

September 25, 2002
Project 9077.15.01

PORTLAND, OREGON
SEATTLE, WASHINGTON
VANCOUVER, WASHINGTON

Ms. Krystal Rodriguez
Washington Department of Ecology
15 West Yakima Avenue, Suite 200
Yakima, Washington 98902-3452

Re: Remediation System Performance Report, Former Unocal Bulk Fuel Terminal
#0082, Chelan, Washington

Dear Ms. Rodriguez:

On behalf of Unocal RRMC (Unocal), Maul Foster & Alongi, Inc. (MFA) has prepared this report to describe the performance of an air sparging and soil vapor extraction (SVE) system at the above-referenced site. The site is located at the intersection of Highway 97 and East Street in Chelan, Washington. The site is approximately 200 feet south of Lake Chelan. The location of the site is shown on Figure 1. This report describes the air sparging and SVE system, presents the data collected during system operation, details the performance of the system, and presents the July 2002 quarterly groundwater sampling results.

REMEDIATION SYSTEM INSTALLATION SUMMARY

Based on the results of groundwater sampling events conducted in 1998 and 1999, petroleum hydrocarbon concentrations greater than Model Toxics Control Act (MTCA) Method A cleanup levels¹ were present in the groundwater beneath the eastern part of the site in the vicinity of wells MW-1 and MW-5. In May and July 2001, MFA installed an air sparging and SVE system to remediate the hydrocarbon-impacted groundwater beneath the site and the hydrocarbon-impacted soil that occurred within the zone of groundwater fluctuation [approximately 14 to 28 feet below ground surface (bgs)]. On May 24 and 25, 2001, three air sparging points (AS-1, AS-2, and AS-3) were drilled and installed within the estimated area of impacted groundwater, and spaced so that the area would be effectively remediated (Figure 2). Each sparge point was constructed with 2-inch-diameter, schedule 40 PVC casing and a micro-porous bubbler screen. The 2-foot-long

¹ Chapter 173-340 WAC, "Model Toxics Control Act Cleanup Regulation; Method A Cleanup Levels."
Amended February 12, 2001.

JULY 2002 GROUNDWATER SAMPLING RESULTS

On July 22 and 23, 2002, MFA collected groundwater samples from all of the monitoring wells (MW-1 through MW-8) at the site for laboratory analysis. Prior to sampling, the depths to groundwater were measured in the wells by using an electronic water level probe. The depths to groundwater ranged from 13.77 to 19.47 feet. The depth to groundwater measurements were converted to groundwater elevations by using the results of a well elevation survey conducted by Erlandsen Associates, Inc. of Chelan, Washington. The groundwater elevations in the wells ranged from 1,097.98 to 1,098.03 feet above mean sea level (msl). In July 2002, the groundwater table beneath the site was relatively flat, and the general groundwater flow direction beneath the site was to the east-southeast. Previous monitoring events have shown inconsistent groundwater flow directions beneath the site due to low horizontal hydraulic gradients (0.0005 to 0.003 feet per foot). The groundwater monitoring data from the July 2002 sampling event and previous sampling events are presented in Table 3. Figure 3 is a groundwater elevation contour map of the July 2002 data.

The depth to groundwater measurements were used to calculate the volume of standing water in each well casing (pore volume). Before sample collection, at least three pore volumes were removed from each well by using a disposable PVC bailer. Field parameters of pH, specific conductance, and temperature were measured following removal of each pore volume. A groundwater sample was collected following stabilization of the field parameters to less than a 10 percent variation in parameter measurements between pore volumes. Each sample was labeled, placed into an iced cooler, and submitted to NCA by using standard chain-of-custody protocol. A new disposable bailer was used to collect the sample set at each well. The purge water is temporarily stored on site in a properly labeled, 55-gallon drum pending off-site disposal.

The groundwater samples were analyzed for TPH-D and TPH-O by Ecology Method NWTPH-Dx (after silica gel/sulfuric acid cleanup), and for BTEX and TPH-G. The analytical results showed that the sample from well MW-5 contained a TPH-D concentration (842 $\mu\text{g/L}$) that exceeded the MTCA Method A cleanup level. MW-5 also contained benzene and ethylbenzene concentrations (2.11 and 0.57 $\mu\text{g/L}$, respectively) that were below the Method A cleanup levels. The samples from wells MW-1 and MW-8 contained TPH-D concentrations (346 and 319 $\mu\text{g/L}$, respectively) that were below the Method A cleanup level. The samples from wells MW-2, MW-3, MW-4, MW-6, and MW-7 did not contain petroleum hydrocarbon concentrations above the MRLs. The groundwater sample analytical results from the July 2002 event and the previous sampling

events are presented in Table 2. The benzene concentrations from the July 2002 sampling event are presented on Figure 3. A copy of the laboratory report is attached.

CONCLUSIONS

An air sparging and SVE system was installed at the site in May and July 2001, and was activated on August 5, 2001. The purpose of the system was to remediate the petroleum hydrocarbon-impacted groundwater beneath the site and the hydrocarbon-impacted soil that occurred within the zone of groundwater fluctuation. The SVE system extracted a total of approximately 648 pounds (97 gallons) of volatile petroleum hydrocarbons. During the system operation, the hydrocarbon mass removal rates ranged from 0.23 to 5.25 pounds per day. The carbon treatment system effectively reduced the extracted hydrocarbon concentrations to below the temporary air permit emission standard. After obtaining approval from Ecology, the carbon canisters were removed from the system on June 21, 2002. By July 2002, the hydrocarbon concentrations in the extracted vapors had decreased to below 10 ppm-v. Based on the low extracted hydrocarbon concentrations, the system was permanently deactivated on July 22, 2002. The equipment and enclosure was removed from the site on July 23, 2002.

The results of the quarterly groundwater sampling events conducted in August and November 2001 and in January, April, and July 2002 showed that the air sparging operations reduced the volatile petroleum hydrocarbon concentrations in the groundwater. By July 2002, the groundwater sample from well MW-5 contained a TPH-D concentration (842 µg/L) that exceeded the MTCA Method A cleanup level. The samples from all of the other wells contained petroleum hydrocarbons that were below the Method A cleanup levels or MRLs. Since December 1996, the groundwater samples from wells MW-2, MW-3, MW-4, MW-6, and MW-7 have contained petroleum hydrocarbon concentrations below the Method A cleanup levels or MRLs. Since the well was installed in May 2001, the groundwater samples from MW-8 have contained petroleum hydrocarbon concentrations below the Method A cleanup levels or MRLs. Since August 2001, groundwater samples from MW-1 and MW-5 have contained petroleum hydrocarbon concentrations above the Method A cleanup levels; however, the concentrations decreased during the system operations and the samples from the wells located in all directions from MW-1 and MW-5 have consistently contained hydrocarbon concentrations below the Method A cleanup levels or MRLs.

Unocal plans to obtain a deed restriction for the site that precludes the use of the shallow groundwater. Since the groundwater sampling results show that the impacted

Ms. Krystal Rodriguez
September 25, 2002
Page 7

Project 9077.15.01

groundwater beneath the site occurs in a localized area and is not migrating off site, and a deed restriction will prevent the use of the groundwater, MFA believes that a no further action (NFA) status is appropriate for the site groundwater.

If you have any questions, please call Mike Staton at (425) 744-1489.

Sincerely,

Maul Foster & Alongi, Inc.



Carol L. Lybeer
Project Engineer



Michael D. Staton
Principal Geologist

Attachments: Limitations
Tables 1, 2, and 3
Figures 1, 2, and 3
Laboratory Reports

LIMITATIONS

The services described in this report were performed consistent with generally accepted professional consulting principles and practices. No other warranty, express or implied, is made. These services were performed consistent with our agreement with our client. This report is solely for the use and information of our client unless otherwise noted. Any reliance on this report by a third party is at such party's sole risk.

Opinions and recommendations contained in this report apply to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames and project parameters indicated. We are not responsible for the impacts of any changes in environmental standards, practices or regulations subsequent to performance of services. We do not warrant the accuracy of information supplied by others, nor the use of segregated portions of this report.

Table 1
Hydrocarbon Mass Removal/Emission Results
Soil Vapor Extraction System
Former Unocal Bulk Fuel Terminal #0082
Chelan, Washington

Date	Flow at Manifold		Flow at Stack		PID (ppm-v)		Vacuum at Manifold (inches of water)	Air Sample (ppm-v)		Hydrocarbons Removed (lbs/day)	Hydrocarbons Emitted (lbs/day)	Total Hydrocarbons Removed (pounds)
	(fpm)	(cfm)	(fpm)	(cfm)	Manifold	Stack		Manifold	Stack			
8/9/01	4,700	103	2,200	192	14.5	0.0	28	NA	<2.36 ^a	0.58	0.09	—
8/15/01	5,300	116	2,000	175	44.8	0.1	22	NA	NA	2.01	0.01	7.75
8/15/01	Deactivated System due to overheating of sparge compressor.											
9/5/01	Reactivated system.											
9/5/01	5,900	129	2,200	192	32.0	0.0	27	NA	NA	1.60	0.00	7.75
9/10/01	5,000	109	2,400	209	33.0	0.0	19	39.2	NA	1.66	0.00	15.89
9/26/01	NM	125 ^b	NM	125 ^b	40.0	5.0	21	NA	NA	1.94	0.24	44.64
10/9/01	NM	150 ^b	NM	150 ^b	55.4	5.4	4	NA	NA	3.22	0.31	78.17
10/11/01	NM	121 ^b	NM	121 ^b	54.8	5.8	24	NA	NA	2.57	0.27	83.96
10/23/01	5,500	120	1,800	157	57.0	0.1	30	NA	NA	2.65	0.01	115.28
11/13/01	4,100	89	1,400	122	60.5	3.9	26	NA	NA	2.10	0.18	165.14
11/13/01	System shut down from 11/13/01 to 11/14/01 for groundwater sampling.											
11/15/01	4,100	89	1,400	122	28.2	3.8	26	9.62	<2.36 ^a	0.33	0.06	166.35
12/11/01	4,900	107	1,400	122	29.8	0.2	42	NA	NA	1.23	0.01	186.74
1/4/02	4,200	92	1,500	131	43.3	3.5	21	NA	NA	1.54	0.18	220.01
1/30/02	System down upon arrival due to power outage. Reactivated system.											
1/31/02	4,400	96	1,300	113	74.2	5.5	20	126	2.95	4.69	0.13	263.58
2/21/02	4,800	105	1,400	122	43	0.3	18	NA	NA	1.75	0.01	331.12
2/23/02	4,900	107	1,450	126	61	1.2	17	NA	NA	2.53	0.06	335.40
3/23/02	4,700	103	1,400	122	132	29	16	NA	NA	5.25	1.37	444.32
5/1/02	4,400	96	1,400	122	31	4.6	17	40.3	4.85	1.50	0.23	575.95
6/10/02	4,200	92	1,400	122	25	1.2	19	NA	NA	0.89	0.06	623.75
7/22/02	4,500	98	1,000	87	6	6	27	NA	NA	0.23	0.20	647.83

Table 2

Groundwater Sample Analytical Results
Former Unocal Bulk Fuel Terminal #0082
Chelan, Washington

Well Number	Date Collected	Benzene ^a (µg/L)	Toluene ^a (µg/L)	Ethylbenzene ^a (µg/L)	Total Xylenes ^a (µg/L)	TPH-G ^b (µg/L)	TPH-D ^c (µg/L)	TPH-O ^d (µg/L)	Dissolved Lead ^e (µg/L)	
MTCA Method A Cleanup Levels ^f		5	1,000	700	1,000	800	500	500	15	
MW-1	12/4/89	270	150	94	700	NA	NA	3,800 ^g	NA	
	4/9/91	280	50	41	270	2,800 ^h	<1,000 ^{h,j}	NA	10	
	8/27/91	84	8.3	6.8	57	3,000 ^h	15,000 ^b	5,300 ⁱ	12	
	11/23/91	250	71	43	350	12,000 ^h	19,000 ^b	14,000 ⁱ	59	
	2/20/92	Well was dry at time of sampling.								
	5/21/92	1.2	<0.5	0.57	4.3	1,200	9,900	25,000	19	
	8/19/92	28	5.0	4.7	24	570	16,000	NA	17	
	11/12/92	75	53	19	150	1,600	12,000	NA	NA	
	2/25/93	Well was dry at time of sampling.								
	8/24/93	15	1.6	2.2	9.1	240	18,000	<3,800 ^j	NA	
	7/8/94	0.88	<0.5	<0.5	<1.0	<50	3,200	930	6.4	
	1/4/95	27	0.83	2.4	4.9	730	2,000	1,900	7.1	
	6/29/95	0.69	<0.5	<0.5	<1.0	<50	5,600	2,000	5.5	
	12/29/95	28	4.4	1.2	33	200	21,000	6,800	6.2	
	6/19/96	13.7	<0.5	<0.5	2.29	411	15,500	4,020	4.1	
	12/13/96	55	9.2	15.8	112	1,290	1,910	<750 ^j	<10	
	7/1/97	5.4	<0.5	<0.5	1.0	94.8	1,200	<750 ^j	2.9	
	12/30/97	33.6	<25	<25	124	10,490	4,800	<750 ^j	7.4	
	6/12/98	1.29	<0.5	<0.5	<1.0	<50	<250	<750 ^j	4.6	
	12/7/98	34.4	7.21	15.8	115	841	792	<750 ^j	4.7	
	6/21/99	1.31	0.10	<0.5	1.09	<50	<250	<750 ^j	2.6	
	5/25/01	0.67	<0.5	<0.5	1.24	117	889	<500	NA	
	8/9/01	1.89	<0.5	1.67	7.70	114	2,370	<500	NA	
	11/13/01	<0.5	<0.5	<0.5	<1.0	61.6	435	<500	NA	
	1/30/02	<0.5	<0.5	<0.5	<1.0	168	1,820	<500	NA	
	4/29/02	Well was dry at time of sampling.								
	7/23/02	<0.5	<0.5	<0.5	<1.0	<50	346	<500	NA	

Table 2

Groundwater Sample Analytical Results
Former Unocal Bulk Fuel Terminal #0082
Chelan, Washington

Well Number	Date Collected	Benzene ^a (µg/L)	Toluene ^a (µg/L)	Ethylbenzene ^a (µg/L)	Total Xylenes ^a (µg/L)	TPH-G ^b (µg/L)	TPH-D ^c (µg/L)	TPH-O ^d (µg/L)	Dissolved Lead ^e (µg/L)
MTCA Method A Cleanup Levels ^f									
MW-2	12/4/89	5	1,000	700	1,000	800	500	500	15
	4/9/91	<0.5	<0.5	<0.5	<0.5	NA	NA	230 ^j	NA
	8/27/91	<0.5	<0.5	<0.5	<0.5	<1,000 ^{h,j}	<1,000 ^{h,j}	NA	9.0
	11/23/91	<0.5	<0.5	<0.5	<0.5	<1,000 ^{h,j}	<1,000 ^{h,j}	<1,000 ^{h,j}	<2.0
	2/20/92	<0.5	<0.5	<0.5	<0.5	<1,000 ^{h,j}	<1,000 ^{h,j}	<1,000 ^{h,j}	<3.0
	5/21/92	<0.5	<0.5	<0.5	<0.5	<50	<500	<1,000 ^j	3.3
	8/19/92	Well was not sampled.							
	11/12/92	<0.5	<0.5	<0.5	<0.5	<100	1,000	NA	NA
	2/25/93	Well was dry at time of sampling.							
	8/24/93	<0.5	<0.5	<0.5	<0.5	<100	<250	<750 ^j	NA
	7/8/94	<0.5	<0.5	<0.5	<1.0	<50	<250	<750 ^j	NA
	1/4/95	<0.5	<0.5	<0.5	<1.0	<50	340	720	NA
	6/29/95	<0.5	<0.5	<0.5	<1.0	<50	<250	<750 ^j	NA
	12/29/95	<0.5	<0.5	<0.5	<1.0	<50	2,000	1,400	NA
	6/19/96	<0.5	<0.5	<0.5	<1.0	<50	518	<750 ^j	NA
	12/13/96	<0.5	<0.5	<0.5	<1.0	<50	<250	<750 ^j	NA
	7/1/97	<0.5	<0.5	<0.5	<1.0	<50	<250	<750 ^j	NA
	12/30/97	NA	NA	NA	NA	NA	287	<750 ^j	NA
	6/12/98	NA	NA	NA	NA	<50	<250	<750 ^j	NA
	12/7/98	NA	NA	NA	NA	NA	<250	<750 ^j	NA
	6/21/99	NA	NA	NA	NA	NA	<250	<750 ^j	NA
	5/25/01	<0.5	<0.5	<0.5	<1.0	<50	<250	<500	NA
	8/9/01	<0.5	<0.5	<0.5	<1.0	<50	<301	<602 ^j	NA
	11/13/01	<0.5	<0.5	<0.5	<1.0	<50	<250	<500	NA
	1/30/02	<0.5	<0.5	<0.5	<1.0	<50	<250	<500	NA
	4/29/02	Well was dry at time of sampling.							
	7/22/02	<0.5	<0.5	<0.5	<1.0	<50	<250	<500	NA

Table 2

Groundwater Sample Analytical Results
Former Unocal Bulk Fuel Terminal #0082
Chelan, Washington

Well Number	Date Collected	Benzene ^a (µg/L)	Toluene ^a (µg/L)	Ethylbenzene ^a (µg/L)	Total Xylenes ^a (µg/L)	TPH-G ^b (µg/L)	TPH-D ^c (µg/L)	TPH-O ^d (µg/L)	Dissolved Lead ^e (µg/L)
MTCA Method A Cleanup Levels ^f		5	1,000	700	1,000	800	500	500	15
MW-3	12/4/89	<0.5	<0.5	<0.5	<0.5	NA	NA	9,300 ⁱ	NA
	4/9/91	3.9	<0.5	<0.5	1.6	<1,000 ^{gj}	<1,000 ^{hj}	NA	12
	8/27/91	<0.5	<0.5	<0.5	<0.5	<1,000 ^{gj}	<1,000 ^{hj}	<1,000 ^{ij}	<2.0
	11/23/91	1.2	<0.5	<0.5	<0.5	<1,000 ^{gj}	<1,000 ^{hj}	<1,000 ^{ij}	<3.0
	2/20/92	<0.5	<0.5	<0.5	<0.5	<1,000 ^{gj}	12,000 ^b	6,600 ⁱ	<3.0
	5/21/92	1.0	<0.5	<0.5	<0.5	100	3,500	9,000	2.9
	8/19/92	4.4	<0.5	<0.5	<1.0	<50	1,800	NA	<2.0
	11/12/92	<0.5	<0.5	<0.5	<0.5	<100	1,800	NA	NA
	2/25/93	1.4	<0.5	<0.5	<0.5	<100	2,600	NA	NA
	8/24/93	1.6	<0.5	<0.5	<0.5	<100	1,000	<750 ^j	NA
	7/8/94	0.95	<0.5	<0.5	<1.0	<50	2,000	1,200	NA
	1/4/95	2.8	<0.5	<0.5	<1.0	59	11,000	2,400	NA
	6/29/95	<0.5	<0.5	<0.5	<1.0	<50	2,300	1,700	NA
	12/29/95	<0.5	<0.5	<0.5	<1.0	<50	5,100	2,900	NA
	6/19/96	<0.5	<0.5	<0.5	<1.0	<50	4,790	1,940	NA
	12/13/96	<0.5	<0.5	<0.5	<1.0	<50	<250	<750 ^j	NA
	7/1/97	<0.5	<0.5	<0.5	<1.0	<50	<250	<750 ^j	NA
	12/30/97	NA	NA	<0.5	NA	NA	280	<750 ^j	NA
	6/12/98	NA	NA	NA	NA	NA	<250	<750 ^j	NA
	12/7/98	NA	NA	NA	NA	NA	<250	<750 ^j	NA
	6/21/99	NA	NA	NA	NA	NA	<250	<750 ^j	NA
	5/25/01	<0.5	<0.5	<0.5	<1.0	<50	<250	<500	NA
	8/9/01	<0.5	<0.5	<0.5	<1.0	<50	<250	<500	NA
	11/13/01	<0.5	<0.5	<0.5	<1.0	<50	<250	<500	NA
	1/30/02	1.35	<0.5	<0.5	<1.0	55	379	<500	NA
	4/29/02	<0.5	<0.5	<0.5	<1.0	<50	<250	<500	NA
	7/22/02	<0.5	<0.5	<0.5	<1.0	<50	<250	<500	NA

Table 2

Groundwater Sample Analytical Results
Former Unocal Bulk Fuel Terminal #0082
Chelan, Washington

Well Number	Date Collected	Benzene ^a (µg/L)	Toluene ^a (µg/L)	Ethylbenzene ^a (µg/L)	Total Xylenes ^a (µg/L)	TPH-G ^b (µg/L)	TPH-D ^c (µg/L)	TPH-O ^d (µg/L)	Dissolved Lead ^e (µg/L)
MTCA Method A Cleanup Levels ^f									
MW-4	4/9/91	5	1,000	700	1,000	800	500	500	15
	8/27/91	<0.5	<0.5	<0.5	<0.5	<1,000 ^{g,j}	<1,000 ^{h,j}	NA	45
	11/23/91	<0.5	<0.5	<0.5	<0.5	<1,000 ^{g,j}	<1,000 ^{h,j}	<1,000 ^{i,j}	15
	2/20/92	<0.5	<0.5	<0.5	<0.5	<1,000 ^{g,j}	<1,000 ^{h,j}	<1,000 ^{i,j}	15
	5/21/92	<0.5	<0.5	<0.5	<0.5	<50	600	2,100	41
	8/19/92	Well was not sampled.							
	11/12/92	Well was not sampled.							
	2/25/93	Well was dry at time of sampling.							
	8/24/93	<0.5	<0.5	<0.5	<0.5	<100	280	<750 ⁱ	NA
	7/8/94	<0.5	<0.5	<0.5	<1.0	<50	630	910	2.9
	1/4/95	<0.5	<0.5	<0.5	<1.0	<50	750	880	6.4
	6/29/95	<0.5	<0.5	<0.5	<1.0	<50	490	1,500	2.2
	12/29/95	<0.5	<0.5	<0.5	<1.0	<50	1,700	1,400	6.3
	6/19/96	<0.5	<0.5	<0.5	<1.0	<50	2,530	1,840	5.7
	12/13/96	<0.5	<0.5	<0.5	<1.0	<50	<250	<750 ⁱ	<10
	7/1/97	<0.5	<0.5	<0.5	<1.0	<50	<250	<750 ⁱ	4.2
	12/30/97	NA	NA	NA	NA	NA	<250	<750 ⁱ	3.2
	6/12/98	NA	NA	NA	NA	NA	<250	<750 ⁱ	2.4
	12/7/98	NA	NA	NA	NA	NA	<250	<750 ⁱ	2.4
	6/21/99	NA	NA	NA	NA	NA	<250	<750 ⁱ	NA
	5/25/01	<0.5	<0.5	<0.5	<1.0	<50	<250	<500	NA
	8/9/01	<0.5	<0.5	<0.5	<1.0	<50	<250	<500	NA
	11/14/01	<0.5	<0.5	<0.5	<1.0	<50	<250	<500	NA
	1/30/02	<0.5	<0.5	<0.5	<1.0	<50	<250	<500	NA
	4/29/02	Well was dry at time of sampling.							
	7/22/02	<0.5	<0.5	<0.5	<1.0	<50	<250	<500	NA

Table 2

Groundwater Sample Analytical Results
Former Unocal Bulk Fuel Terminal #0082
Chelan, Washington

Well Number	Date Collected	Benzene ^a (µg/L)	Toluene ^a (µg/L)	Ethylbenzene ^a (µg/L)	Total Xylenes ^a (µg/L)	TPH-G ^b (µg/L)	TPH-D ^c (µg/L)	TPH-O ^d (µg/L)	Dissolved Lead ^e (µg/L)	
MTCA Method A Cleanup Levels ^f		5	1,000	700	1,000	800	500	500	15	
MW-5	4/9/91	300	20	78	410	3,200 ^g	<1,000 ^{h,j}	NA	<5.0	
	8/27/91	270	21	38	460	7,000 ^g	20,000 ^b	2,500 ⁱ	<4.0	
	11/23/91	280	12	100	350	6,000 ^g	17,000 ^b	9,400 ⁱ	<3.0	
	2/20/92	220	28	120	440	4,000 ^g	8,000 ^b	5,200 ⁱ	<3.0	
	5/21/92	160	11	170	190	2,500	9,900	6,800	5.3	
	8/19/92	130	6.1	70	180	2,200	NA	NA	<2.0	
	11/12/92	91	5.8	<0.5	110	2,100	15,000	NA	NA	
	2/25/93	Well was dry at time of sampling.								
	8/24/93	86	4.1	47	92	1,500	11,000	<3,800 ^j	NA	
	7/8/94	67	3.5	43	130	3,000	16,000	3,000	NA	
	1/4/95	<0.5	0.91	20	53	1,000	13,000	2,300	NA	
	6/29/95	73	9.5	110	260	3,300	11,000	2,900	NA	
	12/29/95	70	2.6	37	47	1,300	23,000	8,900	NA	
	6/19/96	43.1	3.85	55.7	122	2,200	17,500	5,540	NA	
	12/13/96	51.8	2.94	34	65	1,130	853	<750 ^j	NA	
	7/1/97	87.7	14.4	144	294	3,890	557	<750 ^j	NA	
	12/30/97	62.8	6.01	55	155	1,920	525	<750 ^j	NA	
	6/12/98	88.1	13.4	76.6	400	3,800	295	<750 ^j	NA	
	12/7/98	77	8.74	68	260	1,860	388	<750 ^j	NA	
	6/21/99	31.1	1.24	<0.5	74.9	1,050	468	<750 ^j	NA	
	5/25/01	56.2	8.18	88.2	221	1,740	8,250	<500	NA	
	8/9/01	50.3	2.69	34.1	71.8	1,030	8,600	502	NA	
	11/13/01	0.72	<0.5	<0.5	1.69	<50	275	<500	NA	
	1/30/02	21.5	0.96	7.66	14.2	222	309	<500	NA	
	4/29/02	2.46	<0.5	3.88	6.65	525	2,040	<500	NA	
	7/23/02	2.11	<0.5	0.57	<1.0	<50	842	<500	NA	

Table 2

Groundwater Sample Analytical Results
Former Unocal Bulk Fuel Terminal #0082
Chelan, Washington

Well Number	Date Collected	Benzene ^a (µg/L)	Toluene ^a (µg/L)	Ethylbenzene ^a (µg/L)	Total Xylenes ^a (µg/L)	TPH-G ^b (µg/L)	TPH-D ^c (µg/L)	TPH-O ^d (µg/L)	Dissolved Lead ^e (µg/L)
MTC A Cleanup Levels ^f									
MW-6	4/9/91	5	1,000	700	1,000	800	500	500	15
	8/27/91	<0.5	<0.5	<0.5	<0.5	<1,000 ^{g,j}	<1,000 ^{h,j}	NA	<5.0
	11/23/91	<0.5	<0.5	<0.5	<0.5	<1,000 ^{g,j}	<1,000 ^{h,j}	<1,000 ^{h,j}	<2.0
	2/20/92	<0.5	<0.5	<0.5	<0.5	<1,000 ^{g,j}	<1,000 ^{h,j}	<1,000 ^{h,j}	<3.0
	5/21/92	<0.5	<0.5	<0.5	<0.5	<50	<500	1,700	<3.0
	8/19/92	<0.5	<0.5	<0.5	<0.5	<50	<250	NA	4.7
	11/12/92	<0.5	<0.5	<0.5	<0.5	<100	<500	NA	<2.0
	2/25/93	Well was dry at time of sampling.							
	8/24/93	<0.5	<0.5	<0.5	<0.5	<100	NA	NA	NA
	7/8/94	<0.5	<0.5	<0.5	<1.0	<50	360	840	NA
	1/4/95	<0.5	<0.5	<0.5	<1.0	<50	470	800	NA
	6/29/95	<0.5	<0.5	<0.5	<1.0	<50	260	1,000	NA
	12/29/95	<0.5	<0.5	<0.5	<1.0	<50	270	890	NA
	6/19/96	<0.5	<0.5	<0.5	<1.0	<50	NA	NA	NA
	12/13/96	<0.5	<0.5	<0.5	<1.0	<50	<250	<750 ⁱ	NA
	7/1/97	<0.5	<0.5	<0.5	<1.0	<50	<250	<750 ⁱ	NA
	12/30/97	NA	NA	NA	NA	NA	<250	<750 ⁱ	NA
	6/12/98	NA	NA	NA	NA	NA	<250	<750 ⁱ	NA
	12/7/98	NA	NA	NA	NA	NA	<250	<750 ⁱ	NA
	6/21/99	NA	NA	NA	NA	NA	<250	<750 ⁱ	NA
	5/25/01	<0.5	<0.5	<0.5	<1.0	<50	<250	<500	NA
	8/9/01	<0.5	<0.5	<0.5	<1.0	<50	<250	<500	NA
	11/14/01	<0.5	<0.5	<0.5	<1.0	<50	<250	<500	NA
	1/30/02	<0.5	<0.5	<0.5	<1.0	<50	<250	<500	NA
	4/29/02	Well was dry at time of sampling.							
	7/22/02	<0.5	<0.5	<0.5	<1.0	<50	<250	<500	NA

Table 2

Groundwater Sample Analytical Results
Former Unocal Bulk Fuel Terminal #0082
Chelan, Washington

Well Number	Date Collected	Benzene ^a (µg/L)	Toluene ^a (µg/L)	Ethylbenzene ^a (µg/L)	Total Xylenes ^a (µg/L)	TPH-G ^b (µg/L)	TPH-D ^c (µg/L)	TPH-O ^d (µg/L)	Dissolved Lead ^e (µg/L)	
MTCA Method A Cleanup Levels ^f	11/15/92	5	1,000	700	1,000	800	500	500	15	
		<0.5	<0.5	<0.5	0.7	<100	1,700	NA	NA	
MW-7	Well was dry at time of sampling.									
	2/25/93	<0.5	<0.5	<0.5	<0.5	<100	<250	<750 ⁱ	NA	
	8/24/93	<0.5	<0.5	<0.5	<1.0	<50	600	1,300	2.0	
	7/8/94	<0.5	<0.5	<0.5	<1.0	<50	1,300	1,200	<2.0	
	1/4/95	<0.5	<0.5	<0.5	<1.0	<50	370	1,000	NA	
	6/29/95	<0.5	<0.5	<0.5	<1.0	<50	510	1,000	NA	
	12/29/95	<0.5	<0.5	<0.5	<1.0	<50	841	789	NA	
	6/19/96	<0.5	<0.5	<0.5	<1.0	<50	<250	<750 ⁱ	NA	
	12/13/96	<0.5	<0.5	<0.5	<1.0	<50	<250	<750 ⁱ	NA	
	7/1/97	<0.5	<0.5	<0.5	<1.0	<50	<250	<750 ⁱ	NA	
	12/30/97	NA	NA	NA	NA	NA	<250	<750 ⁱ	NA	
	6/12/98	NA	NA	NA	NA	NA	<250	<750 ⁱ	NA	
	12/7/98	NA	NA	NA	NA	NA	<250	<750 ⁱ	NA	
	6/21/99	NA	NA	NA	NA	NA	<250	<750 ⁱ	NA	
	5/25/01	<0.5	<0.5	<0.5	<1.0	<50	<250	<500	NA	
	8/9/01	<0.5	<0.5	<0.5	<1.0	<50	<250	<500	NA	
	11/13/01	<0.5	<0.5	<0.5	<1.0	<50	<250	<500	NA	
1/30/02	<0.5	<0.5	<0.5	<1.0	<50	<250	<500	NA		
4/29/02	Well was dry at time of sampling.									
7/22/02	<0.5	<0.5	<0.5	<1.0	<50	<250	<500	NA		

Table 2

Groundwater Sample Analytical Results
Former Unocal Bulk Fuel Terminal #0082
Chelan, Washington

Well Number	Date Collected	Benzene ^a (µg/L)	Toluene ^a (µg/L)	Ethylbenzene ^a (µg/L)	Total Xylenes ^a (µg/L)	TPH-G ^b (µg/L)	TPH-D ^c (µg/L)	TPH-O ^d (µg/L)	Dissolved Lead ^e (µg/L)
MTC A Method A Cleanup Levels ^f									
MW-8	5/25/01	5	1,000	700	1,000	800	500	500	15
	8/9/01	<0.5	<0.5	<0.5	<1.0	<50	<250	<500	NA
	11/14/01	<0.5	<0.5	<0.5	<1.0	<50	<250	<500	NA
	1/30/02	<0.5	<0.5	<0.5	<1.0	<50	<250	<500	NA
	4/29/02	<0.5	<0.5	<0.5	<1.0	<50	<250	<500	NA
	7/23/02	<0.5	<0.5	<0.5	<1.0	<50	319	<500	NA

NOTES:

µg/L = micrograms per liter; approximates parts per billion.

Shaded values exceed MTC A Method A cleanup levels.

NA = Not analyzed.

^a Benzene, toluene, ethylbenzene, and total xylenes by EPA Methods 8020 or 8021B.

^b TPH as gasoline (TPH-G) by Ecology Methods WTPH-G or NWTPH-Gx.

^c TPH as diesel (TPH-D) by Ecology Methods WTPH-D or NWTPH-Dx (after sulfuric acid/silica gel cleanup).

^d TPH as oil (TPH-O) by Ecology Methods WTPH-418.1 or NWTPH-418.1 or NWTPH-Dx (after sulfuric acid/silica gel cleanup).

^e Dissolved lead by EPA Method 7421.

^f Chapter 173-340 WAC, "Model Toxics Control Act Cleanup Regulation; Method A Cleanup Levels for Ground Water." Amended February 12, 2001.

^g TPH-G by EPA Method 8015 modified.

^h TPH-D by EPA Method 8015 modified.

ⁱ TPH-O by EPA Method 418.1.

^j Method reporting limit exceeded the MTC A Method A cleanup level.

Table 3

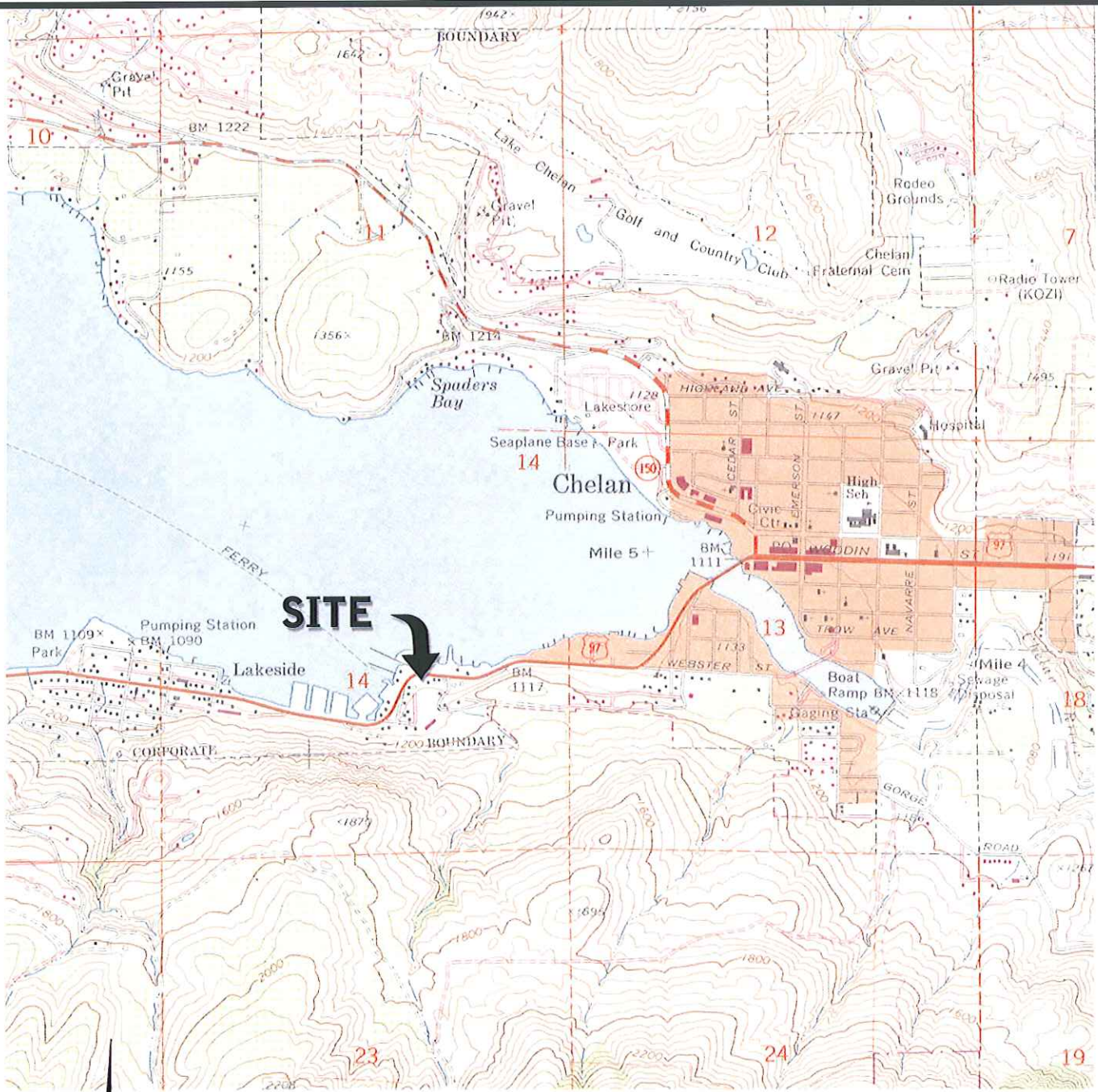
**Groundwater Monitoring Data
Former Unocal Bulk Fuel Terminal #0082
Chelan, Washington**

Well Number	Top of Well Casing Elevation ^a (feet)	Date	Depth to Groundwater ^b (feet)	Groundwater Elevation (feet)
MW-1	1,112.38	05/25/01	20.02	1,092.36
		08/09/01	15.09	1,097.29
		11/14/01	20.62	1,091.76
		01/30/02	24.12	1,088.26
		04/29/02	Dry ^c	----
		07/22/02	14.38	1,098.00
MW-2	1,111.78	05/25/01	19.46	1,092.32
		08/09/01	14.50	1,097.28
		11/13/01	20.01	1,091.77
		01/30/02	23.57	1,088.21
		04/29/02	Dry ^c	----
		07/22/02	13.77	1,098.01
MW-3	1,112.15	05/25/01	19.82	1,092.33
		08/09/01	14.89	1,097.26
		11/13/01	20.45	1,091.70
		01/30/02	23.96	1,088.19
		04/29/02	28.56	1,083.59
		07/22/02	14.14	1,098.01
MW-4	1,112.35	05/25/01	20.06	1,092.29
		08/09/01	15.07	1,097.28
		11/14/01	20.67	1,091.68
		01/30/02	24.16	1,088.19
		04/29/02	Dry ^c	----
		07/22/02	14.35	1,098.00
MW-5	1,112.20	05/25/01	19.84	1,092.36
		08/09/01	14.94	1,097.26
		11/13/01	20.42	1,091.78
		01/30/02	24.02	1,088.18
		04/29/02	28.53	1,083.67
		07/22/02	14.17	1,098.03
MW-6	1,112.18	05/25/01	19.92	1,092.26
		08/09/01	14.89	1,097.29
		11/14/01	20.49	1,091.69
		01/30/02	23.99	1,088.19
		04/29/02	Dry ^c	----
		07/22/02	14.18	1,098.00

Table 3

**Groundwater Monitoring Data
Former Unocal Bulk Fuel Terminal #0082
Chelan, Washington**

Well Number	Top of Well Casing Elevation ^a (feet)	Date	Depth to Groundwater ^b (feet)	Groundwater Elevation (feet)
MW-7	1,117.45	05/25/01	25.02	1,092.43
		08/09/01	20.12	1,097.33
		11/13/01	25.61	1,091.84
		01/30/02	29.22	1,088.23
		04/29/02	Dry ^c	----
		07/22/02	19.47	1,097.98
MW-8	1,112.66	05/25/01	20.37	1,092.29
		08/09/01	15.39	1,097.27
		11/14/01	20.99	1,091.67
		01/30/02	24.47	1,088.19
		04/29/02	29.11	1,083.55
		07/22/02	14.68	1,097.98
NOTE:				
^a Well elevations were surveyed relative to mean sea level. ^b The depths to groundwater were measured from the tops of the well casings. ^c Well was dry at time of monitoring.				



Base map prepared from USGS 7.5-minute quadrangle of Chelan, Washington (1987).

17171 Bothell Way NE, #264
Seattle, Washington 98155

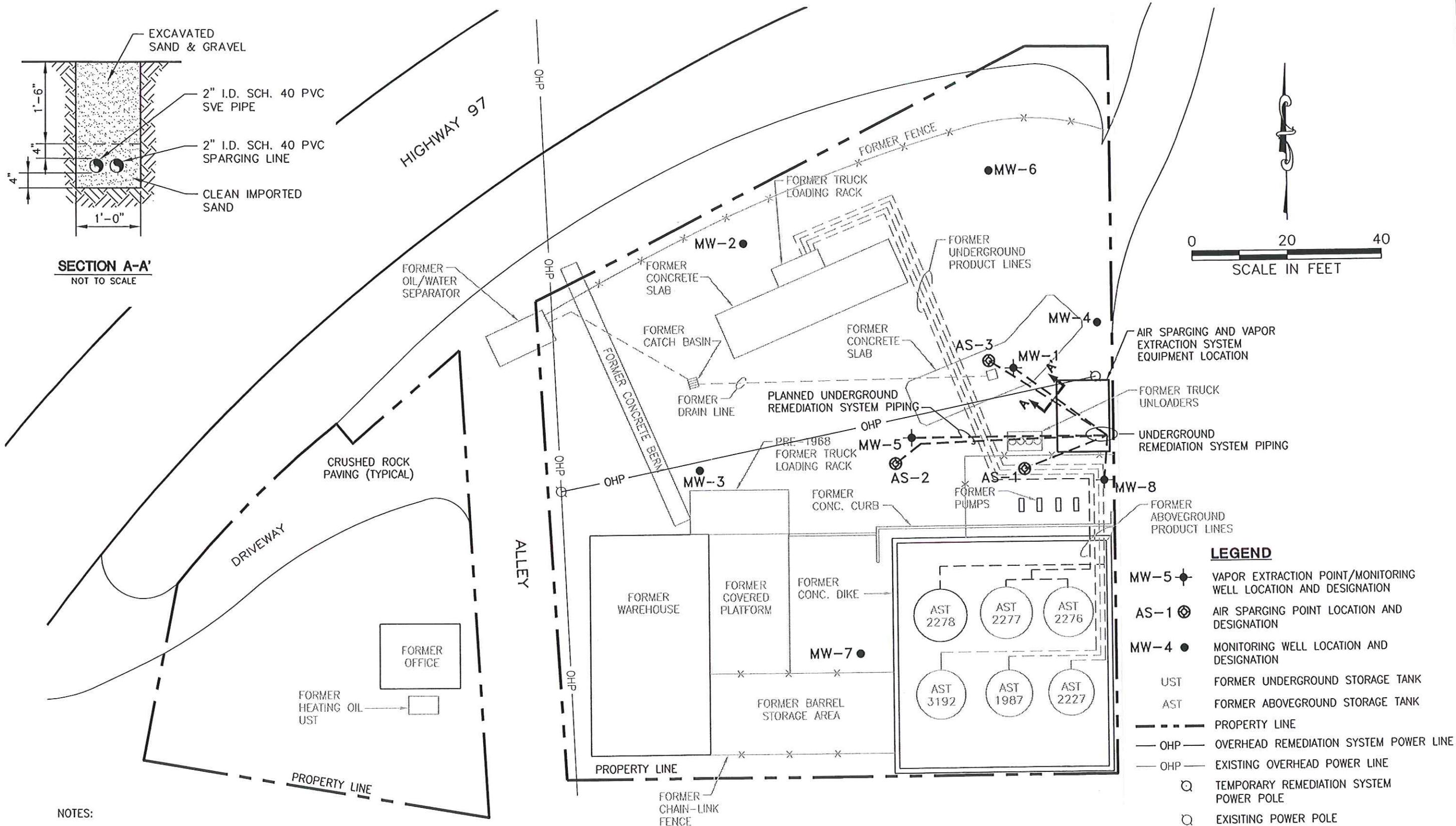
425.744.1489 P
425.744.0919 F

MAUL FOSTER ALONGI
ENVIRONMENTAL & ENGINEERING CONSULTANTS

DATE	02/02
DWN.	AL
APPR.	ESA
REVIS.	
PROJECT NO.	9077.15.01

Figure 1
FORMER UNOCAL BULK FUEL
TERMINAL #0082
CHELAN, WASHINGTON
SITE LOCATION MAP

File: \\9077\15.01\007-02.dwg Last Edited: AUG 31, 2002 By: btooke Xrefs: None Black/White



NOTES:

1. THE LOCATIONS OF ALL FORMER SITE FEATURES ARE APPROXIMATE.
2. ALL FACILITIES WERE DEMOLISHED AND REMOVED IN NOVEMBER 1992.

BASE MAP REFERENCE: DRAWING ENTITLED "FORMER SITE FACILITIES AND EXPLORATIONS", BY GEOENGINEERS, DATED MAY 7, 1998.

17171 Bothell Way, #264
Seattle, WA 98155

P 425.744.1489
F 425.744.0919

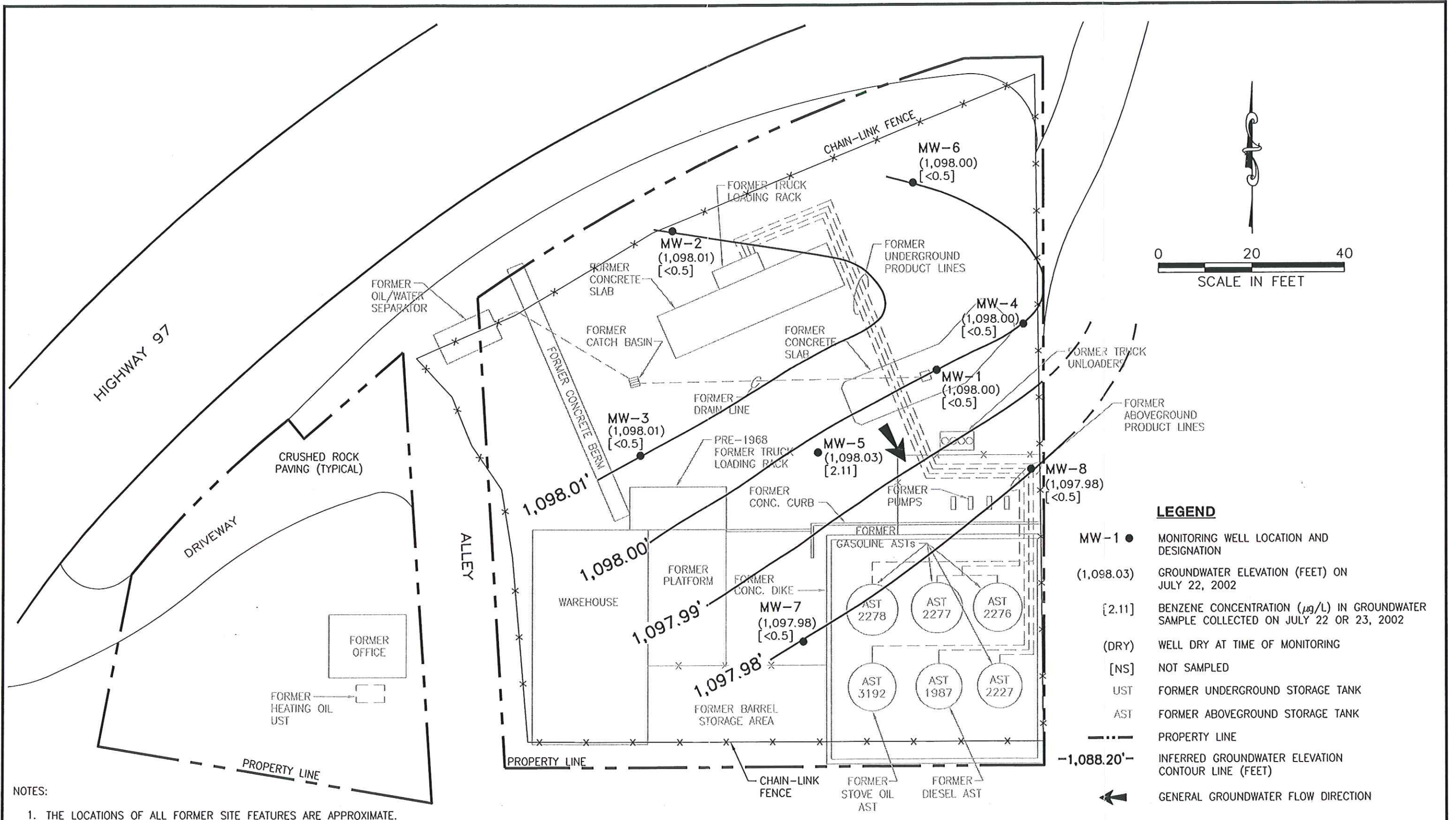
MAUL FOSTER ALONGI

DATE	08/02
DWN.	BDT
APPR.	CJA
REVIS.	
PROJECT NO.	9077.15.01

FIGURE 2
FORMER UNOCAL BULK PLANT
TERMINAL #0082
CHELAN, WASHINGTON

REMEDATION SYSTEM PIPING PLAN

File: \9077\15.01\007-03.dwg Last Edited: SEP 05, 2002 By: btookey Xrefs: None Black/White



- LEGEND**
- MW-1 ● MONITORING WELL LOCATION AND DESIGNATION
 - (1,098.03) GROUNDWATER ELEVATION (FEET) ON JULY 22, 2002
 - [2.11] BENZENE CONCENTRATION (µg/L) IN GROUNDWATER SAMPLE COLLECTED ON JULY 22 OR 23, 2002
 - (DRY) WELL DRY AT TIME OF MONITORING
 - [NS] NOT SAMPLED
 - UST FORMER UNDERGROUND STORAGE TANK
 - AST FORMER ABOVEGROUND STORAGE TANK
 - - - - - PROPERTY LINE
 - - - - - INFERRED GROUNDWATER ELEVATION CONTOUR LINE (FEET)
 - ← GENERAL GROUNDWATER FLOW DIRECTION

NOTES:

1. THE LOCATIONS OF ALL FORMER SITE FEATURES ARE APPROXIMATE.
2. ALL FACILITIES WERE DEMOLISHED AND REMOVED IN NOVEMBER 1992.
3. DUE TO AN ANOMALOUS GROUNDWATER ELEVATION, THE DATA FROM WELL MW-5 WAS NOT USED FOR CONTOURING.

BASE MAP REFERENCE: DRAWING ENTITLED "FORMER SITE FACILITIES AND EXPLORATIONS", BY GEOENGINEERS, DATED MAY 7, 1998.

17171 Bothell Way, #264 Seattle, WA 98155 P 425.744.1489 F 425.744.0919		DATE 09/02 DWN. BDT APPR. <i>MJS</i> REVIS. PROJECT NO. 9077.15.01	FIGURE 3 FORMER UNOCAL BULK FUEL TERMINAL #0082 CHELAN, WASHINGTON GROUNDWATER ELEVATION CONTOUR MAP JULY 22, 2002
--	--	--	---



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


Maul Foster & Alongi-Seattle 17171 Bothell Way NE #264 Seattle WA/USA, 98155	Project: Chelan Bulk Terminal #0082 Project Number: 9077.015.001 Project Manager: Mike Staton	Reported: 08/27/01 14:59
--	---	-----------------------------

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
VE-Stack-0801	B1H0240-09	Air	08/09/01 21:15	08/10/01 08:50

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.



Scott A. Woerman, Project Manager

North Creek Analytical, Inc.
Environmental Laboratory Network



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

Maul Foster & Alongi-Seattle
 17171 Bothell Way NE #264
 Seattle WA/USA, 98155

Project: Chelan Bulk Terminal #0082
 Project Number: 9077.015.001
 Project Manager: Mike Staton

Reported:
 08/27/01 14:59

Gasoline Hydrocarbons (Toluene to Dodecane) and BTEX in Air by WTPH-G and EPA 8021B
North Creek Analytical - Bothell

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								

VE-Stack-0801 (B1H0240-09) Air Sampled: 08/09/01 21:15 Received: 08/10/01 08:50

Gasoline Range Hydrocarbons	ND	10.0		mg/m ³ Air	1	1H10010	08/10/01	08/10/01	NWTPH Modified	
Benzene	ND	0.100		"	"	"	"	"	"	
Toluene	ND	0.100		"	"	"	"	"	"	
Ethylbenzene	ND	0.100		"	"	"	"	"	"	
Xylenes (total)	ND	0.200		"	"	"	"	"	"	
Surrogate: 4-BFB (FID)	85.3 %	50-150				"	"	"	"	
Surrogate: 4-BFB (PID)	94.5 %	50-150				"	"	"	"	

VE-Stack-0801 (B1H0240-09) Air Sampled: 08/09/01 21:15 Received: 08/10/01 08:50

Gasoline Range Hydrocarbons (v/v)	ND	2.36		ppmv	"	"	"	"	"	
Benzene (v/v)	ND	0.0308		"	"	"	"	"	"	
Toluene (v/v)	ND	0.0261		"	"	"	"	"	"	
Ethylbenzene (v/v)	ND	0.0227		"	"	"	"	"	"	
Xylenes, total (v/v)	ND	0.0454		"	"	"	"	"	"	

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.

Scott A. Woerman, Project Manager

North Creek Analytical, Inc.
 Environmental Laboratory Network



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

Maul Foster & Alongi-Seattle
 17171 Bothell Way NE #264
 Seattle WA/USA, 98155

Project: Chelan Bulk Terminal #0082
 Project Number: 9077.015.001
 Project Manager: Mike Staton

Reported:
 08/27/01 14:59

Gasoline Hydrocarbons (Toluene to Dodecane) and BTEX in Air by WTPH-G 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
Batch 1H10010: Prepared 08/10/01 Using EPA 5030B (P/T)										
Blank (1H10010-BLK1)										
Gasoline Range Hydrocarbons	ND	10.0	mg/m ³ Air							
Benzene	ND	0.100	"							
Toluene	ND	0.100	"							
Ethylbenzene	ND	0.100	"							
Xylenes (total)	ND	0.200	"							
Surrogate: 4-BFB (FID)	8.67		"	9.60		90.3	50-150			
Surrogate: 4-BFB (PID)	8.78		"	9.60		91.5	50-150			
LCS (1H10010-BS1)										
Gasoline Range Hydrocarbons	61.4	10.0	mg/m ³ Air	100		61.4	50-150			
Surrogate: 4-BFB (FID)	9.43		"	9.60		98.2	50-150			
LCS (1H10010-BS2)										
Benzene	1.38	0.100	mg/m ³ Air	2.00		69.0	50-150			
Toluene	1.39	0.100	"	2.00		69.5	50-150			
Ethylbenzene	1.39	0.100	"	2.00		69.5	50-150			
Xylenes (total)	4.25	0.200	"	6.00		70.8	50-150			
Surrogate: 4-BFB (PID)	9.24		"	9.60		96.2	50-150			
LCS Dup (1H10010-BSD1)										
Gasoline Range Hydrocarbons	57.8	10.0	mg/m ³ Air	100		57.8	50-150	6.04	50	
Surrogate: 4-BFB (FID)	8.96		"	9.60		93.3	50-150			
LCS Dup (1H10010-BSD2)										
Benzene	1.26	0.100	mg/m ³ Air	2.00		63.0	50-150	9.09	50	
Toluene	1.26	0.100	"	2.00		63.0	50-150	9.81	50	
Ethylbenzene	1.25	0.100	"	2.00		62.5	50-150	10.6	50	
Xylenes (total)	3.82	0.200	"	6.00		63.7	50-150	10.7	50	
Surrogate: 4-BFB (PID)	9.20		"	9.60		95.8	50-150			

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.

Scott A. Woerman, Project Manager

North Creek Analytical, Inc.
 Environmental Laboratory Network



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

Maul Foster & Alongi-Seattle
 17171 Bothell Way NE #264
 Seattle WA/USA, 98155

Project: Chelan Bulk Terminal #0082
 Project Number: 9077.015.001
 Project Manager: Mike Staton

Reported:
 08/27/01 14:59

Gasoline Hydrocarbons (Toluene to Dodecane) and BTEX in Air by WTPH-G 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
Batch 1H10010: Prepared 08/10/01 Using EPA 5030B (P/T)										
Duplicate (1H10010-DUP1) Source: B1H0181-08										
Gasoline Range Hydrocarbons	3090	100	mg/m ³ Air		3140			1.61	30	
Surrogate: 4-BFB (FID)	17.1		"	9.60		178	50-150			S-06

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.


 Scott A. Woerman, Project Manager

North Creek Analytical, Inc.
 Environmental Laboratory Network



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

Maul Foster & Alongi-Seattle
 17171 Bothell Way NE #264
 Seattle WA/USA, 98155

Project: Chelan Bulk Terminal #0082
 Project Number: 9077.015.001
 Project Manager: Mike Staton

Reported:
 08/27/01 14:59

**Gasoline Hydrocarbons (Toluene to Dodecane) in Air by WTPH-G - Quality Control
 North Creek Analytical - Bothell**

Analyte	Result	Reporting	Units	Spike Level	Source Result	%REC		RPD		Notes
		Limit				%REC	Limits	RPD	Limit	

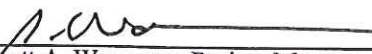
Batch 1H10010: Prepared 08/10/01 Using EPA 5030B (P/T)

Blank (1H10010-BLK1)

Gasoline Range Hydrocarbons (v/v)	ND	2.36	ppmv							
Benzene (v/v)	ND	0.0308	"							
Toluene (v/v)	ND	0.0261	"							
Ethylbenzene (v/v)	ND	0.0227	"							
Xylenes, total (v/v)	ND	0.0454	"							

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.


 Scott A. Woerman, Project Manager

North Creek Analytical, Inc.
 Environmental Laboratory Network



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

Maul Foster & Alongi-Seattle
17171 Bothell Way NE #264
Seattle WA/USA, 98155

Project: Chelan Bulk Terminal #0082
Project Number: 9077.015.001
Project Manager: Mike Staton


Reported:
08/27/01 14:59

Notes and Definitions

- S-06 The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interferences.
- 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.



Scott A. Woerman, Project Manager

North Creek Analytical, Inc.
Environmental Laboratory Network

Page 6 of 6



11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8223
 East 11115 Montgomery, Suite B, Spokane, WA 98206-4776
 9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132
 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711

(425) 420-9200 FAX 4. 10
 (509) 924-9200 FAX 924-9290
 (503) 906-9200 FAX 906-9210
 (541) 383-9310 FAX 382-7588

UNOCAL CHAIN OF CUSTODY REPORT B1H0240

UNOCAL INFORMATION

Facility Number: Chelan Bulk Terminal
 Site Address: Chelan, WA.
 City, State, ZIP:
 Site Release Number: Direct Billing to Mark Brearley/Chesel
 Unocal Manager: Mark Brearley
 CERT INFO: (check one) Evaluation Remediation
 Detection Demolition Closure Miscellaneous

CONSULTANT INFORMATION

Firm: Maul, Foster, & Alving Project# 9077, 615.00
 Address: 17176 Bothell Way NE, #204
Seattle, WA. 98155
 Phone: (425) 744-1489 Fax: (425) 744-0919
 Project Manager: Mike Staton
 Sample Collection by: G Sandberg

Chain of Custody Record #:

Quality Assurance Data Level: A B

A: Standard Summary
 B: Standard + Chromatograms

Laboratory Turnaround Days: 1 2 3 4 5

SAMPLE IDENTIFICATION	SAMPLING DATE / TIME	MATRIX (W.S.O)	# OF CON-TAINERS
1. MW-1-0801	8/10/01 @ 1630	W	4
2. " -2- "	@ 1315		
3. " -3- "	@ 1220		
4. " -4- "	@ 1450		
5. " -5- "	@ 1720		
6. " -6- "	@ 1400		
7. " -7- "	@ 1130		
8. MW-8-0801	8/10/01 @ 215	Air	1

TPH-HCID	TPH-Gas	BTEX	BPA 802 Mod.	TPH-Gas + BTEX	TPH-Diesel	TPH-Diesel	Extended	TPH-Diesel-Ext.	W/SG Cleanup	Halogen. Volatiles	BPA 8021	Pesticides/PCBs or PCBs Only	GCMS Volatiles	BPA 8260	GCMS SemiVols.	BPA 8270	PAH's	8270 SIM or 8310	Lead:	Total or Dissolved	TCLP or RCRA	Metals (8)	
	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

NCA SAMPLE NUMBER

B1H0240-01
 -02
 -03
 -04
 -05
 -06
 -07
 -08
 -09

Relinquished By: [Signature] Firm: MTA Date & Time: 8/10/01 @ 8:50
 Received by: [Signature] Firm: NCA Date & Time: 8/10/01 @ 9:50

Page ___ of ___
 Rev. UNO3.3.2/99

Final Report Approval

Were all requested results provided? yes no Define "No" on back

Were results within requested turnaround? yes no

Final Approval Signature: _____ Date: _____

5-30 w/b



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

Maul Foster & Alongi-Seattle
 17171 Bothell Way NE #264
 Seattle WA/USA, 98155

Project: Chelan Bulk Terminal #0082
 Project Number: 9077.015.001
 Project Manager: Mike Staton


Reported:
 09/17/01 16:53

**Gasoline Hydrocarbons (Benzene to Napthalene) and BTEX in Air by NWTPH-G and EPA 8021B
 North Creek Analytical - Bothell**

Analyte	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Result	Limit							
VES-1-0901 (B1I0158-01) Air Sampled: 09/10/01 14:45 Received: 09/11/01 08:05									
Gasoline Range Hydrocarbons	166	10.0	mg/m ³ Air	1	1113006	09/13/01	09/13/01	NWTPH Modified	
Benzene	0.110	0.100	"	"	"	"	"	"	
Toluene	ND	0.100	"	"	"	"	"	"	
Ethylbenzene	0.519	0.100	"	"	"	"	"	"	
Xylenes (total)	3.55	0.200	"	"	"	"	"	"	I-06
Surrogate: 4-BFB (FID)	154 %	50-150			"	"	"	"	I-06
Surrogate: 4-BFB (PID)	114 %	50-150			"	"	"	"	S-04
Gasoline Range Hydrocarbons (v/v)	39.2	2.36	ppmv	"	"	"	"	"	
Benzene (v/v)	0.0340	0.0308	"	"	"	"	"	"	
Toluene (v/v)	ND	0.0261	"	"	"	"	"	"	
Ethylbenzene (v/v)	0.118	0.0227	"	"	"	"	"	"	
Xylenes, total (v/v)	0.805	0.0454	"	"	"	"	"	"	I-06 I-06

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.


 Scott A. Woerman, Project Manager

North Creek Analytical, Inc.
 Environmental Laboratory Network



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

Maul Foster & Alongi-Seattle
 17171 Bothell Way NE #264
 Seattle WA/USA, 98155

Project: Chelan Bulk Terminal #0082
 Project Number: 9077.015.001
 Project Manager: Mike Staton

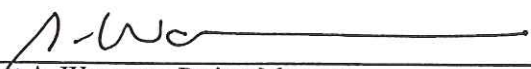
Reported:
 09/17/01 16:53

Gasoline Hydrocarbons (Benzene to Napthalene) and BTEX in Air by NWTPH-G and EPA 8021B - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC Limits	RPD RPD	RPD Limit	Notes
Batch 1I13006: Prepared 09/13/01 Using EPA 5030B (P/T)									
Blank (1I13006-BLK1)									
Gasoline Range Hydrocarbons	ND	10.0	mg/m ³ Air						
Gasoline Range Hydrocarbons (v/v)	ND	2.36	ppmv						
Benzene	ND	0.100	mg/m ³ Air						
Benzene (v/v)	ND	0.0308	ppmv						
Toluene	ND	0.100	mg/m ³ Air						
Toluene (v/v)	ND	0.0261	ppmv						
Ethylbenzene	ND	0.100	mg/m ³ Air						
Ethylbenzene (v/v)	ND	0.0227	ppmv						
Xylenes (total)	ND	0.200	mg/m ³ Air						
Xylenes, total (v/v)	ND	0.0454	ppmv						
Surrogate: 4-BFB (FID)	9.28		mg/m ³ Air	9.60		96.7	50-150		
Surrogate: 4-BFB (PID)	9.16		"	9.60		95.4	50-150		
LCS (1I13006-BS1)									
Gasoline Range Hydrocarbons	74.1	10.0	mg/m ³ Air	100		74.1	50-150		
Surrogate: 4-BFB (FID)	8.98		"	9.60		93.5	50-150		
LCS (1I13006-BS2)									
Benzene	1.67	0.100	mg/m ³ Air	2.00		83.5	50-150		
Toluene	1.75	0.100	"	2.00		87.5	50-150		
Ethylbenzene	1.78	0.100	"	2.00		89.0	50-150		
Xylenes (total)	5.50	0.200	"	6.00		91.7	50-150		
Surrogate: 4-BFB (PID)	9.51		"	9.60		99.1	50-150		
LCS Dup (1I13006-BSD1)									
Gasoline Range Hydrocarbons	74.5	10.0	mg/m ³ Air	100		74.5	50-150	0.538	50
Surrogate: 4-BFB (FID)	9.22		"	9.60		96.0	50-150		

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.


 Scott A. Woerman, Project Manager

North Creek Analytical, Inc.
 Environmental Laboratory Network



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

Maul Foster & Alongi-Seattle
 17171 Bothell Way NE #264
 Seattle WA/USA, 98155

Project: Chelan Bulk Terminal #0082
 Project Number: 9077.015.001
 Project Manager: Mike Staton

Reported:
 09/17/01 16:53

Gasoline Hydrocarbons (Benzene to Napthalene) and BTEX in Air by NWTPH-G 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
Batch 1I13006: Prepared 09/13/01 Using EPA 5030B (P/T)										
LCS Dup (1I13006-BSD2)										
Benzene	1.67	0.100	mg/m ³ Air	2.00		83.5	50-150	0.00	50	
Toluene	1.75	0.100	"	2.00		87.5	50-150	0.00	50	
Ethylbenzene	1.77	0.100	"	2.00		88.5	50-150	0.563	50	
Xylenes (total)	5.46	0.200	"	6.00		91.0	50-150	0.730	50	
Surrogate: 4-BFB (PID)	9.45		"	9.60		98.4	50-150			
Duplicate (1I13006-DUP1) Source: BII0231-01										
Gasoline Range Hydrocarbons	15100	1000	mg/m ³ Air		17200			13.0	30	
Surrogate: 4-BFB (FID)	9.49		"	9.60		98.9	50-150			
Duplicate (1I13006-DUP2) Source: BII0231-02										
Gasoline Range Hydrocarbons	14400	1000	mg/m ³ Air		17100			17.1	30	
Surrogate: 4-BFB (FID)	9.73		"	9.60		101	50-150			

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.

Scott A. Woerman, Project Manager

North Creek Analytical, Inc.
 Environmental Laboratory Network



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

Maul Foster & Alongi-Seattle
 17171 Bothell Way NE #264
 Seattle WA/USA, 98155

Project: Chelan Bulk Terminal #0082
 Project Number: 9077.015.001
 Project Manager: Mike Staton

Reported:
 09/17/01 16:53

Notes and Definitions

- I-06 The analyte concentration may be artificially elevated due to coeluting compounds or components.
- 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

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.


 Scott A. Woerman, Project Manager

North Creek Analytical, Inc.
 Environmental Laboratory Network



11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8223
 East 11115 Montgomery, Suite B, Spokane, WA 98206-4776
 9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132
 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711

(425) 420-9200 FAX 3210
 (509) 924-9200 FAX 944-9290
 (503) 906-9200 FAX 906-9210
 (541) 383-9310 FAX 382-7588

UNOCAL CHAIN OF CUSTODY REPORT **B10158**

UNOCAL INFORMATION

Facility Number: Former Bulk O282, Crelan, WA
 Site Address: 500 E. Gibson St.
 City, State, ZIP: Cheltenham, WA
 Site Release Number: Direct billing to Mark Breenley
 Unocal Manager: Mark Breenley
 CERT INFO: (check one) Evaluation Remediation
 Detection Demolition Closure Miscellaneous

CONSULTANT INFORMATION

Firm: Manul, Feest & Alang Project# 9077.015.001
 Address: 17171 Bottem Way NE # 204
Seattle, WA 98155
 Phone: 425-744-1489 Fax: 425-744-0919
 Project Manager: Mike Stator
 Sample Collection by: Scott Anderson

Chain of Custody Record #:

Quality Assurance Data Level:
 A
 B

A: Standard Summary
 B: Standard + Chromatograms

Laboratory Turnaround Days:
 0 1 2 3 4 5 6

SAMPLE IDENTIFICATION	SAMPLING DATE / TIME	MATRIX (W.S.O)	# OF CON-TAINERS
1. <u>VES-1-0901</u>	<u>9-10-01/14:45</u>	<u>Air</u>	<u>1</u>
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			

TPH-HCID	TPH-Gas	BTEX	EPA 8021 Mod.	TPH-Gas + BTEX	TPH-Diesel	TPH-Diesel Extended	Halogen. Volatiles	EPA 8021 w/SG Cleanup	Pesticides/PCBs or PCBs Only	GCM/S Volatiles	EPA 8260	GCM/S Semi-Vols.	BPA 8270	PAH's	8270 SIM or 8310	Lead	Total or Dissolved	TCDF or RCRA	Metals (8)	
				<input checked="" type="checkbox"/>																

NCA SAMPLE NUMBER
B10158-01

20.7 / 0

Retrieved by: Scott Anderson MFA Firm: NCA Date & Time: 9-11-01 8:05
 Received by: Calby Meech Firm: NCA Date & Time: 9/11/01 8:05

Final Report Approval

Were all requested results provided? yes no Define

Were results within requested turnaround? yes no "No" on back

Final Approval Signature: _____ Date: _____

Page _____ of _____

Comments: TPH-Gas by NW TPH-G/BTEX by 8021 B

Rev: UNO3.3.299 Distribution: White - Laboratory Yellow - Consultant Photocopy - Unocal



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

Maul Foster & Alongi-Seattle
 17171 Bothell Way NE #264
 Seattle WA/USA, 98155

Project: Former Bulk Terminal #0082
 Project Number: 9077.15.01
 Project Manager: Mike Staton


Reported:
 11/19/01 17:54

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
VES-Stack-1101	B1K0352-01	Air	11/15/01 12:35	11/15/01 16:00
VES-Combined Influent-1101	B1K0352-02	Air	11/15/01 12:30	11/15/01 16:00

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.


 Scott A. Woerman, Project Manager

North Creek Analytical, Inc.
 Environmental Laboratory Network



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

Maul Foster & Alongi-Seattle
 17171 Bothell Way NE #264
 Seattle WA/USA, 98155

Project: Former Bulk Terminal #0082
 Project Number: 9077.15.01
 Project Manager: Mike Staton

Reported:
 11/19/01 17:54

**Gasoline Hydrocarbons (Benzene to Napthalene) and BTEX in Air by NWTPH-G and EPA 8021B
 North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
---------	--------	-----------------	-------	----------	-------	----------	----------	--------	-------

VES-Stack-1101 (B1K0352-01) Air Sampled: 11/15/01 12:35 Received: 11/15/01 16:00

Gasoline Range Hydrocarbons	ND	10.0	mg/m ³ Air	1	1K16016	11/16/01	11/16/01	NWTPH Modified	
Benzene	ND	0.100	"	"	"	"	"	"	
Toluene	ND	0.100	"	"	"	"	"	"	
Ethylbenzene	ND	0.100	"	"	"	"	"	"	
Xylenes (total)	ND	0.200	"	"	"	"	"	"	
Surrogate: 4-BFB (FID)	87.7 %	50-150			"	"	"	"	
Surrogate: 4-BFB (PID)	94.6 %	50-150			"	"	"	"	
Gasoline Range Hydrocarbons (v/v)	ND	2.36	ppmv	"	"	"	"	"	
Benzene (v/v)	ND	0.0308	"	"	"	"	"	"	
Toluene (v/v)	ND	0.0261	"	"	"	"	"	"	
Ethylbenzene (v/v)	ND	0.0227	"	"	"	"	"	"	
Xylenes, total (v/v)	ND	0.0454	"	"	"	"	"	"	

VES-Combined Influent-1101 (B1K0352-02) Air Sampled: 11/15/01 12:30 Received: 11/15/01 16:00

Gasoline Range Hydrocarbons	39.9	10.0	mg/m ³ Air	1	1K16016	11/16/01	11/16/01	NWTPH Modified	
Benzene	ND	0.100	"	"	"	"	"	"	
Toluene	ND	0.100	"	"	"	"	"	"	
Ethylbenzene	0.220	0.100	"	"	"	"	"	"	I-06
Xylenes (total)	0.745	0.200	"	"	"	"	"	"	I-06
Surrogate: 4-BFB (FID)	96.1 %	50-150			"	"	"	"	
Surrogate: 4-BFB (PID)	107 %	50-150			"	"	"	"	
Gasoline Range Hydrocarbons (v/v)	9.40	2.36	ppmv	"	"	"	"	"	
Benzene (v/v)	ND	0.0308	"	"	"	"	"	"	
Toluene (v/v)	ND	0.0261	"	"	"	"	"	"	
Ethylbenzene (v/v)	0.0498	0.0227	"	"	"	"	"	"	I-06
Xylenes, total (v/v)	0.169	0.0454	"	"	"	"	"	"	I-06

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.

Scott A. Woerman, Project Manager

North Creek Analytical, Inc.
 Environmental Laboratory Network



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


Maul Foster & Alongi-Seattle 17171 Bothell Way NE #264 Seattle WA/USA, 98155	Project: Former Bulk Terminal #0082 Project Number: 9077.15.01 Project Manager: Mike Staton	Reported: 11/19/01 17:54
--	---	-----------------------------

Gasoline Hydrocarbons (Benzene to Napthalene) and BTEX in Air by NWTPH-G 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
Batch 1K16016: Prepared 11/16/01 Using EPA 5030B (P/T)										
Blank (1K16016-BLK1)										
Gasoline Range Hydrocarbons	ND	10.0	mg/m ³ Air							
Gasoline Range Hydrocarbons (v/v)	ND	2.36	ppmv							
Benzene	ND	0.100	mg/m ³ Air							
Benzene (v/v)	ND	0.0308	ppmv							
Toluene	ND	0.100	mg/m ³ Air							
Toluene (v/v)	ND	0.0261	ppmv							
Ethylbenzene	ND	0.100	mg/m ³ Air							
Ethylbenzene (v/v)	ND	0.0227	ppmv							
Xylenes (total)	ND	0.200	mg/m ³ Air							
Xylenes, total (v/v)	ND	0.0454	ppmv							
Surrogate: 4-BFB (FID)	8.62		mg/m ³ Air	9.60		89.8	50-150			
Surrogate: 4-BFB (PID)	8.95		"	9.60		93.2	50-150			
LCS (1K16016-BS1)										
Gasoline Range Hydrocarbons	69.1	10.0	mg/m ³ Air	100		69.1	50-150			
Surrogate: 4-BFB (FID)	9.10		"	9.60		94.8	50-150			
LCS (1K16016-BS2)										
Benzene	1.58	0.100	mg/m ³ Air	2.00		79.0	50-150			
Toluene	1.58	0.100	"	2.00		79.0	50-150			
Ethylbenzene	1.58	0.100	"	2.00		79.0	50-150			
Xylenes (total)	4.88	0.200	"	6.00		81.3	50-150			
Surrogate: 4-BFB (PID)	9.40		"	9.60		97.9	50-150			
LCS Dup (1K16016-BSD1)										
Gasoline Range Hydrocarbons	60.7	10.0	mg/m ³ Air	100		60.7	50-150	12.9	50	
Surrogate: 4-BFB (FID)	8.68		"	9.60		90.4	50-150			

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.


 Scott A. Woerman, Project Manager

North Creek Analytical, Inc.
Environmental Laboratory Network



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

Maul Foster & Alongi-Seattle
 17171 Bothell Way NE #264
 Seattle WA/USA, 98155

Project: Former Bulk Terminal #0082
 Project Number: 9077.15.01
 Project Manager: Mike Staton

Reported:
 11/19/01 17:54

Gasoline Hydrocarbons (Benzene to Napthalene) and BTEX in Air by NWTPH-G 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
Batch 1K16016: Prepared 11/16/01 Using EPA 5030B (P/T)										
LCS Dup (1K16016-BSD2)										
Benzene	1.66	0.100	mg/m ³ Air	2.00		83.0	50-150	4.94	50	
Toluene	1.65	0.100	"	2.00		82.5	50-150	4.33	50	
Ethylbenzene	1.66	0.100	"	2.00		83.0	50-150	4.94	50	
Xylenes (total)	4.99	0.200	"	6.00		83.2	50-150	2.23	50	
Surrogate: 4-BFB (PID)	9.28		"	9.60		96.7	50-150			
Duplicate (1K16016-DUP1) Source: B1K0316-08										
Gasoline Range Hydrocarbons	ND	10.0	mg/m ³ Air		ND			14.4	30	
Surrogate: 4-BFB (FID)	7.39		"	9.60		77.0	50-150			

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.

Scott A. Woerman, Project Manager

North Creek Analytical, Inc.
 Environmental Laboratory Network



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

Maul Foster & Alongi-Seattle
 17171 Bothell Way NE #264
 Seattle WA/USA, 98155

Project: Former Bulk Terminal #0082
 Project Number: 9077.15.01
 Project Manager: Mike Staton


Reported:
 11/19/01 17:54

Notes and Definitions

- 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.


 Scott A. Woerman, Project Manager

North Creek Analytical, Inc.
 Environmental Laboratory Network



J North Creek Pkwy N, Suite 400, Bothell, WA 98011-8223
 East 11115 Montgomery, Suite B, Spokane, WA 98206-4776
 9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132
 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711

(425) 420-9200 FAX .9210
 (509) 924-9200 FAX 924-9290
 (503) 906-9200 FAX 906-9210
 (541) 383-9310 FAX 382-7588

UNOCAL CHAIN OF CUSTODY REPORT

BK0352

UNOCAL INFORMATION

Facility Number: 1 Former Bulk Terminal # 0082

Site Address:
 City, State, ZIP: Chelan, WA
 Site Release Number: Direct Billing to Mark Breatley (Unocal)

Unocal Manager: Mark Breatley

CERT INFO: (check one) Evaluation Remediation

Detection Demolition Closure Miscellaneous

CONSULTANT INFORMATION

Firm: Maul, Foerster Alongi Project# 9077.15.01

Address: 17171 Bothellway NE # 264
 Seattle, WA 98155

Phone: 425-744-1489 Fax: 425-744-0919

Project Manager: Mike Stetson
 Sample Collection by: Scott Anderson

Chain of Custody Record #:

Quality Assurance Data Level: A B

A: Standard Summary
 B: Standard + Chromatograms

Laboratory Turnaround Days: 1 2 3 4 5

Stel + Unacal

SAMPLE IDENTIFICATION	SAMPLING DATE / TIME	MATRIX (W,S,O)	# OF CON-TAINERS
1. VES-Stack-101	11/15/01 12:35 AIR	AIR	1
2. VES-Combined Influent - "1101"	12:30 AIR	AIR	1
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			

TPH-HCID	TPH-Gas	BTEX	TPH-Gas + BTEX	TPH-Diesel	TPH-Diesel Extended	TPH-Diesel-Ext. w/SG Cleanup	Halogen, Volatiles EPA 8021	Pesticides/PCBs or PCBs Only	GCMS Volatiles EPA 8260	GCMS SemiVols. EPA 8270	PAH's: 8270 SIM or 8310	Lead: 8270 SIM or 8310	Total or Dissolved TCIP or RCRA	Metals (8)
			X	X										

Relinquished by: *[Signature]* Firm: MFA Date & Time: 11/15/01 16:00

Received by: *[Signature]* Firm: NCA Date & Time: 11/15/01 16:30

Comments: WB 20, 90

Final Report Approval

Were all requested results provided? yes no Define

Were results within requested turnaround? yes no "No" on back

Final Approval Signature: _____ Date: _____

NCA SAMPLE NUMBER

-01

-02



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

Maul Foster & Alongi-Seattle
 17171 Bothell Way NE #264
 Seattle WA/USA, 98155

Project: Chelan Bulk Terminal #0082
 Project Number: 9077.015.001
 Project Manager: Mike Staton


Reported:
 02/05/02 18:28

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
VES-Stack-0102	B2B0007-01	Air	01/31/02 16:20	02/01/02 10:30
VES-Combined Influent-0102	B2B0007-02	Air	01/31/02 16:23	02/01/02 10:30

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.


 Scott A. Woerman, Project Manager

North Creek Analytical, Inc.
 Environmental Laboratory Network



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 97701-5111
 541.383.9310 fax 541.382.7588

Maul Foster & Alongi-Seattle
 17171 Bothell Way NE #264
 Seattle WA/USA, 98155

Project: Chelan Bulk Terminal #0082
 Project Number: 9077.015.001
 Project Manager: Mike Staton

Reported:
 02/05/02 18:28

**Gasoline Hydrocarbons (Benzene to Naphthalene) and BTEX in Air by NWTPH-G and EPA 8021B
 North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
---------	--------	-----------------	-------	----------	-------	----------	----------	--------	-------

VES-Stack-0102 (B2B0007-01) Air Sampled: 01/31/02 16:20 Received: 02/01/02 10:30

Gasoline Range Hydrocarbons	12.5	10.0	mg/m ³ Air	1	2B01034	02/01/02	02/03/02	NWTPH Modified	
Benzene	ND	0.100	"	"	"	"	"	"	
Toluene	ND	0.100	"	"	"	"	"	"	
Ethylbenzene	ND	0.100	"	"	"	"	"	"	
Xylenes (total)	0.225	0.200	"	"	"	"	"	"	I-06
Surrogate: 4-BFB (FID)	88.4 %	52-148			"	"	"	"	
Surrogate: 4-BFB (PID)	84.4 %	57-117			"	"	"	"	
Gasoline Range Hydrocarbons (v/v)	2.95	2.36	ppmv	"	"	"	"	"	
Benzene (v/v)	ND	0.0308	"	"	"	"	"	"	
Toluene (v/v)	ND	0.0261	"	"	"	"	"	"	
Ethylbenzene (v/v)	ND	0.0227	"	"	"	"	"	"	
Xylenes, total (v/v)	0.0510	0.0454	"	"	"	"	"	"	I-06

VES-Combined Influent-0102 (B2B0007-02) Air Sampled: 01/31/02 16:23 Received: 02/01/02 10:30

Gasoline Range Hydrocarbons	533	25.0	mg/m ³ Air	2.5	2B01034	02/01/02	02/03/02	NWTPH Modified	
Benzene	0.553	0.250	"	"	"	"	"	"	
Toluene	1.50	0.250	"	"	"	"	"	"	I-06
Ethylbenzene	1.38	0.250	"	"	"	"	"	"	I-06
Xylenes (total)	6.39	0.500	"	"	"	"	"	"	I-06
Surrogate: 4-BFB (FID)	191 %	52-148			"	"	"	"	S-04
Surrogate: 4-BFB (PID)	93.8 %	57-117			"	"	"	"	
Gasoline Range Hydrocarbons (v/v)	126	5.90	ppmv	2.5	"	"	"	"	
Benzene (v/v)	0.170	0.0770	"	"	"	"	"	"	
Toluene (v/v)	0.392	0.0652	"	"	"	"	"	"	I-06
Ethylbenzene (v/v)	0.314	0.0568	"	"	"	"	"	"	I-06
Xylenes, total (v/v)	1.45	0.114	"	"	"	"	"	"	I-06

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.

Scott A. Woerman, Project Manager

North Creek Analytical, Inc.
 Environmental Laboratory Network



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

Maul Foster & Alongi-Seattle
 17171 Bothell Way NE #264
 Seattle WA/USA, 98155

Project: Chelan Bulk Terminal #0082
 Project Number: 9077.015.001
 Project Manager: Mike Staton

Reported:
 02/05/02 18:28

Gasoline Hydrocarbons (Benzene to Napthalene) and BTEX in Air by NWTPH-G and EPA 8021B - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
Batch 2B01034: Prepared 02/01/02 Using EPA 5030B (P/T)									
Blank (2B01034-BLK1)									
Gasoline Range Hydrocarbons	ND	10.0	mg/m ³ Air						
Gasoline Range Hydrocarbons (v/v)	ND	2.36	ppmv						
Benzene	ND	0.100	mg/m ³ Air						
Benzene (v/v)	ND	0.0308	ppmv						
Toluene	ND	0.100	mg/m ³ Air						
Toluene (v/v)	ND	0.0261	ppmv						
Ethylbenzene	ND	0.100	mg/m ³ Air						
Ethylbenzene (v/v)	ND	0.0227	ppmv						
Xylenes (total)	ND	0.200	mg/m ³ Air						
Xylenes, total (v/v)	ND	0.0454	ppmv						
Surrogate: 4-BFB (FID)	8.63		mg/m ³ Air	9.60		89.9	52-148		
Surrogate: 4-BFB (PID)	7.61		"	9.60		79.3	57-117		
LCS (2B01034-BS1)									
Gasoline Range Hydrocarbons	79.0	10.0	mg/m ³ Air	100		79.0	50-150		
Surrogate: 4-BFB (FID)	10.2		"	9.60		106	52-148		
LCS (2B01034-BS2)									
Benzene	1.50	0.100	mg/m ³ Air	2.00		75.0	50-150		
Toluene	1.51	0.100	"	2.00		75.5	50-150		
Ethylbenzene	1.53	0.100	"	2.00		76.5	50-150		
Xylenes (total)	4.90	0.200	"	6.00		81.7	50-150		
Surrogate: 4-BFB (PID)	8.18		"	9.60		85.2	57-117		
LCS Dup (2B01034-BSD1)									
Gasoline Range Hydrocarbons	66.1	10.0	mg/m ³ Air	100		66.1	50-150	17.8	50
Surrogate: 4-BFB (FID)	9.97		"	9.60		104	52-148		

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.

Scott A. Woerman, Project Manager

North Creek Analytical, Inc.
 Environmental Laboratory Network



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

Maul Foster & Alongi-Seattle 17171 Bothell Way NE #264 Seattle WA/USA, 98155	Project: Chelan Bulk Terminal #0082 Project Number: 9077.015.001 Project Manager: Mike Staton	Reported: 02/05/02 18:28
--	---	-----------------------------

Gasoline Hydrocarbons (Benzene to Napthalene) and BTEX in Air by NWTPH-G 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
Batch 2B01034: Prepared 02/01/02 Using EPA 5030B (P/T)										
LCS Dup (2B01034-BSD2)										
Benzene	1.51	0.100	mg/m ³ Air	2.00		75.5	50-150	0.664	50	
Toluene	1.50	0.100	"	2.00		75.0	50-150	0.664	50	
Ethylbenzene	1.53	0.100	"	2.00		76.5	50-150	0.00	50	
Xylenes (total)	4.89	0.200	"	6.00		81.5	50-150	0.204	50	
<i>Surrogate: 4-BFB (PID)</i>	<i>8.21</i>		"	<i>9.60</i>		<i>85.5</i>	<i>57-117</i>			
Duplicate (2B01034-DUP1) Source: B2B0020-02										
Gasoline Range Hydrocarbons	123	10.0	mg/m ³ Air		124			0.810	30	
<i>Surrogate: 4-BFB (FID)</i>	<i>11.8</i>		"	<i>9.60</i>		<i>123</i>	<i>52-148</i>			

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.

Scott A. Woerman, Project Manager

North Creek Analytical, Inc.
 Environmental Laboratory Network



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

Maul Foster & Alongi-Seattle
 17171 Bothell Way NE #264
 Seattle WA/USA, 98155

Project: Chelan Bulk Terminal #0082
 Project Number: 9077.015.001
 Project Manager: Mike Staton

Reported:
 02/05/02 18:28

Notes and Definitions

- I-06 The analyte concentration may be artificially elevated due to coeluting compounds or components.
- 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

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.

Scott A. Woerman, Project Manager

North Creek Analytical, Inc.
 Environmental Laboratory Network



1
Creek Pkwy N, Suite 400, Bothell, WA 98011-8223
Eas. 15 Montgomery, Suite B, Spokane, WA 98206-4776
9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132
20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711

(425) 420-9200 FAX 210
(509) 924-9200 FAX 924-9290
(503) 906-9200 FAX 906-9210
(541) 383-9310 FAX 382-7588

UNOCAL CHAIN OF CUSTODY REPORT \$230007

UNOCAL INFORMATION

Facility Number: Chelan Bulk Terminal

Site Address: Chelan, WA

City, State, ZIP:

Site Release Number: Direct Billing to Mark Brearley Unocal

Unocal Manager: Mark Brearley

CERT INFO: (check one) Evaluation Remediation

Detection Demolition Closure Miscellaneous

CONSULTANT INFORMATION

Firm: Maui Foster + Abong, Inc Project# 9077.15-01

Address: 17171 Bothell Way NE #284
Seattle, WA 98155

Phone: 425-744-1689 Fax: 425-744-0919

Project Manager: Mike Staton

Sample Collection by: Scott Anderson

Chain of Custody Record #:

Quality Assurance Data Level: A B

A: Standard Summary
B: Standard + Chromatograms

Laboratory Turnaround Days: 1 2 3 5

SAMPLE IDENTIFICATION	SAMPLING DATE / TIME	MATRIX (W.S.O)	# OF CON-TAINERS
1. VES - Stack-010Z	1/3/02 1600	Air	1
2. VES Combined Influent-010Z	1/5/02 1623	Air	1
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			

TPH-HCID	TPH-Gas	BTEX	EPA 8021 Mod.	TPH-Gas + BTEX	TPH-Diesel	TPH-Diesel Extended	TPH-Diesel-Bxt. w/S/G Cleanup	Halogen. Volatiles EPA 8021	Pesticides/PCBs or PCBs Only	GCMS Volatiles EPA 8260	GCMS SemiVol. EPA 8270	PAH's: 8270 SIM or 8310	Lead: Total or Dissolved	Metals (8) TCLP or RCRA
				X	X									

NCA SAMPLE NUMBER 230007-01
02

Retinquished by: [Signature] Firm: MAF Date & Time: 2/1/02 10:30

Received by: [Signature] Firm: NCA Date & Time: 2/1/02 10:30

Final Report Approval

Were all requested results provided? yes no Define

Were results within requested turnaround? yes no "No" on back

Final Approval Signature: _____ Date: _____

Comments: WJ6 20.7°



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

Maul Foster & Alongi-Seattle 17171 Bothell Way NE #264 Seattle WA/USA, 98155	Project: Chelan Bulk Terminal #0082 Project Number: 9077.15.01 Project Manager: Carol Lybeer	Reported: 05/03/02 13:17
--	--	-----------------------------

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
VE-IN-0502	B2E0020-01	Air	05/01/02 09:40	05/01/02 14:40
VE-EF-0502	B2E0020-02	Air	05/01/02 09:50	05/01/02 14:40

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.

Jeff Gerdes, Project Manager

North Creek Analytical, Inc.
Environmental Laboratory Network



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

Maul Foster & Alongi-Seattle
 17171 Bothell Way NE #264
 Seattle WA/USA, 98155

Project: Chelan Bulk Terminal #0082
 Project Number: 9077.15.01
 Project Manager: Carol Lybeer

Reported:
 05/03/02 13:17

Gasoline Hydrocarbons (Benzene to Napthalene) and BTEX in Air by NWTPH-G and EPA 8021B
North Creek Analytical - Bothell

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								

VE-IN-0502 (B2E0020-01) Air Sampled: 05/01/02 09:40 Received: 05/01/02 14:40

Gasoline Range Hydrocarbons	171	10.0		mg/m ³ Air	1	2E01007	05/01/02	05/02/02	NWTPH Modified	G-02
Benzene	ND	0.100		"	"	"	"	"	"	
Toluene	ND	0.100		"	"	"	"	"	"	
Ethylbenzene	0.566	0.100		"	"	"	"	"	"	I-06
Xylenes (total)	1.91	0.200		"	"	"	"	"	"	I-06
Surrogate: 4-BFB (FID)	190 %	52-148				"	"	"	"	S-04
Surrogate: 4-BFB (PID)	134 %	57-117				"	"	"	"	S-04
Gasoline Range Hydrocarbons (v/v)	40.3	2.36		ppmv	"	"	"	"	"	G-02
Benzene (v/v)	ND	0.0308		"	"	"	"	"	"	
Toluene (v/v)	ND	0.0261		"	"	"	"	"	"	
Ethylbenzene (v/v)	0.128	0.0227		"	"	"	"	"	"	I-06
Xylenes, total (v/v)	0.432	0.0454		"	"	"	"	"	"	I-06

VE-EF-0502 (B2E0020-02) Air Sampled: 05/01/02 09:50 Received: 05/01/02 14:40

Gasoline Range Hydrocarbons	20.6	10.0		mg/m ³ Air	1	2E01007	05/01/02	05/02/02	NWTPH Modified	
Benzene	ND	0.100		"	"	"	"	"	"	
Toluene	ND	0.100		"	"	"	"	"	"	
Ethylbenzene	ND	0.100		"	"	"	"	"	"	
Xylenes (total)	0.334	0.200		"	"	"	"	"	"	
Surrogate: 4-BFB (FID)	104 %	52-148				"	"	"	"	
Surrogate: 4-BFB (PID)	104 %	57-117				"	"	"	"	
Gasoline Range Hydrocarbons (v/v)	4.85	2.36		ppmv	"	"	"	"	"	
Benzene (v/v)	ND	0.0308		"	"	"	"	"	"	
Toluene (v/v)	ND	0.0261		"	"	"	"	"	"	
Ethylbenzene (v/v)	ND	0.0227		"	"	"	"	"	"	
Xylenes, total (v/v)	0.0757	0.0454		"	"	"	"	"	"	

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.

Jeff Gerdes, Project Manager

North Creek Analytical, Inc.
 Environmental Laboratory Network

Page 2 of 5



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

Maul Foster & Alongi-Seattle 17171 Bothell Way NE #264 Seattle WA/USA, 98155	Project: Chelan Bulk Terminal #0082 Project Number: 9077.15.01 Project Manager: Carol Lybeer	Reported: 05/03/02 13:17
--	--	-----------------------------

Gasoline Hydrocarbons (Benzene to Napthalene) and BTEX in Air by NWTPH-G 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
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 2E01007: Prepared 05/01/02 Using EPA 5030B (P/T)

Blank (2E01007-BLK1)

Gasoline Range Hydrocarbons	ND	10.0	mg/m ³ Air							
Gasoline Range Hydrocarbons (v/v)	ND	2.36	ppmv							
Benzene	ND	0.100	mg/m ³ Air							
Benzene (v/v)	ND	0.0308	ppmv							
Toluene	ND	0.100	mg/m ³ Air							
Toluene (v/v)	ND	0.0261	ppmv							
Ethylbenzene	ND	0.100	mg/m ³ Air							
Ethylbenzene (v/v)	ND	0.0227	ppmv							
Xylenes (total)	ND	0.200	mg/m ³ Air							
Xylenes, total (v/v)	ND	0.0454	ppmv							
Surrogate: 4-BFB (FID)	9.59		mg/m ³ Air	9.60		99.9	52-148			
Surrogate: 4-BFB (PID)	10.3		"	9.60		107	57-117			

LCS (2E01007-BS1)

Gasoline Range Hydrocarbons	88.1	10.0	mg/m ³ Air	100		88.1	50-150			
Surrogate: 4-BFB (FID)	10.8		"	9.60		112	52-148			

LCS (2E01007-BS2)

Benzene	1.94	0.100	mg/m ³ Air	2.00		97.0	50-150			
Toluene	1.90	0.100	"	2.00		95.0	50-150			
Ethylbenzene	1.92	0.100	"	2.00		96.0	50-150			
Xylenes (total)	5.78	0.200	"	6.00		96.3	50-150			
Surrogate: 4-BFB (PID)	10.1		"	9.60		105	57-117			

LCS Dup (2E01007-BSD1)

Gasoline Range Hydrocarbons	84.6	10.0	mg/m ³ Air	100		84.6	50-150	4.05	50	
Surrogate: 4-BFB (FID)	10.3		"	9.60		107	52-148			

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.

Jeff Gerdes, Project Manager

North Creek Analytical, Inc.
Environmental Laboratory Network



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

Maul Foster & Alongi-Seattle
 17171 Bothell Way NE #264
 Seattle WA/USA, 98155

Project: Chelan Bulk Terminal #0082
 Project Number: 9077.15.01
 Project Manager: Carol Lybeer

Reported:
 05/03/02 13:17

Gasoline Hydrocarbons (Benzene to Napthalene) and BTEX in Air by NWTPH-G 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
Batch 2E01007: Prepared 05/01/02 Using EPA 5030B (P/T)										
LCS Dup (2E01007-BSD2)										
Benzene	2.04	0.100	mg/m ³ Air	2.00		102	50-150	5.03	50	
Toluene	1.98	0.100	"	2.00		99.0	50-150	4.12	50	
Ethylbenzene	1.99	0.100	"	2.00		99.5	50-150	3.58	50	
Xylenes (total)	6.08	0.200	"	6.00		101	50-150	5.06	50	
Surrogate: 4-BFB (PID)	10.1		"	9.60		105	57-117			
Duplicate (2E01007-DUP1) Source: B2D0580-02										
Gasoline Range Hydrocarbons	23.7	10.0	mg/m ³ Air		20.2			15.9	30	
Surrogate: 4-BFB (FID)	9.38		"	9.60		97.7	52-148			

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.

Jeff Gerdes, Project Manager

North Creek Analytical, Inc.
 Environmental Laboratory Network



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

Maul Foster & Alongi-Seattle
17171 Bothell Way NE #264
Seattle WA/USA, 98155

Project: Chelan Bulk Terminal #0082
Project Number: 9077.15.01
Project Manager: Carol Lybeer

Reported:
05/03/02 13:17

Notes and Definitions

- G-02 The chromatogram for this sample does not resemble a typical gasoline pattern. Please refer to the sample chromatogram.
- I-06 The analyte concentration may be artificially elevated due to coeluting compounds or components.
- 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

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.

Jeff Gerdes, Project Manager

North Creek Analytical, Inc.
Environmental Laboratory Network

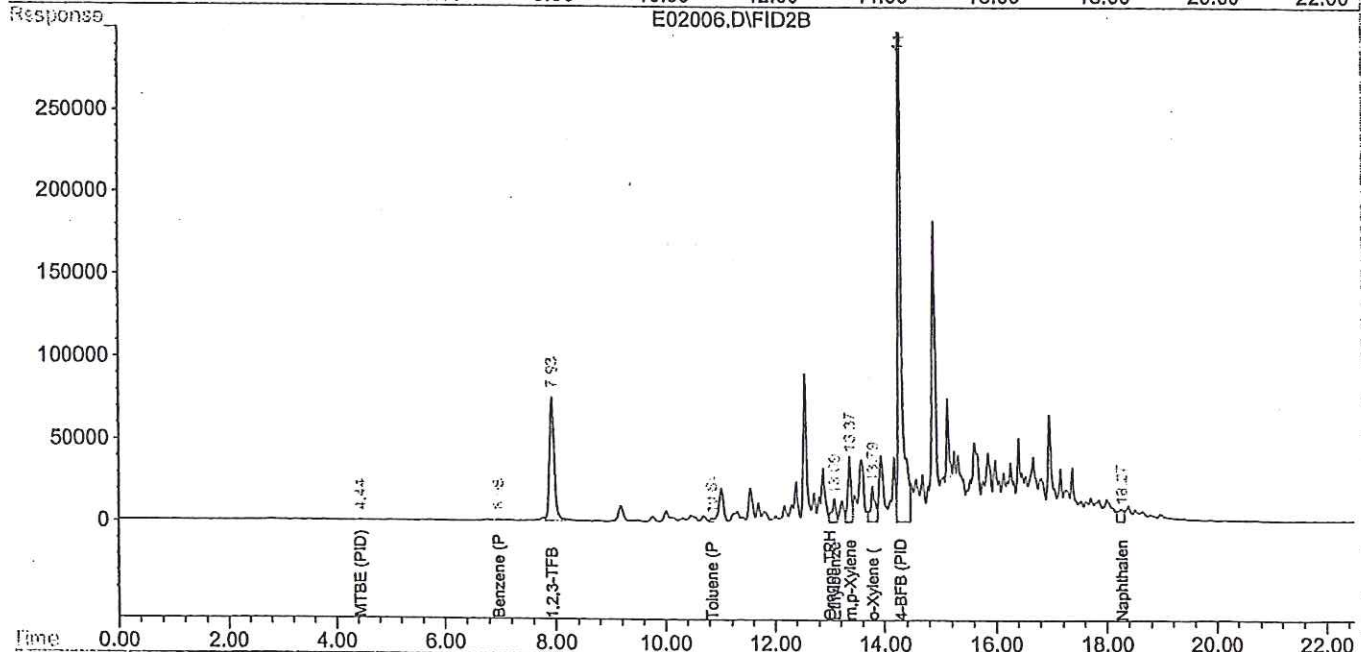
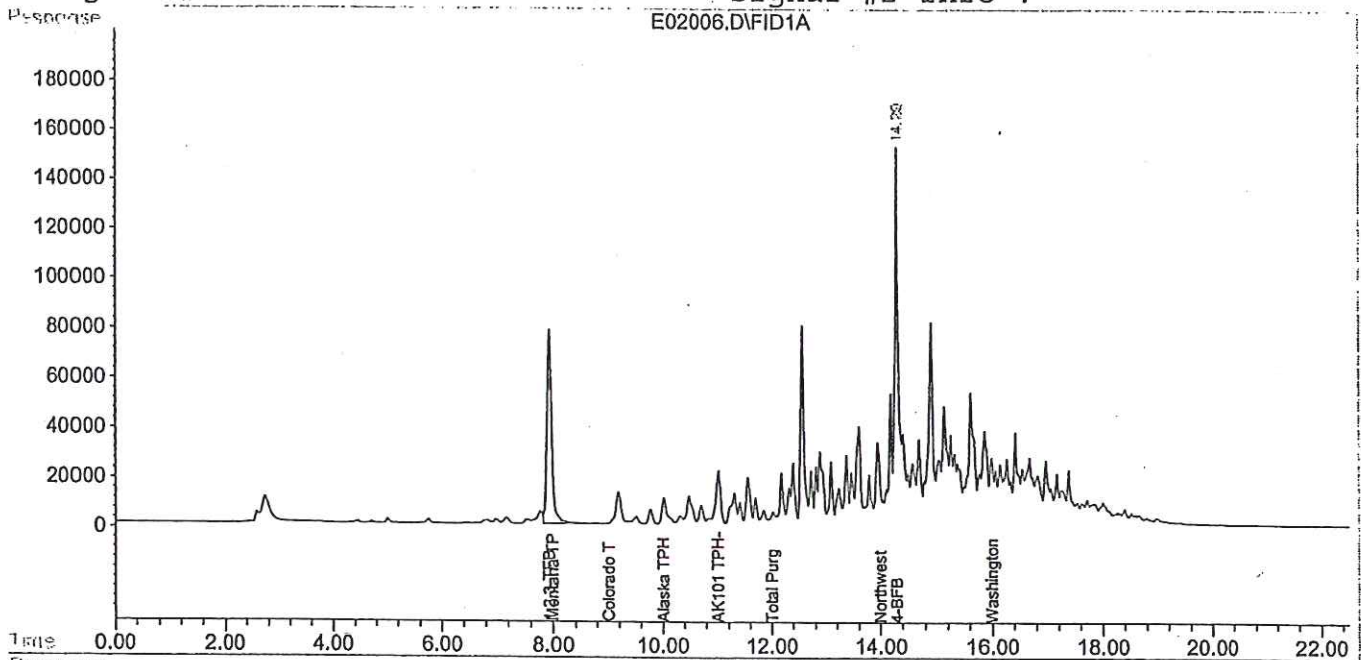
Page 5 of 5

Quantitation Report

Signal #1 : D:\HPCHEM\3\DATA\050202\E02006.D\FID1A.CH Vial: 6
Signal #2 : D:\HPCHEM\3\DATA\050202\E02006.D\FID2B.CH
Acq On : 2 May 2002 9:13 Operator: sk
Sample : b2e0020-01 Inst : GC #6
Misc : 1x 25 ml, air Multiplr: 1.00
IntFile Signal #1: SURR.E IntFile Signal #2: SURR2.E
Quant Time: May 2 9:36 2002 Quant Results File: TEST0202.RES

Quant Method : D:\HPCHEM\3\METHODS\TEST0202.M (Chemstation Integrator)
Title : TPH-G Method
Last Update : Mon Apr 29 11:45:22 2002
Response via : Multiple Level Calibration
DataAcq Meth : TEST0202.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

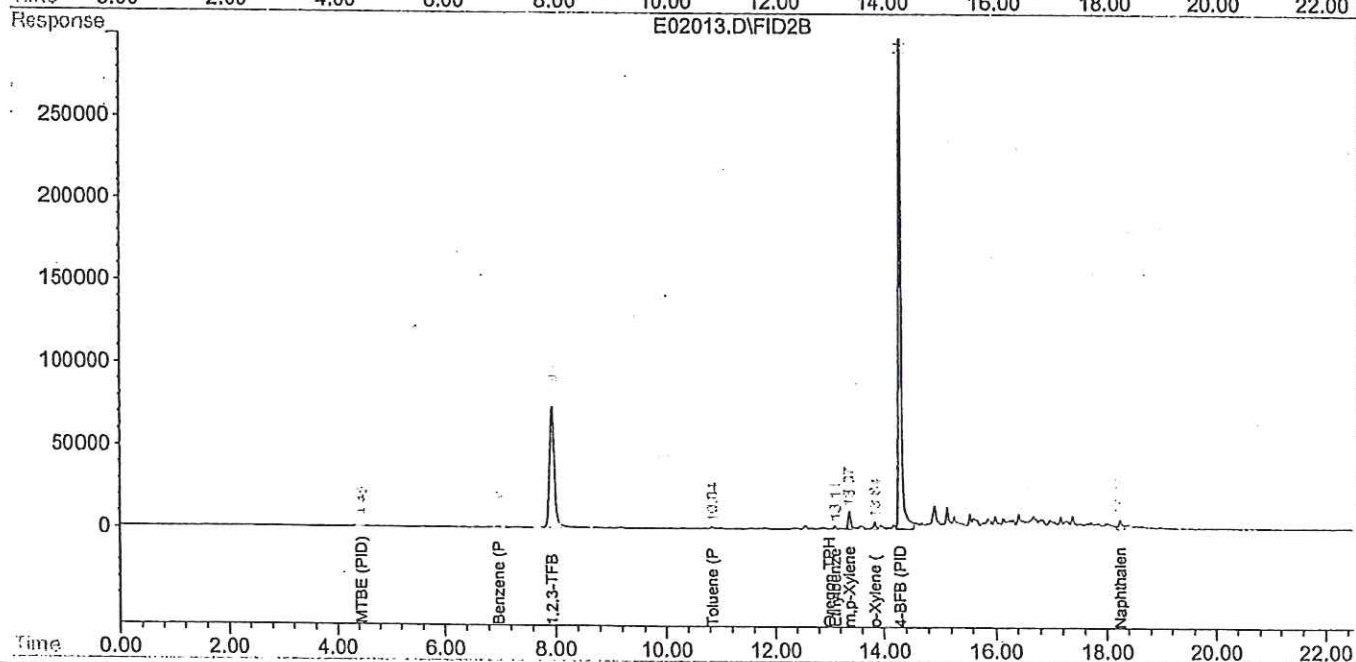
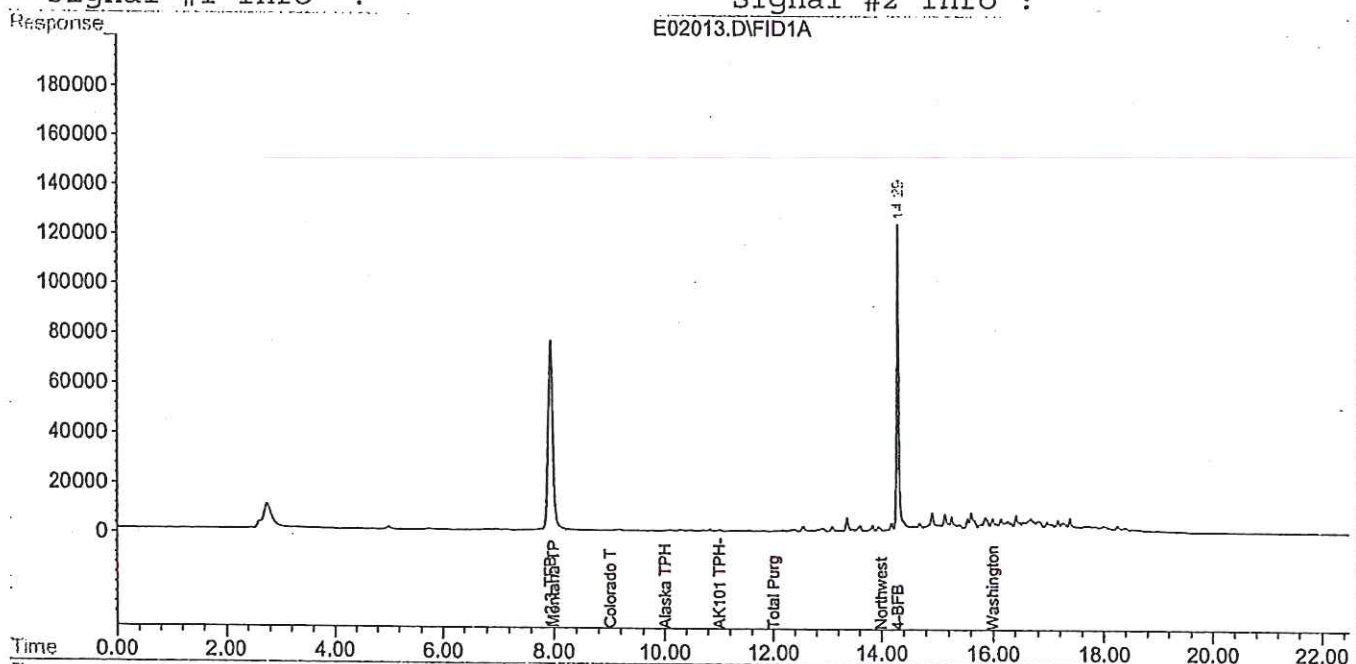


Quantitation Report

Signal #1 : D:\HPCHEM\3\DATA\050202\E02013.D\FID1A.CH Vial: 13
Signal #2 : D:\HPCHEM\3\DATA\050202\E02013.D\FID2B.CH
Acq On : 2 May 2002 12:34 Operator: sk
Sample : b2e0020-02 r1 Inst : GC #6
Misc : 1x 25 ml, air Multiplr: 1.00
IntFile Signal #1: SURR.E IntFile Signal #2: SURR2.E
Quant Time: May 2 12:57 2002 Quant Results File: TEST0202.RES

Quant Method : D:\HPCHEM\3\METHODS\TEST0202.M (Chemstation Integrator)
Title : TPH-G Method
Last Update : Mon Apr 29 11:45:22 2002
Response via : Multiple Level Calibration
DataAcq Meth : TEST0202.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8223
 East 11115 Montgomery, Suite B, Spokane, WA 98206-4776
 9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132
 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711

(425) 420-9200 FAX 210
 (509) 924-9200 FAX 924-9290
 (503) 906-9200 FAX 906-9210
 (541) 383-9310 FAX 382-7588

UNOCAL CHAIN OF CUSTODY REPORT

B2E0020

UNOCAL INFORMATION

Facility Number: Chelan Bulk Terminal #0082

Site Address: Chelan, WA

City, State, ZIP:

Site Release Number: Direct Billing to Mark Bearley-Unocal

Unocal Manager: Mark Bearley

CERT INFO: (check one) Evaluation Remediation

Detection Demolition Closure Miscellaneous

CONSULTANT INFORMATION

Firm: Maul, Foster, & Alougi Project#: 9077.15.01

Address: 17171 Bothell Way NE, #204
Seattle, WA 98155

Phone: (425) 744-1489 Fax: (425) 744-0919

Project Manager: Carol Lo

Sample Collection by: G. Sandberg

Chain of Custody Record #:

Quality Assurance Data Level: A B

A: Standard Summary

B: Standard + Chromatograms

Laboratory Turnaround Days: 1 2 3 4 5

SAMPLE IDENTIFICATION	SAMPLING DATE / TIME	MATRIX (W.S.O)	# OF CON-TAINERS
1. <u>VE-IN-0502</u>	<u>5/1/02 @ 0940</u>	<u>Air</u>	<u>1</u>
2. <u>VE-EF-0502</u>	<u>5/1/02 @ 0950</u>	<u>Air</u>	<u>1</u>
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			

TPH-HCID	TPH-Gas	BTEX	EPA 8021 Mod.	TPH-Gas + BTEX	TPH-Diesel	TPH-Diesel-Ext.	W/SG Cleanup	Halogen. Volatiles	EPA 8021	Pesticides/CBS	or PCBs Only	GCMS Volatiles	EPA 8260	GCMS SemiVol.	EPA 8270	PAH's:	8270 SIM or 8310	Lead:	Total or Dissolved	TCLP or RCRA	Metals (8)	
				X	X																	

NCA SAMPLE NUMBER B2E0020-01

02

Relinquished by: [Signature] Firm: MFA Date & Time: 5/1/02 @ 1440

Received by: [Signature] Firm: NGA Date & Time: 5/1/02 @ 1440

Were all requested results provided? yes no Define

Were results within requested turnaround? yes no "No" on back

Final Report Approval

Final Approval Signature: _____ Date: _____



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

Maul Foster & Alongi-Seattle
 17171 Bothell Way NE #264
 Seattle WA/USA, 98155

Project: Former Bulk Terminal #0082
 Project Number: 9077.15.01
 Project Manager: Carol Lybeer

Reported:
 08/06/02 14:08

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-1-0702	B2G0466-01	Water	07/23/02 10:20	07/23/02 17:20
MW-2-0702	B2G0466-02	Water	07/22/02 20:15	07/23/02 17:20
MW-3-0702	B2G0466-03	Water	07/22/02 21:00	07/23/02 17:20
MW-4-0702	B2G0466-04	Water	07/22/02 22:10	07/23/02 17:20
MW-5-0702	B2G0466-05	Water	07/23/02 11:05	07/23/02 17:20
MW-6-0702	B2G0466-06	Water	07/22/02 19:30	07/23/02 17:20
MW-7-0702	B2G0466-07	Water	07/22/02 21:35	07/23/02 17:20
MW-8-0702	B2G0466-08	Water	07/23/02 09:35	07/23/02 17:20

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.

Scott A. Woerman For Jeff Gerdes, Project Manager

North Creek Analytical, Inc.
 Environmental Laboratory Network



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

Maul Foster & Alongi-Seattle
 17171 Bothell Way NE #264
 Seattle WA/USA, 98155

Project: Former Bulk Terminal #0082
 Project Number: 9077.15.01
 Project Manager: Carol Lybeer

Reported:
 08/06/02 14:08

**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-1-0702 (B2G0466-01) Water Sampled: 07/23/02 10:20 Received: 07/23/02 17:20

Gasoline Range Hydrocarbons	ND	50.0	ug/l	1	2G29003	07/29/02	07/29/02	NWTPH-Gx/8021B	
Benzene	ND	0.500	"	"	"	"	"	"	"
Toluene	ND	0.500	"	"	"	"	"	"	"
Ethylbenzene	ND	0.500	"	"	"	"	"	"	"
Xylenes (total)	ND	1.00	"	"	"	"	"	"	"
Surrogate: 4-BFB (FID)	95.0 %	57-125			"	"	"	"	"
Surrogate: 4-BFB (PID)	99.4 %	62-120			"	"	"	"	"

MW-2-0702 (B2G0466-02) Water Sampled: 07/22/02 20:15 Received: 07/23/02 17:20

Gasoline Range Hydrocarbons	ND	50.0	ug/l	1	2G29003	07/29/02	07/29/02	NWTPH-Gx/8021B	
Benzene	ND	0.500	"	"	"	"	"	"	"
Toluene	ND	0.500	"	"	"	"	"	"	"
Ethylbenzene	ND	0.500	"	"	"	"	"	"	"
Xylenes (total)	ND	1.00	"	"	"	"	"	"	"
Surrogate: 4-BFB (FID)	90.4 %	57-125			"	"	"	"	"
Surrogate: 4-BFB (PID)	100 %	62-120			"	"	"	"	"

MW-3-0702 (B2G0466-03) Water Sampled: 07/22/02 21:00 Received: 07/23/02 17:20

Gasoline Range Hydrocarbons	ND	50.0	ug/l	1	2G29003	07/29/02	07/29/02	NWTPH-Gx/8021B	
Benzene	ND	0.500	"	"	"	"	"	"	"
Toluene	ND	0.500	"	"	"	"	"	"	"
Ethylbenzene	ND	0.500	"	"	"	"	"	"	"
Xylenes (total)	ND	1.00	"	"	"	"	"	"	"
Surrogate: 4-BFB (FID)	94.8 %	57-125			"	"	"	"	"
Surrogate: 4-BFB (PID)	101 %	62-120			"	"	"	"	"

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.

Scott A. Woerman For Jeff Gerdes, Project Manager

North Creek Analytical, Inc.
 Environmental Laboratory Network

Page 2 of 10



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

Maul Foster & Alongi-Seattle
 17171 Bothell Way NE #264
 Seattle WA/USA, 98155

Project: Former Bulk Terminal #0082
 Project Number: 9077.15.01
 Project Manager: Carol Lybeer

Reported:
 08/06/02 14:08

**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-4-0702 (B2G0466-04) Water Sampled: 07/22/02 22:10 Received: 07/23/02 17:20									
Gasoline Range Hydrocarbons	ND	50.0	ug/l	1	2G29003	07/29/02	07/29/02	NWTPH-Gx/8021B	
Benzene	ND	0.500	"	"	"	"	"	"	
Toluene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	1.00	"	"	"	"	"	"	
Surrogate: 4-BFB (FID)	95.4 %	57-125			"	"	"	"	
Surrogate: 4-BFB (PID)	100 %	62-120			"	"	"	"	
MW-5-0702 (B2G0466-05) Water Sampled: 07/23/02 11:05 Received: 07/23/02 17:20									
Gasoline Range Hydrocarbons	ND	50.0	ug/l	1	2G29003	07/29/02	07/29/02	NWTPH-Gx/8021B	
Benzene	2.11	0.500	"	"	"	"	"	"	
Toluene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	0.565	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	1.00	"	"	"	"	"	"	
Surrogate: 4-BFB (FID)	97.3 %	57-125			"	"	"	"	
Surrogate: 4-BFB (PID)	99.6 %	62-120			"	"	"	"	
MW-6-0702 (B2G0466-06) Water Sampled: 07/22/02 19:30 Received: 07/23/02 17:20									
Gasoline Range Hydrocarbons	ND	50.0	ug/l	1	2G29003	07/29/02	07/29/02	NWTPH-Gx/8021B	
Benzene	ND	0.500	"	"	"	"	"	"	
Toluene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	1.00	"	"	"	"	"	"	
Surrogate: 4-BFB (FID)	89.6 %	57-125			"	"	"	"	
Surrogate: 4-BFB (PID)	100 %	62-120			"	"	"	"	

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.

Scott A. Woerman For Jeff Gerdes, Project Manager



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

Maul Foster & Alongi-Seattle
 17171 Bothell Way NE #264
 Seattle WA/USA, 98155

Project: Former Bulk Terminal #0082
 Project Number: 9077.15.01
 Project Manager: Carol Lybeer

Reported:
 08/06/02 14:08

**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-7-0702 (B2G0466-07) Water Sampled: 07/22/02 21:35 Received: 07/23/02 17:20									
Gasoline Range Hydrocarbons	ND	50.0	ug/l	1	2G29003	07/29/02	07/29/02	NWTPH-Gx/8021B	
Benzene	ND	0.500	"	"	"	"	"	"	
Toluene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	1.00	"	"	"	"	"	"	
Surrogate: 4-BFB (FID)	94.8 %	57-125			"	"	"	"	
Surrogate: 4-BFB (PID)	101 %	62-120			"	"	"	"	
MW-8-0702 (B2G0466-08) Water Sampled: 07/23/02 09:35 Received: 07/23/02 17:20									
Gasoline Range Hydrocarbons	ND	50.0	ug/l	1	2G29003	07/29/02	07/29/02	NWTPH-Gx/8021B	
Benzene	ND	0.500	"	"	"	"	"	"	
Toluene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	1.00	"	"	"	"	"	"	
Surrogate: 4-BFB (FID)	91.2 %	57-125			"	"	"	"	
Surrogate: 4-BFB (PID)	101 %	62-120			"	"	"	"	

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.

Scott A. Woerman For Jeff Gerdes, Project Manager



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 Emplre Avenue, Suite F-1, Bend, OR 97701-5711
 541.383.9310 fax 541.382.7588

Maul Foster & Alongi-Seattle
 17171 Bothell Way NE #264
 Seattle WA/USA, 98155

Project: Former Bulk Terminal #0082
 Project Number: 9077.15.01
 Project Manager: Carol Lybeer

Reported:
 08/06/02 14:08

Semivolatile Petroleum Products by NWTPH-Dx with Acid/Silica Gel Clean-up
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-1-0702 (B2G0466-01) Water Sampled: 07/23/02 10:20 Received: 07/23/02 17:20									
Diesel Range Hydrocarbons	0.346	0.250	mg/l	1	2G24014	07/24/02	07/25/02	NWTPH-Dx	D-06
Lube Oil Range Hydrocarbons	ND	0.500	"	"	"	"	"	"	"
Surrogate: 2-FBP	67.5 %	50-150			"	"	"	"	
Surrogate: Octacosane	73.1 %	50-150			"	"	"	"	
MW-2-0702 (B2G0466-02) Water Sampled: 07/22/02 20:15 Received: 07/23/02 17:20									
Diesel Range Hydrocarbons	ND	0.250	mg/l	1	2G24014	07/24/02	07/25/02	NWTPH-Dx	
Lube Oil Range Hydrocarbons	ND	0.500	"	"	"	"	"	"	
Surrogate: 2-FBP	69.8 %	50-150			"	"	"	"	
Surrogate: Octacosane	65.3 %	50-150			"	"	"	"	
MW-3-0702 (B2G0466-03) Water Sampled: 07/22/02 21:00 Received: 07/23/02 17:20									
Diesel Range Hydrocarbons	ND	0.250	mg/l	1	2G24014	07/24/02	07/25/02	NWTPH-Dx	
Lube Oil Range Hydrocarbons	ND	0.500	"	"	"	"	"	"	
Surrogate: 2-FBP	70.1 %	50-150			"	"	"	"	
Surrogate: Octacosane	72.9 %	50-150			"	"	"	"	
MW-4-0702 (B2G0466-04) Water Sampled: 07/22/02 22:10 Received: 07/23/02 17:20									
Diesel Range Hydrocarbons	ND	0.250	mg/l	1	2G24014	07/24/02	07/25/02	NWTPH-Dx	
Lube Oil Range Hydrocarbons	ND	0.500	"	"	"	"	"	"	
Surrogate: 2-FBP	69.1 %	50-150			"	"	"	"	
Surrogate: Octacosane	66.5 %	50-150			"	"	"	"	
MW-5-0702 (B2G0466-05) Water Sampled: 07/23/02 11:05 Received: 07/23/02 17:20									
Diesel Range Hydrocarbons	0.842	0.250	mg/l	1	2G24014	07/24/02	07/25/02	NWTPH-Dx	D-06
Lube Oil Range Hydrocarbons	ND	0.500	"	"	"	"	"	"	
Surrogate: 2-FBP	69.1 %	50-150			"	"	"	"	
Surrogate: Octacosane	75.0 %	50-150			"	"	"	"	

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.

S. Woerman

Scott A. Woerman For Jeff Gerdes, Project Manager



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

Maul Foster & Alongi-Seattle
 17171 Bothell Way NE #264
 Seattle WA/USA, 98155

Project: Former Bulk Terminal #0082
 Project Number: 9077.15.01
 Project Manager: Carol Lybeer

Reported:
 08/06/02 14:08

**Semivolatile Petroleum Products by NWTPH-Dx with Acid/Silica Gel Clean-up
 North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-6-0702 (B2G0466-06) Water Sampled: 07/22/02 19:30 Received: 07/23/02 17:20									
Diesel Range Hydrocarbons	ND	0.250	mg/l	1	2G24014	07/24/02	07/25/02	NWTPH-Dx	
Lube Oil Range Hydrocarbons	ND	0.500	"	"	"	"	"	"	
Surrogate: 2-FBP	65.9 %	50-150			"	"	"	"	
Surrogate: Octacosane	63.5 %	50-150			"	"	"	"	
MW-7-0702 (B2G0466-07) Water Sampled: 07/22/02 21:35 Received: 07/23/02 17:20									
Diesel Range Hydrocarbons	ND	0.250	mg/l	1	2G24014	07/24/02	07/25/02	NWTPH-Dx	
Lube Oil Range Hydrocarbons	ND	0.500	"	"	"	"	"	"	
Surrogate: 2-FBP	71.3 %	50-150			"	"	"	"	
Surrogate: Octacosane	74.7 %	50-150			"	"	"	"	
MW-8-0702 (B2G0466-08) Water Sampled: 07/23/02 09:35 Received: 07/23/02 17:20									
Diesel Range Hydrocarbons	0.319	0.250	mg/l	1	2G24014	07/24/02	07/25/02	NWTPH-Dx	D-06
Lube Oil Range Hydrocarbons	ND	0.500	"	"	"	"	"	"	
Surrogate: 2-FBP	68.2 %	50-150			"	"	"	"	
Surrogate: Octacosane	66.5 %	50-150			"	"	"	"	

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.

Scott A. Woerman For Jeff Gerdes, Project Manager

North Creek Analytical, Inc.
 Environmental Laboratory Network



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

Maul Foster & Alongi-Seattle
 17171 Bothell Way NE #264
 Seattle WA/USA, 98155

Project: Former Bulk Terminal #0082
 Project Number: 9077.15.01
 Project Manager: Carol Lybeer

Reported:
 08/06/02 14:08

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

Batch 2G29003: Prepared 07/29/02 Using EPA 5030B (P/T)

Blank (2G29003-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)	45.4		"	48.0		94.6	57-125			
Surrogate: 4-BFB (PID)	47.6		"	48.0		99.2	62-120			

LCS (2G29003-BS1)

Gasoline Range Hydrocarbons	511	50.0	ug/l	500		102	80-120			
Benzene	6.90	0.500	"	6.19		111	80-120			
Toluene	35.4	0.500	"	37.6		94.1	80-120			
Ethylbenzene	9.14	0.500	"	8.83		104	80-120			
Xylenes (total)	44.7	1.00	"	44.5		100	80-120			
Surrogate: 4-BFB (FID)	49.9		"	48.0		104	57-125			
Surrogate: 4-BFB (PID)	46.4		"	48.0		96.7	62-120			

LCS Dup (2G29003-BSD1)

Gasoline Range Hydrocarbons	521	50.0	ug/l	500		104	80-120	1.94	25	
Benzene	6.86	0.500	"	6.19		111	80-120	0.581	40	
Toluene	35.1	0.500	"	37.6		93.4	80-120	0.851	40	
Ethylbenzene	9.09	0.500	"	8.83		103	80-120	0.549	40	
Xylenes (total)	44.6	1.00	"	44.5		100	80-120	0.224	40	
Surrogate: 4-BFB (FID)	51.5		"	48.0		107	57-125			
Surrogate: 4-BFB (PID)	47.1		"	48.0		98.1	62-120			

Matrix Spike (2G29003-MS1)

Source: B2G0466-01

Gasoline Range Hydrocarbons	483	50.0	ug/l	500	ND	92.5	70-130			
Benzene	7.08	0.500	"	6.19	ND	114	80-120			
Toluene	35.5	0.500	"	37.6	ND	94.0	68-114			
Ethylbenzene	9.05	0.500	"	8.83	ND	101	80-120			
Xylenes (total)	44.5	1.00	"	44.5	ND	99.0	80-120			
Surrogate: 4-BFB (FID)	48.3		"	48.0		101	57-125			
Surrogate: 4-BFB (PID)	46.6		"	48.0		97.1	62-120			

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.

Scott A. Woerman For Jeff Gerdes, Project Manager



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 Emplre Avenue, Suite F-1, Bend, OR 97701-5711
 541.383.9310 fax 541.382.7588

Maul Foster & Alongi-Seattle
 17171 Bothell Way NE #264
 Seattle WA/USA, 98155

Project: Former Bulk Terminal #0082
 Project Number: 9077.15.01
 Project Manager: Carol Lybeer

Reported:
 08/06/02 14:08

**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
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 2G29003: Prepared 07/29/02 Using EPA 5030B (P/T)

Matrix Spike Dup (2G29003-MSD1)

Source: B2G0466-01

Gasoline Range Hydrocarbons	485	50.0	ug/l	500	ND	92.9	70-130	0.413	25	
Benzene	7.05	0.500	"	6.19	ND	114	80-120	0.425	40	
Toluene	35.9	0.500	"	37.6	ND	95.0	68-114	1.12	40	
Ethylbenzene	9.14	0.500	"	8.83	ND	102	80-120	0.990	40	
Xylenes (total)	45.1	1.00	"	44.5	ND	100	80-120	1.34	40	
Surrogate: 4-BFB (FID)	48.6		"	48.0		101	57-125			
Surrogate: 4-BFB (PID)	47.4		"	48.0		98.8	62-120			

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.

Scott A. Woerman For Jeff Gerdes, Project Manager



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

Maul Foster & Alongi-Seattle
 17171 Bothell Way NE #264
 Seattle WA/USA, 98155

Project: Former Bulk Terminal #0082
 Project Number: 9077.15.01
 Project Manager: Carol Lybeer

Reported:
 08/06/02 14:08

Semivolatle Petroleum Products by NWTPH-Dx with Acid/Silica Gel Clean-up - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	RPD RPD	RPD RPD	Notes
---------	--------	-----------------	-------	-------------	---------------	-----------	---------	---------	-------

Batch 2G24014: Prepared 07/24/02 Using EPA 3520C

Blank (2G24014-BLK1)

Diesel Range Hydrocarbons	ND	0.250	mg/l						
Lube Oil Range Hydrocarbons	ND	0.500	"						
Surrogate: 2-FBP	0.217		"	0.320		67.8	50-150		
Surrogate: Octacosane	0.209		"	0.320		65.3	50-150		

LCS (2G24014-BS1)

Diesel Range Hydrocarbons	1.79	0.250	mg/l	2.00		89.5	50-110		
Surrogate: 2-FBP	0.276		"	0.320		86.2	50-150		

LCS Dup (2G24014-BSD1)

Diesel Range Hydrocarbons	1.39	0.250	mg/l	2.00		69.5	50-110	25.2	50
Surrogate: 2-FBP	0.271		"	0.320		84.7	50-150		

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.

Scott A. Woerman For Jeff Gerdes, Project Manager



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

Maul Foster & Alongi-Seattle
 17171 Bothell Way NE #264
 Seattle WA/USA, 98155

Project: Former Bulk Terminal #0082
 Project Number: 9077.15.01
 Project Manager: Carol Lybeer

Reported:
 08/06/02 14:08

Notes and Definitions

- D-06 The sample chromatographic pattern does not resemble the fuel standard used for quantitation.
- 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.

Scott A. Woerman For Jeff Gerdes, Project Manager



North Creek Analytical, Inc. Environmental Laboratory Network www.nca-labs.com

11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8223
East 11115 Montgomery, Suite B, Spokane, WA 98206-4776
9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132
20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711
(425) 420-9200 FAX 420-9210
(509) 924-9200 FAX 924-9290
(503) 906-9200 FAX 906-9210
(541) 383-9310 FAX 382-7588

UNOCAL CHAIN OF CUSTODY REPORT BA60466

UNOCAL INFORMATION
 Facility Number: **Chelan Bulk #0082**
 Site Address: **Chelan, WA.**
 City, State, ZIP:
 Site Release Number: **Direct Billing to Mark Brearley@Unocal**
 Unocal Manager: **Mark Brearley**
 CERT INFO: (check one) Evaluation Remediation
 Demolition Closure Miscellaneous

CONSULTANT INFORMATION
 Firm: **Maule, Foster, & Alving** Project# **9077.15.01** COPY
 Address: **17171 Bothell Way NE, #264**
Seattle, WA. 98155
 Phone: **(425) 744-1489** Fax: **(425) 744-0919**
 Project Manager: **Carol Lybeer**
 Sample Collection by: **Greg Sundborg**

Chain of Custody Record #:
 Quality Assurance Data Level:
 A: Standard Summary
 B: Standard + Chromatograms
 Laboratory Turnaround Days: 1 2 3 4 5

SAMPLE IDENTIFICATION	SAMPLING DATE / TIME	MATRIX (W.S.O)	# OF CON. TAINERS
1. MW-1-0702	7/23/02 @ 10:20	W	5
2. MW-2-0702	7/23/02 @ 20:15		
3. MW-3-0702	7/23/02 @ 21:07		
4. MW-4-0702	7/23/02 @ 22:10		
5. MW-5-0702	7/23/02 @ 11:15		
6. MW-6-0702	7/23/02 @ 19:30		
7. MW-7-0702	7/23/02 @ 21:35		
8. MW-8-0702	7/23/02 @ 21:35		
9. Trip		W	1
10.			

TPH-HCID	TPH-Gas	BTEX	EPA 8021 Mod	TPH-Gas + BTEX	TPH-Diesel	TPH-Diesel-Ext.	TPH-Diesel-Ext. w/SG Cleanup	Halogen, Volatiles	EPA 8021 Pesticides/PCBs or PCBs Only	GCM/S Volatiles	EPA 8260 GCM/S SemiVols.	EPA 8270 PAH's	Lead: Total or Dissolved	TCLP or RCRA Metals (8)	MWH-DX w/Acid + Silica gel	(Hold Time)	
	X	X	X	X	X									X	X	X	

Relinquished by:
 Firm: **MFA** Date & Time: **7/23/02 @ 17:00**
 Received by: Date & Time: **7/27/02 1:15**
 Firm: **NCA**

Final Report Approval: **0**
 Were all requested results provided?
 Were results within requested turnaround?
 Final Approval Signature: _____
 Date: _____