

CLUST 1855 unocal station #5028
UST 8472
Blaine

DATE: October 8, 2001

**TOSCO MARKETING COMPANY
GROUNDWATER MONITORING REPORT**

Site No.: 5028 Address: 247 D Street, Blaine, WA
Tosco Project Manager: Timothy D. Johnson
Consultant /Contact Person: Environmental Resolutions, Inc./John Meyer
Primary Agency/Regulatory ID No.: Washington State Department of Ecology

WORK PERFORMED THIS QUARTER(S) [Third - 2001]:

- Monitored and sampled 3 groundwater monitoring wells without purging

WORK PROPOSED FOR NEXT QUARTER [Fourth - 2001]:

- Monitor and sample 3 wells without purging

SUMMARY:

Frequency of Sampling Events:	<u>Quarterly</u>	(Quarterly, etc.)
Approximate Depth to Groundwater:	<u>4 to 7 ft</u>	(Measured Feet)
Groundwater Gradient:	<u>Northerly and Westerly</u>	(Direction)
	<u>0.05 ft/ft</u>	(Magnitude)
Maximum TPH-G/Benzene Concentrations:	<u>41,400/7,880</u>	(ppb)
Measurable Free Product Detected:	<u>No</u>	(Yes - ID wells(s)/No)
Free Product Recovered This Quarter:	<u>None</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 a 2000'	<u>Unknown</u>	(Distance and)
Radius and Respective Direction:	<u>Unknown</u>	Direction)
Current Remedial Action:	<u>ORC</u>	(SVE/AS/P&T etc.)
Permits for Discharge:	<u>None</u>	(NPDES, POTW, etc.)

DISCUSSION:

- 2 of 3 wells sampled contained hydrocarbon concentrations exceeding MTCA Method A Cleanup Levels.

ATTACHMENTS:

Plate 1 - Groundwater Sample Analysis Map, 08/14/01
Table 1 - Groundwater Analytical Results
Laboratory Reports and Chain of Custody Records
Field Data Records

Prepared By:



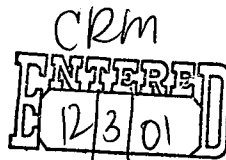
Yukiko Noguchi
Environmental Technician

Reviewed By:



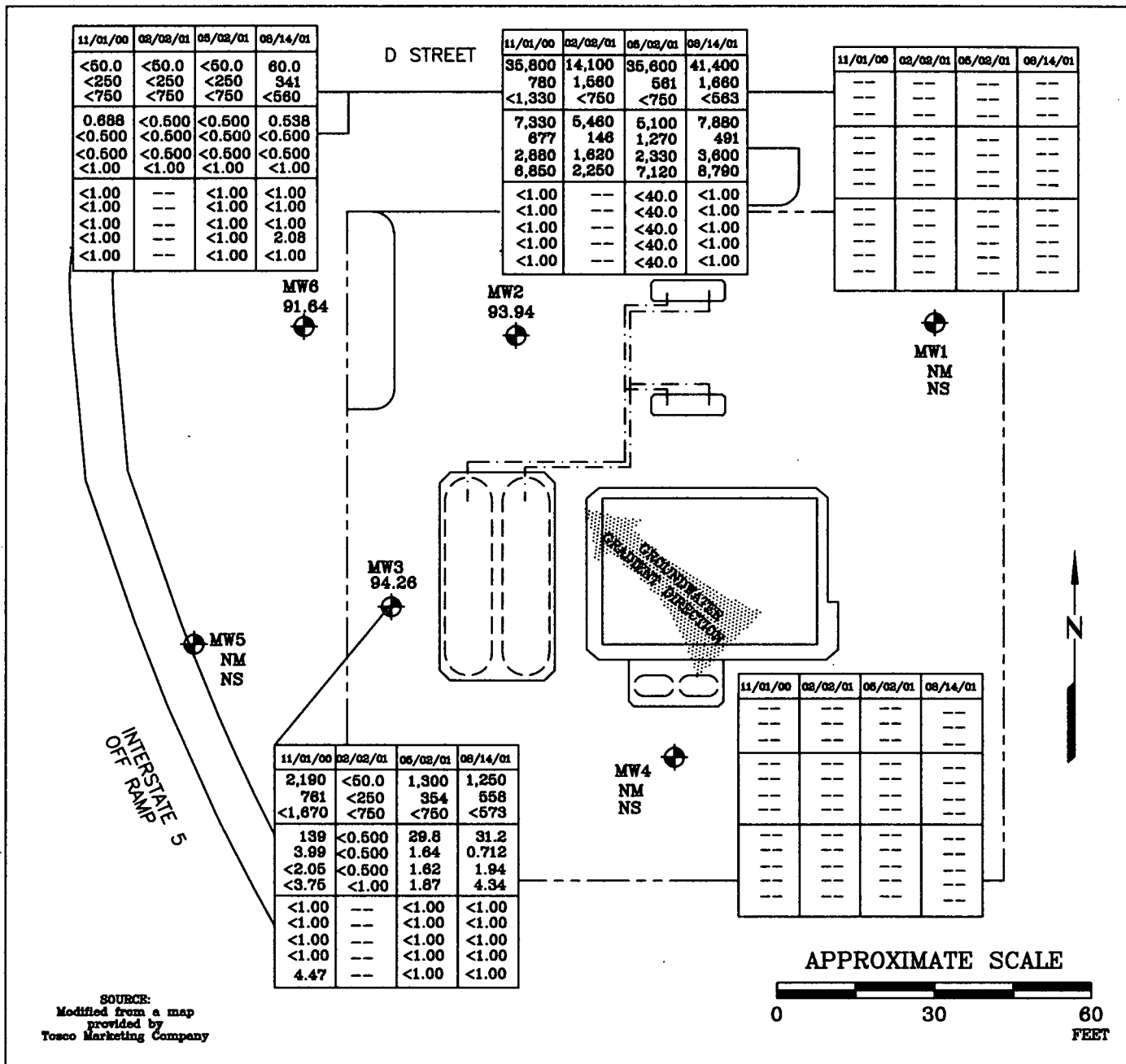
John K. Meyer, R.G.
Branch Manager

cc: Washington State Department of Ecology, NW Region
GeoEngineers



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31017GWS



FN 31017GWS

EXPLANATION

- MW3 Groundwater Monitoring Well
- 93.28 Groundwater Elevation
- NM Not Measured
- NS Not Sampled

Laboratory Results in ug/L (ppb)

8/17/98	Sample Date
2,990	Total Petroleum Hydrocarbons as Gasoline
<250	Total Petroleum Hydrocarbons as Diesel
<750	Total Petroleum Hydrocarbons as Oil
68.4	Benzene
3.29	Toluene
3.57	Ethylbenzene
ND	Total Xylenes
1.51	1,2-Dichloroethene
<1.00	Chloroethane
<1.00	1,1-Dichloroethane
<1.00	1,2-Dichloroethane
30.8	Vinyl Chloride

Numbers in Red Exceed
MTCA Method A Cleanup Levels
-- = Not Analyzed
<1.00 = Less than the Stated
Laboratory Reporting Limit

GROUNDWATER SAMPLE ANALYSIS MAP - 08/14/01

Tosco Facility 5028
247 D Street
Blaine, Washington

PROJECT NO.

31017

PLATE

1

YN: 10/08/01



TABLE 1
GROUNDWATER ANALYTICAL RESULTS
Tosco Facility 5028
247 D Street
Blaine, Washington
Page 1 of 4

Well	Sample Date	DTW	GW Elev.	TPH-G	TPH-D	TPH-O	B	T	E	X	1,2-DCE	CA	1,1-DCA	1,2-DCA	VC	O ₂ Lab	O ₂ Meter
MW1 100.42	07/06/93	4.35	98.07	<50	-	-	<0.1	<0.1	<0.1	<1.0	-	-	-	-	-	-	-
	10/11/94	4.60	95.82	<50	<250	<750	<0.5	<0.5	<0.5	<1.0	-	-	-	-	-	-	-
	01/20/95	3.80	96.62	<50	<250	<750	<0.5	<0.5	<0.5	<1.0	-	-	-	-	-	-	-
	04/21/95	3.77	98.65	<50	<250	<750	<0.5	<0.5	<0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	-	-
	07/24/95	5.13	95.29	<50	<250	<750	<0.5	<0.5	<0.5	<1.0	-	-	-	-	-	-	-
	10/25/95	4.28	96.14	<50	<250	<750	<0.5	<0.5	<0.5	<1.0	-	-	-	-	-	-	-
	01/17/96	2.95	97.47	<50	<250	<750	<0.5	<0.5	<0.5	<1.0	-	-	-	-	-	-	-
	04/18/96	3.30	97.12	-	-	-	-	-	-	-	-	-	-	-	-	4	-
	07/25/96	4.13	96.29	<50	<250	<750	<0.5	<0.5	<0.5	<1.0	-	-	-	-	-	1.8	1.6
	10/16/96	4.74	95.68	-	<250	<750	-	-	-	-	-	-	-	-	-	3.0	2.2
	02/27/97	4.47	95.95	<50	<250	<750	<0.500	<0.500	<0.500	<1.00	-	-	-	-	-	-	1.9
	05/13/97	6.19	94.23	-	-	-	-	-	-	-	-	-	-	-	-	-	6.2
	08/21/97	5.65	94.77	142	387	<750	<0.500	<0.500	<0.500	<1.00	-	-	-	-	-	-	8.0
	11/25/97	4.02	96.40	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	02/13/98	4.01	96.41	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	-	-
	05/19/98	4.31	96.11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	08/17/98	4.94	95.48	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	-	-
	11/19/98	4.28	96.14	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	02/17/99	4.08	96.34	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	-	-
	05/25/99	4.90	95.52	136	<250	<750	<0.500	<0.500	<0.500	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	-	-
	08/12/99	4.94	95.48	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	12/07/99	NM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	02/10/00	NM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	05/31/00	4.96	95.46	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	-	-
	08/31/00	5.00	95.42	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00	-	-	-	-	-	-	-
	11/01/00	NM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	02/02/01	NM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	05/02/01	NM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	08/14/01	NM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW2 98.49	07/06/93	3.87	94.62	7,800	-	-	990	560	140	840	-	-	-	-	-	-	-
	10/11/94	5.20	93.29	2,500	380	<750	1,500	37	220	300	-	-	-	-	-	-	-
	01/20/95	4.19	94.30	14,000	690	<750	5,400	1,300	660	2,300	<1.0	<1.0	<1.0	<1.0	<1.0	-	-
	04/21/95	4.23	94.26	16,000	680	<750	8,600	950	610	2,800	-	-	-	-	-	-	-
	07/24/95	4.71	93.78	4,500	690	<750	4,300	65	430	860	-	-	-	-	-	-	-
	10/25/95	4.04	94.45	12,000	1,000	<750	8,900	390	800	2,000	-	-	-	-	-	-	-
	01/17/96	3.87	94.62	13,000	410	<750	5,300	520	640	2,200	-	-	-	-	-	-	-
	04/18/96	2.67	95.82	31,000	670	<750	5,600	1,900	1,100	4,300	-	-	-	-	-	0.6	-
	07/25/96	4.29	94.20	5,780	689	<750	7,920	169	463	901	-	-	-	-	-	0	1.0
	10/16/96	3.96	94.53	6,680	<250	<750	5,360	252	436	1,120	-	-	-	-	-	0	1.4
	02/27/97	3.67	94.82	16,300	280	<750	6,790	661	632	2,600	-	-	-	-	-	-	0.8
	05/13/97	4.08	94.41	15,800	<250	<750	8,530	1,960	793	3,470	-	-	-	-	-	-	4.6
	08/21/97	4.41	94.08	25,500	<250	<750	8,950	716	652	2,220	-	-	-	-	-	-	4.6
	11/25/97	3.48	95.01	42,400	993	<750	9,070	1,330	1,670	6,620	<20	<20	<20	<20	<20	2.11	-
	02/13/98	3.05	95.44	27,600	455	<750	8,020	664	1,560	5,260	<1.00	<1.00	<1.00	<1.00	<1.00	-	-
	05/19/98	3.71	94.78	54,300	1,300	<750	12,200	2,620	2,340	6,850	<10.0	<10.0	<10.0	<10.0	<10.0	-	-
	08/17/98	4.72	93.77	44,300	750	<750	12,100	644	2,490	6,700	<10.0	<10.0	<10.0	<10.0	<10.0	-	-
	11/19/98	4.18	94.31	30,100	-	-	8,730	435	2,050	6,530	<20.0	<20.0	<20.0	<20.0	<20.0	-	-
	02/17/99	2.66	95.83	24,300	689	<750	7,550	489	1,940	5,070	<20.0	<20.0	<20.0	<20.0	<20.0	-	-
	05/25/99	3.16	95.33	65,900	2,120	<3,750	8,960	3,990	3,100	12,000	<10.0	<10.0	<10.0	<10.0	<10.0	-	-
	08/12/99	3.56	94.93	56,100	991	<750	10,600	1,340	3,660	13,560	<100	<100	<100	<100	<100	-	-
	12/07/99	3.23	95.26	17,700	530	<750	8,280	589	1,790	2,290	<10.0	<10.0	<10.0	<10.0	<10.0	-	-
	02/10/00	2.91	95.58	20,300	532	<1,490	6,540	421	2,050	3,650	<1.00	<1.00	<1.00	<1.00	<1.00	-	-
	05/31/00	3.60	94.89	44,700	637	<750	9,650	793	3,230	8,840	<10.0	<10.0	<10.0	<10.0	<10.0	-	-
	08/31/00	4.65	93.84	33,600	1,020	<750	10,400	110	3,120	5,260	-	-	-	-	-	-	-
	11/01/00	3.78	94.71	35,800	780	<1,330	7,330	677	2,690	6,850	<1.00	<1.00	<1.00	<1.00	<1.00	-	-
	02/02/01	2.94	95.55	14,100	1,560	<750	5,460	146	1,620	2,250	-	-	-	-	-	-	-
	05/02/01	3.88	94.61	35,600	561	<750	5,100	1,270	2,330	7,120	<40.0	<40.0	<40.0	<40.0	<40.0	-	-
	08/14/01	4.55	93.94	41,400	1,680	<563	7,880	1491	3,600	8,790	<1.00	<1.00	<1.00	<1.00	<1.00	-	-
MTCA Method A Cleanup Level				1,000*			5	40	30	20	NA	NA	NA	5	0.2	NA	NA

Continued on Page 2.

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GROUNDWATER ANALYTICAL RESULTS
Tosco Facility 5028
247 D Street
Blaine, Washington
Page 2 of 4

Well	Sample Date	DTW	GW Elev.	TPH-G	TPH-D	TPH-O	B	T	E	X	1,2-DCE	CA	1,1-DCA	1,2-DCA	VC	O ₂ Lab	O ₂ Meter
MW3 98.57	07/06/93	4.39	94.18	1,000	-	-	840	25	570	-	-	-	-	-	-	-	-
	10/11/94	5.54	93.03	21,000	1,200	<750	1,100	21	380	640	-	-	-	-	-	-	-
	01/20/95	5.54	93.03	7,900	2,600	<750	1,990	13	210	150	4.7	<1.0	<1.0	<2.0	40	-	-
	04/21/95	6.63	91.94	6,300	1,900	<750	1,000	11	130	91	3.3	1.2	<1.0	1.9	150	-	-
	07/24/95	6.54	92.03	<50	1,700	<750	4.6	<0.5	0.69	<1.0	1.7	<1.0	<1.0	1.2	53	-	-
	10/25/95	5.39	93.18	11,000	2,400	<750	840	5.8	130	34	4.5	<1.0	<1.0	1.5	74	-	-
	01/17/96	6.30	92.27	5,600	930	<750	480	3.8	56	18	2.1	1.7	<1.0	1.3	32	-	-
	04/18/96	3.72	94.85	7,400	1,200	<750	380	5.3	61	22	2.4	1.5	<1.0	1.5	53	0.4	-
	07/25/96	4.74	93.83	4,340	997	<750	372	<1.0	40.2	<10.0	1.21	<1.0	<1.0	1.27	22.3	1.2	1.0
	10/16/96	5.22	93.35	4,040	<250	<750	171	1.85	27.2	5.04	1.04	1.65	<1.00	1.12	32.1	0.4	-
	02/27/97	3.79	94.78	2,580	<250	<750	261	<2.50	24.1	6.01	1.47	1.85	<1.00	1.39	13.2	-	0.9
	05/13/97	4.54	94.03	186	<250	<750	119	<1.00	8.85	2.35	<1.00	1.31	<1.00	<1.00	15.8	-	5.0
	08/21/97	4.72	93.85	1,760	<250	<750	136	1.96	18.3	5.45	<1.00	2.24	<1.00	<1.00	21.4	-	5.8
	11/25/97	4.19	94.38	1,640	738	<750	36.3	1.80	5.85	3.21	1.07	<1.00	<1.00	<1.00	18.8	2.49	-
	02/13/98	4.35	94.22	1,850	497	<750	85.6	1.86	4.91	2.99	1.16	1.83	<1.00	<1.00	22.7	-	-
	05/19/98	4.78	93.79	2,650	567	<750	83.8	<5.00	9.07	<5.00	1.03	<1.00	<1.00	<1.00	29.5	-	-
	08/17/98	5.29	93.28	2,990	<250	<750	98.4	3.29	3.57	<5.00	1.51	<1.00	<1.00	<1.00	30.6	-	-
	11/19/98	4.89	93.68	1,650	-	<750	40.1	<10.0	2.84	<5.00	1.33	1.05	<1.00	<1.00	47.4	-	-
	02/17/99	Obstructed - Well could not be accessed															
	05/25/99	4.21	94.36	1,100	976	<750	53.8	10.8	4.72	<2.00	<1.00	<1.00	<1.00	<1.00	11.2	-	-
	08/12/99	4.40	94.17	3,030	674	<750	314	23.2	15.0	4.25	<2.00	<2.00	<2.00	<2.00	19.3	-	-
	12/07/99	4.85	93.72	1,910	560	<750	211	12.0	<5.00	<10.0	1.05	1.76	<1.00	<1.00	20.2	-	-
	02/10/00	4.78	93.81	2,080	<250	<750	260	6.55	3.31	<2.30	1.17	<1.00	<1.00	<1.00	15.6	-	-
	05/31/00	4.62	93.95	2,250	489	<750	273	9.06	22.6	7.03	<1.00	<1.00	<1.00	<1.00	<1.00	-	-
	08/31/00	4.97	93.60	3,070	622	<750	268	5.86	9.41	<10.0	-	-	-	-	-	-	-
	11/01/00	4.72	93.85	2,180	761	<1,670	139	3.99	<2.05	<3.75	<1.00	<1.00	<1.00	<1.00	4.47	-	-
	02/02/01	5.85	92.72	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00	-	-	-	-	-	-	-
	05/02/01	3.81	94.76	1,300	354	<750	29.8	1.64	1.62	1.87	<1.00	<1.00	<1.00	<1.00	<1.00	-	-
	08/14/01	4.31	94.26	1,250	558	<573	31.2	0.712	1.94	4.34	<1.00	<1.00	<1.00	<1.00	<1.00	-	-
MW4 99.53	07/06/93	4.78	94.75	<50	320	<1,000	<1.0	<1.0	<1.0	<1.0	9.8	<1.0	<1.0	<1.0	<5.0	-	-
	10/11/94	5.50	94.03	<50	290	<750	<0.5	<0.5	<0.5	<1.0	9.8	<1.0	<1.0	<1.0	<1.0	-	-
	01/20/95	6.53	93.00	<50	<250	<750	<0.5	<0.5	<0.5	<1.0	8.9	<1.0	<1.0	<1.0	<1.0	-	-
	04/21/95	6.62	92.91	<50	<250	<750	<0.5	<0.5	<0.5	<1.0	8.8	<1.0	<1.0	<1.0	<1.0	-	-
	07/24/95	6.83	92.70	<50	<250	<750	<0.5	<0.5	<0.5	<1.0	8.6	<1.0	<1.0	<0.5	<1.0	-	-
	10/25/95	6.41	93.12	<50	<250	<750	<0.5	<0.5	<0.5	<1.0	11	<1.0	<1.0	<0.5	<1.0	-	-
	01/17/96	6.25	93.28	<50	<250	<750	<0.5	<0.5	<0.5	<1.0	7.8	<1.0	<1.0	<0.5	<1.0	-	-
	04/18/96	4.13	95.40	-	-	-	-	-	-	-	-	-	-	-	-	8	-
	07/25/96	4.88	94.65	<50	<250	<750	<0.5	<0.5	<0.5	<1.0	5.15	<1.0	<1.0	<0.5	<1.0	2.0	2.7
	10/16/96	6.55	92.98	-	-	-	-	-	-	-	-	-	-	-	-	4.8	2.4
	02/27/97	6.05	93.48	<50	<250	<750	<0.500	<0.500	<0.500	<1.00	8.33	<1.00	<1.00	<1.00	<1.00	-	2.2
	05/13/97	6.26	93.27	-	-	-	-	-	-	-	-	-	-	-	-	-	7.3
	08/21/97	6.04	93.49	<50	<250	<750	<0.500	<0.500	<0.500	<1.00	10.3	<1.00	<1.00	<1.00	<1.00	-	6.5
	11/25/97	4.88	94.65	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	02/13/98	4.89	94.64	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00	7.76	<1.00	<1.00	<1.00	<1.00	-	-
	05/19/98	5.11	94.42	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	08/17/98	5.20	94.33	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00	5.38	<1.00	<1.00	<1.00	<1.00	-	-
	11/19/98	4.95	94.58	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	02/17/99	4.72	94.81	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00	9.01	<1.00	<1.00	<1.00	<1.00	-	-
	05/25/99	4.66	94.87	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00	6.96	<1.00	<1.00	<1.00	<1.00	-	-
	08/12/99	4.98	94.55	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	12/07/99	NM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	02/10/00	NM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	05/31/00	4.78	94.75	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00	6.11	<1.00	<1.00	<1.00	<1.00	-	-
	08/31/00	5.44	94.09	<50.0	<483	<1390	<0.500	<0.500	<0.500	<1.00	-	-	-	-	-	-	-
	11/01/00	NM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	02/02/01	NM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	05/02/01	NM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	08/14/01	NM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MTCA Method A Cleanup Level				1,000*	5	40	30	20	NA	NA	NA	5	0.2	NA	NA		

Continued on Page 3.

TABLE 1
GROUNDWATER ANALYTICAL RESULTS
Tosco Facility 5028
247 D Street
Blaine, Washington
Page 3 of 4

Well	Sample Date	DTW	GW Elev.	TPH-G	TPH-D	TPH-O	B	T	E	X	1,2-DCE	CA	1,1-DCA	1,2-DCA	VC	O ₂ Lab	O ₂ Meter
MW5 92.96	10/11/94	5.75	87.21	55	660	<750	2.8	<0.5	<0.5	<1.0	--	--	--	--	--	--	--
	01/20/95	3.04	89.92	<50	<250	<750	<0.5	<0.5	<0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	--	--
	04/21/95	3.57	89.39	<50	<250	<750	<0.70	<0.5	<0.5	<1.0	--	--	--	--	--	--	--
	07/24/95	4.37	88.59	<50	<250	<750	<0.88	<0.5	<0.5	<1.0	--	--	--	--	--	--	--
	10/25/95	3.87	89.09	<50	<250	<750	4.1	<0.5	<0.5	<1.0	--	--	--	--	--	--	--
	01/17/96	2.86	90.10	<50	<250	<750	<0.5	<0.5	<0.5	<1.0	--	--	--	--	--	--	--
	04/18/96	3.19	89.77	<50	<250	<750	2.9	<0.5	<0.5	<1.0	--	--	--	--	--	4.8	--
	07/25/96	4.06	88.90	<50	<250	<750	1.97	<0.5	<0.5	<1.0	--	--	--	--	--	0.6	1.2
	10/16/96	3.87	89.09	<50	<250	<750	1.02	<0.500	<0.500	<1.00	--	--	--	--	--	2.0	1.6
	02/27/97	3.09	89.87	<50	<250	<750	0.836	<0.500	<0.500	<1.00	--	--	--	--	--	--	2.2
	05/13/97	3.05	89.91	<50	<250	<750	<0.500	<0.500	<0.500	<1.00	--	--	--	--	--	--	5.1
	08/21/97	3.89	89.07	<50	348	<750	<0.500	<0.500	<0.500	<1.00	--	--	--	--	--	--	6.6
	11/25/97	2.53	90.43	<50	266	<750	0.876	<0.500	<0.500	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	3.02	--
	02/13/98	3.02	89.94	88.9	<250	<750	<6.00	<0.500	<0.500	<2.00	<1.00	<1.00	<1.00	<1.00	<1.00	--	--
	05/19/98	3.65	89.31	160	<250	<750	<5.00	<1.00	<0.500	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	--	--
	08/17/98	4.53	88.43	78.8	<250	<750	<3.00	<0.500	<0.500	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	--	--
	11/19/98	3.33	89.63	<50.0	--	--	<0.500	<0.500	<0.500	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	--	--
	02/17/99	3.21	89.75	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	--	--
	05/25/99	3.66	89.30	<50.0	<250	<750	0.800	<0.500	<0.500	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	--	--
	08/12/99	NM	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	12/07/99	NM	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	02/10/00	Unable to Locate	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	05/31/00	Unable to Locate	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	08/31/00	Unable to Locate	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	11/01/00	Unable to Locate	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	02/02/01	Unable to Locate	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	05/02/01	NM	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	08/14/01	NM	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MTCA Method A Cleanup Level					1,000*		5	40	30	20	NA	NA	NA	5	0.2	NA	NA

Continued on Page 4.

TABLE 1
GROUNDWATER ANALYTICAL RESULTS
Tosco Facility 5028
247 D Street
Blaine, Washington
Page 4 of 4

Well	Sample Date	DTW	GW Elev.	TPH-G	TPH-D	TPH-O	B	T	E	X	1,2-DCE	CA	1,1-DCA	1,2-DCA	VC	O ₂ Lab	O ₂ Meter
MW6 97.84	10/11/94	5.85	91.99	<50	<250	<750	3.2	<0.5	0.53	<1.0	--	--	--	--	--	--	--
	01/20/95	2.36	95.48	<50	260	<750	<0.5	<0.5	<0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	--	--
	04/21/95	3.34	94.50	<50	260	<750	4.5	<0.5	<0.5	<1.0	--	--	--	--	--	--	--
	07/24/95	5	92.84	150	330	<750	3.9	<0.5	2.8	<1.0	--	--	--	--	--	--	--
	10/25/95	4.97	92.87	290	440	<750	2.8	<0.5	2.1	<1.0	--	--	--	--	--	--	--
	01/17/96	2.15	95.69	<50	250	<750	1.6	<0.5	<0.5	<1.0	--	--	--	--	--	--	--
	04/18/96	3.34	94.50	61	250	<750	5.9	<0.5	0.54	<1.0	--	--	--	--	--	8	--
	07/25/96	4.22	93.62	149	321	<750	7.2	<0.5	3.68	1.92	--	--	--	--	--	2.2	2.6
	10/16/96	4.24	93.60	68.3	<250	<750	10.6	<0.500	0.760	<1.00	--	--	--	--	--	1.0	2.5
	02/27/97	4.41	93.43	<50	<250	<750	<0.500	<0.500	<0.500	<1.00	--	--	--	--	--	--	2.6
	05/13/97	4.32	93.52	<50	<250	<750	<0.500	<0.500	<0.500	<1.00	--	--	--	--	--	--	7.9
	08/21/97	5.75	92.09	<50	370	<750	<0.500	<0.500	<0.500	<1.00	--	--	--	--	--	--	6.6
	11/25/97	2.09	95.75	<50	<250	<750	<0.500	<0.500	<0.500	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	4.83	--
	02/13/98	4.23	93.61	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	--	--
	05/19/98	4.26	93.58	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	--	--
	08/17/98	6.46	91.38	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00	<1.00	<1.00	<1.00	1.04	<1.00	--	--
	11/19/98	3.15	94.69	<50.0	--	--	<0.500	<0.500	<0.500	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	--	--
	02/17/99	3.54	94.30	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	--	--
	05/25/99	4.86	92.98	<50.0	341	<750	0.601	<0.500	<0.500	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	--	--
	08/12/99	NM	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	12/07/99	3.11	94.73	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	--	--
	02/10/00	3.60	94.24	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	05/31/00	4.61	93.23	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	--	--
	08/31/00	6.18	91.68	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00	--	--	--	--	--	--	--
	11/01/00	5.07	92.77	<50.0	<250	<750	0.688	<0.500	<0.500	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	--	--
	02/02/01	4.05	93.79	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00	--	--	--	--	--	--	--
	05/02/01	4.04	93.80	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	--	--
	08/14/01	6.20	91.64	60.0	341	<560	0.538	<0.500	<0.500	<1.00	<1.00	<1.00	<1.00	2.08	<1.00	--	--
MTCA Method A Cleanup Level				1,000*			5	40	30	20	NA	NA	NA	5	0.2	NA	NA

EXPLANATION:

Concentrations in ug/L (ppb) except where noted.

Wellhead elevations taken from prior consultant's reports.

DTW = Depth to water in feet below top of casing.

GW Elev. = Groundwater elevation relative to top of casing elevations.

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

TPH-D and TPH-O = Total Petroleum Hydrocarbons as Diesel and Oil, respectively, by Ecology Method NWTPH-D (extended).

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

BTEX = Aromatic compounds by EPA Method 8020 or EPA 8021B; refer to official laboratory reports.

1,2-DCE = Cis 1,2-dichloroethene; CA = Chloroethane; 1,1-DCA = 1,1-dichloroethane; 1,2-DCA = 1,2-dichloroethane; VC = Vinyl chloride.

1,2-DCE, DCA, 1,1-DCA, 1,2-DCA; and VC by EPA 8010B (modified) or EPA 8260B;

refer to official laboratory reports.

< = Less than the stated laboratory reporting limit.

NM = Not measured; NA = Not applicable; -- = Not analyzed or sampled.

Shaded values equal or exceed MTCA Method A Cleanup Levels.

* Total Petroleum Hydrocarbons

Data collected before 11/25/97 are taken from prior consultants.

O₂ Lab = Dissolved oxygen by APHA/EPA Methods; results in parts per million (ppm).

O₂ Meter = Dissolved oxygen in parts per million (ppm) measured with field instrumentation.



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244
425.420.9200 fax 425.420.9210
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776
509.924.9200 fax 509.924.9290
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132
503.906.9200 fax 503.906.9210
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711
541.383.9310 fax 541.382.7588

24 August, 2001

John Meyer
ERI
905 Industry Dr
Tukwila, WA 98188

RE: Tosco #5028 Blaine

Enclosed are the results of analyses for samples received by the laboratory on 08/14/01 14:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Arnel Gill
Project Manager



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425.420.9200 fax 425.420.9210
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776
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ERI
905 Industry Dr
Tukwila WA, 98188

Project: Tosco #5028 Blaine
Project Number: 1017
Project Manager: John Meyer

Reported:
08/24/01 13:54

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW 2	B1H0331-01	Water	08/14/01 11:15	08/14/01 14:00
MW 3	B1H0331-02	Water	08/14/01 12:00	08/14/01 14:00
MW 6	B1H0331-03	Water	08/14/01 12:00	08/14/01 14:00

North Creek Analytical - Bothell

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Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776
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ERI
905 Industry Dr
Tukwila WA, 98188

Project: Tosco #5028 Blaine
Project Number: 1017
Project Manager: John Meyer

Reported:
08/24/01 13:54

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
---------	--------	-----------------	-------	----------	-------	----------	----------	--------	-------

MW 2 (B1H0331-01) Water Sampled: 08/14/01 11:15 Received: 08/14/01 14:00

Gasoline Range Hydrocarbons	41400	2500	ug/l	50	1H21005	08/21/01	08/21/01	NWTPH-Gx/8021B	
Benzene	7880	100	"	200	"	"	08/21/01	"	
Toluene	491	25.0	"	50	"	"	08/21/01	"	
Ethylbenzene	3600	25.0	"	"	"	"	"	"	
Xylenes (total)	8790	50.0	"	"	"	"	"	"	
Surrogate: 4-BFB (FID)	112 %	62-139			"	"	"	"	
Surrogate: 4-BFB (PID)	104 %	62-125			"	"	"	"	

MW 3 (B1H0331-02) Water Sampled: 08/14/01 12:00 Received: 08/14/01 14:00

Gasoline Range Hydrocarbons	1250	50.0	ug/l	1	1H21005	08/21/01	08/21/01	NWTPH-Gx/8021B	
Benzene	31.2	0.500	"	"	"	"	"	"	
Toluene	0.712	0.500	"	"	"	"	"	"	I-06
Ethylbenzene	1.94	0.500	"	"	"	"	"	"	I-06
Xylenes (total)	4.34	1.00	"	"	"	"	"	"	I-06
Surrogate: 4-BFB (FID)	112 %	62-139			"	"	"	"	
Surrogate: 4-BFB (PID)	101 %	62-125			"	"	"	"	

MW 6 (B1H0331-03) Water Sampled: 08/14/01 12:00 Received: 08/14/01 14:00

Gasoline Range Hydrocarbons	60.0	50.0	ug/l	1	1H21005	08/21/01	08/21/01	NWTPH-Gx/8021B	
Benzene	0.538	0.500	"	"	"	"	"	"	
Toluene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	1.00	"	"	"	"	"	"	
Surrogate: 4-BFB (FID)	84.8 %	62-139			"	"	"	"	
Surrogate: 4-BFB (PID)	80.6 %	62-125			"	"	"	"	

North Creek Analytical - Bothell

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425.420.9200 fax 425.420.9210
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776
509.924.9200 fax 509.924.9290
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132
503.906.9200 fax 503.906.9210
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711
541.383.9310 fax 541.382.7588

ERI
905 Industry Dr
Tukwila WA, 98188

Project: Tosco #5028 Blaine
Project Number: 1017
Project Manager: John Meyer

Reported:
08/24/01 13:54

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
MW 2 (B1H0331-01) Water Sampled: 08/14/01 11:15 Received: 08/14/01 14:00									
Diesel Range Hydrocarbons	1.66	0.282	mg/l	1	1H15011	08/15/01	08/20/01	NWTPH-Dx	D-08
Lube Oil Range Hydrocarbons	ND	0.563	"	"	"	"	"	"	
Surrogate: 2-FBP	101 %	50-121			"	"	"	"	
Surrogate: Octacosane	91.9 %	56-123			"	"	"	"	
MW 3 (B1H0331-02) Water Sampled: 08/14/01 12:00 Received: 08/14/01 14:00									
Diesel Range Hydrocarbons	0.558	0.287	mg/l	1	1H15011	08/15/01	08/20/01	NWTPH-Dx	
Lube Oil Range Hydrocarbons	ND	0.573	"	"	"	"	"	"	
Surrogate: 2-FBP	83.4 %	50-121			"	"	"	"	
Surrogate: Octacosane	79.0 %	56-123			"	"	"	"	
MW 6 (B1H0331-03) Water Sampled: 08/14/01 12:00 Received: 08/14/01 14:00									
Diesel Range Hydrocarbons	0.341	0.280	mg/l	1	1H15011	08/15/01	08/20/01	NWTPH-Dx	
Lube Oil Range Hydrocarbons	ND	0.560	"	"	"	"	"	"	
Surrogate: 2-FBP	95.8 %	50-121			"	"	"	"	
Surrogate: Octacosane	89.7 %	56-123			"	"	"	"	

North Creek Analytical - Bothell

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Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776
509.924.9200 fax 509.924.9290
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503.906.9200 fax 503.906.9210
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541.383.9310 fax 541.382.7588

ERI
905 Industry Dr
Tukwila WA, 98188

Project: Tosco #5028 Blaine
Project Number: 1017
Project Manager: John Meyer

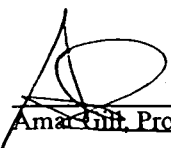
Reported:
08/24/01 13:54

Volatile Organic Compounds by EPA Method 8260B
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW 2 (B1H0331-01) Water Sampled: 08/14/01 11:15 Received: 08/14/01 14:00									
Bromodichloromethane	ND	1.00	ug/l	1	1H14018	08/13/01	08/15/01	EPA 8260B	
Bromoform	ND	1.00	"	"	"	"	"	"	
Bromomethane	ND	2.00	"	"	"	"	"	"	
Carbon tetrachloride	ND	1.00	"	"	"	"	"	"	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloroform	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
Dibromochloromethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	1.00	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Trichlorofluoromethane	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	1.00	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	120 %	73-137			"	"	"	"	
Surrogate: Toluene-d8	97.5 %	75-124			"	"	"	"	
Surrogate: 4-BFB	111 %	77-120			"	"	"	"	

North Creek Analytical - Bothell

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509.924.9200 fax 509.924.9290
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132
503.906.9200 fax 503.906.9210
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711
541.383.9310 fax 541.382.7588

ERI
905-Industry Dr
Tukwila WA, 98188

Project: Tosco #5028 Blaine
Project Number: 1017
Project Manager: John Meyer

Reported:
08/24/01 13:54

Volatile Organic Compounds by EPA Method 8260B
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW 3 (B1H0331-02) Water Sampled: 08/14/01 12:00 Received: 08/14/01 14:00									
Bromodichloromethane	ND	1.00	ug/l	1	1H14018	08/13/01	08/16/01	EPA 8260B	
Bromoform	ND	1.00	"	"	"	"	"	"	
Bromomethane	ND	2.00	"	"	"	"	"	"	
Carbon tetrachloride	ND	1.00	"	"	"	"	"	"	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloroform	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
Dibromochloromethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	1.00	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Trichlorofluoromethane	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	1.00	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	92.0 %	73-137			"	"	"	"	
Surrogate: Toluene-d8	100 %	75-124			"	"	"	"	
Surrogate: 4-BFB	98.5 %	77-120			"	"	"	"	

North Creek Analytical - Bothell

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509.924.9200 fax 509.924.9290
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132
503.906.9200 fax 503.906.9210
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711
541.383.9310 fax 541.382.7588

ERI
905 Industry Dr
Tukwila WA, 98188

Project: Tosco #5028 Blaine
Project Number: 1017
Project Manager: John Meyer

Reported:
08/24/01 13:54

Volatile Organic Compounds by EPA Method 8260B
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW 6 (B1H0331-03) Water Sampled: 08/14/01 12:00 Received: 08/14/01 14:00									
Bromodichloromethane	ND	1.00	ug/l	1	1H14018	08/13/01	08/16/01	EPA 8260B	
Bromoform	ND	1.00	"	"	"	"	"	"	
Bromomethane	ND	2.00	"	"	"	"	"	"	
Carbon tetrachloride	ND	1.00	"	"	"	"	"	"	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloroform	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
Dibromochloromethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	2.08	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	1.00	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Trichlorofluoromethane	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	1.00	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	90.5 %	73-137			"	"	"	"	
Surrogate: Toluene-d8	99.5 %	75-124			"	"	"	"	
Surrogate: 4-BFB	99.5 %	77-120			"	"	"	"	

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509.924.9200 fax 509.924.9290
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132
503.906.9200 fax 503.906.9210
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541.383.9310 fax 541.382.7588

ERI
905 Industry Dr
Tukwila WA, 98188

Project: Tosco #5028 Blaine
Project Number: 1017
Project Manager: John Meyer

Reported:
08/24/01 13:54

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 1H21005: Prepared 08/21/01 Using EPA 5030B (P/T)

Blank (1H21005-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)	35.5		"	48.0		74.0	62-139			
Surrogate: 4-BFB (PID)	37.1		"	48.0		77.3	62-125			

LCS (1H21005-BS1)

Gasoline Range Hydrocarbons	493	50.0	ug/l	500		98.6	80-120			
Benzene	6.27	0.500	"	6.01		104	80-120			
Toluene	34.3	0.500	"	36.1		95.0	80-120			
Ethylbenzene	9.51	0.500	"	8.37		114	80-120			
Xylenes (total)	43.0	1.00	"	42.0		102	80-120			
Surrogate: 4-BFB (FID)	49.2		"	48.0		102	62-139			
Surrogate: 4-BFB (PID)	41.2		"	48.0		85.8	62-125			

LCS Dup (1H21005-BSD1)

Gasoline Range Hydrocarbons	493	50.0	ug/l	500		98.6	80-120	0.00	25	
Benzene	6.29	0.500	"	6.01		105	80-120	0.318	40	
Toluene	34.4	0.500	"	36.1		95.3	80-120	0.291	40	
Ethylbenzene	9.55	0.500	"	8.37		114	80-120	0.420	40	
Xylenes (total)	44.8	1.00	"	42.0		107	80-120	4.10	40	
Surrogate: 4-BFB (FID)	50.9		"	48.0		106	62-139			
Surrogate: 4-BFB (PID)	43.2		"	48.0		90.0	62-125			

Matrix Spike (1H21005-MS1)

Source: B1H0432-01

Gasoline Range Hydrocarbons	456	50.0	ug/l	500	ND	88.6	70-130			
Benzene	6.31	0.500	"	6.01	ND	105	80-120			
Toluene	34.5	0.500	"	36.1	ND	95.1	75-117			
Ethylbenzene	9.48	0.500	"	8.37	ND	113	80-120			
Xylenes (total)	44.9	1.00	"	42.0	ND	107	80-120			
Surrogate: 4-BFB (FID)	48.9		"	48.0		102	62-139			
Surrogate: 4-BFB (PID)	43.5		"	48.0		90.6	62-125			

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Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132
503.906.9200 fax 503.906.9210
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541.383.9310 fax 541.382.7588

ERI
905 Industry Dr
Tukwila WA, 98188

Project: Tosco #5028 Blaine
Project Number: 1017
Project Manager: John Meyer

Reported:
08/24/01 13:54

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 1H21005: Prepared 08/21/01 Using EPA 5030B (P/T)

Matrix Spike Dup (1H21005-MSD1)

Source: B1H0432-01

Gasoline Range Hydrocarbons	482	50.0	ug/l	500	ND	93.8	70-130	5.54	25	
Benzene	6.49	0.500	"	6.01	ND	108	80-120	2.81	40	
Toluene	35.6	0.500	"	36.1	ND	98.1	75-117	3.14	40	
Ethylbenzene	9.79	0.500	"	8.37	ND	117	80-120	3.22	40	
Xylenes (total)	46.7	1.00	"	42.0	ND	111	80-120	3.93	40	
Surrogate: 4-BFB (FID)	50.4		"	48.0		105	62-139			
Surrogate: 4-BFB (PID)	44.4		"	48.0		92.5	62-125			

North Creek Analytical - Bothell

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Anna Gill, Project Manager

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509.924.9200 fax 509.924.9290
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503.906.9200 fax 503.906.9210
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541.383.9310 fax 541.382.7588

ERI
905-Industry Dr
Tukwila WA, 98188

Project: Tosco #5028 Blaine
Project Number: 1017
Project Manager: John Meyer

Reported:
08/24/01 13:54

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
Batch 1H15011: Prepared 08/15/01 Using EPA 3520C										
Blank (1H15011-BLK1)										
Diesel Range Hydrocarbons	ND	0.250	mg/l							
Lube Oil Range Hydrocarbons	ND	0.500	"							
Surrogate: 2-FBP	0.288		"	0.320		90.0	50-121			
Surrogate: Octacosane	0.274		"	0.320		85.6	56-123			
LCS (1H15011-BS1)										
Diesel Range Hydrocarbons	1.80	0.250	mg/l	2.00		90.0	62-122			
Surrogate: 2-FBP	0.317		"	0.320		99.1	50-121			
LCS Dup (1H15011-BSD1)										
Diesel Range Hydrocarbons	1.99	0.250	mg/l	2.00		99.5	62-122	10.0	40	
Surrogate: 2-FBP	0.336		"	0.320		105	50-121			

North Creek Analytical - Bothell

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509.924.9200 fax 509.924.9290
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132
503.906.9200 fax 503.906.9210
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711
541.383.9310 fax 541.382.7588

ERI
905-Industry Dr
Tukwila WA, 98188

Project: Tosco #5028 Blaine
Project Number: 1017
Project Manager: John Meyer

Reported:
08/24/01 13:54

Volatile Organic Compounds by EPA Method 8260B - 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 1H14018: Prepared 08/14/01 Using EPA 5030B [P/T]

Blank (1H14018-BLK1)

Bromodichloromethane	ND	1.00	ug/l							
Bromoform	ND	1.00	"							
Bromomethane	ND	2.00	"							
Carbon tetrachloride	ND	1.00	"							
Chlorobenzene	ND	1.00	"							
Chloroethane	ND	1.00	"							
Chloroform	ND	1.00	"							
Chloromethane	ND	5.00	"							
Dibromochloromethane	ND	1.00	"							
1,2-Dichlorobenzene	ND	1.00	"							
1,3-Dichlorobenzene	ND	1.00	"							
1,4-Dichlorobenzene	ND	1.00	"							
1,1-Dichloroethane	ND	1.00	"							
1,2-Dichloroethane	ND	1.00	"							
1,1-Dichloroethene	ND	1.00	"							
cis-1,2-Dichloroethene	ND	1.00	"							
trans-1,2-Dichloroethene	ND	1.00	"							
1,2-Dichloropropane	ND	1.00	"							
cis-1,3-Dichloropropene	ND	1.00	"							
trans-1,3-Dichloropropene	ND	1.00	"							
Methylene chloride	ND	5.00	"							
1,1,2,2-Tetrachloroethane	ND	1.00	"							
Tetrachloroethene	ND	1.00	"							
1,1,1-Trichloroethane	ND	1.00	"							
1,1,2-Trichloroethane	ND	1.00	"							
Trichloroethene	ND	1.00	"							
Trichlorofluoromethane	ND	1.00	"							
Vinyl chloride	ND	1.00	"							
Surrogate: 1,2-DCA-d4	20.8		"	20.0		104	73-137			
Surrogate: Toluene-d8	20.3		"	20.0		102	75-124			
Surrogate: 4-BFB	20.1		"	20.0		100	77-120			

North Creek Analytical - Bothell

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Amber Gill, Project Manager

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509.924.9200 fax 509.924.9290
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132
503.906.9200 fax 503.906.9210
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711
541.383.9310 fax 541.382.7588

ERI
905 Industry Dr
Tukwila WA, 98188

Project: Tosco #5028 Blaine
Project Number: 1017
Project Manager: John Meyer

Reported:
08/24/01 13:54

Volatile Organic Compounds by EPA Method 8260B - 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 1H14018: Prepared 08/14/01 Using EPA 5030B [P/T]

LCS (1H14018-BS1)

Chlorobenzene	10.2	1.00	ug/l	10.0		102	77-120			
1,1-Dichloroethene	9.46	1.00	"	10.0		94.6	80-120			
Trichloroethene	9.36	1.00	"	10.0		93.6	80-120			
Surrogate: 1,2-DCA-d4	20.3		"	20.0		102	73-137			
Surrogate: Toluene-d8	19.5		"	20.0		97.5	75-124			
Surrogate: 4-BFB	19.9		"	20.0		99.5	77-120			

LCS Dup (1H14018-BSD1)

Chlorobenzene	9.72	1.00	ug/l	10.0		97.2	77-120	4.82	20	
1,1-Dichloroethene	9.28	1.00	"	10.0		92.8	80-120	1.92	20	
Trichloroethene	9.22	1.00	"	10.0		92.2	80-120	1.51	20	
Surrogate: 1,2-DCA-d4	19.7		"	20.0		98.5	73-137			
Surrogate: Toluene-d8	19.9		"	20.0		99.5	75-124			
Surrogate: 4-BFB	20.1		"	20.0		100	77-120			

Matrix Spike (1H14018-MS1)

Source: B1H0213-01RE1

Chlorobenzene	191	20.0	ug/l	200	ND	95.5	75-125			
1,1-Dichloroethene	205	20.0	"	200	ND	102	40-154			
Trichloroethene	207	20.0	"	200	ND	94.5	73-131			
Surrogate: 1,2-DCA-d4	22.1		"	20.0		110	73-137			
Surrogate: Toluene-d8	20.2		"	20.0		101	75-124			
Surrogate: 4-BFB	19.1		"	20.0		95.5	77-120			

Matrix Spike Dup (1H14018-MSD1)

Source: B1H0213-01RE1

Chlorobenzene	204	20.0	ug/l	200	ND	102	75-125	6.58	20	
1,1-Dichloroethene	210	20.0	"	200	ND	105	40-154	2.41	30	
Trichloroethene	215	20.0	"	200	ND	98.5	73-131	3.79	20	
Surrogate: 1,2-DCA-d4	22.3		"	20.0		112	73-137			
Surrogate: Toluene-d8	21.0		"	20.0		105	75-124			
Surrogate: 4-BFB	19.2		"	20.0		96.0	77-120			

North Creek Analytical - Bothell

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Andy Gill, Project Manager

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Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132
503.906.9200 fax 503.906.9210
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541.383.9310 fax 541.382.7588

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905 Industry Dr
Tukwila WA, 98188

Project: Tosco #5028 Blaine
Project Number: 1017
Project Manager: John Meyer

Reported:
08/24/01 13:54

Notes and Definitions

D-08 Results in the diesel organics range are primarily due to overlap from a gasoline range product.
I-06 The analyte concentration may be artificially elevated due to coeluting compounds or components.
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

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.


Andy Gill, Project Manager

North Creek Analytical, Inc.
Environmental Laboratory Network

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TOSCO CHAIN OF CUSTODY REPORT

B1H0331

TOSCO INFORMATION	
Facility Number:	5028
Site Address:	247 D St.
City, State, ZIP:	BLAINE, WA
Project/AWO Code	
Tosco Manager:	TIM JOHNSON
FACILITY TYPE: (check one)	
☐ Brown Bear	☒ Former 76 Site
☐ BP/	☐ Terminal/Bulk Plant
☐ Other	

CONSULTANT INFORMATION	
Firm:	EPI
Project#	1017
Address:	905 INDUSTRY DR TUKWILA, WA 98188
Phone:	(206) 575-6220
Fax:	X 6423
Project Manager:	JOHN MEYER
E-mail:	
Sample Collection by:	ROY MORSE

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. MW2	8/14/01 11:15am	W	3
2. MW3	1	W	3
3. MW6	12:00pm	W	3
4.			
5.			
6.			
7.			
8.			
9.			
10.			

	OR	WA	AK	NW Series	ID
TPH-HCID					
TPH-Gas					
BTEX					
EPA 8021 Mod.					
TPH-Gas + BTEX					
TPH-Diesel					
TPH-Diesel Extended					
TPH-Diesel-Ext. w/SG Cleanup					
Halogen. Volatiles					
EPA 8021					
Pesticides/PCBs or PCBs Only					
GC/MS Volatiles					
EPA 8260 HALO					
GC/MS Semi Vols.					
EPA 8270					
PAH's:					
8270 SIM or 8310					
Lead:					
Total or Dissolved					
TCLP or RCRA					
Metals (8)					

NCA SAMPLE NUMBER

01
02
03

Relinquished by:	Firm:	Date & Time	Received by:	Firm:	Date & Time
1. Roy F. Morse	EPI	8/14/01	[Signature]	NCA	8/14/01 14:00
2.					
3.					

Comments:

W/O 3.1

GROUNDWATER SAMPLING - FIELD LOG

Client Name: TOSCO
Location: BLAINE
Field Crew: ROY MORSE

ERI Job No. 31017 Date: 8/14/01
Field Cleaning Performed: _____
Analysis: _____ • - Case Volume

Date: 8/14/01

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- Case Volume = $(d_{\text{out}} - d_{\text{inner}})_{\text{in R}} \times F$ 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

[illegible]

Revised 7/20/92

ENVIRONMENTAL RESOLUTIONS, INC.