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DATE: May 29, 2002

JUN 10 2002

ENVIRONMENTAL DEPARTMENT  
NORTHWEST REGION  
**TOSCO CORPORATION  
GROUNDWATER MONITORING REPORT**

Site No.: 5353 Address: 600 Westlake Avenue North, Seattle, Washington  
Tosco Project Manager: Timothy D. Johnson  
Consultant/Contact Person: Environmental Resolutions, Inc./ James S. Matthiessen  
Primary Agency/Regulatory ID No.: Washington State Department of Ecology

**WORK PERFORMED THIS QUARTER(S) [First - 2002]:**

- Monitored 9, purged and sampled 7 groundwater monitoring wells.

**WORK PROPOSED FOR NEXT QUARTER [Second - 2002]:**

- Monitor 10, purge and sample 9 groundwater monitoring wells.

**SUMMARY:**

Frequency of Sampling Events:	<u>Quarterly</u>	(Quarterly, etc.)
Approximate Depth to Groundwater:	<u>9 to 12 feet</u>	(Measured Feet)
Groundwater Gradient:	<u>Not Determined</u>	(Direction)
	<u>Not Determined</u>	(Magnitude)
Maximum TPH-G/Benzene Concentrations:	<u>126,000/7,200</u>	(ppb)
Measurable Free Product Detected:	<u>Yes - MW37</u>	(Yes - ID well(s)/No)
Free Product Recovered This Quarter:	<u>Unknown</u>	(gallons)
Cumulative Free Product Recovered to Date:	<u>Unknown</u>	(gallons)
Bulk Soil Removed This Quarter:	<u>None</u>	(cubic yards)
Water Wells or Surface Waters w/in 2,000 ft:	<u>Lake Union, 400 ft</u>	(Distance &
Radius and Respective Direction:	<u>North</u>	Direction)
Current Remedial Action:	<u>VES/EFRT</u>	(SVE/AS/P&T etc.)
Permits for Discharge:	<u>PSAPCA No. 4397</u>	(NPDES, POTW, etc.)

**DISCUSSION:**

- All 7 wells sampled contained hydrocarbon concentrations exceeding MTCA Method A Cleanup Levels.
- MW37 contained LPH with thickness of 0.40 feet; an absorbent sock was installed.

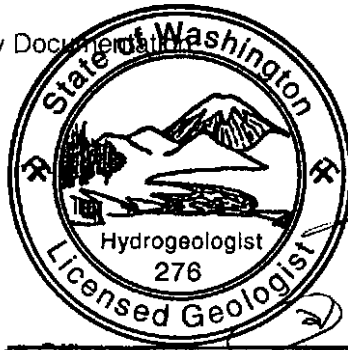
**ATTACHMENTS:**

- Plate 1: Groundwater Sample Analysis Map - 03/08/02
- Table 1: Groundwater Analytical Results
- Laboratory Reports and Chain of Custody Documents
- Field Data Records

Prepared By:

*Yukiko Noguchi*

Yukiko Noguchi  
Staff Scientist



Reviewed By:

*John K. Meyer*  
John K. Meyer, R.G.  
Branch Manager

cc: Department of Ecology, Northwest Region Office  
Dave Cook, GeoEngineers

**JOHN K. MEYER**

APPROXIMATE SCALE



TERRY AVENUE NORTH

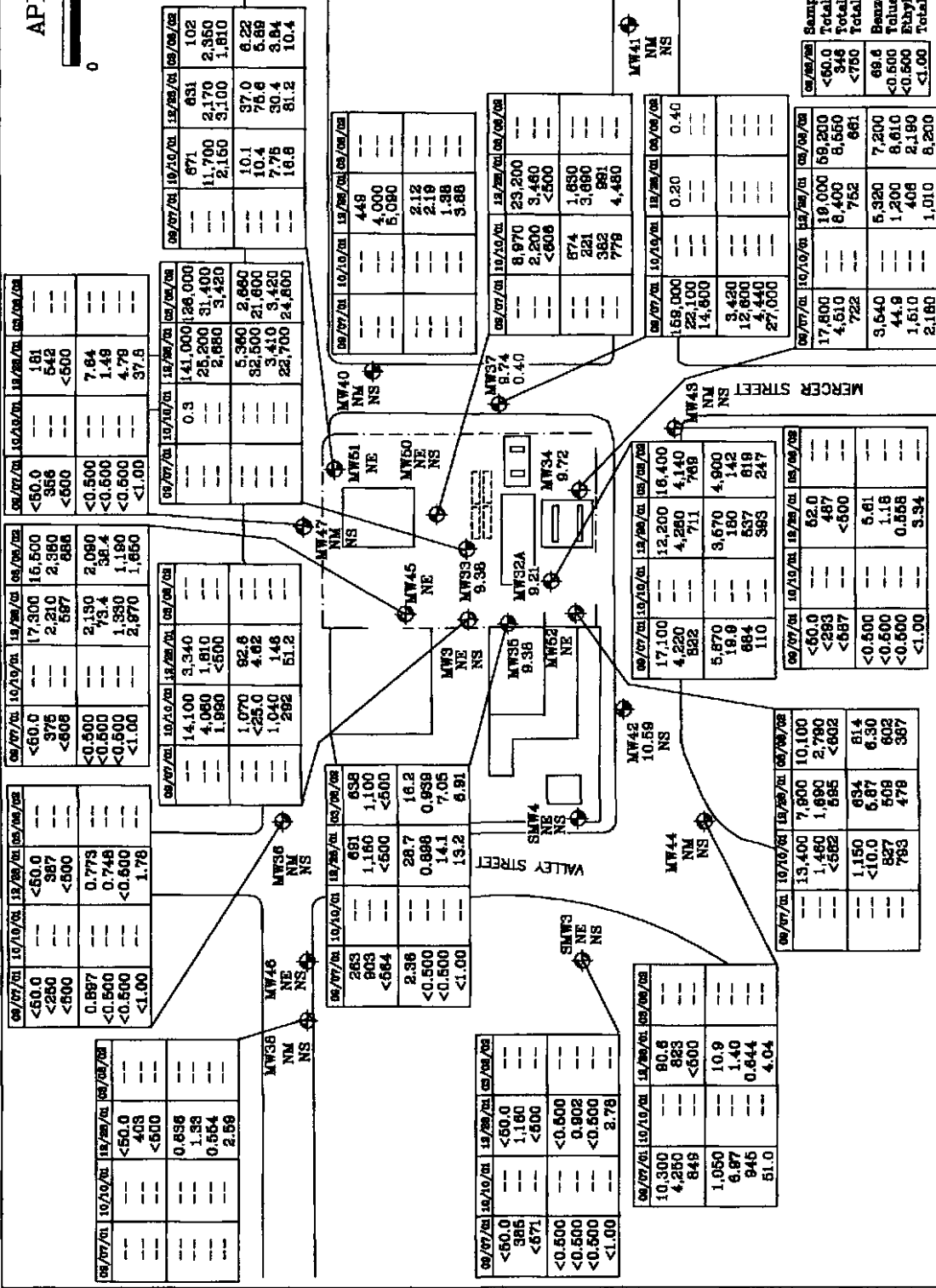
WESTLAKE AVENUE NORTH

Laboratory Results  
In ug/L (ppb)

Sample Date	Total Petroleum Hydrocarbons as Gasoline	Total Petroleum Hydrocarbons as Diesel	Total Petroleum Hydrocarbons as Oil	Benzenes	Numbers in Red Exceed	MVCA Method A Cleanup Levels	Polychlorinated Biphenyls	Total Xylenes
<50.0	<50.0	<50.0	<750	69.6	---	<0.500	<0.500	<1.00
348	19,000	8,400	762	7,200	---	408	2,189	8,200

SOURCE: Modified from maps provided by Tuscum Corporation

FN 311800WS



EXPLANATION

- MW37 Groundwater Monitoring Well
- 9.70 Groundwater Elevation
- 0.01 Free Product Thickness in Feet
- NM Not Measured
- NE Not Established
- NS Not Sampled
- Groundwater elevation corrected for free product, where applicable.

PROJECT NO.

31020

PLATE

1

YN: 05/28/02

GROUNDWATER SAMPLE ANALYSIS MAP - 03/08/02

TOSCO SITE NO. 5353

600 Westlake Avenue North  
Seattle, Washington



TABLE 1  
GROUNDWATER ANALYTICAL RESULTS

Tosco Site No. 5353  
600 Westlake Avenue North  
Seattle, Washington  
Page 1 of 6

Well Name	Sample Date	DTW	LPH	GW Elev.	TPH-G	TPH-D	TPH-O	B	T	E	X
SMW3 NE	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 <sup>NP</sup>	10.14	0.00	--	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00
	09/08/97 <sup>NP</sup>	10.85	0.00	--	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00
	12/19/97 <sup>NP</sup>	9.67	0.00	--	<50.0	521	<750	<0.500	<0.500	<0.500	<1.00
	03/16/98 <sup>NP</sup>	9.28	0.00	--	50.1	<250	<750	<0.500	<0.500	<0.500	<1.00
	06/26/98 <sup>NP</sup>	8.87	0.00	--	<50.0	500	<750	<0.500	<0.500	<0.500	<1.00
	09/23/98 <sup>NP</sup>	9.88	0.00	--	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00
	12/17/98 <sup>NP</sup>	9.22	0.00	--	<50.0	293	<750	<0.500	<0.500	<0.500	<1.00
	03/31/99 <sup>NP</sup>	9.01	0.00	--	<50.0	360	<750	<0.500	<0.500	0.526	4.97
	06/30/99 <sup>NP</sup>	9.55	0.00	--	<50.0	639	<750	<0.500	0.609	<0.500	1.32
	12/08/99 <sup>NP</sup>	8.75	0.00	--	<50.0	4484	<1,450	<0.500	<0.500	<0.500	<1.00
	06/20/00 <sup>NP</sup>	8.89	0.00	--	<50.0	<250	<750	<0.500	0.585	<0.500	1.86
	12/19/00	NM	--	--	--	--	--	--	--	--	--
	06/15/01 <sup>NP</sup>	7.23	0.00	--	<50.0	368	<866	<0.500	<0.500	<0.500	<1.00
	06/26/01	NM	--	--	--	--	--	--	--	--	--
	09/07/01 <sup>NP</sup>	9.19	0.00	--	<50.0	385	<671	<0.500	<0.500	<0.500	<1.00
	10/10/01	NM	--	--	--	--	--	--	--	--	--
	12/28/01	8.89	0.00	--	<50.0	1,160	<500	<0.500	0.902	<0.500	2.78
	03/08/02	NM	--	--	--	--	--	--	--	--	--
	SMW4 NE	03/08/95	8.14	0.00	--	39,000	4,100	5,100	13,000	<250	2,400
06/06/95		8.90	0.00	--	41,000	5,900	<750	9,400	44	2,700	4,900
09/07/95		8.99	0.00	--	--	--	--	--	--	--	--
12/08/95		7.56	0.00	--	40,000	1,500	920	8,100	57	2,600	3,600
04/01/96		8.13	0.00	--	<50	<250	<750	<0.5	<0.5	<0.6	<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	2,480	<750	6,090	<0.500	2,080	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	--	--	--	--	--	--	--	--
03/16/98		9.09	0.00	--	--	--	--	--	--	--	--
06/26/98		8.76	Trace	--	--	--	--	--	--	--	--
09/23/98		9.96	0.05	--	--	--	--	--	--	--	--
12/17/98		10.22	Trace	--	--	--	--	--	--	--	--
03/31/99		8.70	Trace	--	--	--	--	--	--	--	--
06/30/99		8.20	Trace	--	--	--	--	--	--	--	--
12/08/99		Not Accessible	--	--	--	--	--	--	--	--	--
06/20/00		Not Accessible	--	--	--	--	--	--	--	--	--
12/19/00		Not Accessible	--	--	--	--	--	--	--	--	--
06/15/01		Not Accessible	--	--	--	--	--	--	--	--	--
06/26/01		NM	--	--	--	--	--	--	--	--	--
09/07/01		Not Accessible	--	--	--	--	--	--	--	--	--
10/10/01		NM	--	--	--	--	--	--	--	--	--
12/28/01		Not Accessible	--	--	--	--	--	--	--	--	--
03/08/02		NM	--	--	--	--	--	--	--	--	--
MW3 NE		10/10/01	10.11	0.00	--	14,100	4,060	1,990	1,070	<25.0	1,040
	12/28/01	9.61	0.00	--	3,340	1,810	<500	82.6	4.62	146	51.2
	03/08/02	NM	--	--	--	--	--	--	--	--	--
MW32A 20.70	03/08/95	11.29	0.00	9.69	21,000	2,300	2,300	5,800	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	58	300	490
	06/25/96	10.98	--	9.72	7,500	1,250	<750	1,200	60.4	217	435
	09/27/96	11.37	--	9.61	7,050	1,040	<750	1,570	37.4	284	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	--	--	--	--	--	--	--
	03/16/98	11.30	0.00	9.40	--	--	--	--	--	--	--
	06/26/98	11.29	0.00	9.41	--	--	--	--	--	--	--
	09/23/98	11.97	0.00	8.73	--	--	--	--	--	--	--
	12/17/98	11.09	0.00	9.61	--	--	--	--	--	--	--
	03/31/99	10.47	0.00	10.23	--	--	--	--	--	--	--
	06/30/99	9.60	0.00	11.10	--	--	--	--	--	--	--
	12/08/99	11.07	0.00	9.63	--	--	--	--	--	--	--
	06/20/00	11.40	0.00	9.30	--	--	--	--	--	--	--
	12/19/00 <sup>P</sup>	10.90	0.00	9.80	7,010	1,740	<750	4,430	136	438	182
	06/15/01 <sup>NP</sup>	11.31	0.00	9.39	13,700	2,810	<846	2,370	11.2	272	31.1
	06/26/01 <sup>NP</sup>	11.85	0.00	8.85	15,500	1,620	<750	8,780	1,110	1,230	1,020
	09/07/01 <sup>NP</sup>	10.81	0.00	9.89	17,100	4,220	822	5,870	19.9	684	110
10/10/01	NM	--	--	--	--	--	--	--	--	--	
12/28/01	11.29	0.00	9.41	12,200	4,260	711	3,570	180	537	393	
03/08/02	11.49	0.00	9.21	16,400	4,140	769	4,900	142	619	247	
MTCA Method A Cleanup Level					1,000 <sup>a</sup>	5	40	30	20		

Continued on Page 2.

TABLE 1  
GROUNDWATER ANALYTICAL RESULTS  
Tesco Site No. 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	
MW33 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	550	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	5,200	960	<750	630	33	130	270	
	06/25/96	11.05	0.00	9.70	2,700	1,030	<750	230	24.6	46.5	61.1	
	09/27/96	11.13	0.00	9.76	5,150	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	--	--	--	--	--	--	--	--	--	--	
	03/16/98	--	--	--	--	--	--	--	--	--	--	
	06/26/98	11.18	0.00	9.57	--	--	--	--	--	--	--	
	09/23/98	11.90	0.00	8.85	--	--	--	--	--	--	--	
	12/17/98	11.03	0.00	9.72	--	--	--	--	--	--	--	
	03/31/99	10.38	0.00	10.37	--	--	--	--	--	--	--	
	06/30/99	9.52	0.00	11.23	--	--	--	--	--	--	--	
	12/08/99	10.97	0.00	9.78	--	--	--	--	--	--	--	
	06/20/00	11.33	0.00	9.42	--	--	--	--	--	--	--	
	12/19/00	Not Accessible		--	--	--	--	--	--	--	--	--
06/15/01	12.72	2.50	10.16	LPH Present								
06/26/01	NM	--	--	LPH Present								
09/07/01	NM	0.3	--	LPH Present								
10/10/01	NM	--	--	LPH Present								
12/28/01	11.21	0.00	9.54	141,000	25,200	2,580	5,360	32,600	3,410	22,700		
03/08/02	11.37	0.00	9.38	126,000	31,400	3,420	2,660	21,600	3,420	24,800		
MW34 21.42	03/08/95	11.62	0.00	10.08	8,200	1,100	480	2,400	1,500	250	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	560	2,000	
	12/08/95	10.92	0.00	10.50	68,000	2,900	1,600	12,000	9,200	1,200	5,500	
	04/01/96	11.21	0.00	10.21	10,000	1,900	<750	5,500	580	520	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	5,010	2,520	541	1,310	
	03/28/97	11.47	0.00	10.23	--	--	--	--	--	--	--	
	06/30/97 <sup>NP</sup>	11.19	0.00	10.51	2,970	311	<750	1,930	15.7	271	531	
	09/08/97 <sup>NP</sup>	11.74	0.00	9.96	8,390	495	<750	3,920	645	567	1,270	
	12/19/97	NM	--	--	--	--	--	--	--	--	--	
	03/16/98	NM	--	--	--	--	--	--	--	--	--	
	06/26/98 <sup>NP</sup>	11.42	0.00	10.00	76,900	3,090	<750	13,400	11,100	2,310	9,080	
	09/23/98 <sup>NP</sup>	12.23	0.00	9.19	9,040	3,000	799	3,540	243	636	1,650	
	12/17/98 <sup>NP</sup>	11.35	0.00	10.07	80,900	5,470	1,380	14,200	10,800	3,110	11,800	
	03/31/99 <sup>NP</sup>	10.85	0.00	10.57	33,400	1,910	<750	5,970	1,740	1,400	3,820	
	06/30/99 <sup>NP</sup>	10.18	0.00	11.24	28,500	4,840	984	4,340	1,320	1,490	3,610	
	12/08/99 <sup>NP</sup>	11.33	0.00	10.09	62,400	2,900	<1,360	12,900	7,440	3,240	9,210	
	06/20/00 <sup>NP</sup>	11.68	0.00	9.74	25,000	<250	<750	6,360	480	2,190	3,930	
	12/19/00	NM	--	--	--	--	--	--	--	--	--	
06/15/01 <sup>NP</sup>	11.85	0.00	9.57	25,800	4,780	<883	5,300	90.0	1,930	2,190		
06/26/01	NM	--	--	--	--	--	--	--	--	--		
09/07/01 <sup>NP</sup>	11.86	0.00	9.56	17,800	4,510	722	3,540	44.9	1,510	2,180		
10/10/01	NM	--	--	--	--	--	--	--	--	--		
12/28/01	11.46	0.00	9.96	19,000	8,400	752	5,320	1,200	406	1,010		
03/08/02	11.70	0.00	9.72	59,200	8,550	661	7,200	8,610	2,190	8,200		
MW35 20.10	03/08/95	10.67	0.00	9.60	2,600	1,200	1,300	400	<25	120	83	
	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	624	<750	38.8	0.990	10.4	6.18	
	03/28/97 <sup>NP</sup>	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	250	2.62	49.1	8.04	
	06/30/97 <sup>NP</sup>	10.19	0.00	10.08	1,900	<250	<750	348	<2.50	85	7.31	
	09/08/97 <sup>NP</sup>	10.86	0.00	9.41	4,200	<250	<750	1,460	16.2	231	68.2	
	12/19/97	NM	--	--	--	--	--	--	--	--	--	
	03/16/98 <sup>NP</sup>	10.64	0.00	9.46	905	561	<750	410	4.24	<2.50	<5.00	
	06/26/98 <sup>NP</sup>	10.65	0.00	9.45	1,300	682	<750	600	<10.0	45.1	<20.0	
	09/23/98 <sup>NP</sup>	11.38	0.00	8.72	665	659	<750	243	<2.50	<2.50	<5.00	
	12/17/98 <sup>NP</sup>	10.49	0.00	9.61	699	572	<750	402	<2.50	10.8	9.99	
	03/31/99	Obstructed by vehicle		--	--	--	--	--	--	--	--	--
	06/30/99	Obstructed by vehicle		--	--	--	--	--	--	--	--	--
	12/08/99	Obstructed by vehicle		--	--	--	--	--	--	--	--	--
	06/20/00	Obstructed by vehicle		--	--	--	--	--	--	--	--	--
12/19/00	Obstructed by vehicle		--	--	--	--	--	--	--	--	--	
06/15/01	NM	--	--	--	--	--	--	--	--	--		
06/26/01 <sup>NP</sup>	10.60	0.00	9.50	504	464	<750	11.3	27.5	5.52	28.4		
09/04/01 <sup>NP</sup>	10.54	0.00	9.56	263	903	<564	2.36	<0.500	<0.500	<1.00		
10/10/01	NM	--	--	--	--	--	--	--	--	--		
12/28/01	10.54	0.00	9.56	691	1,160	<500	28.7	0.898	14.1	13.2		
03/08/02	10.72	0.00	9.38	538	1,100	<500	16.2	0.939	7.05	6.91		
MTCA Method A Cleanup Level					1,000 <sup>a</sup>	5	40	30	20			

Continued on Page 3.

TABLE 1  
GROUNDWATER ANALYTICAL RESULTS

Tosco Site No. 5353  
600 Westlake Avenue North  
Seattle, Washington  
Page 3 of 6

Well Name	Sample Date	DTW	LPH	GW Elev.	TPH-G	TPH-D	TPH-O	B	T	E	X	
MW36 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 <sup>SP</sup>	6.88	0.00	11.16	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00	
	09/08/97 <sup>SP</sup>	9.21	0.00	8.83	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00	
	12/19/97 <sup>SP</sup>	10.09	0.00	7.71	<50.0	<250	<750	0.606	<0.500	<0.500	<1.00	
	03/16/98 <sup>SP</sup>	9.29	0.00	8.51	56.6	287	<750	<0.500	<0.500	<0.500	<1.00	
	06/26/98 <sup>SP</sup>	8.47	0.00	9.33	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00	
	09/23/98 <sup>SP</sup>	9.89	0.00	7.91	<50.0	<250	<750	0.737	<0.500	<0.500	1.13	
	12/17/98 <sup>SP</sup>	10.00	0.00	7.80	<50.0	288	<750	0.533	<0.500	<0.500	<1.00	
	03/31/99 <sup>SP</sup>	8.96	0.00	8.84	<50.0	321	<750	0.759	<0.500	<0.500	<1.00	
	06/30/99 <sup>SP</sup>	8.44	0.00	9.36	<50.0	<250	<750	1.29	<0.500	<0.500	<1.00	
	12/08/99 <sup>SP</sup>	10.05	0.00	7.75	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00	
	06/20/00 <sup>SP</sup>	8.47	0.00	9.33	172	<250	<750	<0.500	0.583	1.78	11.1	
	12/19/00 <sup>SP</sup>	9.50	0.00	8.30	106	<250	<750	0.529	1.51	1.08	7.14	
	06/15/01 <sup>SP</sup>	8.00	0.00	9.80	<50.0	298	<750	0.691	0.648	0.530	1.53	
	06/26/01	NM	--	--	--	--	--	--	--	--	--	--
	09/07/01 <sup>SP</sup>	8.70	0.00	9.10	<50.0	<250	<500	0.897	<0.500	<0.500	<1.00	
	10/10/01	NM	--	--	--	--	--	--	--	--	--	--
	12/28/01	9.57	0.00	8.23	<50.0	387	<500	0.773	0.748	<0.500	1.78	
	03/08/02	NM	--	--	--	--	--	--	--	--	--	--
	MW37 21.01	03/08/95	11.94	0.00	9.24	34	3,200	1,400	3,100	2,400	1,200	6,700
		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	LPH Present	--	--	--	--	--	--
06/25/96		10.82	0.20	10.19	LPH Present	--	--	--	--	--	--	
09/27/96		11.47	0.05	9.75	LPH Present	--	--	--	--	--	--	
03/28/97 <sup>SP</sup>		11.14	0.25	10.40	60,100	7,570	789	1,530	2,180	1,650	7,440	
03/28/97		11.14	0.25	10.40	297,000	45,100	<8,250	6,570	13,200	4,930	22,900	
06/30/97		10.80	0.02	10.23	LPH Present	--	--	--	--	--	--	
09/08/97		11.41	0.23	9.77	LPH Present	--	--	--	--	--	--	
12/19/97		11.28	0.02	9.75	LPH Present	--	--	--	--	--	--	
03/16/98		11.11	0.01	9.91	LPH Present	--	--	--	--	--	--	
06/26/98		11.32	0.01	9.70	LPH Present	--	--	--	--	--	--	
09/23/98		12.01	0.03	9.03	LPH Present	--	--	--	--	--	--	
12/17/98		11.00	Trace	10.01	LPH Present	--	--	--	--	--	--	
03/31/99		--	Trace	--	LPH Present	--	--	--	--	--	--	
06/30/99		Dry	0.3	--	LPH Present	--	--	--	--	--	--	
12/08/99		11.11	--	9.90	--	--	--	--	--	--	--	
06/20/00		11.50	--	9.51	--	--	--	--	--	--	--	
12/19/00		11.50	0.50	9.94	LPH Present	--	--	--	--	--	--	
06/15/01 <sup>SP</sup>		11.35	0.03	9.68	LPH Present	--	--	--	--	--	--	
06/26/01		NM	--	--	--	--	--	--	--	--	--	
09/07/01 <sup>SP</sup>	11.43	0.00	9.58	189,000	22,100	14,600	3,420	12,600	4,440	27,000		
10/10/01	NM	--	--	--	--	--	--	--	--	--		
12/28/01 <sup>SP</sup>	11.00	0.20	10.18	LPH Present	--	--	--	--	--	--		
03/08/02	11.61	0.40	9.74	LPH Present	--	--	--	--	--	--		
MW38 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	NM	--	--	--	--	--	--	--	--	--	
	03/16/98	NM	--	--	--	--	--	--	--	--	--	
	06/26/98	NM	--	--	--	--	--	--	--	--	--	
	09/23/98	NM	--	--	--	--	--	--	--	--	--	
	12/17/98	NM	--	--	--	--	--	--	--	--	--	
	03/31/99	NM	--	--	--	--	--	--	--	--	--	
	06/30/99	NM	--	--	--	--	--	--	--	--	--	
	12/08/99	NM	--	--	--	--	--	--	--	--	--	
	06/20/00	NM	--	--	--	--	--	--	--	--	--	
	12/19/00	NM	--	--	--	--	--	--	--	--	--	
06/15/01	NM	--	--	--	--	--	--	--	--	--		
06/26/01	NM	--	--	--	--	--	--	--	--	--		
09/07/01	NM	--	--	--	--	--	--	--	--	--		
10/10/01	NM	--	--	--	--	--	--	--	--	--		
12/28/01	8.96	0.00	7.56	<50.0	403	<500	0.636	1.33	0.554	2.59		
03/08/02	NM	--	--	--	--	--	--	--	--	--		

MTCA Method A Cleanup Level  
Continued on page 4.

1,000<sup>B</sup> 5 40 30 20

TABLE 1  
GROUNDWATER ANALYTICAL RESULTS

Toeco Site No. 5353  
600 Westlake Avenue North  
Seattle, Washington  
Page 4 of 6

Well Name	Sample Date	DTW	LPH	GW Elev.	TPH-G	TPH-D	TPH-O	B	T	E	X
MW40 20.89	03/08/95	10.98	0.00	10.14	960	2,600	2,600	11	<0.5	11	<1.0
	06/06/95	11.18	0.00	9.94	1,500	2,300	1,600	6.8	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	520	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	3,550	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 <sup>NP</sup>	11.11	0.00	9.78	325	3,260	12,600	<0.500	0.504	0.663	2.44
	03/16/98	NM	--	--	--	--	--	--	--	--	--
	06/26/98	NM	--	--	--	--	--	--	--	--	--
	09/23/98	NM	--	--	--	--	--	--	--	--	--
	12/17/98 <sup>NP</sup>	10.86	0.00	10.03	384	2,840	9,620	<0.500	<0.500	<0.500	<1.00
	03/31/99	NM	--	--	--	--	--	--	--	--	--
	06/30/99	NM	--	--	--	--	--	--	--	--	--
	12/08/99	NM	--	--	--	--	--	--	--	--	--
	06/20/00	NM	--	--	--	--	--	--	--	--	--
	12/09/00	NM	--	--	--	--	--	--	--	--	--
12/19/00	NM	--	--	--	--	--	--	--	--	--	
06/15/01	NM	--	--	--	--	--	--	--	--	--	
06/26/01	NM	--	--	--	--	--	--	--	--	--	
09/07/01	NM	--	--	--	--	--	--	--	--	--	
10/10/01	NM	--	--	--	--	--	--	--	--	--	
12/28/01	10.75	0.00	10.14	449	4,000	5,090	2.12	2.19	1.38	3.88	
03/08/02	NM	--	--	--	--	--	--	--	--	--	
MW41 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	NM	--	--	--	--	--	--	--	--	--
	03/16/98	NM	--	--	--	--	--	--	--	--	--
	06/26/98	NM	--	--	--	--	--	--	--	--	--
	09/23/98	NM	--	--	--	--	--	--	--	--	--
	12/17/98	NM	--	--	--	--	--	--	--	--	--
	03/31/99	NM	--	--	--	--	--	--	--	--	--
	06/30/99	NM	--	--	--	--	--	--	--	--	--
	12/08/99	NM	--	--	--	--	--	--	--	--	--
	06/20/00	NM	--	--	--	--	--	--	--	--	--
	12/19/00	NM	--	--	--	--	--	--	--	--	--
06/15/01	NM	--	--	--	--	--	--	--	--	--	
06/26/01	NM	--	--	--	--	--	--	--	--	--	
09/07/01	NM	--	--	--	--	--	--	--	--	--	
10/10/01	NM	--	--	--	--	--	--	--	--	--	
12/28/01	NM	--	--	--	--	--	--	--	--	--	
03/08/02	NM	--	--	--	--	--	--	--	--	--	
MW42 20.34	03/08/95	9.45	0.00	10.91	130	670	1,200	790	<25	<25	<50
	06/06/95	9.37	0.00	10.89	120	920	1,500	500	<0.56	<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	190	<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	NM	--	--	--	--	--	--	--	--	--
	03/16/98	9.53	0.00	10.81	--	--	--	--	--	--	--
	06/26/98	9.51	0.00	10.83	--	--	--	--	--	--	--
	09/23/98	9.96	0.00	10.38	--	--	--	--	--	--	--
	12/17/98	9.10	0.00	11.24	--	--	--	--	--	--	--
	03/31/99	9.00	0.00	11.34	--	--	--	--	--	--	--
	06/30/99	8.60	0.00	11.74	--	--	--	--	--	--	--
	12/08/99	8.00	0.00	12.34	--	--	--	--	--	--	--
	06/20/00	NM	--	--	--	--	--	--	--	--	--
	12/19/00	NM	--	--	--	--	--	--	--	--	--
06/15/01	9.41	0.00	10.93	--	--	--	--	--	--	--	
06/26/01	NM	--	--	--	--	--	--	--	--	--	
09/07/01	9.66	0.00	10.68	--	--	--	--	--	--	--	
10/10/01	NM	--	--	--	--	--	--	--	--	--	
12/28/01	10.28	0.00	10.06	--	--	--	--	--	--	--	
03/08/02	9.75	0.00	10.59	--	--	--	--	--	--	--	
MTCA Method A Cleanup Level					1,000*	5	40	30	20		

Continued on page 5.

TABLE 1  
GROUNDWATER ANALYTICAL RESULTS

Tosco Site No. 5353  
600 Westlake Avenue North  
Seattle, Washington  
Page 5 of 6

Well Name	Sample Date	DTW	LPH	GW Elev.	TPH-G	TPH-D	TPH-O	B	T	E	X
MW43 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	1,900	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	4.4	<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 <sup>SP</sup>	7.08	0.00	14.21	<50.0	<250	<750	59.2	<0.500	<0.500	<1.00
	09/08/97 <sup>SP</sup>	11.46	0.00	9.83	83	<250	<750	35.5	<0.500	2.10	3.08
	12/19/97	NM	--	--	--	--	--	--	--	--	--
	03/16/98 <sup>SP</sup>	11.09	0.00	9.95	76.3	408	<750	26.5	<0.500	<0.500	<1.00
	06/26/98 <sup>SP</sup>	11.26	0	9.78	<50.0	346	<750	69.6	<0.500	<0.500	<1.00
	09/23/98 <sup>SP</sup>	11.75	0.00	9.29	<50.0	267	<750	9.05	<0.500	<0.500	<1.00
	12/17/98 <sup>SP</sup>	11.07	0.00	9.97	<50.0	<250	<750	33.0	<0.500	<0.500	<1.00
	03/31/99 <sup>SP</sup>	10.97	0.00	10.07	<50.0	267	<750	9.84	<0.500	0.782	2.47
	06/30/99 <sup>SP</sup>	9.97	0.00	11.07	146	253	<750	28.2	7.47	2.95	17.5
	12/08/99 <sup>SP</sup>	11.06	0.00	9.98	<50.0	<250	<750	20.5	<0.500	<0.500	<1.00
	06/20/00 <sup>SP</sup>	11.40	0.00	9.64	<50.0	<250	<750	3.79	<0.500	<0.500	<1.00
	12/19/00 <sup>SP</sup>	11.40	0.00	9.64	55.9	253	<749	2.97	0.948	0.730	4.78
	06/15/01 <sup>SP</sup>	11.32	0.00	9.72	<50.0	405	<750	0.670	<0.500	<0.500	1.22
	06/26/01	NM	--	--	--	--	--	--	--	--	--
	09/07/01 <sup>SP</sup>	11.46	0.00	9.58	<50.0	<293	<587	<0.500	<0.500	<0.500	<1.00
	10/10/01	NM	--	--	--	--	--	--	--	--	--
	12/28/01	11.17	0.00	9.87	52.0	487	<500	5.61	1.18	0.558	3.34
	03/08/02	NM	--	--	--	--	--	--	--	--	--
	MW44 18.73	03/08/95	9.44	0.00	10.46	<50	290	940	<0.5	<0.5	<0.5
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	520	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 <sup>SP</sup>		7.84	0.00	11.06	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00
09/08/97 <sup>SP</sup>		8.65	0.00	10.25	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00
12/19/97 <sup>SP</sup>		8.51	0.00	10.22	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00
03/16/98 <sup>SP</sup>		8.43	0.00	10.30	60.0	310	<750	<0.500	<0.500	<0.500	<1.00
06/26/98 <sup>SP</sup>		8.37	0.00	10.36	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00
09/23/98 <sup>SP</sup>		9.30	0.00	9.43	<50.0	343	<750	<0.500	<0.500	<0.500	<1.00
12/17/98 <sup>SP</sup>		8.10	0.00	10.83	<50.0	271	<750	<0.500	<0.500	<0.500	<1.00
03/31/99 <sup>SP</sup>		8.18	0.00	10.65	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00
06/30/99 <sup>SP</sup>		8.03	0.00	10.70	<50.0	393	<750	<0.500	0.619	<0.500	1.21
12/08/99 <sup>SP</sup>		8.52	0.00	10.21	<50.0	281	<750	<0.500	<0.500	<0.500	<1.00
06/20/00 <sup>SP</sup>		9.53	0.00	9.20	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00
12/19/00 <sup>SP</sup>		9.20	0.00	9.53	301	330	<750	<0.500	1.64	2.76	22.1
06/15/01 <sup>SP</sup>		8.44	0.00	10.29	<50.0	468	<841	<0.500	<0.500	<0.500	<1.00
06/26/01		NM	--	--	--	--	--	--	--	--	--
09/07/01 <sup>SP</sup>		9.48	0.00	9.25	10,300	4,250	849	1,050	6.97	945	51.0
10/10/01		NM	--	--	--	--	--	--	--	--	--
12/28/01		9.31	0.00	9.42	90.6	823	<500	10.9	1.40	0.644	4.04
03/08/02		NM	--	--	--	--	--	--	--	--	--
MW45 NE		09/07/01 <sup>SP</sup>	9.80	0.00	--	<50.0	375	<606	<0.500	<0.500	<0.500
	10/10/01	NM	--	--	--	--	--	--	--	--	--
	12/28/01	9.03	0.00	--	17,300	2,210	597	2,130	73.4	1,330	2,970
	03/08/02	9.12	0.00	--	15,500	2,380	686	2,090	38.4	1,190	1,650
MW46 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 <sup>SP</sup>	9.40	0.00	7.51	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00
	03/16/98	NM	--	--	--	--	--	--	--	--	--
	06/26/98	NM	--	--	--	--	--	--	--	--	--
	09/23/98	NM	--	--	--	--	--	--	--	--	--
	12/17/98 <sup>SP</sup>	9.20	0.00	7.71	<50.0	354	<750	<0.500	<0.500	<0.500	<1.00
	03/31/99	NM	--	--	--	--	--	--	--	--	--
	06/30/99	NM	--	--	--	--	--	--	--	--	--
	12/08/99	NM	--	--	--	--	--	--	--	--	--
	06/20/00	NM	--	--	--	--	--	--	--	--	--
	12/19/00 <sup>SP</sup>	12.70	0.00	4.21	226	277	<750	<0.500	2.18	2.53	18.0
	06/15/01 <sup>SP</sup>	7.19	0.00	9.72	<50.0	295	<750	<0.500	<0.500	<0.500	1.39
	06/26/01	NM	--	--	--	--	--	--	--	--	--
	09/07/01	NM	--	--	--	--	--	--	--	--	--
	10/10/01	NM	--	--	--	--	--	--	--	--	--
	12/28/01	Covered by Asphalt	--	--	--	--	--	--	--	--	--
	03/08/02	NM	--	--	--	--	--	--	--	--	--

MTCA Method A Cleanup Level

1,000<sup>g</sup>

5

40

30

20

Continued on page 6

TABLE 1  
GROUNDWATER ANALYTICAL RESULTS

Tosco Site No. 5353  
600 Westlake Avenue North  
Seattle, Washington  
Page 6 of 6

Well Name	Sample Date	DTW	LPH	GW Elev.	TPH-G	TPH-D	TPH-O	B	T	E	X
MW47	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	15	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	580	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 <sup>NP</sup>	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	--	--	--	--	--	--	--	--	--	--
	03/16/98	--	--	--	--	--	--	--	--	--	--
	06/26/98 <sup>NP</sup>	10.78	0.00	9.05	<50.0	356	<750	27.3	<0.500	<0.500	<1.00
	09/23/98	--	--	--	--	--	--	--	--	--	--
	12/17/98 <sup>NP</sup>	10.61	0.00	9.22	<50.0	<250	<750	3.34	<0.500	<0.500	1.12
	03/31/99	9.65	0.00	10.18	--	--	--	--	--	--	--
	06/30/99	--	0.00	--	--	--	--	--	--	--	--
	12/08/99	--	--	--	--	--	--	--	--	--	--
	06/20/00 <sup>NP</sup>	10.94	0.00	8.89	<50.0	<250	<750	<1.30	<0.500	<0.500	<1.00
	12/19/00 <sup>NP</sup>	11.20	0.00	8.63	1,310	357	<750	<0.500	6.10	10.6	77.3
	06/15/01	10.98	0.00	8.85	<50.0	591	<952	0.709	0.504	<0.500	1.18
	06/26/01	NM	--	--	--	--	--	--	--	--	--
	09/07/01 <sup>NP</sup>	11.14	0.00	8.69	<50.0	356	<500	<0.500	<0.500	<0.500	<1.00
	10/10/01	NM	--	--	--	--	--	--	--	--	--
	12/28/01	10.90	0.00	8.93	181	542	<500	7.64	1.49	4.79	37.8
	03/08/02	NM	--	--	--	--	--	--	--	--	--
MW50	10/10/01	11.11	0.00	--	8,970	2,200	<606	574	221	382	779
NE	12/28/01	10.45	0.00	--	23,200	3,460	<500	1,630	3,690	991	4,480
	03/08/02	Obstructed by Vehicle	--	--	--	--	--	--	--	--	--
MW51	10/10/01	11.68	0.00	--	671	11,700	2,150	10.1	10.4	7.75	16.6
NE	12/28/01	11.20	0.00	--	631	2,170	3,100	37.0	75.5	30.4	81.2
	03/08/02	11.38	0.00	--	102	2,350	1,610	6.22	5.89	3.84	10.4
MW52	10/10/01	10.79	0.00	--	13,400	1,460	<582	1,150	<10.0	827	793
NE	12/28/01	10.22	0.00	--	7,900	1,690	595	634	5.87	509	479
	03/08/02	10.42	0.00	--	10,100	2,790	<602	814	6.30	602	387
MTCVA Method A Cleanup Level					1,000 <sup>a</sup>	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 NWTPH-Gx.

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

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

BTEX = Aromatic compounds by EPA Method 8021B.

< = Less than the stated laboratory reporting limit.

NE = Not established; NM = Not measured; -- = Not analyzed or sampled.

<sup>NP</sup> = Not purged.

<sup>a</sup> Total Petroleum Hydrocarbons.

Shaded values equal or exceed MTCVA Method A Cleanup Levels.

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

\*MW46 identified as MW9 on chain of custody and official laboratory report.

\*\*SMW3 identified as SMW2 on chain of custody and official laboratory report.





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21 March 2002

John Meyer  
ERI  
815 Industry Dr  
Tukwila, WA/USA 98188  
RE: TOSCO #5353

Enclosed are the results of analyses for samples received by the laboratory on 03/08/02 13:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Amar Gill  
Project Manager



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ERI 815 Industry Dr Tukwila WA/USA, 98188	Project: TOSCO #5353 Project Number: 1020 Project Manager: John Meyer	Reported: 03/21/02 13:21
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**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW32A	B2C0186-01	Water	03/08/02 12:00	03/08/02 13:00
MW33	B2C0186-02	Water	03/08/02 08:50	03/08/02 13:00
MW34	B2C0186-03	Water	03/08/02 12:00	03/08/02 13:00
MW35	B2C0186-04	Water	03/08/02 12:00	03/08/02 13:00
MW45	B2C0186-05	Water	03/08/02 12:00	03/08/02 13:00
MW51	B2C0186-06	Water	03/08/02 07:30	03/08/02 13:00
MW52	B2C0186-07	Water	03/08/02 12:00	03/08/02 13:00

North Creek Analytical - Bothell

*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.*

Amar Gill, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 1 of 10



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ERI Project: TOSCO #5353  
 815 Industry Dr Project Number: 1020 Reported: 03/21/02 13:21  
 Tukwila WA/USA, 98188 Project Manager: John Meyer

**Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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MW32A (B2C0186-01) Water Sampled: 03/08/02 12:00 Received: 03/08/02 13:00

Gasoline Range Hydrocarbons	16400	2500	ug/l	50	2C19010	03/19/02	03/19/02	NWTPH-Gx/8021B	
Benzene	4900	25.0	"	"	"	"	"	"	
Toluene	142	25.0	"	"	"	"	"	"	
Ethylbenzene	619	25.0	"	"	"	"	"	"	
Xylenes (total)	247	50.0	"	"	"	"	"	"	
Surrogate: 4-BFB (FID)	105 %	62-139			"	"	"	"	
Surrogate: 4-BFB (PID)	84.4 %	62-125			"	"	"	"	

MW33 (B2C0186-02) Water Sampled: 03/08/02 08:50 Received: 03/08/02 13:00

Gasoline Range Hydrocarbons	126000	25000	ug/l	500	2C19010	03/19/02	03/19/02	NWTPH-Gx/8021B	
Benzene	2660	250	"	"	"	"	"	"	
Toluene	21600	250	"	"	"	"	"	"	
Ethylbenzene	3420	250	"	"	"	"	"	"	
Xylenes (total)	24800	500	"	"	"	"	"	"	
Surrogate: 4-BFB (FID)	100 %	62-139			"	"	"	"	
Surrogate: 4-BFB (PID)	87.5 %	62-125			"	"	"	"	

MW34 (B2C0186-03) Water Sampled: 03/08/02 12:00 Received: 03/08/02 13:00

Gasoline Range Hydrocarbons	59200	12500	ug/l	250	2C19010	03/19/02	03/19/02	NWTPH-Gx/8021B	
Benzene	7200	125	"	"	"	"	"	"	
Toluene	8610	125	"	"	"	"	"	"	
Ethylbenzene	2190	125	"	"	"	"	"	"	
Xylenes (total)	8200	250	"	"	"	"	"	"	
Surrogate: 4-BFB (FID)	99.0 %	62-139			"	"	"	"	
Surrogate: 4-BFB (PID)	86.7 %	62-125			"	"	"	"	

North Creek Analytical - Bothell

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Amar Gill, Project Manager

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ERI  
 815 Industry Dr  
 Tukwila WA/USA, 98188

Project: TOSCO #5353  
 Project Number: 1020  
 Project Manager: John Meyer

Reported:  
 03/21/02 13:21

**Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>MW35 (B2C0186-04) Water</b> Sampled: 03/08/02 12:00 Received: 03/08/02 13:00									
Gasoline Range Hydrocarbons	638	50.0	ug/l	1	2C19010	03/19/02	03/19/02	NWTPH-Gx/8021B	
Benzene	16.2	0.500	"	"	"	"	"	"	
Toluene	0.939	0.500	"	"	"	"	"	"	
Ethylbenzene	7.05	0.500	"	"	"	"	"	"	
Xylenes (total)	6.91	1.00	"	"	"	"	"	"	
Surrogate: 4-BFB (FID)	168 %	62-139			"	"	"	"	S-04
Surrogate: 4-BFB (PID)	113 %	62-125			"	"	"	"	
<b>MW45 (B2C0186-05) Water</b> Sampled: 03/08/02 12:00 Received: 03/08/02 13:00									
Gasoline Range Hydrocarbons	15500	500	ug/l	10	2C19010	03/19/02	03/19/02	NWTPH-Gx/8021B	
Benzene	2090	25.0	"	50	"	"	03/19/02	"	
Toluene	38.4	5.00	"	10	"	"	03/19/02	"	
Ethylbenzene	1190	25.0	"	50	"	"	03/19/02	"	
Xylenes (total)	1650	10.0	"	10	"	"	03/19/02	"	
Surrogate: 4-BFB (FID)	147 %	62-139			"	"	"	"	S-04
Surrogate: 4-BFB (PID)	95.0 %	62-125			"	"	"	"	
<b>MW51 (B2C0186-06) Water</b> Sampled: 03/08/02 07:30 Received: 03/08/02 13:00									
Gasoline Range Hydrocarbons	102	50.0	ug/l	1	2C19010	03/19/02	03/19/02	NWTPH-Gx/8021B	
Benzene	6.22	0.500	"	"	"	"	"	"	
Toluene	5.89	0.500	"	"	"	"	"	"	
Ethylbenzene	3.84	0.500	"	"	"	"	"	"	
Xylenes (total)	10.4	1.00	"	"	"	"	"	"	
Surrogate: 4-BFB (FID)	95.0 %	62-139			"	"	"	"	
Surrogate: 4-BFB (PID)	84.8 %	62-125			"	"	"	"	

North Creek Analytical - Bothell

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Page 3 of 10



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ERI 815 Industry Dr Tukwila WA/USA, 98188	Project: TOSCO #5353 Project Number: 1020 Project Manager: John Meyer	Reported: 03/21/02 13:21
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**Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B  
 North Creek Analytical - Bothell**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
MW52 (B2C0186-07) Water Sampled: 03/08/02 12:00 Received: 03/08/02 13:00										
Gasoline Range Hydrocarbons	10100	500		ug/l	10	2C19010	03/19/02	03/19/02	NWTPH-Gx/8021B	
Benzene	814	5.00		"	"	"	"	"	"	
Toluene	6.30	5.00		"	"	"	"	"	"	
Ethylbenzene	602	5.00		"	"	"	"	"	"	
Xylenes (total)	387	10.0		"	"	"	"	"	"	
Surrogate: 4-BFB (FID)	146 %	62-139				"	"	"	"	S-04
Surrogate: 4-BFB (PID)	106 %	62-125				"	"	"	"	

North Creek Analytical - Bothell

*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.*

Amar Gill, Project Manager



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ERI 815 Industry Dr Tukwila WA/USA, 98188	Project: TOSCO #5353 Project Number: 1020 Project Manager: John Meyer	Reported: 03/21/02 13:21
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**Semivolatile Petroleum Products by NWTPH-Dx (w/o Acid/Silica Gel Clean-up)**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>MW32A (B2C0186-01) Water</b> <b>Sampled: 03/08/02 12:00</b> <b>Received: 03/08/02 13:00</b>									
Diesel Range Hydrocarbons	4.14	0.250	mg/l	1	2C10004	03/10/02	03/11/02	NWTPH-Dx	
Lube Oil Range Hydrocarbons	0.769	0.500	"	"	"	"	"	"	
Surrogate: 2-FBP	113 %	50-121			"	"	"	"	
Surrogate: Octacosane	102 %	56-123			"	"	"	"	
<b>MW33 (B2C0186-02) Water</b> <b>Sampled: 03/08/02 08:50</b> <b>Received: 03/08/02 13:00</b>									
Diesel Range Hydrocarbons	31.4	2.50	mg/l	10	2C10004	03/10/02	03/12/02	NWTPH-Dx	D-08
Lube Oil Range Hydrocarbons	3.42	0.500	"	1	"	"	03/11/02	"	
Surrogate: 2-FBP	106 %	50-121			"	"	03/12/02	"	
Surrogate: Octacosane	111 %	56-123			"	"	03/11/02	"	
<b>MW34 (B2C0186-03) Water</b> <b>Sampled: 03/08/02 12:00</b> <b>Received: 03/08/02 13:00</b>									
Diesel Range Hydrocarbons	8.55	0.250	mg/l	1	2C10004	03/10/02	03/11/02	NWTPH-Dx	D-08
Lube Oil Range Hydrocarbons	0.661	0.500	"	"	"	"	"	"	
Surrogate: 2-FBP	111 %	50-121			"	"	"	"	
Surrogate: Octacosane	104 %	56-123			"	"	"	"	
<b>MW35 (B2C0186-04) Water</b> <b>Sampled: 03/08/02 12:00</b> <b>Received: 03/08/02 13:00</b>									
Diesel Range Hydrocarbons	1.10	0.250	mg/l	1	2C10004	03/10/02	03/11/02	NWTPH-Dx	
Lube Oil Range Hydrocarbons	ND	0.500	"	"	"	"	"	"	
Surrogate: 2-FBP	96.8 %	50-121			"	"	"	"	
Surrogate: Octacosane	98.6 %	56-123			"	"	"	"	
<b>MW45 (B2C0186-05) Water</b> <b>Sampled: 03/08/02 12:00</b> <b>Received: 03/08/02 13:00</b>									
Diesel Range Hydrocarbons	2.38	0.250	mg/l	1	2C10004	03/10/02	03/11/02	NWTPH-Dx	D-08
Lube Oil Range Hydrocarbons	0.686	0.500	"	"	"	"	"	"	
Surrogate: 2-FBP	101 %	50-121			"	"	"	"	
Surrogate: Octacosane	99.1 %	56-123			"	"	"	"	

North Creek Analytical - Bothell

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Amar Gill, Project Manager

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**Environmental Laboratory Network**



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ERI 815 Industry Dr Tukwila WA/USA, 98188	Project: TOSCO #5353 Project Number: 1020 Project Manager: John Meyer	Reported: 03/21/02 13:21
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**Semivolatile Petroleum Products by NWTPH-Dx (w/o Acid/Silica Gel Clean-up)**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>MW51 (B2C0186-06) Water</b> <b>Sampled: 03/08/02 07:30</b> <b>Received: 03/08/02 13:00</b>									
Diesel Range Hydrocarbons	2.35	0.250	mg/l	1	2C10004	03/10/02	03/11/02	NWTPH-Dx	D-06
Lube Oil Range Hydrocarbons	1.61	0.500	"	"	"	"	"	"	
Surrogate: 2-FBP	97.7 %	50-121			"	"	"	"	
Surrogate: Octacosane	102 %	56-123			"	"	"	"	
<b>MW52 (B2C0186-07) Water</b> <b>Sampled: 03/08/02 12:00</b> <b>Received: 03/08/02 13:00</b>									
Diesel Range Hydrocarbons	2.79	0.301	mg/l	1	2C10004	03/10/02	03/11/02	NWTPH-Dx	
Lube Oil Range Hydrocarbons	ND	0.602	"	"	"	"	"	"	
Surrogate: 2-FBP	108 %	50-121			"	"	"	"	
Surrogate: Octacosane	103 %	56-123			"	"	"	"	

North Creek Analytical - Bothell

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ERI 815 Industry Dr Tukwila WA/USA, 98188	Project: TOSCO #5353 Project Number: 1020 Project Manager: John Meyer	Reported: 03/21/02 13:21
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**Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B - Quality Control  
 North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 2C19010: Prepared 03/19/02 Using EPA 5030B (P/T)

**Blank (2C19010-BLK1)**

Gasoline Range Hydrocarbons	ND	50.0	ug/l							
Benzene	ND	0.500	"							
Toluene	ND	0.500	"							
Ethylbenzene	ND	0.500	"							
Xylenes (total)	ND	1.00	"							
Surrogate: 4-BFB (FID)	37.7		"	48.0		78.5	62-139			
Surrogate: 4-BFB (PID)	36.1		"	48.0		75.2	62-125			

**LCS (2C19010-BS1)**

Gasoline Range Hydrocarbons	556	50.0	ug/l	500		111	80-120			
Benzene	6.84	0.500	"	6.01		114	80-120			
Toluene	32.3	0.500	"	35.8		90.2	80-120			
Ethylbenzene	8.80	0.500	"	8.37		105	80-120			
Xylenes (total)	43.0	1.00	"	41.4		104	80-120			
Surrogate: 4-BFB (FID)	57.2		"	48.0		119	62-139			
Surrogate: 4-BFB (PID)	41.4		"	48.0		86.2	62-125			

**LCS Dup (2C19010-BSD1)**

Gasoline Range Hydrocarbons	498	50.0	ug/l	500		99.6	80-120	11.0	25	
Benzene	6.84	0.500	"	6.01		114	80-120	0.00	40	
Toluene	33.0	0.500	"	35.8		92.2	80-120	2.14	40	
Ethylbenzene	8.80	0.500	"	8.37		105	80-120	0.00	40	
Xylenes (total)	43.4	1.00	"	41.4		105	80-120	0.926	40	
Surrogate: 4-BFB (FID)	53.2		"	48.0		111	62-139			
Surrogate: 4-BFB (PID)	42.4		"	48.0		88.3	62-125			

**Matrix Spike (2C19010-MS1)**

Source: B2C0264-01

Gasoline Range Hydrocarbons	612	50.0	ug/l	500	140	94.4	70-130			
Benzene	6.39	0.500	"	6.01	ND	103	80-120			
Toluene	32.4	0.500	"	35.8	ND	90.2	75-117			
Ethylbenzene	8.63	0.500	"	8.37	ND	103	80-120			
Xylenes (total)	43.7	1.00	"	41.4	1.40	102	80-120			
Surrogate: 4-BFB (FID)	55.1		"	48.0		115	62-139			
Surrogate: 4-BFB (PID)	44.4		"	48.0		92.5	62-125			

North Creek Analytical - Bothell

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ERI 815 Industry Dr Tukwila WA/USA, 98188	Project: TOSCO #5353 Project Number: 1020 Project Manager: John Meyer	Reported: 03/21/02 13:21
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**Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B - Quality Control  
 North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 2C19010: Prepared 03/19/02 Using EPA 5030B (P/T)**

**Matrix Spike Dup (2C19010-MSD1)**

**Source: B2C0264-01**

Gasoline Range Hydrocarbons	623	50.0	ug/l	500	140	96.6	70-130	1.78	25	-
Benzene	6.48	0.500	"	6.01	ND	105	80-120	1.40	40	
Toluene	33.2	0.500	"	35.8	ND	92.4	75-117	2.44	40	
Ethylbenzene	8.87	0.500	"	8.37	ND	106	80-120	2.74	40	
Xylenes (total)	44.4	1.00	"	41.4	1.40	104	80-120	1.59	40	
Surrogate: 4-BFB (FID)	55.8		"	48.0		116	62-139			
Surrogate: 4-BFB (PID)	44.2		"	48.0		92.1	62-125			

North Creek Analytical - Bothell

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ERI 815 Industry Dr Tukwila WA/USA, 98188	Project: TOSCO #5353 Project Number: 1020 Project Manager: John Meyer	Reported: 03/21/02 13:21
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**Semivolatile Petroleum Products by NWTPH-Dx (w/o Acid/Silica Gel Clean-up) - Quality Control**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 2C10004: Prepared 03/10/02 Using EPA 3520C**

**Blank (2C10004-BLK1)**

Diesel Range Hydrocarbons	ND	0.250	mg/l							
Lube Oil Range Hydrocarbons	ND	0.500	"							
Surrogate: 2-FBP	0.304		"	0.320		95.0	50-121			
Surrogate: Octacosane	0.305		"	0.320		95.3	56-123			

**LCS (2C10004-BS1)**

Diesel Range Hydrocarbons	1.92	0.250	mg/l	2.00		96.0	62-122			
Surrogate: 2-FBP	0.291		"	0.320		90.9	50-121			

**LCS Dup (2C10004-BSD1)**

Diesel Range Hydrocarbons	1.66	0.250	mg/l	2.00		83.0	62-122	14.5	40	
Surrogate: 2-FBP	0.267		"	0.320		83.4	50-121			

North Creek Analytical - Bothell

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ERI 815 Industry Dr Tukwila WA/USA, 98188	Project: TOSCO #5353 Project Number: 1020 Project Manager: John Meyer	Reported: 03/21/02 13:21
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**Notes and Definitions**

- D-06 The sample chromatographic pattern does not resemble the fuel standard used for quantitation.
- D-08 Results in the diesel organics range are primarily due to overlap from a gasoline range product.
- S-04 The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
- 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
- RPD Relative Percent Difference

North Creek Analytical - Bothell

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 (541) 383-9310 FAX 382-7588

# TOSCO CHAIN OF CUSTODY REPORT

6200186

**TOSCO INFORMATION**

Facility Number: 3353

Site Address: 600 Westlake N

City, State, ZIP: SATTLER WA

Project/AWO Code: \_\_\_\_\_

Tosco Manager: Tim Johnson

FACILITY TYPE: (check one)  BP  Terminal/Bulk Plant

Brown Bear  Former 76 Site  Other

**CONSISTANT INFORMATION**

Firm: PHI Project# 1020

Address: 85 Industrial Dr

Tokwila WA 98188

Phone: (206) 575-6020 Fax: X6923

Project Manager: SMZ E-mail: \_\_\_\_\_

Sample Collection by: Ray Moore / AL

Quality Assurance Data Level:

A: Standard Summary

B: Standard + Chromatograms

Laboratory Turnaround Days:

5  3  2  1

10 Day - Standard

SAMPLE IDENTIFICATION	SAMPLING DATE / TIME	MATRIX (W.S.O)	# OF CON-TAINERS
1. <u>MW32A</u>	<u>3/8/02</u>	<u>W</u>	<u>5</u>
2. <u>MW33</u>	<u>8:50AM</u>	<u>W</u>	<u>5</u>
3. <u>MW34</u>		<u>W</u>	<u>5</u>
4. <u>MW35</u>		<u>W</u>	<u>5</u>
5. <u>MW45</u>		<u>W</u>	<u>5</u>
6. <u>MW51</u>	<u>7:30AM</u>	<u>W</u>	<u>5</u>
7. <u>MW52</u>		<u>W</u>	<u>5</u>
8.			
9.			
10.			

TPH-HCID	TPH-Gas	BTEX	EPA 8021 Mod	TPH-Gas + BTEX	TPH-Diesel	TPH-Diesel Extended	w/SG Cleanup	Halogen Volatiles	EPA 8021	Pesticides/PCBs or PCBs Only	GCMS Volatiles	GCMS Semi-Vols	EPA 8270	PAH's	8270 SIM or 8310	Lead	Total Dissolved	TCLP or RCRA	Metals (2)	

NCA SAMPLE NUMBER
<u>01</u>
<u>02</u>
<u>03</u>
<u>04</u>
<u>05</u>
<u>06</u>
<u>07</u>

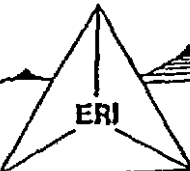
Relinquished by: Ray Moore Date & Time: 3/8/02

Received by: NCA Date & Time: 3/8/02 11:50

Firm: NCA

Comments: Done NCA 3/6/02 1:00 PM

Comments: 1.8 w/o



GROUNDWATER SAMPLING - FIELD LOG

Client Name: TESCO SSS

ERI Job No. 1020

Date: 3/8/02

Page 1 of 1

Field Cleaning Performed: \_\_\_\_\_

Analysis: \_\_\_\_\_

\* Case Volume =  $(d_{case} \cdot d_{well}) \cdot X \cdot F$  where F =  
 0.163 for a 2" inside diameter well casing  
 0.652 for a 4" inside diameter well casing  
 1.467 for a 6" inside diameter well casing

Well No.	Time	Depth Water (ft.)	Depth Well (ft.)	Case Dia. (in)	Case Vol. gal	Purge Vol. (gal)	Conduct. µS/CM (x1000)	Temp. Deg F	pH	TURB. NTU	PID PPM	Comments
MW 31		11.61		2								
MW 32		9.75		2								PLACE SOCK IN WELL (1.20) 0.487 LPH
MW 33		9.12	18.30	2	1.5	4.5						MONITOR ONLY
MW 34		11.38	15.00	2	1	3						
MW 35		10.72	22.80	2	7	24						
MW 36		10.42	17.45	2	1	3						
MW 37		11.49	21.88	2	1.5	4.5						
MW 38		11.70	21.40	2	1.5	4.5						
MW 39		11.37	24.51	2								OBSTRUCTED BY VEHICLE

Revised 3/20/96