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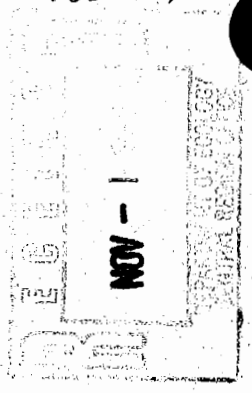

LIMITED SUBSURFACE INVESTIGATION REPORT

Pilot Travel Center #389
1512 Highway 97
Ellensburg, Washington

Project No. 20-019

October 1996

LIMITED SUBSURFACE INVESTIGATION REPORT

Pilot Travel Center
1512 Highway 97
Ellensburg, Washington

Project No. 20-019-01-005

Prepared for:

ADaPT Engineering
252 S.W. 43rd Street
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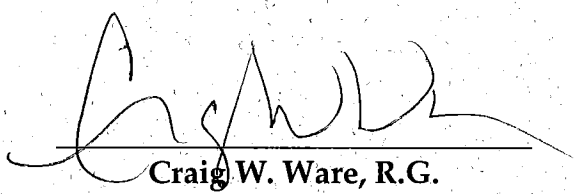
Prepared by:

Alisto Engineering Group
15110 S.W. Boones Ferry Road, Suite 180
Lake Oswego, Oregon

October 9, 1996



Craig W. Ware, R.G.
Supervising Geologist

CONTENTS

1.0 INTRODUCTION

On behalf of Pilot Corporation, ADaPT Engineering retained Alisto Engineering Group to conduct a limited subsurface investigation at the Pilot Travel Center, 1512 Highway 97, Ellensburg, Washington. The work was conducted to: (1) further assess the extent of petroleum hydrocarbons in the soil and groundwater; and (2) provide compliance soil sampling following in-place abandonment of the former product lines.

1.1 Scope of Work

The scope of work included the following:

- Review of results of previous work and available information to identify areas of potential environmental concern at the site.
- Drilling and logging of two exploratory soil borings and collection of soil samples.
- Installation of two groundwater monitoring wells and collection of groundwater samples.
- Collection of soil samples from beneath abandoned product lines and fuel dispensers.
- Analysis of soil and groundwater samples for specific petroleum hydrocarbon constituents.
- Preparation of a technical report to present the results and findings of the above tasks.

The activities were conducted in accordance with the guidelines and requirements of the Washington Department of Ecology (WDOE).

1.2 Site Location and Description

The Pilot Travel Center (formerly operated as Steve's Truck Stop) encompasses about 9 acres and is approximately 1000 feet north-northeast of the West Ellensburg Interchange (Exit 106) off of Highway 90. The properties in the vicinity of the site are a mixture of retail and commercial developments and undeveloped land. The site is bordered by State Highway 97 on the southwest, agricultural land to the northeast and northwest, and a restaurant is located to the southeast. Reecer Creek, which borders the northeast side of the property, flows towards the south-southeast.

The fuel storage system includes four steel underground storage tanks in a single cavity immediately to the northeast of the station building. There were eight diesel dispensers beneath a single canopy to the northwest of the building, and four gasoline dispensers to the southwest of the building. A truck scale was located immediately northwest of the diesel islands.

The former site building was demolished in June 1996 to facilitate the construction of a new facility. The underground storage tanks have been re-lined, and new product lines are being installed to upgrade the diesel and gasoline dispenser islands northwest and southwest of

the new facility. The former product lines were drained, capped, and abandoned in-place. A site vicinity map is shown on Figure 1. The former layout of the site and pertinent site features are shown on Figure 2.

2.0 FIELD METHODS AND PROCEDURES

The field methods and procedures used during drilling, monitoring well installation, and compliance soil sampling are described in this section.

2.1 Drilling and Soil Sampling

Two soil borings were drilled at the site on July 22, 1996. Each boring was first drilled to a depth of 4 feet, using a hand auger or posthole digger. Drilling was performed by Cascade Drilling, Woodinville, Washington, using a truck-mounted drilling rig equipped with 8-inch-diameter hollow-stem augers. Soil Borings MW-4 and MW-5 were drilled to depths of 19 and 12 feet, where auger refusal was encountered in each boring. Soil samples were collected for chemical analysis using a split-spoon sampler lined with brass tubes. The field procedures for drilling and soil sampling are presented in Appendix A.

Borings logs were prepared based on the Unified Soil Classification System, which included a description of soil characteristics such as color, moisture, consistency, and field readings from an organic vapor meter. The boring logs are presented in Appendix B.

2.2 Monitoring Well Installation

Soil Borings MW-4 and MW-5 were converted into Monitoring Wells MW-4 and MW-5 in accordance with the field procedures for groundwater monitoring well installation presented in Appendix B. The wells were constructed using clean, 2-inch-diameter, flush-threaded, Schedule 40, polyvinyl chloride (PVC) blank casing and 0.020-inch slotted well casing. Well construction details are included on the boring logs presented in Appendix B.

2.3 Monitoring Well Development and Sampling

After each well was inspected for liquid-phase hydrocarbons, Monitoring Wells MW-4 and MW-5 were developed on July 22, 1996. The wells were developed using a positive displacement pump by removing at least 10 casing volumes, or until groundwater was relatively free of sediment.

After purging at least 3 well casing volumes and while monitoring indicator parameters, the monitoring wells were sampled on July 24, 1996. The field procedures for well development and sampling and the field sampling forms are presented in Appendix C. The samples were transported in an iced cooler to a state-certified laboratory for analysis following standard chain of custody procedures.

2.4 Groundwater Monitoring and Well Surveying

The existing Monitoring Wells MW-1 through MW-3 and new wells MW-4 and MW-5 were surveyed by a Washington licensed land surveyor relative to a U.S. Geological Survey datum. On July 24, 1996, the depth to groundwater in the wells was measured from the top of the well casing to the nearest 0.01 foot using an electronic water level indicator. The survey data and relative groundwater elevation measurements are presented in Table 2.

2.5 Product Line Soil Sampling

Site check sampling was performed beginning on July 23, 1996 in accordance with the general requirements of Washington Administrative Code 173-360-385, and the WSDE Guidance for Site Checks and Site Assessments for Underground Storage Tanks. The site check sampling included collection of soil samples at selected locations along the former product lines to meet the minimum requirements. At least one soil sample was collected at a depth of 2 feet below the depth of the piping at each dispenser island, and one soil sample was collected for every 50 feet of piping between the dispensers and the underground storage tanks. A backhoe was used to excavate soil at selected locations along the product lines.

Since the underground storage tanks were re-lined, soil sampling was not performed in the underground storage tank cavity. Soil samples were not collected along portions of the product line trenches beneath the new station building slab, immediately southeast and northwest of the former station building.

A total of 15 soil samples were collected on July 23, 1996 from the product lines trenches for analysis. During construction work at the site, two additional samples (S-2A-4 and S-7A-5) were collected on August 27, 1996 to provide confirmation of the results of laboratory results for soil samples collected on July 23, 1996. Based on the results of previous soil sampling conducted at the site by others in November 1995, one soil sample was collected at a depth of 1 foot below the approximate area of Sample S-2 on the northeast side of the property (S-A2-1) to confirm the vertical extent of total petroleum hydrocarbons in the shallow soil. Soil sample locations are shown on Figure 3.

3.0 ANALYTICAL METHODS

The soil and groundwater samples were analyzed by National Environmental Testing (NET), a state-certified laboratory, using standard test methods of the U.S. Environmental Protection Agency (EPA) and the WDOE for the following:

- Total petroleum hydrocarbon identification (TPH-HCID) using Washington Method TPH-HCID.

- Total petroleum hydrocarbons as gasoline (TPH-G) using Washington Method TPH-G.

- Total petroleum hydrocarbons as diesel (TPH-D) using Washington Method TPH-D.

- Benzene, toluene, ethylbenzene, and total xylenes using EPA Method 8020.

- Total lead using EPA Method 6010.

- Total petroleum hydrocarbons (TPH) using Washington Method 418.1.

One soil sample from the gasoline and diesel dispenser islands was submitted for hydrocarbon identification analysis using Washington Method TPH-HCID. Results of the analysis for both samples indicated the presence of petroleum hydrocarbons in the diesel and gasoline hydrocarbons ranges. Based on visual and field observations during sampling, and operations of the former facility, quantification of total petroleum hydrocarbons was limited to TPH-D for soil samples collected at the diesel dispenser islands and TPH-G for soil samples collected at the gasoline dispenser islands.

The field procedures for chain of custody documentation and the laboratory reports and chain of custody records are presented in Appendix D. The results of soil and groundwater sample analysis are presented in Tables 1 and 2. The results of groundwater analysis are also graphically shown on Figure 4.

4.0 SITE GEOLOGY AND HYDROGEOLOGY

Boring logs prepared during this and previous subsurface investigations at the site indicate that the stratigraphy is relatively consistent. Soil types encountered in the borings were predominantly unconsolidated sandy gravel with cobbles to the explored depth of 19 feet. Sandy silt and silty sand was encountered at depths ranging from 4 to 8 feet in Borings MW-4 and MW-5.

On July 24, 1996, depth to groundwater measured in the monitoring wells ranged from 5.07 to 7.12 feet. The groundwater gradient as interpreted from these measurements is approximately 0.007 foot per foot in a south-southeasterly direction across the site. A graphical interpretation of the groundwater gradient beneath the site, based on the July 1996 data, is shown on Figure 5.

5.0 RESULTS AND FINDINGS

The following are the results and findings of field activities and laboratory analysis of soil and groundwater samples collected during this investigation:

- Soil types encountered in the borings consisted of unconsolidated sandy gravel and cobbles, with interspersed silty sand and sandy silt layers.

- Groundwater was measured at a depth of about 5 to 7 feet on July 24, 1996. The groundwater gradient, as interpreted from these data, is 0.007 foot per foot in a south-southeasterly direction.

- Laboratory analysis of soil samples collected at the gasoline dispenser islands and from the product line trench leading to the gasoline dispenser islands detected TPH-G at concentrations ranging from 14 to 3900 milligrams per kilogram (mg/kg), with TPH-G concentrations in three of the seven samples exceeding the Method A cleanup level of 100 mg/kg. Analysis of soil samples collected at the diesel dispenser islands detected TPH-D at concentrations ranging from 41 to 15000 mg/kg, with TPH-D concentrations in five of the seven samples exceeding the Method A cleanup level of 200 mg/kg.

- Total petroleum hydrocarbons, using Washington Method 418.1, were not detected in Soil Sample S-A2-1, collected at a depth of one foot at the approximate location of Soil Sample S-2 (November 1995) at the northeast corner of the property.

- Analysis of the groundwater samples collected from MW-1 and MW-3 detected benzene at concentrations of 9.1 and 8.1 ug/l, exceeding the Method A cleanup level of 5 ug/l. The concentrations of toluene and ethylbenzene detected in the groundwater sample collected from MW-3 also exceeded the Method A cleanup levels of 40 and 20 ug/l.

6.0 CONCLUSIONS

Based on the results and findings of this investigation, the concentrations of petroleum hydrocarbons detected in the soil and groundwater exceed the Washington Model Toxics Control Act (MTCA) Method A cleanup levels and constitute a reportable release in accordance with Washington Administrative Code (WAC) 173-340-450. Accordingly, we recommend that WDOE be notified as to the results and findings.

TABLES

FIGURES

TABLE 1 - SUMMARY OF RESULTS OF SOIL SAMPLING
PILOT TRAVEL CENTER
1512 HIGHWAY 97, ELLENSBURG, WASHINGTON

ALISTO PROJECT NO. 20-019

Method A Cleanup Standard					100	200	200	0.5	40	20	20	250	
Sample ID		Sample Depth	Date of Sampling	WTPH-HCID	WTPH-G (mg/kg)	WTPH-D (mg/kg)	WTPH-418.1 (mg/kg)	B (mg/kg)	T (mg/kg)	E (mg/kg)	X (mg/kg)	Total Lead (mg/kg)	Lab
B1-1/MW-1	(a)	2.5 feet	11/08/95	ND	4.3	—	—	0.1	0.057	0.18	0.31	—	NCA
B1-2/MW-1	(a)	5.0 feet	11/08/95	ND	2.5	—	—	ND<.013	ND<.013	0.022	0.053	—	NCA
B2	(a)	2.5 feet	11/08/95	ND	ND<2	—	—	ND<.013	ND<.013	ND<.013	ND<.013	—	NCA
B3/MW-3	(a)	10.0 feet	11/08/95	ND	ND<2	—	—	ND<.013	ND<.013	ND<.013	ND<.013	—	NCA
B4	(a)	5.0 feet	11/08/95	Oil	ND<2	—	230	ND<.013	ND<.013	ND<.013	ND<.013	—	NCA
B5	(a)	5.0 feet	11/08/95	ND	ND<2	—	—	ND<.013	ND<.013	ND<.013	ND<.013	—	NCA
B6/MW-2	(a)	5.0 feet	11/08/95	ND	ND<2	—	210	ND<.013	ND<.013	ND<.013	ND<.013	—	NCA
B7	(a)	10.0 feet	11/08/95	ND	ND<2	—	—	ND<.013	ND<.013	ND<.013	ND<.013	—	NCA
B8	(a)	10.0 feet	11/08/95	ND	ND<2	—	—	ND<.013	ND<.013	ND<.013	ND<.013	—	NCA
B9-1	(a)	2.0 inches	11/08/95	Diesel	4.6	180	—	ND<.013	ND<.013	ND<.013	ND<.013	—	NCA
B9-2	(a)	3.0 feet	11/08/95	ND	6.1	—	—	ND<.013	ND<.013	ND<.013	ND<.013	—	NCA
B10-1	(a)	2.0 inches	11/08/95	ND	ND<2	—	—	ND<.013	ND<.013	ND<.013	ND<.013	—	NCA
B10-2	(a)	3.0 feet	11/08/95	ND	ND<2	—	—	ND<.013	ND<.013	ND<.013	ND<.013	—	NCA
B11	(a)	3.0 feet	11/08/95	ND	ND<2	—	—	ND<.013	ND<.013	ND<.013	ND<.013	—	NCA
B12	(a)	3.0 feet	11/08/95	ND	ND<2	—	—	ND<.013	ND<.013	ND<.013	ND<.013	—	NCA
MW-4-5		5.0 feet	07/22/96	ND	—	—	—	—	—	—	—	—	NET
MW-5-5		5.0 feet	07/22/96	ND	—	—	—	—	—	—	—	—	NET
S-1-1	(a)	2.0 inches	11/08/95	Gas/Diesel/Oil	260	—	29000	ND<.05	ND<.05	0.19	1.20	—	NCA
S-1-2	(a)	1.0 feet	11/08/95	ND	3.8	—	—	ND<.013	ND<.013	ND<.013	ND<.013	—	NCA
S-1-4		4.0 feet	07/23/96	Gas/Diesel	2000	—	—	ND<6	ND<6	ND<6	140	6.9	NET
S-2	(a)	2.0 inches	11/08/95	Diesel/Oil	ND<2	—	39000	ND<.013	ND<.013	ND<.013	ND<.013	—	NCA
S-2-4		4.0 feet	07/23/96	—	3900	—	—	ND<25	120	49	350	2.6	NET
S-2A-4		4.0 feet	08/27/96	—	3100	—	—	ND<38	150	380	120	2.4	NET

TABLE 1 - SUMMARY OF RESULTS OF SOIL SAMPLING
PILOT TRAVEL CENTER
1512 HIGHWAY 97, ELLENSBURG, WASHINGTON

ALISTO PROJECT NO. 20-019

Method A Cleanup Standard				100	200	200	0.5	40	20	20	250	
Sample ID	Sample Depth	Date of Sampling	WTPH-HCID	WTPH-G (mg/kg)	WTPH-D (mg/kg)	WTPH-418.1 (mg/kg)	B (mg/kg)	T (mg/kg)	E (mg/kg)	X (mg/kg)	Total Lead (mg/kg)	Lab
S-3-4	4.0 feet	07/23/96	—	ND<6.1	—	—	ND<0.4	ND<0.4	ND<0.4	0.36	—	NET
S-4-5	5.0 feet	07/23/96	—	14	—	—	ND<0.4	ND<0.4	ND<0.4	2.6	3.1	NET
S-5-5.5	5.5 feet	07/23/96	—	ND<6.3	—	—	ND<0.4	ND<0.4	ND<0.4	ND<0.4	—	NET
S-6-4.5	4.5 feet	07/23/96	—	ND<6.3	—	—	ND<0.4	ND<0.4	ND<0.4	ND<0.4	—	NET
S-7-5	5.0 feet	07/23/96	—	49	15000	—	ND<0.4	ND<0.4	ND<0.4	ND<0.4	—	NET
S-7A-5	5.0 feet	08/27/96	—	—	10000	—	—	—	—	—	—	NET
S-8-4	4.0 feet	07/23/96	Gas/Diesel	—	1200	—	—	—	—	—	—	NET
S-9-5	5.0 feet	07/23/96	—	—	3200	—	—	—	—	—	—	NET
S-10-4	4.0 feet	07/23/96	—	—	2000	—	—	—	—	—	—	NET
S-11-5.5	5.5 feet	07/23/96	—	—	41	—	—	—	—	—	—	NET
S-12-6	6.0 feet	07/23/96	—	—	2500	—	—	—	—	—	—	NET
S-13-5.5	5.5 feet	07/23/96	—	—	ND<17	—	—	—	—	—	—	NET
S-14-5	5.0 feet	07/24/96	—	—	ND<16	—	—	—	—	—	—	NET
S-15-5	5.0 feet	07/24/96	—	5400	—	—	3.8	86	52	580	4.3	NET
S-A2-1	1.0 feet	07/24/96	—	—	—	ND<12	—	—	—	—	—	NET

ABBREVIATIONS:

WTPH-HCID	Washington total petroleum hydrocarbons - hydrocarbon identification
WTPH-G	Washington total petroleum hydrocarbons as gasoline
WTPH-D	Washington total petroleum hydrocarbons as diesel
WTPH-418.1	Washington total petroleum hydrocarbons - 418.1
B	Benzene
T	Toluene
E	Ethylbenzene
X	Total xylenes
mg/kg	Milligrams per kilogram
—	Not analyzed/applicable/measured
ND	Not detected above reported detection limit
NCA	North Creek Analytical
NET	National Environmental Testing, Inc.

NOTES:

(a) Samples collected by Professional Services Industries.

Shaded results indicate concentration exceeding the WDOE method A Cleanup Standard.

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TABLE 2 - SUMMARY OF RESULTS OF GROUNDWATER SAMPLING
PILOT TRAVEL CENTER
1512 HIGHWAY 97, ELLENSBURG, WASHINGTON

ALISTO PROJECT NO. 20-019

Method A Cleanup Standard					1000	1000	1000	5	40	30	20	0.005	
WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	GROUNDWATER ELEVATION (b) (Feet)	WTPH-418.1 (ug/l)	WTPH-G (ug/l)	WTPH-D (ug/l)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	Total Lead (mg/l)	LAB
MW-1	11/09/95	1535.53	8.54	1526.99	1800	—	—	18	1.4	3.9	5.9	0.014	NCA
MW-1	07/24/96	1535.53	5.87	1529.66	—	52	ND<250	9.1	0.8	0.7	2.6	ND<0.005	NET
QC-1 (MW-6) (c)	07/24/96	---	—	—	—	ND<50	ND<250	8.9	0.6	ND<0.5	0.6	0.006	NET
MW-2	11/09/95	1535.46	8.24	1527.22	ND	—	—	ND	ND	ND	ND	—	NCA
MW-2	07/24/96	1535.46	5.37	1530.09	—	ND<50	ND<250	ND<0.5	ND<0.5	ND<0.5	1.4	ND<0.005	NET
MW-3	11/09/95	1534.98	7.72	1527.26	ND	—	—	0.70	ND	ND	ND	—	NCA
MW-3	07/24/96	1534.98	5.22	1529.76	—	260	ND<250	8.1	45	2.9	29	ND<0.005	NET
MW-4	07/24/96	1536.48	7.12	1529.36	—	ND<50	ND<250	ND<0.5	ND<0.5	ND<0.5	ND<0.5	0.006	NET
MW-5	07/24/96	1535.02	5.07	1529.95	—	ND<50	ND<250	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.005	NET
QC-2 (d)	07/24/96	---	---	—	—	—	—	ND<0.5	ND<0.5	ND<0.5	ND<0.5	—	NET

ABBREVIATIONS:

WTPH-418.1	Washington total petroleum hydrocarbons-418.1
WTPH-G	Washington total petroleum hydrocarbons as gasoline
WTPH-D	Washington total petroleum hydrocarbons as diesel
B	Benzene
T	Toluene
E	Ethylbenzene
X	Total xylenes
ug/l	Micrograms per liter
mg/l	Milligrams per liter
---	Not analyzed/applicable/measured
ND	Not detected above reported detection limit
NCA	North Creek Analytical
NET	National Environmental Testing, Inc.

NOTES:

(a) Casing elevations surveyed to the nearest 0.01 foot relative to National Geodetic Vertical Datum of 1929.

(b) Groundwater elevations relative to National Geodetic Vertical Datum of 1929.

(c) Blind duplicate.

(d) Travel blank.

Shaded results indicate concentration exceeding the WDOE Method A Cleanup Standard.

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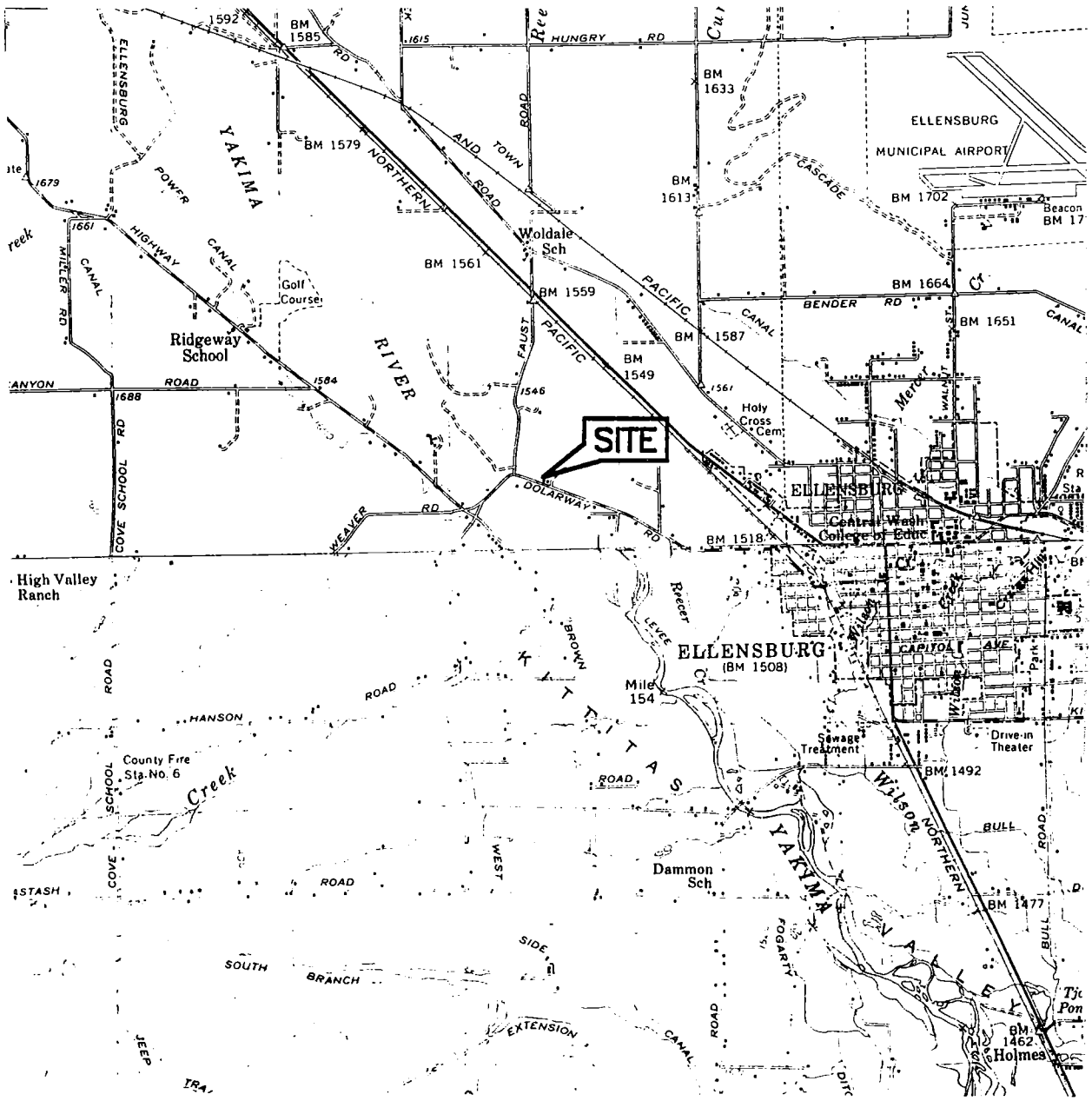


SOURCE:
USGS MAPS, ELLENSBURG AND THORP QUADRANGLES, 15 MINUTE SERIES. 1958.

N

0 1/2 MILE 1 MILE

FIGURE 1

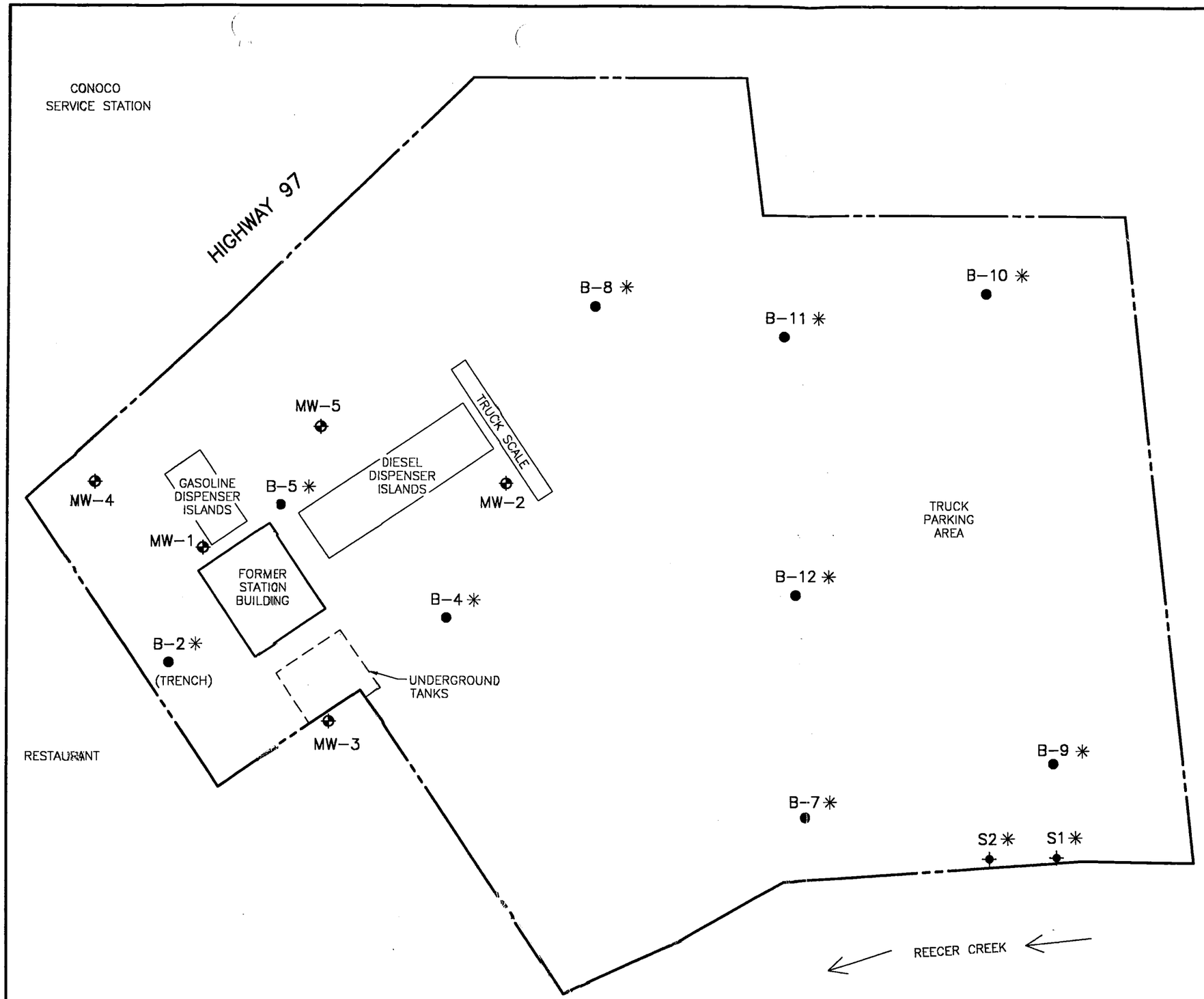
SITE VICINITY MAP

PILOT TRAVEL CENTER
1512 HIGHWAY 97
ELLENSBURG, WASHINGTON

PROJECT NO. 20-019

ALISTO ENGINEERING GROUP
PORTLAND, OREGON

200198-- .DWG 9-4-96 RKW 1=1



N

0 60 120

SCALE IN FEET

LEGEND

- ⊕ GROUNDWATER MONITORING WELL
- ● SOIL BORING LOCATION (PSI, 1995)
- ✦ SURFACE SOIL SAMPLE LOCATION
- ✳ APPROXIMATE LOCATION BASED ON PSI MAP DATED 11–13–95 (NOT TO SCALE)

FIGURE 2

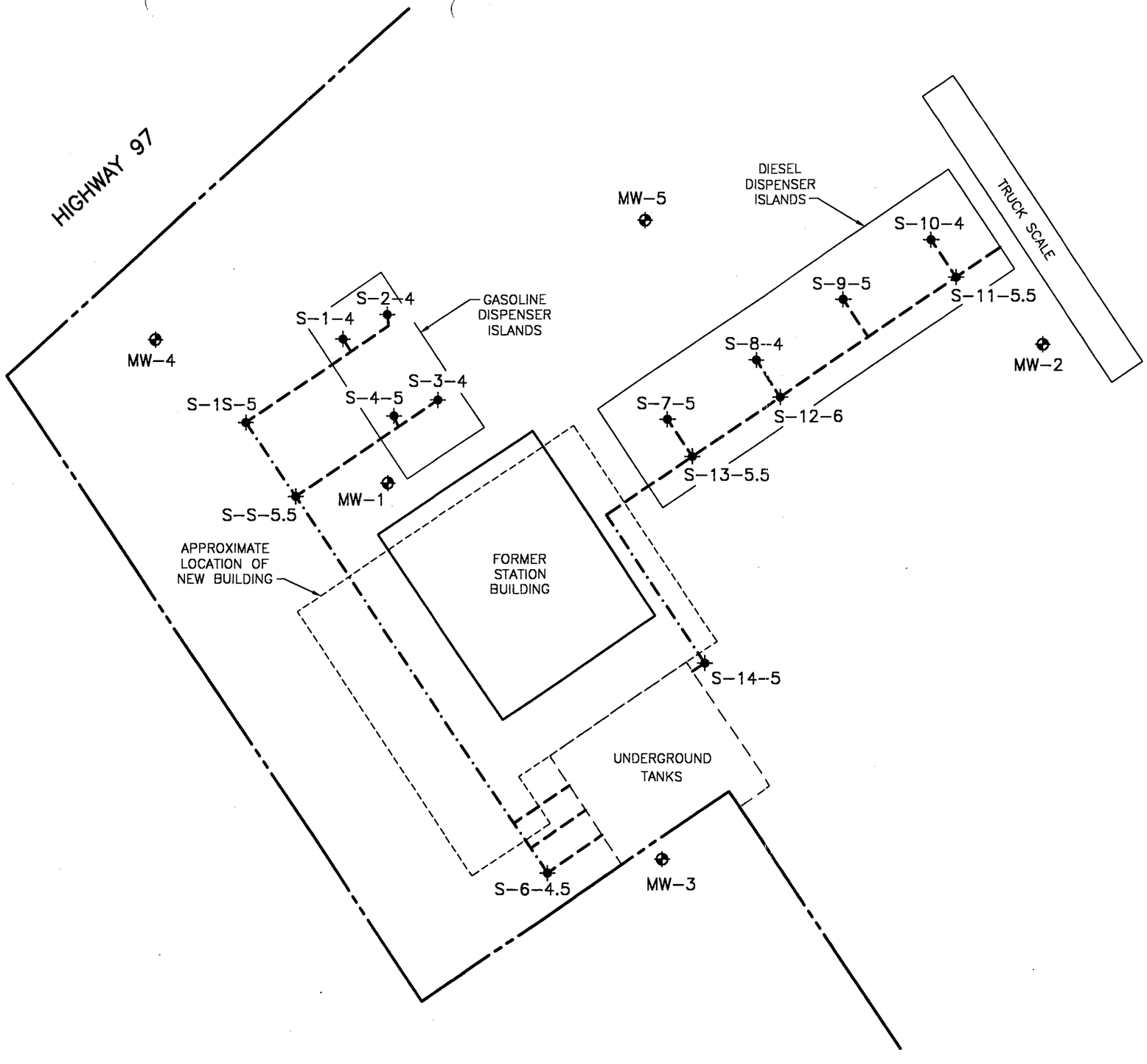
SITE PLAN

PILOT TRAVEL CENTER
1512 HIGHWAY 97
ELLENSBURG, WASHINGTON

PROJECT NO. 20–019

ALISTO ENGINEERING GROUP
PORTLAND, OREGON

20019—.DWG 8–23–96 DDM 1=60



N

0 30 60

SCALE IN FEET

LEGEND

- GROUNDWATER MONITORING WELL
- SOIL SAMPLE LOCATION
- PRODUCT LINE TRENCH LOCATION
- INFERRED PRODUCT LINE TRENCH LOCATION

FIGURE 3

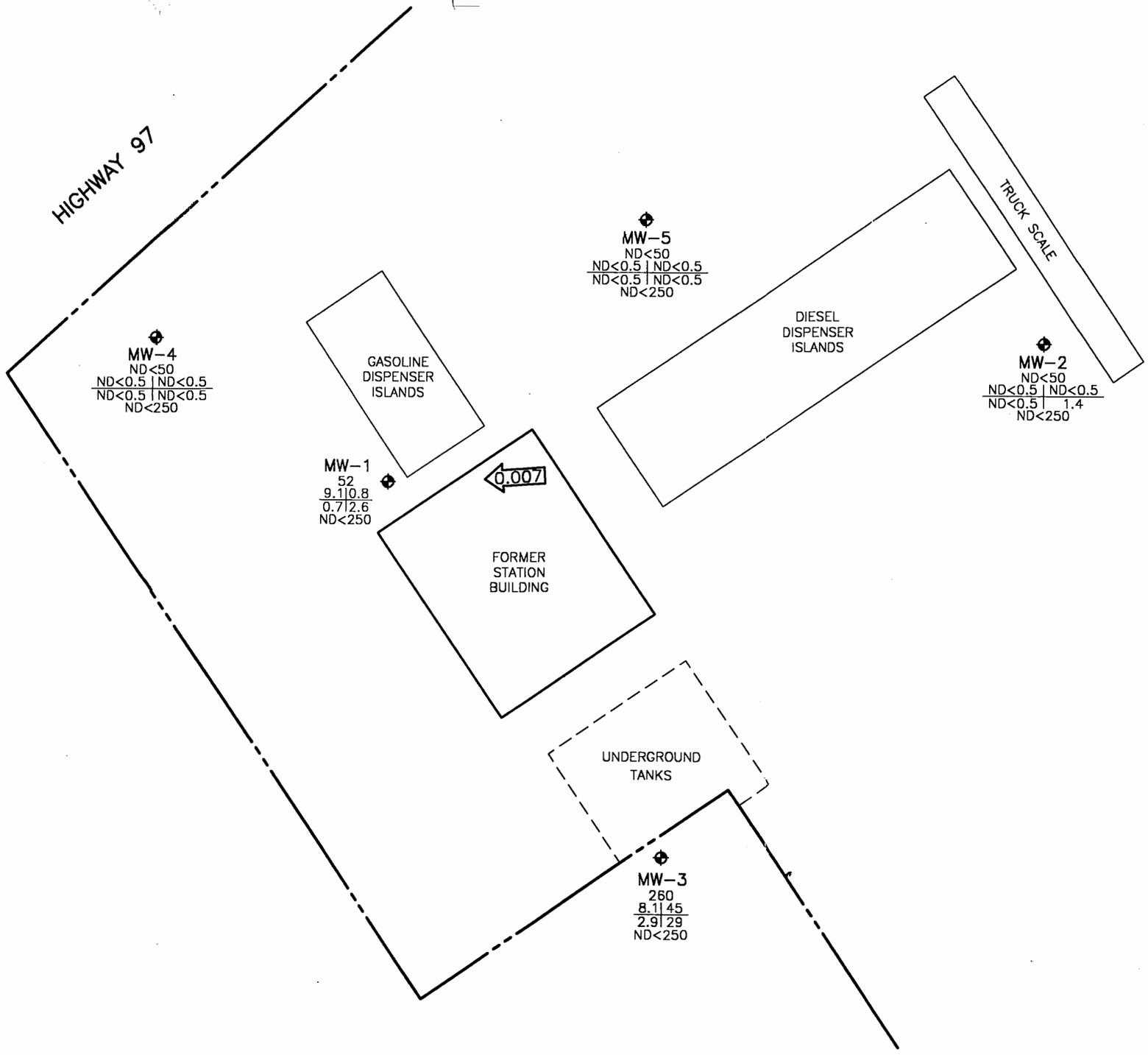
SITE PLAN SHOWING PRODUCT LINE SOIL SAMPLE LOCATIONS

PILOT TRAVEL CENTER
1512 HIGHWAY 97
ELLENSBURG, WASHINGTON

PROJECT NO. 20-019

ALISTO ENGINEERING GROUP
PORTLAND, OREGON

20019A-DWG 8-17-98 DSM 1=30



N

0 30 60

SCALE IN FEET

LEGEND

◆	GROUNDWATER MONITORING WELL
TPH-G / B | T / E | X / TPH-D	CONCENTRATION OF CONSTITUENTS IN MICROGRAMS PER LITER
TPH-G	TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
B	BENZENE
T	TOLUENE
E	ETHYLBENZENE
X	TOTAL XYLENES
TPH-D	TOTAL PETROLEUM HYDROCARBONS AS DIESEL
ND	NOT DETECTED ABOVE REPORTED DETECTION LIMIT
⟵ 0.007	CALCULATED GROUNDWATER GRADIENT DIRECTION AND MAGNITUDE IN FOOT PER FOOT

FIGURE 4

CONCENTRATIONS OF PETROLEUM HYDROCARBONS IN GROUNDWATER

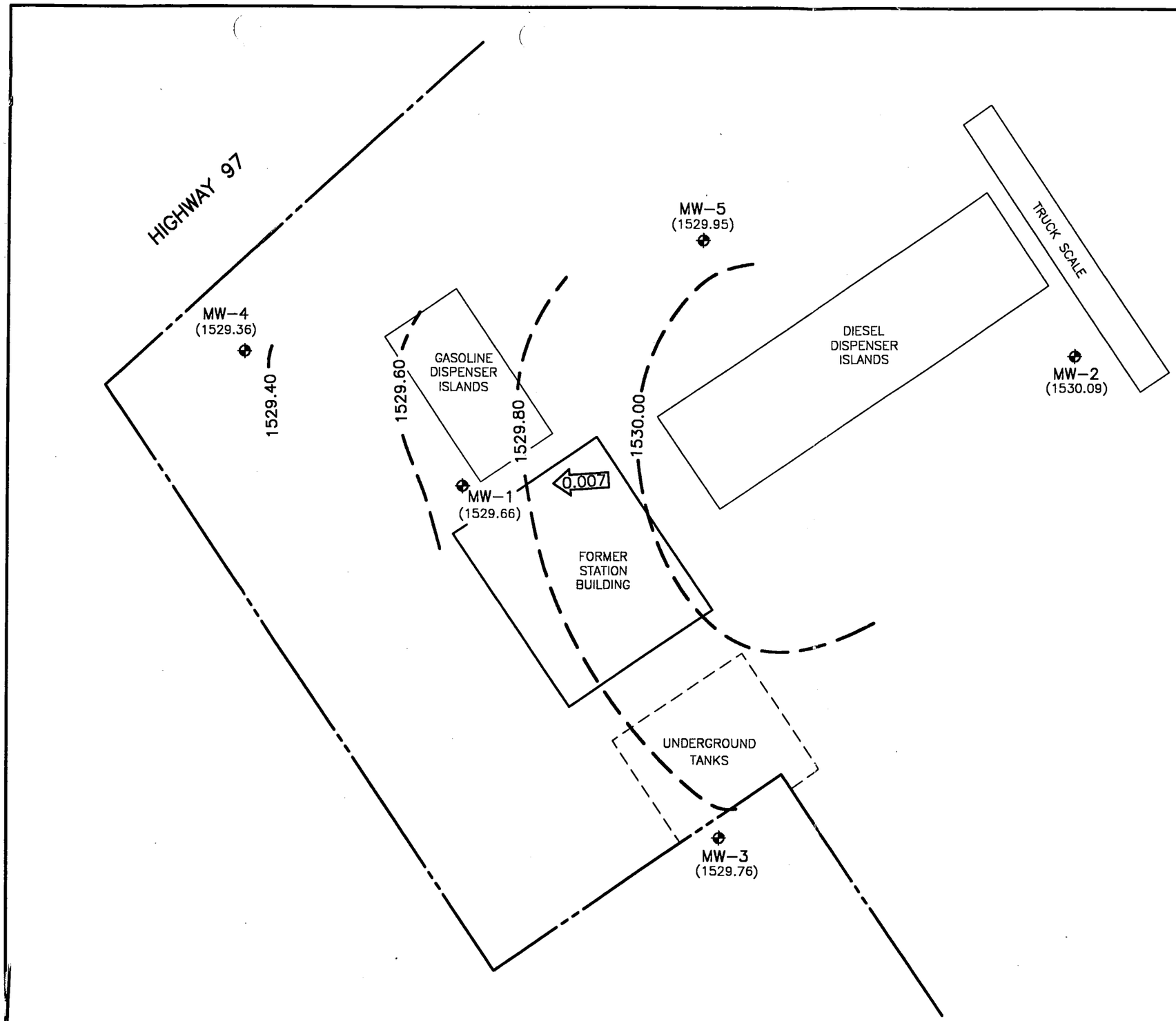
JULY 24, 1996

PILOT TRAVEL CENTER
1512 HIGHWAY 97
ELLENSBURG, WASHINGTON

PROJECT NO. 20-019

ALISTO ENGINEERING GROUP
PORTLAND, OREGON

20019E-5.DWG 8-23-96 DDN 1=30



N

0 30 60

SCALE IN FEET

LEGEND

- ◆ GROUNDWATER MONITORING WELL
- (1529.36) GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL
- 1529.40 GROUNDWATER ELEVATION CONTOUR IN FEET ABOVE MEAN SEA LEVEL (CONTOUR INTERVAL–0.20 FOOT)
- 0.007 CALCULATED GROUNDWATER GRADIENT DIRECTION AND MAGNITUDE IN FOOT PER FOOT

FIGURE 5

POTENTIOMETRIC GROUNDWATER ELEVATION CONTOUR MAP

JULY 24, 1996

PILOT TRAVEL CENTER
1512 HIGHWAY 97
ELLENSBURG, WASHINGTON

PROJECT NO. 20–019

ALISTO ENGINEERING GROUP
PORTLAND, OREGON

20019D-S.DWG 8-23-96 DOM 1=30

APPENDIX A

FIELD PROCEDURES FOR DRILLING AND SOIL SAMPLING

FIELD PROCEDURES
FOR
DRILLING AND SOIL SAMPLING

Drilling Procedures

The soil borings were drilled using 8-inch-diameter, continuous-flight, hollow-stem augers. To avoid cross-contamination, drilling equipment in contact with potentially contaminated material was decontaminated by steam cleaning before and after each use. Decontamination fluids were placed into drums for disposal. Drill cuttings from Borings MW-4 and MW-5 were placed on plastic sheeting and covered pending evaluation of laboratory results and appropriate options for disposal.

Soil Sampling Procedures

During drilling, samples were collected beginning at 5 feet below grade and terminating at the total depth of each boring. Before and after each use, the sampler was washed using a phosphate-free detergent followed by tap water and deionized water rinses. Soil sampling was accomplished using a split-spoon sampler lined with brass tubes. A 140-pound slide hammer falling 30 inches was used to advance the sampler 18 inches ahead of the hollow-stem augers into undisturbed soil, and blow counts were recorded for every 6 inches of penetration to evaluate the consistency of the soil.

After retrieval from the augers, the sampler was split, the sample tubes removed, and a soil sample was selected for possible chemical analysis. The selected sample was retained within the brass tube, and both ends were immediately covered with Teflon sheeting and polyurethane caps. The caps were sealed with tape and labeled with the following information: Alisto's project number, boring number, sample depth interval, sampler's initials, and date of collection. The sample was immediately placed in a waterproof plastic bag and stored in a cooler containing dry ice. Possession of the soil samples was documented from the field to the state-certified analytical laboratory by using a chain of custody form.

Soil samples and, when representative, drill cuttings were described by Alisto's personnel using the Unified Soils Classification System, and field estimates of soil type, color, moisture, density, and consistency were noted on the boring logs. The logs were reviewed and approved by a licensed civil engineer registered in the state of Washington.

APPENDIX B

BORING LOGS, WELL CONSTRUCTION DETAILS, AND FIELD PROCEDURES FOR GROUNDWATER MONITORING WELL INSTALLATION

FIELD PROCEDURES FOR GROUNDWATER MONITORING WELL INSTALLATION

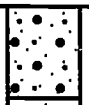
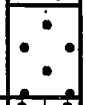
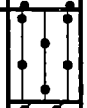
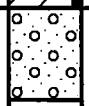
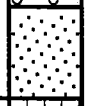
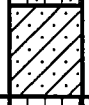
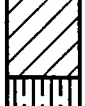
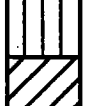
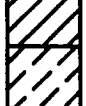
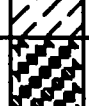
Field Procedures for Groundwater Monitoring Well Installation

Construction of the groundwater monitoring wells was based on the stratigraphy in the soil borings. The well construction materials were introduced into the boring through the hollow-stem augers to centralize the well casing and minimize the possibility of native material entering the annular space of the well.

The 2-inch-diameter PVC well casing consisted of 0.020-inch slotted casing from the bottom of the boring to above the highest anticipated water level. Solid casing was installed from the top of the slotted casing to approximately 0.5 foot below grade.

The annular space surrounding the screened portion was backfilled with 10/20 sand (filter pack) to approximately 1 foot above the top of the screened section. The remainder of the annulus was sealed with bentonite, and a traffic-rated well box was installed around the top of the well casing and set in concrete. An expanding, watertight well cap and lock were installed on top of the casing to secure the well from surface fluid and tampering.

GEOLOGIC LEGEND

COARSE-GRAINED SOILS	GRAVELS more than 1/2 of coarse fraction > No. 4 Sieve	LITTLE OR NO FINES		GW	Well-graded gravels, gravel-sand mixtures, little or no fines
				GP	Poorly-graded gravels, gravel-sand mixtures
		APPRECIABLE NO FINES		GM	Silty gravels, gravel-sand-silt mixtures
				GC	Clayey gravels, gravel-sand-clay mixtures
	SANDS more than 1/2 of coarse fraction < No. 4 Sieve	LITTLE OR NO FINES		SW	Well-graded sands, gravelly sands, little or no fines
				SP	Poorly-graded sands, gravelly sands, little or no fines
		APPRECIABLE NO FINES		SM	Silty sands, sand-silt mixtures
				SC	Clayey sands, sand-clay mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS Liquid limit < 50			ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity
				CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
				OL	Organic silts and organic silty clays of low plasticity
	SILTS AND CLAYS Liquid limit > 50			MH	Inorganic silts, micaceous or diatomoceous fine sandy or silty soils, elastic silts
				CH	Inorganic clays of high plasticity, fat clays
				OH	Organic clays of medium to high plasticity, organic silts
HIGHLY ORGANIC SOILS				Pt	Peat and other highly organic soils

SYMBOL LEGEND:

- Cement
- Sand
- Bentonite
- Driven Interval of Soil Sample
- Sample preserved for possible analysis
- No sample recovered
- Stabilized water level
- Groundwater level encountered during drilling

LEGEND TO BORING LOGS

PILOT TRAVEL CENTER
ELLENSBURG, WASHINGTON

PROJECT NO. 20-019

ALISTO ENGINEERING GROUP
PORTLAND, OREGON

20019JA-DWG 8-16-96 DDM 1=1

ALISTO ENGINEERING GROUP
PORTLAND, OREGON

LOG OF BORING MW-4

SEE SITE PLAN

ALISTO PROJECT NO: *20-019-01* DATE DRILLED: *07/22/98*

CLIENT: *ADAPT Engineering*

LOCATION: *Pilot Travel Center, Ellensburg, Washington*

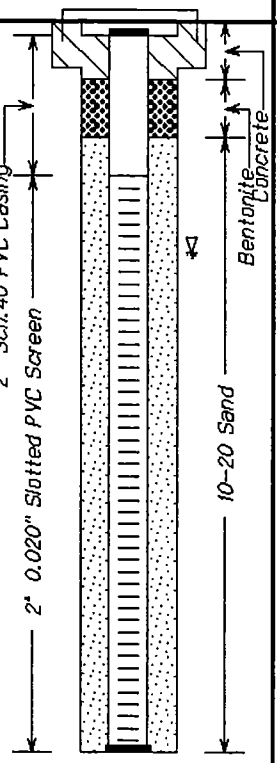
DRILLING METHOD: *Hollow-stem auger (8"); 2"-split spoon sampler*

DRILLING COMPANY: *Cascade Drilling* CASING ELEVATION: *1536.48 '*

LOGGED BY: *J. Day* APPROVED BY: *Al Sevilla*

BLOWS/6 IN.	PID VALUES	DEPTH feet	SAMPLES	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION
						2" asphalt
					GW	sandy GRAVEL: olive brown, moist; fine- to coarse-grained sand; fine to 4-inch-diameter gravel; cobbles to 6-inch-diameter.
8,11,10	ND	5			ML	sandy SILT: dark grayish brown, moist to saturated, very stiff; very fine- to medium-grained sand.
					GW	
50 (6")	NR	10				sandy GRAVEL: light brown, moist to wet, very dense; fine-to coarse-grained sand and gravel; some cobbles and silt.
						Same: at 12 feet, increase in cobbles.
50 (5")		15				Same
		20				Boring terminated at 18 feet.
		25				
		30				

WELL DIAGRAM



ALISTO ENGINEERING GROUP
PORTLAND, OREGON

LOG OF BORING MW-5

SEE SITE PLAN

ALISTO PROJECT NO: *20-019-01* DATE DRILLED: *07/22/96*

CLIENT: *ADAPT Engineering*

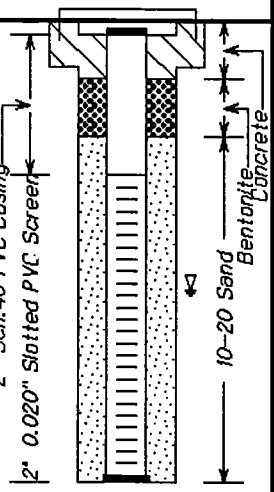
LOCATION: *Pilot Travel Center, Ellensburg, Washington*

DRILLING METHOD: *Hollow-stem auger (8"); 2"-split spoon sampler*

DRILLING COMPANY: *Cascade Drilling* CASING ELEVATION: *1535.02 '*

LOGGED BY: *J. Day* APPROVED BY: *Al Sevilla*

BLOWS/6 IN.	PID VALUES	WELL DIAGRAN	DEPTH feet	SAMPLES	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION
							3" asphalt
						GW	sandy GRAVEL: olive brown, moist; fine- to coarse-grained sand and gravel; cobbles up to 10-inch-diameter.
						SM	silty SAND: dark olive brown, moist; fine- to coarse-grained sand; trace of clay and gravel.
11,12,14	NM		5			GW	GRAVEL: grayish brown, moist to wet, medium dense; fine to coarse gravel; some cobbles.
50 (3")	NM		10				Same
							Auger refusal at 12 feet.
							Boring terminated at 12 feet.
			15				
			20				
			25				
			30				



APPENDIX C

FIELD PROCEDURES FOR WELL DEVELOPMENT AND SAMPLING AND FIELD SURVEY FORMS

FIELD PROCEDURES FOR WELL DEVELOPMENT AND SAMPLING

Groundwater Monitoring Well Development

The groundwater monitoring wells were developed to consolidate and stabilize the filter pack to optimize well production and reduce the turbidity of subsequent groundwater samples. Development continued until the groundwater was relatively free of sediment and/or until pH, electrical conductivity, and temperature parameters stabilized. Well development fluids were placed into DOT-approved drums for disposal.

Groundwater Level Measurement

Before sampling, the groundwater level in each well was measured from the permanent survey reference point at the top of the well casing. Groundwater in each well was monitored for liquid-phase hydrocarbons or sheen. The depth to groundwater was measured to an accuracy of 0.01 foot from the top of the PVC well casing using an electronic sounder.

Groundwater Monitoring Well Sampling

The wells were purged of at least 3 casing volumes and the above parameters stabilized before sample collection. Purging was accomplished using a stainless steel bailer.

The groundwater samples were collected using a disposable bailer, and transferred into laboratory-supplied containers. The sampling technician wore nitrile gloves at all times during purging and well sampling. The samples were labeled with well number, site identification, date and time of collection, and sampler's initials, and transported in an iced cooler to a state-certified laboratory following preservation and chain of custody protocol.

ALISTO

ENGINEERING
GROUP
1575 TREAT BOULEVARD, SUITE 201
WALNUT CREEK CA 94596 (510) 295-1650 FAX 295-1823

Field Report / Sampling Data Sheet

⊗ Groundwater Sampling

Date: 7/24/96 Project No. 20019
Day: WED Station No. N/A
Weather: HOT/CLR Address 1512 Highway 97, Ellensburg
SAMPLER:

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Thickness	Gal	Time	Temp °F	pH	E.C.	D.O.
MW-2	5.37	2"				0		18	7.2		
						3		16.2	7.4		
						5		16.0	7.4		

Total Depth - Water Level= x Well Vol. Factor= x#vol. to Purge= PurgeVol
15 - 5.37 9.63 x .17 = 1.64 x 3 = 4.9

Purge Method OSurface Pump ODisp.Tube OWinch ODisp Baller(s)__ OSys Port
Comments:

O EPA 601 ____
O TPH-G/BTEX ____
O TPH Diesel ____
O TOG 5520 ____
Time Sampled

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Thickness	Gal.	Time	Temp °F	pH	E.C.	D.O.
MW-3	5.22					0		17.6	6.8		
						3		16.1	7.1		
						6		15.7	7.2		

Total Depth - Water Level= x Well Vol. Factor= x#vol. to Purge= PurgeVol.
15 - 5.22 = 9.78 x .17 = 1.67 x 3 = 5.0

Purge Method: OSurface Pump ODisp.Tube OWinch ODisp. Baller(s)__ OSys Port
Comments:

O EPA 601 ____
O TPH-G/BTEX ____
O TPH Diesel ____
O TOG 5520 ____
Time Sampled

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Thickness	Gal.	Time	Temp °F	pH	E.C.	D.O.
MW-4	7.12					1		19.1	6.8		
						4		16.7	6.8		
						10		16.8	7.0		

Total Depth - Water Level= x Well Vol. Factor= x#vol. to Purge= PurgeVol.
19 - 7.12 = 11.88 x .17 = 2.0 x 3 = 6.1

Purge Method: OSurface Pump ODisp.Tube OWinch ODisp. Baller(s)__ OSys Port
Comments:

O EPA 601 ____
O TPH-G/BTEX ____
O TPH Diesel ____
O TOG 5520 ____
Time Sampled

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Thickness	Gal.	Time	Temp °F	pH	E.C.	D.O.
MW-5	5.07					0		19.2	7.3		
						2		18.1	7.1		
						4		17.9	7.1		

Total Depth - Water Level= x Well Vol. Factor= x#vol. to Purge= PurgeVol.
12 - 5.07 = 6.93 x .17 = 1.17 x 3 = 3.5

Purge Method: OSurface Pump ODisp.Tube OWinch ODisp. Baller(s). __ OSys Port
Comments:

O EPA 601 ____
O TPH-G/BTEX ____
O TPH Diesel ____
O TOG 5520 ____
Time Sampled

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Thickness	Gal.	Time	Temp °F	pH	E.C.	D.O.
MW-1	5.87					0		19.1	7.2		
						3		16.9	7.0		
						5.5		16.8	6.9		

Total Depth - Water Level= x Well Vol. Factor= x#vol to Purge= PurgeVol.
15 - 5.87 = 9.13 x .17 = 1.55 x 3 = 4.7

Purge Method. OSurface Pump ODisp.Tube OWinch ODisp Baller(s)__ OSys Port
Comments:

O EPA 601 ____
O TPH-G/BTEX ____
O TPH Diesel ____
O TOG 5520 ____
Time Sampled

APPENDIX D

FIELD PROCEDURES FOR CHAIN OF CUSTODY DOCUMENTATION, LABORATORY REPORTS, AND CHAIN OF CUSTODY RECORDS

FIELD PROCEDURES
FOR
CHAIN OF CUSTODY DOCUMENTATION

The samples were handled in accordance with the Washington Department of Ecology guidelines. Each sample was labeled in the field and immediately stored in a cooler and preserved with blue or dry ice for transport to a state-certified laboratory for analysis.

A chain of custody record accompanied the samples and included the site and sample identification, date and time of sample collection, analysis requested, and the name and signature of the sampling technician. When transferring possession of the samples, the transferee signed and dated the chain of custody record.

LABORATORY REPORTS
AND
CHAIN OF CUSTODY RECORDS

NATIONAL ENVIRONMENTAL TESTING, INC.

Portland Division
17400 SW Upper Boones Ferry Rd.
Suite #260
Portland, OR 97224
Tel: (503) 624-5449
Fax: (503) 639-6889

Mr. Craig Ware
Alisto Engineering Group
15110 S.W. Boones Ferry Rd
Suite 180
Lake Oswego, OR 97035

Date: 08/13/1996
NET Account No.: 700
NET Job Number: 96.02239

Project: Pilot - Ellensburg
Location: 20-019-01-004

Sample analysis in support of the project referenced above has been completed and results are presented on the following pages. Should you have questions regarding procedures or results, please feel welcome to contact Client Services.

Sample Number	Sample Description	Matrix Type	Date Taken	Date Received
67147	MW-4-5	SOIL	07/22/1996	07/29/1996
67148	MW-5-5	SOIL	07/22/1996	07/29/1996
67149	MW-1	GROUND WATER	07/24/1996	07/29/1996
67150	MW-2	GROUND WATER	07/24/1996	07/29/1996
67151	MW-3	GROUND WATER	07/24/1996	07/29/1996
67152	MW-4	GROUND WATER	07/24/1996	07/29/1996
67153	MW-5	GROUND WATER	07/24/1996	07/29/1996
67154	MW-6	GROUND WATER	07/24/1996	07/29/1996
67155	Trip Blanks	GROUND WATER		07/29/1996
67156	S-1-4	SOIL	07/23/1996	07/29/1996
67157	S-2-4	SOIL	07/23/1996	07/29/1996
67158	S-3-4	SOIL	07/23/1996	07/29/1996
67159	S-4-5	SOIL	07/23/1996	07/29/1996
67160	S-5-5.5	SOIL	07/23/1996	07/29/1996
67161	S-6-4.5	SOIL	07/23/1996	07/29/1996
67162	S-7-5	SOIL	07/23/1996	07/29/1996
67163	S-8-4	SOIL	07/23/1996	07/29/1996
67164	S-9-5	SOIL	07/23/1996	07/29/1996
67165	S-10-4	SOIL	07/23/1996	07/29/1996
67166	S-11-5.5	SOIL	07/23/1996	07/29/1996
67167	S-12-6	SOIL	07/23/1996	07/29/1996
67168	S-13-5.5	SOIL	07/23/1996	07/29/1996
67169	S-14-5	SOIL	07/24/1996	07/29/1996
67170	S-15-5	SOIL	07/24/1996	07/29/1996
67171	S-A2-1	SOIL	07/24/1996	07/29/1996
67172	S-A2-2 - HOLD	SOIL	07/24/1996	07/29/1996

Approved by:

Marty French
NET, INC. Division Manager

ANALYTICAL REPORT

Mr. Craig Ware
Alisto Engineering Group
15110 S.W. Boones Ferry Rd
Suite 180
Lake Oswego, OR 97035

08/13/1996
Job No.: 96.02239

Project Name: Pilot - Ellensburg
Date Received: 07/29/1996

Sample Number 67147 — Sample Description MW-4-5

PARAMETERS	METHODS	RESULTS	REPORT LIMIT	UNITS	DATE ANALYZED	FLAG
Solids, Total	160.3	77	0.01	%	07/31/1996	
WTPH-HCID (S) PREP		-	-		07/30/1996	
WTPH-HCID (S)						
Dilution Factor		1	-		07/30/1996	
Gasoline	WTPH-HCID	ND	10	mg/Kg	07/30/1996	
Diesel	WTPH-HCID	ND	25	mg/Kg	07/30/1996	
Heavy Oils	WTPH-HCID	ND	50	mg/Kg	07/30/1996	

Sample Number 67148 — Sample Description MW-5-5

PARAMETERS	METHODS	RESULTS	REPORT LIMIT	UNITS	DATE ANALYZED	FLAG
Solids, Total	160.3	87	0.01	%	07/31/1996	
WTPH-HCID (S) PREP		-	-		07/30/1996	
WTPH-HCID (S)						
Dilution Factor		1	-		07/30/1996	
Gasoline	WTPH-HCID	ND	11.	mg/kg d	07/30/1996	
Diesel	WTPH-HCID	ND	29.	mg/kg d	07/30/1996	
Heavy Oils	WTPH-HCID	ND	57.	mg/kg d	07/30/1996	

Sample Number 67149 — Sample Description MW-1

PARAMETERS	METHODS	RESULTS	REPORT LIMIT	UNITS	DATE ANALYZED	FLAG
ICP/AA Digestion - Water	ICP	-			07/30/1996	
Lead, ICP	6010	ND	0.005	mg/L	08/07/1996	
BTEX/WTPH-Gasoline (W)						
Dilution Factor		1			07/31/1996	
Benzene	8020	9.1	0.5	ug/L	07/31/1996	
Toluene	8020	0.8	0.5	ug/L	07/31/1996	
Ethyl Benzene	8020	0.7	0.5	ug/L	07/31/1996	
Xylenes, total	8020	2.6	0.5	ug/L	07/31/1996	

A sample result of ND indicates the parameter was Not Detected at the reporting limit.

ANALYTICAL REPORT

Mr. Craig Ware
Alisto Engineering Group
15110 S.W. Boones Ferry Rd
Suite 180
Lake Oswego, OR 97035

08/13/1996
Job No.: 96.02239

Project Name: Pilot - Ellensburg
Date Received: 07/29/1996

Sample Number 67149 — Sample Description MW-1

PARAMETERS	METHODS	RESULTS	REPORT LIMIT	UNITS	DATE ANALYZED	FLAG
WTPH-Gasoline	WTPH-G	52	50	ug/L	07/31/1996	
WA/OR Diesel (W) PREP	TPH-D	-	-		08/02/1996	
WTPH-Diesel (W)						
Dilution Factor		1	-		08/02/1996	
Diesel	WTPH-D	ND	250	ug/L	08/02/1996	

Sample Number 67150 — Sample Description MW-2

PARAMETERS	METHODS	RESULTS	REPORT LIMIT	UNITS	DATE ANALYZED	FLAG
ICP/AA Digestion - Water	ICP	-			07/30/1996	
Lead, ICP	6010	ND	0.005	mg/L	08/07/1996	
BTEX/WTPH-Gasoline (W)						
Dilution Factor		1			07/31/1996	
Benzene	8020	ND	0.5	ug/L	07/31/1996	
Toluene	8020	ND	0.5	ug/L	07/31/1996	
Ethyl Benzene	8020	ND	0.5	ug/L	07/31/1996	
Xylenes, total	8020	1.4	0.5	ug/L	07/31/1996	
WTPH-Gasoline	WTPH-G	ND	50	ug/L	07/31/1996	
WA/OR Diesel (W) PREP	TPH-D	-	-		08/02/1996	
WTPH-Diesel (W)						
Dilution Factor		1	-		08/02/1996	
Diesel	WTPH-D	ND	250	ug/L	08/02/1996	

Sample Number 67151 — Sample Description MW-3

PARAMETERS	METHODS	RESULTS	REPORT LIMIT	UNITS	DATE ANALYZED	FLAG
ICP/AA Digestion - Water	ICP	-			07/30/1996	
Lead, ICP	6010	ND	0.005	mg/L	08/07/1996	
BTEX/WTPH-Gasoline (W)						
Dilution Factor		1			07/31/1996	

A sample result of ND indicates the parameter was Not Detected at the reporting limit.

ANALYTICAL REPORT

Mr. Craig Ware
Alisto Engineering Group
15110 S.W. Boones Ferry Rd
Suite 180
Lake Oswego, OR 97035

08/13/1996
Job No.: 96.02239

Project Name: Pilot - Ellensburg
Date Received: 07/29/1996

Sample Number 67151 — Sample Description MW-3

PARAMETERS	METHODS	RESULTS	REPORT LIMIT	UNITS	DATE ANALYZED	FLAG
Benzene	8020	8.1	0.5	ug/L	07/31/1996	
Toluene	8020	45	0.5	ug/L	07/31/1996	
Ethyl Benzene	8020	2.9	0.5	ug/L	07/31/1996	
Xylenes, total	8020	29	0.5	ug/L	07/31/1996	
WTPH-Gasoline	WTPH-G	260	50	ug/L	07/31/1996	
WA/OR Diesel (W) PREP	TPH-D	-	-		08/02/1996	
WTPH-Diesel (W)						
Dilution Factor		1	-		08/02/1996	
Diesel	WTPH-D	ND	250	ug/L	08/02/1996	

Sample Number 67152 — Sample Description MW-4

PARAMETERS	METHODS	RESULTS	REPORT LIMIT	UNITS	DATE ANALYZED	FLAG
ICP/AA Digestion - Water	ICP	-			07/30/1996	
Lead, ICP	6010	0.006	0.005	mg/L	08/07/1996	
BTEX/WTPH-Gasoline (W)						
Dilution Factor		1			07/31/1996	
Benzene	8020	ND	0.5	ug/L	07/31/1996	
Toluene	8020	ND	0.5	ug/L	07/31/1996	
Ethyl Benzene	8020	ND	0.5	ug/L	07/31/1996	
Xylenes, total	8020	ND	0.5	ug/L	07/31/1996	
WTPH-Gasoline	WTPH-G	ND	50	ug/L	07/31/1996	
WA/OR Diesel (W) PREP	TPH-D	-	-		08/02/1996	
WTPH-Diesel (W)						
Dilution Factor		1	-		08/02/1996	
Diesel	WTPH-D	ND	250	ug/L	08/02/1996	

Sample Number 67153 — Sample Description MW-5

PARAMETERS	METHODS	RESULTS	REPORT LIMIT	UNITS	DATE ANALYZED	FLAG

A sample result of ND indicates the parameter was Not Detected at the reporting limit.

ANALYTICAL REPORT

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08/13/1996
Job No.: 96.02239

Project Name: Pilot - Ellensburg
Date Received: 07/29/1996

Sample Number 67153 — Sample Description MW-5

PARAMETERS	METHODS	RESULTS	REPORT LIMIT	UNITS	DATE ANALYZED	FLAG
ICP/AA Digestion - Water	ICP	-			07/30/1996	
Lead, ICP	6010	ND	0.005	mg/L	08/07/1996	
BTEX/WTPH-Gasoline (W)						
Dilution Factor		1			07/31/1996	
Benzene	8020	ND	0.5	ug/L	07/31/1996	
Toluene	8020	ND	0.5	ug/L	07/31/1996	
Ethyl Benzene	8020	ND	0.5	ug/L	07/31/1996	
Xylenes, total	8020	ND	0.5	ug/L	07/31/1996	
WTPH-Gasoline	WTPH-G	ND	50	ug/L	07/31/1996	
WA/OR Diesel (W) PREP	TPH-D	-	-		08/02/1996	
WTPH-Diesel (W)						
Dilution Factor		1	-		08/02/1996	
Diesel	WTPH-D	ND	250	ug/L	08/02/1996	

Sample Number 67154 — Sample Description MW-6

PARAMETERS	METHODS	RESULTS	REPORT LIMIT	UNITS	DATE ANALYZED	FLAG
ICP/AA Digestion - Water	ICP	-			07/30/1996	
Lead, ICP	6010	0.006	0.005	mg/L	08/07/1996	
BTEX/WTPH-Gasoline (W)						
Dilution Factor		1			07/31/1996	
Benzene	8020	8.9	0.5	ug/L	07/31/1996	
Toluene	8020	0.6	0.5	ug/L	07/31/1996	
Ethyl Benzene	8020	ND	0.5	ug/L	07/31/1996	
Xylenes, total	8020	0.6	0.5	ug/L	07/31/1996	
WTPH-Gasoline	WTPH-G	ND	50	ug/L	07/31/1996	
WA/OR Diesel (W) PREP	TPH-D	-	-		08/02/1996	
WTPH-Diesel (W)						
Dilution Factor		1	-		08/02/1996	
Diesel	WTPH-D	ND	250	ug/L	08/02/1996	

A sample result of ND indicates the parameter was Not Detected at the reporting limit.

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Sample Number 67155 — Sample Description: Trip Blanks

PARAMETERS	METHODS	RESULTS	REPORT LIMIT	UNITS	DATE ANALYZED	FLAG
BTEX (W)						
Dilution Factor	8020	1			07/31/1996	
Benzene	8020	ND	0.5	ug/L	07/31/1996	
Toluene	8020	ND	0.5	ug/L	07/31/1996	
Ethyl Benzene	8020	ND	0.5	ug/L	07/31/1996	
Xylenes, total	8020	ND	0.5	ug/L	07/31/1996	

Sample Number 67156 — Sample Description: S-1-4

PARAMETERS	METHODS	RESULTS	REPORT LIMIT	UNITS	DATE ANALYZED	FLAG
Solids, Total	160.3	91	0.01	%	07/31/1996	
ICP/AA Digestion - Soil	ICP	-	-		08/09/1996	
Lead, ICP	6010	6.9	1.1	mg/kg d	08/12/1996	
BTEX / WA-TPH-GAS (S)						
Dilution Factor		20			08/05/1996	
Benzene	8020	ND	6.	mg/kg d	08/05/1996	
Toluene	8020	ND	6.	mg/kg d	08/05/1996	
Ethyl Benzene	8020	ND	6.	mg/kg d	08/05/1996	
Xylenes, total	8020	140	6.	mg/kg d	08/05/1996	
WA TPH-Gas	TPH-G	2,000	110	mg/kg d	08/05/1996	
WTPH-HCID (S) PREP		-	-		07/30/1996	
WTPH-HCID (S)						
Dilution Factor		1	-		07/30/1996	
Gasoline	WTPH-HCID	Gas	11.	mg/kg d	07/30/1996	D
Diesel	WTPH-HCID	Diesel	27.	mg/kg d	07/30/1996	E
Heavy Oils	WTPH-HCID	ND	55.	mg/kg d	07/30/1996	

Sample Number 67157 — Sample Description: S-2-4

PARAMETERS	METHODS	RESULTS	REPORT LIMIT	UNITS	DATE ANALYZED	FLAG

A sample result of ND indicates the parameter was Not Detected at the reporting limit.

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Project Name: Pilot - Ellensburg
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Sample Number 67157 — Sample Description S-2-4

PARAMETERS	METHODS	RESULTS	REPORT LIMIT	UNITS	DATE ANALYZED	FLAG
Solids, Total	160.3	80	0.01	%	08/01/1996	
ICP/AA Digestion - Soil	ICP	-	-		08/09/1996	
Lead, ICP	6010	2.6	1.2	mg/kg d	08/12/1996	
BTEX / WA-TPH-GAS (S)						
Dilution Factor		50			08/05/1996	
Benzene	8020	ND	25.	mg/kg d	08/05/1996	
Toluene	8020	120	25.	mg/kg d	08/05/1996	
Ethyl Benzene	8020	49.	25.	mg/kg d	08/05/1996	
Xylenes, total	8020	350	25.	mg/kg d	08/05/1996	
WA TPH-Gas	TPH-G	3,900	310	mg/kg d	08/05/1996	

Sample Number 67158 — Sample Description S-3-4

PARAMETERS	METHODS	RESULTS	REPORT LIMIT	UNITS	DATE ANALYZED	FLAG
Solids, Total	160.3	82	0.01	%	08/01/1996	
BTEX / WA-TPH-GAS (S)						
Dilution Factor		1			08/05/1996	
Benzene	8020	ND	0.4	mg/kg d	08/05/1996	
Toluene	8020	ND	0.4	mg/kg d	08/05/1996	
Ethyl Benzene	8020	ND	0.4	mg/kg d	08/05/1996	
Xylenes, total	8020	0.36	0.4	mg/kg d	08/05/1996	
WA TPH-Gas	TPH-G	ND	6.1	mg/kg d	08/05/1996	

Sample Number 67159 — Sample Description S-4-5

PARAMETERS	METHODS	RESULTS	REPORT LIMIT	UNITS	DATE ANALYZED	FLAG
Solids, Total	160.3	80	0.01	%	08/01/1996	
ICP/AA Digestion - Soil	ICP	-	-		08/09/1996	
Lead, ICP	6010	3.1	1.2	mg/kg d	08/12/1996	
BTEX / WA-TPH-GAS (S)						

A sample result of ND indicates the parameter was Not Detected at the reporting limit.

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Sample Number 67159 — Sample Description S-4-5

PARAMETERS	METHODS	RESULTS	REPORT LIMIT	UNITS	DATE ANALYZED	FLAG
Dilution Factor		1			08/05/1996	
Benzene	8020	ND	0.4	mg/kg d	08/05/1996	
Toluene	8020	ND	0.4	mg/kg d	08/05/1996	
Ethyl Benzene	8020	ND	0.4	mg/kg d	08/05/1996	
Xylenes, total	8020	2.6	0.4	mg/kg d	08/05/1996	
WA TPH-Gas	TPH-G	14.	6.2	mg/kg d	08/05/1996	

Sample Number 67160 — Sample Description S-5-5.5

PARAMETERS	METHODS	RESULTS	REPORT LIMIT	UNITS	DATE ANALYZED	FLAG
Solids, Total	160.3	79	0.01	%	08/01/1996	
BTEX / WA-TPH-GAS (S)						
Dilution Factor		1			08/05/1996	
Benzene	8020	ND	0.4	mg/kg d	08/05/1996	
Toluene	8020	ND	0.4	mg/kg d	08/05/1996	
Ethyl Benzene	8020	ND	0.4	mg/kg d	08/05/1996	
Xylenes, total	8020	ND	0.4	mg/kg d	08/05/1996	
WA TPH-Gas	TPH-G	ND	6.3	mg/kg d	08/05/1996	

Sample Number 67161 — Sample Description S-6-4.5

PARAMETERS	METHODS	RESULTS	REPORT LIMIT	UNITS	DATE ANALYZED	FLAG
Solids, Total	160.3	79	0.01	%	08/01/1996	
BTEX / WA-TPH-GAS (S)						
Dilution Factor		1			08/05/1996	
Benzene	8020	ND	0.4	mg/kg d	08/05/1996	
Toluene	8020	ND	0.4	mg/kg d	08/05/1996	
Ethyl Benzene	8020	ND	0.4	mg/kg d	08/05/1996	
Xylenes, total	8020	ND	0.4	mg/kg d	08/05/1996	
WA TPH-Gas	TPH-G	ND	6.3	mg/kg d	08/05/1996	

A sample result of ND indicates the parameter was Not Detected at the reporting limit.

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Project Name: Pilot - Ellensburg
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Sample Number 67162 — Sample Description S-7-5

PARAMETERS	METHODS	RESULTS	REPORT LIMIT	UNITS	DATE ANALYZED	FLAG
Solids, Total	160.3	84	0.01	%	08/01/1996	
BTEX / WA-TPH-GAS (S)						
Dilution Factor		1			08/05/1996	
Benzene	8020	ND	0.4	mg/kg d	08/05/1996	
Toluene	8020	ND	0.4	mg/kg d	08/05/1996	
Ethyl Benzene	8020	ND	0.4	mg/kg d	08/05/1996	
Xylenes, total	8020	ND	0.4	mg/kg d	08/05/1996	
WA TPH-Gas	TPH-G	49.	6.0	mg/kg d	08/05/1996	
WTPH-Diesel (S) PREP	WTPH-D	-	-		08/06/1996	
WTPH-Diesel (S)						
Diesel	WTPH-D	15,000	18.	mg/kg d	08/07/1996	

Sample Number 67163 — Sample Description S-8-4

PARAMETERS	METHODS	RESULTS	REPORT LIMIT	UNITS	DATE ANALYZED	FLAG
Solids, Total	160.3	82	0.01	%	07/31/1996	
WTPH-HCID (S) PREP		-	-		07/30/1996	
WTPH-HCID (S)						
Dilution Factor		1	-		07/30/1996	
Gasoline	WTPH-HCID	Gas	12.	mg/kg d	07/30/1996	D
Diesel	WTPH-HCID	Diesel	30.	mg/kg d	07/30/1996	
Heavy Oils	WTPH-HCID	ND	61.	mg/kg d	07/30/1996	
WTPH-Diesel (S) PREP	WTPH-D	-	-		08/02/1996	
WTPH-Diesel (S)						
Diesel	WTPH-D	1,200	18.	mg/kg d	08/05/1996	

Sample Number 67164 — Sample Description S-9-5

PARAMETERS	METHODS	RESULTS	REPORT LIMIT	UNITS	DATE ANALYZED	FLAG
Solids, Total	160.3	96	0.01	%	08/01/1996	

A sample result of ND indicates the parameter was Not Detected at the reporting limit.

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Sample Number 67164 — Sample Description S-9-5

PARAMETERS	METHODS	RESULTS	REPORT LIMIT	UNITS	DATE ANALYZED	FLAG
WTPH-Diesel (S) PREP	WTPH-D	-	-		08/02/1996	
WTPH-Diesel (S) Diesel	WTPH-D	3,200	16.	mg/kg d	08/05/1996	

Sample Number 67165 — Sample Description S-10-4

PARAMETERS	METHODS	RESULTS	REPORT LIMIT	UNITS	DATE ANALYZED	FLAG
Solids, Total	160.3	92	0.01	%	08/01/1996	
WTPH-Diesel (S) PREP	WTPH-D	-	-		08/02/1996	
WTPH-Diesel (S) Diesel	WTPH-D	2,000	16.	mg/kg d	08/05/1996	

Sample Number 67166 — Sample Description S-11-5.5

PARAMETERS	METHODS	RESULTS	REPORT LIMIT	UNITS	DATE ANALYZED	FLAG
Solids, Total	160.3	95	0.01	%	08/01/1996	
WTPH-Diesel (S) PREP	WTPH-D	-	-		08/02/1996	
WTPH-Diesel (S) Diesel	WTPH-D	41.	16.	mg/kg d	08/05/1996	

Sample Number 67167 — Sample Description S-12-6

PARAMETERS	METHODS	RESULTS	REPORT LIMIT	UNITS	DATE ANALYZED	FLAG
Solids, Total	160.3	89	0.01	%	08/01/1996	
WTPH-Diesel (S) PREP	WTPH-D	-	-		08/02/1996	
WTPH-Diesel (S) Diesel	WTPH-D	2,500	17.	mg/kg d	08/05/1996	

A sample result of ND indicates the parameter was Not Detected at the reporting limit.

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Sample Number: 67168
Sample Description: S-13-5.5

PARAMETERS	METHODS	RESULTS	REPORT LIMIT	UNITS	DATE ANALYZED	FLAG
Solids, Total	160.3	88	0.01	%	08/01/1996	
WTPH-Diesel (S) PREP	WTPH-D	-	-		08/02/1996	
WTPH-Diesel (S)						
Diesel	WTPH-D	ND	17.	mg/kg d	08/05/1996	

Sample Number: 67169
Sample Description: S-14-5

PARAMETERS	METHODS	RESULTS	REPORT LIMIT	UNITS	DATE ANALYZED	FLAG
Solids, Total	160.3	93	0.01	%	08/01/1996	
WTPH-Diesel (S) PREP	WTPH-D	-	-		08/02/1996	
WTPH-Diesel (S)						
Diesel	WTPH-D	ND	16.	mg/kg d	08/05/1996	

Sample Number: 67170
Sample Description: S-15-5

PARAMETERS	METHODS	RESULTS	REPORT LIMIT	UNITS	DATE ANALYZED	FLAG
Solids, Total	160.3	82	0.01	%	08/01/1996	
ICP/AA Digestion - Soil	ICP	-	-		08/09/1996	
Lead, ICP	6010	4.3	1.2	mg/kg d	08/13/1996	
BTEX / WA-TPH-GAS (S)						
Dilution Factor		10			08/05/1996	
Benzene	8020	3.8	4.	mg/kg d	08/05/1996	
Toluene	8020	86.	4.	mg/kg d	08/05/1996	
Ethyl Benzene	8020	52.	4.	mg/kg d	08/05/1996	
Xylenes, total	8020	580	36.	mg/kg d	08/05/1996	
WA TPH-Gas	TPH-G	5,400	61.	mg/kg d	08/05/1996	

A sample result of ND indicates the parameter was Not Detected at the reporting limit.

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Sample Number	Sample Description
67171	S-A2-1

PARAMETERS	METHODS	RESULTS	REPORT LIMIT	UNITS	DATE ANALYZED	FLAG
Solids, Total	160.3	82	0.01	%	07/31/1996	
WA/EPA 418.1 (S) Prep	418.1M	-			08/05/1996	
WTPH-418.1M (S)	WTPH-418.1	ND	12.	mg/kg d	08/05/1996	

A sample result of ND indicates the parameter was Not Detected at the reporting limit.

SURROGATE REPORT

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SURROGATES	METHODS	RESULTS		DATE ANALYZED	FLAG
Sample Number 67147	Sample Description MW-4-5				
o-Terphenyl (Surr.)	WTPH-HCID	95	%	07/30/1996	
Sample Number 67148	Sample Description MW-5-5				
o-Terphenyl (Surr.)	WTPH-HCID	95	%	07/30/1996	
Sample Number 67149	Sample Description MW-1				
aaa-TFT (BTEX-Surr.)	8020	93	%	07/31/1996	
aaa-TFT (Gas Surr.)	WTPH-G	96	%	07/31/1996	
o-Terphenyl (Surr.)	WTPH-D	73	%	08/02/1996	
Sample Number 67150	Sample Description MW-2				
aaa-TFT (BTEX-Surr.)	8020	97	%	07/31/1996	
aaa-TFT (Gas Surr.)	WTPH-G	94	%	07/31/1996	
o-Terphenyl (Surr.)	WTPH-D	80	%	08/02/1996	
Sample Number 67151	Sample Description MW-3				
aaa-TFT (BTEX-Surr.)	8020	103	%	07/31/1996	
aaa-TFT (Gas Surr.)	WTPH-G	99	%	07/31/1996	
o-Terphenyl (Surr.)	WTPH-D	71	%	08/02/1996	
Sample Number 67152	Sample Description MW-4				
aaa-TFT (BTEX-Surr.)	8020	101	%	07/31/1996	

Note: Recovery limits for 8240, 8260, 8270, 624, 625 specified in method.
Gasoline, Diesel, HCID limits 50-150%. 8010/8020 limits 70-130%.

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SURROGATES	METHODS	RESULTS		DATE ANALYZED	FLAG
Sample Number 67152	Sample Description MW-4				
aaa-TFT (Gas Surr.)	WTPH-G	98	%	07/31/1996	
o-Terphenyl (Surr.)	WTPH-D	66	%	08/02/1996	
Sample Number 67153	Sample Description MW-5				
aaa-TFT (BTEX-Surr.)	8020	92	%	07/31/1996	
aaa-TFT (Gas Surr.)	WTPH-G	88	%	07/31/1996	
o-Terphenyl (Surr.)	WTPH-D	67	%	08/02/1996	
Sample Number 67154	Sample Description MW-6				
aaa-TFT (BTEX-Surr.)	8020	106	%	07/31/1996	
aaa-TFT (Gas Surr.)	WTPH-G	106	%	07/31/1996	
o-Terphenyl (Surr.)	WTPH-D	68	%	08/02/1996	
Sample Number 67155	Sample Description Trip Blanks				
aaa-TFT (Surr.)	8020	78	%	07/31/1996	
Sample Number 67156	Sample Description S-1-4				
aaa-TFT (BTEX Surr.)	8020	105	%	08/05/1996	
aaa-TFT (Gas Surr.)	TPH-G	107	%	08/05/1996	
BFB (Gas Surr.)	TPH-G	Dil	%	08/05/1996	
o-Terphenyl (Surr.)	WTPH-HCID	97	%	07/30/1996	
Sample Number 67157	Sample Description S-2-4				

Note: Recovery limits for 8240, 8260, 8270, 624, 625 specified in method.
Gasoline, Diesel, HCID limits 50-150%. 8010/8020 limits 70-130%.

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SURROGATES	METHODS	RESULTS		DATE ANALYZED	FLAG
Sample Number	**Sample Description**				
67157	S-2-4				
aaa-TFT (BTEX Surr.)	8020	104	%	08/05/1996	
aaa-TFT (Gas Surr.)	TPH-G	104	%	08/05/1996	
BFB (Gas Surr.)	TPH-G	Dil	%	08/05/1996	
Sample Number	**Sample Description**				
67158	S-3-4				
aaa-TFT (BTEX Surr.)	8020	99	%	08/05/1996	
aaa-TFT (Gas Surr.)	TPH-G	98	%	08/05/1996	
BFB (Gas Surr.)	TPH-G	75	%	08/05/1996	
Sample Number	**Sample Description**				
67159	S-4-5				
aaa-TFT (BTEX Surr.)	8020	98	%	08/05/1996	
aaa-TFT (Gas Surr.)	TPH-G	94	%	08/05/1996	
BFB (Gas Surr.)	TPH-G	75	%	08/05/1996	
Sample Number	**Sample Description**				
67160	S-5-5.5				
aaa-TFT (BTEX Surr.)	8020	98	%	08/05/1996	
aaa-TFT (Gas Surr.)	TPH-G	95	%	08/05/1996	
BFB (Gas Surr.)	TPH-G	81	%	08/05/1996	
Sample Number	**Sample Description**				
67161	S-6-4.5				
aaa-TFT (BTEX Surr.)	8020	98	%	08/05/1996	
aaa-TFT (Gas Surr.)	TPH-G	93	%	08/05/1996	
BFB (Gas Surr.)	TPH-G	70	%	08/05/1996	
Sample Number	**Sample Description**				
67162	S-7-5				

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SURROGATES	METHODS	RESULTS		DATE ANALYZED	FLAG
Sample Number	**Sample Description**				
67162	S-7-5				
aaa-TFT (BTEX Surr.)	8020	103	%	08/05/1996	
aaa-TFT (Gas Surr.)	TPH-G	101	%	08/05/1996	
BFB (Gas Surr.)	TPH-G	124	%	08/05/1996	
o-Terphenyl (Surr.)	WTPH-D	DIL	%	08/07/1996	
Sample Number	**Sample Description**				
67163	S-8-4				
o-Terphenyl (Surr.)	WTPH-HCID	MI	%	07/30/1996	
o-Terphenyl (Surr.)	WTPH-D	DIL	%	08/05/1996	
Sample Number	**Sample Description**				
67164	S-9-5				
o-Terphenyl (Surr.)	WTPH-D	DIL	%	08/05/1996	
Sample Number	**Sample Description**				
67165	S-10-4				
o-Terphenyl (Surr.)	WTPH-D	DIL	%	08/05/1996	
Sample Number	**Sample Description**				
67166	S-11-5.5				
o-Terphenyl (Surr.)	WTPH-D	110	%	08/05/1996	
Sample Number	**Sample Description**				
67167	S-12-6				
o-Terphenyl (Surr.)	WTPH-D	DIL	%	08/05/1996	
Sample Number	**Sample Description**				
67168	S-13-5.5				

Gasoline, Diesel, HCID limits 50-150%. 8010/8020 limits 70-130%.

SURROGATE REPORT

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Project Name: Pilot - Ellensburg
Date Received: 07/29/1996

SURROGATES	METHODS	RESULTS		DATE ANALYZED	FLAG
Sample Number 67168	Sample Description S-13-5.5				
o-Terphenyl (Surr.)	WTPH-D	90	%	08/05/1996	
Sample Number 67169	Sample Description S-14-5				
o-Terphenyl (Surr.)	WTPH-D	87	%	08/05/1996	
Sample Number 67170	Sample Description S-15-5				
aaa-TFT (BTEX Surr.)	8020	142	%	08/05/1996	
aaa-TFT (Gas Surr.)	TPH-G	MI	%	08/05/1996	
BFB (Gas Surr.)	TPH-G	Dil	%	08/05/1996	

QUALITY CONTROL REPORT
CONTINUING CALIBRATION VERIFICATION

Alisto Engineering Group
15110 S.W. Boones Ferry Rd
Suite 180
Lake Oswego, OR 97035

Date: 08/13/1996

NET Job Number: 96.02239

Contact: Mr. Craig Ware
Project: Pilot - Ellensburg

Analyte	CCV True Concentration	Concentration Found	Percent Recovery	Date Analyzed
Lead, ICP	0.500	0.520	104.0	08/07/1996
Lead, ICP	0.500	0.520	104.0	08/07/1996
Lead, ICP	25.0	25	100.0	08/12/1996
BTEX / WA-TPH-GAS (S)				
Benzene	20	17.9	89.5	08/05/1996
Toluene	20	18.5	92.5	08/05/1996
WA TPH-Gas	700	706	100.9	08/05/1996
BTEX / WA-TPH-GAS (S)				
Benzene	20	18.8	94.0	08/08/1996
Toluene	20	19.1	95.5	08/08/1996
WA TPH-Gas	700	632	90.3	08/08/1996
WTPH-Diesel (S)				
Diesel	402.2	421.3	104.7	08/05/1996
WTPH-Diesel (S)				
Diesel	402.2	402.5	100.1	08/05/1996
WTPH-Diesel (S)				
Diesel	402.2	425.9	105.9	08/07/1996
WTPH-Diesel (S)				
Diesel	402.2	418.5	104.1	08/07/1996
WTPH-Diesel (W)				
Diesel	402	440	109.5	08/02/1996
WTPH-Diesel (W)				
Diesel	402	447	111.2	08/02/1996
WTPH-418.1M (S)	41.1	41.7	101.5	08/05/1996
WTPH-418.1M (S)	41.1	44.9	109.2	08/05/1996

CCV - Continuing Calibration Verification

Note: Recovery limits for 8240, 8260, 8270, 8010, 8020, 624, 625 specified in method. Gasoline, Diesel, 418.1, 418.1M limits 80-120%. Metals recovery limits 80-120%.

QUALITY CONTROL REPORT
LABORATORY CONTROL STANDARD

Alisto Engineering Group
15110 S.W. Boones Ferry Rd
Suite 180
Lake Oswego, OR 97035

Date: 08/13/1996

NET Job Number: 96.02239

Contact: Mr. Craig Ware
Project: Pilot - Ellensburg

Analyte	LCS True Concentration	Concentration Found	LCS % Recovery		Date Analyzed
Lead, ICP	0.500	0.500	100.0		08/07/1996
Lead, ICP	50.0	52	104.0		08/12/1996
BTEX / WA-TPH-GAS (S)					
Benzene	1.84	1.47	79.9	L	08/05/1996
Toluene	5.58	5.60	100.4		08/05/1996
WA TPH-Gas	50.82	56.3	110.8		08/05/1996
BTEX / WA-TPH-GAS (S)					
Benzene	1.84	1.50	81.5		08/05/1996
Toluene	5.58	5.70	102.2		08/05/1996
WA TPH-Gas	50.82	58.2	114.5		08/05/1996
BTEX / WA-TPH-GAS (S)					
Benzene	12.7	10.4	81.9		08/05/1996
Toluene	38.4	36.5	95.1		08/05/1996
WA TPH-Gas	350	374	106.9		08/05/1996
BTEX / WA-TPH-GAS (S)					
Benzene	12.7	9.1	71.7	L	08/05/1996
Toluene	38.4	31.6	82.3		08/05/1996
WA TPH-Gas	350	308	88.0		08/05/1996
BTEX / WA-TPH-GAS (S)					
Benzene	12.7	11.4	89.8		08/08/1996
Toluene	38.4	37.9	98.7		08/08/1996
WA TPH-Gas	350	329	94.0		08/08/1996
BTEX / WA-TPH-GAS (S)					
Benzene	12.7	12.2	96.1		08/08/1996
Toluene	38.4	40.2	104.7		08/08/1996
WA TPH-Gas	350	338	96.6		08/08/1996
WTPH-Diesel (S)					
Diesel	50.28	47.86	95.2		08/06/1996
WTPH-Diesel (S)					
Diesel	50.28	48.46	96.4		08/06/1996

LCS - Laboratory Control Standard

Note: Recovery limits for fuels 80-120%. 8010, 8020, 8240, 8260, 8270, 624, 625 specified in method.
Recovery limits for metals analyses 80-120%. 418.1 limits are 90-140%.

QUALITY CONTROL REPORT
LABORATORY CONTROL STANDARD

Alisto Engineering Group
15110 S.W. Boones Ferry Rd
Suite 180
Lake Oswego, OR 97035

Date: 08/13/1996

NET Job Number: 96.02239

Contact: Mr. Craig Ware
Project: Pilot - Ellensburg

Analyte	LCS True Concentration	Concentration Found	LCS % Recovery		Date Analyzed
WTPH-Diesel (W)					
Diesel	5,060	2811	55.6		08/05/1996
WTPH-Diesel (W)					
Diesel	5,060	2724	53.8	L	08/05/1996
WTPH-418.1M (S)	53.5	68.4	127.9		07/31/1996
WTPH-418.1M (S)	53.5	65.1	121.7		07/31/1996
WTPH-418.1M (S)	53.5	68.4	127.9		08/05/1996
WTPH-418.1M (S)	53.5	71.7	134.0		08/05/1996

LCS - Laboratory Control Standard

Note: Recovery limits for fuels 80-120%. 8010, 8020, 8240, 8260, 8270, 624, 625 specified in method.
Recovery limits for metals analyses 80-120%. 418.1 limits are 90-140%.

QUALITY CONTROL REPORT
MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Alisto Engineering Group
15110 S.W. Boones Ferry Rd
Suite 180
Lake Oswego, OR 97035

Date: 08/13/1996

NET Job Number: 96.02239

Contact: Mr. Craig Ware
Project: Pilot - Ellensburg

Analyte	Matrix Spike Result	Sample Result	Spike Amount	Units	Percent Recovery	MSD Result	MSD Spike Amount	Units	Percent Recovery	MS/MSD RPD	
Lead, ICP	0.490	ND	0.500	mg/L	98.0	0.490	0.500	mg/L	98.0	0.0	
Lead, ICP	57.	6.9	50.0	mg/kg	91.4	55.	50.0	mg/kg	87.4	4.5	
BTEX / WA-TPH-GAS (S)											
Benzene	1.22	ND	1.84	mg/Kg	66.3	1.18	1.84	mg/Kg	64.1	3.4	L
Toluene	4.24	ND	5.58	mg/Kg	76.0	4.07	5.58	mg/Kg	72.9	4.2	L
WA TPH-Gas	45.1	ND	50.82	mg/Kg	88.7	43.3	50.82	mg/Kg	85.2	4.0	

NOTE: Matrix Spike Samples may not be samples from this job.

MS = Matrix Spike
MSD = Matrix Spike Duplicate
RPD = Relative Percent Difference
dil.= Diluted Out

QUALITY CONTROL REPORT
BLANKS

Alisto Engineering Group
15110 S.W. Boones Ferry Rd
Suite 180
Lake Oswego, OR 97035

Date: 08/13/1996

NET Job Number: 96.02239

Contact: Mr. Craig Ware
Project: Pilot - Ellensburg
Location: 20-019-01-004

Analyte	Blank Analysis	MDL	Units	Date Analyzed
Lead, ICP	ND	0.005	mg/L	08/07/1996
Lead, ICP	ND	1.0	mg/Kg	08/12/1996
BTEX / WA-TPH-GAS (S)				
Benzene	ND	0.3	mg/Kg	08/05/1996
Toluene	ND	0.3	mg/Kg	08/05/1996
Ethyl Benzene	ND	0.3	mg/Kg	08/05/1996
Xylenes, total	ND	0.3	mg/Kg	08/05/1996
WA TPH-Gas	ND	5.0	mg/Kg	08/05/1996
aaa-TFT (BTEX Surr.)	102		%	08/05/1996
aaa-TFT (Gas Surr.)	98		%	08/05/1996
BFB (Gas Surr.)	95		%	08/05/1996
BTEX / WA-TPH-GAS (S)				
Benzene	ND	0.3	mg/Kg	08/08/1996
Toluene	ND	0.3	mg/Kg	08/08/1996
Ethyl Benzene	ND	0.3	mg/Kg	08/08/1996
Xylenes, total	ND	0.3	mg/Kg	08/08/1996
WA TPH-Gas	ND	5.0	mg/Kg	08/08/1996
aaa-TFT (BTEX Surr.)	103		%	08/08/1996
aaa-TFT (Gas Surr.)	93		%	08/08/1996
BFB (Gas Surr.)	79		%	08/08/1996
WTPH-HCID (S)				
Gasoline	ND	10	mg/Kg	07/31/1996
Diesel	ND	25	mg/Kg	07/31/1996
Heavy Oils	ND	50	mg/Kg	07/31/1996
o-Terphenyl (Surr.)	96	-	%	07/31/1996
WTPH-HCID (S)				

Advisory Control Limits for Blanks:
Metals/Wet Chemistry/ Conventionals/GC - all compounds should be less than the Reporting Limit.
GC/MS - Semi-Volatiles - all compounds should be less than the Reporting Limit except for phthalates which should be less than 5 times the reporting limit.

QUALITY CONTROL REPORT
BLANKS

Alisto Engineering Group
15110 S.W. Boones Ferry Rd
Suite 180
Lake Oswego, OR 97035

Date: 08/13/1996

NET Job Number: 96.02239

Contact: Mr. Craig Ware
Project: Pilot - Ellensburg
Location: 20-019-01-004

Analyte	Blank Analysis	MDL	Units	Date Analyzed
Gasoline	ND	10	mg/Kg	08/02/1996
Diesel	ND	25	mg/Kg	08/02/1996
Heavy Oils	ND	50	mg/Kg	08/02/1996
o-Terphenyl (Surr.)	103	-	%	08/02/1996
WTPH-Diesel (S)				
Diesel	ND	15	mg/Kg	08/06/1996
o-Terphenyl (Surr.)	91	-	%	08/06/1996
WTPH-Diesel (S)				
Diesel	ND	15	mg/Kg	08/06/1996
o-Terphenyl (Surr.)	90	-	%	08/06/1996
WTPH-Diesel (W)				
Diesel	ND	250	ug/L	08/02/1996
o-Terphenyl (Surr.)	103	-	%	08/02/1996
WTPH-Diesel (W)				
Diesel	ND	250	ug/L	08/05/1996
o-Terphenyl (Surr.)	58		%	08/05/1996
WTPH-Diesel (W)				
Diesel	ND	250	ug/L	08/05/1996
o-Terphenyl (Surr.)	58	-	%	08/05/1996
WTPH-418.1M (S)	ND	10	mg/Kg	07/31/1996
WTPH-418.1M (S)	ND	10	mg/Kg	08/05/1996

Advisory Control Limits for Blanks:
Metals/Wet Chemistry/ Conventionals/GC - all compounds should be less than the Reporting Limit.
GC/MS - Semi-Volatiles - all compounds should be less than the Reporting Limit except for phthalates which should be less than 5 times the reporting limit.

QUALITY CONTROL REPORT
DUPLICATES

Alisto Engineering Group
15110 S.W. Boones Ferry Rd
Suite 180
Lake Oswego, OR 97035

Date: 08/13/1996

NET Job Number: 96.02239

Contact: Mr. Craig Ware
Project: Pilot - Ellensburg

Analyte	Original Analysis	Duplicate Analysis	Units	RPD	Date Analyzed	Flag
BTEX / WA-TPH-GAS (S)						
Benzene	ND	ND	mg/kg		08/08/1996	MR
Toluene	ND	ND	mg/kg		08/08/1996	MR
WA TPH-Gas	250	250	mg/kg	90.4	08/08/1996	MR
WTPH-HCID (S)						
Gasoline	ND	ND	mg/kg		07/22/1996	
Diesel	Diesel	Diesel	mg/kg		07/22/1996	F
Heavy Oils	H.Oil	H.Oil	mg/kg		07/22/1996	
WTPH-Diesel (S)						
Diesel	2,500	2,400	mg/kg	4.7	08/05/1996	
WTPH-Diesel (S)						
Diesel	ND	ND	mg/kg		08/06/1996	
WTPH-Diesel (S)						
WTPH-Diesel (S)						
WTPH-Diesel (W)						
Diesel	ND	ND	ug/L		08/02/1996	
WTPH-Diesel (W)						
Diesel	ND	ND	ug/L		08/05/1996	
WTPH-Diesel (W)						
Diesel	1,100	800	ug/L	31.5	08/05/1996	W
WTPH-418.1M (S)	42	52	mg/Kg	21.3	07/31/1996	R
WTPH-418.1M (S)	8000	11000	mg/Kg	31.5	08/05/1996	R

NOTE: Duplicates may not be samples from this job.

RPD - Relative Percent Difference

A	This sample does not have a typical gasoline pattern.
B1	This sample does not have a typical diesel pattern.
B	The blank exhibited a positive result greater than the reporting limit for this compound.
C	The sample appears to contain a lighter hydrocarbon than gasoline.
D	The sample appears to extend to a heavier hydrocarbon range than gasoline.
E	The sample appears to extend to a lighter hydrocarbon range than diesel.
F	The sample appears to extend to a heavier hydrocarbon range than diesel.
G	The positive result for gasoline is due to single component comtamination.
H	The gasoline elution pattern for the sample is not typical.
I	The oil pattern for this sample is not typical.
J	The result for this compound is an estimated concentration.
L	The LCS recovery exceeded control limits. See the LCS page of this report.
M	MS and/or MSD percent recovery exceeds control limits.
MR	The MS/MSD RPD is greater than 20%. The sample was re-extracted and re-analyzed with similar results. This is due to a matrix interference, likely a non-homogeneity of the sample.
P	A post digestion spike was analyzed, and recoveries are within control limits.
Q	Detection limits elevated due to sample matrix.
R	The duplicate RPD was greater than 20%. The sample was re-extracted and re-analyzed with similar results. This indicates a matrix interference in the sample, likely a non-homogeneity of the sample.
SR	Surrogate recovery outside control limits. See the surrogate page of the report.
W	The duplicate RPD was greater than 20%. Due to insufficient sample, re-analysis was not possible.
X	Sample was analyzed outside recommended holding times.
Y	The result for this parameter was greater than the TCLP regulatory limit.
Z	The pattern seen for the parameter being analyzed is not typical.

NATIONAL ENVIRONMENTAL TESTING, INC.

17400 SW Upper Boones Ferry Rd.
Suite # 260
Portland, OR 97224
PH: (503) 624-5449 FAX: (503) 639-6889

CHAIN OF CUSTODY RECORD

COMPANY: Alisto Eng Comp
ADDRESS: 15110 SW Boones Ferry RD #180, LO, OR
PHONE: 675-6106 FAX: 675-6132
PROJECT NAME/LOCATION: Pilot - Ellen Tanks
PROJECT NUMBER: 20019-01-004
PROJECT MANAGER: Craig Wace

REPORT TO: Craig
INVOICE TO:
P.O. NO.
NET QUOTE NO.

SAMPLED BY: John Day (PRINT NAME)
SIGNATURE: [signature]
(PRINT NAME)
SIGNATURE

To assist us in selecting the proper method
Is this work being conducted for regulatory compliance monitoring? Yes X No
Is this work being conducted for regulatory enforcement action? Yes No X
Which regulations apply: RCRA UST X Other NPDES Wastewater Drinking Water None

DATE	TIME	SAMPLE ID/DESCRIPTION	MATRIX	GRAB	COMP	HCl	NaOH	HNO_3	H_2SO_4	OTHER	WTPH-HCID	WTPH-418.1	BTEX-WTPH-G	WTPH-D	Total Pb	COMMENTS
7/24	830	S-1-4		X						1	X		X		X	
	855	S-2-4											X		X	HOLD
	930	S-3-4											X			
	1020	S-4-5											X		X	
	1140	S-5-5.5											X			
	1340	S-6-4.5											X			
	1455	S-7-5											X	X		
	1520	S-8-4									X			X		Hold
	1540	S-9-5												X		
	1550	S-10-4												X		
	1645	S-11-5.5												X		
	1710	S-12-6												X		
	1740	S-13-5.5												X		
7/25	845	S-13-5											X			Hold
	1000	S-15-5										X				
	920	S-AZ-1														
	935	S-AZ-2														HOLD

CONDITION OF SAMPLE: BOTTLES INTACT? YES / NO FIELD FILTERED? YES / NO
COC SEALS PRESENT AND INTACT? YES / NO VOLATILES FREE OF HEADSPACE? YES / NO
TEMPERATURE UPON RECEIPT: Bottles supplied by NET? YES / NO

SAMPLE REMAINDER DISPOSAL: RETURN SAMPLE REMAINDER TO CLIENT VIA
I REQUEST NET TO DISPOSE OF ALL SAMPLE REMAINDERS DATE

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	RELINQUISHED BY:	DATE	TIME	RECEIVED FOR NET BY:
[signature]	7/29/96	14:35			7/29/96	14:35	Cindy Day

METHOD OF SHIPMENT

REMARKS: Analyze WTPH-HCID. Contact Jud/Craig for follow-up. If TPH-418.1 detected in S-AZ-1, then analyze S-AZ-2 for WTPH-418.1

7/31/96 TMD X Analyze samples w/ BTEX TPH-G for total Pb

PT 1 - ORIGINAL - WHITE PT 2 - NET PROJECT MANAGER - YELLOW PT 3 - CUSTOMER COPY - PINK

NET NATIONAL ENVIRONMENTAL TESTING, INC.®

17400 SW Upper Boones Ferry Rd.
Suite # 260
Portland, OR 97224
PH: (503) 624-5449 FAX: (503) 639-6889

CHAIN OF CUSTODY RECORD

Gue Out =

COMPANY Alisto Eng Group
ADDRESS 15110 SW Boones Fy Rd #180, LO, OR
PHONE 635-6106 FAX 635-6132
PROJECT NAME/LOCATION Pilot - Ellensburg
PROJECT NUMBER 20019-01-004
PROJECT MANAGER Craig Ware

REPORT TO: Craig Ware
INVOICE TO:
P.O. NO.
NET QUOTE NO.

SAMPLED BY John Day (PRINT NAME) SIGNATURE [signature]
(PRINT NAME) SIGNATURE

To assist us in selecting the proper method
Is this work being conducted for regulatory compliance monitoring? Yes X No
Is this work being conducted for regulatory enforcement action? Yes No X
Which regulations apply: RCRA ___ UST X Other ___ NPDES Wastewater ___ Drinking Water ___ None ___

DATE	TIME	SAMPLE ID/DESCRIPTION	MATRIX	GRAB	COMP	HCl	NaOH	HNO_3	H_2SO_4	OTHER	WTPH-HCID	WTPH-418.1	BTEX-WTPH-G	WTPH-D	TOTAL Pb	COMMENTS
7/23/96	830	S-1-4		X						1	X					
↓	855	S-2-4		↓						↓						HOLD ↓
	930	S-3-4														
	1020	S-4-5														
	1140	S-5-5.5														
	1340	S-6-4.5														
	1455	S-7-5														↓
	1520	S-8-4									X					
	1540	S-9-5														HOLD ↓
	1550	S-10-4														
	1645	S-11-5.5														
	1710	S-12-6														
↓	1740	S-13-5.5														
7/24/96	825	S-14-5														↓
	1000	S-15-5														
	930	S-A2-1										X				X
↓	935	S-A2-2		↓						↓						HOLD

CONDITION OF SAMPLE: BOTTLES INTACT? YES / NO FIELD FILTERED? YES / NO
COC SEALS PRESENT AND INTACT? YES / NO VOLATILES FREE OF HEADSPACE? YES / NO
TEMPERATURE UPON RECEIPT: ___ Bottles supplied by NET? YES / NO

SAMPLE REMAINDER DISPOSAL: RETURN SAMPLE REMAINDER TO CLIENT VIA ___
I REQUEST NET TO DISPOSE OF ALL SAMPLE REMAINDERS ___ DATE ___

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	RELINQUISHED BY:	DATE	TIME	RECEIVED FOR NET BY:
[signature]	7/29/96	14:35			7/29/96	14:35	Cindy Day

METHOD OF SHIPMENT

REMARKS: Analyze WTPH-HCID, Contact JWD/CDW for follow-up / If TPH-418.1 detected in S-A2-1, then analyze S-A2-2 for WTPH-418.1

PT 1 - ORIGINAL - WHITE PT 2 - NET PROJECT MANAGER - YELLOW PT 3 - CUSTOMER COPY - PINK

NATIONAL ENVIRONMENTAL TESTING, INC.

Portland Division
17400 SW Upper Boones Ferry Rd.
Suite #260
Portland, OR 97224
Tel: (503) 624-5449
Fax: (503) 639-6889

Mr. Craig Ware
Alisto Engineering Group
15110 S.W. Boones Ferry Rd
Suite 180
Lake Oswego, OR 97035

Date: 08/30/1996
NET Account No.: 700
NET Job Number: 96.02609

Project: Pilot-Ellensburg
Location: 20019

Sample analysis in support of the project referenced above has been completed and results are presented on the following pages. Should you have questions regarding procedures or results, please feel welcome to contact Client Services.

Sample Number	Sample Description	Matrix Type	Date Taken	Date Received
68708	S-2A-4	SOIL	08/27/1996	08/27/1996
68709	S-7A-5	SOIL	08/27/1996	08/27/1996

Approved by:

Marty French
NET, INC. Division Manager

ANALYTICAL REPORT

Mr. Craig Ware
Alisto Engineering Group
15110 S.W. Boones Ferry Rd
Suite 180
Lake Oswego, OR 97035

08/30/1996
Job No.: 96.02609

Project Name: Pilot-Ellensburg
Date Received: 08/27/1996

Sample Number 68708 — Sample Description S-2A-4

PARAMETERS	METHODS	RESULTS	REPORT LIMIT	UNITS	DATE ANALYZED	FLAG
Solids, Total	160.3	80	0.01	%	08/28/1996	
ICP/AA Digestion - Soil	ICP	-	-		08/28/1996	
Lead, ICP	6010	2.4	1.2	mg/kg d		1
BTEX / WA-TPH-GAS (S)						
Dilution Factor		100			08/27/1996	
Benzene	8020	ND	38.	mg/kg d	08/27/1996	
Toluene	8020	150	38.	mg/kg d	08/27/1996	
Ethyl Benzene	8020	380	38.	mg/kg d	08/27/1996	
Xylenes, total	8020	120	38.	mg/kg d	08/27/1996	
WA TPH-Gas	TPH-G	3,100	620	mg/kg d	08/27/1996	

Sample Number 68709 — Sample Description S-7A-5

PARAMETERS	METHODS	RESULTS	REPORT LIMIT	UNITS	DATE ANALYZED	FLAG
Solids, Total	160.3	89	0.01	%	08/28/1996	
WTPH-Diesel (S) PREP	WTPH-D	-	-		08/28/1996	
WTPH-Diesel (S)						
Diesel	WTPH-D	10,000	17.	mg/kg d	08/28/1996	

A sample result of ND indicates the parameter was Not Detected at the reporting limit.

SURROGATE REPORT

Mr. Craig Ware
Alisto Engineering Group
15110 S.W. Boones Ferry Rd
Suite 180
Lake Oswego, OR 97035

08/30/1996
Job No.: 96.02609

Project Name: Pilot-Ellensburg
Date Received: 08/27/1996

SURROGATES	METHODS	RESULTS		DATE ANALYZED	FLAG
Sample Number	**Sample Description**				
68708	S-2A-4				
aaa-TFT (BTEX Surr.)	8020	108	%	08/27/1996	
aaa-TFT (Gas Surr.)	TPH-G	100	%	08/27/1996	
BFB (Gas Surr.)	TPH-G	Dil	%	08/27/1996	
Sample Number	**Sample Description**				
68709	S-7A-5				
o-Terphenyl (Surr.)	WTPH-D	MI	%	08/28/1996	

QUALITY CONTROL REPORT
CONTINUING CALIBRATION VERIFICATION

Alisto Engineering Group
15110 S.W. Boones Ferry Rd
Suite 180
Lake Oswego, OR 97035

Date: 08/30/1996

NET Job Number: 96.02609

Contact: Mr. Craig Ware
Project: Pilot-Ellensburg

Analyte	CCV True Concentration	Concentration Found	Percent Recovery	Date Analyzed
BTEX / WA-TPH-GAS (S)				
Benzene	20	19.8	99.0	08/27/1996
Toluene	20	20.5	102.5	08/27/1996
WA TPH-Gas	700	682	97.4	08/27/1996
WTPH-Diesel (S)				
Diesel	402.2	396.6	98.6	08/28/1996
WTPH-Diesel (S)				
Diesel	402.2	392.5	97.6	08/28/1996

CCV - Continuing Calibration Verification

Note: Recovery limits for 8240, 8260, 8270, 8010, 8020, 624, 625 specified in method. Gasoline, Diesel, 418.1, 418.1M limits 80-120%. Metals recovery limits 80-120%.

QUALITY CONTROL REPORT
LABORATORY CONTROL STANDARD

Alisto Engineering Group
15110 S.W. Boones Ferry Rd
Suite 180
Lake Oswego, OR 97035

Date: 08/30/1996

NET Job Number: 96.02609

Contact: Mr. Craig Ware
Project: Pilot-Ellensburg

Analyte	LCS True Concentration	Concentration Found	LCS % Recovery		Date Analyzed
Lead, ICP	50.0	ND	0	1	
BTEX / WA-TPH-GAS (S)					
Benzene	12.7	12.3	96.9		08/27/1996
Toluene	38.4	41.6	108.3		08/27/1996
WA TPH-Gas	350	352	100.6		08/27/1996
BTEX / WA-TPH-GAS (S)					
Benzene	1.84	2.0	108.7		08/27/1996
Toluene	5.58	6.8	121.9		08/27/1996
WA TPH-Gas	50.8	58.8	115.7		08/27/1996
BTEX / WA-TPH-GAS (S)					
Benzene	1.84	2.56	139.1		08/27/1996
Toluene	5.58	8.5	152.3		08/27/1996
WA TPH-Gas	50.8	54.9	108.1		08/27/1996

LCS - Laboratory Control Standard

Note: Recovery limits for fuels 80-120%. 8010, 8020, 8240, 8260, 8270, 624, 625 specified in method. Recovery limits for metals analyses 80-120%. 418.1 limits are 90-140%.

QUALITY CONTROL REPORT
MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Alisto Engineering Group
15110 S.W. Boones Ferry Rd
Suite 180
Lake Oswego, OR 97035

Date: 08/30/1996

NET Job Number: 96.02609

Contact: Mr. Craig Ware
Project: Pilot-Ellensburg

Analyte	Matrix Spike Result	Sample Result	Spike Amount	Units	Percent Recovery	MSD Result	MSD Spike Amount	Units	Percent Recovery	MS/MSD RPD	
Lead, ICP	ND	1049.5	50.0	mg/kg	0	ND	50.0	mg/kg	0	0	1
BTEX / WA-TPH-GAS (S)											
Benzene	1.75	ND	1.84	mg/Kg	95.1	1.82	1.84	mg/Kg	98.9	3.9	
Toluene	6.65	ND	5.58	mg/Kg	119.2	6.90	5.58	mg/Kg	123.7	3.7	
WA TPH-Gas	57.4	ND	50.8	mg/Kg	113.0	59.5	50.8	mg/Kg	117.1	3.6	

NOTE: Matrix Spike Samples may not be samples from this job.

MS = Matrix Spike
MSD = Matrix Spike Duplicate
RPD = Relative Percent Difference
dil.= Diluted Out

QUALITY CONTROL REPORT
BLANKS

Alisto Engineering Group
15110 S.W. Boones Ferry Rd
Suite 180
Lake Oswego, OR 97035

Date: 08/30/1996

NET Job Number: 96.02609

Contact: Mr. Craig Ware
Project: Pilot-Ellensburg
Location: 20019

Analyte	Blank Analysis	MDL	Units	Date Analyzed
Lead, ICP	ND	1.0	mg/kg	
BTEX / WA-TPH-GAS (S)				
Benzene	ND	0.3	mg/Kg	08/27/1996
Toluene	ND	0.3	mg/Kg	08/27/1996
Ethyl Benzene	ND	0.3	mg/Kg	08/27/1996
Xylenes, total	ND	0.3	mg/Kg	08/27/1996
WA TPH-Gas	ND	5.0	mg/Kg	08/27/1996
aaa-TFT (BTEX Surr.)	100		%	08/27/1996
aaa-TFT (Gas Surr.)	100		%	08/27/1996
BFB (Gas Surr.)	91		%	08/27/1996

Advisory Control Limits for Blanks:
Metals/Wet Chemistry/ Conventionals/GC - all compounds should be less than the Reporting Limit.
GC/MS - Semi-Volatiles - all compounds should be less than the Reporting Limit except for phthalates which should be less than 5 times the reporting limit.

QUALITY CONTROL REPORT
DUPLICATES

Alisto Engineering Group
15110 S.W. Boones Ferry Rd
Suite 180
Lake Oswego, OR 97035

Date: 08/30/1996

NET Job Number: 96.02609

Contact: Mr. Craig Ware
Project: Pilot-Ellensburg

Analyte	Original Analysis	Duplicate Analysis	Units	RPD	Date Analyzed	Flag
BTEX / WA-TPH-GAS (S)						
Benzene	ND	ND	mg/Kg		08/27/1996	
Toluene	ND	ND	mg/Kg		08/27/1996	
BTEX / WA-TPH-GAS (S)						
Benzene	ND	ND	mg/Kg		08/27/1996	
Toluene	ND	ND	mg/Kg		08/27/1996	
WTPH-Diesel (S)						
Diesel	10,000	10,000	mg/kg	3.3	08/28/1996	

NOTE: Duplicates may not be samples from this job.

RPD - Relative Percent Difference

A	This sample does not have a typical gasoline pattern.
B1	This sample does not have a typical diesel pattern.
B	The blank exhibited a positive result greater than the reporting limit for this compound.
C	The sample appears to contain a lighter hydrocarbon than gasoline.
D	The sample appears to extend to a heavier hydrocarbon range than gasoline.
E	The sample appears to extend to a lighter hydrocarbon range than diesel.
F	The sample appears to extend to a heavier hydrocarbon range than diesel.
G	The positive result for gasoline is due to single component comtamination.
H	The gasoline elution pattern for the sample is not typical.
I	The oil pattern for this sample is not typical.
J	The result for this compound is an estimated concentration.
L	The LCS recovery exceeded control limits. See the LCS page of this report.
M	MS and/or MSD percent recovery exceeds control limits.
MR	The MS/MSD RPD is greater than 20%. The sample was re-extracted and re-analyzed with similar results. This is due to a matrix interference, likely a non-homogeneity of the sample.
P	A post digestion spike was analyzed, and recoveries are within control limits.
Q	Detection limits elevated due to sample matrix.
R	The duplicate RPD was greater than 20%. The sample was re-extracted and re-analyzed with similar results. This indicates a matrix interference in the sample, likely a non-homogeneity of the sample.
SR	Surrogate recovery outside control limits. See the surrogate page of the report.
W	The duplicate RPD was greater than 20%. Due to insufficient sample, re-analysis was not possible.
X	Sample was analyzed outside recommended holding times.
Y	The result for this parameter was greater than the TCLP regulatory limit.
Z	The pattern seen for the parameter being analyzed is not typical.

NATIONAL ENVIRONMENTAL TESTING, INC.

CHAIN OF CUSTODY RECORD

96.0707-1

COMPANY Aluto
ADDRESS LO OR
PHONE 635-6106 FAX 635-6172
PROJECT NAME/LOCATION Pilot - Ellensburg
PROJECT NUMBER 20019
PROJECT MANAGER Craig Wares

REPORT TO: Craig Wares
INVOICE TO: " "
P.O. NO.
NET QUOTE NO.

SAMPLED BY John Day
(PRINT NAME) SIGNATURE
(PRINT NAME) SIGNATURE

DATE	TIME	SAMPLE ID/DESCRIPTION	MATRIX	GRAB	COMP	HCl	NaOH	HNO_3	H_2SO_4	OTHER	WTPH-D	WTPH-G	BTEX	LEAD (TOTAL)						COMMENTS
8/27/96	1010	S-2A-4	S							1		X	X	X						*) Rush WTPH-D & WTPH-G
↓	1035	S-4A-5	↓							1	X									*)

(# and Type of Containers: HCl, NaOH, HNO_3, H_2SO_4, OTHER)

To assist us in selecting the proper method
Is this work being conducted for regulatory compliance monitoring? Yes ____ No ____
Is this work being conducted for regulatory enforcement action? Yes ____ No ____
Which regulations apply: RCRA ____ NPDES Wastewater ____ UST ____ Drinking Water ____ Other ____ None ____

CONDITION OF SAMPLE: BOTTLES INTACT? YES / NO FIELD FILTERED? YES / NO COC SEALS PRESENT AND INTACT? YES / NO VOLATILES FREE OF HEADSPACE? YES / NO TEMPERATURE UPON RECEIPT: ____ Bottles supplied by NET? YES / NO

SAMPLE REMAINDER DISPOSAL: RETURN SAMPLE REMAINDER TO CLIENT VIA ____
I REQUEST NET TO DISPOSE OF ALL SAMPLE REMAINDERS ____ DATE ____

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	RELINQUISHED BY:	DATE	TIME	RECEIVED FOR NET BY:
[signature]	8/27/96	1730			8/27/96	17:30	Cindy Day

METHOD OF SHIPMENT

REMARKS: * Rush WTPH-G & WTPH-D

PT 1 - ORIGINAL - WHITE PT 2 - NET PROJECT MANAGER - YELLOW PT 3 - CUSTOMER COPY - PINK