



REMEDIAL INVESTIGATION REPORT

**JEFFY LUBE FACILITY
1430 CORNWALL AVENUE
BELLINGHAM, WASHINGTON**

SAP CODE	171149
INCIDENT NO.	97605407
ECOLOGY F/S NO.	87852737
VCP NO.	NW2073

Prepared For:
Shell Oil Products US
20945 S. Wilmington Ave
Carson, CA 90810

Prepared by:
Conestoga-Rovers
& Associates

20818 44th Avenue West,
Suite 190
Lynnwood, Washington
U.S.A. 98026

Office: 425-563-6500
Fax: 425-563-6599

web: <http://www.CRAworld.com>

MARCH 18, 2011
REF. NO. 241736 (5)

This report is printed on recycled paper.



REMEDIAL INVESTIGATION REPORT

**JEFFY LUBE FACILITY
1430 CORNWALL AVENUE
BELLINGHAM, WASHINGTON**

SAP CODE	171149
INCIDENT NO.	97605407
ECOLOGY F/S NO.	87852737
VCP NO.	NW2073

Prepared For:

**Shell Oil Products US
20945 S. Wilmington Ave
Carson, CA 90810**

Christina McClelland

Brian Peters, LG



BRIAN C. PETERS

**Prepared by:
Conestoga-Rovers
& Associates**

20818 44th Avenue West,
Suite 190
Lynnwood, Washington
U.S.A. 98026

Office: 425-563-6500
Fax: 425-563-6599

web: <http://www.CRAworld.com>

MARCH 18, 2011

REF. NO. 241736 (5)

This report is printed on recycled paper.

TABLE OF CONTENTS

	<u>Page</u>
1.0 INTRODUCTION	1
1.1 SITE INFORMATION.....	1
1.2 PURPOSE.....	1
2.0 SITE IDENTIFICATION AND DESCRIPTION	1
2.1 SITE DISCOVERY AND REGULATORY STATUS.....	1
2.2 SITE AND PROPERTY LOCATION/DEFINITION	2
2.3 NEIGHBORHOOD SETTING	2
2.4 PHYSIOGRAPHIC SETTING/TOPOGRAPHY	3
3.0 PROPERTY DEVELOPMENT AND HISTORY.....	3
3.1 PAST PROPERTY USES AND FACILITIES	3
3.2 CURRENT SITE USE AND FACILITIES	4
3.3 PROPOSED OR POTENTIAL FUTURE SITE USES.....	4
3.4 ZONING	4
3.5 TRANSPORTATION/ROADS.....	5
3.6 UTILITIES AND WATER SUPPLY.....	5
3.7 POTENTIAL SOURCES OF SITE CONTAMINATION	5
3.8 POTENTIAL SOURCES OF CONTAMINATION FROM NEIGHBORING PROPERTIES.....	5
4.0 ENVIRONMENTAL INVESTIGATION SUMMARY	6
4.1 CONSTITUENTS OF CONCERN	7
4.2 SOIL.....	8
4.3 SURFACE WATER.....	8
4.4 GROUNDWATER.....	8
4.5 SEDIMENT.....	9
4.6 AIR/SOIL VAPOR	9
4.7 NATURAL RESOURCES/WILDLIFE.....	9
4.8 CULTURAL HISTORY/ARCHAEOLOGY	9
4.9 INTERIM ACTIONS	9
5.0 NATURAL CONDITIONS	9
5.1 GEOLOGY	9
5.2 SURFACE WATER.....	10
5.3 GROUNDWATER.....	10
5.4 NATURAL RESOURCES AND ECOLOGICAL RECEPTORS.....	11
6.0 CONTAMINANT OCCURRENCE AND MOVEMENT	11
6.1 WASTE MATERIAL	11
6.2 SOIL.....	11
6.3 SURFACE WATER.....	12
6.4 GROUNDWATER.....	12
6.5 SEDIMENT	12
6.6 AIR/SOIL VAPOR	13
7.0 CONCEPTUAL MODEL.....	13

8.0	CLEANUP STANDARDS - SOIL AND GROUNDWATER	14
8.1	GROUNDWATER.....	14
8.2	SOIL.....	14
9.0	AREAS REQUIRING FUTURE MANAGEMENT AND CONCLUSIONS	15
9.1	CONSTITUENTS OF CONCERN	15
9.2	SOIL - VERTICAL AND LATERAL.....	15
9.3	GROUNDWATER - VERTICAL AND LATERAL.....	15
9.4	SEDIMENT	15
9.5	SURFACE WATER.....	15
9.6	SOIL VAPOR/ AIR	15
10.0	REFERENCES.....	16

LIST OF FIGURES
(Following Text)

FIGURE 1	VICINITY MAP
FIGURE 2	SITE PLAN
FIGURE 3	AREA MAP
FIGURE 4	SOIL INVESTIGATION DATA MAP - JIFFY LUBE COCS
FIGURE 5	CROSS SECTION A-A'
FIGURE 6	GROUNDWATER ELEVATION MAP - SEPTEMBER 2, 2009

LIST OF TABLES

TABLE 1	SUMMARY OF HISTORICAL SOIL ANALYTICAL DATA
TABLE 2	SUMMARY OF GROUNDWATER MONITORING DATA

LIST OF APPENDICES

APPENDIX A	ENVIRONMENTAL DOCUMENT LIST
APPENDIX B	LEGAL DESCRIPTION OF PROPERTY, PRESENT OWNER AND OPERATOR, KNOWN PAST OWNERS AND OPERATORS
APPENDIX C	SUMMARY OF PREVIOUS INVESTIGATIONS AND REMEDIAL ACTIVITIES
APPENDIX D	AVAILABLE HISTORICAL SOIL BORING LOGS
APPENDIX E	TERRESTRIAL ECOLOGICAL EVALUATION EXCLUSION FORM

1.0 INTRODUCTION

1.1 SITE INFORMATION

<i>Site Name:</i>	Jiffy Lube Service Station
<i>Site Address:</i>	1430 Cornwall Avenue, Bellingham, WA
<i>Voluntary Cleanup Program Number:</i>	NW2073
<i>Project Consultant:</i>	Conestoga-Rovers & Associates
<i>Project Consultant Contact Information:</i>	Christina McClelland 20818 44 th Avenue West, Suite 190 Lynnwood, Washington, 98036 Office – 425.563.6500 Direct – 425.563.6514
<i>Current Owner/Operator:</i>	Belcher – Bellingham LLC

1.2 PURPOSE

Conestoga-Rovers & Associates (CRA) prepared this Remedial Investigation (RI) report on behalf of Equilon Enterprises LLC dba Shell Oil Products US (SOPUS) for the Jiffy Lube service station located at the southwest corner of East Champion Street and Cornwall Avenue with the address 1430 Cornwall Avenue, Bellingham, Whatcom County, Washington (Property; Figure 1).

This RI was prepared to satisfy the items required by Washington Administrative Code (WAC) 173-340-350 and summarizes environmental investigation findings for the petroleum hydrocarbon release associated with the Property. The background and previous investigations and remediation activities described in this report are a summary of historical investigations and documents prepared by CRA and previous consultants. A list of all documents reviewed in preparation of this RI report is included in Appendix A.

2.0 SITE IDENTIFICATION AND DESCRIPTION

2.1 SITE DISCOVERY AND REGULATORY STATUS

In 1995, plans to upgrade the former underground storage tank (UST) system to an aboveground storage tank (AST) system facilitated an environmental investigation to assess subsurface conditions during the removal of one 5,000-gallon new oil UST, one

3,000-gallon new oil UST, and one 1,000-gallon waste oil UST. Soil samples were collected in the area of the former UST excavation. Laboratory results from soil samples collected in the area of the former USTs indicated heavy range petroleum hydrocarbon-impacted soil above the Washington State Department of Ecology (Ecology) Model Toxics Control Act (MTCA) Method A cleanup levels. No specific equipment failure was identified at the time of discovery.

A petroleum release impacting soil was reported to Ecology on March 31, 1995, and the site was listed with Ecology's leaking UST (LUST) program, ID #5710. The site was entered into Ecology's Voluntary Cleanup Program (VCP) in 2009 and issued site number NW2073. The current status of the site with Ecology is "Cleanup Started". MTCA Method A cleanup levels for soil and groundwater will be used as screening levels for purposes of discussion of investigation results. Cleanup standards are developed and discussed in Section 8.

2.2 SITE AND PROPERTY LOCATION/DEFINITION

The Property is an active Jiffy Lube oil change facility located at the southwest corner of East Champion Street and Cornwall Avenue in Bellingham, Washington (Figure 1). A legal description of the Property, including past and present Property owners and operators, is included in Appendix B.

The MTCA site (Site) is defined as all affected areas from the petroleum release associated with the Property and potentially impacted adjacent parcels. The Site boundary is confined to the Property and is presented in Figure 2.

2.3 NEIGHBORHOOD SETTING

The Property is located in a commercially zoned area. The nearest single family residence is located approximately ¼ mile to the southeast. The nearest multi-family residential area is located approximately 900 feet to the northwest. Businesses surround the Property to the north, east, and west. Skagit State Bank is located north of the Property, a Banner Bank is located to the northeast, a small strip mall with restaurants and a copy shop is located to the south, a small strip mall with restaurants and gift shops is located directly adjacent to the west, and a large building that houses Kids Northwest clothing store and Exit Reality is located to the northwest (Figure 3). Whatcom Creek is located approximately 800 feet to the north, Lincoln Creek is located approximately 3,500 feet to the east, Cemetery Creek is located approximately 1 mile to the east, and Bellingham Bay is located approximately 1 mile to the west of the Property.

2.4 PHYSIOGRAPHIC SETTING/TOPOGRAPHY

The Property is situated in an area characterized by rolling hills with a series of east to west trending valleys formed by rivers and streams. The city of Bellingham rings the shore of Bellingham Bay which is surrounded by Lummi Island, Portage Island, and the Lummi Peninsula, opening into the Strait of Georgia. It lies west of Mount Baker and Lake Whatcom and north of the Chuckanut Mountains and the Skagit Valley. Whatcom Creek, located 800 feet north of the Property, is the outlet of Lake Whatcom and flows westerly through the middle of Bellingham into Bellingham Bay (CH2MHILL, 2009).

Surface cover at the Site is primarily asphalt and concrete pavement and topography of the Site is relatively flat at an approximate elevation of 75 feet above mean sea level (msl). On-Property catch basins connected to the city storm water system are located along East Champion Street, indicating runoff from the Property flows to the east. City employees confirmed that storm water drains into the storm system in East Champion Street and eventually discharges into Whatcom Creek. Area topography in the vicinity of the Site has a slight slope to the north towards Whatcom Creek.

3.0 PROPERTY DEVELOPMENT AND HISTORY

3.1 PAST PROPERTY USES AND FACILITIES

Available information indicates the Property operated as a gasoline service station from approximately 1950 until 1964 when the Property became an automobile oil change facility and service shop (FINE, 2006). Details regarding the installation, contents, location, and decommissioning of the Site facilities associated with the service station were not available in historical plans, drawings or documents available for review by CRA. The former gasoline service station facilities, therefore, are not shown on the Site figures included in this report. In approximately 1964, the Property became Stromme's Service Station until approximately 1969, when the Property became Penny's Auto Center. In 1984, the Property became a Minute Lube; in 2000, the Property became a Q-Lube; and in 2004, the Property began operation as a Jiffy Lube (Appendix B). Historical Site facilities associated with the Jiffy Lube included one 5,000-gallon new oil UST, one 3,000-gallon new oil UST, and one 1,000-gallon waste oil UST (Figure 2). The table below summarizes historical facilities associated the Property:

<i>Tank Type & Volume</i>	<i>Content</i>	<i>Date Installed</i>	<i>Date Decommissioned</i>
5,000-gallon UST	New Motor Oil	Unknown	1995
3,000-gallon UST	New Motor Oil	Unknown	1995
1,000-gallon UST	Waste Oil	Unknown	1995

In 1995, the new oil and waste oil USTs were replaced with ASTs. The former UST system configuration is presented in Figure 2.

3.2 CURRENT SITE USE AND FACILITIES

The Property currently operates as a Jiffy Lube automobile oil change facility. Current facilities include a building with three service bays and ten ASTs, including two 500-gallon waste oil ASTs, two 150-gallon new and used antifreeze ASTs, one 1,000-gallon new oil AST, one 500-gallon new oil AST, three 120-gallon new oil ASTs, and one 500-gallon empty AST. The ASTs are located in the southeast corner of the building. The table below summarizes the current Property facilities:

<i>Tank Type & Volume</i>	<i>Content</i>	<i>Date Installed</i>	<i>Tank Status</i>
120-gallon AST	New Oil	1995	Active
1,000-gallon AST	New Oil	1995	Active
500-gallon AST	New Oil	1995	Active
120-gallon AST	New Oil	1995	Active
120-gallon AST	New Oil	1995	Active
500-gallon AST	Empty	1995	Active
150-gallon AST	Used Anti-freeze	1995	Active
150-gallon AST	Anti-freeze	1995	Active
500-gallon AST	Waste Oil	1995	Active
500-gallon AST	Waste Oil	1995	Active

3.3 PROPOSED OR POTENTIAL FUTURE SITE USES

Planned use for the Property is uncertain; however, due to its location, it will likely continue as a commercial-use property.

3.4 ZONING

The Property and surrounding properties are commercially-zoned according to the City of Bellingham Zoning Map (2009).

3.5 TRANSPORTATION/ROADS

The Property is located on the southwest corner of East Champion Street and Cornwall Avenue. East Champion Street is a local street running southeast-northwest that provides access from West Champion Street to residential areas, extending ¼ mile southeast of the Property. Cornwall Avenue is a north-south arterial road that provides access to Cornwall Park to the north and to the Bellingham Bay waterfront to the south. The Whatcom Transit Authority Bellingham Bus Station is located southeast of the intersection of East Champion Street and Railroad Avenue.

3.6 UTILITIES AND WATER SUPPLY

Utilities at the Property are present along the northwestern, northeastern, and southeastern Property boundaries and include a sanitary sewer line, water lines, and storm sewer lines (Figure 2). Catch basins and storm sewer lines connect along the northeastern and southeastern Property boundaries, and connect with the city storm water system located in East Champion Street. According to the City of Bellingham, the storm sewer line located in East Champion Street flows to the northwest and discharges to an outfall in Whatcom Creek approximately 2,000 feet northwest of the Property. Drinking water is provided to the Property and the City of Bellingham by source water from Lake Whatcom and the Middle Fork of the Nooksack River.

3.7 POTENTIAL SOURCES OF SITE CONTAMINATION

Potential on-Site sources of contamination related to the operation of the lube facilities include the former new oil and waste oil USTs, located in the southeast portion of the Site. The former USTs were identified as likely sources of the original release of hydrocarbons at the Site (Figure 2). The existing ASTs at the Site do not pose a significant risk as a potential source of subsurface contamination.

USTs related to the operation of the former fueling station were not considered a source for the on-Site release related to the lube operations.

3.8 POTENTIAL SOURCES OF CONTAMINATION FROM NEIGHBORING PROPERTIES

According to the Environmental Data Resources, Inc. (EDR) report dated March 10, 2006, five properties were identified by Ecology as LUST sites located within

¼ mile of the Property. Properties which were evaluated by CRA as a potential source of contamination to the Site are included in the table below.

<i>Site name</i>	<i>Address</i>	<i>Distance</i>	<i>Direction from Jiffy Lube Facility</i>	<i>Ecology Site Status</i>
Old Sears Roebuck	1618 Cornwall Avenue	¼ mile	Northeast	Reported Cleaned Up, June 1, 1995
Walton Beverage Company	1511 North State Street	¼ mile	Southeast	Reported Cleaned Up, June 1, 2005
Mr. Cabinet	1701 Ellis Street	¼ mile	Northeast	Reported Cleaned Up, April 19, 2002
Motorpool	313 Central Avenue	¼ mile	Northwest	Cleanup Started, June 1, 1995
Gull-Branded Service Station	1526 Ellis Street	¼ mile	Southeast	Cleanup Started, June 1, 1995
Vienna Dry Cleaner	206 East Magnolia Street	500 feet	Southeast	N/A
Whatcom County Old Gas Station	230 Prospect Street	¼ mile	Northwest	N/A

Three U.S. Brownfield sites are located over ¼ mile northwest of the Property, and are not considered potential sources of contamination to the Property. The Vienna Drycleaner, Walton Beverage Company, and the former Gull-branded service station are considered potential off-Site sources of contamination based on their up-gradient locations and relative proximity to the Property.

4.0 ENVIRONMENTAL INVESTIGATION SUMMARY

A total of five groundwater monitoring wells and eleven soil borings have been completed at the Site to date. During the 1995 conversion to an AST system, approximately 120 tons of petroleum-impacted soil was removed from the former UST excavation until over-excavation was no longer possible due to infrastructure constraints. Historical reports indicate no additional interim actions have occurred at the Site. A total of six investigations have been completed to date and are summarized in the following reports:

- 1995 *Underground Storage Tank Closure*, Nowicki and Associates, Inc. (Nowicki)
- 1995 *Soil Borings*, Nowicki

- 2006 *Phase I Environmental Assessment*, FINE Environmental, Inc. (FINE)
- 2006 *Limited Phase II Environmental Assessment*, FINE
- 2006 *Subsurface Assessment*, GeoEngineers, Inc (GeoEngineers)
- 2007 *Site Investigation Report*, CRA

A complete chronological summary of work completed at the Site during the investigations listed above is included as Appendix C. Reports summarized in Appendix C represent all available investigation reports obtained by or provided to CRA. A summary of historical soil analytical data is presented in Table 1 and a summary of groundwater monitoring results are summarized in Table 2. All available historical boring logs for the previous investigations are included in Appendix D.

4.1 CONSTITUENTS OF CONCERN

Potential constituents of concern (COCs), based on current and past use of the Property, include the compounds listed in MTCA 173-340-900 Table 830-1 Required Testing for Petroleum Releases. The following is the list of potential COCs associated with historical and current lube operation's USTs at the Site:

<i>Potential Source</i>	<i>Potential COCs</i>
Historical new oil UST and distribution system	<ul style="list-style-type: none"> • Total petroleum hydrocarbons (TPH) as diesel (TPHd) and TPH as oil (TPHo) • Carcinogenic polycyclic aromatic hydrocarbons (cPAHs) • Polychlorinated biphenyls (PCBs)
Historical waste oil USTs and distribution system	<ul style="list-style-type: none"> • TPH as gasoline (TPHg) • TPHd and TPHo • Benzene, toluene, ethylbenzene, xylenes (BTEX) • Methyl tert butyl ether (MTBE) • 1,2-dichloroethane (EDC) • 1,2-dibromoethane (EDB) • Halogenated volatile organic compounds (HVOCs) • cPAHs • Polychlorinated biphenyls (PCBs) • Total lead

TPHg, TPHd, and TPHo in soil, and total lead and tetrachloroethene (PCE) in groundwater were detected above Ecology's MTCA Method A screening levels in previous investigations summarized in Appendix C. TPHg concentrations in soil at the Site are likely associated with the former gasoline service station located on the Property and are not associated with the Jiffy Lube automotive oil change facility; therefore,

TPHg is not considered a COC at the Jiffy Lube Site. The PCE detected in groundwater monitoring well MW-1 is likely associated with an off-Property release and not associated with historical or current Property facilities related to lube operations; however, additional investigation may be necessary to demonstrate that the PCE impacting Site groundwater originates from an off-Site source. Historical total lead concentrations in groundwater above screening levels are likely a result of suspended particulates in groundwater that were dissolved into the sample during preservation. Historical groundwater monitoring results for total lead in Site wells are, therefore, not reflective of actual total lead concentrations in groundwater. The sampling method was changed to low flow purge sampling technique via peristaltic pump and total lead concentrations have subsequently decreased to concentrations below the MTCA Method A screening levels, therefore, total lead is no longer considered a potential COC at the Site. The remaining analytes listed in the table above have not been detected above the MTCA Method A screening levels and are not considered COCs.

4.2 SOIL

Multiple soil investigations have been conducted at the Site from 1995 through 2007. Figure 4 presents the locations of all soil samples collected during the investigation activities conducted at the Site. A summary of all soil sample locations submitted for analyses, including the date of the sample, depth, consultant performing sampling, and analytical methods and results are presented in Table 1. The depths of soil samples collected ranged from 6 to 30 feet bgs.

4.3 SURFACE WATER

No surface water has been sampled as there has been no indication that surface water has been impacted from the Site.

4.4 GROUNDWATER

A total of five groundwater monitoring wells have been installed at the Site (Figure 2). Monitoring well MW-1 was installed in 2004 and monitoring wells MW-2 through MW-5 were installed in 2007. The locations of all monitoring wells installed at the Site are presented in Figure 2. Sampling has been conducted on Site monitoring wells since 2004. Table 2 presents the dates sampled, groundwater elevations, and the analytical results for each sampling event.

4.5 SEDIMENT

No indication of surface water impact has been identified in association with the Site, therefore, no sediment sampling has been conducted.

4.6 AIR/SOIL VAPOR

There have been no investigations of soil vapor at the Site. Based on the concentrations remaining in soil and groundwater, and current and future use of the site, potential impact to the Site from soil vapor is unlikely.

4.7 NATURAL RESOURCES/WILDLIFE

A Terrestrial Ecological Evaluation (TEE) is included in this report (see Section 5.4 below).

4.8 CULTURAL HISTORY/ARCHAEOLOGY

No prior information or results of historical investigations have indicated a need for additional investigation of Site history or archaeology.

4.9 INTERIM ACTIONS

Approximately 120 tons of petroleum-impacted soil was removed from the new oil/waste oil UST excavation in 1995. No additional interim actions have been completed at the Site.

5.0 NATURAL CONDITIONS

5.1 GEOLOGY

The regional geological setting and property geological conditions are summarized below:

Regional Geological Setting: The Site is located in the Puget Lowland Physiographic province of Washington and is characterized by a broad low lying region situated between the Cascade Range to the east and the Olympic Range to the west. Generally,

unconsolidated sediments including gravels, cobbles, and silts deposited during the Quaternary era overlay sedimentary and volcanic bedrock (Lasmanis, 1991).

Site Geological Conditions: The Site is underlain by unconsolidated sediments consisting of poorly to well-graded sands with varying amounts of silt and gravel from the ground surface to a depth of approximately 8 feet bgs. From approximately 8 feet bgs to approximately 20 feet bgs, the observed geology is dense clay to clayey silt. From approximately 20 feet bgs to the extent of exploration (36.5 feet bgs), the observed geology is fine to coarse grained sand.

A cross section depicting subsurface soil and groundwater conditions is included as Figure 5.

5.2 SURFACE WATER

The on-Property catch basins direct surface runoff into the storm drain system managed by the City of Bellingham and discharge to an outfall in Whatcom Creek, located approximately 2,000 feet northwest of the Property. Whatcom Creek is located approximately 800 feet northwest of the Property at its closest point. Additional surface waters near the Site include Lincoln Creek located approximately 3,500 feet to the east, Cemetery Creek located approximately 1 mile to the east, and Bellingham Bay located approximately 1 mile to the west.

5.3 GROUNDWATER

Regional and local groundwater conditions are summarized below:

Regional Groundwater Conditions: Bellingham, Washington is located in the Puget-Willamette Trough lowland regional aquifer between the Cascade and Olympic Mountain ranges in Washington. Groundwater exists as the uppermost aquifer in unconsolidated glacial deposits and till material. Unconsolidated glacial deposits consist of particles that range in size from clay to boulders. There are no drinking water wells within ¼ mile of the Site.

Site Groundwater Conditions: Groundwater beneath the Site is present within a water bearing zone consisting of unconsolidated sediments/silty sand on top of a confining layer of silty clay. Historically, groundwater has been encountered between 25 and 31 feet bgs in Site monitoring wells. Historical depth to groundwater beneath the Site has remained generally consistent over time. Seasonal fluctuations at the Site are typical for the region, with higher groundwater elevations (depth to water between

approximately 25 and 30 feet bgs) in the winter and spring and lower groundwater elevations (depth to water between 26 and 31 feet bgs) in summer and fall. As depicted in the rose diagram included on Figure 7, groundwater flow direction at the Site is predominantly to the north with slight variations to the north-northwest at a gradient of 0.004 to 0.06 feet per foot. Table 2 presents historical groundwater elevations and groundwater monitoring results for all wells associated with the Site.

5.4 NATURAL RESOURCES AND ECOLOGICAL RECEPTORS

A Sensitive Receptor Survey (SRS) and a Terrestrial Ecological Evaluation (TEE) were completed for the Site. Details of the evaluations are summarized below:

Sensitive Receptor Survey Analysis:

- Whatcom Creek is located approximately 800 feet to the north
- No schools or hospitals are located within ¼ mile
- There are no public water supply wells located within ¼ mile of the Site

Terrestrial Ecological Evaluation: A TEE exclusion form was completed for the Site indicating that further evaluation is not required for the Site. The TEE exclusion form and an aerial map depicting a 500-foot radius around the Site is included as Appendix E.

6.0 CONTAMINANT OCCURRENCE AND MOVEMENT

6.1 WASTE MATERIAL

No waste material is present on the surface or in the subsurface of this Site. Investigative-derived waste is transported from the Site and disposed of properly.

6.2 SOIL

Table 1 summarizes soil analytical data for the Site. Figure 4 depicts areas of the Site that contain soil samples exceeding the MTCA Method A screening levels. Soil samples collected between 14 to 15 feet bgs within the new oil and waste oil UST excavation extents contained heavy range petroleum compounds exceeding MTCA Method A screening levels. Soil samples from MW-1 located just outside the former new oil and waste oil UST excavation contained heavy range petroleum compounds exceeding the MTCA Method A screening levels at depths of 7.5 and 12.5 feet bgs. No other soil samples collected have contained heavy range petroleum compounds exceeding MTCA Method A screening levels. Based on field screening and observations, the maximum

depth at which impacted soils were observed was approximately 15 feet bgs. From 15 to 20 feet bgs, a clay or silty clay layer was observed, and soil sampling and field observations below this depth indicated there were no impacted soils below 15 feet bgs.

Soil samples exceeding MTCA Method A screening levels for TPHg collected between 7 to 15 feet bgs in the eastern and northwestern portions of the Site are likely associated with the former gasoline service station UST system and are not associated with the lube operations at the Site. These detections are not associated with the release of heavy range hydrocarbons at the Site and are not included within the MTCA Site boundary.

6.3 SURFACE WATER

Based on current groundwater quality of Site monitoring wells, impact to surface water is not likely.

6.4 GROUNDWATER

There are currently five on-Property groundwater monitoring wells, MW-1 through MW-5. Groundwater at the Site is defined by concentrations below MTCA Method A screening levels in all Site wells with the exception of PCE in monitoring well MW-1. PCE and total lead are the only analytes that have been detected above the MTCA Method A screening levels. Monitoring well MW-1 has contained detections of PCE at concentrations above the MTCA Method A screening levels since sampling was initiated in 2006. Based on historical operations at the Property, the PCE is likely from an off-Property source. Groundwater analytical results indicate that remaining impacted soil from Jiffy Lube operations at the Site is not affecting Site groundwater quality.

A groundwater elevation map for the September 2009 sampling event and rose diagram depicting groundwater flow directions from 2007 through 2009 are presented in Figure 7. Table 2 summarizes historical groundwater analytical results for Site monitoring wells.

6.5 SEDIMENT

No discussion of the occurrence or movement of contaminants in this media is necessary.

6.6 AIR/SOIL VAPOR

Based on the absence of volatile organic compounds associated with this release and current and future Site use, it is unlikely that soil vapor poses a risk to air quality.

7.0 CONCEPTUAL MODEL

Heavy range petroleum hydrocarbons were released into soil at the facility sometime prior to 1995. It is not certain when or how the release occurred, but based on environmental investigations the release likely occurred from the former new oil and waste oil USTs. Impacted soil may remain at the Site in the vicinity the former new and waste oil USTs to a depth of 15 feet bgs. Gasoline-range hydrocarbons were detected in the eastern and northwestern portions of the Property during 2006 that may be associated with the former service station UST system and are not related to the lube oil operations.

The Property has been capped by asphalt and concrete since it was developed, and therefore, has not been exposed to infiltrating surface water. Subsurface soils at the Site consist of sands with varying amounts of silt and gravel to a depth of approximately 8 feet bgs underlain by a dense clay to clayey silt layer to a depth of approximately 20 feet bgs underlain by a fine to coarse grained sand to the total explored depth of 36.5 feet bgs. Soils become saturated at depths ranging between 25 and 30 feet bgs. The groundwater flow direction is to the north-northwest. Heavy range hydrocarbons released from the former new oil and waste oil UST pit permeated the upper sand formation to the clay layer at approximately 15 feet bgs, but did not migrate a significant distance laterally from the release point in the impermeable clays and silts. Analytical results for soil samples at the Site that exceed the MTCA Method A screening level are located at depths above the water table and historically have likely not come into contact with groundwater. Site groundwater monitoring wells have been below MTCA Method A screening levels for all Site COCs with the exception of PCE in monitoring well MW-1. The source of the PCE is not known. Soil sampling conducted during the installation of monitoring well MW-1 included analyses for HVOCs. No PCE was detected from the sample collected at 12.5 feet bgs which contained elevated TPH concentrations associated with the new and waste oil release. If PCE was associated with the Site release, detectable concentrations would have likely been present in soil sampling associated with this well.

Current groundwater quality indicates Site soils have not affected groundwater quality at the Site. Additionally, residually impacted soil is confined to the area beneath and directly northwest of the former new and waste oil UST pit. Based on soil and groundwater sampling conducted at the Site and current use of the Property, soil vapor

concentrations of petroleum hydrocarbon compounds are not likely to be a potential risk to human health. It is anticipated that the commercial use of the Property will continue in the future.

8.0 CLEANUP STANDARDS - SOIL AND GROUNDWATER

In accordance with MTCA, development of cleanup levels includes identifying potential exposure pathways for humans and environmental impacts based on the planned land use. The Property is currently zoned for mixed residential and retail use, and future zoning is not anticipated to change. As noted previously, the Property is currently used as an automobile oil change facility.

8.1 GROUNDWATER

Groundwater beneath the Site exists between 25 and 31 feet bgs. Drinking water for the City of Bellingham is sourced solely from local surface waters, including Lake Whatcom and the Middle Fork of the Nooksack River. Shallow groundwater in the vicinity of the Site is not currently classified as drinking water for the City of Bellingham and likely does not meet the criteria to be classified as a potential future source of drinking water; however, no physical evaluation has been conducted. Therefore, MTCA Method A groundwater cleanup levels for Site COCs will be used. The point of compliance for this Site is defined as the point at which the groundwater cleanup level must be attained; thus, the point of compliance is the entire Site.

8.2 SOIL

Based on the results of groundwater monitoring conducted at the Site, an empirical demonstration can be made to show that remaining soil concentrations at the Site are not causing concentrations of Site-specific COCs in groundwater to exceed the MTCA Method A groundwater cleanup levels and therefore are protective of the leaching pathway. Soil cleanup levels based on protection of the direct contact pathway are appropriate for this Site. However, the use of soil cleanup levels protective of the direct contact pathway will only be used if it can be demonstrated that the PCE impact to groundwater at monitoring well MW-1 is associated with an up-gradient, off-Property source. Furthermore, Site-specific hydrocarbon fractionization data for development of Site-specific TPH cleanup levels has not been collected at the Site and therefore TPHd and TPHo cleanup levels default back to MTCA Method A cleanup levels. Therefore, additional investigation data is needed to establish the appropriate cleanup levels for soil at this Site.

9.0 AREAS REQUIRING FUTURE MANAGEMENT AND CONCLUSIONS

9.1 CONSTITUENTS OF CONCERN

COCs include petroleum hydrocarbons sourced from the former new oil and waste oil USTs, including TPHd and TPHo. PCE requires further evaluation to determine whether it is a Site COC for groundwater.

9.2 SOIL - VERTICAL AND LATERAL

Figure 4 designates soil sample locations at the Site containing residual petroleum hydrocarbon concentrations above the MTCA Method A screening levels. Confirmation soil sampling is necessary to determine remaining concentrations in soil surrounding the former waste oil/new oil USTs. Areas requiring future management in soil include the area surrounding the former new oil and waste oil USTs.

9.3 GROUNDWATER - VERTICAL AND LATERAL

Groundwater at the Site currently exceeds the MTCA Method A cleanup levels in monitoring MW-1 for PCE; however, detection of PCE is likely a result of an off-Property source. Further investigation is required up-gradient of the former waste oil and new oil USTs to determine if PCE is entering the Site from an off-Property source.

9.4 SEDIMENT

No areas of impacted sediment exist at the Site nor require any future management.

9.5 SURFACE WATER

Surface water quality has not been adversely impacted from this release.

9.6 SOIL VAPOR/AIR

Based on concentrations of petroleum compounds in soil, and current and probable future Site use, future management of soil vapor is not required.

10.0 REFERENCES

CH2MHILL, City of Bellingham, Washington Water System Plan, June, 2009.

City of Bellingham, *Zoning Map*, March, 2009.

CRA, *Site Investigation Report*, January 28, 2008.

FINE, *Phase I Environmental Site Assessment*, March 23, 2006.

FINE, *Limited Phase I Environmental Site Assessment*, April 15, 2006.

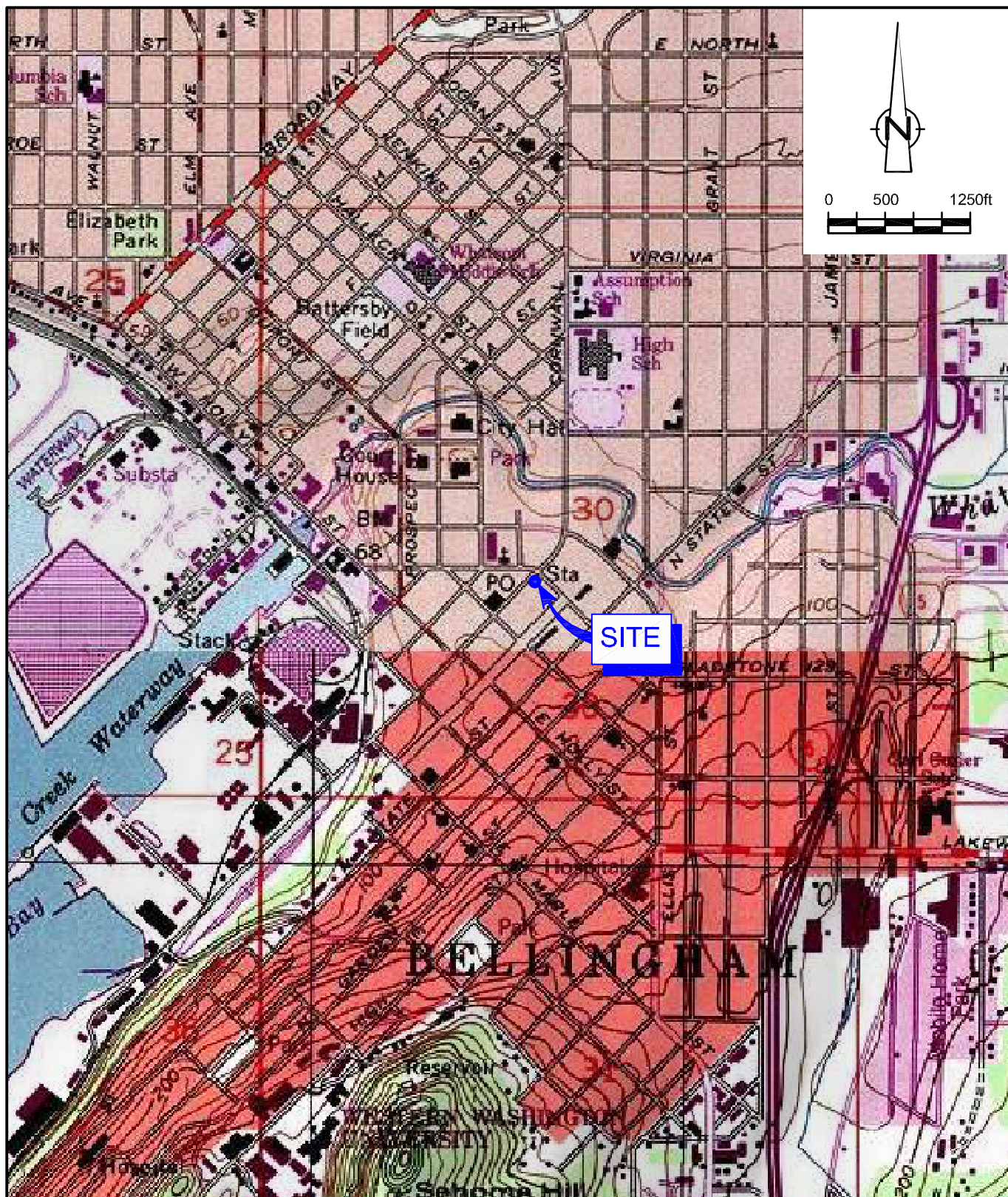
GeoEngineers, *Subsurface Assessment*, May 22, 2006

Lasmanis, Raymond (1991). The Geology of Washington: Rocks and Minerals, v. 66, no. 4, p. 262-277.

Nowicki, *Underground Storage Tank Closure*, May 24, 1995.

Nowicki, *Soil Borings*, July 20, 1995.

FIGURES



SOURCE: TOPO! MAPS.

figure 1

VICINITY MAP
 JIFFY LUBE FACILITY
 1430 CORNWALL AVENUE
Bellingham, Washington



- LEGEND**
- MW-5 ● MONITORING WELL LOCATION
 - APPROXIMATE PROPERTY BOUNDARY
 - MTCA SITE BOUNDARY
 - W WATER LINE
 - SAN SANITARY SEWER
 - STM STORM SEWER

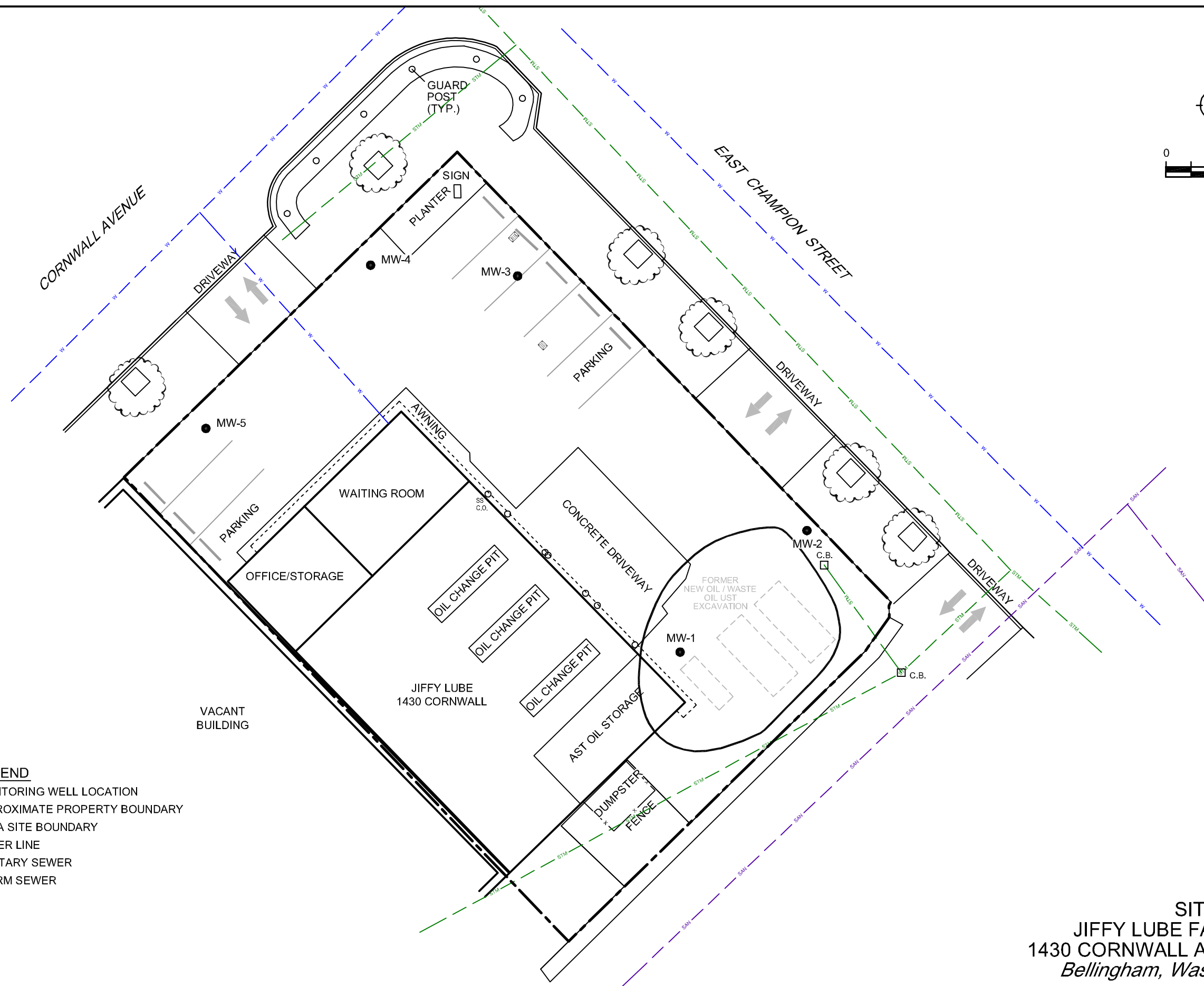


figure 2
 SITE PLAN
 JIFFY LUBE FACILITY
 1430 CORNWALL AVENUE
 Bellingham, Washington



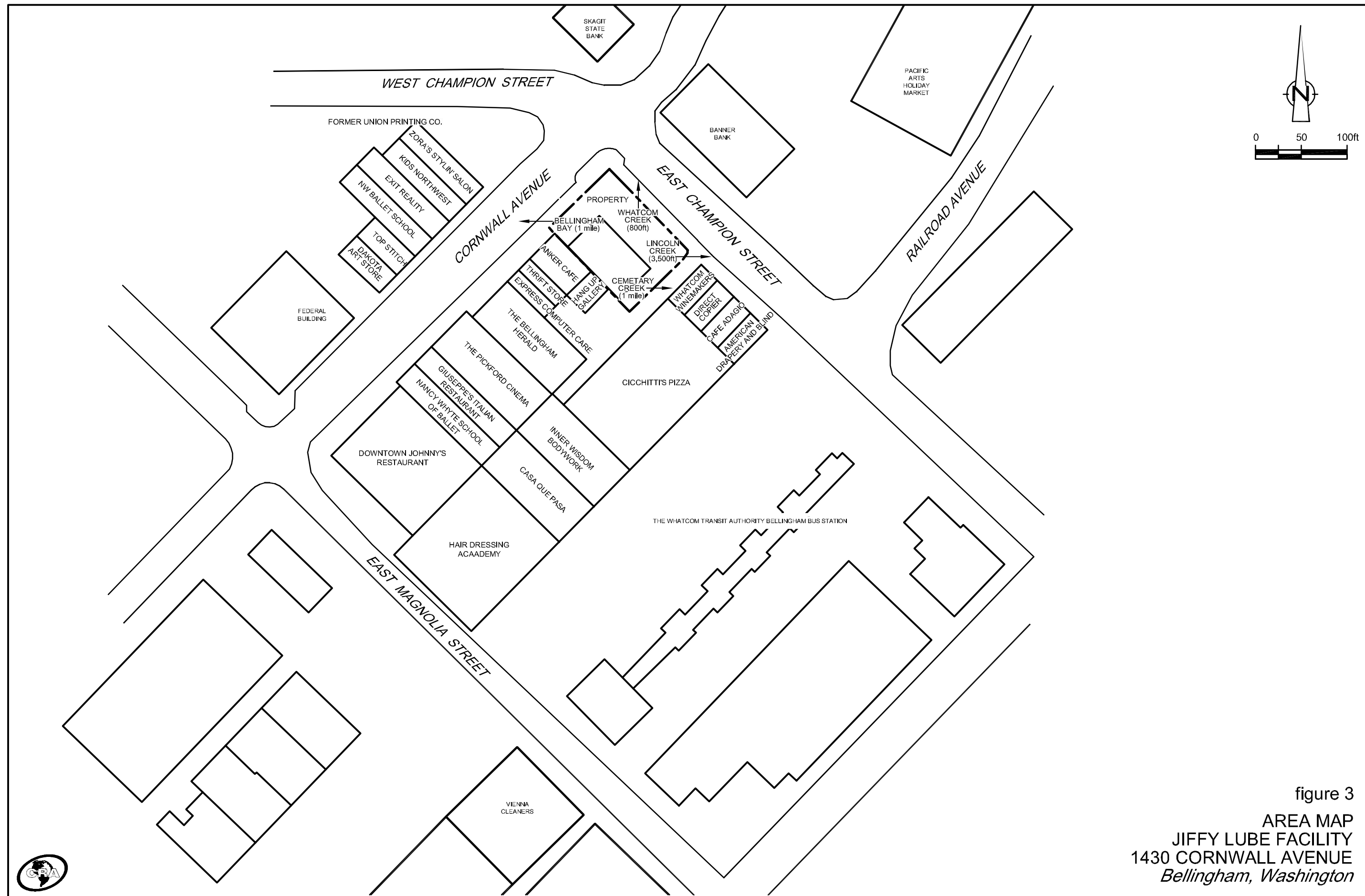
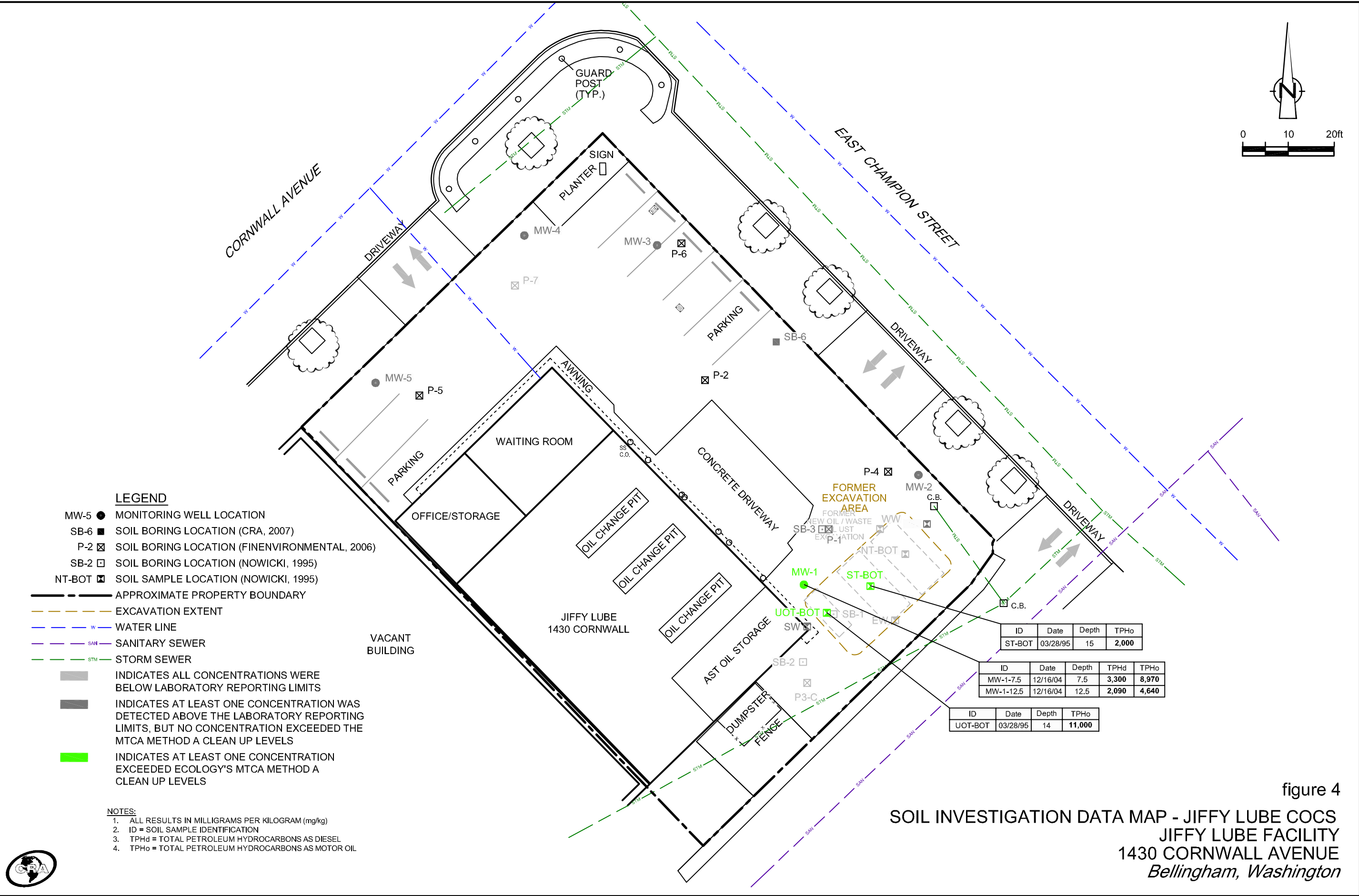
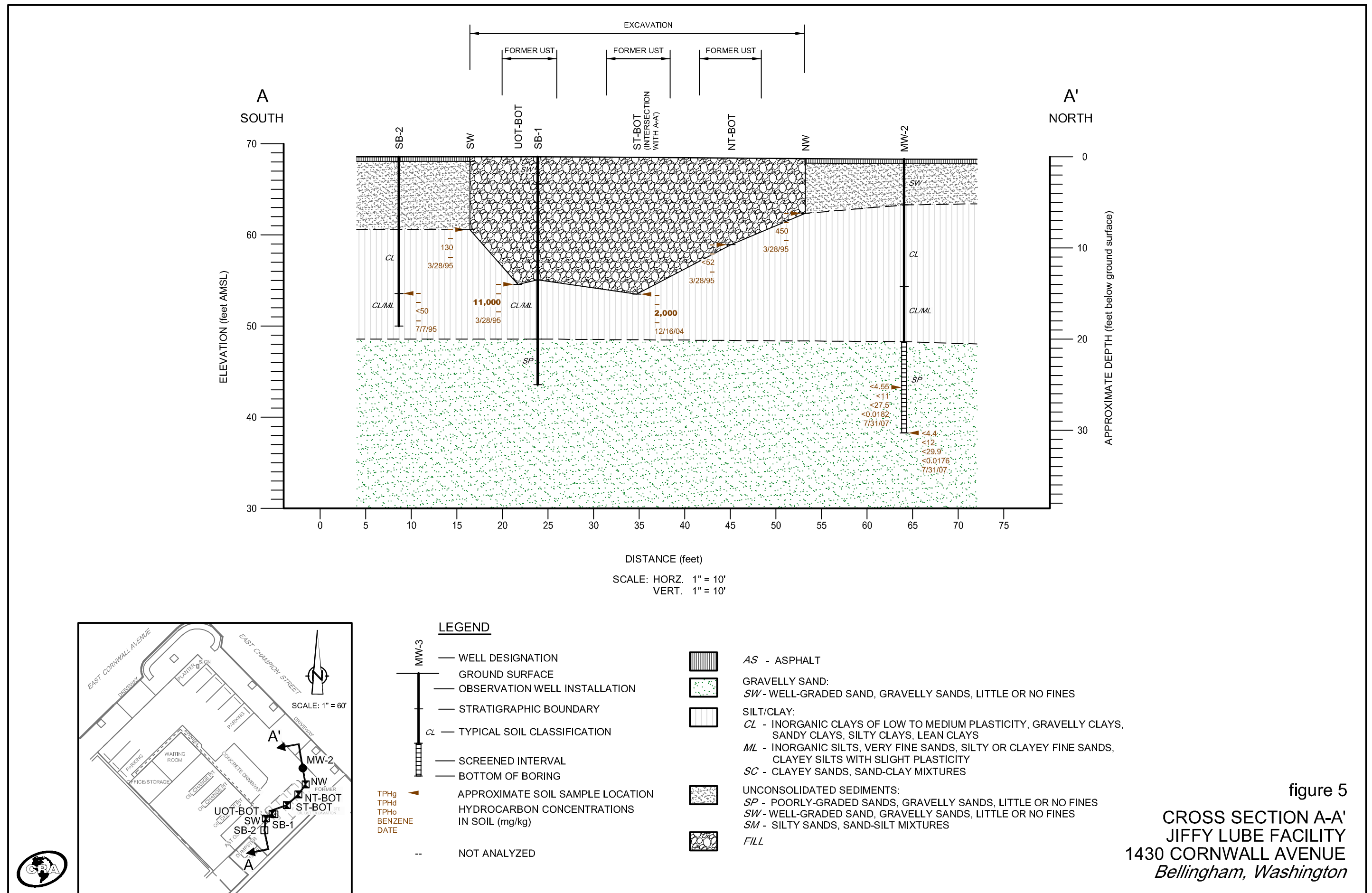
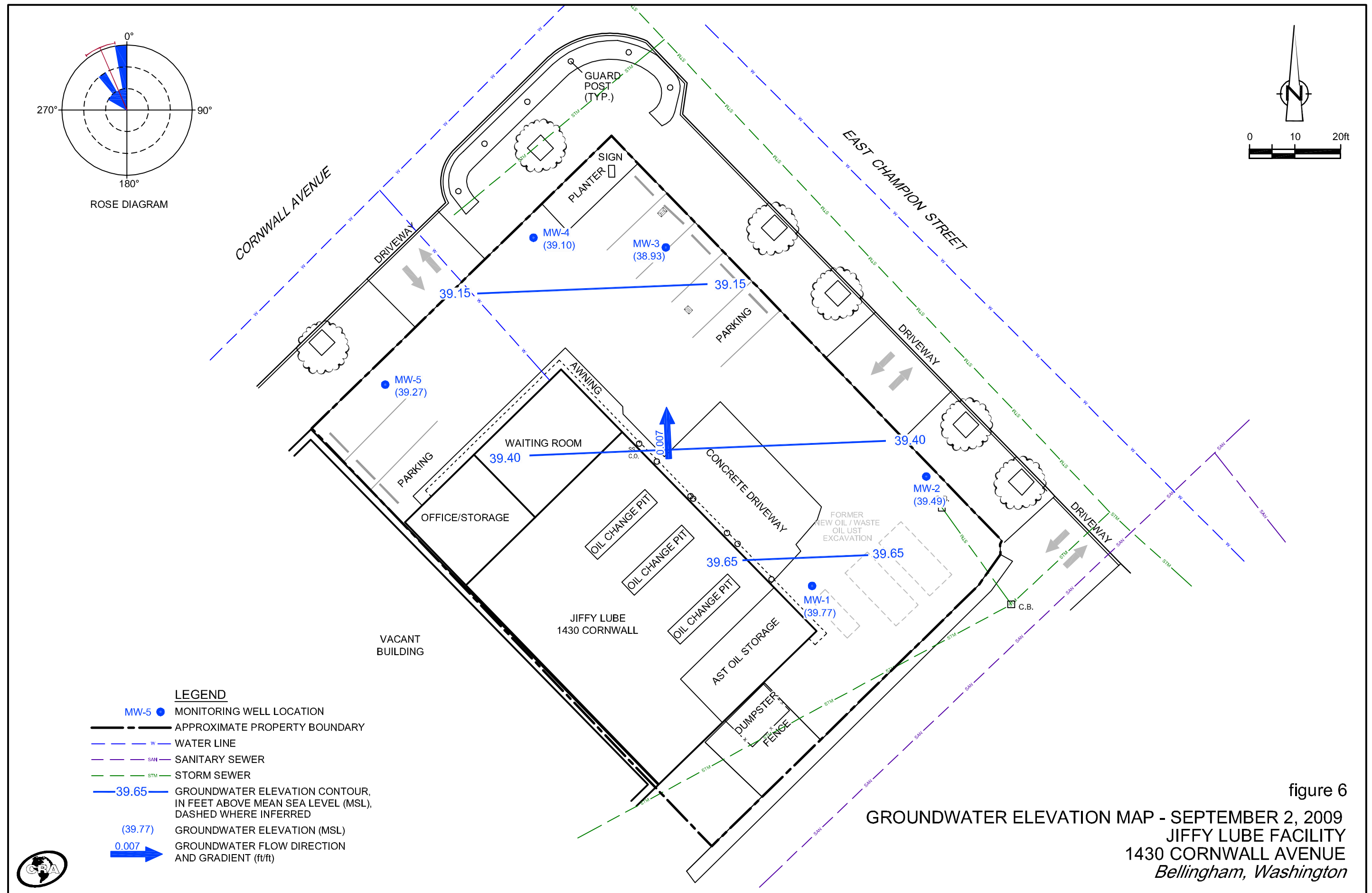


figure 3
 AREA MAP
 JIFFY LUBE FACILITY
 1430 CORNWALL AVENUE
 Bellingham, Washington









TABLES

TABLE 1

SUMMARY OF HISTORICAL SOIL AND ANALYTICAL DATA
JIFFY LUBE SERVICE STATION
1430 CORNWALL AVENUE
BELLINGHAM, WA

Sample ID	Consultant	Sample Date	Sample Depth MTCA Method A Cleanup Level feet	HYDROCARBONS			PRIMARY VOCs				LEAD	OXYGENATES	PAHs		PCBs
				TPHg	TPHd	TPHo	B	T	E	X	Total	MTBE	Naphthalene	cPAHs	PCBs
				30/100	2,000	2,000	0.03	7	6	9	250	0.1	5	0.1	1
				(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
NT-BOT ¹	Nowicki 1995	3/28/1995	9.5	--	--	<52	--	--	--	--	--	--	--	--	--
NW ¹	Nowicki 1995	3/28/1995	6	--	--	430	--	--	--	--	--	--	--	--	--
WW ¹	Nowicki 1995	3/28/1995	7	--	--	<50	--	--	--	--	--	--	--	--	--
ST-BOT ¹	Nowicki 1995	3/28/1995	15	--	--	2,000	--	--	--	--	--	--	--	--	--
EW ¹	Nowicki 1995	3/28/1995	6	--	--	<50	--	--	--	--	--	--	--	--	--
UOT-BOT ¹	Nowicki 1995	3/28/1995	14	--	--	11,000	--	--	--	--	--	--	--	--	--
SW ¹	Nowicki 1995	3/28/1995	8	--	--	130	--	--	--	--	--	--	--	--	--
SB1-15 ¹	Nowicki 1995	7/7/1995	15	--	<25	<50	--	--	--	--	--	--	--	--	--
SB2-15 ¹	Nowicki 1995	7/7/1995	15	--	<25	<50	--	--	--	--	--	--	--	--	--
SB3-15 ¹	Nowicki 1995	7/7/1995	15	--	110 a	390	--	--	--	--	--	--	--	--	--
MW-1-7.5	GeoEngineers 2006	12/16/2004	7.5	4.4	3,300	8,970	<0.0238	<0.0397	<0.0397	<0.0794	--	--	--	--	--
MW-1-12.5*	GeoEngineers 2006	12/16/2004	12.5	27.7	2,090	4,640	<0.03	0.0586	<0.05	0.305	25.1	--	0.18	0.09787	0.114
MW-1-14	GeoEngineers 2006	12/16/2004	14	<5	<10	<25	<0.03	<0.05	<0.05	<0.1	--	--	--	--	--
P1-15	Fine Environmental 2006	3/28/2006	15	<3	790	1,600	<0.03	<0.05	<0.05	<0.2	--	--	--	--	--
P2-7	Fine Environmental 2006	3/28/2006	7	700*	<25	<50	<0.03	0.8	5.9	4	--	--	--	--	--
P3C-11	Fine Environmental 2006	3/28/2006	11	<3	<25	<50	<0.03	<0.05	<0.05	<0.2	--	--	--	--	--
P4-11	Fine Environmental 2006	3/28/2006	11	180*	<25	<50	<0.03	0.1	0.6	1.6	--	--	--	--	--
P5-10.5	Fine Environmental 2006	3/28/2006	10.5	200*	<25	<50	<0.03	0.2	0.3	0.7	--	--	--	--	--
P6-15	Fine Environmental 2006	3/28/2006	15	460*	<25	<50	<0.12	0.4	1.6	3.9	--	--	--	--	--
P7-11	Fine Environmental 2006	3/28/2006	11	<2	<25	<50	<0.03	<0.05	<0.05	<0.2	--	--	--	--	--
MW-2-25*	CRA 2007	7/31/2007	25	<4.55	<11.0	<27.5	<0.0182	<0.0910	<0.0910	<0.273	1.90	<0.45	<0.0109	<0.0109	<0.0548
MW-2-30*	CRA 2007	7/31/2007	30	<4.40	<12.0	<29.9	<0.0176	<0.0881	<0.0881	<0.264	2.01	<0.44	<0.0118	<0.0118	<0.0598
MW-3-25*	CRA 2007	8/1/2007	25	<4.86	<10.6	<26.5	<0.0194	<0.0972	<0.0972	<0.292	1.93	<0.49	<0.0107	<0.0107	<0.0530
MW-3-30*	CRA 2007	8/1/2007	30	<4.67	<11.7	<29.4	<0.0187	<0.0934	<0.0934	<0.280	1.85	<0.47	<0.0118	<0.0118	<0.0581
MW-4-25*	CRA 2007	8/1/2007	25	<4.66	<10.6	<26.5	<0.0186	<0.0932	<0.0932	<0.280	2.00	<0.47	<0.0107	<0.0107	<0.0533
MW-4-30*	CRA 2007	8/1/2007	30	<4.9	<11.8	<29.6	<0.0196	<0.0981	<0.0981	<0.294	1.84	<0.49	<0.0120	<0.012	<0.0595
MW-5-25*	CRA 2007	8/1/2007	25	<4.65	<10.7	<26.9	<0.0186	<0.0930	<0.0930	<0.279	1.88	<0.47	<0.0106	<0.0106	<0.0532
MW-5-30*	CRA 2007	8/1/2007	30	<4.1	<11.9	<29.7	<0.0164	<0.0820	<0.0820	<0.246	1.76	<0.41	<0.0119	<0.0119	<0.0595
SB-6-25*	CRA 2007	8/1/2007	25	<4.96	<10.7	<26.7	<0.0198	<0.0991	<0.0991	<0.297	1.92	<0.5	<0.0108	<0.0108	<0.0540
SB-6-30*	CRA 2007	8/1/2007	30	52.1	<13.1	<32.6	<0.0202	<0.101	<0.101	<0.304	2.38	<0.51	<0.0131	<0.0131	<0.0655

TABLE 1

SUMMARY OF HISTORICAL SOIL AND ANALYTICAL DATA
JIFFY LUBE SERVICE STATION
1430 CORNWALL AVENUE
BELLINGHAM, WA

Sample ID	Consultant	Sample Date	Sample Depth	TPHg	TPHd	TPHo	B	T	E	X	Total	MTBE	Naphthalene	cPAHs	PCBs
		MTCA Method A	Cleanup Level	30/100	2,000	2,000	0.03	7	6	9	250	0.1	5	0.1	1
			feet	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)

Notes:

-- = Not analyzed

All results in milligrams per kilogram (mg/kg) unless otherwise indicated.

Results in bold indicate an exceedance of the MTCA Method A cleanup level.

Feet = Feet below ground surface

TPHg = Total petroleum hydrocarbons as gasoline analyzed by EPA Method 8015 unless otherwise noted.

TPHd = Total petroleum hydrocarbons as diesel, analyzed by GC FID/3550 unless otherwise noted

TPHo = Total petroleum hydrocarbons as motor oil, analyzed by GC FID/3550.

BTEX = Benzene, toluene, ethylbenzene, and xylenes analyzed by EPA Method 8260B; before February 26, 2008, analyzed by EPA Method 8021B unless otherwise noted

EDB = 1,2 Dibromoethane

EDC = 1,2 Dichloroethane

MTBE = Methyl tertiary-butyl ether analyzed by EPA Method 8260B

cPAHs = Carcinogenic polynuclear aromatic hydrocarbons (cPAHs)

PAHs = Polynuclear aromatic hydrocarbons (cPAHs)

VOCs = Volatile organic compounds

PCBs = Polychlorinated biphenyls

Total Lead analyzed by EPA Method 6020

<x = Not detected at reporting limit x

MTCA = Model Toxics Control Act

* indicates the soil samples were additionally analyzed for halogenated volatile organic compounds (HVOCs) and oxygenates; all of these analytes were not detected above the laboratory reporting limits, except for methylene chloride at 0.017 mg/kg in SB-6-.

¹ Analyzed by method WTPH-D Extended

a = Diesel result is due to front of oil range product eluting the diesel range

TABLE 2

SUMARY OF GROUNDWATER MONITORING DATA
JIFFY LUBE SERVICE STATION
1430 CORNWALL AVENUE
BELLINGHAM, WASHINGTON

Sample ID	Date	TOC	DTW	GWE	HYDROCARBONS			PRIMARY VOCs						VOCs					OXYGENATES					LEAD	PAHs		PCBs	
					TPHg 800/1000	TPHd 500	TPHo 500	B 5	T 1000	E 700	X 1000	EDB 0.01	EDC 5	Chloroform ---	1,2-DCE ---	PCE 5	1,1,1-TCA 200	TCE 5	MTBE 20	TBA ---	DIPE ---	ETBE ---	TAME ---	Total 15	Naphthalene 160	cPAHs 0.1	PCBs 0.1	
MTCA Method A Screening Levels																												
MW-1	01/31/06	---	25.72	---	78.2	<236	<472	<0.500	<0.500	<0.500	<1.00	---	---	1.27	6.42	222	0.400	0.440	---	---	---	---	---	---	---	---	---	---
MW-1	08/21/07	68.57	26.37	42.20	<50.0	<263	<526	<0.200	<0.200	<0.200	<0.750	---	---	0.700	5.49	326	0.200	0.690	<5.00	<50	<1.0	<1.0	<1.0	118	0.188	<0.101	<0.495	
MW-1	12/19/07	68.57	25.12	43.45	351	24.8 J	50.2 J	<1.00	<1.00	<1.00	<3.00	---	---	0.860 J	7.00 J	435 J	<1.00	1.00	<1.00	---	---	---	---	---	<0.0980	<0.0980	---	
MW-1	03/19/08	68.57	25.91	42.66	57	<7.4	<11	<0.069	<0.05	<0.1	<0.1	---	---	< 0.41	2.70	130	<0.079	0.55 J	---	---	---	---	---	---	<0.30	<0.33	---	
MW-1	06/16/08	68.57	25.84	42.73	64	<250	<400	<1.00	<1.00	<1.80	<5.40	<1	<1	<1.00	3.70	170	<1.00	<1.00	<1.00	---	---	---	---	---	<1.00	<1.00	---	
MW-1	09/02/08	68.57	26.41	42.16	<100	130	<100	<0.50	<1.0	<1.0	<1.0	<1.0	<0.50	<1.0	2.80	140	<1.0	<1.0	<1.0	<10	<2.0	<2.0	<2.0	112	<10	---	---	
MW-1	12/11/08	68.57	26.00	42.57	<100	<100	<100	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.43 J	2.90	120	<0.50	0.56	<0.50	<10	<0.50	<0.50	<0.50	37.3	<0.50	---	---	
MW-1	03/11/09	68.58	27.88	40.70	<100	<100	<100	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	7.40	250	<5.0	1.20	<5.0	<100	<5.0	<5.0	<5.0	74.6	<5.0	---	---	
MW-1	06/05/09	68.58	28.51	40.07	---	---	---	<5.0	<5.0	<5.0	<5.0	<0.01	<5.0	<5.0	9.10	300	<5.0	2.10	<5.0	<100	<5.0	<5.0	<5.0	54.4	---	---	<0.12	
MW-1	09/02/09	68.58	28.81	39.77	---	---	---	<5.0	<5.0	<5.0	<5.0	<0.010	<5.0	0.99 J	13	440	<5.0	3.7 J	<5.0	<100	<5.0	<5.0	<5.0	3.41	<0.10	<0.10	---	
MW-2	08/21/07	68.29	26.21	42.08	<50.0	<250	<500	<0.200	<0.200	<0.200	<0.750	---	---	0.470	<0.200	<0.200	<0.200	<0.200	<5.00	<50	<1.0	<1.0	<1.0	73.7	0.143	<0.0962	<0.556	
MW-2	12/19/07	68.29	24.97	43.32	77.5 J	29.4 J	71.8 J	<1.00	<1.00	<1.00	<3.00	---	---	<1.00	<1.00	0.520 J	<1.00	<1.00	<1.00	---	---	---	---	---	<0.0980	<0.0980	---	
MW-2	03/19/08	68.29	25.79	42.50	25 J	<7.4	<11	<0.069	<0.05	<0.1	<0.1	---	---	<0.41	0.23 J	0.62 J	0.15 J	<0.11	---	---	---	---	---	---	<0.30	<0.33	---	
MW-2	06/16/08	68.29	25.70	42.59	<50.0	<250	<400	<1.00	<1.00	<1.00	<1.00	<1	<1	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	---	---	---	---	---	<1.00	<1.00	---	
MW-2	09/02/08	68.29	26.30	41.99	<100	<100	<100	<0.50	<1.0	<1.0	<1.0	<1.0	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<2.0	<2.0	<2.0	31.9	<10	---	---		
MW-2	12/11/08	68.29	25.91	42.38	<100	<100	<100	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.28 J	<0.50	0.4	<0.50	<0.50	<0.50	<10	<0.50	<0.50	<0.50	131	<0.50	---	---	
MW-2	03/11/09	68.29	27.84	40.45	<100	<100	<100	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<10	<0.50	<0.50	<0.50	94.6	<0.50	---	---	
MW-2	06/05/09	68.29	28.39	39.90	---	---	---	<0.5	<0.5	<0.5	<0.5	<0.01	<5.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<10	<0.5	<0.5	<0.5	54.9	---	---	<0.12	
MW-2	09/02/09	68.29	28.80	39.49	---	---	---	<0.50	<0.50	<0.50	<0.50	<0.010	0.13 J	0.20 J	0.14 J	<0.50	<0.50	<0.50	<0.50	<10	<0.50	<0.50	<0.50	7.66	<0.10	<0.10	---	
MW-3	08/21/07	69.06	27.25	41.81	<50.0	<245	<490	<0.200	<0.200	<0.200	<0.750	---	---	0.830	<0.200	<0.200	<0.200	<0.200	<5.00	<50	<1.0	<1.0	<1.0	133	0.139	<0.100	<0.500	
MW-3	12/19/07	69.06	26.11	42.95	56.8 J	25.2 J	59.5 J	<1.00	<1.00	<1.00	<3.00	---	---	0.870 J	<1.00	<1.00	<1.00	<1.00	<1.00	---	---	---	---	---	<0.100	<0.100	---	
MW-3	03/19/08	69.06	26.84	42.22	120	<7.4	<11	<0.069	<0.05	<0.1	<0.1	---	---	0.69 J	<0.11	0.32 J	<0.12	<0.11	---	---	---	---	---	---	<0.30	<0.33	---	
MW-3	06/16/08	69.06	26.77	42.29	<50.0	<250	<400	<1.00	<1.00	<1.00	<1.00	<1	<1	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	---	---	---	---	---	<1.00	<1.00	---	
MW-3	09/02/08	69.06	27.40	41.66	<100	<100	<100	<0.50	<1.0	<1.0	<1.0	<1	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<2.0	<2.0	<2.0	55.4	<10	---	---		
MW-3	12/11/08	69.06	26.96	42.10	<100	<100	<100	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.83	<0.50	0.10	<0.50	<0.50	<0.50	<10	<0.50	<0.50	<0.50	22.0	<0.50	---	---	
MW-3	03/11/09	69.06	29.21	39.85	<100	<100	<100	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.91	<0.50	<0.50	<0.50	<0.50	<0.50	<10	<0.50	<0.50	<0.50	51.6	<0.50	---	---	
MW-3	06/05/09	69.06	29.70	39.36	---	---	---	<0.5	<0.5	<0.5	<0.5	<0.01	<0.5	0.78	<0.50	<0.50	<0.50	<0.50	<0.5	<10	<0.5	<0.5	<0.5	10.3	---	---	<0.12	
MW-3	09/02/09	69.06	30.13	38.93	---	---	---	<0.50	<0.50	<0.50	<0.50	<0.010	<0.50	0.82	<0.50	<0.50	0.091 J	<0.50	<0.50	<10	<0.50	<0.50	<0.50	<1.00	---	---	---	
MW-4	08/21/07	69.70	27.98	41.72	<50.0	<248	<495	<0.200	<0.200	<0.200	<0.750	---	---	<0.200	<0.200	<0.200	<0.200	<0.200	<5.00	<50	<1.0	<1.0	<1.0	72.6	<0.100	<0.100	<0.490	
MW-4	12/19/07	69.70	26.59	43.11	50.3 J	24.8 J	48.5 J	<1.00	<1.00	<1.00	<3.00	---	---	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	---	---	---	---	---	<0.0980	<0.0980	---	
MW-4	03/19/08	69.70	27.60	42.10	< 16	<7.4	95 J	<0.069	<0.05	<0.1	<0.1	---	---	<0.41	<0.11	0.35 J	<0.079	<0.11	---	---	---	---	---	---	<0.30	<0.33	---	
MW-4	06/16/08	69.70	27.44	42.26	<50.0	<250	<400	<1.00	<1.00	<1.00	<1.00	<1	<1	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	---	---	---	---	---	<1.00	<1.00	---	
MW-4	09/02/08	69.70	28.05	41.65	<100	250	<100	<0.50	<1.0	<1.0	<1.0	<1.0	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<2.0	<2.0	<2.0	24.9	<10	---	---		
MW-4	12/11/08	69.70	27.69	42.01	<100	150	120	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.15	<0.50	<0.50	<0.50	<10	<0.50	<0.50	<0.50	29.4	<0.50	---	---	
MW-4	03/11/09	69.70	29.89	39.81	<100	<100	<100	<0.50	<0.																			

TABLE 2

SUMARY OF GROUNDWATER MONITORING DATA
JIFFY LUBE SERVICE STATION
1430 CORNWALL AVENUE
BELLINGHAM, WASHINGTON

Sample ID	Date	TOC	DTW	GWE	HYDROCARBONS			PRIMARY VOCs					VOCs					OXYGENATES					LEAD	PAHs		PCBs	
					TPHg 800/1000	TPHd 500	TPHo 500	B 5	T 1000	E 700	X 1000	EDB 0.01	EDC 5	Chloroform ---	1,2-DCE ---	PCE 5	1,1,1-TCA 200	TCE 5	MTBE 20	TBA ---	DIPE ---	ETBE ---	TAME ---	Total 15	Naphthalene 160	cPAHs 0.1	PCBs 0.1
MTCA Method A Screening Levels																											
MW-5	12/19/07	70.20	27.36	42.84	50.7 J	25.2 J	36.7 J	<1.00	<1.00	<1.00	<3.00	---	---	0.640 J	<1.00	<1.00	<1.00	<1.00	<1.00	---	---	---	---	---	<0.100	<0.100	---
MW-5	03/19/08	70.20	28.00	42.20	93	<7.4	<11	<0.069	<0.05	<0.1	<0.1	---	---	0.67 J	<0.11	0.2 J	0.18 J	<0.11	---	---	---	---	---	---	<0.30	<0.33	---
MW-5	06/16/08	70.20	27.83	42.37	<50.0	<250.0	<400	<1.00	<1.00	<1.00	<1.00	<1	<1	1.00	<1.00	<1.00	<1.00	<1.00	<1.00	---	---	---	---	---	<1.00	<1.00	---
MW-5	09/02/08	70.20	28.36	41.84	<100	<100	<100	<0.50	<1.0	<1.0	<1.0	<1.0	<0.50	---	<1.0	<1.0,	<1.0	<1.0	<1.0	<10	<2.0	<2.0	<2.0	39.2	<10	---	---
MW-5	12/11/08	70.20	28.09	42.11	<100	<100	<100	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.2	<0.50	<0.50	<0.50	<0.50	<0.50	<10	<0.50	<0.50	<0.50	17.1	<0.50	---	---
MW-5	03/11/09	70.20	30.11	40.09	<100	<100	<100	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.61	<0.50	<0.50	<0.50	<0.50	<0.50	<10	<0.50	<0.50	<0.50	78.0	<0.50	---	---
MW-5	06/05/09	70.20	30.62	39.58	---	---	---	<0.5	<0.5	<0.5	<0.5	<0.01	<0.5	1.7	<0.50	<0.50	0.13	<0.50	<0.5	<10	<0.5	<0.5	<0.5	7.86	---	---	<0.12
MW-5	09/02/09	70.20	30.93	39.27	---	---	---	<0.50	<0.50	<0.50	<0.50	<0.010	<0.50	1.6	<0.50	<0.50	0.18 J	<0.50	<0.50	<10	<0.50	<0.50	<0.50	2.85	---	---	---

Notes:

DTW = Depth to Water in feet
GWE = Groundwater Elevation in feet relative to arbitrary benchmarks
TOC = Top of Casing in feet relative to arbitrry benchmarks
All results in µg/L unless otherwise indicated.
TPHg = Total petroleum hydrocarbons as gasoline analyzed by EPA Method 8015 unless otherwise noted.
TPHd = Total petroleum hydrocarbons as diesel, analyzed by GC FID/3550 unless otherwise noted.
TPHo = Total petroleum hydrocarbons as heavy oil, analyzed by GC FID/3550 unless otherwise noted.
BTEX = Benzene, toluene, ethylbenzene, and xylenes analyzed by EPA Method 8260B; before February 26, 2008, analyzed by EPA Method 8020 unless otherwise noted.
1,2-DCE = cis-1,2-Dichloroethene analyzed by EPA Method 8260B.
PCE = Tetrachloroethene analyzed by EPA Method 8260B.
1,1,1-TCA = 1,1,1-Trichloroethane analyzed by EPA Method 8260B.
TCE = Trichloroethene analyzed by EPA Method 8260B.
MTBE = Methyl tertiary-butyl ether analyzed by EPA Method 8260B.
TBA = Tertiary-butanol analyzed by EPA Method 8260B.
DIPE = Di-isopropyl ether analyzed by EPA Method 8260B.
ETBE = Ethyl tertiary-butyl ether analyzed by EPA Method 8260B.
TAME = Tertiary-amyl methyl ether analyzed by EPA Method 8260B.
Total Lead analyzed by EPA Method 6010.
cPAHs = carcinogenic polycyclic aromatic hydrocarbons analyzed by EPA Method 8070 SIM.
PCBs = polychlorinated biphenyls analyzed by EPA Method 8082.
VOCs = Volatile organic compounds analyzed by EPA Method 8260B.
<x = Not detected at laboratory reporting limit x.
--- = Not analyzed.
Concentrations in bold type indicate the analyte was detected above MTCA Method A Screening levels.
J = Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). Concentrations within this range are estimated.

APPENDIX A

ENVIRONMENTAL DOCUMENT LIST

Environmental Document List: 1430 Cornwall Avenue, Bellingham, WA				
Title	Author	Date	Submitted to Ecology	
			Y/N	Date
Underground Storage Tank Closure	Nowicki and Associates, Inc.	4/27/1995	Y	5/25/1995
Soil Borings	Nowicki and Associates, Inc.	7/20/1995	Y	7/21/1995
Phase I Environmental Assessment	FINEnvironmental, Inc.	5/10/2002	N	N/A
Limited Phase II Environmental Assessment	FINEnvironmental, Inc.	11/18/2002	N	N/A
Subsurface Assessment	GeoEngineering, Inc.	5/22/2006	N	N/A
Groundwater Monitoring Report - Third Quarter 2007	Conestoga-Rovers & Associates	1/3/2008	Y	1/7/2008
Site Investigation Report	Conestoga-Rovers & Associates	1/28/2008	Y	2/5/2008
Groundwater Monitoring Report - Fourth Quarter 2007	Conestoga-Rovers & Associates	2/12/2008	Y	2/14/2008
Groundwater Monitoring Report - First Quarter 2008	Conestoga-Rovers & Associates	5/30/2008	Y	6/4/2008
Groundwater Monitoring Report - Second Quarter 2008	Conestoga-Rovers & Associates	8/12/2008	Y	8/18/2008
Groundwater Monitoring Report - Third Quarter 2008	Conestoga-Rovers & Associates	10/31/2008	Y	11/5/2008
Groundwater Monitoring Report - Fourth Quarter 2008	Conestoga-Rovers & Associates	2/10/2009	Y	2/12/2009
Groundwater Monitoring Report - First Quarter 2009	Conestoga-Rovers & Associates	7/1/2009	Y	N/A
Groundwater Monitoring Report - Second Quarter 2009	Conestoga-Rovers & Associates	9/2/2009	Y	N/A

APPENDIX B

LEGAL DESCRIPTION OF PROPERTY, PRESENT OWNER AND OPERATOR,
CHRONOLOGICAL LISTING OF KNOWN PAST OWNERS AND OPERATORS

Known Listing of Owners and Operators		
<i>Owner</i>	<i>Business Operator</i>	<i>Approximate Years of Site Occupation</i>
Belcher – Bellingham LLC	Jiffy Lube	1999-Present
Q-Lube, Inc	Q-Lube	1994-1999
Unknown	Minute Lube	1984-1994
Unknown	Pennys Auto Center	1969-1984
Unknown	Stromme's Service Station	1964-1969
Unknown	Gasoline Service Station	1950-1964


[Whatcom County](#) | [Contacts](#) | [Help](#) | [Search](#)

Assessor

[Assessor Home](#) | [Tax Guides](#) | [Property Search](#) | [Map Search](#)


Parcel Summary	Tax Summary	Tax Detail	Assessment/History	Appeals/Permits/Sales	Building Details	Map List
----------------	-------------	------------	--------------------	-----------------------	------------------	----------

380330 245187 0000

Site address: 1430 CORNWALL AVE

Legal NEW WHATCOM

Description: ALL LOT 1-NE 36 FT OF LOT 2 BLK 45

Owner: BELCHER-BELLINGHAM LLC
 3819 100TH PL NE
 MARYSVILLE WA 98270-9102

Taxpayer: JIFFY LUBE #2081

Property Characteristics

	Assessed Value	Total Acres
Land:	398,125	.26
Imp:	265,000	
Total:	663,125	

Land Use: 6411 AUTOMOBILE REPAIR SERVICES

Tax Dist: 100 BELLINGHAM 501

Zoning: COMMERCIAL CORE

Tax Status: TAXABLE

F/P? N

F/P Ac: .00

Exempt Prog:

[Help](#)
[New Search](#)
[<< Back to parcel list](#)


Copyright © 2002 Whatcom County

Webmaster: webmaster@co.whatcom.wa.us

Search Engine B:




[Whatcom County](#) | [Contacts](#) | [Help](#) | [Search](#)

Assessor

[Assessor Home](#) | [Tax Guides](#) | [Property Search](#) | [Map Search](#)


Parcel Summary	Tax Summary	Tax Detail	Assessment/History	Appeals/Permits/Sales	Building Details	Map List
----------------	-------------	------------	--------------------	-----------------------	------------------	----------

380330 245187 0000

Appeal History

Petition #	Decision	Stat	Change
BE08-6176	WTH		0
BE05-3950	SUSTAIN	FIN	0

Building Permit History

Permit #	Date	Permit Type	Amount	Status
SGN99-0118	10/01/99	PERS PROPERTY IMPS	3,500	PPR
SGN99-0096	7/29/99	PERS PROPERTY IMPS	0	PPR
BLD99-0443	7/29/99	COM TENANT IMPRVMT	0	FIN
BLD94-0555	1/24/95	COM TENANT IMPRVMT	80,000	FIN

Sales History

Date	Doc	Seller	Buyer	Aud File #	Excise #	RP Sale Amt	Mul
7/19/99	WD	Q LUBE INC	TO BELCHER-BELLINGHAM LLC	199-0703816	1999-02368	258,160	

[Help](#) [New Search](#)
[<< Back to parcel list](#)


Copyright © 2002 Whatcom County
 Webmaster: webmaster@co.whatcom.wa.us

Search Engine By:



[Whatcom County](#) | [Contacts](#) | [Help](#) | [Search](#)

Assessor

[Assessor Home](#) | [Tax Guides](#) | [Property Search](#) | [Map Search](#)

Parcel Summary	Tax Summary	Tax Detail	Assessment/History	Appeals/Permits/Sales	Building Details	Map List
--------------------------------	-----------------------------	----------------------------	------------------------------------	---------------------------------------	----------------------------------	--------------------------

380330 245187 0000

Building Details

No building detail.

Land Segment Details

Method	Class	Use	Quantity	Rate	Adj%	Value	Waterfront	View	Topog/Type	Service	Ab
Sq Ft	Improv	6411	11375	3500	0	398,125			Clear Level		

[Help](#)[New Search](#)[<< Back to parcel list](#)

Copyright © 2002 [Whatcom County](#)
Webmaster: webmaster@co.whatcom.wa.us

Search Engine B



APPENDIX C

SUMMARY OF PREVIOUS INVESTIGATIONS AND REMEDIAL ACTIVITIES

PREVIOUS INVESTIGATIONS AND REMEDIAL ACTIVITIES

1995 Underground Storage Tank Closure: In March 1995, Nowicki & Associates (Nowicki) oversaw the removal of one 5,000-gallon new oil underground storage tank (UST), one 3,000-gallon new oil UST, and one 1,000-gallon waste oil UST from the Property. Soil samples were collected and analyzed for total petroleum hydrocarbons (TPH) as oil (TPHo). TPHo was detected above the Washington State Department of Ecology's (Ecology) Model Toxics Control Act (MTCA) Method A screening levels in soil samples ST-BOT and UOT-BOT at depths of 15 and 14 feet below ground surface (bgs), respectively. Approximately 120 tons of impacted soil was excavated and disposed off-Site. Due to limited reach of the excavating equipment and the close proximity of the UST excavation to the building structure, soil containing petroleum hydrocarbons exceeding the MTCA Method A screening levels was left in place at the bottom of the excavation. More information is available in Nowicki's *Bellingham Quaker State Minit-Lube UST Closure Site Characterization* report, dated April 27, 1995.

1995 Soil Boring Report: In July 1995, Nowicki supervised the advancement of three soil borings (SB-1 through SB-3) in the vicinity of the former UST excavation to depths ranging from 20 to 25 feet bgs to determine the extent of petroleum hydrocarbon contamination in soil discovered during the new oil/waste oil UST excavation. Soil samples were collected and analyzed for TPH as diesel (TPHd) and TPHo. No soil sample collected from borings SB-1 through SB-3 contained either analyte above the MTCA Method A screening levels. Based on analytical results from the additional investigation, Nowicki determined that soil impacts in the UST excavation do not extend beyond the clay layer present at 15 feet bgs. More information is available in Nowicki's *Soil Borings* report, dated July 20, 1995.

2006 Subsurface Assessment: In December 2004, GeoEngineers, Inc. (GeoEngineers) installed groundwater monitoring well MW-1 in the vicinity of former new oil/waste oil UST excavation to a depth of 36.5 feet bgs. Soil samples were collected and analyzed for TPHg, TPHd, TPHo, BTEX, polychlorinated biphenyls (PCBs), halogenated volatile organic compounds (HVOCs), carcinogenic polynuclear aromatic hydrocarbons (cPAHs) and total lead. TPHd and TPHo exceeded the MTCA Method A screening levels in MW-1 at depths of 7.5 and 12.5 feet below ground surface (bgs). The sample at 14 feet bgs did not contain any analyte above laboratory reporting limits, indicating impacts were limited to depths above 14 feet bgs. Groundwater was encountered at a depth of approximately 29 feet bgs. Groundwater samples were collected

from monitoring well MW-1 and analyzed for TPHg, TPHd, TPHo, and BTEX. Tetrachloroethene (TCE) was detected in groundwater at a concentration of 222 micrograms per liter (µg/L), which exceeds the MTCA Method A screening level. No other analytes were detected in groundwater above MTCA Method A screening levels. More information is available in GeoEngineer's *Subsurface Assessment* report, dated May 22, 2006.

2006 Phase I Environmental Site Assessment: FINEnvironmental, Inc. (FEI) completed a Phase I environmental site assessment for the Property in March 2006. FEI concluded that the Jiffy Lube facility has been in operation since 1965. Prior to 1965, a gasoline service station operated on the Property, from approximately 1950 to 1964. Stromme's Service Station is the only tenant on record as operator of the historical gasoline service station. No additional information regarding the former service station was available. More information is available in FEI's *Phase I Environmental Site Assessment* report, dated March 23, 2006.

2006 Limited Phase II Environmental Assessment: Based on the results of a Phase I Environmental Site Assessment completed by FEI in January 2006, FEI advanced seven direct push soil borings (P-1 through P-7) to total depths of 20 feet bgs in March 2006. Soil samples were collected and analyzed for TPH as gasoline (TPHg), TPHd, TPHo, benzene, toluene, ethylbenzene, and xylenes (BTEX). TPHg exceeded the MTCA Method A screening levels in soil samples from P-2 and P-4 through P-6 at depths ranging from 7 to 15 feet bgs. Groundwater was not observed during this assessment; several wet zones were observed, but did not contain sufficient groundwater for collection of a sample. More information is available in FEI's *Limited Phase II Environmental Site Assessment* report, dated April 15, 2006.

2008 Site Investigation Report: In July and August 2007, Conestoga-Rovers and Associates (CRA) advanced five soil borings (SB-1 through SB-5) on the Property, four of which were completed as monitoring wells MW-2 through MW-5. Soil samples were collected from each boring and analyzed for TPHg, TPHd, TPHo, BTEX, oxygenates, 1,2-dichloroethane (EDC), 1,2-dibromoethane (EDB), VOCs, PCBs, PAHs, cPAHs, and total lead. No analytes were detected above MTCA Method A screening levels in any soil sample. Groundwater samples were collected from wells MW-1 through MW-5 and analyzed for TPHg, TPHd, TPHo, BTEX, MTBE, PCBs, and total lead. Total lead exceeded the MTCA Method A screening levels in monitoring wells MW-1 through MW-5 at concentrations ranging from 48.4 to 133 ug/L. No other analytes were detected above MTCA

Jiffy Lube Facility, 1430 Cornwall Avenue, Bellingham, WA

Method A screening levels. More information is available in CRA's *Site Investigation Report*, dated January 28, 2008.

APPENDIX D

AVAILABLE HISTORICAL SOIL BORING LOGS

NOWICKI & ASSOCIATES

ENERGY & ENVIRONMENTAL MANAGEMENT

33516 9th Avenue South
Building #6
Federal Way, Washington 98003
Phone: (206) 927-5233
FAX: (206) 924-0323

Boring SBI Date 7/7/95 Sheet 1 of 2
Job Q Lube - Bellingham Job No. _____
Logged by ML Weather Overcast
Drilled by/Method HSA Hayes Drilling
Sampling Method Split spoon 1 1/2"

Water Content	Color	Size %			Sample Number	Depth	Sample Recovery	Penetration Resistance	REMARKS: Drill action, sample procedures, water conditions, heave, soil variations.	SUMMARY LOG
		G	S	F						
		Max.	Range							
						0			Asphalt over brown gravel sand fill - to about 3'	0
						1				1
						2				2
						3			- pea gravel fill to approx. 14'	3
						4				4
						5				5
						6				6
						7				7
						8				8
						9				9
						0				0
						1				1
						2				2
						3				3
						4				4
						5	✓	5	Black silty sand - moist	5
						6		8	Light brown clay - damp - weak odor	6
						7		7		7
						8	✓		Silty clay - brown/grey - moist - weak odor	8
						9		2		9
						0	✓	4		0
								5		
								1	Grey silty/sandy clay - moist - no odor	

NOWICKI & ASSOCIATES

ENERGY & ENVIRONMENTAL MANAGEMENT

33516 9th Avenue South
Building #6
Federal Way, Washington 98003
Phone: (206) 927-5233
FAX: (206) 924-0323

Boring SBI Date 7/7/95 Sheet 2 of 2
Job Life Bellington Job No. _____
Logged by ML Weather Overcast
Drilled by/Method HSA Hayes Drilling
Sampling Method Split spoon 1 1/2"

Water Content	Color	Size %			Sample Number	Depth	Sample Recovery	Penetration Resistance	REMARKS: Drill action, sample procedures, water conditions, heave, soil variations.	SUMMARY LOG
		G	S	F						
		Max.	Range							
					0		2			0
					1		4			1
					2	✓			Dark brown hard-packed fine grain sand - moist - no odor	2
					3		6			3
					4		8			4
					5		10			5
					6		11		Hard-packed - brown/reddish - fine grain sand.	6
					7		27		Bottom of boring at 25'.	7
					8		24			8
					9					9
					0					0
					1					1
					2					2
					3					3
					4					4
					5					5
					6					6
					7					7
					8					8
					9					9
					0					0

NOWICKI & ASSOCIATES

ENERGY & ENVIRONMENTAL MANAGEMENT

33516 9th Avenue South
Building #6
Federal Way, Washington 98003
Phone: (206) 927-5233
FAX: (206) 924-0323

Boring SB2 Date 7/7/93 Sheet 1 of 1
Job Libe Bellingham Job No. _____
Logged by ML Weather Overcast
Drilled by/Method HCA Hayes Drilling
Sampling Method Split spoon 1 1/2"

Water Content	Color	Size %			Sample Number	Depth	Sample Recovery	Penetration Resistance	REMARKS: Drill action, sample procedures, water conditions, heave, soil variations.	SUMMARY LOG
		G	S	F						
		Max.	Range							
						0			Asphalt over brown/reddish gravelly sand to 2'1/2'.	0
						1				1
						2				2
						3			Black elastic, silty material - moist to about 4'	3
						4				4
						5			Dark brown fine grain sand	5
						6				6
						7			Silty/clayey sand	7
						8				8
						9				9
						0	✓	4	Brown clay (silty) - damp - no odor	0
						1		12		1
						2		14		2
						3				3
						4				4
						5	✓	2	Brown/grey clay - damp - no odor	5
						6		6		6
						7		8		7
						8		3		8
						9		3		9
						0	✓	4	Grey silty / sandy clay - moist	0
						1		15		1
						2				2

Bottom of boring at 20'.

NOWICKI & ASSOCIATES

ENERGY & ENVIRONMENTAL MANAGEMENT

33516 9th Avenue South
Building #6
Federal Way, Washington 98003
Phone: (206) 927-5233
FAX: (206) 924-0323

Boring SB 3 Date 7/7/93 Sheet 1 of 1
Job A. Luke Bellington Job No. _____
Logged by ML Weather Sunny
Drilled by/Method HSA
Sampling Method Split spoon - 1 1/2"

REMARKS: Drill action, sample procedures,
water conditions, heave, soil variations.

SUMMARY
LOG

Water Content	Color	Size %			Sample Number	Depth	Sample Recovery	Penetration Resistance		
		G	S	F						
		Max.	Range							
						0			Asphalt over dark brown gravelly sand	0
						1				1
						2				2
						3				3
						4				4
						5				5
						6				6
						7	✓	1	No recovery	7
						8		2		8
						9		4		9
						0	✓	7	Grey clay - damp - weak to no odor	0
						1		20		1
						2		12		2
						3				3
						4				4
						5	✓	3	Brown grey sandy clay - damp. no odor	5
						6		7		6
						7		8		7
						8				8
						9				9
						0	✓	13, 4	Green silty sand - no odor - moist	0

Bottom of boring at 7'0"

FINE Environmental Consulting Engineers		Geologist: HW Small, R.G.	Date Began: 3/28/06	Boring No.: P-1				
		Driller: Cascade Drilling, Inc.	Date End: 3/28/06	Casing Elevation: N/A				
		Drill Rig: Gcoprobe	Total Depth: 20 Feet	Depth to Water: N/A Feet				
Graphic Log	Classification	Soil Description	Depth	Sampled Interval	Blow Counts	Sample Number	PID	Completion
	SP	Asphalt over damp, brown, gravelly SAND (old UST excavation backfill).	5		N/A	P-1-3.5	<1	
	ML	Mottled brown, oxidized brown and gray, slightly fine sandy, silty CLAY. Slight hydrocarbon-like odor at approximately 15 feet.	10		N/A	P-1-7.5	<1	
10.5				N/A	P-1-10.5	<1		
15				N/A	P-1-15	20		
19				N/A	P-1-19	10		
Completion Notes: Grouted boring from bottom to 1/4-foot with hydrated bentonite chips. Completed at surface with asphalt cold patch.			SITE: Jiffy Lube Store #2081 1430 Cornwall Avenue Bellingham, WA					
			Project No.:		Page:		1	

FINE Environmental Consulting Engineers		Geologist:	HW Small, R.G.	Date Began:	3/28/06	Boring No.:	P-2
		Driller:	Cascade Drilling, Inc.	Date End:	3/28/06	Casing Elevation:	N/A
		Drill Rig:	Geoprobe	Total Depth:	16 Feet	Depth to Water:	N/A Feet

Graphic Log	Classification	Soil Description	Depth	Sampled Interval	Blow Counts	Sample Number	PID	Completion
	SP	Asphalt over damp, brown, slightly gravelly, medium to fine SAND.						
			5		N/A	P-2-3.5	<1	
	ML	Dark brown to black, moist to wet, slightly fine sandy, clayey SILT, with moderate to substantial organic matter. Moderate to strong hydrocarbon-like odor.			N/A	P-2-7	324	
	ML	Damp, mottled gray, brown and oxidized brown, silty CLAY. Slight hydrocarbon-like odor.						
	ML	Dark brown to black, moist to wet, slightly fine sandy, clayey SILT, with moderate to substantial organic matter. Moderate hydrocarbon-like odor.	10		N/A	P-2-10.5	309	
	ML	Mottled brown, oxidized brown and gray, slightly fine sandy, silty CLAY. Poor recovery on last drive.	15					

Completion Notes: Grouted boring from bottom to 1/4-foot with hydrated bentonite chips. Completed at surface with asphalt cold patch.	SITE: Jiffy Lube Store #2081 1430 Cornwall Avenue Bellingham, WA
Project No.:	Page: 1

FINEnvironmental Consulting Engineers		Geologist: HW Small, R.G.	Date Began: 3/28/06	Boring No.: P-3				
		Driller: Cascade Drilling, Inc.	Date End: 3/28/06	Casing Elevation: N/A				
		Drill Rig: Geoprobe	Total Depth: 20 Feet	Depth to Water: N/A Feet				
Graphic Log	Classification	Soil Description	Depth	Sample Interval	Blow Counts	Sample Number	PID	Completion
	SP	Asphalt over pea gravel. Attempted second boring nearby, but also encountered pea gravel. Moved south of building corner and attempted third boring, designated P-3C. Encountered asphalt over mix of pea gravel and damp, brown, slightly gravelly, medium to fine SAND (UST excavation backfill).	5		N/A	P-3C-7	<1	
	ML	Dark brown to black, moist to wet, slightly fine sandy, clayey SILT, with moderate to substantial organic matter.	10		N/A	P-3C-11	<1	
	ML	Damp, mottled gray, brown and oxidized brown, silty CLAY.	15		N/A	P-3C-15.5	<1	
					N/A	P-3C-19	<1	
Completion Notes: Grouted boring from bottom to 1/4-foot with hydrated bentonite chips. Completed at surface with asphalt cold patch.			SITE: <i>Jiffy Lube Store #2081</i> <i>1430 Cornwall Avenue</i> <i>Bellingham, WA</i>					
			Project No.:		Page:		1	

FINEEnvironmental
Consulting Engineers

Geologist: HW Small, R.G.

Date Began: 3/28/06

Boring No.: **P-4**

Driller: Cascade Drilling, Inc.

Date End: 3/28/06

Casing Elevation: N/A

Drill Rig: Geoprobe

Total Depth: 16 Feet

Depth to Water: N/A Feet

Graphic Log	Classification	Soil Description	Depth	Sampled Interval	Blow Counts	Sample Number	P/D	Completion
	SP	Asphalt over damp, brown, slightly gravelly, medium to fine SAND.						
	ML	Dark brown to black, moist to wet, slightly fine sandy, clayey SILT, with moderate to substantial organic matter.			N/A	P-4-3.5	<1	
	SP	Damp, brown, slightly gravelly, medium to fine SAND.	5					
	ML	Dark brown to black, moist to wet, slightly fine sandy, clayey SILT, with moderate to substantial organic matter.			N/A	P-4-9	10	
	ML	Mottled brown, oxidized brown and gray, slightly fine sandy, silty CLAY to clayey SILT. Slight hydrocarbon-like odor at 11 feet.	10		N/A	P-4-10.5	80	
			15		N/A	P-4-15	10	

Completion Notes:

Grouted boring from bottom to 1/4-foot with hydrated bentonite chips.
Completed at surface with asphalt cold patch.

SITE:

Jiffy Lube Store #2081
1430 Cornwall Avenue
Bellingham, WA

Project No.:

Page:

1

FINEnvironmental
Consulting Engineers

Geologist: IIW Small, R.G.	Date Began: 3/28/06	Boring No.: P-5
Driller: Cascade Drilling, Inc.	Date End: 3/28/06	Casing Elevation: N/A
Drill Rig: Geoprobe	Total Depth: 16 Feet	Depth to Water: N/A Feet

Graphic Log	Classification	Soil Description	Depth	Sampled Interval	Blow Counts	Sample Number	PID	Completion
	SP	Asphalt over damp, brown and black SAND mixed with apparent old gravel-sized pieces of asphalt (FILL).						
	SP	Damp, brown and light gray, trace gravelly medium to fine SAND (FILL?).	5		N/A	P-5-3.5	<1	
	ML	Wet, brown, slightly fine sandy, clayey SILT, with minor organic matter.	10		N/A	P-5-7.5	<1	
	ML	Mottled brown, oxidized brown and gray, slightly fine sandy, silty CLAY to clayey SILT. Moderate hydrocarbon-like odor at 11 feet.	15		N/A	P-5-10.5	202	
					N/A	P-5-15.5	<1	

Completion Notes:

Grouted boring from bottom to 1/4-foot with hydrated bentonite chips.
Completed at surface with asphalt cold patch.

SITE:

*Jiffy Lube Store #2081
1430 Cornwall Avenue
Bellingham, WA*

Project No.:

Page:

1

FINEnvironmental Consulting Engineers		Geologist: HW Small, R.G.	Date Began: 3/28/06	Boring No.: P-6				
		Driller: Cascade Drilling, Inc.	Date End: 3/28/06	Casing Elevation: N/A				
		Drill Rig: Geoprobe	Total Depth: 16 Feet	Depth to Water: N/A Feet				
Graphic Log	Classification	Soil Description	Depth	Sample Interval	Blow Counts	Sample Number	PID	Completion
	SP	Asphalt over damp, brown, slightly gravelly, medium to fine SAND.	5		N/A	P-6-3.5	<1	
					N/A	P-6-7.5	<1	
	ML	Dark brown to black, moist to wet, slightly fine sandy, clayey SILT, with moderate to substantial organic matter.	10		N/A	P-6-10.5	<1	
	ML	Mottled brown, oxidized brown and gray, slightly fine sandy, silty CLAY. Slight hydrocarbon-like odor between 14 and 16 feet.	15		N/A	P-6-15	376	
Completion Notes: Grouted boring from bottom to 1/4-foot with hydrated bentonite chips. Completed at surface with asphalt cold patch.			SITE: <i>Jiffy Lube Store #2081</i> <i>1430 Cornwall Avenue</i> <i>Bellingham, WA</i>					
			Project No.:		Page: 1			

FINEnvironmental
Consulting Engineers

Geologist: HW Small, R.G.	Date Began: 3/28/06	Boring No.: P-7
Driller: Cascade Drilling, Inc.	Date End: 3/28/06	Casing Elevation: N/A
Drill Rig: Geoprobe	Total Depth: 16 Feet	Depth to Water: N/A Feet

Graphic Log	Classification	Soil Description	Depth	Sampled Interval	Blow Counts	Sample Number	PID	Completion
	SP	Asphalt over damp, brown and black SAND mixed with apparent old gravel-sized pieces of asphalt (FILL).						
			5		N/A	P-7-3.5	<1	
	SP	Damp, brown and light gray, trace gravelly medium to fine SAND (FILL?).						
			10		N/A	P-7-7	<1	
	ML	Mottled brown, oxidized brown and gray, slightly fine sandy, silty CLAY to clayey SILT.						
			15		N/A	P-7-11	<1	
						P-7-14.5	<1	

Completion Notes:

Grouted boring from bottom to 1/4-foot with hydrated bentonite chips.
Completed at surface with asphalt cold patch.

SITE:

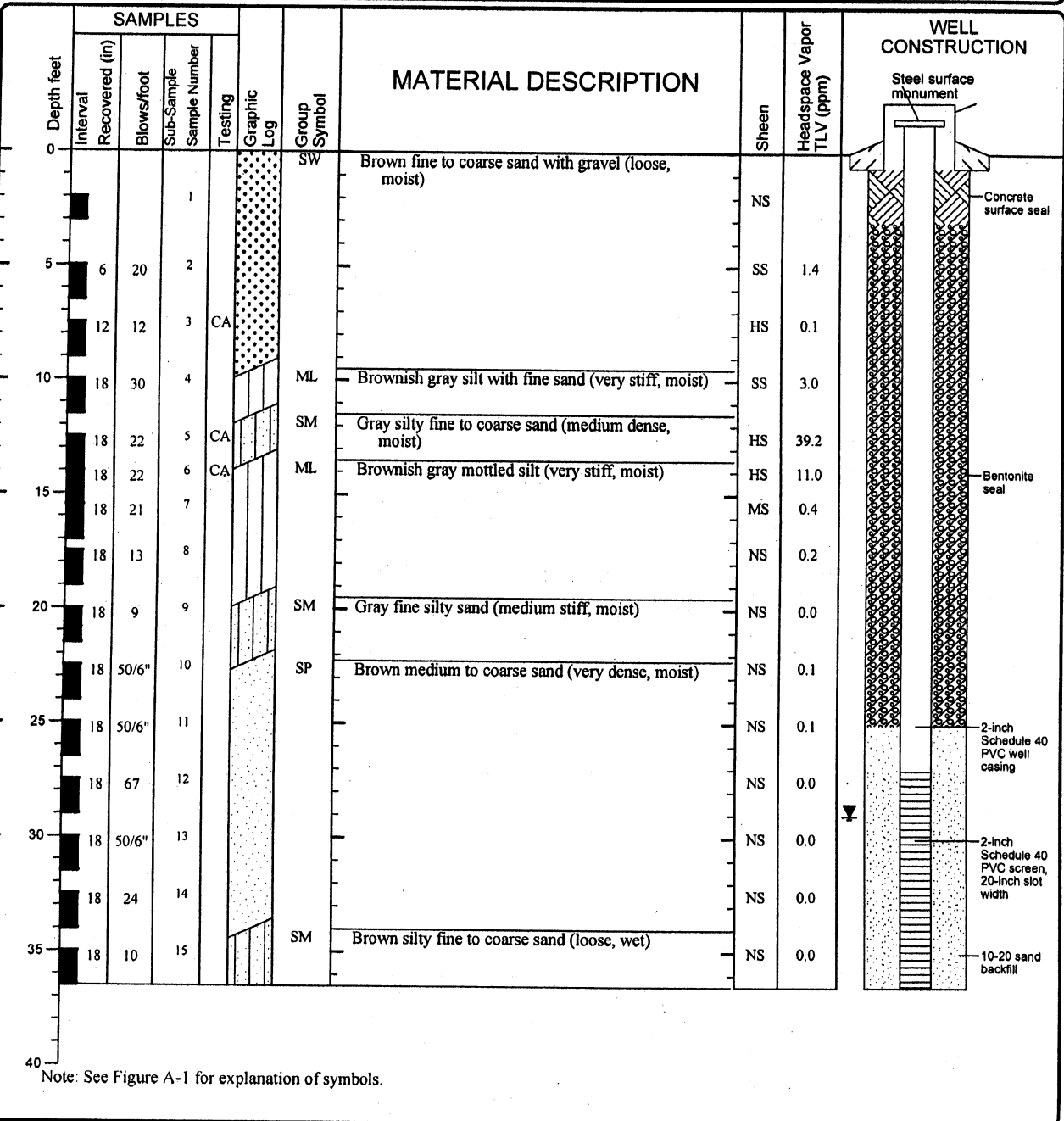
Jiffy Lube Store #2081
1430 Cornwall Avenue
Bellingham, WA

Project No.:

Page:

1

Date(s) Drilled	12/16/04	Logged By	MR4	Checked By	TNO
Drilling Contractor	Cascade	Drilling Method	Hollow-stem Auger	Sampling Methods	
Auger Data		Hammer Data	300 lb hammer/30 in drop	Drilling Equipment	
Total Exploration Depth (ft)	36.5	Ground Surface Elevation (ft)		Groundwater Level (ft. bgs)	29
Location:	1430 Cornwall Avenue	Datum/ System		Easting(x): Northing(y):	



LOG OF MONITORING WELL MW-1

GEOENGINEERS

Project: Shell-Bellingham
 Project Location: Bellingham, Washington
 Project Number: 9876-171-00

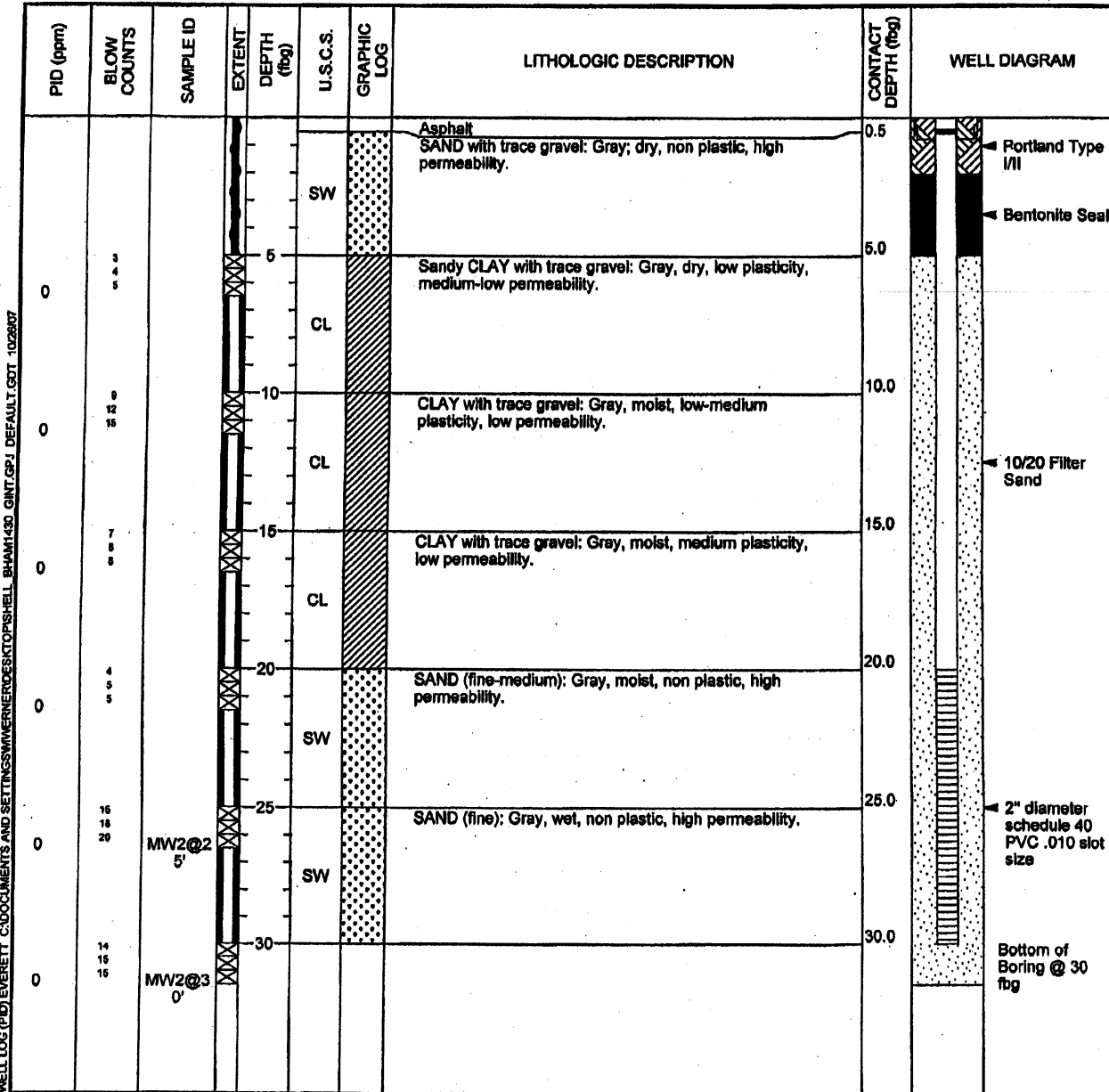
Figure A-2
 Sheet 1 of 1



Conestoga-Rovers & Associates
528 Commerce Center - Building B
1420 80th Street SW, Suite A
Everett, WA 98203
Telephone: (425) 212-5100
Fax: (425) 212-5199

BORING/WELL LOG

CLIENT NAME	Shell Oil Products US	BORING/WELL NAME	MW-2
JOB/SITE NAME	LYNN6808	DRILLING STARTED	31-Jul-07
LOCATION	1430 Cornwall Ave, Bellingham, WA	DRILLING COMPLETED	31-Jul-07
PROJECT NUMBER	241738	WELL DEVELOPMENT DATE (YIELD)	31-Jul-07
DRILLER	Cascade Drilling	GROUND SURFACE ELEVATION	Not Surveyed
DRILLING METHOD	Hollow-stem auger	TOP OF CASING ELEVATION	Not Surveyed
BORING DIAMETER	8"	SCREENED INTERVAL	20 to 30 fbg
LOGGED BY	Bryan Palmer	DEPTH TO WATER (First Encountered)	NA
REVIEWED BY	T. Crotwell	DEPTH TO WATER (Static)	NA
REMARKS			



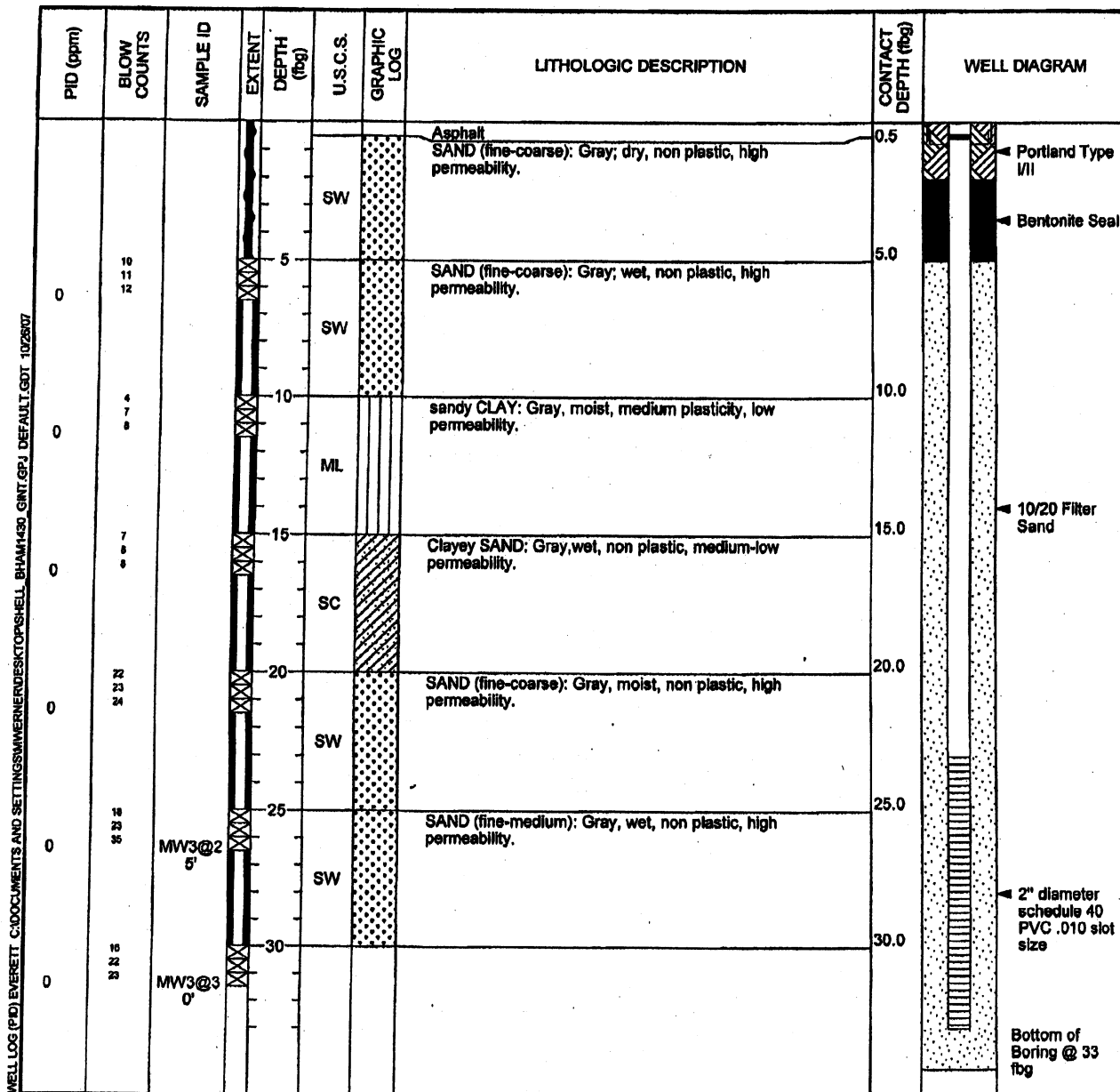


Conestoga-Rovers & Associates
526 Commerce Center - Building B
1420 80th Street SW, Suite A
Everett, WA 98203
Telephone: (425) 212-5100
Fax: (425) 212-5199

BORING/WELL LOG

CLIENT NAME	Shell Oil Products US	BORING/WELL NAME	MW-3
JOB/SITE NAME	LYNN6806	DRILLING STARTED	31-Jul-07
LOCATION	1430 Cornwell Ave, Bellingham, WA	DRILLING COMPLETED	01-Aug-07
PROJECT NUMBER	241736	WELL DEVELOPMENT DATE (YIELD)	01-Aug-07
DRILLER	Cascade Drilling	GROUND SURFACE ELEVATION	Not Surveyed
DRILLING METHOD	Hollow-stem auger	TOP OF CASING ELEVATION	Not Surveyed
BORING DIAMETER	8"	SCREENED INTERVAL	23 to 33 fbg
LOGGED BY	Bryan Palmer	DEPTH TO WATER (First Encountered)	NA
REVIEWED BY	T. Croswell	DEPTH TO WATER (Static)	NA

REMARKS





Conestoga-Rovers & Associates
526 Commerce Center - Building B
1420 80th Street SW, Suite A
Everett, WA 98203
Telephone: (425) 212-5100
Fax: (425) 212-5199

BORING/WELL LOG

CLIENT NAME	Shell Oil Products US	BORING/WELL NAME	MW-4
JOB/SITE NAME	LYNN6808	DRILLING STARTED	31-Jul-07
LOCATION	1430 Cornwall Ave, Bellingham, WA	DRILLING COMPLETED	01-Aug-07
PROJECT NUMBER	241738	WELL DEVELOPMENT DATE (YIELD)	01-Aug-07
DRILLER	Cascade Drilling	GROUND SURFACE ELEVATION	Not Surveyed
DRILLING METHOD	Hollow-stem auger	TOP OF CASING ELEVATION	Not Surveyed
BORING DIAMETER	8"	SCREENED INTERVAL	23 to 33 fbg
LOGGED BY	Bryan Palmer	DEPTH TO WATER (First Encountered)	NA
REVIEWED BY	T. Crowell	DEPTH TO WATER (Static)	NA

REMARKS

PID (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (ftg)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ftg)	WELL DIAGRAM
0	3 4			0	SW		Asphalt SAND (medium-coarse): Gray; dry, non plastic, high permeability.	0.5	Portland Type I/II
0	7 8 10			5	CL		CLAY with trace silt: Gray; moist, low plasticity, low permeability.	5.0	Bentonite Seal
0	7 7 10			10	CL		CLAY: Gray; moist, high plasticity, low permeability.	10.0	
0	7 7 6			15	CL		CLAY with trace sand: Gray; moist, med plasticity, low permeability.	15.0	10/20 Filter Sand
0	6 6 7			20	SW		SAND (medium-fine): Gray, moist, non plastic, high permeability.	20.0	
0	15 17 18	MW4@2 5'		25	SW		SAND (fine): Gray, wet, non plastic, high permeability.	25.0	
0	3 6 7	MW4@3 0'		30				30.0	2" diameter schedule 40 PVC .010 slot size
									Bottom of Boring @ 33 ftg

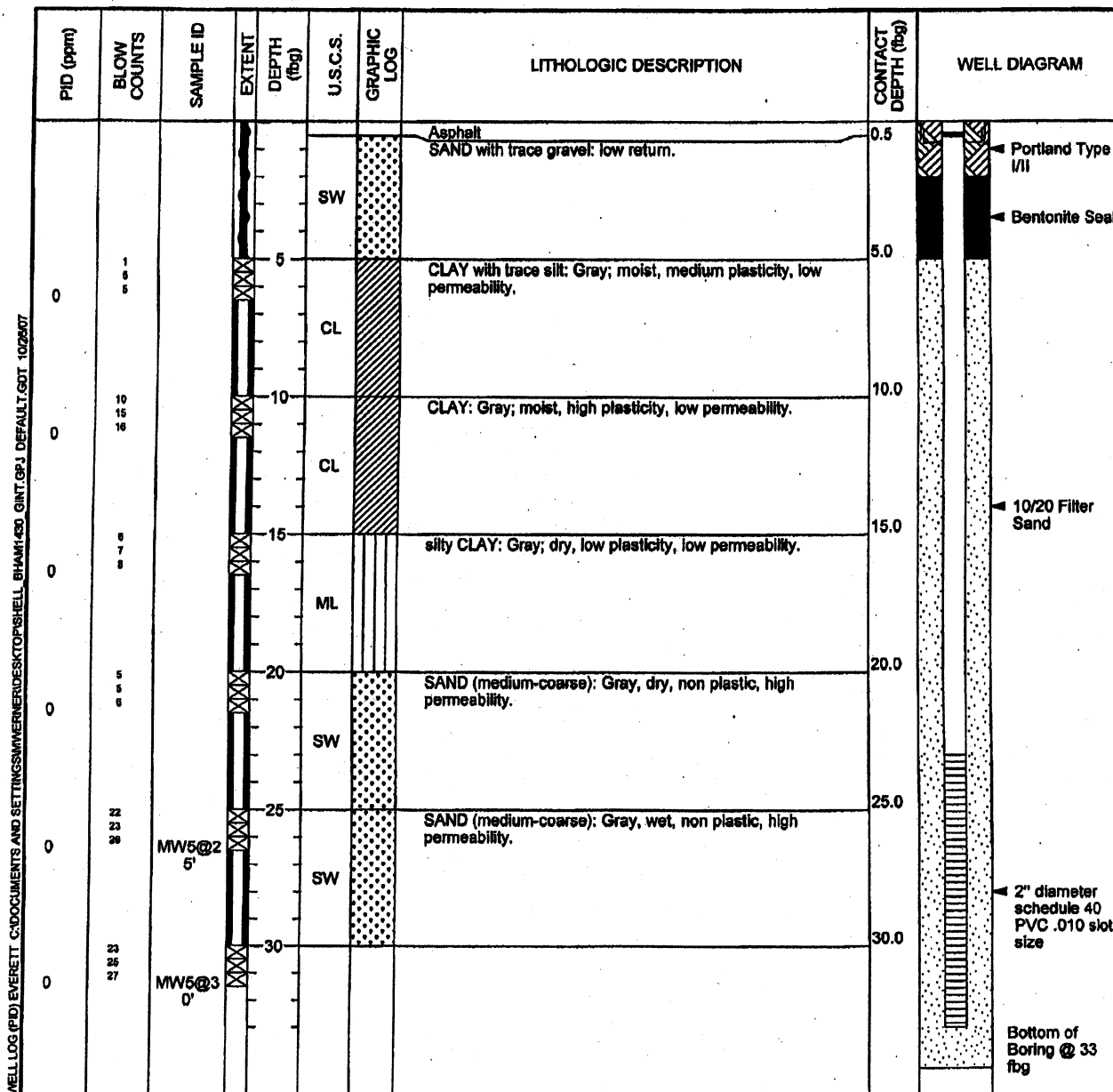
WELL LOG (PID) EVERETT C:\DOCUMENTS AND SETTINGS\MMERNER\DESKTOP\SHELL_BHAM430_GINT.GPJ DEFAULT.GOT 10/26/07



Conestoga-Rovers & Associates
526 Commerce Center - Building B
1420 80th Street SW, Suite A
Everett, WA 98203
Telephone: (425) 212-5100
Fax: (425) 212-5199

BORING/WELL LOG

CLIENT NAME	Shell Oil Products US	BORING/WELL NAME	MW-5
JOB/SITE NAME	LYNN8808	DRILLING STARTED	31-Jul-07
LOCATION	1430 Cornwall Ave, Bellingham, WA	DRILLING COMPLETED	01-Aug-07
PROJECT NUMBER	241736	WELL DEVELOPMENT DATE (YIELD)	01-Aug-07
DRILLER	Cascade Drilling	GROUND SURFACE ELEVATION	Not Surveyed
DRILLING METHOD	Hollow-stem auger	TOP OF CASING ELEVATION	Not Surveyed
BORING DIAMETER	8"	SCREENED INTERVAL	23 to 33 fbg
LOGGED BY	Bryan Palmer	DEPTH TO WATER (First Encountered)	NA
REVIEWED BY	T. Crotwell	DEPTH TO WATER (Static)	NA
REMARKS			

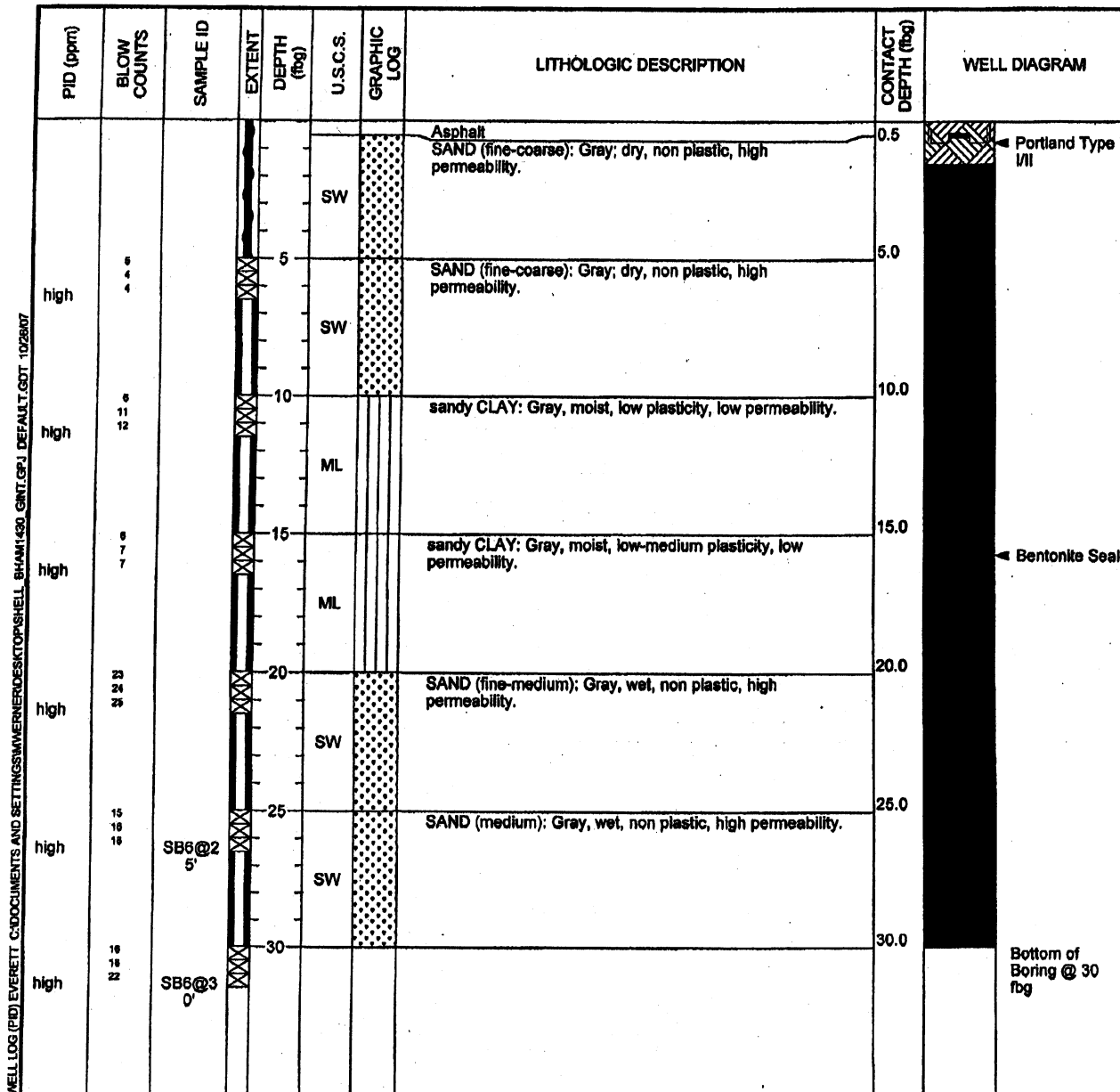




Conestoga-Rovers & Associates
526 Commerce Center - Building B
1420 80th Street SW, Suite A
Everett, WA 98203
Telephone: (425) 212-5100
Fax: (425) 212-5199

BORING/WELL LOG

CLIENT NAME	Shell Oil Products US	BORING/WELL NAME	SB-6
JOB/SITE NAME	LYNN6808	DRILLING STARTED	31-Jul-07
LOCATION	1430 Cornwall Ave, Bellingham, WA	DRILLING COMPLETED	01-Aug-07
PROJECT NUMBER	241736	WELL DEVELOPMENT DATE (YIELD)	01-Aug-07
DRILLER	Cascade Drilling	GROUND SURFACE ELEVATION	Not Surveyed
DRILLING METHOD	Hollow-stem auger	TOP OF CASING ELEVATION	Not Surveyed
BORING DIAMETER	8"	SCREENED INTERVAL	NA
LOGGED BY	Bryan Palmer	DEPTH TO WATER (First Encountered)	NA
REVIEWED BY	T. Crotwell	DEPTH TO WATER (Static)	NA
REMARKS			



APPENDIX E

TERRESTRIAL ECOLOGICAL EVALUATION



Voluntary Cleanup Program

Washington State Department of Ecology Toxics Cleanup Program

TERRESTRIAL ECOLOGICAL EVALUATION EXCLUSION FORM

Under the Model Toxics Control Act (MTCA), a Terrestrial Ecological Evaluation (TEE) is not required if the Site meets the criteria in WAC 173-340-7491 for an exclusion. If you determine that your Site does not require a TEE, please complete this form and submit it to the Department of Ecology (Ecology) at the appropriate time, either with your VCP Application or with a subsequent request for a written opinion. Please note that exclusion from the TEE does not exclude the Site from an evaluation of aquatic or sediment ecological receptors.

If your Site does not meet the criteria for exclusion under WAC 173-340-7491, then you may have to conduct a simplified TEE in accordance with WAC 173-340-7492 or a site-specific TEE in accordance with WAC 173-340-7493. If you have questions about conducting a simplified or site-specific TEE, please contact the Ecology site manager assigned to your Site or the appropriate Ecology regional office.

Step 1: IDENTIFY HAZARDOUS WASTE SITE AND EVALUATOR

Please identify below the hazardous waste site for which you are documenting an exclusion from conducting a TEE and the name of the person who conducted the evaluation.

Facility/Site Name: Jiffy Lube Site No. 2081

Facility/Site Address: 1430 Cornwall Avenue, Bellingham, WA

Facility/Site No: 87852737

VCP Project No.: NW2073

Name of Evaluator: Nick Acklam

Step 2: DOCUMENT BASIS FOR EXCLUSION

The bases for excluding a site from a terrestrial ecological evaluation are set forth in WAC 173-340-7491(1). Please identify below the basis for excluding your Site from further evaluation. Please check all that apply.

POINT OF COMPLIANCE – WAC 173-340-7491(1)(A)

- 1-☐ No contamination present at site.
- 2-☐ All contamination is 15 feet below ground level prior to remedial activities.
- 3-☐ All contamination is six feet below ground level and an institutional control has been implemented as required by WAC 173-340-440.
- 4-☐ All contamination is below a site-specific point of compliance established in compliance with WAC 173-340-7490(4)(b) with an institutional control implemented as required by WAC 173-340-440. ***Please provide documentation that describes the rationale for setting a site-specific point of compliance.***

BARRIERS TO EXPOSURE – WAC 173-340-7491(1)(b)

- 5-☐ All contaminated soil, is or will be, covered by physical barriers (such as buildings or paved roads) that prevent exposure to plants and wildlife and an institutional control has been implemented as required by WAC 173-340-440. ***An exclusion based on future land use must have a completion date for future development that is acceptable to Ecology.***

Step 2: DOCUMENT BASIS FOR EXCLUSION continued

UNDEVELOPED LAND – WAC 173-340-7491(1)(c)

“Undeveloped land” is land that is not covered by building, roads, paved areas, or other barriers that would prevent wildlife from feeding on plants, earthworms, insects, or other food in or on the soil.

“Contiguous” undeveloped land is an area of undeveloped land that is not divided into smaller areas of highways, extensive paving, or similar structures that are likely to reduce the potential use of the overall area by wildlife.

- There is less than one-quarter acre of contiguous undeveloped land on or within 500 feet of any area of the Site and any of the following chemicals is present: chlorinated dioxins or furans, PCB mixtures, DDT, DDE, DDD, aldrin, chlordane, dieldrin, endosulfan, endrin, heptachlor, heptachlor epoxide, benzene hexachloride, toxaphene, hexachlorobenzene, pentachlorophenol, or pentachlorobenzene.
- 6- ☐ For sites not containing any of the chemicals mentioned above, there is less than one-and-a-half acres of contiguous undeveloped land on or within 500 feet of any area of the Site.
- 7- ☒

BACKGROUND CONCENTRATIONS – WAC 173-340-7491(1)(d)

- 8- ☐ Concentrations of hazardous substances in soil do not exceed natural background levels as described in WAC 173-340-200 and 173-340-709.

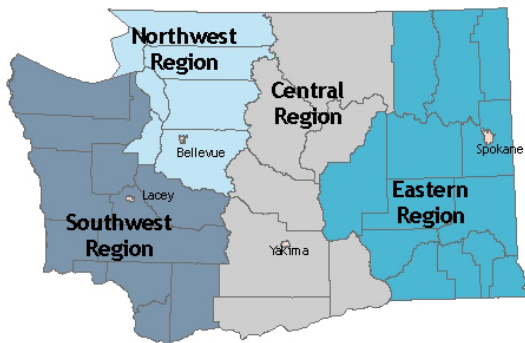
Step 3: PROVIDE EXPLANATION FOR EXCLUSION (IF NECESSARY)

The site is fully paved with asphalt or concrete. None of the chemicals listed in point 6 (above) are present at the site and there is less than one-and-one-half acres of contiguous undeveloped land on or within 500 feet of the any area of the Site (see attached map).

Attach additional pages if necessary.

Step 4: SUBMITTAL

Please mail your completed form to Ecology at the appropriate time, either with your VCP Application or with a subsequent request for a written opinion. If you complete the form after you enter the VCP, please mail your completed form to the Ecology site manager assigned to your Site. If a site manager has not yet been assigned, please mail your completed form to the Ecology regional office for the County in which your Site is located.



Northwest Region:

Attn: Sara Maser
3190 160th Ave. SE
Bellevue, WA 98008-5452

Central Region:

Attn: Mark Dunbar
15 W. Yakima Ave., Suite 200
Yakima, WA 98902

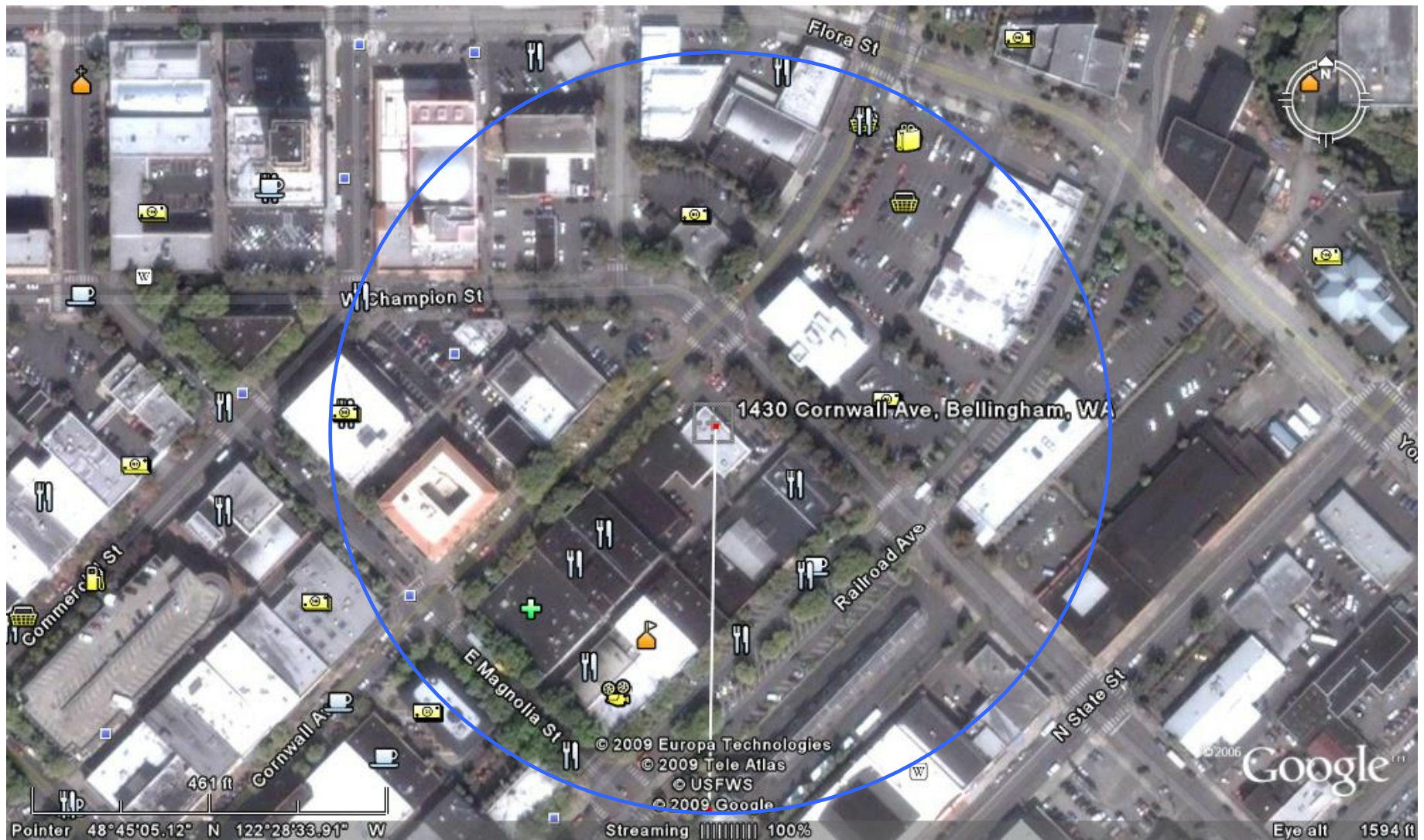
Southwest Region:

Attn: Scott Rose
P.O. Box 47775
Olympia, WA 98504-7775

Eastern Region:

Patti Carter
N. 4601 Monroe
Spokane WA 99205-1295

If you need this publication in an alternate format, please call the Toxics Cleanup Program at 360-407-7170. Persons with hearing loss can call 711 for Washington Relay Service. Persons with a speech disability can call 877-833-6341.



Aerial Map of 1430 Cornwall Avenue, Bellingham, WA - 500 foot radius