SEACOR

DEPARTMENT OF ECOLOGY
NWRO/TCP TANK UNIT
1667
INTERIM CLEANUP REPORT ☒
SITE CHARACTERIZATION ☐
FINAL CLEANUP REPORT ☐
OTHER _____ ☐
AFFECTED MEDIA: SOIL ☒
OTHER _____ GW ☒
INSPECTOR (INIT.) DAF DATE 4-6-94

December 6, 1993

Mr. Dennis Bock
Exxon Company, U.S.A.
10655 NE 4th, Suite 418
Bellevue, Washington 98004

SUBJECT: QUARTERLY STATUS REPORT - THIRD QUARTER, 1993
FORMER EXXON SERVICE STATION 7-3372
8402 EVERGREEN WAY, EVERETT, WASHINGTON
SEACOR JOB NO. 00091-011-02

Dear Mr. Bock:

WORK PERFORMED THROUGH THE SECOND QUARTER, 1993

In 1988 Golder Associates performed a Sensitive Receptor Survey and installed groundwater monitoring wells, MW-1 through MW-6. Rittenhouse-Zeman & Associates, Inc., removed an underground storage tank (UST) and initiated quarterly monitoring in 1990.

Beginning in 1991, Science & Engineering Analysis Corporation (SEACOR) attempted unsuccessfully to gain off-site access in order to better delineate the western extent of the hydrocarbon plume.

On November 25, 1992, SEACOR performed a soil vapor extraction pilot test at the site.

In January 1993, in preparation of the scheduled UST system upgrade excavation activities, SEACOR installed seven soil borings to characterize the soils near the existing gasoline USTs for disposal purposes. SEACOR also abandoned wells MW-1 and MW-5 in accordance with Chapter 173-160 WAC.

In February 1993, SEACOR observed the excavation and removal of three gasoline USTs, one fuel oil UST, one used oil UST, and two "orphan" USTs that were encountered during excavation. Well MW-3 was damaged beyond repair during the excavation activities. SEACOR assisted Exxon in arranging for the disposal of petroleum contaminated soils.

Following the excavation activities, SEACOR supervised the installation of the remedial system piping as per SEACOR's design titled *Pipe Layout and Details for Exxon 7-3372*, dated February 9, 1993.

11040 Main Street
Suite 240
Bellevue, WA 98004
(206) 646-0280
(206) 646-0283 FAX

Independent Action Report Update

Site Name: Exxon St 7-3372

Inc. #: 1667 Date of Report: 12-6-93

County: King Date Report Rec'd: 2-8-94

Reviewed by: B. Amoah-Forson

Comments (please include: free prod., tank info., media, contaminant migration, GW conc. trends, PCS treated/fate?):

No free product was observed in any MW during the quarter. Elevated levels of BTEX and TPH present in MW5.

SEACOR submitted to Exxon in May 1993, Engineering Drawings titled *Vapor Extraction and Groundwater Air Sparging System*, dated May 4, 1993. In preparation for the system, SEACOR installed five groundwater monitoring wells, MW-2A and MW-7 through MW-10, and four air sparging wells, SW-1 through SW-4. SEACOR also abandoned monitoring well MW-3 in accordance with Chapter 173-160 WAC.

SEACOR has monitored and sampled the existing on-site monitoring wells on a quarterly basis starting in the Third Quarter, 1991 to the present.

WORK PERFORMED DURING PRESENT QUARTER (THIRD QUARTER, 1993)

In July 1993, SEACOR provided a revised site plan layout for the proposed remediation system. The changes were requested due to the present station owner installing a waste oil tank at the site.

SEACOR prepared an off-gas treatment technology review and cost benefit analysis for the proposed vacuum extraction and groundwater air sparging remediation system. The report is titled *Off-Gas Treatment Technology Review,* and dated July 16, 1993. Three treatment system designs were reviewed; carbon absorption, thermal oxidation and internal combustion. In addition, SEACOR evaluated the required utilities associated with each system.

SEACOR responded to a request from Exxon regarding preconstruction activities associated with the site remediation system. The proposal is titled *Preconstruction Professional Services*, and dated August 26, 1993.

In September 1993 SEACOR ordered and prepaid Washington Natural Gas (WNG) for installation of high pressure gas service and a meter for the site remediation system.

In September 1993 SEACOR submitted to Exxon an equipment procurement list associated with the remediation system.

SEACOR completed quarterly monitoring and sampling on August 18, 1993. Well monitoring data were collected from six monitoring wells, MW-2A, MW-4 and MW-7 through MW-10. Groundwater samples were collected from all six wells. Prior to sampling, wells MW-2A, MW-4, MW-7, MW-8, and MW-9 were purged of three well casing volumes. Well MW-10 bailed dry after purging only 1.7 well casing volumes. The groundwater samples were submitted to PACE, Incorporated under chain-of-custody protocol for analyses of benzene, toluene, ethyl benzene and total xylenes (BTEX) by EPA Method 8020; total petroleum hydrocarbons (TPH) in the gasoline range (C_6 to C_{12}) by EPA Method 8015 modified; and total lead by EPA Method 7421. In addition, the groundwater sample

collected from MW-8, located near the used oil UST, was analyzed for TPH in the oil range (C_{24} to C_{32}) by EPA Method 418.1 and the groundwater sample collected from MW-9, located next to the fuel oil UST, was analyzed for TPH in the diesel range (C_{12} to C_{24}) by EPA Method 8015.

The groundwater table was encountered between 12.23 and 15.39 feet below the ground surface during well monitoring on August 18, 1993. Groundwater surface elevation contours interpreted from the well monitoring data indicate groundwater flow direction beneath the site is toward the southwest at an average gradient of 0.02 feet per foot (Figure 1). These data are consistent with previous data collected at the site. Quarterly and historical well monitoring data are presented in Tables 1 and 3, respectively. Graphs illustrating well monitoring data trends are presented in Attachment A.

The analytical results indicate that high concentrations of TPH in the gasoline range and the four BTEX constituents were detected in the groundwater samples from wells MW-2A, MW-7, MW-8, MW-9 and MW-10. High concentrations of total lead were detected in the samples from wells MW-2A, MW-7, MW-8 and MW-10. Toluene, ethyl benzene, xylenes and TPH in the gasoline range were detected at low concentrations in the groundwater sample from well MW-4, but a high concentration of benzene was detected. A high concentration of TPH in the diesel range was detected in the groundwater sample from well MW-9. These data are generally consistent with historical analytical data at the site. Quarterly and historical groundwater analytical data are presented in Tables 2 and 4, respectively. Graphs that illustrate analytical data trends are presented in Attachment A. PACE's "Report of Laboratory Analyses" is presented in Attachment B.

LPH PRODUCT RECOVERY

The site was monitored four times during the third quarter for LPH. No LPH was detected in the any of the wells.

DRUM STATUS

Approximately 600 gallons of purged groundwater is contained in 11 labeled Department of Transportation (DOT)-approved 55-gallon drums. In addition, one 55-gallon drum containing approximately 3 gallons of LPH is stored at the site. Final purge water disposal is presently being handled by Burlington Environmental, Inc., of Seattle, Washington.

WORK TO BE PERFORMED DURING THE NEXT QUARTER (FOURTH QUARTER, 1993)

- Fourth Quarter, 1993 monitoring and sampling is scheduled for November 1993.
- Complete utility acquisition from the Snohomish Public Utility District (SNO-PUD).
- Meet with the Everett Fire Department and Building Department to define construction details for connections from utility service meters to the remediation system and appropriately revise the engineering drawings.
- Issue a proposal to Exxon to complete well head connections.
- Procure a Puget Sound Air Pollution Control Agency (PSAPCA) Notice of Construction Permit for the soil vapor extraction portion of the system.
- Resubmit the new remediation system design for construction bids.

SEACOR appreciates the opportunity to provide services to Exxon Company, U.S.A on this project. If you have questions or comments regarding the information provided in this report or the status of this project, please contact Mr. Gary Siville at (206) 646-0280.

Sincerely,

Science & Engineering Analysis Corporation

Curtis F. Goddard
Staff Geologist

Reviewed by:

Peter A. Kahn
Senior Geologist

Attachments

TABLE 1
QUARTERLY WELL MONITORING DATA
THIRD QUARTER 1993
Exxon Service Station 7-3372
8402 Evergreen Way, Everett, Washington

Well No.	Date Monitored	Reference Elevation (feet)	Depth to Water (feet)	Apparent Product Thickness (feet)	Equivalent Water Level (feet)	Remarks
MW-2A	08/18/93	97.93	13.42	0.00	84.51	Odor, No Sheen
MW-4	08/18/93	97.78	12.23	0.00	85.55	No Odor, No Sheen
MW-7	08/18/93	98.95	14.50	0.00	84.45	Odor, No Sheen
MW-8	08/18/93	98.41	15.39	0.00	83.02	No Odor, No Sheen
MW-9	08/18/93	98.09	13.69	0.00	84.40	No Odor, No Sheen
MW-10	08/18/93	98.25	14.03	0.00	84.22	Odor and Sheen

NOTES: Reference Elevations (top of casing) surveyed to an assumed datum with an assigned elevation of 100.00 feet.

Equivalent Water Level = Reference Elevation - Depth to Water + (0.75 x Apparent Product Thickness). This equation assumes a product specific gravity of 0.75.

TABLE 2
QUARTERLY GROUNDWATER ANALYTICAL RESULTS
THIRD QUARTER 1993
Exxon Service Station 7-3372
8402 Evergreen Way, Everett, Washington

Well No.	Date Sampled	TRPH (ug/l)	TPHd (ug/l)	TPHg (ug/l)	Benzene (ug/l)	Toluene (ug/l)	Ethyl Benzene (ug/l)	Xylenes (ug/l)	Total Lead (ug/l)
MW-2A	08/18/93	--	--	75,000	14,000	9,700	1,700	8,200	5
MW-4	08/18/93	--	--	480	54	3.8	6.4	6.2	(3)
MW-7	08/18/93	--	--	37,000	4,400	3,000	1,100	6,200	10
MW-8	08/18/93	(50)	--	42,000	5,600	2,700	1,600	7,000	17
MW-9	08/18/93	--	1,200	4,300	780	400	98	490	(3)
MW-10	08/18/93	--	--	44,000	4,500	4,300	1,200	6,000	12
MTCA Cleanup Level		1,000.0	1,000.0	1,000.0	5.0	40.0	30.0	20.0	5.0

NOTES: TRPH = Total Recoverable Petroleum Hydrocarbons by EPA Method 418.1.
TPHd = Total Petroleum Hydrocarbons as diesel by EPA Method 8015 modified
TPHg = Total Petroleum Hydrocarbons as gasoline by EPA Method 8015 modified
BTEX by EPA Method 8020
Total Lead by EPA Method 7421
ug/l = micrograms per liter.
-- indicates constituent not analyzed for on date shown
( ) indicates constituent not detected above the enclosed analytical detection limit.
Model Toxics Control Act (MTCA) Method A groundwater cleanup levels from WAC 173-340-720(2)(a)(i), dated 01/28/91.
MTCA Method A groundwater cleanup level for Total Petroleum Hydrocarbons is the total of TPH as gasoline, diesel and o
MW-1 and MW-5 abandoned in the First Quarter, 1993. MW-3 abandoned in the Second Quarter, 1993.
MW-6 was over-drilled and completed as MW-9 on 05/04/93.

TABLE 3
HISTORICAL WELL MONITORING DATA
Exxon Service Station 7-3372
8402 Evergreen Way, Everett, Washington

Well No.	Date Monitored	Reference Elevation (feet)	Depth to Water (feet)	Apparent Product Thickness (feet)	Equivalent Water Level (feet)	Remarks
MW-1	10/01/91	100.14	13.65	0.00	86.49	Odor and Sheen
	01/09/92	100.14	14.87	0.00	85.27	Odor and Sheen
	04/14/92	100.14	13.64	0.04	86.53	Measureable LPH
	07/09/92	100.14	13.95	0.03	86.21	Measureable LPH
	11/05/92	100.14	17.09	1.11	83.88	Measureable LPH
MW-2A	10/01/91	99.98	14.13	0.00	85.85	Odor and Sheen
	01/09/92	99.98	15.35	0.00	84.63	Odor and Sheen
	04/14/92	99.98	14.50	0.00	85.48	Odor and Sheen
	07/09/92	99.98	14.39	0.00	85.59	Odor, No Sheen
	11/05/92	99.98	17.28	0.87	83.35	Measureable LPH
	02/27/93	97.93	15.29	0.96	83.36	Measureable LPH
	06/08/93	97.93	13.73	0.00	84.20	Odor and Sheen
	08/18/93	97.93	13.42	0.00	84.51	Odor, No Sheen
MW-3	10/01/91	100.65	14.80	0.02	85.87	Measureable LPH
	01/09/92	100.65	16.23	0.17	84.55	Measureable LPH
	04/14/92	100.65	14.91	0.17	85.87	Measureable LPH
	07/09/92	100.65	15.26	0.20	85.54	Measureable LPH
	11/05/92	100.65	17.95	0.60	83.15	Measureable LPH
MW-4	10/01/91	99.97	13.30	0.00	86.67	Odor, No Sheen
	01/09/92	99.97	14.48	0.00	85.49	Odor, No Sheen
	04/14/92	99.97	13.21	0.00	86.76	Odor, No Sheen
	07/09/92	99.97	13.57	0.00	86.40	No Odor, No Sheen
	11/05/92	99.97	15.85	0.00	84.12	No Odor, No Sheen
	02/27/93	97.78	13.93	0.00	83.85	No Odor, No Sheen
	06/08/93	97.78	12.74	0.00	85.04	Odor, No Sheen
	08/18/93	97.78	12.23	0.00	85.55	No Odor, No Sheen

NOTES: Reference Elevations for well monitoring data collected on or before 11/5/92 are relative to SEACOR's origional temporary benchmark with an assigned elevation of 100.00 feet.

Reference Elevations for well monitoring data collected after 11/5/92 are relative to SEACOR's temporary benchmark established on 6/8/93 with an assigned elevation of 100.00 feet.

Reference elevations for MW-2A, MW-4, and MW-6 were changed due to excavation activities.

MW-1 and MW-5 abandoned in January, 1993; MW-3 abandoned in May, 1993.

MW-6 was over-drilled and completed as MW-9 on 5/4/92.

Equivalent Water Level = Reference Elevation - Depth to Water + (0.75 x Apparent Product Thickness). This equation assumes a product specific gravity of 0.75.

LPH = liquid phase hydrocarbons.

TABLE 3
HISTORICAL WELL MONITORING DATA
Exxon Service Station 7-3372
8402 Evergreen Way, Everett, Washington

Well No.	Date Monitored	Reference Elevation (feet)	Depth to Water (feet)	Apparent Product Thickness (feet)	Equivalent Water Level (feet)	Remarks
MW-5	10/01/91	100.08	15.45	0.00	84.63	Odor, No Sheen
	01/09/92	100.08	16.97	0.00	83.11	Odor, No Sheen
	04/14/92	100.08	15.44	0.00	84.64	Odor, No Sheen
	07/09/92	100.08	16.07	0.00	84.01	Odor, No Sheen
	11/05/92	100.08	18.31	0.00	81.77	Odor, No Sheen
MW-6	10/01/91	100.13	14.51	0.00	85.62	Odor and Sheen
	01/09/92	100.13	15.98	0.00	84.15	Odor and Sheen
	04/14/92	100.13	14.40	0.00	85.73	Odor and Sheen
	07/09/92	100.13	14.75	0.00	85.38	Odor and Sheen
	11/05/92	100.13	16.92	0.00	83.21	Odor and Sheen
	02/27/93	98.09	15.70	0.71	82.92	Measureable LPH
MW-7	06/08/93	98.95	14.83	0.00	84.12	Odor, No Sheen
	08/18/93	98.95	14.50	0.00	84.45	Odor, No Sheen
MW-8	06/08/93	98.41	15.70	0.00	82.71	Odor, No Sheen
	08/18/93	98.41	15.39	0.00	83.02	No Odor, No Sheen
MW-9	06/08/93	98.09	14.07	0.00	84.02	Odor, No Sheen
	08/18/93	98.09	13.69	0.00	84.40	No Odor, No Sheen
MW-10	06/08/93	98.25	14.40	0.00	83.85	Odor and Sheen
	08/18/93	98.25	14.03	0.00	84.22	Odor and Sheen

NOTES: Reference Elevations for well monitoring data collected on or before 11/5/92 are relative to SEACOR's origional temporary benchmark with an assigned elevation of 100.00 feet.

Reference Elevations for well monitoring data collected after 11/5/92 are relative to SEACOR's temporary benchmark established on 6/8/93 with an assigned elevation of 100.00 feet.

Reference elevations for MW-2A, MW-4, and MW-6 were changed due to excavation activities.

MW-1 and MW-5 abandoned in January, 1993; MW-3 abandoned in May, 1993.

MW-6 was over-drilled and completed as MW-9 on 5/4/92.

Equivalent Water Level = Reference Elevation - Depth to Water + (0.75 x Apparent Product Thickness). This equation assumes a product specific gravity of 0.75.

LPH = liquid phase hydrocarbons.

TABLE 4
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
Exxon Service Station 7-3372
8402 Evergreen Way, Everett, Washington

Well No.	Date Sampled	TRPH (ug/l)	TPHd (ug/l)	TPHg (ug/l)	Benzene (ug/l)	Toluene (ug/l)	Ethyl Benzene (ug/l)	Xylenes (ug/l)	Total Lead (ug/l)
MW-1	10/01/91	--	--	68,000	4,000	18,000	1,600	12,000	8
MW-2A	10/01/91	--	--	64,000	7,300	260	2,900	17,000	230
	01/09/92	--	--	68,000	10,000	5,500	3,000	15,000	21
	04/14/92	--	--	78,000	9,800	7,000	2,200	14,000	20
	07/09/92	--	--	66,000	14,000	11,000	3,400	20,000	21
	06/08/93	--	--	70,000	11,000	10,000	1,900	10,000	6.8
	08/18/93	--	--	75,000	14,000	9,700	1,700	8,200	5.0
MW-4	10/01/91	--	--	990	200	14	23	39	150
	01/09/92	--	--	630	96	9	6.5	20	(3)
	04/14/92	--	--	1,000	81	3.9	3.1	8.1	3
	07/09/92	--	--	750	160	5.2	6.9	11	(3)
	11/05/92	--	--	360	43	0.8	(0.5)	1.0	(3)
	02/27/93	--	--	530	68	1.0	4.7	1.9	5
	06/08/93	--	--	460	130	4.2	5.7	11	7.6
	08/18/93	--	--	480	54	3.8	6.4	6.2	(3)
MW-5	10/01/91	4,900	--	26,000	2,000	2,800	1,200	6,000	190
	01/09/92	4,200	--	30,000	2,200	3,200	1,600	8,000	25
	04/14/92	1,200	--	31,000	2,000	1,800	1,100	5,900	15
	07/09/92	2,000	--	30,000	2,800	1,900	1,200	6,700	15
	11/05/92	1,600	--	18,000	1,500	1,800	1,400	7,800	12
MW-6	10/01/91	5,800	--	86,000	21,000	9,600	1,800	10,000	180
	01/09/92	6,500	--	99,000	28,000	14,000	2,100	9,800	10
	04/14/92	--	3,300	71,000	14,000	7,700	1,300	7,100	10
	07/09/92	--	3,100	63,000	13,000	9,500	1,500	8,100	11
	11/05/92	--	1,700	67,000	21,000	13,000	2,200	11,000	28
MW-7	06/08/93	--	--	22,000	3,200	2,700	850	4,600	7.5
	08/18/93	--	--	37,000	4,400	3,000	1,100	6,200	10
MW-8	06/08/93	1,800	--	35,000	5,400	2,400	1,400	6,300	15
	08/18/93	(50)	--	42,000	5,600	2,700	1,600	7,000	17
MW-9	06/08/93	--	160	7,600	1,300	1,000	170	920	(3)
	08/18/93	--	1,200	4,300	780	400	98	490	(3)
MW-10	06/08/93	--	--	66,000	2,800	4,400	2,000	11,000	24
	08/18/93	--	--	44,000	4,500	4,300	1,200	6,000	12
MTCA Cleanup Level		1,000.0	1,000.0	1,000.0	5.0	40.0	30.0	20.0	5.0

NOTES: TRPH = Total Recoverable Petroleum Hydrocarbons by EPA Method 418.1.
TPHd = Total Petroleum Hydrocarbons as diesel by EPA Method 8015 modified
TPHg = Total Petroleum Hydrocarbons as gasoline by EPA Method 8015 modified
BTEX by EPA Method 8020
Total Lead by EPA Method 7421
ug/l = micrograms per liter.
-- indicates constituent not analyzed for on date shown
( ) indicates constituent not detected above the enclosed analytical detection limit.
Model Toxics Control Act (MTCA) Method A groundwater cleanup levels from WAC 173-340-720(2)(a)(i), dated 01/
MTCA Method A groundwater cleanup level for Total Petroleum Hydrocarbons is the total of TPH as gasoline, diesel
MW-1 and MW-5 abandoned in the First Quarter, 1993. MW-3 abandoned in the Second Quarter, 1993.
MW-6 was over-drilled and completed as MW-9 on 05/04/93.

TABLE 5
LIQUID PHASE HYDROCARBON (LPH) RECOVERY
FORMER EXXON RAS #7-3372
8402 EVERGREEN WAY, EVERETT, WASHINGTON
SEACOR JOB #00091-011-02 11EX09

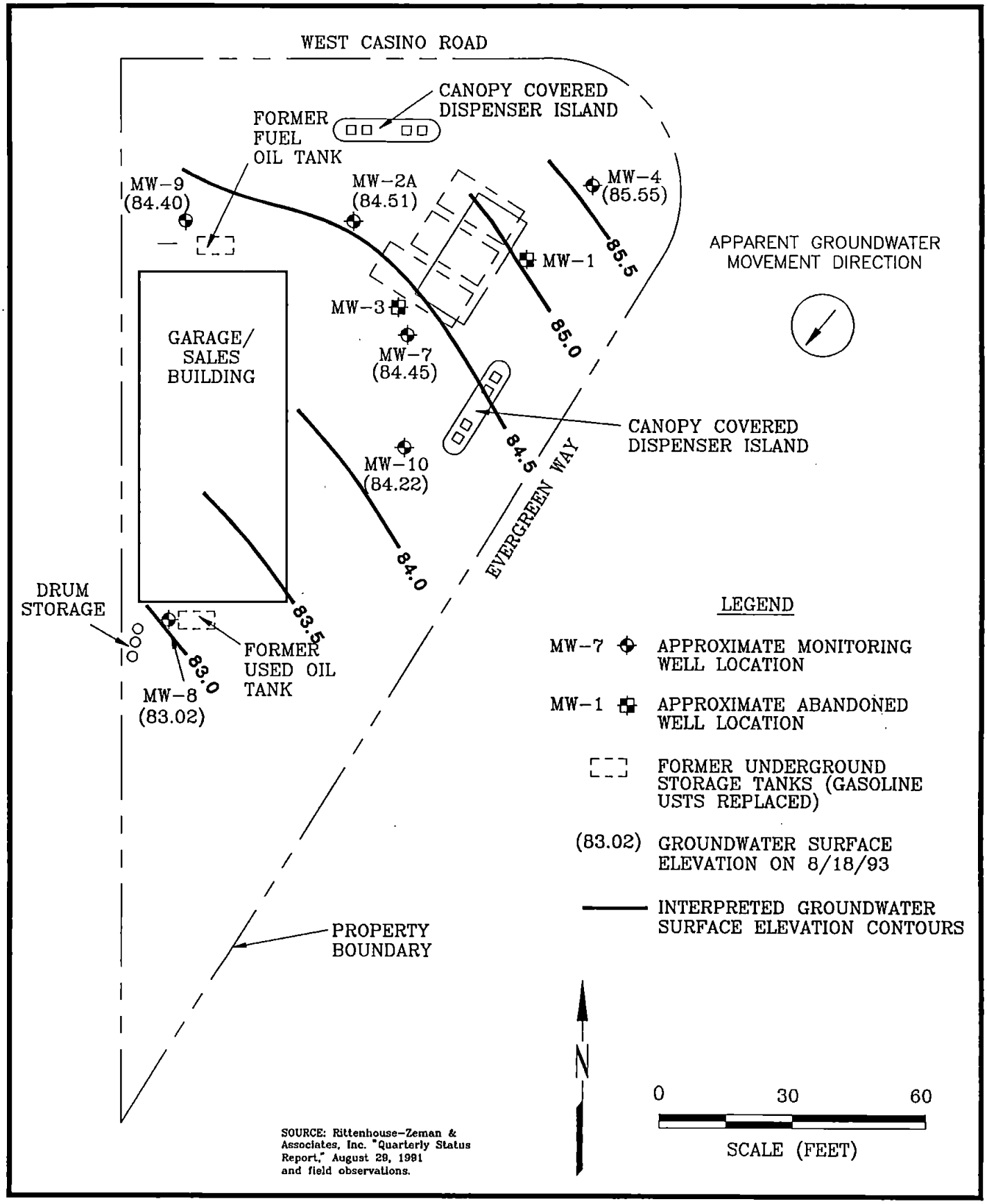
	MW-2A						MW-7					
DATE	TIME	DEPTH TO LPH (FEET)	DEPTH TO WATER (FEET)	LPH THICKNESS (FEET)	LPH REMOVED (GALLONS)	WATER REMOVED (GALLONS)	TIME	DEPTH TO LPH (FEET)	DEPTH TO WATER (FEET)	LPH THICKNESS (FEET)	LPH REMOVED (GALLONS)	WATER REMOVED (GALLONS)
6/30/93	818	-	13.54	-	-	-	824	-	14.66	-	-	-
7/14/93	1101	-	13.32	-	-	-	1103	-	14.44	-	-	-
7/27/93	-	-	13.18	-	-	-	-	-	14.34	-	-	-
8/13/93	1055	-	13.32	-	-	-	1058	-	14.38	-	-	-
8/27/93	921	-	13.43	-	-	-	924	-	14.55	-	-	-
9/30/93	1236	-	14.01	-	-	-	1240	-	15.14	-	-	-
10/26/93	1220	-	14.71	-	-	-	1225	-	15.88	-	-	-
AVERAGE				0.00						0.00		
SUM					0.00	0.00					0.00	0.00
TOTAL LPH		0.00										
TOTAL WATER		0.00										

TABLE 5
LIQUID PHASE HYDROCARBON (LPH) RECOVERY
FORMER EXXON RAS #7-3372
8402 EVERGREEN WAY, EVERETT, WASHINGTON
SEACOR JOB #00091-011-02 11EX09

	MW-8						MW-9					
DATE	TIME	DEPTH TO LPH (FEET)	DEPTH TO WATER (FEET)	LPH THICKNESS (FEET)	LPH REMOVED (GALLONS)	WATER REMOVED (GALLONS)	TIME	DEPTH TO LPH (FEET)	DEPTH TO WATER (FEET)	LPH THICKNESS (FEET)	LPH REMOVED (GALLONS)	WATER REMOVED (GALLONS)
6/30/93	-	inaccessable	-	-	-	-	813	-	13.91	-	-	-
7/14/93	1112	-	15.34	-	-	-	1055	-	13.67	-	-	-
7/27/93	-	-	15.23	-	-	-	-	-	13.60	-	-	-
8/13/93	1104	-	15.34	-	-	-	1051	-	13.63	-	-	-
8/27/93	930	-	15.56	-	-	-	918	-	13.81	-	-	-
9/30/93	1248	-	16.15	-	-	-	1234	-	14.38	-	-	-
10/26/93	1229	-	16.27	-	-	-	1233	-	15.05	-	-	-
AVERAGE				0.00						0.00		
SUM					0.00	0.00					0.00	0.00

TABLE 5
LIQUID PHASE HYDROCARBON (LPH) RECOVERY
FORMER EXXON RAS #7-3372
8402 EVERGREEN WAY, EVERETT, WASHINGTON
SEACOR JOB #00091-011-02 11EX09

	MW-10					
DATE	TIME	DEPTH TO LPH (FEET)	DEPTH TO WATER (FEET)	LPH THICKN (FEET)	LPH REMOVED (GALLONS)	WATER REMOVED (GALLONS)
6/30/93	828	-	14.23	-	-	-
7/14/93	1108	-	14.01	-	-	-
7/27/93	-	-	13.94	-	-	-
8/13/93	1102	-	13.98	-	-	-
8/27/93	927	-	14.16	-	-	-
9/30/93	1245	-	14.75	-	-	-
10/26/93	1236	-	14.92	-	-	-
AVERAGE				0.00		
SUM					0.00	0.00

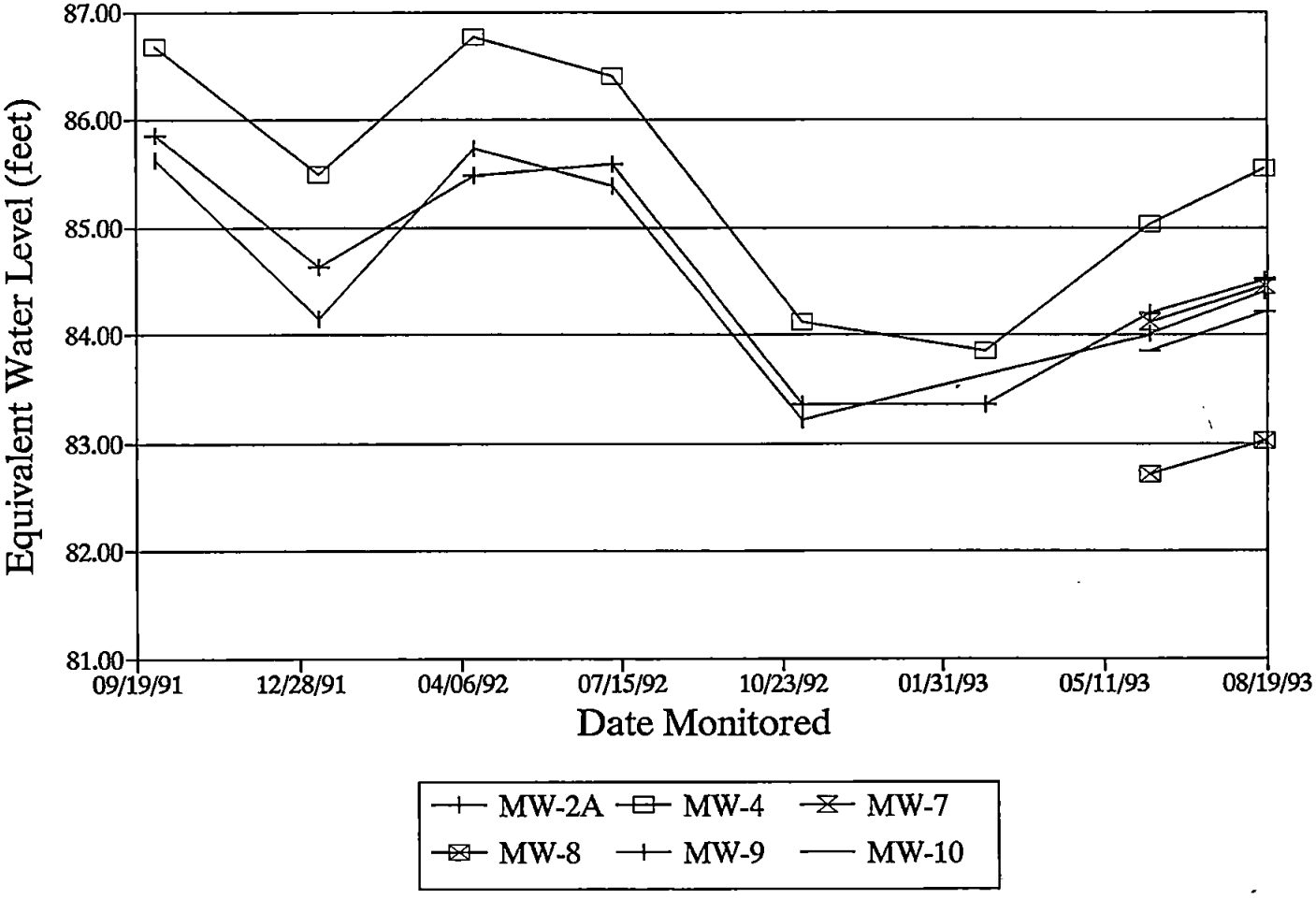


SEACOR	DWN RB APPR DATE 10/14/93 JOB# 00091-011-02	FIGURE 1 GROUNDWATER ELEVATION CONTOUR MAP FORMER EXXON SERVICE STATION 7-3372 8402 EVERGREEN WAY EVERETT, WASHINGTON

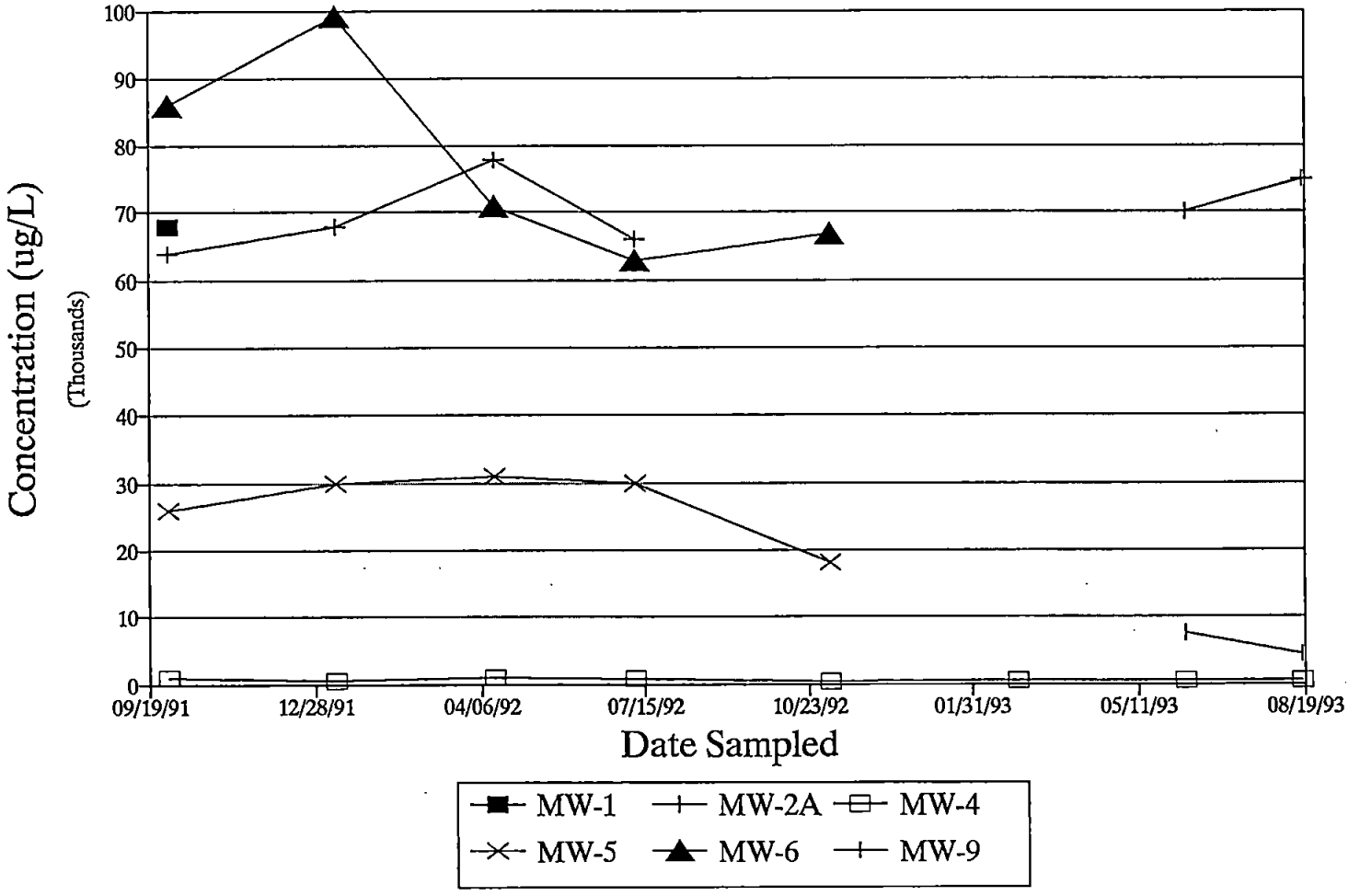
DWG: EXXEVE08

ATTACHMENT A
GRAPHS

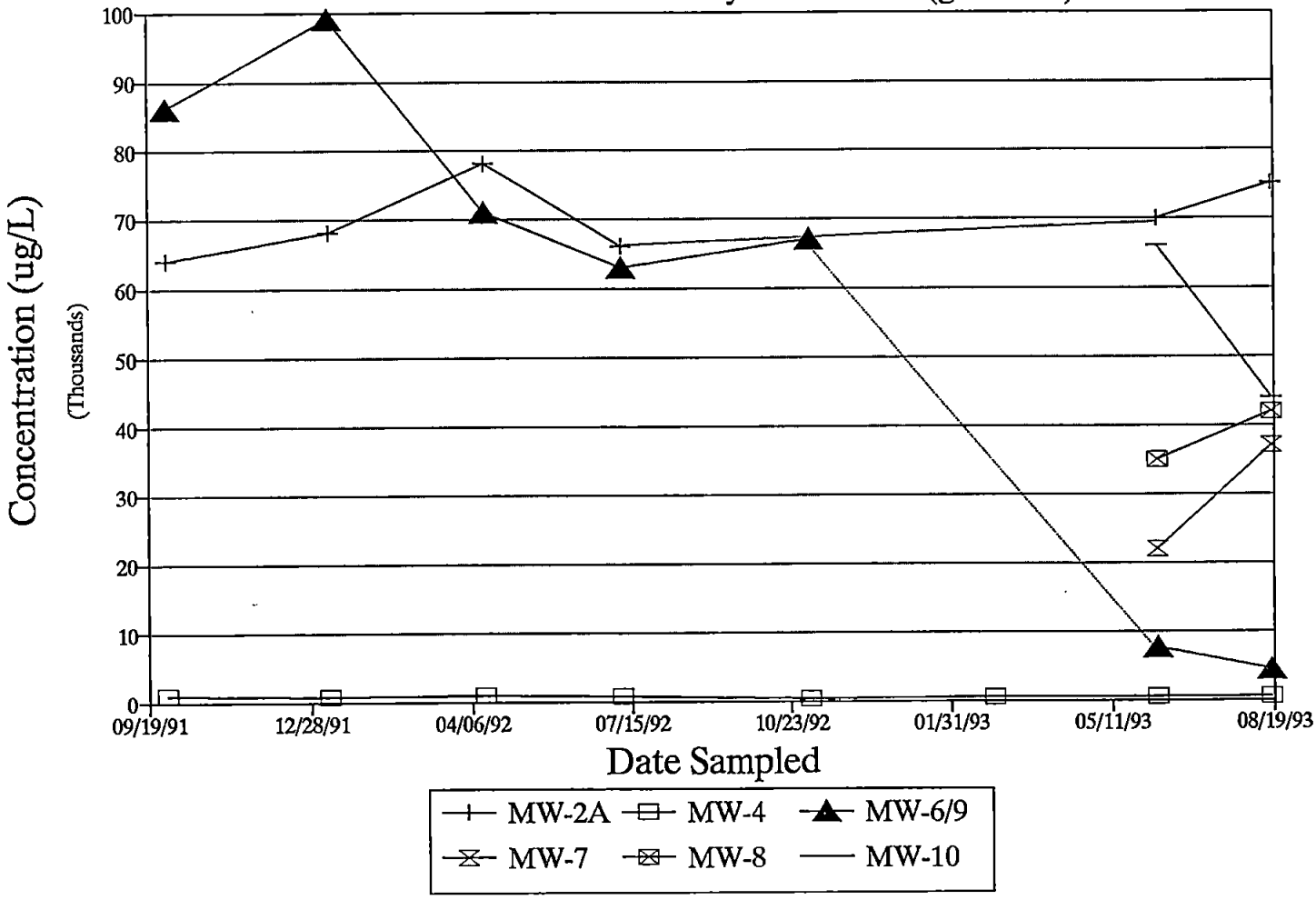
Exxon 7-3372
Well Monitoring Data
MW -2A, 4, 7, 8, 9 and 10



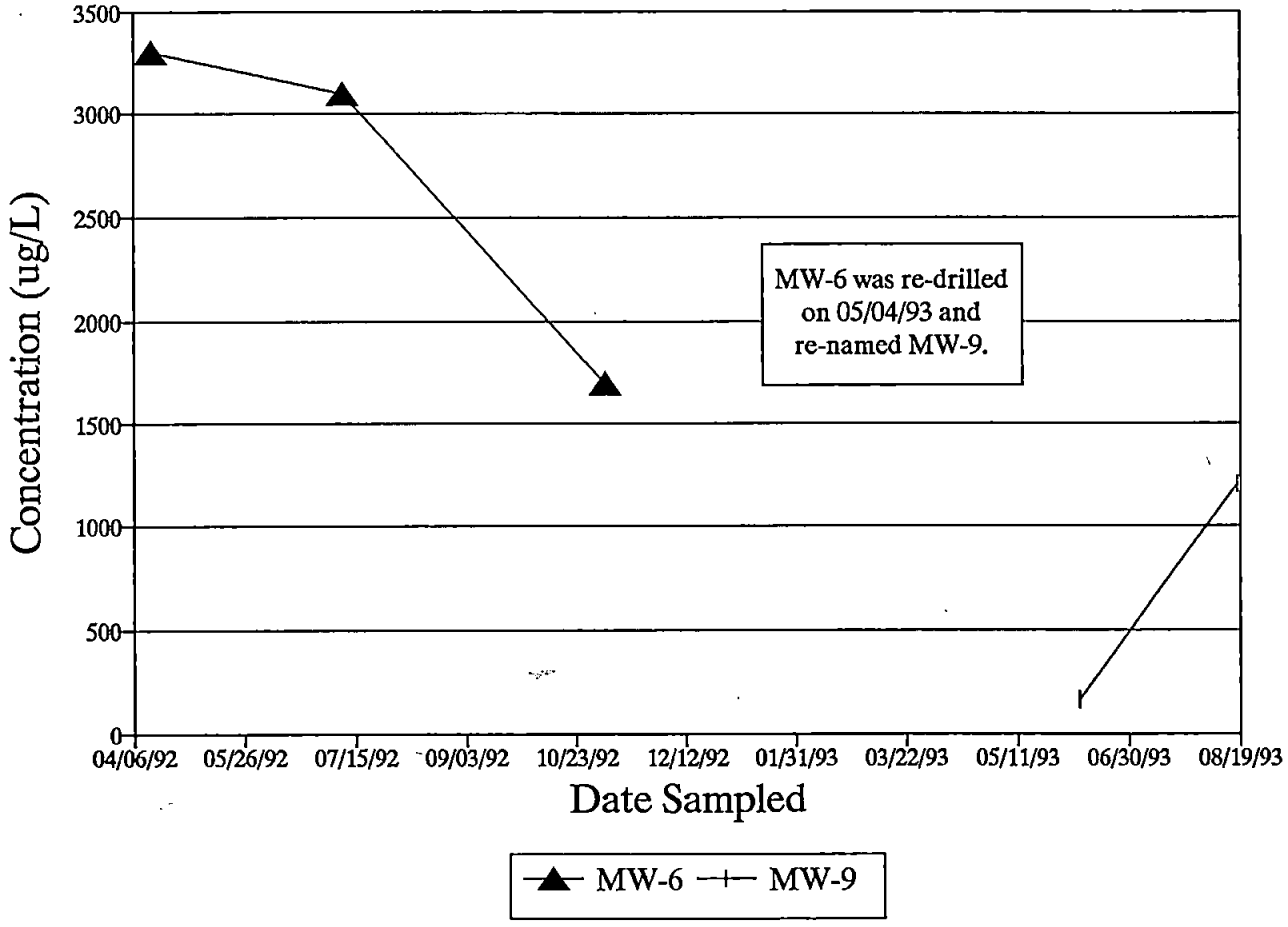
Exxon 7-3372
Analytical Results
TPH in the Gasoline Range



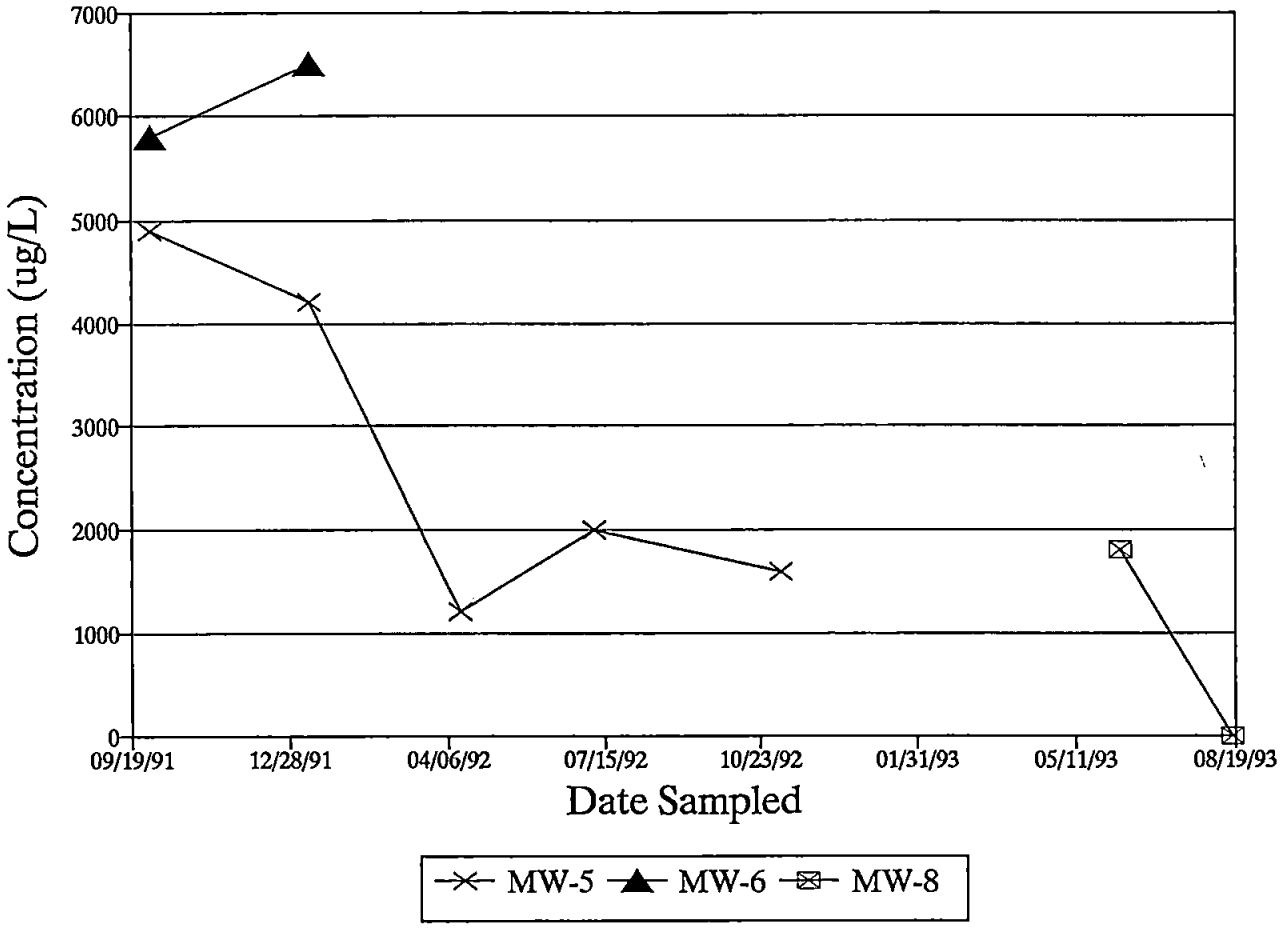
Exxon 7-3372
Analytical Results
Total Petroleum Hydrocarbons (gasoline)



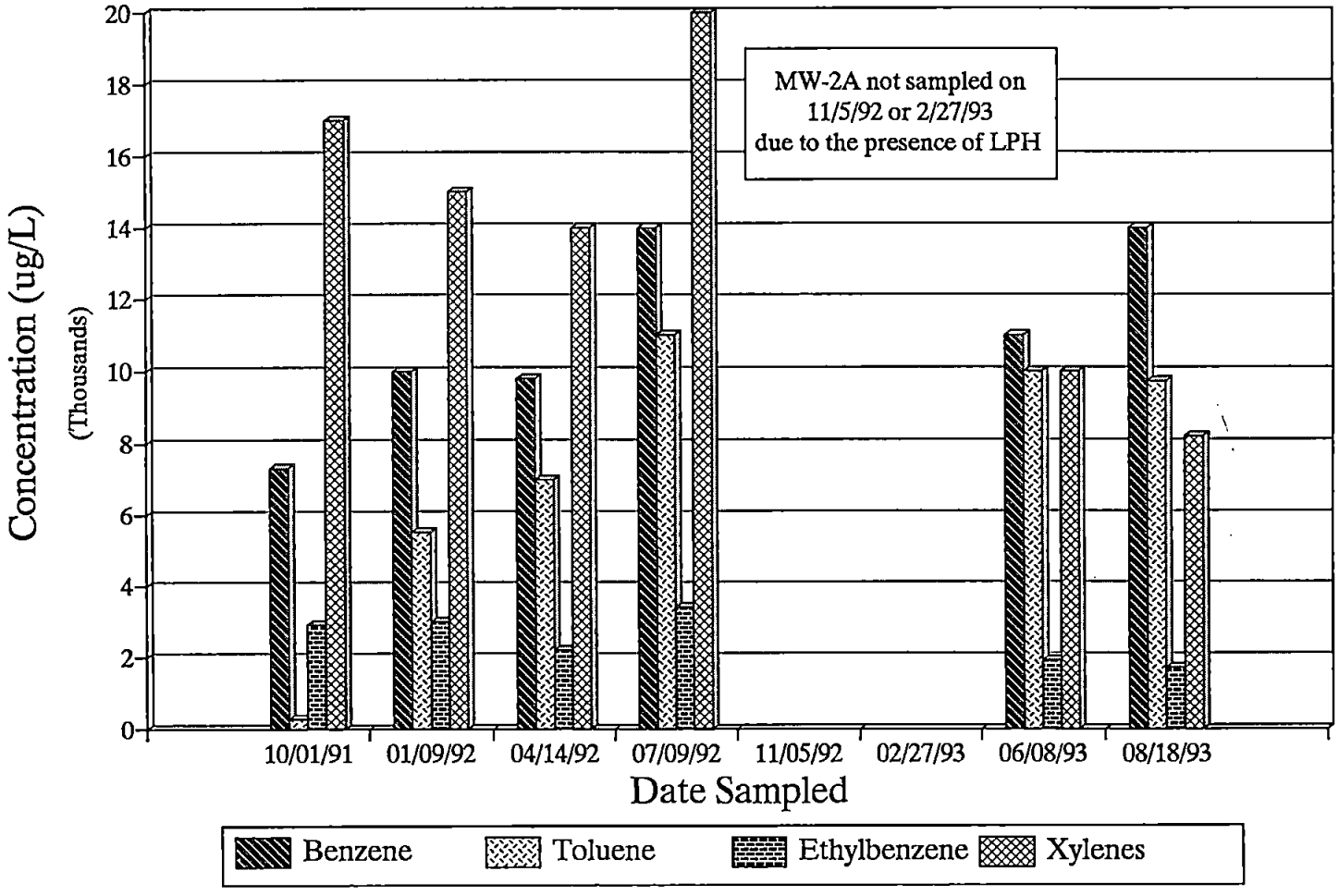
Exxon 7-3372
Total Petroleum Hydrocarbons (diesel)



Exxon 7-3372
Total Petroleum Hydrocarbons (oil)

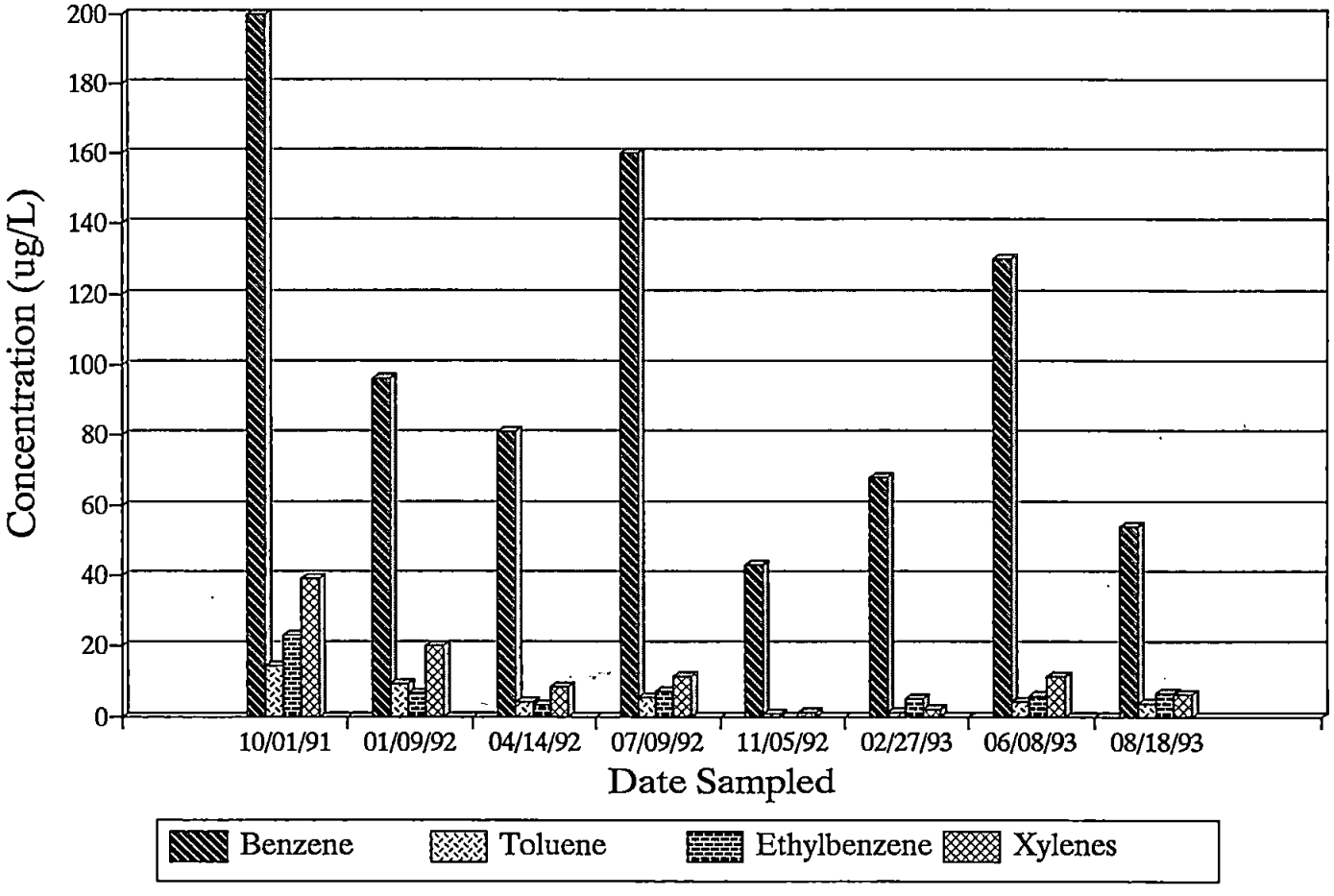


Exxon 7-3372
Analytical Results
MW-2A

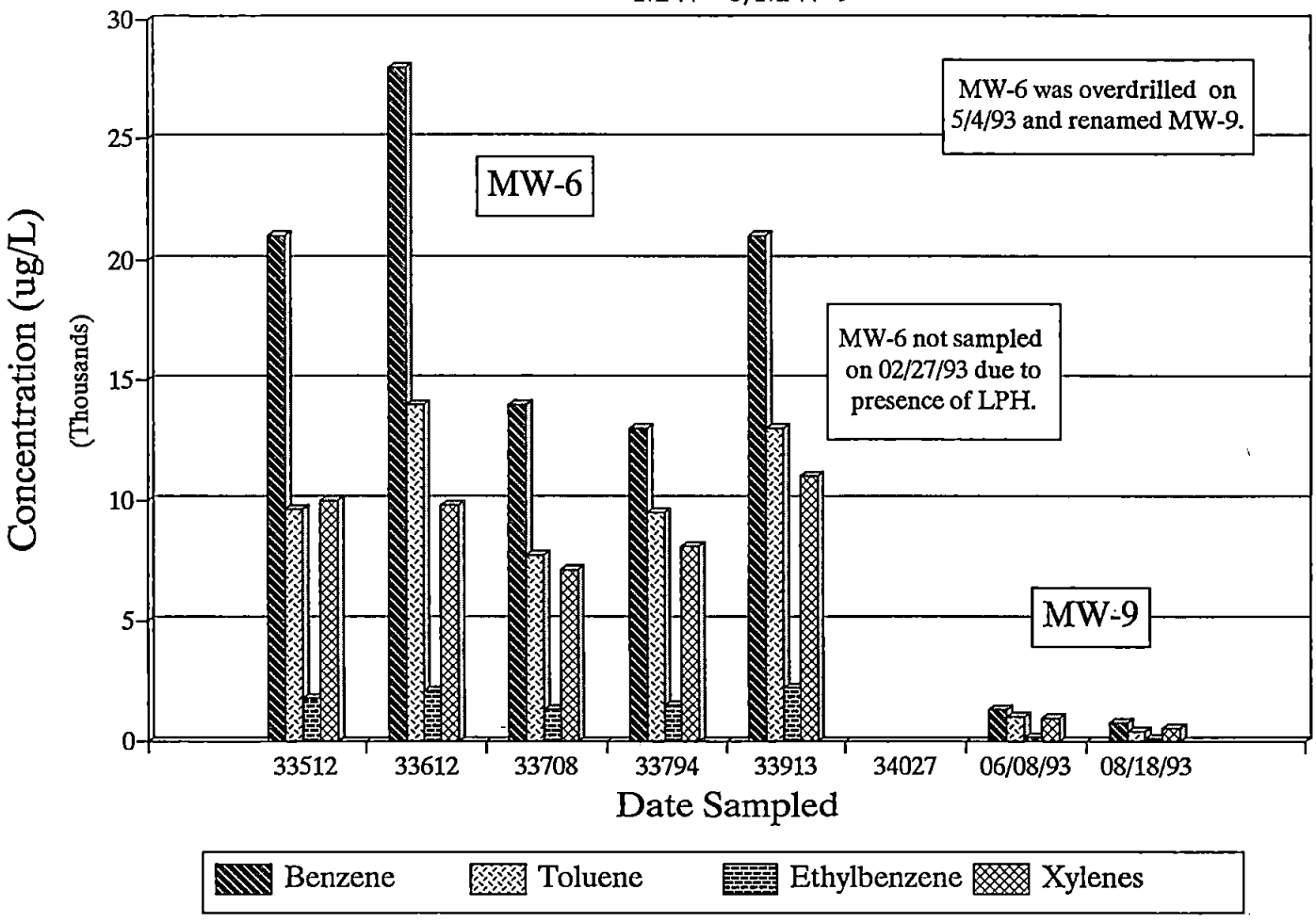


Exxon 7-3372
Analytical Results

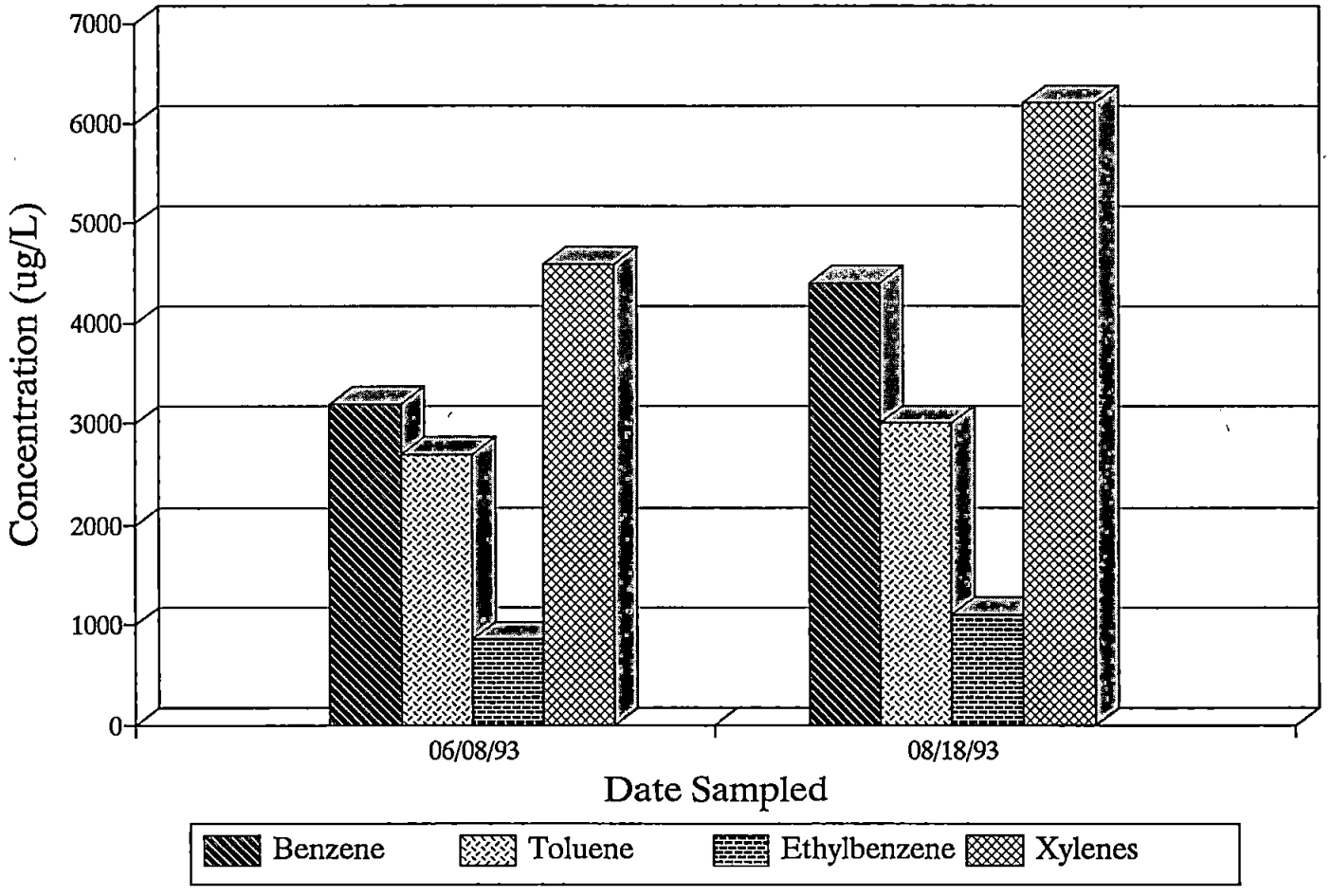
MW-4



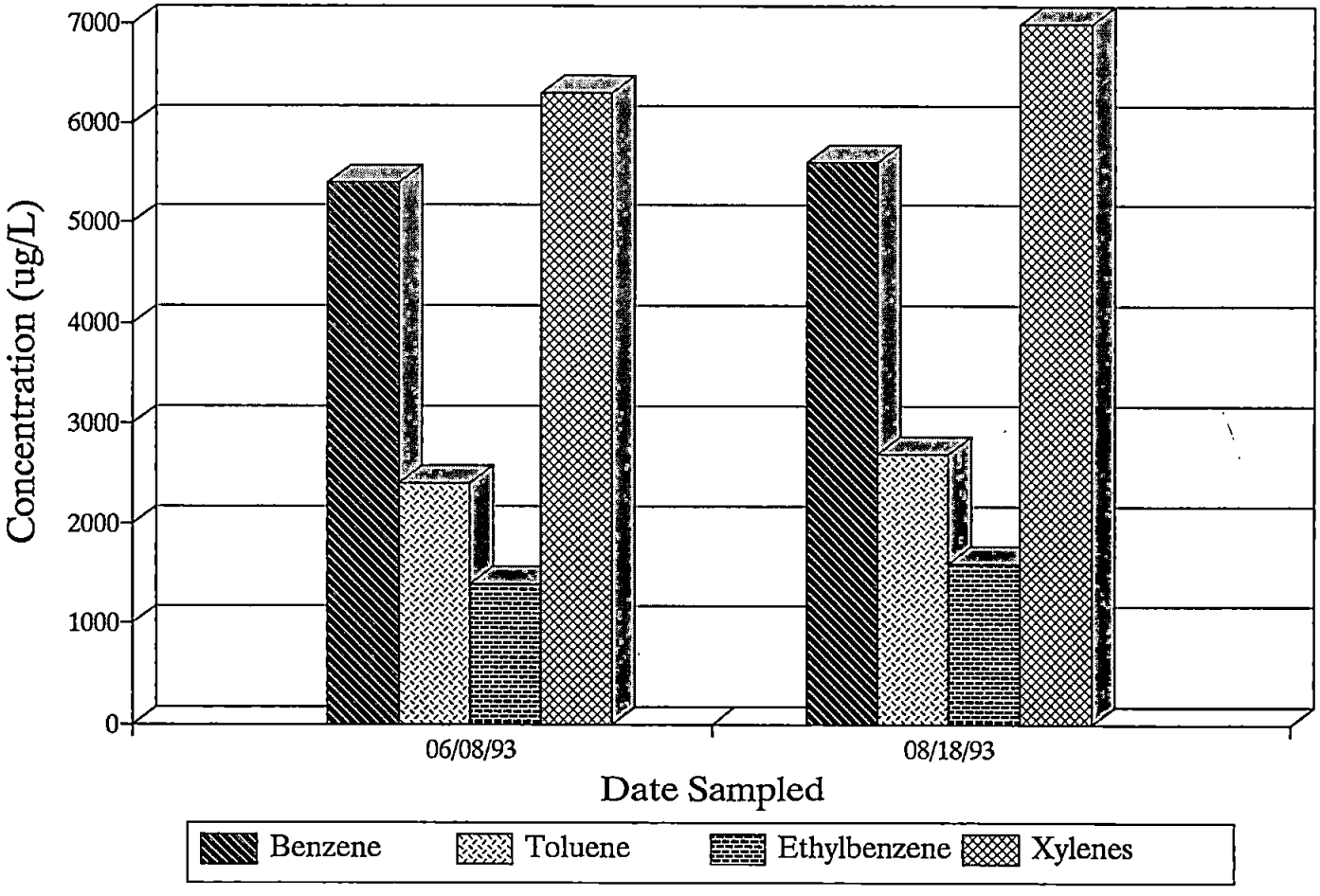
Exxon 7-3372
Analytical Results
MW -6/MW-9



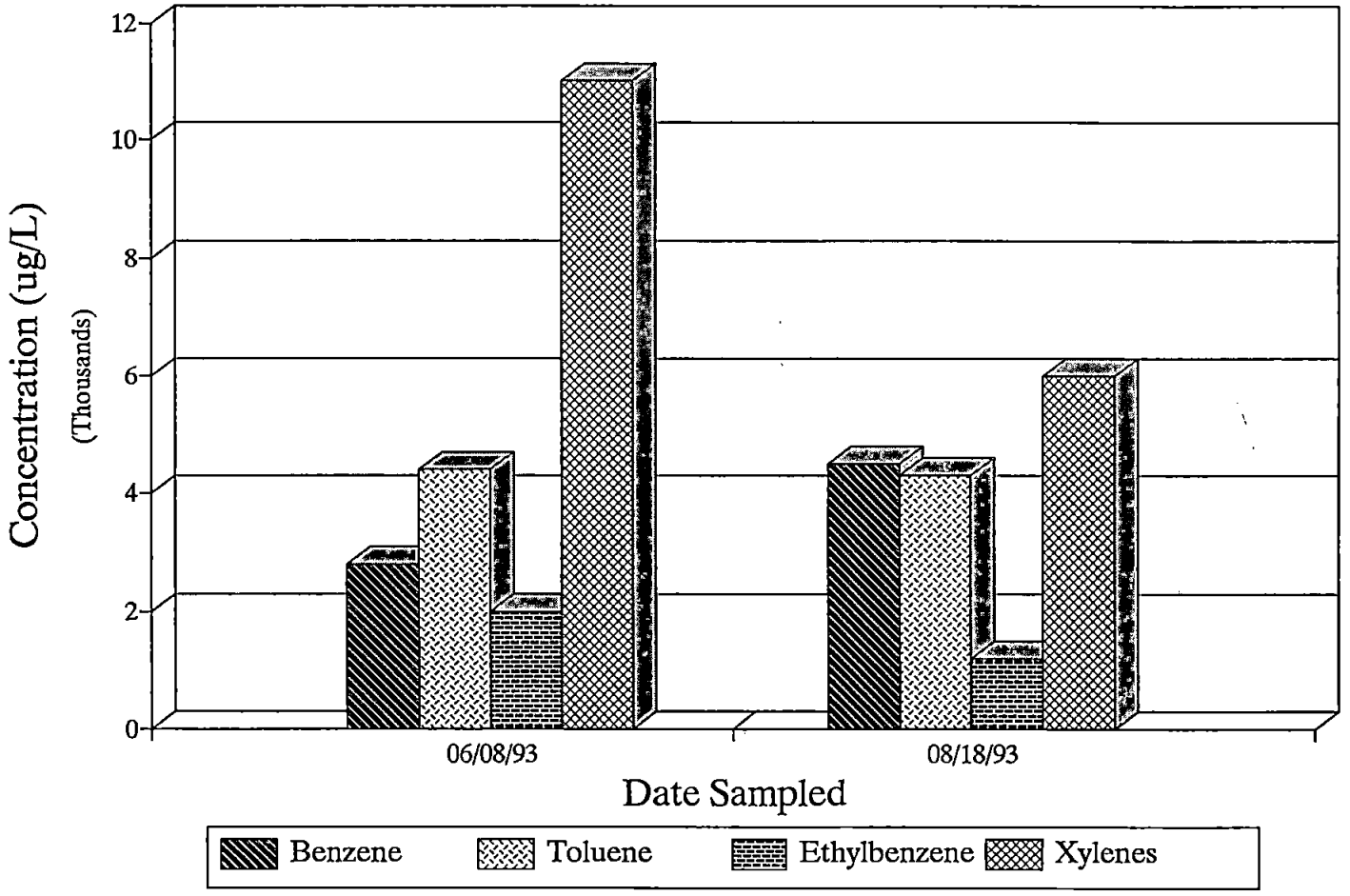
Exxon 7-3372
Analytical Results
MW - 7



Exxon 7-3372
Analytical Results
MW - 8



Exxon 7-3372
Analytical Results
MW - 10



ATTACHMENT B
REPORT OF LABORATORY ANALYSIS

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THE ASSURANCE OF QUALITY

REPORT OF LABORATORY ANALYSIS

August 30, 1993

Mr. Curtis Goddard
Seacor
11040 Main St., Suite 240
Bellevue, WA 98004

RE: PACE Project No. 430820.514
Client Reference: Exxon 7-3372 (EE)

Dear Mr. Goddard:

Enclosed is the report of laboratory analyses for samples received August 20, 1993.

Footnotes are given at the end of the report.

If you have any questions concerning this report, please feel free to contact us.

Sincerely,

Stacy P. Hoch

Stacy P. Hoch
Project Manager

Enclosures

11 Digital Drive
Novato, CA 94949
TEL: 415-883-6100
FAX: 415-883-2673

pace INCORPORATED
THE ASSURANCE OF QUALITY

REPORT OF LABORATORY ANALYSIS

Seacor
11040 Main St., Suite 240
Bellevue, WA 98004

August 30, 1993
PACE Project Number: 430820514

Attn: Mr. Curtis Goddard

Client Reference: Exxon 7-3372 (EE)

Parameter	Units	MDL		DATE ANALYZED
PACE Sample Number:			70 0136792	
Date Collected:			08/18/93	
Date Received:			08/20/93	
Client Sample ID:			MW-2A	
INORGANIC ANALYSIS				
INDIVIDUAL PARAMETERS				
Lead (EPA Method 7421, Graphite Furnace)	mg/L	0.003	0.005	08/25/93
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	08/26/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	5000	75000	08/26/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	08/26/93
Benzene	ug/L	50	14000	08/26/93
Toluene	ug/L	50	9700	08/26/93
Ethylbenzene	ug/L	50	1700	08/26/93
Xylene (total)	ug/L	50	8200	08/26/93

REPORT OF LABORATORY ANALYSIS

August 30, 1993
PACE Project Number: 430820514

Client Reference: Exxon 7-3372 (EE)

PACE Sample Number:			70 0136806	
Date Collected:			08/18/93	
Date Received:			08/20/93	
Client Sample ID:			MW-4	
Parameter	Units	MDL		DATE ANALYZED
INORGANIC ANALYSIS				
INDIVIDUAL PARAMETERS				
Lead (EPA Method 7421, Graphite Furnace)	mg/L	0.003	ND	08/25/93
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	08/26/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	480	08/26/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	08/26/93
Benzene	ug/L	0.5	54	08/26/93
Toluene	ug/L	0.5	3.8	08/26/93
Ethylbenzene	ug/L	0.5	6.4	08/26/93
Xylene (total)	ug/L	0.5	6.2	08/26/93

REPORT OF LABORATORY ANALYSIS

August 30, 1993
PACE Project Number: 430820514

Client Reference: Exxon 7-3372 (EE)

PACE Sample Number:			70 0136814	
Date Collected:			08/18/93	
Date Received:			08/20/93	
Client Sample ID:			MW-7	
Parameter	Units	MDL		DATE ANALYZED
INORGANIC ANALYSIS				
INDIVIDUAL PARAMETERS				
Lead (EPA Method 7421, Graphite Furnace)	mg/L	0.003	0.010	08/25/93
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	08/26/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	5000	37000	08/26/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	08/26/93
Benzene	ug/L	50	4400	08/26/93
Toluene	ug/L	50	3000	08/26/93
Ethylbenzene	ug/L	50	1100	08/26/93
Xylene (total)	ug/L	50	6200	08/26/93

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REPORT OF LABORATORY ANALYSIS

August 30, 1993
PACE Project Number: 430820514

Client Reference: Exxon 7-3372 (EE)

PACE Sample Number:			70 0136822	
Date Collected:			08/18/93	
Date Received:			08/20/93	
Client Sample ID:			MW-8	
Parameter	Units	MDL		DATE ANALYZED
INORGANIC ANALYSIS				
INDIVIDUAL PARAMETERS				
Lead (EPA Method 7421, Graphite Furnace)	mg/L	0.003	0.017	08/25/93
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	08/26/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	2500	42000	08/26/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	08/26/93
Benzene	ug/L	25	5600	08/26/93
Toluene	ug/L	25	2700	08/26/93
Ethylbenzene	ug/L	25	1600	08/26/93
Xylene (total)	ug/L	25	7000	08/26/93
TOTAL PETRO HYDROCARBONS (IR, EPA 418.1)				
Total Petroleum Hydrocarbons, by IR	mg/L	0.50	ND	08/25/93
Date Extracted			08/24/93	

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REPORT OF LABORATORY ANALYSIS

Mr. Curtis Goddard
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August 30, 1993
PACE Project Number: 430820514

Client Reference: Exxon 7-3372 (EE)

Parameter	Units	MDL		DATE ANALYZED
PACE Sample Number:			70 0136830	
Date Collected:			08/18/93	
Date Received:			08/20/93	
Client Sample ID:			MW-9	
INORGANIC ANALYSIS				
INDIVIDUAL PARAMETERS				
Lead (EPA Method 7421, Graphite Furnace)	mg/L	0.003	ND	08/25/93
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	08/26/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	500	4300	08/26/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	08/26/93
Benzene	ug/L	5.0	780	08/26/93
Toluene	ug/L	5.0	400	08/26/93
Ethylbenzene	ug/L	5.0	98	08/26/93
Xylene (total)	ug/L	5.0	490	08/26/93
EXTRACTABLE FUELS (EPA 3510/8015)				
Extractable Fuels, as Diesel	mg/L	0.05	1.2	08/25/93
n-Pentacosane (Surrogate Recovery)	%		108	08/25/93
Date Extracted			08/24/93	

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REPORT OF LABORATORY ANALYSIS

August 30, 1993
PACE Project Number: 430820514

Client Reference: Exxon 7-3372 (EE)

PACE Sample Number:			70 0136849	
Date Collected:			08/18/93	
Date Received:			08/20/93	
Client Sample ID:			MW-10	
Parameter	Units	MDL		DATE ANALYZED
INORGANIC ANALYSIS				
INDIVIDUAL PARAMETERS				
Lead (EPA Method 7421, Graphite Furnace)	mg/L	0.003	0.012	08/25/93
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	08/26/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	5000	44000	08/26/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	08/26/93
Benzene	ug/L	50	4500	08/26/93
Toluene	ug/L	50	4300	08/26/93
Ethylbenzene	ug/L	50	1200	08/26/93
Xylene (total)	ug/L	50	6000	08/26/93

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REPORT OF LABORATORY ANALYSIS

Mr. Curtis Goddard
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August 30, 1993
PACE Project Number: 430820514

Client Reference: Exxon 7-3372 (EE)

PACE Sample Number:			70 0136857	
Date Collected:			08/18/93	
Date Received:			08/20/93	
Client Sample ID:			Trip Blank	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	08/26/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	ND	08/26/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	08/26/93
Benzene	ug/L	0.5	ND	08/26/93
Toluene	ug/L	0.5	ND	08/26/93
Ethylbenzene	ug/L	0.5	ND	08/26/93
Xylene (total)	ug/L	0.5	ND	08/26/93

These data have been reviewed and are approved for release.

Darrell C. Cain
Regional Director

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Mr. Curtis Goddard | FOOTNOTES | August 30, 1993
Page 8 | for pages 1 through 7 | PACE Project Number: 430820514

Client Reference: Exxon 7-3372 (EE)

MDL Method Detection Limit
ND Not detected at or above the MDL.

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REPORT OF LABORATORY ANALYSIS

Mr. Curtis Goddard
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QUALITY CONTROL DATA

August 30, 1993
PACE Project Number: 430820514

Client Reference: Exxon 7-3372 (EE)

Lead (EPA Method 7421, Graphite Furnace)
Batch: 70 23965
Samples: 70 0136792, 70 0136806, 70 0136814, 70 0136822, 70 0136830
70 0136849

METHOD BLANK:

Parameter	Units	MDL	Method Blank
Lead (EPA Method 7421, Graphite Furnace	mg/L	0.003	ND

LABORATORY CONTROL SAMPLE AND CONTROL SAMPLE DUPLICATE:

Parameter	Units	MDL	Reference Value	Recv	Dupl Recv	RPD
Lead (EPA Method 7421, Graphite Furnace	mg/L	0.003	0.020	105%	110%	4%

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Mr. Curtis Goddard
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QUALITY CONTROL DATA

August 30, 1993
PACE Project Number: 430820514

Client Reference: Exxon 7-3372 (EE)

EXTRACTABLE FUELS EPA 3510/8015
Batch: 70 23996
Samples: 70 0136830

METHOD BLANK:

Parameter	Units	MDL	Method Blank
Extractable Fuels, as Diesel	mg/L	0.05	ND

LABORATORY CONTROL SAMPLE AND CONTROL SAMPLE DUPLICATE:

Parameter	Units	MDL	Reference Value	Recv	Dupl Recv	RPD
Extractable Fuels, as Diesel	mg/L	0.05	1.00	69%	66%	4%

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Mr. Curtis Goddard
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QUALITY CONTROL DATA

August 30, 1993
PACE Project Number: 430820514

Client Reference: Exxon 7-3372 (EE)

PURGEABLE FUELS AND AROMATICS
Batch: 70 24048
Samples: 70 0136792, 70 0136806, 70 0136814, 70 0136822, 70 0136830
70 0136849, 70 0136857

METHOD BLANK:

Parameter	Units	MDL	Method Blank
TOTAL FUEL HYDROCARBONS, (LIGHT):			-
Purgeable Fuels, as Gasoline (EPA 8015M	ug/L	50	ND
PURGEABLE AROMATICS (BTXE BY EPA 8020M)			-
Benzene	ug/L	0.5	ND
Toluene	ug/L	0.5	ND
Ethylbenzene	ug/L	0.5	ND
Xylene (total)	ug/L	0.5	ND

LABORATORY CONTROL SAMPLE AND CONTROL SAMPLE DUPLICATE:

Parameter	Units	MDL	Reference Value	Recv	Dupl Recv	RPD
Purgeable Fuels, as Gasoline (EPA 8015M	ug/L	50	1000	108%	105%	2%
Benzene	ug/L	0.5	40	97%	95%	2%
Toluene	ug/L	0.5	40	97%	95%	2%
Ethylbenzene	ug/L	0.5	40	102%	100%	1%
Xylene (total)	ug/L	0.5	120	99%	95%	4%

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REPORT OF LABORATORY ANALYSIS

QUALITY CONTROL DATA

August 30, 1993
PACE Project Number: 430820514

Client Reference: Exxon 7-3372 (EE)

TOTAL PETRO HYDROCARBONS (IR, EPA 418.1)
Batch: 70 24031
Samples: 70 0136822

METHOD BLANK:

Parameter	Units	MDL	Method Blank
Total Petroleum Hydrocarbons, by IR	mg/L	0.50	0.57

LABORATORY CONTROL SAMPLE AND CONTROL SAMPLE DUPLICATE:

Parameter	Units	MDL	Reference Value	Recv	Dupl Recv	RPD
Total Petroleum Hydrocarbons, by IR	mg/L	0.50	1.60	123%	121%	1%

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Client Reference: Exxon 7-3372 (EE)

MDL	Method Detection Limit
ND	Not detected at or above the MDL.
RPD	Relative Percent Difference

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EXXON COMPANY, U.S.A.

P.O. Box 4415, Houston, TX 77210-4415

CHAIN OF CUSTODY

430820.514

[X] Novato, CA, 11 Digital Drive, 94949 (415) 883-6100

[ ] Huntington Beach, CA, 5702 Bolsa Avenue, 92649 (714) 892-2565

Consultant's Name: SEACOR — Page 1 of 1

Address: 11040 MAIN ST, STE 240, BELLEVUE, WA 98004 — Site Location: 8402 Evergreen Way, Everett, WA

Project #: — Consultant Project #: 00091-011-02 115Ke2 — Consultant Work Release #: 911 21397 4005

Project Contact: Curt Goddard — Phone #: 206-646-0280 — Fax #: 646-0283 — Laboratory Work Release #:

EXXON Contact: DENNIS Beck [X] EE [ ] C&M — Phone #: 206-453-1267 — Fax #: 455-9080 — EXXON RAS #: 7-3372

Sampled by (print): David Samples — Sampler's Signature: [signature]

Shipment Method: Burlington Air — Air Bill #: 206 312 805 — Shipment Date: 8-19-93

TAT: [ ] 24 hr [ ] 48 hr [ ] 72 hr [X] Standard (5 day)

Sample Condition as Received: Temperature °C: 12.0; Cooler #: C39; Inbound Seal Yes No; Outbound Seal (Yes) No

Sample Description	Collection Date/Time	Matrix Soil/Water	Prsv	# of Cont	PACE Sample #	TPH/GAS/BTEX EPA 8015/8020	TPH/Diesel EPA 8015	TRPH EPA 418.1	Total Pb 7421									COMMENTS
MW-2A	8-18-93 1655	Water	HCl per label 908823 on label	4	13679.2	X			X									All Samples
MW-4	1538	↓		4	13680.6	X			X									Unfiltered
MW-7	1610			4	13681.4	X			X									
MW-8	1620			6	13682.2	X		X	X									w TPH-G &
MW-9	1545			6	13683.0	X	X		X									w TPH-D please.
MW-10	↓ 1645	↓		4	13684.9	X			X									
Trip Blank		H2O	↓	2	13685.7	X												

Relinquished by/Affiliation	Date	Time	Accepted by/Affiliation	Date	Time
[signature]	8-19-93	1600	Via BAE		
			G. Grover Pace	8/20/93	0940

Additional Comments:

Distribution: 9/21/93 White - Original — Yellow - Exxon — Pink - Lab — Goldenrod - Consultant Field Staff