70	94.92	None	Mild
	8/17/92	5.71	94.92	None	None
	12/10/92	6.39	94.24	Light Sheen	Mild
	3/18/93	6.50	94.13	Light Sheen	Mild

TABLE 1 CONT'D
GROUNDWATER MONITORING DATA
(Measured in Feet)

Well No./ Elevation	Date	Depth-to-Water	Groundwater Elevation	FFP Thickness	Petroleum Odor
MW-2 (99.39)	3/11/91	4.29	95.07	None	Mild
	7/03/91	5.83	93.53	None	Strong
	11/04/91	4.79	94.57	None	Mild
	1/20/92	4.60	94.76	None	Mild
	5/07/92	4.42	94.94	None	Mild
	8/17/92	4.43	94.96	None	Mild
	12/10/92	4.94	94.45	None	Mild
	3/18/93	5.11	94.28	None	Light Sewage
MW-3 (100.09)	3/11/91	4.67	95.42	Trace	Moderate
	7/03/91	5.75	94.55	Light Sheen	Strong
	11/04/92	5.67	94.42	Trace	Strong
	1/20/92	5.54	94.55	Light Sheen	Strong
	5/07/92	5.18	94.91	Rainbow Sheen	Strong
	8/17/92	5.24	94.85	Rainbow Sheen	Mild
	12/10/92	4.42	95.67	Light Sheen	Mild
	3/18/93	5.39	94.70	Thick Sheen	Strong

TABLE 1 CONT'D
GROUNDWATER MONITORING DATA
(Measured in Feet)

Well No./ Elevation	Date	Depth-to-Water	Groundwater Elevation	FFP Thickness	Petroleum Odor
OTMW-5 (100.87)	3/11/91	5.02	95.85	None	Mild
	7/03/91	5.75	95.12	None	Mild
	11/04/91	5.77	95.10	None	Mild
	1/20/92	5.58	95.29	None	Mild
	5/07/92	5.43	95.44	None	Mild
	8/17/92	5.45	95.42	None	None
	12/10/92	7.30	93.57	None	Mild
	3/18/93	7.11	93.76	None	Light Sewage
OTMW-6	8/17/92	4.88	NA	None	None

FFP - Free Floating Product
NA - Not Applicable

TABLE 2
WATER ANALYTICAL RESULTS
IN
MILLIGRAMS PER LITER (mg/L)

Well No.	Date	TPHg	B	T	E	X
STMW-1	3/13/91	0.85	0.1	0.007	ND	0.15
	7/03/91	5.1	1.8	0.5	0.095	0.56
	11/04/91	2.05	0.76	0.054	ND	0.056
	1/20/92	4.6	0.59	0.036	ND	0.19
	5/07/92	4.4	0.066	0.053	0.004	0.16
	8/17/92	2.7	0.031	0.018	0.019	0.067
	12/10/92	35	0.054	0.079	0.083	0.22
	3/18/93	19	0.049	0.052	0.055	0.18
STMW-2	3/13/91	0.17	0.001	0.0017	ND	0.028
	7/03/91	1.8	0.64	0.048	0.044	0.094
	11/04/91	2.14	1.00	0.057	0.003	0.019
	1/20/92	14	0.12	0.0006	0.0006	0.08
	5/07/92	1.7	0.032	0.017	0.0086	0.048
	8/17/92	16	0.18	0.22	0.21	0.62
	12/10/92	44	0.084	0.096	0.12	0.35
	3/18/93	9.2	0.022	0.031	0.04	0.11

TABLE 2 CONT'D
WATER ANALYTICAL RESULTS
IN
MILLIGRAMS PER LITER (mg/L)

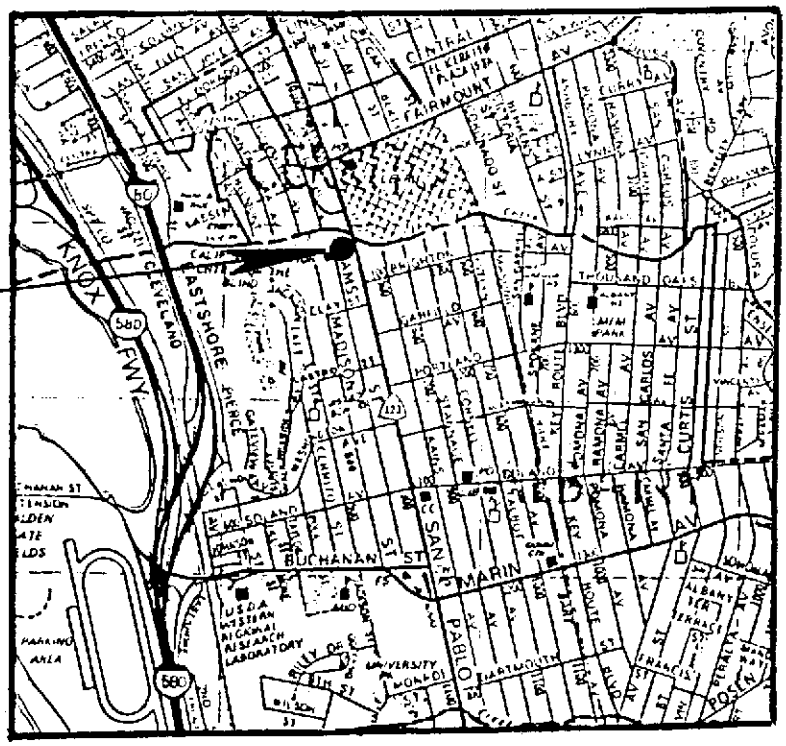
Well No.	Date	TPHg	B	T	E	X
MW-2	3/13/91	25	2.6	4.4	ND	5.8
	7/03/91	21	2.8	3.2	ND	4.3
	11/04/91	3.58	1.7	0.119	0.009	0.056
	1/20/92	0.38	0.38	0.0013	ND	0.034
	5/07/92	10	0.062	0.032	0.044	0.16
	8/17/92	6	0.048	0.027	0.065	0.18
	12/10/92	7.2	0.015	0.023	0.032	0.082
	3/18/93	1.4	0.0083	0.011	0.013	0.048
MW-3	3/13/91	47	9.1	9.9	0.27	8.11
	7/03/91	40	12	4.5	1.2	4.0
	11/04/91	102.7	38.87	19.1	3.2	8.3
	1/20/92	510	27	27	5.8	46
	5/07/92	43	0.25	0.23	0.12	0.47
	8/17/92	140	2.5	2.4	1.7	5.5
	12/10/92	94	0.4	0.41	0.43	1.1
	3/18/93	51	0.092	0.13	0.16	0.59

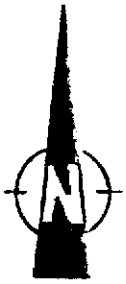
TABLE 2 CONT'D
WATER ANALYTICAL RESULTS
IN
MILLIGRAM PER LITER (mg/L)

Well No.	Date	TPHg	B	T	E	X
OTMW-5	3/13/91	0.12	0.046	0.012	0.001	0.004
	7/03/91	0.81	0.32	0.043	0.016	0.043
	11/04/91	0.97	0.1	0.019	0.005	0.013
	1/20/92	0.09	0.0007	0.0007	ND	0.011
	5/07/92	0.18	0.027	0.014	0.0082	0.035
	8/17/92	0.087	0.012	0.0098	0.004	0.042
	12/10/92	0.54	0.0047	0.0045	0.0064	0.019
	3/18/93	0.57	0.006	0.0076	0.011	0.029
OTMW-6	8/17/92	ND	ND	ND	ND	ND

TPHg - Total Petroleum Hydrocarbons as gasoline
BTEX - Benzene, Toluene, Ethylbenzene, Total Xylenes
ND - Not Detected (Below Laboratory Detection Limit)

Site Location



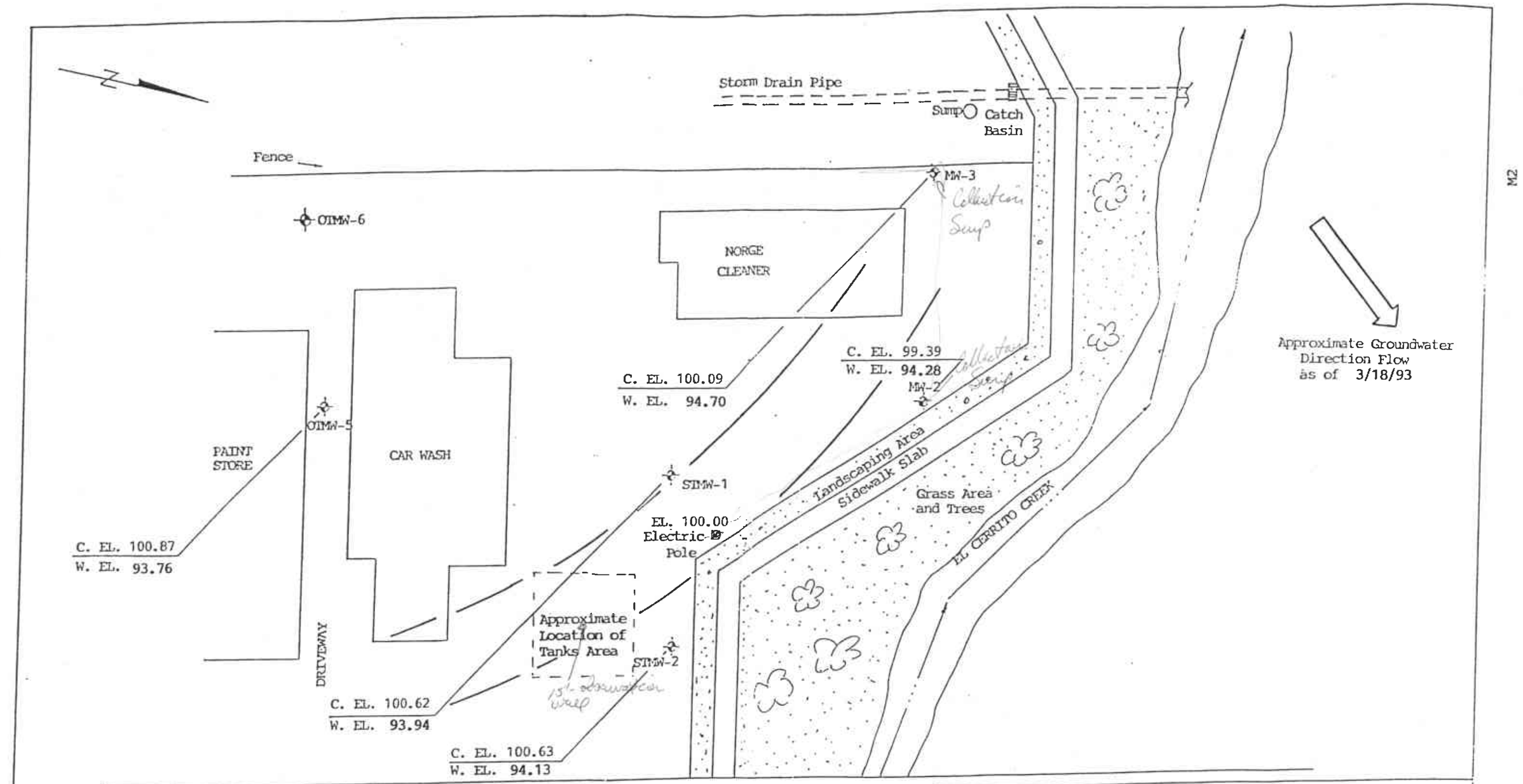


Thomas Brothers Map 1993 Edition
San Francisco, Alameda
and Contra Costa Counties

Page 1 D2

Figure 1

M1



DIRECTION OF GROUNDWATER FLOW

400 SAN PABLO AVENUE, ALBANY, CALIFONRIA

1" = 30'	PROJECT NO. 8-90-421-SI	FIGURE - 2
DRAWN BY N.A.		3/18/93

SOIL TECH ENGINEERING, INC.
298 BROKAW ROAD, SANTA CLARA, CA 95050

File No. 8-90-421-SI

GROUNDWATER SAMPLING

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 in 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.

PRIORITY ENVIRONMENTAL LABS

Priority Environmental Analytical laboratory

March 21, 1993 PEL # 9303042

SOIL TECH ENGINEERING, INC.

Attn: Noori Ameli
Re: Five water samples for Gasoline/BTEX analysis.

Project name: 400 San Pablo Ave., - Albany
Project number: 8-90-421-SI

Date sampled: Mar 18, 1993 Date submitted: Mar 18, 1993
Date extracted: Mar 19-20, 1993 Date analyzed: Mar 19-20, 1993

RESULTS:

SAMPLE I.D.	Gasoline (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl Benzene (ug/L)	Total Xylenes (ug/L)
STMW-1	19000	49	52	55	180
STMW-2	9200	22	31	40	110
MW-2	1400	8.3	11	13	48
MW-3	51000	92	130	160	590
OTMW-5	570	6.0	7.6	11	29
Blank	N.D.	N.D.	N.D.	N.D.	N.D.
Spiked Recovery	86.6%	84.2%	85.1%	92.4%	97.3%
Duplicate Spiked Recovery	91.3%	94.0%	90.9%	95.5%	102.1%
Detection limit	50	0.5	0.5	0.5	0.5
Method of Analysis	5030 / 8015	602	602	602	602

David Duong
Laboratory Director

1764 Houret Court Milpitas, CA. 95035 Tel: 408-946-9636 Fax: 408-946-9663

PEL

CHAIN OF CUSTODY RECORD

PROJ. NO.	NAME
8-90-421-SI	400 San Pablo Av. ALBANY

SAMPLERS: *(Signature)* N. Am[signature]

NO.	DATE	TIME	SOIL	WATER	LOCATION	CONTAINER	ANALYSES REQUESTED (2) TPHG/BTEXX						REMARKS
1	3/18/93	14 17		✓	STMW-1	1	✓						
2	3/18/93	13 20		✓	STMW-2	1	✓						
3	3/18/93	14 32		✓	MW-2	1	✓						
4	3/18/93	15 55		✓	MW-3	1	✓						
5	3/18/93	15 27		✓	OTMW-5	1	✓						

Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*
[signature]	3/18/93 16 25				
Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*
Relinquished by: *(Signature)*	Date / Time	Received for Laboratory by: *(Signature)*	Date / Time	Remarks	
		[signature]	3/18/93 16 25		

SOIL TECH ENGINEERING

Soil, Foundation and Geological Engineers

[redacted] BRO[redacted] ROA[redacted] ANT[redacted] ARA[redacted] 95[redacted] ([redacted] 49[redacted]265 [redacted] (408[redacted]6-0[redacted]

PEL

CHAIN OF CUSTODY RECORD

PEL # 9303042

INV # 23456

PROJ. NO.	NAME
8-90-421-SI	400 San Pablo Av. ALBANY

SAMPLERS: *(Signature)* N. Amini

NO.	DATE	TIME	SOIL	WATER	LOCATION	CONTAINER	Analyses Requested (2) TPHG (BTEXX	REMARKS
1	3/18/93	14[17]		✓	STMW-1	1	✓	
2	3/18/93	13[50]		✓	STMW-2	1	✓	
3	3/18/93	14[35]		✓	MW-2	1	✓	
4	3/18/93	15[05]		✓	MW-3	1	✓	
5	3/18/93	15[27]		✓	OTMW-5	1	✓	

Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date / Time	Receive by: *(Signature)*
N. Amini	3/18/93 16[25]				
Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*
Relinquished by: *(Signature)*	Date / Time	Received for Laboratory by: *(Signature)* Victor Deng	Date / Time 3/18/93 16[25]	Remarks	

SOIL TECH ENGINEERING

Soil, Foundation and Geological Engineers

2[redacted] ROP[redacted] ROAD, [redacted] SANTA CLARA, [redacted] 95050 [redacted] (4[redacted]) 49[redacted]65 ([redacted]08) [redacted]-02[redacted]