

DATE: February 5, 1998

TOSCO MARKETING COMPANY QUARTERLY REPORT

Tosco Facility: 5353 Address: 600 Westlake Avenue North, Seattle, Washington
Tosco Environmental Manager: Timothy D. Johnson
Consulting Co./Contact Person: Environmental Resolutions, Inc., John Meyer
ERI Project No.: 03102013
Primary Agency/Regulatory ID No.: Washington State Department of Ecology UST 2788 and 2789

WORK PERFORMED THIS QUARTER(S) [Fourth - 1997]:

1. Fourth quarter groundwater monitoring, sampling, and report.

WORK PROPOSED FOR NEXT QUARTER [First - 1998]:

1. First quarter groundwater monitoring and sampling.

Current Phase of Project:	<u>Remediation</u>	(Assmnt, Remed., etc.)
Frequency of Sampling:	<u>Quarterly</u>	(Quarterly, etc.)
Frequency of Monitoring:	<u>Quarterly</u>	(Monthly, etc.)
Are Liquid Phase Hydrocarbons Present On-site:	<u>Yes</u>	(Yes/No)
Cumulative LPH Recovered to Date:	<u>46,632 Gallons</u>	(gallons)
LPH Recovered This Quarter:	<u>None</u>	(gallons)
Bulk Soil Removed to Date:	<u>None</u>	(cubic yards)
Bulk Soil Removed This Quarter:	<u>None</u>	(cubic yards)
Water Wells or Surface Waters w/in a 2000' Radius & Their Respective Directions:	<u>Lake Union, 400 Feet North</u>	(Distance and Direction)
Current Remediation Techniques:	<u>VES</u>	(SVES, LPH Removal,
Permits for Discharge:	<u>PSAPCA No. 4397</u>	(NPDES, POTW, etc.)
Approximate Depth to Groundwater:	<u>8 to 12 Feet</u>	(Measured Feet)
Groundwater Gradient:	<u>North and East</u>	(Direction)
	<u>0.005 Vertical Feet per Linear Foot</u>	(Magnitude)

Discussion: On December 19, 1997, Environmental Resolutions, Inc., (ERI) gauged 8 and sampled 5 groundwater monitoring wells. Groundwater samples were collected without purging. Monitoring wells MW-33, 34, 35, 42, 43, and 47 could not be accessed. Results indicated groundwater present approximately 8 to 12 feet bgs with a gradient generally directed toward the north and east. Liquid-phase hydrocarbons (LPH) were observed in SMW-4 (0.04 ft.) and MW-37 (0.02 ft.).

The groundwater sample collected from MW-40 contained concentrations of total petroleum hydrocarbons (TPH-G, TPH-D, and TPH-O) exceeding the MTCA Method A Cleanup Level. No other analyte concentrations exceeded MTCA Method A Cleanup Levels in any well sampled.

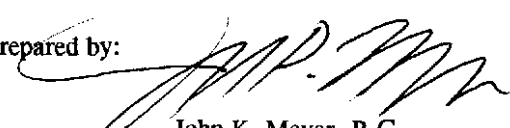
Summary of Unusual Activity: LPH observed for the first time in SMW-4
Agency Directive Requirements: None
Recommended Activities: Continue quarterly groundwater sampling

ATTACHED:

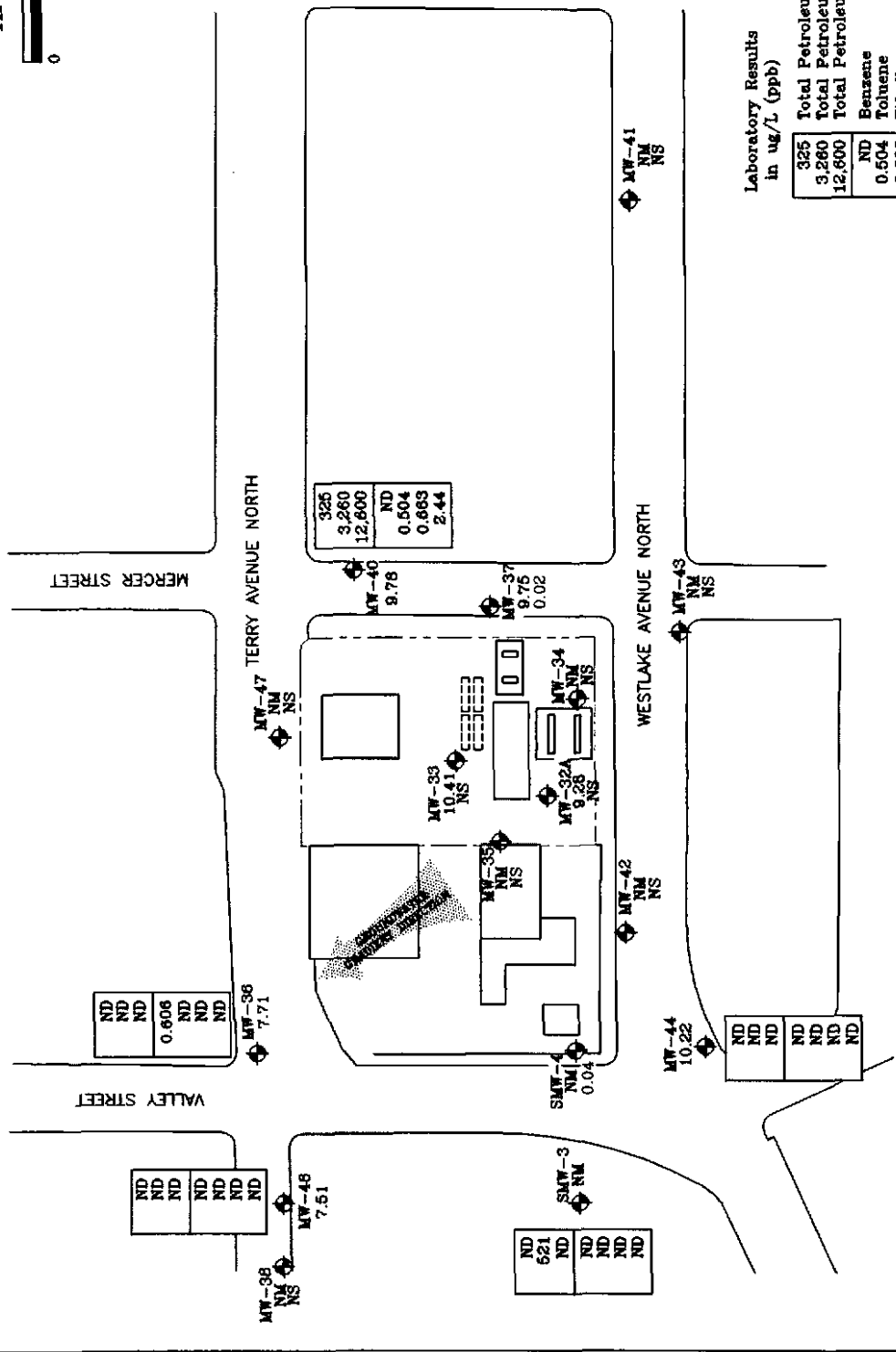
- Plate P-1 - Groundwater Sample Analyses Map, 12/19/97
- Table 1 - Groundwater Analytical Results
- Laboratory Reports and Chain-of-Custody Documentation

cc: Washington State Department of Ecology

Prepared by:


John K. Meyer, R.G.
Environmental Resolutions, Inc.

APPROXIMATE SCALE



Laboratory Results
in ug/L (ppb)

325	Total Petroleum Hydrocarbons as Gasoline
3.260	Total Petroleum Hydrocarbons as Diesel
12.600	Total Petroleum Hydrocarbons as Oil
ND	Benzene
0.504	Toluene
0.663	Ethylbenzene
2.44	Total Xylenes

Numbers in Red Exceed MTCA Method A Cleanup Levels
ND = Not Detected

SOURCE: Modified from maps provided by Toseco Marketing Company

FN 5353

GROUNDWATER SAMPLE ANALYSES MAP - 12/19/97
TOSCO FACILITY 5353
600 Westlake Avenue North
Seattle, Washington

PROJECT NO.	31020
PLATE	P-1
DATE:	2/6/98

EXPLANATION

◆ MW-40	Groundwater Monitoring Well
9.78	Groundwater Elevation
0.02	Free Product Thickness in Feet
NM	Not Measured
NS	Not Sampled



TABLE 1
GROUNDWATER ANALYTICAL RESULTS
Tosco Facility 5353
600 Westlake Avenue North
Seattle, Washington
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Well Name	Sample Date	DTW	LPH	GW Elev.	TPH-G	TPH-D	TPH-O	B	T	E	X
SMW-3 --	03/08/95	10.25	0.00	--	<50	400	2,500	<0.5	<0.5	<0.5	<1.0
	06/06/95	10.23	0.00	--	<50	<250	<750	<0.5	<0.5	<0.5	<1.0
	09/07/95	10.89	0.00	--	<50	300	<750	<0.5	<0.5	<0.5	<1.0
	12/08/95	10.36	0.00	--	<50	300	<750	<0.5	<0.5	<0.5	<1.0
	04/01/96	10.07	0.00	--	34,000	4,000	2,300	6,400	42	2,100	3,000
	06/25/96	10.19	0.00	--	<50.0	320	<750	<0.500	<0.500	<0.500	<1.00
	09/27/96	11.12	0.00	--	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00
	03/28/97	10.19	0.00	--	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00
	06/30/97 ^{NP}	10.14	0.00	--	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00
	09/08/97 ^{NP}	10.85	0.00	--	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00
	12/19/97 ^{NP}	9.67	0.00	--	<50.0	521	<750	<0.500	<0.500	<0.500	<1.00
SMW-4 --	03/08/95	8.14	0.00	--	39,000	4,100	6,100	13,000	<250	2,400	6,200
	06/06/95	8.90	0.00	--	41,000	6,600	<750	9,400	44	2,700	4,900
	09/07/95	8.99	0.00	--	--	--	--	--	--	--	--
	12/08/95	7.56	0.00	--	40,000	1,600	920	8,100	67	2,600	3,600
	04/01/96	8.13	0.00	--	<50	<250	<750	<0.5	<0.5	<0.5	<1.0
	06/25/96	8.20	0.00	--	28,100	2,680	630	3,900	81.4	1,710	1,710
	09/27/96	8.62	0.00	--	28,600	2,460	<750	6,090	<0.500	2,060	1,730
	03/28/97	8.20	0.00	--	--	--	--	--	--	--	--
	06/30/97	8.06	0.00	--	--	--	--	--	--	--	--
	09/08/97	9.00	0.00	--	--	--	--	--	--	--	--
	12/19/97	9.41	0.04	--	--	--	--	--	--	--	--
MW-32A 20.70	03/08/95	11.29	0.00	9.69	21,000	2,300	2,300	6,800	1,700	990	2,900
	06/06/95	--	--	--	--	--	--	--	--	--	--
	09/07/95	11.27	--	9.43	20,000	2,500	1,600	4,200	470	730	2,000
	12/08/95	10.61	--	10.06	11,000	1,200	<750	1,600	86	420	910
	04/01/96	10.90	--	9.80	7,900	1,400	1,000	2,200	68	300	490
	06/25/96	10.98	--	9.72	7,600	1,250	<750	1,200	60.4	217	436
	09/27/96	11.37	--	9.61	7,060	1,040	<750	1,670	37.4	264	416
	03/28/97	11.26	--	9.72	--	--	--	--	--	--	--
	06/30/97	10.89	--	--	--	--	--	--	--	--	--
	09/08/97	11.67	0.00	9.31	--	--	--	--	--	--	--
	12/19/97	11.42	0.00	9.28	--	--	--	--	--	--	--
MW-33 20.75	03/08/95	11.16	0.00	9.73	4,900	1,400	2,000	650	<25	320	420
	06/06/95	--	--	--	--	--	--	--	--	--	--
	09/07/95	11.20	0.00	9.55	9,700	1,400	820	650	140	230	620
	12/08/95	--	--	--	13,000	1,900	1,800	800	240	280	760
	04/01/96	11.00	0.00	9.75	6,200	960	<750	630	33	130	270
	06/25/96	11.05	0.00	9.70	2,700	1,030	<750	230	24.6	46.6	61.1
	09/27/96	11.13	0.00	9.76	6,160	1,190	<750	1,190	237	66.3	272
	03/28/97	11.19	0.00	9.70	--	--	--	--	--	--	--
	06/30/97	10.66	0.00	10.23	--	--	--	--	--	--	--
	09/08/97	10.48	0.00	10.41	--	--	--	--	--	--	--
	12/19/97	--	--	--	--	--	--	--	--	--	--
MW-34 21.42	03/08/95	11.62	0.00	10.08	8,200	1,100	480	2,400	1,500	260	1,300
	06/06/95	11.73	0.00	9.97	9,100	2,300	<750	4,200	1,000	330	1,200
	09/07/95	11.57	0.00	9.85	18,000	1,800	930	4,800	2,300	660	2,000
	12/08/95	10.92	0.00	10.50	68,000	2,900	1,600	12,000	9,200	1,200	6,600
	04/01/96	11.21	0.00	10.21	10,000	1,900	<750	6,600	680	620	1,200
	06/25/96	11.19	0.00	10.23	13,700	1,160	<750	4,190	1,110	393	1,740
	09/27/96	11.58	0.00	10.12	16,300	1,030	<750	6,010	2,620	541	1,310
	03/28/97	11.47	0.00	10.23	--	--	--	--	--	--	--
	06/30/97 ^{NP}	11.19	0.00	10.51	2,970	311	<750	1,930	15.7	271	631
	09/08/97 ^{NP}	11.74	0.00	9.96	8,390	466	<750	3,920	645	567	1,270
	12/19/97	--	--	--	--	--	--	--	--	--	--
MTCA Method A Cleanup Level					1,000^a			5	40	30	20

Continued on Page 2.

TABLE 1
GROUNDWATER ANALYTICAL RESULTS
Tosco Facility 5353
600 Westlake Avenue North
Seattle, Washington
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Well Name	Sample Date	DTW	LPH	GW Elev.	TPH-G	TPH-D	TPH-O	B	T	E	X
MW-35 20.10	03/08/95	10.67	0.00	9.60	2,600	1,200	1,300	400	<25	120	63
	06/06/95	10.67	0.00	9.60	810	1,000	930	62	1.4	27	36
	09/07/95	10.87	0.00	9.43	--	--	--	--	--	--	--
	12/08/95	0.00	--	--	--	--	--	--	--	--	--
	04/01/96	--	--	--	--	--	--	--	--	--	--
	06/25/96	11.11	0.00	8.99	1,620	850	<750	68.2	1.11	26.7	17.6
	09/27/96	10.64	0.00	9.63	959	524	<750	38.8	0.990	10.4	6.18
	03/28/97 ^{NP}	11.28	0.00	8.99	1,370	333	<750	161	2.36	31.9	10.7
	03/28/97	11.28	0.00	8.99	1,800	<250	<750	260	2.62	49.1	8.04
	06/30/97 ^{NP}	10.19	0.00	10.06	1,900	<250	<750	348	<2.50	88.0	7.31
	09/08/97 ^{NP}	10.86	0.00	9.41	4,200	<250	<750	1,460	16.2	231	68.2
	12/19/97	--	--	--	--	--	--	--	--	--	--
MW-36 17.80	03/08/95	9.07	0.00	8.97	<50	560	1,200	2.6	<0.5	<0.5	<1.0
	06/06/95	7.92	0.00	10.12	<50	<250	<750	1.0	<0.5	<0.5	<1.0
	09/07/95	8.11	0.00	9.69	<50	<250	<750	<0.5	<0.5	<0.5	<1.0
	12/08/95	9.00	0.00	8.80	<50	510	1,200	1.1	<0.5	<0.5	<1.0
	04/01/96	9.00	0.00	8.80	<50	<250	<750	<0.5	<0.5	<0.5	<1.0
	06/25/96	8.97	0.00	--	<50.0	<250	<750	0.580	0.500	<0.500	<1.00
	09/27/96	7.53	0.00	10.51	<50.0	<250	<750	1.18	<0.500	<0.500	<1.00
	03/28/97	9.21	0.00	8.83	<50.0	<250	<750	0.810	<0.500	<0.500	<1.00
	06/30/97 ^{NP}	6.88	0.00	11.16	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00
	09/08/97 ^{NP}	9.21	0.00	8.83	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00
	12/19/97 ^{NP}	10.09	0.00	7.71	<50.0	<250	<750	0.606	<0.500	<0.500	<1.00
	MW-37 21.01	03/08/95	11.94	0.00	9.24	34	3,200	1,400	3,100	2,400	1,200
06/06/95		11.76	0.01	9.43	45	4,600	2,500	3,700	2,400	1,300	7,900
06/06/95		11.76	0.01	9.43	90	--	--	5,100	6,000	2,400	14,000
09/07/95		11.17	0.00	9.84	--	--	--	--	--	--	--
12/08/95		10.22	0.00	10.79	--	--	--	--	--	--	--
04/01/96		10.79	0.02	10.22	--	--	--	--	--	--	--
06/25/96		10.82	0.20	10.19	--	--	--	--	--	--	--
09/27/96		11.47	0.06	9.75	--	--	--	--	--	--	--
03/28/97 ^{NP}		11.14	0.25	10.40	60,100	7,670	789	1,630	2,180	1,660	7,440
03/28/97		11.14	0.25	10.40	297,000	45,100	<8,250	5,670	13,200	4,930	22,900
06/30/97		10.80	0.02	10.23	--	--	--	--	--	--	--
09/08/97		11.41	0.23	9.77	--	--	--	--	--	--	--
12/19/97	11.28	0.02	9.75	--	--	--	--	--	--	--	
MW-38 16.52	03/08/95	--	--	--	--	--	--	--	--	--	--
	06/06/95	--	--	--	--	--	--	--	--	--	--
	09/07/95	--	--	--	--	--	--	--	--	--	--
	12/08/95	--	--	--	--	--	--	--	--	--	--
	04/01/96	--	--	--	--	--	--	--	--	--	--
	06/25/96	--	--	--	--	--	--	--	--	--	--
	09/27/96	--	--	--	--	--	--	--	--	--	--
	03/28/97	9.23	0.00	7.60	<50	<250	<750	<0.500	<0.500	<0.500	<1.00
	06/30/97	--	--	--	--	--	--	--	--	--	--
	09/08/97	--	--	--	--	--	--	--	--	--	--
	12/19/97	--	--	--	--	--	--	--	--	--	--
	MW-40 20.89	03/08/95	10.98	0.00	10.14	960	2,600	2,600	11	<0.5	11
06/06/95		11.18	0.00	9.94	1,500	2,300	1,500	6.6	4.3	4.1	21
09/07/95		11.08	0.00	9.81	650	13,000	66,000	11	0.91	0.57	<1.0
12/08/95		10.30	0.00	10.59	500	1,400	4,800	2.7	3	<0.5	<1.0
04/01/96		10.56	0.00	10.33	620	3,200	13,000	1.2	<0.5	0.55	<1.0
06/25/96		10.69	0.00	10.20	500	2,700	8,460	<0.500	9.82	<0.500	<1.00
09/27/96		10.95	0.00	10.17	602	3,560	9,860	0.604	41.1	0.525	<1.0
03/28/97		10.92	0.00	10.20	--	--	--	--	--	--	--
06/30/97		--	--	--	--	--	--	--	--	--	--
09/08/97		--	--	--	--	--	--	--	--	--	--
12/19/97 ^{NP}		11.11	0.00	9.78	325	3,280	12,500	<0.500	0.504	0.663	2.44
MTCA Method A Cleanup Level					1,000 ^a		5	40	30	20	

Continued on Page 3.

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GROUNDWATER ANALYTICAL RESULTS
Tosco Facility 5353
600 Westlake Avenue North
Seattle, Washington
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Well Name	Sample Date	DTW	LPH	GW Elev.	TPH-G	TPH-D	TPH-O	B	T	E	X
MW-41 27.00	03/08/95	14.72	--	12.48	<50	<250	<750	1.6	<0.5	<0.5	<1.0
	06/06/95	15.02	--	12.18	<50	<250	<750	<0.5	<0.5	<0.5	<1.0
	09/07/95	15.00	--	12.00	<50	<250	<750	<0.5	<0.5	<0.5	<1.0
	12/08/95	16.30	--	10.70	<50	<250	<750	<0.5	<0.5	<0.5	<1.0
	04/01/96	15.02	--	11.98	<50	<250	<750	<0.5	<0.5	<0.5	<1.0
	06/25/96	15.07	--	11.93	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00
	09/27/96	15.42	0.00	11.78	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00
	03/28/97	15.27	0.00	11.93	--	--	--	--	--	--	--
	06/30/97	--	--	--	--	--	--	--	--	--	--
	09/08/97	--	--	--	--	--	--	--	--	--	--
	12/19/97	--	--	--	--	--	--	--	--	--	--
MW-42 20.34	03/08/95	9.45	0.00	10.91	130	870	1,200	790	<25	<25	<50
	06/06/95	9.37	0.00	10.89	120	920	1,500	500	<0.66	<0.5	<1.0
	09/07/95	9.50	0.00	10.84	3,000	780	1,200	210	4.1	42	230
	12/08/95	8.95	0.00	11.39	200	1,300	1,900	380	<2.0	<2.0	<4.0
	04/01/96	9.03	0.00	11.31	180	650	<750	280	0.52	<0.5	<1.0
	06/25/96	9.07	0.00	11.27	150	720	<750	150	<0.500	<0.500	<1.00
	09/27/96	9.12	0.00	11.24	<250	534	<750	228	<2.50	<2.50	<5.00
	03/28/97	9.09	0.00	11.27	--	--	--	--	--	--	--
	06/30/97	8.92	0.00	11.44	--	--	--	--	--	--	--
	09/08/97	9.57	0.00	10.79	--	--	--	--	--	--	--
	12/19/97	--	--	--	--	--	--	--	--	--	--
MW-43 21.04	03/08/95	11.35	0.00	9.94	<50	650	2,400	25	<0.5	<0.5	<1.0
	06/06/95	11.45	0.00	9.84	<50	690	1,500	8.2	<0.5	<0.5	<1.0
	09/07/95	11.14	0.00	9.90	<50	<250	850	10	<0.5	<0.5	<1.0
	12/08/95	10.85	0.00	10.19	<50	960	3,100	37	<0.5	<0.5	<1.0
	04/01/96	10.98	0.00	10.06	<50	300	<750	4.5	<0.5	<0.5	<1.0
	06/25/96	11.06	0.00	9.98	<50.0	370	<750	2.57	<0.500	<0.500	<1.00
	09/27/96	11.33	0.00	9.96	<50.0	339	<750	4.40	<0.5	<0.500	<1.00
	03/28/97	11.13	0.00	9.98	<50.0	<250	<750	5.89	0.884	<0.500	2.47
	06/30/97 ^{NP}	7.08	0.00	14.21	<50.0	<250	<750	59.2	<0.500	<0.500	<1.00
	09/08/97 ^{NP}	11.46	0.00	9.83	83	<250	<750	36.5	<0.500	2.10	3.08
	12/19/97	--	--	--	--	--	--	--	--	--	--
MW-44 18.73	03/08/95	9.44	0.00	10.46	<50	290	940	<0.5	<0.5	<0.5	<1.0
	06/06/95	8.28	0.00	10.62	<50	<250	820	<0.5	<0.5	<0.5	1.6
	09/07/95	7.94	0.00	10.79	<50	<250	<750	<0.5	<0.5	<0.5	<1.0
	12/08/95	8.09	0.00	10.64	<50	620	2,500	<0.5	<0.5	<0.5	<1.0
	04/01/96	7.98	0.00	10.75	<50	<250	<750	<0.5	<0.5	<0.5	<1.0
	06/25/96	7.90	0.00	10.83	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00
	09/27/96	8.28	0.00	10.59	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00
	03/28/97	8.07	0.00	10.83	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00
	06/30/97 ^{NP}	7.84	0.00	11.06	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00
	09/08/97 ^{NP}	8.65	0.00	10.25	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00
	12/19/97 ^{NP}	8.51	0.00	10.22	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00
MW-46 16.91	03/08/95	8.00	0.00	8.91	<50	720	3,600	<0.5	<0.5	<0.5	<1.0
	06/06/95	7.30	0.00	10.01	<50	<250	1,400	<0.5	<0.5	<0.5	<1.0
	09/07/95	7.80	0.00	8.93	<50	710	5,600	<0.5	<0.5	<0.5	<1.0
	12/08/95	8.32	0.00	8.59	<50	1,400	14,000	<0.5	<0.5	<0.5	<1.0
	04/01/96	7.04	0.00	9.87	<50	<400	2,800	<0.5	<0.5	<0.5	<1.0
	06/25/96	7.85	0.00	9.06	<50.0	440	2,090	<0.500	<0.500	<0.500	<1.00
	09/27/96	7.57	0.00	9.74	<50.0	267	<750	0.518	<0.500	<0.500	<1.00
	03/28/97	7.25	0.00	10.06	<50.0	<250	<750	<0.500	1.25	<0.500	2.06
	06/30/97	7.12	0.00	10.19	--	--	--	--	--	--	--
	09/08/97	8.82	0.00	8.49	--	--	--	--	--	--	--
	12/19/97 ^{NP}	9.40	0.00	7.51	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00
MTCA Method A Cleanup Level					1,000 ^a	5	40	30	20		

Continued on Page 4.

TABLE 1
GROUNDWATER ANALYTICAL RESULTS
Tosco Facility 5353
600 Westlake Avenue North
Seattle, Washington
Page 4 of 4

Well Name	Sample Date	DTW	LPH	GW Elev.	TPH-G	TPH-D	TPH-O	B	T	E	X
MW-47	03/08/95	10.88	0.00	9.16	<50	330	1,600	5.3	<0.5	<0.5	<1.0
19.83	06/06/95	10.91	0.00	9.13	70	380	780	16	0.59	<0.5	2.3
	09/07/95	10.76	0.00	9.07	<50	260	<750	1.7	<0.5	<0.5	<1.0
	12/08/95	10.40	0.00	9.43	740	680	2,000	<0.5	<0.5	<0.5	<1.0
	04/01/96	10.67	0.00	9.16	<50	<250	<750	4.4	<0.5	<0.5	<1.0
	06/25/96	10.71	0.00	9.12	110	400	<750	14.4	<0.500	<0.500	<1.00
	09/27/96	10.85	0.00	9.19	<50.0	<250	<750	4.34	<0.500	<0.500	<1.00
	03/28/97 ^{NP}	10.92	0.00	9.12	64.5	<250	<750	7.61	<0.500	<0.500	1.57
	03/28/97	10.92	0.00	9.12	177	<250	<750	52.6	<0.500	<0.500	<1.00
	06/30/97	--	--	--	--	--	--	--	--	--	--
	09/08/97	--	--	--	--	--	--	--	--	--	--
	12/19/97	--	--	--	--	--	--	--	--	--	--
MTCA Method A Cleanup Level						1,000 ^a		5	40	30	20

EXPLANATION:

Concentrations in ug/L (ppb).

Wellhead elevations taken from prior consultant's reports.

DTW = Depth to water in feet below top of casing except where noted in prior reports.

LPH = Liquid-phase petroleum hydrocarbon thickness in feet.

GW Elev. = Groundwater elevation relative to DTW data; corrected for LPH where applicable using a specific gravity of 0.85.

TPH-G = Total Petroleum Hydrocarbons as Gasoline by Ecology Method WTPH-G.

TPH-D and TPH-O = Total petroleum hydrocarbons as diesel and as oil (respectively) by Ecology Method WTPH-D (Extended).

B = Benzene; T = Toluene; E = Ethylbenzene; X = Total Xylenes.

BTEX = Aromatic compounds by EPA Method 8020.

^{NP} = Well not purged prior to sampling.

< = Less than the stated laboratory reporting limit.

-- = Not analyzed or no data.

Shaded values equal or exceed MTCA Method A Cleanup Levels.

^a Total Petroleum Hydrocarbons

Data collected before 12/19/97 are taken from prior consultants.



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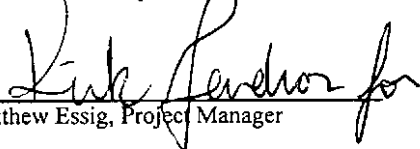
ERI 1921 Edmonds Drive SE Renton, WA 98055	Project: TOSCO #5353 Project Number: 31020 Project Manager: John Meyer	Sampled: 12/19/97 Received: 12/19/97 Reported: 12/30/97 14:03
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ANALYTICAL REPORT FOR SAMPLES:

Sample Description	Laboratory Sample Number	Sample Matrix	Date Sampled
SMW-3	B712452-01	Water	12/19/97
MW-36	B712452-02	Water	12/19/97
MW-40	B712452-03	Water	12/19/97
MW-44	B712452-04	Water	12/19/97
MW-46	B712452-05	Water	12/19/97

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*The results in this report apply to the samples analyzed in accordance with the chain of custody document.
 This analytical report must be reproduced in its entirety.*


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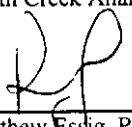
ERI 1921 Edmonds Drive SE Renton, WA 98055	Project: TOSCO #5353 Project Number: 31020 Project Manager: John Meyer	Sampled: 12/19/97 Received: 12/19/97 Reported: 12/30/97 14:03
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Gasoline Hydrocarbons (Toluene to Dodecane) and BTEX by WTPH-G and EPA 8020A North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
SMW-3				B712452-01		Water		
Gasoline Range Hydrocarbons	1270745	12/29/97	12/29/97		50.0	ND	ug/l	
Benzene	"	"	"		0.500	ND	"	
Toluene	"	"	"		0.500	ND	"	
Ethylbenzene	"	"	"		0.500	ND	"	
Xylenes (total)	"	"	"		1.00	ND	"	
Surrogate: 4-BFB (FID)	"	"	"	50.0-150		77.3	%	
Surrogate: 4-BFB (PID)	"	"	"	50.0-150		82.3	"	
MW-36				B712452-02		Water		
Gasoline Range Hydrocarbons	1270745	12/29/97	12/29/97		50.0	ND	ug/l	
Benzene	"	"	"		0.500	0.606	"	
Toluene	"	"	"		0.500	ND	"	
Ethylbenzene	"	"	"		0.500	ND	"	
Xylenes (total)	"	"	"		1.00	ND	"	
Surrogate: 4-BFB (FID)	"	"	"	50.0-150		78.3	%	
Surrogate: 4-BFB (PID)	"	"	"	50.0-150		82.9	"	
MW-40				B712452-03		Water		
Gasoline Range Hydrocarbons	1270745	12/29/97	12/29/97		50.0	325	ug/l	
Benzene	"	"	"		0.500	ND	"	
Toluene	"	"	"		0.500	0.504	"	
Ethylbenzene	"	"	"		0.500	0.663	"	
Xylenes (total)	"	"	"		1.00	2.44	"	
Surrogate: 4-BFB (FID)	"	"	"	50.0-150		105	%	
Surrogate: 4-BFB (PID)	"	"	"	50.0-150		94.4	"	
MW-44				B712452-04		Water		
Gasoline Range Hydrocarbons	1270745	12/29/97	12/29/97		50.0	ND	ug/l	
Benzene	"	"	"		0.500	ND	"	
Toluene	"	"	"		0.500	ND	"	
Ethylbenzene	"	"	"		0.500	ND	"	
Xylenes (total)	"	"	"		1.00	ND	"	
Surrogate: 4-BFB (FID)	"	"	"	50.0-150		79.6	%	
Surrogate: 4-BFB (PID)	"	"	"	50.0-150		81.7	"	
MW-46				B712452-05		Water		
Gasoline Range Hydrocarbons	1270745	12/29/97	12/29/97		50.0	ND	ug/l	
Benzene	"	"	"		0.500	ND	"	

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*Refer to end of report for text of notes and definitions.


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ERI 1921 Edmonds Drive SE Renton, WA 98055	Project: TOSCO #5353 Project Number: 31020 Project Manager: John Meyer	Sampled: 12/19/97 Received: 12/19/97 Reported: 12/30/97 14:03
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**Gasoline Hydrocarbons (Toluene to Dodecane) and BTEX by WTPH-G and EPA 8020A
 North Creek Analytical - Bothell**

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
<u>MW-46 (continued)</u>				<u>B712452-05</u>			<u>Water</u>	
Toluene	1270745	12/29/97	12/29/97		0.500	ND	ug/l	
Ethylbenzene	"	"	"		0.500	ND	"	
Xylenes (total)	"	"	"		1.00	ND	"	
Surrogate: 4-BFB (FID)	"	"	"	50.0-150		78.1	%	
Surrogate: 4-BFB (PID)	"	"	"	50.0-150		84.2	"	

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ERI 1921 Edmonds Drive SE Renton, WA 98055	Project: TOSCO #5353 Project Number: 31020 Project Manager: John Meyer	Sampled: 12/19/97 Received: 12/19/97 Reported: 12/30/97 14:03
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Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by WTPH-D (extended) North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
				<u>B712452-01</u>				
<u>SMW-3</u> Diesel Range Hydrocarbons	1270707	12/26/97	12/29/97		0.250	0.521	Water mg/l	
Heavy Oil Range Hydrocarbons	"	"	"		0.750	ND	"	
Surrogate: 2-FBP	"	"	"	50.0-150		81.4	%	
				<u>B712452-02</u>				
<u>MW-36</u> Diesel Range Hydrocarbons	1270707	12/26/97	12/29/97		0.250	ND	Water mg/l	
Heavy Oil Range Hydrocarbons	"	"	"		0.750	ND	"	
Surrogate: 2-FBP	"	"	"	50.0-150		81.1	%	
				<u>B712452-03</u>				
<u>MW-40</u> Diesel Range Hydrocarbons	1270707	12/26/97	12/30/97		0.250	3.26	Water mg/l	
Heavy Oil Range Hydrocarbons	"	"	"		0.750	12.6	"	
Surrogate: Octacosane	"	"	"	50.0-150		56.3	%	1
				<u>B712452-04</u>				
<u>MW-44</u> Diesel Range Hydrocarbons	1270707	12/26/97	12/29/97		0.250	ND	Water mg/l	
Heavy Oil Range Hydrocarbons	"	"	"		0.750	ND	"	
Surrogate: 2-FBP	"	"	"	50.0-150		89.2	%	
				<u>B712452-05</u>				
<u>MW-46</u> Diesel Range Hydrocarbons	1270707	12/26/97	12/29/97		0.250	ND	Water mg/l	
Heavy Oil Range Hydrocarbons	"	"	"		0.750	ND	"	
Surrogate: 2-FBP	"	"	"	50.0-150		81.7	%	

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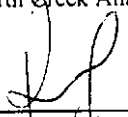
ERI 1921 Edmonds Drive SE Renton, WA 98055	Project: TOSCO #5353 Project Number: 31020 Project Manager: John Meyer	Sampled: 12/19/97 Received: 12/19/97 Reported: 12/30/97 14:03
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Gasoline Hydrocarbons (Toluene to Dodecane) and BTEX by WTPH-G and EPA 8020A/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 1270745			Date Prepared: 12/29/97			Extraction Method: EPA 5030 (P/T)				
Blank			1270745-BLK1							
Gasoline Range Hydrocarbons	12/29/97			ND	ug/l	50.0				
Benzene	"			ND	"	0.500				
Toluene	"			ND	"	0.500				
Ethylbenzene	"			ND	"	0.500				
Xylenes (total)	"			ND	"	1.00				
Surrogate: 4-BFB (FID)	"	48.0		37.6	"	50.0-150	78.3			
Surrogate: 4-BFB (PID)	"	48.0		39.2	"	50.0-150	81.7			
LCS			1270745-BS1							
Gasoline Range Hydrocarbons	12/29/97	500		541	ug/l	75.0-125	108			
Surrogate: 4-BFB (FID)	"	48.0		44.7	"	50.0-150	93.1			
Duplicate			1270745-DUP1 B712400-13							
Gasoline Range Hydrocarbons	12/29/97		2820	2770	ug/l			25.0	1.79	
Surrogate: 4-BFB (FID)	"	48.0		45.7	"	50.0-150	95.2			
Duplicate			1270745-DUP2 B712400-15							
Gasoline Range Hydrocarbons	12/29/97		4990	5190	ug/l			25.0	3.93	
Surrogate: 4-BFB (FID)	"	48.0		68.3	"	50.0-150	142			
Matrix Spike			1270745-MS1 B712400-07							
Benzene	12/29/97	10.0	ND	9.61	ug/l	70.0-130	96.1			
Toluene	"	10.0	ND	9.45	"	70.0-130	94.5			
Ethylbenzene	"	10.0	ND	9.48	"	70.0-130	94.8			
Xylenes (total)	"	30.0	ND	27.8	"	70.0-130	92.7			
Surrogate: 4-BFB (PID)	"	48.0		40.1	"	50.0-150	83.5			
Matrix Spike Dup			1270745-MSD1 B712400-07							
Benzene	12/29/97	10.0	ND	9.53	ug/l	70.0-130	95.3	15.0	0.836	
Toluene	"	10.0	ND	9.37	"	70.0-130	93.7	15.0	0.850	
Ethylbenzene	"	10.0	ND	9.37	"	70.0-130	93.7	15.0	1.17	
Xylenes (total)	"	30.0	ND	27.2	"	70.0-130	90.7	15.0	2.18	
Surrogate: 4-BFB (PID)	"	48.0		40.2	"	50.0-150	83.8			

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ERI 1921 Edmonds Drive SE Renton, WA 98055	Project: TOSCO #5353 Project Number: 31020 Project Manager: John Meyer	Sampled: 12/19/97 Received: 12/19/97 Reported: 12/30/97 14:03
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Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by WTPH-D (extended)/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 1270707			Date Prepared: 12/26/97			Extraction Method: EPA 3520/600 Series				
Blank										
Diesel Range Hydrocarbons	12/29/97			ND	mg/l	0.250				
Heavy Oil Range Hydrocarbons	"			ND	"	0.750				
Surrogate: 2-FBP	"	0.364		0.271	"	50.0-150	74.5			
LCS										
Diesel Range Hydrocarbons	12/29/97	2.00		2.17	mg/l	60.0-140	109			
Surrogate: 2-FBP	"	0.364		0.309	"	50.0-150	84.9			
Duplicate										
Diesel Range Hydrocarbons	12/29/97		0.521	0.442	mg/l			44.0	16.4	
Surrogate: 2-FBP	"	0.687		0.508	"	50.0-150	73.9			

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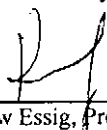
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Notes and Definitions

#	Note
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- 1 Due to an extraction anomaly, results of the secondary surrogate have been used to control the analysis.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- Recov. Recovery
- RPD Relative Percent Difference

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CHAIN OF CUSTODY REPORT

Work Order # **B712452**

REPORT TO: ERI	INVOICE TO: 10910	TURNAROUND REQUEST in Business Days *	
ATTENTION: John Major	ATTENTION: 7753532511/500	Organic & Inorganic Analyses	<input type="checkbox"/> 10 Standard <input type="checkbox"/> 7 <input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1 Same Day
ADDRESS: 1921 Edmonds Dr SE London, WA 98055	ADDRESS: 930/849/11000/255353	Fuels & Hydrocarbon Analyses	<input type="checkbox"/> 5 Standard <input type="checkbox"/> 3-4 <input type="checkbox"/> 2 <input type="checkbox"/> 1 Same Day
PHONE: (425) 227-0280	FAX: 5 0225	OTHER Specify: _____	
PROJECT NAME: Temo 5353 Westlake	P.O. NUMBER: _____	* Turnaround Requests less than standard may incur Rush Charges.	
PROJECT NUMBER: 21020	Analysis Request: THM-Total, THM-THM, THM-THM	MATRIX (W, S, A, O)	
SAMPLED BY: MSJ/n	NCA QUOTE #: _____	# OF CONTAINERS	COMMENTS
CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	NCA SAMPLE ID (Laboratory Use Only)	
1. SMW-3	12/19/01	87292-01	W
2. MW-36		-20	W
3. MW-40		-03	W
4. MW-44		-04	W
5. MW-46		-05	W
6. _____			
7. _____			
8. _____			
9. _____			
10. _____			
RELINQUISHED BY: John Major	DATE: 12/19/01	RECEIVED BY (Signature): Andrew Gilligan	DATE: 12/17/01
PRINT NAME: John Major	FIRM: ERI	PRINT NAME: Andrew Gilligan	FIRM: NCA-B
RELINQUISHED BY (Signature): _____	DATE: _____	RECEIVED BY (Signature): _____	DATE: _____
PRINT NAME: _____	FIRM: _____	PRINT NAME: _____	FIRM: _____
ADDITIONAL REMARKS:			