REPORT OF ACTIVITIES
QUARTER 1, 1990

SHELL OIL COMPANY FACILITY
2724 CASTRO VALLEY ROAD
CASTRO VALLEY, CALIFORNIA

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SECTION 1

INTRODUCTION

1.1 BACKGROUND AND OBJECTIVES

This report presents the results of investigative activities conducted by Converse Environmental West (CEW) during Quarter 1, 1990 (Q1/90) for the former Shell Oil Company (Shell) station (site) at 2724 Castro Valley Blvd, Castro Valley, California (Drawing 1). This report is prepared to fulfill the quarterly reporting requirements as specified in the Work Plan prepared by CEW and dated January 16, 1990 for achievement of environmental closure of the facility. The Work Plan is on file with the regulatory agencies of jurisdiction.

This former retail gasoline station is located on the northeast corner of Castro Valley Blvd and Lake Chabot Road in Castro Valley, California. The site is approximately 160 feet long by 100 feet wide (Drawing 2). Commercial businesses exist on all corners of the intersection. Surrounding neighborhood development is commercial along both roads. Single family dwellings are located on side streets nearby. The site was an active service station before 1989, but is now temporarily closed due to ongoing renovation work, tank replacement, major building construction and environmental remediation.

Topographically, the site is located on the western edge of a gentle valley (Castro Valley) on recent alluvial fill. The terrain rises northward into the San Leandro Hills and the site is approximately 50 feet above the valley floor. An isolated hillside knob with 60 to 100 feet of relief exists 600 feet south of the site. An intermittent stream is shown 300 feet west on the Hayward, Calif USGS topographic map. This stream enters San Lorenzo Creek approximately one mile south of the site.

During the past four years Shell and its environmental consultants Blaine Technical Services, Woodward-Clyde Consultants, Crosby and Overton, and Converse Environmental West (CEW) have investigated the extent of soil contamination associated with underground storage tanks and product lines at the former Shell gasoline station at the subject address. First environmental activities were initiated in November, 1986, when Shell replaced the waste oil tank and discovered minor soil contamination in tank backfill.

In March, 1989, Shell removed the underground gasoline storage tanks and discovered subjacent soil contamination. The contaminated soil was removed in three successive stages.

During June and July, 1989, soil around the former storage tanks was excavated to a depth of 12 feet, the approximate depth of the water table. The enlarged excavation extended from the existing building on the north, to the sidewalk of Castro Valley Boulevard on the South (Drawing 2). The spoils from the excavation were removed from the site, and taken to a Class I landfill at Buttonwillow, California, by Crosby and Overton, a licensed waste hauler. Verification samples taken in the sidewalls showed that the exposed soils were clean, except at the northeast corner, where further excavation was impractical due to obstruction from buildings and underground utilities. Mr. Larry Seto of ACHCSA was notified of the sample results in letters dated July 11 and July 27, 1989, and the excavation was backfilled soon thereafter (Drawings 3, 4 and 5).

A second excavation currently exists, immediately to the west, under the former pump islands. In late August, 1989, exploratory test pits were excavated under the drive pad area, to determine the extent of suspected near-surface contamination. Local areas of contaminated soil were discovered between the pump islands. In early October 1989, the test pits were expanded into an excavation (Drawing 2) and contaminated soil was removed. Soil samples were taken from the sidewalls and bottom of the excavation, and the excavation was expanded slightly where residual actionable soil contamination was present (Drawings 3, 4, and 5).

Final verification samples taken in January 1990 showed that the exposed soils were clean. Three samples taken in the deepest portion of the excavation (#16, SW-22, SW-23) showed some contamination. These samples were all taken in the capillary or saturated zone (see CEW report dated January 16, 1990).

A letter has been sent to ACHCSA describing these sampling results, and requesting permission to backfill the excavation and fully restore the site.

1.2 SCOPE OF ACTIVITIES

The investigative activities conducted during Q1/90 were authorized under an existing purchase order and blanket number from Shell for environmental services at the site. The work completed during Q1/90 consisted of the following activities:

- Drilling and abandoning one dry boring (SB-1) to approximately 25 feet below ground surface (bgs) (Drawing 2),
- Drilling and installing four groundwater monitoring wells MW-1, MW-2, MW-3, and MW-5 to depths of approximately 25 feet bgs (Drawing 2),
- Sampling the soil from each boring and monitoring well at 5-foot centers and analyzing the soil for petroleum hydrocarbons as gasoline (TPH-g), as diesel (TPH-d) and benzene, toluene, ethylbenzene and xylenes (BTEX) and lead (Pb),
- Sampling each monitoring well and analyzing the water for petroleum hydrocarbons and BTEX,
- Sampling MW-2, near the former waste oil tank, for waste oil constituents in soil and groundwater,
- Surveying each monitoring wellhead to mean sea level (MSL), to allow for measurement of groundwater elevation and gradient, and
- Evaluating the findings from the field activities and preparing this report.

SECTION 2

WORK COMPLETED THIS QUARTER

Work initiated and completed during Q4/89 followed the task descriptions of the Work Plan dated January 16, 1990 and the CEW protocols on file with the regulatory agencies of jurisdiction. No modifications were made to the Work Plan as proposed.

2.1 PROGRAM I ACTIVITIES: VERIFICATION OF SOIL REMEDIATION

Program I was completed during Q1/90. Soil samples were taken in the existing excavation. During the Q1/90 monitoring period five samples were taken at depths of 4 to 5 feet (Soil I Horizon) and 13 samples were taken at depths of 6 to 9 feet (Soil II Horizon) (Table 4). Before sampling, the existing exposed excavation surface was removed to a depth of approximately 6 inches. The soil samples were properly stored, transported to a state-certified analytical laboratory and analyzed for TPH-g, TPH-d and BTEX. Laboratory reports and chain-of-custody forms are included in Appendix C.

Because the samples collected in Program I lacked concentrations of total TPH greater than 100 ppm, additional lateral and vertical excavation was not carried out. A letter requesting permission to proceed with site restoration was sent to the ACHCSA on March 12, 1990.

2.2 PROGRAM II ACTIVITIES: SITE RESTORATION

Site restoration has not begun.

2.3 PROGRAM III ACTIVITIES: GROUNDWATER INVESTIGATIONS

2.3.1 Soil Sampling and Analyses

Five soil borings (MW-1 through MW-3 and MW-5; SB-1) were drilled during Q1/90 (from 1/19/90 to 1/23/90) by All Terrain Exploration Drilling, Pleasant Grove, California, following CEW protocols. Boring MW-1 was continuously logged and sampled; the remainder of the borings were logged and sampled at 5-foot centers. A summary of soil boring information is listed in Table 2. Boring logs are provided in Appendix B.

Soil cuttings were added to onsite excavation soils stockpiles near the center of the facility (Drawing 2) and covered with the plastic. Final disposition of the soil will be at a permitted Class II or III landfill following CEW protocols. Disposal activities will occur in Q2/90.

Soil samples were collected from the borings 1/18/90 through 1/22/90 and submitted to NET Pacific, Inc., a California-certified laboratory in Santa Rosa, California, according to CEW chain-of-custody protocols. Following the recommended analytical methods listed in Table 3, the soil samples from MW-1, MW-3, SB-1 and MW-5 were analyzed for lead; TPH-g, and TPH-d; and BTEX. Soil samples from MW-2 were analyzed for waste oil constituents (Table 5).

Analytical data for the soil samples collected from the borings are summarized in Table 5. Laboratory reports and chain-of-custody forms are included in Appendix D.

SB-1 was intended to be a well, and was terminated at 25-feet bgs, substantially below the site-wide water table. Upon completion of soil sampling, SB-1 was abandoned (i.e., backfilled with bentonite grout) according to CEW protocols because this boring failed to yield water during an observation period of several hours.

2.3.2 Monitoring Well Installation

Four of the five soil borings drilled at the site during Q1/90 (MW-1 through MW-3 and MW-5) were completed as groundwater monitoring wells according to CEW protocols (Drawing 2). Well installation information is summarized in Table 6. Well completion diagrams are included on the boring logs in Appendix C.

Monitoring well permits were issued on 1/10/90 by the Zone 7 of the Alameda County Flood Control and Water Conservation District (ACFCWCD) for these wells (permit number 90015. ACFCWCD personnel verbally approved the construction of the grout seals in monitoring wells MW-1 through MW-5 on January 18, 1990.

Monitoring wells MW-1, MW-2, MW-3 and MW-5 were developed and purged on February 8 and 9 1990, following CEW protocols. Field parameter (e.g., pH, conductivity) data were recorded during the development of the wells (see Table 9 and Appendix E).

Development and purge waters were placed in tightly-covered properly labeled 55-gallon dot drums and stored west of the main station building (Drawing 2). Final disposition of the water will be at a permitted recycling facility. Disposal will occur prior to the end of Q2/90, following CEW protocols on file in the site Revised Work Plan.

2.3.3 Groundwater Sampling and Analyses

Groundwater samples were collected on February 1 through 9, 1990 from monitoring wells MW-1 through MW-3, MW-5 following CEW protocols. These samples were submitted to NET Pacific, Inc., a California-certified laboratory in Santa Rosa, California, under proper chain-of-custody. The samples were analyzed for TPH-g, TPH-d, and BTEX following the recommended analytical methods listed in Table 3. Analytical data for the water samples collected from the monitoring wells are summarized in Table 7. Laboratory reports and chain-of-custody forms are provided in Appendix D.

2.3.4 Physical Monitoring Activities

During Q1/90, wells MW-1 through MW-3 and MW-5 were physically monitored once for depth to water table and measured for floating product, if present. A summary of these results is presented in Table 8.

SECTION 3

FINDINGS AND DISCUSSION

3.1 SOIL

The soil stratigraphy revealed in the excavations consists of three major layers on bedrock: (1) dark brown topsoil and fill, to a depth of approximately 5 feet below ground surface (bgs), (2) light brown firm silty clay subsoil, to a depth of approximately 11 feet (bgs), and (3) damp to wet gravelly sand below 11 feet (bgs) (CEW report, January 16, 1990). The exploratory borings encountered weathered shale bedrock at about 12 to 14 feet.

3.1.1 Pedology

Drilling in 1990 confirmed the initial soil stratigraphy defined in excavating. Drilling results are described below.

Clay, topsoil, loam, and minor sand gravel constitutes the upper 4 to 5 feet of the soil sequence. This interval has been informally named "Soil Horizon I" in prior reports of soil stratigraphy established during excavations (CEW, January 16, 1990). Odor from the Soil Horizon I zone was observed during excavation and sampling around the former pump islands. This zone exhibited no odor, and one sample was collected, on the eastern side of the site.

Subjacent is a sequence of dense, light brown clay with minor intercalated lenses of clayey sand (inferred <6" thick, discontinuous), which extends to approximately 9 to 11 feet bgs; this interval is "Soil Horizon II" of prior reports. None of the clay samples exhibited odor during field screening. No contamination has been observed in samples of this clay.

Below Soil Horizon II are discontinuous, thin (< 3 feet thick) lenses of saturated, poorly-sorted sand, gravel silt and clay (paleoregolith and "C" Soils); this interval is "Soil Horizon III" of excavation stratigraphy. The sand is grayish green in color loosely consolidated, well graded (poorly sorted), with abundant angular and rounded shale pebbles of 3/4 inch diameter. Strong odors were observed locally in soil from excavated parts of this layer. However, at locations where the odor was the highest, the analytical results of soil sampling were low (< 18 ppm TPH).

Lastly, shale bedrock extends from the base of Soil Horizon II or Soil Horizon III to the maximum depth of exploration, 25 feet below grade (Drawing 6).

3.1.2 Results of Chemical Analyses

Soil samples from the monitoring well borings contained negligible concentrations of petroleum hydrocarbons, BTEX and lead (Table 5). Exceptions were: (1) MW-1 and MW-2, which contained slightly detectable concentrations of TPH-mo (< 100 ppm), at shallow depths, and (2) MW-2, which contained slightly anomalous concentrations of chromium (18 to 48 ppm), zinc (56 to 110 ppm) and certain phthalates (< 0.55 ppm) (Table 5).

3.1.3 Discussion

At present, minor residual contamination remains near the waste oil tank. Contaminated soil has been removed by excavation at the center of the site, to clean sidewalls (complete practical lateral extent) and to the capillary zone (winter, 1989 complete vertical extent). Residual contamination in Soil Horizon III probably is in groundwater or pore fluids in soil at or below the water table.

3.2 GROUNDWATER

3.2.1 Physical Parameters

Floating product was not present in the wells at the facility during Q1/90 monitoring activities.

Petroleum hydrocarbon odors were not noted in water from wells MW-1 through MW-3 and MW-5 during Q1/90 monitoring activities.

3.2.2 Elevation and Gradient

Reported Q1/90

The groundwater gradient is south to southwest across the site, at approximately 0.03 ft/ft to 0.01 ft/ft (Drawing 7).

3.2.3 Results of Chemical Analyses

Reported Q1/90

The results of quarterly monitoring indicated sub-detectable concentrations of TPH-g, TPH-d and BTEX in groundwater at MW-3 and MW-5, and only trace benzene and toluene in MW-1. MW-2 contained detectable concentrations of these constituents (Table 7, Drawings 8 and 9). Further monitoring of MW-2 is appropriate.

3.2.4 Physical Monitoring

The four wells were monitored once during the quarter for groundwater conditions, at the time of sampling. No free product sheen or petroleum odor were present in groundwater samples in February, 1990 (Table 9).

3.2.5 Discussion

Groundwater from MW-1 and MW-2 will be analyzed for waste-oil constituents (EPA Method 624) once, in Q2/90, to demonstrate that the minor soil contamination at the waste oil tank has had negligible impact on local water.

SECTION 4

NEXT QUARTER ACTIVITIES

4.1 PROPOSED ACTIVITIES

The following are planned as Q1/90 and Q2/90 investigative activities:

4.1.1 Program II - Site Restoration

Backfilling and Recompaction:

The excavation (Drawing 2) will be backfilled with imported soil, including a 2-foot thick base fill of relatively impermeable clay. The remainder of the excavation will be backfilled with non-expansive soil and compacted to a minimum relative density of 90 percent (using ASTM D-1557-70). The clay will laterally re-establish the Soil Horizon II clay zone, and separate shallower excavation fill from possibly contaminated groundwater in Soil Horizon III.

Site Reconstruction:

After the excavation is backfilled, the site will be suitable for renovation and construction of improvements by the owner.

4.1.2 Program III - Groundwater Investigations

Drill and Sample Soil Borings:

One or two soil borings will be drilled and sampled and abandoned per the procedures followed in drilling SB-1 (Drawing 10). Soil samples will be analyzed for EPA 8015 and EPA 8270 compounds.

Install and Develop Groundwater Monitoring Wells (offsite):

Because groundwater contamination may extend offsite, investigations will continue as needed. One offsite groundwater monitoring well may be installed on municipal or private property, within 150 feet of MW-2. This well will be installed, developed and sampled according to CEW protocols on file. The well will be constructed with a 4-inch diameter, PVC Schedule 40 casing with either .010 or .020 inch screen. Boring logs and well construction diagrams will be supplied in the appropriate quarterly report.

Collect and Analyze Groundwater Samples:

The well will be fully developed and sampled, and the initial groundwater sample from the well will be analyzed for EPA 624 compounds.

Survey Wellhead Elevations:

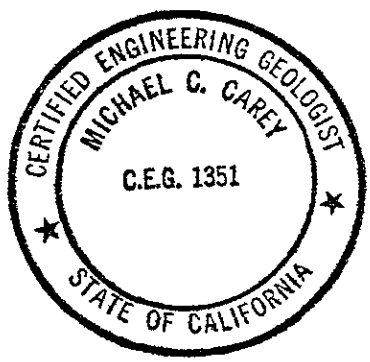
The site plan will be extended offsite by surveying, and wellhead elevations will be surveyed using an EDM. The depth to groundwater will be measured in each well to establish the onsite groundwater gradient.

CERTIFICATION

This report of activities for the Shell Oil Company facility at 2724 Castro Valley Road, Castro Valley, California has been prepared by the staff of **Converse Environmental West** under the professional supervision of the Engineer and/or Geologist whose seal(s) and signature(s) appear hereon.

The findings, recommendations, specifications or professional opinions are presented, within the limits prescribed by the Client, after being prepared in accordance with generally accepted professional engineering and geologic practice. We make no other warranty, either expressed or implied.

Respectfully submitted,



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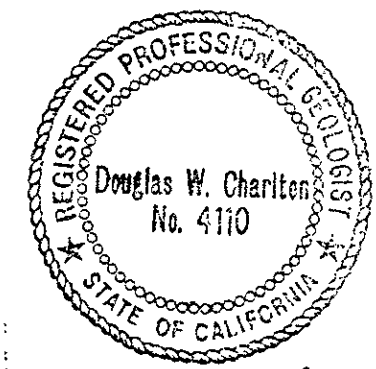

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2724 Castro Valley Road
Castro Valley, California

Quarter 1, 1990

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TABLES

TABLE 1. ACTIVITY SUMMARY - QUARTER 1, 1990

Shell Oil Company Facility
2724 Castro Valley Road
Castro Valley, California

Activity	PERCENT COMPLETE			
	Quarter 1, 1990		Total to Date	
	Onsite	Offsite	Onsite	Offsite
Soil Characterization	5	N/A	100	NA
Groundwater Characterization (Dissolved Product)	20	0	20	0
Groundwater Characterization (Floating Product)	NA	NA	NA	NA
Soil Remediation	0	NA	100*	N/A
Groundwater Remediation (Dissolved Product)	0	0	0	0
Groundwater Remediation (Floating Product)	NA	NA	NA	NA

NOTES:

* Presumes that excavation to 11 feet below ground surface will be accepted as the full vertical extent of the unsaturated zone

NA Not Applicable

TABLE 2. SOIL BORING INFORMATION

Shell Oil Company Facility
2724 Castro Valley Road
Castro Valley, California

Boring No.	Date Drilled	Total Depth (ft bgs)	Completion	Unsaturated Soil Samples (ft bgs)	Saturated Soil Samples (ft bgs)
MW-1	1/18/90	16	4" diameter well	5, 10	NC
MW-2	1/19/90	15	4" diameter well	5, 9, 15, 20, 25	NC
MW-3	1/19/90	25	4" diameter well	5, 10, 15	NC
MW-5	1/22/90	23	4" diameter well	5, 9, 15, 20, 25	NC
SB-1	1/18/90	15	Abandoned 01/18/90	5, 9	NC

NOTES:

ft bgs feet below ground surface
ppm part per million
NC none collected

TABLE 3. RECOMMENDED MIMIMUM VERIFICATION ANALYSES FOR UNDERGROUND TANK LEAKS

From: RWQCB Guidelines for Additional Fuel Tank Leaks (Revised May 18, 1989)

HYDROCARBON LEAK	SOIL ANALYSIS				WATER ANALYSIS			
	Prep	Analysis		D.L. (mg/kg)	Prep	Analysis		D.L. (ug/l)
Unknown Fuel	TPH-g	5030	GCFID	1.0	TPH-g	5030	GCFID	50.0
	TPH-d	3550	GCFID	1.0	TPH-d	3510	GCFID	50.0
	BTEX	5030	8020/8240	0.005	BTEX	5030	602/624	0.50
Leaded Gas	TPH-g	5030	GCFID	1.0	TPH-g	5030	GCFID	50.0
	BTEX	5030	8020/8240	0.005	BTEX	5030	602/624	0.50
	TEL*	---	DHS-LUFT		TEL	---	DHS-LUFT	
	EDB*	---	DHS-AB1803		EDB	---	DHS-AB1803	
Unleaded Gas	TPH-g	5030	GCFID	1.0	TPH-g	5030	GCFID	50.0
	BTEX	5030	8020/8240	0.005	BTEX	5030	602/624	0.50
Diesel	TPH-d	3550	GCFID	1.0	TPH-d	3510	GCFID	50.0
	BTEX	5030	8020/8240	0.005	BTEX	5030	602/624	0.50
Waste Oil or Unknown	TPH-g	5030	GCFID	1.0	TPH-g	5030	GCFID	50.0
	TPH-d	3550	GCFID	1.0	TPH-d	3510	GCFID	50.0
	O&G	---	503D&E	50.0	O&G	---	503A&E	5000.0
	BTEX	5030	8020/8240	1.0	BTEX	5030	602/624	0.50
	CL HC	5030	8010/8240	1.0	CL HC	5030	601/624	0.50

ICAP or AA for soil or water to detect metals: Cadmium, Chromium, Lead, Zinc
Method 8270 for soil or water to detect: PCB, PCP, PNA, Creosote

NOTES:

*	Optional Analysis
RWQCB	Regional Water Quality Control Board
ug/l	microgram per liter
mg/kg	milligram per kilogram
D.L.	Detection Limit
TPH-g	Total Petroleum Hydrocarbons as Gasoline
TPH-d	Total Petroleum Hydrocarbons as Diesel
BTEX	Benzene, Toluene, Ethylbenzene and Xylenes
O & G	Oil and Grease
CL HC	Chlorinated Hydrocarbons
TEL	Tetra Ethyl Lead
EDB	Ethylene Dibromide

TABLE 4. SOIL REMEDIATION VERIFICATION

Shell Oil Company Facility
2724 Castro Valley Road
Castro Valley, California

Loc/Depth	Date Collected	TPH-g	Benzene	Ethyl-Benzene	Toluene	Xylenes
Sidewall Samples						
SW-1 @ 13'	6/12/89	810	2.700	5.000	15.00	31.00
SW-2 @ 13'		160	0.470	1.400	4.600	10.00
SW-3 @ 13'		400	1.300	2.600	6.800	17.00
SW-4 @ 15'		<10	<.025	<.075	<.025	<.075
SW-5 @ 13'		2300	29.00	32.00	160.0	200.0
SW-6 @ 11.5'		14	0.055	0.110	0.090	0.0460
SW-6A @ 4'		<10	0.029	<.075	0.120	<.075
SW-7 @ 5.5'		<10	0.061	0.190	0.140	<.075
SW-8 @ 12'	7/5/89	<10	<.025	<.075	<.025	<.075
SW-9 @ 12'		11	<.025	0.060	0.660	1.400
SW-10 @ 12'		18	1.000	0.570	2.900	1.700
SW-11 @ 12'		71	2.600	2.500	7.000	5.400
EX PIT (H20)	7/6/89	<0.05	<.0005	<.0015	<.0005	<.0015
Test Pit Samples						
SS-1 @ 4'	8/30/89	<10	<.025	<.075	<.025	<.075
SS-2 @ 4.5'		130	0.330	2.900	1.300	14.00
SS-3 @ 5'		<10	0.180	<.075	<.025	<.075
SS-3-2 @ 5'		<10	<.025	<.075	<.025	<0.025
SS-4 @ 4'		17	0.100	0.240	<.025	1.100
SS-5 @ 5'		630	0.028	0.810	0.240	7.600
SS-6 @ 5'		1300	0.061	3.300	<.025	8.100
SS-7 @ 5.5'		3300	3.600	51.00	4.200	140.0
Sidewall Samples						
1 @ 7'	10/2/89	<10	<.025	<.075	<.025	<.075
2 @ 7'		13	<.025	<.075	<.025	<.075
3 @ 8'		12	0.096	0.098	0.180	0.560
4 @ 3'	10/3/89	<10	<.025	<.075	<.025	<.075
S-1*		28	<.025	0.012	0.038	0.660
S-2*		14	<.025	<.075	<.025	0.190
S-3*		11	<.025	<.075	<.025	0.230
S-4*		81	<.025	0.200	<.025	0.510
S-5*		<10	<.025	<.075	<.025	<.075
S-6*	10/4/89	<10	<.025	<.075	<.025	<.075
S-7*		<10	<.025	<.075	<.025	<.075

NOTES:
All results in mg/Kg(ppm)
TPH-g measured at parts per million
BTEX measured at parts per billion
1 Verification samples adjacent to 29
2 Verification samples adjacent to 35
* Indicates sample collected in surface stockpile for disposal analysis

TABLE 4 (cont'd). SOIL REMEDIATION VERIFICATION

Shell Oil Company Facility
2724 Castro Valley Road
Castro Valley, California

Loc/Depth	Date Collected	TPH-g	Benzene	Ethyl-Benzene	Toluene	Xylenes
5 @ 10.5'	10/4/89	41	0.082	2.100	5.000	12.00
6 @ 7'		<10	0.029	<.075	0.071	0.170
7 @ 3'		<10	<.025	<.075	<.025	<.075
8 @ 3'		<10	<.025	<.075	<.025	<.075
9 @ 6'		<10	<.025	<.075	<.025	<.075
10 @ 3'		<10	<.025	<.075	<.025	<.075
11 @ 7.5'		<10	<.025	<.075	<.025	<.075
12 @ 4'		<10	<.025	<.075	<.025	<.075
13 @ 8'		<10	<.025	0.280	<.025	0.240
14 @ 3'		<10	<.025	<.075	<.025	<.075
15 @ 3'	10/11/89	<10	<.025	<.075	<.025	<.075
16 @ 9'		240	0.150	1.800	1.500	11.00
17 @ 4'		<10	<.025	<.075	<.025	<.075
18 @ 4'		<10	<.025	<.075	<.025	<.075
19 @ 3'		470	<.025	1.000	<.025	10.00
SW-20 @ 6'	10/26/89	1.9	<.0025	<0.0025	0.0064	0.0078
SW-21 @ 7'		<1	<.0025	<0.0025	<.0025	<.0025
SW-22 @ 12'		200	0.5200	1.50005	1.8000	5.3000
SW-23 @ 12'		350	0.9500	3.1000	4.7000	13.000
SP 10:26*		1.8	4.500	20.00	40.00	120.00

NOTES:
All results in mg/Kg(ppm)
TPH-g measured at parts per million
BTEX measured at parts per billion
1 Verification samples adjacent to 29
2 Verification samples adjacent to 35
* Indicates sample collected in surface stockpile for disposal analysis

TABLE 5. RESULTS OF DOWNHOLE SOIL CHEMICALS ANALYSES

Shell Oil Company Facility
2724 Castro Valley Road
Castro Valley, California

Boring No.	Sample Depth (ft bgs)	Date Sampled	TPH-g (ppm)	TPH-d (ppm)	TPH-mo (ppm)	Benzene (ppb)	Toluene (ppb)	Ethyl-Benzene (ppb)	Xylenes (ppb)	Total Lead[1] (ppm)
MW-1	5'	1/18/90	<1.0	5.8	73	<2.5	<2.5	<2.5	<2.5	4.4
MW-1	10'	1/18/90	<1.0	4.4	39	<2.5	<2.5	<2.5	<2.5	4.3
MW-2[1]	5'	1/19/90	<1.0	14	90	<2.5	<2.5	<2.5	<2.5	4.6
MW-2[2]	9'	1/19/90	<1.0	<1.0	23	<2.5	<2.5	<2.5	<2.5	5.3
MW-2[3]	15'	1/19/90	<1.0	3.1	<10	3.2	2.9	<2.5	54	6.3
MW-2[4]	20'	1/19/90	<1.0	3.2	<10	8.4	21	<2.5	16	7.9
MW-2[5]	25'	1/19/90	<1.0	8.2	19	23	34	3.6	23	8.0
MW-3	5'	1/19/90	<1.0	<1.0	<10	<2.5	5.9	<2.5	<2.5	6.2
MW-3	10'	1/19/90	<1.0	<1.0	<10	<2.5	11	<2.5	<2.5	5.8
MW-3	15'	1/19/90	<1.0	2.4	<10	<2.5	23	<2.5	7.4	6.5
MW-5	5'	1/22/90	<1.0	<1.0	<10	<2.5	6.5	<2.5	2.6	5.5
MW-5	9'	1/22/90	<1.0	<1.0	<10	<2.5	3.1	<2.5	<2.5	6.4
MW-5	15'	1/22/90	<1.0	<1.0	<10	<2.5	4.4	<2.5	2.7	8.0
MW-5	20'	1/22/90	<1.0	1.6	<10	3.0	11	<2.5	6.1	35
MW-5	25'	1/22/90	<1.0	<1.0	<10	<2.5	6.0	<2.5	4.9	3.9
SB-1	5'	1/18/90	<1.0	<1.0	<10	<2.5	6.7	<2.5	4.6	4.7
SB-1	9'	1/18/90	<1.0	<1.0	<10	<2.5	7.7	<2.5	3.4	6.5
SB-1	10	1/18/90	<1.0	<1.0	<10	<2.5	18	<2.5	6.8	NR[6]

NOTES:

1 Sample contained 370 ppm total oil and grease, 350 ppm non-polar oil and grease, 18 ppm chromium, and 67 ppm zinc.
2 Sample contained 45 ppm chromium and 56 ppm zinc.
3 Sample contained 40 ppm chromium, 60 ppm zinc, 240 ppb total xylenes, and 380 ppb bis (2-ethylhexyl) phthalate.
4 Sample contained 53 ppm chromium, 99 ppm zinc, and 550 ppb bis (2-ethylhexyl) phthalate.
5 Sample contained 48 ppm chromium and 110 ppm zinc.
6 NR - not reported.

TABLE 6. WELL INSTALLATION INFORMATION

Shell Oil Company Facility
2724 Castro Valley Road
Castro Valley, California

Well No.	Date Installed	Well Diameter (inches)	Total Depth of Well (ft bgs)	Screened Interval (ft bgs)	Bentonite Seal Interval (ft bgs)	Grout Seal Interval (ft bgs)
MW-1	1/18/90	4	16	6 to 16	4 to 6	0 to 4
MW-2	1/19/90	4	15	5 to 15	3 to 4	0 to 3
MW-3	1/19/90	4	25	5 to 25	3 to 4	0 to 3
MW-5	1/22/90	4	23	9 to 23	6 to 8	0 to 6

NOTES:

ft bgs feet below ground surface
CEW Converse Environmental West

TABLE 7. RESULTS OF GROUNDWATER CHEMICAL ANALYSES

Shell Oil Company Facility
2724 Castro Valley Road
Castro Valley, California

Well No.	Date Sampled	Concentration (ppm)					
		TPH-g	TPH-d	Benzene	Toluene	Ethyl-Benzene	Xylenes
MW-1	02/09/90	<1.0	NS	0.00058	0.00063	<0.0005	<0.0005
MW-2	02/09/90	8.6	4.1	0.360	0.410	0.0065	0.670
MW-3	02/09/90	<1.0	NS	<0.0005	<0.0005	<0.0005	<0.0005
MW-5	02/09/90	<1.0	NS	<0.0005	<0.0005	<0.0005	<0.0005

NOTES:

MW-4 was not completed as groundwater monitoring well
TPH-g total petroleum hydrocarbons as gasoline (GCFID)
TPH-d total petroleum hydrocarbons as diesel (GCFID)
NS not sampled

TABLE 8. GROUNDWATER MONITORING INFORMATION

Shell Oil Company Facility
2724 Castro Valley Road
Castro Valley, California

Well No.	Date Monitored	Depth to Water (ft bgs)	Petroleum Odor In Water	Floating Product Thickness (inches)	Comments
MW-1 El. 99.78'	2/8/90	8.39	NS	NS	---
MW-2 El. 100.83'	2/8/90	7.33	NS	NS	---
MW-3 El. 101.48'	2/8/90	8.91	NS	NS	---
MW-5 El. 99.90'	2/8/90	8.80	NS	NS	---

NOTES:

ft bgs feet below ground surface
NS none observed
All elevations are tied into a temporary benchmark elevation of 100.00 feet

TABLE 9. FIELD PARAMETERS

Shell Oil Company Facility
2724 Castro Valley Blvd.
Castro Valley, California

Well Number	Date Sampled	Time	Purge Method	Total Gallons Purged	pH (pH units)	Conductivity (µmhos)	Temperature (° C)
MW-1	2/09/90	1029	Hand Bailed	NM	8.16	120	19
		1105	Hand Bailed	14	7.55	130	19
		1115	Hand Bailed	22	7.50	120	19
		1124	Hand Bailed	30	7.40	130	19
		1130	Hand Bailed	35	7.38	130	19
		1136	Hand Bailed	40	7.35	130	19
		1143	Hand Bailed	45	7.38	130	20
		1147	Hand Bailed	50	7.32	130	20
		1156	Hand Bailed	55	7.35	130	20
		1201	Hand Bailed	62	7.36	130	20
MW-2	2/09/90	125	Hand Bailed	NM	7.56	120	18
		146	Hand Bailed	10	7.71	120	19
		201	Hand Bailed	15	7.74	110	19
		237	Hand Bailed	20	7.74	100	20
		318	Hand Bailed	25	7.72	100	20
MW-3	2/08/90	1019	Hand Bailed	NM	7.42	1300	19
		1045	Hand Bailed	10	7.59	1500	20
		1115	Cent. Pump	18	7.54	1200	20
		1121	Cent. Pump	23	7.67	1200	21
		1131	Cent. Pump	28	7.64	1300	21
		1145	Cent. Pump	33	7.64	1600	22
		1155	Cent. Pump	38	7.66	1700	22
		1305	Cent. Pump	43	7.48	2500	23
		1318	Cent. Pump	48	7.55	1200	23
		1418	Cent. Pump	52	7.43	1700	23
		1425	Cent. Pump	55	7.55	1400	23

NOTE:

NM None measured

TABLE 9 (cont'd). FIELD PARAMETERS*

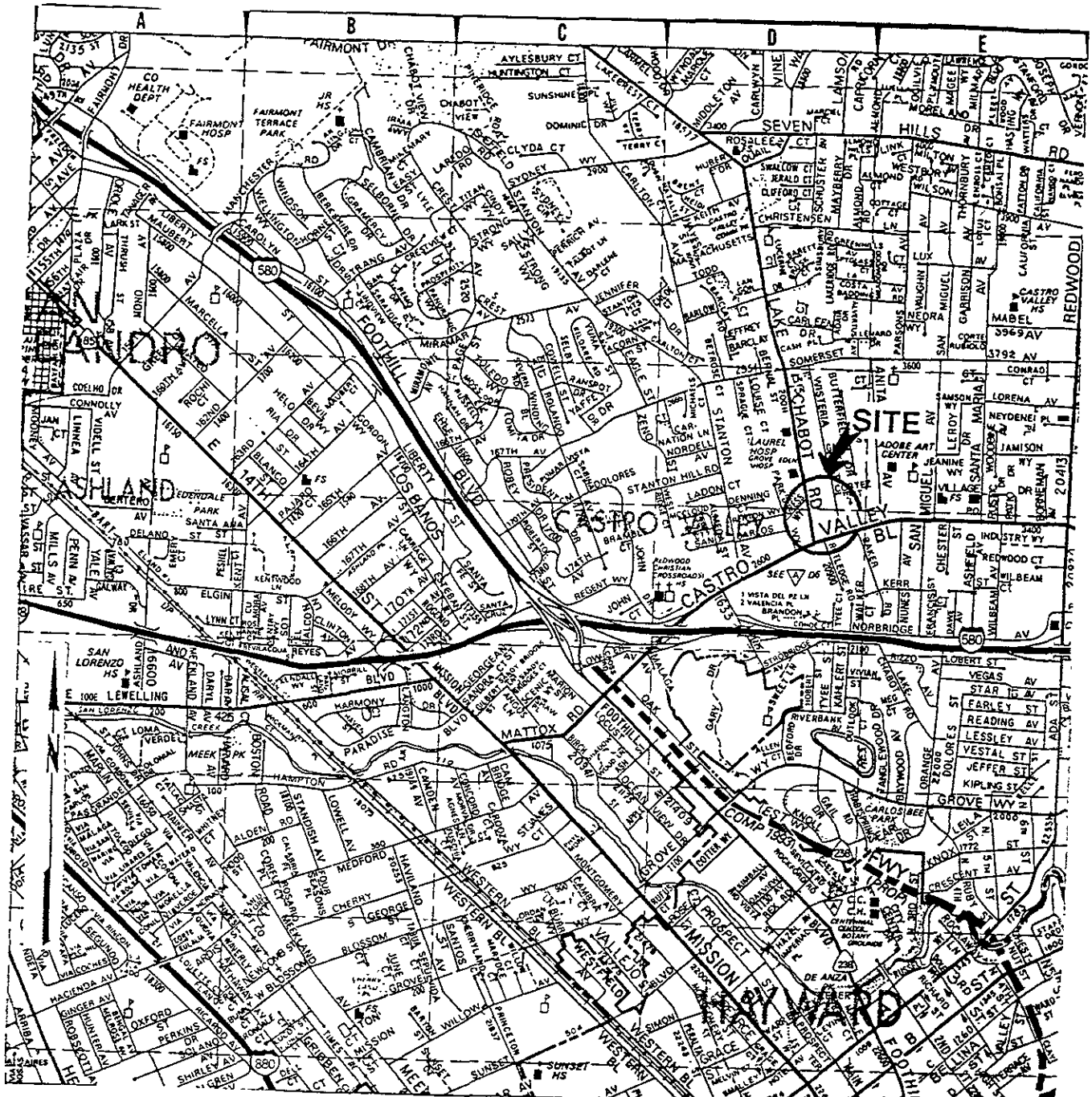
Shell Oil Company Facility
2724 Castro Valley Blvd.
Castro Valley, California

Well Number	Date Sampled	Time	Purge Method	Total Gallons Purged	pH (pH units)	Conductivity (µmhos)	Temperature (° C)
MW-5	2/08/90	1245	Hand Bailed	NM	7.22	250	18
		152	Hand Bailed	10	7.74	230	20
		206	Cent. Pump	15	7.57	220	20
		216	Cent. Pump	20	7.60	220	21
		227	Cent. Pump	25	7.63	220	21
		257	Cent. Pump	27	NM	NM	NM
	2/09/90	1337	Cent. Pump	43	7.63	200	22
		1347	Cent. Pump	48	7.35	200	22
		1356	Cent. Pump	53	7.62	200	22

NOTE:

NM None measured

DRAWINGS



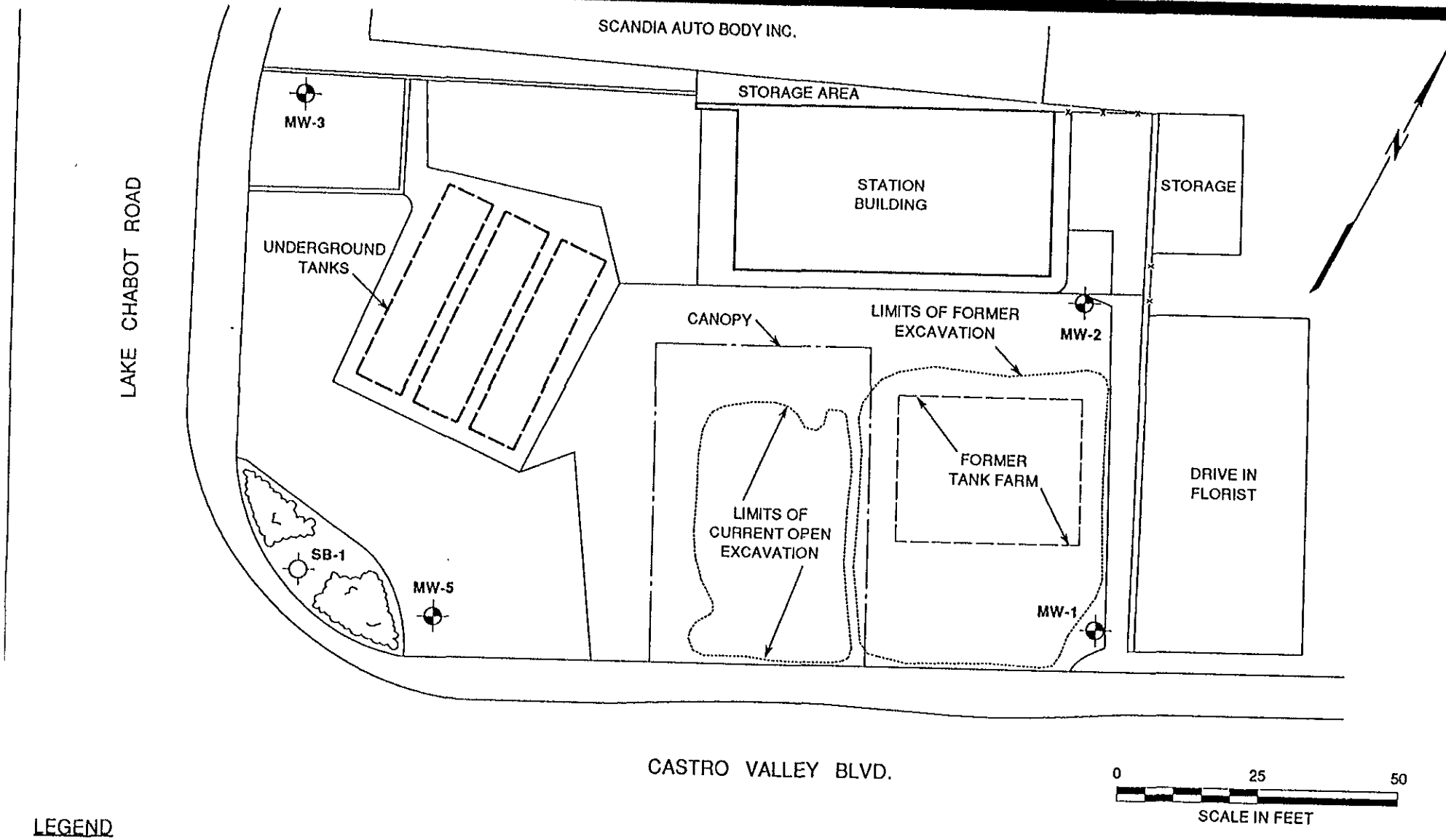
SOURCE: Thomas Brothers Maps, 1989.

SITE LOCATION MAP

SHELL OIL COMPANY
2724 Castro Valley Boulevard
Castro Valley, California

Converse Environmental Consultants California

Scale: AS SHOWN	Project No.: 88-44-380-01
Prepared by: CRB	Date: 7/20/89
Checked by: RKM	Drawing No.: 1
Approved by: DWC	



LEGEND

MW-1 — GROUNDWATER MONITORING WELL

SB-1 — SOIL BORING

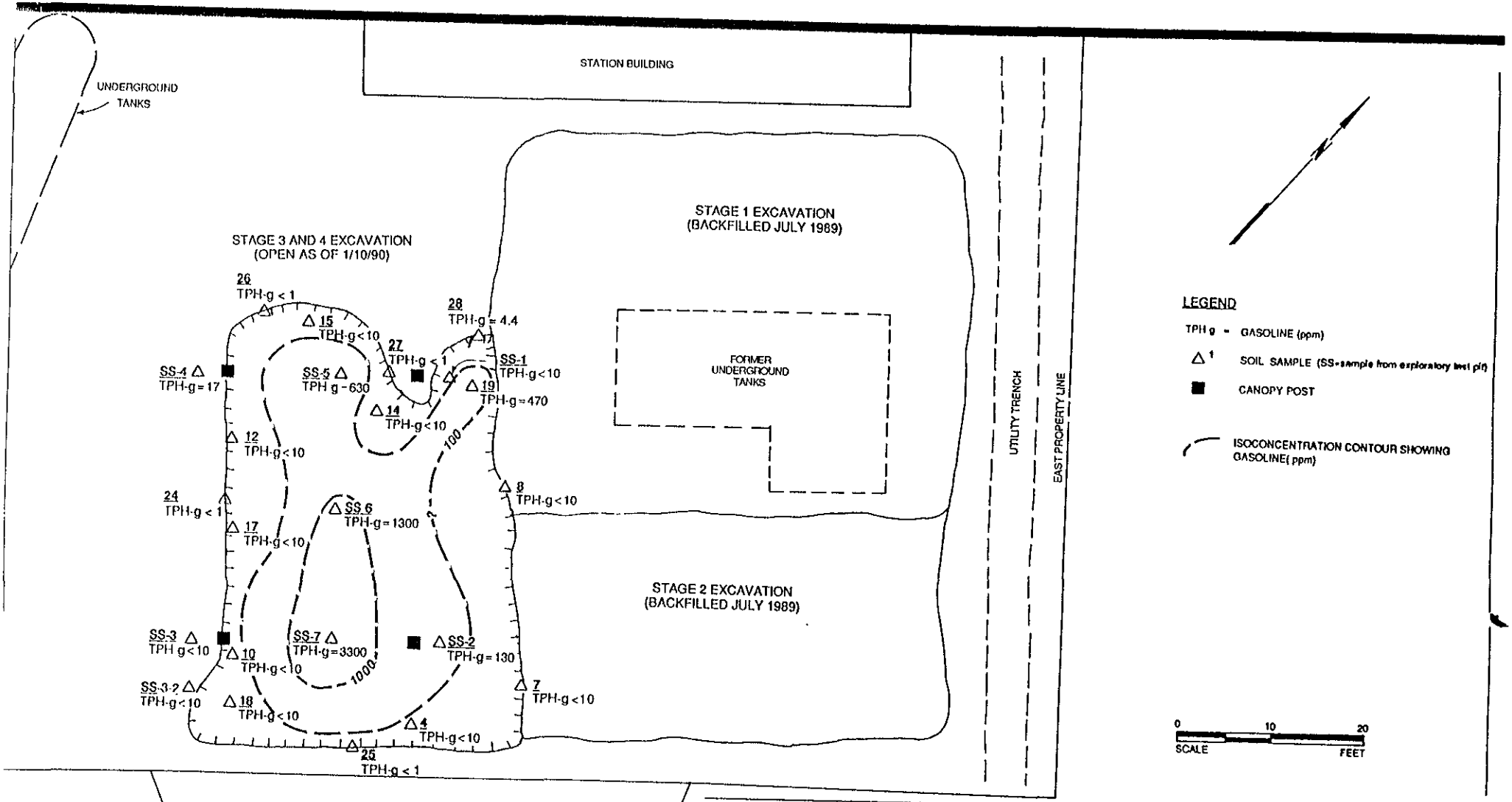
Base Map: Surveyed with electronic distance meter by CEW, 1990.

PLOT PLAN

SHELL OIL COMPANY
2724 Castro Valley Boulevard
Castro Valley, California

Converse Environmental West

Scale	AS SHOWN
Project No.	88-44-380-01
Prepared by	LQL
Date	3/6/90
Checked by	MCC
Drawing No.	2
Approved by	DWC

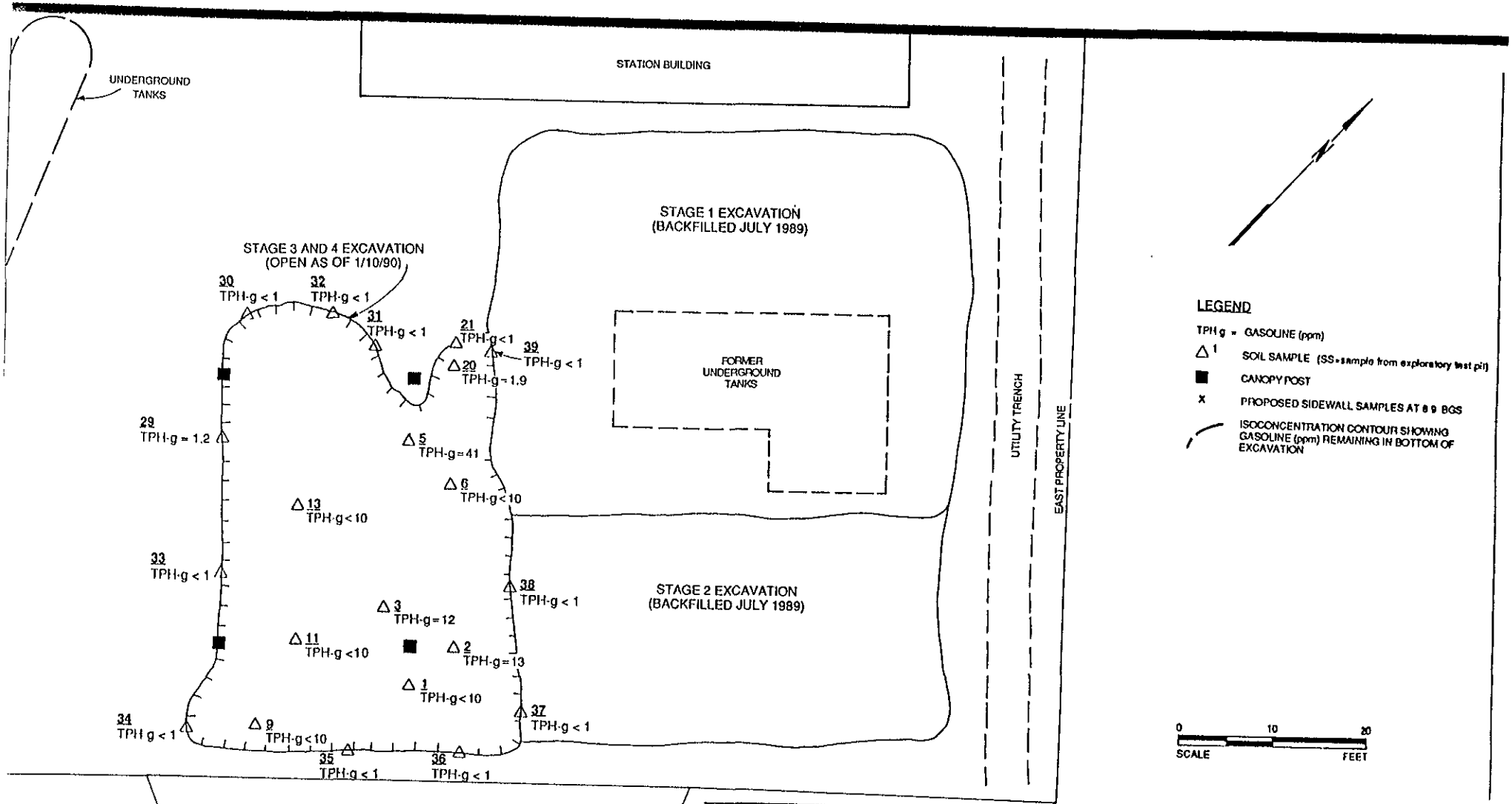


PLAN: SOIL TPH-g AT 0' to 6' BGS (SOIL HORIZON I)

SHELL OIL COMPANY
2724 Castro Valley Boulevard
Castro Valley, California

Converse Environmental Consultants California

Scale	AS SHOWN
Date	11/28/89
Prepared By	CRB
Checked By	RKM
Approved By	
Project No	88-44-380-01
Drawing No	3

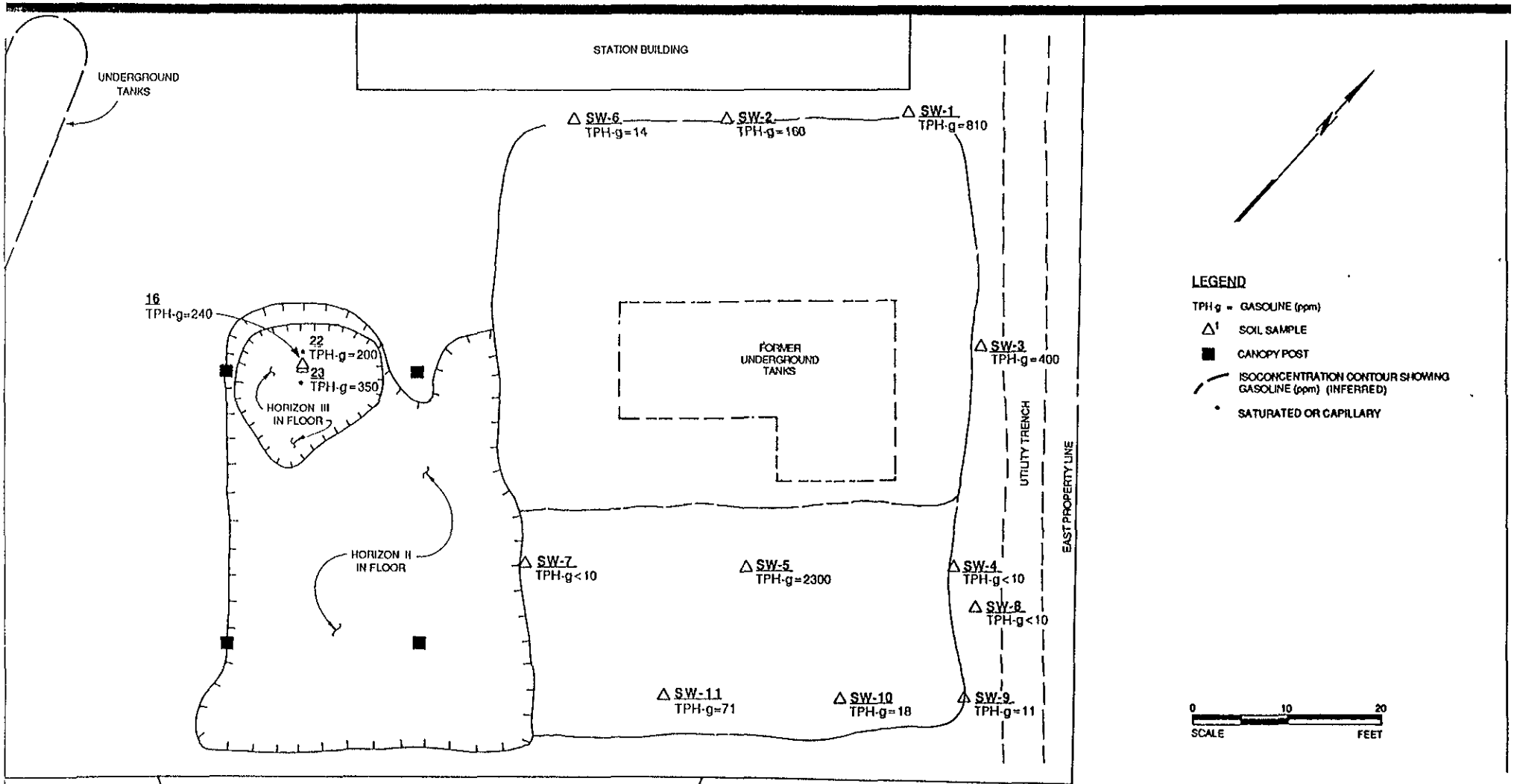


PLAN: SOIL TPH-g AT 6' to 11' BGS (SOIL HORIZON II)

SHELL OIL COMPANY
2724 Castro Valley Boulevard
Castro Valley, California

Converse Environmental Consultants California

Scale	AS SHOWN
Date	11/28/89
Prepared By	CRB
Checked By	RKM
Approved By	
Project No	88-44-360-01
Drawing No	4

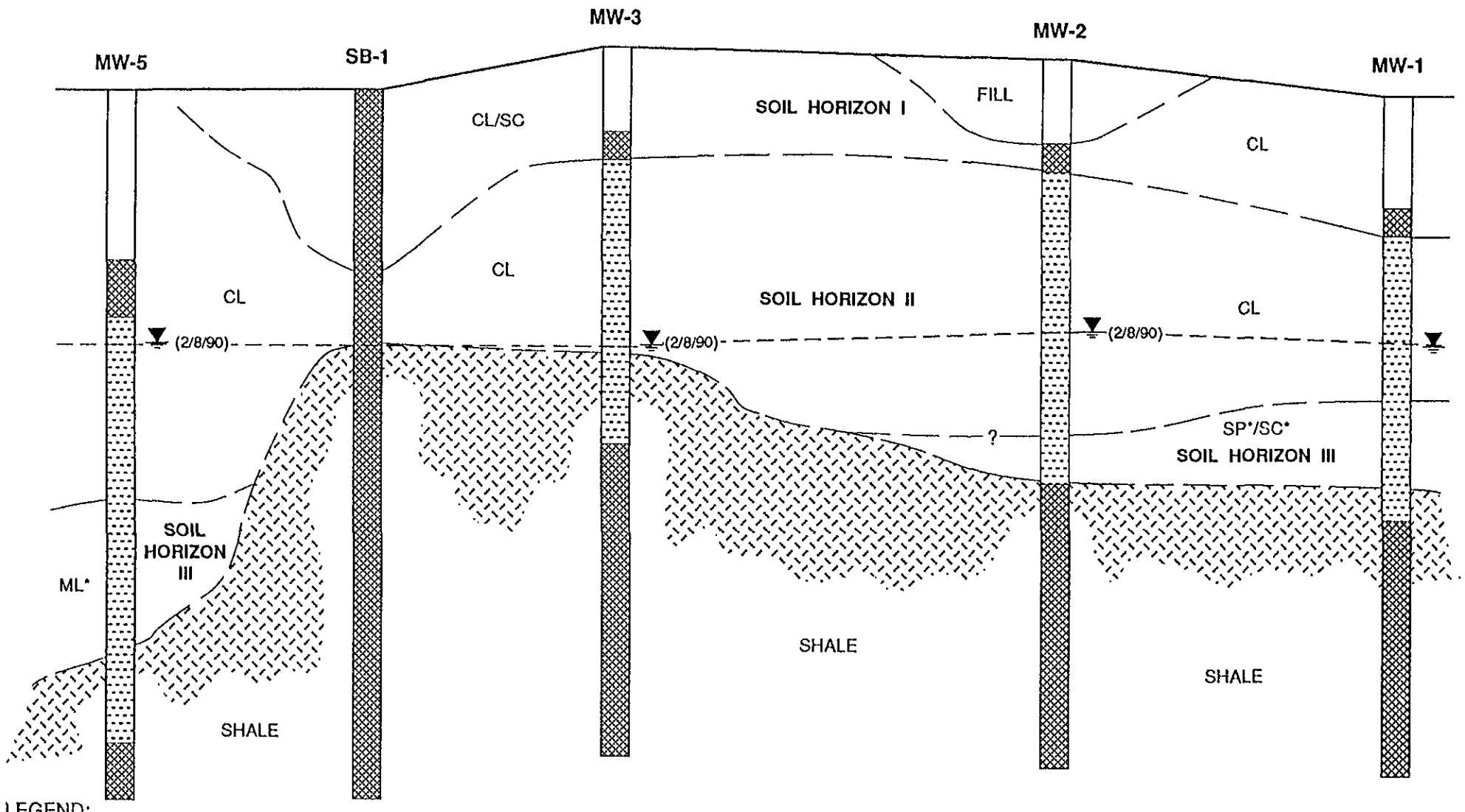


PLAN: SOIL TPH-g AT 11' BGS AND BELOW (SOIL HORIZON III)

SHELL OIL COMPANY
2724 Castro Valley Boulevard
Castro Valley, California

Converse Environmental Consultants California

Scale	AS SHOWN
Date	11/28/89
Prepared By	CRB
Checked By	RKM
Approved By	
Project No	88 44-380-01
Drawing No	5



LEGEND:

- NEAT CEMENT GROUT SEALS
- WELL SCREEN
- BENTONITE GROUT SEALS
- BEDROCK

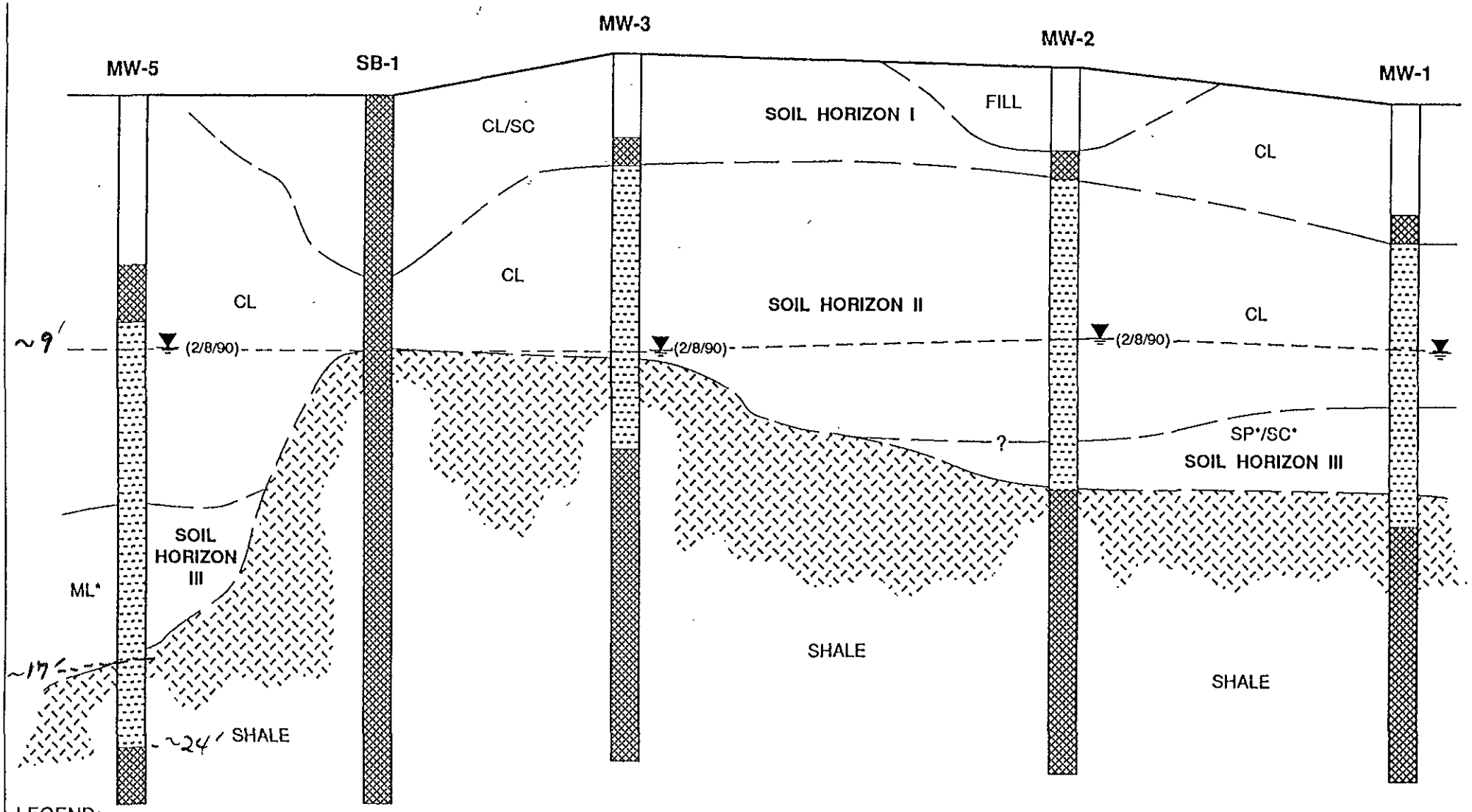
* WITH SHALE FRAGMENTS (PALEOREGOLITH ?)

SCHEMATIC GEOLOGIC CROSS SECTION

SHELL OIL COMPANY
2724 Castro Valley Blvd.
Castro Valley, California

Converse Environmental West

Scale	Not to Scale
Prepared by	LQL
Checked by	DWC
Approved by	DWC
Project No.	88-44-380-01
Date	3/13/90
Drawing No.	6

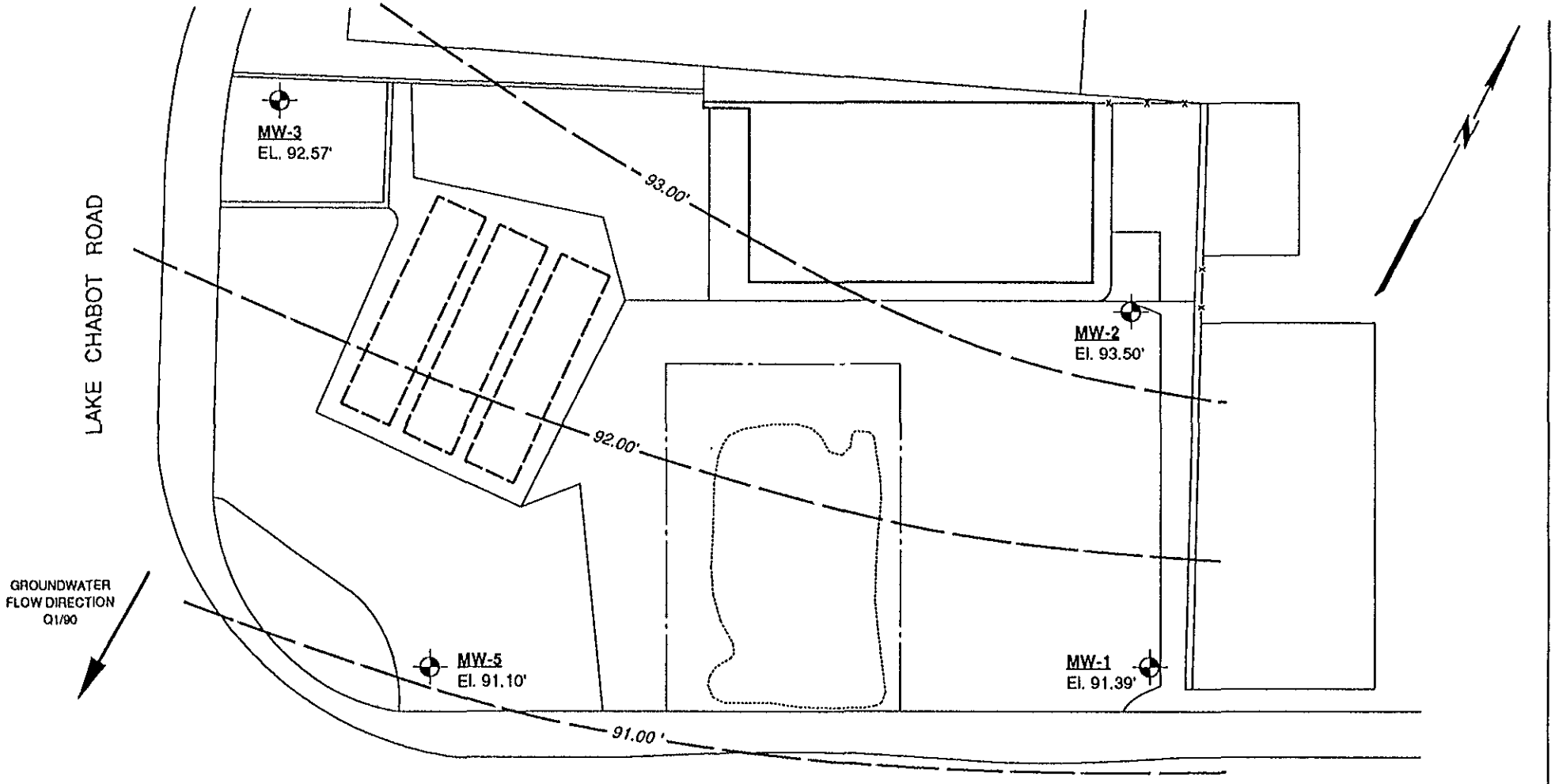


SCHEMATIC GEOLOGIC CROSS SECTION

SHELL OIL COMPANY
2724 Castro Valley Blvd.
Castro Valley, California

Converse Environmental West

Scale	Not to Scale
Prepared by	LQL
Checked by	DWC
Approved by	DWC
Project No.	88-44-380-01
Date	3/13/90
Drawing No.	6



LEGEND

GROUNDWATER CONTOUR (long dash where approximate, short dash where inferred)

MW-1 GROUNDWATER MONITORING WELL SHOWING GROUNDWATER ELEVATION

NOTE: GROUNDWATER ELEVATIONS GIVEN WITH RESPECT TO A POINT HAVING AN ARBITRARY DATUM OF 100.00 FEET

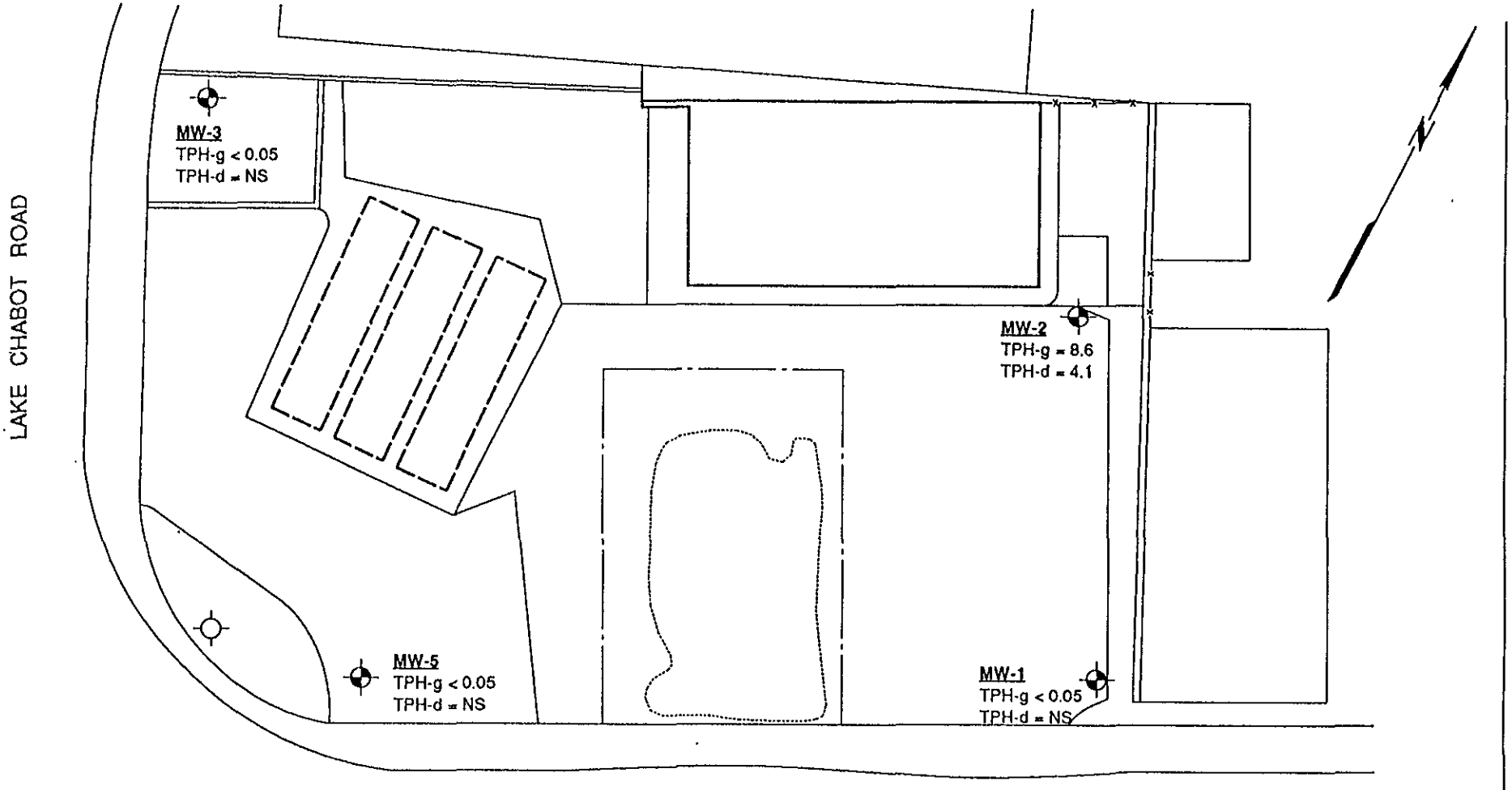
Base Map: Surveyed with electronic distance meter by CEW, 1990.

POTENTIOMETRIC SURFACE MAP (Q1/90)

SHELL OIL COMPANY
2724 Castro Valley Boulevard
Castro Valley, California

Converse Environmental West

Scale	AS SHOWN
Project No.	88-44-380-01
Prepared by	LQL
Date	3/6/90
Checked by	MCC
Drawing No.	7
Approved by	DWC



LEGEND

MW-1 GROUNDWATER MONITORING WELL

TPH-g = TOTAL PETROLEUM HYDROCARBONS AS GASOLINE (in milligrams per liter)

TPH-d = TOTAL PETROLEUM HYDROCARBONS AS DIESEL (in milligrams per liter)

NS NOT SAMPLED

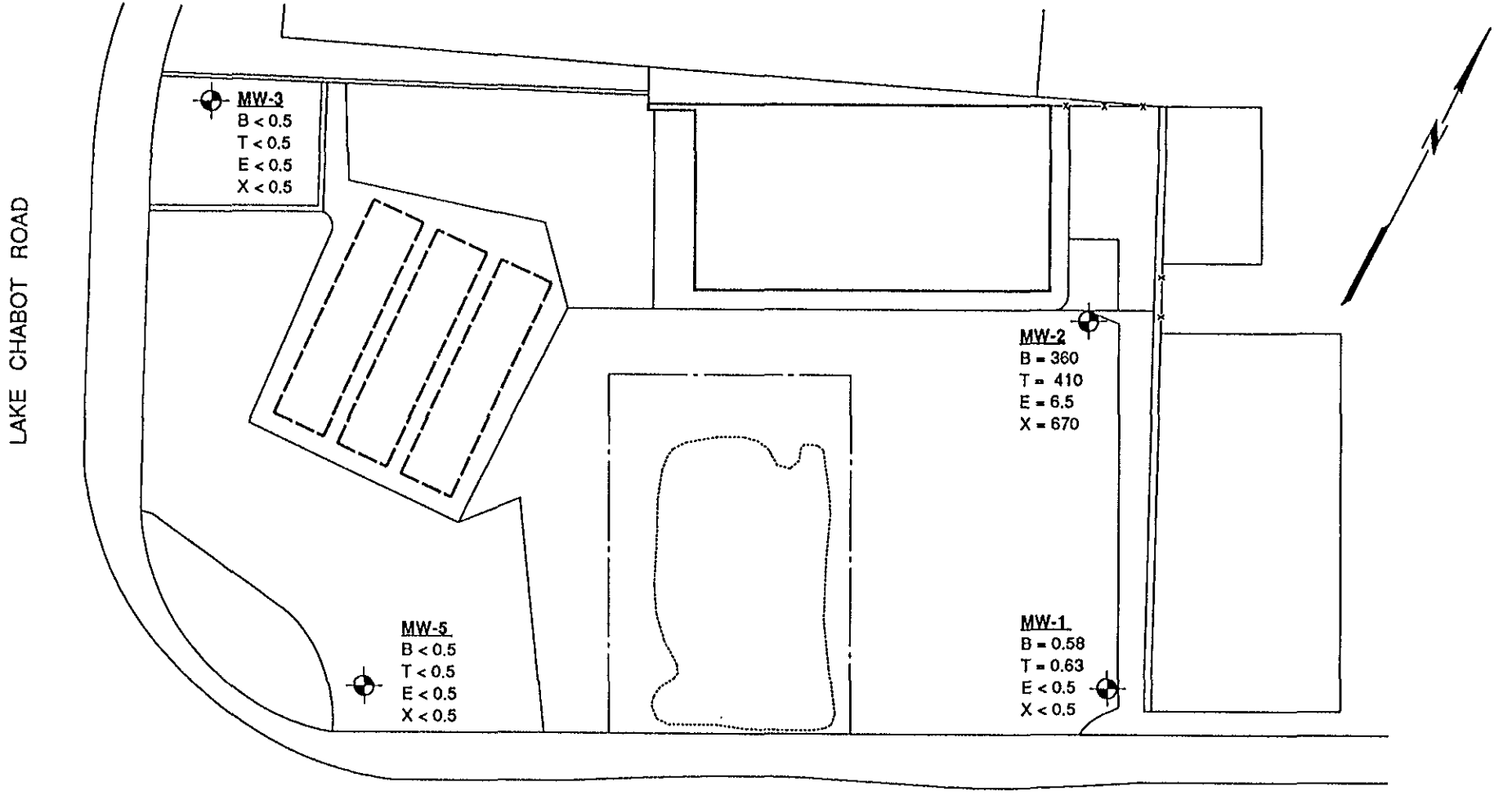
Base Map: Surveyed with electronic distance meter by CEW, 1990.

PLAN: GROUNDWATER TPH-g AND TPH-d (Q1/90)

SHELL OIL COMPANY
2724 Castro Valley Boulervard
Castro Valley, California

Converse Environmental West

Scale	AS SHOWN
Project No.	88-44-380-01
Prepared by	LQL
Date	3/6/90
Checked by	MCC
Drawing No.	8
Approved by	DWC



LEGEND

MW-1 GROUNDWATER MONITORING WELL

B = BENZENE (in µg/L)

T = TOLUENE (in µg/L)

E = ETHYLBENZENE (in µg/L)

X = XYLENES (in µg/L)

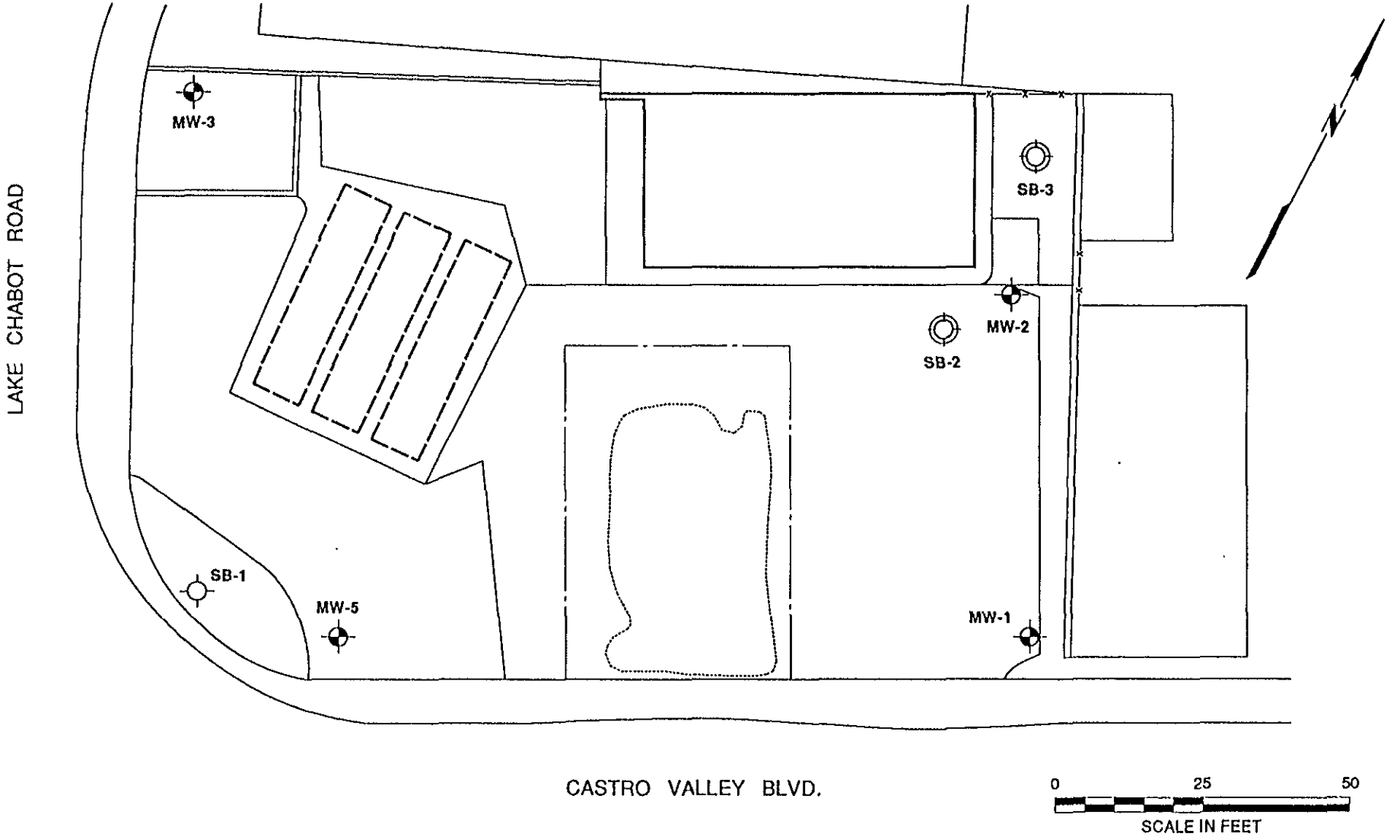
Base Map: Surveyed with electronic distance meter by CEW, 1990.

PLAN: GROUNDWATER BTEX (Q1/90)

SHELL OIL COMPANY
2724 Castro Valley Boulevard
Castro Valley, California

Converse Environmental West

Scale	AS SHOWN
Prepared by	LQL
Checked by	MCC
Approved by	DWC
Project No.	88-44-380-01
Date	3/6/90
Drawing No.	9



LEGEND

MW-1 GROUNDWATER MONITORING WELL

SB-1 SOIL BORING

SB-2 PROPOSED SOIL BORING

Base Map: Surveyed with electronic distance meter by CEW, 1990.

PROPOSED SOIL BORINGS

SHELL OIL COMPANY
2724 Castro Valley Boulevard
Castro Valley, California

Converse Environmental West

Scale	AS SHOWN
Prepared by	LQL
Checked by	MCC
Approved by	DWC
Project No.	88-44-380-01
Date	3/6/90
Drawing No.	10

APPENDIX A

SITE DESCRIPTION

APPENDIX A

SITE DESCRIPTION

SITE DESCRIPTION

This retail gasoline station is located on the northeast corner of Castro Valley Blvd and Lake Chabot Road in Castro Valley, California (Drawing 1). It was an active service station, but is now temporarily closed due to ongoing renovation work, tank replacement, major building construction and environmental remediation.

Commercial businesses exist on all corners of the intersection. Surrounding neighborhood development is commercial along both roads. Single family dwellings are located on side streets nearby.

Topographically, the site is located on the western edge of a gentle valley (Castro Valley) on recent alluvial fill. The terrain rises northward into the San Leandro Hills and the site is approximately 50 feet above the valley floor. An isolated hillside knob with 60 to 100 feet of relief exists 600 feet south of the site. An intermittent stream is shown 300 feet west on the Hayward, Calif USGS topographic map. This stream enters San Lorenzo Creek approximately one mile south of the site.

Surface water drainage has been altered by urbanization but is probably south to southwest. Groundwater flow is assumed to be south, as well.

SETTING

The facility is located within the East Bay Plain area of Alameda County. The site lies on Quaternary age older alluvium composed of weakly consolidated, slightly weathered, poorly sorted, irregularly interbedded clay, silt, sand and gravel (Helley et al.,

1979), within an "island" of alluvium, last of the Hayward fault (Hickenbottom and Muir, 1988). The Hayward Fault, a northwest trending strike-slip fault, which passes approximately 1 mile west of the site. The alluvial deposits are underlain by consolidated bedrock.

The older alluvium is the major groundwater reservoir in the East Bay Plain east of the Hayward Fault. In Castro Valley, however, the older alluvial deposits have a maximum thickness of approximately 80 feet and do not produce large quantities of water (Hickenbottom and Muir, 1988).

Recharge to groundwater reservoirs in the East Bay Plain are occurs mainly form infiltration of rain, seepage from streams, and subsurface flow from adjacent areas. There is probably a small amount of recharge from excess irrigation water, lawn and garden watering, and leaking municipal sewer lines (Hickenbottom and Muir, 1988). Groundwater pumpage from wells is, at the present time, probably the main element of groundwater discharge to streams, underflow to San Francisco Bay, and spring discharge are also contributory factors (Hickenbottom and Muir, 1988).

The quality of groundwater in the East Bay Plain area is generally good. Total dissolved solids concentrations are generally int eh range of 300 to 1000 mg/l. It is likely that groundwater in shallow wells in Castro Valley have been affected by bacterial contamination, possibly from leaking sewers (Hickenbottom and Muir, 1988).

APPENDIX B
CHRONOLOGICAL SUMMARY

CHRONOLOGICAL SUMMARY

For Shell Property at
2724 Castro Valley Blvd., Castro Valley, California

The following chronological summary is based on information provided to Converse Environmental West (CEW) by Shell Oil Company (Shell). CEW was not provided with certain information related to the construction, operational, and environmental history of the facility. According to Shell, the following information is not available in Shell files: volume of contaminated soil removed at the time of tank removal, geometry of the excavation created during tank removal, if any, and date and volume of any possible releases at the facility.

Date	Description of Activity
11/21/86	Blaine Tech Services removed one 550 gallon waste oil tank and conducted field sampling.
04/22/88	Woodward-Clyde drilled and sampled three soil borings around the existing underground storage tank (UST) complex. Attachment 2.
03/06/89	Crosby & Overton, Inc conducted field sampling during removal of 4 underground storage tanks. Contaminated soil was discovered and additional excavation and sampling was performed. Attachment 3.
03/31/89	Field sampling in the vicinity of the new tank hole was performed. Attachment 4.
05/05/89	Converse Environmental West (CEW) was retained by Shell Oil Co to supervise environmental activities at the site.
06/12/89	Samples SW-1 through SW-7 were collected.
07/05/89	Samples SW-8 through SW-11 were collected.
07/06/89	One water sample in the excavation pit was collected.
07/11/89	CEW sent an "Interim Sampling Report and Recommendations" to the Alameda County Health Agency.
07/27/89	CEW sent an "Addendum to July 11, 1989 Interim Sampling Report and Recommendations" to the Alameda County Health Agency.
08/30/89	Samples SS-1 through SS-7 were collected.
10/02/89 to 10/11/89	Soil samples 1 through 4 and S-1 through S-7 were collected.
10/26/89	Samples 20 through 23, and stockpile 10:26 were collected.
10/31/89	CEW sent a report titled "Soil Sampling Report" to the Alameda County Health Agency.
11/30/89	CEW sent a Draft Work Plan to the ACHCSA.
01/11/90	**CEW sent a Progress Report for Q4/89 to the ACHCSA.**

CHRONOLOGICAL SUMMARY (cont'd)

For Shell Property at
2724 Castro Valley Blvd., Castro Valley, California

Date	Description of Activity
01/18/90 to 01/23/90	**Bored and sampled MW-2 through MW-5 and installed MW-2, MW-3 and MW-5. MW-4 grouted. Surface completed: MW-2 and MW-3.**
02/08/90	**Developed MW-5. Surveyed wells MW-1, MW-2, MW-3, MW-5 and soil borings site survey.**
02/09/90	**Developed, sampled MW-1, MW-2, MW-3 and MW-5.**
02/22/90	**Sampled MW-2 for pesticides and 0.1 and grease.**
3/12/90	**CEW requested permission from ACCHCSA to backfill the existing excavation onsite.**

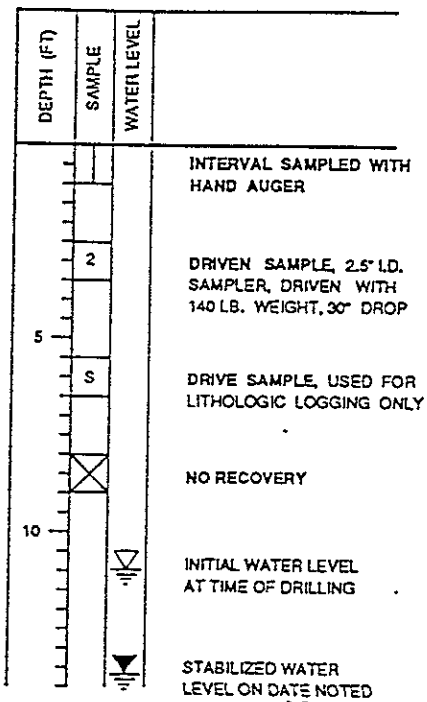
Bold Boldface indicates work completed this quarter.

APPENDIX C

BORING LOGS

MAJOR DIVISIONS			SYMBOLS	TYPICAL NAMES
COARSE GRAINED SOILS MORE THAN HALF IS LARGER THAN NO. 200 SIEVE	GRAVELS MORE THAN HALF COARSE FRACTION IS LARGER THAN NO. 4 SIEVE	CLEAN GRAVELS WITH LITTLE OR NO FINES	GW	WELL GRADED GRAVELS, GRAVEL-SAND MIXTURES
			GP	POORLY GRADED GRAVELS, GRAVEL-SAND MIXTURES
		GRAVELS WITH OVER 12 % FINE	GM	SILTY GRAVELS, POORLY GRADED GRAVEL-SAND-SILT MIXTURES
			GC	CLAYEY GRAVELS, POORLY GRADED GRAVEL-SAND-CLAY MIXTURES
	SANDS MORE THAN HALF COARSE FRACTION IS SMALLER THAN NO. 4 SIEVE	CLEAN SANDS WITH LITTLE OR NO FINES	SW	WELL GRADED SANDS, GRAVELLY SANDS
			SP	POORLY GRADED SANDS, GRAVELLY SANDS
		SANDS WITH OVER 12 % FINE	SM	SILTY SANDS, POORLY GRADED SAND-SILT MIXTURES
			SC	CLAYEY SANDS, POORLY GRADED SAND-CLAY MIXTURES
FINE GRAINED SOILS MORE THAN HALF IS SMALLER THAN NO. 200 SIEVE	SILTS AND CLAYS LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS, OR CLAYEY SILTS WITH SLIGHT PLASTICITY
			CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAY
			OL	ORGANIC CLAYS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE, SANDY OR SILTY SOILS, ELASTIC SILTS
			CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
			OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS			Pt	PEAT AND OTHER HIGHLY ORGANIC SOILS

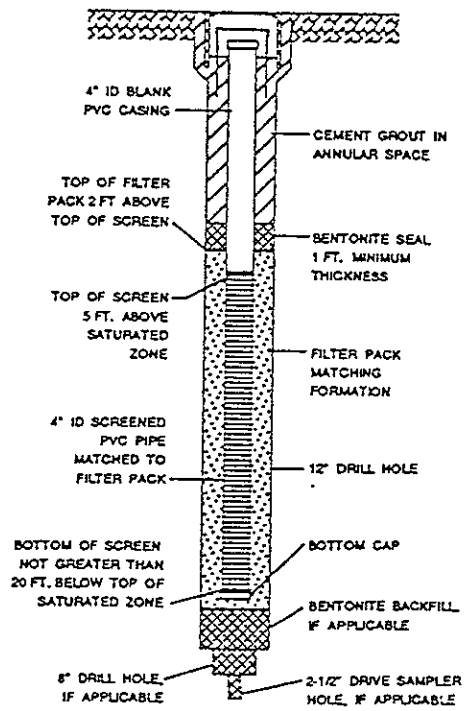
SAMPLE TYPE



NOTE:

SOIL CONDITIONS INDICATED BY BORING LOGS APPLY ONLY AT THE LOCATION OF THE PARTICULAR BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THE BORING LOCATION WITH THE PASSAGE OF TIME. DATA PRESENTED IN THE LOGS REPRESENT A SIMPLIFICATION OF THE ACTUAL CONDITIONS ENCOUNTERED.

WELL CONSTRUCTION



UNIFIED SOIL CLASSIFICATION, BORING LOG, AND WELL CONSTRUCTION SYMBOLS

SHELL OIL COMPANY
2724 Castro Valley Boulevard
Castro Valley, California

Project No.
88-44-380-01

Converse Environmental West

Drawing No.
A-1

LOG OF BORING NO. MW-1

DATE DRILLED: 1/18/90	EL:	WL TAKEN: n/a	EQUIPMENT: 3 3/4"x 8" / 8"x 12" H.S.A.

DEPTH (ft)	SAMPLE	WATER LEVEL	SYMBOL	MOISTURE	CONSISTENCY	COLOR	DESCRIPTION	WELL CONSTRUCTION	BLOWS/6IN.	O.V.H. (ppm)	T.P.H. (ppm)
							0.2' GRAVEL BASEROCK. (Fill)				
				moist	medium	dark brown	Silty CLAY and GRAVEL.				
	1			moist	medium dense	light brown	Silty CLAY, some Gravel. CL		4 5		
5											
	2	▽		wet		light brown			2 2 2		
10											
	S			wet		dark gray	Silty CLAY, trace coarse Sand. CL		5 10		
				wet		light brown	Fn to med SAND, tr CLAY. SP/SC -- grading into --		16 23		
	S			wet			Coarse SAND, trace fines. SP		18 19		
				s moist	dense	lt brn	Silty CLAY, tr coarse Sand. CL		23		
	S			dry	dense	dark gray	Fractured SHALE, little fines. (Top of bedrock.) SH		35 49 30		
15											
	S			dry	dense		Silty CLAY, trace Gravel. CL		50		
				dry	dense		Fract. SHALE, li-tle fns. SH		42		
				dry	dense	drk gry	Sil-y CLAY, trace ravel. CL		50/4"		
	S			dry	dense	dark gray	Fractured SHALE, trace fines. SH Increasing fines.		32 32 45 50/5"		
	S								20		
20				dry	m dense	drk gry	Silty CLAY, with Shale fragments. CL		26		

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SHELL OIL COMPANY
2724 Castro Valley Boulevard
Castro Valley, California

Project No.
88-44-380-01

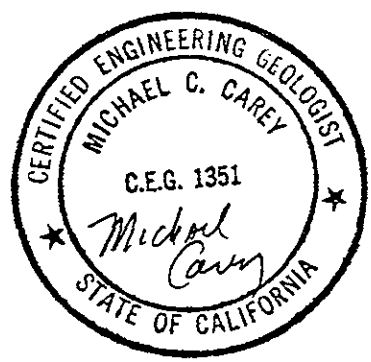
Converse Environmental West

Drawing No.
A-2

LOG OF BORING NO. MW-1

continued - page 2

DEPTH (ft)	SAMPLE	WATER LEVEL	SYMBOL	MOISTURE	CONSISTENCY	COLOR	DESCRIPTION	WELL CONSTRUCTION	BLOWS/6IN.	O.V.H. (ppm)	T.P.H. (ppm)
	S			dry	dense	dark gray	Silty CLAY, with minor Shaley fragments. CL		22		
									31		
	S						Increasing Shale fragments.		38		
									40		
	S								23		
									28		
									39		
									42		
25							Total Depth of Boring: 24 ft Below Ground Surface.				
							Screen Slot Size: 0.020 in. Filter Pack: 2/12 sand.				
30											
35											
40											



SHELL OIL COMPANY
2724 Castro Valley Boulevard
Castro Valley, California

Project No.
88-44-380-01

Converse Environmental West

Drawing No.
A-3

LOG OF BORING NO. MW-2

DATE DRILLED: 1/19/90 | EL: | WL TAKEN: n/a | EQUIPMENT: 3 3/4"x 8" / 8"x 12" H.S.A.

DEPTH (ft)	SAMPLE	WATER LEVEL	SYMBOL	MOISTURE	CONSISTENCY	COLOR	DESCRIPTION		WELL CONSTRUCTION	BLOWS/6IN.	O.V.H. (ppm)	T.P.H. (ppm)
				moist	stiff	rust brown	Silty CLAY, little medium to coarse Sand.	CL				
							Coarse SAND and GRAVEL. (Fill)	GP				
				moist	stiff	light brown	Silty CLAY, little coarse Sand.	CL				
5	1			moist		light brown	Silty CLAY, little coarse Sand.	CL		18 19		
	2			very moist	medium	light brown	Silty CLAY, trace coarse Sand.	CL		2 3		
10							Blocky SHALE, 2-3 inch fragments. (Top of Bedrock)	SH				
	3			dry						26		
15				moist	hard	lt brn	4" lens Silty CLAY, trace Gravel.	CL		50/3"		
							Blocky SHALE, 2-3 inch fragments, with matrix of Silty Clay.	SH				
	4			dry	very stiff	dark brown				13 33		
20												

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SHELL OIL COMPANY
2724 Castro Valley Boulevard
Castro Valley, California

Project No.
88-44-380-01

Converse Environmental West

Drawing No.
A-4

LOG OF BORING NO. MW-2

continued - page 2

DEPTH (ft)	SAMPLE	WATER LEVEL	SYMBOL	MOISTURE	CONSISTENCY	COLOR	DESCRIPTION	WELL CONSTRUCTION	BLOWS/6IN.	O.V.H. (ppm)	T.P.H. (ppm)
				dry	dark gray	dark gray	Blocky SHALE, SH with matrix of Silty Clay.				
25	5			dry	dark gray	dark gray	Fractured SHALE, SH 1/2-1 inch fragments.		50/5"		
							Total Depth of Boring: 25 ft Below Ground Surface.				
							Screen Slot Size: 0.020 in. Filter Pack: 2/12 sand.				
30											
35											
40											

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SHELL OIL COMPANY
2724 Castro Valley Boulevard
Castro Valley, California

Project No.
88-44-380-01

Converse Environmental West

Drawing No.
A-5

LOG OF BORING NO. MW-3

DATE DRILLED: 1/19/90	EL:	WL TAKEN: n/a	EQUIPMENT: 3 3/4"x 8" / 8"x 12" H.S.A.

DEPTH (ft)	SAMPLE	WATER LEVEL	SYMBOL	MOISTURE	CONSISTENCY	COLOR	DESCRIPTION	WELL CONSTRUCTION	BLOWS/6IN.	O.V.M. (ppm)	T.P.H. (ppm)
							1.0' EXCAVATION				
				moist	medium	black	Silty CLAY. CL				
	1			moist	medium	black, mottled rust	Silty CLAY. CL		4 5		
5											
	2			moist	medium	dark gray, rust mottled	Silty CLAY, some Shale fragments. CL/SH		2 8		
10							(Top of Bedrock)				
	3			dry	dense to hard	dark gray, stained	Fractured SHALE, trace Silty CLAY. SH		26 50/4"		
15											
	S						Highly fractured SHALE, with Silty Clay matrix. CL/SH		9 16		
20											

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SHELL OIL COMPANY
2724 Castro Valley Boulevard
Castro Valley, California

Project No.
88-44-380-01

Converse Environmental West

Drawing No.
A-6

LOG OF BORING NO. MW-3

continued - page 2

DEPTH (ft)	SAMPLE	WATER LEVEL	SYMBOL	MOISTURE	CONSISTENCY	COLOR	DESCRIPTION	WELL CONSTRUCTION	BLOWS/6IN.	O.V.H. (ppm)	T.P.H. (ppm)
							Highly fractured SHALE, CL/SH with Silty Clay matrix.				
				- - - -		- - - -	- - - - - - - - - - - - - - - - -				
	S			dry	very hard	dark gray	Blocky Shale, 2-3" pieces. SH		40/1"		
25							Total Depth of Boring: 25 ft Below Ground Surface. Screen Slot Size: 0.020 in. Filter Pack: 2/12 sand. .				
30											
35											
40											

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STATE OF CALIFORNIA

SHELL OIL COMPANY
2724 Castro Valley Boulevard
Castro Valley, California

Project No.
88-44-380-01

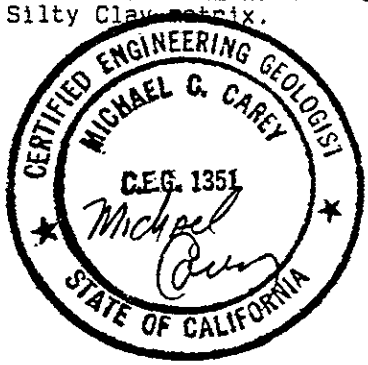
Converse Environmental West

Drawing No.
A-7

LOG OF BORING NO. MW-4 (SB-1)

DATE DRILLED: 1/18/90	EL:	WL TAKEN: n/a	EQUIPMENT: 3 3/4"x 8" / 8"x 12" H.S.A.

DEPTH (ft)	SAMPLE	WATER LEVEL	SYMBOL	MOISTURE	CONSISTENCY	COLOR	DESCRIPTION		BLOWS/6IN.	O.V.M. (ppm)	DRY DENSITY lb/ft3	TESTS
				moist	medium	dark brown	Silty CLAY. (Topsoil)	CL				
5	1			moist	medium	light brown, stained rust	Clayey SAND.	SC	4 7			
	2			moist	medium dense	mottled olive and gray	Silty CLAY, trace fine to medium Sand.	CL	5 12			
	3								5			
10				dry		dark gray	Fractured SHALE, trace fines. (Top of Bedrock)	SH	36 37			
	S					dark gray, mottled rust	3" lens Silty CLAY, little Shale.		38 39			
				dry	dense		Fractured SHALE, little fines.	SH	50/6"			
	S								30			
				dry	dense		Fractured SHALE with Silty Clay matrix.	CL/SH	50/4"			
15												
				dry	dense	dark gray, stained rust	Blocky SHALE, 4-5 inch fragments.	SH	22 50/4"			
20												



SHELL OIL COMPANY
2724 Castro Valley Boulevard
Castro Valley, California

Project No.
88-44-380-01

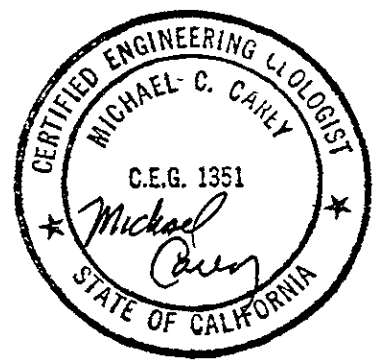
Converse Environmental West

Drawing No.
A-8

LOG OF BORING NO. MW-4 (SB-1)

continued - page 2

DEPTH (ft)	SAMPLE	WATER LEVEL	SYMBOL	MOISTURE	CONSISTENCY	COLOR	DESCRIPTION	BLOWS/6IN.	O.V.H. (ppm)	DRY DENSITY lb/ft³	TESTS
				dry	dense	dark gray	Blocky SHALE, SH 4-5 inch fragments.	50/4"			
25							Total Depth of Boring: 25 ft Below Ground Surface.				
30											
35											
40											



SHELL OIL COMPANY
2724 Castro Valley Boulevard
Castro Valley, California

Project No.
88-44-380-01

Converse Environmental West

Drawing No.
A-9

LOG OF BORING NO. MW-5

DATE DRILLED: 1/22/90	EL:	WL TAKEN: n/a	EQUIPMENT: 3 3/4"x 8" / 8"x 12" H.S.A.

DEPTH (ft)	SAMPLE	WATER LEVEL	SYMBOL	MOISTURE	CONSISTENCY	COLOR	DESCRIPTION		WELL CONSTRUCTION	BLOWS/6IN.	O.V.M. (ppm)	T.P.H. (ppm)
							CERTIFIED ENGINEERING GEOLOGIST MICHAEL C. CAREY C.E.G. 1351 STATE OF CALIFORNIA					
5	1			moist	soft	black	Silty CLAY.	CL		4 5		
	2			moist	stiff	mottled olive and gray	Silty CLAY, little Shaley Gravel.	CL		8 17		
10							Increase in Gravel. Gravel pieces 1/2-1" dia.					
15	3			moist	stiff	light brown	Silty CLAY and Shaley GRAVEL.	CL		12 15		
				- - - -	- - - -	- - - -	Approximate top of bedrock.					
20	4			slightly moist	stiff	dark gray	Silty CLAY and Shaley GRAVEL.	CL		12 15		

SHELL OIL COMPANY
2724 Castro Valley Boulevard
Castro Valley, California

Project No.
88-44-380-01

Converse Environmental West

Drawing No.
A-10

LOG OF BORING NO. MW-5

continued - page 2

DEPTH (ft)	SAMPLE	WATER LEVEL	SYMBOL	MOISTURE	CONSISTENCY	COLOR	DESCRIPTION		WELL CONSTRUCTION	BLOWS/6IN.	O.V.H. (ppm)	T.P.H. (ppm)
				slightly moist	very stiff	dark gray	Silty CLAY and Shaley GRAVEL.	CL				
							Increasing Shale.					
25	5			dry	hard	dark gray	Fractured SHALE, trace Silty Clay.	SH		50/4"		
							Total Depth of Boring: 25 ft Below Ground Surface.					
							Screen Slot Size: 0.020 in. Filter Pack: 2/12 sand.					
30												
35												
40												

CERTIFIED ENGINEERING GEOLOGIST
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STATE OF CALIFORNIA

SHELL OIL COMPANY
2724 Castro Valley Boulevard
Castro Valley, California

Project No.
88-44-380-01

Converse Environmental West

Drawing No.
A-11

APPENDIX D

LABORATORY REPORTS AND CHAIN-OF-CUSTODY

NATIONAL ENVIRONMENTAL TESTING, INC.

NET Pacific, Inc.
435 Tesconi Circle
Santa Rosa, CA 95401
Tel: (707) 526-7200
Fax: (707) 526-9623

~~Robin Breuer~~ MCC
Converse Consultants
55 Hawthorne St, Ste 500
San Francisco, CA 94105

Date: 03-09-90
NET Client Acct. No: 18.02
NET Pacific Log No: 9858
Received: 02-23-90 2300

Client Reference Information

SHELL-2724 Castro Valley Blvd, Project: 88-44-380-01

Sample analysis in support of the project referenced above has been completed and results are presented on following pages. Please refer to the enclosed "Key to Abbreviations" for definition of terms. Should you have questions regarding procedures or results, please feel welcome to contact Client Services.

Approved by:

Jules Skamarack
Laboratory Manager

Enclosure(s)

Client A. t: 18.02
Client Name: Converse Consultants
NET Log No: 9858

Date: 03-09-90
Page: 2

Ref: SHELL-2724 Castro Valley Blvd, Project: 88-44-380-01

SAMPLE DESCRIPTION: MW-2 02-22-90 0950-1010
LAB Job No: (-47161)

Parameter	Reporting Limit	Results	Units
Oil & Grease, (total)	5	ND	mg/L
Oil & Grease (non-polar)	10	ND	mg/L
Cadmium	0.02	ND	mg/L
Chromium, total	0.05	ND	mg/L
Lead (EPA 7421)	0.002	ND	mg/L
Zinc	0.02	ND	mg/L

Client A .t: 18.02
Client Name: Converse Consultants
NET Log No: 9858

Date: 03-09-90
Page: 3

Ref: SHELL-2724 Castro Valley Blvd, Project: 88-44-380-01

SAMPLE DESCRIPTION: MW-2 02-22-90 0950-1010
LAB Job No: (-47161)

Parameter	Reporting Limit	Results	Units
METHOD 608			
DATE EXTRACTED		02-27-90	
DATE ANALYZED		03-02-90	
DILUTION FACTOR *		1	
Aldrin	0.02	ND	ug/L
alpha-BHC	0.005	ND	ug/L
beta-BHC	0.005	ND	ug/L
delta-BHC	0.005	ND	ug/L
gamma-BHC (Lindane)	0.02	ND	ug/L
Chlordane	0.4	ND	ug/L
4,4'-DDD	0.05	ND	ug/L
4,4'-DDE	0.05	ND	ug/L
4,4'-DDT	0.05	ND	ug/L
Dieldrin	0.05	ND	ug/L
Endosulfan I	0.05	ND	ug/L
Endosulfan II	0.05	ND	ug/L
Endosulfan sulfate	0.05	ND	ug/L
Endrin	0.05	ND	ug/L
Endrin aldehyde	0.05	ND	ug/L
Heptachlor	0.05	ND	ug/L
Heptachlor epoxide	0.05	ND	ug/L
Methoxychlor	0.08	ND	ug/L
Toxaphene	1.0	ND	ug/L
POLYCHLORINATED BIPHENYLS		--	
Aroclor 1016	2.0	ND	ug/L
Aroclor 1221	8.0	ND	ug/L
Aroclor 1232	3.0	ND	ug/L
Aroclor 1242	2.0	ND	ug/L
Aroclor 1248	2.0	ND	ug/L
Aroclor 1254	0.5	ND	ug/L
Aroclor 1260	0.5	ND	ug/L

Client Acct: 18.02
Client Name: Converse Consultants
NET Log No: 9858

Date: 03-09-90
Page: 4

Ref: SHELL-2724 Castro Valley Blvd, Project: 88-44-380-01

QUALITY CONTROL DATA - GENERAL CHEMISTRY AND INORGANICS

Parameter	Method	Blank	Spike Analysis (% Recovery)	Mean	RPD (%)	External Standard (% Recovery)	Method Standard (% Recovery)
Cadmium	6010	<0.05	88	3.5	2.3	108	90
Chromium	6010	<0.05	90	3.6	1.2	107	93
Lead	7421	<0.002	84	0.042	2.2	96	87
Zinc	6010	<0.05	91	3.6	1.8	103	90
Oil & Grease (total)	503A	<5	N/A	N/A	N/A	N/A	97
Oil & Grease (non-polar)	503A,E	<10	N/A	N/A	N/A	N/A	93

Ref: SHELL-2724 Castro Valley Blvd, Project: 88-44-380-01
BATCH SPIKE AND SPIKE REPLICATE RESULTS FOR ANALYSIS BY EPA METHOD 608

	Percent Recovery		
Compound	(-47161S)	(-47161SR)	RPD (%)
Lindane	178	165	7
Heptachlor	43	77	55
Aldrin	40	76	63
Dieldrin	131	128	2
Endrin	145	145	2
DDT_{pp}	147	170	15

Client Acct: 18.02
Client Name: Converse Consultants
NET Log No: 9858

Date: 03-09-90
Page: 6

Ref: SHELL-2724 Castro Valley Blvd, Project: 88-44-380-01
SAMPLE DESCRIPTION: Blank
LAB Job No:

Parameter	Reporting Limit	Results	Units
METHOD 608			
DATE EXTRACTED		02-27-90	
DATE ANALYZED		03-02-90	
DILUTION FACTOR *		1	
Aldrin	0.02	ND	ug/L
alpha-BHC	0.005	ND	ug/L
beta-BHC	0.005	ND	ug/L
delta-BHC	0.005	ND	ug/L
gamma-BHC (Lindane)	0.02	ND	ug/L
Chlordane	0.4	ND	ug/L
4,4'-DDD	0.05	ND	ug/L
4,4'-DDE	0.05	ND	ug/L
4,4'-DDT	0.05	ND	ug/L
Dieldrin	0.05	ND	ug/L
Endosulfan I	0.05	ND	ug/L
Endosulfan II	0.05	ND	ug/L
Endosulfan sulfate	0.05	ND	ug/L
Endrin	0.05	ND	ug/L
Endrin aldehyde	0.05	ND	ug/L
Heptachlor	0.05	ND	ug/L
Heptachlor epoxide	0.05	ND	ug/L
Methoxychlor	0.08	ND	ug/L
Toxaphene	1.0	ND	ug/L
POLYCHLORINATED BIPHENYLS		--	
Aroclor 1016	2.0	ND	ug/L
Aroclor 1221	8.0	ND	ug/L
Aroclor 1232	3.0	ND	ug/L
Aroclor 1242	2.0	ND	ug/L
Aroclor 1248	2.0	ND	ug/L
Aroclor 1254	0.5	ND	ug/L
Aroclor 1260	0.5	ND	ug/L

KEY TO ABBREVIATIONS and METHOD REFERENCES

<	:	Less than; When appearing in results column indicates analyte not detected at the value following, which supercedes the listed reporting limit.
mean	:	Average; sum of measurements divided by number of measurements.
mg/Kg (ppm)	:	Concentration in units of milligrams of analyte per kilogram of sample, wet-weight basis (parts per million).
mg/L	:	Concentration in units of milligrams of analyte per liter of sample.
mL/L/hr	:	Milliliters per liter per hour.
MPN/100 mL	:	Most probable number of bacteria per one hundred milliliters of sample.
N/A	:	Not applicable.
NA	:	Not analyzed.
ND	:	Not detected; the analyte concentration is less than applicable listed reporting limit.
NTU	:	Nephelometric turbidity units.
RPD	:	Relative percent difference, 100 [Value 1 - Value 2]/mean value.
SNA	:	Standard not available.
ug/Kg (ppb)	:	Concentration in units of micrograms of analyte per kilogram of sample, wet-weight basis (parts per billion).
ug/L	:	Concentration in units of micrograms of analyte per liter of sample.
umhos/cm	:	Micromhos per centimeter.

Method References

Methods 601 through 625: see "Guidelines Establishing Test Procedures for the Analysis of Pollutants" U.S. EPA, 40 CFR, Part 136, rev. 1988.

Methods 1000 through 9999: see "Test Methods for Evaluating Solid Waste", U.S. EPA SW-846, 3rd edition, 1986.

* Reporting Limits are a function of the dilution factor for any given sample. To obtain the actual reporting limits for this sample, multiply the stated reporting limits by the dilution factor.

9858

WIC # 204-1381-0407
AFE # 986675
EXP. CODE # 5441
P.M. DAN/BO

CONVERSE ENVIRONMENTAL WEST

CHAIN OF CUSTODY RECORD

PROJECT NO.: 884438001

PROJECT NAME / CROSS STREET: 2724 CASTRO VALLEY BLVD.

SAMPLERS: (Signature) [signature]

STATION NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NUMBER OF CONTAINERS	EPA 608	~~EPA 608~~	OIL & GREASE	METALS			REMARKS
MW-2	2/22	9:50		X	1 LITRE (AMBER)	1	X						} PESTICIDES
MW-2	2/22	9:58		X	1 LITRE (AMBER)	1	X						
MW-2	2/22	10:02		X	1 LITRE (AMBER)	1		~~X~~	X				} OIL & GREASE
MW-2	2/22	10:10		X	1 LITRE (AMBER)	1		~~X~~	X				
MW-2	2/22	10:15		X	500 ML (PLASTIC	1				X			METALS Cd, Cr, Pb, Zn per MSlojR

RELINQUISHED BY: (Signature) [signature]	DATE: 2/22/90 TIME: 17:25	RECEIVED BY: (Signartue) [signature]	RELINQUISHED BY: (Signature) [signature]	DATE: TIME:	RECEIVED BY: (Signature)
RELINQUISHED BY: (Signature)	DATE: TIME:	RECEIVED BY: (Signartue)	RELINQUISHED BY: (Signature)	DATE: TIME:	RECEIVED BY: (Signature)
RELINQUISHED BY COURIER: (Sign.)	DATE: TIME:	RECEIVED BY MOBILE LAB: (Sign.)	RELINQ. BY MOBILE LAB: (Signatue)	DATE: TIME:	RECEIVED BY COURIER: (Signature)
METHOD OF SHIPMENT		SHIPPED BY: (Signatue) VIA NCS	RECEIVED FOR LAB: (Signature) [signature]	DATE: 2-23-90 TIME: 2300	COURIER FROM AIRPORT: (Signature)

NATIONAL ENVIRONMENTAL TESTING, INC.

NET Pacific, Inc.
435 Tesconi Circle
Santa Rosa, CA 95401
Tel: (707) 526-7200
Fax: (707) 526-9623

RECEIVED

CONVERSE ENVIRONMENTAL

~~Ken Hodgson~~ Nick

Converse Consultants
55 Hawthorne St, Ste 500
San Francisco, CA 94105

Date: 02-27-90
NET Client Acct. No: 18.02
NET Pacific Log No: 9708
Received: 02-13-90 0700

Client Reference Information

SHELL- 2724 Castro Valley Blvd, Project: 88-44-380-01

Sample analysis in support of the project referenced above has been completed and results are presented on following pages. Please refer to the enclosed "Key to Abbreviations" for definition of terms. Should you have questions regarding procedures or results, please feel welcome to contact Client Services.

Approved by:

Jules Skamarack
Laboratory Manager

Enclosure(s)

Ref: SHELL- 2724 Castro Valley Blvd, Project: 88-44-380-01

SAMPLE DESCRIPTION: MW-2 02-09-90 1620
LAB Job No: (-46214)

Parameter	Reporting Limit	Results	Units
Oil & Grease, (total)	5	ND	mg/L
Oil & Grease (non-polar)	10	ND	mg/L
METHOD 601/602			
DATE ANALYZED		02-15-90	
DILUTION FACTOR*		1	
Bromodichloromethane	0.4	ND	ug/L
Bromoform	0.4	ND	ug/L
Bromomethane	0.4	ND	ug/L
Carbon tetrachloride	0.4	ND	ug/L
Chlorobenzene	0.4	ND	ug/L
Chloroethane	0.4	ND	ug/L
2-Chloroethylvinyl ether	1.0	ND	ug/L
Chloroform	0.4	ND	ug/L
Chloromethane	0.4	ND	ug/L
Dibromochloromethane	0.4	ND	ug/L
1,2-Dichlorobenzene	0.4	ND	ug/L
1,3-Dichlorobenzene	0.4	ND	ug/L
1,4-Dichlorobenzene	0.4	ND	ug/L
Dichlorodifluoromethane	0.4	ND	ug/L
1,1-Dichloroethane	0.4	ND	ug/L
1,2-Dichloroethane	0.4	ND	ug/L
1,1-Dichloroethene	0.4	ND	ug/L
trans-1,2-Dichloroethene	0.4	ND	ug/L
1,2-Dichloropropane	0.4	ND	ug/L
cis-1,3-Dichloropropene	0.4	ND	ug/L
trans-1,3-Dichloropropene	0.4	ND	ug/L
Methylene Chloride	10	ND	ug/L
1,1,2,2-Tetrachloroethane	0.4	ND	ug/L
Tetrachloroethene	0.1	ND	ug/L
1,1,1-Trichloroethane	0.4	ND	ug/L
1,1,2-Trichloroethane	0.4	ND	ug/L
Trichloroethene	0.4	ND	ug/L
Trichlorofluoromethane	0.4	ND	ug/L
Vinyl chloride	2.0	ND	ug/L
Benzene	0.5	360	ug/L
Ethylbenzene	0.6	6.5	ug/L
Toluene	0.5	410	ug/L
Xylenes, total	0.6	670	ug/L

Ref: SHELL- 2724 Castro Valley Blvd, Project: 88-44-380-01

SAMPLE DESCRIPTION: MW-2 02-09-90 1620
LAB Job No: (-46214)

Parameter	Reporting Limit	Results	Units
PETROLEUM HYDROCARBONS		--	
VOLATILE (WATER)		--	
DILUTION FACTOR *		1	
DATE ANALYZED		02-20-90	
METHOD GC FID/5030		--	
as Gasoline	0.05	8.6	mg/L
PETROLEUM HYDROCARBONS		--	
EXTRACTABLE (WATER)		--	
DILUTION FACTOR *		1	
DATE EXTRACTED		02-15-90	
DATE ANALYZED		02-15-90	
METHOD GC FID/3510		--	
as Diesel	0.05	4.1	mg/L
as Motor Oil	0.05	ND	mg/L

Ref: SHELL- 2724 Castro Valley Blvd, Project: 88-44-380-01

SAMPLE DESCRIPTION: MW-1 02-09-90 1530
LAB Job No: (-46215)

Parameter	Reporting Limit	Results	Units
PETROLEUM HYDROCARBONS		--	
VOLATILE (WATER)		--	
DILUTION FACTOR *		1	
DATE ANALYZED		02-20-90	
METHOD GC FID/5030		--	
as Gasoline	0.05	ND	mg/L
METHOD 602		--	
Benzene	0.5	0.58	ug/L
Ethylbenzene	0.5	ND	ug/L
Toluene	0.5	0.63	ug/L
Xylenes, total	0.5	ND	ug/L

Ref: SHELL- 2724 Castro Valley Blvd, Project: 88-44-380-01

SAMPLE DESCRIPTION: MW-5 02-09-90 1545
LAB Job No: (-46216)

Parameter	Reporting Limit	Results	Units
PETROLEUM HYDROCARBONS		--	
VOLATILE (WATER)		--	
DILUTION FACTOR *		1	
DATE ANALYZED		02-20-90	
METHOD GC FID/5030		--	
as Gasoline	0.05	ND	mg/L
METHOD 602		--	
Benzene	0.5	ND	ug/L
Ethylbenzene	0.5	ND	ug/L
Toluene	0.5	ND	ug/L
Xylenes, total	0.5	ND	ug/L

Ref: SHELL- 2724 Castro Valley Blvd, Project: 88-44-380-01

SAMPLE DESCRIPTION: MW-3 02-09-90 1600
LAB Job No: (-46217)

Parameter	Reporting Limit	Results	Units
PETROLEUM HYDROCARBONS		--	
VOLATILE (WATER)		--	
DILUTION FACTOR *		1	
DATE ANALYZED		02-20-90	
METHOD GC FID/5030		--	
as Gasoline	0.05	ND	mg/L
METHOD 602		--	
Benzene	0.5	ND	ug/L
Ethylbenzene	0.5	ND	ug/L
Toluene	0.5	ND	ug/L
Xylenes, total	0.5	ND	ug/L

Ref: SHELL- 2724 Castro Valley Blvd, Project: 88-44-380-01

SAMPLE DESCRIPTION: MW-1 Dup 02-09-90 1530
LAB Job No: (-46738)

Parameter	Reporting Limit	Results	Units
PETROLEUM HYDROCARBONS		--	
VOLATILE (WATER)		--	
DILUTION FACTOR *		1	
DATE ANALYZED		02-20-90	
METHOD GC FID/5030		--	
as Gasoline	0.05	ND	mg/L
METHOD 602		--	
Benzene	0.5	ND	ug/L
Ethylbenzene	0.5	ND	ug/L
Toluene	0.5	ND	ug/L
Xylenes, total	0.5	ND	ug/L

Ref: SHELL- 2724 Castro Valley Blvd, Project: 88-44-380-01

QUALITY CONTROL DATA - GENERAL CHEMISTRY AND INORGANICS

Parameter	Method	Blank	Spike Analysis (% Recovery)	Mean	RPD (%)	External Standard (% Recovery)	Method Standard (% Recovery)
Oil & Grease (total)	503A	<5	N/A	N/A	N/A	N/A	100

BATCH SPIKE AND SPIKE REPLICATE RESULTS FOR ANALYSIS BY EPA METHOD 601/602

	Lab No. and Percent Recovery		
Compound	(-45593S)	(-45593SR)	RPD (%)
1,1-Dichloroethene	129	144	11
Trichloroethene	108	104	3.8
Benzene	108	102	4.5
Toluene	104	98.5	5.4
Chlorobenzene	132	124	6.2

Ref: SHELL- 2724 Castro Valley Blvd, Project: 88-44-380-01

QUALITY CONTROL RESULTS - TOTAL PETROLEUM HYDROCARBONS (water)

Parameter	Reporting Limits	Units	Blank Results	Lab No. Spike and Spike Replicate Results (% Recovery) (-46512S)	(-46512SR)	RPD
as Gasoline	0.05	mg/L	ND	89	88	1
Benzene	0.5	ug/L	ND	99	100	1
Toluene	0.5	ug/L	ND	99	99	0

QUALITY CONTROL RESULTS - TOTAL PETROLEUM HYDROCARBONS (water)

Parameter	Reporting Limits	Units	Blank Results	Lab No. Spike and Spike Replicate Results (% Recovery) (-46305S)	(-46305SR)	RPD
as Diesel	0.5	mg/L	ND	116	145	21

KEY TO ABBREVIATIONS and METHOD REFERENCES

<	:	Less than; When appearing in results colum indicates analyte not detected at the value following, which supercedes the listed reporting limit.
mean	:	Average; sum of measurements divided by number of measurements.
mg/Kg (ppm)	:	Concentration in units of milligrams of analyte per kilogram of sample, wet-weight basis (parts per million).
mg/L	:	Concentration in units of milligrams of analyte per liter of sample.
mL/L/hr	:	Milliliters per liter per hour.
MPN/100 mL	:	Most probable number of bacteria per one hundred milliliters of sample.
N/A	:	Not applicable.
NA	:	Not analyzed.
ND	:	Not detected; the analyte concentration is less than applicable listed reporting limit.
NTU	:	Nephelometric turbidity units.
RPD	:	Relative percent difference, 100 [Value 1 - Value 2]/mean value.
SNA	:	Standard not available.
ug/Kg (ppb)	:	Concentration in units of micrograms of analyte per kilogram of sample, wet-weight basis (parts per billion).
ug/L	:	Concentration in units of micrograms of analyte per liter of sample.
umhos/cm	:	Micromhos per centimeter.

Method References

Methods 601 through 625: see "Guidelines Establishing Test Procedures for the Analysis of Pollutants" U.S. EPA, 40 CFR, Part 136, rev. 1988.

Methods 1000 through 9999: see "Test Methods for Evaluating Solid Waste", U.S. EPA SW-846, 3rd edition, 1986.

* Reporting Limits are a function of the dilution factor for any given sample. To obtain the actual reporting limits for this sample, multiply the stated reporting limits by the dilution factor.

CONVERSE ENVIRONMENTAL WEST

CHAIN OF CUSTODY RECORD

P.M. Mike Carey
WIC# 204-1381-0407
AFE # 98667S
Exp Code 5412
Shell Engineer - Diane Lizuist

PROJECT NO.:	PROJECT NAME / CROSS STREET :
88-44-380-01	Shell Oil Company 2724 Castro Valley Blvd Castro Valley, CA
SAMPLERS: (Signature) Thomas Smith	

STATION NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NUMBER OF CONTAINERS	ANALYSES: TPH-GAS	BTEX	503 Oil & Grease	8015 ext HC	8020/8040	601/602	REMARKS
MW-2	2/9/90	16:20		V	40ml VOA	12	V	~~V~~	N/A	V		V	All samples standard turnaround time
MW-2	2/9/90	16:20		V	Amber Liters	2			V		V		STAT
MW-1	2/9/90	15:30		V	40ml VOA	8	V	V					Incl. four VOA for duplicate QC
MW-5	2/9/90	15:45		V	40 ml VOA	8	V	V					
MW-3	2/9/90	16:00		V	40ml VOA	8	V	V					

CLARIFICATION
Note: Please Run TPH-g & BTEX DUP ON MW-1 only - M Yuen

RELINQUISHED BY . (Signature)	DATE : 2/12	RECEIVED BY : (Signartue)	RELINQUISHED BY : (Signature)	DATE :	RECEIVED BY : (Signature)
Thomas Smith	TIME : 18:15			TIME :	
RELINQUISHED BY : (Signature)	DATE :	RECEIVED BY : (Signartue)	RELINQUISHED BY : (Signature)	DATE :	RECEIVED BY : (Signature)
	TIME :			TIME :	
RELINQUISHED BY COURIER: (Sign.)	DATE :	RECEIVED BY MOBILE LAB : (Sign.)	RELINQ. BY MOBILE LAB : (Signature)	DATE :	RECEIVED BY COURIER : (Signature)
	TIME :			TIME :	
METHOD OF SHIPMENT		SHIPPED BY : (Signature)	RECEIVED FOR LAB : (Signature)	DATE : 2-13-90	COURIER FROM AIRPORT : (Signature)
(VIA NCS)			K Temple	TIME : 0700	

NATIONAL ENVIRONMENTAL TESTING, INC.

NET Pacific, Inc.
435 Tesconi Circle
Santa Rosa, CA 95401
Tel: (707) 526-7200
Fax: (707) 526-9623

Doug Charleton
Converse Consultants
55 Hawthorne St, Ste 500
San Francisco, CA 94105

Date: 02-07-90
NET Client Acct No: 18.02
NET Pacific Log No: 9426
Received: 01-25-90 0700

Client Reference Information

SHELL, 2724 Castro Valley; Project: 88-44-380-01

Sample analysis in support of the project referenced above has been completed and results are presented on following pages. Please refer to the enclosed "Key to Abbreviations" for definition of terms. Should you have questions regarding procedures or results, please feel welcome to contact Client Services.

Approved by:

Jules Skamarack
Laboratory Manager

Enclosure(s)

Parameter	Reporting Limit	Descriptor, Lab No. and Results: cuttingspile 44505	cuttingspile 44506	Units
METHOD 503D,E				
Oil & Grease (total)	50	150	560	mg/Kg
Oil & Grease (non-polar)	100	140	340	mg/Kg
Cadmium(EPA 6010)	5	ND	ND	mg/Kg
Chromium(EPA 6010)	5	38	34	mg/Kg
Lead (EPA 7421)	0.2	7.3	13	mg/Kg
Zinc (EPA 6010)	5	78	91	mg/Kg
METHOD 8010				
DATE ANALYZED		01-25-90	01-25-90	
DILUTION FACTOR*		1	1	
Bromodichloromethane	2.0	ND	ND	ug/Kg
Bromoform	2.0	ND	ND	ug/Kg
Bromomethane	2.0	ND	ND	ug/Kg
Carbon tetrachloride	2.0	ND	ND	ug/Kg
Chlorobenzene	2.0	ND	ND	ug/Kg
Chloroethane	2.0	ND	ND	ug/Kg
2-Chloroethylvinyl ether	5.0	ND	ND	ug/Kg
Chloroform	2.0	ND	ND	ug/Kg
Chloromethane	2.0	ND	ND	ug/Kg
Dibromochloromethane	2.0	ND	ND	ug/Kg
1,2-Dichlorobenzene	2.0	ND	ND	ug/Kg
1,3-Dichlorobenzene	2.0	ND	ND	ug/Kg
1,4-Dichlorobenzene	2.0	ND	ND	ug/Kg
Dichlorodifluoromethane	2.0	ND	ND	ug/Kg
1,1-Dichloroethane	2.0	ND	ND	ug/Kg
1,2-Dichloroethane	2.0	ND	ND	ug/Kg
1,1-Dichloroethene	2.0	ND	ND	ug/Kg
trans-1,2-Dichloroethene	2.0	ND	ND	ug/Kg
1,2-Dichloropropane	2.0	ND	ND	ug/Kg
cis-1,3-Dichloropropene	2.0	ND	ND	ug/Kg
trans-1,3-Dichloropropene	2.0	ND	ND	ug/Kg
Methylene Chloride	50	ND	ND	ug/Kg
1,1,2,Tetrachloroethane	2.0	ND	ND	ug/Kg
Tetrachloroethene	2.0	ND	ND	ug/Kg
1,1,1-Trichloroethane	2.0	ND	ND	ug/Kg
1,1,2-Trichloroethane	2.0	ND	ND	ug/Kg
Trichloroethene	2.0	ND	ND	ug/Kg
Trichlorofluoromethane	2.0	ND	ND	ug/Kg
Vinyl chloride	2.0	ND	ND	ug/Kg

Ref: SHELL, 2724 Castro Valley; Project: 88-44-380-01

Parameter	Reporting Limit	Descriptor, Lab No. and Results: cuttingspile 44505	cuttingspile 44506	Units
PETROLEUM HYDROCARBONS		--	--	
VOLATILE (SOIL)		--	--	
DILUTION FACTOR *		1	1	
DATE ANALYZED		01-29-90	01-29-90	
METHOD GC FID/5030		--	--	
as Gasoline	1	ND	ND	mg/Kg
METHOD 8020		--	--	
Benzene	2.5	ND	ND	ug/Kg
Ethylbenzene	2.5	ND	ND	ug/Kg
Toluene	2.5	ND	3.0	ug/Kg
Xylenes, total	2.5	ND	ND	ug/Kg
PETROLEUM HYDROCARBONS		--	--	
EXTRACTABLE (SOIL)		--	--	
DILUTION FACTOR *		1	1	
DATE EXTRACTED		01-26-90	01-26-90	
DATE ANALYZED		01-27-90	01-27-90	
METHOD GC FID/3550		--	--	
as Diesel	1	ND	ND	mg/Kg
as Motor Oil	10	12	65	mg/Kg

QUALITY CONTROL DATA - GENERAL CHEMISTRY AND INORGANICS

Parameter	Method	Blank	Spike Analysis (% Recovery)	Mean	RPD (%)	External Standard (% Recovery)	Method Standard (% Recovery)
Cadmium	6010	<0.05	100	4.0	2.4	101	100
Chromium	6010	<0.05	99	4.3	1.8	100	99
Lead	7421	<0.002	94	0.082	6.1	92	84
Zinc	6010	<0.05	102	4.9	1.2	98	96
Oil & Grease (total)	503D	<50	100	530	<1	N/A	100

QUALITY CONTROL RESULTS - TOTAL PETROLEUM HYDROCARBONS (soil)

Parameter	Reporting Limits	Units	Blank Results	Lab No. Spike and Spike Replicate Results (% Recovery) (-44053S)	(-44053SR)	RPD
as Gasoline	1.0	mg/Kg	ND	94	90	4
Benzene	2.5	ug/Kg	ND	101	101	0
Toluene	2.5	ug/Kg	ND	102	103	1

QUALITY CONTROL RESULTS - TOTAL PETROLEUM HYDROCARBONS (soil)

Parameter	Reporting Limits	Units	Blank Results	Lab No. Spike and Spike Replicate Results (% Recovery) (-44537S)	(-44537SR)	RPD
as Diesel	1.0	mg/Kg	ND	76	73	3.7

NET Pacific, Inc.

Ref: SHELL, 2724 Castro Valley; Project: 88-44-380-01

BATCH SPIKE AND SPIKE REPLICATE RESULTS FOR ANALYSIS BY EPA METHOD 8010

Compound	Lab No. and Percent Recovery (-44220S)	(-44220SR)	RPD (%)
1,1-Dichloroethene	129	125	4.5
Trichloroethene	109	111	1.8
Benzene	107	104	2.8
Toluene	116	121	4.2
Chlorobenzene	110	110	0.90

NET Pacific, Inc. Ref: SHELL, 2724 Castro Valley; Project: 88-44-380-01

SAMPLE DESCRIPTOR: Blank

Parameter	Reporting Limit		Units
METHOD 8010			
DATE ANALYZED		01-25-90	
DILUTION FACTOR*		1	
Bromodichloromethane	2.0	ND	ug/Kg
Bromoform	2.0	ND	ug/Kg
Bromomethane	2.0	ND	ug/Kg
Carbon tetrachloride	2.0	ND	ug/Kg
Chlorobenzene	2.0	ND	ug/Kg
Chloroethane	2.0	ND	ug/Kg
2-Chloroethylvinyl ether	5.0	ND	ug/Kg
Chloroform	2.0	ND	ug/Kg
Chloromethane	2.0	ND	ug/Kg
Dibromochloromethane	2.0	ND	ug/Kg
1,2-Dichlorobenzene	2.0	ND	ug/Kg
1,3-Dichlorobenzene	2.0	ND	ug/Kg
1,4-Dichlorobenzene	2.0	ND	ug/Kg
Dichlorodifluoromethane	2.0	ND	ug/Kg
1,1-Dichloroethane	2.0	ND	ug/Kg
1,2-Dichloroethane	2.0	ND	ug/Kg
1,1-Dichloroethene	2.0	ND	ug/Kg
trans-1,2-Dichloroethene	2.0	ND	ug/Kg
1,2-Dichloropropane	2.0	ND	ug/Kg
cis-1,3-Dichloropropene	2.0	ND	ug/Kg
trans-1,3-Dichloropropene	2.0	ND	ug/Kg
Methylene Chloride	50	ND	ug/Kg
1,1,2,Tetrachloroethane	2.0	ND	ug/Kg
Tetrachloroethene	2.0	ND	ug/Kg
1,1,1-Trichloroethane	2.0	ND	ug/Kg
1,1,2-Trichloroethane	2.0	ND	ug/Kg
Trichloroethene	2.0	ND	ug/Kg
Trichlorofluoromethane	2.0	ND	ug/Kg
Vinyl chloride	2.0	ND	ug/Kg

NET Pacific, Inc.

KEY TO ABBREVIATIONS and METHOD REFERENCES

<	:	Less than; When appearing in results column indicates analyte not detected at the value following, which supercedes the listed reporting limit.
mean	:	Average; sum of measurements divided by number of measurements.
mg/Kg (ppm)	:	Concentration in units of milligrams of analyte per kilogram of sample, wet-weight basis (parts per million).
mg/L	:	Concentration in units of milligrams of analyte per liter of sample.
mL/L/hr	:	Milliliters per liter per hour.
MPN/100 mL	:	Most probable number of bacteria per one hundred milliliters of sample.
N/A	:	Not applicable.
NA	:	Not analyzed.
ND	:	Not detected; the analyte concentration is less than applicable listed reporting limit.
NTU	:	Nephelometric turbidity units.
RPD	:	Relative percent difference, 100 [Value 1 - Value 2]/mean value.
SNA	:	Standard not available.
ug/Kg (ppb)	:	Concentration in units of micrograms of analyte per kilogram of sample, wet-weight basis (parts per billion).
ug/L	:	Concentration in units of micrograms of analyte per liter of sample.
umhos/cm	:	Micromhos per centimeter.

Method References

Methods 601 through 625: see "Guidelines Establishing Test Procedures for the Analysis of Pollutants" U.S. EPA, 40 CFR, Part 136, rev. 1988.

Methods 1000 through 9999: see "Test Methods for Evaluating Solid Waste", U.S. EPA SW-846, 3rd edition, 1986.

* Reporting Limits are a function of the dilution factor for any given sample. To obtain the actual reporting limits for this sample, multiply the stated reporting limits by the dilution factor.

Converse Consultants

PM: DWC WIC # 204-1381-0?57 AFE # 986675 Exp Code 5992

9426

CHAIN OF CUSTODY RECORD

Project No.	Project Name
66-44-380-01	2720 Castro Valley

Samplers: (signature) [signature]

Station No.	Date	Time	Comp.	Grab	Station Location	Number of Containers (2)	TPH-g	TPH-d	BTEX	Oil and grease	CL HC 8010	ICAP Cd, Cr, Pb, Zn per DC to 1/25	Remarks
cuttings pile 1	1-23-90			X	Pile 1 - SE end of site	1	X	X	X	X	X	X	STAT
cuttings pile 2	1-23-90			X	pile 2 - SW end of site	1	X	X	X	X	X	X	

samples recd on ice 1/25

Relinquished by: (signature)	Date/Time	Received by: (signature)	Relinquished by: (signature)	Date/Time	Received by: (signature)
[signature]	1/24 15:15	[signature]	[signature]		
Relinquished by: (signature)	Date/Time	Received by: (signature)	Relinquished by: (signature)	Date/Time	Received by: (signature)
Relinquished by Courier: (signature)	Date/Time	Received by Mobile Lab: (signature)	Relinquished by Mobile Lab: (signature)	Date/Time	Received by Courier: (signature)
Method of Shipment: CVIA NCSI		Shipped by: (signature)	Courier from Airport: (signature)	Received for Laboratory: (signature) [signature]	Date/Time 1-25-90 0700

NATIONAL ENVIRONMENTAL TESTING, INC.

NET Pacific, Inc.
435 Tesconi Circle
Santa Rosa, CA 95401
Tel: (707) 526-7200
Fax: (707) 526-9623

Michael Carey
Converse Consultants
55 Hawthorne St, Ste 500
San Francisco, CA 94105

Date: 02-01-90
NET Client Acct No: 18.02
NET Pacific Log No: 9392
Received: 01-23-90 0700

Client Reference Information

SHELL, Castro Valley; Project # 88-44-380

Sample analysis in support of the project referenced above has been completed and results are presented on following pages. Please refer to the enclosed "Key to Abbreviations" for definition of terms. Should you have questions regarding procedures or results, please feel welcome to contact Client Services.

Approved by:

Jules Skamarack
Laboratory Manager

Enclosure(s)

Parameter	Reporting Limit	Descriptor, Lab No. and Results # 24 01-19-90 44338	# 25 01-19-90 44339	# 26 01-19-90 44340	# 27 01-19-90 44341	Units
Lead (EPA 7421)	0.2	5.8	6.2	7.3	5.4	mg/Kg
PETROLEUM HYDROCARBONS		—	—	—	—	
VOLATILE (SOIL)		—	—	—	—	
DILUTION FACTOR *		1	1	1	1	
DATE ANALYZED		01-24-90	01-24-90	01-24-90	01-24-90	
METHOD GC FID/5030		—	—	—	—	
as Gasoline	1	ND	ND	ND	ND	mg/Kg
METHOD 8020		—	—	—	—	
Benzene	2.5	ND	3.1	ND	ND	ug/Kg
Ethylbenzene	2.5	ND	ND	ND	ND	ug/Kg
Toluene	2.5	ND	6.0	ND	ND	ug/Kg
Xylenes, total	2.5	ND	10	2.9	ND	ug/Kg
PETROLEUM HYDROCARBONS		—	—	—	—	
EXTRACTABLE (SOIL)		—	—	—	—	
DILUTION FACTOR *		1	1	1	1	
DATE EXTRACTED		01-25-90	01-25-90	01-25-90	01-25-90	
DATE ANALYZED		01-27-90	01-25-90	01-25-90	01-25-90	
METHOD GC FID/3550		—	—	—	—	
as Diesel	1	ND	ND	ND	ND	mg/Kg
as Motor Oil	10	ND	ND	ND	ND	mg/Kg

Parameter	Reporting Limit	Descriptor, Lab No. and Results # 28 01-19-90 44342	# 29 01-19-90 44343	# 30 01-19-90 44344	# 31 01-19-90 44345	Units
Lead (EPA 7421)	0.2	7.0	7.2	6.7	7.4	mg/Kg
PETROLEUM HYDROCARBONS		—	—	—	—	
VOLATILE (SOIL)		—	—	—	—	
DILUTION FACTOR *		1	1	1	1	
DATE ANALYZED		01-24-90	01-24-90	01-24-90	01-24-90	
METHOD GC FID/5030		—	—	—	—	
as Gasoline	1	4.4	1.2	ND	ND	mg/Kg
METHOD 8020		—	—	—	—	
Benzene	2.5	ND	ND	ND	ND	ug/Kg
Ethylbenzene	2.5	ND	ND	ND	ND	ug/Kg
Toluene	2.5	ND	ND	ND	ND	ug/Kg
Xylenes, total	2.5	20	ND	ND	ND	ug/Kg
PETROLEUM HYDROCARBONS		—	—	—	—	
EXTRACTABLE (SOIL)		—	—	—	—	
DILUTION FACTOR *		1	1	1	1	
DATE EXTRACTED		01-25-90	01-25-90	01-25-90	01-25-90	
DATE ANALYZED		01-27-90	01-27-90	01-27-90	01-27-90	
METHOD GC FID/3550		—	—	—	—	
as Diesel	1	1.9	4.0	ND	ND	mg/Kg
as Motor Oil	10	ND	ND	ND	ND	mg/Kg

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Client Name: Converse Consultants
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Parameter	Reporting Limit	Descriptor, Lab No. and Results # 32 01-19-90 44346	# 33 01-19-90 44347	# 34 01-19-90 44348	# 35 01-19-90 44349	Units
Lead (EPA 7421)	0.2	6.4	5.4	6.3	5.4	mg/Kg
PETROLEUM HYDROCARBONS		—	—	—	—	
VOLATILE (SOIL)		—	—	—	—	
DILUTION FACTOR *		1	1	1	1	
DATE ANALYZED		01-24-90	01-24-90	01-24-90	01-24-90	
METHOD GC FID/5030		—	—	—	—	
as Gasoline	1	ND	ND	ND	ND	mg/Kg
METHOD 8020		—	—	—	—	
Benzene	2.5	ND	ND	ND	ND	ug/Kg
Ethylbenzene	2.5	ND	ND	ND	ND	ug/Kg
Toluene	2.5	ND	ND	ND	ND	ug/Kg
Xylenes, total	2.5	ND	ND	ND	ND	ug/Kg
PETROLEUM HYDROCARBONS		—	—	—	—	
EXTRACTABLE (SOIL)		—	—	—	—	
DILUTION FACTOR *		1	1	1	1	
DATE EXTRACTED		01-25-90	01-25-90	01-25-90	01-25-90	
DATE ANALYZED		01-27-90	01-27-90	01-27-90	01-27-90	
METHOD GC FID/3550		—	—	—	—	
as Diesel	1	ND	1.1	ND	ND	mg/Kg
as Motor Oil	10	ND	ND	ND	ND	mg/Kg

Parameter	Reporting Limit	Descriptor, Lab No. and Results # 36 01-19-90 44350	# 37 01-19-90 44351	# 38 01-19-90 44352	# 39 01-19-90 44353	Units
Lead (EPA 7421)	0.2	6.1	5.5	5.9	7.0	mg/Kg
PETROLEUM HYDROCARBONS		—	—	—	—	
VOLATILE (SOIL)		—	—	—	—	
DILUTION FACTOR *		1	1	1	1	
DATE ANALYZED		01-24-90	01-25-90	01-25-90	01-25-90	
METHOD GC FID/5030		—	—	—	—	
as Gasoline	1	ND	ND	ND	ND	mg/Kg
METHOD 8020		—	—	—	—	
Benzene	2.5	ND	ND	ND	ND	ug/Kg
Ethylbenzene	2.5	ND	ND	ND	ND	ug/Kg
Toluene	2.5	ND	ND	ND	ND	ug/Kg
Xylenes, total	2.5	ND	ND	ND	ND	ug/Kg
PETROLEUM HYDROCARBONS		—	—	—	—	
EXTRACTABLE (SOIL)		—	—	—	—	
DILUTION FACTOR *		1	1	1	1	
DATE EXTRACTED		01-25-90	01-25-90	01-25-90	01-25-90	
DATE ANALYZED		01-27-90	01-27-90	01-27-90	01-27-90	
METHOD GC FID/3550		—	—	—	—	
as Diesel	1	ND	ND	ND	ND	mg/Kg
as Motor Oil	10	ND	ND	ND	ND	mg/Kg

Parameter	Reporting Limit	Descriptor, Lab No. and Results # 6 A 01-19-90 44354	 # 12 A 01-19-90 44355	Units
Lead (EPA 7421)	0.2	6.6	8.8	mg/Kg
PETROLEUM HYDROCARBONS		—	—	
VOLATILE (SOIL)		—	—	
DILUTION FACTOR *		1	1	
DATE ANALYZED		01-25-90	01-25-90	
METHOD GC FID/5030		—	—	
as Gasoline	1	ND	ND	mg/Kg
METHOD 8020		—	—	
Benzene	2.5	ND	ND	ug/Kg
Ethylbenzene	2.5	ND	ND	ug/Kg
Toluene	2.5	4.9	ND	ug/Kg
Xylenes, total	2.5	2.5	ND	ug/Kg
PETROLEUM HYDROCARBONS		—	—	
EXTRACTABLE (SOIL)		—	—	
DILUTION FACTOR *		1	1	
DATE EXTRACTED		01-25-90	01-25-90	
DATE ANALYZED		01-27-90	01-27-90	
METHOD GC FID/3550		—	—	
as Diesel	1	4.0	ND	mg/Kg
as Motor Oil	10	ND	ND	mg/Kg

QUALITY CONTROL DATA - GENERAL CHEMISTRY AND INORGANICS

Parameter	Method	Blank	Spike Analysis (% Recovery)	Mean	RPD (%)	External Standard (% Recovery)	Method Standard (% Recovery)
Lead	7421	<0.002	109	0.092	2.2	102	108

QUALITY CONTROL RESULTS - TOTAL PETROLEUM HYDROCARBONS (soil)

Parameter	Reporting Limits	Units	Blank Results	Lab No. Spike and Spike Replicate Results (% Recovery) (-44462S)	(-44462SR)	RPD
as Gasoline	1.0	mg/Kg	ND	91	92	1
Benzene	25	ug/Kg	ND	99	101	2
Toluene	25	ug/Kg	ND	100	103	3

QUALITY CONTROL RESULTS - TOTAL PETROLEUM HYDROCARBONS (soil)

Parameter	Reporting Limits	Units	Blank Results	Lab No. Spike and Spike Replicate Results (% Recovery) (-44338S)	(-44338SR)	RPD
as Gasoline	1.0	mg/Kg	ND	77	79	3
Benzene	25	ug/Kg	ND	107	108	1
Toluene	25	ug/Kg	ND	106	108	2

QUALITY CONTROL RESULTS - TOTAL PETROLEUM HYDROCARBONS (soil)

Parameter	Reporting Limits	Units	Blank Results	Lab No. Spike and Spike Replicate Results (% Recovery) (-44352S)	(-44352SR)	RPD
as Diesel	1.0	mg/Kg	ND	83	75	9.8

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EXP 5442

9392

CHAIN OF CUSTODY RECORD

P.M., D.W.C.

PAGE 1 of 2

Project No.	Project Name
88-44-380	CASTRO Valley

Samplers: (signature) Michael Carey

Station No.	Date 1/19/90	Time	Comp.	Grab	Station Location	Number of Containers	TPH-g	BTEX	Pb	[illegible]		Remarks
24	~~1-19~~				SAMPLES of Sidewall 1-19-90 (SEE MAP)		/	/	/	/		
25							/	/	/	/		
26							/	/	/	/		
27							/	/	/	/		
28							/	/	/	/		
29							/	/	/	/		
30							/	/	/	/		
31							/	/	/	/		
32							/	/	/	/		
33							/	/	/	/		
34							/	/	/	/		
35							/	/	/	/		
36							/	/	/	/		
37							/	/	/	/		
38							/	/	/	/		
39	1/19/90						/	/	/	/		

Relinquished by: (signature)	Date/Time	Received by: (signature)	Relinquished by: (signature)	Date/Time	Received by: (signature)
Michael Carey	1-22-90	Jeff Winkler 18:00	Jeff Winkler		
Relinquished by: (signature)	Date/Time	Received by: (signature)	Relinquished by: (signature)	Date/Time	Received by: (signature)
Relinquished by Courier: (signature)	Date/Time	Received by Mobile Lab: (signature)	Relinquished by Mobile Lab: (signature)	Date/Time	Received by Courier: (signature)

Method of Shipment	Shipped by: (signature)	Courier from Airport: (signature)	Received for Laboratory: (signature)	Date/Time
(VIA NCS)			[illegible signature]	1-23-90 0700

Converse Consultants

WIC [illegible]
AFE 986675
EXP 5442

9392

CHAIN OF CUSTODY RECORD

P.M DWC,

PAGE 2 of 2

Project No. 88-44-380-01 | Project Name: Castro Valley

Samplers: (signature) Michael Carey

Station No.	Date	Time	Comp.	Grab	Station Location	Number of Containers	TPH-g	BTEX	Pb	diesel			Remarks
1A	1-19-90				Sidewall Samples		✓	✓	✓	✓			
12A	1-19-90				"		✓	✓	✓	✓			

diesel per JC to JR 1/23 9:15 AM

Relinquished by: (signature)	Date/Time	Received by: (signature)	Relinquished by: (signature)	Date/Time	Received by: (signature)
Michael Carey	1-22-90 18:00	Jeff [illegible]	Jeff [illegible]		
Relinquished by: (signature)	Date/Time	Received by: (signature)	Relinquished by: (signature)	Date/Time	Received by: (signature)
Relinquished by Courier: (signature)	Date/Time	Received by Mobile Lab: (signature)	Relinquished by Mobile Lab: (signature)	Date/Time	Received by Courier: (signature)
Method of Shipment: (VIA NCS)		Shipped by: (signature)	Courier from Airport: (signature)	Received for Laboratory: (signature) [illegible]	Date/Time 1-23-90 0800

NATIONAL ENVIRONMENTAL TESTING, INC.

NET Pacific, Inc.
435 Tesconi Circle
Santa Rosa, CA 95401
Tel: (707) 526-7200
Fax: (707) 526-9623

Michael Carey
Converse Consultants
55 Hawthorne St, Ste 500
San Francisco, CA 94105

Date: 02-02-90
NET Client Acct No: 18.02
NET Pacific Log No: 9391
Received: 01-23-90 0700

Client Reference Information

SHELL, 2724 Castro Valley Blvd.; Project # 88-44-380-01

REVISED 02-13-90

Sample analysis in support of the project referenced above has been completed and results are presented on following pages. Please refer to the enclosed "Key to Abbreviations" for definition of terms. Should you have questions regarding procedures or results, please feel welcome to contact Client Services.

Approved by:

Jules Skamarack
Laboratory Manager

Enclosure(s)

NET Pacific, Inc.

Client No: 18.02
Client Name: Converse Consultants
NET Log No: 9391

Date: 02-02-90
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Parameter	Reporting Limit	Descriptor, Lab No. and Results MW2 #1 5' 01-19-90 44324	 MW2 #2 9' 01-19-90 44325	 MW2 #3 15' 01-19-90 44326	Units
METHOD 503D,E					
Oil & Grease (total)	50	370	ND	ND	mg/Kg
Oil & Grease (non-polar)	100	350	ND	ND	mg/Kg
Cadmium(EPA 6010)	5	ND	ND	ND	mg/Kg
Chromium(EPA 6010)	5	18	45	40	mg/Kg
Lead (EPA 7421)	0.2	4.6	5.3	6.3	mg/Kg
Zinc (EPA 6010)	5	67	56	60	mg/Kg
PETROLEUM HYDROCARBONS		--	--	--	
VOLATILE (SOIL)		--	--	--	
DILUTION FACTOR *		1	1	1	
DATE ANALYZED		01-23-90	01-23-90	01-24-90	
METHOD GC FID/5030		--	--	--	
as Gasoline	1	ND	ND	ND	mg/Kg
METHOD 8020		--	--	--	
Benzene	2.5	ND	ND	3.2	ug/Kg
Ethylbenzene	2.5	ND	ND	ND	ug/Kg
Toluene	2.5	ND	ND	2.9	ug/Kg
Xylenes, total	2.5	ND	ND	54	ug/Kg
PETROLEUM HYDROCARBONS		--	--	--	
EXTRACTABLE (SOIL)		--	--	--	
DILUTION FACTOR *		1	1	1	
DATE EXTRACTED		01-24-90	01-24-90	01-24-90	
DATE ANALYZED		01-25-90	01-25-90	01-25-90	
METHOD GC FID/3550		--	--	--	
as Diesel	1	14	ND	3.1	mg/Kg
as Motor Oil	10	90	23	ND	mg/Kg

Parameter	Reporting Limit	Descriptor, Lab No. and Results MW2 #1 5' 01-19-90 44324	 MW2 #2 9' 01-19-90 44325	 MW2 #3 15' 01-19-90 44326	Units
METHOD 8240					
DATE ANALYZED		01-24-90	01-24-90	01-24-90	
DILUTION FACTOR *		1	1	1	
Benzene	25	ND	ND	ND	ug/Kg
Acetone	50	ND	ND	ND	ug/Kg
Bromodichloromethane	25	ND	ND	ND	ug/Kg
Bromoform	25	ND	ND	ND	ug/Kg
Bromomethane	25	ND	ND	ND	ug/Kg
2-Butanone	50	ND	ND	ND	ug/Kg
Carbon disulfide	25	ND	ND	ND	ug/Kg
Carbon tetrachloride	25	ND	ND	ND	ug/Kg
Chlorobenzene	25	ND	ND	ND	ug/Kg
Chloroethane	25	ND	ND	ND	ug/Kg
2-Chloroethyl Vinyl Ether	50	ND	ND	ND	ug/Kg
Chloroform	25	ND	ND	ND	ug/Kg
Chloromethane	25	ND	ND	ND	ug/Kg
Dibromochloromethane	25	ND	ND	ND	ug/Kg
1,2-Dichlorobenzene	25	ND	ND	ND	ug/Kg
1,3-Dichlorobenzene	25	ND	ND	ND	ug/Kg
1,4-Dichlorobenzene	25	ND	ND	ND	ug/Kg
1,1-Dichloroethane	25	ND	ND	ND	ug/Kg
1,2-Dichloroethane	25	ND	ND	ND	ug/Kg
1,1-Dichloroethene	25	ND	ND	ND	ug/Kg
trans-1,2-Dichloroethene	25	ND	ND	ND	ug/Kg
1,2-Dichloropropane	25	ND	ND	ND	ug/Kg
cis-1,3-Dichloropropene	25	ND	ND	ND	ug/Kg
trans-1,3-Dichloropropene	25	ND	ND	ND	ug/Kg
Ethylbenzene	25	ND	ND	ND	ug/Kg
2-Hexanone	50	ND	ND	ND	ug/Kg
Methylene chloride	25	ND	ND	ND	ug/Kg
4-Methyl-2-pentanone	50	ND	ND	ND	ug/Kg
Styrene	25	ND	ND	ND	ug/Kg
1,1,2,2-Tetrachloroethane	25	ND	ND	ND	ug/Kg
Tetrachloroethene	25	ND	ND	ND	ug/Kg
Toluene	25	ND	ND	ND	ug/Kg
1,1,1-Trichloroethane	25	ND	ND	ND	ug/Kg
1,1,2-Trichloroethane	25	ND	ND	ND	ug/Kg
Trichloroethene	25	ND	ND	ND	ug/Kg
Trichlorofluoromethane	25	ND	ND	ND	ug/Kg
Vinyl Acetate	50	ND	ND	ND	ug/Kg
Vinyl chloride	25	ND	ND	ND	ug/Kg
Xylenes, total	25	ND	ND	ND	ug/Kg
				240	ug/Kg

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Parameter	Reporting Limit	Descriptor, Lab No. and Results MW2 #1 5' 01-19-90 44324	 MW2 #2 9' 01-19-90 44325	 MW2 #3 15' 01-19-90 44326	Units
METHOD 8270					
DATE EXTRACTED		01-24-90	01-24-90	01-24-90	
DATE ANALYZED		01-25-90	01-25-90	01-25-90	
DILUTION FACTOR *		10	1	1	
Acenaphthene	330	ND	ND	ND	ug/Kg
Acenaphthylene	330	ND	ND	ND	ug/Kg
Aldrin	1600	ND	ND	ND	ug/Kg
Anthracene	330	ND	ND	ND	ug/Kg
Benzidine	1600	ND	ND	ND	ug/Kg
Benzo(a)anthracene	330	ND	ND	ND	ug/Kg
Benzo(b)fluoranthene	330	ND	ND	ND	ug/Kg
Benzo(k)fluoranthene	330	ND	ND	ND	ug/Kg
Benzo(a)pyrene	330	ND	ND	ND	ug/Kg
Benzo(g,h,i)perylene	330	ND	ND	ND	ug/Kg
Benzoic Acid	1600	ND	ND	ND	ug/Kg
Benyzl Alcohol	660	ND	ND	ND	ug/Kg
Butyl benzyl phthalate	330	ND	ND	ND	ug/Kg
delta-BHC	1600	ND	ND	ND	ug/Kg
gamma-BHC	1600	ND	ND	ND	ug/Kg
bis(2-chloroethyl)ether	330	ND	ND	ND	ug/Kg
bis(2-chloroethoxy)methane	330	ND	ND	ND	ug/Kg
bis(2-chloroisopropyl)ether	330	ND	ND	ND	ug/Kg
bis(2-ethylhexyl)phthalate	330	ND	ND	ND	ug/Kg
4-Bromophenyl phenyl ether	330	ND	ND	ND	ug/Kg
4-Chloroanaline	660	ND	ND	ND	ug/Kg
2-Chloronaphthalene	330	ND	ND	ND	ug/Kg
4-Chlorophenyl phenyl ether	330	ND	ND	ND	ug/Kg
Chrysene	330	ND	ND	ND	ug/Kg
4,4'-DDD	1600	ND	ND	ND	ug/Kg
4,4'-DDE	1600	ND	ND	ND	ug/Kg
4,4'-DDT	1600	ND	ND	ND	ug/Kg
Dibenzo(a,h)anthracene	330	ND	ND	ND	ug/Kg
Dibenzofuran	330	ND	ND	ND	ug/Kg
Di-n-butylphthalate	330	ND	ND	ND	ug/Kg
1,2-Dichlorobenzene	330	ND	ND	ND	ug/Kg
1,3-Dichlorobenzene	330	ND	ND	ND	ug/Kg
1,4-Dichlorobenzene	330	ND	ND	ND	ug/Kg
3,3'-Dichlorobenzidine	660	ND	ND	ND	ug/Kg
Dieldrin	1600	ND	ND	ND	ug/Kg
Diethylphthalate	330	ND	ND	ND	ug/Kg

Parameter	Reporting Limit	Descriptor, Lab No. and Results MW2 #1 5' 01-19-90 44324	 MW2 #2 9' 01-19-90 44325	 MW2 #3 15' 01-19-90 44326	Units
Dimethyl phthalate	330	ND	ND	ND	ug/Kg
2,4-Dinitrotoluene	330	ND	ND	ND	ug/Kg
2,6-Dinitrotoluene	330	ND	ND	ND	ug/Kg
Di-n-octyl phthalate	33	ND	ND	ND	ug/Kg
Endrin aldehyde	1600	ND	ND	ND	ug/Kg
Fluoranthene	330	ND	ND	ND	ug/Kg
Fluorene	330	ND	ND	ND	ug/Kg
Heptachlor	1600	ND	ND	ND	ug/Kg
Heptachlor epoxide	1600	ND	ND	ND	ug/Kg
Hexachlorobenzene	330	ND	ND	ND	ug/Kg
Hexachlorobutadiene	330	ND	ND	ND	ug/Kg
Hexachlorocyclopentadiene	330	ND	ND	ND	ug/Kg
Hexachloroethane	330	ND	ND	ND	ug/Kg
Indeno(1,2,3-cd)pyrene	330	ND	ND	ND	ug/Kg
Isophorone	330	ND	ND	ND	ug/Kg
2-Methylnaphthalene	330	ND	ND	ND	ug/Kg
Naphthalene	330	ND	ND	ND	ug/Kg
2-Nitroaniline	1600	ND	ND	ND	ug/Kg
3-Nitroaniline	1600	ND	ND	ND	ug/Kg
4-Nitroaniline	1600	ND	ND	ND	ug/Kg
Nitrobenzene	330	ND	ND	ND	ug/Kg
N-Nitroso-Di-N-propylamine	330	ND	ND	ND	ug/Kg
N-Nitrosodiphenylamine	330	ND	ND	ND	ug/Kg
Phenanthrene	330	ND	ND	ND	ug/Kg
Pyrene	330	ND	ND	ND	ug/Kg
1,2,4-Trichlorobenzene	330	ND	ND	ND	ug/Kg
4-Chloro-3-methylphenol	660	ND	ND	ND	ug/Kg
2-Chlorophenol	330	ND	ND	ND	ug/Kg
2,4-Dichlorophenol	330	ND	ND	ND	ug/Kg
2,4-Dimethylphenol	330	ND	ND	ND	ug/Kg
2,4-Dinitrophenol	1600	ND	ND	ND	ug/Kg
4,6-Dinitro-2-methylphenol	33	ND	ND	ND	ug/Kg
2-Nitrophenol	330	ND	ND	ND	ug/Kg
4-Nitrophenol	1600	ND	ND	ND	ug/Kg
Pentachlorophenol	1600	ND	ND	ND	ug/Kg
Phenol	330	ND	ND	ND	ug/Kg
2,4,6-Trichlorophenol	330	ND	ND	ND	ug/Kg
2-methylphenol	330	ND	ND	ND	ug/Kg
4-methylphenol	330	ND	ND	ND	ug/Kg
2,4,5-Trichlorophenol	33	ND	ND	ND	ug/Kg

Parameter	Reporting Limit	Descriptor, Lab No. and Results MW2 #4 20' 01-19-90 44327	 MW2 #5 25' 01-19-90 44328
METHOD 503D,E			
Oil & Grease (total)	50	ND	ND
Oil & Grease (non-polar)	100	ND	ND
Cadmium(EPA 6010)	5	ND	ND
Chromium(EPA 6010)	5	53	48
Lead (EPA 7421)	0.2	7.9	8.0
Zinc (EPA 6010)	5	99	110
PETROLEUM HYDROCARBONS		--	--
VOLATILE (SOIL)		--	--
DILUTION FACTOR *		1	1
DATE ANALYZED		01-24-90	01-24-90
METHOD GC FID/5030		--	--
as Gasoline	1	ND	ND
METHOD 8020		--	--
Benzene	2.5	8.4	23
Ethylbenzene	2.5	ND	3.6
Toluene	2.5	21	34
Xylenes, total	2.5	16	23
PETROLEUM HYDROCARBONS		--	--
EXTRACTABLE (SOIL)		--	--
DILUTION FACTOR *		1	1
DATE EXTRACTED		01-24-90	01-24-90
DATE ANALYZED		01-25-90	01-25-90
METHOD GC FID/3550		--	--
as Diesel	1	3.2	8.2
as Motor Oil	10	ND	19

Parameter	Reporting Limit	Descriptor, Lab No. and Results: MW2 #4 20' 01-19-90 44327	MW2 #5 25' 01-19-90 44328	METHOD BLANK 44329	Units
METHOD 8240					
DATE ANALYZED		01-24-90	01-24-90	01-24-90	
DILUTION FACTOR *		1	1	1	
Benzene	25	ND	ND	ND	ug/Kg
Acetone	50	ND	ND	ND	ug/Kg
Bromodichloromethane	25	ND	ND	ND	ug/Kg
Bromoform	25	ND	ND	ND	ug/Kg
Bromomethane	25	ND	ND	ND	ug/Kg
2-Butanone	50	ND	ND	ND	ug/Kg
Carbon disulfide	25	ND	ND	ND	ug/Kg
Carbon tetrachloride	25	ND	ND	ND	ug/Kg
Chlorobenzene	25	ND	ND	ND	ug/Kg
Chloroethane	25	ND	ND	ND	ug/Kg
2-Chloroethyl Vinyl Ether	50	ND	ND	ND	ug/Kg
Chloroform	25	ND	ND	ND	ug/Kg
Chloromethane	25	ND	ND	ND	ug/Kg
Dibromochloromethane	25	ND	ND	ND	ug/Kg
1,2-Dichlorobenzene	25	ND	ND	ND	ug/Kg
1,3-Dichlorobenzene	25	ND	ND	ND	ug/Kg
1,4-Dichlorobenzene	25	ND	ND	ND	ug/Kg
1,1-Dichloroethane	25	ND	ND	ND	ug/Kg
1,2-Dichloroethane	25	ND	ND	ND	ug/Kg
1,1-Dichloroethene	25	ND	ND	ND	ug/Kg
trans-1,2-Dichloroethene	25	ND	ND	ND	ug/Kg
1,2-Dichloropropane	25	ND	ND	ND	ug/Kg
cis-1,3-Dichloropropene	25	ND	ND	ND	ug/Kg
trans-1,3-Dichloropropene	25	ND	ND	ND	ug/Kg
Ethylbenzene	25	ND	ND	ND	ug/Kg
2-Hexanone	50	ND	ND	ND	ug/Kg
Methylene chloride	25	ND	ND	ND	ug/Kg
4-Methyl-2-pentanone	50	ND	ND	ND	ug/Kg
Styrene	25	ND	ND	ND	ug/Kg
1,1,2,2-Tetrachloroethane	25	ND	ND	ND	ug/Kg
Tetrachloroethene	25	ND	ND	ND	ug/Kg
Toluene	25	ND	ND	ND	ug/Kg
1,1,1-Trichloroethane	25	ND	ND	ND	ug/Kg
1,1,2-Trichloroethane	25	ND	ND	ND	ug/Kg
Trichloroethene	25	ND	ND	ND	ug/Kg
Trichlorofluoromethane	25	ND	ND	ND	ug/Kg
Vinyl Acetate	50	ND	ND	ND	ug/Kg
Vinyl chloride	25	ND	ND	ND	ug/Kg
Xylenes, total	25	ND	ND	ND	ug/Kg

Parameter	Reporting Limit	Descriptor, Lab No. and Results MW2 #4 20' 01-19-90 44327	 MW2 #5 25' 01-19-90 44328	 METHOD BLANK 44329	Units
METHOD 8270					
DATE EXTRACTED		01-24-90	01-24-90	01-24-90	
DATE ANALYZED		01-25-90	01-25-90	01-25-90	
DILUTION FACTOR *		1	1	1	
Acenaphthene	330	ND	ND	ND	ug/Kg
Acenaphthylene	330	ND	ND	ND	ug/Kg
Aldrin	1600	ND	ND	ND	ug/Kg
Anthracene	330	ND	ND	ND	ug/Kg
Benzidine	1600	ND	ND	ND	ug/Kg
Benzo(a)anthracene	330	ND	ND	ND	ug/Kg
Benzo(b)fluoranthene	330	ND	ND	ND	ug/Kg
Benzo(k)fluoranthene	330	ND	ND	ND	ug/Kg
Benzo(a)pyrene	330	ND	ND	ND	ug/Kg
Benzo(g,h,i)perylene	330	ND	ND	ND	ug/Kg
Benzoic Acid	1600	ND	ND	ND	ug/Kg
Benyzl Alcohol	660	ND	ND	ND	ug/Kg
Butyl benzyl phthalate	330	ND	ND	ND	ug/Kg
delta-BHC	1600	ND	ND	ND	ug/Kg
gamma-BHC	1600	ND	ND	ND	ug/Kg
bis(2-chloroethyl)ether	330	ND	ND	ND	ug/Kg
bis(2-chloroethoxy)methane	330	ND	ND	ND	ug/Kg
bis(2-chloroisopropyl)ether	330	ND	ND	ND	ug/Kg
bis(2-ethylhexyl)phthalate	330	[illegible]	ND	ND	ug/Kg
4-Bromophenyl phenyl ether	330	ND	ND	ND	ug/Kg
4-Chloroanaline	660	ND	ND	ND	ug/Kg
2-Chloronaphthalene	330	ND	ND	ND	ug/Kg
4-Chlorophenyl phenyl ether	330	ND	ND	ND	ug/Kg
Chrysene	330	ND	ND	ND	ug/Kg
4,4'-DDD	1600	ND	ND	ND	ug/Kg
4,4'-DDE	1600	ND	ND	ND	ug/Kg
4,4'-DDT	1600	ND	ND	ND	ug/Kg
Dibenzo(a,h)anthracene	330	ND	ND	ND	ug/Kg
Dibenzofuran	330	ND	ND	ND	ug/Kg
Di-n-butylphthalate	330	ND	ND	ND	ug/Kg
1,2-Dichlorobenzene	330	ND	ND	ND	ug/Kg
1,3-Dichlorobenzene	330	ND	ND	ND	ug/Kg
1,4-Dichlorobenzene	330	ND	ND	ND	ug/Kg
3,3'-Dichlorobenzidine	660	ND	ND	ND	ug/Kg
Dieldrin	1600	ND	ND	ND	ug/Kg
Diethylphthalate	330	ND	ND	ND	ug/Kg

Parameter	Reporting Limit	Descriptor, Lab No. and Results: MW2 #4 20' 01-19-90 44327	MW2 #5 25' 01-19-90 44328	METHOD BLANK 44329	Units
Dimethyl phthalate	330	ND	ND	ND	ug/Kg
2,4-Dinitrotoluene	330	ND	ND	ND	ug/Kg
2,6-Dinitrotoluene	330	ND	ND	ND	ug/Kg
Di-n-octyl phthalate	33	ND	ND	ND	ug/Kg
Endrin aldehyde	1600	ND	ND	ND	ug/Kg
Fluoranthene	330	ND	ND	ND	ug/Kg
Fluorene	330	ND	ND	ND	ug/Kg
Heptachlor	1600	ND	ND	ND	ug/Kg
Heptachlor epoxide	1600	ND	ND	ND	ug/Kg
Hexachlorobenzene	330	ND	ND	ND	ug/Kg
Hexachlorobutadiene	330	ND	ND	ND	ug/Kg
Hexachlorocyclopentadiene	330	ND	ND	ND	ug/Kg
Hexachloroethane	330	ND	ND	ND	ug/Kg
Indeno(1,2,3-cd)pyrene	330	ND	ND	ND	ug/Kg
Isophorone	330	ND	ND	ND	ug/Kg
2-Methylnaphthalene	330	ND	ND	ND	ug/Kg
Naphthalene	330	ND	ND	ND	ug/Kg
2-Nitroaniline	1600	ND	ND	ND	ug/Kg
3-Nitroaniline	1600	ND	ND	ND	ug/Kg
4-Nitroaniline	1600	ND	ND	ND	ug/Kg
Nitrobenzene	330	ND	ND	ND	ug/Kg
N-Nitroso-Di-N-propylamine	330	ND	ND	ND	ug/Kg
N-Nitrosodiphenylamine	330	ND	ND	ND	ug/Kg
Phenanthrene	330	ND	ND	ND	ug/Kg
Pyrene	330	ND	ND	ND	ug/Kg
1,2,4-Trichlorobenzene	330	ND	ND	ND	ug/Kg
4-Chloro-3-methylphenol	660	ND	ND	ND	ug/Kg
2-Chlorophenol	330	ND	ND	ND	ug/Kg
2,4-Dichlorophenol	330	ND	ND	ND	ug/Kg
2,4-Dimethylphenol	330	ND	ND	ND	ug/Kg
2,4-Dinitrophenol	1600	ND	ND	ND	ug/Kg
4,6-Dinitro-2-methylphenol	33	ND	ND	ND	ug/Kg
2-Nitrophenol	330	ND	ND	ND	ug/Kg
4-Nitrophenol	1600	ND	ND	ND	ug/Kg
Pentachlorophenol	1600	ND	ND	ND	ug/Kg
Phenol	330	ND	ND	ND	ug/Kg
2,4,6-Trichlorophenol	330	ND	ND	ND	ug/Kg
2-methylphenol	330	ND	ND	ND	ug/Kg
4-methylphenol	330	ND	ND	ND	ug/Kg
2,4,5-Trichlorophenol	33	ND	ND	ND	ug/Kg

Parameter	Reporting Limit	Descriptor, Lab No. and Results MW3 #1 5' 01-19-90 44330	 MW3 #2 10' 01-19-90 44331	 MW3 #3 15' 01-19-90 44332	Units
Lead (EPA 7421)	0.2	6.2	5.8	6.5	mg/Kg
PETROLEUM HYDROCARBONS VOLATILE (SOIL)		--	--	--	
DILUTION FACTOR *		1	1	1	
DATE ANALYZED		01-23-90	01-23-90	01-23-90	
METHOD GC FID/5030 as Gasoline	1	ND	ND	ND	mg/Kg
METHOD 8020		--	--	--	
Benzene	2.5	ND	ND	ND	ug/Kg
Ethylbenzene	2.5	ND	ND	ND	ug/Kg
Toluene	2.5	5.9	11	23	ug/Kg
Xylenes, total	2.5	ND	ND	7.4	ug/Kg
PETROLEUM HYDROCARBONS EXTRACTABLE (SOIL)		--	--	--	
DILUTION FACTOR *		1	1	1	
DATE EXTRACTED		01-24-90	01-24-90	01-24-90	
DATE ANALYZED		01-25-90	01-25-90	01-25-90	
METHOD GC FID/3550 as Diesel	1	ND	ND	2.4	mg/Kg
as Motor Oil	10	ND	ND	ND	mg/Kg

Parameter	Reporting Limit	Descriptor, Lab No. and Results MW5 #1 5' 01-22-90 44333	 MW5 #2 9' 01-22-90 44334	 MW5 #3 15' 01-22-90 44335	Units
Lead (EPA 7421)	0.2	5.5	6.4	8.0	mg/Kg
PETROLEUM HYDROCARBONS		--	--	--	
VOLATILE (SOIL)		--	--	--	
DILUTION FACTOR *		1	1	1	
DATE ANALYZED		01-23-90	01-23-90	01-23-90	
METHOD GC FID/5030		--	--	--	
as Gasoline	1	ND	ND	ND	mg/Kg
METHOD 8020		--	--	--	
Benzene	2.5	ND	ND	ND	ug/Kg
Ethylbenzene	2.5	ND	ND	ND	ug/Kg
Toluene	2.5	6.5	3.1	4.4	ug/Kg
Xylenes, total	2.5	2.6	ND	2.7	ug/Kg
PETROLEUM HYDROCARBONS		--	--	--	
EXTRACTABLE (SOIL)		--	--	--	
DILUTION FACTOR *		1	1	1	
DATE EXTRACTED		01-24-90	01-24-90	01-24-90	
DATE ANALYZED		01-25-90	01-25-90	01-25-90	
METHOD GC FID/3550		--	--	--	
as Diesel	1	ND	ND	ND	mg/Kg
as Motor Oil	10	ND	ND	ND	mg/Kg

Parameter	Reporting Limit	Descriptor, Lab No. and Results MW5 #4 20' 01-22-90 44336	 MW5 #5 25' 01-22-90 44337	Units
Lead (EPA 7421)	0.2	35	5.9	mg/Kg
PETROLEUM HYDROCARBONS		--	--	
VOLATILE (SOIL)		--	--	
DILUTION FACTOR *		1	1	
DATE ANALYZED		01-24-90	01-24-90	
METHOD GC FID/5030		--	--	
as Gasoline	1	ND	ND	mg/Kg
METHOD 8020		--	--	
Benzene	2.5	3.0	ND	ug/Kg
Ethylbenzene	2.5	ND	ND	ug/Kg
Toluene	2.5	11	6.0	ug/Kg
Xylenes, total	2.5	6.1	4.9	ug/Kg
PETROLEUM HYDROCARBONS		--	--	
EXTRACTABLE (SOIL)		--	--	
DILUTION FACTOR *		1	1	
DATE EXTRACTED		01-24-90	01-24-90	
DATE ANALYZED		01-25-90	01-25-90	
METHOD GC FID/3550		--	--	
as Diesel	1	1.6	ND	mg/Kg
as Motor Oil	10	ND	ND	mg/Kg

QUALITY CONTROL RESULTS - TOTAL PETROLEUM HYDROCARBONS (soil)

Parameter	Reporting Limits	Units	Blank Results	Lab No. Spike and Spike Replicate Results (% Recovery) (-44331S)	(-44331SR)	RPD
as Diesel	1.0	mg/Kg	ND	90	84	6.5

QUALITY CONTROL DATA - GENERAL CHEMISTRY AND INORGANICS

Parameter	Method No.	Blank	Spike Analysis (% Recovery)	Precision		External Standard (% Recovery)	Method Standard (% Recovery)
				Mean	RPD (%)		
Oil & Grease, total	5030	<50	87	390	28	N/A	77
Cadmium	6010	<0.05	97	3.9	<1	97	100
Chromium	6010	<0.05	95	4.0	<1	100	100
Lead	7421	<0.002	100	0.089	2.2	96	84
Zinc	6010	<0.05	97	4.8	9.2	98	96

QUALITY CONTROL DATA - GC/MS SURROGATE RECOVERY SUMMARY

Lab No.	Toluene d-8	BFB[a]	1,2 Dichloro-ethane d-4	Nitro-Benzene d-5	2-Fluoro-Biphenyl	Terphenyl-d-14	Phenol d-5	2-Fluoro-Phenol	2,4,6 Tribromo-Phenol
44324	98	92	84	79	117*	142*	95	74	79
44325	100	88	86	83	92	122	87	73	121
44326	105	104	104	69	81	119	72	61	113
44327	100	94	89	76	87	123	78	65	109
44328	138*	56*	84	70	81	114	73	60	98

[a]BFB--4-Bromofluorobenzene.

BATCH SPIKE AND SPIKE REPLICATE RESULTS FOR ANALYSIS BY EPA METHOD 625

Compound	Lab No. and Percent Recovery (-44328S)	(-44328SR)	RPD (%)
Phenol	63	60	4
2-Chlorophenol	61	59	4
1,4-Dichlorobenzene	64	62	2
N-Nitroso-di-n-propylamine	85	80	7
1,2,4-Trichlorobenzene	78	74	5
4-Chloro-3-Methylphenol	88	86	2
Acenaphthene	85	82	3
4-Nitrophenol	70	61	13
2,4-Dinitrotoluene	84	81	4
Pentachlorophenol	17	14*	19
Pyrene	81	79	2

BATCH SPIKE AND SPIKE REPLICATE RESULTS FOR ANALYSIS BY EPA METHOD 624

Compound	Lab No. and Percent Recovery (-44328S)	(-44328SR)	RPD (%)
1,1-Dichloroethene	91	105	14.6
Trichloroethene	85	93	9.6
Benzene	108	112	3.9
Toluene	140	130	7.1
Chlorobenzene	96	103	7.7

QUALITY CONTROL RESULTS - TOTAL PETROLEUM HYDROCARBONS (soil)

Parameter	Reporting Limits	Units	Blank Results	Lab No. Spike and Spike Replicate Results (% Recovery) (-44205S)	(-44205SR)	RPD
as Gasoline	1.0	mg/Kg	ND	79	80	1
Benzene	25	ug/Kg	ND	106	106	0
Toluene	25	ug/Kg	ND	106	105	1

QUALITY CONTROL RESULTS - TOTAL PETROLEUM HYDROCARBONS (soil)

Parameter	Reporting Limits	Units	Blank Results	Lab No. Spike and Spike Replicate Results (% Recovery) (-44338S)	(-44338SR)	RPD
as Gasoline	1.0	mg/Kg	ND	77	79	3
Benzene	25	ug/Kg	ND	107	108	1
Toluene	25	ug/Kg	ND	106	108	2

Ref: SHELL, 2724 Castro Valley Blvd.; Project: 88-44-380-01

Parameter	Reporting Limit	Descriptor, Lab No. and Results MW3 #1 5' 01-19-90 44330	 MW3 #2 10 01-19-90 44331	 MW3 #3 15 01-19-90 44332	 MW5 #1 5 01-22-90 44333	Units
Lead (EPA 7421)	0.2	6.2	5.8	6.5	5.5	mg/Kg
PETROLEUM HYDROCARBONS VOLATILE (SOIL)		—	—	—	—	
DILUTION FACTOR *		1	1	1	1	
DATE ANALYZED		01-23-90	01-23-90	01-23-90	01-23-90	
METHOD GC FID/5030 as Gasoline	1	ND	ND	ND	ND	mg/Kg
METHOD 8020		—	—	—	—	
Benzene	2.5	ND	ND	ND	ND	ug/Kg
Ethylbenzene	2.5	ND	ND	ND	ND	ug/Kg
Toluene	2.5	5.9	11	23	6.5	ug/Kg
Xylenes, total	2.5	ND	ND	7.4	2.6	ug/Kg
PETROLEUM HYDROCARBONS EXTRACTABLE (SOIL)		—	—	—	—	
DILUTION FACTOR *		1	1	1	1	
DATE EXTRACTED		01-24-90	01-24-90	01-24-90	01-24-90	
DATE ANALYZED		01-25-90	01-25-90	01-25-90	01-25-90	
METHOD GC FID/3550 as Diesel	1	ND	ND	2.4	ND	mg/Kg
as Motor Oil	10	ND	ND	ND	ND	mg/Kg

Parameter	Reporting Limit	Descriptor, Lab No. and Results MW5 #2 9 01-22-90 44334	 MW5 #3 15 01-22-90 44335	 MW5 #4 20 01-22-90 44336	 MW5 #5 25 01-22-90 44337	Units
Lead (EPA 7421)	0.2	6.4	8.0	35	5.9	mg/Kg
PETROLEUM HYDROCARBONS		—	—	—	—	
VOLATILE (SOIL)		—	—	—	—	
DILUTION FACTOR *		1	1	1	1	
DATE ANALYZED		01-23-90	01-23-90	01-24-90	01-24-90	
METHOD GC FID/5030		—	—	—	—	
as Gasoline	1	ND	ND	ND	ND	mg/Kg
METHOD 8020		—	—	—	—	
Benzene	2.5	ND	ND	3.0	ND	ug/Kg
Ethylbenzene	2.5	ND	ND	ND	ND	ug/Kg
Toluene	2.5	3.1	4.4	11	6.0	ug/Kg
Xylenes, total	2.5	ND	2.7	6.1	4.9	ug/Kg
PETROLEUM HYDROCARBONS		—	—	—	—	
EXTRACTABLE (SOIL)		—	—	—	—	
DILUTION FACTOR *		1	1	1	1	
DATE EXTRACTED		01-24-90	01-24-90	01-24-90	01-24-90	
DATE ANALYZED		01-25-90	01-25-90	01-25-90	01-25-90	
METHOD GC FID/3550		—	—	—	—	
as Diesel	1	ND	ND	1.6	ND	mg/Kg
as Motor Oil	10	ND	ND	ND	ND	mg/Kg

Converse Consultants

CHAIN OF CUSTODY RECORD

9391

Project No.: [illegible]

Project Name: [illegible]

Samplers: (signature) [illegible signature]

Station No.	Date	Time	Comp.	Grab	Station Location	Number of Containers 13	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	PP 8240 8270 / Remarks
[illegible]	[illegible] 1990				Drive 1 @ 5º	1	X	X	X	X	X	X	X X X 57.97
					Drive 2 @ 10º	1	X	X	X	X	X	X	X X X
					Drive 3 @ 15º	1	X	X	X	X	X	X	X X X
					Drive 4 @ 20º	1	X	X	X	X	X	X	X X X
					Drive 5 @ 25º	1	X	X	X	X	X	X	X X X
[illegible]					Drive 1 @ 5º	1	X	X	X				
					Drive 2 @ 10º	1	X	X	X				
					Drive 3 @ 15º	1	X	X	X				
14W 5	1-22-90				Drive 1 @ 5º		X	X	X			X	
					Drive 2 @ 10º		X	X	X			X	
					Drive 3 @ 15º		X	X	X			X	
					Drive 4 @ 20º		X	X	X			X	
					Drive 5 @ 25º		X	X	X			X	

per DC to JR 1/23/90

Relinquished by: (signature)	Date/Time	Received by: (signature)	Relinquished by: (signature)	Date/Time	Received by: (signature)
[signature]	1/22/90 18:00	[signature]	[signature]		
Relinquished by: (signature)	Date/Time	Received by: (signature)	Relinquished by: (signature)	Date/Time	Received by: (signature)
Relinquished by Courier: (signature)	Date/Time	Received by Mobile Lab: (signature)	Relinquished by Mobile Lab: (signature)	Date/Time	Received by Courier: (signature)

Method of Shipment	Shipped by: (signature)	Courier from Airport: (signature)	Received for Laboratory: (signature)	Date/Time
[illegible]			[signature]	1-23-90 0900

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Date: 01-31-90
NET Client Acct No: 18.02
NET Pacific Log No: 9366
Received: 01-19-90 2300

Client Reference Information

SHELL, 2724 Castro Valley Blvd., CV; Project # 88-44-380-01

Sample analysis in support of the project referenced above has been completed and results are presented on following pages. Please refer to the enclosed "Key to Abbreviations" for definition of terms. Should you have questions regarding procedures or results, please feel welcome to contact Client Services.

Approved by:

Jules Skamarack
Laboratory Manager

Enclosure(s)

Parameter	Reporting Limit	Descriptor, Lab No. and Results MW1 #1 5' 01-18-90 44205	 MW1 #2 10' 01-18-90 44206	 MW4 #1 5 ' 01-18-90 44207	Units
Lead (EPA 7421)	0.2	4.4	4.3	4.7	mg/Kg
PETROLEUM HYDROCARBONS		--	--	--	
VOLATILE (SOIL)		--	--	--	
DILUTION FACTOR *		1	1	1	
DATE ANALYZED		01-23-90	01-23-90	01-23-90	
METHOD GC FID/5030		--	--	--	
as Gasoline	1	ND	ND	ND	mg/Kg
METHOD 8020		--	--	--	
Benzene	2.5	ND	ND	ND	ug/Kg
Ethylbenzene	2.5	ND	ND	ND	ug/Kg
Toluene	2.5	ND	11	6.7	ug/Kg
Xylenes, total	2.5	ND	5.8	4.6	ug/Kg
PETROLEUM HYDROCARBONS		--	--	--	
EXTRACTABLE (SOIL)		--	--	--	
DILUTION FACTOR *		1	1	1	
DATE EXTRACTED		01-26-90	01-26-90	01-26-90	
DATE ANALYZED		01-26-90	01-26-90	01-26-90	
METHOD GC FID/3550		--	--	--	
as Diesel	1	5.8	4.4	ND	mg/Kg
as Motor Oil	10	73	39	ND	mg/Kg

Parameter	Reporting Limit	Descriptor, Lab No. and Results MW4 #2 9 ' 01-18-90 44208	 MW4 #3 10' 01-18-90 44222	Units
Lead (EPA 7421)	0.2	6.5	NR	
PETROLEUM HYDROCARBONS		--	--	
VOLATILE (SOIL)		--	--	
DILUTION FACTOR *		1	1	
DATE ANALYZED		01-23-90	01-23-90	
METHOD GC FID/5030		--	--	
as Gasoline	1	ND	ND	mg/Kg
METHOD 8020		--	--	
Benzene	2.5	ND	ND	ug/Kg
Ethylbenzene	2.5	ND	ND	ug/Kg
Toluene	2.5	7.7	18	ug/Kg
Xylenes, total	2.5	3.4	6.8	ug/Kg
PETROLEUM HYDROCARBONS		--	--	
EXTRACTABLE (SOIL)		--	--	
DILUTION FACTOR *		1	1	
DATE EXTRACTED		01-26-90	01-26-90	
DATE ANALYZED		01-26-90	01-26-90	
METHOD GC FID/3550		--	--	
as Diesel	1	ND	ND	mg/Kg
as Motor Oil	10	ND	ND	mg/Kg

QUALITY CONTROL DATA - GENERAL CHEMISTRY AND INORGANICS

Parameter	Method	Blank	Spike Analysis (% Recovery)	Mean	RPD (%)	External Standard (% Recovery)	Method Standard (% Recovery)
Lead	7421	<0.002	100	0.067	6.0	102	108

QUALITY CONTROL RESULTS - TOTAL PETROLEUM HYDROCARBONS (soil)

Parameter	Reporting Limits	Units	Blank Results	Lab No. Spike and Spike Replicate Results (% Recovery) (-44205S)	(-44205SR)	RPD
as Gasoline	1.0	mg/Kg	ND	79	80	1
Benzene	25	ug/Kg	ND	106	106	<1
Toluene	25	ug/Kg	ND	106	105	1

Parameter	Reporting Limits	Units	Blank Results	Lab No. Spike and Spike Replicate Results (% Recovery) (-43913S)	(-43193SR)	RPD
as Diesel	1.0	mg/Kg	ND	80	70	13

NET Pacific, Inc.

KEY TO ABBREVIATIONS and METHOD REFERENCES

<	:	Less than; When appearing in results column indicates analyte not detected at the value following, which supercedes the listed reporting limit.
mean	:	Average; sum of measurements divided by number of measurements.
mg/Kg (ppm)	:	Concentration in units of milligrams of analyte per kilogram of sample, wet-weight basis (parts per million).
mg/L	:	Concentration in units of milligrams of analyte per liter of sample.
mL/L/hr	:	Milliliters per liter per hour.
MPN/100 mL	:	Most probable number of bacteria per one hundred milliliters of sample.
N/A	:	Not applicable.
NA	:	Not analyzed.
ND	:	Not detected; the analyte concentration is less than applicable listed reporting limit.
NTU	:	Nephelometric turbidity units.
RPD	:	Relative percent difference, 100 [Value 1 - Value 2]/mean value.
SNA	:	Standard not available.
ug/Kg (ppb)	:	Concentration in units of micrograms of analyte per kilogram of sample, wet-weight basis (parts per billion).
ug/L	:	Concentration in units of micrograms of analyte per liter of sample.
umhos/cm	:	Micromhos per centimeter.

Method References

Methods 601 through 625: see "Guidelines Establishing Test Procedures for the Analysis of Pollutants" U.S. EPA, 40 CFR, Part 136, rev. 1988.

Methods 1000 through 9999: see "Test Methods for Evaluating Solid Waste", U.S. EPA SW-846, 3rd edition, 1986.

* Reporting Limits are a function of the dilution factor for any given sample. To obtain the actual reporting limits for this sample, multiply the stated reporting limits by the dilution factor.

Converse Consultants

PM Mike Carey 9366

CHAIN OF CUSTODY RECORD

Project No. 88-44 380-01

Project Name 2724 Castro Valley Blvd, Castro Valley

Samplers: (signature) [signature]

Station No.	Date	Time	Comp.	Grab	Station Location	Number of Containers	TPH-G	TPH-D	BTEX	Pb		Remarks
MW 1	1-18-90				Drive 1 @ 5'		X	X	X	X		
MW 1	1-18-90				Drive 2 @ 10'		X	X	X	X		
MW 4					Drive 1 @ 5'		X	X	X	X		
MW 4					Drive 2 @ 9'		X	X	X	X		
MW 4					Drive 3 @ 10'		X	X	X	X	per RB JS	to 1/22
												samples received on ice 1/19

Relinquished by: (signature)	Date/Time	Received by: (signature)	Relinquished by: (signature)	Date/Time	Received by: (signature)
N/A	1/19 13:40	Jeff Wickle	Jeff Wickle		
Relinquished by: (signature)	Date/Time	Received by: (signature)	Relinquished by: (signature)	Date/Time	Received by: (signature)
Relinquished by Courier: (signature)	Date/Time	Received by Mobile Lab: (signature)	Relinquished by Mobile Lab: (signature)	Date/Time	Received by Courier: (signature)

Method of Shipment	Shipped by: (signature)	Courier from Airport: (signature)	Received for Laboratory: (signature)	Date/Time
(via NCS)			[signature]	1/19/90 2300

APPENDIX E

FIELD DATA

CONVERSE ENVIRONMENTAL WEST

Well Sampling Summary

Project Name: Shell-2724 Castro Valley Boulevard
Project Number: 88-44-380-01
Date: 2/8/90
Inspector: T. J. Smith

Well Number	Time	Total Depth	Depth to Water	Comments
MW-5	11:54	22.71FT	8.80FT	No odor
MW-1	12:05	14.80FT	8.39FT	No odor, Soft bottom before development
MW-2	12:12	14.84FT	7.33FT	No odor
MW-3	12:18	25.51FT	8.91FT	No odor