EXXON COMPANY, U.S.A.

P.O. BOX 4032 . CONCORD, CA 94524-4032

ENVIRONMENTAL ENGINEERING

MARLA D. GUENSLER
SENIOR ENVIRONMENTAL ENGINEER

(510) 246-8776
(510) 246-8798 FAX

0&1995

November 13, 1995

Ms. Eva Chu
Alameda County Department of Environmental Health
Environmental Protection Division
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

RE: Exxon RAS #7-0104/1725 Park Street, Alameda, CA

Dear Ms. Chu:

Attached for your review and comment is a report entitled ***Hydrogeologic Assessment and Monitoring Well Installation Report*** for the above referenced site. This report, prepared by Delta Environmental Consultants, Inc. (Delta) of Rancho Cordova, California, details the results of the August 1995 hydrogeologic investigation and installation of 2 monitoring wells (MW11, MW12).

Please contact me at (510) 246-8776 if you have any questions or comments.

Sincerely,

Marla D. Guensler
Senior Engineer

MDG/dn

attachment: Delta Quarterly Report dated October 26, 1995

cc: w/attachment:
Mr. Richard Hiett - San Francisco Bay RWQCB
Mr. Larry Seto - Alameda Co. Dept. of Environmental Health

w/o attachment:
Ms. Linda J. McGahan - Delta

Delta
Environmental
Consultants, Inc.

3164 Gold Camp Drive
Suite 200
Rancho Cordova, CA 95670
916/638-2085
FAX: 916/638-8385

October 26, 1995

Ms. Marla Guensler
Exxon Company, U.S.A.
2300 Clayton Road, Suite 640
Concord, California 94520

Subject: *Hydrogeologic Assessment and Monitoring Well Installation Report*
Exxon Service Station No. 7-0104
1725 Park Street
Alameda, California
Delta Project No. D094-832

Dear Ms. Guensler:

Delta Environmental Consultants, Inc. (Delta), was authorized by Exxon Company, U.S.A. (Exxon), to conduct a hydrogeologic investigation at Exxon Service Station No. 7-0104, located at 1725 Park Street, Alameda, Alameda County, California (Figure 1). The assessment was intended to characterize the distribution of petroleum hydrocarbon constituents in soil and ground water off-site, north of the station building along Eagle Avenue, and adjacent to the Auto Service building south of the site along Park Street. This letter report presents project background information, and the assessment results.

Project Background

Harding Lawson Associates (Harding Lawson) performed an initial site investigation in 1988, which included drilling six soil borings and constructing ground water monitoring wells (MW-1 through MW-6) at the site. Gasoline hydrocarbons were detected in soil and ground water samples collected during the 1988 drilling event (Harding Lawson, March 21, 1989). In 1990, Harding Lawson drilled an additional seven shallow soil borings and one deep boring, completing the deep boring as ground water monitoring well MW-7 on-site (Harding Lawson, May 1, 1990). Harding Lawson subsequently drilled additional soil borings in 1991, and constructed five ground water extraction wells (EW-1 through EW-5) on-site (Harding Lawson, May 1, 1990). The locations of the wells are shown on Figure 2.

In September 1992, Harding Lawson performed a records review to evaluate the potential of off-site sources contributing to dissolved hydrocarbons in ground water near the Exxon site. Harding Lawson concluded that additional sources of petroleum hydrocarbons were present from the gasoline service stations at the intersection of Eagle Avenue and Park Street. In addition, a release of petroleum hydrocarbons was reported from the Shell service station on Park Street southwest of the site (Figure 2).

In December 1992, Harding Lawson began construction of a ground water treatment system at the site, and began operation of the system in February 1993. The system removes ground water from the existing extraction wells (EW-1 through EW-5) and pumps the water to an aboveground holding tank, through activated carbon columns prior to discharge to the sanitary sewer system.

Additional monitoring wells (MW-8, MW-9, and MW-10) were installed by RESNA Industries, Inc. (RESNA), in May 1993, to define the extent of dissolved petroleum hydrocarbons in ground water. Harding Lawson performed quarterly ground water monitoring at the site from June 1988 through January 1993. RESNA conducted monitoring activities from January 1993 through February 1994. Delta has conducted ground water monitoring and remediation system operation and maintenance activities at the site since September 1994.

Delta's work plan for the additional assessment work was approved by the Alameda County Department of Environmental Health, Hazardous Material Division. The off-site well locations were approved by Ms. Eva Chu on June 26, 1995, during a telephone conversation with Ms. Linda McGahan of Delta.

Soil Boring Results

On August 23, 1995, under the direction of a Delta geologist, two soil borings were advanced at the site and completed as ground water monitoring wells MW-11 and MW-12. Monitoring wells MW-11 and MW-12 were installed in the City of Alameda (City) right-of-way along Park Street and Eagle Avenue, respectively. Copies of the well permits issued by Zone 7 Water Agency are included in Enclosure A. Copies of the encroachment permits issued by the City's Central Permit Office are included in Enclosure B. The locations of the soil borings/monitoring wells, along with other site features are illustrated in Figure 2.

Soil samples were collected from each soil boring at approximately 5-foot intervals, and were field analyzed for the presence of petroleum hydrocarbon vapors with a photoionization detector (PID). The methods used to drill and sample the soil borings are included in Enclosure C. Soil borings logs containing soil descriptions and PID readings are included in Enclosure D.

The soil samples collected at 6.5 and 11.5 feet below surface grade (bsg) in the boring for monitoring well MW-11, and the soil sample collected at 6.5 feet bsg in the boring for monitoring well MW-12 were submitted to a Sequoia Analytical laboratory in Redwood City, California, for analysis of benzene, toluene, ethylbenzene, total xylenes (BTEX), methyl tertiary butyl ether (MTBE), and total petroleum hydrocarbons (TPH) as gasoline using the U.S. Environmental Protection Agency and the California Department of Health Services approved methods described in Enclosure C.

The analytical results of the soil samples reported concentrations of benzene and TPH as gasoline in the soil sample from MW-11 collected at a depth of 11.5 feet bsg, at concentrations of 0.26 and 2.0 milligrams per kilogram (mg/kg), respectively. Total xylenes were detected in both soil samples collected from MW-11, at concentrations ranging from 0.024 to 0.16 mg/kg. Petroleum hydrocarbon constituents were not detected in the soil sample submitted from the boring for monitoring well MW-12. Soil sample analytical results are summarized in Table 1. A copy of the laboratory analytical report and chain of custody documentation for the soil analyses are included in Enclosure E.

Ground Water Monitoring Well Installation

Ground water monitoring wells MW-11 and MW-12 were constructed of 2-inch diameter, flush-threaded, Schedule 40 PVC casing. Monitoring well MW-11 was screened with 0.02-inch slotted casing from its total depth of 17 feet bsg to 7 feet bsg. Monitoring well MW-12 was screened from its total depth of 15 feet bsg to 5 feet bsg. The annular space in each monitoring well was filled with No. 3 Lonestar sand (filter pack) from its maximum depth, to 1-foot above the top of the well screen. A 1-foot thick bentonite seal was placed above the filter pack in each monitoring well. The annular space above the bentonite seal was filled with neat cement grout containing approximately 3 to 5 percent bentonite. Construction details for the monitoring wells are included in Enclosure F.

Water Table Elevation Measurements, Flow Direction, and Hydraulic Gradient

Following the installation of the wells, the top of each casing was surveyed to within 0.01 feet relative to a temporary benchmark as outlined in the field methods and procedures. On August 23, 1995, ground water measurements were recorded in monitoring wells MW-1 through MW-5 and MW-7 through MW-12, and extraction wells EW-1 through EW-5. Monitoring well MW-6 was inaccessible due to a parked car over the well. Depths to ground water in the monitoring wells ranged from 6.61 (MW-8) to 7.75 (MW-1) feet below the top of the well casings. Depth to water in the extraction wells ranged from 9.87 (EW-5) to 22.90 (EW-3) feet below the top of the well casings. Cumulative ground water measurements collected by Delta are presented in Table 2. A water table contour map constructed from the ground water elevation measurements recorded on August 23, 1995, is illustrated in Figure 3. The inferred direction of ground water flow on August 23, 1995, was radially toward the extraction wells.

Ground Water Sampling and Analytical Results

Monitoring wells MW-11 and MW-12 were sampled on August 23, 1995. Each well was developed immediately prior to sampling using the methods described in Enclosure C. Water samples collected from monitoring wells MW-11 and MW-12 were submitted for laboratory analysis of BTEX and TPH as gasoline using the methods described in Enclosure C.

The ground water sample collected from monitoring well MW-12 was below the laboratory's limits of detection for all analytes. BTEX, TPH as gasoline and MTBE constituents were detected in the ground water sample collected from monitoring well MW-11. The ground water sample collected from monitoring well MW-11 contained benzene at a concentration of 5,200 micrograms per liter (μg/L); toluene at 190 μg/L; ethylbenzene at 890 μg/L; total xylenes at 5,900 μg/L; TPH as gasoline at 39,000 μg/L; and MTBE at 560 μg/L. Cumulative laboratory analytical results for the ground water samples collected by Delta are summarized in Table 3, and a copy of the certified laboratory analytical report for the August 23, 1995, sampling event of MW-11 and MW-12 is included in Enclosure G.

Discussion

The petroleum hydrocarbons detected in the ground water sample collected from monitoring well MW-11, which is located upgradient and cross gradient of the subject property, may be originating from the Shell service station located approximately 100 feet southwest of the subject property. Based on the location of MW-3, MW-6, and MW-11, the reported analytical results from these wells, and the historical ground water flow direction, it appears that the dissolved hydrocarbons reported from the sample collected in MW-11 probably originated from an upgradient off-site source. The concentrations of hydrocarbons reported in the sample from MW-11 are one to two orders of magnitude (higher) than recent and historic analytical results from MW-3 and MW-6 (which are located between MW-11 and Exxon's underground storage tank and dispenser islands).

The reported presence of elevated hydrocarbon concentrations in ground water upgradient from the Exxon site indicate a probable off-site source. Due to the location of upgradient potential contributions, Delta does not recommend the installation of additional monitoring wells by Exxon at this time.

Remarks

The interpretations contained in this report represent our professional opinions, and are based in part, on information supplied by the client. These opinions are based on currently available information and are arrived at in accordance with currently accepted hydrogeologic and engineering practices at this time and location. Other than this, no warranty is implied or intended.

We recommend that a copy of this letter report be forwarded to:

Ms. Eva Chu
Alameda County Department of
Environmental Health
Environmental Protection Division
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Mr. Richard Hiett
California Regional Water Quality Control
Board, San Francisco Bay Region
2101 Webster Street, Suite 500
Oakland, California 94612

If you have any questions regarding this project, please do not hesitate to contact myself or Linda McGahan at (916) 638-2085.

Sincerely,

DELTA ENVIRONMENTAL CONSULTANTS, INC.

Michael A. Berrington
Project Geologist

Linda J. McGahan
Project Manager

Eric J. Holm, R.G.
California Registered Geologist No. 5880

MAB (LRP710.TA)
Enclosures

TABLE 1

SOIL SAMPLE ANALYTICAL RESULTS
Concentrations in milligrams per kilogram

Exxon Retail Station No. 7-0104
1725 Park Street
Alameda, California

Sample ID	Date	Depth (ft)	Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPH[a] as gasoline	MTBE[b]
MW-11-6.5	08/23/95	6.5	<0.005	<0.005	<0.005	0.024	<1.0	<0.025
MW-11-11.5	08/23/95	11.5	0.26	<0.005	0.021	0.16	2.0	<0.025
MW-12-6.5	08/23/95	6.5	<0.005	<0.005	<0.005	<0.005	<1.0	<0.025

[a] Total petroleum hydrocarbons.
[b] Methyl tertiary butyl ether.

TABLE 2

GROUND WATER LEVEL MEASUREMENTS

Exxon Retail Station No. 7-0104
1725 Park Street
Alameda, California

Monitoring Well	Date	Top of Riser Elevation (ft)[a]	Depth to Water (ft)	Ground Water Elevation (ft)	Comments
MW-1	09/12/94	17.35	7.11	10.24	No LPH[b] or Sheen
	10/01/94		7.44	9.91	No LPH or Sheen
	01/13/95		5.13	12.22	No LPH or Sheen
	04/27/95		6.57	10.78	No LPH or Sheen
	08/03/95		7.46	9.89	No LPH or Sheen
	08/23/95		7.75	9.60	No LPH or Sheen
MW-2	09/12/94	16.67	6.71	9.96	No LPH or Sheen
	10/01/94		7.22	9.45	Sheen
	01/13/95		4.46	12.22[c]	LPH Thickness 0.01
	04/27/95		6.92	9.75	No LPH or Sheen
	08/03/95		6.96	9.71	No LPH or Sheen
	08/23/95		7.57	9.10	No LPH or Sheen
MW-3	09/12/94	17.11	6.58	10.53	No LPH or Sheen
	10/01/94		6.85	10.26	No LPH or Sheen
	01/13/95		5.27	11.84	No LPH or Sheen
	04/27/95		6.05	11.06	No LPH or Sheen
	08/03/95		6.71	10.40	No LPH or Sheen
	08/23/95		7.12	9.99	No LPH or Sheen
MW-4	09/12/94	17.34	6.80	10.54	No LPH or Sheen
	10/01/94		7.09	10.25	No LPH or Sheen
	01/13/95		4.66	12.68	No LPH or Sheen
	04/27/95		5.54	11.80	No LPH or Sheen
	08/03/95		6.92	10.42	No LPH or Sheen
	08/23/95		7.33	10.01	No LPH or Sheen
MW-5	09/12/94	16.71	7.12	9.59	No LPH or Sheen
	10/01/94		7.06	9.65	Sheen
	01/13/95		4.85	11.88[c]	LPH Thickness 0.02
	04/27/95		6.51	10.20	No LPH or Sheen
	08/03/95		7.24	9.47	No LPH or Sheen
	08/23/95		7.51	9.20	No LPH or Sheen
MW-6	09/12/94	17.56	6.88	10.68	No LPH or Sheen
	10/01/94		7.15	10.41	No LPH or Sheen
	01/13/95		4.80	12.76	No LPH or Sheen
	04/27/95		6.14	11.42	No LPH or Sheen
	08/03/95		6.83	10.73	No LPH or Sheen
	08/23/95		NM[d]	—	Inaccessible

TABLE 2-Continued

GROUND WATER LEVEL DATA

Exxon Retail Station No. 7-0104
1725 Park Street
Alameda, California

Monitoring Well	Date	Top of Riser Elevation (ft)*	Depth to Water (ft)	Ground Water Elevation (ft)	Comments
MW-7	09/12/94	17.12	6.43	10.69	No LPH or Sheen
	10/01/94		6.71	10.41	No LPH or Sheen
	01/13/95		4.29	12.83	No LPH or Sheen
	04/27/95		5.00	12.12	No LPH or Sheen
	08/03/95		6.53	10.59	No LPH or Sheen
	08/23/95		6.93	10.19	No LPH or Sheen
MW-8	09/12/94	16.33	6.42	9.91	No LPH or Sheen
	10/01/94		6.62	9.71	No LPH or Sheen
	01/13/95		5.25	11.08	No LPH or Sheen
	04/27/95		6.00	10.33	No LPH or Sheen
	08/03/95		6.28	10.05	No LPH or Sheen
	08/23/95		6.61	9.72	No LPH or Sheen
MW-9	09/12/94	15.62	6.84	8.78	No LPH or Sheen
	10/01/94		6.97	8.65	No LPH or Sheen
	01/13/95		6.18	9.44	No LPH or Sheen
	04/27/95		6.58	9.04	No LPH or Sheen
	08/03/95		6.72	8.90	No LPH or Sheen
	08/23/95		6.92	8.70	No LPH or Sheen
MW-10	09/12/94	16.79	7.04	9.75	No LPH or Sheen
	10/01/94		7.30	9.49	No LPH or Sheen
	01/13/95		6.04	10.75	No LPH or Sheen
	04/27/95		6.66	10.13	No LPH or Sheen
	08/03/95		7.23	9.56	No LPH or Sheen
	08/23/95		7.66	9.13	No LPH or Sheen
MW-11	08/23/95	18.04	7.30	10.74	No LPH or Sheen
MW-12	08/23/95	16.30	7.32	8.98	No LPH or Sheen
EW-1	09/12/94	16.22	6.13	10.09	No LPH or Sheen
	10/01/94		7.63	8.59	No LPH or Sheen
	01/13/95		11.46	4.76	No LPH or Sheen
	04/27/95		15.47	0.75	No LPH or Sheen
	08/03/95		13.85	2.37	No LPH or Sheen
	08/23/95		15.31	0.91	No LPH or Sheen
EW-2	09/12/94	16.05	6.09	9.96	Sheen
	10/01/94		7.32	8.73	Sheen
	01/13/95		14.38	1.67	No LPH or Sheen
	04/27/95		15.23	0.82	No LPH or Sheen
	08/03/95		7.19	8.86	No LPH or Sheen
	08/23/95		10.44	5.61	No LPH or Sheen

TABLE 2-Continued

GROUND WATER LEVEL DATA

Exxon Retail Station No. 7-0104
1725 Park Street
Alameda, California

Monitoring Well	Date	Top of Riser Elevation (ft)[a]	Depth to Water (ft)	Ground Water Elevation (ft)	Comments
EW-3	09/12/94	16.02	6.12	9.9	No LPH or Sheen
	10/01/94		10.52	5.5	No LPH or Sheen
	01/13/95		18.13	-2.11	No LPH or Sheen
	04/27/95		23.07	-7.05	No LPH or Sheen
	08/03/95		22.90	-6.88	No LPH or Sheen
	08/23/95		22.90	-6.88	No LPH or Sheen
EW-4	09/12/94	16.61	5.69	10.92	No LPH or Sheen
	10/01/94		7.90	8.71	No LPH or Sheen
	01/13/95		11.36	5.25	No LPH or Sheen
	04/27/95		16.30	0.31	No LPH or Sheen
	08/03/95		6.45	10.16	No LPH or Sheen
	08/23/95		16.03	0.58	No LPH or Sheen
EW-5	09/12/94	16.51	6.30	10.21	No LPH or Sheen
	10/01/94		11.83	4.68	No LPH or Sheen
	01/13/95		12.54	3.97	No LPH or Sheen
	04/27/95		13.11	3.40	No LPH or Sheen
	08/03/95		11.99	4.52	No LPH or Sheen
	08/23/95		9.87	6.64	No LPH or Sheen

[a] Elevation of top of well casing in relative to mean sea level (RESNA Industries, Inc., February 10, 1994).
[b] Liquid-phase petroleum hydrocarbons.
[c] Adjusted ground water elevations, based on the specific gravity of gasoline as 0.80.
[d] Not measured, well inaccessible.

TABLE 3

CUMULATIVE GROUND WATER SAMPLE ANALYTICAL RESULTS

Concentrations in micrograms per liter (µg/L)

Exxon Retail Station No. 7-0104
1725 Park Street
Alameda, California

Monitoring Well	Date	Benzene	Toluene	Ethyl-benzene	Xylenes	TPH[a] as gasoline	MTBE[b]
MW-1	09/12/94	200	1.9	210	6.6	1,600[c]	NA[d]
	10/01/94	200	<0.5	160	6.6	1,400[c]	NA
	01/13/95	410[e]	17	280[e]	89	2,100[e]	NA
	04/27/95	460	41	340	270	4,700	NA
	08/03/95	140	<5.0	160	9.9	1,900	30
MW-2	09/12/94	4,400	120	1,700	2,100	31,000[c]	NA
	10/01/94	4,500	250	1,800	2,400	45,000[c]	NA
	01/13/95	NS[f]	NS	NS	NS	NS	NA
	04/27/95	7,000	840	2,400	3,400	44,000	NA
	08/03/95	4,600	170	1,600	1,100	30,000	37,000
MW-3	09/12/94	580	8.0	340	100	3,100[c]	NA
	10/01/94	640	11	230	130	3,800[c]	NA
	01/13/95	690	24	210	130	3,800[c]	NA
	04/27/95	940	35	810	530	7,500	NA
	08/03/95	380	<5.0	140	45	1,900	24
MW-4	09/12/94	900	57	310	490	5,200[c]	NA
	10/01/94	1,200	66	360	380	9,100[c]	NA
	01/13/95	1,300	200	550	1,000	25,000[c]	NA
	04/27/95	650	130	350	590	5,900	NA
	08/03/95	1,000	<12	170	140	4,200	5,700
MW-5	09/12/94	2,300	17	320	230	10,000[c]	NA
	10/01/94	2,300	19	220	200	11,000[c]	NA
	01/13/95	NS	NS	NS	NS	NS	NA
	04/27/95	2,200	72	540	350	14,000	NA
	08/03/95	2,100	<100	210	<100	<10,000	39,000
MW-6	09/12/94	150	4.4	170	85	1,500[c]	NA
	10/01/94	120	<0.5	99	38	87[c]	NA
	01/13/95	710	220	780	1,100	9,900[c]	NA
	04/27/95	340	40	460	320	3,900	NA
	08/03/95	89	<2.5	110	63	1,100	65
MW-7	09/12/94	490	50	280	70	6,000[c]	NA
	10/01/94	940	670	310	160	8,900[c]	NA
	01/13/95	590	780	970	4,200	20,000[c]	NA
	04/27/95	410	32	410	230	8,800	NA
	08/03/95	390	<50	290	<50	4,900	17,000

TABLE 3-Continued

CUMULATIVE GROUND WATER SAMPLE ANALYTICAL RESULTS
Concentrations in micrograms per liter (µg/L)

Exxon Retail Station No. 7-0104
1725 Park Street
Alameda, California

Monitoring Well	Date	Benzene	Toluene	Ethyl-benzene	Xylenes	TPH[a] as gasoline	MTBE[b]
MW-8	09/12/94	<0.5	<0.5	<0.5	<0.5	<50[c]	NA
	10/01/94	<0.5	<0.5	<0.5	<0.5	<50[c]	NA
	01/13/95	<0.5	<0.5	<0.5	<0.5	<50[c]	NA
	04/27/95	<0.5	<0.5	<0.5	<0.5	<50	NA
	08/03/95	<0.5	<0.5	<0.5	<0.5	<50	<2.5
MW-9	09/12/94	<0.5	<0.5	<0.5	<0.5	<50[c]	NA
	10/01/94	<0.5	<0.5	<0.5	<0.5	<50[c]	NA
	01/13/95	<0.5	<0.5	<0.5	<0.5	<50[c]	NA
	04/27/95	<0.5	<0.5	<0.5	<0.5	<50	NA
	08/03/95	<0.5	<0.5	<0.5	<0.5	<50	<2.5
MW-10	09/12/94	<0.5	<0.5	1.6	<0.5	71[c]	NA
	10/01/94	1.1	<0.5	2.8	0.73	330[c]	NA
	01/13/95	<0.5	<0.5	<0.5	<0.5	90[c]	NA
	04/27/95	<0.5	<0.5	5.4	1.3	140	NA
	08/03/95	<0.5	<0.5	<0.5	<0.5	150	<2.5
MW-11	08/23/95	5,200	190	890	5,900	39,000	560
MW-12	08/23/95	<0.5	<0.5	<0.5	<0.5	<50	<2.5
EW-1	09/12/94	40	<0.5	10	5.4	400[c]	NA
	10/01/94	<0.5	4.4	30	11	3,400[c]	NA
	01/13/95	40	<0.5	12	16	680[c]	NA
	04/27/95	NS	NS	NS	NS	NS	NA
	08/03/95	2.7	<1.2	<1.2	<1.2	<125	590
EW-2	09/12/94	2,000	79	180	290	8,800[c]	NA
	10/01/94	1,400	6.7	700	310	9,500[c]	NA
	01/13/95	930	270	21	280	5,700[c]	NA
	04/27/95	NS	NS	NS	NS	NS	NA
	08/03/95	170	27	36	64	830	1,600
EW-3	09/12/94	44	5.9	12	31	300[c]	NA
	10/01/94	12	0.42	1.7	3.7	140[c]	NA
	01/13/95	4.6	7.6	1.2	6.6	230[c]	NA
	04/27/95	NS	NS	NS	NS	NS	NA
	08/03/95	<2.0	<2.0	<2.0	<2.0	<200	1,400

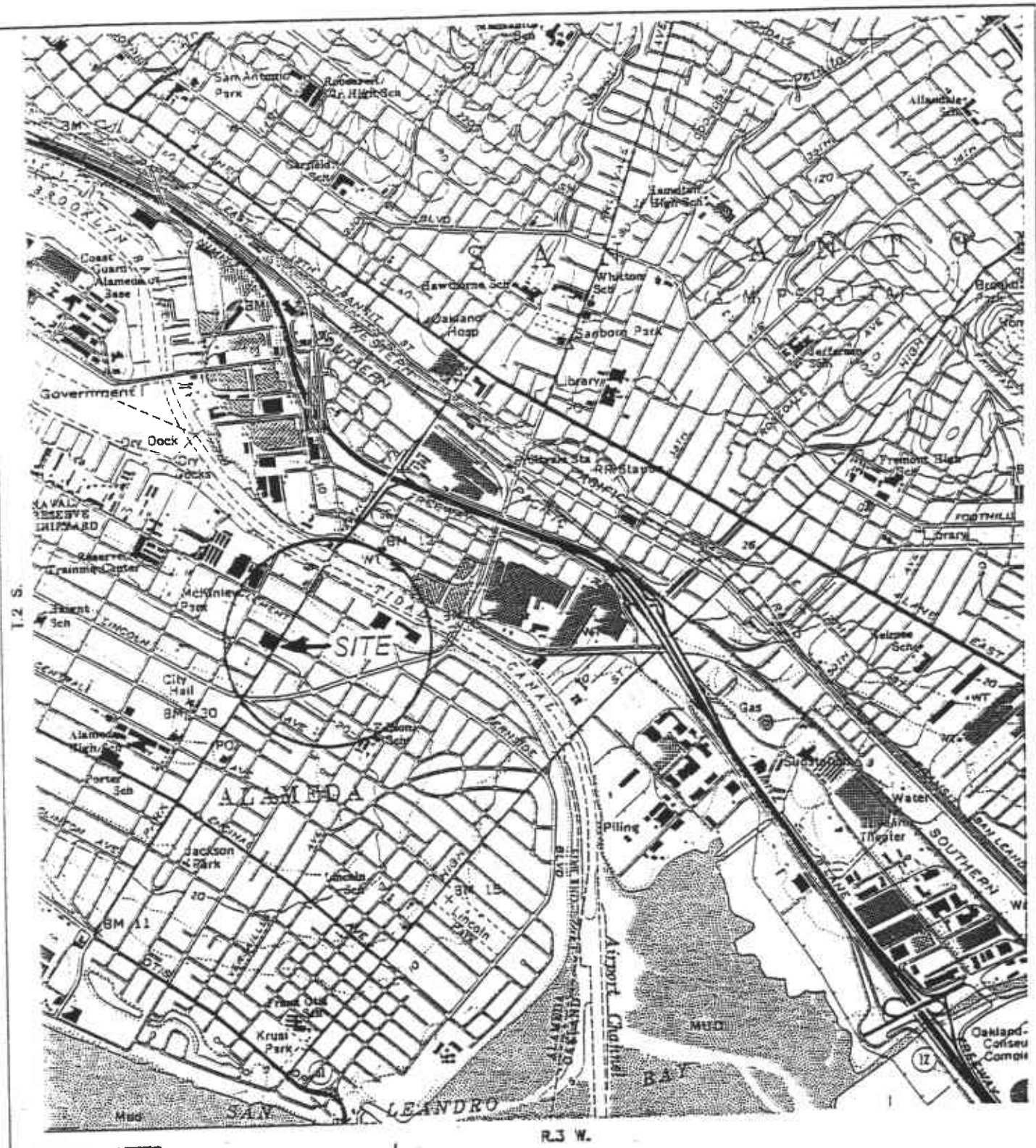
TABLE 3-Continued

CUMULATIVE GROUND WATER SAMPLE ANALYTICAL RESULTS
Concentrations in micrograms per liter (µg/L)

Exxon Retail Station No. 7-0104
1725 Park Street
Alameda, California

Monitoring Well	Date	Benzene	Toluene	Ethyl-benzene	Xylenes	TPH[a] as gasoline	MTBE[b]
EW-4	09/12/94	1,700	12	210	77	4,000[c]	NA
	10/01/94	100	1.5	15	11	460[c]	NA
	01/13/95	89	8.8	1.6	82	520[c]	NA
	04/27/95	NS	NS	NS	NS	NS	NA
	08/03/95	3,100	1,100	2,000	8,200	42,000	17,000
EW-5	09/12/94	26	1.7	11	12	180[c]	NA
	10/01/94	16	0.92	5.7	8.5	130[c]	NA
	01/13/95	0.6	0.8	0.6	2.9	130[c]	NA
	04/27/95	NS	NS	NS	NS	NS	NA
	08/03/95	<0.50	<0.50	<0.50	<0.50	70	210

[a] Total petroleum hydrocarbons by EPA Method 8015 Modified, except as noted.
[b] Methyl tertiary butyl ether by EPA Method 8020.
[c] Total volatile hydrocarbons by DOHS/LUFT manual method.
[d] Not analyzed.
[e] Result obtained from a 1:10 dilution analyzed on January 17, 1995.
[f] Not sampled.



GENERAL NOTES:
BASE MAP FROM U.S.G.S.
OAKLAND EAST, CA.
7.5 MINUTE TOPOGRAPHIC
PHOTOREVISED 1980

North

CALIF

QUADRANGLE LOCATION

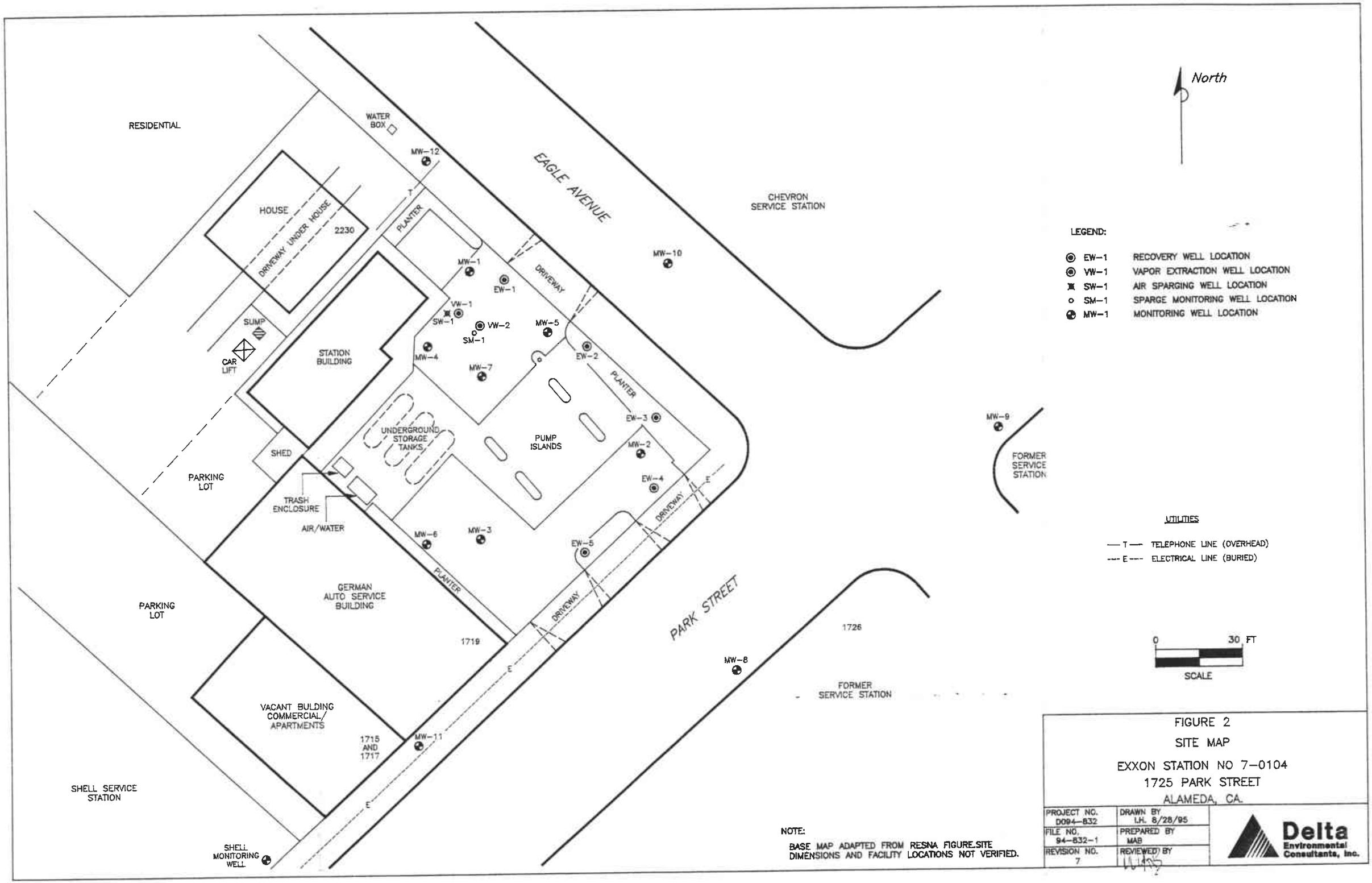
0 2000 FT

SCALE 1 : 24,000

FIGURE 1
SITE LOCATION MAP
EXXON STATION NO 7-0104
1725 PARK STREET
ALAMEDA, CA.

PROJECT NO. 0094-632	DRAWN BY LH 9/27/94
FILE NO. —	PREPARED BY RDM
REVISION NO. 1	REVIEWED BY

Delta Environmental Consultants, Inc.



NOTE:

BASE MAP ADAPTED FROM RESNA FIGURE.SITE DIMENSIONS AND FACILITY LOCATIONS NOT VERIFIED.

FIGURE 2

SITE MAP

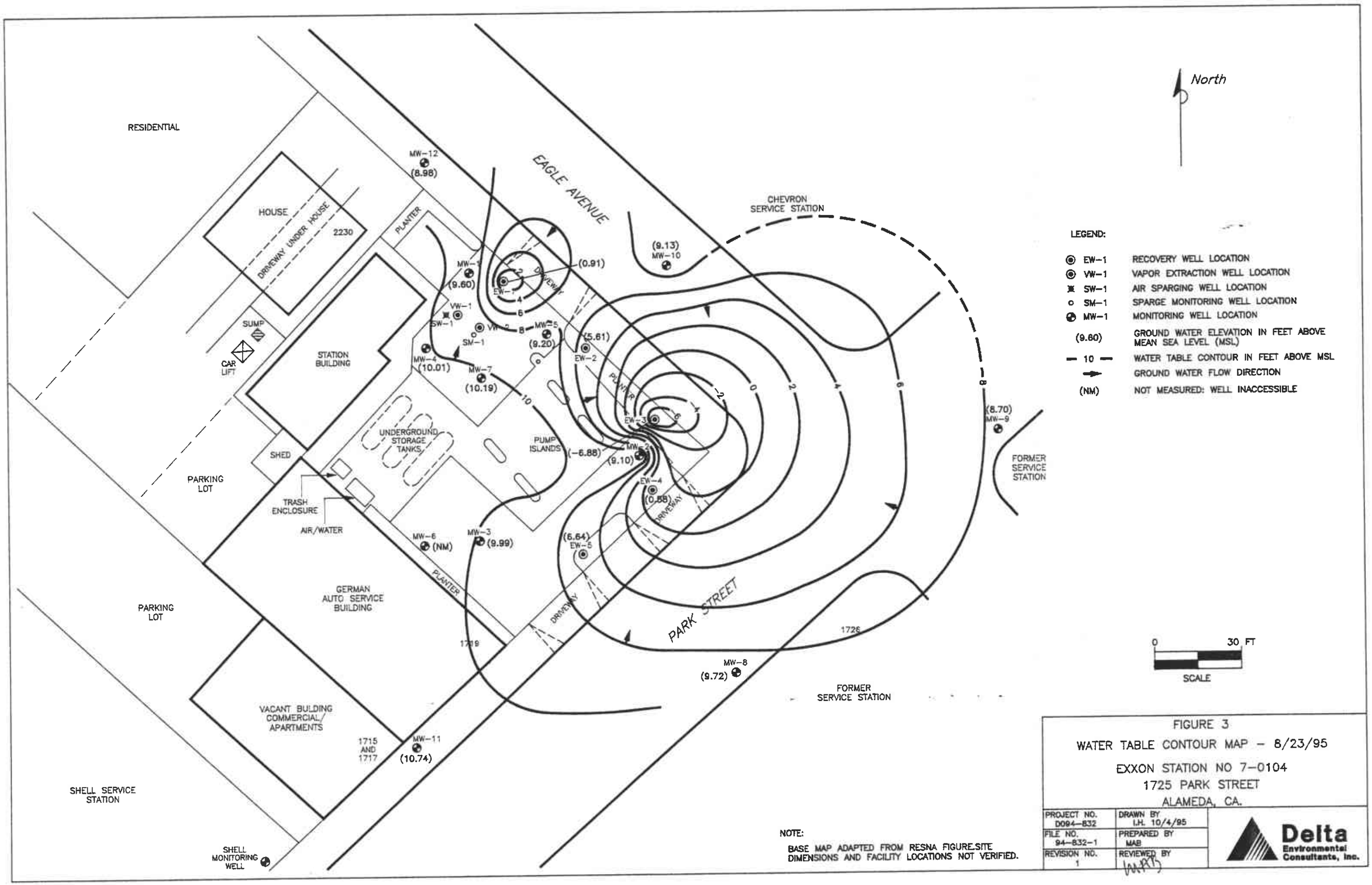
EXXON STATION NO 7-0104

1725 PARK STREET

ALAMEDA, CA.

PROJECT NO. D094-832	DRAWN BY L.H. 8/28/95
FILE NO. 94-832-1	PREPARED BY MAB
REVISION NO. 7	REVIEWED BY

Delta Environmental Consultants, Inc.



NOTE:

BASE MAP ADAPTED FROM RESNA FIGURE.SITE DIMENSIONS AND FACILITY LOCATIONS NOT VERIFIED.

FIGURE 3

WATER TABLE CONTOUR MAP – 8/23/95

EXXON STATION NO 7-0104

1725 PARK STREET

ALAMEDA, CA.

PROJECT NO. D094-832	DRAWN BY I.H. 10/4/95
FILE NO. 94-832-1	PREPARED BY MAB
REVISION NO. 1	REVIEWED BY

Delta Environmental Consultants, Inc.

ENCLOSURE A

Zone 7 Water Agency Well Permits

ZONE 7 WATER AGENCY

5997 PARKSIDE DRIVE PLEASANTON, CALIFORNIA 94588 VOICE (510) 484-2600
FAX (510) 462-3914

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT Exxon Station 7-0104
1725 Park Street
Alameda, California

CLIENT
Name Exxon Company, U.S.A. (Exxon)
Address 2300 Clayton Rd. Voice (510) 246-8776
City Concord, CA 94520 Zip

APPLICANT
Name Delta Environmental Consultants
Fax (916) 638-8385
Address 3330 Data Dr. Suite 100 Voice (916) 638-2085
City Rancho Cordova, CA Zip 95670

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection	___	General	___
Water Supply	___	Contamination	___
Monitoring	X	Well Destruction	___

PROPOSED WATER SUPPLY WELL USE
Domestic ___ Industrial ___ Other Analytical Sampling
Municipal ___ Irrigation ___

DRILLING METHOD:
Mud Rotary ___ Air Rotary ___ Auger Hollow-Stem
Cable ___ Other ___

DRILLER'S LICENSE NO. (C57) 602720

WELL PROJECTS
Drill Hole Diameter 8 in. Maximum
Casing Diameter 2 in. Depth 20 ft.
Surface Seal Depth 3 ft. Number 2

GEOTECHNICAL PROJECTS
Number of Borings 2 Maximum
Hole Diameter 8 in. Depth 20 ft.

ESTIMATED STARTING DATE May 1, 1995
ESTIMATED COMPLETION DATE May 1, 1995

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE [signature] Date ___
As Agent For: Exxon Company, U.S.A.

FOR OFFICE USE

PERMIT NUMBER 95208
LOCATION NUMBER ___

PERMIT CONDITIONS

Circled Permit Requirements Apply

(A.) GENERAL
1. A permit application should be submitted so as to arrive at the Zone 7 office five days prior to proposed starting date.
2. Submit to Zone 7 within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well Projects, or drilling logs and location sketch for geotechnical projects.
3. Permit is void if project not begun within 90 days of approval date.

(B.) WATER WELLS, INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

(C.) GEOTECHNICAL. Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied cement grout shall be used in place of compacted cuttings.

D. CATHODIC. Fill hole above anode zone with concrete placed by tremie.

E. WELL DESTRUCTION. See attached.

Approved Wyman Hong Date 14 Apr 95
Wyman Hong

91992

ENCLOSURE B

City of Alameda Encroachment Permits

FILE COPY

ENCROACHMENT PERMIT
EXXON 7-0104.

(510) 748-45[illegible]
~~415-522-4100~~

CITY OF ALAMEDA
CENTRAL PERMIT OFFICE

2263 SANTA CLARA AVE., ROOM 204
ALAMEDA, CA 94501

APPLICATION FOR PERMIT TO EXCAVATE IN THE RIGHT-OF-WAY OF THE CITY OF ALAMEDA

DATE 3/21 19 95

________ SERVICE NUMBER

Application is hereby made for a permit to excavate on the SOUTHWEST side of EAGLE (Ave.) St. 160 feet NORTHWEST of PARK ST. (SEE ATTACHED FIG'S 1 & 2)

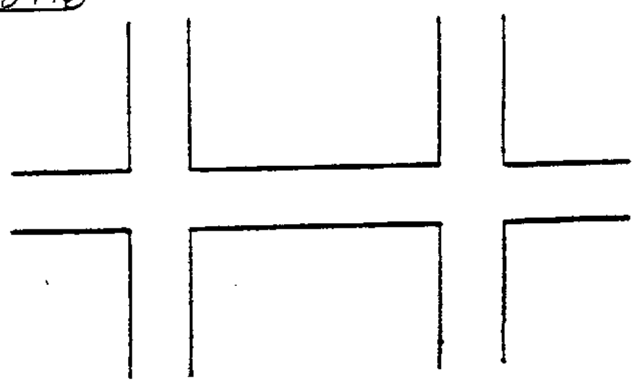
House No. 2230 EAGLE Owner OSKAR BOEHLER

For the purpose of INSTALLING ONE GROUND WATER MONITORING WELL IN EITHER THE SIDEWALK OR EDGE OF PAVEMENT.

Name of Applicant EXXON CO. USA Address 2300 CLAYTON RD, CONCORD, CA. 94520

Phone (510) 246-8776

☐ VERBAL APPROVAL
Date ________
By ________
Reasons: ________



SEE ATTACHED FIGURES 1 & 2

Diagram of Proposed Work

FOR OFFICE USE ONLY

This permit to be Inspected by ☑ ENGINEERING DIVISION ☐ MAINTENANCE DIVISION

☐ ALL STRIPING, PAINTED GRAPHICS AND PAVEMENT MARKERS DAMAGED OR DESTROYED BY STREET EXCAVATION WORK ARE TO BE RESTORED BY THE PERMITEE.

☑ ALL CONSTRUCTION WITHIN THE PUBLIC RIGHT OF WAY MUST HAVE BARRICADES WITH FLASHERS FOR NIGHT TIME PROTECTION.

☐ ALL WORK INVOLVED IS TO BE DONE IN ACCORDANCE WITH STANDARD CITY OF ALAMEDA SPECIFICATIONS AND CITY OF ALAMEDA PRACTICES ALL TO THE SATISFACTION OF THE CITY ENGINEER. INSPECTION CHARGES SHALL BE PAID TO THE CITY MONTHLY. ACCEPTANCE OF THIS PERMIT CONSTITUTES ACCEPTANCE OF THE CONDITIONS INCLUDED.

[signature] / Delta Environmental, as agent for Exxon 3/21/95
SIGNATURE DATE

☐ CONCRETE PERMIT REQUIRED

☐ NO OPEN TRENCH CUTTING

☐ STATE PERMIT REQUIRED

CLEAR SIGNATURE DATE

☑ SPECIAL CONDITIONS Please have attachments stay with field copy of this permit. Thanks, [initials]

RECEIVED DATE 4-4-95 SIGNED Gail Moore PERMIT # 95-0015

APPROVAL DATE 4-4-95 SIGNED [signature]

ISSUED DATE 4-4-95 SIGNED Gail Moore

CITY OF ALAMEDA
CENTRAL PERMIT OFFICE 415-522-4100
2263 SANTA CLARA AVE., ROOM 204
ALAMEDA, CA 94501

APPLICATION FOR PERMIT TO EXCAVATE IN THE RIGHT-OF-WAY OF THE CITY OF ALAMEDA

_____ SERVICE NUMBER DATE 13 JULY 19 95

Application is hereby made for a permit to excavate on the NORTHWEST side of PARK (Ave. / St.) 165 feet SOUTHWEST of EAGLE AVENUE

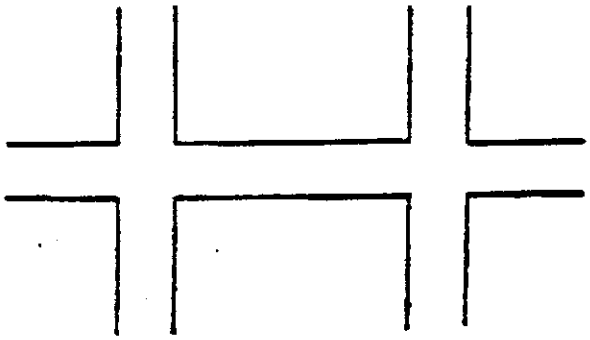
House No. 1715 & 1717 PARK STREET SIDEWALK Owner MR. J. BRADFORD AND MR. M. BRADFORD.

For the purpose of INSTALLATION OF A GROUND WATER MONITORING WELL FOR OBSERVATION PURPOSES. WELL WILL BE INSTALLED ON SIDEWALK.

Name of Applicant EXXON Co. U.S.A. Address 2300 CLAYTON ROAD, CONCORD, CA 94520

Phone (510) 246-8776

☐ VERBAL APPROVAL
Date _____
By _____
Reasons: _____



* SEE ATTACHED FIGURES 1 & 2 FOR PROPOSED LOCATION.

Diagram of Proposed Work

FOR OFFICE USE ONLY

This permit to be Inspected by ☑ ENGINEERING DIVISION ☐ MAINTENANCE DIVISION

☑ ALL STRIPING, PAINTED GRAPHICS AND PAVEMENT MARKERS DAMAGED OR DESTROYED BY STREET EXCAVATION WORK ARE TO BE RESTORED BY THE PERMITEE.

☑ ALL CONSTRUCTION WITHIN THE PUBLIC RIGHT OF WAY MUST HAVE BARRICADES WITH FLASHERS FOR NIGHT TIME PROTECTION.

☑ ALL WORK INVOLVED IS TO BE DONE IN ACCORDANCE WITH STANDARD CITY OF ALAMEDA SPECIFICATIONS AND CITY OF ALAMEDA PRACTICES ALL TO THE SATISFACTION OF THE CITY ENGINEER. INSPECTION CHARGES SHALL BE PAID TO THE CITY MONTHLY. ACCEPTANCE OF THIS PERMIT CONSTITUTES ACCEPTANCE OF THE CONDITIONS INCLUDED.

SIGNATURE / DELTA ENVIRONMENTAL INC. AS AGENT FOR EXXON, DATE JULY 15, 1995

☐ CONCRETE PERMIT REQUIRED

☐ NO OPEN TRENCH CUTTING

☐ STATE PERMIT REQUIRED

CLEAR SIGNATURE DATE

☐ SPECIAL CONDITIONS _____

RECEIVED DATE 7/27/95 SIGNED David Moore

APPROVAL DATE 7/27/95 SIGNED _____

ISSUED DATE 7/27/95 SIGNED David Moore

PERMIT # 95-0032

ENCLOSURE C

Field Methods and Procedures

FIELD METHODS AND PROCEDURES

The following section describes field procedures that were completed by Delta personnel in the performance of the tasks involved with this project.

1.0 HEALTH AND SAFETY PLAN

Fieldwork performed by Delta and subcontractors at the site was conducted according to guidelines established in a Site Health and Safety Plan (SHSP). The SHSP document describes the hazards that may be encountered in the field and specifies protective equipment, work procedures, and emergency information. A copy of the SHSP was at the site and available for reference by appropriate parties during work at the site.

2.0 FIELD PROCEDURES

2.1 Soil Sampling

Drilling and soil sampling was performed under the direction of a Delta geologist. The soil borings were advanced using a truck-mounted hollow-stem auger drill rig.

To reduce the chance of potential cross-contamination between boreholes, all downhole drilling equipment was steam-cleaned between each boring, and the split-barrel sampler was washed in a soap solution and double-rinsed between each sampling event.

Soil sampling was conducted in accordance with ASTM Method 1586-84. Using this procedure, a 2-inch inside-diameter California-type sampler is driven into the soil by a 140-pound weight falling 30 inches. After an initial set of 6 inches, the number of blows required to drive the sampler an additional 12 inches, known as penetration resistance or the "N" value was recorded. The "N" value is used as an empirical measure of the relative density of cohesionless soils and the consistency of cohesive soils.

Upon recovery, a portion of the soil sample was placed into a ziplock bag and sealed for later screening with an organic vapor monitor (OVM). Another portion of the soil sample was used for classification and description. The portion of the soil sample collected within one of the brass tubes in the California-type sampler was stored at approximately 4°C for transport to the laboratory.

2.2 Soil Classification

As the samples were obtained in the field, they were classified by the geologist in accordance with the Unified Soil Classification System (USCS). Representative portions of the samples were then retained for further examination and for verification of the field classification. Logs of the borings indicating the depth and identification of the geologic conditions encountered, the "N" value, and pertinent information regarding the method of maintaining and advancing the borehole were recorded.

2.3 Soil Sample Screening/Portable Photoionization Detector Method

After the soil sample ziplock bags were brought to ambient temperature, the headspace vapors of the soil sample in the bag were screened with an OVM. The corner of the sample bag was opened slightly, and the detector probe immediately inserted into the headspace. The highest observed reading was recorded.

2.4 Monitoring Well Gravel Pack and Slot Size Selection

The gravel pack was selected such that it would permit the development of a zone of higher hydraulic conductivity adjacent to the well screen but would not allow piping of the finer-grained formation materials into the well. The slot size of the well screen was selected so that it would retain a minimum of 95 percent of the gravel pack material.

2.5 Monitoring Well Development

After the monitoring wells were installed, each well was developed using a surge block and disposable Teflon bailer until the well produced water that was relatively sediment-free. No water or chemicals were introduced into the monitoring wells during well development. All development water was transferred to the holding tank, treated and disposed through the ground water treatment system on-site.

2.6 Ground Water and Liquid-Phase Petroleum Hydrocarbon Depth Determination

A water/petroleum interface probe was used to assess the thickness of liquid-phase petroleum hydrocarbons (LPH), if present, and a water level indicator was used to assess ground water depth in monitoring wells that do not contain LPH. Depth to ground water was measured from the top of each monitoring well casing. The tip of the water level indicator was subjectively analyzed for LPH sheen. All measurements and physical observations were recorded in the field.

2.7 Subjective Analysis of Ground Water

Prior to purging, a water sample was collected from the monitoring well for subjective analysis. The sample was retrieved by gently lowering a clean, disposable bailer to approximately one-half the bailer length past the air/liquid interface. The bailer was then retrieved and the sample contained within the bailer was examined for LPH and the appearance of a petroleum sheen.

2.8 Ground Water Sampling

Ground water samples were removed from each of the newly installed wells using a disposable bailer upon completion of well development, once the water level had recharged to at least 85 percent of the initial water level prior to development. Samples were collected in air-tight vials, appropriately labeled, and stored on ice from the time of collection through the time of delivery to the laboratory. A chain-of-custody form was completed to document possession of the samples. Ground water samples were transported to the laboratory and analyzed within the EPA-specified holding times for the requested analyses.

2.9 Surveying Well Casing Elevations

Following installation of the monitoring wells, reference marks at the top of the well casings were surveyed to within 0.01 foot relative to a temporary bench mark with an assumed elevation, allowing correlation of water levels between each well at the site.

3.0 ANALYTICAL PROCEDURES

Soil and ground water samples were submitted to Sequoia Analytical laboratory for analyses of BTEX and MTBE using EPA Method 8020, and TPH as gasoline using EPA Method 8015 Modified.

4.0 QUALITY ASSURANCE PLAN

This section describes the field and analytical procedures which were followed throughout the investigation.

4.1 General Sample Collection and Handling Procedures

Proper collection and handling are essential to ensure the quality of a sample. Each sample was collected in a suitable container, preserved correctly for the intended analysis, and stored prior to analysis for no longer than the maximum allowable holding time.

4.2 Sample Identification and Chain-of-Custody Procedures

Sample identification and chain-of-custody procedures document sample possession from the time of collection to its ultimate disposal. Each sample container submitted for analysis was labeled with the job number, sampler, date and time of sample collection, and a sample number unique to that sample. This information, in addition to a description of the sample, field measurements made, sampling methodology, names of on-site personnel, and any other pertinent field observations were recorded on the borehole log or in the field records. Samples were analyzed by a California-certified laboratory.

A chain-of-custody form was completed to record possession of each sample from time of collection to its arrival at the laboratory. When the samples were shipped via laboratory courier, the person in custody of the samples relinquished them by signing the chain-of-custody form and noting the time. The sample-control officer at the laboratory verified sample integrity and confirmed that it was collected in the proper container, preserved correctly, and that there was adequate volume for analysis.

When these conditions were met, the sample was assigned a unique log number for identification throughout analysis and reporting. The log number was recorded by the laboratory on the chain-of-custody form and in the legally-required log book maintained by the laboratory. The sample description, date received, client's name, and other relevant information were recorded.

PROJECT NAME/LOCATION:	Project Number	D094-832	Boring Number	MW-11
Exxon Service Station No. 7-0104 1725 Park Street Alameda, CA	Contractor	Turner Explorations	Drilling Method	8" HSA
	Driller	Jarrod Kump	Drilling Rig	Mobile B-34
	Start	12:30 p.m. 08/23/95	Completed	2:35 p.m. 08/23/95
Landowner:	Surface Elev.	—	Logged By	Mike Berrington

Sample Type	Sample No.	Blow Count	Sample Interval (ft)	Sample Recovery (in.)	Depth Scale 1" = 4'	Descriptions of Materials and Conditions	Observations Instrument: Units: hNu ppm	Comments
					0	3" CONCRETE		
					1	POORLY GRADED SAND; fine grained sand; tan to light brown, moist, medium dense (SP)		
					2			
					3			
					4			
CAM	MW-11-6.5	11 10 13	5.0-6.5	18	5	CLAYEY SAND; fine grained sand; light brown, moist to wet, medium dense (SC)	43	
					6			
					7	SANDY LEAN CLAY; fine grained sand; low to medium plasticity clay; olive to blue green, moist, very stiff (CL)		
					8			
					9			First water at ~9 ft.
CAM	MW-11-11.5	24 42 50 for 5"	10.0-11.5	18	10	POORLY GRADED SAND; fine grained sand; olive, wet, very dense (SP)	166	
					11			
					12			
					13			
					14			
CAM	MW-11-15.5	50 for 6"	15.0-15.5	6	15	CLAYEY SAND/SANDY LEAN CLAY; fine grained sand; light brown to tan, moist to wet, very dense (SC/CL)	60	
					16			
CAM	MW-11-17.5	28 41 32 for 5"	17.0-18.0	12	17	SILT; olive gray, moist, hard (ML)	13	
					18	Total drilled depth at 17 ft.		
					19			
					20			
					21			
					22			
					23			

BOREHOLE WATER LEVEL DATA			
Date	08/23/95		
Time	4:50 p.m.		
GWL	7.30		
Casing Depth	17 ft.		

Delta Environmental Consultants, Inc.

Sheet 1 of 1

Rev. October 19, 1993

PROJECT NAME/LOCATION:	Project Number	D094-832	Boring Number	MW-12
Exxon Service Station No. 7-0104 1725 Park Street Alameda, CA	Contractor	Turner Explorations	Drilling Method	8" HSA
	Driller	Jarrod Kump	Drilling Rig	Mobile B-34
	Start	9:30 a.m. 08/23/95	Completed	10:20 a.m. 08/23/95
Landowner:	Surface Elev.	---	Logged By	Mike Berrington

Sample Type	Sample No.	Blow Count	Sample Interval (ft)	Sample Recovery (in.)	Depth Scale 1" = 4'	Descriptions of Materials and Conditions	Observations Instrument: Units: HNu ppm	Comments
					0	3" CONCRETE		
					1	POORLY GRADED SAND WITH SILT; fine grained sand; dark brown, moist (SP-SM)		
					2			
					3	POORLY GRADED SAND; fine grained sand; tan, moist (SP)		
					4			
CAM	MW-12-6.5	8 16 25	5.0-6.5	18	5	CLAYEY SAND/SANDY LEAN CLAY; fine grained sand; low to medium plasticity clay; pale olive brown, moist, dense (SC/CL)	0	
					6			
					7			
					8			First water at −8 ft.
					9			
CAM	MW-12-10.5	28 49 50 for 2"	10.0-11.5	12	10	POORLY GRADED SAND WITH SILT; fine grained sand; tan to light brown, moist to wet, very dense (SP-SM)	2	
					11			
					12			
					13			
					14			
CAM	MW-12-16	10 18 28	15.0-16.5	18	15	SANDY LEAN CLAY; very fine grained sand; bluish-green, low plasticity, moist, hard (CL)	2	
					16			
					17	Total drilled depth at 15 ft.		
					18			
					19			
					20			
					21			
					22			
					23			

BOREHOLE WATER LEVEL DATA			
Date	08/23/95		
Time	4:40 p.m.		
GWL	7.30		
Casing Depth	15 ft.		

Delta Environmental Consultants, Inc.

Sheet 1 of 1

Rev. October 19, 1995

ENCLOSURE E

Certified Laboratory Soil Sample Analytical Report

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Delta Environmental Consults
3164 Gold Camp Drive, #200
Rancho Cordova, CA 95670

Attention: Linda McGahan

Client Proj. ID: Exxon 7-0104, Alameda
Sample Descript: MW-11-6.5
Matrix: SOLID
Analysis Method: 8015Mod/8020
Lab Number: 9508J28-01

Sampled: 08/23/95
Received: 08/25/95
Extracted: 08/28/95
Analyzed: 08/31/95
Reported: 09/01/95

QC Batch Number: GC082895BTEXEXA
Instrument ID: GCHP17

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Methyl t-Butyl Ether	0.025	N.D.
Benzene	0.0050	N.D.
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	**0.0050**	**0.024**
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	94

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Delta Environmental Consults	Client Proj. ID: Exxon 7-0104, Alameda	Sampled: 08/23/95
3164 Gold Camp Drive, #200	Sample Descript: MW-11-11.5	Received: 08/25/95
Rancho Cordova, CA 95670	Matrix: SOLID	Extracted: 08/28/95
	Analysis Method: 8015Mod/8020	Analyzed: 08/31/95
Attention: Linda McGahan	Lab Number: 9508J28-02	Reported: 09/01/95

QC Batch Number: GC082895BTEXEXA
Instrument ID: GCHP17

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	**1.0**	**2.0**
Methyl t-Butyl Ether	0.025	N.D.
Benzene	**0.0050**	**0.26**
Toluene	0.0050	N.D.
Ethyl Benzene	**0.0050**	**0.021**
Xylenes (Total)	**0.0050**	**0.16**
Chromatogram Pattern:		**Gas**

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	73

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Delta Environmental Consults
3164 Gold Camp Drive, #200
Rancho Cordova, CA 95670

Attention: Linda McGahan

Client Proj. ID: Exxon 7-0104, Alameda
Sample Descript: MW-12-6.5
Matrix: SOLID
Analysis Method: 8015Mod/8020
Lab Number: 9508J28-03

Sampled: 08/23/95
Received: 08/25/95
Extracted: 08/28/95
Analyzed: 08/31/95
Reported: 09/01/95

QC Batch Number: GC082895BTEXEXA
Instrument ID: GCHP17

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Methyl t-Butyl Ether	0.025	N.D.
Benzene	0.0050	N.D.
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	0.0050	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	98

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Delta Environmental Consultants
3330 Data Drive
Rancho Cordova, CA 95670
Attention: Linda McGahan

Client Project ID: Exxon 7-0104, Alameda
Matrix: Solid
Work Order #: 9508J28 -01- 03
Reported: Sep 1, 1995

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC082895BTEXEXA	GC082895BTEXEXA	GC082895BTEXEXA	GC082895BTEXEXA
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030
Analyst:	G. Garcia	G. Garcia	G. Garcia	G. Garcia
MS/MSD #:	9508D7311	9508D7311	9508D7311	9508D7311
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	8/28/95	8/28/95	8/28/95	8/28/95
Analyzed Date:	8/28/95	8/28/95	8/28/95	8/28/95
Instrument I.D.#:	GCHP1	GCHP1	GCHP1	GCHP1
Conc. Spiked:	0.20 mg/Kg	0.20 mg/Kg	0.20 mg/Kg	0.60 mg/Kg
Result:	0.18	0.18	0.18	0.54
MS % Recovery:	90	90	90	90
Dup. Result:	0.17	0.17	0.18	0.52
MSD % Recov.:	85	85	90	87
RPD:	5.7	5.7	0.0	3.8
RPD Limit:	0-50	0-50	0-50	0-50
LCS #:				
Prepared Date:				
Analyzed Date:				
Instrument I.D.#:				
Conc. Spiked:				
LCS Result:				
LCS % Recov.:				
MS/MSD LCS Control Limits	55-145	47-149	47-155	56-140

Please Note:
The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

SEQUOIA ANALYTICAL

Mike Gregory
Project Manager

** MS = Matrix Spike, MSD = MS Duplicate, RPD = Relative % Difference

9508J28.DLT <1>

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Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

EXXON COMPANY, U.S.A.

P.O. Box 2180, Houston, TX 77002-7426

CHAIN OF CUSTODY

9508J28

Page 1 of 1

Consultant's Name: Delta Environmental Consultants		
Address: 1725 PARK ST.		**Site Location:** ALAMEDA, CA.
Project #:	**Consultant Project #:** D/94-832	**Consultant Work Release #:** 19432522
Project Contact: Linda McGahan	**Phone #:** (916) 638-2085	**Laboratory Work Release #:**
EXXON Contact: Marla Gruensler	**Phone #:** (510) 246-8776	**EXXON RAS #:** 7-0104
Sampled by (print): MICHAEL A. BERRINGER	**Sampler's Signature:** Michael A. Berringer	
Shipment Method: COURIER	**Air Bill #:**	

TAT: ☐ 24 hr ☐ 48 hr ☐ 72 hr ☐ 96 hr ☒ Standard (10 day)

Sample Description	Collection Date	Collection Time	Matrix Soil/Water/Air	Prsv	# of Cont.	Sequoia's Sample #	ANALYSIS REQUIRED: TPH/Gas BTEX/ 8015/ 8020	TPH/ Diesel EPA 8015	TRPH S.M. 5520	MTBE	HOLD	Temperature: _____ Inbound Seal: Yes No Outbound Seal: Yes No
MW-11-6.5	8/23/95	1250	Soil	None	1	1A	X			X		
MW-11-11.5		1315				2A	X			X		
MW-11-15.5		1335									X	
MW-11-17.5		1425									X	
MW-12-6.5	8/23/95	0943	Soil	None	1	3A	X			X		
MW-12-11.5		0958									X	
MW-12-16.5		1015									X	

RELINQUISHED BY / AFFILIATION	Date	Time	ACCEPTED / AFFILIATION	Date	Time	Additional Comments
Michael A. Berringer / Delta	8/24/95	1040	John Yowell / SEQUOIA	8/24/95	1040	
John Yowell / SEQUOIA	8/24/95	1130	Stacy Oldman / Sequoia	8/24/95	1130	
Stacy Oldman / Sequoia	8/25/95	1015	[illegible] CDC	8-25	1015	

Pink - Client
Yellow - Sequoia
White - Sequoia

ENCLOSURE F

Monitoring Well Construction Details

INSTALLATION OF FLUSH GRADE MONITORING WELL

Project: Exxon Service Station No. 7-0104
1725 Park Street
Alameda, California

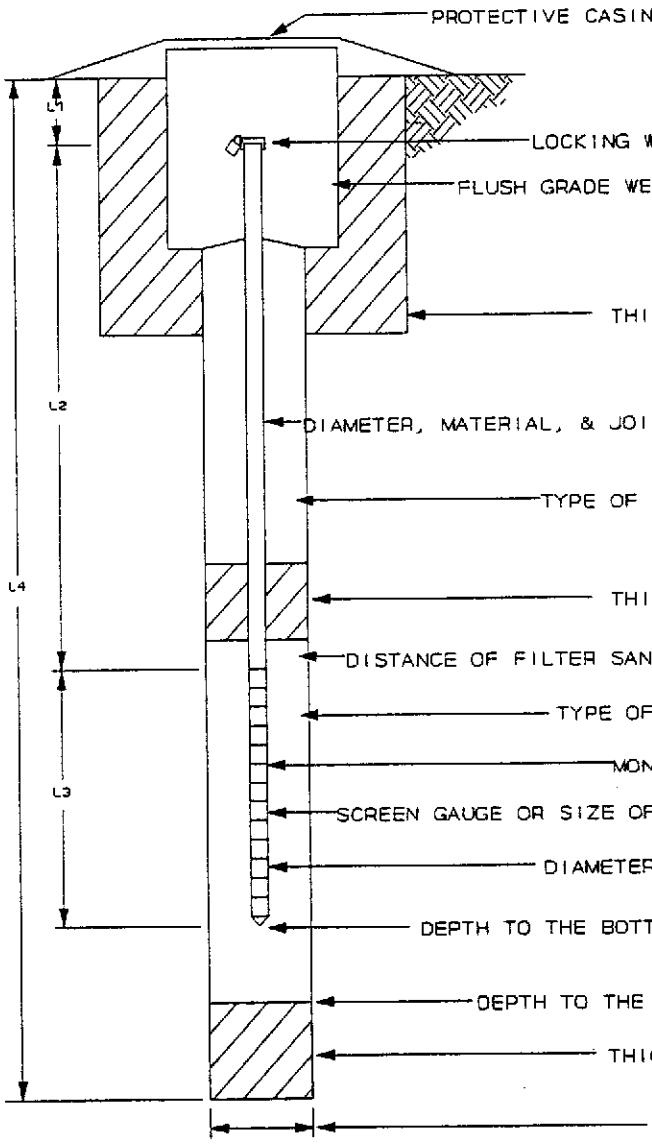
Delta No. D094-832

Monitoring Well No. MW-11

Elevations:

Top of Riser: 18.04

Ground Level:



DIAMETER AND MATERIAL	10-inch steel
TOTAL LENGTH	12 inches
THICKNESS & TYPE OF SEAL	12 inches concrete
DIAMETER, MATERIAL, & JOINT TYPE OF RISER PIPE	2-inch SCH 40 PVC, flush threaded
TYPE OF BACKFILL AROUND RISER	Cement grout with 3-5% bentonite
THICKNESS & TYPE OF SEAL	1 foot bentonite
DISTANCE OF FILTER SAND ABOVE TOP OF SCREEN	1 foot
TYPE OF FILTER AROUND SCREEN	No. 3 Lonestar sand
MONITORING WELL MATERIAL	Schedule 40 PVC
SCREEN GAUGE OR SIZE OF OPENINGS (SLOT SIZE)	0.020 inch
DIAMETER AND LENGTH OF SCREEN	2 inches x 10 feet
DEPTH TO THE BOTTOM OF MONITORING WELL	17 feet
DEPTH TO THE BOTTOM OF FILTER SAND	17 feet
THICKNESS & TYPE OF SEAL	NA
DIAMETER OF BOREHOLE	8 inches

L1 = 0.5 FT
L2 = 4.5 FT
L3 = 10.0 FT
L4 = 17.0 FT

Installation Completed
Date: 08/23/95
Time: 6:00 p.m.

Delta Environmental Consultants, Inc.

Monitoring Well Water Level Measurements		
Date	Time	Water Level*
08/23/95	4:50 p.m.	7.30 feet

* Measure Point: Top of casing

INSTALLATION OF FLUSH GRADE MONITORING WELL

Project: Exxon Service Station No. 7-0104
1725 Park Street
Alameda, California

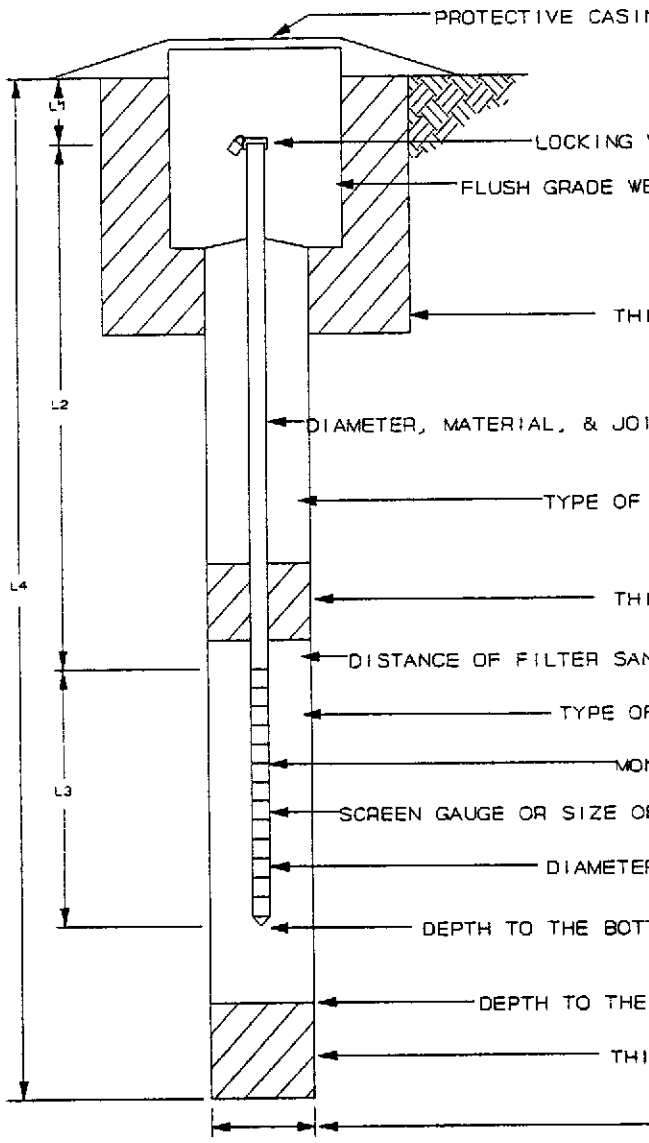
Delta No. D094-832

Monitoring Well No. MW-12

Elevations:

Top of Riser: 16.30

Ground Level:



DIAMETER AND MATERIAL	10-inch steel
TOTAL LENGTH	12 inches
THICKNESS & TYPE OF SEAL	12 inches concrete
DIAMETER, MATERIAL, & JOINT TYPE OF RISER PIPE	2-inch SCH 40 PVC, flush threaded
TYPE OF BACKFILL AROUND RISER	Cement grout with 3-5% bentonite
THICKNESS & TYPE OF SEAL	1 foot bentonite
DISTANCE OF FILTER SAND ABOVE TOP OF SCREEN	1 foot
TYPE OF FILTER AROUND SCREEN	No. 3 Lonestar sand
MONITORING WELL MATERIAL	Schedule 40 PVC
SCREEN GAUGE OR SIZE OF OPENINGS (SLOT SIZE)	0.020 inch
DIAMETER AND LENGTH OF SCREEN	2 inches x 10 feet
DEPTH TO THE BOTTOM OF MONITORING WELL	15 feet
DEPTH TO THE BOTTOM OF FILTER SAND	15 feet
THICKNESS & TYPE OF SEAL	NA
DIAMETER OF BOREHOLE	8 inches

L1 = 0.5 FT
L2 = 4.5 FT
L3 = 10.0 FT
L4 = 15.0 FT

Installation Completed
Date: 08/23/95
Time: 6:30 p.m.

Delta Environmental Consultants, Inc.

Monitoring Well Water Level Measurements		
Date	Time	Water Level*
08/23/95	12:30 p.m.	7.72 feet
08/23/95	4:40 p.m.	7.30 feet

* Measure Point: Top of casing

ENCLOSURE G

Certified Laboratory Ground Water Sample Analytical Report

Sequoia Analytical

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819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

SEP - 5

Delta Environmental Consults
3164 Gold Camp Drive, #200
Rancho Cordova, CA 95670

Attention: Linda McGahan

Client Proj. ID: Exxon 7-0104, Alameda
Sample Descript: MW-11
Matrix: LIQUID
Analysis Method: 8015Mod/8020
Lab Number: 9508J22-01

Sampled: 08/23/95
Received: 08/25/95

Analyzed: 08/31/95
Reported: 09/01/95

QC Batch Number: GC083095BTEX03A
Instrument ID: GCHP03

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	10000	39000
Methyl t-Butyl Ether	500	560
Benzene	100	5200
Toluene	100	190
Ethyl Benzene	100	890
Xylenes (Total)	100	5900
Chromatogram Pattern:		Gas

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	105

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

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Delta Environmental Consults
3164 Gold Camp Drive, #200
Rancho Cordova, CA 95670

Attention: Linda McGahan

Client Proj. ID: Exxon 7-0104, Alameda
Sample Descript: MW-12
Matrix: LIQUID
Analysis Method: 8015Mod/8020
Lab Number: 9508J22-02

Sampled: 08/23/95
Received: 08/25/95

Analyzed: 08/29/95
Reported: 09/01/95

QC Batch Number: GC082995BTEX02A
Instrument ID: GCHP02

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Methyl t-Butyl Ether	2.5	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	96

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

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Delta Environmental Consultants
3164 Gold Camp Drive, #200
Rancho Cordova, CA 95670
Attention: Linda McGahan

Client Project ID: Exxon 7-0104, Alameda
Matrix: Liquid
Work Order #: 9508J22 -01
Reported: Sep 1, 1995

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC083095BTEX03A	GC083095BTEX03A	GC083095BTEX03A	GC083095BTEX03A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030
Analyst:	J. Minkel	J. Minkel	J. Minkel	J. Minkel
MS/MSD #:	9508B9302	9508B9302	9508B9302	9508B9302
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	8/30/95	8/30/95	8/30/95	8/30/95
Analyzed Date:	8/30/95	8/30/95	8/30/95	8/30/95
Instrument I.D.#:	GCHP3	GCHP3	GCHP3	GCHP3
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
Result:	6.0	6.8	6.1	26
MS % Recovery:	60	68	61	87
Dup. Result:	6.9	7.6	5.4	26
MSD % Recov.:	69	76	54	87
RPD:	14	11	12	0.0
RPD Limit:	0-50	0-50	0-50	0-50
LCS #:	BLK083095	BLK083095	BLK083095	BLK083095
Prepared Date:	8/30/95	8/30/95	8/30/95	8/30/95
Analyzed Date:	8/30/95	8/30/95	8/30/95	8/30/95
Instrument I.D.#:	GCHP3	GCHP3	GCHP3	GCHP3
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
LCS Result:	10	10	10	31
LCS % Recov.:	100	100	100	103
MS/MSD LCS Control Limits	71-133	72-128	72-130	71-120

SEQUOIA ANALYTICAL

Mike Gregory
Project Manager

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** MS = Matrix Spike, MSD = MS Duplicate, RPD = Relative % Difference

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Delta Environmental Consultants
3164 Gold Camp Drive, #200
Rancho Cordova, CA 95670
Attention: Linda McGahan

Client Project ID: Exxon 7-0104, Alameda
Matrix: Liquid
Work Order #: 9508J22-02

Reported: Sep 1, 1995

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC082995BTEX02A	GC082995BTEX02A	GC082995BTEX02A	GC082995BTEX02A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030
Analyst:	J. Minkel	J. Minkel	J. Minkel	J. Minkel
MS/MSD #:	9508D9702	9508D9702	9508D9702	9508D9702
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	8/29/95	8/29/95	8/29/95	8/29/95
Analyzed Date:	8/29/95	8/29/95	8/29/95	8/29/95
Instrument I.D.#:	GCHP2	GCHP2	GCHP2	GCHP2
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
Result:	9.2	9.2	9.2	27
MS % Recovery:	92	92	92	90
Dup. Result:	10	10	10	30
MSD % Recov.:	100	100	100	100
RPD:	8.3	8.3	8.3	11
RPD Limit:	0-50	0-50	0-50	0-50
LCS #:				
Prepared Date:				
Analyzed Date:				
Instrument I.D.#:				
Conc. Spiked:				
LCS Result:				
LCS % Recov.:				
MS/MSD LCS Control Limits	71-133	72-128	72-130	71-120

SEQUOIA ANALYTICAL

Mike Gregory
Project Manager

Please Note:
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** MS = Matrix Spike, MSD = MS Duplicate, RPD = Relative % Difference

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EXXON COMPANY, U.S.A.

P.O. Box 2180, Houston, TX 77002-7426

CHAIN OF CUSTODY

Page 1 of 1

Consultant's Name: Delta Environmental			
Address: 1725 Park St.		**Site Location:** Alameda, CA	
Project #:	**Consultant Project #:** 8144-932	**Consultant Work Release #:** 19432522	
Project Contact: Linda McGraham	**Phone #:** (916) 638-2085	**Laboratory Work Release #:**	
EXXON Contact: Marla Brunstler	**Phone #:** (510) 246-8776	**EXXON RAS #:** 7-0104	
Sampled by (print): Michael A. Kennington	**Sampler's Signature:**		
Shipment Method: Courier	**Air Bill #:**	9408522	

TAT: ☐ 24 hr ☐ 48 hr ☐ 72 hr ☐ 96 hr ☒ Standard (10 day)

ANALYSIS REQUIRED

Sample Description	Collection Date	Collection Time	Matrix Soil/Water/Air	Prsv	# of Cont.	Sequoia's Sample #	TPH/Gas BTEX/ 8015/ 8020	TPH/ Diesel EPA 8015	TRPH S.M. 5520	MTBE		Temperature: _____ Inbound Seal: Yes No Outbound Seal: Yes No
MW-11	8/23/95	1800	Water	HCL	6		X			X		1
MW-12	8/23/95	1530	↓	↓	↓		↓			↓		2

RELINQUISHED BY / AFFILIATION	Date	Time	ACCEPTED / AFFILIATION	Date	Time	Additional Comments
Michael A. Kennington / Delta	8/24/95	1040	John Yowell / Sequoia	8/24/95	1040	
John Yowell / Sequoia	8/24/95	1130	Hilary A. Warren / Sequoia	8/24/95	1130	
Hilary A. Warren / Sequoia	8/25/95	1015	CBC	8-25	105	

Pink - Client
Yellow - Sequoia
White - Sequoia