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ENVIRONMENTAL ASSESSMENT - PHASE I

JIFFY LUBE INTERNATIONAL STORE #1012

17869 S.E. McLOUGHLIN BOULEVARD

MILWAUKIE, OREGON

DELTA PROJECT NO. ~~43-93-011~~ 03-93-008

Delta
Environmental
Consultants, Inc.

ENVIRONMENTAL ASSESSMENT - PHASE I

JIFFY LUBE INTERNATIONAL STORE #1012

17869 S.E. McLOUGHLIN BOULEVARD

MILWAUKIE, OREGON

DELTA PROJECT NO. 43-93-011

Prepared by:

Delta Environmental Consultants, Inc.

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649-9663

June 10, 1993

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ENVIRONMENTAL ASSESSMENT - PHASE I

JIFFY LUBE INTERNATIONAL STORE #1012
17869 S.E. McLOUGHLIN BLVD.
MILWAUKIE, OREGON
DELTA PROJECT NO. 43-93-777

1.0 INTRODUCTION

1.1 Purpose

Delta Environmental Consultants, Inc. (Delta), performed a Level I Environmental Assessment of the Jiffy Lube Store No. 1012 located at 17869 S.E. McLoughlin Boulevard in Milwaukie, Oregon (Figure 1). The purpose of this assessment was to evaluate the subject site with respect potential environmental impacts which may have resulted from the current or past use of the subject site or nearby properties. Authorization to perform this assessment was provided by Mr. Rick Anderson of Pennzoil Company on May 12, 1993.

1.2 Scope of Work

The scope of services performed for this project consisted of:

1. Collecting, reviewing, and evaluating historical information from the following:
   - Pennzoil Company;
   - City of Portland Engineering, and Utilities Departments;
   - Ms. Vi Pletcher, the current station manager;
   - Review available aerial photographs for the project site and vicinity;
   - Review of Regulatory Agency Information;
   - Discussions with people knowledgeable about the history of the subject area and former site activities;

2. Conducting a site reconnaissance of the property, including sampling and analytical testing of soils suspected to contain petroleum products (presented under separate cover as a Phase II report);

3. Conducting a reconnaissance of the site vicinity for obvious sources of contaminants with the potential to impact the subject property;

4. Reviewing available regulatory agency databases for sites with the potential to impact the subject site.

5. Assessing the geological, hydrogeological and topographical features of the subject property and immediate vicinity;

6. Preparing this report which includes our data, conclusions, and recommendations.

2.0 CURRENT CONDITIONS

2.1 Site Reconnaissance

A site reconnaissance was performed by a representative of Delta on May 12, 1993. This reconnaissance consisted of walking the site and recording any pertinent observations regarding the current use or condition of the property. Photographs taken during our site reconnaissance are included in Appendix A.

At the time of this reconnaissance, the subject site was occupied by a Jiffy Lube Facility and a Flying J Company gas station. The retail building consists of approximate 2600 square feet concrete masonry unit (CMU) structure. The approximate layout of the project building is presented on the site map, Figure 2. The buildings interior primarily consists of an open service area occupied by the Jiffy Lube Facility located at the west end of the structure, a lower level, a small retail area, two offices, and an auto parts storage room. The service area consists of a series of four auto service bays with service pits (no hydraulic lifts were present). The lower level beneath the auto service station is utilized primarily for employees to service cars, as well as, to store product overstock and above ground tanks for fresh and used oil. The eastern portion of the building is occupied by the Flying J Gas Station, consisting of two small offices and restrooms.

Located immediately outside (south) of the Jiffy Lube service area are five inactive bulk oil USTs.

The area surrounding the site building is asphalt paved for customer parking or drive through. No evidence of pad mounted transformers were present on the site property. Numerous fluorescent light fixtures are present in the on-site structure. These fixtures were inaccessible, and it could not be determined if they utilized ballasts containing PCB fluids.

On the eastern portion of the site property are three pump islands covered by a canopy. To the northwest of the pump islands are four UST fill ports bordered on the north by a diesel pump island. To the immediate west of the diesel pump island are four vertical steel vent pipes for the USTs.

A number of storm drain catch basins are present in the parking area around the building. It appears that surface water drains toward these storm drain catch basins. No surface water was observed on the property at the time of our reconnaissance.

Delta performed a site reconnaissance to document current site conditions and as every effort was made to conduct the site reconnaissance within the project time and budget allotted. Delta focused on property areas deemed more likely to exhibit hazardous materials or adverse conditions while other areas may have received limited attention, or may have been inaccessible at the time of our reconnaissance.

3.0 SITE HISTORY

3.1 Review of Chain of Title

The chain of titled ownership of the subject property was reviewed by Stewart Title Company, Clackamas County, Inc., who supplied Delta with a Recorded Document Guarantee. Recorded documents dating to 1931 were summarized in their report. The transactions related to this property indicate this lot (lot 51) has in the past always been associated with several other lots (lots 50, 49 and 48) located to the south of the project site. The listed prior ownership of the property has generally been in private hands, or investment companies. From 1976 until 1992, the property was held by Flying J Oil Company, a Utah Corporation. In 1992 the property was sold to Calls Investment Company, another Utah based limited partnership. The chain of title report is included as Appendix B.

3.2 Aerial Photographs

Aerial photographs of the subject site and vicinity were obtained from Northern Light Studio of Portland, Oregon. Photos were available for the years 1942, 1964, 1973, 1980, and 1988. The aerial photographs are included in Appendix C. Based on a review of these photos it appears that the subject site has been developed as it currently exists since at least 1980. Prior to it's current configuration, it appears that the site was an undeveloped portion of a truck stop. The following is a brief discussion of our interpretation of these photos:

1942 The subject site and the immediate surrounding area were generally undeveloped. The area surrounding the subject site is primarily residential properties with dispersed commercial sites located mainly along McLoughlin Boulevard. The types of businesses which occupy these properties could not be determined.

1964 The subject site remains undeveloped. A commercial building is located directly south

of the subject site and was surrounded by what appears to be semi-trucks. This is apparently a truck stop and it appears that several pump islands are present in front of the structure.

1973 The subject site remains undeveloped, however, semi-trucks are parked on the sites property. The building immediately south of the project site exists as it did in the previous aerial photograph. The surrounding area has developed both commercially and residentially. Residential development as expanded east and west of the subject site were as commercial development has expanded primarily along McLoughlin Boulevard.

1980 The subject site building exists as it currently exists today. The structure to the south of the project site appears to be unchanged, however the surrounding area has been paved. A structure has been built to the immediate south of the project site and it's surrounding property is paved for parking. The property to the north of the project site remains undeveloped. The surrounding area has expanded both commercially and residentially.

1988 The subject site and surrounding properties exist as they are currently constructed today.

3.3 Anecdotal Information

An interview was conducted with the current manager of the Jiffy Lube, Ms. Vi Pletcher. Ms. Pletcher indicated that the Flying J Service Store has occupied the subject site since approximately 1978 and possibly earlier. The manager also indicated that five bulk oil underground storage tank (UST) on the property were inactive for approximately the last three years and that there are accumulations of water in some of the tanks.

Ms. Pletcher also indicated that in February of 1993, free product was discovered while installing a second stage vapor system for the fuel USTs and pump islands. Approximately 20 yards of contaminated soils were excavated, stockpiled on site and covered with visqueen at that time. The soil was present during our site investigation but will reportedly be removed within one month.

4.0 SURROUNDING LAND USE

4.1 Site Vicinity Reconnaissance

On May 12, 1993 Delta conducted a reconnaissance of the site vicinity. The purpose of this reconnaissance was to look for nearby properties which may have the potential to adversely impact the subject property. This

reconnaissance was limited to the area within approximately one-half of a mile of the parcel. The site and immediate surrounding properties are presented on the site vicinity map, Figure 3.

The project site is located in an area dominated by commercial, retail and restaurant properties. Single family residential properties are also present in the immediate vicinity.

The site is bordered on the south by Busters Best Barbecue Restaurant. Immediately west of the subject site are several single family residential properties. To the north of the site there is a brake and muffler shop. To the east of the site, across McLoughlin Boulevard, there is a U-Haul dealership and several small commercial shops. Beyond these sites, to the north and south are more small commercial businesses. These consist of auto dealerships, autobody shops, restaurants, retail and shops, service stations and motels.

Of the noted surrounding properties, the service station (Texaco) to the south of the site is the most likely off-site potential source of environmental impacts to the property. However, the ground surface in the area slopes significantly to the west, toward the Willamette River. Groundwater would most likely migrate towards the river, suggesting that significant plumes of groundwater contaminants from any sources in this direction would move to the west, away from the subject site.

5.0 REGULATORY REVIEW

A review of information available through regulatory agencies was performed as a part of this assessment. We reviewed the following records from the United States EPA and the Oregon State Department of Environmental Quality (DEQ) for those sites within an approximate one-half mile radius of the subject property:

- EPA Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS);
- EPA Resource Conservation and Recovery Act (RCRA);
- DEQ Environmental Cleanup Division (ECD);
- DEQ Hazardous Waste Handlers (HW Handlers) List;
- DEQ Registered Underground Storage Tank (UST) site list;
- DEQ Registered leaking Underground Storage Tank (LUST) site list;

Those sites identified within approximately a one-half mile radius of the subject property are shown on Figure 5.

5.1 U.S. EPA CERCLIS Data Base

The CERCLIS data base is used by the U.S. EPA to track activity conducted under the Superfund Program. Sites placed on this inventory include those which may be hazardous and require a preliminary investigation, sites for

which no action is planned based on a preliminary investigation, and sites that are classified as National Priority List (NPL) sites which are determined to represent a long term threat.

A review of this data base for Milwaukie (all listings with the zip code 97222) revealed no sites within the one-half mile radius search area.

5.2 EPA RCRA Data Base

The RCRA data base is a list of regulated generators, handlers, transporters and disposers of hazardous materials. Being on the RCRA data base does not indicate that a facility has been adversely affected by a hazardous material, however, it may indicate that there is a potential for the site to have been impacted.

The following sites on this data base were noted to be within approximately a one-half mile radius of the site:

- J & M Auto Import Rebuilders Inc., small quantity generator.
- Gladstone Auto Body & Paint Co., 16700 S.E. McLoughlin Blvd., transporter.
- Town & Country Chrysler, 16803 S.E. McLoughlin Blvd., small quantity generator.
- Valet Cleaners, 15020 S.E. McLoughlin Blvd., conditionally exempt.

None of the listed sites appear to be in a condition or location to have potential to impact the subject site.

5.3 DEQ ECD Data Base

The Environmental Cleanup Division (ECD) List report lists sites which, after an initial investigation, are determined to require further action. These sites may require additional investigation(s), remedial action, or monitoring of remediation.

Based on our review of this data base the ECD list did not include any sites within a one-half mile radius of the subject property:

5.4 DEQ Registered UST Data Base

The Registered Underground Storage Tank (UST) data base is a list of sites which have USTs that are registered with DEQ. This data base does not indicate whether or not a release has occurred at the listed sites.

The following sites were listed within our one-half mile radius search.

- Flying J Service Station, 17873 S.E. McLoughlin Blvd. — 9 tanks
- Jiffy Lube, 17869 S.E. McLoughlin Blvd. — 4 tanks

• Bob Frink Chevrolet, 16700 S.E. McLoughlin Blvd.	3 tanks
• Firestone Store #3556/021954, 15340 S.E. McLoughlin Blvd.	1 tank
• G.I. Joes, 15600 S.E. McLoughlin Blvd.	1 tank
• Gladstone, 18777 S.E. McLoughlin Blvd.	6 tanks
• Goodyear Auto Service Center, 15815 S.E. McLoughlin Blvd.	1 tank
• Hudson # 105, 17185 S.E. McLoughlin Blvd.	3 tanks
• McCartney Automotive, Inc., 17627 S.E. McLoughlin Blvd.	3 tanks
• Precision Tune, 16651 S.E. McLoughlin Blvd.	3 tanks
• Texaco Station, 18122 S.E. McLoughlin Blvd.	4 tanks
• Town & Country Chrysler, 16803 S.E. McLoughlin Blvd.	1 tank
• Ruth Bany, 18410 S.E. McLoughlin Blvd.	1 tank
• Bob Frink Hyundai, 16900 S.E. McLoughlin Blvd.	1 tank
• Chevron U.S.A. Inc. #94637, 15710 S.E. McLoughlin Blvd.	8 tanks
• J & M Auto Import Inc., 16420 S.E. McLoughlin Blvd.	1 tank
• Oak Grove Disposal Co., 16911 S.E. McLoughlin Blvd.	1 tank
• Practical Used Car Rental, 16001 S.E. McLoughlin Blvd.	1 tank
• Town & Country Chrysler, 16800 S.E. McLoughlin Blvd.	2 tanks

The 9 tanks registered at the Flying J include the four active fuel tanks (3 gasoline, 1 diesel), as well as 5 bulk petroleum tanks which are also listed as active. The site manager indicated these bulk oil tanks are no longer in active use. The four tanks registered to Jiffy Lube were not observed on the site, or may be the same inactive bulk oil tanks registered to Flying J Service Station.

This database search located 19 registered underground storage tank sites within the one-half mile radius search area. The tank sites are generally concentrated on one main thoroughfare, S.E. McLoughlin Boulevard. Of these, the closest sites to the subject site (within approximately four blocks) are a Texaco Station to the south, McCartney Automotive to the north, and the Hudson Station to the north. Due to the distance and/or cross-gradient nature of these sites relative to the subject site, it appears unlikely that the listed sites would have potential to impact the subject property.

The DEQ listing of the registered tanks is updated regularly, regarding the status and age of tanks throughout the state. Regardless, there may be other tanks that have not been registered, or are exempted from regulation (such as heating oil tanks) that may be in the vicinity of the site.

5.5 DEQ LUST Data Base

The Leaking Underground Storage Tank (LUST) data base lists sites that have been reported to DEQ because a release from a UST has occurred. DEQ states that the database is not maintained on a regular basis, and that other sites may be present. The following sites were within one-half mile of the site:

- Flying J Service Station, 17873 S.E. McLoughlin Blvd.
- Hudson Station #105, 17185 S.E. McLoughlin Blvd.
- Texaco Station, 18122 S.E. McLoughlin Blvd.
- Discount Tire Center, 18101 S.E. McLoughlin Blvd.
- Practical Rent-A-Car, 16001 S.E. McLoughlin Blvd.
- Firestone Stores 3558/021954, 15340 S.E. McLoughlin Blvd.
- Vista Convenience Store, 14666 S.E. River Rd.
- J & M Auto Import, Inc., 16420 S.E. McLoughlin Blvd.
- Rally Auto Mart, 15025 S.E. McLoughlin Blvd.

At the time of our investigation the ODEQ supplied Delta with the Flying J Service Station LUST file. The file indicated that on January 13, 1993, free product was discovered while installing a second stage vapor system. This release was reported to DEQ in the proper manner by the Flying J Company. At the time of the discovery soil samples were collected and analyzed by Coffey Laboratories of Portland, Oregon. The analytical results indicated concentrations of total petroleum hydrocarbons as gasoline at 1000 ppm (parts per million). The file indicates that the source of contamination was due to a fuel line leak and both soil and ground water had been impacted at the time of the release. The file contained no record of further investigation or action. A copy of the Initial Report Form for UST Clean-up projects documentation was supplied by the Department of Environmental Quality and is included as Appendix D.

Also included in the file was a report of an above ground release in 1988 due to a valve leak in the pump. Approximately 81 gallons were released and immediately cleaned up. A formal report was requested by the ODEQ several times before any response occurred. DEQ threatened fines, however, further information was not included in the file. A copy of Flying J's submittal to DEQ is included as Appendix D.

At the time of our site reconnaissance, a waste oil tank was observed on the site (Ed's Brake and Muffler Shop) immediately north of the project site, however, the site was not observed in the UST list. The Discount Tire Store located two buildings to the south of the project site is mentioned in the LUST list but was not observed in the UST list.

All of the other sites indicated above are located to the north or south of the subject site. It appears unlikely that the sites listed would impact the subject site given their locations relative to the subject site.

5.6 DEQ HW Handlers Data Base

The HW Handlers data base lists operators that report to the DEQ because they transport or handle (but do not generate) hazardous waste on their site.

Based on our review of this data base the HW Handlers list indicated one site within the one-half mile radius search area. This site was listed as the Goodyear Auto Service Center, located at 15815 S.E. Mcloughlin Blvd. Due to this sites location the potential for environmental impacts to the subject property is low.

6.0 GEOLOGY, HYDROGEOLOGY AND TOPOGRAPHY

6.1 Geology

Published geologic data (Soil Conservation Services, 1992) was reviewed to provide an indication of setting of the project site. The City of Milwaukie is located in the northern portion of the Willamette River Valley. This area is described as consisting of Pleistocene alluvial deposits overlying volcanic and sedimentary deposits of the Mesozoic age. In this area these alluvial deposits generally consist of silts and sands of varying thicknesses.

6.2 Hydrogeology

Based on the topography of the area, regional ground water flow is estimated to be towards the west, towards the Willamette River. Groundwater is estimated to be at or above the elevation of the Willamette River, or less than approximately 10 feet below ground surface at the site. Groundwater migration would be expected to be toward the Willamette River, generally to the west of the subject site.

6.3 Topography

Topographically the subject property is relatively level. However, the general topography in the immediate vicinity of the subject site appears to slope slightly to the northwest towards the Willamette River. Immediately east of the site the ground surface is generally flat.

7.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the reconnaissance of the subject property and surrounding area, it appears that there is potential for environmental concerns on the subject property. Reports to the ODEQ indicated free product has been observed

on site, and a stockpile of contaminated soil was observed. Numerous USTs are present on-site, some of which are inactive but not properly abandoned. Based on the findings of our evaluation it is our opinion that further evaluation of the property is warranted at this time.

Delta's review of historical and regulatory information did not indicate any sites of environmental concern in the immediate vicinity of the project site. Based on the review of aerial photographs it is our opinion that prior to the occupancy by the Flying J Service Station the site was used as a dirt parking lot for semi-trucks.

The conclusions and recommendations contained in this report represent our professional opinions. These opinions are arrived at in accordance with currently accepted hydrogeologic and engineering practices at this time and location and are subject to the inherent limitations of environmental assessments discussed below.

Delta obtained, reviewed, and evaluated information available from the property owner and local, state, or federal agencies. Delta's conclusions, opinions, and recommendations are based, in part, on this information. Delta's services do not include the verification of the accuracy or authenticity of this information.

Delta's report is based upon the information provided to Delta and Delta's observations made during the site and vicinity reconnaissance. Given the inherent limitations of environmental assessment work, Delta does not guarantee that the site is free of hazardous or potentially hazardous materials or conditions, or that latent or undiscovered conditions will not become evident in the future. Delta's report is prepared in accordance with the proposal and the standard terms and conditions presented in the service contract, and no other warranties, representations, or certifications are made.

Delta has been pleased to be of service in this matter. If you have any questions regarding the information contained in this report, or if we may be of any further assistance, please feel free to contact us.

Respectfully submitted,

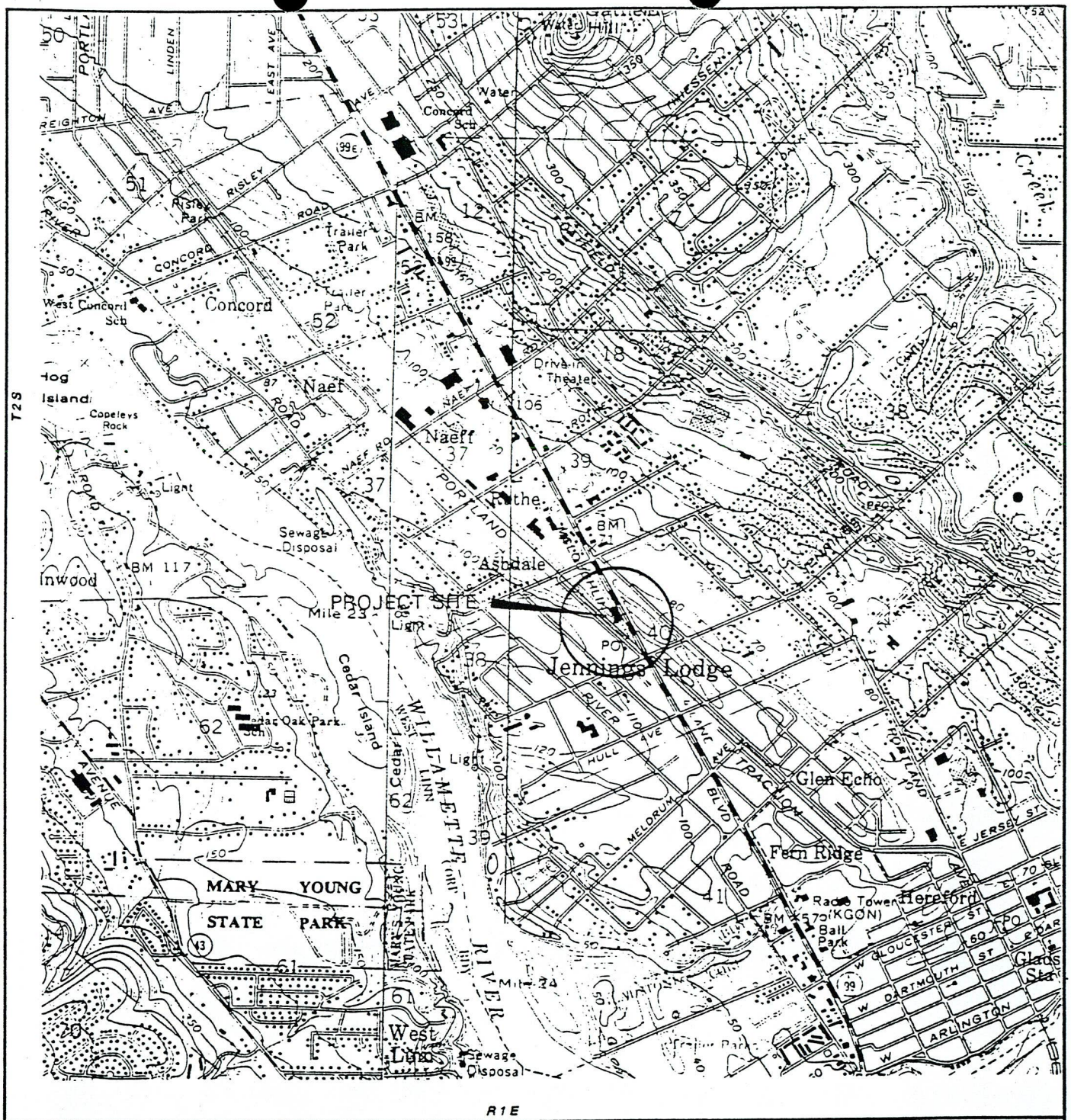
DELTA ENVIRONMENTAL CONSULTANTS, INC.

PREPARED BY:

Patricia A. Crump
Environmental Technician

Daniel S. Whitman
Senior Environmental Geologist

FIGURES



GENERAL NOTES:
BASE MAPS FROM U.S.G.S.
MILWAUKIE, OR
7.5x15 MIN TOPOGRAPHIC
PHOTOREVISED 1984

NORTH

0 2000 FT

SCALE 1 : 24,000

FIGURE 1
SITE LOCATION MAP

JIFFY LUBE INTERNATIONAL STORE #1012
17869 MCLOUGHLIN BOULEVARD
MILWAUKIE, OREGON

Project No. 43-93-011	Drawn By: PAC
File No. FIG4011	Prepared By: PAC
Revision No. 0	Reviewed By:

Delta
Environmental Consultants, Inc.

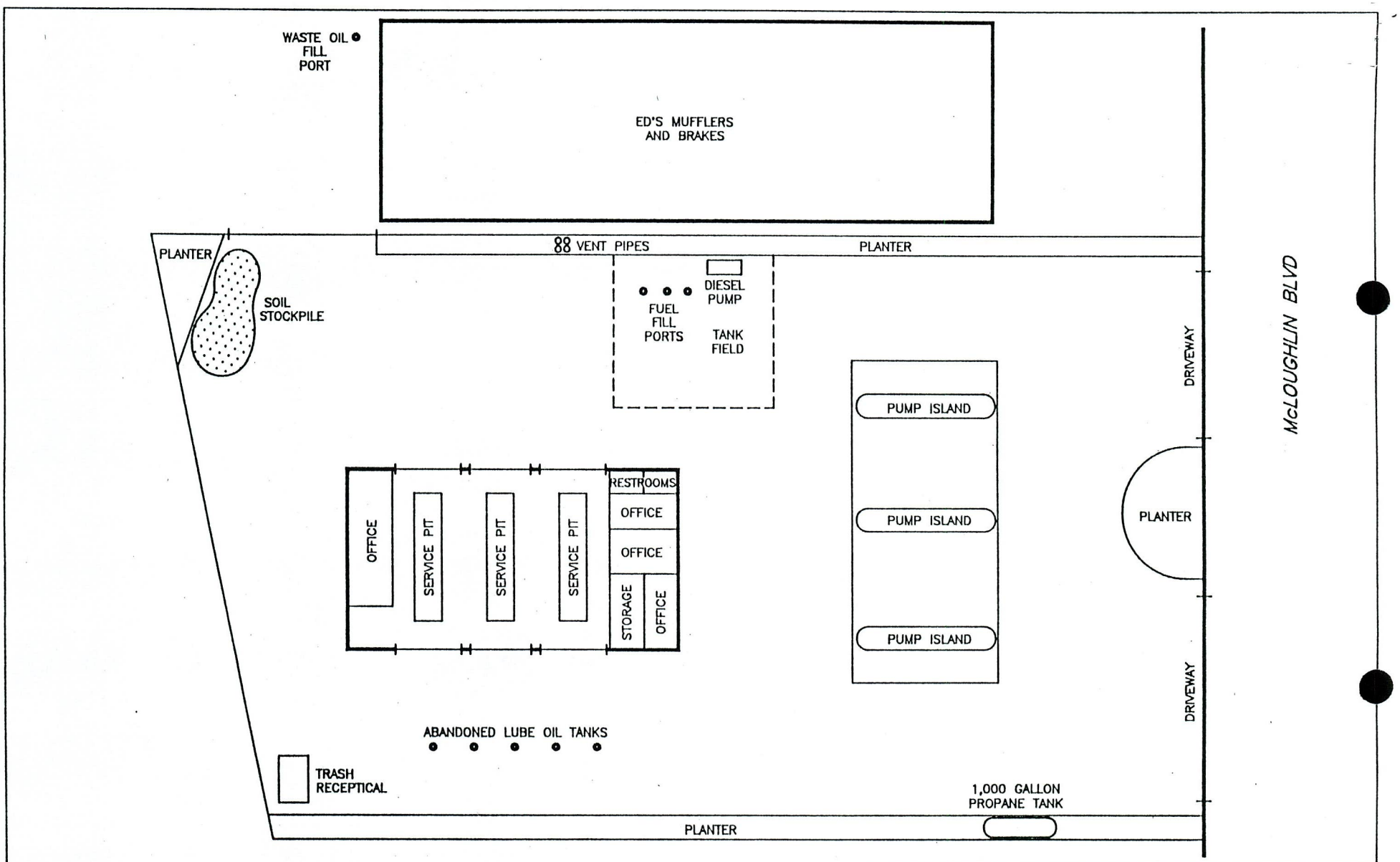


FIGURE 2

SITE MAP

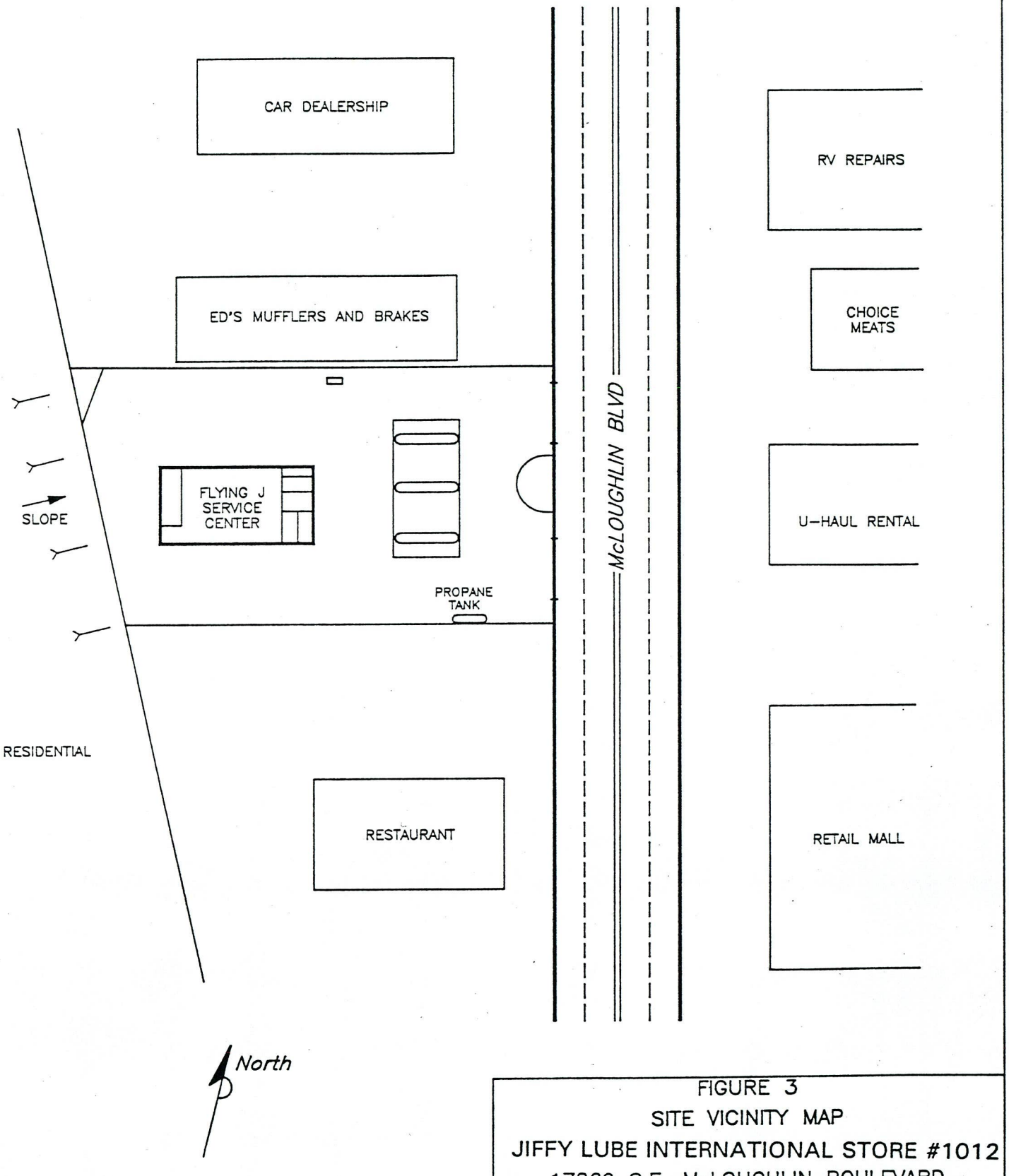
JIFFY LUBE INTERNATIONAL STORE #1012

17869 S.E. McLOUGHLIN BOULEVARD

MILWAUKIE, OR.

PROJECT NO. 43-93-011	DRAWN BY I.H. 6/1/93
FILE NO. 4393011A	PREPARED BY PAC
REVISION NO. 1	REVIEWED BY

Delta Environmental Consultants, Inc.



NOT TO SCALE

FIGURE 3

SITE VICINITY MAP

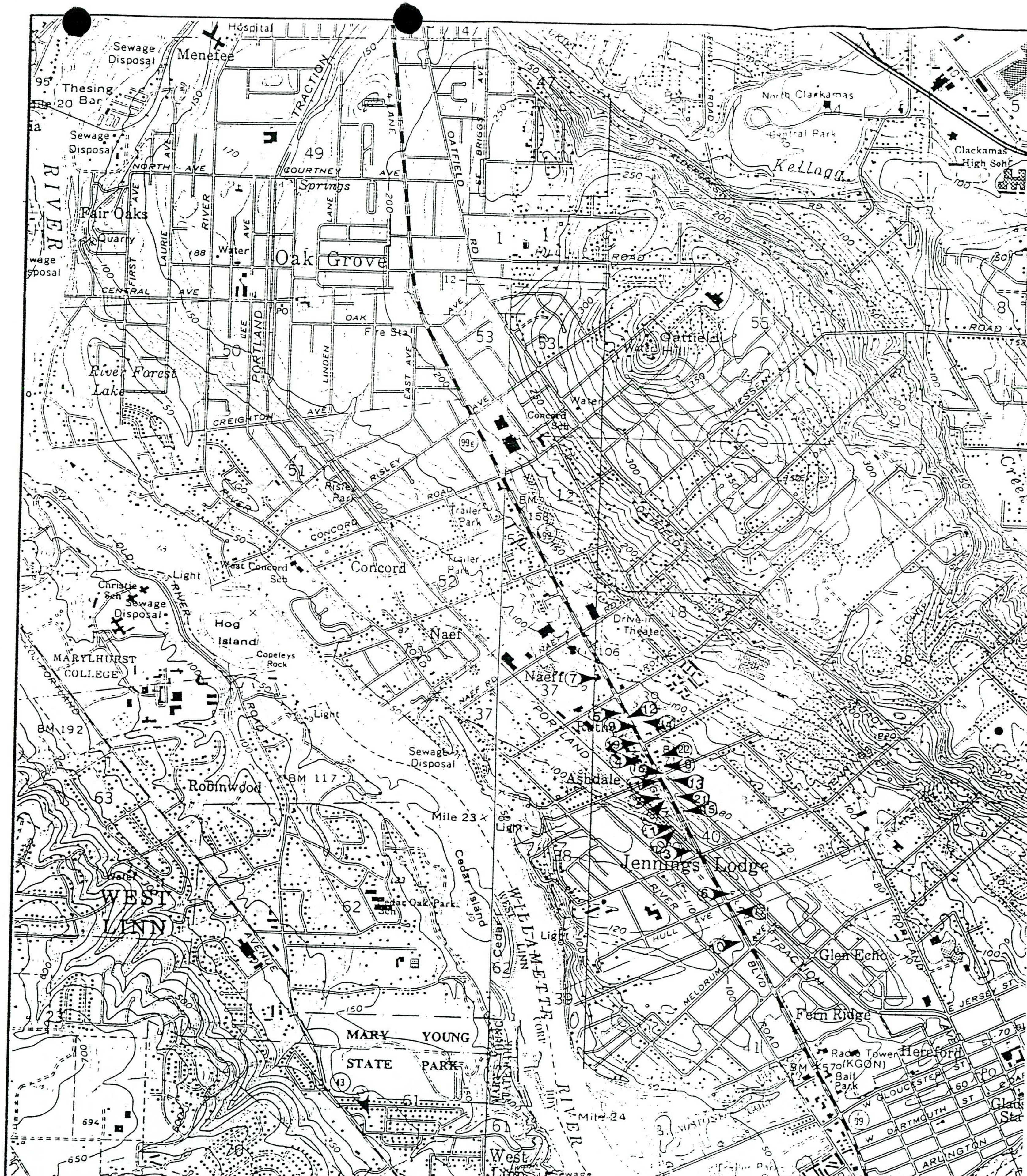
JIFFY LUBE INTERNATIONAL STORE #1012

17869 S.E. McLOUGHLIN BOULEVARD

MILWAUKIE, OR.

PROJECT NO. 43-93-011	DRAWN BY I.H. 6/1/93
FILE NO. 4393011B	PREPARED BY PAC
REVISION NO. 1	REVIEWED BY

Delta Environmental Consultants, Inc.



0 4000 FT

APPROXIMATE SCALE

NORTH

SURROUNDING SITE IDENTIFICATION

LUST

1. **Flying J Service Station**
2. Hudson Station #105
3. Discount Tire Center
4. Practical Rent-A-Car
5. Firestone Store #3558/021954
6. Texaco Station
7. Vista Convienence Store
8. J & M Auto Inport Rebuilding, Inc.
9. Rally Auto Mart Site

RCRA

8. J & M Auto Inport Rebuilders Inc.
10. Gladstone Auto Body & Paint
11. Town & Country Chrysler-Plymouth
12. Valet Cleaners

UST

1. **Flying J Service Station**
2. Hudson Station #105
4. Practical Rent-A-Car
5. Firestone Store #3558/021954
6. Texaco Station
8. J & M Auto Inport Rebuilders Inc.
10. Gladstone Auto Body & Paint
11. Town & Country Chrysler-Plymouth
13. Bob Frink Chevrolet
14. G.I. Joes
15. McCartney Automotive, Inc.
16. Precision Tune
17. Ruth Bany
18. Bob Frink Hyundai
19. Chevron U.S.A. Inc. #94637
20. **Jiffy Lube**
21. Oak Grove Disposal Co.
22. Goodyear Auto Service Center

HW HANDLERS

22. Goodyear Auto Service Center

FIGURE 4
JIFFY LUBE INTERNATIONAL STORE #1012

PENNZOIL COMPANY
17869 S.E. MCLOUGHLIN BOULEVARD
MILWAUKIE, OREGON

Project No. 43-93-011	Drawn By: PAC
File No. FIG4011	Prepared By: PAC
Revision No. 0	Reviewed By:

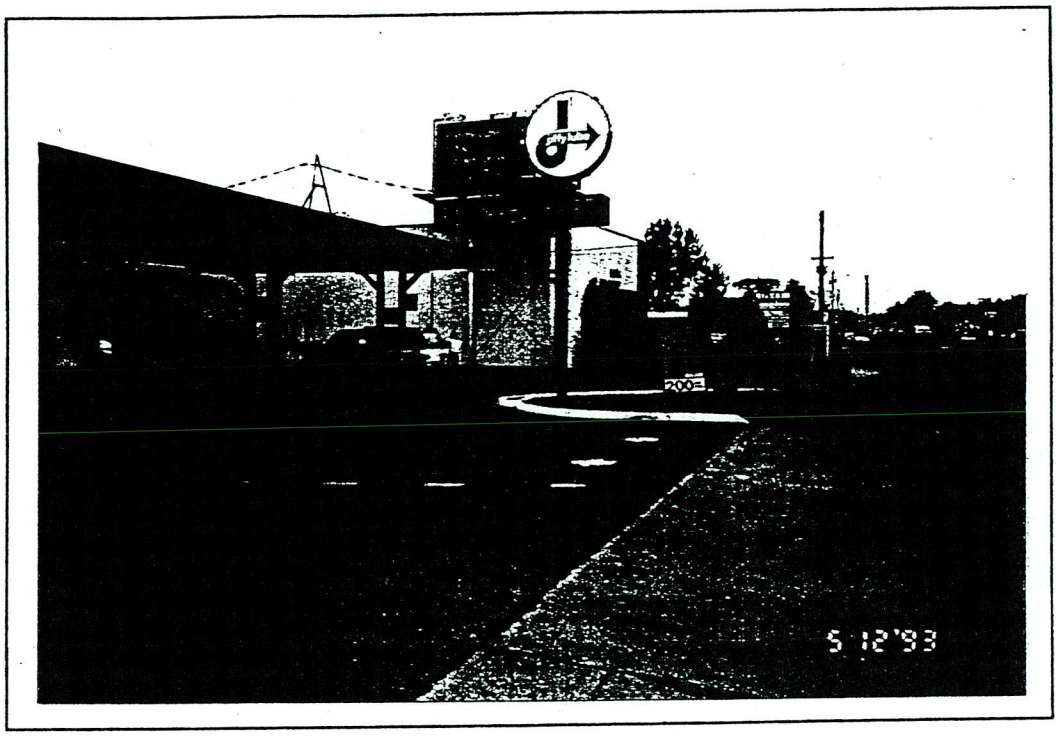
Delta Environmental Consultants, Inc.

APPENDICES

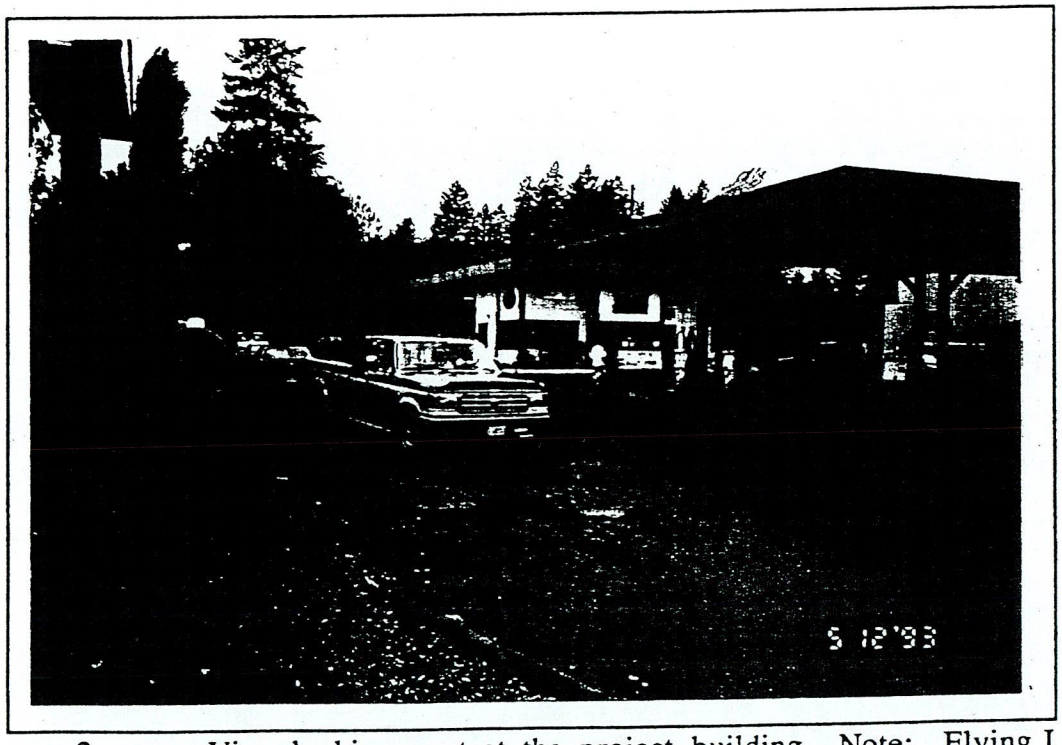
APPENDIX A

APPENDIX A

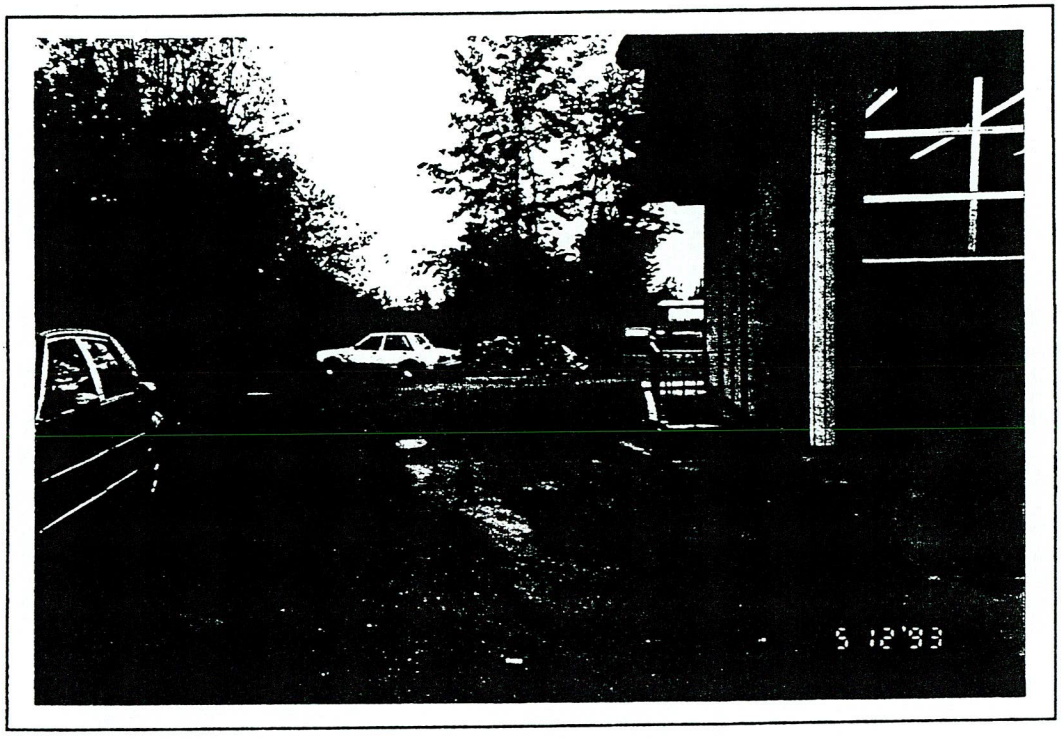
Site Photographs



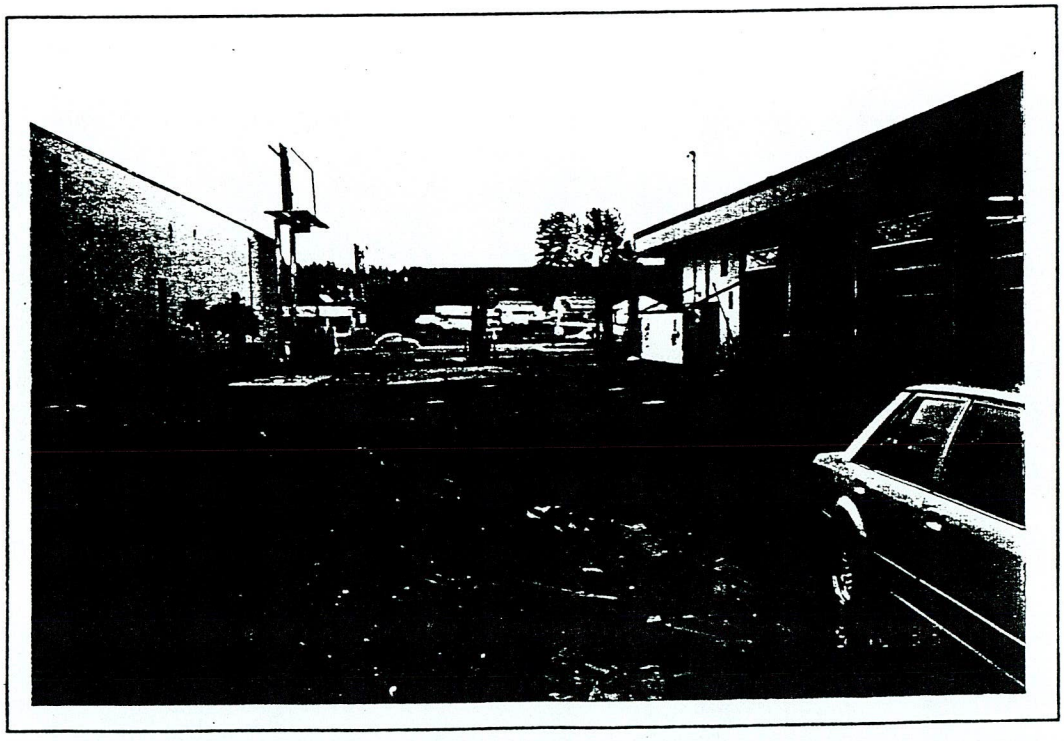
1 - View looking at the front of the project site.



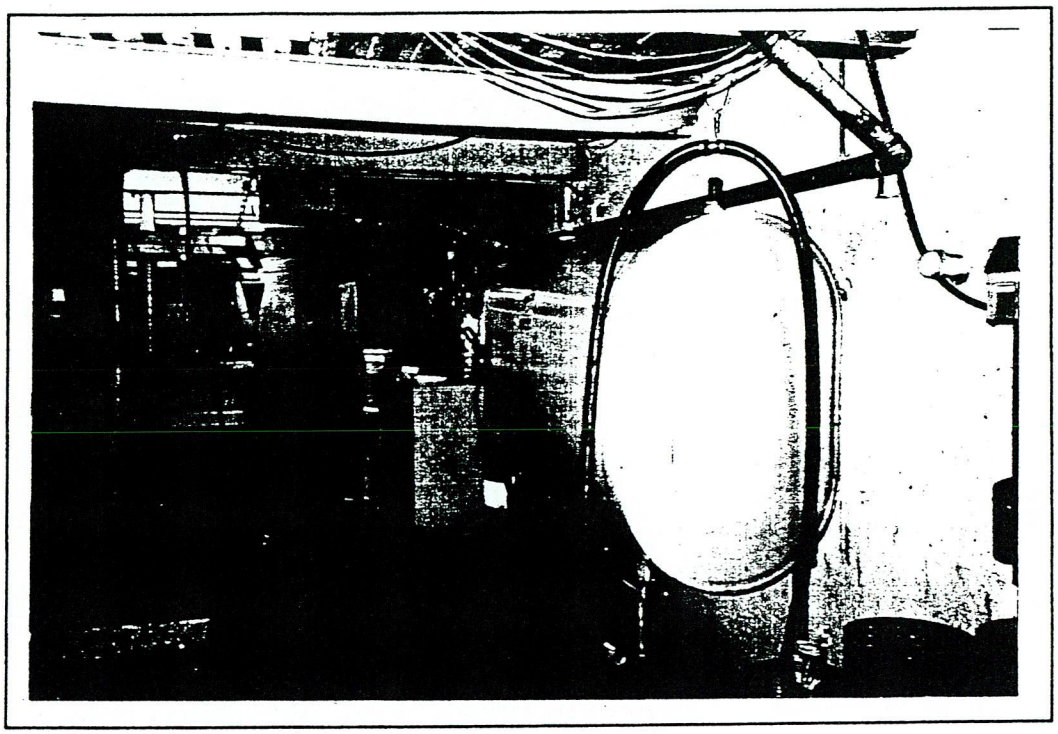
2 - View looking west at the project building. Note: Flying J Service Station occupies the first quarter of the project building and Jiffy Lube Service Station occupies the back three-quarters of the project building.



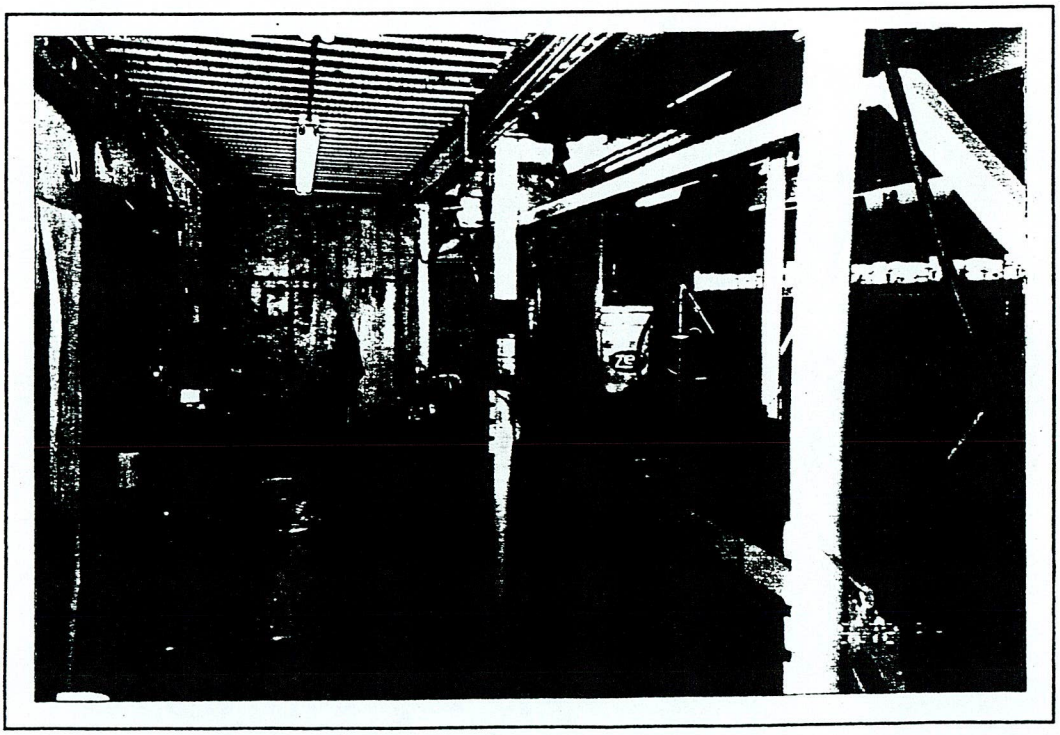
3 - View of the back of project building. Note: Stockpiled material in background.



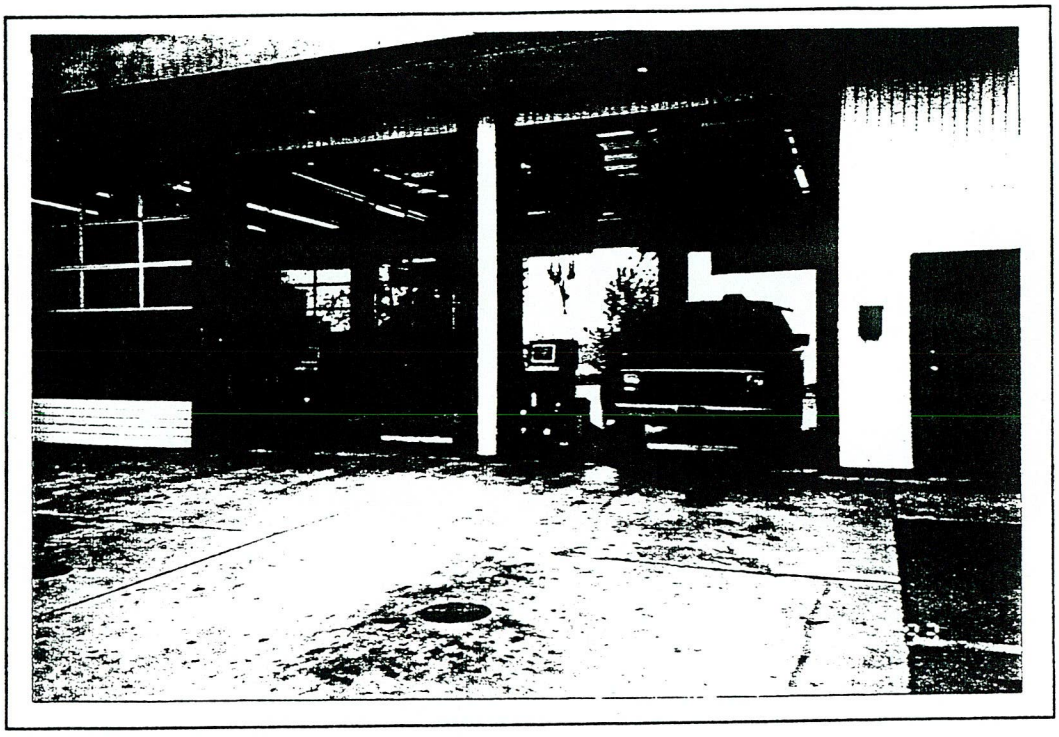
4 - View looking east at the north side of the project site. Note: Stockpiled material in foreground.



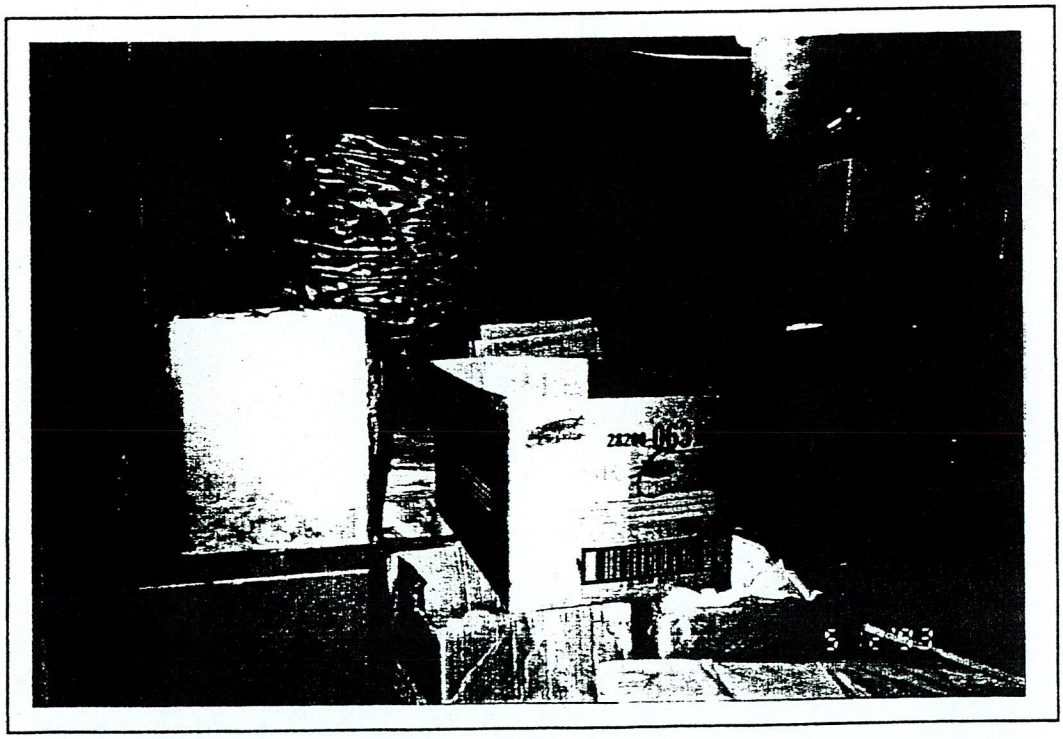
5 - View of the lower floor of Jiffy Lube's auto services area. Note: Storage tanks along right wall.



6 - View of the auto service pit in the lower level of Jiffy Lube's auto service area.



7 - View of Jiffy Lube's auto service area. Note: Maintenence hole in foreground (five abandoned UST's).



8 - View of the attic above the Flying J Service office.

APPENDIX B

APPENDIX B

Chain of Title Report

STEWART TITLE

ORDER NO.: 93067292-C
YOUR REF: Jiffy Lube
FEE: $336.00

PROPERTY HISTORY REPORT

Effective Date: May 4, 1993

A. Name of Assured:

WEST DELTA ENVIRONMENTAL CONSULTANTS

B. The land referred to in this report is situate in the County of Clackamas, State of Oregon, and described as follows:

Lot 51, JENNINGS LODGE, Clackamas County, Oregon. EXCEPTING THEREFROM the South 19.3 feet thereof. ALSO EXCEPTING THEREFROM all that portion thereof conveyed to Clackamas County by Deed recorded January 24, 1931, in Book 209, page 454, Deed Records. FURTHER EXCEPTING THEREFROM that portion lying within public roads. TOGETHER WITH that portion of an unnamed street adjacent to the Southwest boundary of the above described premises which inured thereto by reason of the vacation of said street.

C. Stewart Title Company of Oregon, Inc. finds that a search of the public records of Clackamas County, Oregon discloses the following deeds, real estate contracts, leases, and/or memoranda thereof describing the land referred to in this report recorded during the period beginning January 6, 1931 and ending on the effective date above.

D. The public records are those records established under state statutes for the purpose of imparting constructive notice of matters relating to real property to purchasers of value and without knowledge.

Continued on next page

9020 SW Washington Square Road, Suite 220
Tigard, Oregon 97224

Customer Service
(503) 671-0525 • FAX (503) 671-0535
'Nite Owl' (503) 671-0555

Tri-County Title Plant
(503) 671-0505 • FAX (503) 671-0515

PROPERTY HISTORY REPORT

PROPERTY HISTORY DOCUMENT LIST

1. TYPE OF DOCUMENT: Quitclaim Deed
   DATED: January 5, 1931
   RECORDED: January 6, 1931
   BOOK: 209
   PAGE: 315
   GRANTOR: Portland Loan Company
   GRANTEE: David Aeby

2. TYPE OF DOCUMENT: Deed
   DATED: January 12, 1931
   RECORDED: January 24, 1931
   BOOK: 209
   PAGE: 454
   GRANTOR: David Aeby
   GRANTEE: Clackamas County

3. TYPE OF DOCUMENT: Assignment of Contract (vendee)
   DATED: May 3, 1960
   RECORDED: May 31, 1960
   BOOK: 572
   PAGE: 23
   GRANTOR: Marcel Hurliman and Constance Hurliman
   GRANTEE: Linn Latourette

4. TYPE OF DOCUMENT: Assignment of Rentals
   DATED: March 27, 1964
   RECORDED: April 7, 1964
   BOOK: 591
   PAGE: 851
   GRANTOR: Linn S. Latourette and Frances Latourette
   GRANTEE: Citizens Bank of Oregon

5. TYPE OF DOCUMENT: Special Warranty Deed
   DATED: April 23, 1964
   RECORDED: April 27, 1964
   BOOK: 638
   PAGE: 927
   GRANTOR: Ray I. Rilance and Pauline L. Rilance
   GRANTEE: Linn S. Latourette and Frances Latourette

6. TYPE OF DOCUMENT: Contract of Sale
   DATED: December 6, 1976
   RECORDED: December 27, 1976
   FEE NO.: 76-46312
   GRANTOR: Herman E. Schmutzer and Mollie M. Schmutzer
   GRANTEE: Flying "J" Oil Company, a Utah corporation

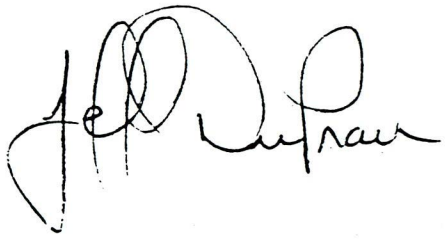
7. TYPE OF DOCUMENT: Assignment of Real Estate Contract and Deed

Continued on next page

DATED: September 4, 1979
RECORDED: July 7, 1980
FEE NO.: 80-24989
GRANTOR: Herman E. Schmutzer and Mollie M. Schmutzer
GRANTEE: Chadwick Insurance, and Benjamin F. Chadwick and Albert O. Chadwick

8. TYPE OF DOCUMENT: Warranty Deed
DATED: July 2, 1992
RECORDED: July 16, 1992
FEE NO.: 92-43586
PAGE: 186
GRANTOR: Flying 'J' Oil Company, a Utah corporation, now known as Flying J. Inc.
GRANTEE: Call's Investment Company, a Utah general partnership

9. TYPE OF DOCUMENT: Warranty Deed
DATED: July 6, 1992
RECORDED: July 16, 1992
FEE NO.: 92-43585
GRANTOR: Call's Investment Company, a Utah general partnership
GRANTEE: Calls Investment Company, Ltd., a limited partnership formed under the laws of the State of Utah



KNOW ALL MEN BY THESE PRESENTS, That Portland Loan Company 506 Dekum Bldg. Portland, Oregon, a corporation duly organized and incorporated under the laws of the State of Oregon, in consideration of One hundred fifty and no/100 Dollars, to us paid by David Aeby, Station A Box 2243, Portland, Oregon, do hereby remise, release and forever QUITCLAIM unto the said David Aeby and unto his heirs and assigns all our right, title and interest in and to the following described parcel of real estate, situate in Jennings Lodge, County of Clackamas, State of Oregon, to-wit:

All of Lot fifty-one (51) Jennings Lodge according to the duly recorded map or plat thereof, now of record in the office of the Recorder of Conveyances in the County of Clackamas, State of Oregon. (This deed is given to satisfy a mortgage given in the form of a deed recorded in Book 109 page 47 of the records of Clackamas County, State of Oregon.

TO HAVE AND TO HOLD, the same, together with all and singular the hereditaments and appurtenances thereunto belonging or in anywise appertaining to the said David Aeby and to his heirs and assigns forever.

IN WITNESS WHEREOF, Portland Loan Company pursuant to a resolution of its Board of Directors, duly and legally adopted, has caused these presents to be signed by its Vice President and Asst. Secretary and its corporate seal to be hereunto affixed this 5th day of January A.D. 1931

Executed in the presence of:

Cecil M. Tompkins

(Seal of P. Loan Co.)

Portland Loan Company
By W.H. Harrington, Vice President
Portland Loan Company
By Gjerda Hall, Secretary

State of Oregon)
)ss
County of Multnomah)

On this 5th day of January 1931, before me appeared W.H. Harrington, and Gjerda Hall, both to me personally known, who being duly sworn, did say that he, the said W.H. Harrington is the Vice President, and he, the said Gjerda Hall is the Asst. Secretary of Portland Loan Company the within named Corporation, and that the seal affixed to said instrument is the corporate seal of said Corporation, and that the said instrument was signed and sealed in behalf of said Corporation by authority of its Board of Directors, and said W.H. Harrington and Gjerda Hall acknowledged said instrument to be the free act and deed of said corporation.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my official seal, this the day and year first in this my certificate written.

Cecil M. Tompkins
Notary Public in and for said County and State.

(Seal of Notary)

My commission expires Oct. 13-1931

E.C. Hackett, County Recorder

Filed and recorded Jan. 6, 1932 at 10:20 A.M.

RW

Seal) Notary)

Notary Public for Oregon
My commission expires July 27th, 1932

E. C. Hackett, County Recorder

Filed and recorded Jan 24, 1931 at 11:06 A.M.

THIS INDENTURE WITNESSETH, That David Aeby, a single man, and his wife, for and in consideration of One Hundred Twenty-Five and no/100 ($125.00) Dollars, to him paid has bargained and sold, and by these presents does bargain, and convey unto Clackamas County, the following described real estate, situate in Clackamas County, State of Oregon, to-wit:

Being a part of Tract 51 Jennings Lodge, Clackamas County, Oregon, bounded and described as follows, to-wit:

Beginning at the most Easterly corner of Tract #51, Jennings Lodge, according to the duly recorded plat thereof in T. 2 S.R. 2 E. of the W.M.; running thence S. 65° 12' 30" W. tracing the Southeasterly boundary of Tract #51 a distance of 91.77 feet to an iron pipe driven in the Westerly side line of the East Side Super-Highway; thence N. 28°10' W. 159.21 feet to an iron pipe driven in the Northwest boundary of said tract; thence N. 65°12'30" E. tracing the Northwesterly boundary of said tract 59.58 feet to the most Northerly corner thereof; thence S. 45°53' E. tracing the Northeasterly boundary of said tract 120.25 feet to the place of beginning. Containing 0.22 acres more or less.

Said tract of land to be used for road purposes.

TO HAVE AND TO HOLD the said premises with appurtenances, unto the said Clackamas County, its successors forever; and the said David Aeby, does hereby covenant to and with the said Clackamas County, that he is the owner in fee simple of said premises; that they are free from all incumbrances, and that he will warrant and defend the same from all lawful claims whatsoever.

IN WITNESS WHEREOF, I have hereunto set my hand and seal this 12th day of January A.D. 1931.

Signed, sealed and delivered in the presence of:

Elden Aldredge

David Aeby (Seal)

State of Oregon, ss.
County of Clackamas

On this 12th day of January A.D. 1931, personally came before me a County Clerk for said County and State, the within named David Aeby, and to me personally known to be the identical person described in and who executed the foregoing conveyance and acknowledged to me that he executed the same freely and voluntarily for the uses and purposes therein named.

IN TESTIMONY WHEREOF, I have hereunto set my hand and official seal, this the day and year in this certificate first above written.

Donald J. Ryan
County Clerk

(Seal) State of Oregon, County of Clackamas

E. C. Hackett, County Recorder

FORM No. 17—ASSIGNMENT OF CONTRACT (by Vendee-Buyer).

In CONSIDERATION of the sum of Ten and No/100---------- *DOLLARS,*

to them in hand paid, the receipt whereof is hereby acknowledged WE *hereby convey, assign, sell, transfer and set over unto* LINN S. LATOURETTE

all our right, title and interest in and to the written and attached contract of sale dated October 14, *19* 58., *between* Raymond L. Rilance and Pauline Rilance, husband and wife *and* Marcel Hurliman and Constance Hurliman, husband and wife *and in and to the* real property *described therein, and upon full compliance of covenants by assignee with the terms of said contract authorize and direct that conveyance be made to such assignee.*

Description: All of Tract 51, JENNING'S LODGE, EXCEPTING THEREFROM that portion conveyed to Clackamas County by deed recorded January 4, 1951, in book 209, page 454, Deed Records of Clackamas County. ALSO that portion of Lot 50, JENNING'S LODGE, which lies westerly of the right of way of State Highway 99E.

IN WITNESS WHEREOF, we *have hereunto set* our *hand* s *and seal* s *this* 3rd *day of* May, *19* 60

Marcel Hurliman (SEAL)

Constance Hurliman (SEAL)

STATE OF OREGON,

County of Clackamas } ss.

On this 3rd *day of* May, 1960 *before me, the undersigned, a Notary Public in and for said County and State, personally appeared the within named* Marcel Hurliman and Constance Hurliman, husband and wife *who* are *known to me to be the identical individuals described in and who executed the within instrument, and acknowledged to me that* they *executed the same freely and voluntarily.*

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my official seal the day and year last above written.

Notary Public for Oregon.

My commission expires 2/10/61

BOOK 572 PAGE 23

SEAL DOCUMENT 9571 RECORDED MAY 31 1960 2:46 P. M. ROBERT SCHUMACHER, County Clerk

ASSIGNMENT OF RENTALS

This Agreement, entered into this 27th day of March, 1964,

between Linn S. Latourette and Frances Latourette, husband and wife

hereinafter called the Mortgagors, and Citizens Bank of Oregon, an Oregon Corporation,

hereinafter called the Mortgagee, Witnesseth:

Whereas, the Mortgagors are the present owners in fee simple of the following described real property situated in the County of Clackamas and State of Oregon, to-wit:

PARCEL I: Part of Tract 48 and 49, Jennings Lodge, in the County of Clackamas and State of Oregon, more particularly described as:

Beginning at the most westerly corner of Tract 49; thence North 65° 12' 30" East tracing the northwesterly boundary of said Tract 49, a distance of 98.22 feet to a point on the westerly boundary of the East Side Portland-Oregon City Highway; thence South 28° 10' East tracing the westerly boundary of said highway 223.24 feet to the most northerly corner of a tract of land conveyed to Ed Berdine and Hazel Berdine by deed recorded May 1, 1946, in Book 366, page 240, Deed Records; thence South 65° 12' 30" West parallel with the boundary between Tract 48 and 49, 24.45 feet, more or less, to a point in the southwesterly boundary of Tract 48; thence North 45° 58' West tracing the southwesterly boundaries of Tract 48 and 49, 242.07 feet to the place of beginning. TOGETHER with that portion of an unnamed street adjacent to the southwest boundary of the above described premises which inurred thereto by reason of the vacation of said street.

PARCEL II: That portion of Lot 50, Jennings Lodge, in the County of Clackamas and State of Oregon, which lies westerly of the right of way of State Highway No. 99-E. TOGETHER with that portion of an unnamed street adjacent to the southwest boundary of the above described premises which inurred thereto by reason of the vacation of said street.

PARCEL III: All of Tract 51, JENNINGS LODGE, EXCEPTING therefrom that portion conveyed to Clackamas County, by deed recorded January 24, 1931, in Book 209, page 454, Deed Records, in the County of Clackamas and State of Oregon, TOGETHER WITH that portion of an unnamed street adjacent to the southwest boundary of the above described premises which inurred thereto by reason of the vacation of said street.

and

Whereas, the Mortgagee has agreed to loan to the Mortgagors the sum of $ 40,000.00 to be evidenced by a promissory note and secured by a first mortgage covering all of said real property,

and to be further secured by an assignment of rentals in accordance with the provisions hereof, said loan to be made and said note, mortgage and assignment of rentals to be executed contemporaneously; and

5253

Whereas, the Mortgagee has now paid to the Mortgagors the said sum, and the Mortgagors have now executed and delivered to the Mortgagee the said note and mortgage;

Now, Therefore, these presents witness, that in consideration of the premises, and other good and valuable considerations, the Mortgagors do hereby sell, assign, transfer and set over to the Mortgagee, as of this date, all of the rents, issues and profits now owing and also those hereafter arising or growing out of the aforesaid mortgaged premises, as described, such assignment to be and remain in full force and effect at all times hereafter when there shall be a default existing in any of the payments or in performance of any of the terms, covenants or conditions of the aforesaid note or mortgage; it being the intention and agreement that should any default or defaults be remedied, and should there later occur another default or defaults, this assignment shall be and remain in full force and effect during the period when any such default or defaults exist. The Mortgagors hereby covenant and warrant to the Mortgagee that neither they nor any previous owner have executed any prior assignment of said rents, issues or profits, which now remains in force or effect; nor have the Mortgagors nor any previous owner performed any other act or executed any other instrument which might prevent the Mortgagee from operating under any of the terms and conditions of this agreement, or which would limit the Mortgagee in such operation. In furtherance of such assignment, the Mortgagors hereby authorize the Mortgagee, at its option, upon default as aforesaid, to enter upon the said mortgaged premises, by its officer, agent or employee, and take possession of the same for the collection of rents and for the operation and maintenance of said mortgaged premises, the Mortgagors hereby authorizing the Mortgagee in general to perform any and all acts necessary, proper or advisable for the operation and maintenance of said premises, in the same manner and to the same extent that the Mortgagors might so act.

In further consideration of the premises, and in furtherance of the purposes and provisions of this instrument, the Mortgagors do hereby sell, assign, transfer and set over unto the Mortgagee any and all leases now existing,

as well as any and all leases hereafter entered into by and between the Mortgagors and any and all persons whomsoever, covering or affecting ~~the~~ described real property, as described , or any part thereof, together with all moneys due and/or to become due thereunder, subject, of course, to all the other terms of this instrument.

It is expressly understood that the Mortgagee shall have the right, after taking possession of the said premises, , hereunder, to pay all such bills, charges and expenses as, in its discretion, may be necessary, proper or advisable for the operation and maintenance of the said premises, including a reasonable salary for a manager thereof; and, after the payment of said items, to pay such taxes, assessments, liens or charges as may exist against the said premises, , and to apply the overplus, if any, to the payment of interest, principal and/or other sums payable under the terms of the note and/or mortgage secured hereby.

It is further expressly understood that this instrument shall in nowise operate to affect, impair or diminish the rights granted to the Mortgagee under the aforesaid mortgage or note, and that the rights and remedies given to the Mortgagee by this agreement shall be in addition to and not in lieu of any of the rights, remedies, terms, covenants or provisions of the said mortgage or note.

The provisions of this instrument shall be binding upon the Mortgagors , their heirs, executors, administrators, successors and assigns, and shall be irrevocable except with the written consent of the Mortgagee, and shall enure to the benefit of the Mortgagee, its successors and assigns.

In Testimony Whereof, the Mortgagor has hereunto set their hand and affixed their seal, the day and year first above written.

Lum S Latourette (SEAL)

Frances Latourette (SEAL)

Assignment of Rentals

Between

Lirm S Latourette and Frances Latourette

STATE OF OREGON, County of Clackamas } ss.

I, Robert Schumacher, County Clerk, Ex-Officio Recorder of Conveyances, and Ex-Officio Clerk of the Circuit Court of the State of Oregon, for the County of Clackamas, do hereby certify that the within instrument of writing was received for record and recorded in the records of MORTGAGES of said County at 1964 APR 7 PM 4 03

BOOK 591 PAGE 850 Records of Said County

Witness my hand and seal of said Court affixed.

ROBERT SCHUMACHER, County Clerk

By [signature] Deputy

Recording Certificate

RETURN TO

OREGON CITY BRANCH
CITIZENS BANK OF OREGON
(ADDRESS)
P.O. Box 311, 611 High St.
OREGON CITY, OREGON

5753 T

STATE OF Oregon } ss.
County of Clackamas }

Be it Remembered that on this 27th day of March , 1964 before me, the undersigned, a Notary Public in and for said County and State, personally appeared the within named Lirm S Latourette and Frances Latourette

known to me to be the identical individual s described in and who executed the within instrument, and acknowledged to me that t hey executed the same freely and voluntarily.

In Testimony Whereof, I have hereunto set my hand and notarial seal the day and year last above written.

E. E. Ruby

Notary Public for

My commission expires July 25, 1966

NOTARY PUBLIC

FORM No. 762—SPECIAL WARRANTY DEED. STEVENS-NESS LAW PUB. CO., PORTLAND, ORE.

KNOW ALL MEN BY THESE PRESENTS, That RAY I. RILANCE and PAULINE L. RILANCE, husband and wife, *grantor s*, *in consideration of* TEN AND NO/100 ($10.00) *Dollars, to them paid by* LINN S. LATOURETTE and FRANCES LATOURETTE, husband and wife, *grantees*, *do* hereby grant, bargain, sell and convey unto the said grantees, their heirs and assigns, all the following real property, with the tenements, hereditaments and appurtenances, situated in the County of Clackamas and State of Oregon, bounded and described as follows, to-wit:

PARCEL I: That portion of Lot 50, JENNINGS LODGE, in the County of Clackamas and State of Oregon, which lies westerly of the right of way of State Highway No. 99-E, TOGETHER with that portion of an unnamed street adjacent to the southwest boundary of the above-described premises which inurred thereto by reason of the vacation of said street; and

PARCEL II: All of Tract 51, JENNINGS LODGE, EXCEPTING therefrom that portion conveyed to Clackamas County by deed recorded January 24, 1931 in Book 209, page 454, Deed Records, in the County of Clackamas and State of Oregon; TOGETHER with that portion of an unnamed street adjacent to the southwest boundary of the above-described premises which inurred thereto by reason of the vacation of said street;

SUBJECT TO regulations, penalties, liens, and assessments of the Oak Lodge Sanitary District No. 2, within the limits of which the said property lies.

To Have and to Hold the above described and granted premises unto the said grantees, their heirs and assigns forever.

And the grantors do covenant that they will and their heirs, executors and administrators, shall warrant and defend the above granted premises, and every part and parcel thereof, against the lawful claims and demands of all persons claiming by, through, or under the grantors.

Witness their hands and seals this 2nd day of April, 1964.

Ray I. Rilance (SEAL)

Pauline L. Rilance (SEAL)

(SEAL)

(SEAL)

STATE OF OREGON, } ss.
County of Clackamas }

On this 2nd *day of* April, 1964, *before me, the undersigned, a Notary Public in and for said County and State, personally appeared the within named* RAY I. RILANCE and PAULINE L. RILANCE, husband and wife, *who are known to me to be the identical individual s described in and who executed the within instrument, and acknowledged to me that they executed the same freely and voluntarily.*

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my official seal the day and year last above written.

Notary Public for Oregon.

My Commission expires June 22, 1966.

Special
WARRANTY DEED

RAY I. RILANCE et ux

to

LINN S. LATOURETTE et ux

AFTER RECORDING RETURN TO
Citizens Bank of Oregon
Oregon City, Ore

Docket No. K-8865

STATE OF OREGON, County of Clackamas, } ss.

I, Robert Schumacher, County Clerk, Ex-Officio Recorder of Conveyances and Ex-Officio Clerk of the Circuit Court of the State of Oregon, for the County of Clackamas, do hereby certify that the within instrument of writing was received for record and recorded in the records of said County at 4 PM April 1 1964 and recorded in Book DEED Page 638 PAGE 927

Witness my hand and seal of said Court affixed. ROBERT SCHUMACHER, County Clerk, By [illegible] Deputy. Recording Certificate

Deputy.

762

Book 638 PAGE 927

137-077

CONTRACT—REAL ESTATE

THIS CONTRACT, Made this 6th day of December, 19 76, between HERMAN E. SCHMUTZER and MOLLIE M. SCHMUTZER, husband and wife, hereinafter called the seller, and FLYING "J" OIL COMPANY, a Utah corporation, hereinafter called the buyer,

WITNESSETH: That in consideration of the mutual covenants and agreements herein contained, the seller agrees to sell unto the buyer and the buyer agrees to purchase from the seller all of the following described lands and premises situated in Clackamas County, State of Oregon, to-wit:

PARCEL I:
Part of Tracts 48 and 49, JENNINGS LODGE, more particularly described as:

Beginning at the most westerly corner of Tract 49; thence North 65° 12'30" East tracing the northwesterly boundary of said Tract 49, a distance of 98.22 feet to a point on the westerly boundary of the East Side Portland-Oregon City Highway; thence South 28° 10' East tracing the westerly boundary of said highway 223.24 feet to the most northerly corner of a tract of land conveyed to Ed Berdine and Hazel Berdine by Deed recorded May 1, 1946, in Book 366, page 240, Deed Records; thence South 65° 12' 30" West parallel with the boundary between Tracts 48 and 49, a distance of 24.45 feet, more or less, to a point in the southwesterly boundary of Tract 48; thence North 45° 58' West tracing the southwesterly boundaries of Tracts 48 and 49, 242.07 feet to the place of beginning.

TOGETHER WITH that portion of an unnamed street adjacent to the southwest boundary of the above described premises which inured thereto by reason of the vacation of said street.

PARCEL II:
That portion of Lot 50, JENNINGS LODGE, which lies westerly of the westerly right of way of State Highway No. 99-E.

TOGETHER with that portion of an unnamed street adjacent to the southwest boundary of the above described premises which inured thereto by reason of the vacation of said street.

PARCEL III:
All of Lot 51, JENNINGS LODGE.

EXCEPTING THEREFROM that portion conveyed to Clackamas County, by Deed recorded January 24, 1931, in Book 209, page 454, Deed Records.

TOGETHER WITH that portion of an unnamed street adjacent to the southwest boundary of the above described premises which inured thereto by reason of the vacation of said street.

ALSO EXCEPTING THEREFROM that portion lying within the boundaries of public roads.

INCLUDING the following described property as fixtures:

1. Underground fuel tanks: one 10,000 gallon capacity, six 3,000 gallon capacity, one 1,000 gallon capacity.

2. Seven fuel pumps.

3. 80,000 pound capacity Fairbanks truck scale.

76-16312

for the sum of Two Hundred Thousand and No/100 ———————— Dollars ($ 200,000.00) (hereinafter called the purchase price) on account of which Forty Thousand and No/100 ———————— Dollars ($ 40,000.00) is paid on the execution hereof (the receipt of which is hereby acknowledged by the seller), and the remainder to be paid to the order of the seller at the times and in amounts as follows, to-wit:

The remaining balance of $160,000.00 shall be paid in monthly installments of $2,005.24 each, including interest at the rate of 8 3/4% per annum on the unpaid balances, the first of such installments to be paid on the 6th day of January, 1977, and subsequent installments to be paid on the same day of each month thereafter until the entire purchase price, including both principal and interest is paid in full. Interest on all unpaid balances shall commence on the date of this contract. Each payment shall be applied first to interest to the date of payment and the balance to principal. After December 31, 1976, buyer shall have the privilege of increasing any monthly payment or prepaying the entire balance at any time.

[illegible] after December 31, 1976; [illegible] 8 3/4 [illegible] the date hereof [illegible] monthly [illegible] on the date hereof, subject to [illegible] hereafter described. [illegible]

[illegible] 160,000.00 [illegible]

[illegible] 30 [illegible]

[illegible]

[illegible]

Herman E. Schmutzer & Mollie M. Schmutzer
4421 S.E. Glen Echo
Milwaukie, Oregon 97222

Flying "J" Oil Company
P.O. Drawer 678
Brigham City, Utah 84302

Flying "J" Oil
P. O. Drawer 678
Brigham City, Utah 84302

Flying "J" Oil Company
P.O. Drawer 678
Brigham City, Utah 84302

STATE OF OREGON, } ss.

County of

I certify that the within instrument was received for record on the day of , 19 , at o'clock M., and recorded in book on page or as file reel number , Record of Deeds of said county.

Witness my hand and seal of County affixed.

Recording Officer

By Deputy

76 46312

OFFICIAL DOCUMENT 76-46312 RECORDED DEC 27 1976 4:17 M GEORGE D. POPPEN, County Clerk

Additional provisions below.

The true and actual consideration paid for this transfer stated in terms of dollars, is $ 200,000.00 (If Boxes, the actual consideration consists of or includes other property or value given or promised which is part of the

IN WITNESS WHEREOF, said parties have executed this instrument in duplicate; if either of the undersigned is a corporation, it has caused its corporate name to be signed and its corporate seal affixed hereto by its officers duly authorized thereunto by order of its board of directors.

FLYING "J" OIL COMPANY

By: [signature] President

Herman E. Schmutzer

Mollie M. Schmutzer

NOTE: The sentence between the symbols ( ), if not applicable, should be deleted. See ORS 93.030.

STATE OF OREGON, County of Clackamas } ss.

December 27, 19 76

Personally appeared the above named Herman E. Schmutzer and Mollie M. Schmutzer, husband and wife, and acknowledged the foregoing instrument to be their voluntary act and deed.

Before me: [signature]

(OFFICIAL SEAL) Notary Public for Oregon

My commission expires 11-19-79

STATE OF OREGON, County of Box Elder } ss.

December, 19 76

Personally appeared O. Jay Call who, being duly sworn, each for himself and not one for the other, did say that the former is the president and that the latter is the secretary of Flying "J" Oil Company, a corporation, and that the foregoing instrument is the corporate seal of said corporation and that said instrument was signed and sealed in behalf of said corporation by authority of its board of directors; and each of them acknowledged said instrument to be its voluntary act and deed.

Before me:

(OFFICIAL SEAL) Notary Public for Oregon

My commission expires 1-1-77

Utah, Residing at

Notwithstanding anything hereinabove to the contrary, the parties hereto further agree as follows:

1. Immediately after each payment of real estate taxes, buyer shall forward a copy of the receipted tax statement to sellers.

2. It is understood and agreed that the premises are being sold subject to contract indebtedness to Linn S. Latourette and Frances Latourette (Fee No. 70 28340, Deed Records) and that buyer shall have no personal liability thereon. Sellers covenant that said indebtedness will be fully paid prior to delivery of the deed hereinabove referred to. Should there be any default in the payment of said indebtedness, buyer may correct such default and credit sums so paid to future monthly payments hereinabove provided for.

3. Buyer shall not assign this contract, its rights thereunder or in the property covered thereby, without the prior written consent of sellers, which consent shall not unreasonably be withheld.

4. It is further understood and agreed that the premises are being sold subject to leasehold interest of Jack Livingston Dodge, Inc., which is a tenancy from month to month, and leasehold interest of Ackerley, Inc., as set forth in an advertising sign lease which expires June 14, 1987, unless terminated earlier. A copy of said advertising sign lease has been furnished to and examined by buyer. Sellers represent and warrant that they mailed to said lessee by certified mail December 10, 1976, a notice terminating said lease. Sellers will indemnify and hold buyer harmless against all claims by said lessee relating to prepaid rent and the cost of construction and removal of lessee's sign.

3

4:17

76 46312

ASSIGNMENT OF REAL ESTATE CONTRACT AND DEBT

WHEREAS, Chadwick Insurance, a Washington corporation, and Benjamin F. Chadwick and Albert S. Chadwick, hereinafter referred to as "CHADWICKS", have obtained various bonds for Washington-Oregon Lumber Freighters, Inc., and will, in the future, procure the issuance of certain other bonds including, but not limited to, court bonds and fuel tax bonds, for the said Washington-Oregon Lumber Freighters, Inc., at the special instance of the undersigned assignors,

NOW, THEREFORE, in order to provide CHADWICKS with security for the payment of such bonds, in the event that payment becomes necessary, and to indemnify them against any loss or liability thereon, now, therefore,

We, the undersigned assignors, individually and as husband and wife, do hereby sell, assign and transfer to CHADWICKS, as assignees, all of our rights, title, and interest in and to that certain real estate contract dated December 6, 1976, wherein we, HERMAN E. SCHWEEP and MOLLIE M. SCHWEEP, husband and wife, are sellers, and the Flying "J" Oil Company, a Utah corporation, is the purchaser of the following-described real property situate in Clackamas County, Oregon:

PARCEL I:
Part of Tracts 48 and 49, JENNINGS LODGE, more particularly described as:

Beginning at the most westerly corner of Tract 49; thence North 65°12'30" East tracing the northwesterly boundary of said Tract 49, a distance of 98.22 feet to a point on the westerly boundary of the East Side Portland-Oregon City Highway; thence South 28°10' East tracing the westerly boundary of said Highway 223.24 feet to the most northerly corner of a tract of land conveyed to Ed Berdine and Hazel Berdine by Deed recorded May 1, 1946, in Book 369, page 240, Deed Records; thence South 65°12'30" West parallel with the boundary between Tracts 48 and 49, a distance of 24.45 feet, more or less, to a point in the southwesterly boundary of Tract 48; thence North 45°58' West tracing the southwesterly boundaries of Tracts 48 and 49, 242.07 feet to the place of beginning.

TOGETHER WITH that portion of an unnamed street adjacent to the southwest boundary of the above-described premises which inured thereto by reason of the vacation of said street.

80 21989

PARCEL II:
That portion of Lot 50, JENNINGS LODGE, which lies westerly of the westerly right of way of State Highway No. 99-E.

TOGETHER WITH that portion of an unnamed street adjacent to the southwest boundary of the above-described premises which inured thereto by reason of the vacation of said street.

PARCEL III:
All of Lot 51, JENNINGS LODGE.

EXCEPTING THEREFROM that portion conveyed to Clackamas County, by Deed recorded January 24, 1931, in Book 299, page 434, Deed Records.

TOGETHER WITH that portion of an unnamed street adjacent to the southwest boundary of the above-described premises which inured thereto by reason of the vacation of said street.

ALSO EXCEPTING THEREFROM that portion lying within the boundaries of public roads.

And we do hereby quit claim and convey to GRANTEES all of our rights, title, interest and interest in and to the said real property, including after acquired title.

This assignment and conveyance is given as security for the payment of said bonds and to indemnify the assignees against any liability or loss thereon.

In the event of the faithful performance of said bonds by Washington-Oregon Motor Freighters, Inc., and of ourselves, as guarantors, this assignment shall become null and void and no longer of any force or effect, and the assignors shall be entitled to a reconveyance of said real property.

DATED at Yakima, Washington, September 4, 1973.

HERMAN E. SCHMITZER

WILLIAM V. SCHMITZER

2

STATE OF OREGON)
: ss
County of Clackamas)

On this _____ day of July, 1980, personally appeared before me the above-named HERMAN E. SCHMUTZER and MILLIE M. SCHMUTZER and acknowledged the foregoing instrument to be their voluntary act and deed, for the uses and purposes therein mentioned.

NOTARY PUBLIC In and For the
State of Oregon, residing at
_____.

My commission expires: _____

STATE OF OREGON,
County of Clackamas } ss

I, Margie D. Pogue, County Clerk for the County of Clackamas and ex-officio Clerk of the Circuit Court of the State of Oregon for the County of Clackamas, do hereby certify that the within instrument of writing was received and recorded in the records of said County at

'80 JUL 17 P3 22

Witness my hand and seal of said Court affixed.

Margie D. Pogue
County Clerk

By _____ Deputy

Recording Certificate

CCP 84 80 23110-9

3

CA

20
16

WARRANTY DEED—STATUTORY FORM

CALL'S INVESTMENT COMPANY, a Utahgeneral partnership, of 50 West 990 South, Brigham City, Utah 84302 *Grantor,*

conveys and warrants to CALLS INVESTMENT COMPANY, LTD., a limited partnership formed under the laws of the State of Utah, 50 West 990 South, Brigham City, Utah 84302 *Grantee, the following described real property free of encumbrances except as specifically set forth herein situated in* Clackamas County *County, Oregon, to-wit:*

SEE EXHIBIT A ATTACHED HERETO AND INCORPORATED HEREIN BY THIS REFERENCE

(IF SPACE INSUFFICIENT, CONTINUE DESCRIPTION ON REVERSE SIDE)

The said property is free from encumbrances except encumbrances of record

The true consideration for this conveyance is $0.00 *(Here comply with the requirements of ORS 93.030)*
This is a conveyance of real property between related parties.

Dated this 6th *day of* June July, 1992

CALL'S INVESTMENT COMPANY, a Utah general partnership

O. Jay Call, Managing Partner

THIS INSTRUMENT WILL NOT ALLOW USE OF THE PROPERTY DESCRIBED IN THIS INSTRUMENT IN VIOLATION OF APPLICABLE LAND USE LAWS AND REGULATIONS. BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON ACQUIRING FEE TITLE TO THE PROPERTY SHOULD CHECK WITH THE APPROPRIATE CITY OR COUNTY PLANNING DEPARTMENT TO VERIFY APPROVED USES

Utah

STATE OF OREGON, *County of* Box Elder, ss.

This instrument was acknowledged before me on July 6, 1992.

by O. Jay Call, Managing Partner, of Call's Investment Company, a Utah general partnership

(SEAL)

Notary Public
GLORIA HORR LIESEL
322 Greenwood Drive
Brigham City, Utah 84302
My Commission Expires
February 15, 1996
State of Utah

Notary Public for OREGON Utah

My commission expires _____

WARRANTY DEED

Call's Investment Company
GRANTOR
Calls Investment Company Ltd.
50 West 990 South, Brigham City,
Utah 84302
GRANTEE'S ADDRESS, ZIP

After recording, return to:
O. Jay Call
Calls Investment Company, Ltd.
50 West 990 South
Brigham City, Utah 84302
NAME, ADDRESS, ZIP

Until a change is requested, all tax statements shall be sent to the following address:
O. Jay Call
Calls Investment Company, Ltd.
50 West 990 South
Brigham City, Utah 84302
NAME, ADDRESS, ZIP

SPACE RESERVED FOR RECORDER'S USE

STATE OF OREGON,
County of _____ ss.

I certify that the within instrument was received for record on the _____ *day of* _____, *19*____, *at* _____ *o'clock* ____ *M., and recorded in book/reel/volume No.* _____ *on page* _____ *or as fee/file/instrument/microfilm/reception No.* _____, *Record of Deeds of said county.*

Witness my hand and seal of County affixed.

NAME TITLE

By _____ *Deputy*

92 43585

EXHIBIT A

PARCEL 1:
Part of tracts 48 & 49, JENNINGS LODGE, more particularly described as:

Beginning at the most westerly corner of Tract 49; thence North 65° 12'30" East tracing the northwesterly boundary of said Tract 49, a distance of 98.22 feet to a point on the westerly boundary of the East side Portland-Pregon City Highway; thence South 28°10' East tracing the westerly boundary of said highway 223.24 feet to the most northerly corner of a tract of land conveyed to Ed Berdine and Hazel Berdine by Deed recorded May 1, 1946, in Book 366, page240, Deed Records; thence South 65° 12'30" West parallel with the boundary between Tracts 48 and 49, a distance of 24.45 feet, more or less to a point in the southwesterly boundary of Tract 48; thence North 45° 58' West tracing the southwesterly boundaries of Tracts 48 and 49, 242.07 feet to the place of beginning.

TOGETHER WITH that portion of an unnamed street adjacent to the Southwest boundary of the above described premises which inured thereto by reason of the vacation of said street.

PARCEL II:
That portion of Lot 50, JENNINGS LODGE, which lies westerly of the westerly right of way of State Highway No. 99-E.

TOGETHER with that portion of an unnamed street adjacent to the Southwest boundary of the bove described premises which unured thereto by reason of the vacation of said street.

PARCEL III:
All of Lot 51, JENNINGS LODGE.

EXCEPTING THEREFROM that portion conveyed to Clackamas County, by Deed recorded January 24, 1931, in Book 209, page 454, Deed Records.

TOGETHER WITH that portion of an unnamed street adjacent to the Southwest boundary of the bove described premises which unured thereto by reason of the vacation of said street.

ALSO EXCEPTING THEREFROM that portion lying within the boundaries of public roads.

2

STATE OF OREGON
County of Clackamas } ss

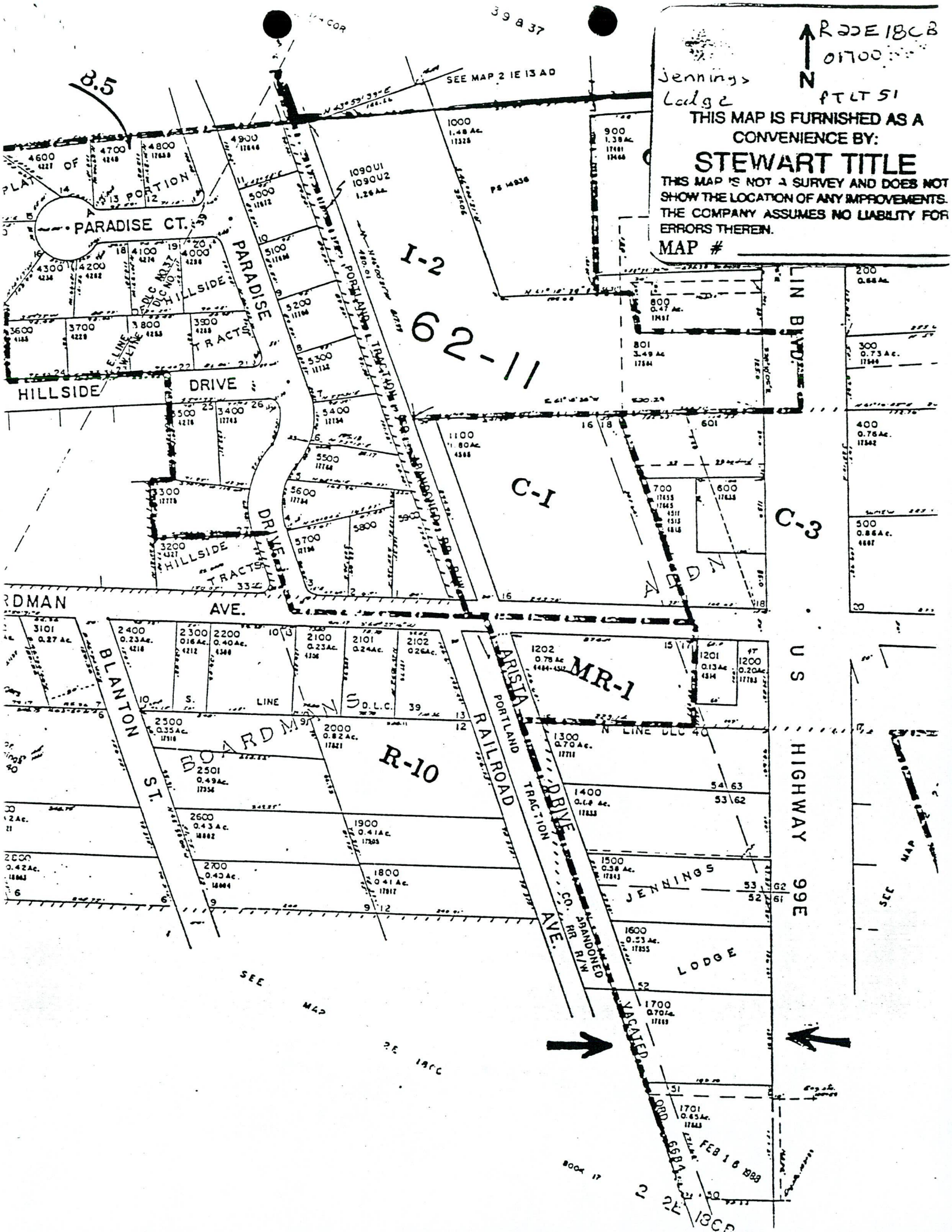
I, John Kauffman, County Clerk for the County of Clackamas do hereby certify that the instrument of writing was received for recording in the records of said county at

92 JUL 16 PM 2:36

COUNTY OF CLACKAMAS * STATE OF OREGON *

Witness my hand and seal affixed
JOHN KAUFFMAN
County Clerk

Recording Certificate
OCF-Mi No 93 43585


1S 2E 18CB
01700
Jennings Lodge
Pt Lt 51
N
THIS MAP IS FURNISHED AS A CONVENIENCE BY:
STEWART TITLE
THIS MAP IS NOT A SURVEY AND DOES NOT SHOW THE LOCATION OF ANY IMPROVEMENTS. THE COMPANY ASSUMES NO LIABILITY FOR ERRORS THEREIN.
MAP #
SEE MAP 2 1E 13 AD
PARADISE CT.
PARADISE DRIVE
HILLSIDE DRIVE
HILLSIDE TRACT
PORTLAND TRACTION CO. RR ABANDONED R/W
I-2
62-11
C-1
C-3
MR-1
R-10
LINDEN BLVD.
ARDMAN AVE.
BLANTON ST.
ARISTA DRIVE
RAILROAD AVE.
PORTLAND TRACTION CO. RR ABANDONED R/W
U S HIGHWAY 99E
JENNINGS LODGE
VACATED
ORD 668A
FEB 16 1988
SEE MAP 2 1E 13CC
2 2W 18CB

FORM No. 964—WARRANTY DEED—STATUTORY FORM (Corporate Grantor). STEVENS-NESS LAW PUB. CO., PORTLAND, OR. 1-94

OK

WARRANTY DEED—STATUTORY FORM

CORPORATE GRANTOR

Flying "J" Oil Company, a Utah corporation, now known as Flying J Inc.

a corporation duly organized and existing under the laws of the State of Utah Grantor, conveys and warrants to Call's Investment Company, a Utah general partnership

Grantee, the following described real property free of encumbrances except as specifically set forth herein situated in Clackamas County, Oregon, to-wit:

SEE EXHIBIT A ATTACHED HERETO AND INCORPORATED HERIN BY THIS REFERENCE

(IF SPACE INSUFFICIENT, CONTINUE DESCRIPTION ON REVERSE SIDE)

The said property is free from all encumbrances except

The true consideration for this conveyance is $ 200,155.00 (Here comply with the requirements of ORS 93.030)

Done by order of the grantor's board of directors with its corporate seal affixed on July 2, 1992

THIS INSTRUMENT WILL NOT ALLOW USE OF THE PROPERTY DESCRIBED IN THIS INSTRUMENT IN VIOLATION OF APPLICABLE LAND USE LAWS AND REGULATIONS. BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON ACQUIRING FEE TITLE TO THE PROPERTY SHOULD CHECK WITH THE APPROPRIATE CITY OR COUNTY PLANNING DEPARTMENT TO VERIFY APPROVED USES.

FLYING J INC.

(CORPORATE SEAL) Utah

By _____ President

By _____ Secretary

STATE OF ~~OREGON~~, County of Box Elder) ss. July 6, 1992

Personally appeared J Phillip Adams and Barre B. Burgon

who, each being first duly sworn, did say that the former is the president and that the latter is the secretary of Flying J Inc.

a corporation, and that the seal affixed to the foregoing instrument is the corporate seal of said corporation and that said instrument was signed and sealed in behalf of said corporation by authority of its board of directors; and each of them acknowledged said instrument to be its voluntary act and deed.

(OFFICIAL SEAL)

GLORIA HORSLEY
300 Greenwood Drive
Brigham City, Utah 84302
My Commission Expires
February 15, 1993
State of Utah

Before me: _____

Notary Public for Oregon: My commission expires: _____

Utah

WARRANTY DEED

Flying J Inc. GRANTOR
Call's Investment Company GRANTEE
50 West 990 South
BrighamCity, Utah 84302
GRANTEE'S ADDRESS, ZIP

After recording, return to:
Calls Investment Company
50 West 990 South
Brigham City, Utah 84302
NAME, ADDRESS, ZIP

Until a change is requested, all tax statements shall be sent to the following address:
Calls Investment Company
50 West 990 South
Brigham City, Utah 84302
NAME, ADDRESS, ZIP

SPACE RESERVED FOR RECORDER'S USE

STATE OF OREGON, County of _____ } ss.

I certify that the within instrument was received for record on the _____ day of _____, 19 __, at _____ o'clock _____ M., and recorded in book/reel/volume No. _____ on page _____ or as document/fee/file/instrument/microfilm No. _____, Record of Deeds of said county.

Witness my hand and seal of County affixed.

NAME _____ TITLE

By _____ Deputy

92-43586

EXHIBIT A

PARCEL 1:
Part of tracts 48 & 49, JENNINGS LODGE, more particularly described as:

Beginning at the most westerly corner of Tract 49; thence North 65° 12'30' East tracing the northwesterly boundary of said Tract 49, a distance of 98.22 feet to a point on the westerly boundary of the East side Portland-Pregon City Highway; thence South 28°10' East tracing the westerly boundary of said highway 223.24 feet to the most northerly corner of a tract of land conveyed to Ed Berdine and Hazel Berdine by Deed recorded May 1, 1946, in Book 366, page240, Deed Records; thence South 65° 12'30" West parallel with the boundary between Tracts 48 and 49, a distance of 24.45 feet, more or less to a point in the southwesterly boundary of Tract 48; thence North 45° 58' West tracing the southwesterly boundaries of Tracts 48 and 49, 242.07 feet to the place of beginning.

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2

STATE OF OREGON
County of Clackamas } ss

I, John Kaufman, County Clerk for the County of Clackamas, do hereby certify that the instrument of writing was received for recording in the records of said county at

92 JUL 16 PM 2:36

COUNTY OF CLACKAMAS ★ STATE OF OREGON ★

Witness my hand and seal of said

JOHN KAUFMAN
County Clerk

Deputy

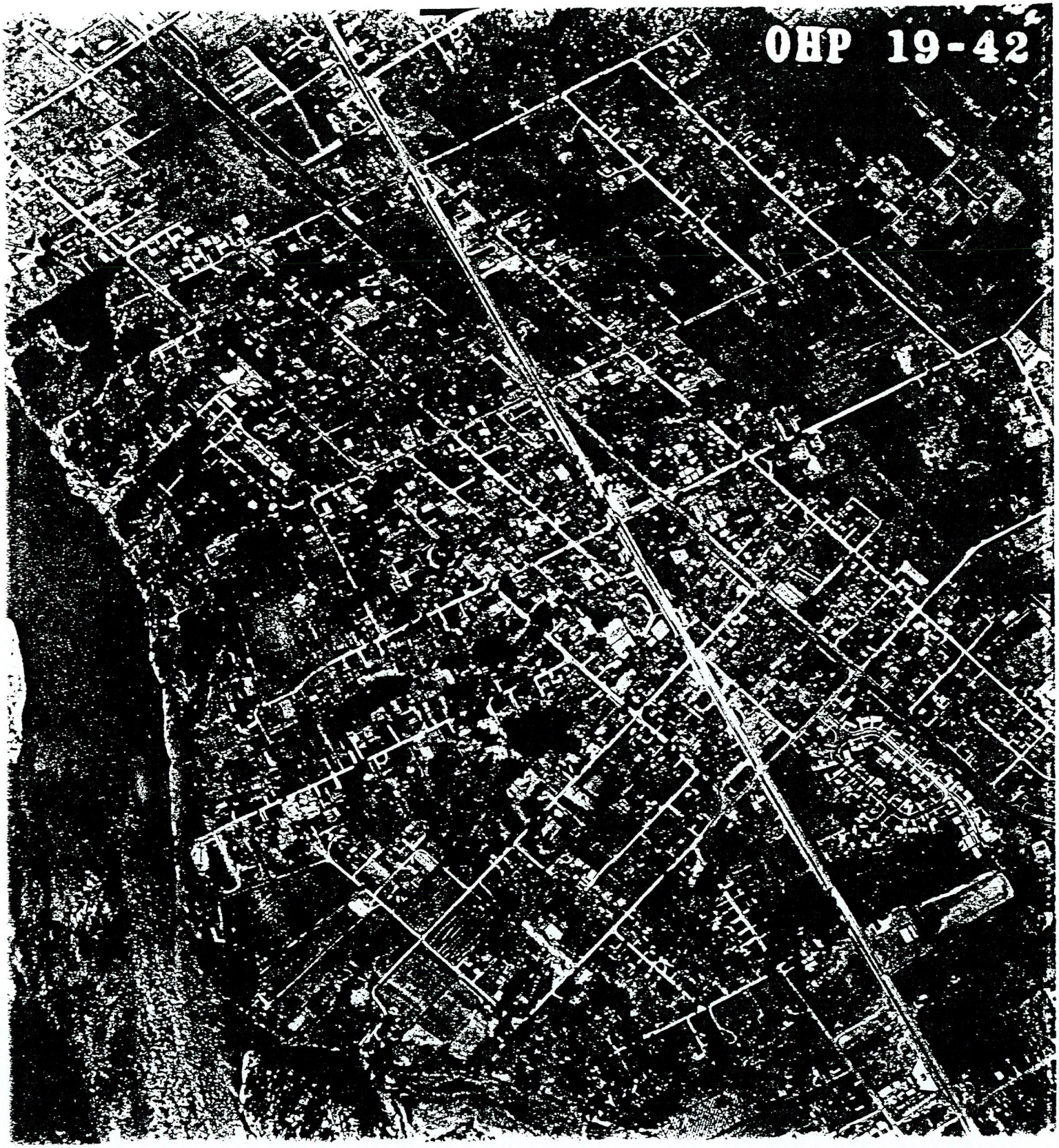
Recording Officer's
CCF No. 92 43586

APPENDIX C

APPENDIX C

Aerial Photographs

Aerial Photographs-1942
Jiffy Lube International Store #1012
Milwaukie, Oregon
Delta Project No. 43-93-011



Aerial Photographs-1964
Jiffy Lube International Store #1012
Milwaukie, Oregon
Delta Project No. 43-93-011

Aerial Photographs-1973
Jiffy Lube International Store #1012
Milwaukie, Oregon
Delta Project No. 43-93-011

Aerial Photographs-1980
Jiffy Lube International Store #1012
Milwaukie, Oregon
Delta Project No. 43-93-011

Aerial Photographs-1988
Jiffy Lube International Store #1012
Milwaukie, Oregon
Delta Project No. 43-93-011

APPENDIX D

APPENDIX D

Initial Report Form for Underground Storage Tank Clean-up Project

File Copy

PHASE II
ENVIRONMENTAL ASSESSMENT REPORT

JIFFY LUBE INTERNATIONAL STORE #1012
17869 S.E. McLOUGHLIN BOULEVARD
MILWAUKIE, OREGON

DELTA PROJECT NO. ~~43-93-011~~
03-93-008

Delta
Environmental
Consultants, Inc.

PHASE II
ENVIRONMENTAL ASSESSMENT REPORT

JIFFY LUBE INTERNATIONAL STORE #1012
17869 S.E. McLOUGHLIN BOULEVARD
MILWAUKIE, OREGON

DELTA PROJECT NO. 43-93-011

Prepared By:

Delta Environmental Consultants, Inc.
3150 Richards Road, Suite 100
Bellevue, Washington 98005
(206)649-9663

TABLE OF CONTENTS

PHASE II ENVIRONMENTAL ASSESSMENT REPORT

JIFFY LUBE INTERNATIONAL STORE #1012
17869 S.E. McLOUGHLIN BOULEVARD
MILWAUKIE, OREGON

DELTA PROJECT NO. 43-93-011

1.0 EXECUTIVE SUMMARY

An investigation was conducted at the Jiffy Lube International Store #1012, 17869 S.E. McLoughlin Boulevard, Milwaukie, Oregon, to assess the potential for environmental concerns at the property. The investigation involved drilling five soil borings in different locations throughout the subject site and collecting representative soil samples. The sample results indicated that the soils tested from SB-1, SB-3, and SB-5 contained benzene, toluene, ethlybenzene, xylenes (BTEX) and total petroleum hydrocarbons (TPH). Concentrations of TPH and xylenes were discovered in SB-2 and only TPH was detected in SB-4. In general, the detected levels of benzene, ethylbenzene and TPH are above acceptable Oregon Cleanup Levels in samples from boring SB-1 and SB-5.

2.0 INTRODUCTION

2.1 Scope of Work

An investigation was conducted at the Jiffy Lube International Store #1012, 17869 S.E. McLoughlin Boulevard, in Milwaukie, Oregon (Figure 1), on May 27, 1993 by Delta Environmental Consultants, Inc. (Delta). The purpose of the investigation was to assess the potential for environmental concerns at the property. The scope of work included the following:

- Drilling five soil borings and collecting representative soil samples;
- Analyzing soil samples for BTEX and TPH;
- Preparing a summary report.

3.0 SOIL INVESTIGATION

3.1 Soil Borings

Soil boring were drilled a five locations on the property (Figure 2). Two of the borings were drilled in locations adjacent to the underground storage tank (UST) basin; two adjacent to the pump islands, and one boring was drilled immediately south of the five abandoned lube oil USTs. The borings were drilled to depths of 15 feet and are shown as SB-1, SB-2, SB-3, SB-4, and SB-5 on Figure 2. Soil boring logs are attached as Appendix A.

3.2 Site Geology and Hydrogeology

The soil borings indicate that the site is underlain by a fine silty sand to a depth of approximately 15 feet below ground surface. Ground water was encountered in all of the soil borings at depths of approximately seven feet.

3.3 Soil Analytical Data

One soil sample from each boring was submitted for laboratory analysis for benzene, toluene, ethylbenzene, xylene (BTEX) by EPA Method 8020 and total petroleum hydrocarbons (TPH) by a modified EPA Method 418.1 I.R. analysis preferred by the Oregon Department of Environmental Quality (DEQ). The sample identification, sample depths, and analytical results are shown in Table 1. The sample interval selected for analysis was determined by the highest field screen reading with a photoionization detector (HNU). The field screening data is shown on the boring logs in Appendix A.

During the drilling of SB-1 and SB-5, free product was encountered in the samples at depths of approximately 5 feet. The free product in boring SB-5 was black and viscous. In SB-1, the free product was brown and less viscous.

The results of the laboratory analyses are shown in Table 1 and the laboratory report is attached in Appendix B. The analytical results indicate that all soil borings have contaminations above the cleanup levels. Benzene was detected in soil borings SB-1, SB- 3, and SB- 5 significantly above the action level of 0.1 ppm. Concentrations of toluene in SB-1 were detected at 99 ppm with an Oregon Clean-up Level of 80 ppm. Ethlybenzene was apparent in SB-1 and SB-5 at concentrations of 120 ppm and 160 ppm, respectively, with an action level of 100 ppm. Total petroleum hydrocarbons were detected in all of the borings, with significant concentrations noted in SB-1 (2,200) and SB-5 (18,000 ppm).

4.0 METHODOLOGIES

4.1 Locating Underground Utilities

Prior to the commencement of work on site, Delta researched the locations of all underground utilities with the assistance of Underground Utility Located Services. On May 21, 1993, Underground Utility Located Services was on site to determine and mark the locations of all the underground utilities. Work associated with the drilling was preceded by hand-digging of the soil borings to a minimum depth of 4 feet to avoid contact with underground fuel distribution lines, vent lines and other unmarked utilities.

4.2 Drilling and Soil Sampling Procedures

Soil borings and soil sampling were performed under the direction of a Delta field geologist. The soil borings were advanced using a truck-mounted drill rig utilizing hollow-stem augers.

Soil sampling was done in general accordance with procedure ASTM 1586-84. Samples were placed in glass jars as well as plastic bags for later screening with a photoionization detector (HNU). The samples were placed in a iced cooler for transport to the laboratory. The soil samples were submitted to Alden Analytical Laboratory, Inc. of Seattle, Washington, a Washington State certified laboratory and accompanied by a Chain-of-Custody form.

4.3 Decontamination Protocol

To reduce the chances of cross contamination between boreholes, all down-hole drilling equipment was cleaned between each soil boring. To reduce cross contamination between samples, the split-barrel sampler was washed in a soap solution and double rinsed between each sampling event.

4.4 Soil Classification

As the samples were obtained in the field, they were classified by the Delta geologist in general accordance with the Unified Soil Classification System as outlined in ASTM:D2488-84. Logs of the borings indicating the depth and identification of the various strata, the blow counts, water-level information and pertinent information regarding the method of maintaining and advancing the bore holes were completed. The boring logs are included in Appendix A.

5.0 CONCLUSIONS

Silty sand soils underlie the site to a depth of approximately 15 feet below the ground surface. A silty clay was encountered in all soil borings at shallow depths. Ground water was encountered at approximately 7 feet below ground surface. Free product was encountered during drilling in SB-1 and SB-5.

Samples submitted from SB-1, SB-3, and SB-5 for analyses each contained TPH or BTEX concentrations in excess of established Oregon Clean-up Levels.

The conclusions contained in this report represent our professional opinions. These opinions are arrived at in accordance with currently accepted hydrogeologic and engineering practices at this time and location and are subject to the inherent limitations of the proposed work.

Delta's report is prepared in accordance with the proposal and the standard terms and conditions presented in the service contract, and no other warranties, representations, or certifications are made.

Delta has been pleased to be of service in this matter. If you have any questions regarding the information contained in this report, or if we may be of any further assistance, please feel free to contact us.

Respectfully submitted,

DELTA ENVIRONMENTAL CONSULTANTS, INC.

PREPARED BY:

Patricia A. Crump
Staff Professional

Daniel S. Whitman
Senior Environmental Geologist

TABLES

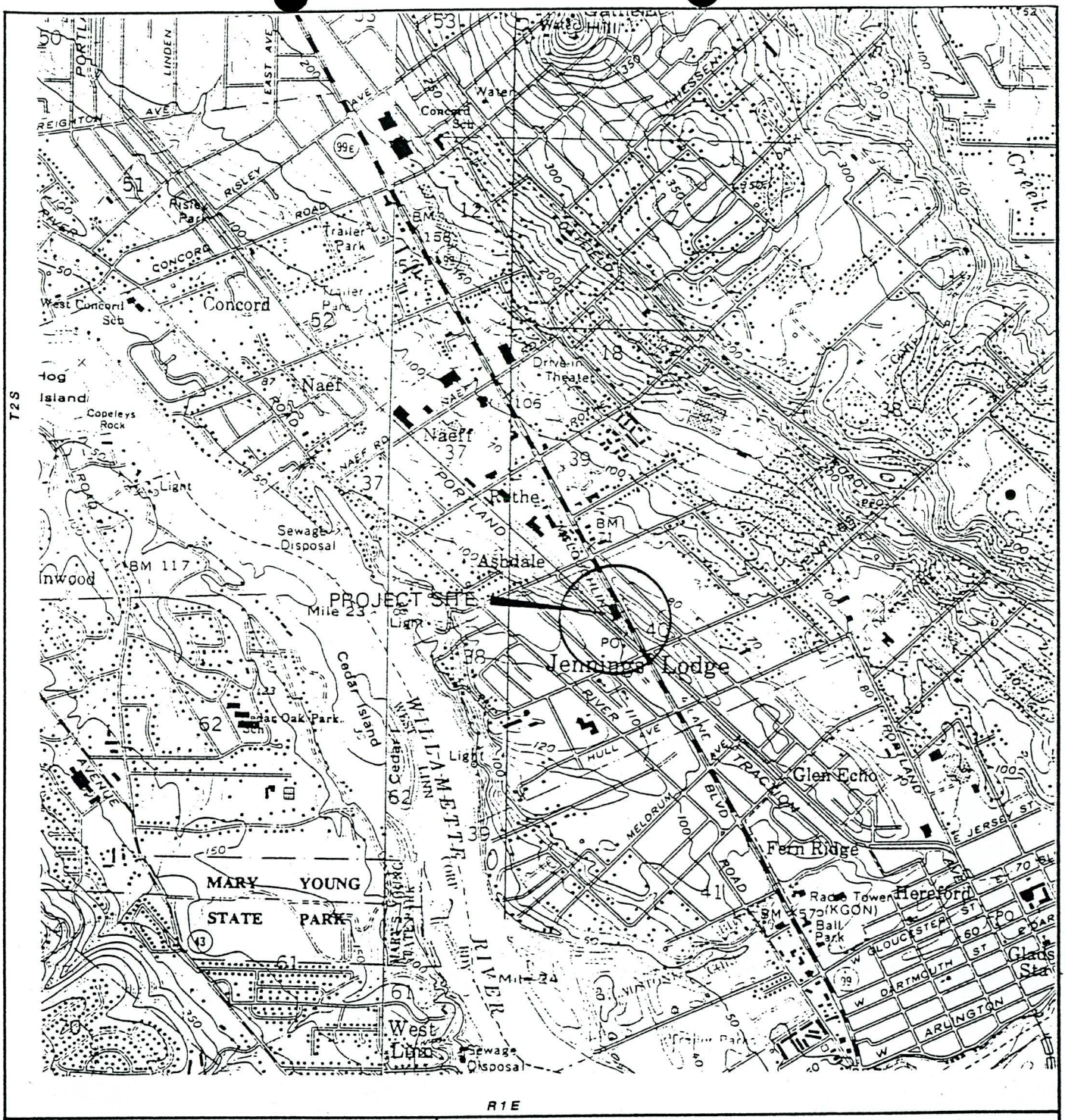
TABLE 1
SOIL SAMPLE CHEMICAL ANALYSIS
Jiffy Lube International Store #1012
Milwaukie, Oregon
Delta Project No. 43-93-011

Sample ID	Date	Soil Depth (in feet)	Benzene (ppm)	Toluene (ppm)	Ethylbenzene (ppm)	Total-Xylenes (ppm)	TPH (ppm)
SB-1	5/27/93	6	20	99	120	520	2,200
SB-2	5/27/93	6	<0.032	<0.032	<0.032	.057	53
SB-3	5/27/93	6	8.5	0.48	1.2	4.7	37
SB-4	5/27/93	6	<0.034	<0.034	<0.034	<0.034	18
SB-5	5/27/93	6	110	3.4	160	470	18,000
Laboratory Method:			EPA 8240	EPA 8240	EPA 8240	EPA 8240	EPA 418.1 Modified
Oregon Cleanup levels:			0.1	80.0	100.0	800.0	40.0-1000.0*

All concentrations are reported in mg/kg (ppm).

* In order to determine an appropriate soil cleanup level, the State of Oregon has established a numeric soil cleanup matrix evaluation system. This scoring system evaluates individual site characteristics, assigning a score to each factor evaluated. The individual scores are totalled and the appropriate TPH Clean-up level is assigned based on the total score. This matrix is only applicable on sites without potential for groundwater contamination.

FIGURES



GENERAL NOTES:
BASE MAPS FROM U.S.G.S.
MILWAUKIE, OR
7.5x15 MIN TOPOGRAPHIC
PHOTOREVISED 1984

NORTH

0 2000 FT

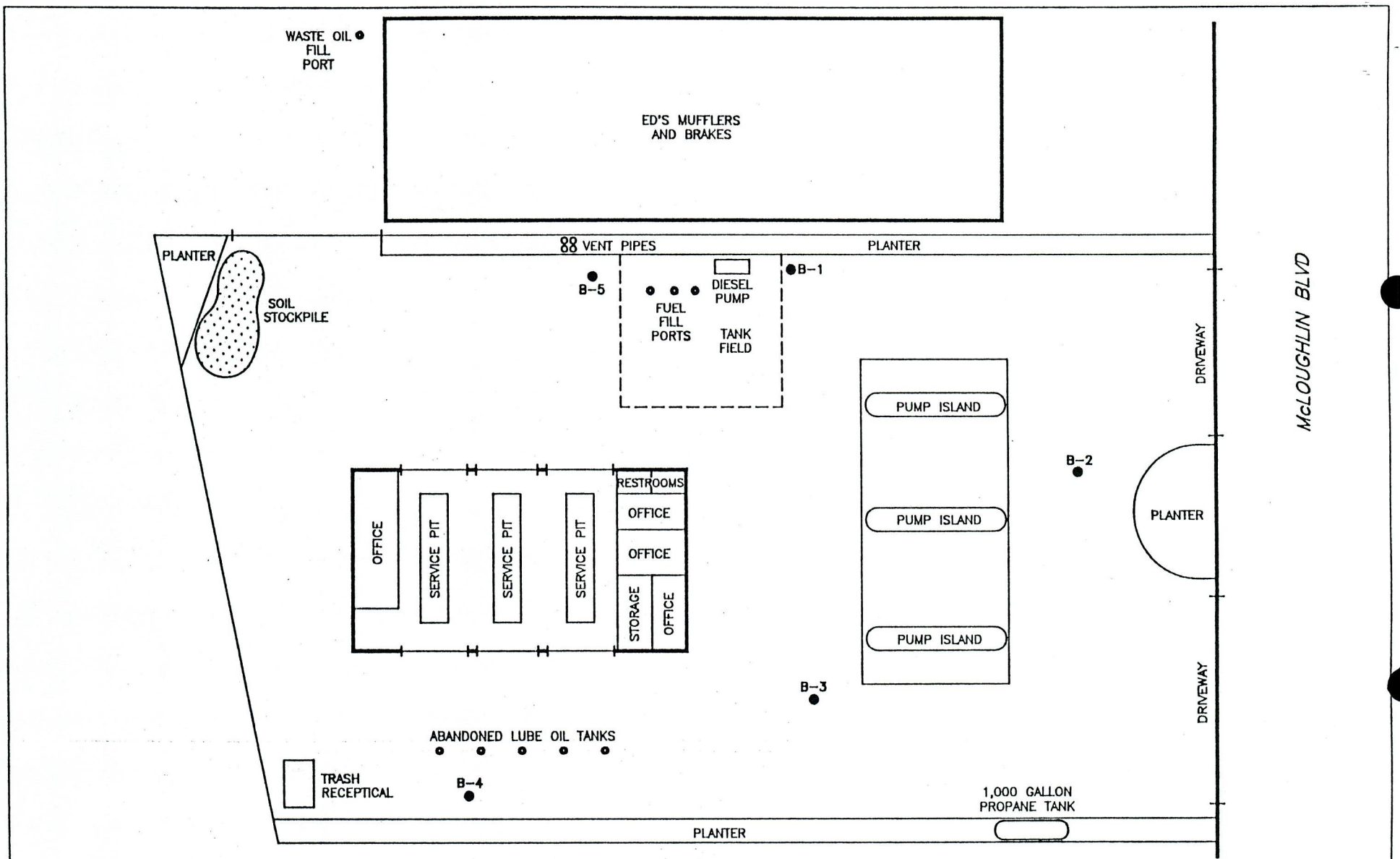
SCALE 1 : 24,000

FIGURE 1
SITE LOCATION MAP

JIFFY LUBE INTERNATIONAL STORE #1012
17869 MCLOUGHLIN BOULEVARD
MILWAUKIE, OREGON

Project No.	Drawn By:
43-93-011	PAC
File No.	Prepared By:
FIG4011	PAC
Revision No.	Reviewed By:
0	

Delta Environmental Consultants, Inc.



LEGEND:

● B-1 SOIL BORING LOCATION

North

0 30 FT

APPROX. SCALE

FIGURE 2

SOIL BORING LOCATION MAP

JIFFY LUBE INTERNATIONAL STORE #1012

17869 S.E. McLOUGHLIN BOULEVARD

MILWAUKIE, OR.

PROJECT NO. 43-93-011	DRAWN BY I.H. 6/1/93
FILE NO. 4393011A	PREPARED BY PAC
REVISION NO. 1	REVIEWED BY

Delta Environmental Consultants, Inc.

APPENDICES

APPENDIX A

SOIL BORING LOGS

PROJECT NAME/LOCATION:	Project Number	43-93-011	Boring Number	SB-1
Jiffy Lube Internation Store #1012 17869 S.E.McLoughlin Boulevard Milwaukie, OR	Contractor	Geotech Explorations	Drilling Method	Hollow Stem Auger
	Driller	Mike Reneker	Drilling Rig	B-61
	Start	8:40 a.m. 05/27/93	Completed	9:05 a.m. 05/27/93
Landowner: Flying J Corporation	Surface Elev.	------	Logged By	Mark Underhill

Sample Type	Sample No.	Blow Count	Sample Interval (ft)	Sample Recovery (in.)	Depth Scale 1" = 4'	Descriptions of Materials and Conditions	Observations: Instrument: hNu Units: ppm	Observations: Comments
					0	Asphalt Concrete and Gravel Base		
					1			
					2			
					3			
					4			
SS	1	1 1 1 2	5.0-7.0	6	5	DARK GREY SILTY SAND; very loose, moist	140 ppm	
					6	FREE PRODUCT, brown		
					7			
					8			
					9			
SS	2	1 1 1 2	10-12	6	10	DARK GREY CLAY; trace silt, soft, moist	0 ppm	
					11	Silt grades to clay		
					12			
					13			
					14			
SS	3	1 1 1 2	15-17	6	15	DARK GREY-BLACK SAND; medium sand with trace silt, loose, wet	0 ppm	
					16			
					17	End of Soil Boring at 15.0 feet below ground surface.		
					18			
					19			
					20			
					21			
					22			
					23			

BOREHOLE WATER LEVEL DATA			
Date			
Time			
GWL			
Casing Depth			

Delta Environmental Consultants, Inc.

Sheet 1 of 1

Rev. June 21, 1993

PROJECT NAME/LOCATION:	Project Number	43-93-011	Boring Number	SB-2
Jiffy Lube International Store #1012 17869 S.E. McLoughlin Boulevard Milwaukie, OR	Contractor	Geotech Exploration	Drilling Method	Hollow Stem Auger
	Driller	Mike Reneker	Drilling Rig	B-61
	Start	9:30 a.m. 05/27/93	Completed	10:20 p.m. 05/27/93
Landowner: Flying J Corporation	Surface Elev.	-----	Logged By	Mark Underhill

Sample Type	Sample No.	Blow Count	Sample Interval (ft)	Sample Recovery (in.)	Depth Scale 1" = 4'	Descriptions of Materials and Conditions	Observations Instrument: hNu Units: ppm	Observations Comments
					0	Asphalt Concrete and Gravel Base		
					1			
					2			
					3			
					4			
SS	1	1 2 3 5	5.0-7.0	6	5	DARK GREY SILTY CLAY, soft, damp	30 ppm	
					6			
					7	Groundwater encountered		
					8			
					9			
SS	2	1 2 1 3	10-12	6	10	DARK GREY CLAY; trace organics, soft, damp	0 ppm	
					11			
					12			
					13			
					14			
SS	3	6 8 6 14	15-17	6	15	GREY/BROWN SAND; trace silt, dense, wet	0 ppm	
					16	End of boring at 15.0 feet below ground surface.		
					17			
					18			
					19			
					20			
					21			
					22			
					23			

BOREHOLE WATER LEVEL DATA			
Date			
Time			
GWL			
Casing Depth			

Delta Environmental Consultants, Inc.

Sheet 1 of 1

Rev. June 21, 1993

PROJECT NAME/LOCATION:	Project Number	43-93-011	Boring Number	SB-3
Jiffy Lube International Store #1012 17869 S.E. McLoughlin Boulevard Milwaukie, OR	Contractor	Geotech Exploration	Drilling Method	Hollow Stem Auger
	Driller	Mike Reneker	Drilling Rig	B-61
	Start	10:58a.m. 05/27/93	Completed	11:25 p.m. 05/27/93
Landowner: Flying J Corporation	Surface Elev.	-----	Logged By	Mark Underhill

Sample Type	Sample No.	Blow Count	Sample Interval (ft)	Sample Recovery (in.)	Depth Scale 1" = 4'	Descriptions of Materials and Conditions	Observations Instrument: hNu Units: ppm	Observations Comments
					0	Asphalt Concrete and Gravel Base		
					1			
					2			
					3			
					4			
SS	1	1 1 1	5.0-7.0	6	5	DARK GREY SILT, trace organics, soft, damp	30 ppm	
					6			
					7	Groundwater encountered		
					8			
					9			
SS	2	1 1 1	10-12	6	10	DARK GREY CLAY, soft, damp	0 ppm	
					11			
					12			
					13			
					14			
SS	3	1 1 1	15-17	6	15	BROWN/GREY SAND; trace silt, loose, wet	0 ppm	
					16	End of boring at 15.0 feet below ground surface.		
					17			
					18			
					19			
					20			
					21			
					22			
					23			

BOREHOLE WATER LEVEL DATA			
Date			
Time			
GWL			
Casing Depth			

Delta Environmental Consultants, Inc.

Sheet 1 of 1

Rev. June 21, 1993

PROJECT NAME/LOCATION:		Project Number	43-93-011	Boring Number	SB-4
Jiffy Lube Internation Store #1012 17869 S.E.McLoughlin Boulevard Milwaukie, OR		Contractor	Geotech Explorations	Drilling Method	Hollow Stem Auger
		Driller	Mike	Drilling Rig	B-61
		Start	1:45 p.m. 05/27/93	Completed	1:58 p.m. 05/27/93
Landowner:	Flying J Corporation	Surface Elev.	------	Logged By	Mark Underhill

Sample Type	Sample No.	Blow Count	Sample Interval (ft)	Sample Recovery (in.)	Depth Scale 1" = 4'	Descriptions of Materials and Conditions	Observations Instrument: hNu Units: ppm	Observations Comments
					0	Asphalt Concrete and Gravel Base		
					1			
					2			
					3			
					4			
SS	1	3 4 5 9	5.0-7.0	6	5	DARK GREY/BLACK SILTY CLAY; stiff, damp	0 ppm	
					6	Groundwater encountered		
					7			
					8			
					9			
SS	2	1 2 4 2	10-12	6	10	GREY SANDS; trace silt, medium dense, moist	0 ppm	
					11			
					12			
					13			
					14			
SS	3	3 2 2 4	15-17	6	15	BROWN/GREY SAND; trace silt, loose, wet	0 ppm	
					16	End of Soil Boring at 15.0 feet.		
					17			
					18			
					19			
					20			
					21			
					22			
					23			

BOREHOLE WATER LEVEL DATA			
Date			
Time			
GWL			
Casing Depth			

Delta Environmental Consultants, Inc.

Sheet 1 of 1

Rev. June 21, 1993

PROJECT NAME/LOCATION:	Project Number	43-93-011	Boring Number	SB-5
Jiffy Lube International Store #1012 17869 S.E. McLoughlin Boulevard Milwaukie, OR	Contractor	Geotech Exploration	Drilling Method	Hollow Stem Auger
	Driller	Mike Reneker	Drilling Rig	B-61
	Start	2:50 a.m. 05/27/93	Completed	3:05 p.m. 05/27/93
Landowner: Flying J Corporation	Surface Elev.	-----	Logged By	Mark Underhill

Sample Type	Sample No.	Blow Count	Sample Interval (ft)	Sample Recovery (in.)	Depth Scale 1" = 4'	Descriptions of Materials and Conditions	Observations: Instrument: hNu, Units: ppm	Comments
					0	Asphalt Concrete and Gravel Base		
					1			
					2			
SS	1	1 1 3 4	3.0-5.0	6	3	DARK GREY SILTY SAND, soft, damp		
					4			
					5		30 ppm	
SS	2	1 1 1 2	6-7	6	6	DARK GREY SILTY CLAY; trace sand, soft, damp		
					7	FREE-PRODUCT; black, viscous Groundwater encountered		
					8			
					9			
SS	3	1 1 1 2	10-12	6	10		0 ppm	
					11	DARK GREY CLAY; trace silts, soft, damp-moist		
					12	End of boring at 10.0 feet below ground surface.		
					13			
					14			
					15		0 ppm	
					16			
					17			
					18			
					19			
					20			
					21			
					22			
					23			

BOREHOLE WATER LEVEL DATA			
Date			
Time			
GWL			
Casing Depth			

Delta Environmental Consultants, Inc.

Sheet 1 of 1

Rev. June 21, 1993

APPENDIX B

LABORATORY RESULTS

Alden Analytical
Laboratories, Inc.

June 8, 1993

Delta Environmental Consultants, Inc.
Attn: Dan Whitman
3150 Richards Road, Suite 100
Bellevue, WA 98005

RE: ALDEN PROJECT NUMBER 9305079/1
(DELTA PROJECT NUMBER 43-93-011)

Dear Dan:

Enclosed are the analytical results for the soil samples submitted to Alden Labs May 28, 1993. The samples were analyzed for TPH using Oregon Method TPH-418.1 Modified and BTEX using Method 8240.

All samples met Alden's internal QA/QC criteria.

It is Alden's policy to dispose of all samples and extracts after the expiration of their hold time unless notified otherwise. If you have any questions, please do not hesitate to call me at the number below.

Sincerely,

John A. Weakland
Project Manager

Enclosures

1001 SW Klickitat Way
Seattle, WA 98134
Telephone (206) 623-3660
Facsimile (206) 624-8778

Alden Analytical
Laboratories, Inc.

REPORT OF ANALYTICAL RESULTS

Client: Delta (43-93-011)
Client Sample Number: See Below
Date of Sample Receipt: 05/28/93
Matrix: Soil

Alden Project Number: 9305079/1
Alden Sample Number: See Below
Analysis Method: TPH-418.1 Modified
Reporting Units: mg/kg

Client Sample ID	*Alden Sample Number*	*Extraction Date*	*Analysis Date*	*TPH*
N/A	Blank	06/02/93	06/02/93	6.3
B-1/S-1	3870	06/02/93	06/02/93	2200
B-2/S-1	3871	06/02/93	06/02/93	53
B-3/S-1	3872	06/02/93	06/02/93	37
B-4/S-1	3873	06/02/93	06/02/93	18
Duplicate	3873 Dup	06/02/93	06/02/93	9.4
B-5/S-2	3874	06/02/93	06/02/93	18000

Note: Results are reported to two significant figures.

Alden Analytical
Laboratories, Inc.

REPORT OF ANALYTICAL RESULTS

Client: Delta (43-93-011)	*Alden Project Number: 9305079/1*
Client Sample Number: N/A	*Alden Sample Number: BLANK1*
Date of Sample Receipt: N/A	*Analysis Method: EPA 8240**
Date of Sample Extraction: N/A	*Matrix: Soil*
Date of Sample Analysis: 06/01/93	*Reporting Units: ug/kg*

Compound Name	*CAS No.*	*Reporting Limits(RL)*	*Reporting Results*
Benzene	71-43-2	1	<RL
Toluene	108-88-3	1	<RL
Ethylbenzene	100-41-4	1	<RL
m,p-Xylene**	1330-20-7	1	<RL
o-Xylene	1330-20-7	1	<RL

Surrogates	*Amount Added*	*Percent Recovery*	*Recovery Limits*
d4-1,2-Dichloroethane	250 ng	105	70-121
d8-Toluene	250 ng	100	81-117
Bromofluorobenzene	250 ng	104	74-121

* Please note that sample results have been corrected for moisture content.

** m-Xylene and p-Xylene cannot be separated and are reported here as a total of the two isomers.

Alden Analytical
Laboratories, Inc.

REPORT OF ANALYTICAL RESULTS

Client: Delta (43-93-011)	*Alden Project Number: 9305079/1*
Client Sample Number: N/A	*Alden Sample Number: BLANK2*
Date of Sample Receipt: N/A	*Analysis Method: EPA 8240**
Date of Sample Extraction: N/A	*Matrix: Soil*
Date of Sample Analysis: 06/02/93	*Reporting Units: ug/kg*

Compound Name	*CAS No.*	*Reporting Limits(RL)*	*Reporting Results*
Benzene	71-43-2	1	<RL
Toluene	108-88-3	1	<RL
Ethylbenzene	100-41-4	1	<RL
m,p-Xylene**	1330-20-7	1	<RL
o-Xylene	1330-20-7	1	<RL

Surrogates	*Amount Added*	*Percent Recovery*	*Recovery Limits*
d4-1,2-Dichloroethane	250 ng	101	70-121
d8-Toluene	250 ng	100	81-117
Bromofluorobenzene	250 ng	94	74-121

* Please note that sample results have been corrected for moisture content.

** m-Xylene and p-Xylene cannot be separated and are reported here as a total of the two isomers.

Alden Analytical
Laboratories, Inc.

REPORT OF ANALYTICAL RESULTS

Client: Delta (43-93-011)	*Alden Project Number: 9305079/1*
Client Sample Number: B-1/S-1	*Alden Sample Number: 3870*
Date of Sample Receipt: 05/28/93	*Analysis Method: EPA 8240**
Date of Sample Extraction: 06/01/93	*Matrix: Soil*
Date of Sample Analysis: 06/02/93	*Reporting Units: ug/kg*

Compound Name	*CAS No.*	*Reporting Limits(RL)*	*Reporting Results*
Benzene	71-43-2	12000	20000
Toluene	108-88-3	12000	99000
Ethylbenzene	100-41-4	12000	120000
m,p-Xylene**	1330-20-7	12000	520000
o-Xylene	1330-20-7	12000	160000

Surrogates	*Amount Added*	*Percent Recovery*	*Recovery Limits*
d4-1,2-Dichloroethane	250 ng	110	70-121
d8-Toluene	250 ng	104	81-117
Bromofluorobenzene	250 ng	100	74-121

* Please note that sample results have been corrected for moisture content.

** m-Xylene and p-Xylene cannot be separated and are reported here as a total of the two isomers.

Alden Analytical
Laboratories, Inc.

REPORT OF ANALYTICAL RESULTS

Client: Delta (43-93-011)	*Alden Project Number: 9305079/1*
Client Sample Number: B-2/S-1	*Alden Sample Number: 3871*
Date of Sample Receipt: 05/28/93	*Analysis Method: EPA 8240**
Date of Sample Extraction: 06/01/93	*Matrix: Soil*
Date of Sample Analysis: 06/02/93	*Reporting Units: ug/kg*

Compound Name	*CAS No.*	*Reporting Limits(RL)*	*Reporting Results*
Benzene	71-43-2	32	<RL
Toluene	108-88-3	32	<RL
Ethylbenzene	100-41-4	32	<RL
m,p-Xylene**	1330-20-7	32	57
o-Xylene	1330-20-7	32	<RL

Surrogates	*Amount Added*	*Percent Recovery*	*Recovery Limits*
d4-1,2-Dichloroethane	250 ng	107	70-121
d8-Toluene	250 ng	109	81-117
Bromofluorobenzene	250 ng	99	74-121

* Please note that sample results have been corrected for moisture content.

** m-Xylene and p-Xylene cannot be separated and are reported here as a total of the two isomers.

Alden Analytical
Laboratories, Inc.

REPORT OF ANALYTICAL RESULTS

Volatiles Matrix Spike/Matrix Spike Duplicate Recoveries

Client: Delta (43-93-011)
Client Sample Number: B-2/S-1
Date of Sample Receipt: 05/28/93
Date of Sample Extraction: 06/01/93
Date of Sample Analysis: 06/02/93

Alden Project Number: 9305079/1
Alden Sample Number: 3871
Analysis Method: EPA 8240
Matrix: Soil
Reporting Units: ug/kg

Compound	*Spike Added (ug/kg)*	*Sample Concentration (ug/kg)*	*MS Concentration (ug/kg)*	*MS % Rec.*	*QC Limits Rec.*
1,1-Dichloroethene	50	0	55.07	110	59 - 172
Trichloroethene	50	0	54.20	108	62 - 137
Benzene	50	0	54.92	110	66 - 142
Toluene	50	0	53.20	106	59 - 139
Chlorobenzene	50	0	50.64	101	60 - 133

Compound	*Spike Added (ug/kg)*	*MSD Concentration (ug/kg)*	*MSD % Rec.*	*% RPD*	*QC Limits*	
					RPD	*REC.*
1,1-Dichloroethene	50	53.35	107	3.2	14	59 - 172
Trichloroethene	50	53.27	107	1.7	14	62 - 137
Benzene	50	52.99	106	3.6	11	66 - 142
Toluene	50	53.58	107	0.7	13	59 - 139
Chlorobenzene	50	49.81	100	1.7	13	60 - 133

Alden Analytical
Laboratories, Inc.

REPORT OF ANALYTICAL RESULTS

Client: Delta (43-93-011)	*Alden Project Number: 9305079/1*
Client Sample Number: B-3/S-1	*Alden Sample Number: 3872*
Date of Sample Receipt: 05/28/93	*Analysis Method: EPA 8240**
Date of Sample Extraction: 06/01/93	*Matrix: Soil*
Date of Sample Analysis: 06/01/93	*Reporting Units: ug/kg*

Compound Name	*CAS No.*	*Reporting Limits(RL)*	*Reporting Results*
Benzene	71-43-2	68	8500
Toluene	108-88-3	68	480
Ethylbenzene	100-41-4	68	1200
m,p-Xylene**	1330-20-7	68	4700
o-Xylene	1330-20-7	68	310

Surrogates	*Amount Added*	*Percent Recovery*	*Recovery Limits*
d4-1,2-Dichloroethane	250 ng	104	70-121
d8-Toluene	250 ng	96	81-117
Bromofluorobenzene	250 ng	95	74-121

* Please note that sample results have been corrected for moisture content.

** m-Xylene and p-Xylene cannot be separated and are reported here as a total of the two isomers.

Alden Analytical
Laboratories, Inc.

REPORT OF ANALYTICAL RESULTS

Client: Delta (43-93-011)	*Alden Project Number: 9305079/1*
Client Sample Number: B-4/S-1	*Alden Sample Number: 3873*
Date of Sample Receipt: 05/28/93	*Analysis Method: EPA 8240**
Date of Sample Extraction: 06/01/93	*Matrix: Soil*
Date of Sample Analysis: 06/01/93	*Reporting Units: ug/kg*

Compound Name	*CAS No.*	*Reporting Limits(RL)*	*Reporting Results*
Benzene	71-43-2	34	<RL
Toluene	108-88-3	34	<RL
Ethylbenzene	100-41-4	34	<RL
m,p-Xylene**	1330-20-7	34	<RL
o-Xylene	1330-20-7	34	<RL

Surrogates	*Amount Added*	*Percent Recovery*	*Recovery Limits*
d4-1,2-Dichloroethane	250 ng	94	70-121
d8-Toluene	250 ng	103	81-117
Bromofluorobenzene	250 ng	102	74-121

* Please note that sample results have been corrected for moisture content.

** m-Xylene and p-Xylene cannot be separated and are reported here as a total of the two isomers.

Alden Analytical
Laboratories, Inc.

REPORT OF ANALYTICAL RESULTS

Client: Delta (43-93-011)	*Alden Project Number: 9305079/1*
Client Sample Number: B-5/S-2	*Alden Sample Number: 3874*
Date of Sample Receipt: 05/28/93	*Analysis Method: EPA 8240**
Date of Sample Extraction: 06/01/93	*Matrix: Soil*
Date of Sample Analysis: 06/01/93	*Reporting Units: ug/kg*

Compound Name	*CAS No.*	*Reporting Limits(RL)*	*Reporting Results*
Benzene	71-43-2	5600	110000
Toluene	108-88-3	280	3400
Ethylbenzene	100-41-4	5600	160000
m,p-Xylene**	1330-20-7	5600	470000
o-Xylene	1330-20-7	280	2700

Surrogates	*Amount Added*	*Percent Recovery*	*Recovery Limits*
d4-1,2-Dichloroethane	250 ng	100	70-121
d8-Toluene	250 ng	92	81-117
Bromofluorobenzene	250 ng	96	74-121

* Please note that sample results have been corrected for moisture content.

** m-Xylene and p-Xylene cannot be separated and are reported here as a total of the two isomers.

Alden Analytical Laboratories, Inc.

1001 S.W. Klickitat way Suite 108 Seattle, WA 98134 (206) 623-3660 Fax (206) 624-8778

Date: 5/28/93 Page 1 of 2

Project/PO Number 43-93-011

Contact: DAN WHITMAN

Company/Address DELTA ENV.

Phone: _____ Fax: _____

Samplers: _____

Alden Project Number: 9305079/1 011

Sample Date/Time	Sample ID #	Matrix	# Containers	BTEX 8240	TPH-IR OREGON	TAT	Lab ID #	Remarks
5/27/93	B-1/S-1	SOIL	1	X	X	C	3870	FREE PHASE PRODUCT IN.
	B-2/S-1		2	X	X		3871	
	B-3/S-1			X	X		3872	
	B-4/S-1			X	X		3873	
	B-5/S-2			X	X		3874	FREE PHASE PRODUCT IN.
	B-1/S-2						3875	HOLD
	B-1/S-3						3876	
	B-2/S-2						3877	
	B-2/S-3						3878	
	B-3/S-2						3879	

Analyses Requested

Relinquished By:	Received By:
Signature	Signature
Date Time	Date Time
Relinquished By:	Received By:
Signature	Signature
Date Time	Date Time

Special Instructions/Comments:

VERBALS REQUESTED!

TAT Codes

A Standard B 24hr

C 48 hr D 72hr

E 1 Week F Other:

Alden Analytical Laboratories, Inc.

1001 S.W. Klickitat way Suite 108 Seattle, WA 98134 (206) 623-3660 Fax (206) 624-8778

Date: 5/28/93 Page 2 of 2

Project/PO Number 43-93-011

Contact: DAN WHITMAN

Company/Address DELTA ENV.

Phone: _____ Fax: _____

Samplers: _____

Analyses Requested

Alden Project Number: 9305079|1

Sample Date/Time	Sample ID #	Matrix	# Containers	TAT	Lab ID #	Remarks
5/27/93	B-3 | S-3	SOIL	2		3880	HOLD
	B-4 | S-2				3881	
	B-4 | S-3				3882	
	B-5 | S-1				3883	
	B-5 | S-3				3884	

Relinquished By:	Received By:	Special Instructions/Comments:
Signature	Signature	
Date Time	Date Time	
Relinquished By:	Received By:	
Signature	Signature	
Date Time	Date Time	

TAT Codes
A Standard B 24hr
C 48 hr D 72hr

COST RECOVERY AGREEMENT

This document serves as an agreement between the undersigned (hereinafter "you") and the Department of Environmental Quality (DEQ) regarding DEQ review and oversight of the investigation and/or cleanup of petroleum (hazardous substances) at the property identified below.

Facility Name: Flying J

Address: 17873 S.E. McLoughlin Blvd.

Milwaukie, Or. 97222

DEQ File No.: 03-93-008

DEQ agrees to review environmental documents submitted by you or on your behalf regarding the investigation and/or cleanup of the above-referenced site. Additional details regarding DEQ oversight will be established upon review of the initial site data.

DEQ requires that persons requesting DEQ review and oversight of investigation and cleanup activities agree to the terms of this agreement and pay project oversight costs.

DEQ project oversight costs will include direct costs and indirect costs. Direct costs include site-specific expenses and legal costs. Indirect costs are those general management and support costs of the DEQ and of the Environmental Cleanup Division (ECD) allocable to DEQ oversight of this agreement and not charged as direct, site-specific costs. Indirect charges are based on a percentage of direct personal services costs. Review and oversight costs shall not include any unreasonable costs or costs not otherwise recoverable by DEQ under ORS 465.255.

DEQ costs are payable within thirty (30) days of issuance of the monthly statement, by check made payable to the "Department of Environmental Quality".

If you elect not to enter into this agreement, it does not release you from any responsibility you might have from any reporting requirements, investigation and/or cleanup of petroleum (hazardous substances) at the above referenced facility. This does not preclude the DEQ from conducting audits or inspections of all or portions of the investigation and cleanup activities associated with this facility. Enforcement action may be initiated if violation of DEQ requirements is found.

Either DEQ or you may terminate this agreement by giving 15 days advance written notice to the other. Only those costs incurred or obligated by DEQ prior to the effective date of any termination of the agreement shall be recoverable under this Agreement. Termination of this agreement will not affect any other right DEQ may have for recovery of costs under any applicable law.

LUST FORM

INCIDENT INFORMATION

LUST Incident Nbr: _____ LUST Log Nbr: 26-93-008 UST Facility ID: _____
Date Received: 1/13/93 Received By: Julie Bemdt Emergency Resp Taken: (Y) N
Tank Identification: File Name: Flying J
Street: 17873 SE McGloughlin Blvd
City: Milwaukie Zip: 97222
County: Multnomah Phone: ~~9220~~ (503) 654-9812
Incident Comments: found contaminat, on during installation of vapor recovery

District Manager

CONTACT & MAIL TYPES

Reported By:	LUST Contact:	Responsible Party:
Name: Jim Lucky	Name: Jim Lucky	Name: Flying J
Company: Flying J	Company: same	Company: Don Roughton
Street: 2134 Sparrow Ct.	Street:	Street: PO Box 678
City: W. Richland Zip: 99352	City: Zip:	City: Brigham City Zip: 84302
State: WA Phone: (509) 967-2550	State: Phone:	State: UT Phone: (801) 734-6400 x413

SITE ASSESSMENT

LUST Incident Nbr: (XXXXXXXXXXXX)
Date Investigated: _____ Investigated By: _____
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 Exposure Assessment: Y N
Off-Site Migration: Y (N) ? Estimated Gallons Released: _____ Priority: _____
Discovery Date: 1/13/93
How Discovered: A)Routine Monitoring B)Inventory Control C)Decommissioning D)Site Assessment E)Complaint F)Tank Test (G)Other Installation of vapor recover
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. K)Chemical L)Unknown
Free Product in Excavation 1000ppm Gasoline in composite sample(s) of soil exposed for 24 hrs
Source of Release: A)Tank Leak (B)Pipe Leak C)Overfill D)Surface Spill E)Pump/Valve Leak F)Other G)Unknown

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: Shallow contamination around Islands so far.

SITE MANAGEMENT

LUST Incident Nbr: (XXXXXXXXXXXX)
Date Released Stopped: _____
Cleanup Activity: Start Date: _____ Under Control Date: _____
End Date: _____ Contractor Name: _____
Cleanup Guideline: (Matrix) C.A.P. Cleanup Lead: (RP) SLW/TF SLW/oTF
Free Product Disposal: Soil Disposal:
Est. Gallons: _____ Est. Cu/Yds: _____
Resp. Party: _____ Resp. Party: _____
Disposal Location: _____ Disposal Location: _____
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: _____
Site Management Comments: _____

[Version 102]

UNDERGROUND STORAGE TANK CLEANUP REPORT EVALUATION WORKSHEET

3/5/93

File Number: 03-93-008 **Date Evaluated:** _____

Site Name : Flying J **Evaluated By:** GMB

✓ TPH-HCID conducted on contaminated sample
type of product detected: ✓ gasoline __ diesel
__ fuel oil __ waste oil __ Other (_____)

__ Matrix Evaluation
cleanup level: 1 __ 2 X 3 __

Gasoline Contamination

X TPH-G analysis
Highest concentration 1000 ppm

Diesel Contamination (or heavier)

__ TPH-D (or TPH-418.1) analysis
Highest concentration ____ ppm

Waste Oil Contamination

__ TPH-418.1 analysis
Highest concentration ____ ppm
__ EPA Method 8010 (or 8240): _____
(hal. vol.)
__ EPA Method 8020 (or 8240): _____
(BTEX)
__ EPA Method 8080: _____
(PCB)
X TCLP for Cd, Cr, Pb: 9 _____

Groundwater Information

__ Groundwater
__ BETX on soil
Highest Results (ppm): B____ T____ E 13 X 21
__ BETX on H_2O
Highest Result (ppb): B____ T____ E____ X____
__ Sheen on H_2O initially
__ Sheen after cleanup
__ PAH analysis on H_2O for diesel or heavier contamination?
Results _____ ppb

INITIAL REPORT FORM FOR UST CLEANUP PROJECTS

This report is due within twenty (20) days from the date of the release.

DEPT. OF ENVIRONMENTAL QUALITY
RECEIVED
FEB 19 1993
NORTHWEST REGION

SITE INFORMATION

*DEQ File No.: 03-93-008 *Date of Release: 1/1

Site Name: Flying J

Site Address: 17873 S.E. McLoughlin Blvd.

Milwaukie , Or. 97222

Responsible Party: Donald W. Rognon Phone: (801) 734-6400

RP Mail Address: P.O. Box 678

Brigham City, Utah 84302

Service Provider: E.S.U Phone: (503) 666-2505

SP Mail Address: 2052 S.E. First St.

Gresham, Oregon 97030

* Note: This information is listed on the cover letter received by the Responsible Party.

INITIAL CLEANUP INFORMATION

(Y) N Do you believe that this cleanup project can be conducted under the requirements for an UST Cleanup Matrix site?

Groundwater use in the immediate area of the project (check all that apply) - complete whether or not the release is believed to have impacted groundwater.

___ Drinking water supply
___ Agricultural
___ Industrial
_X_ Groundwater not used

Facility location (check all that apply)

___ <100 ft. from a wetland or surface stream (circle one or both)
_X_ within a residential area
___ within an industrial/commercial area
___ Other (describe): _____

_25_ Current approximate depth to groundwater (in feet).

_20_ Seasonal high groundwater level (in feet) if different.

Describe how depths were determined: U.S.G.S. - U.S. Geological Survey Groundwater well charts - Portland , Or.

INITIAL REPORT FORM FOR UST CLEANUP PROJECTS - PAGE 2

(Y) N NA Did you take immediate action to prevent any further release of the regulated substance into the environment? EXPLAIN: Release retro fitting of piping system

(Y) N NA Were steps taken to identify and mitigate fire, explosion, and vapor hazards? EXPLAIN: See Above

(Y) N NA Did you remove as much of the regulated substance from the UST system as necessary to prevent further release to the environment? EXPLAIN:

Y (N) NA Did you visually inspect any aboveground releases or exposed below ground releases and prevent further migration of the released substance in surrounding soils and groundwater? EXPLAIN: Delineation and mitigation at future plans

Y (N) NA Are/were there any vapors present in buildings or utility corridors? If yes, are you continuing to monitor and mitigate any additional fire and safety hazards posed by vapors and free product? EXPLAIN:

Y (N) NA Have you remedied any hazards posed by contaminated soils that were excavated or exposed as a result of release confirmation, site investigation, abatement, or cleanup activities? EXPLAIN: Soil removed to install piping system. Soil put on Vis-Queen and covered by VisQueen. To be removed as soon as possible.

Y (N) NA Have you measured for the presence of a release where contamination is most likely to be present at the UST site? EXPLAIN: Future C.A.P

Y N (NA) Did you investigate to determine the possible presence of free product and begin free product removal as soon as practicable? If yes, was the region notified? EXPLAIN: N/A

Y (N) Was groundwater initially encountered in the excavation? If yes, how was this water handled/disposed? How many gallons involved? EXPLAIN:

(Y) N Was a sheen or odor observed on any water in the excavation? If yes, DESCRIBE OBSERVATIONS: Ran water collecting in trenches. Exposed sheen and odor from soil.

Y (N) Did groundwater recharge 24 hours after pumping the accumulated water in the excavation? If yes, what actions have you taken as a result? Did you resample the recharge water? EXPLAIN: No Ground Water

(Y) N Are any SOIL OR WATER SAMPLE RESULTS available at the time of this report? If yes, attach all laboratory analysis reports and chain of custody forms.

GENERAL INFORMATION FOR ALL CONTAMINATED SOILS MANAGEMENT

Note: All soils temporarily stockpiled onsite prior to treatment or disposal must be contained within a bermed area, kept covered (and the cover anchored), and the entire area secured to prevent unauthorized access by the public. Non-contaminated soils should be protected and kept separated from contaminated soil.

(Y) N The level of contamination noted is expected to require removal of contaminated soil for treatment or disposal. If yes, complete the following. If no, go to Page 4, "Report Prepared By".

► Type of petroleum contamination (check all that apply):

_x_ Gasoline ___ Diesel ___ Waste Oil ___ Heating Oil

___ Other contamination (specify): _____

► Estimated volume of soil if known (tons or cubic yards): Unknown

► Intended Disposition of Soils (check appropriate method):

_x_ Treatment ? Not sure at this time.

___ Thermal treatment offsite at an authorized facility

Facility Name: _____ Phone No.: _____

Facility Address: _____

___ Thermal treatment onsite with a mobil treatment unit **

Company Name: _____ Phone No.: _____

___ Offsite soil aeration[1] or bioremediation **

Treatment Site Address: _____

___ Onsite soil aeration or bioremediation **

___ Disposal

Landfill Name: _____ Phone No.: _____

Landfill Address: _____

1 Offsite soil aeration is banned within the Portland METRO area - see enclosed fact sheet.

** Permit from DEQ required, see page 5 if you would like forms mailed.

INITIAL REPORT FORM FOR UST CLEANUP PROJECTS - PAGE 4

► Who will be conducting the soil treatment or disposal work?

Company Name: ? Phone: _____

Contact Name: _____

► What date(s) is the treatment or disposal intended to be started?

_____

Note: You have approximately 30 days to stockpile contaminated soils onsite while making arrangements for proper disposal or treatment. After that time, you may be required to obtain a permit from DEQ for onsite management of the contaminated soil if you fail to take active measures to manage the soil in an appropriate manner.

THIS REPORT WAS PREPARED BY: Date: 2/18/93

Individual: Debbie Iverson Phone: (801) 734-6400

Company: Flying J Inc.

Address: P.O. Box 678, Brigham City, Utah 84302

If this report was NOT prepared by the Responsible Party:

Y N NA Are you the licensed Matrix Service Provider for the project and authorized by the Responsible Party to submit reports on their behalf?

See Page 3

Matrix Service Provider License No.: _____

NOTE: This initial report is intended to provide the Department with the basic initial information about activities associated with the release. It is anticipated that future reports will be much more detailed and will provide a more complete picture of the entire cleanup project. If appropriate, you may reference this initial report in subsequent reports if the information does not need to be repeated for clarity.

► Please attach additional information as necessary to explain any unusual circumstances associated with the project or if you need more space to respond to any of the questions in this report form.

Return this form to: DEQ-Northwest Region
UST Section
1500 SW First, Suite 750
Portland, OR 97201

If you have questions, call 503-229-5263 and ask for the underground storage tank (UST) Duty Officer.

►►►►►►► KEEP A COPY OF THIS REPORT FOR YOUR FACILITY RECORDS ◄◄◄◄◄◄◄

General Information:

►►►►►►► A permit from DEQ is required for the following activities ◄◄◄◄◄◄◄

___ Soil aeration, bioremediation (onsite or offsite) or onsite thermal treatment.

___ Water discharges to a stream/storm drain from excavations or treated groundwater.

Note: If there will be air emissions from pollution control equipment (e.g. air strippers, vapor extraction systems, etc.), notify the regional office by phone before installation. Have actual or estimated emissions calculated before calling.

Check any activities listed above that are anticipated for your cleanup project and the Department will send you the appropriate application forms to complete, information on permit fees and guidance documents as appropriate.

REMINDER: Submit UST Decommissioning/Change-in-Service Report forms and UST Decommissioning Checklists and Reports DIRECTLY to:

DEQ-UST Compliance Program
811 SW 6th
Portland, OR 97204

Phone: 503-229-5759

Failure to do so can result in delays to your project; these reports must be received by the UST Compliance Program or the tank owner will continue to be billed for tank permit fees.

FACSIMILE TRANSMITTAL COVER SHEET

Date 2/18/93

TO Debbie Thueson
(individual)
Flynn
(Company or organization)
1-800-734-6513 — Ph: 734-6400
(Facsimile no.)

FROM Scott Morey

E.S.U., Inc.
2052 S.E. First St.
Gresham, Oregon 97030
Phone No. (503) 666-2505
Fax No. (503) 665-5815

ESU Job Number #300

Pages in this transmittal (including cover sheet) ____

MESSAGE: Please call if you have any questions.

FEB-18-1993 15:12 1 503 665 5815 P.02

COFFEY LABORATORIES INC.
12423 N.E. WHITAKER WAY, PORTLAND, OR 97230
(503) 254-1794 • FAX (503) 254-1452

CHAIN OF CUSTODY

COFFEY LABORATORIES - PENDLETON BRANCH
287 S.E. FIRST, PENDLETON, OR 97801
(503) 276-0385

PROJECT #: 200	PROJECT NAME: Flying J Oil 17873 SE. McGlaughlin Port or.	P.O. #:	PAGE 1 of 1 PAGES PLEASE PRINT OR TYPE	FOR LABORATORY USE ONLY
COMPANY NAME: E.S.I. Inc.				JOB #: TP930113-A
REPORT ATTENTION: Ed Stolz				CUSTABBR: ESI
SAMPLES COLLECTED BY: E.S.I. Inc.				

FIELD IDENTIFICATION: ONE LINE PER SAMPLE CONTAINER	LAB LOC	LAB ID	COLLECTION DATE	COLLECTION TIME	MEDIA	ANALYSIS REQUESTED	ANALYSIS REMARKS
#1 Composit trench		LA	1-12-93	1600	Soil	TPH/HCID — Rush BETX LEAD TPH-G/D	PLEASE FAX Results ASAP 668-5815

RELINQUISHED BY: Ed Stolz DATE/TIME 1-13-93 1200	RECEIVED BY: Debbie Stolz DATE/TIME 1-13-93 1200	LAB USE:
RELINQUISHED BY: Debbie Stolz 1-13-93 DATE/TIME 747	RECEIVED BY LAB: DATE/TIME 1/13/93 0745	
SAMPLE REMARKS:	LEVEL 1 2 3 4	EXPRESS UPS MAIL CXX GREY TAXI LAB

WHITE COPY - COFFEY LABORATORIES

PINK COPY - CLIENTS COPY

SHADED AREA FOR LABORATORY USE ONLY
CHAIN OF CUSTODY INSTRUCTIONS ON BACK OF PINK COPY

(7/90)

Report Date: January 14, 1993
Job#: TP-930113A-1
PO#: None
Project#: 300
Project: Flying J Oil-17873 SE McLoughlin, Portland, OR

Attention: Ed Stolz
E.S.U.
2053 S.E. First St
Gresham, OR 97030

SAMPLE INFORMATION:
Date Samples Were Received By Laboratory: 01/13/93

Lab No.	Field Identification	Sample Matrix	Date	Time
1	#1 Composite Trench	Soil	01-12-93	1600

ANALYTICAL RESULTS ARE ON THE FOLLOWING PAGE(S)

Sincerely,

Susan M. Coffey

Susan Coffey
President

SMC/mlh

This report is for the sole and exclusive use of the above-named client. Samples are retained 15 days from the report date, or until holding time expires. Results pertain only to samples submitted.

Job#: TP-930113A-1

E.S.U.
Page 2

Analysis Performed: TPH-HCID qualitative scan for Hydrocarbons, by GC/FID.

Sample ID: #1 Composite Trench

Summary of Qualitative Screening Test:

	SAMPLE #1 RESULTS
Gasoline detected by TPH-HCID	✓
Gasoline not detected by TPH-HCID	
Diesel detected by TPH-HCID	
Diesel not detected by TPH-HCID	✓
Hydrocarbons heavier than C28 detected	

Recommended further analysis:

TPH-G	✓
TPH-D	
TPH-418.1	
None	

Surrogate Recovery % 118

REPORT CONTINUES

COFFEY LABORATORIES, INC.
12423 N.E. Whitaker Way • Portland, OR • 97230 • (503) 254-1794 • FAX (503) 254-1452

Job#: TP-930113A-1

E.S.U.
Page 3

Analysis Performed: TPH-G, by the Oregon DEQ method, purge-&-trap, GC/PID.

Sample ID: #1 Composite Trench

PARAMETER	DETECTION LIMIT	SAMPLE #1 RESULTS
Gasoline	50	1,000
Surrogate Recovery (%)		N/A*

Results expressed as mg/kg unless otherwise noted.

*Surrogate spike recovery could not be calculated because of the concentration of hydrocarbons present.

Analysis Performed: BTXE in soil by EPA Method 8020, GC/PID

ANALYTE	DETECTION LIMIT	LABORATORY BLANK	SAMPLE #1 RESULTS
Benzene	2.0	ND	ND
Ethylbenzene	2.0	ND	13
Toluene	2.0	ND	ND
Total Xylenes	2.0	ND	21

Results expressed as mg/kg unless otherwise noted.

ND means none detected at or above the detection limit listed.

COFFEY LABORATORIES, INC.
12423 N.E. Whitaker Way • Portland, OR • 97230 • (503) 254-1794 • FAX (503) 254-1452

PACIFIC ENVIRONMENTAL LABORATORY INC.
9405 S.W. Nimbus Ave.
Beaverton, OR 97005
(503) 644-0660
Fax (503) 644-2202

CHAIN OF CUSTODY RECORD

COMPANY E.S.U., INC. PROJECT NAME Flying J Oil LAB PROJECT NUMBER 93-0090

PROJECT MANAGER ED SPOLZ PROJECT NUMBER

COLLECTED BY P.O. NUMBER RUSH ☒ YES ☐ NO

COMMENTS

IF SAMPLE IS LIQUID & HAS SEDIMENT OR PARTICULATE, SHALL WE:
_____ Test Filtrate Only?
_____ Mix Sample by Shaking?
_____ Test Particulate Only?

IF SAMPLE IS MULTI-PHASED, SHALL WE:
_____ Test Each Phase separately?
_____ Test only ONE Phase? Which Phase?
_____ Mix All Phases by Shaking?

PEL NO.	SAMPLE I.D.	DATE	TIME	PRESERV.	MATRIX: SOIL	MATRIX: WATER	MATRIX: OTHER	NUMBER OF CONTAINERS	TPH - HCID 8015/8015	QUANT. IF DETECTED (x)	TPH - Gasoline 8015/8015	TPH - Diesel 8015/8015	TPH - 418.1 Modified 8015/8015	8015M - Gas	8015M - Diesel	TPH 418.1	BTEX 8020/8020	Halogenated Volatiles 8010/8010	Volatiles 624/8240	Semi-Volatiles 625/8270	PCB's 8080/8080	Chlorinated Pesticides 8080/8080	TCLP (8) Metals	P.O.	REMARKS
	#1 / COMPOSIT TRENCH	1/12/93	1600		X																			X	PLEASE FAX RESULTS ASAP

RELINQUISHED BY	COMPANY	DATE/TIME	RECEIVED BY	COMPANY
B. Thorgusen	E.S.U. Inc.	1-13-93 10:00		PEL
RELINQUISHED BY	COMPANY	DATE/TIME	RECEIVED BY	COMPANY
	PEL	1-13-93 10:55	Judie Reynolds	PEL 1-13-93 1100
RELINQUISHED BY	COMPANY	DATE/TIME	RECEIVED BY	COMPANY

Note: Samples are discarded 30 days after receipt unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client's expense.

PACIFIC ENVIRONMENTAL LABORATORY INC

METHOD: Total Metals per EPA 3050, 6010
Results in mg/kg (ppm)

Compound	#1 COMPOSIT TRENCH	Method Blank	Detection Limit
Lead	9.0	ND	5.0

9405 S.W. Nimbus Ave. ■ Beaverton, OR 97005 ■ (503) 644-0880 ■ FAX # (503) 644 2202

Oregon

DEPARTMENT OF ENVIRONMENTAL QUALITY

NORTHWEST REGION

Mailed: 1-19-93

DEQ FILE NO.: 03-93-008

SITE NAME: Flying J

SITE ADDRESS: 17873 S E McLoughlin Blvd.
Milwaukie Oreg. 97222

RESPONSIBLE PARTY NAME: Don Ragnon

RP COMPANY NAME: Flying J.

MAILING ADDRESS: P.O. Box 678
Brigham City, Utah 84302

DATE RELEASE REPORTED TO DEQ: 1-13-93

A release has been reported from an underground storage tank (UST) system at your facility located at the address listed above. As the responsible party for the facility, you are required to clean up the release according to OAR 340-122-201 through 340-122-360.

An Initial Report Form for UST Cleanup Projects is enclosed, which needs to be completed and returned to this office within twenty (20) days from the date the release was reported. An outline of additional reporting requirements and due dates is also enclosed.

Please read the rules carefully. As the responsible party, you should be aware of the regulations and requirements, even if you have hired a qualified consultant or service provider to do the actual work.

Please reference the DEQ File Number listed in the top left corner of this letter in all future correspondence and reports.

The Department is required to recover oversight costs on projects that we review and provide a final notice of compliance or "closure letter". As provided in the law, all petroleum contamination sites are eligible for recovery of costs by the Department. In order to receive oversight and more effectively schedule your project you will be asked to sign, and return within 30 days, an agreement to pay oversight costs with the Department. Not entering into the agreement does not release you from responsibility for investigation and/or cleanup of the contamination. Please read the attached information on the cost recovery process; contact Darby Bacon at 503-229-6635 if you have questions on cost recovery.

Thank you for your cooperation and continued efforts to comply with the regulations. If you have any questions, please contact the UST Section of Northwest Region at 503-229-5263.

A copy of the UST Cleanup Manual
X is enclosed
___ will be provided upon request

1500 SW First Avenue
Suite 750
Portland, OR 97201-5884
(503) 229-5263

NEIL GOLDSCHMIDT
GOVERNOR

Department of Environmental Quality

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

June 21, 1990

Mr. Donald Rognon
Flying J Inc.
P.O. Box 678
Brigham City, Utah 84302

Re: UST-Clackamas County
Flying J Service Station

Dear Mr. Rognon:

Thank you for your report, dated March 29, 1990, and clarification, dated June 13, 1990, concerning the gasoline spill that occurred at the Flying J Service Station located at 17873 McLoughlin Boulevard in Milwaukie, Oregon. This information indicates that 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 and facts as we now understand them, including:

1: A spill of approximately 81 gallons occurred on January 27, 1988 after an automobile hit the number 1 unleaded pump.

2: The release occurred above the ground surface and was cleaned up by placing absorbent material on it. The material was placed in the trash receptacle onsite and ultimately taken to St. Johns Landfill. All of the release was cleaned up in this manner.

Information concerning the gasoline release should be maintained with the permanent facility records. We remind you that the current investigation applies only to the spill 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 questions regarding this matter, please contact me at (503) 229-6923.

Sincerely,

Andree Pollock
UST Cleanup Specialist
Northwest Region

cc: Environmental Cleanup Division, UST Cleanup Section
Enforcement Section, DEQ

FLYING J INC.
P.O. BOX 678 - BRIGHAM CITY, UTAH 84302
PHONE (801) 734-9416

June 13, 1990

Andree Pollock
UST Cleanup Specialist
Department of Environmental Quality
811 S.W. 6th Avenue
Portland, OR 97204-1390

Re: UST - Clackamas County
Flying J Service Station

Dear Mr. Pollock:

After receiving your last letter, I have attempted to collect the additional data that you request. You had two questions:

Q. Your report indicates that the gasoline leaked from the nozzle. The original spill report, which received by telephone on January 27, 1988, indicated that the fuel was leaking from a pipe flange below the ground surface. Please clarify where the release occurred. A sketch of the pump indicating which portion failed may be useful. Also, if the fuel was leaking from the nozzle, please explain why the employees on site were unable to turn it off quickly and why the pumps had to be shut off to stop the flow.

A. Attached is the reply from Richard Howe, the manager of the location (please disregard the poor spelling and punctuation.) He addresses the issue of the quantity of fuel that would have leaked through the pipe flange and includes a diagram and a couple of pictures to help his explanation.

His position is that the leak was in fact through the nozzle and that the employee acted how he felt would be best to alleviate the flow of product.

FLYING J INC.
P.O. BOX 678 - BRIGHAM CITY, UTAH 84302
PHONE (801) 734-9416

Q. The fire department referred the spill to the Department for cleanup. They may have determined that no fire hazard remained, but the Department is ultimately responsible for ensuring that the responsible party performed the cleanup according to the Oregon Administrative Rules. At this point it appears that all of the gasoline released to the ground surface was absorbed. Please indicate where the material used to soak up the gasoline was taken for disposal.

A. Your assumption that all the gasoline released to the ground surface was absorbed is correct. The absorbent material was disposed of by putting it in the trash receptacle (at the suggestion of the Fire Department) which was later picked up by Oak Grove Disposal. They took it to a transfer station. From there they indicate that it would have been transferred to St. John's Landfill in Portland.

I hope this information helps clarify your questions.

Sincerely,

Donald W. Rognon
Director of Administration

enc.

TO DEQ.

Dear Sir,

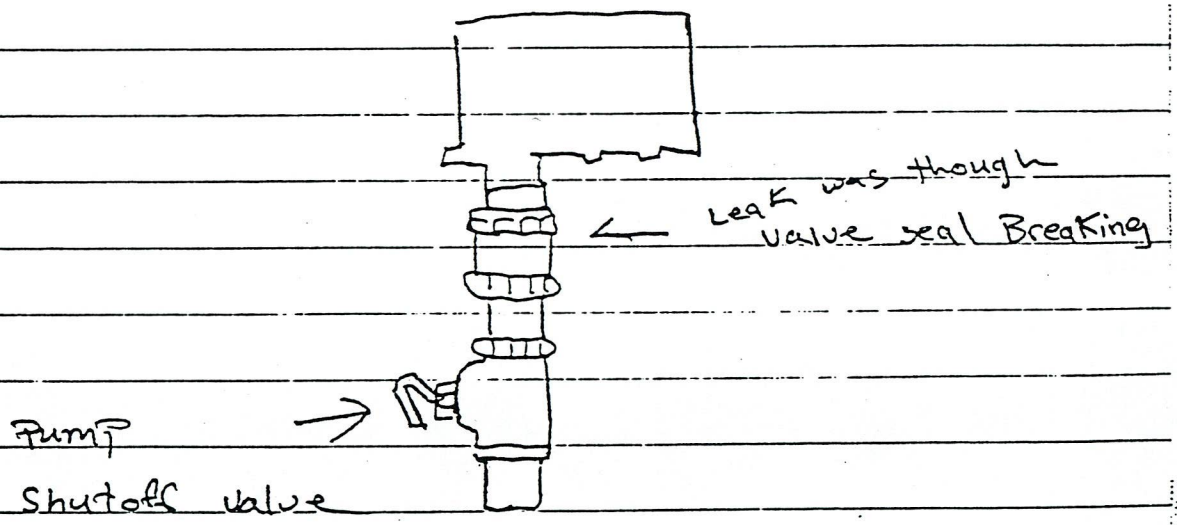
In reply to your lattest letter you will find that the valve that leaked was imedeatly turned off as seen in photo(A) This is pump shutoff valve. With the pump turned by the accident it moved the valve in phone(B) Breaking the seal. The pump shutoff is located Below the break so when the pump was turned off the leaking stopped. The value was resealed and tightened when replaced by northwest pump the fuel lost through the value couldn't have been more then ¼ to ½ a gallon, since the leak was that of a ~~dr~~ dripple like nature.

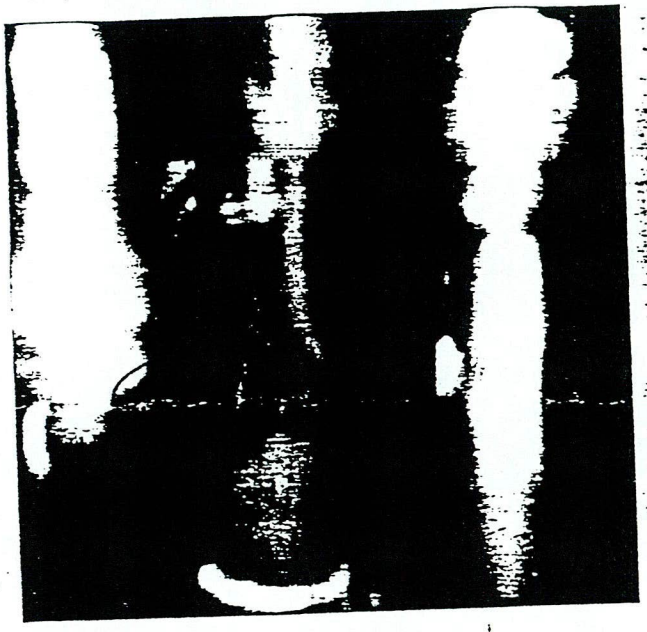
I hope this answers your questions and ashures you that everything was done to correct this problem imedeatly.

Thank you

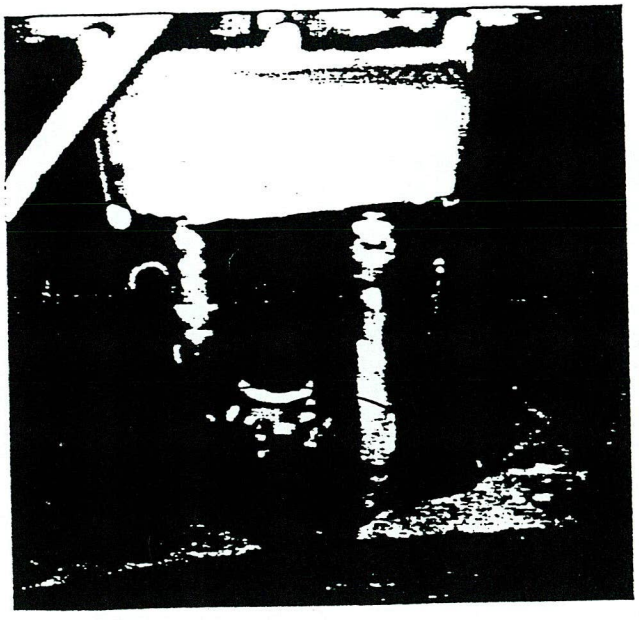
Randy Allen

Mngr.


Leak was though
valve seal Breaking
Pump
Shutoff valve



B - Valve Conection
That leaked



A - Pump Shutoff Valve

PHASE III
ENVIRONMENTAL ASSESSMENT REPORT

JIFFY LUBE INTERNATIONAL STORE #1012
17869 S.E. McLOUGHLIN BOULEVARD
MILWAUKIE, OREGON

DELTA PROJECT NO. ~~43-93-011~~ 03-93-008

Delta
Environmental
Consultants, Inc.

PHASE III
ENVIRONMENTAL ASSESSMENT REPORT

JIFFY LUBE INTERNATIONAL STORE #1012
17869 S.E. McLOUGHLIN BOULEVARD
MILWAUKIE, OREGON

DELTA PROJECT NO. 43-93-011

Prepared By:

DELTA ENVIRONMENTAL CONSULTANTS, INC.
3150 Richards Road, Suite 100
Bellevue, Washington 98005
(206)649-9663

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PHASE III ENVIRONMENTAL ASSESSMENT REPORT

JIFFY LUBE INTERNATIONAL STORE #1012
17869 S.E. McLOUGHLIN BOULEVARD
MILWAUKIE, OREGON

DELTA PROJECT NO. 43-93-011

1.0 EXECUTIVE SUMMARY

A third phase of investigation was conducted at the Jiffy Lube International Store #1012, 17869 S.E. McLoughlin Boulevard, Milwaukie, Oregon, to assess the potential for environmental concerns at the property. The investigation involved drilling six soil borings and installing six monitoring wells at locations throughout the subject site, collecting representative soil samples, taking water level measurements and collecting groundwater samples from the monitoring wells. The soil sample results indicated that the soils tested from MW-1 through MW-5 contained concentrations of benzene, toluene, ethylbenzene, xylenes (BTEX), total petroleum hydrocarbons (TPH) and total petroleum hydrocarbons as gasoline (TPH-G). In general, detected levels of benzene and TPH are above acceptable Oregon Cleanup Levels in samples from borings MW-1 through MW-5. The soil sample from MW-6 did not contain detectable levels of benzene. Concentrations of TPH-G were detected only in MW-1 at levels above the Oregon Action Levels. Groundwater sample results indicated that the samples from MW-1 thru MW-5 contained concentrations of BTEX compounds. Benzene concentrations were detected in all five of these monitoring wells above the acceptable Oregon Cleanup Levels. Toluene was detected in monitoring wells MW-1, MW-3, and MW-4 above the Oregon Cleanup Levels and ethylbenzene and xylenes were detected in MW-3 in excess of the Oregon Cleanup Levels. The sample from MW-6 did not contain detectable BTEX concentrations.

2.0 INTRODUCTION

2.1 Background Information

Two phases of investigation were conducted at the Jiffy Lube International Store #1012, between May 12, 1993 and May 27, 1993. The phase I study involved an in-depth look at historical and potential environmental impacts to the project site. The phase II study involved drilling five soil borings, collecting and analyzing samples and comparing the results with the Oregon Department of Environmental Quality (DEQ) clean up criteria. In order to evaluate the potential for groundwater impacts from the facility a third phase investigation was conducted.

2.2 Scope of Work

An investigation was conducted at the Jiffy Lube International Store #1012, 17869 S.E. McLoughlin Boulevard, in Milwaukie, Oregon (Figure 1), on June 18, 1993 and June 21, 1993 by Delta Environmental Consultants, Inc. (Delta). The purpose of the investigation was to further assess the potential for environmental concerns at the

property. The scope of work included the following:

- Drilling six soil borings, collecting representative soil samples and installing monitoring wells;
- Analyzing soil samples for BTEX and TPH;
- Collecting groundwater samples and water level measurements;
- Analyzing groundwater samples for BTEX, TPH, TPH-G;
- Preparing a summary report.

3.0 SITE ACTIVITIES

3.1 Drilling and Monitoring Well Installation

On June 18, 1993, six soil borings (MW-1, MW-2, MW-3, MW-4, MW-5, and MW-6) were drilled on-site, generally in the area surrounding the underground storage tank basin and adjacent to the former lube oil tanks. A subcontracted drilling company performed this work under the direction of a Delta representative. The selected monitoring well locations are indicated on Figure 2.

The borings were drilled and sampled utilizing a hollow stem auger that had been steam cleaned prior to use. Soil samples were obtained at 2.5 foot depth intervals of using split-spoon samplers that were decontaminated prior to each use. Soil samples were screened using a photoionization meter (h-Nu). A portion of each sample was retained in a laboratory prepared glass bottle for potential analyses. The remaining portion of the sample was used for soil classification. After completion of the field drilling program, the field screening results were reviewed, and the sample from a depth closest to the groundwater interface in each boring was submitted for laboratory analyses.

The soil borings were drilled to total depths ranging from 15.0 feet to 16.5 feet. Soil boring logs have been included in Appendix A, which indicate the soil conditions encountered during drilling.

Monitoring wells were installed in each of the soil borings at the time it was drilled. Details of the monitoring well construction are indicated on the monitoring well installation diagrams in Appendix B.

3.2 Groundwater Sampling and Water Level Measurements

On June 21, 1993, water level measurements were taken and the monitoring wells were purged to remove sediment and increase hydrologic communication with the surrounding formation. Ground water was then

sampled for laboratory analyses. Immediately prior to sampling, at least three well volumes were bailed from each of the wells using a new, disposable polyethylene bailer and nylon cord for each well. Water samples were collected in laboratory prepared bottles, chilled and held under chain of custody until delivered to the laboratories of Alden Analytical Laboratories Inc., in Seattle, Washington.

The top of each well casing was surveyed relative a temporary benchmark assigned an elevation of 100.00 feet for the purposes of this study.

Based on the water level measurement, ground water migration was inferred toward the west-northwest with a hydraulic gradient of 0.001 feet per foot as measured between monitoring wells MW-1 and MW-5. An inferred groundwater contour map is included as Figure 3.

3.3 Laboratory Analytical Data

3.3.1 Soil Samples

One soil sample from each boring was submitted for laboratory analysis for benzene, toluene, ethylbenzene, xylene (BTEX) by EPA Method 8020, total petroleum hydrocarbons (TPH) by a modified EPA Method 418.1 I.R. analysis preferred by the Oregon Department of Environmental Quality (DEQ) and total petroleum hydrocarbons as gasoline (TPH-G). The sample identification, sample depths, and analytical results are shown in Table 1.

The analytical results indicate that the soil samples from monitoring well MW-1 through MW-5 have concentrations of benzene and TPH above the Oregon cleanup levels. Benzene concentrations ranged from 0.51 ppm in MW-1 to 23.0 ppm in MW-2, located near the south and north ends of the pump islands, with an action level of 0.1 ppm. Total petroleum hydrocarbons were detected in all of the soil samples, ranging from 110 ppm in MW-1 to 1,100 ppm in MW-2. Total petroleum hydrocarbons as gasoline were detected above the detection limit in monitoring wells MW-1 through MW-5, however, only MW-1 had concentrations exceeding the an Oregon Soil Matrix Cleanup Level of 80.0 ppm.

3.3.2 Groundwater Samples

Groundwater analytical results indicate that benzene concentrations were detected in monitoring wells MW-1 through MW-5. Concentrations ranged from 0.14 ppm in MW-2 to 3.50 ppm in MW-4, above the DEQ action

level of 0.005 ppm. Toluene concentrations in excess of DEQ cleanup levels were detected in MW-1, MW-3, and MW-4. Ethylbenzene and xylenes concentrations above DEQ criteria were detected in MW-3. Lower concentrations on ethylbenzene and xylenes were detected in all of the other monitoring wells with the exception of MW-6.

The results of the soil sample laboratory analyses are summarized in Table 1, the groundwater analytical results are shown in Table 2 and the laboratory reports are attached in Appendix B.

4.0 METHODOLOGIES

4.1 Locating Underground Utilities

Prior to the commencement of work on site, Delta researched the locations of all underground utilities with the assistance of Underground Utility Located Services. On June 16, 1993, Underground Utility Located Services was on site to determine and mark the locations of all the underground utilities. Work associated with the drilling was preceded by hand-digging of the soil borings to a minimum depth of 4 feet to avoid contact with underground fuel distribution lines, vent lines and other unmarked utilities.

4.2 Drilling and Soil Sampling Procedures

Soil borings and soil sampling were performed under the direction of a Delta field geologist. The soil borings were advanced using a truck-mounted drill rig utilizing hollow-stem augers.

Soil sampling was done in general accordance with procedure ASTM 1586-84. Samples were placed in glass jars as well as plastic bags for later screening with a photoionization detector (h-Nu). The jarred samples were placed in a iced cooler for transport to the laboratory. The soil samples were submitted to Alden Analytical Laboratory, Inc. of Seattle, Washington, accompanied by a Chain-of-Custody form.

4.3 Decontamination Protocol

To reduce the chances of cross contamination between boreholes, all down-hole drilling equipment was cleaned between each soil boring. To reduce cross contamination between samples, the split-barrel sampler was washed in a soap solution and double rinsed between each sampling event.

4.4 Soil Classification

As the samples were obtained in the field, they were classified by the Delta geologist in general accordance with the Unified Soil Classification System as outlined in ASTM:D2488-84. Logs of the borings indicating the depth and identification of the various strata, the blow counts, water-level information and pertinent information regarding the method of maintaining and advancing the bore holes were completed. The boring logs are included in Appendix A.

4.5 Monitoring Well Installation

The monitoring wells were constructed of flush-jointed, 2-inch diameter, schedule 40 PVC pipe, fitted with 10-foot long, 0.020-inch factory slotted well screens. In each well, the screen was set at a depth which intersected the groundwater surface observed at the time of drilling, and was surrounded by a washed silica sand filter pack to a level at least one foot above the top of the screened interval. The remaining borehole was filled with bentonite, and the well was completed with a concrete seal and a flush-mounted locking steel protective casing at the ground surface.

5.0 CONCLUSIONS

Silty sand soils underlie the site to a depth of approximately 15 feet below the ground surface. A silty clay was encountered in all soil borings at shallow depths. Ground water was encountered at approximately 7 feet below ground surface.

Soil samples submitted from MW-1 through MW-5 for analyses contained benzene concentrations in excess of established Oregon Clean-up Levels. TPH and TPH-G concentrations were detected in the samples from all of the borings, the samples from MW-3 containing concentrations above Oregon Cleanup criteria.

Groundwater samples indicated concentrations of BTEX compounds above Oregon Cleanup Levels in monitoring well MW-1 thru MW-5.

The conclusions contained in this report represent our professional opinions. These opinions are arrived at in accordance with currently accepted hydrogeologic and engineering practices at this time and location and are subject to the inherent limitations of the proposed work.

Delta's report is prepared in accordance with the proposal and the standard terms and conditions presented in the service contract, and no other warranties, representations, or certifications are made.

Delta has been pleased to be of service in this matter. If you have any questions regarding the information contained in this report, or if we may be of any further assistance, please feel free to contact us.

Respectfully submitted,

DELTA ENVIRONMENTAL CONSULTANTS, INC.

PREPARED BY:

(for Patti A. Crump)

Patricia A. Crump
Staff Professional

Daniel S. Whitman
Senior Environmental Geologist

TABLES

TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
Jiffy Lube International Store #1012
Milwaukie, Oregon
Delta Project No. 43-93-011

Sample ID	Date	Sample Depth (in feet)	Benzene (ppm)	Toluene (ppm)	Ethylbenzene (ppm)	Total-Xylenes (ppm)	TPH-418.1 (ppm)	TPH-G (ppm)
MW-1	6/18/93	5	0.51	0.044	0.15	1.05	110	87
MW-2	6/18/93	5	23.0	0.32	9.80	40.5	1,100	29
MW-3	6/18/93	5	3.80	49.0	51.0	289	680	62
MW-4	6/18/93	5	4.60	0.52	6.00	10.5	120	8.4
MW-5	6/19/93	5	2.90	0.084	1.30	3.25	210	13
MW-6	6/19/93	5	<0.03	<0.03	<0.03	<0.03	160	<2.0
Laboratory Method:			EPA 8240	EPA 8240	EPA 8240	EPA 8240	EPA 418.1 Modified	Oregon TPH-G
Oregon Cleanup levels:			0.1	80.0	100.0	800.0	80.0	80.0*

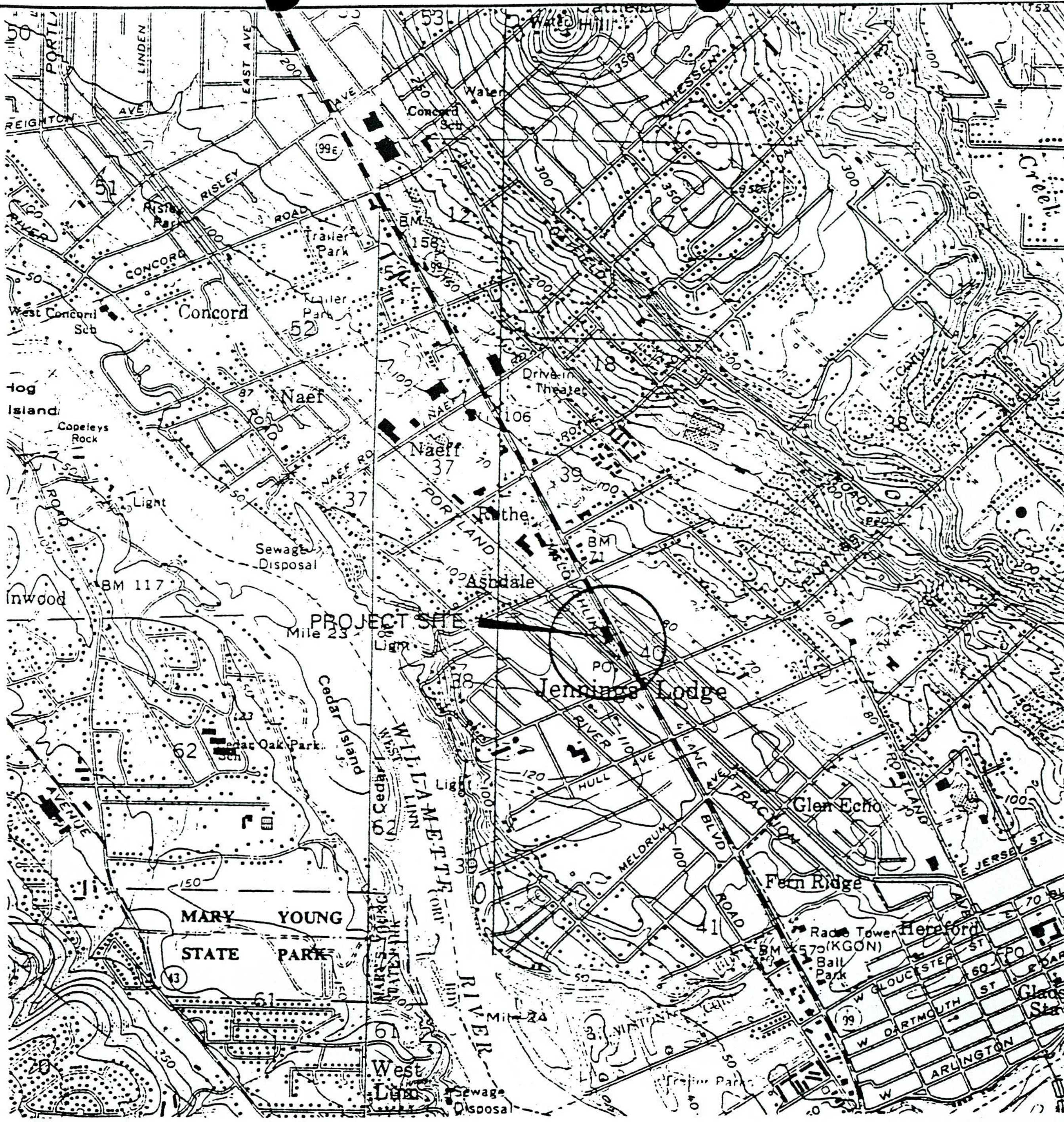
All concentrations are reported in mg/kg (ppm).
* Evaluation of Soil Matrix Cleanup Levels (level 2).

TABLE 2
GROUNDWATER SAMPLE ANALYTICAL RESULTS
Jiffy Lube International Store #1012
Milwaukie, Oregon
Delta Project No. 43-93-011

Sample ID	Date	Groundwater Depth (in feet)	Groundwater Elevation* (in feet)	Benzene (ppm)	Toluene (ppm)	Ethylbenzene (ppm)	Total-Xylenes (ppm)
MW-1	6/21/93	5.02	94.65	0.910	1.30	0.470	2.09
MW-2	6/21/93	4.20	94.59	0.140	0.013	0.020	0.075
MW-3	6/21/93	4.00	94.57	1.60	3.80	1.90	10.1
MW-4	6/21/93	4.76	94.54	3.50	1.50	0.42	2.36
MW-5	6/21/93	6.14	94.52	0.50	0.75	0.18	1.09
MW-6	6/21/93	5.71	94.58	<0.001	<0.001	<0.001	<0.001
Laboratory Method:				EPA 8240	EPA 8240	EPA 8240	EPA 8240
Oregon Cleanup levels:				0.005	1.000	0.700	10.000

All concentrations are reported in mg/l (ppm).
* - Groundwater elevation relative to an on-site benchmark datum assigned an elevation of 100.00 feet for the purposes of this study.

FIGURES



GENERAL NOTES:
BASE MAPS FROM U.S.G.S.
MILWAUKIE, OR
7.5x15 MIN TOPOGRAPHIC
PHOTOREVISED 1984

NORTH

0 2000 FT

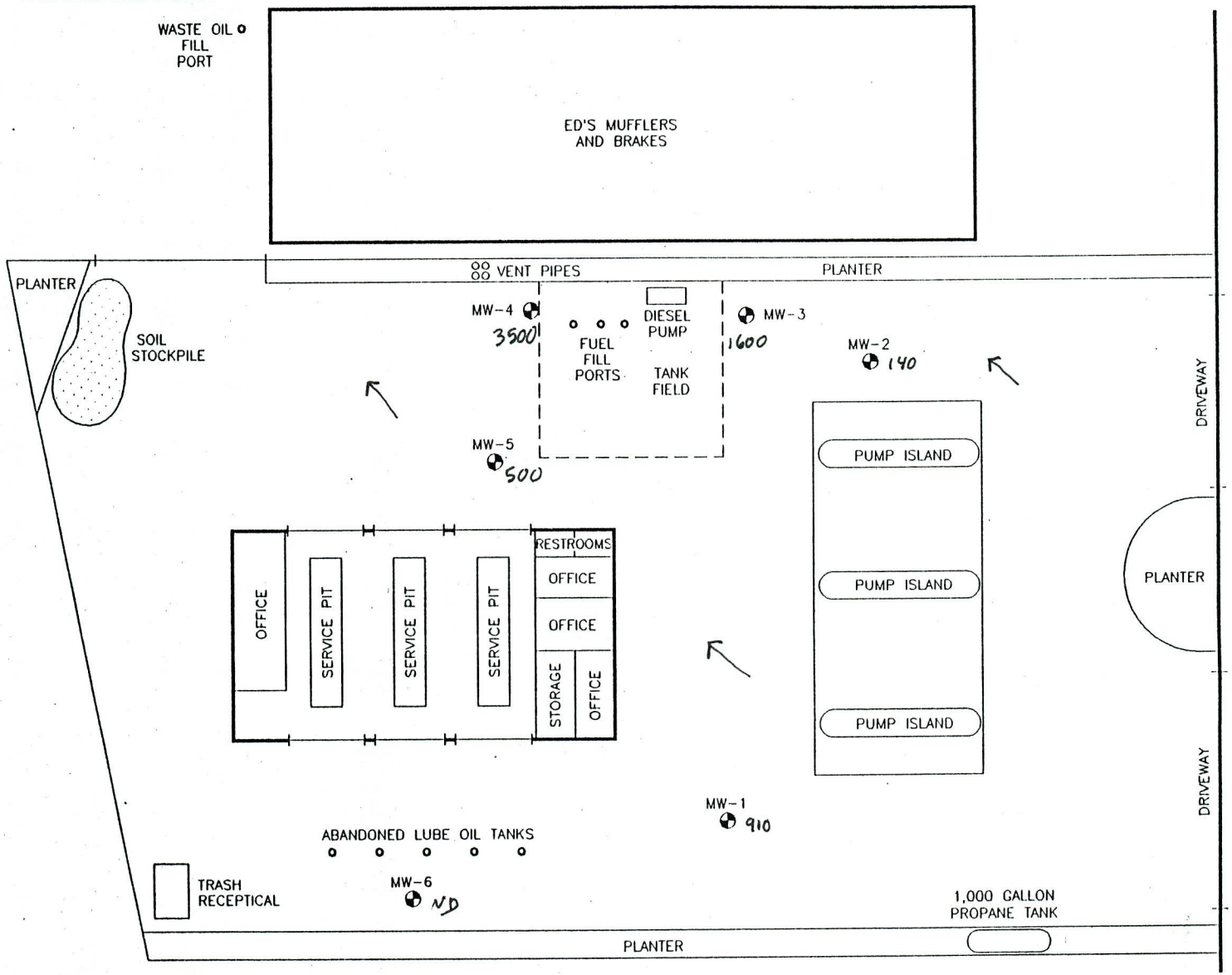
SCALE 1 : 24,000

FIGURE 1
SITE LOCATION MAP

JIFFY LUBE INTERNATIONAL STORE #1012
17869 MCLOUGHLIN BOULEVARD
MILWAUKIE, OREGON

Project No.	Drawn By:
43-93-011	PAC
File No.	Prepared By:
FIG4011	PAC
Revision No.	Reviewed By:
0	

Delta Environmental Consultants, Inc.



LEGEND:

MW-1 MONITORING WELL LOCATION

North

0 30 FT

APPROX. SCALE

FIGURE 2

MONITORING WELL LOCATION MAP

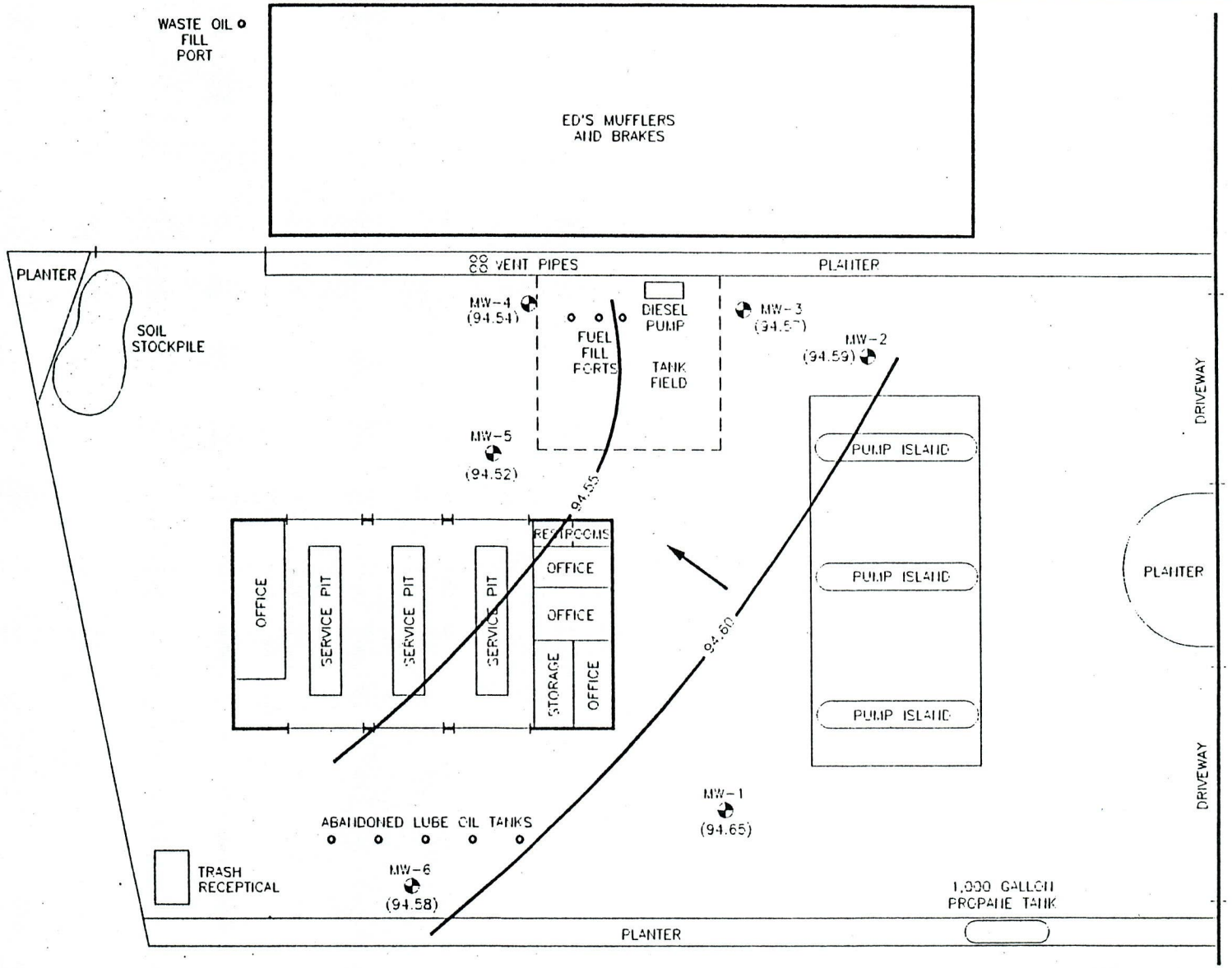
JIFFY LUBE INTERNATIONAL STORE #1012

17869 S.E. McLOUGHLIN BOULEVARD

MILWAUKIE, OR.

PROJECT NO. 43-93-011	DRAWN BY I.H. 7/13/93
FILE NO. 4393011A	PREPARED BY PAC
REVISION NO. 1	REVIEWED BY

Delta Environmental Consultants, Inc.



LEGEND:

- MW-1 — MONITORING WELL LOCATION
- (94.65) — GROUND WATER ELEVATION IN FEET RELATIVE TO AN ASSUMED BENCH MARK
- 94.60 — INFERRED WATER TABLE CONTOUR IN FEET RELATIVE TO AN ASSUMED BENCH MARK
- INFERRED GRADIENT DIRECTION

North

0 30 FT

APPROX. SCALE

FIGURE 3

INFERRED WATER TABLE CONTOUR MAP – 6/21/93

JIFFY LUBE INTERNATIONAL STORE #1012

17869 S.E. McLOUGHLIN BOULEVARD

MILWAUKIE, OR.

PROJECT NO. 43-93-011	DRAWN BY I.H. 7/13/93
FILE NO. 43930111A	PREPARED BY PAC
REVISION NO. 1	REVIEWED BY

Delta Environmental Consultants, Inc.

APPENDICES

APPENDIX A

APPENDIX A

Soil Boring Logs

PROJECT NAME/LOCATION:	Project Number	43-93-011	Boring Number	MW-1
Jiffy Lube Internation Store #1012 17869 S.E.McLoughlin Boulevard Milwaukie, OR	Contractor	Geotech Explorations	Drilling Method	6 1/4" Hollow Stem Auger
	Driller	Mike Reneker	Drilling Rig	B-61
	Start	8:36 a.m. 06/18/93	Completed	9:16 a.m. 06/18/93
Landowner: Flying J Corporation	Surface Elev.	-----	Logged By	Mark Underhill

Sample Type	Sample No.	Blow Count	Sample Interval (ft)	Sample Recovery (in.)	Depth Scale 1" = 4'	Descriptions of Materials and Conditions	Observations Instrument: hNu Units: ppm	Observations Comments
					0	Asphalt Concrete and Gravel Base		
					1			
SS	1	4 9 8	2.5-4.0	6	2	GRAVELY SILT; dark grey, damp	0	
					3			
					4			
SS	2	1 1 1	5.0-6.5	6	5	GRAVELY SILT; dark grey, damp	0	
					6			
SS	3	3 6 7	7.5-9.0	6	7	MEDIUM GREY CLAY; trace silt, damp	0	
					8			
					9			
SS	4	3 3 5	10.0- 11.5	6	10	DARK GREY CLAY; trace silt, damp	0	
					11			
					12			
SS	5	0 2 4	12.5- 14.0	6	13	DARK GREY CLAY; trace silt, damp	0	
					14			
SS	6	5 9 12	15.0- 16.5	6	15	DARK GREY FINE-MEDIUM SAND; wet	0	
					16			
					17	End of Soil Boring at 16.5 feet below ground surface. Monitoring Well MW-1 installed.		
					18			
					19			
					20			
					21			
					22			
					23			

BOREHOLE WATER LEVEL DATA			
Date	06/18/93		
Time	9:25 a.m.		
GWL	7.0 feet		
Casing Depth	15.0 feet		

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PROJECT NAME/LOCATION:	Project Number	43-93-011	Boring Number	MW-2
Jiffy Lube International Store #1012 17869 S.E. McLoughlin Boulevard Milwaukie, OR	Contractor	Geotech Exploration	Drilling Method	6 1/4" Hollow Stem Auger
	Driller	Mike Reneker	Drilling Rig	B-61
	Start	10:23 a.m. 06/18/93	Completed	11:16 p.m. 06/18/93
Landowner: Flying J Corporation	Surface Elev.	-----	Logged By	Mark Underhill

Sample Type	Sample No.	Blow Count	Sample Interval (ft)	Sample Recovery (in.)	Depth Scale 1" = 4'	Descriptions of Materials and Conditions	Observations Instrument: hNu Units: ppm	Observations Comments
					0	Asphalt Concrete and Gravel Base		
					1			
					2		30	
SS	1	2 5 6	2.5-4.0	6	3	SILTY CLAY; dark grey, damp		
					4			
SS	2	1 3 1	5.0-6.5	6	5	CLAY; trace silt, dark grey, damp	0	
					6			
					7			
SS	3	2 6 8	7.5-9	6	8	CLAY; trace silt, medium grey, moist-damp	0	
					9			
SS	4	2 3 3	10.0-11.0	6	10	CLAY; trace silt, dark grey, moist	0	
					11			
					12			
SS	5	2 3 6	12.5-14.0	6	13	CLAY; trace organics, moist	0	
					14			
SS	6	N/A	15.0-16.5	6	15	3" heave-no sample recovered	0	
					16	End of boring at 16.5 feet below ground surface. Monitoring Well MW-2 installed.		
					17			
					18			
					19			
					20			
					21			
					22			
					23			

BOREHOLE WATER LEVEL DATA			
Date	06/18/93		
Time	11:25 a.m.		
GWL	7.0 feet		
Casing Depth	14.0 feet		

Delta Environmental Consultants, Inc.

PROJECT NAME/LOCATION:	Project Number	43-93-011	Boring Number	MW-3
Jiffy Lube International Store #1012 17869 S.E. McLoughlin Boulevard Milwaukie, OR	Contractor	Geotech Exploration	Drilling Method	6 1/4" Hollow Stem Auger
	Driller	Mike Reneker	Drilling Rig	B-61
	Start	10:58a.m. 05/27/93	Completed	11:25 p.m. 05/27/93
Landowner: Flying J Corporation	Surface Elev.	-----	Logged By	Mark Underhill

Sample Type	Sample No.	Blow Count	Sample Interval (ft)	Sample Recovery (in.)	Depth Scale 1" = 4'	Descriptions of Materials and Conditions	Observations Instrument: hNu Units: ppm	Observations Comments
					0	Asphalt Concrete and Gravel Base		
SS	1	1 3 2	2.5-4.0	6	3	SANDY SILT; medium grey, damp	173 ppm	
SS	2	3 2 4	5.0-6.5	6	5	CLAYEY SILT; dark grey, moist	259 ppm	
SS	3	1 2 1	7.5-9.0	6	8	CLAY; trace silt, medium grey, damp	57 ppm	
SS	4	1 2 1	10.0- 11.0	6	10	CLAY; trace silt, dark grey, damp	0	
SS	5	6 9 46	12.5- 14.0	6	13	SANDY SILT; dark grey, wet	0	
SS	6	6 4 7	15.0- 16.5	6	15	SAND; dark grey, fine-medium sand, wet	0	
					16	End of boring at 16.5 feet below ground surface. Monitoring Well MW-3 installed.		

BOREHOLE WATER LEVEL DATA			
Date	06/18/93		
Time	1:55 p.m.		
GWL	7.0 feet		
Casing Depth	15.0 feet		

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PROJECT NAME/LOCATION:	Project Number	43-93-011	Boring Number	MW-4
Jiffy Lube Internation Store #1012 17869 S.E.McLoughlin Boulevard Milwaukie, OR	Contractor	Geotech Explorations	Drilling Method	6 1/4" Hollow Stem Auger
	Driller	Mike	Drilling Rig	B-61
	Start	2:45 p.m. 06/18/93	Completed	3:23 p.m. 06/18/93
Landowner: Flying J Corporation	Surface Elev.	------	Logged By	Mark Underhill

Sample Type	Sample No.	Blow Count	Sample Interval (ft)	Sample Recovery (in.)	Depth Scale 1" = 4'	Descriptions of Materials and Conditions	Observations Instrument: hNu Units: ppm	Observations Comments
					0	Asphalt Concrete and Gravel Base		
SS	1	6 5 3	2.5-4.0	6	3	SILTY CLAY; dark grey, damp	33 ppm	
SS	2	4 3 1	5.0-6.5	6	5	CLAYEY SILT; dark grey, moist	83 ppm	
SS	3	2 4 5	7.5-9.0	6	8	CLAY; trace silt with organics, medium grey, moist	2.5 ppm	
SS	4	3 4 5	10.0-11.0	6	10	CLAY; trace silt, dark grey, moist	0	
SS	5	6 4 5	12.5-14.0	6	13	FINE-MEDIUM SAND; dark grey, wet	0	
SS	6	3 5 8	15.0-16.5	6	15	FINE-MEDIUM SAND; dark grey, wet	0	
					16	End of Soil Boring at 16.5 feet below ground surface. Monitoring Well MW-4 installed.		

BOREHOLE WATER LEVEL DATA			
Date	06/18/93		
Time	3:35 p.m.		
GWL	7.0 feet		
Casing Depth	15.0 feet		

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PROJECT NAME/LOCATION:	Project Number	43-93-011	Boring Number	MW-5
Jiffy Lube International Store #1012 17869 S.E. McLoughlin Boulevard Milwaukie, OR	Contractor	Geotech Exploration	Drilling Method	6 1/4" Hollow Stem Auger
	Driller	Mike Reneker	Drilling Rig	B-61
	Start	9:00 a.m. 06/19/93	Completed	9:37 a.m. 06/19/93
Landowner: Flying J Corporation	Surface Elev.	-----	Logged By	Mark Underhill

Sample Type	Sample No.	Blow Count	Sample Interval (ft)	Sample Recovery (in.)	Depth Scale 1" = 4'	Descriptions of Materials and Conditions	Observations Instrument: hNu Units: ppm	Observations Comments
					0	Asphalt Concrete and Gravel Base		
					1			
					2			
SS	1	5 9 5	2.5-4.0	6	3	SILT; trace clay, dark grey, damp	0	
					4			
SS	2	2 3 5	5.0-6.5	6	5	CLAYEY SILT; dark grey, damp	0	
					6			
					7			
SS	3	2 3 4	7.5-9.0	6	8	SILTY CLAY; medium grey, moist	0	
					9			
SS	4	5 5 5	10.0-11.0	6	10	CLAY; trace silt, dark grey, moist	0	
					11			
					12			
SS	5	2 5 10	12.5-14.0	6	13	FINE-MEDIUM SAND; trace organics, dark grey/brown, wet	0	
					14			
SS	6	5 7 4	15.0-16.5	6	15	FINE-MEDIUM SAND; dark grey, wet	0	
					16	End of boring at 16.5 feet below ground surface. Monitoring Well MW-5 installed.		
					17			
					18			
					19			
					20			
					21			
					22			
					23			

BOREHOLE WATER LEVEL DATA

Date	06/19/93		
Time	9:45 a.m.		
GWL	7.0 feet		
Casing Depth	15.0 feet		

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PROJECT NAME/LOCATION:	Project Number	43-93-011	Boring Number	MW-6
Jiffy Lube International Store #1012 17869 S.E. McLoughlin Boulevard Milwaukie, OR	Contractor	Geotech Exploration	Drilling Method	6 1/4" Hollow Stem Auger
	Driller	Mike Reneker	Drilling Rig	B-61
	Start	11:05 a.m. 06/19/93	Completed	11:56 a.m. 06/19/93
Landowner: Flying J Corporation	Surface Elev.	-----	Logged By	Mark Underhill

Sample Type	Sample No.	Blow Count	Sample Interval (ft)	Sample Recovery (in.)	Depth Scale 1" = 4'	Descriptions of Materials and Conditions	Observations Instrument: Units:	Comments
					0	Asphalt Concrete and Gravel Base		
SS	1	4 6 18	2.5-4.0	6	3	SANDY SILT; dark grey, damp	0	
SS	2	3 5 6	7.5-9.0	6	7	SILT CLAY; trace organics, medium grey, damp	0	
SS	3	2 4 5	10.0-11.0	6	10	SILTY SAND; medium grey, moist	0	
SS	4	3 7 10	12.5-14.0	6	13	FINE-MEDIUM SAND; dark grey, wet	0	
SS	5	3 2 3	15.0-16.5	6	15	FINE-MEDIUM SAND; dark grey, wet	0	
					16	End of boring at 16.5 feet below ground surface. Monitoring Well MW-6 installed.		

BOREHOLE WATER LEVEL DATA			
Date	06/19/93		
Time	12:05 p.m.		
GWL	7.0 feet		
Casing Depth	14.5 feet		

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APPENDIX B

APPENDIX B

Monitoring Well Construction Details

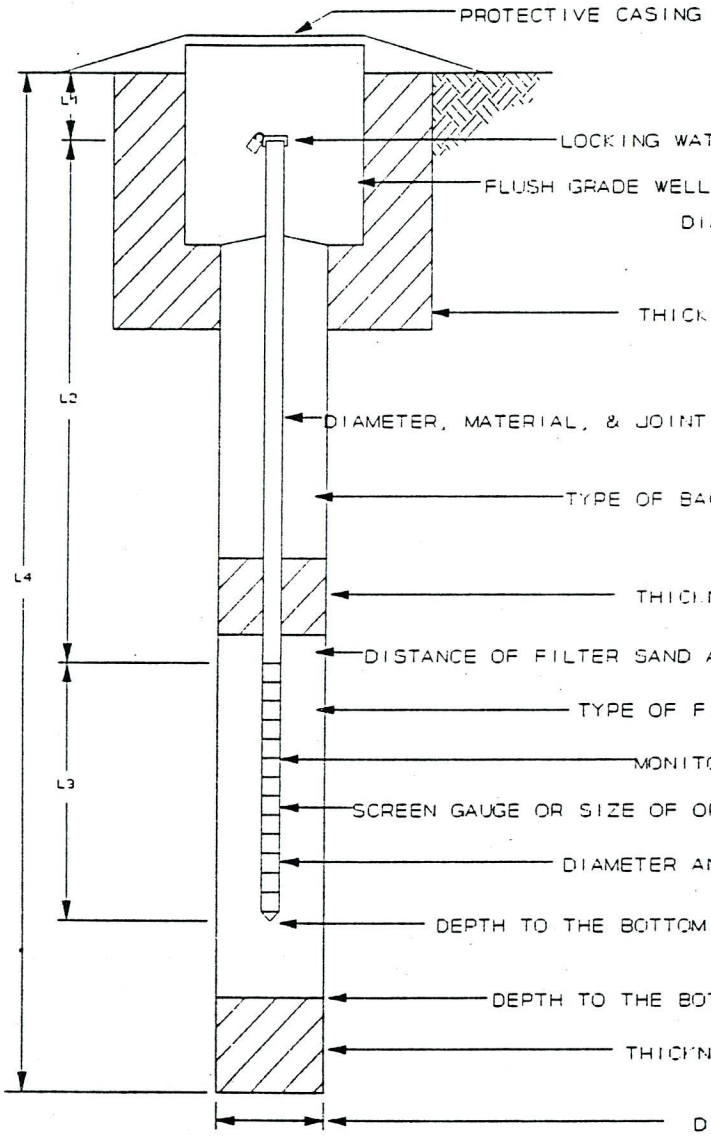
INSTALLATION OF FLUSH GRADE MONITORING WELL

Project: Jiffy Lube International
17869 S.E. McLoughlin Blvd.
Milwaukie, OR

Delta No. 43-92-011

Monitoring Well No. MW-1

Elevations:
Top of Riser: 99.67
Ground Level: ----



FLUSH GRADE WELL CONSTRUCTION	
DIAMETER AND MATERIAL	8-inch steel well box
TOTAL LENGTH	12 inches
THICKNESS & TYPE OF SEAL	1 foot concrete
DIAMETER, MATERIAL, & JOINT TYPE OF RISER PIPE	2-inch SCH 40 PVC flush threaded
TYPE OF BACKFILL AROUND RISER	Bentonite
THICKNESS & TYPE OF SEAL	1 foot bentonite
DISTANCE OF FILTER SAND ABOVE TOP OF SCREEN	1 foot
TYPE OF FILTER AROUND SCREEN	10/20 Silica sand
MONITORING WELL MATERIAL	SCH 40 PVC
SCREEN GAUGE OR SIZE OF OPENINGS (SLOT SIZE)	0.010 inch
DIAMETER AND LENGTH OF SCREEN	2 inch x 10.0 feet
DEPTH TO THE BOTTOM OF MONITORING WELL	15.0 feet
DEPTH TO THE BOTTOM OF FILTER SAND	15.0 feet
THICKNESS & TYPE OF SEAL	NA
DIAMETER OF BOREHOLE	8 inches

L1 = --- FT
L2 = 2.8 FT
L3 = 10.0 FT
L4 = 16.5 FT

Installation Completed
Date: 06/18/93
Time: 9:25 a.m.

Delta Environmental Consultants, Inc.

Monitoring Well Water Level Measurements		
Date	Time	Water Level*
06/21/93	5:58 p.m.	94.65 feet

* Measure Point: Top of casing

INSTALLATION OF FLUSH GRADE MONITORING WELL

Project: Jiffy Lube International
17869 S.E. McLoughlin Blvd.
Milwaukie, OR

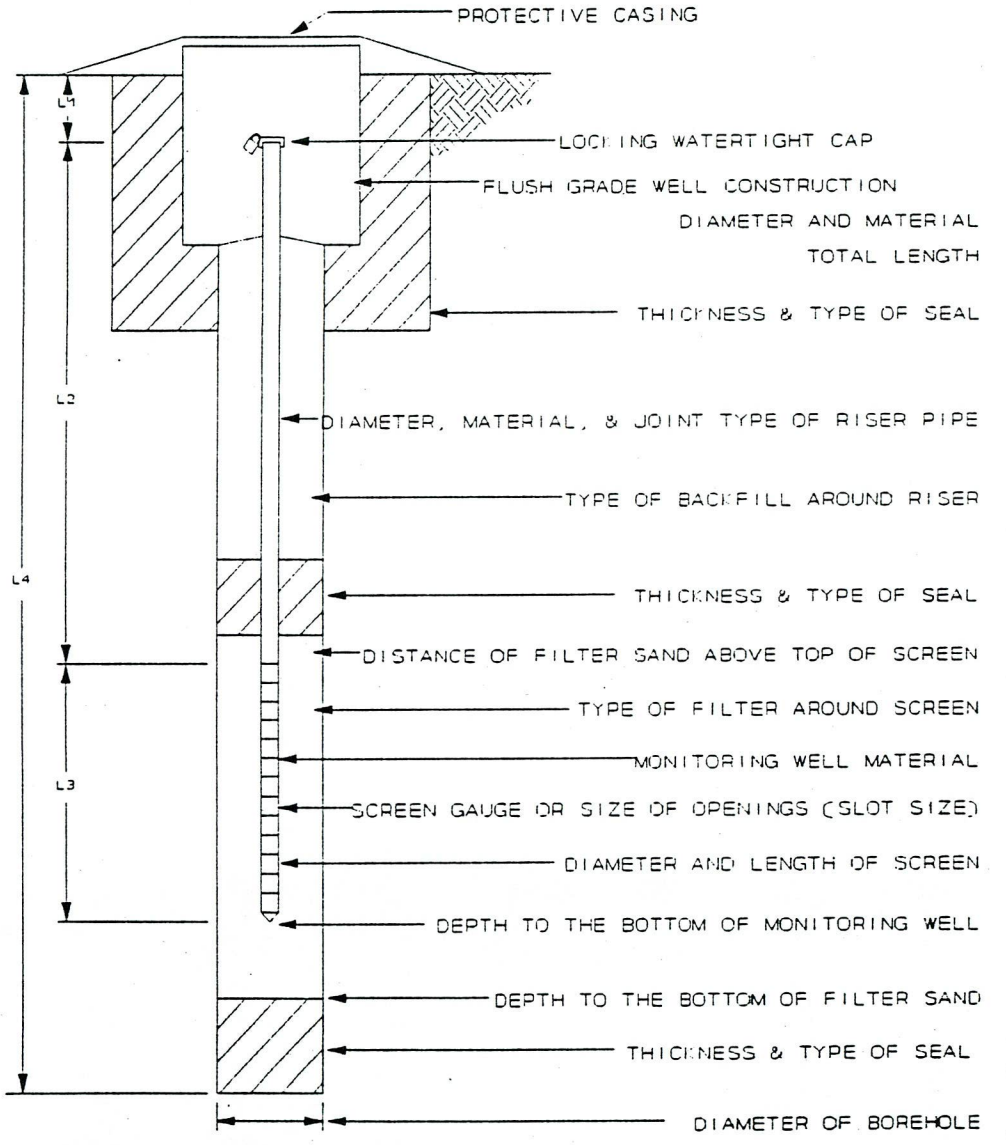
Delta No. 43-92-011

Monitoring Well No. MW-2

Elevations:

Top of Riser: 98.79

Ground Level: ----



DIAMETER AND MATERIAL	8-inch steel well box
TOTAL LENGTH	12 inches
THICKNESS & TYPE OF SEAL	1 foot concrete
DIAMETER, MATERIAL, & JOINT TYPE OF RISER PIPE	2-inch SCH 40 PVC flush threaded
TYPE OF BACKFILL AROUND RISER	Bentonite
THICKNESS & TYPE OF SEAL	1 foot bentonite
DISTANCE OF FILTER SAND ABOVE TOP OF SCREEN	1 foot
TYPE OF FILTER AROUND SCREEN	10/20 Silica sand
MONITORING WELL MATERIAL	SCH 40 PVC
SCREEN GAUGE OR SIZE OF OPENINGS (SLOT SIZE)	0.010 inch
DIAMETER AND LENGTH OF SCREEN	2 inch x 10 feet
DEPTH TO THE BOTTOM OF MONITORING WELL	14.0 feet
DEPTH TO THE BOTTOM OF FILTER SAND	14.0 feet
THICKNESS & TYPE OF SEAL	NA
DIAMETER OF BOREHOLE	8 inches

L1 = ---- FT
L2 = 4.5 FT
L3 = 10.0 FT
L4 = 15.5 FT

Installation Completed
Date: 06/18/93
Time: 11:25 a.m.

Delta Environmental Consultants, Inc.

Monitoring Well Water Level Measurements		
Date	Time	Water Level*
06/21/93	6:17 p.m.	94.59 feet

* Measure Point: Top of casing

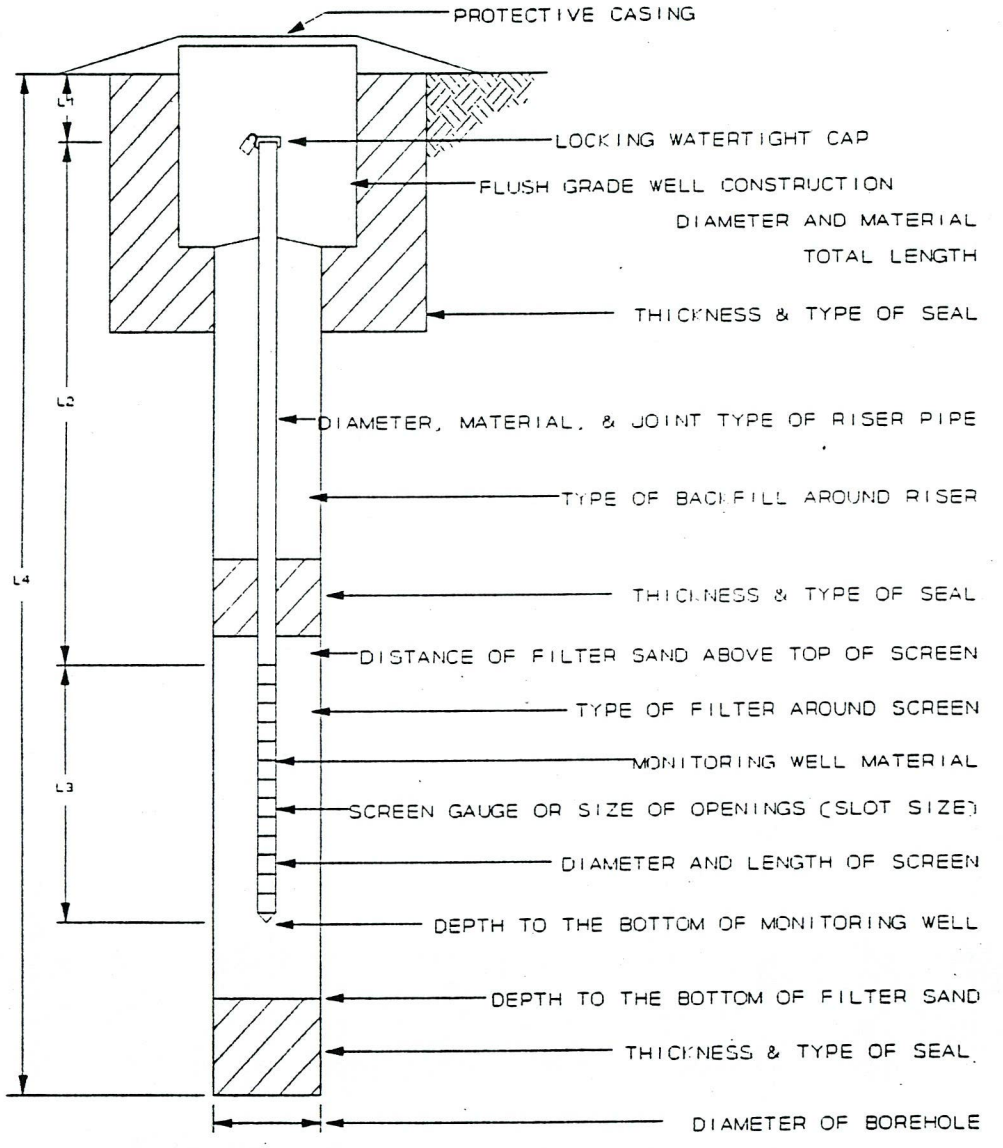
INSTALLATION OF FLUSH GRADE MONITORING WELL

Project: Jiffy Lube International
17869 S.E. McLoughlin Blvd.
Milwaukie, OR

Delta No. 43-92-011

Monitoring Well No. MW-3

Elevations:
Top of Riser: 98.57
Ground Level: ----



DIAMETER AND MATERIAL	8-inch steel well box
TOTAL LENGTH	12 inches
THICKNESS & TYPE OF SEAL	1 foot concrete
DIAMETER, MATERIAL, & JOINT TYPE OF RISER PIPE	2-inch SCH 40 PVC flush threaded
TYPE OF BACKFILL AROUND RISER	Bentonite
THICKNESS & TYPE OF SEAL	1 foot bentonite
DISTANCE OF FILTER SAND ABOVE TOP OF SCREEN	1 foot
TYPE OF FILTER AROUND SCREEN	10/20 Silica sand
MONITORING WELL MATERIAL	SCH 40 PVC
SCREEN GAUGE OR SIZE OF OPENINGS (SLOT SIZE)	0.010 inch
DIAMETER AND LENGTH OF SCREEN	2 inch x 10 feet
DEPTH TO THE BOTTOM OF MONITORING WELL	15.0 feet
DEPTH TO THE BOTTOM OF FILTER SAND	15.0 feet
THICKNESS & TYPE OF SEAL	NA
DIAMETER OF BOREHOLE	8 inches

L1 = ---- FT
L2 = 4.5 FT
L3 = 10.0 FT
L4 = 16.5 FT

Installation Completed
Date: 06/18/93
Time: 1:55 p.m.

Delta Environmental Consultants, Inc.

Monitoring Well Water Level Measurements		
Date	Time	Water Level*
06/21/93	5:13 p.m.	94.57 feet

* Measure Point: Top of casing

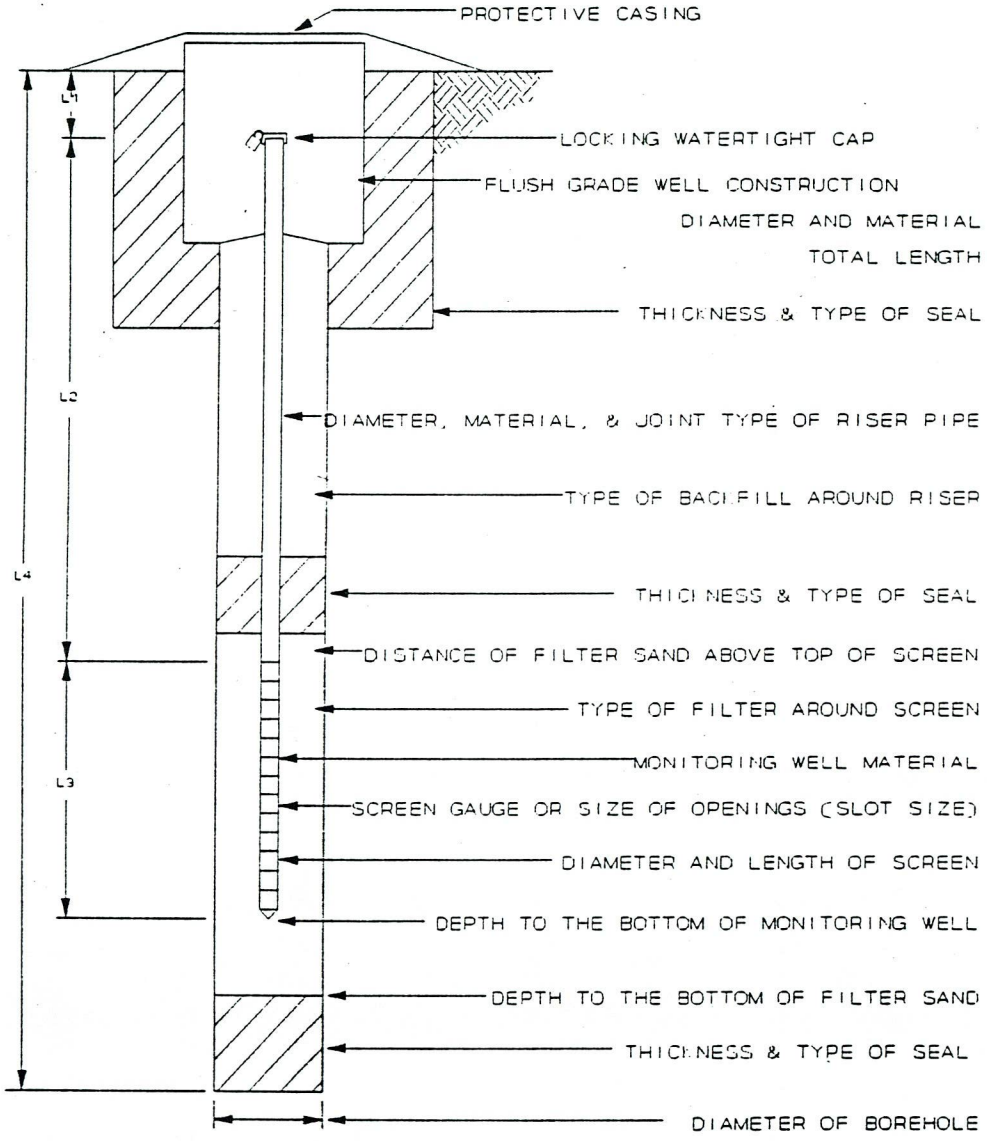
INSTALLATION OF FLUSH GRADE MONITORING WELL

Project: Jiffy Lube International
17869 S.E. McLoughlin Blvd.
Milwaukie, OR

Delta No. 43-92-011

Monitoring Well No. MW-4

Elevations:
Top of Riser: 99.30
Ground Level: ----



DIAMETER AND MATERIAL	8-inch steel well box
TOTAL LENGTH	12 inches
THICKNESS & TYPE OF SEAL	1 foot concrete
DIAMETER, MATERIAL, & JOINT TYPE OF RISER PIPE	2-inch SCH 40 PVC flush threaded
TYPE OF BACKFILL AROUND RISER	Bentonite
THICKNESS & TYPE OF SEAL	1 foot bentonite
DISTANCE OF FILTER SAND ABOVE TOP OF SCREEN	1 foot
TYPE OF FILTER AROUND SCREEN	10/20 Silica sand
MONITORING WELL MATERIAL	SCH 40 PVC
SCREEN GAUGE OR SIZE OF OPENINGS (SLOT SIZE)	0.010 inch
DIAMETER AND LENGTH OF SCREEN	2 inch x 10 feet
DEPTH TO THE BOTTOM OF MONITORING WELL	15.0 feet
DEPTH TO THE BOTTOM OF FILTER SAND	15.0 feet
THICKNESS & TYPE OF SEAL	NA
DIAMETER OF BOREHOLE	8 inches

L1 = ---- FT
L2 = 4.5 FT
L3 = 10.0 FT
L4 = 16.5 FT

Installation Completed
Date: 06/18/93
Time: 3:35 p.m.

Delta Environmental Consultants, Inc.

Monitoring Well Water Level Measurements		
Date	Time	Water Level*
06/21/93	5:09 p.m.	94.54 feet

* Measure Point: Top of casing

INSTALLATION OF FLUSH GRADE MONITORING WELL

Project: Jiffy Lube International
17869 S.E. McLoughlin Blvd.
Milwaukie, OR

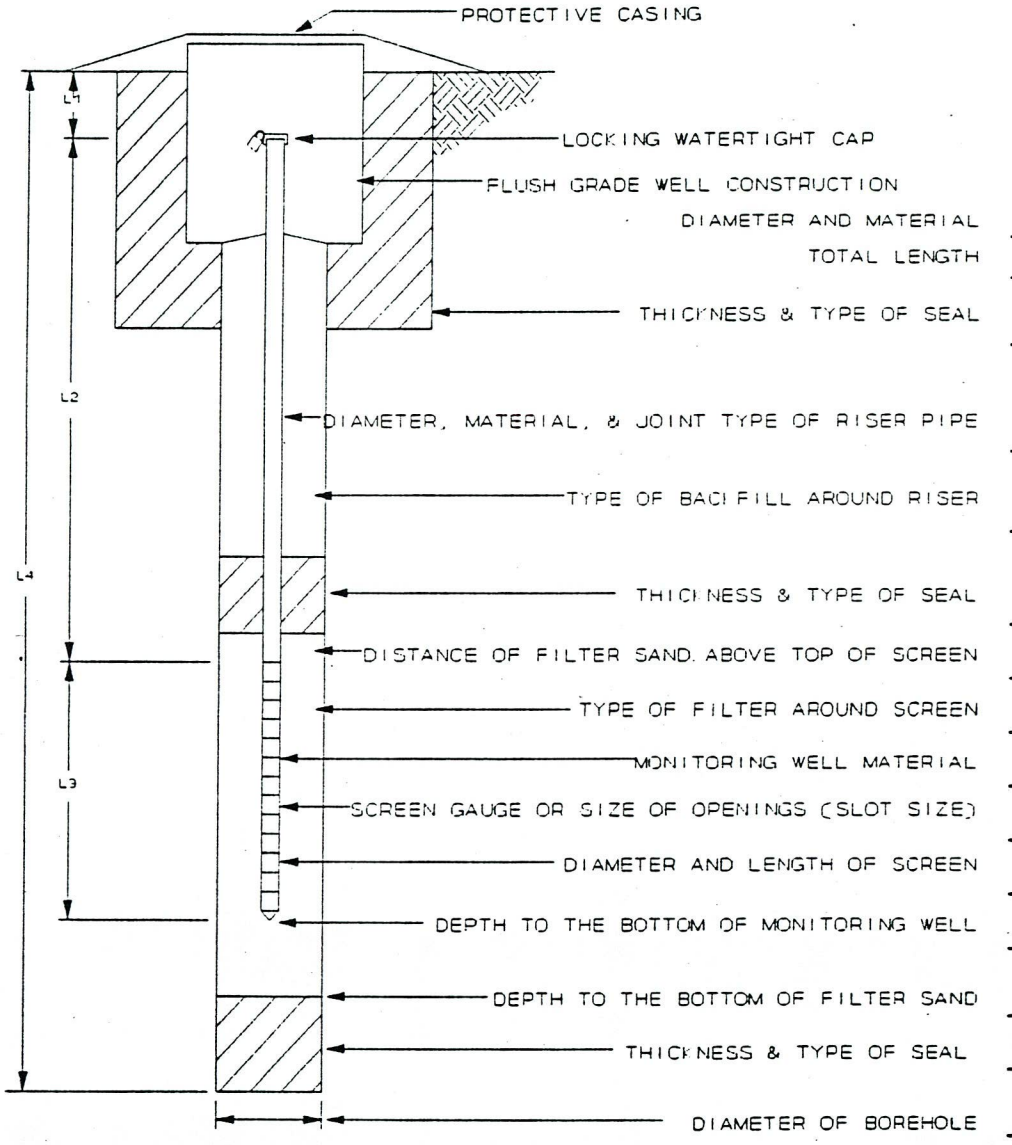
Delta No. 43-92-011

Monitoring Well No. MW-5

Elevations:

Top of Riser: 100.66

Ground Level: ----



DIAMETER AND MATERIAL	8-inch steel well box
TOTAL LENGTH	12 inches
THICKNESS & TYPE OF SEAL	1 foot concrete
DIAMETER, MATERIAL, & JOINT TYPE OF RISER PIPE	2-inch SCH 40 PVC flush threaded
TYPE OF BACKFILL AROUND RISER	Bentonite
THICKNESS & TYPE OF SEAL	1 foot bentonite
DISTANCE OF FILTER SAND ABOVE TOP OF SCREEN	1 foot
TYPE OF FILTER AROUND SCREEN	10/20 Silica sand
MONITORING WELL MATERIAL	SCH 40 PVC
SCREEN GAUGE OR SIZE OF OPENINGS (SLOT SIZE)	0.010 inch
DIAMETER AND LENGTH OF SCREEN	2 inch x 10 feet
DEPTH TO THE BOTTOM OF MONITORING WELL	15.0 feet
DEPTH TO THE BOTTOM OF FILTER SAND	15.0 feet
THICKNESS & TYPE OF SEAL	NA
DIAMETER OF BOREHOLE	8 inches

L1 = ---- FT
L2 = 4.5 FT
L3 = 10.0 FT
L4 = 16.5 FT

Installation Completed
Date: 06/19/93
Time: 9:45 a.m.

Delta Environmental Consultants, Inc.

Monitoring Well Water Level Measurements		
Date	Time	Water Level*
06/21/93	5:05 p.m.	94.52 feet

* Measure Point: Top of casing

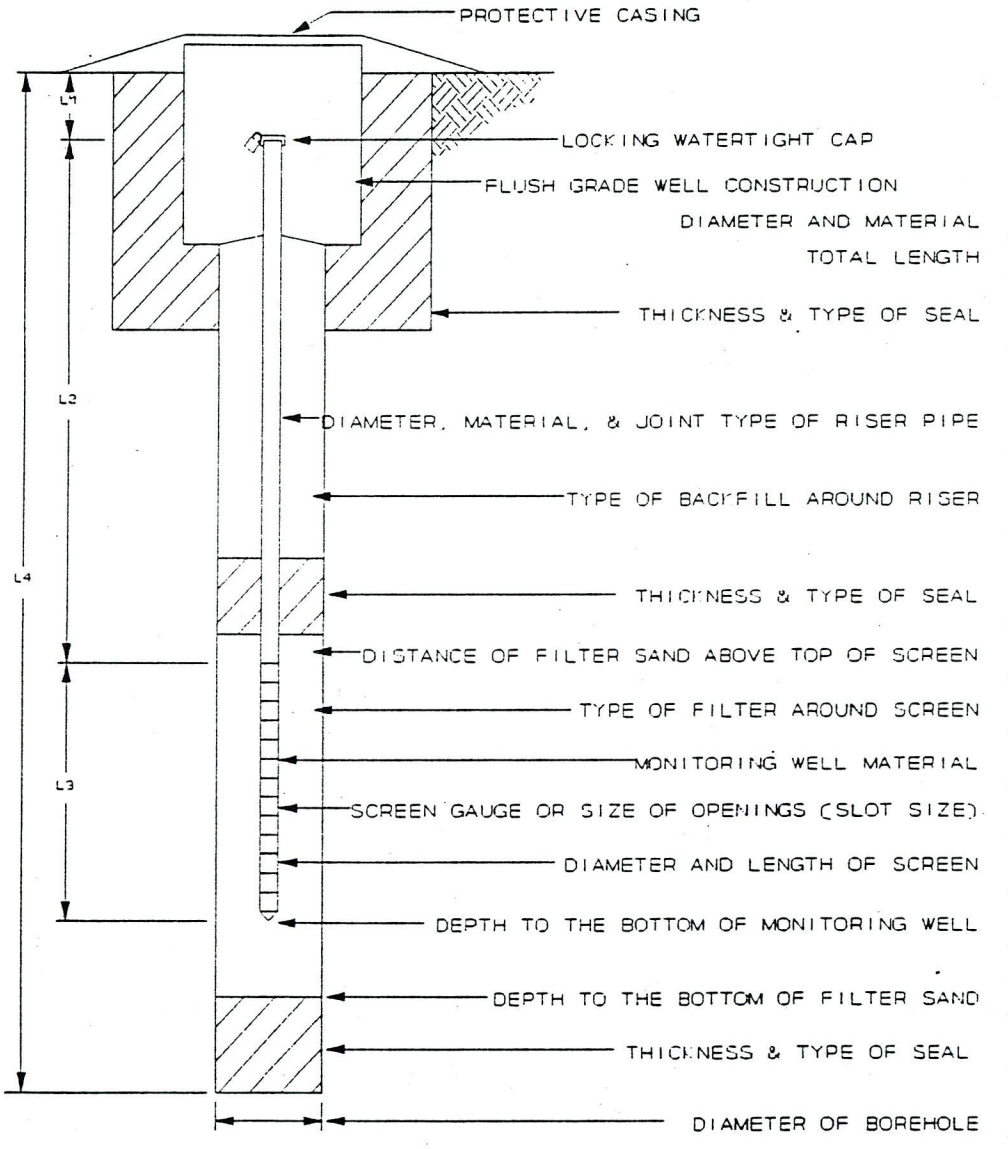
INSTALLATION OF FLUSH GRADE MONITORING WELL

Project: Jiffy Lube International
17869 S.E. McLoughlin Blvd.
Milwaukie, OR

Delta No. 43-92-011

Monitoring Well No. MW-6

Elevations:
Top of Riser: 100.29
Ground Level: ----



DIAMETER AND MATERIAL	8-inch steel well box
TOTAL LENGTH	12 inches
THICKNESS & TYPE OF SEAL	1 foot concrete
DIAMETER, MATERIAL, & JOINT TYPE OF RISER PIPE	2-inch SCH 40 PVC flush threaded
TYPE OF BACKFILL AROUND RISER	Bentonite
THICKNESS & TYPE OF SEAL	1 foot bentonite
DISTANCE OF FILTER SAND ABOVE TOP OF SCREEN	1 foot
TYPE OF FILTER AROUND SCREEN	10/20 Silica sand
MONITORING WELL MATERIAL	SCH 40 PVC
SCREEN GAUGE OR SIZE OF OPENINGS (SLOT SIZE)	0.010 inch
DIAMETER AND LENGTH OF SCREEN	2 inch x 9.5 feet
DEPTH TO THE BOTTOM OF MONITORING WELL	1 feet
DEPTH TO THE BOTTOM OF FILTER SAND	14.5 feet
THICKNESS & TYPE OF SEAL	NA
DIAMETER OF BOREHOLE	8 inches

L1 = ---- FT
L2 = 4.5 FT
L3 = 10.0 FT
L4 = 15.5 FT

Installation Completed
Date: 06/19/93
Time: 12:05 p.m.

Delta Environmental Consultants, Inc.

Monitoring Well Water Level Measurements		
Date	Time	Water Level*
06/21/93	5:53 p.m.	94.58 feet

* Measure Point: Top of casing

APPENDIX C

APPENDIX C

Laboratory Analytical Reports

Alden Analytical
Laboratories, Inc.

July 14, 1993

Delta Environmental Consultants, Inc.
Attn: Dan Whitman
3150 Richards Road, Suite 100
Bellevue, WA 98005

RE: ALDEN PROJECT NUMBERS 9306047/1 and 9306047/2
(DELTA PROJECT NUMBER 43-93-011.03)

Dear Dan:

Enclosed are the analytical results for the soil samples submitted to Alden Labs June 23, 1993. The samples were analyzed for TPH using Oregon State Methods TPH-ID, TPH-G, and TPH-418.1 Modified and BTEX using Method 8240. Four samples were further quantified following the Leaking Underground Storage Tank Decision Tree using Oregon State Method TPH-D. This is outlined on the next page.

There was slight blank contamination for the TPH-D analyses and is reported above the detection limit. All samples met Alden's internal QA/QC criteria.

It is Alden's policy to dispose of all samples and extracts after the expiration of their hold time unless notified otherwise. If you have any questions, please do not hesitate to call me at the number below.

Sincerely,

John A. Weakland
Project Manager

Enclosures

1001 SW Klickitat Way
Seattle, WA 98134
Telephone (206) 623-3660
Facsimile (206) 624-8778

den Analytical
boratories, Inc.

TPH-ID DECISION TREE

lient: Delta (43-93-011.03) *Alden Project Number: 9306047/1*

ient ID Number	*Alden Lab ID*	*TPH-G*	*TPH-D*
W-1/S-2	4137	X	
W-2/S-1	4138	X	X
W-3/S-2	4139	X	X
W-4/S-2	4140	X	X
W-5/S-2	4141	X	
W-6/S-2	4142	X	X

Based on the TPH-ID results, the following samples require further analysis. These analyses are ndicated with an X in the above table.

Soil Samples

Alden Analytical
Laboratories, Inc.

REPORT OF ANALYTICAL RESULTS

Client: Delta (43-93-011.03)	*Alden Project Number: 9306047/1*
Client Sample Number: N/A	*Alden Sample Number: Blank*
Date of Sample Receipt: N/A	*Analysis Method: TPH-ID*
Date of Sample Extraction: 06/23/93	*Matrix: Soil*
Date of Sample Analysis: 06/24/93	*Reporting Units: mg/kg*

Product Identification	*Range*	*Reporting Limits(RL)*	*Reporting Results*
Gasoline	C_6 - C_{10}	20	< RL
Diesel	C_{10} - C_{28}	50	< RL

Surrogates	*Percent Recovery*	*Recovery Limits*
Trifluorotoluene	123	50 - 150
Bromofluorobenzene	116	50 - 150
Fluorobiphenyl	130	50 - 150
o-Terphenyl	121	50 - 150

Alden Analytical
Laboratories, Inc.

REPORT OF ANALYTICAL RESULTS

Client: Delta (43-93-011.03)	*Alden Project Number: 9306047/1*
Client Sample Number: MW-1/S-2	*Alden Sample Number: 4137*
Date of Sample Receipt: 06/23/93	*Analysis Method: TPH-ID*
Date of Sample Extraction: 06/23/93	*Matrix: Soil*
Date of Sample Analysis: 06/24/93	*Reporting Units: mg/kg*

Product Identification	*Range*	*Reporting Limits(RL)*	*Reporting Results*
Gasoline	C_6 - C_{10}	20	> 20
Diesel	C_{10} - C_{28}	50	< RL

Surrogates	*Percent Recovery*	*Recovery Limits*
Trifluorotoluene	114	50 - 150
Bromofluorobenzene	116	50 - 150
Fluorobiphenyl	129	50 - 150
o-Terphenyl	126	50 - 150

Alden Analytical
Laboratories, Inc.

REPORT OF ANALYTICAL RESULTS

Client: Delta (43-93-011.03)	*Alden Project Number: 9306047/1*
Client Sample Number: MW-2/S-1	*Alden Sample Number: 4138*
Date of Sample Receipt: 06/23/93	*Analysis Method: TPH-ID*
Date of Sample Extraction: 06/23/93	*Matrix: Soil*
Date of Sample Analysis: 06/24/93	*Reporting Units: mg/kg*

Product Identification	*Range*	*Reporting Limits(RL)*	*Reporting Results*
Gasoline	C_6 - C_{10}	20	> 20
Diesel	C_{10} - C_{28}	50	> 50

Surrogates	*Percent Recovery*	*Recovery Limits*
Trifluorotoluene	115	50 - 150
Bromofluorobenzene	124	50 - 150
Fluorobiphenyl	131	50 - 150
o-Terphenyl	117	50 - 150

Alden Analytical
Laboratories, Inc.

REPORT OF ANALYTICAL RESULTS

Client: Delta (43-93-011.03)	*Alden Project Number: 9306047/1*
Client Sample Number: MW-3/S-2	*Alden Sample Number: 4139*
Date of Sample Receipt: 06/23/93	*Analysis Method: TPH-ID*
Date of Sample Extraction: 06/23/93	*Matrix: Soil*
Date of Sample Analysis: 06/24/93	*Reporting Units: mg/kg*

Product Identification	*Range*	*Reporting Limits(RL)*	*Reporting Results*
Gasoline	C_6 - C_{10}	20	> 20
Diesel	C_{10} - C_{28}	50	> 50

Surrogates	*Percent Recovery*	*Recovery Limits*
Trifluorotoluene	105	50 - 150
Bromofluorobenzene	143	50 - 150
Fluorobiphenyl	103	50 - 150
o-Terphenyl	122	50 - 150

Alden Analytical
Laboratories, Inc.

REPORT OF ANALYTICAL RESULTS

Client: Delta (43-93-011.03)	*Alden Project Number: 9306047/1*
Client Sample Number: Duplicate	*Alden Sample Number: 4139 Dup*
Date of Sample Receipt: 06/23/93	*Analysis Method: TPH-ID*
Date of Sample Extraction: 06/23/93	*Matrix: Soil*
Date of Sample Analysis: 06/24/93	*Reporting Units: mg/kg*

Product Identification	*Range*	*Reporting Limits(RL)*	*Reporting Results*
Gasoline	C_6 - C_{10}	20	> 20
Diesel	C_{10} - C_{28}	50	> 50

Surrogates	*Percent Recovery*	*Recovery Limits*
Trifluorotoluene	98	50 - 150
Bromofluorobenzene	128	50 - 150
Fluorobiphenyl	92	50 - 150
o-Terphenyl	116	50 - 150

Alden Analytical
Laboratories, Inc.

REPORT OF ANALYTICAL RESULTS

Client: Delta (43-93-011.03)	*Alden Project Number: 9306047/1*
Client Sample Number: MW-4/S-2	*Alden Sample Number: 4140*
Date of Sample Receipt: 06/23/93	*Analysis Method: TPH-ID*
Date of Sample Extraction: 06/23/93	*Matrix: Soil*
Date of Sample Analysis: 06/24/93	*Reporting Units: mg/kg*

Product Identification	*Range*	*Reporting Limits(RL)*	*Reporting Results*
Gasoline	C_6 - C_{10}	20	> 20
Diesel	C_{10} - C_{28}	50	> 50

Surrogates	*Percent Recovery*	*Recovery Limits*
Trifluorotoluene	95	50 - 150
Bromofluorobenzene	120	50 - 150
Fluorobiphenyl	98	50 - 150
o-Terphenyl	124	50 - 150

Alden Analytical
Laboratories, Inc.

REPORT OF ANALYTICAL RESULTS

Client: Delta (43-93-011.03)	*Alden Project Number: 9306047/1*
Client Sample Number: MW-5/S-2	*Alden Sample Number: 4141*
Date of Sample Receipt: 06/23/93	*Analysis Method: TPH-ID*
Date of Sample Extraction: 06/23/93	*Matrix: Soil*
Date of Sample Analysis: 06/24/93	*Reporting Units: mg/kg*

Product Identification	*Range*	*Reporting Limits(RL)*	*Reporting Results*
Gasoline	C_6 - C_{10}	20	> 20
Diesel	C_{10} - C_{28}	50	<RL

Surrogates	*Percent Recovery*	*Recovery Limits*
Trifluorotoluene	115	50 - 150
Bromofluorobenzene	118	50 - 150
Fluorobiphenyl	125	50 - 150
o-Terphenyl	103	50 - 150

Alden Analytical
Laboratories, Inc.

REPORT OF ANALYTICAL RESULTS

Client: Delta (43-93-011.03)	*Alden Project Number: 9306047/1*
Client Sample Number: MW-6/S-2	*Alden Sample Number: 4142*
Date of Sample Receipt: 06/23/93	*Analysis Method: TPH-ID*
Date of Sample Extraction: 06/23/93	*Matrix: Soil*
Date of Sample Analysis: 06/24/93	*Reporting Units: mg/kg*

Product Identification	*Range*	*Reporting Limits(RL)*	*Reporting Results*
Gasoline	C_6 - C_{10}	20	> 20
Diesel	C_{10} - C_{28}	50	> 50

Surrogates	*Percent Recovery*	*Recovery Limits*
Trifluorotoluene	106	50 - 150
Bromofluorobenzene	117	50 - 150
Fluorobiphenyl	133	50 - 150
o-Terphenyl	124	50 - 150

Alden Analytical
Laboratories, Inc.

REPORT OF ANALYTICAL RESULTS

Client: Delta (43-93-011.03)	*Alden Project Number: 9306047/1*
Client Sample Number: N/A	*Alden Sample Number: Blank*
Date of Sample Receipt: N/A	*Analysis Method: TPH-G*
Date of Sample Extraction: N/A	*Matrix: Soil*
Date of Sample Analysis: 06/24/93	*Reporting Units: mg/kg*

Compound Name	*CAS No.*	*Reporting Limits(RL)*	*Reporting Results*
Total Petroleum Hydrocarbons	N/A	10	< RL

Surrogates	*Percent Recovery*	*Recovery Limits*
Trifluorotoluene	78	50 - 150
Bromofluorobenzene	78	50 - 150

Alden Analytical
Laboratories, Inc.

REPORT OF ANALYTICAL RESULTS

Client: Delta (43-93-011.03)	*Alden Project Number: 9306047/1*
Client Sample Number: MW-1/S-2	*Alden Sample Number: 4137*
Date of Sample Receipt: 06/21/93	*Analysis Method: TPH-G*
Date of Sample Extraction: N/A	*Matrix: Soil*
Date of Sample Analysis: 06/24/93	*Reporting Units: mg/kg*

Compound Name	*CAS No.*	*Reporting Limits(RL)*	*Reporting Results*
Total Petroleum Hydrocarbons	N/A	10	87

Surrogates	*Percent Recovery*	*Recovery Limits*
Trifluorotoluene	70	50 - 150
Bromofluorobenzene	77	50 - 150

Alden Analytical
Laboratories, Inc.

REPORT OF ANALYTICAL RESULTS

Client: Delta (43-93-011.03)	*Alden Project Number: 9306047/1*
Client Sample Number: MW-2/S-1	*Alden Sample Number: 4138*
Date of Sample Receipt: 06/21/93	*Analysis Method: TPH-G*
Date of Sample Extraction: N/A	*Matrix: Soil*
Date of Sample Analysis: 06/24/93	*Reporting Units: mg/kg*

Compound Name	*CAS No.*	*Reporting Limits(RL)*	*Reporting Results*
Total Petroleum Hydrocarbons	N/A	10	29

Surrogates	*Percent Recovery*	*Recovery Limits*
Trifluorotoluene	150	50 - 150
Bromofluorobenzene	78	50 - 150

Alden Analytical
Laboratories, Inc.

REPORT OF ANALYTICAL RESULTS

Client: Delta (43-93-011.03)	*Alden Project Number: 9306047/1*
Client Sample Number: MW-3/S-2	*Alden Sample Number: 4139*
Date of Sample Receipt: 06/21/93	*Analysis Method: TPH-G*
Date of Sample Extraction: N/A	*Matrix: Soil*
Date of Sample Analysis: 06/24/93	*Reporting Units: mg/kg*

Compound Name	*CAS No.*	*Reporting Limits(RL)*	*Reporting Results*
Total Petroleum Hydrocarbons	N/A	40	62

Surrogates	*Percent Recovery*	*Recovery Limits*
Trifluorotoluene	75	50 - 150
Bromofluorobenzene	72	50 - 150

Alden Analytical
Laboratories, Inc.

REPORT OF ANALYTICAL RESULTS

Client: Delta (43-93-011.03)	*Alden Project Number: 9306047/1*
Client Sample Number: MW-4/S-2	*Alden Sample Number: 4140*
Date of Sample Receipt: 06/21/93	*Analysis Method: TPH-G*
Date of Sample Extraction: N/A	*Matrix: Soil*
Date of Sample Analysis: 06/24/93	*Reporting Units: mg/kg*

Compound Name	*CAS No.*	*Reporting Limits(RL)*	*Reporting Results*
Total Petroleum Hydrocarbons	N/A	10	< RL

Surrogates	*Percent Recovery*	*Recovery Limits*
Trifluorotoluene	79	50 - 150
Bromofluorobenzene	73	50 - 150

Alden Analytical
Laboratories, Inc.

REPORT OF ANALYTICAL RESULTS

Client: Delta (43-93-011.03)	*Alden Project Number: 9306047/1*
Client Sample Number: MW-5/S-2	*Alden Sample Number: 4141*
Date of Sample Receipt: 06/21/93	*Analysis Method: TPH-G*
Date of Sample Extraction: N/A	*Matrix: Soil*
Date of Sample Analysis: 06/24/93	*Reporting Units: mg/kg*

Compound Name	*CAS No.*	*Reporting Limits(RL)*	*Reporting Results*
Total Petroleum Hydrocarbons	N/A	10	13

Surrogates	*Percent Recovery*	*Recovery Limits*
Trifluorotoluene	80	50 - 150
Bromofluorobenzene	78	50 - 150

Alden Analytical
Laboratories, Inc.

REPORT OF ANALYTICAL RESULTS

Client: Delta (43-93-011.03)	*Alden Project Number: 9306047/1*
Client Sample Number: MW-6/S-2	*Alden Sample Number: 4142*
Date of Sample Receipt: 06/21/93	*Analysis Method: TPH-G*
Date of Sample Extraction: N/A	*Matrix: Soil*
Date of Sample Analysis: 06/24/93	*Reporting Units: mg/kg*

Compound Name	*CAS No.*	*Reporting Limits(RL)*	*Reporting Results*
Total Petroleum Hydrocarbons	N/A	10	< RL

Surrogates	*Percent Recovery*	*Recovery Limits*
Trifluorotoluene	92	50 - 150
Bromofluorobenzene	97	50 - 150

Alden Analytical
Laboratories, Inc.

REPORT OF ANALYTICAL RESULTS

Client: Delta (43-93-011.03)	*Alden Project Number: 9306047/1*
Client Sample Number: Duplicate	*Alden Sample Number: 4142 Dup*
Date of Sample Receipt: 06/21/93	*Analysis Method: TPH-G*
Date of Sample Extraction: N/A	*Matrix: Soil*
Date of Sample Analysis: 06/24/93	*Reporting Units: mg/kg*

Compound Name	*CAS No.*	*Reporting Limits(RL)*	*Reporting Results*
Total Petroleum Hydrocarbons	N/A	10	< RL

Surrogates	*Percent Recovery*	*Recovery Limits*
Trifluorotoluene	88	50 - 150
Bromofluorobenzene	87	50 - 150

Alden Analytical
Laboratories, Inc.

REPORT OF ANALYTICAL RESULTS

Client: Delta (43-93-011.03)	*Alden Project Number: 9306047/2*
Client Sample Number: N/A	*Alden Sample Number: Blank*
Date of Sample Receipt: N/A	*Analysis Method: TPH-D*
Date of Sample Extraction: 07/02/93	*Matrix: Soil*
Date of Sample Analysis: 07/07/93	*Reporting Units: mg/kg*

Compound Name	*Reporting Limits(RL)*	*Reporting Results*
Total Petroleum Hydrocarbons	20	21

Surrogates	*Percent Recovery*	*Recovery Limits*
o-Terphenyl	120	50 - 150

Alden Analytical
Laboratories, Inc.

REPORT OF ANALYTICAL RESULTS

Client: Delta (43-93-011.03)	*Alden Project Number: 9306047/2*
Client Sample Number: MW-1/S-2	*Alden Sample Number: 4138*
Date of Sample Receipt: 06/21/93	*Analysis Method: TPH-D*
Date of Sample Extraction: 07/02/93	*Matrix: Soil*
Date of Sample Analysis: 07/08/93	*Reporting Units: mg/kg*

Compound Name	*Reporting Limits(RL)*	*Reporting Results*
Total Petroleum Hydrocarbons	200	550

Surrogates	*Percent Recovery*	*Recovery Limits*
o-Terphenyl	130	50 - 150

Alden Analytical
Laboratories, Inc.

REPORT OF ANALYTICAL RESULTS

Client: Delta (43-93-011.03)	*Alden Project Number: 9306047/2*
Client Sample Number: MW-2/S-1	*Alden Sample Number: 4139*
Date of Sample Receipt: 06/21/93	*Analysis Method: TPH-D*
Date of Sample Extraction: 07/02/93	*Matrix: Soil*
Date of Sample Analysis: 07/08/93	*Reporting Units: mg/kg*

Compound Name	*Reporting Limits(RL)*	*Reporting Results*
Total Petroleum Hydrocarbons	200	1200

Surrogates	*Percent Recovery*	*Recovery Limits*
o-Terphenyl	130	50 - 150

Alden Analytical
Laboratories, Inc.

REPORT OF ANALYTICAL RESULTS

Client: Delta (43-93-011.03)	*Alden Project Number: 9306047/2*
Client Sample Number: MW-3/S-2	*Alden Sample Number: 4140*
Date of Sample Receipt: 06/21/93	*Analysis Method: TPH-D*
Date of Sample Extraction: 07/02/93	*Matrix: Soil*
Date of Sample Analysis: 07/08/93	*Reporting Units: mg/kg*

Compound Name	*Reporting Limits(RL)*	*Reporting Results*
Total Petroleum Hydrocarbons	20	180

Surrogates	*Percent Recovery*	*Recovery Limits*
o-Terphenyl	110	50 - 150

Alden Analytical
Laboratories, Inc.

REPORT OF ANALYTICAL RESULTS

Client: Delta (43-93-011.03)	*Alden Project Number: 9306047/2*
Client Sample Number: MW-6/S-2	*Alden Sample Number: 4142*
Date of Sample Receipt: 06/21/93	*Analysis Method: TPH-D*
Date of Sample Extraction: 07/02/93	*Matrix: Soil*
Date of Sample Analysis: 07/08/93	*Reporting Units: mg/kg*

Compound Name	*Reporting Limits(RL)*	*Reporting Results*
Total Petroleum Hydrocarbons	20	23

Surrogates	*Percent Recovery*	*Recovery Limits*
o-Terphenyl	118	50 - 150

Alden Analytical
Laboratories, Inc.

REPORT OF ANALYTICAL RESULTS

Client: Delta (43-93-011.03)	*Alden Project Number: 9306047/2*
Client Sample Number: Duplicate	*Alden Sample Number: 4142 Dup*
Date of Sample Receipt: 06/21/93	*Analysis Method: TPH-D*
Date of Sample Extraction: 07/02/93	*Matrix: Soil*
Date of Sample Analysis: 07/08/93	*Reporting Units: mg/kg*

Compound Name	*Reporting Limits(RL)*	*Reporting Results*
Total Petroleum Hydrocarbons	20	43

Surrogates	*Percent Recovery*	*Recovery Limits*
o-Terphenyl	119	50 - 150

Alden Analytical
Laboratories, Inc.

REPORT OF ANALYTICAL RESULTS

Client: Delta (43-93-011.03)
Client Sample Number: See Below
Date of Sample Receipt: 06/21/93
Matrix: Soil

Alden Project Number: 9306047/1
Alden Sample Number: See Below
Analysis Method: TPH-418.1 Mod.
Reporting Units: mg/kg

Client Sample ID	*Alden Sample Number*	*Extraction Date*	*Analysis Date*	*TPH*
N/A	Blank	06/28/93	06/28/93	5.8
MW-1/S-2	4137	06/28/93	06/28/93	110
MW-2/S-1	4138	06/28/93	06/28/93	1100
MW-3/S-2	4139	06/28/93	06/28/93	680
Duplicate	4139 Dup	06/28/93	06/28/93	620
MW-4/S-2	4140	06/28/93	06/28/93	120
MW-5/S-2	4141	06/28/93	06/28/93	210
MW-6/S-2	4142	06/28/93	06/28/93	160

Note: Results are reported to two significant figures.

Alden Analytical
Laboratories, Inc.

REPORT OF ANALYTICAL RESULTS

Client: Delta (43-93-011.03)	*Alden Project Number: 9306047/1*
Client Sample Number: N/A	*Alden Sample Number: BLANK1*
Date of Sample Receipt: N/A	*Analysis Method: EPA 8240**
Date of Sample Extraction:	*Matrix: Soil*
Date of Sample Analysis: 06/24/93	*Reporting Units: ug/kg*

Compound Name	*CAS No.*	*Reporting Limits(RL)*	*Reporting Results*
Benzene	71-43-2	1	<RL
Toluene	108-88-3	1	<RL
Ethylbenzene	100-41-4	1	<RL
m,p-Xylene**	1330-20-7	1	<RL
o-Xylene	1330-20-7	1	<RL

Surrogates	*Amount Added*	*Percent Recovery*	*Recovery Limits*
d4-1,2-Dichloroethane	250 ng	97	70-121
d8-Toluene	250 ng	102	81-117
Bromofluorobenzene	250 ng	101	74-121

* Please note that sample results have been corrected for moisture content.

** m-Xylene and p-Xylene cannot be separated and are reported here as a total of the two isomers.

Alden Analytical
Laboratories, Inc.

REPORT OF ANALYTICAL RESULTS

Client: Delta (43-93-011.03)	*Alden Project Number: 9306047/1*
Client Sample Number: N/A	*Alden Sample Number: BLANK2*
Date of Sample Receipt: N/A	*Analysis Method: EPA 8240**
Date of Sample Extraction: N/A	*Matrix: Soil*
Date of Sample Analysis: 06/25/93	*Reporting Units: ug/kg*

Compound Name	*CAS No.*	*Reporting Limits(RL)*	*Reporting Results*
Benzene	71-43-2	1	<RL
Toluene	108-88-3	1	<RL
Ethylbenzene	100-41-4	1	<RL
m,p-Xylene**	1330-20-7	1	<RL
o-Xylene	1330-20-7	1	<RL

Surrogates	*Amount Added*	*Percent Recovery*	*Recovery Limits*
d4-1,2-Dichloroethane	250 ng	99	70-121
d8-Toluene	250 ng	106	81-117
Bromofluorobenzene	250 ng	110	74-121

* Please note that sample results have been corrected for moisture content.

** m-Xylene and p-Xylene cannot be separated and are reported here as a total of the two isomers.

Alden Analytical
Laboratories, Inc.

REPORT OF ANALYTICAL RESULTS

Client: Delta (43-93-011.03)	*Alden Project Number: 9306047/1*
Client Sample Number: MW-1/S-2	*Alden Sample Number: 4137*
Date of Sample Receipt: 06/21/93	*Analysis Method: EPA 8240**
Date of Sample Extraction: 06/24/93	*Matrix: Soil*
Date of Sample Analysis: 06/24/93	*Reporting Units: ug/kg*

Compound Name	*CAS No.*	*Reporting Limits(RL)*	*Reporting Results*
Benzene	71-43-2	40	510
Toluene	108-88-3	40	44
Ethylbenzene	100-41-4	40	150
m,p-Xylene**	1330-20-7	40	900
o-Xylene	1330-20-7	40	150

Surrogates	*Amount Added*	*Percent Recovery*	*Recovery Limits*
d4-1,2-Dichloroethane	250 ng	98	70-121
d8-Toluene	250 ng	93	81-117
Bromofluorobenzene	250 ng	97	74-121

* Please note that sample results have been corrected for moisture content.

** m-Xylene and p-Xylene cannot be separated and are reported here as a total of the two isomers.

Alden Analytical
Laboratories, Inc.

REPORT OF ANALYTICAL RESULTS

Client: Delta (43-93-011.03)	*Alden Project Number: 9306047/1*
Client Sample Number: MW-2/S-1	*Alden Sample Number: 4138*
Date of Sample Receipt: 06/21/93	*Analysis Method: EPA 8240**
Date of Sample Extraction: 06/24/93	*Matrix: Soil*
Date of Sample Analysis: 06/24/93	*Reporting Units: ug/kg*

Compound Name	*CAS No.*	*Reporting Limits(RL)*	*Reporting Results*
Benzene	71-43-2	680	23000
Toluene	108-88-3	34	320
Ethylbenzene	100-41-4	680	9800
m,p-Xylene**	1330-20-7	680	40000
o-Xylene	1330-20-7	34	470

Surrogates	*Amount Added*	*Percent Recovery*	*Recovery Limits*
d4-1,2-Dichloroethane	250 ng	98	70-121
d8-Toluene	250 ng	95	81-117
Bromofluorobenzene	250 ng	115	74-121

* Please note that sample results have been corrected for moisture content.

** m-Xylene and p-Xylene cannot be separated and are reported here as a total of the two isomers.

Alden Analytical
Laboratories, Inc.

REPORT OF ANALYTICAL RESULTS

Client: Delta (43-93-011.03)	*Alden Project Number: 9306047/1*
Client Sample Number: MW-3/S-2	*Alden Sample Number: 4139*
Date of Sample Receipt: 06/21/93	*Analysis Method: EPA 8240**
Date of Sample Extraction: 06/25/93	*Matrix: Soil*
Date of Sample Analysis: 06/25/93	*Reporting Units: ug/kg*

Compound Name	*CAS No.*	*Reporting Limits(RL)*	*Reporting Results*
Benzene	71-43-2	2300	3800
Toluene	108-88-3	2300	49000
Ethylbenzene	100-41-4	2300	51000
m,p-Xylene**	1330-20-7	2300	200000
o-Xylene	1330-20-7	2300	89000

Surrogates	*Amount Added*	*Percent Recovery*	*Recovery Limits*
d4-1,2-Dichloroethane	250 ng	100	70-121
d8-Toluene	250 ng	106	81-117
Bromofluorobenzene	250 ng	114	74-121

* Please note that sample results have been corrected for moisture content.

** m-Xylene and p-Xylene cannot be separated and are reported here as a total of the two isomers.

Alden Analytical
Laboratories, Inc.

REPORT OF ANALYTICAL RESULTS

Client: Delta (43-93-011.03)	*Alden Project Number: 9306047/1*
Client Sample Number: MW-4/S-2	*Alden Sample Number: 4140*
Date of Sample Receipt: 06/21/93	*Analysis Method: EPA 8240**
Date of Sample Extraction: 06/25/93	*Matrix: Soil*
Date of Sample Analysis: 06/25/93	*Reporting Units: ug/kg*

Compound Name	*CAS No.*	*Reporting Limits(RL)*	*Reporting Results*
Benzene	71-43-2	250	4600
Toluene	108-88-3	250	520
Ethylbenzene	100-41-4	250	6000
m,p-Xylene**	1330-20-7	250	9500
o-Xylene	1330-20-7	250	1000

Surrogates	*Amount Added*	*Percent Recovery*	*Recovery Limits*
d4-1,2-Dichloroethane	250 ng	99	70-121
d8-Toluene	250 ng	104	81-117
Bromofluorobenzene	250 ng	108	74-121

* Please note that sample results have been corrected for moisture content.

** m-Xylene and p-Xylene cannot be separated and are reported here as a total of the two isomers.

Alden Analytical
Laboratories, Inc.

REPORT OF ANALYTICAL RESULTS

Client: Delta (43-93-011.03)	*Alden Project Number: 9306047/1*
Client Sample Number: MW-5/S-2	*Alden Sample Number: 4141*
Date of Sample Receipt: 06/21/93	*Analysis Method: EPA 8240**
Date of Sample Extraction: 06/25/93	*Matrix: Soil*
Date of Sample Analysis: 06/25/93	*Reporting Units: ug/kg*

Compound Name	*CAS No.*	*Reporting Limits(RL)*	*Reporting Results*
Benzene	71-43-2	66	2900
Toluene	108-88-3	66	84
Ethylbenzene	100-41-4	66	1300
m,p-Xylene**	1330-20-7	66	3000
o-Xylene	1330-20-7	66	250

Surrogates	*Amount Added*	*Percent Recovery*	*Recovery Limits*
d4-1,2-Dichloroethane	250 ng	103	70-121
d8-Toluene	250 ng	106	81-117
Bromofluorobenzene	250 ng	108	74-121

* Please note that sample results have been corrected for moisture content.

** m-Xylene and p-Xylene cannot be separated and are reported here as a total of the two isomers.

Alden Analytical
Laboratories, Inc.

REPORT OF ANALYTICAL RESULTS

Client: Delta (43-93-011.03)	*Alden Project Number: 9306047/1*
Client Sample Number: MW-6/S-2	*Alden Sample Number: 4142*
Date of Sample Receipt: 06/21/93	*Analysis Method: EPA 8240**
Date of Sample Extraction: 06/25/93	*Matrix: Soil*
Date of Sample Analysis: 06/25/93	*Reporting Units: ug/kg*

Compound Name	*CAS No.*	*Reporting Limits(RL)*	*Reporting Results*
Benzene	71-43-2	30	<RL
Toluene	108-88-3	30	<RL
Ethylbenzene	100-41-4	30	<RL
m,p-Xylene**	1330-20-7	30	<RL
o-Xylene	1330-20-7	30	<RL

Surrogates	*Amount Added*	*Percent Recovery*	*Recovery Limits*
d4-1,2-Dichloroethane	250 ng	96	70-121
d8-Toluene	250 ng	110	81-117
Bromofluorobenzene	250 ng	115	74-121

* Please note that sample results have been corrected for moisture content.

** m-Xylene and p-Xylene cannot be separated and are reported here as a total of the two isomers.

Alden Analytical
Laboratories, Inc.

REPORT OF ANALYTICAL RESULTS

Volatiles Matrix Spike/Matrix Spike Duplicate Recoveries

Client: Delta (43-93-011.03)
Client Sample Number: MW-5/S-2
Date of Sample Receipt: 06/21/93
Date of Sample Extraction: 06/25/93
Date of Sample Analysis: 06/25/93

Alden Project Number: 9306047/1
Alden Sample Number: 4141
Analysis Method: EPA 8240
Matrix: Soil
Reporting Units: ug/kg

Compound	*Spike Added (ug/kg)*	*Sample Concentration (ug/kg)*	*MS Concentration (ug/kg)*	*MS % Rec.*	*QC Limits Rec.*
1,1-Dichloroethene	50	0	45.47	91	59 - 172
Trichloroethene	50	0	46.73	93	62 - 137
Benzene	50	44	91.00	93	66 - 142
Toluene	50	1	48.70	95	59 - 139
Chlorobenzene	50	0	49.59	99	60 - 133

Compound	*Spike Added (ug/kg)*	*MSD Concentration (ug/kg)*	*MSD % Rec.*	*% RPD*	*QC Limits*	
					RPD	*REC.*
1,1-Dichloroethene	50	47.66	95	4.7	14	59 - 172
Trichloroethene	50	50.78	102	8.3	14	62 - 137
Benzene	50	95.55	102	9.3	11	66 - 142
Toluene	50	54.76	107	12.0	13	59 - 139
Chlorobenzene	50	55.09	110	10.5	13	60 - 133

Alden Analytical Laboratories, Inc.

1001 S.W. Klickitat way Suite 108 Seattle, WA 98134 (206) 623-3660 Fax (206) 624-8778

Date: 6/21/93 Page 1 of 1

Project/PO Number 43-93-011.03

Contact: DAN WHITMAN

Company/Address DELTA

Phone: _____ Fax: _____

Samplers: _____

Alden Project Number: 9306047|1

Sample Date/Time	Sample ID #	Matrix	# Containers	~~WTPH-HCID~~ TPH-ID.	TPH-G	BTEX 8240	TPH-418.1 MOD.	TAT	Lab ID #	Remarks
6/18/93	~~MW-1~~ B-4 S-2	Soil	3	X	X	X	X	E	4137A-C	
	~~MW-5~~ B-5 S-1								4138 A-C	
	~~MW-2~~ B-6 S-2								4139 A-C	
	~~MW-4~~ B-7 S-2								4140 A-C	
6/19/93	~~MW-3~~ B-8 S-2								4141 A-C	
	MW-6 B-9 S-2								4142 A-C	

Relinquished By:	Received By:
Signature	Signature
Date Time	Date Time
Relinquished By:	Received By:
Signature	Signature
Date Time	Date Time

Special Instructions/Comments:

OREGON METHODS !

TAT Codes

A Standard B 24hr

C 48 hr D 72hr

E 1 Week F Other

Delta
Environmental
Consultants, Inc.
3900 Northwoods Dr., Suite 200
St. Paul, MN 55112

CHAIN–OF–CUSTODY RECORD

DELTA PROJECT NO: 43-93-011.03 | INVOICE CODE | PAGE 1 OF

PROJECT MANAGER: Dan Whitman

PROJECT NAME: Jiffy Lube

PROJECT LOCATION: Milwaukie OR

SAMPLER'S SIGNATURE: for M. Vanderhill

TURN AROUND REQUESTED:
- ☒ NORMAL 1 week
- ☐ RUSH
- ☐ OTHER

LAB NAME: Alden Analytical

LAB USE ONLY

LABORATORY PROJECT NO.

SAMPLE CONDITION AS RECEIVED: CHILLED YES/NO; SEALED YES/NO

SAMPLE ID	SAMPLE LOCATION/DESCRIPTION	DATE/TIME SAMPLED	SAMPLE MATRIX: SOIL(S): AIR(A): BULK(B): AQUEOUS(Q): SLUDGE(L): OTHER(O)	ANALYSIS REQUESTED: HCID	TPH-G/BTEX	418.1	[illegible]			NUMBER OF CONTAINERS	ACCEPT (A) REJECT (R)	SAMPLE CONDITION/ COMMENTS	LABORATORY SAMPLE NUMBER
MW-1 B-1/S-2	Chain of Custody ID Sample ID D.W.S. From 1/1193	6/18/93 8:42	S	X	X	X				3			
MW-2 B-2/S-1		10:23	S	X	X	X				3			
MW-3 B-6/S-2		1:12	S							3			
MW-4 B-7/S-2		2:52	S							3			
MW-5 B-8/S-2		6/19/93 9:05	S							3			
MW-6 B-9/S-2		6/19/93 11:24	S							3			

GENERAL COMMENTS:

◀ TOTAL NUMBER OF CONTAINERS

1 RELINQUISHED BY (SIGNATURE)	DATE	3 RELINQUISHED BY (SIGNATURE)	DATE	5 RELINQUISHED BY (SIGNATURE)	DATE
Valincia Cisneros	6/21/93				
COMPANY: Delta Env.	TIME: 5:15	COMPANY	TIME	COMPANY	TIME
2 RECEIVED BY (SIGNATURE)	DATE: 6/21/93	4 RECEIVED BY (SIGNATURE)	DATE	6 RECEIVED BY (SIGNATURE)	DATE
COMPANY: Alden Labs	TIME: 5:15PM	COMPANY	TIME	COMPANY	TIME

Original - Return with Report • Yellow - Lab Copy • Pink - Sampler Copy

Groundwater Samples

Alden Analytical
Laboratories, Inc.

July 14, 1993

Delta Environmental Consultants, Inc.
Attn: Dan Whitman
3150 Richards Road, Suite 100
Bellevue, WA 98005

RE: ALDEN PROJECT NUMBER 9306049/1
(DELTA PROJECT NUMBER 43-93-011)

Dear Dan:

Enclosed are the analytical results for the water samples submitted to Alden Labs June 22, 1993. The samples were analyzed for BTEX using Method 8240.

All samples met Alden's internal QA/QC criteria.

It is Alden's policy to dispose of all samples and extracts after the expiration of their hold time unless notified otherwise. If you have any questions, please do not hesitate to call me at the number below.

Sincerely,

John A. Weakland
Project Manager

Enclosures

1001 SW Klickitat Way
Seattle, WA 98134
Telephone (206) 623-3660
Facsimile (206) 624-8778

Alden Analytical
Laboratories, Inc.

REPORT OF ANALYTICAL RESULTS

Client: Delta (43-93-011)	*Alden Project Number: 9306049/1*
Client Sample Number: N/A	*Alden Sample Number: BLANK1*
Date of Sample Receipt: N/A	*Analysis Method: EPA 8240*
Date of Sample Extraction: N/A	*Matrix: Water*
Date of Sample Analysis: 06/23/93	*Reporting Units: ug/L*

Compound Name	*CAS No.*	*Reporting Limits(RL)*	*Reporting Results*
Benzene	71-43-2	1	<RL
Toluene	108-88-3	1	<RL
Ethylbenzene	100-41-4	1	<RL
m,p-Xylene*	1330-20-7	1	<RL
o-Xylene	1330-20-7	1	<RL

Surrogates	*Amount Added*	*Percent Recovery*	*Recovery Limits*
d4-1,2-Dichloroethane	250 ng	98	76-114
d8-Toluene	250 ng	100	88-110
Bromofluorobenzene	250 ng	97	86-115

* m-Xylene and p-Xylene cannot be separated and are reported here as a total of the two isomers.

Alden Analytical
Laboratories, Inc.

REPORT OF ANALYTICAL RESULTS

Client: Delta (43-93-011)	*Alden Project Number: 9306049/1*
Client Sample Number: N/A	*Alden Sample Number: BLANK2*
Date of Sample Receipt: N/A	*Analysis Method: EPA 8240*
Date of Sample Extraction: N/A	*Matrix: Water*
Date of Sample Analysis: 06/24/93	*Reporting Units: ug/L*

Compound Name	*CAS No.*	*Reporting Limits(RL)*	*Reporting Results*
Benzene	71-43-2	1	<RL
Toluene	108-88-3	1	<RL
Ethylbenzene	100-41-4	1	<RL
m,p-Xylene*	1330-20-7	1	<RL
o-Xylene	1330-20-7	1	<RL

Surrogates	*Amount Added*	*Percent Recovery*	*Recovery Limits*
d4-1,2-Dichloroethane	250 ng	97	76-114
d8-Toluene	250 ng	102	88-110
Bromofluorobenzene	250 ng	101	86-115

* m-Xylene and p-Xylene cannot be separated and are reported here as a total of the two isomers.

Alden Analytical
Laboratories, Inc.

REPORT OF ANALYTICAL RESULTS

Volatiles Matrix Spike/Matrix Spike Duplicate Recoveries

Client: Delta (43-93-011)
Client Sample Number: N/A
Date of Sample Receipt: N/A
Date of Sample Extraction: N/A
Date of Sample Analysis: 06/18/93

Alden Project Number: 9306049/1
Alden Sample Number: 4089
Analysis Method: EPA 8240
Matrix: Water
Reporting Units: ug/L

Compound	*Spike Added (ug/L)*	*Sample Concentration (ug/L)*	*MS Concentration (ug/L)*	*MS % Rec.*	*QC Limits Rec.*
1,1-Dichloroethene	50	0	55.20	110	61 - 145
Trichloroethene	50	0	57.45	115	71 - 120
Benzene	50	0	54.10	108	76 - 127
Toluene	50	0	50.45	101	76 - 125
Chlorobenzene	50	0	48.65	97	75 - 130

Compound	*Spike Added (ug/L)*	*MSD Concentration (ug/L)*	*MSD % Rec.*	*% RPD*	*QC Limits*	
					RPD	*REC.*
1,1-Dichloroethene	50	51.53	103	6.9	14	61 - 145
Trichloroethene	50	53.28	107	7.5	14	71 - 120
Benzene	50	50.60	101	6.7	11	76 - 127
Toluene	50	51.99	104	3.0	13	76 - 125
Chlorobenzene	50	51.42	103	5.5	13	75 - 130

Alden Analytical
Laboratories, Inc.

REPORT OF ANALYTICAL RESULTS

Client: Delta (43-93-011)	*Alden Project Number: 9306049/1*
Client Sample Number: MW-1	*Alden Sample Number: 4146*
Date of Sample Receipt: 06/22/93	*Analysis Method: EPA 8240*
Date of Sample Extraction: N/A	*Matrix: Water*
Date of Sample Analysis: 06/23/93	*Reporting Units: ug/L*

Compound Name	*CAS No.*	*Reporting Limits(RL)*	*Reporting Results*
Benzene	71-43-2	50	910
Toluene	108-88-3	50	1300
Ethylbenzene	100-41-4	50	470
m,p-Xylene*	1330-20-7	50	1500
o-Xylene	1330-20-7	50	590

Surrogates	*Amount Added*	*Percent Recovery*	*Recovery Limits*
d4-1,2-Dichloroethane	250 ng	102	76-114
d8-Toluene	250 ng	95	88-110
Bromofluorobenzene	250 ng	102	86-115

* m-Xylene and p-Xylene cannot be separated and are reported here as a total of the two isomers.

Alden Analytical
Laboratories, Inc.

REPORT OF ANALYTICAL RESULTS

Client: Delta (43-93-011)	*Alden Project Number: 9306049/1*
Client Sample Number: MW-2	*Alden Sample Number: 4147*
Date of Sample Receipt: 06/22/93	*Analysis Method: EPA 8240*
Date of Sample Extraction: N/A	*Matrix: Water*
Date of Sample Analysis: 06/23/93	*Reporting Units: ug/L*

Compound Name	*CAS No.*	*Reporting Limits(RL)*	*Reporting Results*
Benzene	71-43-2	1	140
Toluene	108-88-3	1	13
Ethylbenzene	100-41-4	1	20
m,p-Xylene*	1330-20-7	1	61
o-Xylene	1330-20-7	1	14

Surrogates	*Amount Added*	*Percent Recovery*	*Recovery Limits*
d4-1,2-Dichloroethane	250 ng	102	76-114
d8-Toluene	250 ng	98	88-110
Bromofluorobenzene	250 ng	104	86-115

* m-Xylene and p-Xylene cannot be separated and are reported here as a total of the two isomers.

Alden Analytical
Laboratories, Inc.

REPORT OF ANALYTICAL RESULTS

Client: Delta (43-93-011)	*Alden Project Number: 9306049/1*
Client Sample Number: MW-3	*Alden Sample Number: 4148*
Date of Sample Receipt: 06/22/93	*Analysis Method: EPA 8240*
Date of Sample Extraction: N/A	*Matrix: Water*
Date of Sample Analysis: 06/23/93	*Reporting Units: ug/L*

Compound Name	*CAS No.*	*Reporting Limits(RL)*	*Reporting Results*
Benzene	71-43-2	200	1600
Toluene	108-88-3	200	3800
Ethylbenzene	100-41-4	200	1900
m,p-Xylene*	1330-20-7	200	7200
o-Xylene	1330-20-7	200	2900

Surrogates	*Amount Added*	*Percent Recovery*	*Recovery Limits*
d4-1,2-Dichloroethane	250 ng	95	76-114
d8-Toluene	250 ng	93	88-110
Bromofluorobenzene	250 ng	105	86-115

* m-Xylene and p-Xylene cannot be separated and are reported here as a total of the two isomers.

Alden Analytical
Laboratories, Inc.

REPORT OF ANALYTICAL RESULTS

Client: Delta (43-93-011)	*Alden Project Number: 9306049/1*
Client Sample Number: MW-4	*Alden Sample Number: 4149*
Date of Sample Receipt: 06/22/93	*Analysis Method: EPA 8240*
Date of Sample Extraction: N/A	*Matrix: Water*
Date of Sample Analysis: 06/23/93	*Reporting Units: ug/L*

Compound Name	*CAS No.*	*Reporting Limits(RL)*	*Reporting Results*
Benzene	71-43-2	100	3500
Toluene	108-88-3	100	1500
Ethylbenzene	100-41-4	100	420
m,p-Xylene*	1330-20-7	100	1800
o-Xylene	1330-20-7	100	560

Surrogates	*Amount Added*	*Percent Recovery*	*Recovery Limits*
d4-1,2-Dichloroethane	250 ng	99	76-114
d8-Toluene	250 ng	92	88-110
Bromofluorobenzene	250 ng	91	86-115

* m-Xylene and p-Xylene cannot be separated and are reported here as a total of the two isomers.

Alden Analytical
Laboratories, Inc.

REPORT OF ANALYTICAL RESULTS

Client: Delta (43-93-011)	*Alden Project Number: 9306049/1*
Client Sample Number: MW-5	*Alden Sample Number: 4150*
Date of Sample Receipt: 06/22/93	*Analysis Method: EPA 8240*
Date of Sample Extraction: N/A	*Matrix: Water*
Date of Sample Analysis: 06/24/93	*Reporting Units: ug/L*

Compound Name	*CAS No.*	*Reporting Limits(RL)*	*Reporting Results*
Benzene	71-43-2	50	500
Toluene	108-88-3	50	750
Ethylbenzene	100-41-4	50	180
m,p-Xylene*	1330-20-7	50	780
o-Xylene	1330-20-7	50	310

Surrogates	*Amount Added*	*Percent Recovery*	*Recovery Limits*
d4-1,2-Dichloroethane	250 ng	102	76-114
d8-Toluene	250 ng	96	88-110
Bromofluorobenzene	250 ng	95	86-115

* m-Xylene and p-Xylene cannot be separated and are reported here as a total of the two isomers.

Alden Analytical
Laboratories, Inc.

REPORT OF ANALYTICAL RESULTS

Client: Delta (43-93-011)	*Alden Project Number: 9306049/1*
Client Sample Number: MW-6	*Alden Sample Number: 4151*
Date of Sample Receipt: 06/22/93	*Analysis Method: EPA 8240*
Date of Sample Extraction: N/A	*Matrix: Water*
Date of Sample Analysis: 06/24/93	*Reporting Units: ug/L*

Compound Name	*CAS No.*	*Reporting Limits(RL)*	*Reporting Results*
Benzene	71-43-2	1	<RL
Toluene	108-88-3	1	<RL
Ethylbenzene	100-41-4	1	<RL
m,p-Xylene*	1330-20-7	1	<RL
o-Xylene	1330-20-7	1	<RL

Surrogates	*Amount Added*	*Percent Recovery*	*Recovery Limits*
d4-1,2-Dichloroethane	250 ng	102	76-114
d8-Toluene	250 ng	100	88-110
Bromofluorobenzene	250 ng	103	86-115

* m-Xylene and p-Xylene cannot be separated and are reported here as a total of the two isomers.

1001 S.W. Klickitat way Suite 108 Seattle, WA 98134 (206) 623-3660 Fax (206) 624 0778

Date: 6/22/93 Page 1 of 1

Project/PO Number 43.93.011

Contact: Dan Whitman

Company/Address 3150 Richards Rd. Suite 100 Bellevue, WA 98005

Phone: 6499663 Fax: 6490409

Samplers: C. Anderson

Alden Project Number: 9306049 | 1

Analyses Requested

Sample Date/Time	Sample ID #	Matrix	# Containers	BTEX	8015 mod.	per C.A. 6/22/93 1510	TAT	Lab ID #	Remarks
6/22/93 2115	MW-1	Water	3	X	X		E	4146 A-C	
2055	MW-2		3	X	X			4147 AC	
2030	MW-3		3	X	X			4148 A-C	
2000	MW-4		3	X	X			4149 A-C	
1930	MW-5		3	X	X			4150 A-C	
1910	MW-6		3	X	X			4151 A-C	

Relinquished By: Carl R. Anderson
Signature
6/22/93 1130
Date Time

Received By: DJS
Signature
6/22/93 4:00PM
Date Time

Relinquished By:
Signature
Date Time

Received By:
Signature
Date Time

Please note that samples received after 3PM are considered received 8AM the following business day.

Special Instructions/Comments:

TAT Codes
A Standard B 24hr
C 48 hr D 72hr
E 1 Week F Other: