



## Department of Environmental Quality

811 SW SIXTH AVENUE, PORTLAND, OREGON 97204-1390 PHONE (503) 229-5696

September 28, 1989

Mr. Myron Smith  
Chevron USA Inc.  
P.O. Box 220  
Seattle, Washington 98111

Re: UST-Multnomah County  
Chevron Station 3541

Dear Mr. Smith:

We have completed our review of Thorne Environmental's report, dated April 4, 1989, concerning the underground storage tank decommissioning and contaminated soil cleanup conducted at Chevron Station 3541 located at 10808 SE McLaughlin Boulevard in Milwaukie, Oregon. Since this information indicates that the decommissioning and cleanup met our criteria, no further action is required at this time.

This decision is a result of our evaluation and judgement based on the regulations in place at the time of cleanup and the facts as we now understand them, including:

1. The five underground storage tanks (3-10,000 gallon gasoline, 1-1,000 gallon used oil and 1-1,000 gallon heating oil) were removed from the site and properly disposed of.
2. No contamination was detected, by laboratory soil sample analyses, in the gasoline tank excavations. A maximum of 64.9 mg/kg of petroleum hydrocarbons were detected in the used oil and heating oil excavation. This is consistent with the no visible contamination or odor criteria for used and heating oils.
3. Contamination was detected under one of the vehicle hoists in the facility. Approximately 10 cubic yards of contaminated soil was removed from the excavation and taken to St. Johns Landfill for disposal. Contaminated soil was removed until the criteria of no visible contamination or odor was met.
4. The confirmation soil sample analysis detected 253 mg/kg of hydraulic oil remaining in the vehicle hoist excavation. This is consistent with the no visible contamination or odor criteria for hydraulic oil.
5. No ground water was observed in the excavation.

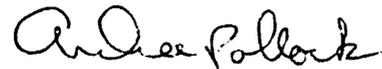
Mr. Myron Smith  
September 28, 1989  
Page 2

Information concerning the tank and contaminated soil removals should be maintained with the permanent facility records. We remind you that the current investigation applies only to the vehicle hoists and underground storage tank systems and in no way transfers any liability to the State of Oregon.

Although we agree that the current conditions at the site do not appear to pose an environmental threat, the responsibility for environmental evaluation, reporting, and cleanup rests with the landowners.

If you have any question regarding this matter, please contact me at 229-6923.

Sincerely,



Andree Pollock  
Leaking UST Specialist  
Northwest Region

cc: Environmental Cleanup Division, IUST Section  
Thorne Environmental, Inc.  
19730 64th Avenue West, Suite 202  
Lynnwood, Washington 98036  
Attn: Allen Sprott

**GEOTECHNICAL RESOURCES, INC.**  
 Consulting Engineers and Geologists  
 7412 SW Beaverton-Hillsdale Hwy., Suite 102  
 Portland, OR 97225  
 (503) 292-2621 FAX (503) 297-1696

03-87-68

LETTER OF TRANSMITTAL

Date: 5-31-91

Job No: 873

To: Tim Todd

Re: Chevron Station 3541

Milwaukie, OR

Dept. of Environmental Quality

**RECEIVED**  
 MAY 31 1991

Copies	Dated	Title	NORTHWEST REGION

THESE ARE TRANSMITTED as checked below:

- For approval     
  For your use     
  As requested     
  For review and comment

REMARKS: A discussion with the environmental coordinator  
at Chevron revealed that the full station no. is actually  
60093541. His records indicated that DEQ issued a letter  
of approval for the cleanup. Please call me to discuss.  
-Thanks

COPY TO:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

BY: Sharon Melmon



RECEIVED  
MAR 30 1991  
O'DONNELL, RAMIR.

Dept. of Environmental Quality  
RECEIVED  
MAY 31 1991

PRELIMINARY ENVIRONMENTAL  
ASSESSMENT  
CHEVRON U.S.A. INC.  
SERVICE STATION 3541  
MILWAUKIE, OREGON

NORTHWEST REGION

PREPARED FOR:

CHEVRON U.S.A. INC.  
P.O. BOX 220  
SEATTLE, WASHINGTON 98111

PRESENTED BY:

THORNE ENVIRONMENTAL, INC.

APRIL, 1989



April 4, 1989

5E-1013-1

Chevron U.S.A. Inc.  
P.O. Box 220  
Seattle, Washington 98111

Attention: Mr. M.W. Smith

Subject: Preliminary Environmental Assessment  
Chevron U.S.A. Inc. Service Station 3541  
Milwaukie, Oregon

Mr. Smith:

Thorne Environmental, Inc. is pleased to present the following report on the above referenced project. The report describes our observations and findings during the recent underground storage tank removals at the site.

Please contact us should you have any questions about this report.

Sincerely,  
THORNE ENVIRONMENTAL, INC.

*Alan Spratt by JRB*

Alan Spratt  
Project Hydrogeologist

*Maurice W. Gallarda by JRB*

Maurice W. Gallarda, P.E.\*  
Principal Engineer

\*"A permit to practice in Oregon has been granted to

MAURICE WILLIAM GALLARDA

valid only until official action is taken on his  
application for Oregon registration dated February 17, 1989."

Preliminary Environmental Assessment  
Chevron U.S.A. Inc. Service Station 3541  
Milwaukie, Oregon

## SUMMARY

At the request of Chevron U.S.A. Inc., Thorne Environmental, Inc. conducted a preliminary environmental assessment during the removal of underground fuel and oil storage tanks, and associated piping at Service Station 3541 in Milwaukie, Oregon. The assessment was intended to evaluate if the on-site storage and transfer of automotive fuels and lubricants had impacted the quality of soils underlying the site. The scope of work consisted of: 1) observing the subsurface conditions exposed during the removal of the buried tanks and piping systems; 2) collecting soil samples from the excavation walls, floors, and interior soils; 3) completing chemical analyses on selected soil samples; 4) interpreting the collected data; and 5) preparing this report presenting our findings.

Our findings indicate the following:

- o Soils underlying the site in the areas of the tank excavations consist of stiff, silty CLAY from ground surface to a depth of about seven feet, and very fine-grained sandy SILT from seven feet to an unknown depth.
- o Groundwater was not encountered in the excavations which penetrated to a maximum depth of nine feet below the existing ground surface.
- o Analysis of soil samples collected in vicinity of the gasoline storage tanks and pump islands did not detect benzene, toluene, ethylbenzene and xylenes (BTEX) concentrations at the analytical limits of detection. The detection limits were 0.005 mg/kg for these compounds, except for m,p-xylene which had a detection limit of 0.010 mg/kg.
- o Analysis of soil samples from the used oil and heating oil tanks excavation detected petroleum hydrocarbons at concentrations ranging from 6.2 mg/kg to 64.9 mg/kg. These units approximate part per million (ppm) concentrations.
- o Analysis of soil samples collected from about one foot and five feet beneath the south vehicle hoist detected petroleum hydrocarbon at concentrations of 2,350 mg/kg and 252 mg/kg, respectively. These units approximate part per million (ppm) concentrations. Material in this area which appeared to contain petroleum hydrocarbon staining was excavated and stockpiled on-site.

This summary is presented only for introductory purposes and is intended for use in conjunction with the full text of this report. This report contains a site and project description, soil sampling procedures, analytical chemistry methods and results, and our conclusions.

Chevron U.S.A. Inc.  
April 4, 1989

Page One  
5E-1013-1

## 1.0 INTRODUCTION

### 1.1 Purpose and Scope of Work

On February 15, 1989, Thorne Environmental, Inc. was authorized by Chevron U.S.A. Inc. to provide professional services during underground tank removal operations at the subject facility. These services consisted of observing removal of the underground storage tanks, vehicle hoists and fuel supply lines from the property, sampling of soils in proximity to these structures, submittal of soil samples to an analytical laboratory for testing, and preparation of this report. The purpose of our services was to evaluate whether the on-site storage and dispensing of automotive fuels and lubricants had impacted the quality of the soils and groundwater underlying the property.

The scope of work implemented for this project was outlined in a proposal to Chevron U.S.A. Inc. dated January 27, 1989. Our services were provided under Chevron U.S.A. Inc. Contract Number M66CNW01669X, Release Number 9, dated February 15, 1989.

We have prepared this report for property transfer purposes by Chevron U.S.A. Inc. and their agents, in accordance with generally accepted engineering practices in existence at the time our work was completed. The statements and conclusions contained in this report are based on the explorations and sampling completed for this project by Thorne Environmental, Inc.. No other warranties, either express or implied, are provided.

### 1.2 Site Location and Description

Figure 1 presents a site location map. The project site occupies the southeast corner of the Jackson Street and Pacific Highway intersection in Milwaukie, Oregon. It is bounded on the north by Jackson Street, on the west by Pacific Highway, and on the south and east by commercial properties. At the time of our site visit, all buildings on the property had been demolished and removed. Surface cover at the site consisted of concrete and asphaltic pavement. Topography across the site is relatively level, with an elevation relief of approximately one foot.

## 2.0 FIELD OPERATIONS

### 2.1 Tank Removal Activities

Removal of the underground storage tanks and appurtenances from the property was completed by Blakely Construction of Gresham, Oregon. Table 1 presents information on the tanks removed from the site.

TABLE 1. Characteristics of Underground Storage Tanks  
Removed From Station 3541, Milwaukie, Oregon

<u>Estimated Tank Capacity in Gallons</u>	<u>Construction Material</u>	<u>Contents*</u>
10,000	fiberglass	unleaded gasoline
10,000	fiberglass	supreme gasoline
10,000	fiberglass	regular gasoline
1,000	fiberglass	used oil
1,000	fiberglass	heating oil

Notes: \* Contents based on site plan provided by Chevron U.S.A. Inc.

All underground structures were excavated and removed on February 15, 1989. Figure 2 shows a generalized site plan and depicts the sampling locations. Prior to removing the gasoline storage tanks, approximately 30 pounds of dry ice were placed within each tank, and the associated fuel supply lines were disconnected and allowed to drain into containers. Absorbent material was placed in the orifice of each supply line to collect any residual.

Two excavations were completed to remove all of the underground storage tanks on the property. Within this report, Excavation One refers to the excavation for removal of the three gasoline storage tanks and Excavation Two refers to the removal of the used oil and heating oil tanks. The approximate final dimensions of Excavation One were 35 feet by 36 feet by 10-feet deep. The approximate final dimensions of Excavation Two were 11 feet by 28 feet by 5-feet deep. The Contractor planned to backfill the excavations with both on-site and imported material.

## 2.2 Soil Sampling and Observations

Soil samples were collected from excavations completed to remove the underground structures, at the locations shown on figure 2. A backhoe was used to remove the material for sampling from the floor and sidewalls of each excavation. Samples were obtained directly from material within the interior of the backhoe bucket.

Soil samples were field screened at the time of sample collection with a Thermo Environmental Instruments, Inc. Model 580A OVM/Datalogger photoionization detector (PID), calibrated to benzene. The PID had an operating range from 0 to 2,000 parts per million (ppm) with a minimum detection limit of 0.1 ppm.

Glass sample jars sealed with Teflon-lined lids were used to contain each sample. The jars were labeled as to their respective origins and placed in a chilled ice chest for transport to the contract laboratory. Chain-of-custody procedures were followed to document sample handling.

In order to increase the number of sampling locations evaluated while maintaining a reasonable laboratory program, selected samples collected at similar locations were composited in the field or at the time of analysis. Field-compositing was accomplished by combining approximate equal portions of material from separate locations, prior to placement in the glass sample jar. Laboratory-compositing consisted of mixing equal portions of material from discrete samples immediately before analysis.

Chevron U.S.A. Inc.  
April 4, 1989

Page Three  
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Samples which were field-composited are shown on Figure 2 with common sample location numbers.

### 2.2.1 Excavation One

Material comprising the backfill around the gasoline storage tanks consisted of poorly-graded pea gravel. The soils encompassing the excavation consisted of stiff, silty CLAY from ground surface to a depth of about seven feet, and very fine-grained sandy SILT from about seven feet to an unknown depth.

The sidewalls of Excavation One were sampled in proximity to the ends of the tanks, at depths adjacent to the tanks' midsections. Both excavation sidewalls adjacent the longitudinal side of the tanks were each sampled at two locations. Both sidewalls adjacent to the ends of the tanks were each sampled at three locations. Floor samples were obtained from soils immediately underlying the backfill material beneath the end of each tank. Samples collected from each sidewall of the excavation were composited in the field, resulting in a total of four samples representing ten sampling locations. The collected floor samples were composited at the laboratory, resulting in a total of three samples representing six sampling locations.

During removal of the gasoline storage tanks, two vapor monitoring wells were observed in the excavation. One well was located at the northwest corner of the excavation, and the other at the southeast corner. Both wells were perforated throughout the zone of the tank backfill. PID measurements made within each wells' head space did not detect the presence of volatile organic compounds. Both wells were removed during the tank excavation operation.

### 2.2.2 Excavation Two

Backfill material surrounding the used oil and heating oil tanks consisted of poorly-graded pea gravel. The soils surrounding the tank excavation consisted of stiff, silty CLAY from ground surface to an unknown depth.

The sidewalls of Excavation Two were sampled in proximity to the ends of the tanks, at depths adjacent to the tanks' midsection. All four sidewalls were each sampled at three locations. Floor samples were obtained from soils immediately underlying the backfill material beneath the end of each tank. Samples collected from each sidewall of the excavation were composited in the field providing a total of four sidewall samples. These four samples were then composited at the laboratory, resulting in one sample representing eight sampling locations. Floor samples collected were also composited in the field, resulting in a total of two samples representing four sampling locations.

Chevron U.S.A. Inc.  
April 4, 1989

### 2.2.3 Fuel Pump Islands

Material adjacent to the pump islands where samples were collected consisted of fine- to coarse-grained SAND. These soils were present from ground surface to a depth of at least three feet below ground surface.

Samples were collected from material located about one foot below the buried fuel lines servicing each island. Two samples were collected from locations adjacent to each island. The samples were field-composited, resulting in two samples representing four sampling locations.

### 2.2.4 Vehicle Hoists

Material encompassing the vehicle hoist rams consisted of stiff, silty CLAY which extended from ground surface to an undetermined depth.

Samples were collected from material located about one foot below each hoist ram, and from material located about five feet below the southern hoist ram at sampling location SLC-4. Each sample collected from beneath the vehicle hoists analyzed separately.

## 3.0 LABORATORY ANALYSES

### 3.1 Analysis Procedures

Chemical analysis of soil samples was performed by AmTest Laboratories, Inc. of Redmond, Washington. AmTest maintains EPA certification for the tests conducted on this project.

Six samples were analyzed for petroleum hydrocarbon concentrations by infrared techniques in accordance with EPA Method 418.1. <sup>Nine</sup> ~~Seven~~ samples were analyzed for the presence of benzene, toluene, ethylbenzene, and xylenes (BTEX) by gas chromatography-photoionization detection in accordance with EPA Method 8020. Analytical limits of detection for the compounds evaluated are shown in Table 2. The mg/kg units reported by the analytical laboratory approximate part per million (ppm) concentrations.

TABLE 2. Analytical limits of detection for analyzed compounds at Chevron Service Station 3541, Milwaukie, Oregon

<u>Analytical Method</u>	<u>Compound</u>	<u>Limit of Detection (mg/kg)</u>
EPA Method 418.1	Petroleum Hydrocarbon	5.0
EPA Method 8020	Benzene	0.005
EPA Method 8020	Toluene	0.005
EPA Method 8020	Ethylbenzene	0.005
EPA Method 8020	m + p-Xylene	0.010
EPA Method 8020	o-Xylene	0.005

### 3.2 Analytical Results

Figure 2 presents the numerical sampling locations referred to in the following text. Copies of the laboratory reports are in Appendix A.

#### 3.2.1 Volatile Organic Compounds

Samples collected from Excavation One (gasoline tank excavation) and adjacent to the pump islands were analyzed for benzene, toluene, ethylbenzene, and xylenes (m,p and o-isomers). These compounds were not detected in any samples at the respective analytical limits of detection. The results are summarized in Table 3 and the analysis reports are contained in Appendix A Tables A-1, A-2, A-3 and A-4. Tables A-1, A-2 and A-5 present Quality Assurance (QA) data for the analyses.

#### 3.2.2 Petroleum Hydrocarbon

Samples collected from Excavation Two and beneath the vehicle hoist rams were analyzed for petroleum hydrocarbon concentrations. Table 4 presents the analytical results and the analysis reports are provided in Table A-6 in Appendix A.

Laboratory analysis (EPA 418.1) of the sample collected one foot beneath the southern vehicle hoist at location SLD-1 detected petroleum hydrocarbon at a concentration of 2,350 mg/kg. Material in proximity to this sampling location appeared discolored with respect to the surrounding soils. Approximately ten cubic yards of this discolored material was excavated and stockpiled on-site. Laboratory analysis of a sample collected from material beneath the excavated zone (SLC-4) detected petroleum hydrocarbon at a concentration of 252 mg/kg.

Laboratory analysis of a soil sample collected from beneath the northern hoist at sampling location NL-1 detected petroleum hydrocarbon at a concentration of 67 mg/kg.

TABLE 4. Results of petroleum hydrocarbon analyses by EPA Method 418.1 (in mg/kg units) for soil samples from Service Station 3541, Milwaukie, Oregon

<u>Sample ID</u>	<u>Sample Location</u>	<u>Concentration (mg/kg)*</u>
S-11-1	11	64.9
S-12-1	12	6.2
Composite	2x(13, 14, 15, 16)	64.9
SLD-1	SLD-1	2,350
SLC-4	SLC-1	252
NL-1	NL-1	67.0

Notes: \* Analytical detection limit for the analysis was 5 mg/kg.

Table 3. Benzene, toluene, ethylbenzene and xylene concentrations determined by EPA Method 8020 (in mg/kg units) for soil samples collected at Service Station 3541.

Sample I.D.	Benzene* (mg/kg)	Toluene* (mg/kg)	Ethyl- benzene* (mg/kg)	m+p- Xylene* (mg/kg)	o- Xylene* (mg/kg)
S-1 & S-2-1 Composite	ND	ND	ND	ND	ND
S-3-1 & S-4-1 Composite	ND	ND	ND	ND	ND
S-5-1 & S-6-1 Composite	ND	ND	ND	ND	ND
S-7-1 Composite	ND	ND	ND	ND	ND
S-8-1 Composite	ND	ND	ND	ND	ND
S-9-1 Composite	ND	ND	ND	ND	ND
S-10-1 Composite	ND	ND	ND	ND	ND
IWC Composite	ND	ND	ND	ND	ND
IEC Composite	ND	ND	ND	ND	ND

Notes:

ND = Not detected at analytical detection limits.

\* Analytical detection limits = 0.005 mg/kg for all compounds, except 0.010 mg/kg for m+p- xylenes.

Chevron U.S.A. Inc.  
April 4, 1989

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#### 4.0 CONCLUSIONS

Our field observations and the laboratory data indicate that previous site operations had limited impact, if any, on the subsurface soils in vicinity of the underground gasoline storage tanks, the used oil tank, and the heating oil tank, as well as the fuel dispensing island. A limited volume of subsurface soil appeared to have been impacted by the operation of the southern-most vehicle hoist. This soil was excavated and stockpiled on-site.

Analysis of soil samples collected at locations in proximity to the underground fuel storage tanks (Excavation One) and the fuel dispensing islands did not detect the gasoline fuel components benzene, toluene, ethylbenzene or xylenes (BTEX) at the analytical limits of detection. A total of 20 sampling locations within these two areas were evaluated.

The concentrations of petroleum hydrocarbon detected in samples collected from the used oil and heating oil tanks excavation (Excavation Two) are due to either matrix interference during analysis or residual petroleum hydrocarbon from normal site operations. Since the petroleum hydrocarbon analysis used on this project provides none-specific results, indigenous organic material within the soil are detectable as well as any petroleum hydrocarbon which may be present. Concentrations of the detected petroleum hydrocarbons ranged from 6.2 mg/kg to 64.9 mg/kg. It is our opinion that these concentrations are not indicative of impacted soils at the locations sampled.

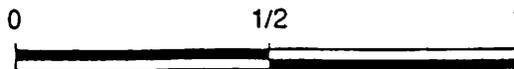
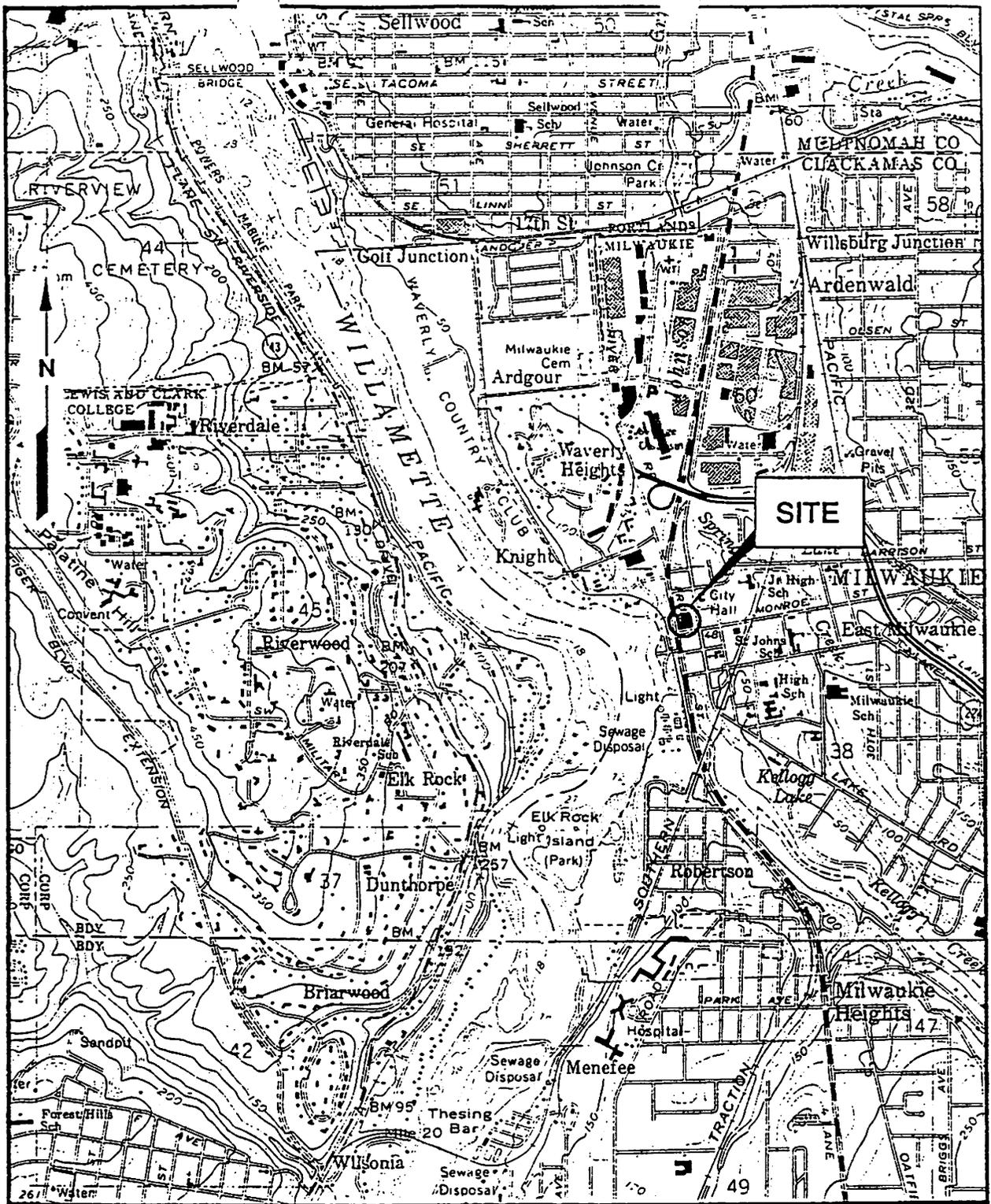
The petroleum hydrocarbon concentration of 2,350 mg/kg detected in a soil sample collected beneath the vehicle hoist ram at sampling location SLD-1 indicates that soils were affected by operation of the southern-most hoist. Based on our visual observations and the results of laboratory analyses, the material which was impacted appeared limited to a discernible zone around the perimeter of the hoist. Excavation of discolored material comprising this zone appears to have removed the impacted soils from the subsurface. The petroleum hydrocarbon concentration of 252 mg/kg detected in a sample collected subsequent to removal of the discolored material (SLC-4) appears to be residual compounds since no obvious discoloration of the sampled soils was apparent.

THORNE ENVIRONMENTAL, INC.

*Alan Spratt by LRB*  
Alan Spratt  
Project Hydrogeologist

*Maurice W. Gallarda by LRB*  
Maurice W. Gallarda, P.E.\*  
Principal Engineer

\*"A permit to practice in Oregon has been granted to  
MAURICE WILLIAM GALLARDA  
valid only until official action is taken on his  
application for Oregon registration dated February 17, 1989."



Approximate Scale in Miles

Source: U.S.G.S.  
7.5-min. quadrangle map,  
Lake Oswego, OR (1984).



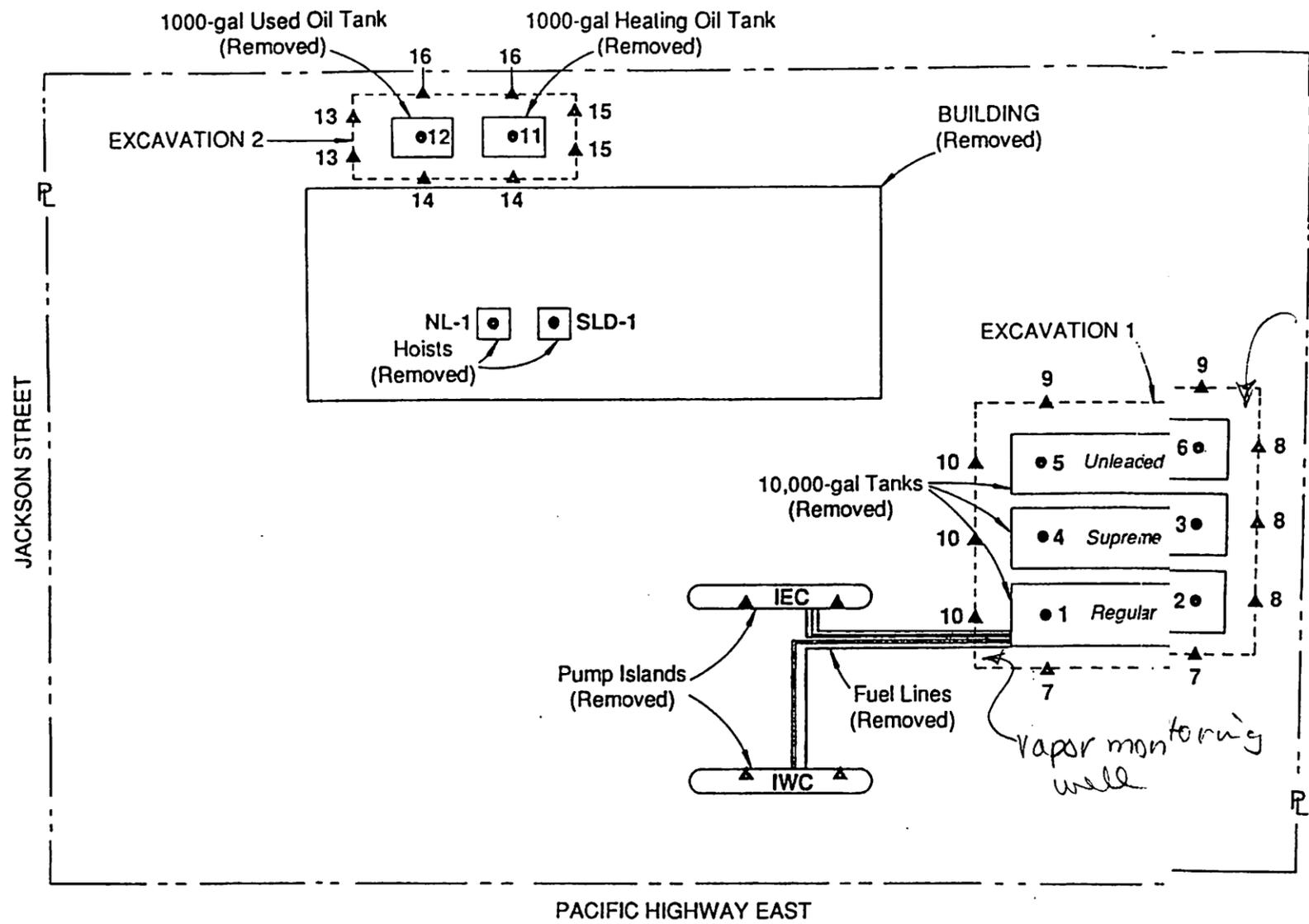
Date: April 1989  
Project Number: SE-1013

Chevron U.S.A. Inc.  
Service Station 3541/Milwaukie, OR

**SITE LOCATION MAP**

Figure

**1**

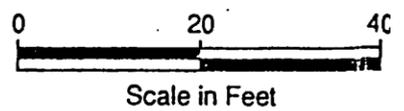


Soil Sample Identification Codes and Description of Sampling Locations.

<u>SAMPLE I.D.</u>	<u>SOIL SAMPLE LOCATION DESCRIPTION</u>
SS-1 & SS-2	Discrete samples from beneath bottom of regular gasoline tank
SS-3 & SS-4	Discrete samples from beneath bottom of supreme gasoline tank
SS-5 & SS-6	Discrete samples from beneath bottom of unleaded gasoline tank
SS-7	Discrete samples from west wall of Excavation One
SS-8	Discrete samples from south wall of Excavation One
SS-9	Discrete samples from east wall of Excavation One
SS-10	Discrete samples from north wall of Excavation One
SS-11	Discrete sample from beneath bottom of heating oil tank
SS-12	Discrete sample from beneath bottom of used oil tank
SS-13	Discrete samples from north wall of Excavation Two
SS-14	Discrete samples from west wall of Excavation Two
SS-15	Discrete samples from south wall of Excavation Two
SS-16	Discrete samples from east wall of Excavation Two
NL-1	Discrete sample from about one foot beneath northern hydraulic hoist ram
SLD-1	Discrete sample from about one ft. beneath southern hydraulic hoist ram
SLC-1	Composite sample from about one five ft. beneath southern hydraulic hoist ram
IEC	Composite sample from beneath eastern pump island
IWC	Composite sample from beneath western pump island

EXPLANATION

- Discrete Sample Location
- ▲ Composite Sample Location
- Approximate Excavation Limits



Source: Chevron U.S.A. Inc. drawing (August 11, 1969).

<p>Date: April 1989 Project Number: 5E-1013</p>	<p>Chevron U.S.A. Inc. Service Station 3541/Milwaukie, OR</p>	Figure
	<p><b>SITE PLAN AND SAMPLING LOCATIONS</b></p>	<b>2</b>

**APPENDIX A**  
**ANALYTICAL CHEMISTRY RESULTS**

CLIENT: Thorne Environmental

DATE RECEIVED: 2/21/89

REPORT TO: Alan Sprott

DATE REPORTED: 3/10/89

JOB NO.: 5E-1013

GC ANALYSIS OF PURGEABLE AROMATIC COMPOUNDS BY EPA METHOD 8020

Laboratory Sample Nos.	Blank *	902193	902194	DETECTION LIMIT (mg/kg)
Client Identification	---	Composite of S-1-1 & S-2-1	S-7-1	
Benzene	ND	ND	ND	0.005
Toluene	ND	ND	ND	0.005
Chlorobenzene	ND	ND	ND	0.005
Ethylbenzene	ND	ND	ND	0.005
m+p-Xylene	ND	ND	ND	0.010
o-Xylene	ND	ND	ND	0.005
1,3-Dichlorobenzene	ND	ND	ND	0.005
1,4-Dichlorobenzene	ND	ND	ND	0.005
1,2-Dichlorobenzene	ND	ND	ND	0.005

m-Xylene & p-Xylene coelute.

ND = Not Detected.

All results are reported in mg/kg.

\*Quality Assurance (QA) sample

Table A-1



CLIENT: Thorne Environmental

DATE RECEIVED: 2/21/89

REPORT TO: Alan Sprott

DATE REPORTED: 3/10/89

JOB NO.: 5E-1013

GC ANALYSIS OF PURGEABLE AROMATIC COMPOUNDS BY EPA METHOD 8020

Laboratory Sample Nos.	902207	902193	DETECTION
Client Identification	IEC	Duplicate Composite of S-1-1 & S-2-1*	LIMIT (mg/kg)
Benzene	ND	ND	0.005
Toluene	ND	ND	0.005
Chlorobenzene	ND	ND	0.005
Ethylbenzene	ND	ND	0.005
m+p-Xylene	ND	ND	0.010
o-Xylene	ND	ND	0.005
1,3-Dichlorobenzene	ND	ND	0.005
1,4-Dichlorobenzene	ND	ND	0.005
1,2-Dichlorobenzene	ND	ND	0.005

m-Xylene & p-Xylene coelute.

ND = Not Detected.

All results are reported in mg/kg.

\*Quality Assurance (QA) sample

CLIENT: Thorne Environmental

DATE RECEIVED: 2/21/89

REPORT TO: Alan Sprott

DATE REPORTED: 3/10/89

JOB NO.: 5E-1013

GC ANALYSIS OF PURGEABLE AROMATIC COMPOUNDS BY EPA METHOD 8020

Laboratory Sample Nos.	902195	902196	902197	DETECTION LIMIT (mg/kg)
Client Identification	Composite of S-3-1 & S-4-1	Composite of S-5-1 & S-6-1	S-8-1	
Benzene	ND	ND	ND	0.005
Toluene	ND	ND	ND	0.005
Chlorobenzene	ND	ND	ND	0.005
Ethylbenzene	ND	ND	ND	0.005
m+p-Xylene	ND	ND	ND	0.010
o-Xylene	ND	ND	ND	0.005
1,3-Dichlorobenzene	ND	ND	ND	0.005
1,4-Dichlorobenzene	ND	ND	ND	0.005
1,2-Dichlorobenzene	ND	ND	ND	0.005

m-Xylene & p-Xylene coelute.

ND = Not Detected.

All results are reported in mg/kg.

CLIENT: Thorne Environmental

DATE RECEIVED: 2/21/89

REPORT TO: Alan Sprott

DATE REPORTED: 3/10/89

JOB NO.: 5E-1013

## GC ANALYSIS OF PURGEABLE AROMATIC COMPOUNDS BY EPA METHOD 8020

Laboratory Sample Nos.	902198	902199	902206	DETECTION LIMIT (mg/kg)
Client Identification	S-9-1	S-10-1	IWC	
Benzene	ND	ND	ND	0.005
Toluene	ND	ND	ND	0.005
Chlorobenzene	ND	ND	ND	0.005
Ethylbenzene	ND	ND	ND	0.005
m+p-Xylene	ND	ND	ND	0.010
o-Xylene	ND	ND	ND	0.005
1,3-Dichlorobenzene	ND	ND	ND	0.005
1,4-Dichlorobenzene	ND	ND	ND	0.005
1,2-Dichlorobenzene	ND	ND	ND	0.005

m-Xylene & p-Xylene coelute.

ND = Not Detected.

All results are reported in mg/kg.

CLIENT: Thorne Environmental

DATE RECEIVED: 2/21/89

REPORT TO: Alan Sprott

DATE REPORTED: 3/10/89

JOB NO.: 5E-1013

GC ANALYSIS OF PURGEABLE AROMATIC COMPOUNDS BY EPA METHOD 8020

Laboratory Sample Nos.

902193

Client Identification

SPIKE RECOVERY

Composite of

S-1-1 & S-2-1\*

---

Benzene	102.
Toluene	99.
Chlorobenzene	108.
Ethylbenzene	99.
m+p-Xylene	100.
o-Xylene	106.
1,3-Dichlorobenzene	109.
1,4-Dichlorobenzene	109.
1,2-Dichlorobenzene	107.

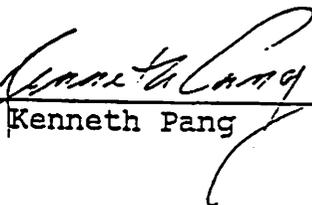
m-Xylene & p-Xylene coelute.

All results are reported in percent (%).

\*Quality Assurance (QA) sample

KP/pb

REPORTED BY



Kenneth Pang

ANALYSIS REPORT

CLIENT: Thorne Environmental  
REPORT TO: Alan Sprott  
19730 - 64th Avenue West  
Suite 205  
Lynnwood, WA 98036

DATE RECEIVED: 2/21/89  
DATE REPORTED: 3/10/89  
JOB NO.: 5E-1013

Laboratory Sample Nos.	Client Identification	Total Petroleum Hydrocarbons (ug/g)
902200	S-11-1	58.6 64.9]
902201	S-12-1	6.2
902202	Composite (S-13-1 through S-16-1)	64.9
902203	SLD-1	2,350.
902204	SLC-4	252.
902205	NL-1	67.0

Analysis was performed by EPA Method 418.1.



Dept. of Environmental Quality  
**RECEIVED**  
DEC 04 1989

NORTHWEST REGION

November 22, 1989

5E-1013-01

Oregon Department of Environmental Quality  
811 S.W. Sixth Avenue  
Portland, OR 97204

*03-89-068  
closed file*

Attention: Mr. Loren Garner

Subject: Request on Behalf of Chevron U.S.A. Inc. for Approval to  
Dispose of Soils at St. Johns Landfill  
Decommissioned Chevron U.S.A. Inc. Service Station 3541  
10808 SE McLaughlin Blvd.  
Milwaukie, Oregon 97222

Mr. Garner:

On behalf of Chevron U.S.A. Inc., we are requesting permission to dispose of about 10 cubic yards of soils at the St. Johns Landfill in Portland, Oregon. The analytical chemistry data for soil samples collected from the stockpile on October 14 and November 13, 1989 indicates that this soil contains up to 300 mg/kg of Total Petroleum Hydrocarbons (TPH) as quantified by EPA Method 418.1. This material originated from around the above-referenced site's southernmost vehicle-hoist hydraulic ram which was removed in February 1989. We would like to arrange disposal of the soils as soon as possible.

The attached Figures 1 and 2 show the site location and a site plan, respectively. Figure 2 also details the locations sampled during the decommissioning activities. Appendix A of this letter contains the analytical chemistry reports for the stockpiled soils.

## 1.0 INTRODUCTION

Thorne Environmental, Inc. was retained to observe and document the removal of the underground storage tanks and associated equipment during the demolition of Service Station 3541. This scope of work included collecting soil samples from the excavations used to remove the tanks and equipment. These samples were then analyzed for petroleum-hydrocarbon compound concentrations. The analytical chemistry data for the soil samples showed that sample SLD-1 from the southernmost vehicle-hoist hydraulic ram contained 2,350 mg/kg of Total Petroleum Hydrocarbons (TPH) as determined by EPA Method 418.1. The soils in the vicinity of the former southernmost hydraulic ram were then excavated in April 1989 and stockpiled on-site. The stockpile was placed on and covered with plastic sheeting to limit precipitation infiltration. The soils within the stockpile ranged from silty CLAY to fine sandy SILT. Additional subsurface sampling and analysis information is contained in our April 4, 1989 report to Chevron U.S.A. Inc. titled, "Preliminary Environmental Assessment".

Chevron U.S.A. Inc.  
November 17, 1989

Page 2  
5E-1013-01

## **2.0 STOCKPILE SAMPLING**

Two composite samples were collected from the stockpiled soils on October 14, 1989. These samples, identified as CS-1 and CS-2, were obtained from the north and south halves of the stockpile, respectively. Each composite consisted of two discrete grab-sample locations about two feet below the surface of stockpile.

Four discrete samples were collected from the stockpile on November 13, 1989. These samples were obtained from at least one foot below the surface of the soils. The samples were identified as SP-1 through SP-4.

## **3.0 QUANTITATIVE CHEMISTRY ANALYSES**

### **3.1 Procedures**

The quantitative chemistry analyses on the stockpile soil samples were contracted through Analytical Resources, Inc. (ARI) of Seattle, Washington. The October 14, 1989 composite samples were analyzed for the concentrations of: 1) fuel hydrocarbons; 2) benzene, toluene, ethylbenzene and xylenes (hereafter referred to as BTEX); 3) Total Petroleum Hydrocarbons (TPH); and 4) flash point temperature. ARI performed these analyses except for the flash point temperature which was subcontracted to Spectra Laboratories, Inc. of Tacoma, Washington. The November 13, 1989 samples were only analyzed for TPH based on the findings from the October samples. Copies of the laboratory analysis reports are shown on Tables A-1 through A-5 of the attached Appendix A. The Appendix A reports also detail the analytical detection limits.

The fuel hydrocarbon, BTEX and TPH analyses were completed by EPA Methods 8015(modified), 8240 and 418.1, respectively. The flash point temperature was determined in accordance with ASTM Number D:93. The reported concentrations are in mg/kg units except for the flash point temperature which is in degrees Fahrenheit. The mg/kg units approximate part per million (ppm) concentrations.

### 3.2 Analytical Results

The analytical chemistry results are summarized in the following tables. Tables 1 and 2 present the results of the fuel hydrocarbon and BTEX analyses. Table 3 provides the results of the TPH and flash point temperature analyses.

**TABLE 1.** Fuel hydrocarbon concentrations (in mg/kg) quantified by EPA Method 8015(modified) for composite samples collected from the soil stockpile at Station 3541 on October 14, 1989

<u>Sample</u>	<u>Fuel Hydrocarbons (mg/kg)</u>
CS-1	ND
CS-2	ND

Notes:

ND = Not Detected at an analytical detection limit of 20 mg/kg

**TABLE 2.** Benzene, toluene, ethylbenzene and xylene (BTEX) concentrations (in mg/kg) quantified by EPA Method 8240 for composite samples collected from the soil stockpile at Station 3541 on October 14, 1989

<u>Sample</u>	<u>Benzene (mg/kg)</u>	<u>Toluene (mg/kg)</u>	<u>Ethylbenzene (mg/kg)</u>	<u>Xylenes (mg/kg)</u>
CS-1	ND	ND	ND	ND
CS-2	ND	ND	ND	ND

Notes:

ND = Not Detected at analytical detection limits shown on the laboratory report in Table A-2 of Appendix A.

**TABLE 3.** Total Petroleum Hydrocarbon (TPH) concentrations (in mg/kg) and Flash Point Temperatures (in °Fahrenheit) for composite samples collected from the soil stockpile at Station 3541 on October 14, 1989 and discrete samples collected on November 13, 1989

<u>Sample</u>	<u>Total Petroleum Hydrocarbons (mg/kg)</u>	<u>Flashpoint (°F)</u>
CS-1*	300	>210
CS-2*	93	>210
SP-1**	184	NA
SP-2**	11	NA
SP-3**	22	NA
SP-4**	13	NA

\* Denotes composite sample collected October 14, 1989

\*\* Denotes discrete sample collected November 13, 1989

Notes:

NA = Not Analyzed for the listed parameter

Chevron U.S.A. Inc.  
November 17, 1989

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5E-1013-01

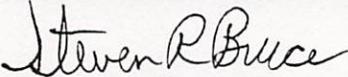
#### 4.0 CONCLUSIONS

Our field observations and the analytical chemistry results indicate that the hydrocarbon concentrations remaining in the stockpiled soils are minimal and are not gasoline-fuel related.

Please call us at (206) 525-9168 should you have any questions.

Sincerely,

**THORNE ENVIRONMENTAL, INC.**

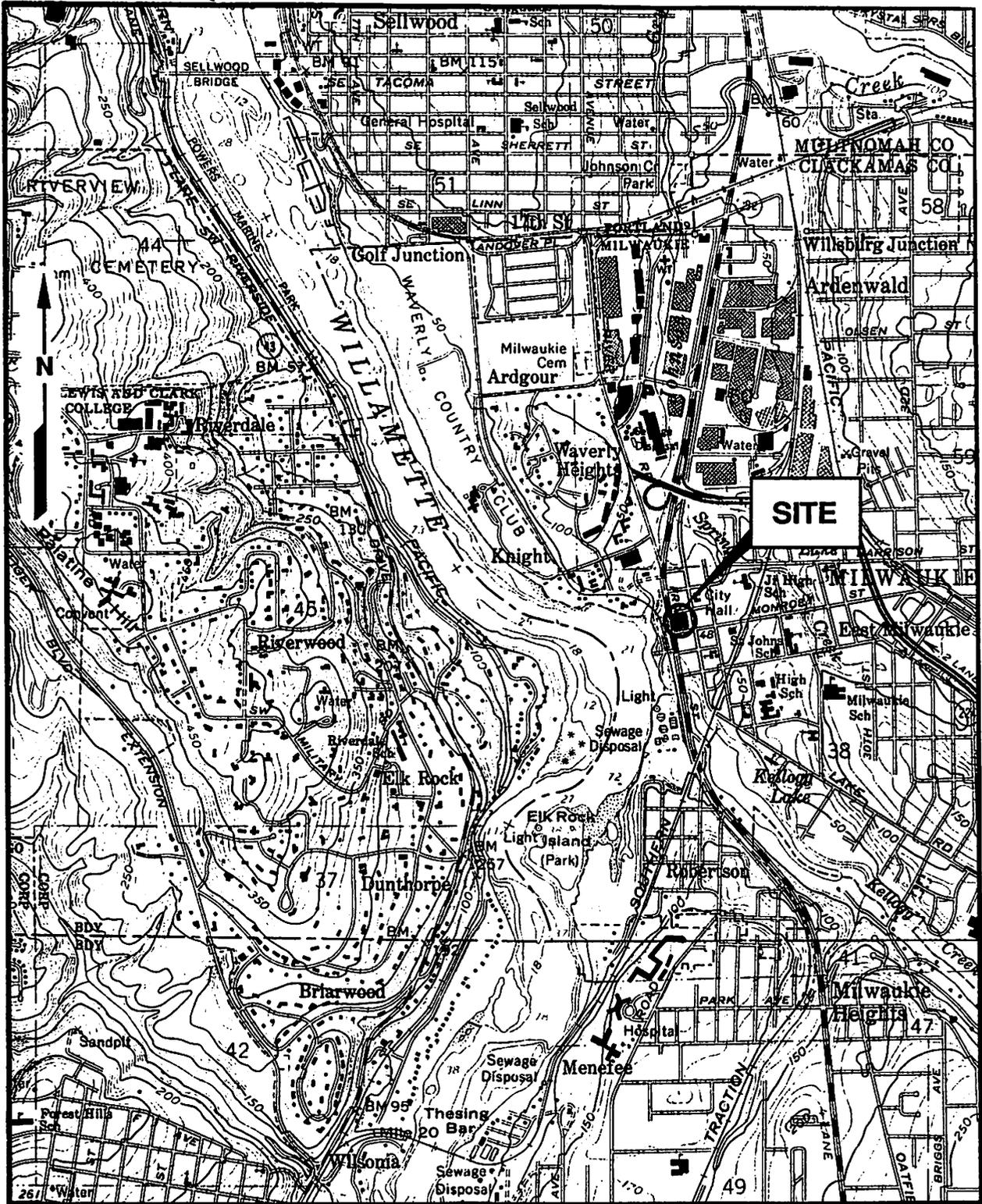


Steven R. Bruce  
Hydrogeologic Services Manager



William F. Galli, P.E.  
Principal Engineer

cc: Mr. Myron Smith (Chevron U.S.A. Inc.)



Approximate Scale in Miles

Source: U.S.G.S.  
7.5-min. quadrangle map,  
Lake Oswego, OR (1984).



Date: April 1989  
Project Number: 5E-1013

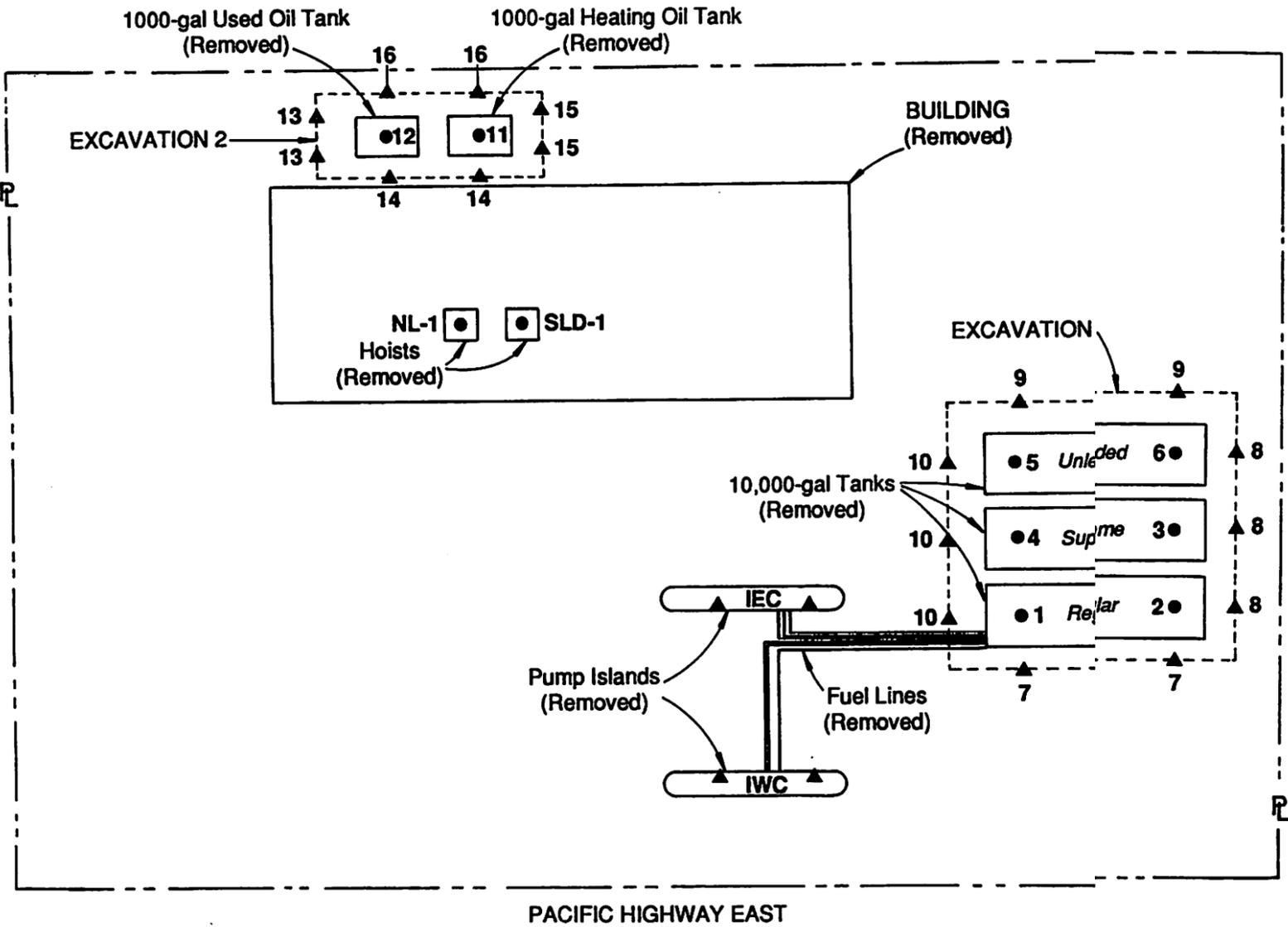
Chevron U.S.A. Inc.  
Service Station 3541/Milwaukie, OR

**SITE LOCATION MAP**

Figure

**1**

JACKSON STREET



**EXPLANATION**

- Discrete Sample Location
- ▲ Composite Sample Location
- Approximate Excavation Limits

Source: Chevron U.S.A. Inc. drawing (August 11, 1969).

**Soil Sample Identification Codes and Description of Sampling Locations.**

<u>SAMPLE I.D.</u>	<u>SOIL SAMPLE LOCATION DESCRIPTION</u>
SS-1 & SS-2	Discrete samples from beneath bottom of regular gasoline tank
SS-3 & SS-4	Discrete samples from beneath bottom of supreme gasoline tank
SS-4 & SS-5	Discrete samples from beneath bottom of unleaded gasoline tank
SS-7	Discrete samples from west wall of Excavation One
SS-8	Discrete samples from south wall of Excavation One
SS-9	Discrete samples from east wall of Excavation One
SS-10	Discrete samples from north wall of Excavation One
SS-11	Discrete sample from beneath bottom of heating oil tank
SS-12	Discrete sample from beneath bottom of used oil tank
SS-13	Discrete samples from north wall of Excavation Two
SS-14	Discrete samples from west wall of Excavation Two
SS-15	Discrete samples from south wall of Excavation Two
SS-16	Discrete samples from east wall of Excavation Two
NL-1	Discrete sample from about one foot beneath northern hydraulic hoist ram
SLD-1	Discrete sample from about one ft. beneath southern hydraulic hoist ram
SLC-1	Composite sample from about one five ft. beneath southern hydraulic hoist ram
IEC	Composite sample from beneath eastern pump island
IWC	Composite sample from beneath western pump island

**THORNE ENVIRONMENTAL**  
 Date: April 1989  
 Project Number: 5E-1013

Chevron U.S.A. Inc.  
 Service Station 3541/Milwaukie, OR  
**SITE PLAN AND SAMPLING LOCATIONS**

APPENDIX A  
ANALYTICAL LABORATORY DATA



**ANALYTICAL  
RESOURCES  
INCORPORATED**

Analytical  
Chemists &  
Consultants

333 Ninth Ave. North  
Seattle, Wa 98109-5187  
(206) 621-6490

**TOTAL PETROLEUM HYDROCARBONS BY GC/FID  
Modified EPA Method 8015**

Matrix: Soils/Sediments

Project: **5E-1013-1**  
**Milwaukie, OR**

QC Report No: 3845 -Thorne Environmental  
VTSR: 10/16/89

Data Release Authorized   
Report Prepared: 10/25/89 - MAC:B

Date Prepared: 10/19/89  
Date of Analysis: 10/20/89

	Lab ID	Client Sample ID	TPH (mg/Kg)		Pattern ID
			DL	Amt Found	
1	3845 MB	Method Blank	20	ND	---
2	3845 A	CS-1	20	ND	---
3	3845 B	CS-2	20	ND	---

Values reported in ppm (mg/Kg) based on dry weight of sample

ND Indicates compound was analyzed for but not detected at the given detection limit.



**ANALYTICAL  
RESOURCES  
INCORPORATED**

Analytical  
Chemists &  
Consultants

333 Ninth Ave. North  
Seattle, Wa 98109-5187  
(206) 621-6490

**ORGANICS ANALYSIS DATA SHEET - METHOD 624/8240  
BETX by GC/MS**

Matrix: Soils/Sediments

QC Report No: 3845-Thome Env.

Project No: 5E-1013-1

Milwaukie, OR

VTSR: 10/16/89

Data Release Authorized: *Chuan H. Roberts*  
Report prepared 10/20/89 MAC:E

Instrument: FINN 1

Date Analyzed: 10/19/89

CAS #	Sample No:	Method Blk		CS-1		CS-2	
		ARI ID:					
	Amt Analyzed:	5.0 g (eq.)		1.19 g (dry)		1.22 g (dry)	
	Units:	mg/Kg		mg/Kg		mg/Kg	
		DL	Amt.	DL	Amt.	DL	Amt.
71-43-2	Benzene	0.001	ND	0.004	ND	0.004	ND
108-88-3	Toluene	0.001	ND	0.004	ND	0.004	ND
100-41-4	Ethylbenzene	0.001	ND	0.004	ND	0.004	ND
1330-20-7	Total Xylenes	0.002	ND	0.008	ND	0.008	ND
	d8-Toluene		97.7%		98.4%		98.2%
	Bromofluorobenzene		97.2%		89.4%		90.3%
	d4-1,2-Dichloroethane		94.9%		92.4%		93.5%

Value If the result is a value greater than or equal to the detection limit, report the value.

B This flag is used when the analyte is found in the blank as well as a sample. Indicates possible/probable blank contamination.

U Indicates compound was analyzed for but not detected at the given detection limit.

K This flag is used when quantitated value falls above the limit of the calibration curve and dilution should be run for valid quantitation.

NR Analysis not required.



**ANALYTICAL  
RESOURCES  
INCORPORATED**

Analytical  
Chemists &  
Consultants

333 Ninth Ave. North  
Seattle, Wa 98109-5187  
(206) 621-6490

**TOTAL PETROLEUM HYDROCARBONS BY IR  
Modified EPA Method 418.1**

Matrix: Soils/Sediments

Project: **5E-1013-1**  
**Milwaukie OR.**

QC Report No: 3845 - Thorne Environmental

Data Release Authorized *David P. Johnson*  
Report Prepared: 10/19/89 - MAC:C C.G.

VTSR: 10/16/89

Date Extracted: 10/18/89  
Date of Analysis: 10/18/89

	Lab ID	Client Sample ID	TPH (mg/Kg)	
			DL	Amt Found
1	3845 MB	Method Blank	13	ND
2	3845 A	CS-1	13	300
3	3845 B	CS-2	13	93

Values reported in ppm (mg/Kg) based on wet weight of sample

ND Indicates compound was analyzed for but not detected at the given  
detection limit.



**ANALYTICAL  
RESOURCES  
INCORPORATED**

Analytical  
Chemists &  
Consultants

333 Ninth Ave. North  
Seattle, Wa 98109-5187  
(206) 621-6490

**TOTAL PETROLEUM HYDROCARBONS BY IR  
Modified EPA Method 418.1**

Matrix: Soils/Sediments

Project: 5E-1013-1

QC Report No: 4045 - Thorne Environmental

VTSR: 11/16/89

Data Release Authorized *Kevin H. Baker*  
Report Prepared: 11/16/89 - MAC:C C.G.

Date Extracted: 11/16/89  
Date of Analysis: 11/16/89

	Lab ID	Client Sample ID	Dilution Factor	TPH (mg/Kg)	
				DL	Amt Found
1	4045 MB	Method Blank	1	10	ND
2	4045 A	SP-1	1	10	184
3	4045 B	SP-2	1	10	11
4	4045 C	SP-3	1	10	22
5	4045 D	SP-4	1	10	13

Values reported in ppm (mg/Kg) based on wet weight of sample

ND Indicates compound was analyzed for but not detected at the given  
detection limit.



# SPECTRA Laboratories, Inc.

5013 Pacific Hwy. E. #12 • Tacoma, WA 98424 • (206) 922-5120

October 24, 1989

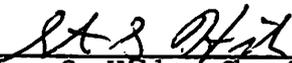
Analytical Resources Inc.  
333 Ninth Avenue North  
Seattle, WA 98109-5187

Desc: Soil

Attn: Dave Mitchell

<u>Sample ID:</u>	<u>Spectra #</u>	<u>Flash Point PMCC, F</u>
CS-1 3845A	27716	>210 (No Flash)
CS-2 3845B	27717	>210 (No Flash)

SPECTRA LABORATORIES, INC.

  
\_\_\_\_\_  
Steven G. Hibbs, Chemist



PRELIMINARY ENVIRONMENTAL  
ASSESSMENT  
CHEVRON U.S.A. INC.  
SERVICE STATION 3541  
MILWAUKIE, OREGON

PREPARED FOR:

CHEVRON U.S.A. INC.  
P.O. BOX 220  
SEATTLE, WASHINGTON 98111

PRESENTED BY:

**THORNE ENVIRONMENTAL, INC.**

APRIL, 1989



April 4, 1989

5E-1013-1

Chevron U.S.A. Inc.  
P.O. Box 220  
Seattle, Washington 98111

Attention: Mr. M.W. Smith

Subject: Preliminary Environmental Assessment  
Chevron U.S.A. Inc. Service Station 3541  
Milwaukie, Oregon

Mr. Smith:

Thorne Environmental, Inc. is pleased to present the following report on the above referenced project. The report describes our observations and findings during the recent underground storage tank removals at the site.

Please contact us should you have any questions about this report.

Sincerely,  
THORNE ENVIRONMENTAL, INC.

*Alan Sprott by ASB*  
Alan Sprott  
Project Hydrogeologist

*Maurice W. Gallarda by ASB*  
Maurice W. Gallarda, P.E.\*  
Principal Engineer

\*"A permit to practice in Oregon has been granted to

MAURICE WILLIAM GALLARDA

valid only until official action is taken on his  
application for Oregon registration dated February 17, 1989."

Preliminary Environmental Assessment  
Chevron U.S.A. Inc. Service Station 3541  
Milwaukie, Oregon

## SUMMARY

At the request of Chevron U.S.A. Inc., Thorne Environmental, Inc. conducted a preliminary environmental assessment during the removal of underground fuel and oil storage tanks, and associated piping at Service Station 3541 in Milwaukie, Oregon. The assessment was intended to evaluate if the on-site storage and transfer of automotive fuels and lubricants had impacted the quality of soils underlying the site. The scope of work consisted of: 1) observing the subsurface conditions exposed during the removal of the buried tanks and piping systems; 2) collecting soil samples from the excavation walls, floors, and interior soils; 3) completing chemical analyses on selected soil samples; 4) interpreting the collected data; and 5) preparing this report presenting our findings.

Our findings indicate the following:

- o Soils underlying the site in the areas of the tank excavations consist of stiff, silty CLAY from ground surface to a depth of about seven feet, and very fine-grained sandy SILT from seven feet to an unknown depth.
- o Groundwater was not encountered in the excavations which penetrated to a maximum depth of nine feet below the existing ground surface.
- o Analysis of soil samples collected in vicinity of the gasoline storage tanks and pump islands did not detect benzene, toluene, ethylbenzene and xylenes (BTEX) concentrations at the analytical limits of detection. The detection limits were 0.005 mg/kg for these compounds, except for m,p-xylene which had a detection limit of 0.010 mg/kg.
- o Analysis of soil samples from the used oil and heating oil tanks excavation detected petroleum hydrocarbons at concentrations ranging from 6.2 mg/kg to 64.9 mg/kg. These units approximate part per million (ppm) concentrations.
- o Analysis of soil samples collected from about one foot and five feet beneath the south vehicle hoist detected petroleum hydrocarbon at concentrations of 2,350 mg/kg and 252 mg/kg, respectively. These units approximate part per million (ppm) concentrations. Material in this area which appeared to contain petroleum hydrocarbon staining was excavated and stockpiled on-site.

This summary is presented only for introductory purposes and is intended for use in conjunction with the full text of this report. This report contains a site and project description, soil sampling procedures, analytical chemistry methods and results, and our conclusions.

Chevron U.S.A. Inc.  
April 4, 1989

Page One  
5E-1013-1

## **1.0 INTRODUCTION**

### **1.1 Purpose and Scope of Work**

On February 15, 1989, Thorne Environmental, Inc. was authorized by Chevron U.S.A. Inc. to provide professional services during underground tank removal operations at the subject facility. These services consisted of observing removal of the underground storage tanks, vehicle hoists and fuel supply lines from the property, sampling of soils in proximity to these structures, submittal of soil samples to an analytical laboratory for testing, and preparation of this report. The purpose of our services was to evaluate whether the on-site storage and dispensing of automotive fuels and lubricants had impacted the quality of the soils and groundwater underlying the property.

The scope of work implemented for this project was outlined in a proposal to Chevron U.S.A. Inc. dated January 27, 1989. Our services were provided under Chevron U.S.A. Inc. Contract Number M66CNW01669X, Release Number 9, dated February 15, 1989.

We have prepared this report for property transfer purposes by Chevron U.S.A. Inc. and their agents, in accordance with generally accepted engineering practices in existence at the time our work was completed. The statements and conclusions contained in this report are based on the explorations and sampling completed for this project by Thorne Environmental, Inc.. No other warranties, either express or implied, are provided.

### **1.2 Site Location and Description**

Figure 1 presents a site location map. The project site occupies the southeast corner of the Jackson Street and Pacific Highway intersection in Milwaukie, Oregon. It is bounded on the north by Jackson Street, on the west by Pacific Highway, and on the south and east by commercial properties. At the time of our site visit, all buildings on the property had been demolished and removed. Surface cover at the site consisted of concrete and asphaltic pavement. Topography across the site is relatively level, with an elevation relief of approximately one foot.

## **2.0 FIELD OPERATIONS**

### **2.1 Tank Removal Activities**

Removal of the underground storage tanks and appurtenances from the property was completed by Blakely Construction of Gresham, Oregon. Table 1 presents information on the tanks removed from the site.

Chevron U.S.A. Inc.  
 April 4, 1989

Page Two  
 5E-1013-1

**TABLE 1.** Characteristics of Underground Storage Tanks  
 Removed From Station 3541, Milwaukie, Oregon

<u>Estimated Tank Capacity in Gallons</u>	<u>Construction Material</u>	<u>Contents*</u>
10,000	fiberglass	unleaded gasoline
10,000	fiberglass	supreme gasoline
10,000	fiberglass	regular gasoline
1,000	fiberglass	used oil
1,000	fiberglass	heating oil

**Notes:** \* Contents based on site plan provided by Chevron U.S.A. Inc.

All underground structures were excavated and removed on February 15, 1989. Figure 2 shows a generalized site plan and depicts the sampling locations. Prior to removing the gasoline storage tanks, approximately 30 pounds of dry ice were placed within each tank, and the associated fuel supply lines were disconnected and allowed to drain into containers. Absorbent material was placed in the orifice of each supply line to collect any residual.

Two excavations were completed to remove all of the underground storage tanks on the property. Within this report, Excavation One refers to the excavation for removal of the three gasoline storage tanks and Excavation Two refers to the removal of the used oil and heating oil tanks. The approximate final dimensions of Excavation One were 35 feet by 36 feet by 10-feet deep. The approximate final dimensions of Excavation Two were 11 feet by 28 feet by 5-feet deep. The Contractor planned to backfill the excavations with both on-site and imported material.

## 2.2 Soil Sampling and Observations

Soil samples were collected from excavations completed to remove the underground structures, at the locations shown on figure 2. A backhoe was used to remove the material for sampling from the floor and sidewalls of each excavation. Samples were obtained directly from material within the interior of the backhoe bucket.

Soil samples were field screened at the time of sample collection with a Thermo Environmental Instruments, Inc. Model 580A OVM/Datalogger photoionization detector (PID), calibrated to benzene. The PID had an operating range from 0 to 2,000 parts per million (ppm) with a minimum detection limit of 0.1 ppm.

Glass sample jars sealed with Teflon-lined lids were used to contain each sample. The jars were labeled as to their respective origins and placed in a chilled ice chest for transport to the contract laboratory. Chain-of-custody procedures were followed to document sample handling.

In order to increase the number of sampling locations evaluated while maintaining a reasonable laboratory program, selected samples collected at similar locations were composited in the field or at the time of analysis. Field-compositing was accomplished by combining approximate equal portions of material from separate locations, prior to placement in the glass sample jar. Laboratory-compositing consisted of mixing equal portions of material from discrete samples immediately before analysis.

Chevron U.S.A. Inc.  
April 4, 1989

Page Three  
5E-1013-1

Samples which were field-composited are shown on Figure 2 with common sample location numbers.

### **2.2.1 Excavation One**

Material comprising the backfill around the gasoline storage tanks consisted of poorly-graded pea gravel. The soils encompassing the excavation consisted of stiff, silty CLAY from ground surface to a depth of about seven feet, and very fine-grained sandy SILT from about seven feet to an unknown depth.

The sidewalls of Excavation One were sampled in proximity to the ends of the tanks, at depths adjacent to the tanks' midsections. Both excavation sidewalls adjacent the longitudinal side of the tanks were each sampled at two locations. Both sidewalls adjacent to the ends of the tanks were each sampled at three locations. Floor samples were obtained from soils immediately underlying the backfill material beneath the end of each tank. Samples collected from each sidewall of the excavation were composited in the field, resulting in a total of four samples representing ten sampling locations. The collected floor samples were composited at the laboratory, resulting in a total of three samples representing six sampling locations.

During removal of the gasoline storage tanks, two vapor monitoring wells were observed in the excavation. One well was located at the northwest corner of the excavation, and the other at the southeast corner. Both wells were perforated throughout the zone of the tank backfill. PID measurements made within each wells' head space did not detect the presence of volatile organic compounds. Both wells were removed during the tank excavation operation.

### **2.2.2 Excavation Two**

Backfill material surrounding the used oil and heating oil tanks consisted of poorly-graded pea gravel. The soils surrounding the tank excavation consisted of stiff, silty CLAY from ground surface to an unknown depth.

The sidewalls of Excavation Two were sampled in proximity to the ends of the tanks, at depths adjacent to the tanks' midsection. All four sidewalls were each sampled at three locations. Floor samples were obtained from soils immediately underlying the backfill material beneath the end of each tank. Samples collected from each sidewall of the excavation were composited in the field providing a total of four sidewall samples. These four samples were then composited at the laboratory, resulting in one sample representing eight sampling locations. Floor samples collected were also composited in the field, resulting in a total of two samples representing four sampling locations.

Chevron U.S.A. Inc.  
April 4, 1989

### 2.2.3 Fuel Pump Islands

Material adjacent to the pump islands where samples were collected consisted of fine- to coarse-grained SAND. These soils were present from ground surface to a depth of at least three feet below ground surface.

Samples were collected from material located about one foot below the buried fuel lines servicing each island. Two samples were collected from locations adjacent to each island. The samples were field-composited, resulting in two samples representing four sampling locations.

### 2.2.4 Vehicle Hoists

Material encompassing the vehicle hoist rams consisted of stiff, silty CLAY which extended from ground surface to an undetermined depth.

Samples were collected from material located about one foot below each hoist ram, and from material located about five feet below the southern hoist ram at sampling location SLC-4. Each sample collected from beneath the vehicle hoists analyzed separately.

## 3.0 LABORATORY ANALYSES

### 3.1 Analysis Procedures

Chemical analysis of soil samples was performed by AmTest Laboratories, Inc. of Redmond, Washington. AmTest maintains EPA certification for the tests conducted on this project.

Six samples were analyzed for petroleum hydrocarbon concentrations by infrared techniques in accordance with EPA Method 418.1. Seven samples were analyzed for the presence of benzene, toluene, ethylbenzene, and xylenes (BTEX) by gas chromatography-photoionization detection in accordance with EPA Method 8020. Analytical limits of detection for the compounds evaluated are shown in Table 2. The mg/kg units reported by the analytical laboratory approximate part per million (ppm) concentrations.

**TABLE 2.** Analytical limits of detection for analyzed compounds at  
Chevron Service Station 3541, Milwaukie, Oregon

<u>Analytical Method</u>	<u>Compound</u>	<u>Limit of Detection (mg/kg)</u>
EPA Method 418.1	Petroleum Hydrocarbon	5.0
EPA Method 8020	Benzene	0.005
EPA Method 8020	Toluene	0.005
EPA Method 8020	Ethylbenzene	0.005
EPA Method 8020	m+p-Xylene	0.010
EPA Method 8020	o-Xylene	0.005

Chevron U.S.A. Inc.  
 April 4, 1989

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 5E-1013-1

### 3.2 Analytical Results

Figure 2 presents the numerical sampling locations referred to in the following text. Copies of the laboratory reports are in Appendix A.

#### 3.2.1 Volatile Organic Compounds

Samples collected from Excavation One (gasoline tank excavation) and adjacent to the pump islands were analyzed for benzene, toluene, ethylbenzene, and xylenes (m,p and o-isomers). These compounds were not detected in any samples at the respective analytical limits of detection. The results are summarized in Table 3 and the analysis reports are contained in Appendix A Tables A-1, A-2, A-3 and A-4. Tables A-1, A-2 and A-5 present Quality Assurance (QA) data for the analyses.

#### 3.2.2 Petroleum Hydrocarbon

Samples collected from Excavation Two and beneath the vehicle hoist rams were analyzed for petroleum hydrocarbon concentrations. Table 4 presents the analytical results and the analysis reports are provided in Table A-6 in Appendix A.

Laboratory analysis (EPA 418.1) of the sample collected one foot beneath the southern vehicle hoist at location SLD-1 detected petroleum hydrocarbon at a concentration of 2,350 mg/kg. Material in proximity to this sampling location appeared discolored with respect to the surrounding soils. Approximately ten cubic yards of this discolored material was excavated and stockpiled on-site. Laboratory analysis of a sample collected from material beneath the excavated zone (SLC-4) detected petroleum hydrocarbon at a concentration of 252 mg/kg.

Laboratory analysis of a soil sample collected from beneath the northern hoist at sampling location NL-1 detected petroleum hydrocarbon at a concentration of 67 mg/kg.

**TABLE 4.** Results of petroleum hydrocarbon analyses by EPA Method 418.1 (in mg/kg units) for soil samples from Service Station 3541, Milwaukie, Oregon

<u>Sample ID</u>	<u>Sample Location</u>	<u>Concentration (mg/kg)*</u>
S-11-1	11	64.9
S-12-1	12	6.2
Composite	(13, 14, 15, 16)	64.9
SLD-1	SLD-1	2,350
SLC-4	SLC-1	252
NL-1	NL-1	67.0

Notes: \* Analytical detection limit for the analysis was 5 mg/kg.

**Table 3.** Benzene, toluene, ethylbenzene and xylene concentrations determined by EPA Method 8020 (in mg/kg units) for soil samples collected at Service Station 3541.

Sample I.D.	Benzene* (mg/kg)	Toluene* (mg/kg)	Ethyl- benzene* (mg/kg)	m+p- Xylene* (mg/kg)	o- Xylene* (mg/kg)
S-1 & S-2-1 Composite	ND	ND	ND	ND	ND
S-3-1 & S-4-1 Composite	ND	ND	ND	ND	ND
S-5-1 & S-6-1 Composite	ND	ND	ND	ND	ND
S-7-1 Composite	ND	ND	ND	ND	ND
S-8-1 Composite	ND	ND	ND	ND	ND
S-9-1 Composite	ND	ND	ND	ND	ND
S-10-1 Composite	ND	ND	ND	ND	ND
IWC Composite	ND	ND	ND	ND	ND
IEC Composite	ND	ND	ND	ND	ND

Notes:

ND = Not detected at analytical detection limits.

\* Analytical detection limits = 0.005 mg/kg for all compounds, except 0.010 mg/kg for m+p- xylenes.

Chevron U.S.A. Inc.  
April 4, 1989

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#### 4.0 CONCLUSIONS

Our field observations and the laboratory data indicate that previous site operations had limited impact, if any, on the subsurface soils in vicinity of the underground gasoline storage tanks, the used oil tank, and the heating oil tank, as well as the fuel dispensing island. A limited volume of subsurface soil appeared to have been impacted by the operation of the southern-most vehicle hoist. This soil was excavated and stockpiled on-site.

Analysis of soil samples collected at locations in proximity to the underground fuel storage tanks (Excavation One) and the fuel dispensing islands did not detect the gasoline fuel components benzene, toluene, ethylbenzene or xylenes (BTEX) at the analytical limits of detection. A total of 20 sampling locations within these two areas were evaluated.

The concentrations of petroleum hydrocarbon detected in samples collected from the used oil and heating oil tanks excavation (Excavation Two) are due to either matrix interference during analysis or residual petroleum hydrocarbon from normal site operations. Since the petroleum hydrocarbon analysis used on this project provides none-specific results, indigenous organic material within the soil are detectable as well as any petroleum hydrocarbon which may be present. Concentrations of the detected petroleum hydrocarbons ranged from 6.2 mg/kg to 64.9 mg/kg. It is our opinion that these concentrations are not indicative of impacted soils at the locations sampled.

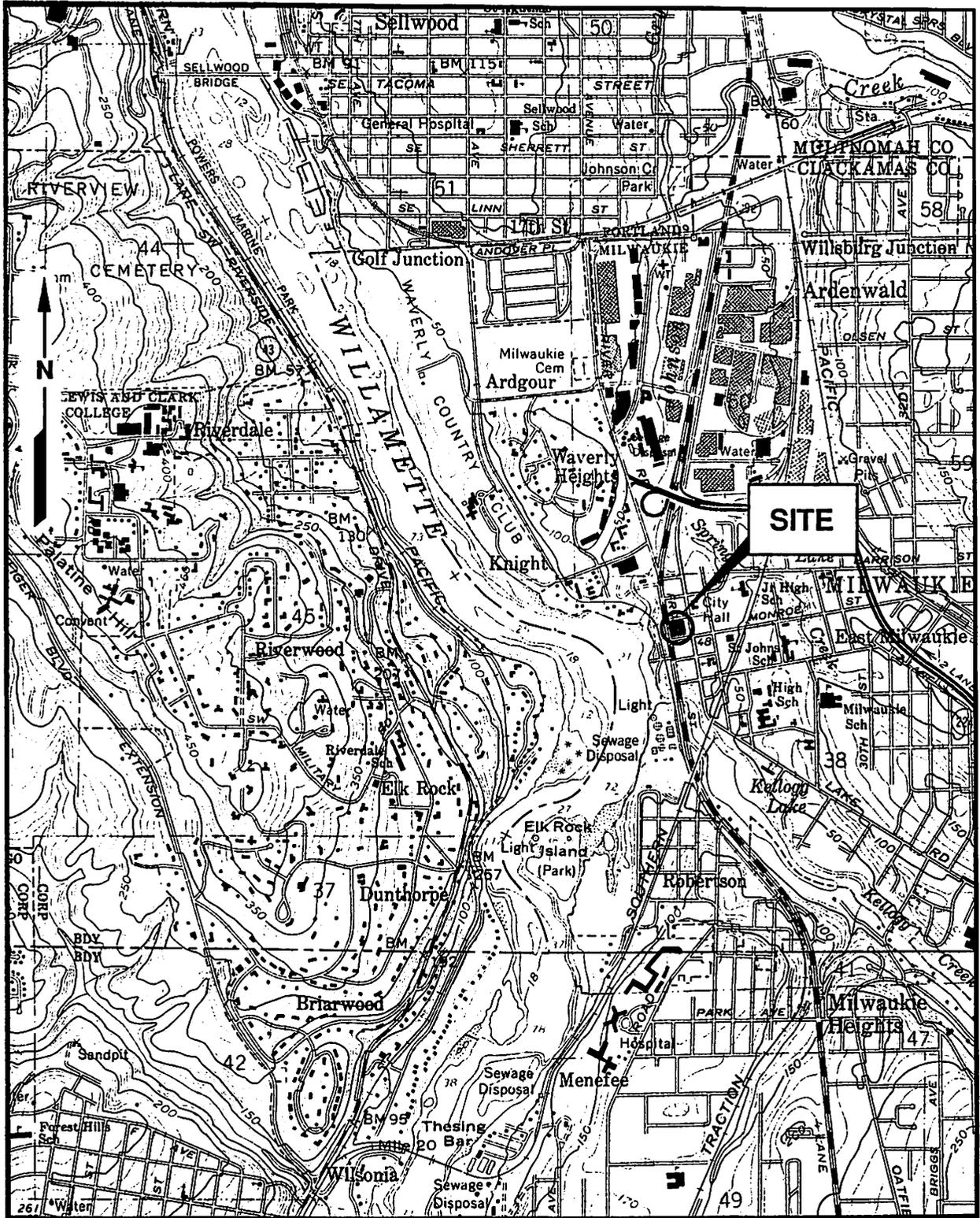
The petroleum hydrocarbon concentration of 2,350 mg/kg detected in a soil sample collected beneath the vehicle hoist ram at sampling location SLD-1 indicates that soils were affected by operation of the southern-most hoist. Based on our visual observations and the results of laboratory analyses, the material which was impacted appeared limited to a discernible zone around the perimeter of the hoist. Excavation of discolored material comprising this zone appears to have removed the impacted soils from the subsurface. The petroleum hydrocarbon concentration of 252 mg/kg detected in a sample collected subsequent to removal of the discolored material (SLC-4) appears to be residual compounds since no obvious discoloration of the sampled soils was apparent.

#### THORNE ENVIRONMENTAL, INC.

*Alan Spratt by LRB*  
Alan Spratt  
Project Hydrogeologist

*Maurice W. Gallarda by LRB*  
Maurice W. Gallarda, P.E.\*  
Principal Engineer

\*"A permit to practice in Oregon has been granted to  
MAURICE WILLIAM GALLARDA  
valid only until official action is taken on his  
application for Oregon registration dated February 17, 1989."



Approximate Scale in Miles

Source: U.S.G.S.  
7.5-min. quadrangle map,  
Lake Oswego, OR (1984).



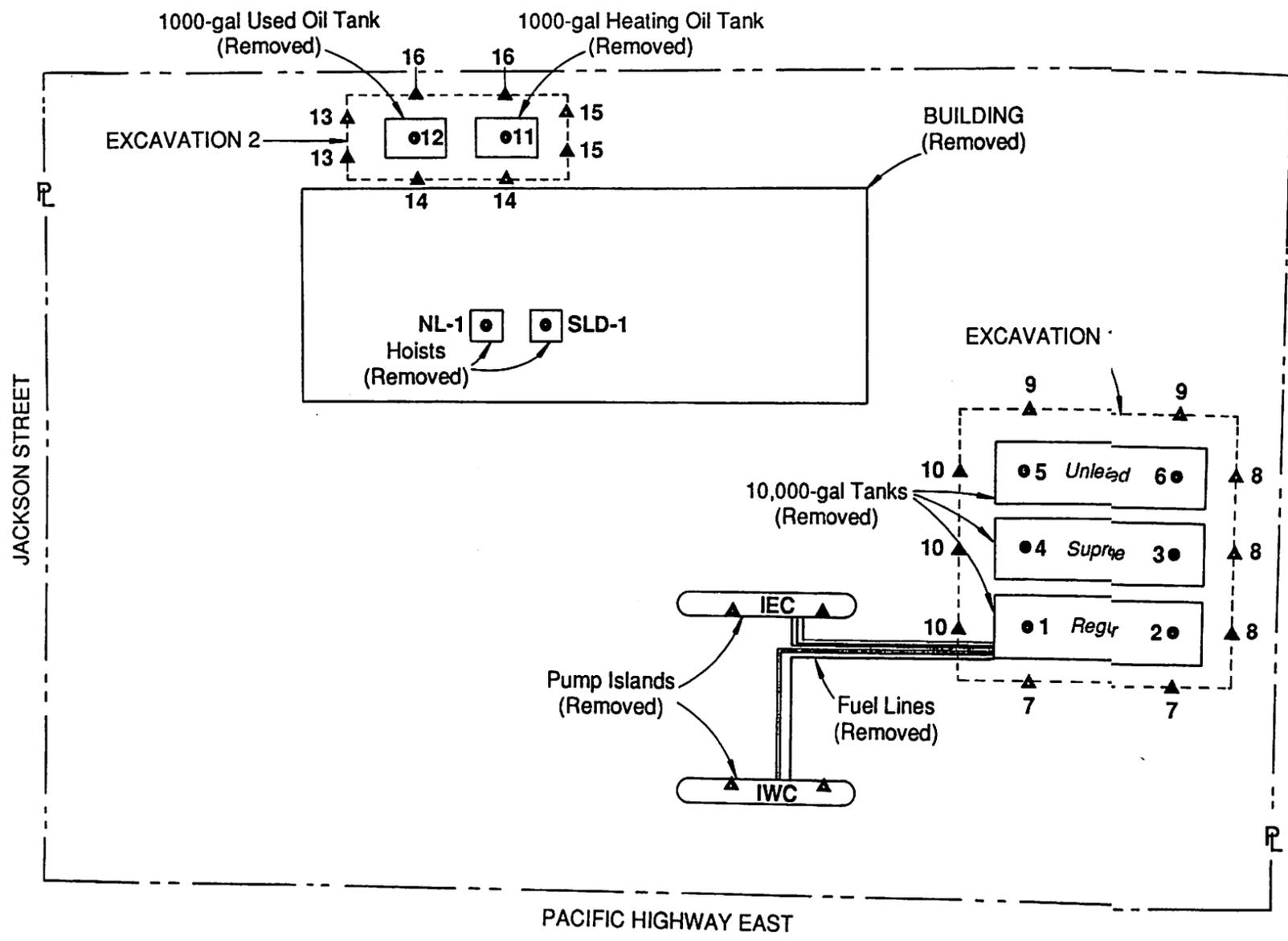
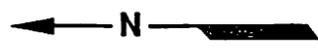
Date: April 1989  
Project Number: 5E-1013

Chevron U.S.A. Inc.  
Service Station 3541/Milwaukie, OR

**SITE LOCATION MAP**

Figure

**1**



Soil Sample Identification Codes and Description of Sampling Locations.

<u>SAMPLE I.D.</u>	<u>SOIL SAMPLE LOCATION DESCRIPTION</u>
SS-1 & SS-2	Discrete samples from beneath bottom of regular gasoline tank
SS-3 & SS-4	Discrete samples from beneath bottom of supreme gasoline tank
SS-4 & SS-5	Discrete samples from beneath bottom of unleaded gasoline tank
SS-7	Discrete samples from west wall of Excavation One
SS-8	Discrete samples from south wall of Excavation One
SS-9	Discrete samples from east wall of Excavation One
SS-10	Discrete samples from north wall of Excavation One
SS-11	Discrete sample from beneath bottom of heating oil tank
SS-12	Discrete sample from beneath bottom of used oil tank
SS-13	Discrete samples from north wall of Excavation Two
SS-14	Discrete samples from west wall of Excavation Two
SS-15	Discrete samples from south wall of Excavation Two
SS-16	Discrete samples from east wall of Excavation Two
NL-1	Discrete sample from about one foot beneath northern hydraulic hoist ram
SLD-1	Discrete sample from about one ft. beneath southern hydraulic hoist ram
SLC-1	Composite sample from about one five ft. beneath southern hydraulic hoist ram
IEC	Composite sample from beneath eastern pump island
IWC	Composite sample from beneath western pump island

EXPLANATION

- Discrete Sample Location
- ▲ Composite Sample Location
- Approximate Excavation Limits



Source: Chevron U.S.A. Inc. drawing (August 11, 1969).

	Chevron U.S.A. Inc. Service Station 3541/Milwaukie, OR	Figure <b>2</b>
	<b>SITE PLAN AND SAMPLING LOCATIONS</b>	
Date: April 1989 Project Number: 5E-1013		



19730 64th Ave. W., Suite 202  
Lynnwood, WA 98036  
(206) 775-8750

APPENDIX A  
ANALYTICAL CHEMISTRY RESULTS

CLIENT: Thorne Environmental

DATE RECEIVED: 2/21/89

REPORT TO: Alan Sprott

DATE REPORTED: 3/10/89

JOB NO.: 5E-1013

GC ANALYSIS OF PURGEABLE AROMATIC COMPOUNDS BY EPA METHOD 8020

Laboratory Sample Nos.	Blank*	902193	902194	DETECTION LIMIT (mg/kg)
Client Identification	---	Composite of S-1-1 & S-2-1	S-7-1	
Benzene	ND	ND	ND	0.005
Toluene	ND	ND	ND	0.005
Chlorobenzene	ND	ND	ND	0.005
Ethylbenzene	ND	ND	ND	0.005
m+p-Xylene	ND	ND	ND	0.010
o-Xylene	ND	ND	ND	0.005
1,3-Dichlorobenzene	ND	ND	ND	0.005
1,4-Dichlorobenzene	ND	ND	ND	0.005
1,2-Dichlorobenzene	ND	ND	ND	0.005

m-Xylene & p-Xylene coelute.

ND = Not Detected.

All results are reported in mg/kg.

\*Quality Assurance (QA) sample

CLIENT: Thorne Environmental

REPORT TO: Alan Sprott

DATE RECEIVED: 2/21/89

DATE REPORTED: 3/10/89

JOB NO.: 5E-1013

GC ANALYSIS OF PURGEABLE AROMATIC COMPOUNDS BY EPA METHOD 8020

Laboratory Sample Nos.	902207	902193 Duplicate Composite of S-1-1 & S-2-1*	DETECTION LIMIT (mg/kg)
Client Identification	IEC		
Benzene	ND	ND	0.005
Toluene	ND	ND	0.005
Chlorobenzene	ND	ND	0.005
Ethylbenzene	ND	ND	0.005
m+p-Xylene	ND	ND	0.010
o-Xylene	ND	ND	0.005
1,3-Dichlorobenzene	ND	ND	0.005
1,4-Dichlorobenzene	ND	ND	0.005
1,2-Dichlorobenzene	ND	ND	0.005

m-Xylene & p-Xylene coelute.

ND = Not Detected.

All results are reported in mg/kg.

\*Quality Assurance (QA) sample

CLIENT: Thorne Environmental

REPORT TO: Alan Sprott

DATE RECEIVED: 2/21/89

DATE REPORTED: 3/10/89

JOB NO.: 5E-1013

GC ANALYSIS OF PURGEABLE AROMATIC COMPOUNDS BY EPA METHOD 8020

Laboratory Sample Nos.	902195	902196	902197	DETECTION LIMIT (mg/kg)
Client Identification	Composite of S-3-1 & S-4-1	Composite of S-5-1 & S-6-1	S-8-1	
Benzene	ND	ND	ND	0.005
Toluene	ND	ND	ND	0.005
Chlorobenzene	ND	ND	ND	0.005
Ethylbenzene	ND	ND	ND	0.005
m+p-Xylene	ND	ND	ND	0.010
o-Xylene	ND	ND	ND	0.005
1,3-Dichlorobenzene	ND	ND	ND	0.005
1,4-Dichlorobenzene	ND	ND	ND	0.005
1,2-Dichlorobenzene	ND	ND	ND	0.005

m-Xylene & p-Xylene coelute.

ND = Not Detected.

All results are reported in mg/kg.

CLIENT: Thorne Environmental

DATE RECEIVED: 2/21/89

REPORT TO: Alan Sprott

DATE REPORTED: 3/10/89

JOB NO.: 5E-1013

GC ANALYSIS OF PURGEABLE AROMATIC COMPOUNDS BY EPA METHOD 8020

Laboratory Sample Nos.	902198	902199	902206	DETECTION LIMIT (mg/kg)
Client Identification	S-9-1	S-10-1	IWC	
Benzene	ND	ND	ND	0.005
Toluene	ND	ND	ND	0.005
Chlorobenzene	ND	ND	ND	0.005
Ethylbenzene	ND	ND	ND	0.005
m+p-Xylene	ND	ND	ND	0.010
o-Xylene	ND	ND	ND	0.005
1,3-Dichlorobenzene	ND	ND	ND	0.005
1,4-Dichlorobenzene	ND	ND	ND	0.005
1,2-Dichlorobenzene	ND	ND	ND	0.005

m-Xylene & p-Xylene coelute.  
ND = Not Detected.  
All results are reported in mg/kg.

CLIENT: Thorne Environmental

DATE RECEIVED: 2/21/89

REPORT TO: Alan Sprott

DATE REPORTED: 3/10/89

JOB NO.: 5E-1013

## GC ANALYSIS OF PURGEABLE AROMATIC COMPOUNDS BY EPA METHOD 8020

Laboratory Sample Nos.

902193

Client Identification

SPIKE RECOVERY

Composite of

S-1-1 &amp; S-2-1\*

---

Benzene	102.
Toluene	99.
Chlorobenzene	108.
Ethylbenzene	99.
m+p-Xylene	100.
o-Xylene	106.
1,3-Dichlorobenzene	109.
1,4-Dichlorobenzene	109.
1,2-Dichlorobenzene	107.

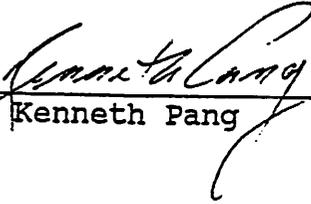
m-Xylene &amp; p-Xylene coelute.

All results are reported in percent (%).

\*Quality Assurance (QA) sample

KP/pb

REPORTED BY

  
Kenneth Pang



AmTest Inc.

Professional  
Analytical  
Services

14603 N.E. 87th St.  
Redmond, WA  
98052

Fax: 206 883 3495

Tel: 206 885 1664

ANALYSIS REPORT

CLIENT: Thorne Environmental

DATE RECEIVED: 2/21/89

REPORT TO: Alan Sprott  
19730 - 64th Avenue West  
Suite 205  
Lynnwood, WA 98036

DATE REPORTED: 3/10/89

JOB NO.: 5E-1013

Laboratory Sample Nos.	Client Identification	Total Petroleum Hydrocarbons (ug/g)
902200	S-11-1	58.6 64.9]
902201	S-12-1	6.2
902202	Composite (S-13-1 through S-16-1)	64.9
902203	SLD-1	2,350.
902204	SLC-4	252.
902205	NL-1	67.0

Analysis was performed by EPA Method 418.1.



March 13, 1990

Chevron U.S.A. Inc.  
P.O. Box 220  
Seattle, Washington 98111

Attention: Mr. E.H. Groves

Subject: Disposal of Soils at St. Johns Landfill  
Decommissioned Chevron U.S.A. Inc. Service Station 3541  
10808 SE McLaughlin Blvd.  
Milwaukie, Oregon 97222

Dept. of Environmental Quality SE-1013-01  
**RECEIVED**  
APR 26 1990

NORTHWEST REGION

Mr. Groves:

This letter provides documentation of the disposal of about 10 cubic yards of soils to the St. Johns Landfill. These soils originated from decommissioned Service Station 3541 at the above referenced address. Our activities were completed in accordance with guidance from Chevron U.S.A. Inc.

### 1.0 Introduction

Thorne Environmental, Inc. was retained to observe and document the removal of the underground storage tanks and associated equipment during the demolition of Service Station 3541. Our scope of work included collecting soil samples from the excavations used to remove these structures. The analytical chemistry data for the samples showed that soils in the vicinity of the southernmost vehicle-hoist hydraulic ram contained up to 2,350 mg/kg of Total Petroleum Hydrocarbons (TPH) as determined by EPA Method 418.1. Since this concentration exceeded the existing regulatory agency standards, the soils with hydrocarbon-like odors and/or staining in this area were then excavated and stockpiled on-site. Our findings and observations for these operations are documented in our April 4, 1989 report to Chevron U.S.A. Inc. titled, "Preliminary Environmental Assessment". Our work was completed under Release Number 9, dated February 15, 1989, of Contract M66CNW01669X.

### 2.0 Soil Disposal Arrangements

Soil samples were collected from the stockpiled soils on October 14 and November 13, 1989. This information was needed to evaluate final disposal options for the soils. Based on the analytical chemistry results which indicated that the TPH concentrations in the stockpiled soils ranged from 11 mg/kg to 300 mg/kg, we prepared a disposal permit application for the St. Johns Landfill. Disposal Permit Number 2046 was then issued to Chevron U.S.A. Inc. by the Portland Metro Service District.

At the request of Chevron U.S.A. Inc., we retained a contractor to haul the stockpiled soils from the site to the St. Johns Landfill. We arranged this with W.G. Moe & Sons, Inc. of Portland, Oregon. Our representative observed the removal of the soils from the site on November 2, 1989. Since the landfill was closed by the time the soils were loaded, the soils could not be hauled to the landfill until the morning of November 3, 1989. However, the landfill personnel refused to accept the materials since 24-hours advance notification had not been provided by

4-24-90

MR. LOREN GARNER

THE ATTACHED LETTER  
IS FOR YOUR INFORMATION  
AND FILES. IT INCLUDES  
THE RECEIPT FROM  
ST. JOHNS LANDFILL.

HAL GROVES.

Chevron U.S.A. Inc.  
March 13, 1990

Page 2  
5E-1013-01

the contractor. To reduce trucking and loading expenses in transporting the soils, Chevron U.S.A. Inc. approved hauling the soils to the W.G. Moe & Sons, Inc. equipment yard in Portland for temporary storage until disposal could be rearranged. We requested the contractor to place plastic sheeting beneath the soils and to maintain a cover of plastic sheeting over the stockpile until disposal could be completed.

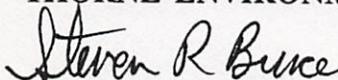
Before the disposal was rescheduled, Mr. Loren Garner of the Oregon Department of Environmental Quality (ODEQ) contacted us and requested additional sampling and analysis of the materials. We visited the W.G. Moe & Sons, Inc. equipment yard on November 13, 1989 to conduct the additional sampling and confirm that the stockpile was still enclosed within plastic sheeting. The analytical chemistry results are documented in our November 22, 1989 letter to Mr. Garner. Following Mr. Garner's approval for the disposal, we resubmitted a disposal permit application to the Portland Metro Service District since the previous permit (#2046) had expired as of November 30, 1989. The new permit number issued to Chevron U.S.A. Inc. was 2172.

We understand that the soils were reloaded into a truck and transported to the St. Johns Landfill on March 2, 1990; this is based on our conversations with Georgia Moe at W.G. Moe & Sons, Inc. and the enclosed copy of the landfill disposal ticket from St. Johns Landfill. We also visited the W.G. Moe & Sons, Inc. equipment yard on March 12, 1990 and confirmed that the soil stockpile was gone from the area where it had been stored.

We appreciate this opportunity to be of continued service to Chevron U.S.A. Inc. Please call us at (206) 525-9168 should you have any questions about this project.

Sincerely,

**THORNE ENVIRONMENTAL, INC.**

A handwritten signature in cursive script that reads 'Steven R. Bruce'.

Steven R. Bruce  
Hydrogeologic Services Manager

A handwritten signature in cursive script that reads 'William F. Galli' with the initials 'LRB' written to the right.

William F. Galli, P.E.  
Principal Engineer

# St. Johns Landfill & Recycling Center

9363 N. Columbia Blvd. Portland, OR 97203 503/286-9613

541037

## METRO

2000 S.W. First Avenue  
Portland, OR 97201-3398  
503/221-1646

*6000  
Thorne Environmental*

Terms: NET 30 DAYS. A finance charge of 1-1/2% per month, 18% per annum, will be made on all accounts over 30 days past due.

REMARKS

Remittance: FRIDAY, NEXT BEST THING TO PAY NOW!

Account Name: WG MOE & SON

Pay in #2172

TICKET NUMBER	TIME		DATE			ACCOUNT NUMBER	STATION	WEIGH-MASTER	WEATHER	HAULER	VEHICLE NUMBER	MATERIAL	YARDAGE	COUNTY
	HOURS	MIN.'S	MONTH	DAY	YEAR									
1277	07:44		03	03	99	5079	5011	571		10	5879	15	15	WALL

22080 Gross Wt 1b \$ 245.59  
12460 Net Wt 1b \$ 0  
10620 Net Wt 1b \$ 0  
5.51 Fee (TW)

Tie Charge \$ 245.59  
Card Waiver \$ 0.00  
Special Fee \$ 0.00  
Total Fee \$ 245.59

Deposit \$ 0.00  
Tendered \$ 0.00  
Change \$ 0.00

Rate \$ 46.25/TN

I CERTIFY THAT THIS  
LOAD WAS GENERATED IN  
WASHINGTON, MULTNOMAH  
OR CLACKAMAS COUNTY

### THANK YOU

*Roy [Signature]*  
Signature

AR BILL  
COPY FOR  
JOB FILE HOPELY BILL

\* L U S T F O R M \*

INCIDENT INFORMATION

LUST Incident Nbr: \_\_\_\_\_ LUST Log Nbr: 03-89-068 UST Facility ID: 1075
Date Received: 4/25/89 Received By: L. G. Garner Emergency Resp Taken: Y (N)
Tank Identification: Tank Owner: Chevron Station #3541
Street: 10808 SE Mahanahlin Blvd
City: Milwaukie Zip: 97222
County: Clack Phone: \_\_\_\_\_

Incident Comments: \_\_\_\_\_

CONTACT & MAIL TYPES

Reported By: Alan Spratt LUST Contact: \_\_\_\_\_ Responsible Party: Myron Smith
Name: \_\_\_\_\_ Name: \_\_\_\_\_
Company: Thorne Envmt. Company: Chevron USA
Street: 19730 64th Ave SW St 202 Street: P.O. Box 220
City: Seaside Zip: 97036 City: Seaside Zip: 97131
State: WA Phone: 206-775-8750 State: WA Phone: \_\_\_\_\_

SITE ASSESSMENT

LUST Incident Nbr: (XXXXXXXXXXXX)
Date Investigated: 4/28/89 Investigated By: LBG. Py Place
Release Exists: (Y) N Confirmation Method: A)Staff B)Lab:DEQ (C)Lab:RP D)Lab:Other E)RP F)Other
Cleanup Necessary: (Y) N Regulated Tank: Y (N) Hyd. Lift system Exposure Assessment: Y (N)
Off-Site Migration: Y (N) ? Estimated Gallons Released: Unk Priority: \_\_\_\_\_
Discovery Date: 3/10/89
How Discovered: A)Routine Monitoring B)Inventory Control C)Decommissioning D)Site Assessment
(E)Complaint F)Tank Test (G)Other Station Demolition
Material Released: A)Unleaded Gasoline B)Leaded Gasoline C)Misc. Gasoline
D)Diesel E)Fuel Oil F)Waste Oil
G)Lubricant H)Solvent I)Bunker Fuel
(J)Other Pet. Dist. Hyd. Oil K)Chemical L)Unknown
Source of Release: A)Tank Leak B)Pipe Leak C)Overfill D)Surface Spill
E)Pump/Valve Leak F)Other (G)Unknown - Lift System
Impacts: Soil (Y) N % ?
Groundwater Y (N) % ?
Surface Water Y (N) % ?
Drinking Water Y (N) % ?
Facility (Vapor) Y (N) % ?
Facility (Free Product) Y (N) % ?

Site Assessment Comments: \_\_\_\_\_

SITE MANAGEMENT

LUST Incident Nbr: (XXXXXXXXXXXX)
Date Released Stopped: \_\_\_\_\_
Cleanup Activity: Start Date: 2-21-89 Under Control Date: 2-21-89
End Date: 3-10-89 Contractor Name: Blakely Const
Cleanup Guideline: Matrix C.A.P. Cleanup Lead: RP SLW/TF SLW/OTF
Free Product Disposal: \_\_\_\_\_ Soil Disposal: 8-10 yds
Est. Gallons: \_\_\_\_\_ Est. Cu/Yds:
Resp. Party: \_\_\_\_\_ Resp. Party: Thorne Envmt + 1
Disposal Location: \_\_\_\_\_ Disposal Location: St Johns
Removal Date: \_\_\_\_\_ Removal Date:
Enforcement Action: Y (N)
Cost Recovery Initiated: Y (N) Source of Cost Recovery: Pct. R.P.:
Pct. SLW/TF:
Pct. SLW/OTF:
Estimations: Cost of Cleanup: \_\_\_\_\_ Staff Time On Project: 5

Site Management Comments: \_\_\_\_\_

Sent NWR  
1/30  
JAN 30 1989

### NOTICE OF UNDERGROUND STORAGE TANK PERMANENT DECOMMISSIONING

**Facility:**

Name CHEVRON USA TAC  
Address 10808 SE McLOUGHLIN BLVD.  
MILWAUKEE, OR. 97222  
Phone 206 628 5266  
Facility ID Number 9-3541

Tank Owner Environmental Cleanup Division  
Name: CHEVRON USA INC  
Address PO BOX 220  
SEATTLE, WA 98111  
Phone 206 628 5266

**Permanent Decommissioning Performed By:**

Company CHEVRON USA TAC Phone \_\_\_\_\_  
Scheduled Date for Permanent Decommissioning 2-7-89 APPROX  
Method to be used: Removal  In-Place \_\_\_\_\_ Fill Material \_\_\_\_\_

**Tanks to be Decommissioned**

Tank ID#	Tank Age	Tank Size	Last Product Stored
1	4 YRS	10000	GASOLINE
2		10000	
3		10000	
4		1000	WASTE OIL
5		1000	FUEL OIL

Are the decommissioned tanks to be replaced by new underground storage tanks? Yes  No   
If yes, please submit a new permit application containing information on the new tanks.

**Where and how will the old tanks be disposed?**

FLUSH CLEAN  
Scrap Name \_\_\_\_\_ Location \_\_\_\_\_  
Landfill Name \_\_\_\_\_ Location \_\_\_\_\_  
Stored Name \_\_\_\_\_ Location \_\_\_\_\_  
Other Comment REMOVED FROM SITE SHIPPED TO (CANADA)

Signature D.M. Terman Date 1-12-89

Return Completed Form To:

Department of Environmental Quality  
UST Program - Decommissioning Notice  
811 SW Sixth Ave.  
Portland, Oregon 97204

For Information: (503) 229-5559 or Toll Free in Oregon 1-800-452-4011