

ALAMEDA COUNTY
HEALTH CARE SERVICES



AGENCY
DAVID J. KEARS, Agency Director

Alameda County CC4580
Environmental Protection Division
1131 Harbor Bay Parkway, Room 250
Alameda CA 94502-6577

June 28, 1996

STID 2584

REMEDIAL ACTION COMPLETION CERTIFICATION

Safeway, Inc.
201 Fourth Street
Oakland, CA 94660
Attn: Melita Elmore

RE: SAFEWAY PRESERVES PLANT, 1111 MARINA BOULEVARD, SAN LEANDRO

Dear Ms. Elmore:

This letter confirms the completion of site investigation and remedial action for the underground storage tanks formerly located at the above-described location. Enclosed is the Case Closure Summary for the referenced site for your records.

Based upon the available information, including current land use, and with the provision that the information provided to this agency was accurate and representative of site conditions, no further action related to the underground storage tank release is required.

This notice is issued pursuant to a regulation contained in Title 23, California Code of Regulations, Division 3, Chapter 16, Section 2721(e). If changes in land use, structural configuration, or site activities are proposed such that more conservative exposure scenarios should be evaluated, the owner must promptly notify this agency.

Please contact Scott Seery at (510) 567-6783 if you have any questions regarding this matter.

Sincerely,


Mee Ling Tung
Director of Environmental Health Services

enclosure

cc: Gordon Coleman, Acting Chief, Env. Protection Division
Kevin Graves, RWQCB
Lori Casias, SWRCB
Mike Bakaldin, San Leandro Fire Department

✓SOS/files

SIGNED
COPY -

01-1282
CALIFORNIA REGIONAL WATER
MAY 13 1996 KG
QUALITY CONTROL BOARD

CASE CLOSURE SUMMARY
Leaking Underground Fuel Storage Tank Program

I. AGENCY INFORMATION

Date: 05/06/96

Agency name: Alameda Co. Env. Protection Address: 1131 Harbor Bay Pkwy
City/State/Zip: Alameda Phone: (510) 567-6700
Responsible staff person: Scott Seery Title: Sr. Haz. Materials Spec.

II. CASE INFORMATION

Site facility name: Safeway Preserves Plant
Site facility address: 1111 Marina Blvd., San Leandro 94577
RB LUSTIS Case No: N/A Local Case No./LOP Case No.: 2584
URF filing date: 12/19/89 SWEEPS No: N/A

<u>Responsible Parties:</u>	<u>Addresses:</u>	<u>Phone Numbers:</u>
Melita Elmore Safeway, Inc	201 Fourth Street Oakland 94660	510/891-3670

<u>Tank No:</u>	<u>Size in gal.:</u>	<u>Contents:</u>	<u>Closed in-place or removed?:</u>	<u>Date:</u>
1	10,000	diesel	removed	12/15/89
2	10,000	"	"	
3	3,000	"	"	

ENVIRONMENTAL PROTECTION
MAY 28 PM 3:03

III. RELEASE AND SITE CHARACTERIZATION INFORMATION

Cause and type of release: UNK
Site characterization complete? YES
Date approved by oversight agency: 05/04/94
Monitoring Wells installed? YES Number: 6
Proper screened interval? YES
Highest GW depth below ground surface: 11.12' Lowest depth: 16.96'
Flow direction: SSE - W
Most sensitive current use: AGRICULTURAL/INDUSTRIAL
Are drinking water wells affected? NO Aquifer name: San Leandro Cone
Is surface water affected? NO Nearest affected SW name: NA
Off-site beneficial use impacts (addresses/locations): NONE

Leaking Underground Fuel Storage Tank Program

III. RELEASE AND SITE CHARACTERIZATION INFORMATION (Continued)

Report(s) on file? YES Where is report(s) filed? Alameda County
1131 Harbor Bay Pkwy.
Alameda, CA 94502

Treatment and Disposal of Affected Material:

<u>Material</u>	<u>Amount</u> (include units)	<u>Action (Treatment</u> <u>of Disposal w/destination)</u>	<u>Date</u>
Tank	2x10,000; 1x3000 gal.	<u>Disposal</u> - H&H Ship Service San Francisco, CA	12/15/89
Piping	UNK	as above	
Free product	NA		
Soil	~ 44 yds ³	<u>Reuse on-site</u> (clean fill)	UNK
	~ 60 "	<u>Disposal</u> - Redwood LF Novato, CA	UNK
	~ 102 "	<u>Treatment/disposal</u> - RW LF Novato, CA	12/26/90
Groundwater	1300 gals	<u>Disposal</u> - H&H Ship Service San Francisco, CA	1/29/90
Barrels	NA		

Maximum Documented Contaminant Concentrations - - Before and After Cleanup

Contaminant	Soil (ppm)		Water (ppb)	
	Before ¹	After ²	Before ³	After ⁴
TPH (Gas)	NA		NA	
TPH (Diesel)	5300	5600	49,000	1200
Benzene	ND	0.0095	ND	NA
Toluene	"	0.0090	"	"
Xylene	"	0.880	490	"
Ethylbenzene	"	ND	ND	"
Oil & Grease	NA	NA	NA	"
Heavy metals	"	"	"	"
Other	"	"	"	"

- Notes:
- 1) "Before" soil results represent initial sample #3 collected from the base of the UST pit @ 12.5' BG during tank closure activities.
 - 2) "After" soil results represent a compilation of samples E1 and E2 collected at the base (E2) and north sidewall (E1) of the resultant excavation.
 - 3) "Before" water results represent a sample collected from the UST excavation.
 - 4) "After" water results represent final sample collected from well MW-S1 during March 1996.

Leaking Underground Fuel Storage Tank Program

Comments (Depth of Remediation, etc.):

Three (3) diesel USTs were removed during December 1989 under SLFD oversight. One initial soil sample (#3), collected at a depth of 12.5' below grade (BG) and just north of the 3000 gallon UST, exhibited 5300 ppm TPH-D. Additional excavation followed. The pit was shored and overexcavation was advanced to the north and NW, extending up to the base of the adjacent boiler building. A sidewall sample (E1), from below the base of the building foundation at 12.5' BG, and bottom sample (E2) at 14' BG were collected. Both E1 and E2 exhibited elevated TPH-D concentrations of 4900 and 5600 ppm, respectively. Observations suggested contamination continued beneath the building. Excavation was terminated at this point. Observations further suggested contamination appeared isolated to the vadose/saturated zone interface.

Apparent product sheen was observed on ground water (GW). Approximately 1300 gallons of affected GW were consequently pumped from the resultant excavation.

Excavated overburden (~44 yds³) was reportedly returned to the site and used as "fill." An additional ~60 yds³ of "moderately" impacted soil (< 100 ppm TPH-D) was reportedly disposed at Redwood Landfill, Novato, CA. The remaining ~ 102 yds³ was biotreated on-site for a period of time before it, too, was transported to Redwood Landfill for ultimate disposal.

IV. CLOSURE

Does completed corrective action protect existing beneficial uses per the Regional Board Basin Plan? **Undetermined**

Does completed corrective action protect potential beneficial uses per the Regional Board Basin Plan? **Undetermined**

Does corrective action protect public health for current land use? YES

Site management requirements: NA

Should corrective action be reviewed if land use changes? YES

Monitoring wells Decommissioned: NO (at this time)

Number Decommissioned: NA

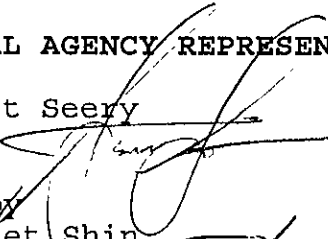
Number Retained: 6

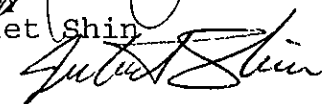
List enforcement actions taken: NONE

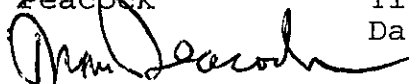
List enforcement actions rescinded: NONE

Leaking Underground Fuel Storage Tank Program

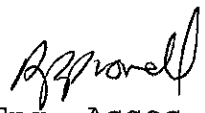
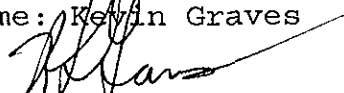
V. LOCAL AGENCY REPRESENTATIVE DATA

Name: Scott Seery Title: Sr. Hazardous Materials Specialist
Signature:  Date: 5-7-96

Reviewed by
Name: Juliet Shin Title: Sr. Hazardous Materials Specialist
Signature:  Date: 5/7/96

Name: Tom Peacock Title: Supervisor
Signature:  Date: 5-7-96

VI. RWQCB NOTIFICATION

Date Submitted to RB: 5-7-96 RB Response: 
RWQCB Staff Name: Kevin Graves Title: San. Eng. Assoc. Date: 5/23/96


VII. ADDITIONAL COMMENTS, DATA, ETC.

Wells MW-S1 through -S3 were constructed during May 1990 subsequent to UST closure and excavation activities. GW was encountered between 13-15' BG in each boring. GW appeared to be under unconfined conditions at the time of well drilling/construction, although stabilized water levels have fluctuated seasonally. Soil samples collected from each boring were impacted by hydrocarbons (HC) at the vadose/saturated zone interface. Only water collected initially from well MW-S1, located west of Tank 2, was impacted by HCs with up to 900 ppb TPH-D and 3.4 ppb benzene detected. GW flow was calculated to be SSW.

Wells were again sampled during October 1990. Only MW-S1 had evidence of HC impact with TPH-D detected at 2700 ppb and benzene at 1.6 ppb. GW flow was calculated to the SW.

In January 1991, 0.08 foot of free product (FP) was measured in well MW-S1. The laboratory also reported non-diesel peaks (HVOC?) in GW sampled from MW-S2. GW flow was calculated to the SSE.

FP sheen was noted in MW-S1 during the April 1991 sampling event. All wells had "hits" for TPH-D, with concentrations of 13,000, 80, and 65 ppb in wells MW-S1, -S2, and -S3, respectively. Water sampled from well MW-S1 also exhibited concentrations of benzene (2 ppb) and toluene (8 ppb). GW appeared to be flowing towards the west.

During February 1992, three soil borings were advanced through the SW floor of the boiler room, adjacent to the former UST pit, and three additional

Leaking Underground Fuel Storage Tank Program

wells constructed both up- (MW-S4) and down-gradient (MW-S5 and -S6) of the former UST locations. Only the shallowest and deepest soil samples collected from borings advanced through the boiler room floor were analyzed. Of these, only the deepest boring samples (16.5 - 20' BG) revealed detectable TPH-D, and all were from saturated sediments. Diesel odor was noted in the 10.5' sample collected from boring S-3; odors were also detected in all borings near or below the saturated zone. These data appear to indicate that soil contamination, where encountered during this phase of the investigation, was fairly well isolated to materials within the capillary fringe.

GW from all wells, except up-gradient well MW-S4, revealed detectable TPH-D, ranging from 2100 (MW-S1) to 130 ppb (MW-S3) during the February sampling event. No BTEX were detected, however, in any of the wells. GW flow was calculated towards the WSW.

Wells were again sampled during June 1992. Only wells MW-S1, -S2 and -S3 exhibited detectable TPH-D, ranging from 50 to 1400 ppb (MW-S3 and -S1, respectively). Benzene was also detected in water sampled from well MW-S1 at a concentration of 0.8 ppb. No aromatics were detected in other wells. GW flow was calculated towards the WSW. Following this sampling event, ACDEH approved the suspension of BTEX analyses in all wells except MW-S1.

Between September 1992 and June 1993, all wells were sampled/monitored quarterly. No BTEX were detected in well MW-S1. TPH-D was detected in well MW-S1 during each event, and in MW-S2 only during the December 1992 event at 670 ppb.

Following a May 1994 meeting between ACDEH, RWQCB and Safeway, a reduction in post-remediation sampling frequency and target wells was negotiated. Consequently, between May 1994 and March 1996, only wells MW-S1, -S5 and -S6 were sampled annually, a total of three events. Only water sampled from well MW-S1 exhibited concentrations of TPH-D during the initial two events at a maximum concentration of 1600 ppb (3/95). Kerosene-range HCs were reported for water sampled 3/95 from well MW-S6 at a concentration of 5 ppb, although the laboratory reports that the chromatogram did not resemble the kerosene standard. Final samples collected during March 1996 revealed diminished TPH-D concentrations in well MW-S1, and trace TPH-D in well MW-S6.

Encountered site sediments appear typical of the fluvial and interfluvial deposits and younger alluvium found elsewhere within the San Leandro cone, comprised of unconsolidated, often gradational, sequences of clays, silty clays, sandy-silty clays, clayey silts, silty sands, silty-clayey sands and infrequent gravelly sand to the depths explored. Finer-grained sediments predominate. These materials are overlain by approximately 6 inches of concrete or asphalt. Approximately 6 inches of base rock underlie the asphalt. The thickness of baserock underlying the concrete floor of the boiler room ranges from 2.5 to 7 feet.

Leaking Underground Fuel Storage Tank Program

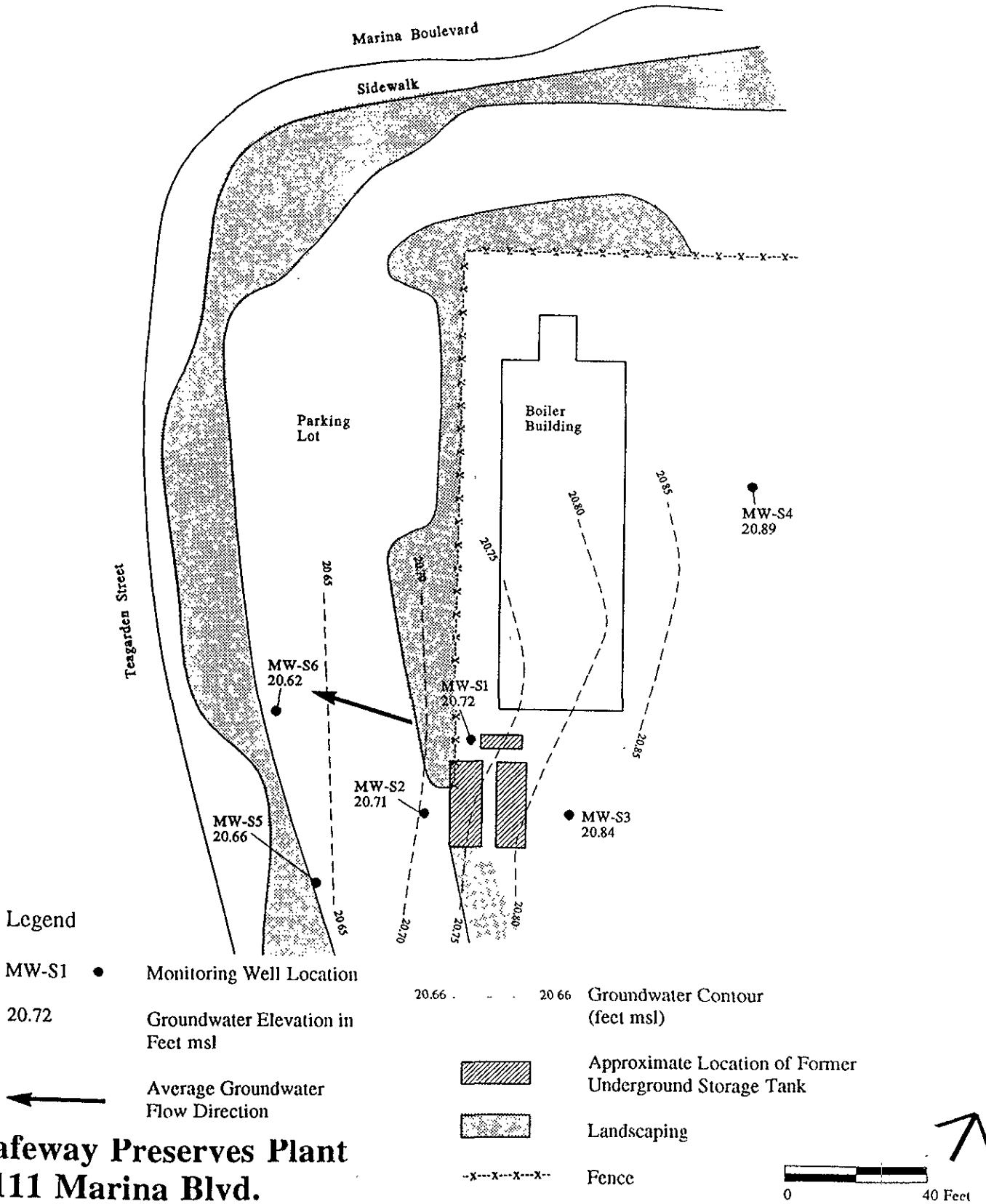
Accumulative data indicate latent soil contamination to be most evident in sediments encountered directly adjacent to, or at the base of, the 3000 gallon UST pit, and, to an areally-limited extent, within the capillary fringe. Capillary action appears to be the mechanism responsible for what little contaminant migration has been identified. Residual concentrations exhibit a maximum TPH-D concentration of 4900 ppm in sample E1 collected at 12.5' BG (sidewall below the boiler building), and sample E2, 5600 ppm TPH-D at 14'BG at the base of the 3000 gallon UST pit.

The nearest surface water is the current channel of San Leandro Creek, approximately one mile north of the site. San Francisco Bay lies approximately 1.8 miles to the west.

GW and soil data collected over the last 4 years suggest that only a limited area has been impacted by the diesel release from USTs formerly located at this site. TPH-D range HCs have been detected consistently in water sampled from well MW-S1, located directly down-gradient of the UST complex, in which TPH-D concentrations have ranged from a high of 13,000 ppb (4/91), to a low of 670 ppb (9/92). The most recent and final event, occurring 3/96, revealed 1,200 and 100 ppb of diesel-range HCs with no aromatics in wells MW-S1 and -S6, respectively. TPH-D has been detected only periodically in other site wells, most notably MW-S2 and -S3, located directly adjacent to the UST pit, down- and up-gradient, respectively.

GROUNDWATER CONTOURS AND FLOW DIRECTION 14 MARCH 1996

Figure 3

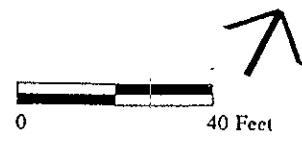


Legend

- MW-S1 ● Monitoring Well Location
- 20.72 Groundwater Elevation in Feet msl
- ← Average Groundwater Flow Direction

- 20.66 - - - 20.66 Groundwater Contour (feet msl)
- ▨ Approximate Location of Former Underground Storage Tank
- ▨ Landscaping
- x-x-x-x-x-x- Fence

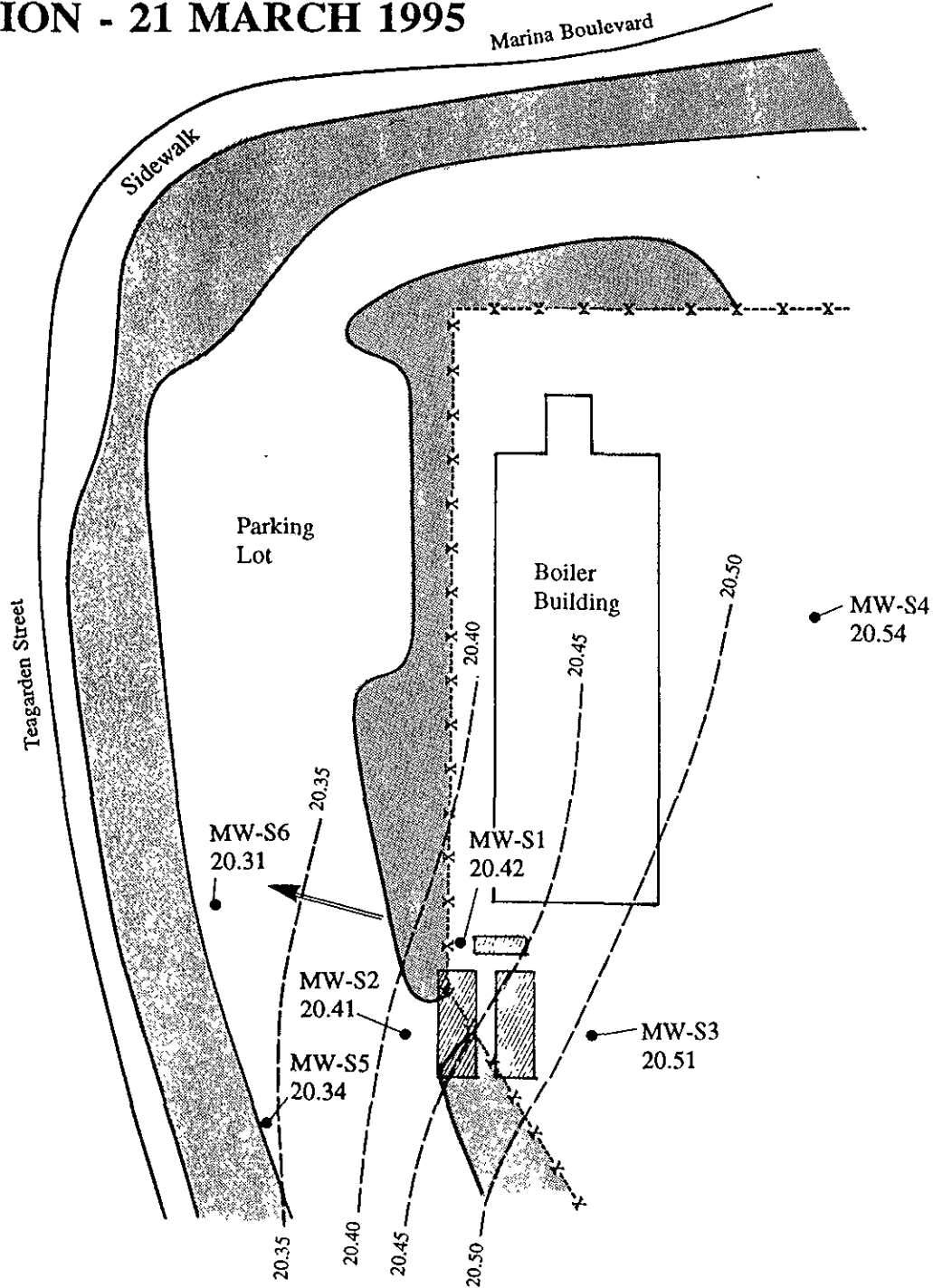
**Safeway Preserves Plant
1111 Marina Blvd.
San Leandro, California**



BASELINE

GROUNDWATER CONTOURS AND FLOW DIRECTION - 21 MARCH 1995

Figure 2



Legend

MW-S1 • Monitoring Well

20.42 Groundwater Elevation in Feet msl.

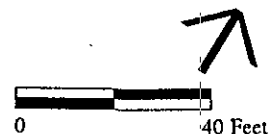
→ Average Groundwater Flow Direction

20.50 --- Groundwater Contour (feet msl)

▨ Approximate Location of Former Underground Storage Tank

■ Landscaping

---x---x---x--- Fence



**Safeway Preserves Plant
1111 Marina Blvd.
San Leandro, California**

BASELINE

TABLE 2

SUMMARY OF ANALYTICAL RESULTS, GROUNDWATER
Safeway Preserves Plant
1111 Marina Blvd., San Leandro, California
(mg/L)

Sample Location	Date Collected	TPH as Diesel ¹	Benzene ²	Toluene ²	Ethylbenzene ²	Xylenes ²	
Tank Excavation	12/15/89	4.9	<0.01	<0.01	<0.01	0.49	
MW-S1	05/22/90	0.9	0.0034	<0.001	<0.001	0.0018	
	10/10/90	2.7	0.0016	0.0007	<0.0005	0.0081	
	01/21/91	11.0	<0.0005	<0.0005	<0.0005	<0.0005	
	04/26/91 ³	13.0	0.002	0.0008	<0.0005	<0.0005	
	03/11/92	2.1 ⁴	<0.0005	<0.0005	<0.0005	<0.0005	
	06/03/92 ³	1.4 ⁴	0.0008	<0.0005	<0.0005	<0.0005	
	09/16/92 ³	0.67 ⁴	<0.0005	<0.0005	<0.0005	<0.0005	
	12/30/92	1.2 ⁴	<0.0005	<0.0005	<0.0005	<0.0005	
	03/30/93	2.3 ⁴	<0.0005/<0.0005	<0.0005/<0.0005	<0.0005/<0.0005	<0.0005/<0.0005	
	06/30/93	1.7 ⁴	<0.0005	<0.0005	<0.0005	<0.0005	
	05/18/94	1.1/1.2 ⁴	--	--	--	--	
	03/21/95	1.6/1.4 ⁷	--	--	--	--	
	03/14/96	1.2/1.0	--	--	--	--	
	MW-S2	05/22/90	<0.5	<0.001	<0.001	<0.001	<0.001
		10/10/90	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
01/21/91		<0.05 ⁵	<0.0005	<0.0005	<0.0005	<0.0005	
04/26/91 ³		0.08/<0.05	<0.0005/<0.0005	<0.0005/<0.0005	<0.0005/<0.0005	<0.0005/<0.0005	
03/11/92		0.28 ⁴	<0.0005	<0.0005	<0.0005	<0.0005	
06/03/92 ³		0.22 ⁴	<0.0005	<0.0005	<0.0005	<0.0005	
09/16/92 ³		<0.05	--	--	--	--	
	12/30/92	0.2 ⁴	--	--	--	--	

Table 2: Summary of Analytical Results, Groundwater - (Continued)

Sample Location	Date Collected	TPH as Diesel ¹	Benzene ²	Toluene ²	Ethyl-benzene ²	Xylenes ²
MW-S2	03/30/93	<0.05	--	--	--	--
	06/30/93	<0.05	--	--	--	--
MW-S3	05/22/90	<0.5	<0.001	<0.001	<0.001	<0.001
	10/10/90	<0.05/<0.05	<0.0005/<0.0005	<0.0005/<0.0005	<0.0005/<0.0005	<0.0005/<0.0005
	01/21/91	<0.05/<0.05	<0.0005/<0.0005	<0.0005/<0.0005	<0.0005/<0.0005	<0.0005/<0.0005
	04/26/91 ³	0.065	<0.0005	<0.0005	<0.0005	<0.0005
	03/11/92	0.13 ⁴	<0.0005	<0.0005	<0.0005	<0.0005
	06/03/92 ³	0.05	<0.0005	<0.0005	<0.0005	<0.0005
	09/16/92 ¹	<0.05	--	--	--	--
	12/30/92	<0.05	--	--	--	--
	03/30/93	<0.05	--	--	--	--
	06/30/93	<0.05	--	--	--	--
MW-S4	03/11/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
	06/03/92 ³	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
	09/16/92 ³	<0.05	--	--	--	--
	12/30/92	<0.05	--	--	--	--
MW-S5	03/11/92	0.19 ⁴	<0.0005	<0.0005	<0.0005	<0.0005
	06/03/92 ³	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
	09/16/92 ³	<0.05	--	--	--	--
	12/30/92	<0.05	--	--	--	--
	03/30/93	<0.05	--	--	--	--
	05/18/94	<0.05 ⁶	--	--	--	--
	03/21/95	<0.05 ⁶	--	--	--	--
	03/14/96	<0.05	--	--	--	--

Table 2: Summary of Analytical Results, Groundwater - (Continued)

Sample Location	Date Collected	TPH as Diesel ¹	Benzene ²	Toluene ²	Ethyl-benzene ²	Xylenes ²
MW-S6	03/11/92	0.26⁴	<0.0005	<0.0005	<0.0005	<0.0005
	06/03/92 ³	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
	09/16/92 ³	<0.05	--	--	--	--
	12/30/92	<0.05	--	--	--	--
	03/30/93	<0.05	--	--	--	--
	05/18/94	<0.05 ⁶	--	--	--	--
	03/21/95	<0.05 ⁸	--	--	--	--
	03/14/96	0.10⁹	--	--	--	--

Notes: TPH = Total petroleum hydrocarbons.
 -- = Not analyzed.
 <x.x = Compound was not identified above laboratory detection limits.
 x.x/y.y = Duplicate sample results.
 Numbers shown in bold indicate concentrations above the laboratory detection limits.
 Well locations are shown on Figure 3.
 The laboratory report for 3/14/96 samples is included in Attachment B.

- ¹ Analyzed by DOHS-LUFT Method. Analysis included kerosene range which was not identified above reporting limits except where noted.
- ² Extracted by EPA Method 5030 and analyzed by EPA Method 8020.
- ³ A travel blank was analyzed for BTXE during this sampling event. None of the compounds were identified above the detection limits.
- ⁴ Laboratory report contains asterisks under the column for kerosene range. The laboratory indicated that this means some hydrocarbons in the kerosene range were present; these were included in the quantification of the diesel-ranged compounds.
- ⁵ Note on laboratory report indicates that hydrocarbons outside of the normal diesel range were present on the chromatogram but were not quantified.
- ⁶ The sample was also analyzed for kerosene. Kerosene was not identified above the reporting limit of 50 µg/L.
- ⁷ The laboratory report indicates that the kerosene range was not reported due to overlap of hydrocarbon ranges.
- ⁸ The sample was also analyzed for kerosene; the laboratory report identifies 5 µg/L of kerosene, with a note that the sample chromatogram does not resemble the hydrocarbon standard. The chromatogram attached to the laboratory report in Attachment A confirms that the kerosene does not resemble the standard.
- ⁹ Sample did not match diesel standard.

TABLE 3

WATER LEVEL MEASUREMENTS
Safeway Preserves Plant
1111 Marina Boulevard, San Leandro, California

Location	Date	Water Level from TOC (feet)	Well Head Elevation (feet msl)	Elevation of Groundwater (feet msl)	Product Thickness (feet)
<u>MW-S1</u>			32.42		
	05/22/90	15.92		16.50	0
	06/25/90	15.59		16.83	0
	10/10/90	16.59		15.83	0
	01/21/91	16.62		15.80	0.08
	04/26/91	14.45		17.97	Sheen
	03/11/92	13.73		18.69	0
	06/03/92	14.36		18.06	0
	09/16/92	15.56		16.86	0
	12/30/92	14.44		17.98	0
	03/30/93	12.23		20.19	0
	06/30/93	13.48		18.94	0
	05/18/94	13.79		18.63	0
	03/21/95	12.00		20.42	0
	03/14/96	11.70		20.72	0
<u>MW-S2</u>			31.83		
	05/22/90	15.66		16.17	0
	06/25/90	15.02		16.81	0
	10/10/90	16.01		15.82	0
	01/21/91	16.96		14.87	0
	04/26/91	13.86		17.97	0
	03/11/92	13.16		18.67	0
	06/03/92	13.79		18.04	0
	09/16/92	14.98		16.85	0
	12/30/92	13.86		17.97	0
	03/30/93	11.66		20.17	0
	06/30/93	12.91		18.92	0
	05/18/94	13.22		18.61	0
	03/21/95	11.42		20.41	0
	03/14/96	11.12		20.71	0
<u>MW-S3</u>			32.13		
	05/22/90	15.60		16.53	0
	06/25/90	15.26		16.87	0
	10/10/90	16.27		15.86	0
	01/21/91	16.62		15.51	0
	04/26/91	14.11		18.02	0
	03/11/92	13.37		18.76	0
	06/03/92	14.02		18.11	0
	09/16/92	15.23		16.90	0
	12/30/92	14.09		18.04	0

Table 3: Water Level Measurements, (Continued)

Location	Date	Water Level from TOC (feet)	Well Head Elevation (feet msl)	Elevation of Groundwater (feet msl)	Product Thickness (feet)
<u>MW-S3</u>					
	03/30/93	11.85		20.28	0
	06/30/93	13.11		19.02	0
	05/18/94	13.43		18.70	0
	03/21/95	11.62		20.51	0
	03/14/96	11.29		20.84	0
<u>MW-S4</u>			32.49		
	03/11/92	13.65		18.84	0
	06/03/92	14.29		18.20	0
	09/16/92	15.54		16.95	0
	12/30/92	14.39		18.10	0
	06/30/93	13.39		19.10	0
	05/18/94	13.69		18.80	0
	03/21/95	11.52		20.34	0
	03/14/96	11.60		20.89	0
<u>MW-S5</u>			31.86		
	03/11/92	13.24		18.62	0
	06/03/92	13.86		18.00	0
	09/16/92	15.03		16.83	0
	12/30/92	13.94		17.92	0
	03/30/93	11.74		20.12	0
	06/30/93	13.00		18.86	0
	05/18/94	13.30		18.56	0
	03/21/95	11.52		20.34	0
	03/14/96	11.20		20.66	0
<u>MW-S6</u>			32.18		
	03/11/92	13.56		18.62	0
	06/03/92	14.19		17.99	0
	09/16/92	15.36		16.82	0
	12/30/92	14.29		17.92	0
	03/30/93	12.09		20.09	0
	06/30/93	13.33		18.85	0
	05/18/94	13.63		18.55	0
	03/21/95	11.87		20.31	0
	03/14/96	11.56		20.62	0

Notes:

TOC = Top of casing.

MSL = Mean sea level.

Monitoring wells MW-S1, MW-S2, and MW-S3 were installed on 22 May 1990.

Monitoring wells MW-S4, MW-S5, and MW-S6 were installed on 27 February 1992.

Well locations are shown on Figure 3.

TABLE 4

**GROUNDWATER FLOW DIRECTIONS
AND GRADIENT MAGNITUDES**
Safeway Preserves Plant
1111 Marina Boulevard, San Leandro, California

Measurement Date	Flow Direction	Gradient Magnitude
05/22/90	S10W	0.013
06/25/90	S53W	0.0014
10/10/90	S62W	0.0012
01/21/91	S5E	0.04
04/26/91	S90W	0.0013
03/11/92	S63W	0.0017
06/03/92	S56W	0.0015
09/16/92	S61W	0.001
12/30/92	S66W	0.0007
03/30/93	S67W	0.0023
06/30/93	S57W	0.0022
05/18/94	S58W	0.0019
03/21/95	S78W	0.002
03/14/96	S81W	0.002

Notes: Groundwater contours and average flow direction for the 3/14/96 monitoring event are shown on Figure 3.

Report on
SOIL INVESTIGATION AND INSTALLATION OF MONITORING WELLS
SAFEWAY PRESERVES PLANT
1111 MARINA BOULEVARD
SAN LEANDRO, CALIFORNIA

Prepared for:

Safeway Inc.

May 1992

Prepared by:

BASELINE ENVIRONMENTAL CONSULTING
5900 Hollis Street, Suite D
Emeryville, California 94608
(510) 420-8686

S9178-BO

TABLE 1

SUMMARY OF ANALYTICAL RESULTS SOIL
Safeway Preserves Plant
1111 Marina Blvd., San Leandro, California
(mg/kg)

SAMPLE LOCATION	DATE COLLECTED	DEPTH (FEET BGS)	TPH AS DIESEL ¹	BENZENE ²	TOLUENE ²	ETHYL BENZENE ²	XYLENES ²
S-1A	2/27/92	12.0 ³	<1.0	<0.005	<0.005	<0.005	<0.005
S-1C	2/27/92	16.5 ³	44^{4*}	<0.005	<0.005	<0.005	<0.005
S-2A	2/27/92	10.5	<1.0	<0.005	<0.005	<0.005	<0.005
S-2C	2/27/92	20.0 ³	89^{4*}	<0.005	<0.005	<0.005	<0.005
S-3A	2/27/92	10.5	<1.0	<0.005	<0.005	<0.005	<0.005
S-3C	2/27/92	19.0 ³	35^{4*}	<0.005	<0.005	<0.005	<0.005
MW-S4	2/27/92	10.0	<1.0	<0.005	<0.005	<0.005	<0.005
MW-S4	2/27/92	13.5	<1.0	<0.005	<0.005	<0.005	<0.005
MW-S5	2/27/92	10.0	<1.0	<0.005	<0.005	<0.005	<0.005
MW-S5	2/27/92	13.0	<1.0	<0.005	<0.005	<0.005	<0.005
MW-S6	2/27/92	10.0	<1.0	<0.005	<0.005	<0.005	<0.005
MW-S6	2/27/92	13.5	<1.0	<0.005	<0.005	<0.005	<0.005

¹ Analyzed by DOHS-LUFT Method.

² Extracted by EPA Method 5030 and analyzed by EPA Method 8020.

³ Soil sample was collected below the ground water table.

^{4*} Laboratory report contains asterisks under the column for kerosene range. The laboratory indicated that this means some hydrocarbons in the kerosene range were present; however, these were included in the quantification of the diesel ranged compounds.

Notes:

Feet bgs = Feet below ground surface.

<x.x = Compound was not identified above laboratory detection limits.

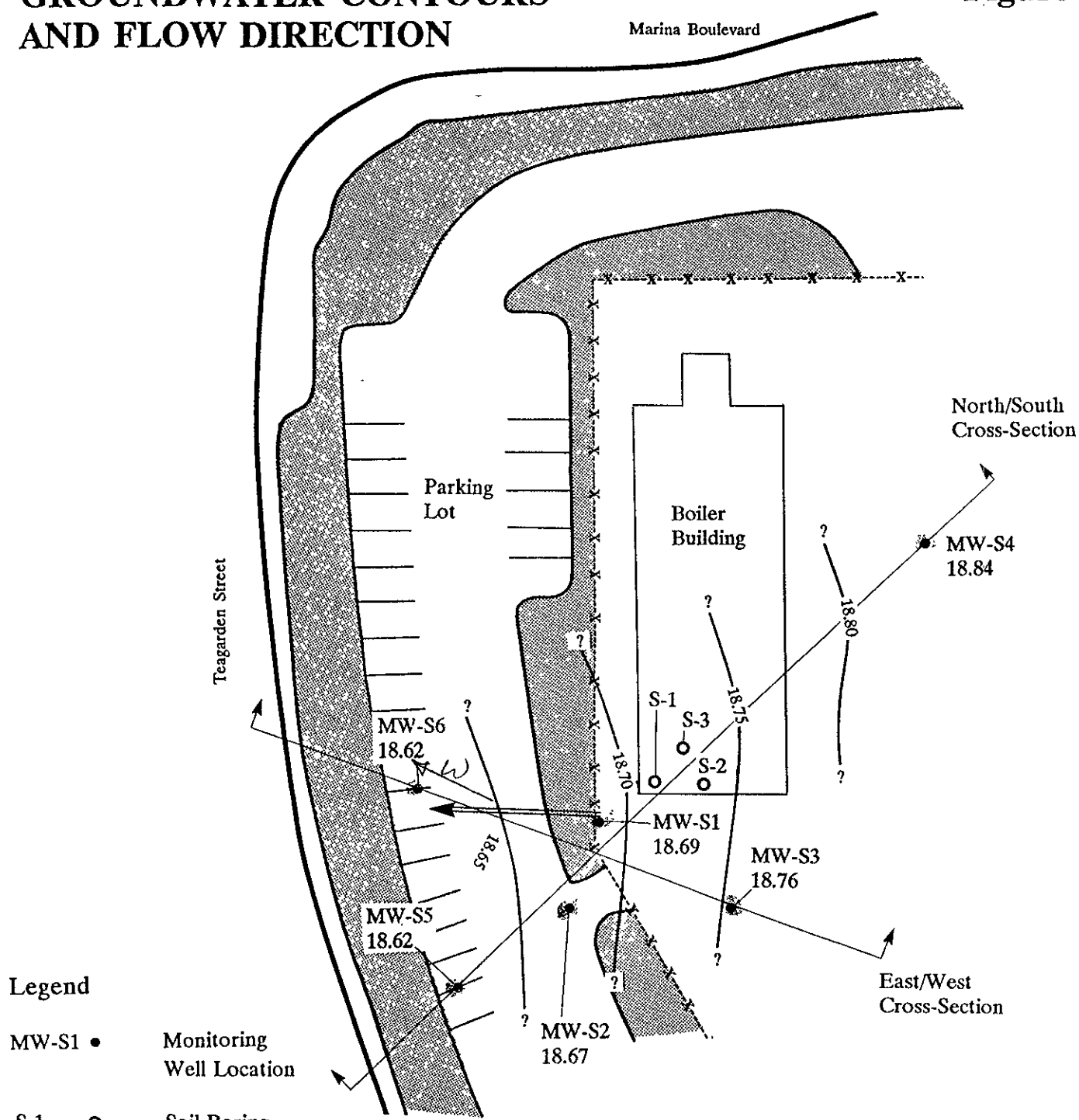
Numbers shown in bold indicate concentrations above the laboratory detection limits.

Sample locations are shown in Figure 2.

Laboratory reports included in Appendix H.

GROUNDWATER CONTOURS AND FLOW DIRECTION

Figure 3



Legend

MW-S1 • Monitoring Well Location

S-1 ○ Soil Boring

← Average Groundwater Flow Direction

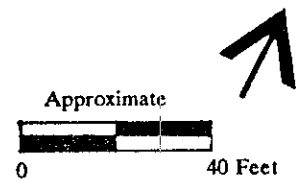
▨ Landscaping

---x---x--- Fence

18.62 Groundwater Elevation

—18.65— Groundwater Contour

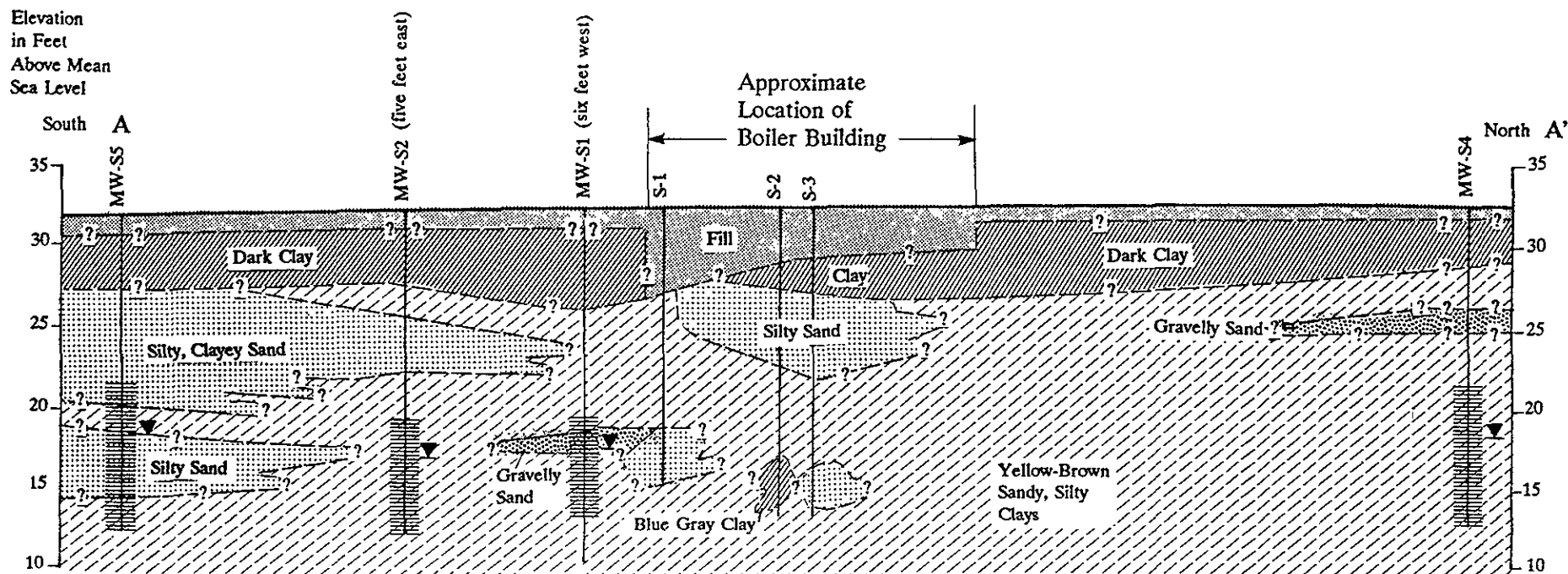
**Safeway Preserves Plant
1111 Marina Blvd.
San Leandro, California**



BASELINE

GEOLOGIC CROSS-SECTION - NORTH/SOUTH

Figure 4





Horizontal Scale: 1 Inch = 20 Feet

Vertical Scale Exaggerated to Show Detail

MW-S6 = Monitoring Well Location

S1 = Soil Boring Location

 = Screened Interval

 = Water Level During Drilling

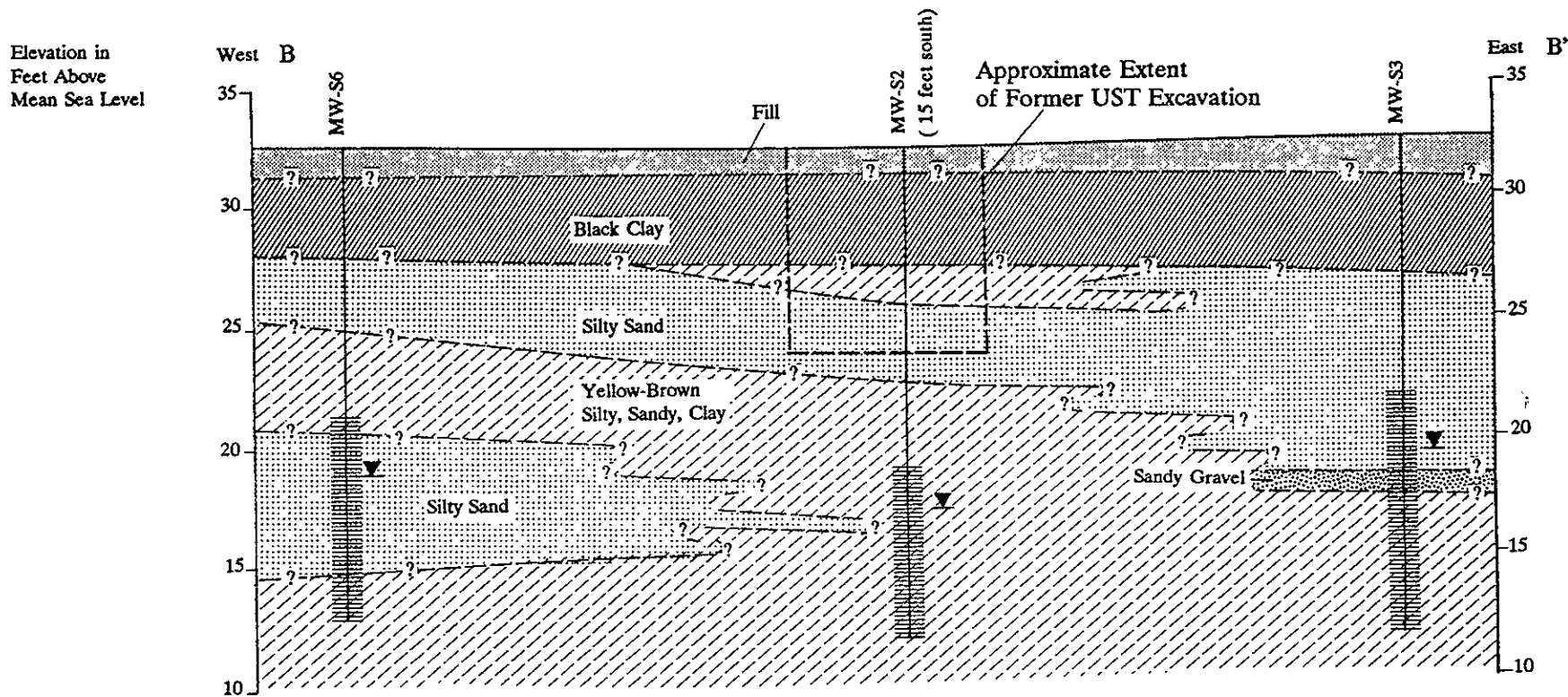
See Figure 3 for location of Cross-Section

Safeway Preserves Plant
111 Marina Blvd.
San Leandro, California

BASELINE

GEOLOGIC CROSS-SECTION - EAST/WEST

Figure 5



Horizontal Scale: 1 Inch = 20 Feet

Vertical Scale Exaggerated to Show Detail

MW-S5 = Monitoring Well Location

= Screened Interval

= Water Level During Drilling

See Figure 3 for location of Cross-Section

Safeway Preserves Plant
111 Marina Blvd.
San Leandro, California

BASELINE

DRILLING LOG

BASELINE
 5900 Hollis Street, Suite D
 Emeryville, CA 94608
 (415) 420-8686

Location	Safeway, 1111 Marina Boulevard, San Leandro	Boring No.	S9178-B
Driller	Clear Heart Construction	Project No.	S9178-B
Method	Solid Stem Continuous Flight	Date	2/27/92
Logger	DR Datum NA Bore size 4 inch	Casing size	NA

Depth	Graphic	Lithology	Notes
0		Concrete slab	HNu=0 ppm
1	GC	Reddish brown, clayey, sandy GRAVEL, moist	
2			
3		Very dark gray/black, silty, clayey GRAVEL, wet	Perched water from boiler room at 3 ft.
4	GC		
5			
6			
7			
▼		Yellowish brown, silty CLAY, medium-high plasticity, moist-very moist	Standing water in boring 7.5 ft.
8	CH		
9			Hnu=0 ppm 5-6-6-6
10			First sample - no recovery (no catcher)

Scale: 1 inch = 1.5 feet

Signature *Yusef Abdur...*

S9178BS1.log-3/24/92

DRILLING LOG

BASELINE
 5900 Hollis Street, Suite D
 Emeryville, CA 94608
 (415) 420-8686

Location Safeway, 1111 Marina Blvd., San Leandro Boring No. S-1 (Cont.)
 Driller Clear Heart Construction Project No. S9178-B
 Method Solid Stem Continuous Flight Date 2/27/92
 Logger DR Datum NA Bore size 4 inch Casing size NA

Depth	Graphic	Lithology	Notes	
10	<p>The graphic log shows a vertical column of soil layers. From 10 to 13.5 feet, the soil is labeled 'CH' (Clayey High plasticity). From 13.5 to 17 feet, it is labeled 'SC' (Silty Clayey). A dashed line is drawn at 13.5 feet. A cross-hatched pattern is used to indicate specific soil types within the layers.</p>	Yellowish brown, silty CLAY, firm, medium-high plasticity, moist-very moist	Recovery on last 1/2 foot only 4-5-6-6	
11				
12				7-11-7-7
13				HNu=0 ppm Stuff from 13-15 ft.
14			Yellowish brown, slightly mottled, clayey, silty SAND, very fine-grained, loose, moist	
15				Petroleum odor detected at 14.5 ft. 8-5-4-6
16				13-17 Mottled with bluish grey Petroleum odor from sample
17			T.D. = 17 ft.	
18				
19				
20				

Scale: 1 inch = 1.5 feet

S9178BS1.log-3/24/92

Signature _____

DRILLING LOG

BASELINE
 5900 Hollis Street, Suite D
 Emeryville, CA 94608
 (415) 420-8686

Location	Safeway, 1111 Marina Boulevard, San Leandro	Boring No.	S-2
Driller	Clear Heart Construction	Project No.	S9178-B
Method	Solid Stem Continuous Flight	Date	2/27/92
Logger	DR Datum NA Bore size 4 inch	Casing size	NA

Depth	Graphic	Lithology	Notes
0		Concrete slab	HNu=0 ppm
1	GC	Reddish brown, clayey, sandy GRAVEL, moist	
2			
3			
4	CH	Very dark gray/black, silty CLAY, minor gravel, firm-stiff, moist, medium-high plasticity	6-9-8-9 HNu=1.5 ppm
5		Yellowish brown, clayey, silty SAND, very fine-grained, low-medium plasticity, loose, moist	
6	SC		
7			
8			
9			
10	CH		8-8-5-7

Scale: 1 inch = 1.5 feet

Signature *Yane [Signature]*

DRILLING LOG

BASELINE
 5900 Hollis Street, Suite D
 Emeryville, CA 94608
 (415) 420-8686

Location	Safeway, 1111 Marina Blvd., San Leandro	Boring No.	1672 (Cont.)
Driller	Clear Heart Construction	Project No.	S9178-B
Method	Solid Stem Continuous Flight	Date	2/27/92
Logger	DR Datum NA Bore size 4 inch	Casing size	NA

Depth	Graphic	Lithology	Notes
10		Yellowish brown, slightly mottled, silty CLAY, firm-stiff, medium-high plasticity, moist	
11			
12			
13			
14			
15			7-5-4-6 Standing water in boring at 14.9 ft.
16		Blue-grey, slightly-very mottled, silty CLAY, soft-firm, medium-high-plasticity, moist	Diesel odor from sample HNu=2 ppm
17	CH		
18			
19			5-6-8-10
20		Brown, silty CLAY, high plasticity, stiff, wet T.D. = 20.5 ft.	Strong diesel odor from sample
	CH		

Scale: 1 inch = 1.5 feet

S9178BS2.log-3/24/92

Signature _____

DRILLING LOG

BASELINE
 5900 Hollis Street, Suite D
 Emeryville, CA 94608
 (415) 420-8686

Location	Safeway, 1111 Marina Boulevard, San Leandro	Boring No.	S3
Driller	Clear Heart Construction	Project No.	S9178-B
Method	Solid Stem Continuous Flight	Date	2/27/92
Logger	DR Datum _____ Bore size 4 inch	Casing size	NA

Depth	Graphic	Lithology	Notes
0		Concrete slab	HNu=0 ppm
1		Reddish brown, clayey, sandy GRAVEL, moist	
2	GC		
3			
4	CH	Very dark gray/black, silty CLAY, minor gravel, firm- medium-high plasticity, moist	HNu=1 ppm 5-5-4-4
5		Yellowish, clayey SAND, very fine-grained, moist-wet	No sample collected
6	SC		
7			
8			
9			
10			2-3-3-4

Scale: 1 inch = 1.5 feet

Signature: Yane Radwan

S9178B\$3.log-3/24/92

DRILLING LOG

BASELINE
 5900 Hollis Street, Suite D
 Emeryville, CA 94608
 (415) 420-8686

Location Safeway, 1111 Marina Boulevard, San Leandro Boring No. [REDACTED]
 Driller Clear Heart Construction Project No. S9178-B0
 Method Hollow-stem, continuous flight Date 2/27/92
 Logger WKS Datum 32.74 ft. msl Bore size 8 inch Casing size 2 inch

Depth	Graphic	Lithology	Notes
0		Concrete slab	
1	GW	Reddish-brown, sandy GRAVEL, baserock Very dark gray to black, silty CLAY, medium-high plasticity, soft, damp	
2	CH		
3	CH	Very dark brown, sandy CLAY, trace gravel, medium plasticity, firm, damp	
4			
5	CL	Brown, sandy clayey SILT/sandy silty CLAY, medium to low plasticity, firm, damp	
6			3-4-7
7	SW	Yellowish brown, silty, gravelly SAND, very fine-grained, subangular clasts, 1/4 to 1/2 inch diameter, loose, damp	
8	CH	Brown, slightly mottled, sandy CLAY, trace of gravel, high plasticity, very fine-grained, rounded clasts, soft, moist	
9			
10			3-3-3

Scale: 1 inch = 1.5 feet







Signature Yuse Abdurao

(S9178-S4)og-3/24/92)

DRILLING LOG

BASELINE
5900 Hollis Street, Suite D
Emeryville, CA 94608
(415) 420-8686

Location	Safeway, 1111 Marina Blvd., San Leandro	Boring No.	S-3 (Cont.)
Driller	Clear Heart Construction	Project No.	S9178-B
Method	Solid Stem Continuous Flight	Date	2/27/92
Logger	DR Datum NA Bore size 4 inch	Casing size	NA

Depth	Graphic	Lithology	Notes
10			
11	 CH	Yellowish brown/grey, mottled, sandy, silty CLAY, high plasticity, soft, moist	Diesel odor in sample
12			
13			
14	 CH	Yellowish brown, sandy, silty CLAY, minor gravel, medium plasticity, firm, moist	5-5-6-8
15	 		Standing water in boring at 15.0 ft.
16			
17	 SC	Yellowish brown/blue grey, mottled, clayey, silty SAND, very fine-grained, loose, moist	
18			5-9-11-14 Strong diesel odor at top of sampler
19	 CH	Brown, silty CLAY, high plasticity, stiff, moist	
20		T.D. = 20 ft.	

Scale: 1 inch = 1.5 feet

S9178BS3.log-3/24/92

Signature _____

DRILLING LOG

BASELINE
 5900 Hollis Street, Suite D
 Emeryville, CA 94608
 (415) 420-8686

Location	Safeway, 1111 Marina Boulevard, San Leandro	Boring No.	MW-84
Driller	Clear Heart Construction	Project No.	S9178-B0
Method	Hollow-stem, continuous flight	Date	2/27/92
Logger	WKS Datum 32.74 ft. msl Bore size 8 inch	Casing size	2 inch

Depth	Graphic	Lithology	Notes
10			
11	CH		
12			
13	CL	Yellowish brown, silty CLAY, slightly mottled, medium- to low-plasticity, soft to firm, some interbedding 1-2 inch thick of gravelly sand, moist-very moist	3-4-7
14			
15			1-2-3
16			
17			
18	CH	Brown, silty CLAY, trace of gravel, medium- to high-plasticity, firm, moist	2-3-8
19			
20		T.D. = 19.5 ft.	

Scale: 1 inch = 1.5 feet

(S9178-S4)log-3/24/92

Signature _____

DRILLING LOG

Location	Safeway, 1111 Marina Boulevard, San Leandro	Boring No.	MW-S5
Driller	Clear Heart Construction	Project No.	S9178-B0
Method	Hollow-stem, continuous flight	Date	2/27/92
Logger	WKS Datum 32.02 ft. msl Bore size 8 inch	Casing size	2 inch

Depth	Graphic	Lithology	Notes
0		Asphalt top	
1	GW	Reddish brown, sandy GRAVEL, dry, baserock	
2	CH	Very dark gray to black, silty CLAY, trace of gravel, medium-high plasticity, soft-firm, damp	
3			
4			
5	SC	Brown, clayey silty SAND, trace of gravel Very fine grained, subangular gravel clasts, up to 1/2 inch diameter, damp-moist	1-3-2
6			
7			
8		Brown, slightly mottled, clayey SAND, trace of coarse-grained sand, low plasticity. rounded sand grains, veinlets, moist	
9	SC		2-4-4
10			






Scale: 1 inch = 1.5 feet

Signature Yane Bedrao

DRILLING LOG

BASELINE
 5900 Hollis Street, Suite D
 Emeryville, CA 94608
 (415) 420-8686

Location	<u>Safeway, 1111 Marina Boulevard, San Leandro</u>	Boring No.	<u>MW-S5</u>
Driller	<u>Clear Heart Construction</u>	Project No.	<u>S9178-B0</u>
Method	<u>Hollow-stem, continuous flight</u>	Date	<u>2/27/92</u>
Logger	<u>WKS</u> Datum <u>32.02 ft. msl</u> Bore size <u>8 inch</u>	Casing size	<u>2 inch</u>

Depth	Graphic	Lithology	Notes
10			
11	SC		
12	CL/ML	Yellowish brown, slightly mottled, silty CLAY/clayey SILT, low plasticity, moist	
13			2-3-5
14	SM	Yellowish brown, silty SAND, very fine- to fine-grained with some gravel interbedding, subangular-rounded clasts with 1/2 inch diameter, loose, very moist-wet	
15			
16			
17	CH	Brown, silty CLAY, medium-high plasticity, soft-firm, moist	
18			2-3-8
19			
20		T.D. = 19.5 ft.	

Scale: 1 inch = 1.5 feet

(S9178-S5.log-3/24/92)

Signature _____

DRILLING LOG

BASELINE
5900 Hollis Street, Suite D
Emeryville, CA 94608
(415) 420-8686

Location	Safeway, 1111 Marina Boulevard, San Leandro	Boring No.	MW-S6
Driller	Clear Heart Construction	Project No.	S9178-B0
Method	Hollow-stem, continuous flight	Date	2/27/92
Logger	WKS Datum 32.61 ft. msl Bore size 8 inch	Casing size	2 inch

Depth	Graphic	Lithology	Notes
0		Asphalt top	
1	GW	Reddish brown, sandy GRAVEL, dry, baserock	
2	CH	Very dark gray to black, silty CLAY, with gravel, medium-high plasticity, 1/2 inch diameter clasts, sub-angular, soft-firm, damp	
3			
4			
5	SC	Brown, clayey SAND, medium to low plasticity, fine-grained sand, some interbedding of coarse-grained sandy clay, soft-firm, damp-moist	2-4-5
6			
7			
8	ML	Yellowish brown, sandy clayey SILT, medium-low plasticity, very fine-grained sand, soft, moist	
9	CH	Brown, slightly mottled, silty CLAY, with trace of sand, medium-high plasticity, soft, veinlets, moist	2-2-3
10			

Scale: 1 inch = 16 feet

(S9178-S6.log-3/24/92)






Signature _____

John ...

DRILLING LOG

BASELINE
 5900 Hollis Street, Suite D
 Emeryville, CA 94608
 (415) 420-8686

Location	Safeway, 1111 Marina Boulevard, San Leandro	Boring No.	MW-S6
Driller	Clear Heart Construction	Project No.	S9178-B0
Method	Hollow-stem, continuous flight	Date	2/27/92
Logger	WKS	Datum	32.61 ft. msl
	Bore size	8 inch	
	Casing size	2 inch	

Depth	Graphic	Lithology	Notes
10			
11			
12	SM	Yellowish brown, silty SAND, trace of clay and gravel, very fine-grained, 1/3-1/2 inch diameter clasts, subangular to subrounded, loose, very moist-wet	
13			
14	 ▼		4-5-10
15			
16			
17			
18	CH	Brown, silty CLAY, with trace of gravel, high plasticity, clasts up to 1/2 inch diameter, firm, very moist	3-4-7
19			
20		T.D. = 19.5 ft.	

Scale: 1 inch = 1.5 feet

(S9178-S6.log-3/24/92)

Signature _____

COPY

Report on

**UNDERGROUND TANK REMOVAL
AND
WORK PLAN FOR
1111 MARINA BOULEVARD
San Leandro, California**

Prepared for:

**SAFEWAY INC.
SAN LEANDRO, CALIFORNIA**

August 1990

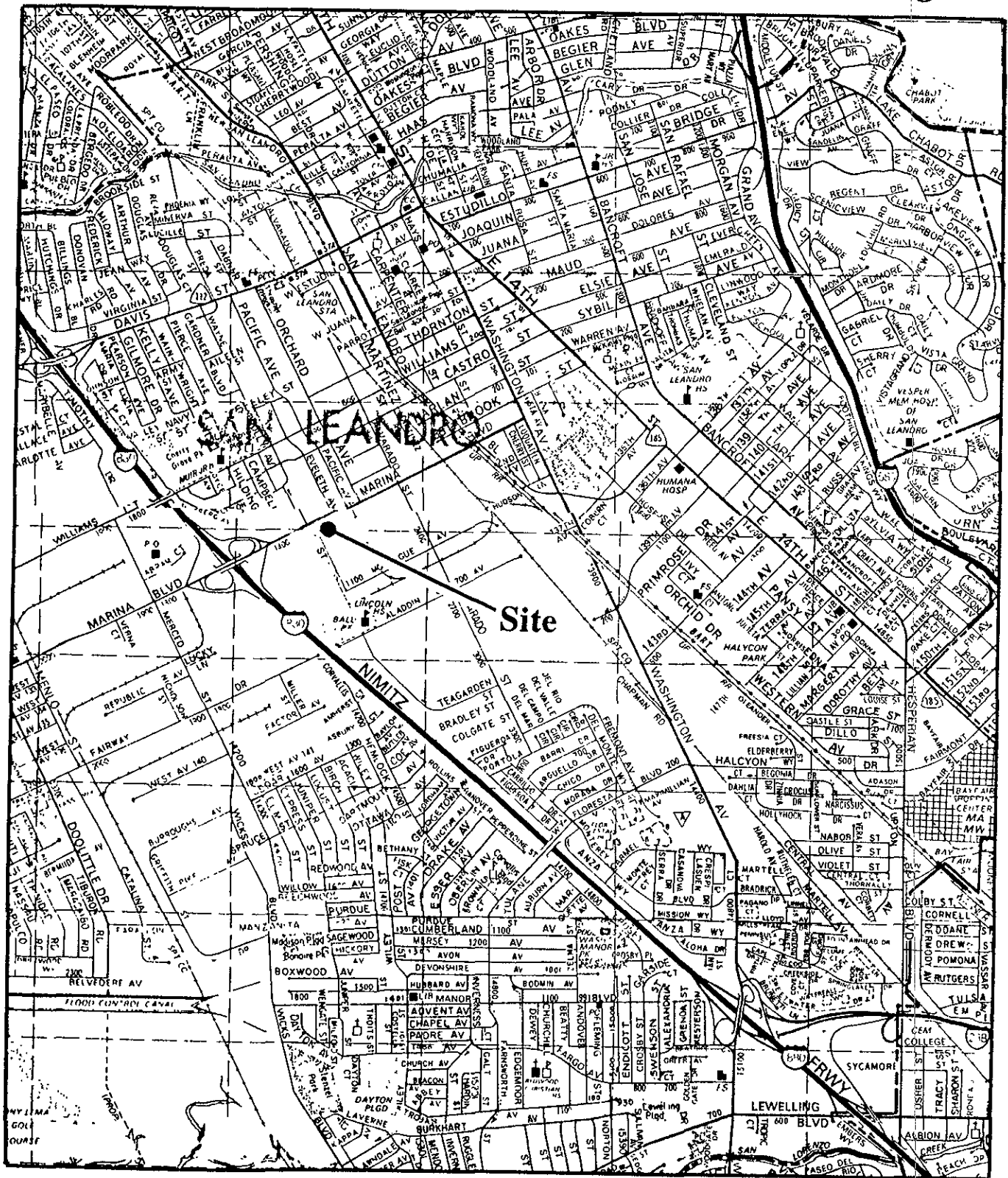
Prepared by:

**BASELINE ENVIRONMENTAL CONSULTING,
5900 Hollis Street, Suite D
Emeryville, California 94608
(415) 420-8686**

S9-178

REGIONAL LOCATION

Figure 1

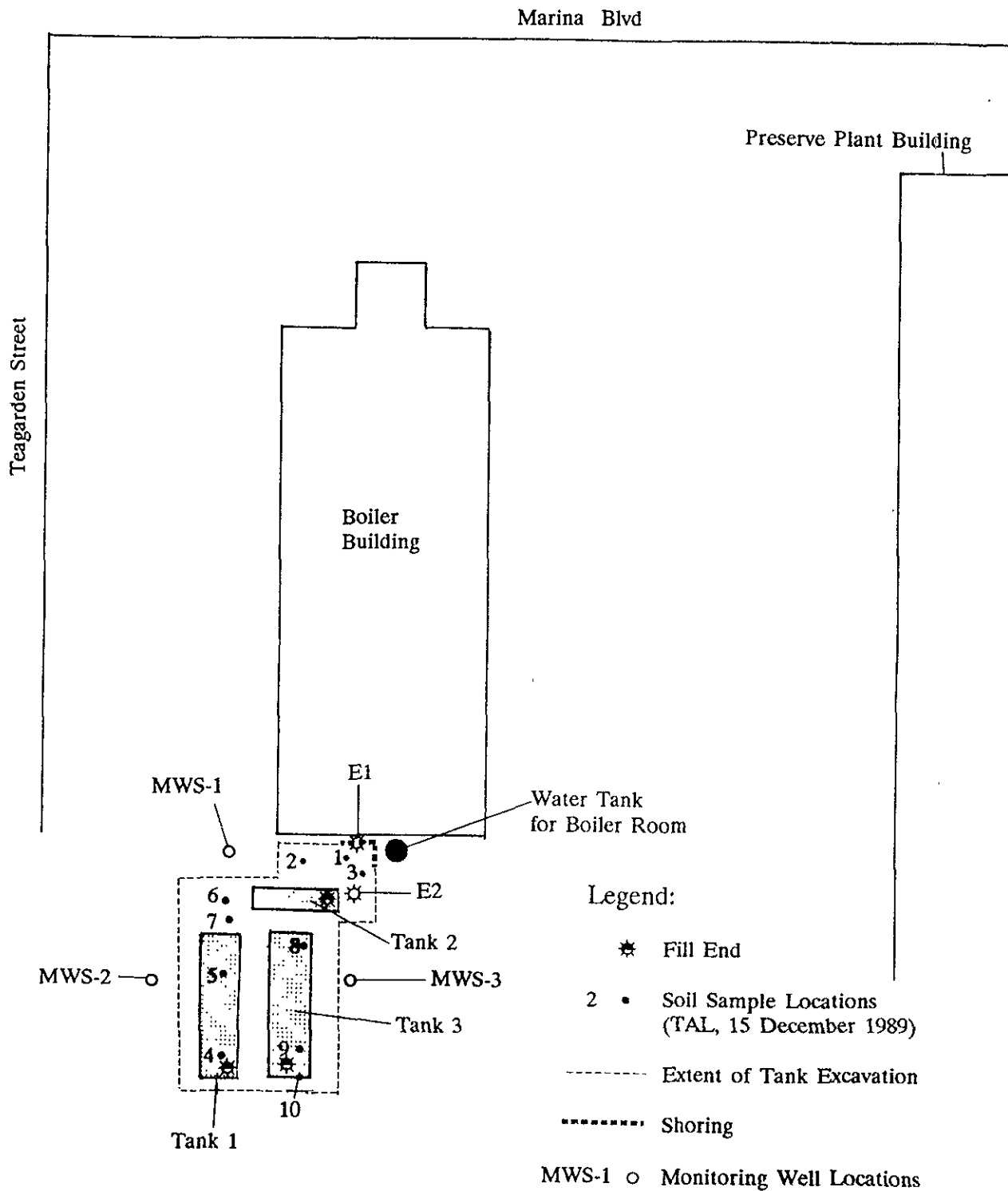


1111 Marina Blvd.
San Leandro, California



SAMPLING LOCATIONS

Figure 2



1111 Marina Blvd.
San Leandro, California

Note: Analytical Results for Soil Samples are Shown in Table 1



BASELINE

Safeway Preserves Plant
1111 Marina Boulevard
San Leandro, California



Building

#2 (13'6")	#1 (6')	Vent
	#3 (12'6")	
	Fill	
Tank #1		

#6 (16'9")	Vent End
#7 (16'5")	



Marina Blvd.

#8 (12'0")

#5 (12'0")
Tank #2

Tank #3

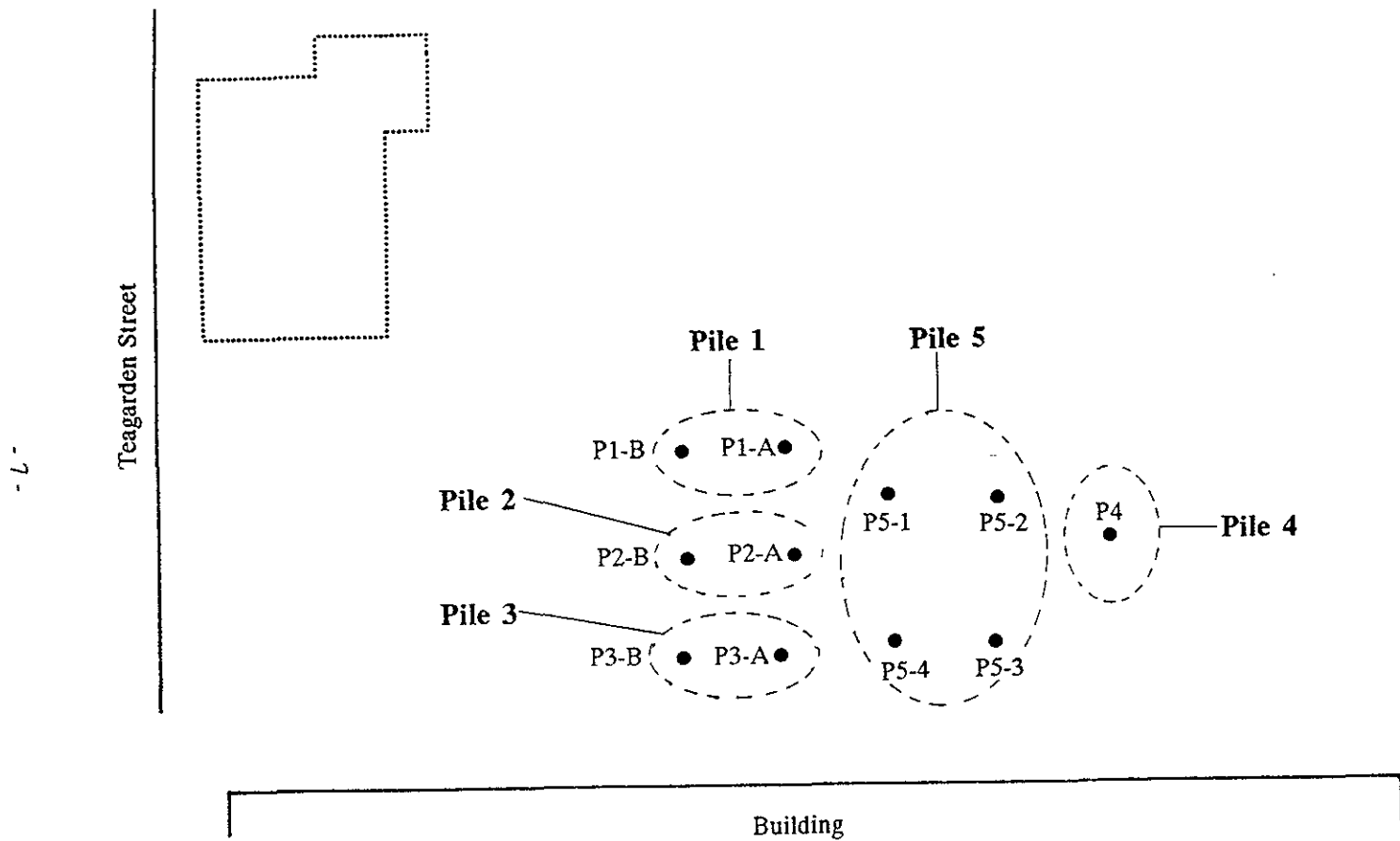
Alvarado St.

Concrete
Parking Lot

#4 (13'6")	Fill End	#9 (16'0")
		#10 (16'0")

SPOILS PILE LOCATIONS

Figure 3



Legend:

- P1-B ● Soil Sample Locations
- Extent of Tank Excavation
- Spoils Pile



Not to Scale

TABLE 1

ANALYTICAL RESULTS, SOIL AND WATER SAMPLING
1111 Marina Blvd, San Leandro, California
December 1989 and January 1990
(mg/kg)

Sample I.D.	Date Sampled	Matrix	Depth (feet)	Diesel ¹	Benzene ²	Toluene ²	Total Xylenes ²	Ethylbenzene ²
No. 1 ³	12/15/89	Soil	6	ND	ND	ND	ND	ND
No. 2 ³	12/15/89	Soil	13.5	ND	ND	ND	ND	ND
No. 3 ³	12/15/89	Soil	12.5	5,300	ND	ND	ND	ND
No. 4 ³	12/15/89	Soil	13.5	4.6	ND	ND	ND	ND
No. 5 ³	12/15/89	Soil	12	ND	ND	ND	ND	ND
No. 6 ³	12/15/89	Soil	16.4	5.0	ND	ND	ND	ND
No. 7 ³	12/15/89	Soil	16.4	--	--	--	--	--
No. 8 ³	12/15/89	Soil	12	ND	ND	ND	ND	ND
No. 9 ³	12/15/89	Soil	16	4.4	ND	ND	ND	ND
No. 10 ³	12/15/89	Water	16	49	ND	ND	0.49	ND
E1 ⁴	01/30/90	Soil	12.5	4,900	0.0095	ND	0.880	ND
E2 ⁴	01/30/90	Soil	14.0	5,600	ND	0.0090	0.360	ND

¹ Test method = DHS Method (samples collected by TAL), EPA 8015M (samples collected by BASELINE).

² Test method = EPA 8020.

³ Samples collected by Trace Analytical Laboratories (TAL).

⁴ Samples collected by BASELINE.

Notes: ND = Not detected above detection limit.

-- = Not analyzed.

Sample locations are shown on Figure 2.

TABLE 2

SPOILS PILE MANAGEMENT
1111 Marina Boulevard
San Leandro, California

Volume (c.y.)	Hydrocarbon Concentrations	Disposal/Treatment
44	Less than detection	Used on-site for grading Disposed off-site at Redwood Sanitary Landfill
60	Less than 100 mg/kg	
120	Greater than 1,000 mg/kg	On-site bioremediation ¹

¹ A proposal for bioremediation of these soils was submitted to Alameda County in a letter dated 4 May 1990. Verbal approval was received on 12 June 1990, and bioremediation is currently occurring.

TABLE 2

ANALYTICAL RESULTS, SPOILS PILE SOIL SAMPLES
1111 Marina Blvd, San Leandro, California
(mg/kg)

Sample I.D.	Diesel ¹	Benzene ²	Toluene ²	Total Xylenes ²	Ethylbenzene ²
P1-A	ND	ND	ND	ND	ND
P1-B	42	ND	ND	ND	ND
P2-A	2,000	ND	ND	ND	ND
P2-B	2,700	ND	ND	0.240	ND
P3-A	ND	ND	ND	ND	ND
P3-B	ND	ND	ND	ND	ND
P4	50	ND	ND	ND	ND
P5-1	3,000	ND	0.0090	0.110	ND
P5-2	1,400	ND	0.0090	0.0060	0.016
P5-3	3,200	ND	0.0090	0.041	0.120
P5-4	140	ND	0.0090	ND	ND

¹ EPA = 8015M.

² EPA = 8020.

Notes: ND = Not detected above detection limits.
 Sampling locations are shown in Figure 2.
 Samples collected by BASELINE.
 Laboratory reports are included in Appendix C.

Pile 1 = 40 cubic yards.
 Pile 2 = 40 cubic yards.
 Pile 3 = 44 cubic yards.
 Pile 4 = 20 cubic yards.
 Pile 5 = 80 cubic yards.

TABLE 3

SUMMARY OF ANALYTICAL RESULTS, GROUNDWATER
 1111 Marina Boulevard
 San Leandro, California
 MAY 1990
 (in mg/kg unless otherwise noted)

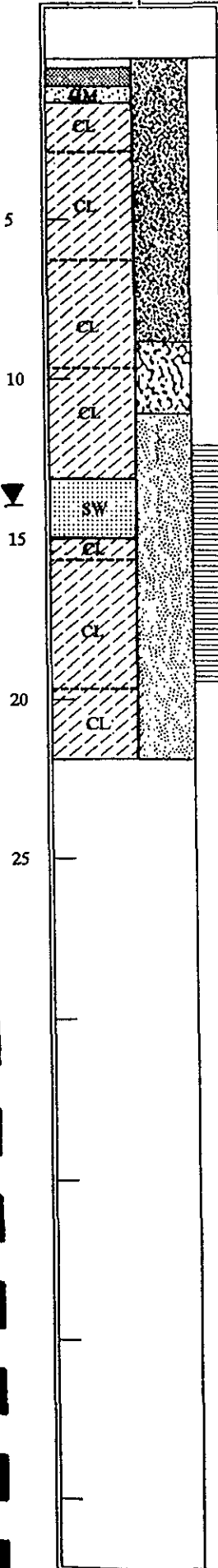
Sample Location/Date	Material	Depth (feet)	Diesel	Benzene	Ethylbenzene	Toluene	Xylenes
<u>MW-S1</u>							
05/17/90	Soil	6.0-6.5	ND	ND	ND	ND	ND
05/17/90	Soil	11.0-11.5	ND	ND	ND	ND	ND
05/17/90	Soil	15.5-16.0	490	0.031	0.650	0.210	0.730
05/17/90	Water (mg/L)	NA	0.9	0.0034	ND	ND	0.0018
<u>MW-S2</u>							
05/17/90	Soil	6.0-6.5	ND	ND	ND	ND	ND
05/17/90	Soil	11.0-11.5	ND	ND	ND	ND	ND
05/17/90	Soil	15.0-15.5	130	ND	ND	ND	ND
05/22/90	Water (mg/L)	NA	ND	ND	ND	ND	ND
<u>MW-S3</u>							
05/17/90	Soil	6.0-6.5	ND	ND	ND	ND	ND
05/17/90	Soil	11.0-11.5	ND	ND	ND	ND	ND
05/17/90	Soil	13.5-14.0	130	ND	ND	ND	ND
05/22/90	Water (mg/L)	NA	ND	ND	ND	ND	ND

Notes: NA = Not applicable.
 ND = Not detected above detection limit.
 Laboratory reports are included in Appendices C and D.
 Sampling locations are shown on Figure 2.

WELL CONSTRUCTION SUMMARY

Project Safeway Stores, Inc.
 Personnel WKS
 Location 1111 Marina Blvd., San Leandro, CA

Well MW-S1
 Project No. S9-178
 Elevation: Ground Level _____
 Top of Casing _____



DRILLING SUMMARY

Total Depth (feet): 22
 Borehole Diameter (inches): 8

Driller: Aqua Science Engineers,
San Ramon
 Rig: Mobile B-53
 Bits: _____

Drilling Fluid: none
 Surface Casing: Christy box

WELL DESIGN

Basis: Geologic Log X
 Geophysical Log _____

Casing String(s): C=Casing, S=Screen

<u>0.5'</u>	<u>-</u>	<u>13'</u>	<u>C</u>	<u>13'</u>	<u>-</u>	<u>19.47'</u>	<u>S</u>
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____

Casing: C1 2-inch PVC Sch 40
 C2 _____
 Screen: S1 2-inch PVC Sch 40; 10-slot
 S2 _____
 Centralizers: none

Filter Material: Lonestar sand #2/12
11-22 ft

Cement: Neat 0-9 ft

Bentonite: 9-11 ft

COMMENTS

Three sand bags used

CONSTRUCTION TIME LOG

TASK	Start		Finish	
	Date	Time	Date	Time
Drilling:	<u>5/16/90</u>	<u>07:30</u>	<u>5/16/90</u>	<u>08:49</u>
Geophys Logging:				
Casing:	<u>5/16/90</u>	<u>09:13</u>	<u>5/16/90</u>	<u>09:16</u>
Filter Placement:	<u>5/16/90</u>	<u>09:16</u>	<u>5/16/90</u>	<u>09:45</u>
Cementing:	<u>5/16/90</u>	<u>16:35</u>	<u>5/16/90</u>	<u>16:50</u>
Development:	<u>5/21/90</u>	<u>11:00</u>	<u>5/21/90</u>	<u>11:55</u>
Other:				

WELL DEVELOPMENT

Time	Gallons	pH	EC	T°	Appearance
<u>11:12</u>	<u>10</u>	<u>6.56</u>	<u>650</u>	<u>28*</u>	<u>Very turbid</u>
<u>11:32</u>	<u>15</u>	<u>6.21</u>	<u>650</u>	<u>31*</u>	<u>Slightly turbid</u>
<u>11:44</u>	<u>17</u>	<u>6.18</u>	<u>600</u>	<u>31*</u>	<u>Very sl. turbid</u>
<u>11:55</u>	<u>22</u>	<u>6.29</u>	<u>600</u>	<u>24</u>	<u>Clear</u>

Comments: * Water temperature warmed by development pump.

WATER LEVELS

Water level during drilling 14.75 feet

Date	Time	Depth (feet)
<u>5/21/90</u>	<u>11:00</u>	<u>16.01</u>
<u>5/22/90</u>	<u>9:00</u>	<u>15.92</u>

BASELINE Environmental Consulting
 5900 Hollis Street, Suite D
 Emeryville, California 94608
 (415) 420-8686

Signature: Yuse Indurao

DRILLING LOG

BASELINE
 5900 Hollis Street, Suite D
 Emeryville, CA 94607
 (415) 420-8686

Location Safeway, 1111 Marina Blvd.
 Driller Aqua Science Engineers
 Method Hollow-stem cont. flight
 Logger WKS Datum _____ Bore Size 8-inch

Boring No. MW-S1
 Project No. S9-178
 Date 5/16/90
 Casing size 2-inch

Depth	Graphic	Lithology	Notes
0		Asphalt top.	
1		Reddish brown, clayey sandy GRAVEL, moist (Fill).	
2		Very dark gray/black, gravelly CLAY, moist.	
3		Very dark gray/black, silty CLAY, minor gravel, moist.	
4			
5			5-6-7
6			
7		Yellowish brown, sandy, silty CLAY, moist.	
8			3-3-5-6
9			
10		Dark brown, slightly mottled, sandy, silty CLAY, moist.	

Scale: 1 inch = 1.5 feet

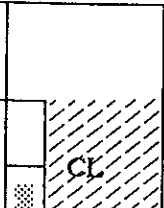

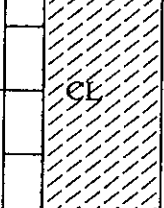
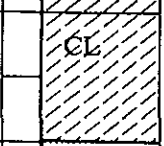
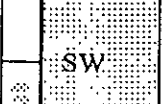
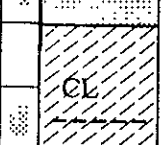
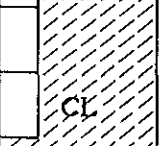
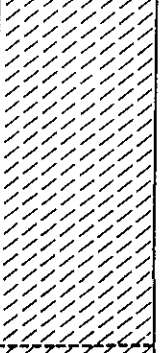
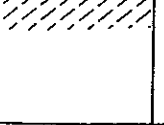
6/8/90

Signature _____

DRILLING LOG

BASELINE
 5900 Hollis Street, Suite D
 Emeryville, CA 94607
 (415) 420-8686

Location <u>Safeway, 1111 Marina Blvd.</u>	Boring No. <u>MW-S1</u>
Driller <u>Aqua Science Engineers</u>	Project No. <u>S9-178</u>
Method <u>Hollow-stem cont. flight</u>	Date <u>5/16/90</u>
Logger <u>WKS</u> Datum _____ Bore Size <u>8-inch</u>	Casing size <u>2-inch</u>

Depth	Graphic	Lithology	Notes
10			3-4-6
11			
12		Brown, silty, sandy CLAY, moist.	4-6-8-15
13		Yellowish brown, sandy CLAY, minor gravel, moist.	4-10-12 Blue-gray stained soil; diesel odor.
14		Brown, mottled, gravelly SAND, moist.	
15		Blue-gray, silty CLAY, wet.	2-3-5-6 Petroleum odor.
16		Brown, silty CLAY, wet.	
17			
18			
19			
20			

Scale: 1 inch = 1.5 feet

6/8/90

Signature _____

DRILLING LOG

BASELINE
 5900 Hollis Street, Suite D
 Emeryville, CA 94607
 (415) 420-8686

Location Safeway, 1111 Marina Blvd.
 Driller Aqua Science Engineers
 Method Hollow-stem cont. flight
 Logger WKS Datum _____ Bore Size 8-inch

Boring No. MW-S1
 Project No. S9-178
 Date 5/16/90
 Casing size 2-inch

Depth	Graphic	Lithology	Notes
20		Dark gray, gravelly CLAY.	4-4-4-6 Increase in angular clast.
21		Total depth = 22.0 feet	
22			
23			
24			
25			
26			
27			
28			
29			
30			

Scale: 1 inch = 1.5 feet

6/8/90

Signature _____

WELL CONSTRUCTION SUMMARY

Project Safeway Stores, Inc.
 Personnel WKS
 Location 1111 Marina Blvd., San Leandro, CA

Well MW-S2
 Project No. S9-178
 Elevation: Ground Level _____
 Top of Casing _____

DRILLING SUMMARY

Total Depth (feet): 20
 Borehole Diameter (inches): 8

Driller: Aqua Science Engineers,
 San Ramon
 Rig: Mobile B-53
 Bits: Hollow-stem cont. flight

Drilling Fluid: none
 Surface Casing: Christy box

WELL DESIGN

Basis: Geologic Log X
 Geophysical Log _____

Casing String(s): C=Casing, S=Screen
0.5' - 13' C
13' - 19.42' S

Casing: C1 2-inch PVC Sch 40
 C2 _____
 Screen: S1 2-inch PVC Sch 40; 10 slot
 S2 _____
 Centralizers: none

Filter Material: Lonestar sand #2/12
11-20 ft

Cement: Neat 0-9 ft

Bentonite: 9-11 ft

COMMENTS

Three sand bags used

CONSTRUCTION TIME LOG

TASK	Start		Finish	
	Date	Time	Date	Time
Drilling:	5/16/90	09:54	5/16/90	10:45
Geophys Logging:				
Casing:	5/16/90	10:55	5/16/90	10:58
Filter Placement:	5/16/90	11:01	5/16/90	11:33
Cementing:	5/16/90	15:53	5/16/90	16:20
Development:	5/21/90	09:45	5/21/90	12:40
Other:				

WELL DEVELOPMENT

Time	Gallons	pH	EC	T°	Appearance
09:48	5	6.73	1,400	29*	Very turbid
12:06	10	6.62	1,200	30*	Slightly turbid
12:40	12	6.15	1,000	27	Sl. turbid to clear

Comments: * Water temperature warmed by development pump.

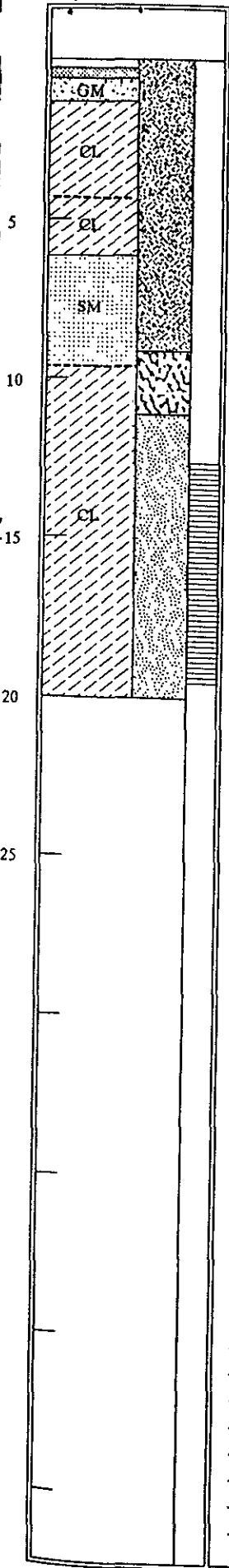
WATER LEVELS

Water level during drilling 15.0 feet ✓

Date	Time	Depth (feet)
5/21/90	09:29	15.35
5/22/90	08:58	15.66

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DRILLING LOG

BASELINE
 5900 Hollis Street, Suite D
 Emeryville, CA 94607
 (415) 420-8686

Location Safeway, 1111 Marina Blvd.
 Driller Aqua Science Engineers
 Method Hollow-stem cont. flight
 Logger WKS Datum _____ Bore Size 8-inch

Boring No. MW-S2
 Project No. S9-178
 Date 5/16/90
 Casing size 2-inch

Depth	Graphic	Lithology	Notes
0		Asphalt top.	
1		Reddish brown, clayey sandy GRAVEL, damp (Fill).	
2		Very dark gray/black, silty CLAY, some gravel, damp.	
3			
4			Becoming dark brown at depth.
5		Dark yellowish brown, silty CLAY, moist.	6-4-7
6			
7		Dark yellowish brown, silty SAND, very fine-grained, some gravel, damp to moist.	
8			
9			
10		Brown, sandy silty CLAY, damp to moist.	

Scale: 1 inch = 1.5 feet

6/8/90

Signature _____

DRILLING LOG

BASELINE
 5900 Hollis Street, Suite D
 Emeryville, CA 94607
 (415) 420-8686

Location Safeway, 1111 Marina Blvd.
 Driller Aqua Science Engineers
 Method Hollow-stem cont. flight
 Logger WKS Datum _____ Bore Size 8-inch

Boring No. MW-S2
 Project No. S9-178
 Date 5/16/90
 Casing size 2-inch

Depth	Graphic	Lithology	Notes
10			4-5-7
11			Becoming less sandy, minor GRAVEL.
12			
13			
14			Water in veinlets. 3-4-5-7 Mottled, brown/dark brown, slight diesel odor.
15			
16			
17			
18			6-9-15-20 Stiff clay between 18 and 19.5 feet.
19			
20		Total depth = 20.0 feet	Increase in gravel, angular fragments.

Scale: 1 inch = 1.5 feet

6/8/90

Signature _____

WELL CONSTRUCTION SUMMARY

Project Safeway Stores, Inc.
 Personnel WKS
 Location 1111 Marina Blvd., San Leandro, CA

Well MW-S3
 Project No. S9-178
 Elevation: Ground Level _____
 Top of Casing _____

DRILLING SUMMARY

Total Depth (feet): 20.5
 Borehole Diameter (inches): 8

Driller: Aqua Science Engineers,
San Ramon

Rig: Mobile B-53

Bits: Hollow-stem cont. flight

Drilling Fluid: none

Surface Casing: Christy box

WELL DESIGN

Basis: Geologic Log X

Geophysical Log _____

Casing String(s): C=Casing, S=Screen

0.5' - 10.5' C _____

10.5' - 19.47' S _____

Casing: C1 2-inch PVC Sch 40

C2 _____

Screen: S1 2-inch PVC Sch 40; 10 slot

S2 _____

Centralizers: _____

Filter Material: Lonestar sand #2/12

8.5-20.5 ft

Cement: Neat 0-7.5 ft

Bentonite: 7.5-8.5 ft

COMMENTS

Four sand bags used

CONSTRUCTION TIME LOG

TASK	Start		Finish	
	Date	Time	Date	Time
Drilling:	5/16/90	12:46	5/16/90	14:00
Geophys Logging:				
Casing:	5/16/90	14:16	5/16/90	14:18
Filter Placement:	5/16/90	14:18	5/16/90	14:39
Cementing:	5/16/90	15:20	5/16/90	15:45
Development:	5/21/90	13:00	5/21/90	14:05
Other:				

WELL DEVELOPMENT

Time	Gallons	pH	EC	T°	Appearance
13:02	5	6.38	1,100	31*	Very turbid
13:35	8	6.36	900	31*	Turbid
13:49	15	6.36	800	28*	Slightly turbid
14:05	17	6.35	800	27*	Very sl. turbid
14:11	20	6.39	600	21	Very sl. turbid

Comments: * Water temperature warmed by development pump.

WATER LEVELS

Water level during drilling 13.0 feet

Date	Time	Depth (feet)
5/21/90	12:48	15.58
5/22/90	09:03	15.06

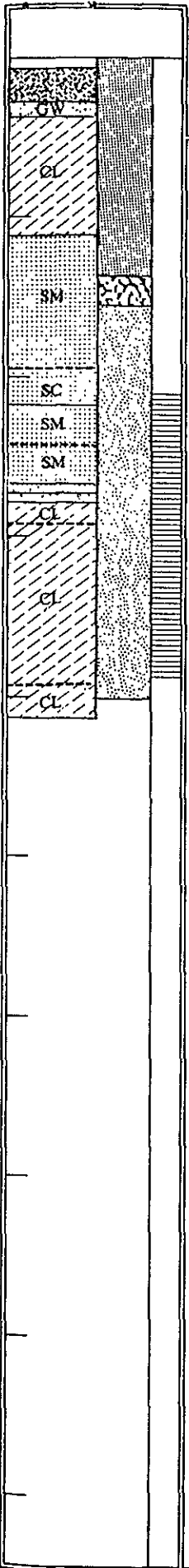
BASELINE Environmental Consulting

5900 Hollis Street, Suite D
 Emeryville, California 94608

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Signature: _____

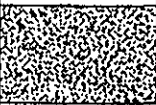

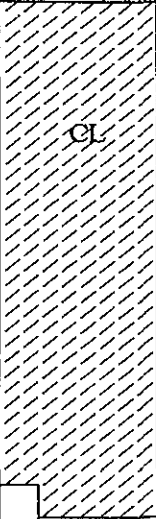

Yane D. Alvarez



DRILLING LOG

BASELINE
 5900 Hollis Street, Suite D
 Emeryville, CA 94607
 (415) 420-8686

Location <u>Safeway, 1111 Marina Blvd.</u>	Boring No. <u>MW-S3</u>
Driller <u>Aqua Science Engineers</u>	Project No. <u>S9-178</u>
Method <u>Hollow-stem cont. flight</u>	Date <u>5/16/90</u>
Logger <u>WKS</u> Datum _____ Bore Size <u>8-inch</u>	Casing size <u>2-inch</u>

Depth	Graphic	Lithology	Notes
0		Concrete slab.	
1		Reddish brown, clayey sandy GRAVEL (Fill).	
2			
3			
4			
5			4-5-7
6		Yellowish brown, silty SAND, very fine-grained, moist.	
7			
8			
9			
10			

Scale: 1 inch = 1.5 feet

6/8/90

Signature _____

DRILLING LOG

BASELINE
 5900 Hollis Street, Suite D
 Emeryville, CA 94607
 (415) 420-8686

Location <u>Safeway, 1111 Marina Blvd.</u>	Boring No. <u>MW-S3</u>
Driller <u>Aqua Science Engineers</u>	Project No. <u>S9-178</u>
Method <u>Hollow-stem cont. flight</u>	Date <u>5/16/90</u>
Logger <u>WKS</u> Datum _____ Bore Size <u>8-inch</u>	Casing size <u>2-inch</u>

Depth	Graphic	Lithology	Notes
10		Brown, gravelly clayey SAND, fine-grained, moist.	3-4-6
11			
12		Mottled, yellowish brown/red oxide stains, clayey silty SAND, very-fine grained, moist.	4-5-9
13			
14		Blue-gray, sandy GRAVEL, wet. Yellowish brown, sandy GRAVEL, wet.	Diesel odor between 13.5 and 14.0 feet.
14			
15		Olive gray, silty CLAY, red oxide-stained veinlets, moist.	3-6-9
16			
17		Mottled, brown, silty CLAY, some gravel, red oxide-stained veinlets, moist.	4
18			
19		Light brown, gravelly sandy CLAY, moist to wet. Total depth = 20.5 feet	4
20			

Scale: 1 inch = 1.5 feet

6/8/90

Signature _____