

Maul Foster & Alongi, Inc.

Environmental & Engineering Services



August 23, 2001
Project 9077.015.001

Dr. Mark Brearley
Unocal Asset Management Group
P.O. Box 2004
Edmonds, Washington 98020

Re: Results of Soil Excavation Activities, Former Unocal Bulk Fuel Terminal #0082,
Chelan, Washington *FS# 345*

Dear Mark:

In April and May 2001, Maul Foster & Alongi, Inc. (MFA) conducted soil excavation activities at former Unocal Bulk Fuel Terminal #0082 (site) in Chelan, Washington. The purpose of the work was to remediate the petroleum hydrocarbon-impacted soil that occurred at depths above the high seasonal groundwater table.

BACKGROUND

Former Unocal Bulk Fuel Terminal #0082 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. The site is bounded to the north by Highway 97 and the Lady of the Lake ferry terminal; to the east and west by private residences; and to the south by a recreational area parking lot. From at least 1927 to 1989, Unocal used the site for bulk petroleum fuel storage and distribution. The structures at the site included an office, a warehouse, three gasoline aboveground storage tanks (ASTs), a diesel AST, a stove oil (heating oil) AST, four dispenser pumps, a heating oil underground storage tank (UST), two truck loading racks, and a truck unloading rack. The site was closed in 1989, and all of the tanks and structures were demolished and removed by 1992. The locations of the former tanks and structures are shown on Figure 2. The site is currently vacant.

In 1989, GeoEngineers conducted a subsurface investigation at the site to evaluate the potential presence of petroleum hydrocarbons in the soil and groundwater. The investigation consisted of collecting one surface soil sample (designated WH-1), excavating and sampling three test pits (TP-1, TP-2, and TP-3), and drilling and sampling three soil borings that were completed as groundwater monitoring wells (MW-1, MW-2, and MW-3). Groundwater samples were collected from the three wells. The locations of the surface soil sample, test pits, and monitoring wells are shown on Figure 2. The soil sample analytical results showed that samples from boring MW-1 [collected at depths of 15 and 20 feet below ground surface (bgs)] and from test pits TP-1 (collected at a depth 11 feet bgs), TP-2 (collected at depths of 5

and 11 feet bgs), and TP-3 (collected at a depth of less than 6 inches bgs) contained total petroleum hydrocarbon (TPH) concentrations that exceeded the Model Toxics Control Act (MTCA) Method A cleanup level¹. MW-1 was located near the former truck unloaders, TP-1 was located near the former truck loading rack, TP-2 was located near the pre-1968 former truck loading rack, and TP-3 was located at the former barrel storage area (Figure 2). The groundwater sample analytical results showed that the sample from MW-1 contained TPH, and benzene, toluene, ethylbenzene, and total xylenes (BTEX) concentrations that exceeded the Method A cleanup levels. The groundwater sample from well MW-3 contained a TPH concentration that exceeded the Method A cleanup level. The results of the investigation were presented in GeoEngineers' report, *Report of Geotechnical Services, Subsurface Contamination Study*, dated March 14, 1990.

In April 1991, GeoEngineers drilled and sampled three additional soil borings that were completed as groundwater monitoring wells (MW-4, MW-5, and MW-6), and collected groundwater samples from all of the wells at the site. The well locations are shown on Figure 2. The soil sample analytical results showed that the sample collected from boring MW-5, at a depth of 20 feet bgs, contained benzene, TPH, TPH as gasoline (TPH-G), and TPH as diesel (TPH-D) concentrations above the MTCA Method A cleanup levels. MW-5 was located near the former truck unloaders (Figure 2). The groundwater sample analytical results showed that the samples from wells MW-1 and MW-5 contained BTEX and TPH-G concentrations that exceeded the Method A cleanup levels. The samples from wells MW-1, MW-2, MW-3 and MW-4 contained dissolved lead concentrations greater than the Method A cleanup level. The results of the assessment activities were presented in GeoEngineers' report, *Supplemental Report of Geotechnical Services, Subsurface Contamination Study*, dated September 3, 1991.

In November 1992, GeoEngineers collected a surface soil sample (designated S-1) and drilled and sampled an additional soil boring that was completed as a groundwater monitoring well (MW-7). The locations of S-1 and MW-7 are shown on Figure 2. The soil sample analytical results showed that surface soil sample S-1 contained total xylenes, TPH-G, and TPH-D concentrations that exceeded the MTCA Method A cleanup levels. S-1 was located near the former ASTs (Figure 2). The results of the investigation activities were described in GeoEngineers' report, *Progress Report No. 2, Quarterly Groundwater Monitoring and Supplemental Subsurface Explorations*, dated May 14, 1993.

In August 1995, GeoEngineers excavated and sampled 15 additional test pits (TP-1 through TP-15) to further assess the extent of shallow, hydrocarbon-impacted soil at the site. The locations of the test pits are shown on Figure 2. The soil sample analytical results showed that

¹ Chapter 173-340 WAC, "The Model Toxics Control Act Cleanup Regulations; Method A Cleanup Levels."
Amended January 1996.

samples from test pits TP-4 (collected at a depth of 6 feet bgs) and TP-5 (collected at a depth of 13.5 feet bgs) contained TPH-G, TPH-D and TPH as oil (TPH-O) concentrations that exceeded the MTCA Method A cleanup levels. A sample from TP-9, collected at a depth of 10 feet bgs, contained a TPH-G concentration that exceeded the Method A cleanup level. A sample from TP-11, collected at a depth of 6 feet bgs, contained a TPH-O concentration that exceeded the Method A cleanup level. TP-4 was located near the former truck loading rack, TP-5 was located near the former truck unloaders, TP-9 was located near the former ASTs, and TP-11 was located near the former heating oil UST (Figure 2). The results of the investigation were described in GeoEngineers' report, *Report of Environmental Services, Supplemental Subsurface Contamination and In-situ Testing*, dated January 18, 1996.

From 1991 to 1999, GeoEngineers collected groundwater samples from all of the monitoring wells at the site on a quarterly to semi-annual basis. From 1991 to 1999, the groundwater samples from wells MW-1 and MW-5 typically contained benzene, total xylenes, TPH-G, and TPH-D concentrations that exceeded the MTCA Method A cleanup levels. Between 1991 and 1997, several of the samples from MW-1 and MW-4 contained dissolved lead concentrations that exceeded the Method A cleanup levels. However, after December 1997, the groundwater samples from MW-1 and MW-4 did not contain dissolved lead concentrations above the Method A cleanup level. The results of the quarterly and semi-annual sampling events are described in several GeoEngineers' reports from 1991 to 1999.

Based on the geologic conditions encountered in the test pits and soil borings, the soil beneath the site consists of sand and gravel with local silty zones to a depth of at least 33 feet bgs. Unconfined groundwater occurs at depths ranging from approximately 14 to 29 feet bgs. Due to fluctuations of the Lake Chelan water level, the groundwater level beneath the site fluctuates up to 14 feet and the groundwater flow direction is variable.

SOIL EXCAVATION ACTIVITIES

Based on the results of the previous investigation activities, petroleum hydrocarbon-impacted soil was present at 6 areas of the site (near the former truck unloaders, near the pre-1968 former truck loading rack, near the former truck loading rack, at the former barrel storage area, near the former ASTs, and near the former heating oil UST). To remediate the impacted soil that occurred at depths above the high seasonal groundwater table (approximately 14 feet bgs), the impacted soil at all six areas was excavated in April and May 2001. The hydrocarbon-impacted soil that occurs within the zone of groundwater fluctuation (14 to 29 feet bgs) was too deep to be excavated. This deeper impacted soil is only present at the former truck unloaders area.

Prior to conducting the work, an excavating and grading permit was obtained from the City of Chelan. Wyser Construction, Inc. (Wyser), of Everett, Washington, conducted the excavation activities under the direction of an MFA environmental technician. MFA screened the excavated soil, and the sidewalls and floors of the excavations for the presence of petroleum hydrocarbons by using visual appearance, odors, and a photoionization detector (PID). After initially completing the excavations, MFA collected composite sidewall and/or floor samples from the excavations for laboratory analysis. Stained soil was encountered in all of the excavations, and the excavation soil samples were often located at areas that contained staining to insure that the impacted soil was effectively removed.

All of the excavation soil samples were submitted to North Creek Analytical, Inc. (NCA), in Bothell, Washington, for analysis. The initial samples from all of the excavations, except the former heating oil UST area excavation, were analyzed for BTEX by EPA Method 8021B, TPH-G by Ecology Method NWTPH-G, and for TPH-D and TPH-O by Ecology Method NWTPH-Dx (after silica gel/sulfuric acid cleanup). The samples from the former heating oil UST area excavation were analyzed for BTEX, TPH-D, and TPH-O. If the soil sample analytical results showed that a sample contained petroleum hydrocarbon concentrations greater than MTCA Method A cleanup levels, then that sample area was further excavated and the expanded area of excavation was sampled for analysis of the contaminant(s) of concern. The soil sample analytical results from all six excavations are presented in Table 1, and copies of the laboratory reports are attached. The excavation activities conducted at each of the six areas are described below.

Excavation #1 - Former Truck Unloaders Area

The previous investigation activities at the former truck unloaders area showed that the soil sample collected from test pit TP-5, at a depth of 13.5 feet bgs, contained TPH-G, TPH-D, and TPH-O concentrations [510, 10,000, and 670 milligrams per kilogram (mg/kg), respectively] that exceeded the MTCA Method A cleanup levels (100, 200, and 200 mg/kg, respectively). On April 30 and May 1, 2001, the impacted soil at the former truck unloaders area was excavated (designated Excavation #1). The area of Excavation #1 was approximately 410 square feet, and included previous test pit TP-5 (Figure 3). The maximum depth of the excavation was approximately 14 feet.

After completing Excavation #1, MFA collected two composite soil samples from the excavation sidewalls (designated EX1-SW1-7.5-0401 and EX1-SW2-7.5-0401) and one composite sample from the excavation floor (designated EX1-F-11-0401) for laboratory analysis. The sidewall samples were collected at a depth of approximately 7.5 feet bgs, and the floor sample was collected at approximately 11 feet bgs. The approximate locations of the Excavation #1 sidewall and floor samples are shown on Figure 3. The sample analytical results showed that sidewall sample EX1-SW1-7.5-0401 contained a TPH-D concentration

(25.7 mg/kg) that was below the MTCA Method A cleanup level. Sidewall sample EX1-SW2-7.5-0401 and the floor sample did not contain TPH-D concentrations greater than the method reporting limit (MRL). BTEX, TPH-G, and TPH-O were not detected at concentrations above the MRLs in any of the Excavation #1 samples.

Excavation #2 – Pre-1968 Former Truck Loading Rack Area

The previous investigation activities at the pre-1968 former truck loading rack area showed that the soil samples collected from 1989 test pit TP-2, at depths of 5 and 11 feet bgs, contained TPH concentrations (6,000 and 590 mg/kg, respectively) that exceeded the MTCA Method A cleanup level (200 mg/kg). On April 30, 2001, the impacted soil at the pre-1968 former truck loading rack area was excavated (designated Excavation #2). The initial area of Excavation #2 was approximately 290 square feet, and included previous test pit TP-2 (Figure 3). The maximum depth of excavation was approximately 11 feet bgs.

After initially completing Excavation #2, MFA collected three composite soil samples from the sidewalls of the excavation for laboratory analysis. Two sidewall samples (designated EX2-SW1-7.5-0401 and EX2-SW2-7.5-0401) were collected at depths of approximately 7.5 feet bgs, and the other sidewall sample (designated EX2-SW3-2.0-0501) was collected at a depth of approximately 2 feet bgs. The approximate locations of the Excavation #2 sidewall samples are shown on Figure 3. The sample analytical results showed that sidewall sample EX2-SW2-7.5-0401 contained TPH-D and TPH-O concentrations (1,660 and 330 mg/kg, respectively) that exceeded the MTCA Method A cleanup levels. Sidewall samples EX2-SW1-7.5-0401 and EX2-SW3-2.0-0501 did not contain TPH-D or TPH-O concentrations above the MRLs. BTEX and TPH-G were not detected at concentrations above the MRLs in any of the Excavation #2 samples.

Due to the TPH-D and TPH-O concentrations in sidewall sample EX2-SW2-7.5-0401, additional soils were excavated from the west side of Excavation #2 on May 7, 2001. The excavation was expanded approximately 12 feet to the west, and the depth of excavation was approximately 11 feet bgs. After expanding the excavation, MFA collected a composite sidewall sample (designated EX2-SW2B-7.5-0501) from the west wall of the excavation at a depth of approximately 7 to 7.5 feet bgs. The sample was submitted to NCA for analysis of TPH-D and TPH-O. The sample analytical results showed that TPH-D and TPH-O were not detected at concentrations above the MRLs. The final area of Excavation #2 was approximately 470 square feet (Figure 3).

Excavation #3 - Former Truck Loading Rack Area

The previous investigation activities at the former truck loading rack area showed that the soil sample collected from 1989 test pit TP-1, at a depth of 11 feet, contained a TPH concentration (1,900 mg/kg) that exceeded the MTCA Method A cleanup level. The previous investigation results also showed that the soil sample collected from test pit TP-4, at a depth of 6 feet bgs, contained TPH-G, TPH-D, and TPH-O concentrations (340, 10,000 and 910 mg/kg, respectively) that exceeded the Method A cleanup levels. On April 30 and May 1, 2001, the impacted soil at the former truck loading rack was excavated (designated Excavation #3). The initial area of Excavation #3 was approximately 300 square feet, and included previous test pits TP-1 and TP-4 (Figure 3). The maximum depth of the excavation was approximately 13 feet.

After initially completing Excavation #3, MFA collected three composite soil samples from the excavation sidewalls for laboratory analysis. Two sidewall samples (designated EX3-SW1-7.5-0401 and EX3-SW2-7.5-0401) were collected at depths of approximately 7.5 feet bgs, and the other sidewall sample (designated EX3-SW3-1.0-0501) was collected at a depth of approximately 1 foot bgs. The approximate locations of the Excavation #3 sidewall samples are shown on Figure 3. The sample analytical results showed that sidewall sample EX3-SW1-7.5-0401 contained a TPH-D concentration (325 mg/kg) that exceeded the MTCA Method A cleanup level. The other two sidewall samples did not contain TPH-D concentrations above the MRL. BTEX, TPH-G, and TPH-O were not detected at concentrations above the MRLs in any of the Excavation #3 samples.

Due to the TPH-D concentration in sidewall sample EX3-SW1-7.5-0401, additional soils were excavated from the north side of Excavation #3 on May 7, 2001. The excavation was expanded approximately 6 feet to the north, and the depth of excavation was approximately 11 feet bgs. After expanding the excavation, MFA collected a composite sidewall sample (designated EX3-SW1B-0501) from the north wall of the excavation at a depth of approximately 8 feet bgs. The sample was submitted to NCA for TPH-D analysis. The analytical results showed that the sample contained a TPH-D concentration (179 mg/kg) that was below the MTCA Method A cleanup level. The final area of Excavation #3 was approximately 370 square feet (Figure 3).

Excavation #4 - Former Barrel Storage Area

The previous investigation activities at the former barrel storage area showed that the soil sample collected from 1989 test pit TP-3, at a depth of less than 6 inches bgs, contained a TPH concentration (69,000 mg/kg) that exceeded the MTCA Method A cleanup level. On May 1, 2001, the impacted soil at the former barrel storage area was excavated (designated Excavation #4). The area of Excavation #4 was approximately 150 square feet, and included

previous test pit TP-3 (Figure 4). The maximum depth of the initial excavation was approximately 1.5 feet bgs.

After initially completing Excavation #4, MFA collected a composite soil sample from the excavation sidewalls (designated EX4-SW-0501) and a composite sample from the excavation floor (designated EX4-F-0501) for laboratory analysis. The sidewall sample was collected at a depth of approximately 0.5 feet bgs, and the floor sample was collected at a depth of approximately 1.0 to 1.5 feet bgs. The approximate locations of the Excavation #4 sidewall and floor samples are shown on Figure 4. The sample analytical results showed that the floor sample contained TPH-D and TPH-O concentrations (376 and 1,010 mg/kg, respectively) that exceeded the MTCA Method A cleanup levels. The sidewall sample contained TPH-D and TPH-O concentrations (92.3 and 129 mg/kg, respectively) that were below the Method A cleanup levels. BTEX and TPH-G were not detected at concentrations above the MRLs in any of the Excavation #4 samples.

Due to the TPH-D and TPH-O concentrations in the floor sample, additional soils were excavated from the bottom of Excavation #4 on May 7, 2001. The entire area of the excavation was extended vertically to approximately 3.5 feet bgs. After expanding the excavation, MFA collected a composite floor sample (designated EX4-FB-0501) at a depth of approximately 3 to 3.5 feet bgs. The sample was submitted to NCA for TPH-D and TPH-O analysis. The analytical results showed that the sample contained TPH-D and TPH-O concentrations (11.1 and 47.7 mg/kg, respectively) that were below the MTCA Method A cleanup levels.

Excavation #5 - Former AST Area

The previous investigation activities at the former AST area showed that surface soil sample S-1 contained total xylenes, TPH-G, and TPH-D concentrations (590, 15,000, and 1,800 mg/kg, respectively) that exceeded the MTCA Method A cleanup levels (20, 100, and 200 mg/kg, respectively). The previous investigation results also showed that the soil sample collected from test pit TP-9, at a depth of approximately 10 feet bgs, contained a TPH-G concentration (294 mg/kg) that exceeded the Method A cleanup level. On May 8, 2001, the impacted soil at the former AST area was excavated (designated Excavation #5). The area of Excavation #5 was approximately 440 square feet, and included previous surface soil sample S-1 (Figure 4). The excavation did not extend to a depth of 10 feet bgs at previous test pit TP-9 because the excavated shallower soil near TP-9 did not exhibit hydrocarbon-like odors or PID readings above background conditions. The maximum depth of the excavation was approximately 6 feet bgs.

After completing Excavation #5, MFA collected two composite soil samples from the excavation sidewalls (designated EX5-SW-0501 and EX5-SW2-0501) and one composite

sample from the excavation floor (designated EX5-F-0501) for laboratory analysis. The sidewall samples were collected at depths of approximately 3.5 feet bgs, and the floor sample was collected at a depth of approximately 5.5 to 6.0 feet bgs. The approximate locations of the Excavation #5 sidewall and floor samples are shown on Figure 4. The sample analytical results showed that the sidewall sample EX5-SW-0501 and floor sample EX5-F-0501 contained TPH-D concentrations (198 and 128 mg/kg, respectively) that were below the MTCA Method A cleanup level. Sample EX5-SW-0501 also contained a TPH-O concentration (29.8 mg/kg) that was below the Method A cleanup level. BTEX and TPH-G were not detected at concentrations above the MRLs in any of the Excavation #5 samples.

Excavation #6 - Former UST Area

The previous investigation activities at the former heating oil UST area showed that the soil sample collected from test pit TP-11, at a depth of 6 feet bgs, contained a TPH-O concentration (230 mg/kg) that exceeded the MTCA Method A cleanup level. To evaluate the current petroleum hydrocarbon concentrations and define the vertical extent of contamination, MFA initially excavated and sampled a test pit at the location of former test pit TP-11 on May 1, 2001. Dark stained soil was encountered in the test pit at a depth of approximately 1.5 to 4.5 feet bgs. The test pit was expanded into a soil excavation (designated Excavation #6) to remove the stained soil. The area of Excavation #6 was approximately 100 square feet, and included previous test pit TP-11 (Figure 4). The excavation extended to a maximum depth of approximately 10 feet bgs.

After completing Excavation #6, MFA collected two composite soil samples from the sidewalls of the excavation for laboratory analysis. Sample TP11B-3-0501 was collected at a depth of approximately 3 feet bgs, and sample TP11B-8-0501 was collected at a depth of approximately 8 feet bgs. The approximate locations of the Excavation #6 sidewall samples are shown on Figure 4. The sample analytical results showed that BTEX, TPH-D, and TPH-O were not detected at concentrations above the MRLs in either of the Excavation #6 samples.

Dispose Soil and Backfill Excavations

A total of approximately 380 cubic yards of soil was excavated from the six excavations. Based on the field screening results, MFA segregated the soil into "clean" and contaminated stockpiles. The soil was placed into "clean" stockpiles if the PID readings were less than 30 parts per million and there was no other evidence of impacts (staining or odors).

To determine the petroleum hydrocarbon concentrations in the three "clean" stockpiles (SP-1, SP-2, and SP-3), MFA collected a composite soil sample from each of the stockpiles for laboratory analysis. The samples from stockpiles SP-1, SP-2, and SP-3 (designated

CSP-1-0501, CSP-2-0501, and CSP-3-0501, respectively) were submitted to NCA for analysis of BTEX, TPH-G, TPH-D and TPH-O. Sample CSP-2-0501 contained a TPH-O concentration (224 mg/kg) that exceeded the MTCA Method A cleanup level; therefore, the soil in stockpile SP-2 was added to the contaminated soil stockpile. Samples CSP-1-0501 and CSP-3-0501 contained TPH-D and TPH-O concentrations that were below the Method A cleanup levels or the MRLs. Based on the sample analytical results, the soil in stockpiles SP-1 and SP-3 (a total of approximately 80 cubic yards) was backfilled in the excavations. A total of approximately 300 cubic yards of soil in the contaminated stockpiles was hauled off site for disposal at the Waste Management landfill in East Wenatchee, Washington. The stockpile sample analytical results are presented in Table 1, and a copy of the laboratory report is attached.

Wyser used the excavated "clean" soil (approximately 80 cubic yards) and approximately 300 cubic yards of clean, imported sand to backfill the excavations. All of the backfill material was compacted in one-foot-thick lifts. At depths below 2 feet bgs, the backfill was compacted to a minimum of 92 percent of the maximum dry density defined by ASTM D1557. At depths above 2 feet bgs, the backfill was compacted to a minimum of 95 percent of the maximum dry density.

CONCLUSIONS

In April and May, 2001, MFA conducted soil excavation activities at the site to remediate the petroleum hydrocarbon-impacted soil that occurred at depths above the high seasonal groundwater table (approximately 14 feet bgs). The impacted soil was present at six areas of the site (near the former truck unloaders, near the pre-1968 former truck loading rack, near the former truck loading rack, at the former barrel storage area, near the former ASTs, and near the former heating oil UST). The impacted soil at all six areas was excavated (a total of six separate excavations), and the final area of each excavation ranged from approximately 100 to 470 square feet. The maximum depth of each excavation ranged from approximately 3.5 to 14 feet bgs.

To evaluate the petroleum hydrocarbon concentrations at the extents of the six excavations, MFA collected composite sidewall and/or floor samples from each excavation for laboratory analysis. The soil sample analytical results showed that the final excavation sidewall and floor samples contained BTEX, TPH-G, TPH-D and TPH-O concentrations below the MTCA Method A cleanup levels. Based on the excavation sample analytical results, the excavation activities effectively removed the hydrocarbon-impacted soil that occurred at depths above the high seasonal groundwater table.

After receiving the soil sample analytical results, the excavations were backfilled with "clean", excavated soil and clean, imported sand. A total of approximately 300 cubic yards of

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excavated soil from the six impacted areas was hauled off site for disposal at the Waste Management landfill in East Wenatchee, Washington.

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

Sincerely,

Maul Foster & Alongi, Inc.



Elisabeth Silver
Project Geologist



Michael D. Staton, R.G.
Principal Geologist

Attachments: Limitations
 Table 1
 Figures 1, 2, 3, and 4
 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 agreements 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.

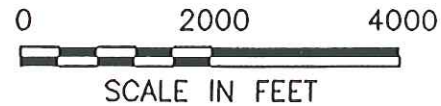
Table 1
Excavation Sample Analytical Results
Former Bulk Terminal #0082
Chelan, Washington

| Sample Name | Date Sampled | Approximate Sample Depth (feet) | TPH-D ^a (mg/kg) | TPH-O ^a (mg/kg) |
|--|--------------|---------------------------------|----------------------------|----------------------------|
| MTCA Method A Cleanup Levels ^b | | | 200 | 200 |
| Sidewall and Floor Samples from Excavation #1 | | | | |
| EX1-SW1-7.5-0401 | 04/30/2001 | 7.5 | 25.7 | <25.0 |
| EX1-SW2-7.5-0401 | 04/30/2001 | 7.5 | <10.0 | <25.0 |
| EX1-F-11-0501 | 05/01/2001 | 11.0 | <10.0 | <25.0 |
| Sidewall Samples from Excavation #2 | | | | |
| EX2-SW1-7.5-0401 | 04/30/2001 | 7.5 | <10.0 | <25.0 |
| EX2-SW2-7.5-0401* | 04/30/2001 | 7.5 | 1,660 | 330 |
| EX2-SW3-2.0-0501 | 05/01/2001 | 2.0 | <10.0 | <25.0 |
| EX2-SW2B-0501 | 05/07/2001 | 7.0 to 7.5 | <10.0 | <25.0 |
| Sidewall Samples from Excavation #3 | | | | |
| EX3-SW1-7.5-0401* | 04/30/2001 | 7.5 | 325 | <25.0 |
| EX3-SW2-7.5-0401 | 04/30/2001 | 7.5 | <10.0 | <25.0 |
| EX3-SW3-1.0-0501 | 05/01/2001 | 1.0 | <10.0 | <25.0 |
| EX3-SW1B-0501 | 05/07/2001 | 8.0 | 179 | <25.0 |
| Sidewall and Floor Samples from Excavation #4 | | | | |
| EX4-SW-0501 | 05/01/2001 | 0.5 | 92.3 | 129 |
| EX4-F-0501* | 05/01/2001 | 1.0 to 1.5 | 376 | 1,010 |
| EX4-FB-0501 | 05/07/2001 | 3.0 to 3.5 | 11.1 | 47.7 |
| Sidewall and Floor Samples from Excavation #5 | | | | |
| EX5-SW-0501 | 05/08/2001 | 3.5 | 198 | 29.8 |
| EX5-SW2-0501 | 05/08/2001 | 3.5 | <10.0 | <25.0 |
| EX5-F-0501 | 05/08/2001 | 5.5 to 6.0 | 128 | <25.0 |
| Sidewall Samples from Excavation #6 | | | | |
| TP11B-3-0501 | 05/01/2001 | 3.0 | <10.0 | <25.0 |
| TP11B-8-0501 | 05/01/2001 | 8.0 | <10.0 | <25.0 |
| Stockpile Samples | | | | |
| CSP-1-0501 | 05/01/2001 | -- | 12.8 | <25.0 |
| CSP-2-0501 | 05/01/2001 | -- | 143 | 224 |
| CSP-3-0501 | 05/01/2001 | -- | 62.8 | <25.0 |
| NOTES: | | | | |
| mg/kg = milligrams per kilogram. | | | | |
| Table 1 only includes the analytes that were detected above the method reporting limits. | | | | |
| Shaded values exceeded the MTCA Method A Cleanup Levels. | | | | |
| ^a TPH as diesel and as oil (TPH-D and TPH-O, respectively) by Ecology Method NWTPH-Dx (after sulfuric acid/silica gel cleanup). | | | | |
| ^b Chapter 173-340 WAC, "The Model Toxics Control Act Cleanup Regulations; Method A Cleanup Levels." Amended January 1996. | | | | |
| * Sample collected from an area that was subsequently excavated. | | | | |

File: G:\9000\9077-015_UNOCAL CHELAN\001-01-A.DWG Last edited: JUN. 26, 01 @ 2:15 p.m. by: ayoung Xrefs: none Black/White



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

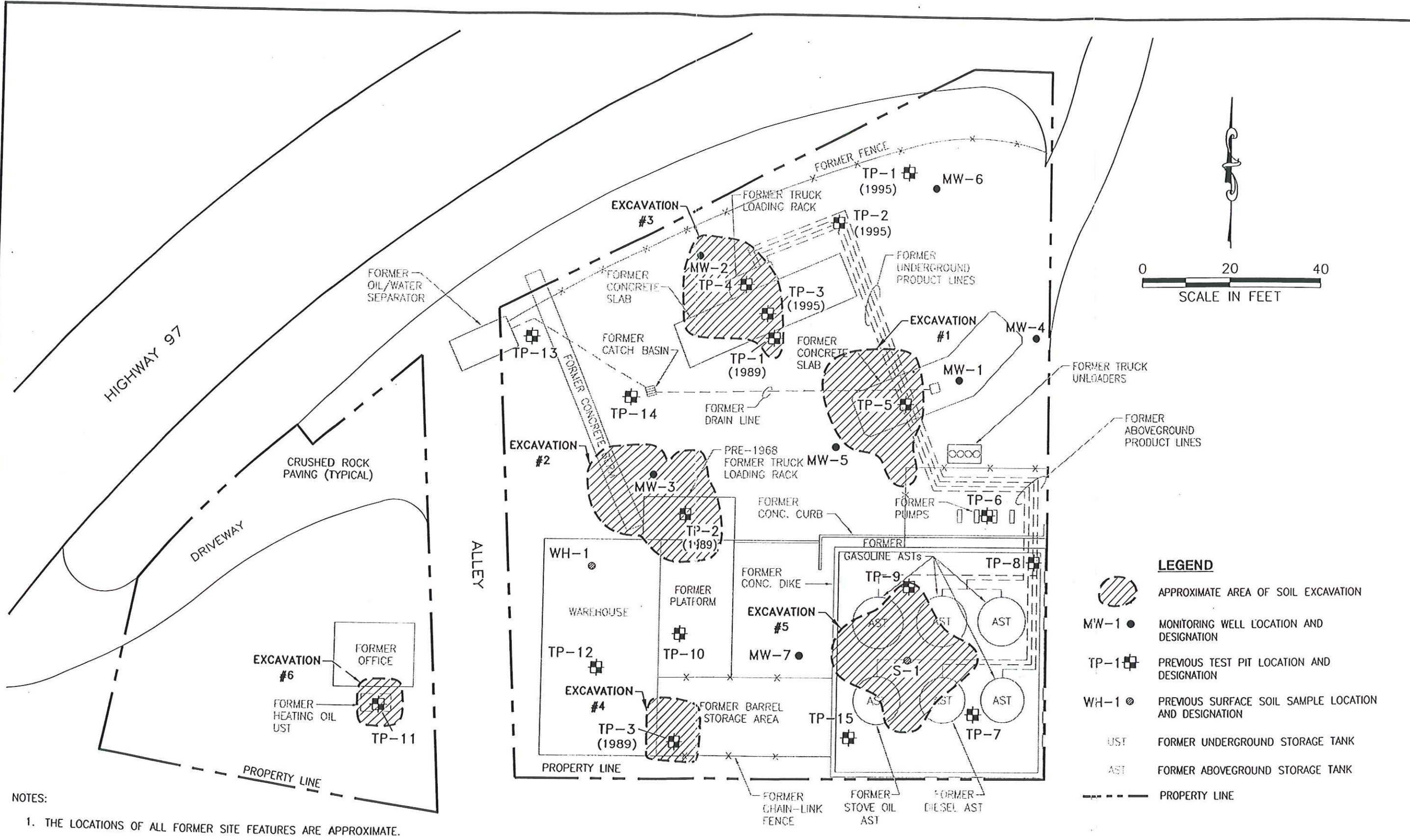


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Figure 1
FORMER UNOCAL BULK
FUEL TERMINAL #0082
CHELAN, WASHINGTON
SITE LOCATION MAP

File: \9077\015.001\005-02.dwg Last Edited: JUL 6, 2001 By: blookey Xrefs: None Black/White



- LEGEND**
- APPROXIMATE AREA OF SOIL EXCAVATION
 - M/W-1 ● MONITORING WELL LOCATION AND DESIGNATION
 - TP-1 □ PREVIOUS TEST PIT LOCATION AND DESIGNATION
 - WH-1 ● PREVIOUS SURFACE SOIL SAMPLE LOCATION AND DESIGNATION
 - UST FORMER UNDERGROUND STORAGE TANK
 - AST FORMER ABOVEGROUND STORAGE TANK
 - - - - - PROPERTY LINE

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

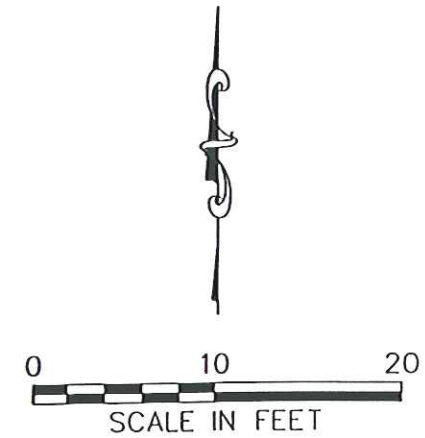
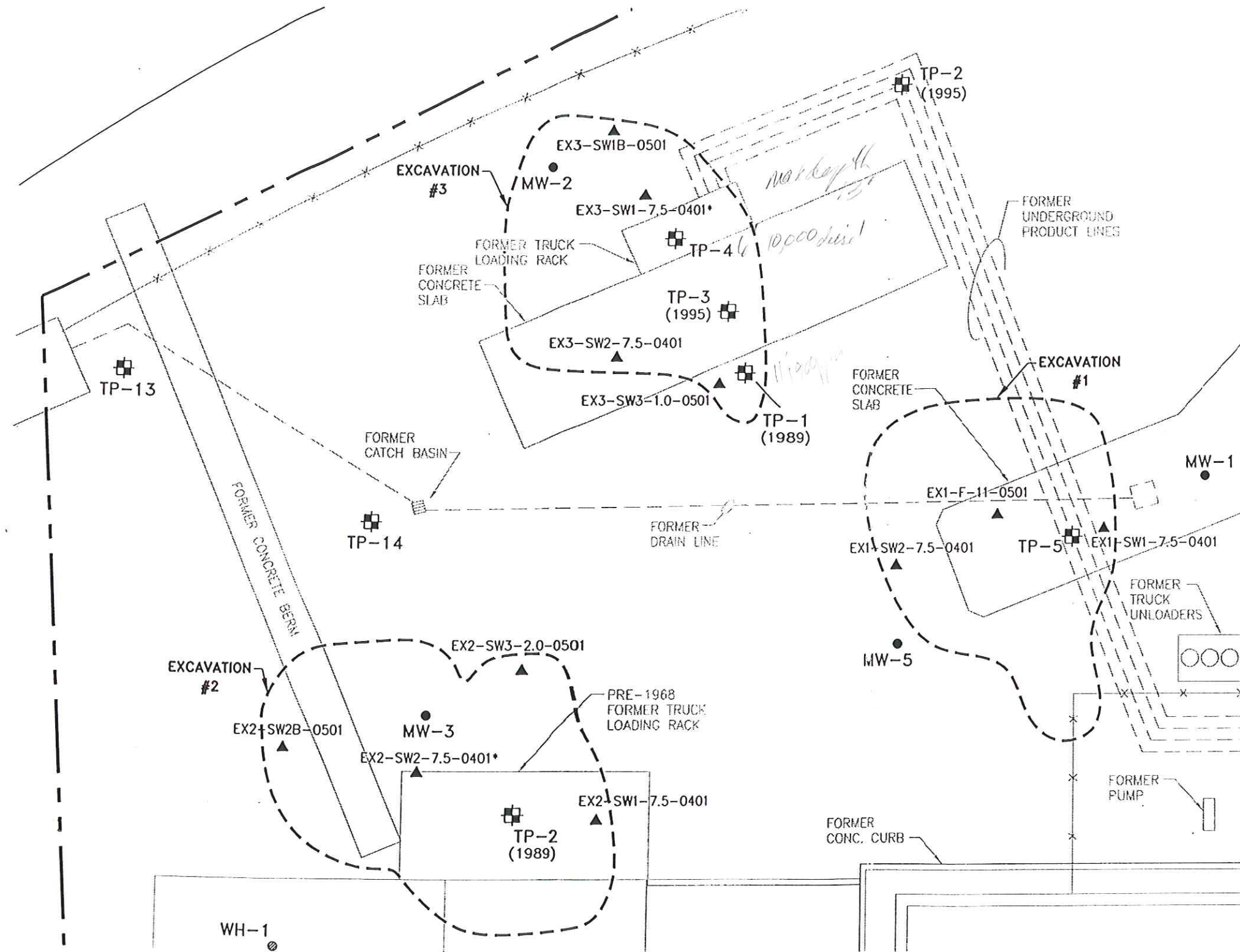
BASE MAP REFERENCE: DRAWING ENTITLED "FORMER SITE FACILITIES AND EXPLORATIONS", BY GEOENGINEERS, DATED MAY 7, 1998.

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 Seattle, Washington 98155 (425) 744-1489

DATE 7/01
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 APPR. MDS
 REVIS. _____
 PROJECT NO. 9077.015.001

Figure 2
 FORMER UNOCAL BULK FUEL
 TERMINAL #0082
 CHELAN, WASHINGTON
 SOIL EXCAVATION LOCATIONS

File: \\9077\015.001\005-03.dwg Last Edited: JUL 6, 2001 By: blookey Xrefs: None Black/White



- LEGEND**
- APPROXIMATE AREA OF SOIL EXCAVATION
 - EX1-SW2-7.5-0401 ▲ COMPOSITE SIDEWALL OR FLOOR SAMPLE LOCATION AND DESIGNATION
 - MW-1 ● MONITORING WELL LOCATION AND DESIGNATION
 - TP-1 PREVIOUS TEST PIT LOCATION AND DESIGNATION
 - WH-1 PREVIOUS SURFACE SOIL SAMPLE LOCATION AND DESIGNATION
 - PROPERTY LINE
 - * DUE TO PETROLEUM HYDROCARBON CONCENTRATIONS GREATER THAN MTCA METHOD A CLEANUP LEVELS, THE SAMPLE AREA WAS SUBSEQUENTLY EXCAVATED.

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

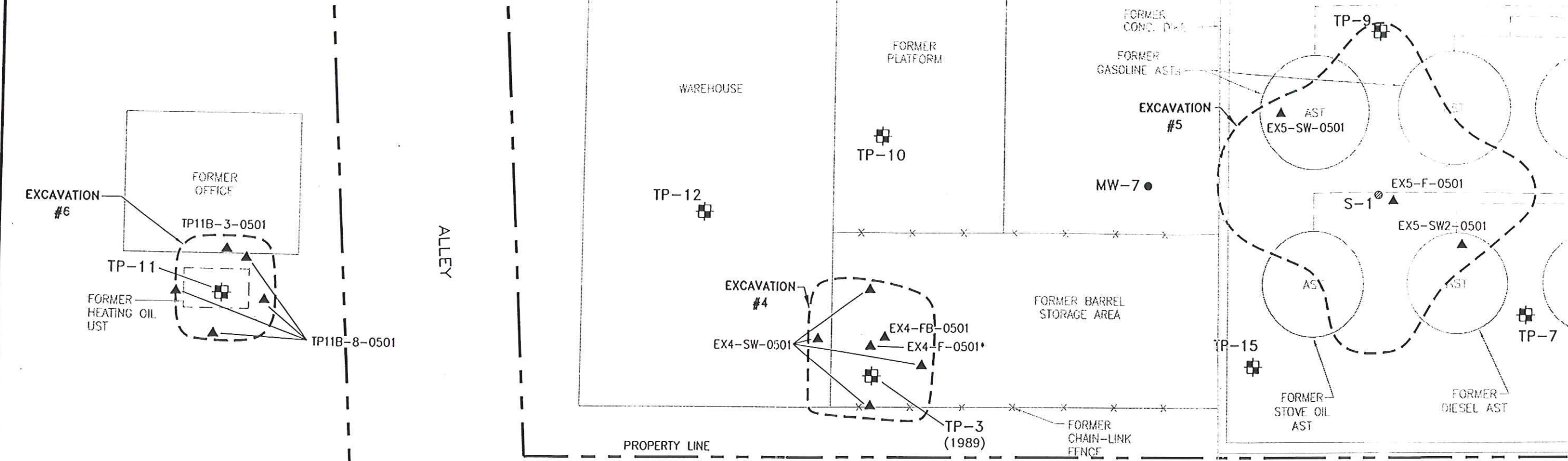
BASE MAP REFERENCE: DRAWING ENTITLED "FORMER SITE FACILITIES AND EXPLORATIONS", BY GEOENGINEERS, DATED MAY 7, 1998.

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| | |
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| DATE | 7/01 |
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| REVS. | |
| PROJECT NO. | 9077.015.001 |

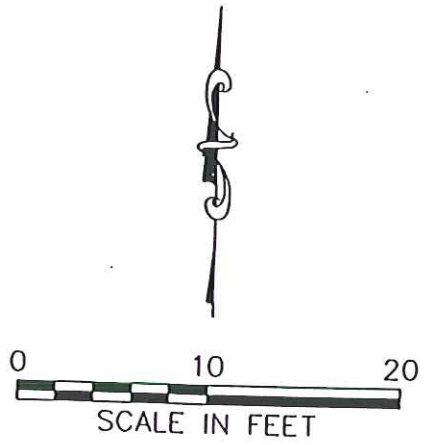
Figure 3
 FORMER UNOCAL BULK FUEL
 TERMINAL #0082
 CHELAN, WASHINGTON
 EXCAVATION SAMPLE LOCATIONS -
 EXCAVATIONS #1, #2, AND #3

File: \\9077\015.001\005-04.dwg Last Edited: JUL 6, 2001 By: blookey Xrefs: None Block/White



LEGEND

- APPROXIMATE AREA OF SOIL EXCAVATION
- EX4-FB-0501 ▲ COMPOSITE SIDEWALL OR FLOOR SAMPLE LOCATION AND DESIGNATION
- MW-7 ● MONITORING WELL LOCATION AND DESIGNATION
- TP-10 ☒ PREVIOUS TEST PIT LOCATION AND DESIGNATION
- S-1 ⊙ PREVIOUS SURFACE SOIL SAMPLE LOCATION AND DESIGNATION
- AST FORMER ABOVEGROUND STORAGE TANK
- PROPERTY LINE
- * DUE TO PETROLEUM HYDROCARBON CONCENTRATIONS GREATER THAN MTCA METHOD A CLEANUP LEVELS, THE SAMPLE AREA WAS SUBSEQUENTLY EXCAVATED.



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.

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 PROJECT NO. 9077.015.001

Figure 4
 FORMER UNOCAL BULK FUEL
 TERMINAL #0082
 CHELAN, WASHINGTON
 EXCAVATION SAMPLE LOCATIONS -
 EXCAVATIONS #4, #5, AND #6



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CASE NARRATIVE for B1E0037

Client: Maul Foster & Alongi
Project Manager: Mike Staton
Project Name: Chelan Bulk Terminal #0082

1.0 DESCRIPTION OF CASE

Eighteen soil samples were submitted on May 1, 2001, for the analysis of one or all of the following: Volatile Petroleum Hydrocarbons and BTEX compounds by NWTPH-Gx/EPA 8021B and Semivolatile Petroleum Hydrocarbons by NWTPH-Dx, BTEX by EPA 8021B and TCLP Metals by EPA 6020 and EPA 7470A.

2.0 COMMENTS ON SAMPLE RECEIPT

The samples were received and logged in on May 2, 2001 at a temperature of 2.1°C. Sample CSP-2-0501 was received in a jar whose lid had a small crack in it. The laboratory replaced the lid. No other anomalies were associated with sample receipt.

3.0 PREPARATION AND ANALYSIS

Volatile Petroleum Hydrocarbons and BTEX compounds by NWTPH-Gx/EPA 8021B

No anomalies or discrepancies were observed other than those already qualified in the data.

Semivolatile Petroleum Hydrocarbons by NWTPH-Dx

Two jars were received for sample EX1-SW1-7.5-0401. Container 'A' was used for the initial analysis of the sample as well as for a QC duplicate associated with laboratory batch 1E02036. The results for the native sample and the duplicate both came back as non-detect for the requested analytes. However, the surrogates 2-FBP and Octacosane fell outside of their established limits in the duplicate sample. As a consequence, the sample and the duplicate were sent back for re-extract.

A re-extract of sample EX1-SW1-7.5-0401 and its QC duplicate was conducted using container 'B' with results for diesel now 2.57 and 3.89 times higher than the reporting limit respectively. Unsure of the homogeneity of the samples, a second and third re-extract was conducted using containers 'A' and 'B'. These results showed that the sample was non-homogenous between containers 'A' and 'B'. The result reported in this data set is from container 'B'.

No additional anomalies or discrepancies were observed other than those already qualified in the data.

BTEX by EPA 8021B

No anomalies or discrepancies were associated with this analysis.

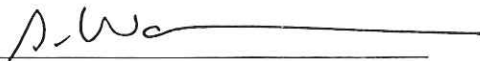


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TCLP Metals by EPA 6020/7470A

No anomalies or discrepancies were observed other than those already qualified in the data.

"I certify that this data package is in compliance with the Contract both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Director or his designee, as verified by the following signature."



Scott A. Woerman
Project Manager
North Creek Analytical

*North Creek Analytical, Inc.
Environmental Laboratory Network*



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

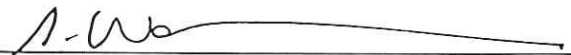
Amended Report
 Issued: 07/05/01 09:54

ANALYTICAL REPORT FOR SAMPLES - Amended

| Sample ID | Laboratory ID | Matrix | Date Sampled | Date Received |
|------------------|---------------|--------|----------------|----------------|
| EX1-SW1-7.5-0401 | B1E0037-01 | Soil | 04/30/01 15:10 | 05/02/01 09:30 |
| EX1-SW2-7.5-0401 | B1E0037-02 | Soil | 04/30/01 15:15 | 05/02/01 09:30 |
| EX2-SW1-7.5-0401 | B1E0037-03 | Soil | 04/30/01 15:20 | 05/02/01 09:30 |
| EX2-SW2-7.5-0401 | B1E0037-04 | Soil | 04/30/01 15:25 | 05/02/01 09:30 |
| EX3-SW1-7.5-0401 | B1E0037-05 | Soil | 04/30/01 15:30 | 05/02/01 09:30 |
| EX3-SW2-7.5-0401 | B1E0037-06 | Soil | 04/30/01 15:35 | 05/02/01 09:30 |
| EX1-F-11-0501 | B1E0037-07 | Soil | 05/01/01 12:10 | 05/02/01 09:30 |
| EX2-SW3-2.0-0501 | B1E0037-08 | Soil | 05/01/01 12:00 | 05/02/01 09:30 |
| EX3-SW3-1.0-0501 | B1E0037-09 | Soil | 05/01/01 11:55 | 05/02/01 09:30 |
| EX4-SW-0501 | B1E0037-10 | Soil | 05/01/01 11:00 | 05/02/01 09:30 |
| EX4-F-0501 | B1E0037-11 | Soil | 05/01/01 11:05 | 05/02/01 09:30 |
| TP11B-3-0501 | B1E0037-12 | Soil | 05/01/01 10:40 | 05/02/01 09:30 |
| TP11B-8-0501 | B1E0037-13 | Soil | 05/01/01 10:30 | 05/02/01 09:30 |
| CSP-1-0501 | B1E0037-14 | Soil | 05/01/01 11:15 | 05/02/01 09:30 |
| CSP-2-0501 | B1E0037-15 | Soil | 05/01/01 11:25 | 05/02/01 09:30 |
| CSP-3-0501 | B1E0037-16 | Soil | 05/01/01 11:35 | 05/02/01 09:30 |

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Maul Foster & Alongi-Seattle
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 Seattle WA, 98155

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

Amended Report
 Issued: 07/05/01 09:54

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

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

EX1-SW1-7.5-0401 (B1E0037-01) Soil Sampled: 04/30/01 15:10 Received: 05/02/01 09:30

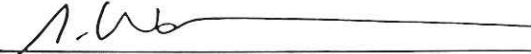
| | | | | | | | | | |
|-----------------------------|--------|--------|-----------|---|---------|----------|----------|----------------|--|
| Gasoline Range Hydrocarbons | ND | 5.00 | mg/kg dry | 1 | 1E02028 | 05/02/01 | 05/02/01 | NWTPH-Gx/8021B | |
| Benzene | ND | 0.0500 | " | " | " | " | " | " | |
| Toluene | ND | 0.0500 | " | " | " | " | " | " | |
| Ethylbenzene | ND | 0.0500 | " | " | " | " | " | " | |
| Xylenes (total) | ND | 0.100 | " | " | " | " | " | " | |
| Surrogate: 4-BFB (FID) | 94.9 % | 50-150 | | | " | " | " | " | |
| Surrogate: 4-BFB (PID) | 99.1 % | 50-150 | | | " | " | " | " | |

EX1-SW2-7.5-0401 (B1E0037-02) Soil Sampled: 04/30/01 15:15 Received: 05/02/01 09:30

| | | | | | | | | | |
|-----------------------------|--------|--------|-----------|---|---------|----------|----------|----------------|--|
| Gasoline Range Hydrocarbons | ND | 5.00 | mg/kg dry | 1 | 1E02028 | 05/02/01 | 05/02/01 | NWTPH-Gx/8021B | |
| Benzene | ND | 0.0500 | " | " | " | " | " | " | |
| Toluene | ND | 0.0500 | " | " | " | " | " | " | |
| Ethylbenzene | ND | 0.0500 | " | " | " | " | " | " | |
| Xylenes (total) | ND | 0.100 | " | " | " | " | " | " | |
| Surrogate: 4-BFB (FID) | 94.7 % | 50-150 | | | " | " | " | " | |
| Surrogate: 4-BFB (PID) | 95.7 % | 50-150 | | | " | " | " | " | |

EX2-SW1-7.5-0401 (B1E0037-03) Soil Sampled: 04/30/01 15:20 Received: 05/02/01 09:30

| | | | | | | | | | |
|-----------------------------|--------|--------|-----------|---|---------|----------|----------|----------------|--|
| Gasoline Range Hydrocarbons | ND | 5.00 | mg/kg dry | 1 | 1E02028 | 05/02/01 | 05/02/01 | NWTPH-Gx/8021B | |
| Benzene | ND | 0.0500 | " | " | " | " | " | " | |
| Toluene | ND | 0.0500 | " | " | " | " | " | " | |
| Ethylbenzene | ND | 0.0500 | " | " | " | " | " | " | |
| Xylenes (total) | ND | 0.100 | " | " | " | " | " | " | |
| Surrogate: 4-BFB (FID) | 94.5 % | 50-150 | | | " | " | " | " | |
| Surrogate: 4-BFB (PID) | 94.7 % | 50-150 | | | " | " | " | " | |


 Scott A. Woerman, Project Manager



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| | | |
|--|---|--|
| Maul Foster & Alongi-Seattle 17171 Bothell Way NE #264 Seattle WA, 98155 | Project: Chelan Bulk Terminal #0082 Project Number: 9077.015.001 Project Manager: Mike Staton | Amended Report Issued: 07/05/01 09:54 |
|--|---|--|

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

| Analyte | Result | Reporting | | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|--|--------|-----------|--|-----------|----------|---------|----------|----------|----------------|-------|
| | | Limit | | | | | | | | |
| EX2-SW2-7.5-0401 (B1E0037-04) Soil Sampled: 04/30/01 15:25 Received: 05/02/01 09:30 | | | | | | | | | | |
| Gasoline Range Hydrocarbons | ND | 5.00 | | mg/kg dry | 1 | 1E02028 | 05/02/01 | 05/03/01 | NWTPH-Gx/8021B | |
| Benzene | ND | 0.0500 | | " | " | " | " | " | " | |
| Toluene | ND | 0.0500 | | " | " | " | " | " | " | |
| Ethylbenzene | ND | 0.0500 | | " | " | " | " | " | " | |
| Xylenes (total) | ND | 0.100 | | " | " | " | " | " | " | |
| Surrogate: 4-BFB (FID) | 93.6 % | 50-150 | | | | " | " | " | " | |
| Surrogate: 4-BFB (PID) | 97.3 % | 50-150 | | | | " | " | " | " | |
| EX3-SW1-7.5-0401 (B1E0037-05) Soil Sampled: 04/30/01 15:30 Received: 05/02/01 09:30 | | | | | | | | | | |
| Gasoline Range Hydrocarbons | ND | 5.00 | | mg/kg dry | 1 | 1E02028 | 05/02/01 | 05/02/01 | NWTPH-Gx/8021B | |
| Benzene | ND | 0.0500 | | " | " | " | " | " | " | |
| Toluene | ND | 0.0500 | | " | " | " | " | " | " | |
| Ethylbenzene | ND | 0.0500 | | " | " | " | " | " | " | |
| Xylenes (total) | ND | 0.100 | | " | " | " | " | " | " | |
| Surrogate: 4-BFB (FID) | 95.2 % | 50-150 | | | | " | " | " | " | |
| Surrogate: 4-BFB (PID) | 96.0 % | 50-150 | | | | " | " | " | " | |
| EX3-SW2-7.5-0401 (B1E0037-06) Soil Sampled: 04/30/01 15:35 Received: 05/02/01 09:30 | | | | | | | | | | |
| Gasoline Range Hydrocarbons | ND | 5.00 | | mg/kg dry | 1 | 1E02028 | 05/02/01 | 05/02/01 | NWTPH-Gx/8021B | |
| Benzene | ND | 0.0500 | | " | " | " | " | " | " | |
| Toluene | ND | 0.0500 | | " | " | " | " | " | " | |
| Ethylbenzene | ND | 0.0500 | | " | " | " | " | " | " | |
| Xylenes (total) | ND | 0.100 | | " | " | " | " | " | " | |
| Surrogate: 4-BFB (FID) | 95.3 % | 50-150 | | | | " | " | " | " | |
| Surrogate: 4-BFB (PID) | 98.1 % | 50-150 | | | | " | " | " | " | |

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 Seattle WA, 98155

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

Amended Report
 Issued: 07/05/01 09:54

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

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

EX1-F-11-0501 (B1E0037-07) Soil Sampled: 05/01/01 12:10 Received: 05/02/01 09:30

| | | | | | | | | | |
|-----------------------------|--------|--------|-----------|---|---------|----------|----------|----------------|--|
| Gasoline Range Hydrocarbons | ND | 5.00 | mg/kg dry | 1 | 1E02028 | 05/02/01 | 05/02/01 | NWTPH-Gx/8021B | |
| Benzene | ND | 0.0500 | " | " | " | " | " | " | |
| Toluene | ND | 0.0500 | " | " | " | " | " | " | |
| Ethylbenzene | ND | 0.0500 | " | " | " | " | " | " | |
| Xylenes (total) | ND | 0.100 | " | " | " | " | " | " | |
| Surrogate: 4-BFB (FID) | 92.5 % | 50-150 | | | " | " | " | " | |
| Surrogate: 4-BFB (PID) | 98.3 % | 50-150 | | | " | " | " | " | |

EX2-SW3-2.0-0501 (B1E0037-08) Soil Sampled: 05/01/01 12:00 Received: 05/02/01 09:30


| | | | | | | | | | |
|-----------------------------|--------|--------|-----------|---|---------|----------|----------|----------------|--|
| Gasoline Range Hydrocarbons | ND | 5.00 | mg/kg dry | 1 | 1E02028 | 05/02/01 | 05/02/01 | NWTPH-Gx/8021B | |
| Benzene | ND | 0.0500 | " | " | " | " | " | " | |
| Toluene | ND | 0.0500 | " | " | " | " | " | " | |
| Ethylbenzene | ND | 0.0500 | " | " | " | " | " | " | |
| Xylenes (total) | ND | 0.100 | " | " | " | " | " | " | |
| Surrogate: 4-BFB (FID) | 92.0 % | 50-150 | | | " | " | " | " | |
| Surrogate: 4-BFB (PID) | 94.4 % | 50-150 | | | " | " | " | " | |

EX3-SW3-1.0-0501 (B1E0037-09) Soil Sampled: 05/01/01 11:55 Received: 05/02/01 09:30

| | | | | | | | | | |
|-----------------------------|--------|--------|-----------|---|---------|----------|----------|----------------|--|
| Gasoline Range Hydrocarbons | ND | 5.00 | mg/kg dry | 1 | 1E02028 | 05/02/01 | 05/02/01 | NWTPH-Gx/8021B | |
| Benzene | ND | 0.0500 | " | " | " | " | " | " | |
| Toluene | ND | 0.0500 | " | " | " | " | " | " | |
| Ethylbenzene | ND | 0.0500 | " | " | " | " | " | " | |
| Xylenes (total) | ND | 0.100 | " | " | " | " | " | " | |
| Surrogate: 4-BFB (FID) | 95.1 % | 50-150 | | | " | " | " | " | |
| Surrogate: 4-BFB (PID) | 98.4 % | 50-150 | | | " | " | " | " | |

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

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

Amended Report
 Issued: 07/05/01 09:54

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

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|--|--------|-----------------|-----------|----------|---------|----------|----------|----------------|-------|
| X4-SW-0501 (B1E0037-10) Soil Sampled: 05/01/01 11:00 Received: 05/02/01 09:30 | | | | | | | | | |
| Gasoline Range Hydrocarbons | ND | 5.00 | mg/kg dry | 1 | 1E02028 | 05/02/01 | 05/03/01 | NWTPH-Gx/8021B | |
| Benzene | ND | 0.0500 | " | " | " | " | " | " | |
| Toluene | ND | 0.0500 | " | " | " | " | " | " | |
| o-Xylenes | ND | 0.0500 | " | " | " | " | " | " | |
| m-Xylenes | ND | 0.0500 | " | " | " | " | " | " | |
| p-Xylenes | ND | 0.0500 | " | " | " | " | " | " | |
| Xylenes (total) | ND | 0.100 | " | " | " | " | " | " | |
| Surrogate: 4-BFB (FID) | 83.6 % | 50-150 | | | " | " | " | " | |
| Surrogate: 4-BFB (PID) | 95.1 % | 50-150 | | | " | " | " | " | |
| X4-F-0501 (B1E0037-11) Soil Sampled: 05/01/01 11:05 Received: 05/02/01 09:30 | | | | | | | | | |
| Gasoline Range Hydrocarbons | ND | 5.00 | mg/kg dry | 1 | 1E02028 | 05/02/01 | 05/03/01 | NWTPH-Gx/8021B | |
| Benzene | ND | 0.0500 | " | " | " | " | " | " | |
| Toluene | ND | 0.0500 | " | " | " | " | " | " | |
| o-Xylenes | ND | 0.0500 | " | " | " | " | " | " | |
| m-Xylenes | ND | 0.0500 | " | " | " | " | " | " | |
| p-Xylenes | ND | 0.0500 | " | " | " | " | " | " | |
| Xylenes (total) | ND | 0.100 | " | " | " | " | " | " | |
| Surrogate: 4-BFB (FID) | 96.2 % | 50-150 | | | " | " | " | " | |
| Surrogate: 4-BFB (PID) | 94.5 % | 50-150 | | | " | " | " | " | |
| SP-1-0501 (B1E0037-14) Soil Sampled: 05/01/01 11:15 Received: 05/02/01 09:30 | | | | | | | | | |
| Gasoline Range Hydrocarbons | ND | 5.00 | mg/kg dry | 1 | 1E02028 | 05/02/01 | 05/03/01 | NWTPH-Gx/8021B | |
| Benzene | ND | 0.0500 | " | " | " | " | " | " | |
| Toluene | ND | 0.0500 | " | " | " | " | " | " | |
| o-Xylenes | ND | 0.0500 | " | " | " | " | " | " | |
| m-Xylenes | ND | 0.0500 | " | " | " | " | " | " | |
| p-Xylenes | ND | 0.0500 | " | " | " | " | " | " | |
| Xylenes (total) | ND | 0.100 | " | " | " | " | " | " | |
| Surrogate: 4-BFB (FID) | 90.9 % | 50-150 | | | " | " | " | " | |
| Surrogate: 4-BFB (PID) | 94.9 % | 50-150 | | | " | " | " | " | |

North Creek Analytical - Bothell

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

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


Amended Report
 Issued: 07/05/01 09:54

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

| Analyte | Result | Reporting | | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---|--------|-----------|--|-----------|----------|---------|----------|----------|-------------|-------|
| | | Limit | | | | | | | | |
| EX1-SW1-7.5-0401 (B1E0037-01RE1) Soil Sampled: 04/30/01 15:10 Received: 05/02/01 09:30 | | | | | | | | | | |
| Diesel Range Hydrocarbons | 25.7 | 10.0 | | mg/kg dry | 1 | 1E07030 | 05/07/01 | 05/08/01 | NWTPH-Dx SG | |
| Lube Oil Range Hydrocarbons | ND | 25.0 | | " | " | " | " | " | " | |
| Surrogate: 2-FBP | 83.7 % | 50-150 | | | | " | " | " | " | |
| Surrogate: Octacosane | 96.5 % | 50-150 | | | | " | " | " | " | |
| EX1-SW2-7.5-0401 (B1E0037-02) Soil Sampled: 04/30/01 15:15 Received: 05/02/01 09:30 | | | | | | | | | | |
| Diesel Range Hydrocarbons | ND | 10.0 | | mg/kg dry | 1 | 1E02036 | 05/02/01 | 05/03/01 | NWTPH-Dx SG | |
| Lube Oil Range Hydrocarbons | ND | 25.0 | | " | " | " | " | " | " | |
| Surrogate: 2-FBP | 72.0 % | 50-150 | | | | " | " | " | " | |
| Surrogate: Octacosane | 88.5 % | 50-150 | | | | " | " | " | " | |
| EX2-SW1-7.5-0401 (B1E0037-03) Soil Sampled: 04/30/01 15:20 Received: 05/02/01 09:30 | | | | | | | | | | |
| Diesel Range Hydrocarbons | ND | 10.0 | | mg/kg dry | 1 | 1E02036 | 05/02/01 | 05/03/01 | NWTPH-Dx SG | |
| Lube Oil Range Hydrocarbons | ND | 25.0 | | " | " | " | " | " | " | |
| Surrogate: 2-FBP | 80.1 % | 50-150 | | | | " | " | " | " | |
| Surrogate: Octacosane | 89.7 % | 50-150 | | | | " | " | " | " | |
| EX2-SW2-7.5-0401 (B1E0037-04) Soil Sampled: 04/30/01 15:25 Received: 05/02/01 09:30 | | | | | | | | | | |
| Diesel Range Hydrocarbons | 1660 | 10.0 | | mg/kg dry | 1 | 1E02036 | 05/02/01 | 05/03/01 | NWTPH-Dx SG | |
| Lube Oil Range Hydrocarbons | 330 | 25.0 | | " | " | " | " | " | " | D-10 |
| Surrogate: 2-FBP | 107 % | 50-150 | | | | " | " | " | " | |
| Surrogate: Octacosane | 91.5 % | 50-150 | | | | " | " | " | " | |
| EX3-SW1-7.5-0401 (B1E0037-05) Soil Sampled: 04/30/01 15:30 Received: 05/02/01 09:30 | | | | | | | | | | |
| Diesel Range Hydrocarbons | 325 | 10.0 | | mg/kg dry | 1 | 1E02036 | 05/02/01 | 05/03/01 | NWTPH-Dx SG | |
| Lube Oil Range Hydrocarbons | ND | 25.0 | | " | " | " | " | " | " | |
| Surrogate: 2-FBP | 69.0 % | 50-150 | | | | " | " | " | " | |
| Surrogate: Octacosane | 82.0 % | 50-150 | | | | " | " | " | " | |

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

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

Amended Report
 Issued: 07/05/01 09:54

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 |
|---------|--------|-----------------|-------|----------|-------|----------|----------|--------|-------|
|---------|--------|-----------------|-------|----------|-------|----------|----------|--------|-------|

EX3-SW2-7.5-0401 (B1E0037-06) Soil Sampled: 04/30/01 15:35 Received: 05/02/01 09:30

| | | | | | | | | | |
|-----------------------------|--------|--------|-----------|---|---------|----------|----------|-------------|--|
| Diesel Range Hydrocarbons | ND | 10.0 | mg/kg dry | 1 | 1E02036 | 05/02/01 | 05/03/01 | NWTPH-Dx SG | |
| Lube Oil Range Hydrocarbons | ND | 25.0 | " | " | " | " | " | " | |
| Surrogate: 2-FBP | 63.2 % | 50-150 | | | " | " | " | " | |
| Surrogate: Octacosane | 79.3 % | 50-150 | | | " | " | " | " | |

EX1-F-11-0501 (B1E0037-07) Soil Sampled: 05/01/01 12:10 Received: 05/02/01 09:30

| | | | | | | | | | |
|-----------------------------|--------|--------|-----------|---|---------|----------|----------|-------------|--|
| Diesel Range Hydrocarbons | ND | 10.0 | mg/kg dry | 1 | 1E02036 | 05/02/01 | 05/03/01 | NWTPH-Dx SG | |
| Lube Oil Range Hydrocarbons | ND | 25.0 | " | " | " | " | " | " | |
| Surrogate: 2-FBP | 71.3 % | 50-150 | | | " | " | " | " | |
| Surrogate: Octacosane | 81.3 % | 50-150 | | | " | " | " | " | |

EX2-SW3-2.0-0501 (B1E0037-08) Soil Sampled: 05/01/01 12:00 Received: 05/02/01 09:30

| | | | | | | | | | |
|-----------------------------|--------|--------|-----------|---|---------|----------|----------|-------------|--|
| Diesel Range Hydrocarbons | ND | 10.0 | mg/kg dry | 1 | 1E02036 | 05/02/01 | 05/03/01 | NWTPH-Dx SG | |
| Lube Oil Range Hydrocarbons | ND | 25.0 | " | " | " | " | " | " | |
| Surrogate: 2-FBP | 63.0 % | 50-150 | | | " | " | " | " | |
| Surrogate: Octacosane | 80.5 % | 50-150 | | | " | " | " | " | |

EX3-SW3-1.0-0501 (B1E0037-09) Soil Sampled: 05/01/01 11:55 Received: 05/02/01 09:30

| | | | | | | | | | |
|-----------------------------|--------|--------|-----------|---|---------|----------|----------|-------------|--|
| Diesel Range Hydrocarbons | ND | 10.0 | mg/kg dry | 1 | 1E02036 | 05/02/01 | 05/03/01 | NWTPH-Dx SG | |
| Lube Oil Range Hydrocarbons | ND | 25.0 | " | " | " | " | " | " | |
| Surrogate: 2-FBP | 73.2 % | 50-150 | | | " | " | " | " | |
| Surrogate: Octacosane | 82.2 % | 50-150 | | | " | " | " | " | |

EX4-SW-0501 (B1E0037-10) Soil Sampled: 05/01/01 11:00 Received: 05/02/01 09:30

| | | | | | | | | | |
|-----------------------------|--------|--------|-----------|---|---------|----------|----------|-------------|--|
| Diesel Range Hydrocarbons | 92.3 | 10.0 | mg/kg dry | 1 | 1E02036 | 05/02/01 | 05/03/01 | NWTPH-Dx SG | |
| Lube Oil Range Hydrocarbons | 129 | 25.0 | " | " | " | " | " | " | |
| Surrogate: 2-FBP | 64.8 % | 50-150 | | | " | " | " | " | |
| Surrogate: Octacosane | 79.7 % | 50-150 | | | " | " | " | " | |

North Creek Analytical - Bothell

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Scott A. Woerman, Project Manager

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

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

Amended Report
 Issued: 07/05/01 09:54

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 |
|--|--------|-----------------|-----------|----------|---------|----------|----------|-------------|-------|
| EX4-F-0501 (B1E0037-11) Soil Sampled: 05/01/01 11:05 Received: 05/02/01 09:30 | | | | | | | | | |
| Diesel Range Hydrocarbons | 376 | 10.0 | mg/kg dry | 1 | 1E02036 | 05/02/01 | 05/03/01 | NWTPH-Dx SG | D-09 |
| Lube Oil Range Hydrocarbons | 1010 | 125 | " | 5 | " | " | 05/03/01 | " | |
| Surrogate: 2-FBP | 68.0 % | 50-150 | | | " | " | 05/03/01 | " | |
| Surrogate: Octacosane | 69.0 % | 50-150 | | | " | " | 05/03/01 | " | |
| TP11B-3-0501 (B1E0037-12) Soil Sampled: 05/01/01 10:40 Received: 05/02/01 09:30 | | | | | | | | | |
| Diesel Range Hydrocarbons | ND | 10.0 | mg/kg dry | 1 | 1E02036 | 05/02/01 | 05/03/01 | NWTPH-Dx SG | |
| Lube Oil Range Hydrocarbons | ND | 25.0 | " | " | " | " | " | " | |
| Surrogate: 2-FBP | 64.1 % | 50-150 | | | " | " | " | " | |
| Surrogate: Octacosane | 80.7 % | 50-150 | | | " | " | " | " | |
| TP11B-8-0501 (B1E0037-13) Soil Sampled: 05/01/01 10:30 Received: 05/02/01 09:30 | | | | | | | | | |
| Diesel Range Hydrocarbons | ND | 10.0 | mg/kg dry | 1 | 1E02036 | 05/02/01 | 05/03/01 | NWTPH-Dx SG | |
| Lube Oil Range Hydrocarbons | ND | 25.0 | " | " | " | " | " | " | |
| Surrogate: 2-FBP | 68.7 % | 50-150 | | | " | " | " | " | |
| Surrogate: Octacosane | 80.1 % | 50-150 | | | " | " | " | " | |
| CSP-1-0501 (B1E0037-14) Soil Sampled: 05/01/01 11:15 Received: 05/02/01 09:30 | | | | | | | | | |
| Diesel Range Hydrocarbons | 12.8 | 10.0 | mg/kg dry | 1 | 1E02036 | 05/02/01 | 05/03/01 | NWTPH-Dx SG | |
| Lube Oil Range Hydrocarbons | ND | 25.0 | " | " | " | " | " | " | |
| Surrogate: 2-FBP | 64.3 % | 50-150 | | | " | " | " | " | |
| Surrogate: Octacosane | 79.1 % | 50-150 | | | " | " | " | " | |
| CSP-2-0501 (B1E0037-15) Soil Sampled: 05/01/01 11:25 Received: 05/02/01 09:30 | | | | | | | | | |
| Diesel Range Hydrocarbons | 143 | 10.0 | mg/kg dry | 1 | 1E02036 | 05/02/01 | 05/03/01 | NWTPH-Dx SG | |
| Lube Oil Range Hydrocarbons | 224 | 25.0 | " | " | " | " | " | " | |
| Surrogate: 2-FBP | 69.7 % | 50-150 | | | " | " | " | " | |
| Surrogate: Octacosane | 79.0 % | 50-150 | | | " | " | " | " | |

North Creek Analytical - Bothell

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| | | |
|--|---|--|
| Maul Foster & Alongi-Seattle 17171 Bothell Way NE #264 Seattle WA, 98155 | Project: Chelan Bulk Terminal #0082 Project Number: 9077.015.001 Project Manager: Mike Staton | Amended Report Issued: 07/05/01 09:54 |
|--|---|--|

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

| Analyte | Reporting | | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---|-----------|--------|-----------|----------|---------|----------|----------|-------------|-------|
| | Result | Limit | | | | | | | |
| CSP-3-0501 (B1E0037-16) Soil Sampled: 05/01/01 11:35 Received: 05/02/01 09:30 | | | | | | | | | |
| Diesel Range Hydrocarbons | 62.8 | 10.0 | mg/kg dry | 1 | 1E02036 | 05/02/01 | 05/03/01 | NWTPH-Dx SG | |
| Lube Oil Range Hydrocarbons | ND | 25.0 | " | " | " | " | " | " | |
| Surrogate: 2-FBP | 67.0 % | 50-150 | | | " | " | " | " | |
| Surrogate: Octacosane | 82.4 % | 50-150 | | | " | " | " | " | |

North Creek Analytical - Bothell

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 Seattle WA, 98155

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

Amended Report
 Issued: 07/05/01 09:54

BTEX by EPA Method 8021B
North Creek Analytical - Bothell

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

TP11B-3-0501 (B1E0037-12) Soil Sampled: 05/01/01 10:40 Received: 05/02/01 09:30


| | | | | | | | | | | |
|------------------------|-------|--------|-----------|---|---------|----------|----------|-----------|---|---|
| Benzene | ND | 0.0500 | mg/kg dry | 1 | 1E02028 | 05/02/01 | 05/03/01 | EPA 8021B | | |
| Toluene | ND | 0.0500 | " | " | " | " | " | " | " | " |
| Ethylbenzene | ND | 0.0500 | " | " | " | " | " | " | " | " |
| Xylenes (total) | ND | 0.100 | " | " | " | " | " | " | " | " |
| Surrogate: 4-BFB (PID) | 124 % | 50-150 | | | " | " | " | " | " | " |

TP11B-8-0501 (B1E0037-13) Soil Sampled: 05/01/01 10:30 Received: 05/02/01 09:30

| | | | | | | | | | | |
|------------------------|--------|--------|-----------|---|---------|----------|----------|-----------|---|---|
| Benzene | ND | 0.0500 | mg/kg dry | 1 | 1E02028 | 05/02/01 | 05/03/01 | EPA 8021B | | |
| Toluene | ND | 0.0500 | " | " | " | " | " | " | " | " |
| Ethylbenzene | ND | 0.0500 | " | " | " | " | " | " | " | " |
| Xylenes (total) | ND | 0.100 | " | " | " | " | " | " | " | " |
| Surrogate: 4-BFB (PID) | 92.7 % | 50-150 | | | " | " | " | " | " | " |

North Creek Analytical - Bothell

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 Seattle WA, 98155

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

Amended Report
 Issued: 07/05/01 09:54

Physical Parameters by APHA/ASTM/EPA Methods
North Creek Analytical - Bothell

| Analyte | Reporting | | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---|-----------|-------|-------|----------|---------|----------|----------|--------------|-------|
| | Result | Limit | | | | | | | |
| EX1-SW1-7.5-0401 (B1E0037-01) Soil Sampled: 04/30/01 15:10 Received: 05/02/01 09:30 | | | | | | | | | |
| Dry Weight | 93.0 | 1.00 | % | 1 | 1E02037 | 05/02/01 | 05/03/01 | BSOPSP003R07 | |
| EX1-SW2-7.5-0401 (B1E0037-02) Soil Sampled: 04/30/01 15:15 Received: 05/02/01 09:30 | | | | | | | | | |
| Dry Weight | 100 | 1.00 | % | 1 | 1E02037 | 05/02/01 | 05/03/01 | BSOPSP003R07 | |
| EX2-SW1-7.5-0401 (B1E0037-03) Soil Sampled: 04/30/01 15:20 Received: 05/02/01 09:30 | | | | | | | | | |
| Dry Weight | 92.1 | 1.00 | % | 1 | 1E02037 | 05/02/01 | 05/03/01 | BSOPSP003R07 | |
| EX2-SW2-7.5-0401 (B1E0037-04) Soil Sampled: 04/30/01 15:25 Received: 05/02/01 09:30 | | | | | | | | | |
| Dry Weight | 91.3 | 1.00 | % | 1 | 1E02037 | 05/02/01 | 05/03/01 | BSOPSP003R07 | |
| EX3-SW1-7.5-0401 (B1E0037-05) Soil Sampled: 04/30/01 15:30 Received: 05/02/01 09:30 | | | | | | | | | |
| Dry Weight | 94.9 | 1.00 | % | 1 | 1E02037 | 05/02/01 | 05/03/01 | BSOPSP003R07 | |
| EX3-SW2-7.5-0401 (B1E0037-06) Soil Sampled: 04/30/01 15:35 Received: 05/02/01 09:30 | | | | | | | | | |
| Dry Weight | 94.7 | 1.00 | % | 1 | 1E02037 | 05/02/01 | 05/03/01 | BSOPSP003R07 | |
| EX1-F-11-0501 (B1E0037-07) Soil Sampled: 05/01/01 12:10 Received: 05/02/01 09:30 | | | | | | | | | |
| Dry Weight | 96.1 | 1.00 | % | 1 | 1E02037 | 05/02/01 | 05/03/01 | BSOPSP003R07 | |
| EX2-SW3-2.0-0501 (B1E0037-08) Soil Sampled: 05/01/01 12:00 Received: 05/02/01 09:30 | | | | | | | | | |
| Dry Weight | 93.9 | 1.00 | % | 1 | 1E02037 | 05/02/01 | 05/03/01 | BSOPSP003R07 | |
| EX3-SW3-1.0-0501 (B1E0037-09) Soil Sampled: 05/01/01 11:55 Received: 05/02/01 09:30 | | | | | | | | | |
| Dry Weight | 94.2 | 1.00 | % | 1 | 1E02037 | 05/02/01 | 05/03/01 | BSOPSP003R07 | |


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| | | |
|--|---|---|
| Maul Foster & Alongi-Seattle 17171 Bothell Way NE #264 Seattle WA, 98155 | Project: Chelan Bulk Terminal #0082 Project Number: 9077.015.001 Project Manager: Mike Staton | Amended Report Issued: 07/05/01 09:54 |
|--|---|---|

Physical Parameters by APHA/ASTM/EPA Methods
North Creek Analytical - Bothell

| Analyte | Result | Reporting | | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---|--------|-----------|--|-------|----------|---------|----------|----------|--------------|-------|
| | | Limit | | | | | | | | |
| EX4-SW-0501 (B1E0037-10) Soil Sampled: 05/01/01 11:00 Received: 05/02/01 09:30 | | | | | | | | | | |
| Dry Weight | 93.8 | 1.00 | | % | 1 | 1E02037 | 05/02/01 | 05/03/01 | BSOPSP003R07 | |
| EX4-F-0501 (B1E0037-11) Soil Sampled: 05/01/01 11:05 Received: 05/02/01 09:30 | | | | | | | | | | |
| Dry Weight | 95.4 | 1.00 | | % | 1 | 1E02037 | 05/02/01 | 05/03/01 | BSOPSP003R07 | |
| TP11B-3-0501 (B1E0037-12) Soil Sampled: 05/01/01 10:40 Received: 05/02/01 09:30 | | | | | | | | | | |
| Dry Weight | 95.4 | 1.00 | | % | 1 | 1E02037 | 05/02/01 | 05/03/01 | BSOPSP003R07 | |
| TP11B-8-0501 (B1E0037-13) Soil Sampled: 05/01/01 10:30 Received: 05/02/01 09:30 | | | | | | | | | | |
| Dry Weight | 94.7 | 1.00 | | % | 1 | 1E02037 | 05/02/01 | 05/03/01 | BSOPSP003R07 | |
| CSP-1-0501 (B1E0037-14) Soil Sampled: 05/01/01 11:15 Received: 05/02/01 09:30 | | | | | | | | | | |
| Dry Weight | 93.1 | 1.00 | | % | 1 | 1E02037 | 05/02/01 | 05/03/01 | BSOPSP003R07 | |
| CSP-2-0501 (B1E0037-15) Soil Sampled: 05/01/01 11:25 Received: 05/02/01 09:30 | | | | | | | | | | |
| Dry Weight | 95.0 | 1.00 | | % | 1 | 1E02037 | 05/02/01 | 05/03/01 | BSOPSP003R07 | |
| CSP-3-0501 (B1E0037-16) Soil Sampled: 05/01/01 11:35 Received: 05/02/01 09:30 | | | | | | | | | | |
| Dry Weight | 94.5 | 1.00 | | % | 1 | 1E02037 | 05/02/01 | 05/03/01 | BSOPSP003R07 | |

North Creek Analytical - Bothell

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| | | |
|--|---|--|
| Maul Foster & Alongi-Seattle 17171 Bothell Way NE #264 Seattle WA, 98155 | Project: Chelan Bulk Terminal #0082 Project Number: 9077.015.001 Project Manager: Mike Staton | Amended Report Issued: 07/05/01 09:54 |
|--|---|--|

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

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

Batch 1E02028: Prepared 05/02/01 Using EPA 5030B (MeOH)

Blank (1E02028-BLK1)

| | | | | | | | | | | |
|-----------------------------|------|--------|-------|------|--|-----|--------|--|--|--|
| Gasoline Range Hydrocarbons | ND | 5.00 | mg/kg | | | | | | | |
| Benzene | ND | 0.0500 | " | | | | | | | |
| Toluene | ND | 0.0500 | " | | | | | | | |
| Ethylbenzene | ND | 0.0500 | " | | | | | | | |
| Xylenes (total) | ND | 0.100 | " | | | | | | | |
| Surrogate: 4-BFB (FID) | 4.07 | | " | 4.00 | | 102 | 50-150 | | | |
| Surrogate: 4-BFB (PID) | 4.09 | | " | 4.00 | | 102 | 50-150 | | | |

LCS (1E02028-BS1)

| | | | | | | | | | | |
|-----------------------------|------|------|-------|------|--|------|--------|--|--|--|
| Gasoline Range Hydrocarbons | 22.8 | 5.00 | mg/kg | 25.0 | | 91.2 | 70-130 | | | |
| Surrogate: 4-BFB (FID) | 4.39 | | " | 4.00 | | 110 | 50-150 | | | |

Duplicate (1E02028-DUP1)

Source: B1E0037-03

| | | | | | | | | | | |
|-----------------------------|------|------|-----------|------|----|------|--------|------|----|------|
| Gasoline Range Hydrocarbons | ND | 5.00 | mg/kg dry | | ND | | | 75.3 | 50 | Q-05 |
| Surrogate: 4-BFB (FID) | 4.16 | | " | 4.34 | | 95.9 | 50-150 | | | |

Duplicate (1E02028-DUP2)

Source: B1E0037-04

| | | | | | | | | | | |
|-----------------------------|------|------|-----------|------|----|------|--------|------|----|--|
| Gasoline Range Hydrocarbons | ND | 5.00 | mg/kg dry | | ND | | | 27.5 | 50 | |
| Surrogate: 4-BFB (FID) | 3.96 | | " | 4.38 | | 90.4 | 50-150 | | | |

Matrix Spike (1E02028-MS1)

Source: B1D0776-02

| | | | | | | | | | | |
|------------------------|-------|--------|-----------|-------|----|------|--------|--|--|--|
| Benzene | 0.534 | 0.0500 | mg/kg dry | 0.581 | ND | 91.3 | 60-140 | | | |
| Toluene | 0.551 | 0.0500 | " | 0.581 | ND | 92.9 | 60-140 | | | |
| Ethylbenzene | 0.570 | 0.0500 | " | 0.581 | ND | 97.3 | 60-140 | | | |
| Xylenes (total) | 1.74 | 0.100 | " | 1.74 | ND | 98.3 | 60-140 | | | |
| Surrogate: 4-BFB (PID) | 4.51 | | " | 4.65 | | 97.0 | 50-150 | | | |

Matrix Spike Dup (1E02028-MSD1)

Source: B1D0776-02

| | | | | | | | | | | |
|------------------------|-------|--------|-----------|-------|----|-----|--------|------|----|--|
| Benzene | 0.585 | 0.0500 | mg/kg dry | 0.581 | ND | 100 | 60-140 | 9.12 | 20 | |
| Toluene | 0.599 | 0.0500 | " | 0.581 | ND | 101 | 60-140 | 8.35 | 20 | |
| Ethylbenzene | 0.625 | 0.0500 | " | 0.581 | ND | 107 | 60-140 | 9.21 | 20 | |
| Xylenes (total) | 1.89 | 0.100 | " | 1.74 | ND | 107 | 60-140 | 8.26 | 20 | |
| Surrogate: 4-BFB (PID) | 4.68 | | " | 4.65 | | 101 | 50-150 | | | |

North Creek Analytical - Bothell

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

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

Amended Report
 Issued: 07/05/01 09:54

Semivolatile 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 Limits | RPD | RPD Limit | Notes |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

Batch 1E02036: Prepared 05/02/01 Using EPA 3550B

Blank (1E02036-BLK1)

| | | | | | | | | | | |
|-----------------------------|------|------|-------|------|--|------|--------|--|--|--|
| Diesel Range Hydrocarbons | ND | 10.0 | mg/kg | | | | | | | |
| Lube Oil Range Hydrocarbons | ND | 25.0 | " | | | | | | | |
| Surrogate: 2-FBP | 8.27 | | " | 10.7 | | 77.3 | 50-150 | | | |
| Surrogate: Octacosane | 9.57 | | " | 10.7 | | 89.4 | 50-150 | | | |

LCS (1E02036-BS1)

| | | | | | | | | | | |
|---------------------------|------|------|-------|------|--|------|--------|--|--|--|
| Diesel Range Hydrocarbons | 56.1 | 10.0 | mg/kg | 66.7 | | 84.1 | 50-150 | | | |
| Surrogate: 2-FBP | 8.04 | | " | 10.7 | | 75.1 | 50-150 | | | |

Duplicate (1E02036-DUP1)

Source: B1D0669-02

| | | | | | | | | | | |
|-----------------------------|------|------|-----------|------|------|------|--------|------|----|--|
| Diesel Range Hydrocarbons | 30.8 | 10.0 | mg/kg dry | | 27.2 | | | 12.4 | 50 | |
| Lube Oil Range Hydrocarbons | 91.5 | 25.0 | " | | 87.0 | | | 5.04 | 50 | |
| Surrogate: 2-FBP | 11.3 | | " | 14.2 | | 79.6 | 50-150 | | | |
| Surrogate: Octacosane | 13.1 | | " | 14.2 | | 92.3 | 50-150 | | | |

Duplicate (1E02036-DUP2)

Source: B1E0037-01

| | | | | | | | | | | |
|-----------------------------|------|------|-----------|------|----|------|--------|------|----|---|
| Diesel Range Hydrocarbons | ND | 10.0 | mg/kg dry | | ND | | | 14.0 | 50 | |
| Lube Oil Range Hydrocarbons | ND | 25.0 | " | | ND | | | | 50 | |
| Surrogate: 2-FBP | 1.02 | | " | 11.5 | | 8.87 | 50-150 | | | X |
| Surrogate: Octacosane | 1.50 | | " | 11.5 | | 13.0 | 50-150 | | | X |

Batch 1E07030: Prepared 05/07/01 Using EPA 3550B

Blank (1E07030-BLK1)

| | | | | | | | | | | |
|-----------------------------|------|------|-------|------|--|------|--------|--|--|--|
| Diesel Range Hydrocarbons | ND | 10.0 | mg/kg | | | | | | | |
| Lube Oil Range Hydrocarbons | ND | 25.0 | " | | | | | | | |
| Surrogate: 2-FBP | 8.50 | | " | 10.7 | | 79.4 | 50-150 | | | |
| Surrogate: Octacosane | 9.40 | | " | 10.7 | | 87.9 | 50-150 | | | |

North Creek Analytical - Bothell

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

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

Amended Report
 Issued: 07/05/01 09:54

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 | Limit | RPD | Limit | Notes |
|---------|--------|-----------------|-------|-------------|---------------|------|-------|-----|-------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------|-----|-------|-------|

Batch 1E07030: Prepared 05/07/01 Using EPA 3550B

LCS (1E07030-BS1)

| | | | | | | | | | | |
|---------------------------|------|------|-------|------|--|------|--------|--|--|--|
| Diesel Range Hydrocarbons | 51.0 | 10.0 | mg/kg | 66.7 | | 76.5 | 50-150 | | | |
| Surrogate: 2-FBP | 9.53 | | " | 10.7 | | 89.1 | 50-150 | | | |


Duplicate (1E07030-DUP1)

Source: B1E0037-01RE1

| | | | | | | | | | | |
|-----------------------------|------|------|-----------|------|------|------|--------|------|----|--|
| Diesel Range Hydrocarbons | 38.9 | 10.0 | mg/kg dry | | 25.7 | | | 40.9 | 50 | |
| Lube Oil Range Hydrocarbons | ND | 25.0 | " | | ND | | | 3.92 | 50 | |
| Surrogate: 2-FBP | 9.39 | | " | 11.5 | | 81.7 | 50-150 | | | |
| Surrogate: Octacosane | 10.3 | | " | 11.5 | | 89.6 | 50-150 | | | |

North Creek Analytical - Bothell

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

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

Amended Report
 Issued: 07/05/01 09:54

BTEX by EPA Method 8021B - Quality Control
North Creek Analytical - Bothell

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

Batch 1E02028: Prepared 05/02/01 Using EPA 5030B (MeOH)

Blank (1E02028-BLK1)

| | | | | | | | | | | |
|------------------------|------|--------|-------|------|--|-----|--------|--|--|--|
| Benzene | ND | 0.0500 | mg/kg | | | | | | | |
| Toluene | ND | 0.0500 | " | | | | | | | |
| Ethylbenzene | ND | 0.0500 | " | | | | | | | |
| Xylenes (total) | ND | 0.100 | " | | | | | | | |
| Surrogate: 4-BFB (PID) | 4.09 | | " | 4.00 | | 102 | 50-150 | | | |

LCS (1E02028-BS2)

| | | | | | | | | | | |
|------------------------|-------|--------|-------|-------|--|-----|--------|--|--|--|
| Benzene | 0.527 | 0.0500 | mg/kg | 0.500 | | 105 | 70-130 | | | |
| Toluene | 0.524 | 0.0500 | " | 0.500 | | 105 | 70-130 | | | |
| Ethylbenzene | 0.546 | 0.0500 | " | 0.500 | | 109 | 70-130 | | | |
| Xylenes (total) | 1.63 | 0.100 | " | 1.50 | | 109 | 70-130 | | | |
| Surrogate: 4-BFB (PID) | 4.11 | | " | 4.00 | | 103 | 50-150 | | | |

Matrix Spike (1E02028-MS1)

Source: BID0776-02

| | | | | | | | | | | |
|------------------------|-------|--------|-----------|-------|----|------|--------|--|--|--|
| Benzene | 0.534 | 0.0500 | mg/kg dry | 0.581 | ND | 91.9 | 60-140 | | | |
| Toluene | 0.551 | 0.0500 | " | 0.581 | ND | 94.8 | 60-140 | | | |
| Ethylbenzene | 0.570 | 0.0500 | " | 0.581 | ND | 98.1 | 60-140 | | | |
| Xylenes (total) | 1.74 | 0.100 | " | 1.74 | ND | 100 | 60-140 | | | |
| Surrogate: 4-BFB (PID) | 4.51 | | " | 4.65 | | 97.0 | 50-150 | | | |

Matrix Spike Dup (1E02028-MSD1)

Source: BID0776-02

| | | | | | | | | | | |
|------------------------|-------|--------|-----------|-------|----|-----|--------|------|----|--|
| Benzene | 0.585 | 0.0500 | mg/kg dry | 0.581 | ND | 101 | 60-140 | 9.12 | 20 | |
| Toluene | 0.599 | 0.0500 | " | 0.581 | ND | 103 | 60-140 | 8.35 | 20 | |
| Ethylbenzene | 0.625 | 0.0500 | " | 0.581 | ND | 108 | 60-140 | 9.21 | 20 | |
| Xylenes (total) | 1.89 | 0.100 | " | 1.74 | ND | 109 | 60-140 | 8.26 | 20 | |
| Surrogate: 4-BFB (PID) | 4.68 | | " | 4.65 | | 101 | 50-150 | | | |

North Creek Analytical - Bothell

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

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

Amended Report
 Issued: 07/05/01 09:54

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control
North Creek Analytical - Bothell

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

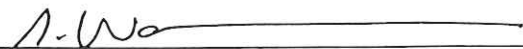
Batch 1E02037: Prepared 05/02/01 Using Dry Weight

Blank (1E02037-BLK1)

| | | | | | | | | | | |
|------------|-----|------|---|--|--|--|--|--|--|--|
| Dry Weight | 100 | 1.00 | % | | | | | | | |
|------------|-----|------|---|--|--|--|--|--|--|--|

North Creek Analytical - Bothell

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

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

Amended Report
Issued: 07/05/01 09:54

Notes and Definitions

- D-09 Results in the diesel organics range are primarily due to overlap from a heavy oil range product.
- D-10 The heavy oil range organics present are due to hydrocarbons eluting primarily in the diesel range.
- Q-05 Analyses are not controlled on RPD values from sample concentrations less than 10 times the reporting limit.
- X See case narrative.
- 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



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| | | |
|--|---|-----------------------------|
| Maul Foster & Alongi-Seattle 17171 Bothell Way NE #264 Seattle WA, 98155 | Project: Chelan Bulk Terminal #0082 Project Number: 9077.015.001 Project Manager: Mike Staton | Reported: 05/09/01 12:57 |
|--|---|-----------------------------|

ANALYTICAL REPORT FOR SAMPLES

| Sample ID | Laboratory ID | Matrix | Date Sampled | Date Received |
|---------------|---------------|--------|----------------|----------------|
| EX2-SW2B-0501 | B1E0193-01 | Soil | 05/07/01 12:15 | 05/08/01 09:30 |
| EX3-SW1B-0501 | B1E0193-02 | Soil | 05/07/01 13:00 | 05/08/01 09:30 |
| EX4-FB-0501 | B1E0193-03 | Soil | 05/07/01 11:35 | 05/08/01 09:30 |

North Creek Analytical - Bothell

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

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

Reported:
 05/09/01 12:57

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 |
|---|--------|-----------------|-----------|----------|---------|----------|----------|-------------|-------|
| EX2-SW2B-0501 (B1E0193-01) Soil Sampled: 05/07/01 12:15 Received: 05/08/01 09:30 | | | | | | | | | |
| Diesel Range Hydrocarbons | ND | 10.0 | mg/kg dry | 1 | 1E08030 | 05/08/01 | 05/09/01 | NWTPH-Dx SG | |
| Lube Oil Range Hydrocarbons | ND | 25.0 | " | " | " | " | " | " | |
| Surrogate: 2-FBP | 63.4 % | 50-150 | | | " | " | " | " | |
| Surrogate: Octacosane | 80.9 % | 50-150 | | | " | " | " | " | |
| EX3-SW1B-0501 (B1E0193-02) Soil Sampled: 05/07/01 13:00 Received: 05/08/01 09:30 | | | | | | | | | |
| Diesel Range Hydrocarbons | 179 | 10.0 | mg/kg dry | 1 | 1E08030 | 05/08/01 | 05/09/01 | NWTPH-Dx SG | |
| Lube Oil Range Hydrocarbons | ND | 25.0 | " | " | " | " | " | " | |
| Surrogate: 2-FBP | 70.9 % | 50-150 | | | " | " | " | " | |
| Surrogate: Octacosane | 83.6 % | 50-150 | | | " | " | " | " | |
| EX4-FB-0501 (B1E0193-03) Soil Sampled: 05/07/01 11:35 Received: 05/08/01 09:30 | | | | | | | | | |
| Diesel Range Hydrocarbons | 11.1 | 10.0 | mg/kg dry | 1 | 1E08030 | 05/08/01 | 05/09/01 | NWTPH-Dx SG | D-09 |
| Lube Oil Range Hydrocarbons | 47.7 | 25.0 | " | " | " | " | " | " | |
| Surrogate: 2-FBP | 64.1 % | 50-150 | | | " | " | " | " | |
| Surrogate: Octacosane | 81.4 % | 50-150 | | | " | " | " | " | |

North Creek Analytical - Bothell

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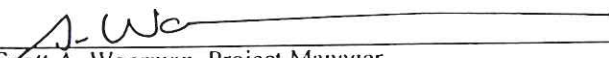
| | | |
|--|---|-----------------------------|
| Maul Foster & Alongi-Seattle 17171 Bothell Way NE #264 Seattle WA, 98155 | Project: Chelan Bulk Terminal #0082 Project Number: 9077.015.001 Project Manager: Mike Staton | Reported: 05/09/01 12:57 |
|--|---|-----------------------------|

**Physical Parameters by APHA/ASTM/EPA Methods
 North Creek Analytical - Bothell**

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---------------------------------|-------------------------|-----------------|--------------------------|----------|---------|----------|----------|--------------|-------|
| EX2-SW2B-0501 (B1E0193-01) Soil | Sampled: 05/07/01 12:15 | | Received: 05/08/01 09:30 | | | | | | |
| Dry Weight | 91.0 | 1.00 | % | 1 | 1E08023 | 05/08/01 | 05/09/01 | BSOPSP003R07 | |
| EX3-SW1B-0501 (B1E0193-02) Soil | Sampled: 05/07/01 13:00 | | Received: 05/08/01 09:30 | | | | | | |
| Dry Weight | 93.2 | 1.00 | % | 1 | 1E08023 | 05/08/01 | 05/09/01 | BSOPSP003R07 | |
| EX4-FB-0501 (B1E0193-03) Soil | Sampled: 05/07/01 11:35 | | Received: 05/08/01 09:30 | | | | | | |
| Dry Weight | 96.5 | 1.00 | % | 1 | 1E08023 | 05/08/01 | 05/09/01 | BSOPSP003R07 | |

North Creek Analytical - Bothell

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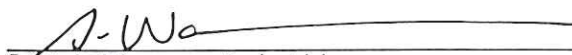


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| | | |
|--|---|-----------------------------|
| Maul Foster & Alongi-Seattle 17171 Bothell Way NE #264 Seattle WA, 98155 | Project: Chelan Bulk Terminal #0082 Project Number: 9077.015.001 Project Manager: Mike Staton | Reported: 05/09/01 12:57 |
|--|---|-----------------------------|

Semivolatile 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 | Limits | RPD | RPD Limit | Notes |
|---|--------|-----------------|-----------|-------------|---------------|-----------|--------|-----|-----------|-------|
| Batch 1E08030: Prepared 05/08/01 Using EPA 3550B | | | | | | | | | | |
| Blank (1E08030-BLK1) | | | | | | | | | | |
| Diesel Range Hydrocarbons | ND | 10.0 | mg/kg wet | | | | | | | |
| Lube Oil Range Hydrocarbons | ND | 25.0 | " | | | | | | | |
| Surrogate: 2-FBP | 6.97 | | " | 10.7 | | 65.1 | 50-150 | | | |
| Surrogate: Octacosane | 8.24 | | " | 10.7 | | 77.0 | 50-150 | | | |
| LCS (1E08030-BS1) | | | | | | | | | | |
| Diesel Range Hydrocarbons | 49.1 | 10.0 | mg/kg wet | 66.7 | | 73.6 | 50-150 | | | |
| Surrogate: 2-FBP | 7.39 | | " | 10.7 | | 69.1 | 50-150 | | | |
| Duplicate (1E08030-DUP1) Source: B1E0193-01 | | | | | | | | | | |
| Diesel Range Hydrocarbons | ND | 10.0 | mg/kg dry | | ND | | | | 50 | |
| Lube Oil Range Hydrocarbons | ND | 25.0 | " | | ND | | | | 50 | |
| Surrogate: 2-FBP | 8.56 | | " | 11.7 | | 73.2 | 50-150 | | | |
| Surrogate: Octacosane | 9.45 | | " | 11.7 | | 80.8 | 50-150 | | | |


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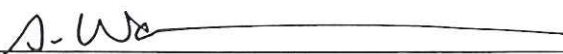
| | | |
|--|---|-----------------------------|
| Maul Foster & Alongi-Seattle 17171 Bothell Way NE #264 Seattle WA, 98155 | Project: Chelan Bulk Terminal #0082 Project Number: 9077.015.001 Project Manager: Mike Staton | Reported: 05/09/01 12:57 |
|--|---|-----------------------------|

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control
North Creek Analytical - Bothell

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|--|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
| Batch 1E08023: Prepared 05/08/01 Using Dry Weight | | | | | | | | | | |
| Blank (1E08023-BLK1) | | | | | | | | | | |
| Dry Weight | 100 | 1.00 | % | | | | | | | |

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

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


Reported:
 05/24/01 09:59

**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 |
|---|--------|-----------------|-----------|----------|---------|----------|----------|----------------|-------|
| EX5-F-0501 (B1E0322-01) Soil Sampled: 05/09/01 09:45 Received: 05/10/01 09:00 | | | | | | | | | |
| Gasoline Range Hydrocarbons | ND | 5.00 | mg/kg dry | 1 | 1E14054 | 05/14/01 | 05/14/01 | NWTPH-Gx/8021B | |
| Benzene | ND | 0.0500 | " | " | " | " | " | " | |
| Toluene | ND | 0.0500 | " | " | " | " | " | " | |
| Ethylbenzene | ND | 0.0500 | " | " | " | " | " | " | |
| Xylenes (total) | ND | 0.100 | " | " | " | " | " | " | |
| Surrogate: 4-BFB (FID) | 86.5 % | 50-150 | | | " | " | " | " | |
| Surrogate: 4-BFB (PID) | 92.2 % | 50-150 | | | " | " | " | " | |
| EX5-SW-0501 (B1E0322-02) Soil Sampled: 05/09/01 09:55 Received: 05/10/01 09:00 | | | | | | | | | |
| Gasoline Range Hydrocarbons | ND | 5.00 | mg/kg dry | 1 | 1E14054 | 05/14/01 | 05/14/01 | NWTPH-Gx/8021B | |
| Benzene | ND | 0.0500 | " | " | " | " | " | " | |
| Toluene | ND | 0.0500 | " | " | " | " | " | " | |
| Ethylbenzene | ND | 0.0500 | " | " | " | " | " | " | |
| Xylenes (total) | ND | 0.100 | " | " | " | " | " | " | |
| Surrogate: 4-BFB (FID) | 87.5 % | 50-150 | | | " | " | " | " | |
| Surrogate: 4-BFB (PID) | 92.2 % | 50-150 | | | " | " | " | " | |
| EX5-SW2-0501 (B1E0322-03) Soil Sampled: 05/09/01 11:10 Received: 05/10/01 09:00 | | | | | | | | | |
| Gasoline Range Hydrocarbons | ND | 5.00 | mg/kg dry | 1 | 1E14054 | 05/14/01 | 05/14/01 | NWTPH-Gx/8021B | |
| Benzene | ND | 0.0500 | " | " | " | " | " | " | |
| Toluene | ND | 0.0500 | " | " | " | " | " | " | |
| Ethylbenzene | ND | 0.0500 | " | " | " | " | " | " | |
| Xylenes (total) | ND | 0.100 | " | " | " | " | " | " | |
| Surrogate: 4-BFB (FID) | 84.8 % | 50-150 | | | " | " | " | " | |
| Surrogate: 4-BFB (PID) | 88.5 % | 50-150 | | | " | " | " | " | |

North Creek Analytical - Bothell

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

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

Reported:
 05/24/01 09:59

**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 |
|---|--------|-----------------|-----------|----------|---------|----------|----------|-------------|-------|
| EX5-F-0501 (B1E0322-01) Soil Sampled: 05/09/01 09:45 Received: 05/10/01 09:00 | | | | | | | | | |
| Diesel Range Hydrocarbons | 128 | 10.0 | mg/kg dry | 1 | 1E14052 | 05/14/01 | 05/15/01 | NWTPH-Dx SG | D-06 |
| Lube Oil Range Hydrocarbons | ND | 25.0 | " | " | " | " | " | " | |
| Surrogate: 2-FBP | 75.0 % | 50-150 | | | " | " | " | " | |
| Surrogate: Octacosane | 86.4 % | 50-150 | | | " | " | " | " | |
| EX5-SW-0501 (B1E0322-02) Soil Sampled: 05/09/01 09:55 Received: 05/10/01 09:00 | | | | | | | | | |
| Diesel Range Hydrocarbons | 198 | 10.0 | mg/kg dry | 1 | 1E14052 | 05/14/01 | 05/15/01 | NWTPH-Dx SG | D-06 |
| Lube Oil Range Hydrocarbons | 29.8 | 25.0 | " | " | " | " | " | " | D-06 |
| Surrogate: 2-FBP | 101 % | 50-150 | | | " | " | " | " | |
| Surrogate: Octacosane | 104 % | 50-150 | | | " | " | " | " | |
| EX5-SW2-0501 (B1E0322-03) Soil Sampled: 05/09/01 11:10 Received: 05/10/01 09:00 | | | | | | | | | |
| Diesel Range Hydrocarbons | ND | 10.0 | mg/kg dry | 1 | 1E14052 | 05/14/01 | 05/15/01 | NWTPH-Dx SG | |
| Lube Oil Range Hydrocarbons | ND | 25.0 | " | " | " | " | " | " | |
| Surrogate: 2-FBP | 80.9 % | 50-150 | | | " | " | " | " | |
| Surrogate: Octacosane | 94.0 % | 50-150 | | | " | " | " | " | |



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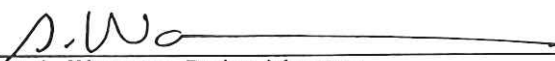
| | | |
|--|---|-----------------------------|
| Maul Foster & Alongi-Seattle 17171 Bothell Way NE #264 Seattle WA, 98155 | Project: Chelan Bulk Terminal #0082 Project Number: 9077.015.001 Project Manager: Mike Staton | Reported: 05/24/01 09:59 |
|--|---|-----------------------------|

**Physical Parameters by APHA/ASTM/EPA Methods
 North Creek Analytical - Bothell**

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---|--------|-----------------|-------|----------|---------|----------|----------|--------------|-------|
| EX5-F-0501 (B1E0322-01) Soil Sampled: 05/09/01 09:45 Received: 05/10/01 09:00 | | | | | | | | | |
| Dry Weight | 94.7 | 1.00 | % | 1 | 1E14013 | 05/14/01 | 05/15/01 | BSOPSP003R07 | |
| EX5-SW-0501 (B1E0322-02) Soil Sampled: 05/09/01 09:55 Received: 05/10/01 09:00 | | | | | | | | | |
| Dry Weight | 94.5 | 1.00 | % | 1 | 1E14013 | 05/14/01 | 05/15/01 | BSOPSP003R07 | |
| EX5-SW2-0501 (B1E0322-03) Soil Sampled: 05/09/01 11:10 Received: 05/10/01 09:00 | | | | | | | | | |
| Dry Weight | 92.2 | 1.00 | % | 1 | 1E14014 | 05/14/01 | 05/15/01 | BSOPSP003R07 | |

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

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

Reported:
 05/24/01 09:59

**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 1E14054: Prepared 05/14/01 Using EPA 5030B (MeOH)

Blank (1E14054-BLK1)

| | | | | | | | | | | |
|-----------------------------|------|--------|-----------|------|--|------|--------|--|--|--|
| Gasoline Range Hydrocarbons | ND | 5.00 | mg/kg wet | | | | | | | |
| Benzene | ND | 0.0500 | " | | | | | | | |
| Toluene | ND | 0.0500 | " | | | | | | | |
| Ethylbenzene | ND | 0.0500 | " | | | | | | | |
| Xylenes (total) | ND | 0.100 | " | | | | | | | |
| Surrogate: 4-BFB (FID) | 3.68 | | " | 4.00 | | 92.0 | 50-150 | | | |
| Surrogate: 4-BFB (PID) | 3.82 | | " | 4.00 | | 95.5 | 50-150 | | | |

LCS (1E14054-BS1)

| | | | | | | | | | | |
|-----------------------------|------|------|-----------|------|--|------|--------|--|--|--|
| Gasoline Range Hydrocarbons | 24.9 | 5.00 | mg/kg wet | 25.0 | | 99.6 | 70-130 | | | |
| Surrogate: 4-BFB (FID) | 3.83 | | " | 4.00 | | 95.8 | 50-150 | | | |

Duplicate (1E14054-DUP1)

Source: B1E0322-02

| | | | | | | | | | | |
|-----------------------------|------|------|-----------|------|----|------|--------|--|----|--|
| Gasoline Range Hydrocarbons | ND | 5.00 | mg/kg dry | | ND | | | | 50 | |
| Surrogate: 4-BFB (FID) | 3.52 | | " | 4.23 | | 83.2 | 50-150 | | | |

Matrix Spike (1E14054-MS1)

Source: B1E0322-03

| | | | | | | | | | | |
|------------------------|-------|--------|-----------|-------|----|------|--------|--|--|--|
| Benzene | 0.491 | 0.0500 | mg/kg dry | 0.543 | ND | 90.4 | 60-140 | | | |
| Toluene | 0.503 | 0.0500 | " | 0.543 | ND | 91.7 | 60-140 | | | |
| Ethylbenzene | 0.532 | 0.0500 | " | 0.543 | ND | 98.0 | 60-140 | | | |
| Xylenes (total) | 1.61 | 0.100 | " | 1.63 | ND | 97.8 | 60-140 | | | |
| Surrogate: 4-BFB (PID) | 4.02 | | " | 4.34 | | 92.6 | 50-150 | | | |

Matrix Spike Dup (1E14054-MSD1)

Source: B1E0322-03

| | | | | | | | | | | |
|------------------------|-------|--------|-----------|-------|----|------|--------|-------|----|--|
| Benzene | 0.487 | 0.0500 | mg/kg dry | 0.543 | ND | 89.7 | 60-140 | 0.818 | 20 | |
| Toluene | 0.489 | 0.0500 | " | 0.543 | ND | 89.1 | 60-140 | 2.82 | 20 | |
| Ethylbenzene | 0.519 | 0.0500 | " | 0.543 | ND | 95.6 | 60-140 | 2.47 | 20 | |
| Xylenes (total) | 1.55 | 0.100 | " | 1.63 | ND | 94.1 | 60-140 | 3.80 | 20 | |
| Surrogate: 4-BFB (PID) | 3.77 | | " | 4.34 | | 86.9 | 50-150 | | | |

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| | | |
|--|---|-----------------------------|
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|--|---|-----------------------------|

Semivolatile 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 Limits | RPD | RPD Limit | Notes |
|---|--------|-----------------|-----------|-------------|---------------|------|-------------|------|-----------|-------|
| Batch 1E14052: Prepared 05/14/01 Using EPA 3550B | | | | | | | | | | |
| Blank (1E14052-BLK1) | | | | | | | | | | |
| Diesel Range Hydrocarbons | ND | 10.0 | mg/kg wet | | | | | | | |
| Lube Oil Range Hydrocarbons | ND | 25.0 | " | | | | | | | |
| Surrogate: 2-FBP | 9.07 | | " | 10.7 | | 84.8 | 50-150 | | | |
| Surrogate: Octacosane | 10.5 | | " | 10.7 | | 98.1 | 50-150 | | | |
| LCS (1E14052-BS1) | | | | | | | | | | |
| Diesel Range Hydrocarbons | 59.2 | 10.0 | mg/kg wet | 66.7 | | 88.8 | 50-150 | | | |
| Surrogate: 2-FBP | 9.69 | | " | 10.7 | | 90.6 | 50-150 | | | |
| Duplicate (1E14052-DUP1) Source: B1E0346-02 | | | | | | | | | | |
| Diesel Range Hydrocarbons | 15.8 | 10.0 | mg/kg dry | | ND | | | 61.0 | 50 | Q-05 |
| Lube Oil Range Hydrocarbons | ND | 25.0 | " | | ND | | | 23.2 | 50 | |
| Surrogate: 2-FBP | 9.87 | | " | 13.6 | | 72.6 | 50-150 | | | |
| Surrogate: Octacosane | 11.6 | | " | 13.6 | | 85.3 | 50-150 | | | |
| Duplicate (1E14052-DUP2) Source: B1E0322-01 | | | | | | | | | | |
| Diesel Range Hydrocarbons | 104 | 10.0 | mg/kg dry | | 128 | | | 20.7 | 50 | |
| Lube Oil Range Hydrocarbons | ND | 25.0 | " | | ND | | | 2.93 | 50 | |
| Surrogate: 2-FBP | 9.22 | | " | 11.3 | | 81.6 | 50-150 | | | |
| Surrogate: Octacosane | 10.7 | | " | 11.3 | | 94.7 | 50-150 | | | |

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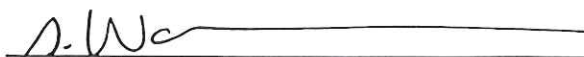
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 17171 Bothell Way NE #264
 Seattle WA, 98155

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

Reported:
 05/24/01 09:59

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control
North Creek Analytical - Bothell

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC %REC | Limits | RPD RPD | Limit | Notes |
|--|--------|-----------------|-------|-------------|---------------|-----------|--------|---------|-------|-------|
| Batch 1E14013: Prepared 05/14/01 Using Dry Weight | | | | | | | | | | |
| Blank (1E14013-BLK1) | | | | | | | | | | |
| Dry Weight | 100 | 1.00 | % | | | | | | | |
| Batch 1E14014: Prepared 05/14/01 Using Dry Weight | | | | | | | | | | |
| Blank (1E14014-BLK1) | | | | | | | | | | |
| Dry Weight | 100 | 1.00 | % | | | | | | | |


 Scott A. Woerman, 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

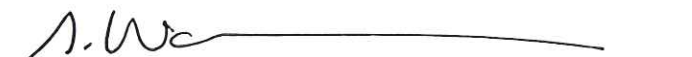
Maul Foster & Alongi-Seattle
 17171 Bothell Way NE #264
 Seattle WA, 98155

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

Reported:
 05/24/01 09:59

Notes and Definitions

- D-06 The sample chromatographic pattern does not resemble the fuel standard used for quantitation.
- Q-05 Analyses are not controlled on RPD values from sample concentrations less than 10 times the reporting limit.
- 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


 Scott A. Woerman, Project Manager



NCATM
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Environmental Laboratory Network
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(541) 383-9310 FAX 382-7588

UNOCAL CHAIN OF CUSTODY REPORT

B1E0322

UNOCAE INFORMATION

Facility Number: Chelan Bulk # 0082
 Site Address: 500 East Gibson St.
 City, State, ZIP: Chelan, WA.
 Site Release Number: Direct billing to Mark Brewley (Unocal)
 Unocal Manager: Mark Brewley
 CERT INFO: (check one) Evaluation Remediation
 Detection Demolition Closure Miscellaneous

CONSULTANT INFORMATION

Firm: Mark Forster & Associates Project#: 9077.015.001
 Address: 17171 Bothell Way NE, #264
Seattle, WA - 98155
 Phone: (425) 744-1489 Fax: (425) 744-0919
 Project Manager: Mike Station
 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 CONTAINERS |
|-----------------------|----------------------|----------------|-----------------|
| 1. EX5-F-0501 | 5/19/01 @ 0945 | S | 2 |
| 2. EX5-SW-0501 | ↓ @ 0955 | S | 2 |
| 3. EX5-SW2-0501 | ↓ @ 1110 | S | 2 |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |

| OR | WA | AK | NW Series | TPH-HCID | TPH-Gas | BTEX | EPA 8021 Mod. | TPH-Gas + BTEX | TPH-Diesel | TPH-Diesel Extended | TPH-Diesel-Ext. | W/S/G Cleanup | Halogen, Volatiles | EPA 8021 | Pesticides/PCBs or PCBs Only | G/CMS Volatiles | EPA 8260 | G/CMS Semi-Vols. | EPA 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 | | | | | | | | | | | | | | |

Handwritten notes: WPH (WA-VPH), PAH'S (8270-SIM), HOLD, -EPH, WPH, & PAH'S may be run after results have been reviewed by Mike Station (BTEX, TPH-g, TPH-DX) receive OK by Mike before running Analysis.

Relinquished by: [Signature] Firm: MFA Date & Time: 5/19/01 @ 1235

Received by: FEDEX Firm: FEDEX Date & Time: 0900

Comments: TPH-g by W/TPH-g; BTEX by 8021B; TPH-O & TPH-D by NWTPH-DX after
Distribution: White - Laboratory Yellow - Consultant Photocopy - Unocal

Were all requested results provided? yes no Define

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

Final Report Approval: _____ Date: _____

Final Approval Signature: _____ Firm: _____