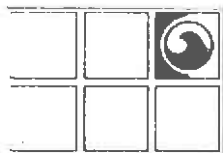


R0480



GROUNDWATER TECHNOLOGY, INC.

4057 Port Chicago Highway, Concord, CA 94520 (415) 671-2387

FAX: (415) 685-9148

May 20, 1994

Project No. 020204554

Ms. Bernadine Palka
Sears, Roebuck and Company
3333 Beverly Road, Building A2-281A
Department 824C
Hoffman Estates, IL 60179

SUBJECT: *Quarterly Monitoring and Sampling Report*
February through April 1994
Former Sears Automotive Center
2633 Telegraph Avenue, Oakland, California

Dear Ms. Palka:

Groundwater Technology, Inc. is pleased to submit this *Quarterly Monitoring and Sampling Report* for February through April 1994. This report presents the results of monitoring well gauging and sample analyses for the former Sears Automotive Center located at 2633 Telegraph Avenue, Oakland, California (Attachment 1, Figure 1). The monitoring and sampling activities were performed and this report prepared according to the *Tri-Regional Board Staff Recommendations for Preliminary Evaluation and Investigation of Underground Tank Sites*, dated August 10, 1990, the *State Water Resources Control Board Leaking Underground Fuel Tank (LUFT) Field Manual*, and the sampling requirements approved by Alameda County Health Care Services Agency, October 7, 1992, and amended in correspondence to Sears, dated June 1, 1993.

SUMMARY OF WORK COMPLETED

Monitoring Well Gauging

On February 8, March 9, and April 1, 1994, the depth to groundwater was measured in monitoring wells MW-1 through MW-8. Groundwater monitoring data are presented in Attachment 2, Table 1. The wells were monitored during each event using an INTERFACE PROBE™ Well Monitoring System, which can detect both water and separate-phase product levels.

4554R034.202

Groundwater monitoring data were used to construct potentiometric surface maps (Figures 2 through 4). The local groundwater gradient was approximately 0.01 foot per foot (ft/ft) to the southeast on February 8, 1994, and approximately 0.02 ft/ft to the south/southeast on March 9 and April 1, 1994. No separate-phase hydrocarbons were detected in the wells during this reporting period.

Monitoring Well Sampling and Results

On March 9, 1994, groundwater samples were collected from monitoring wells MW-1 through MW-8 and analyzed for hydrocarbon constituents. The groundwater samples from monitoring wells MW-2, MW-5, MW-6, and MW-7 were analyzed for dissolved metals. The groundwater samples collected from wells MW-2 through MW-8 were analyzed for dissolved lead. Before sampling, the wells were purged of approximately 3 well-casing volumes. The temperature, conductivity, and pH of the purge water were measured during purging. Well purge data are included in Attachment 3.

Groundwater samples were collected using disposable, polyurethane bailers and placed in appropriate containers. The sample containers were labeled and placed in an ice-chilled, insulated cooler for transport under chain-of-custody protocol to a California-certified laboratory for the analyses described below. A summary of historical groundwater analytical results is presented in Table 2.

- Groundwater samples from wells MW-1, MW-2, MW-3, MW-4, MW-5, MW-6, MW-7, and MW-8 were analyzed for benzene, toluene, ethylbenzene, and total xylenes (BTEX) using Environmental Protection Agency (EPA) Methods 5030/8020 and total petroleum hydrocarbons-as-motor oil (TPH-M) using modified EPA Method 8015.
- Groundwater samples from wells MW-2, MW-3, MW-4, MW-5, MW-6, MW-7, and MW-8 were analyzed for total petroleum hydrocarbons-as-gasoline (TPH-G) using modified EPA Method 8015.
- A groundwater sample from well MW-3 was analyzed for total oil and grease (TOG) in water using EPA Method 413.1.
- Groundwater samples collected from wells MW-2, MW-3, MW-4, MW-5, MW-6, MW-7, and MW-8 were analyzed for dissolved lead using EPA Method 7421; and samples collected from wells MW-2, MW-4, MW-5, MW-6, and MW-7 were analyzed for dissolved cadmium, chromium, nickel, and zinc using EPA Method 6010.

The laboratory reports and chain-of-custody records are included in Attachment 4. Figures 5 and 6 illustrate the distribution of TPH-G and TPH-M concentrations in the groundwater, respectively.

Aromatic Volatile Organic Compounds (VOCs). Concentrations of aromatic VOCs were detected in samples collected in March 1994 from wells MW-1 through MW-8 as follows: benzene from nondetectable to 2 micrograms per liter ($\mu\text{g/l}$); toluene from nondetectable to 1.4 $\mu\text{g/l}$; ethylbenzene from nondetectable to 4.5 $\mu\text{g/l}$; and xylenes from nondetectable to 13 $\mu\text{g/l}$. The results of BTEX analyses are summarized in Table 2.

Total Petroleum Hydrocarbons. Concentrations of TPH-G at 47 $\mu\text{g/l}$, 2,000 $\mu\text{g/l}$, 1,500 $\mu\text{g/l}$, 22 $\mu\text{g/l}$, 15 $\mu\text{g/l}$, 600 $\mu\text{g/l}$, and 420 $\mu\text{g/l}$ were detected in samples collected in March 1994 from wells MW-2, MW-3, MW-4, MW-5, MW-6, MW-7, and MW-8, respectively. Concentrations of TPH-M was detected only in samples from wells MW-3 and MW-4, at concentrations of 3,000 $\mu\text{g/l}$ and 300 $\mu\text{g/l}$, respectively. The sample collected from well MW-3 contained 63 $\mu\text{g/l}$ TOG. The results of TPH-G, TPH-M, and TOG analyses are summarized in Table 2.

Metals. No detectable concentrations of dissolved lead were found in the groundwater samples collected from wells MW-2 through MW-8. Cadmium, chromium, nickel, and zinc were not detected in the groundwater samples from wells MW-2, MW-4, MW-5, MW-6 and MW-7. The analytical results for metals are summarized in Table 2.

WORK TO BE COMPLETED FROM MAY THROUGH JULY 1994

Below is the schedule of planned work tasks at the site for May through July 1994:

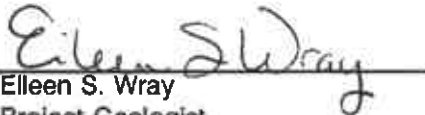
<u>Date</u>	<u>Task</u>
05/94	Monthly well gauging.
06/94	Monthly well gauging and quarterly sampling.
07/94	Monthly well gauging and preparation of <i>Quarterly Monitoring and Sampling Report</i> for May through July 1994.

Additional assessment work is scheduled to be conducted starting in May 1994 and completed by mid-June 1994. The assessment work is designed to further delineate the distribution of hydrocarbons in the groundwater. The following activities will be conducted:

- ~~Install two to three additional monitoring wells~~ downgradient of wells MW-6 and MW-7.
- Prepare and submit a report to Alameda County Health Care Services Agency describing the findings of the further assessment.

If you have any questions or comments concerning this report, please call our Concord office at (510) 671-2387.

Sincerely,
Groundwater Technology, Inc.
Written/Submitted by


Eileen S. Wray
Project Geologist


Michael J. Wray
Project Manager

Groundwater Technology, Inc.
Reviewed/Approved by


Julie S. Menack
Certified Engineering Geologist
No. 1838

For:
Frank J. Gorry
Vice President, Operations Manager
National Industry Division

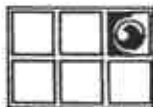
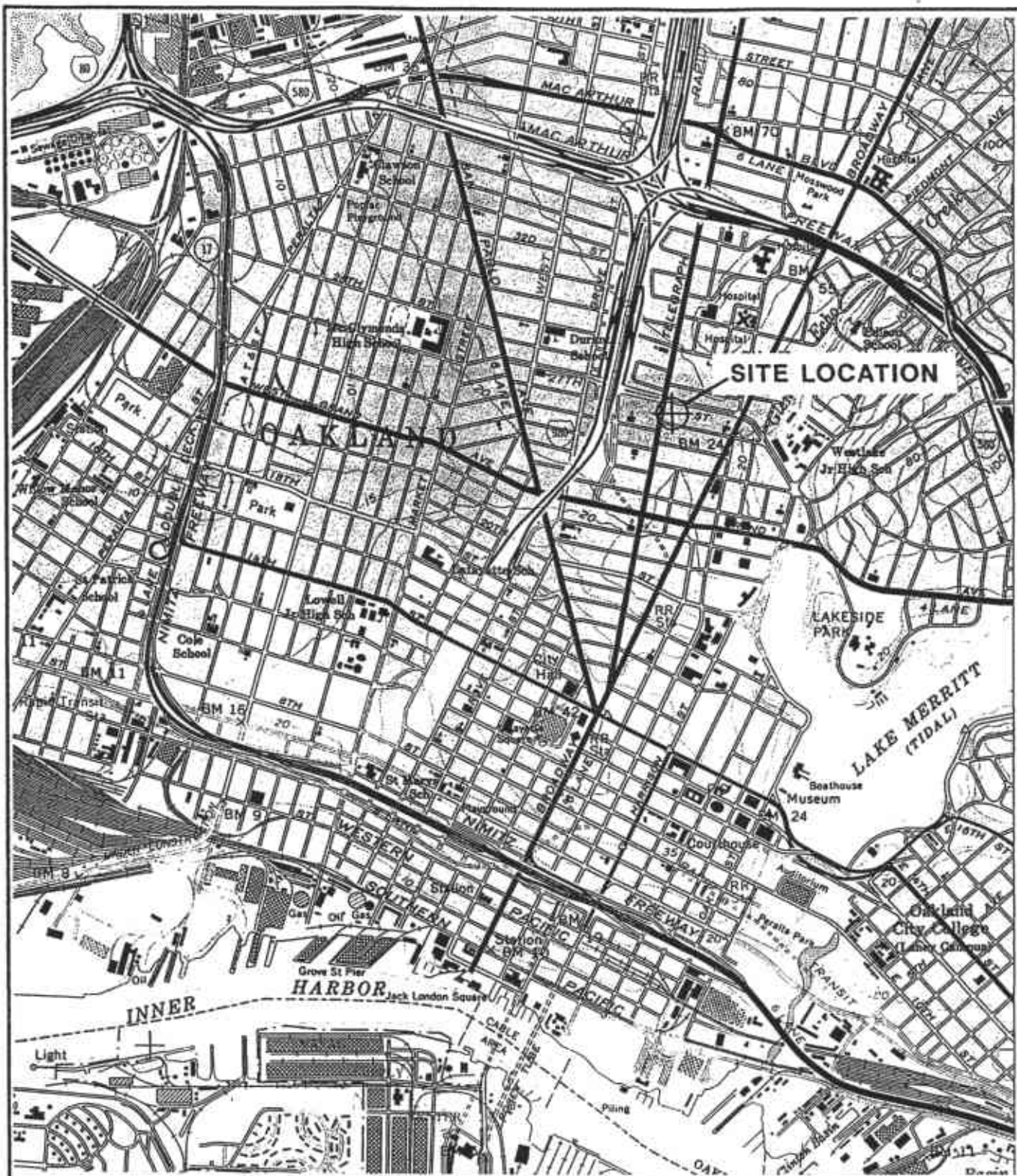
- Attachment 1 Figures
Attachment 2 Tables
Attachment 3 Well Purge Data
Attachment 4 Laboratory Reports and Chain-of-Custody Record

cc: ~~Thomas Peacock, Alameda County Health Services Agency~~
Richard Hiett, Regional Water Quality Control Board

ATTACHMENT 1

Figures

- Figure 1 Site Location Map
- Figure 2 Potentiometric Surface Map (02/08/94)
- Figure 3 Potentiometric Surface Map (03/09/94)
- Figure 4 Potentiometric Surface Map (04/01/94)
- Figure 5 TPH-as-Gasoline Concentrations in Groundwater (March 1994)
- Figure 6 TPH-as-Motor Oil Concentrations in Groundwater (March 1994)



**GROUNDWATER
TECHNOLOGY**

4057 PORT CHICAGO HWY
CONCORD, CA 94520
(510) 671-2387



SCALE:

0 FEET 2000

SITE LOCATION MAP

CLIENT:

SEARS, ROEBUCK AND CO.
SITE No. 1058

DATE:

8/18/92

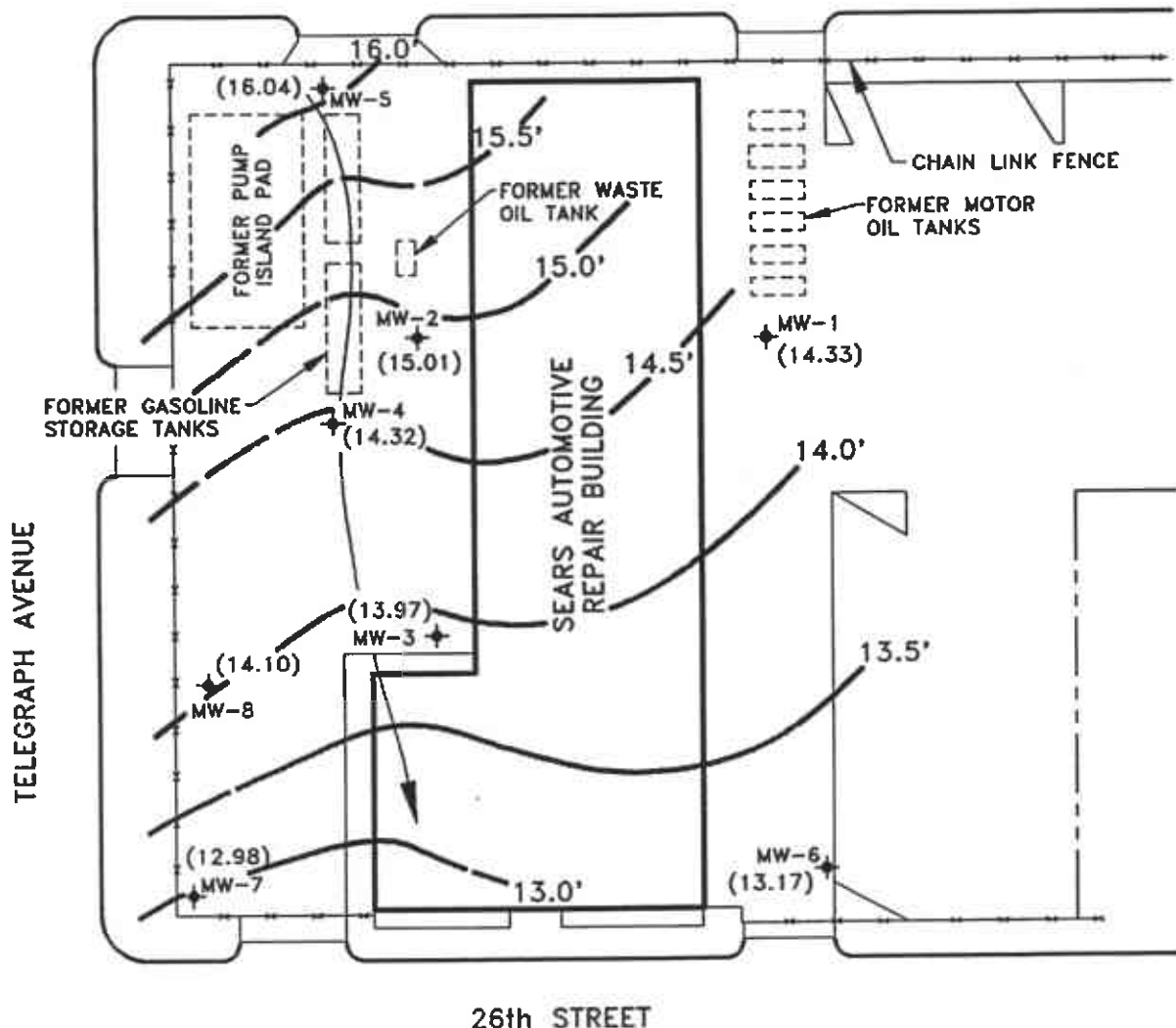
LOCATION:

2633 TELEGRAPH AVE.
OAKLAND, CALIFORNIA

FIGURE:

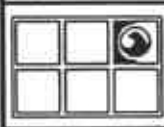
1

27th STREET



LEGEND

- ◆ MONITORING WELL
- () POTENTIOMETRIC SURFACE ELEVATION
- POTENTIOMETRIC SURFACE CONTOUR
- GROUNDWATER FLOW DIRECTION



GROUNDWATER TECHNOLOGY



POTENTIOMETRIC SURFACE MAP (2/8/94)

CLIENT: SEARS, ROEBUCK AND CO. SITE No. 1058

FILE: PSM2894/SPD93

PROJECT NO: 020204554

PM *[Signature]*

RG/PE

LOCATION: 2633 TELEGRAPH AVENUE OAKLAND, CALIFORNIA

REV: 2

FIGURE:

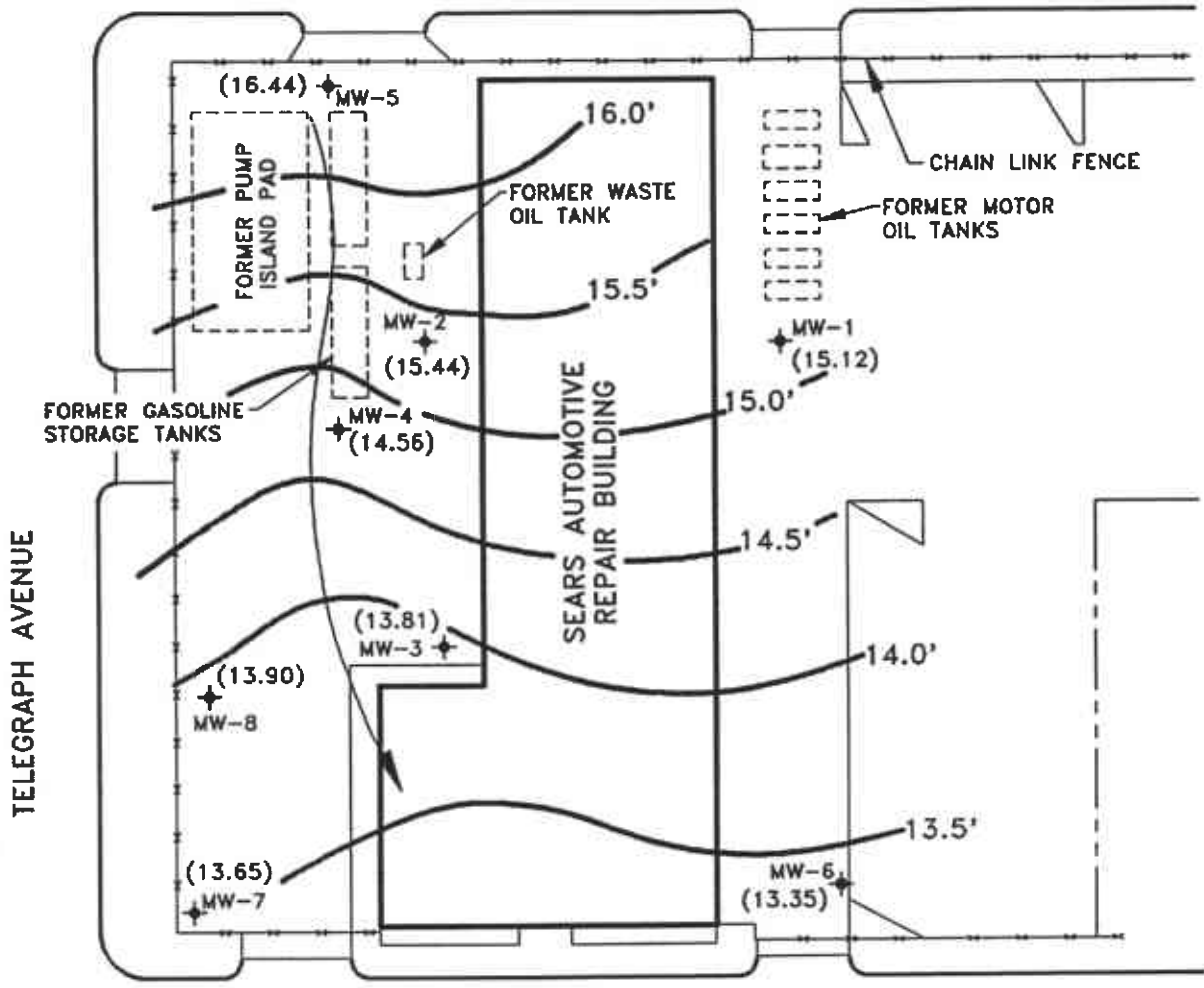
DES: EW

DET: ML

DATE: 5/24/94

2

27th STREET

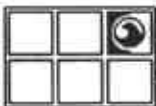
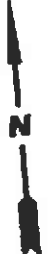


TELEGRAPH AVENUE

26th STREET

LEGEND

- ◆ MONITORING WELL
- () POTENTIOMETRIC SURFACE ELEVATION
- POTENTIOMETRIC SURFACE CONTOUR
- ← GROUNDWATER FLOW DIRECTION



GROUNDWATER TECHNOLOGY



POTENTIOMETRIC SURFACE MAP
(3/9/94)

CLIENT: SEARS, ROEBUCK AND CO.
SITE No. 1058

FILE: PSM3994/SPD93

PROJECT NO: 020204554

PM *[Signature]*

RG/PE

LOCATION: 2633 TELEGRAPH AVENUE
OAKLAND, CALIFORNIA

REV: 2

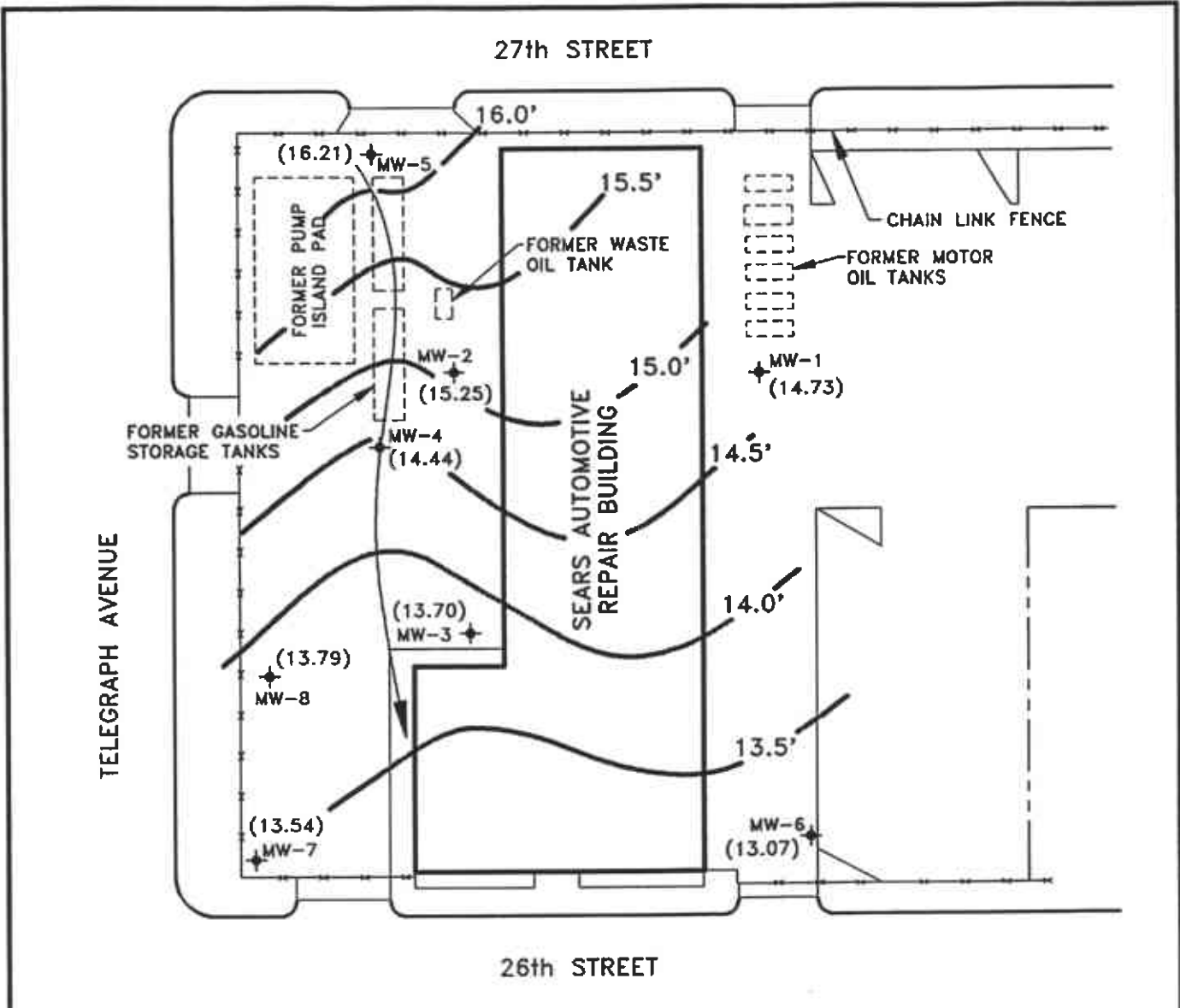
DES: EW

DET: ML

DATE: 5/24/94

FIGURE:

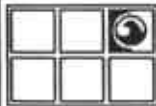

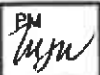
3

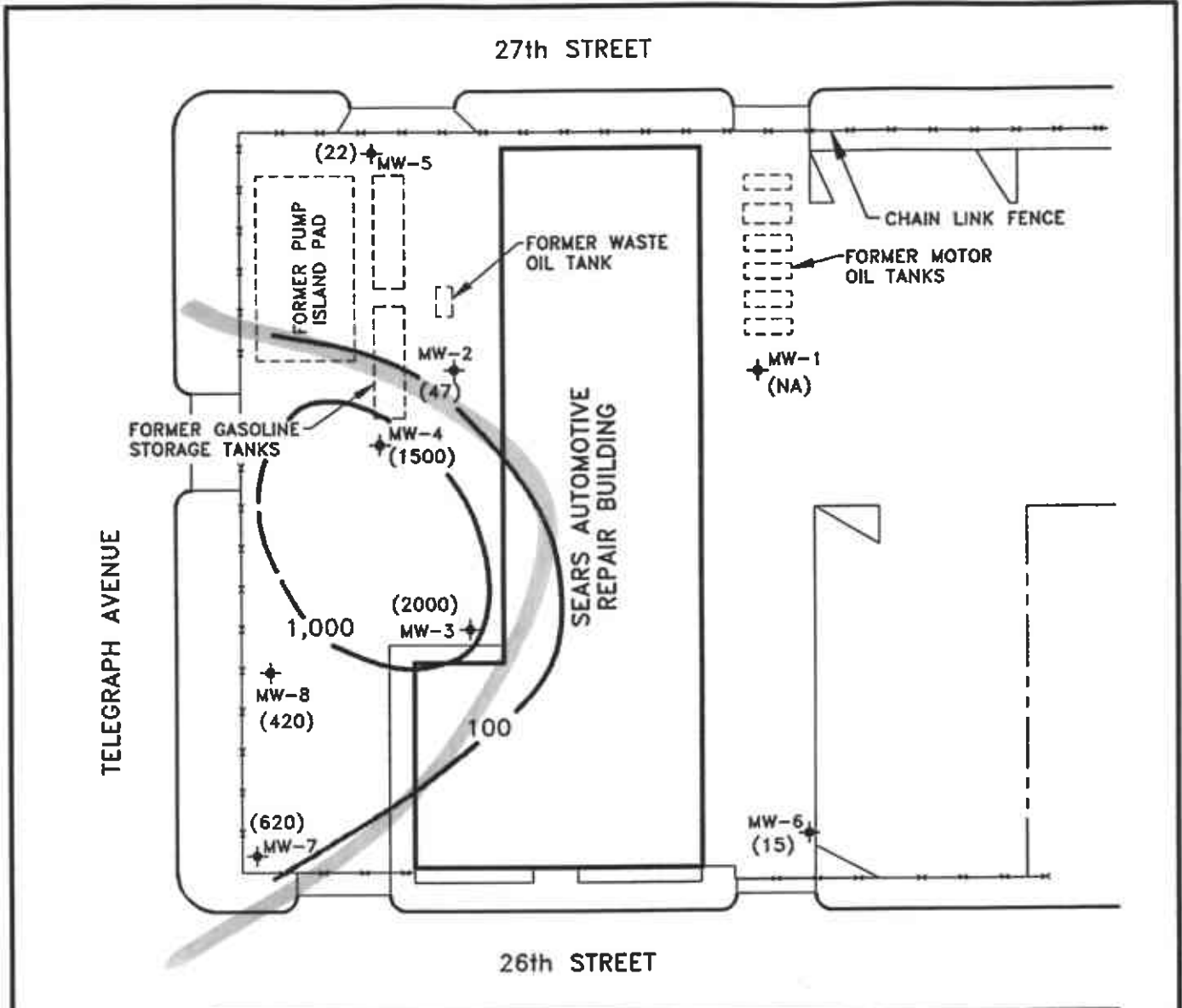


LEGEND

- ◆ MONITORING WELL
- () POTENTIOMETRIC SURFACE ELEVATION
- POTENTIOMETRIC SURFACE CONTOUR
- ← GROUNDWATER FLOW DIRECTION

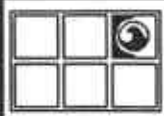


 GROUNDWATER TECHNOLOGY				POTENTIOMETRIC SURFACE MAP (4/1/94)	
CLIENT: SEARS, ROEBUCK AND CO. SITE No. 1058		FILE: PSM4194/SPD93		PROJECT NO: 020204554	
LOCATION: 2633 TELEGRAPH AVENUE OAKLAND, CALIFORNIA		REV: 2		PM  RG/PE	
		DES: EW	DET: ML		
				FIGURE: 4	



LEGEND

- ◆ MONITORING WELL
- () TPH-AS-GASOLINE CONCENTRATION (ppb)
- CONCENTRATION CONTOUR
- NA NOT ANALYZED



GROUNDWATER TECHNOLOGY



TPH-AS-GASOLINE CONCENTRATIONS IN GROUNDWATER (MARCH 1994)

CLIENT: SEARS, ROEBUCK AND CO.
SITE No. 1058

FILE: TPHG394

PROJECT NO: 020204554

PM *WJW* RG/PE

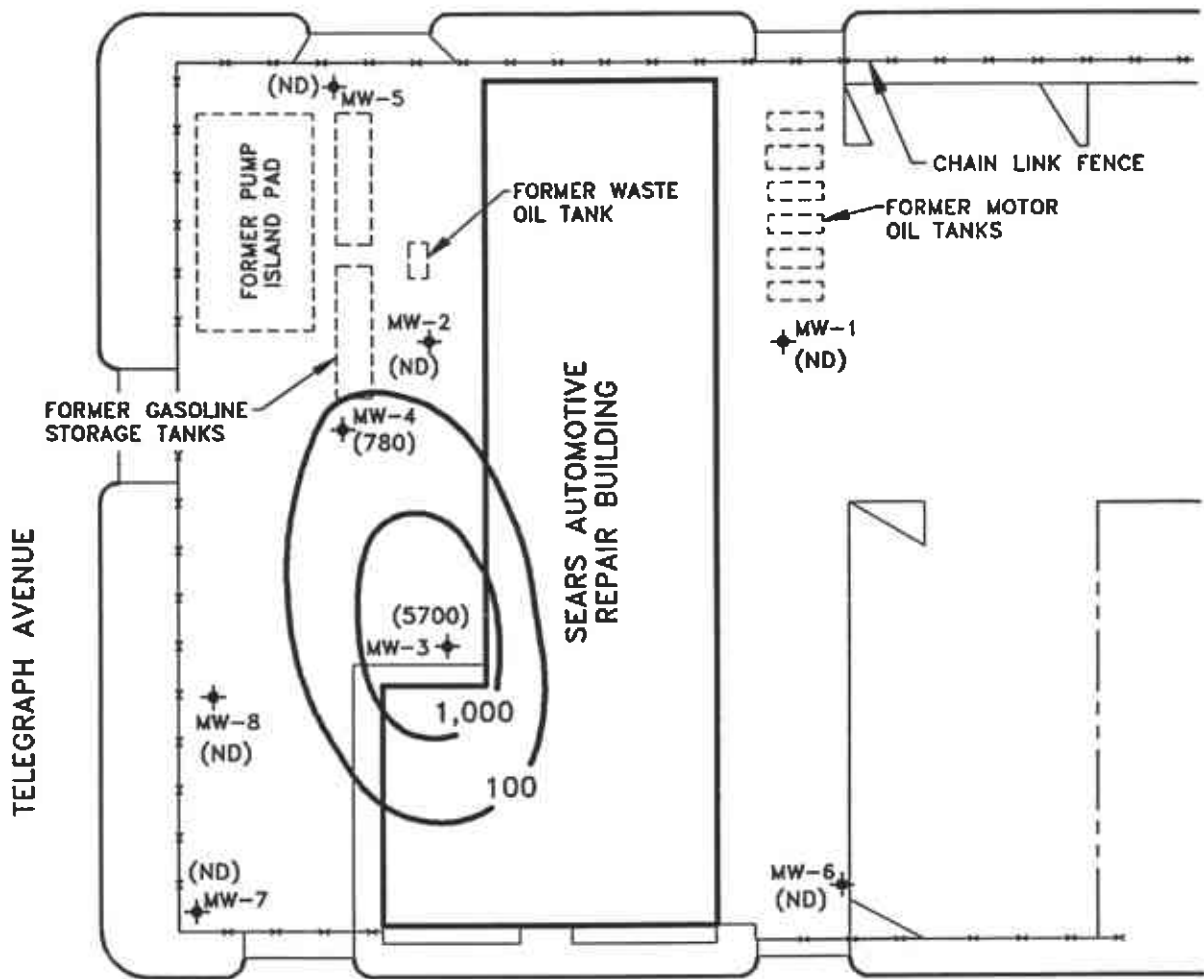
LOCATION: 2633 TELEGRAPH AVENUE
OAKLAND, CALIFORNIA

REV: 2

FIGURE: 5

DES: EW DET: ML DATE: 5/24/94

27th STREET



TELEGRAPH AVENUE

26th STREET

LEGEND

- ✦ MONITORING WELL
- () TPH-AS-MOTOR OIL CONCENTRATION (ppb)
- CONCENTRATION CONTOUR
- ND NOT DETECTED



			TPH-AS-MOTOR OIL CONCENTRATIONS IN GROUNDWATER (MARCH 1994)		
	CLIENT: SEARS, ROEBUCK AND CO. SITE No. 1058	FILE: TPHMO394	PROJECT NO: 020204554	PM <i>Wign</i>	RG/PE
LOCATION: 2633 TELEGRAPH AVENUE OAKLAND, CALIFORNIA	REV: 2	DES: EW	DET: ML	DATE: 5/24/94	FIGURE: 6

ATTACHMENT 2

Tables

- Table 1 Summary of Historical Monitoring Data
- Table 2 Summary of Groundwater Sample Analytical Results

TABLE 1
SUMMARY OF HISTORICAL MONITORING DATA
Former Sears Automotive Center
2633 Telegraph Avenue, Oakland, California

Well No.	Casing Elev	Date	DTW	DTP	PT	Groundwater Elevation
MW-1	26.20	12/30/92	10.60	--	--	15.60
		02/26/93	10.14	--	--	16.06
		03/24/93	10.48	--	--	15.72
		04/27/93	11.30	--	--	14.90
		05/28/93	11.43	--	--	14.77
		06/21/93	11.71	--	--	14.49
		07/22/93	11.87	--	--	14.33
		08/13/93	11.94	--	--	14.26
		09/16/93	12.05	--	--	14.15
		10/22/93	12.00	--	--	14.20
		11/03/93	12.10	--	--	14.10
		11/24/93	11.97	--	--	14.23
		12/01/93	11.46	--	--	14.74
		12/27/93	11.58	--	--	14.62
		01/05/94	11.69	--	--	14.51
		02/08/94	11.87	--	--	14.33
03/09/94	11.08	--	--	15.12		
04/01/94	11.47	--	--	14.73		
MW-2	26.50	12/30/92	10.65	--	*	15.85
		02/26/93	10.56	--	--	15.94
		03/24/93	10.52	--	--	15.98
		04/27/93	11.17	--	--	15.33
		05/28/93	11.12	--	--	15.38
		06/21/93	11.41	--	--	15.09
		07/22/93	11.50	--	--	15.00
		08/13/93	11.54	--	--	14.96
		09/16/93	11.62	--	--	14.88
		10/22/93	11.57	--	--	14.93
		11/03/93	11.65	--	--	14.85
		11/24/93	11.52	--	--	14.98
		12/01/93	11.08	--	--	15.42
		12/27/93	11.27	--	--	15.23
		01/05/94	11.39	--	--	15.11
		02/08/94	11.49	--	--	15.01
03/09/94	11.06	--	--	15.44		
04/01/94	11.25	--	--	15.25		

TABLE 1
SUMMARY OF HISTORICAL MONITORING DATA
Former Sears Automotive Center
2633 Telegraph Avenue, Oakland, California

Well No.	Casing Elev	Date	DTW	DTP	PT	Groundwater Elevation
MW-3	26.34	12/30/92	12.43	---	*	13.91
		02/26/93	12.21	---	---	14.13
		03/24/93	12.36	---	---	13.98
		04/27/93	12.70	---	---	13.64
		05/28/93	12.72	---	---	13.62
		06/21/93	12.87	---	---	13.47
		07/22/93	12.92	---	---	13.42
		08/13/93	12.96	---	---	13.38
		09/16/93	13.01	12.97	0.04	13.36
		10/22/93	NM	12.96	NM	NM
		11/03/93	13.13	13.02	0.11	13.30
		11/24/93	12.94	12.92	0.02	13.42
		12/01/93	12.71	12.69	0.02	13.65
		12/27/93	12.77	12.73	0.04	13.60
		01/05/94	12.85	12.83	0.02	13.51
		02/08/94	12.37	---	---	13.97
		03/09/94	12.53	---	---	13.81
04/01/94	12.64	---	---	13.70		
MW-4	26.17	12/30/92	11.53	---	---	14.64
		02/26/93	11.35	---	---	14.82
		03/24/93	11.46	---	---	14.71
		04/27/93	11.74	---	---	14.43
		05/28/93	11.77	---	---	14.40
		06/21/93	11.92	---	---	14.25
		07/22/93	11.95	---	---	14.22
		08/13/93	12.01	---	---	14.16
		09/16/93	12.08	---	---	14.09
		10/22/93	12.03	---	---	14.14
		11/03/93	12.10	---	---	14.07
		11/24/93	12.02	---	---	14.15
		12/01/93	11.78	---	---	14.39
		12/27/93	11.80	---	---	14.37
		01/05/94	11.91	---	---	14.26
		02/08/94	11.85	---	---	14.32
		03/09/94	11.61	---	---	14.56
04/01/94	11.73	---	---	14.44		

TABLE 1
SUMMARY OF HISTORICAL MONITORING DATA
Former Sears Automotive Center
2633 Telegraph Avenue, Oakland, California

Well No.	Casing Elev	Date	DTW	DTP	PT	Groundwater Elevation
MW-5	26.98	12/30/92	10.50	--	--	16.48
		02/26/93	10.12	--	--	16.86
		03/24/93	10.31	--	--	16.67
		04/27/93	10.75	--	--	16.23
		05/28/93	10.80	--	--	16.18
		06/21/93	10.94	--	--	16.04
		07/22/93	11.01	--	--	15.97
		08/13/93	11.07	--	--	15.91
		09/16/93	11.18	--	--	15.80
		10/22/93	11.19	--	--	15.79
		11/03/93	11.23	--	--	15.75
		11/24/93	12.00	--	--	14.98
		12/01/93	10.84	--	--	16.14
		12/27/93	10.81	--	--	16.17
		01/05/94	10.96	--	--	16.02
MW-6	24.32	02/08/94	10.94	--	--	16.04
		03/09/94	10.54	--	--	16.44
		04/01/94	10.77	--	--	16.21
		12/27/93	11.24	--	--	13.08
		01/05/94	11.39	--	--	12.93
MW-7	24.88	02/08/94	11.15	--	--	13.17
		03/09/94	10.97	--	--	13.35
		04/01/94	11.25	--	--	13.07
		12/27/93	11.80	--	--	13.08
		01/05/94	11.53	--	--	13.35
MW-8	26.12	02/08/94	11.90	--	--	12.98
		03/09/94	11.23	--	--	13.65
		04/01/94	11.34	--	--	13.54
		12/27/93	12.45	--	--	13.67
		01/05/94	12.57	--	--	13.55
		02/08/94	12.02	--	--	14.10
		03/09/94	12.22	--	--	13.90
		04/01/94	12.33	--	--	13.79

Elevation in feet above mean sea level

- DTW = Depth to water (in feet)
DTP = Depth to product (in feet)
PT = Product thickness (in feet)
NM = Not monitored
* = Sheen observed (<0.01 foot)
-- = Product not detected

TABLE 2
SUMMARY OF HISTORICAL GROUNDWATER SAMPLE ANALYTICAL RESULTS
Former Sears Automotive Center
2633 Telegraph Avenue, Oakland, California
Results in micrograms per liter [µg/l] except where noted otherwise

Well ID	Date	B	T	E	X	TPH-G	TPH-M	TPH (mg/l)	Dissolved Metals
MW-1	12/30/92	1	1	2	2	--	--	1	--
	03/24/93	0.4	1	0.3	10	--	--	1	--
	06/21/93	<0.3	1	2	6	--	**<100	--	--
	09/16/93	<0.3	0.7	<0.3	7	--	**<100	--	--
	12/01/93	0.4	1	2	7	--	--	--	--
	12/30/93	--	--	--	--	--	<100	--	--
	03/09/94	<0.3	<0.3	1	4.2	--	<100	--	--
MW-2	12/30/92	0.7	<0.3	<0.3	3	190	--	1	^a ND
	03/24/93	0.6	<0.3	<0.3	2	120	--	<1	^a ND
	06/21/93	0.3	<0.3	<0.3	0.7	82	**<100	--	^c ND
	09/16/93	<0.3	<0.3	<0.3	<0.5	28	**<100	--	^c ND
	12/01/93	<0.3	<0.3	<0.3	1	68	--	--	^c ND
	12/30/93	--	--	--	--	--	310	--	--
	03/09/94	<0.3	<0.3	<0.3	<0.5	47	<100	--	^c ND
MW-3	12/30/92	11	0.9	<0.3	2	910	--	20	^a ND
	03/24/93	28	0.7	1	8	3,300	--	28	^a 15
	06/21/93	21	5	2	19	**2,600	32,000	26	^{cd} 5
	09/16/93	--	--	--	--	--	--	--	--
	12/01/93	--	--	--	--	--	--	--	--
	03/09/94	2	1.4	4.5	13	2,200	**2,700	***63	^a ND
MW-4	12/30/92	2	<0.3	1	<0.5	1,200	--	<1	^a ND
	03/24/93	<0.3	<0.3	<0.3	<0.5	750	--	2	^a 7
	06/21/93	<0.3	2	<0.3	0.5	660	19,000	--	^a ND
	09/16/93	0.3	<0.3	2	3	410	2,500	--	^a ND
	12/01/93	<0.3	<0.3	<0.3	<0.5	150	390	--	^a ND
	12/30/93	--	--	--	--	--	--	--	--
	03/09/94	0.7	0.8	2	3.6	1,200	780	--	^a ND
MW-5	12/30/92	<0.3	<0.3	<0.3	<0.5	37	--	<1	^{bc} 5
	03/24/93	<0.3	<0.3	<0.3	0.5	19	--	2	^d 341
	06/21/93	<0.3	<0.3	<0.3	<0.5	<10	<100	--	^c ND
	09/16/93	0.3	<0.3	<0.3	1	<10	<100	--	^c ND
	12/01/93	<0.3	<0.3	<0.3	1	17	--	--	^c ND
	12/30/93	--	--	--	--	--	<100	--	--
	03/09/94	<0.3	<0.3	<0.3	<0.5	22	<100	--	^c ND
MW-6	12/27/93	<0.3	<0.3	<0.3	<0.5	<10	<100	<1	^a 70
	03/09/94	<0.3	<0.3	<0.3	<0.5	15	<100	--	^c ND

TABLE 2
SUMMARY OF HISTORICAL GROUNDWATER SAMPLE ANALYTICAL RESULTS
Former Sears Automotive Center
2633 Telegraph Avenue, Oakland, California
Results in micrograms per liter [$\mu\text{g/l}$] except where noted otherwise

Well ID	Date	B	T	E	X	TPH-G	TPH-M	TPH (mg/l)	Dissolved Metals
MW-7	12/27/93	<0.3	<0.3	1	2	140	<100	<1	^a 40
	03/09/94	<0.3	1.0	1.5	4.1	140	<100	-	^c ND
MW-8	12/27/93	0.4	4	0.4	1	390	<100	<1	^a 18
	03/09/94	0.6	0.8	0.5	1.5	390	<100	-	^a ND

- BTEX = Benzene, toluene, ethylbenzene, and total xylenes (EPA Methods 5030, 8020)
TPH-G = Total petroleum hydrocarbons-as-gasoline (EPA Methods 5030 and modified EPA Method 8015)
TPH-M = Total petroleum hydrocarbons-as-motor oil (modified EPA Method 8015)
TPH = Total petroleum hydrocarbons (EPA Method 418.1 [SM 5520 FC])
mg/l = Milligrams per liter
- = Not analyzed
ND = Nondetectable (detection limits for each compound are listed in laboratory reports, included in Appendix D)
* = Water samples were not filtered, analytical results represent total metals present, not dissolved concentrations.
** = Uncategorized hydrocarbon compound not included in this hydrocarbon concentration.
*** = Total oil and grease by EPA Method 413.1
a = Dissolved lead
b = Dissolved lead only analyte detected
c = Dissolved lead, cadmium, total chromium, nickel, and zinc.
d = Cadmium only analyte detected.

ATTACHMENT 3

Well Purge Data

Project Name: SEARS/TELEGRAPH AVE.

Date: 3/9/94

Job Number: 020204554, 061002
~~020503392, 6104~~

Page 1 of 8

Site Address: 2533 Telegraph Ave., Oakland, Calif.

Project Manager: Mike Wray

Well ID MW-5
Well Dia 2"

DTW Measurements
Initial = _____ ft
Recharge _____ ft

Calc Well Volume = 2.4 gal
Well Volume = 7.2 gal

Purge Method	Pump Depth	_____ ft
Peristaltic	<input checked="" type="checkbox"/>	Hand Bailed
Gear Drive	_____	Air Lift
Submersible	_____	Other

Instruments Used	
YSI 3650 pH/ C/mmbo	OMEGA Cond.
HYDAC pH/ F/umbo	DRT-15C TURBID
OMEGA pH/ C	HOLBA Other

TIME	TEMP		pH	Conductivity	PURGE VOLUME	COMMENTS
	C	F				
1200	19.4		7.11	.786	2.4	CLOUDY H2O
1203	19.5		7.11	.738	4.8	CLOUDY H2O
1207	19.6		7.51	.732	7.2	BROWNISH, CLOUDY H2O
1209	19.5		7.43	.715	8.0	BROWNISH CLOUDY H2O

Project Name: SEARS/TELEGRAPH AVE.

Date: 3/9/94

Job Number: 204554.061002
020500092-6104

Page 2 of 8

Site Address: 2533 Telegraph Ave., Oakland, Calif.

Project Manager: Mike Wray

Well ID MW-1
Well Dia 2"

DTW Measurements
Initial = _____ ft
Recharge _____ ft

Calc Well Volume = 1.7 gal
3 Well Volume = 5.2 gal

Purge Method	Pump Depth _____ ft
Peristaltic	Hand Bailed
Gear Drive	Air Lift
Submersible	Other

Instruments Used	
YSI 3650 pH/ C/mmbo	OMEGA Cond.
HYDAC pH/ F/umbo	DRT-15C TURBID
OMEGA pH/ C	HOLIBA Other

TIME	TEMP	pH	Conductivity	PURGE VOLUME	COMMENTS
	✓ C F				
1218	19.4	7.54	.737	1.5	REDDISH BROWN H2O
1221	19.2	7.82	.783 (.783)	3.0	" "
1223	19.2	7.45	.798	5.0	" "
1224	19.2	7.47	.784	6.0	REDDISH BROWN H2O

Project Name: SEARS/TELEGRAPH AVE.

Date: 3/9/94

Job Number: 020204554, 061002
020503302, 6104

Page 3 of 8

Site Address: 2533 Telegraph Ave., Oakland, Calif.

Project Manager: Mike Wray

Well ID MW-6

DTW Measurements

Initial = ft

Calc Well Volume = 1.8 gal

Recharge = ft

3 Well Volume = 5.4 gal

Well Dia 2"

Purge Method	Pump Depth	ft
Peristaltic	<input checked="" type="checkbox"/>	Hand Bailed
Gear Drive	<input type="checkbox"/>	Air Lift
Submersible	<input type="checkbox"/>	Other

Instruments Used	
YSI 3650 pH/ C/mmbo	OMEGA Cond.
HYDAC pH/ F/umbo	DRT-15C TURBID
OMEGA pH/ C	<u>Horiba</u> Other

TIME	TEMP		pH	Conductivity	PURGE VOLUME	COMMENTS
	C	F				
1240	18.9		7.35	.610	1.5	RENDS + BROWN 120
1242	19.0		7.38	.612	3.1	" "
12:44	19.0		7.36	.606	5.0	" "
1245	19.0		7.44	.604	6.0	REDDISH BROWN 420

Project Name: SEARS/TELEGRAPH AVE.
020204554, 061002
 Job Number: 020503302, 6104
 Site Address: 2533 Telegraph Ave., Oakland, Calif.

Date: 3/9/94
 Page 4 of 8
 Project Manager: Mike Wray

Well ID MW-7
 Well Dia 2"

DTW Measurements
 Initial = ft
 Recharge ft
 Calc Well Volume = gal
 3 Well Volume = 5.1 gal

Purge Method	Pump Depth	ft
Peristaltic	<input checked="" type="checkbox"/>	Hand Bailed
Gear Drive	<input type="checkbox"/>	Air Lift
Submersible	<input type="checkbox"/>	Other

Instruments Used	
YSI 3650 pH/ C/mmbo	OMEGA Cond.
HYDAC pH/ F/umbo	DRT-15C TURBID
OMEGA pH/ C	<u>HOLISA</u> Other

TIME	TEMP	pH	Conductivity	PURGE VOLUME	COMMENTS
	<input checked="" type="checkbox"/> C <input type="checkbox"/> F				
1256	19.4	7.44	.584	1.5	Brownish, cloudy H ₂ O
1258	19.6	7.32	.606	3.1	Brownish cloudy H ₂ O
1300	19.8	7.34	.609	5.0	" "
1301	19.7	7.12	.613	6.0	Brownish cloudy H ₂ O

Project Name: SEARS/TELEGRAPH AVE.

Date: 3/9/94

Job Number: 020204554, 061002
020503302, 6104

Page 5 of 8

Site Address: 2533 Telegraph Ave., Oakland, Calif.

Project Manager: Mike Wray

Well ID MW-8

DTW Measurements

Initial = ft
Recharge ft

Calc Well Volume =
3 Well Volume = gal
1.6 gal
4.8 gal

Well Dia 2"

Purge Method	Pump Depth	ft
Peristaltic	<input checked="" type="checkbox"/>	Hand Bailed
Gear Drive	<input type="checkbox"/>	Air Lift
Submersible	<input type="checkbox"/>	Other

Instruments Used	
YSI 3650 pH/ C/mmbo	OMEGA Cond.
HYDAC pH/ F/umbo	DRT-15C TURBID
OMEGA pH/ C	<u>HORIBA</u> Other

TIME	TEMP		pH	Conductivity	PURGE VOLUME	COMMENTS
	<input checked="" type="checkbox"/> C	F				
1314		20.1	7.14	819	1.5	GREENISH, Cloudy H2O, ODDR
1316		20.4	7.20	819	3.0	" "
1318		20.4	6.89	818	4.5	" "
1319		20.4	7.12	(819) 819	5.5	" "

Project Name: SEARS/TELEGRAPH AVE.

Date: 3/9/94

Job Number: 204554 061002
020509392 . 0104

Page 6 of 8

Site Address: 2533 Telegraph Ave., Oakland, Calif.

Project Manager: Mike Wray

Well ID MW-2

DTW Measurements

Initial = _____ ft
Recharge _____ ft

Calc Well Volume = 1.7 gal
3 Well Volume = 5.2 gal

Well Dia 2"

Purge Method	Pump Depth _____ ft
Peristaltic	Hand Bailed
Gear Drive	Air Lift
Submersible	Other

Instruments Used	
YSI 3650 pH/ C/mambo	OMEGA Cond.
HYDAC pH/ F/umbo	DRT-15C TURBID
OMEGA pH/ C	HOLZM <u> </u> Other

TIME	TEMP	pH	Conductivity	PURGE VOLUME	COMMENTS
	✓ C F				
1330	19.0	6.88 6.8	.708	1.5	Cloudy H2O SHEEN ON TOP
1333	19.3	7.00	.707	3.2	" "
1336	19.3	6.99	.695	5.0	" "
1338	19.4	6.84	.696	6.0	" "

Project Name: SEARS/TELEGRAPH AVE.

Date: 3/9/94

Job Number: 204554 061002
020509392. 6104

Page 7 of 8

Site Address: 2533 Telegraph Ave., Oakland, Calif.

Project Manager: Mike Wray

Well ID MW-4

DTW Measurements

Initial = _____ ft

Calc Well Volume = 1.8 gal

Recharge _____ ft

Well Volume = 5.5 gal

Well Dia 2"

Purge Method	Pump Depth	_____ ft
Peristaltic	<input checked="" type="checkbox"/>	Hand Bailed
Gear Drive	_____	Air Lift
Submersible	_____	Other

Instruments Used	
YSI 3650 pH/ C/mmbo	OMEGA Cond.
HYDAC pH/ F/umbo	DRT-15C TURBID
OMEGA pH/ C	Horiba Other

TIME	TEMP	pH	Conductivity	PURGE VOLUME	COMMENTS
	<input checked="" type="checkbox"/> C F				
1347	19.8	6.90	.746	1.7	GRAYISH H2O, SHEEN ON TOP
1349	20.1	7.13	.746	3.4	" "
1352	20.2	6.98	.744	5.0	" "
1354	20.4	6.99	.733	6.0	" "

Project Name: SEARS/TELEGRAPH AVE.
204554, 061002
 Job Number: 020503392.6104
 Site Address: 2533 Telegraph Ave., Oakland, Calif.

Date: 3/9/94
 Page 8 of 8
 Project Manager: Mike Wray

Well ID MW-3
 Well Dia 2"

DTW Measurements
 Initial = ft Calc Well Volume = gal
 Recharge = ft 3 Well Volume = 5.9 gal

Purge Method	Pump Depth	ft
Peristaltic	<input checked="" type="checkbox"/>	Hand Bailed
Gear Drive	<input type="checkbox"/>	Air Lift
Submersible	<input type="checkbox"/>	Other

Instruments Used	
YSI 3650 pH/ C/mmbo	OMEGA Cond.
HYDAC pH/ F/umbo	DRT-15C TURBID
OMEGA pH/ C	<u>HORIBA</u> Other

TIME	TEMP	pH	Conductivity	PURGE VOLUME	COMMENTS
	<input checked="" type="checkbox"/> C F				
1403	17.9	9.01	.914	1.8	GRAY H2O, 5 FEET ON TOP, 000R
1406	18.0	7.32	.915	3.6	" "
1408	18.0	7.11 7.11	.913	5.0	" "
1410	17.9	7.02	.911	6.0	" "

ATTACHMENT 4
Laboratory Reports
and
Chain-of-Custody Record



Client Number: 020204554
Project ID: 2633 Telegraph, Oakland
Work Order Number: C4-03-0454

Northwest Region
4080 Pike Lane
Suite C
Concord, CA 94520
(510) 685-7852
(800) 544-3422 Inside CA
FAX (510) 825-0720

April 6, 1994

Eileen Wray
Groundwater Technology, Inc.
4057 Port Chicago Hwy.
Concord, CA 94520

Enclosed please find the analytical results for samples received by GTEL Environmental Laboratories, Inc. on 03/10/94, under chain of custody record 28321.

A formal Quality Assurance/Quality Control (QA/QC) program is maintained by GTEL, which is designed to meet or exceed the EPA requirements. Analytical work for this project met QA/QC criteria, unless otherwise stated in the footnotes.

GTEL is certified by the California State Department of Health Services, Laboratory certification number E1075, to perform analyses for drinking water, wastewater, and hazardous waste materials according to EPA protocols.

If you have any questions concerning this analysis or if we can be of further assistance, please call our Customer Service Representative.

Sincerely,
GTEL Environmental Laboratories, Inc.

A handwritten signature in cursive script, appearing to read 'Edun Poalwe'.

Handwritten initials 'for' in cursive script.

Rashmi Shah
Laboratory Director

ANALYTICAL RESULTS

Dissolved Metals in Water

GTEL Sample Number			01	02	03	04
Client Identification			MW-2	MW-4	MW-5	MW-6
Date Sampled			03/09/94	03/09/94	03/09/94	03/09/94
Date Prepared ^c			03/10/94	03/10/94	03/10/94	03/10/94
Date Analyzed (Method 6010)			03/23/94	03/23/94	03/23/94	03/23/94
Analyte	EPA Method ^a	Detection Limit, ug/L	Concentration, ug/L			
Cadmium	EPA 6010 ^b	5	<5	<5	<5	<5
Chromium, total	EPA 6010 ^b	10	<10	<10	<10	<10
Nickel	EPA 6010 ^b	20	<20	<20	<20	<20
Zinc	EPA 6010 ^b	20	<20	<20	<20	<20
Detection Limit Multiplier			1	1	1	1

- a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986.
- b. Inductively Coupled Argon Plasma(ICP)
- c. Unpreserved water sample passed through a 0.45 micron filter and analyzed as a dissolved metal. Sample was lab/field filtered on 03/10/94.

ANALYTICAL RESULTS

Dissolved Metals in Water

GTEL Sample Number			05	031094 MET		
Client Identification			MW-7	METHOD BLANK		
Date Sampled			03/09/94	--		
Date Prepared ^c			03/10/94	03/10/94		
Date Analyzed (Method 6010)			03/23/94	03/23/94		
Analyte	EPA Method ^a	Detection Limit, ug/L	Concentration, ug/L			
Cadmium	EPA 6010 ^b	5	<5	<5		
Chromium, total	EPA 6010 ^b	10	<10	<10		
Nickel	EPA 6010 ^b	20	<20	<20		
Zinc	EPA 6010 ^b	20	<20	<20		
Detection Limit Multiplier			1	1		

- a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986.
- b. Inductively Coupled Argon Plasma(ICP)
- c. Unpreserved water sample passed through a 0.45 micron filter and analyzed as a dissolved metal. Sample was lab/field filtered on 03/10/94.



Client Number: 020204554
Project ID: 2633 Telegraph, Oakland
Work Order Number: C4-03-0201

Northwest Region
4080 Pike Lane
Suite C
Concord, CA 94520
(510) 685-7852
(800) 544-3422 Inside CA
FAX (510) 825-0720

March 22, 1994

Eileen Wray
Groundwater Technology, Inc.
4057 Port Chicago Hwy.
Concord, CA 94520

Enclosed please find the analytical results for samples received by GTEL Environmental Laboratories, Inc. on 03/10/94, under chain of custody record 28321.

A formal Quality Assurance/Quality Control (QA/QC) program is maintained by GTEL, which is designed to meet or exceed the EPA requirements. Analytical work for this project met QA/QC criteria, unless otherwise stated in the footnotes.

GTEL is certified by the California State Department of Health Services, Laboratory certification number E1075, to perform analyses for drinking water, wastewater, and hazardous waste materials according to EPA protocols.

If you have any questions concerning this analysis or if we can be of further assistance, please call our Customer Service Representative.

Sincerely,
GTEL Environmental Laboratories, Inc.

Rashmi
Rashmi Shah
Laboratory Director

ANALYTICAL RESULTS

Dissolved Lead in Water by Graphite Furnace AA

EPA Methods 7421¹

GTEL Sample Number		03	04	05	06
Client Identification		MW-2	MW-3	MW-4	MW-5
Date Sampled		03/09/94	03/09/94	03/09/94	03/09/94
Date Prepared ²		03/10/94	03/10/94	03/10/94	03/10/94
Date Analyzed		03/15/94	03/15/94	03/15/94	03/15/94
Analyte	Detection Limit, ug/L	Concentration, ug/L			
Lead, Dissolved	5	<5	<5	<5	<5
Detection Limit Multiplier		1	1	1	1

GTEL Sample Number		07	08	09	031094 MET
Client Identification		MW-6	MW-7	MW-8	METHOD BLANK
Date Sampled		03/09/94	03/09/94	03/09/94	--
Date Prepared ²		03/10/94	03/10/94	03/10/94	03/10/94
Date Analyzed		03/15/94	03/15/94	03/15/94	03/15/94
Analyte	Detection Limit, ug/L	Concentration, ug/L			
Lead, Dissolved	5	<5	<5	<5	<5
Detection Limit Multiplier		1	1	1	1

1. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, November 1986.
2. Unpreserved water sample was passed through a 0.45 micron filter and analyzed as a dissolved metal. Sample was lab filtered on 03/10/94.

ANALYTICAL RESULTS

TPH as Motor Oil in Water

Method: Modified EPA 8015a

GTEL Sample Number		02 ^b	03 ^b	04 ^c	05 ^c
Client Identification		MW-1	MW-2	MW-3	MW-4
Date Sampled		03/09/94	03/09/94	03/09/94	03/09/94
Date Extracted		03/11/94	03/11/94	03/11/94	03/11/94
Date Analyzed		03/16/94	03/16/94	03/16/94	03/19/94
Analyte	Detection Limit, ug/L	Concentration, ug/L			
TPH as motor oil	100	<100	<100	5700	780
Detection Limit Multiplier		1	1	1	1
OTP surrogate, % recovery		89.4	85.1	69.7	113

GTEL Sample Number		06	07	08 ^b	09 ^b
Client Identification		MW-5	MW-6	MW-7	MW-8
Date Sampled		03/09/94	03/09/94	03/09/94	03/09/94
Date Extracted		03/11/94	03/11/94	03/11/94	03/11/94
Date Analyzed		03/16/94	03/16/94	03/16/94	03/16/94
Analyte	Detection Limit, ug/L	Concentration, ug/L			
TPH as motor oil	100	<100	<100	<100	<100
Detection Limit Multiplier		1	1	1	1
OTP surrogate, % recovery		80.2	86.2	87.9	101

- a. Test Methods for Evaluating Solid Waste, SW-846, 3rd edition, Rev. O, U.S. EPA, November, 1986. Modification for TPH as diesel as per California State Water Resources Board LUFT Manual procedures. O-Terphenyl surrogate recovery acceptability limits are 50-150%.
- b. Hydrocarbon pattern not characteristic of motor oil.
- c. Uncategorized compounds present not indicative of motor oil.

ANALYTICAL RESULTS

TPH as Motor Oil in Water

Method: Modified EPA 8015a

GTEL Sample Number		GCI 031494			
Client Identification		METHOD BLANK			
Date Sampled		-			
Date Extracted		03/11/94			
Date Analyzed		03/14/94			
Analyte	Detection Limit, ug/L	Concentration, ug/L			
TPH as motor oil	100	<100			
Detection Limit Multiplier		1			
OTP surrogate, % recovery		90.6			

- a. Test Methods for Evaluating Solid Waste, SW-846, 3rd edition, Rev. O, U.S. EPA, November, 1988. Modification for TPH as diesel as per California State Water Resources Board LUFT Manual procedures. O-Terphenyl surrogate recovery acceptability limits are 50-150%.

ANALYTICAL RESULTS

**Aromatic Volatile Organics and
 Total Petroleum Hydrocarbons as Gasoline in Water**

EPA Methods 5030, 8020, and Modified 8015^a

GTEL Sample Number		01	02	03	04
Client Identification		TB - LB	MW-1	MW-2	MW-3
Date Sampled		03/09/94	03/09/94	03/09/94	03/09/94
Date Analyzed		03/14/94	03/14/94	03/15/94	03/17/94
Analyte	Detection Limit, ug/L	Concentration, ug/L			
Benzene	0.3	<0.3	<0.3	<0.3	2
Toluene	0.3	<0.3	<0.3	<0.3	1.4
Ethylbenzene	0.3	<0.3	1	<0.3	4.5
Xylene, total	0.5	<0.5	4.2	<0.5	13
TPH as Gasoline	10	NR	NR	47	2000
Detection Limit Multiplier		1	1	1	1
BFB surrogate, % recovery		102	105	107	114

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986. Modification for TPH as gasoline as per California State Water Resources Control Board LUFT Manual protocols, May 1988 revision. Bromofluorobenzene surrogate recovery acceptability limits are 70-130%. NR = Not Requested.

ANALYTICAL RESULTS

Aromatic Volatile Organics and Total Petroleum Hydrocarbons as Gasoline in Water

EPA Methods 5030, 8020, and Modified 8015a

GTEL Sample Number		05	06	07	08
Client Identification		MW-4	MW-5	MW-6	MW-7
Date Sampled		03/09/94	03/09/94	03/09/94	03/09/94
Date Analyzed		03/14/94	03/15/94	03/14/94	03/15/94
Analyte	Detection Limit, ug/L	Concentration, ug/L			
Benzene	0.3	0.7	<0.3	<0.3	<0.3
Toluene	0.3	0.8	<0.3	<0.3	1.0
Ethylbenzene	0.3	2	<0.3	<0.3	1.5
Xylene, total	0.5	3.6	<0.5	<0.5	4.1
TPH as Gasoline	10	1500	22	15	620
Detection Limit Multiplier		1	1	1	1
BFB surrogate, % recovery		104	88.3	105	103

- a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986. Modification for TPH as gasoline as per California State Water Resources Control Board LUFT Manual protocols, May 1988 revision. Bromofluorobenzene surrogate recovery acceptability limits are 70-130%.

ANALYTICAL RESULTS

Aromatic Volatile Organics and Total Petroleum Hydrocarbons as Gasoline in Water

EPA Methods 5030, 8020, and Modified 8015a

GTEL Sample Number		09	10	E031494-1	
Client Identification		MW-8	DMW-4	METHOD BLANK	
Date Sampled		03/09/94	03/09/94	--	
Date Analyzed		03/15/94	03/14/94	03/14/94	
Analyte	Detection Limit, ug/L	Concentration, ug/L			
Benzene	0.3	0.6	0.6	<0.3	
Toluene	0.3	0.8	3.3	<0.3	
Ethylbenzene	0.3	0.5	1.5	<0.3	
Xylene, total	0.5	1.5	1.7	<0.5	
TPH as Gasoline	10	420	NR	<10	
Detection Limit Multiplier		1	1	1	
BFB surrogate, % recovery		108	104	99.5	

- a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986. Modification for TPH as gasoline as per California State Water Resources Control Board LUFT Manual protocols, May 1988 revision. Bromofluorobenzene surrogate recovery acceptability limits are 70-130%. NR = Not Requested.

ANALYTICAL RESULTS

**Total Oil and Grease in Water
 by Gravimetric Analysis**

EPA Method 413.1^a

a. Methods for Chemical Analysis of Water and Wastes, Revised March 1983, U.S. Environmental Protection Agency.

GTEL Sample Number		04	031594 TPH		
Client Identification		MW-3	METHOD BLANK		
Date Sampled		03/09/94	-		
Date Prepared		03/15/94	03/15/94		
Date Analyzed		03/15/94	03/15/94		
Analyte	Detection Limit, mg/L	Concentration, mg/L			
Total Oil and Grease	5	63	<5		
Detection Limit Multiplier		1	1		

