

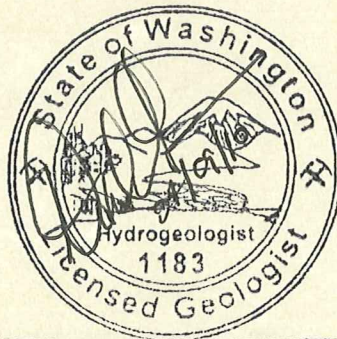
Independent Remedial Action Report

Comet Trailer Facility – Site ID #503
Yakima County Tax Parcel Numbers:
181301-22423 & 181301-23001,
Selah, WA

Prepared For:

Comet Trailer Corporation
P.O. Box 129
Selah, WA 98942

Prepared By:



DAVID L. GREEN



1705 S. 24th Ave.
Yakima, WA 98902

April 9, 2010

Executive Summary

The Comet Trailer facility is located at 501 South First Street, Selah, WA. During soil and groundwater investigations conducted during August 2004, approximately four (4) inches of Diesel #2 was discovered floating on groundwater within a groundwater monitoring well. Sage performed limited site characterization activities during February 2006 which found diesel range impacted soil and/or groundwater on the western portion of the property, adjacent to MW3 and MW5, with an aerial extent of approximately 26,750 square feet. Forensic analyses found medium boiling compounds indicative of diesel fuel No. 2 or heating oil, which has undergone substantial biological degradation. The release apparently resulted from a release at an independent historical truck refueling & bulk heating oil storage location operated by Leonardo Trucking. The site is currently regulated under Agreed Order No. DE 03 TCPCR-5877.

To reduce impacts to groundwater, Comet Trailer chose to excavate accessible diesel impacted soil and temporarily store it on site. Upon receiving approval from the Department of Ecology, Hi-Point Excavation LLC (HPE) excavated approximately 5280 cubic yards of diesel impacted soil on January 2 - February 24, 2010. Approximately 3,000 cubic yards of apparently clean overburden soil was excavated and stockpiled on-site for use as backfill material. HPE transported impacted soil to a temporary storage area, located on the northwestern portion of the property. To facilitate complete removal of impacted soil, MW3 and MW5 were removed completely by excavation.

Sage collected soil samples from within the remedial excavation for field screening and/or laboratory analysis to determine the adequacy of soil remediation activities. For field screening, Sage used Thin Layer Chromatography (TLC). Sage submitted twenty-two (22) soil samples and one (1) groundwater sample to Friedman & Bruya, Inc. (FBI), Seattle, WA for independent laboratory analysis to characterize the final remedial excavation. Sage collected twelve (12) samples of the apparently clean overburden for characterization to evaluate its suitability for use as remedial excavation backfill.

FBI analysis of remedial excavation characterization soil samples found no detectable diesel or motor oil range petroleum hydrocarbons. Comparison of the FBI analytical results with the *Method A Soil Cleanup Levels of WAC 173-340-740* indicated that no additional impacted soil removal is required at the release location. However, FBI analysis of the groundwater sample found diesel range petroleum hydrocarbons at a concentration of 52,000 µg/L and motor oil range petroleum hydrocarbons at a concentration of 2,600 µg/L. Comparison of the FBI analytical results with the *Method A Groundwater Cleanup Levels of WAC 173-340-720* indicates that remedial action is required to reduce diesel and motor oil range petroleum hydrocarbons to acceptable concentrations. Analysis of twelve (12) overburden soil stockpiles found no detectable diesel and/or motor oil range petroleum hydrocarbons. Based upon the FBI analyses, the overburden soil is suitable for use as excavation backfill.

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- Appendix B: Soil & Groundwater Sampling Methods
- Appendix C: Daily Field Sampling Log
- Appendix D: FBI Analytical Data Reports
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1.0 Introduction

1.1 Purpose

The purpose of this report is to describe findings and actions taken associated with remediation of soil impacted by a historic diesel release at the former Comet Trailer facility located in Selah, Washington. The release apparently resulted from a release at an independent historical truck refueling & bulk heating oil storage location operated by Leonardo Trucking. The limited remediation project was performed to comply with regulatory requirements established by the Washington State Department of Ecology (WSDOE).

1.2 Scope of Work

Hi-Point Excavation LLC (HPE), Yakima, WA provided excavating and soil transportation services. Sage Earth Sciences, Inc. (Sage) provided field screening, soil and groundwater sampling services during the soil excavation process. Soil and groundwater samples were submitted to Friedman and Bruya, Inc. (FBI), Seattle, WA for independent laboratory analysis.

2.0 Background Information

2.1 Site Location

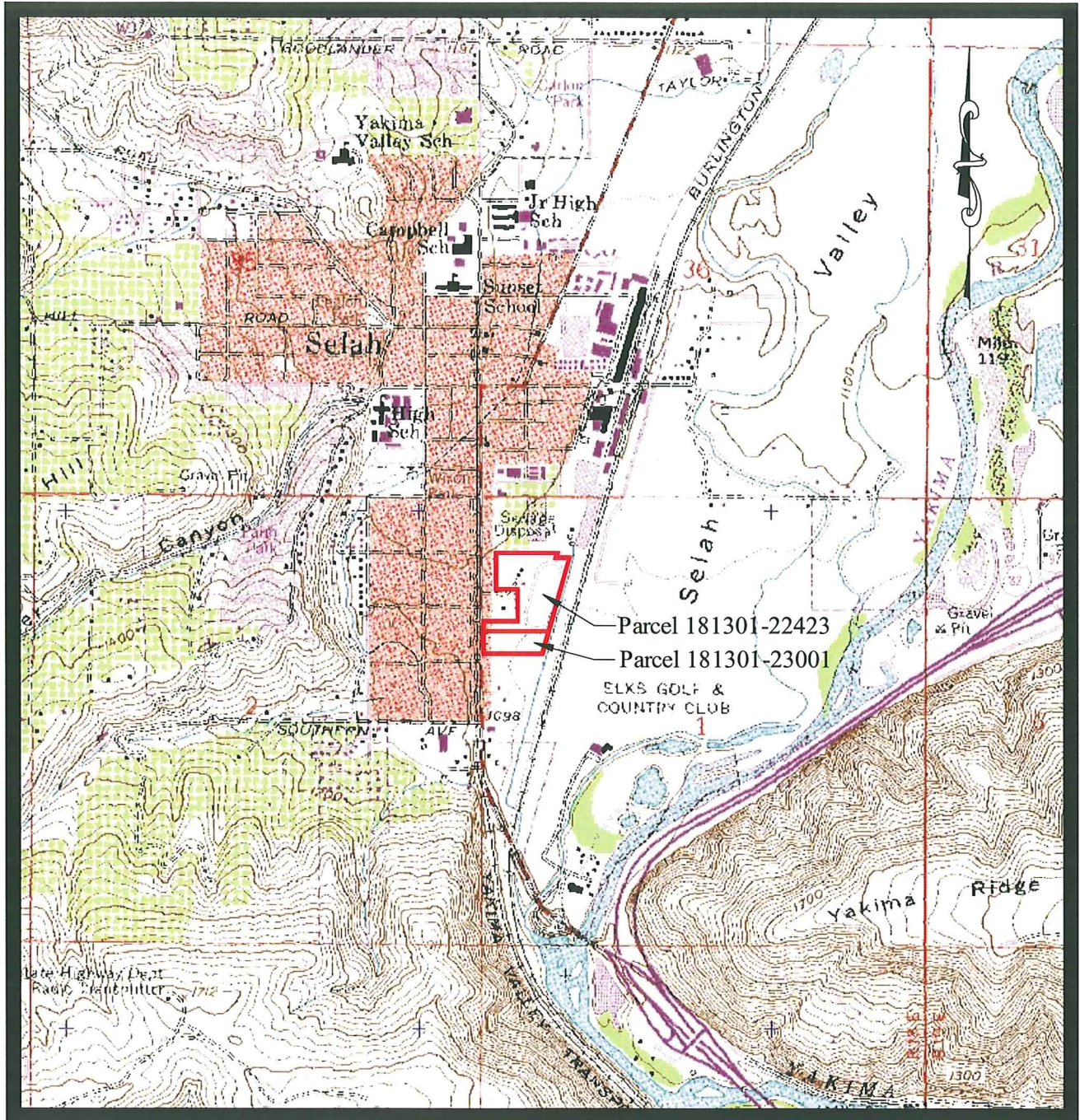
The Comet Trailer facility is located at 501 South First Street, Selah, WA. It is situated within the W 1/2 of the NW 1/4, Section 01, Township 13 North, Range 18 East, Willamette Meridian. Project activities were conducted on Yakima Tax Parcel Numbers: 181301-22423 & 181301-23001. The approximate site latitude is 46° 38' 46.1" and the approximate longitude is 120° 31' 42.9". Figure 1 shows the location of the site.

2.2 Site Description & Adjacent Land Use

The facility is owned by:

Comet Trailer Corporation
P.O. Box 129
Selah, WA 98942
(509) 697-7262

The authorized site contact is Mrs. Terra Rudick.



Graphic Scale
Contour Interval - 20 Feet

Figure 1. Site Location Map

As shown by Figure 2, the eastern portion of Parcel Number 181301-22423 is occupied by the former Comet Trailer manufacturing building, which currently houses the following commercial businesses: Tree Top & Ross Plant Ingredient Division Warehouse, Graham Packaging and Yakama Juice. The area surrounding the building is covered by asphalt surface. The northwestern portion of this parcel is occupied by a gravel parking lot. The southwestern portion of this parcel is occupied by a storage buildings and a residential dwelling. These western areas are separated from the asphalted area by fencing.

The eastern portion of Parcel Number 181301-23001 is occupied by an asphalt parking and equipment storage area. The western portion of this parcel is occupied by a strip mall, an apartment complex and a residential dwelling. Goodwill Industries and small commercial businesses lie west of the northern portion of Parcel Number 181301-22423. South First Street lies immediately west of the Parcel Number 181301-23001 and the southern portion of Parcel Number 181301-22423.

The local topography slopes gently southeast. A drainage ditch, which discharges effluent from the municipal sewer treatment plant, lies immediately east of the subject parcels. The drainage ditch discharges into the Yakima River, which lies approximately three-tenths of a mile southeast of the site.

1.2 Previous Work

During the course of Environmental Site Assessment activities, Kleinfelder, Inc. directed installation of five (5) groundwater monitoring wells (MW-1 through MW-5) on the subject site during March of 1995. The wells were installed by Cascade Drilling, Inc. Monitoring well locations are shown by Figure 2.

During soil and groundwater investigations conducted during August 2004, Technico Environmental Services of Kennewick, WA discovered approximately four (4) inches of Diesel #2 floating on groundwater within MW-3.

Sage performed limited site characterization activities as documented in Sage's *Limited Free Product Removal & Site Characterization Report, February 26, 2006*. Field observations and FBI analytical results for soil and groundwater samples collected from exploratory test pits indicated that diesel range impacted soil and/or groundwater, requiring remedial action, was limited to an aerial extent of approximately 26,750 square feet, as shown by Figure 3.

Sage collected a sample of the petroleum product on July 30, 2008 and submitted it to FBI for forensic evaluation. The FBI analyses found medium boiling compounds indicative of diesel fuel No. 2 or heating oil, which has undergone substantial biological degradation. Additional analysis indicated that if the product was used as road fuel, it was produced prior to October 1, 1993, when the EPA mandated the limit of sulfur to 0.05 percent.

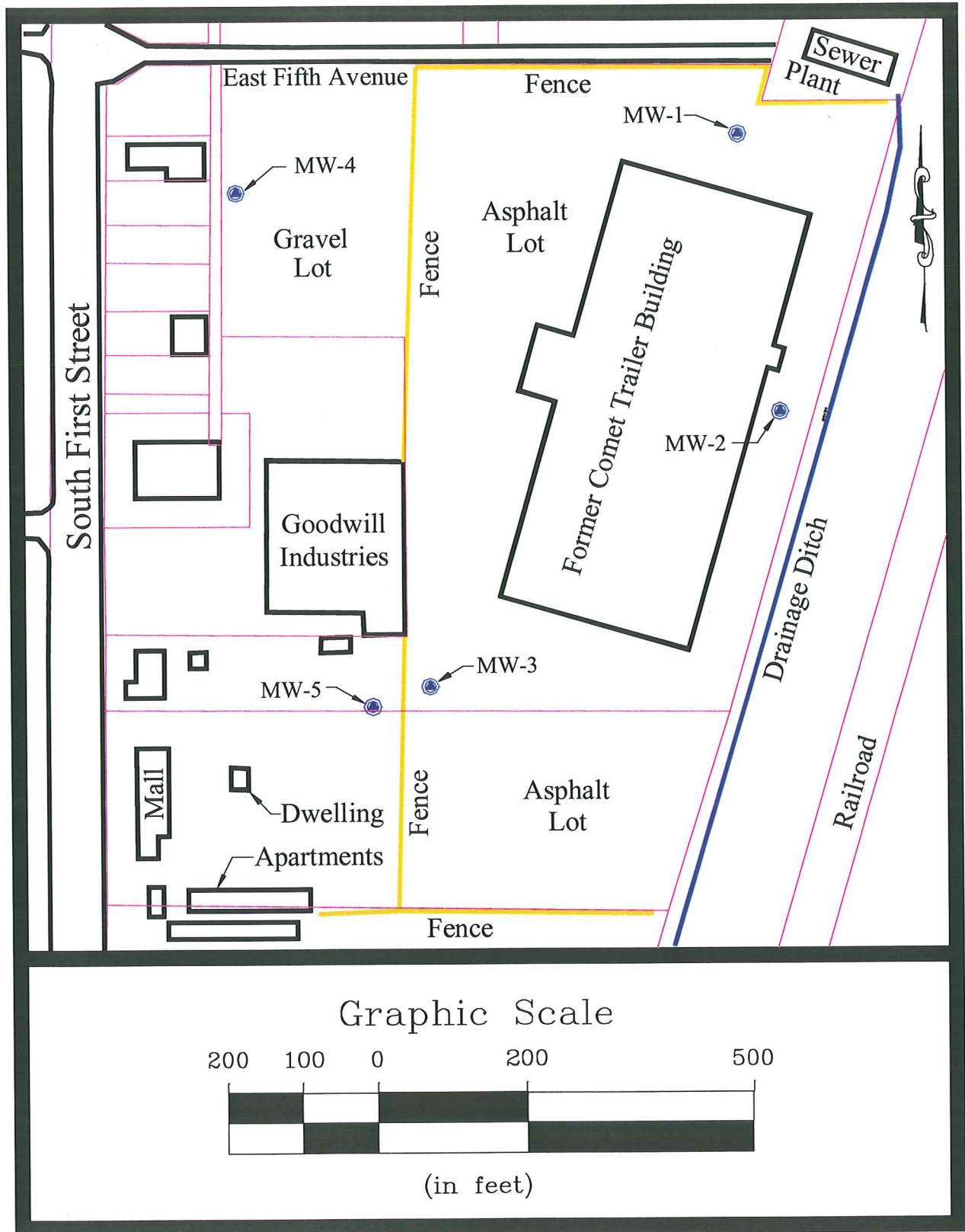


Figure 2. Site Vicinity & Well Location Map

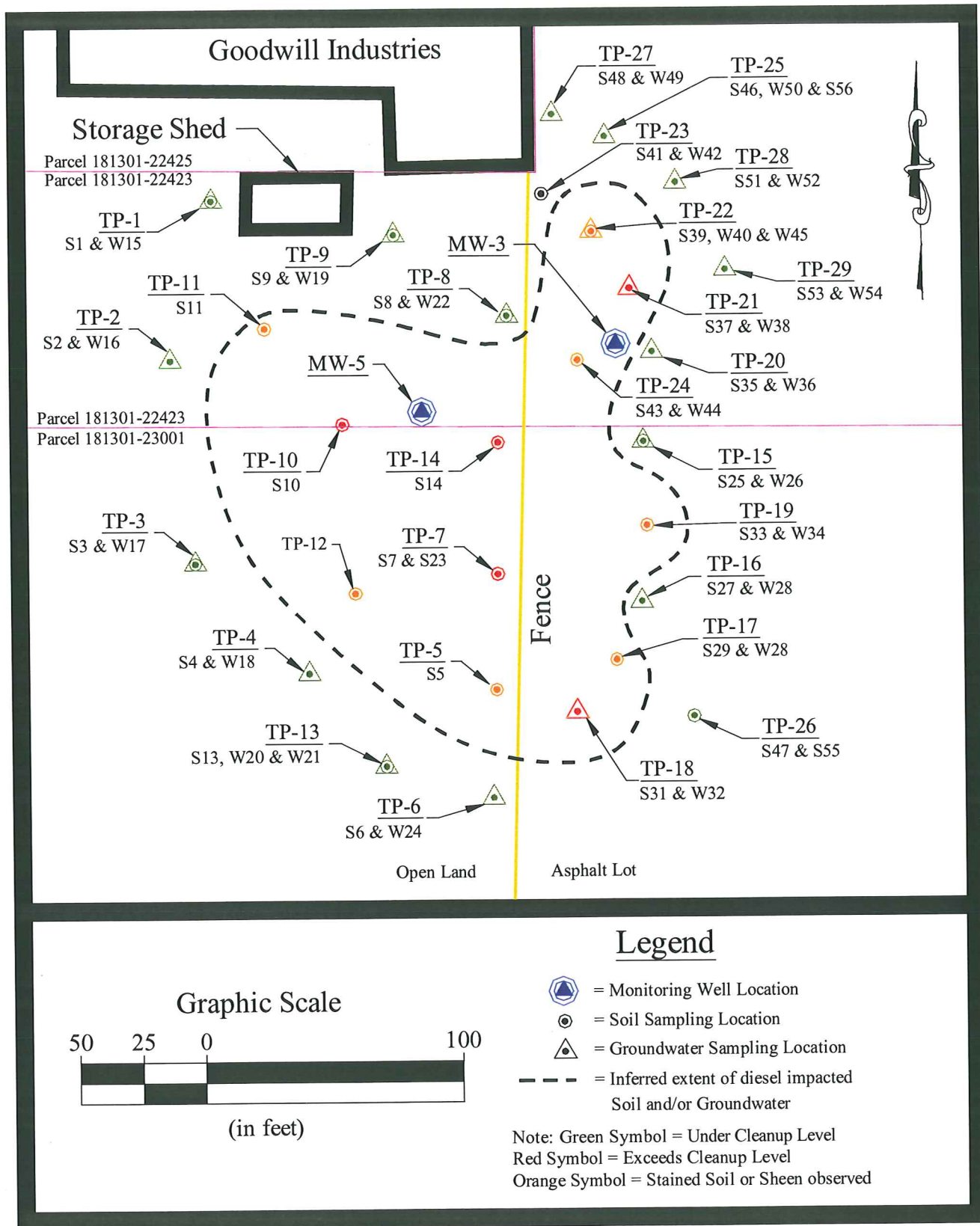


Figure 3. Inferred Extent of Impacted Soil & Groundwater, February 2006

2.4 Soils Description

The majority of soil encountered west of the fence consisted of medium brown, slightly pebbly, clayey silt. This soil unit is classified as “ML” according to the Unified Soil Classification System (USCS). Soil located near, and east of the fence also exhibited poorly sorted, river gravels up to approximately six (6) inches in diameter underlying the silt. The surface of the gravel unit lies at depths ranging from six (6.0) feet Below Ground Surface (BGS) to nine (9.0) feet BGS, extending to the floor of the excavation, which was established to a depth of nine (9.0) feet BGS. This soil unit is classified as “GP” according to the USCS.

2.5 Hydrogeology

Groundwater was encountered within the remedial excavation at a depth of approximately five and one-half (5.5) feet BGS. Previous groundwater monitoring activities indicate the local groundwater gradient to be approximately 0.002 ft/ft up from the northwest to the southeast, bearing approximately E 15° S (or on an azimuth scale, 105°). Additional determination of site hydrogeologic characteristics was not included in Sage's scope of work for this project.

3.0 Independent Remedial Actions

Prior to initiating field remediation activities, Sage obtained approval from the Washington State Department of Ecology to remove the impacted soil and stockpile it at the site in accordance with Agreed Order No. DE 03 TCPCR-5877 (see Appendix A). Hi-Point Excavation LLC (HPE) provided excavating and impacted soil transport services on January 2 - February 24, 2010. Rodney L. Heit, an environmental assessor licensed by the International Code Council, provided technical direction for diesel impacted soil removal. Sage utilized Thin Layer Chromatography (TLC) for field screening to evaluate when impacted soil removal activities were adequate. Sage collected soil and water samples using methods described by Appendix B. Sample descriptions are documented by the *Daily Field Sampling Logs*, included as Appendix C. Sage submitted the soil and groundwater samples to Friedman and Bruya, Inc. (FBI), Seattle, WA for independent laboratory analysis. Since previous work had identified the contaminant of concern to be Diesel #2, FBI analyzed the samples by method NWTPH-Dx (Diesel Range Petroleum Hydrocarbons extended to include motor oil range petroleum hydrocarbons).

3.1 Remedial Excavation

HPE conducted petroleum impacted soil removal activities on January 2 – February 24, 2010. Petroleum stained soil was segregated from non-stained soil. HPE excavated approximately 3,000 cubic yards of non-stained overburden (Soil Stockpile #1) and 5,280 cubic yards of diesel impacted soil (Soil Stockpile #2). Apparently non-impacted soil was transported south of the remedial excavation for temporary storage. Diesel impacted soil was immediately transported to the on-site storage location, located on the northwest portion of the property. To facilitate complete removal of petroleum impacted soil, HPE removed Monitoring Well 3 (MW3) and Monitoring Well 5 (MW5) by excavating them completely.

When field screening with Thin Layer Chromatography (TLC) indicated that diesel impacted soil removal was adequate, Sage collected thirty-eight (38) soil samples (CT-0310-S1 through CT-0310-S38) from the sidewalls and floor of the remedial excavation for submission to FBI. To characterize the final remedial excavation, Sage selected twenty-two (22) soil samples (S1, S3, S5, S6, S13-S15, S17-S20, S22-S25, S27, S28, S30-S33) and one (1) sample of groundwater (W56) exposed at the floor of the final remedial excavation for FBI analysis. The selected sampling locations are shown by Figure 3.

FBI analysis of the soil samples found:

- No detectable (less than 50 mg/Kg) diesel range petroleum hydrocarbons and
- No detectable (less than 250 mg/Kg) motor oil range petroleum hydrocarbons.

Comparison of the analytical results (Appendix D) with the *Method A Soil Cleanup Levels of WAC 173-340-740* (Appendix E) indicates that no additional soil remediation is required within the final remedial excavation.

FBI analysis of the exposed groundwater sample found:

- diesel range petroleum hydrocarbons at a concentration of 52,000 µg/L and
- motor oil range petroleum hydrocarbons at a concentration of 2,600 µg/L.

Comparison of the FBI analytical results with the *Method A Groundwater Cleanup Levels of WAC 173-340-720* indicates that remedial action is required to reduce diesel and motor oil range petroleum hydrocarbons in groundwater to acceptable concentrations.

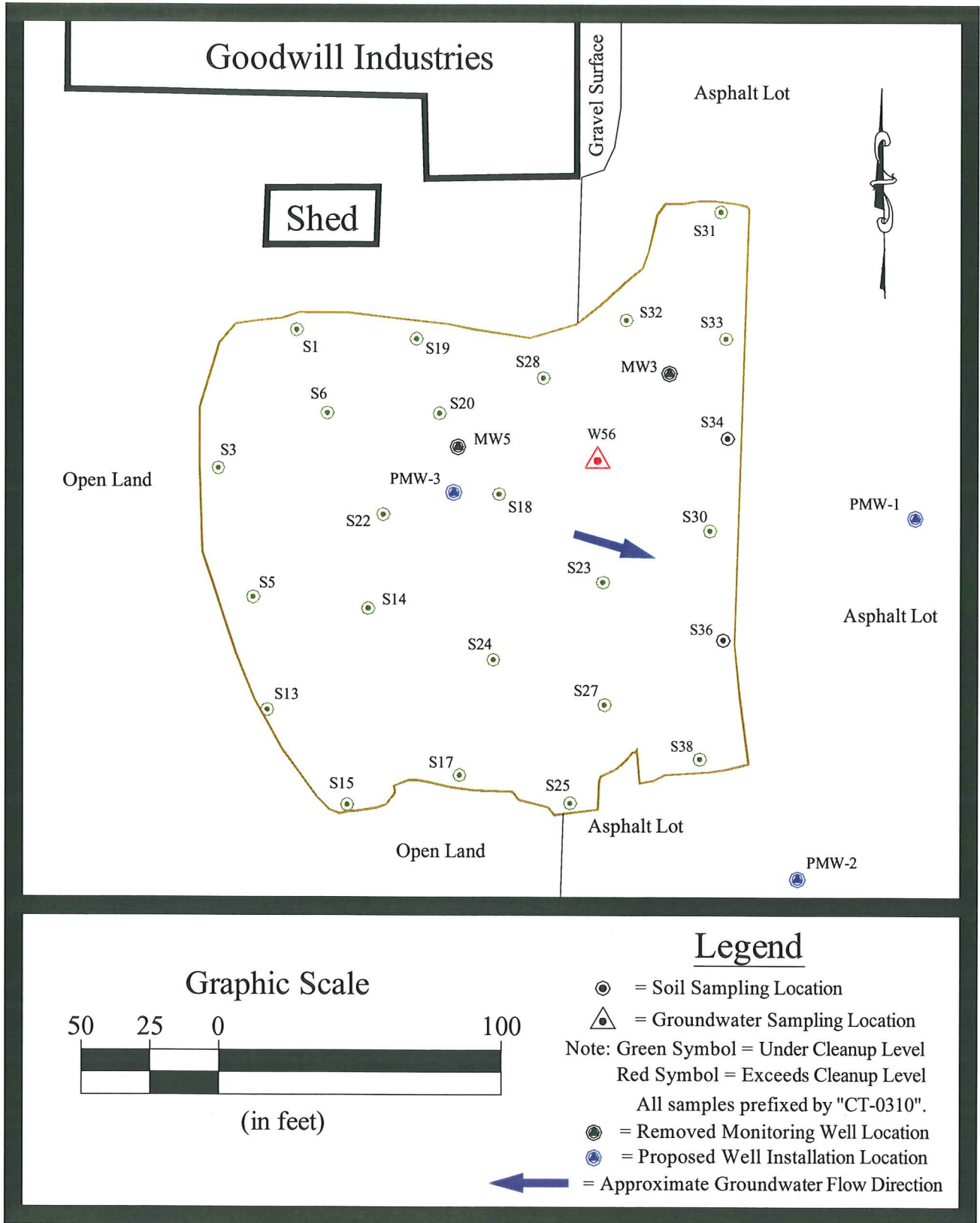


Figure 3. Remedial Excavation Characterization Sampling & Proposed Well Locations

4.0 Project Generated Wastes

4.1 Soil Stockpile #1

Approximately 3,000 cubic yards of apparently clean overburden was generated during remedial excavation activities (Soil Stockpile #1). Sage collected twelve (12) samples (CT-0310-SP39 through CT-0310-SP50) from Soil Stockpile #2. Sage submitted the samples to FBI for independent laboratory analysis. The FBI analyses (see Appendix D) found:

- No detectable (less than 50 mg/Kg) diesel range petroleum hydrocarbons and
- No detectable (less than 250 mg/Kg) motor oil range petroleum hydrocarbons.

The FBI analyses found no diesel or motor oil range petroleum hydrocarbons in excess of the *Method A Soil Cleanup Levels of WAC 173-340-740* (Appendix E). Based upon the FBI analyses, the overburden soil is suitable for use as excavation backfill.

4.2 Soil Stockpile #2

Soil Stockpile #2 is composed of approximately 5,280 cubic yards of diesel impacted soil generated during soil remediation activities. Sage collected no soil samples from this stockpile since analysis of soil samples collected during previous investigations found diesel and total recoverable petroleum hydrocarbons at concentrations up to 16,000 mg/Kg in stained soil. This soil stockpile was placed upon, and covered by a plastic liner for temporary storage on the northwest portion of the property pending treatment and/or disposal.

5.0 Conclusions

Based upon our field observations and independent laboratory analysis, diesel impacted soil has been adequately removed. However, FBI analysis of a sample of exposed groundwater (CT-0310-W56), collected from within the final remedial excavation, indicate that site groundwater has been impacted by diesel and motor oil range petroleum hydrocarbons at concentrations exceeding the *Method A Groundwater Cleanup Levels of WAC 173-340-720*. Approximately 5,280 cubic yards of petroleum impacted soil was excavated and transported to an on-site storage location. This stockpile was placed upon, and covered by a plastic liner for temporary storage pending treatment and/or disposal. Approximately 3,000 cubic yards of apparently non-impacted overburden soil was generated during the impacted soil removal process. Based upon FBI analyses, the overburden soil is suitable for use as excavation backfill. The excavation will be backfilled with three (3) inch minus rock below the water table. Soil Stockpile #1 will be used for backfill above the water table.

6.0 Recommendations

6.1 Soil Stockpile #2

Sage understands that Comet Trailer is considering independent treatment of diesel impacted soil on their property. If this treatment method is chosen, Sage recommends:

- Obtain approval from the local environmental health department prior to treatment activities.
- The depth to groundwater at the treatment site should be greater than ten (10) feet.
- The soil should be spread to a maximum thickness of six (6) inches.
- Construct an impermeable barrier (dike) around the treatment area to prevent surface water runoff from contacting PCS.
- Restrict public access to the PCS treatment site.
- The soil should be tilled on a bi-monthly basis to provide adequate oxygen for microorganisms to metabolize the hydrocarbons.
- Irrigate the treatment site to provide for dust control and to maintain adequate soil moisture for microbial populations. However, the treatment area should not be over watered to the point of producing runoff and/or downward migration of petroleum hydrocarbons.
- Apply fertilizer high in nitrogen and phosphorous according to the manufacturers directions to enhance microbial metabolism of petroleum hydrocarbons.
- Cover the PCS during periods of high precipitation with a plastic liner.
- Soil samples should be collected after three (3) months of treatment to ensure adequate treatment progress and/or to determine if treatment activities are complete.

6.2 Groundwater Monitoring

A sample of groundwater, collected from the floor of the final remedial excavation indicated the presence of diesel and motor oil range petroleum hydrocarbons at concentrations exceeding the *Method A Groundwater Cleanup Levels of WAC 173-340-720*. In addition, prior to remedial activities, groundwater was found to be in contact with soil impacted by diesel and motor oil range petroleum hydrocarbons.

Sage recommends installing a minimum of three (3) groundwater monitoring wells in accordance with WAC 173-340-450 at the locations shown by Figure 3. The wells would be utilized for hydrogeologic investigation and monitoring to:

- Determine the extent of groundwater contamination,
- Ensure that the plume does not migrate off-site and
- Ensure that petroleum concentrations are reduced to acceptable levels.

Sage recommends installing two (2) groundwater monitoring wells (PMW-1 & PMW-2) downgradient of the remedial excavation to evaluate the extent of groundwater contamination, and to facilitate quarterly groundwater sampling activities necessary to evaluate the need for groundwater remediation. Sage recommends establishing another groundwater monitoring well (PMW-3) within the area of the remedial excavation to monitor diesel/motor oil range petroleum hydrocarbon concentrations in the area of the release.

The wells must be surveyed to allow determination of the precise groundwater flow direction. The site specific groundwater flow direction must be determined to ensure that a minimum of one (1) groundwater monitoring well is located downgradient of the remediation site. Please note that additional wells may be required to determine the extent of groundwater contamination. A sufficient quantity of monitoring wells must be installed to determine groundwater flow direction, gradient, and extent of groundwater contamination. Upon determining the extent of groundwater contamination, a remedial action plan could be developed to reduce contaminant concentrations to acceptable levels, if necessary.

Upon completion of monitoring well installation activities, Sage recommends implementing a groundwater-monitoring program to monitor groundwater gradient (flow direction) as well as concentrations of diesel and motor oil range petroleum hydrocarbons. Sage recommends collection and analysis of groundwater samples on a quarterly schedule (every three months) until petroleum hydrocarbon concentrations do not exceed risk based “Cleanup Levels” established in WAC 173-340-720 for four consecutive quarters. Groundwater level measurements should be performed at this time to ensure that a downgradient monitoring well is in place in the case of changing groundwater flow directions.

7.0 Limitations

In performance of this project, Sage Earth Sciences has conducted its activities in accordance with generally accepted professional consulting principles and practices. No other warranty, express or implied, is made. The conclusions and recommendations are based upon our field observations, field screening, and independent laboratory analyses. Since the scope of work for this project is confined to limited remedial excavation characterization, this document does not imply that the property is free of other environmental constraints. This report is solely for the use and information of our client. Any reliance on this report by a third party is at such party's sole risk.

Opinions and recommendations contained in this report apply to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and other parameters indicated. Sage Earth Sciences, Inc. is not responsible for the impacts of changes in environmental standards, practices, or regulations subsequent to the performance of services. Sage Earth Sciences, Inc. does not warrant the accuracy of information supplied by others, nor use of segregated portions of this report. Sage Earth Sciences, Inc. assumes no liability for conditions we were not authorized to evaluate, or conditions not generally recognized as predictable when services were performed.

Appendix A



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

15 W Yakima Ave, Ste 200 • Yakima, WA 98902-3452 • (509) 575-2490

December 7, 2009

Mr. David L. Green
Sage Earth Science, Inc.
1705 S 24th Avenue
Yakima, Washington 98902

RE: Proposed Removal of Diesel-Impacted Soil at the Comet Trailer Corp. Site in Selah,
Washington, Ecology Facility/Site ID # 503

Dear Mr. Green:

The purpose of this letter is to address your proposal regarding contaminated soil removal at the Comet Trailer Corp. site (Site) in Selah, Washington.

Agreed Order No. DE 03 TCPCR-5877 for the Site states that remedial actions conducted outside of those required by the Agreed Order may not occur at the Site without Department of Ecology approval. Your proposal to removal the impacted soil and stockpile it at the Site is approved.

As I mentioned in my phone call to you, I will be on maternity leave until February. I will call you when I return to schedule a meeting to discuss the removal activities and future actions at the Site.

Sincerely,

Brianne Plath
Site Manager
Toxics Cleanup Program

cc: Terra Ruddick, Owens Equipment



Appendix B

Soil Sampling Methodology

Soil samples were collected to characterize contaminant concentrations in site soils. Discrete sampling locations were chosen at locations considered representative of actual site conditions.

The methodology outlined below was used to collect excavation soil samples.

1. When using a backhoe bucket to collect samples, collect the sample from soil in the middle of the bucket, away from the metal sides of the bucket. Otherwise, immediately transfer the soil to the sample container, using the container itself to collect the sample. Using new disposable vinyl gloves, pack the soil tightly into the container to prevent the loss of volatile compounds. Ensure that the container is filled completely to exclude any airspace in the sample.
2. The sample container was labeled with a unique identification number, the analytical procedure to be used, the time/date of sample collection, and sample preservation method.
3. The sample was logged on the Chain-of-Custody form and the Daily Field Sampling Log.
4. All samples were placed in a field cooler containing blue ice to maintain the samples at $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$.
5. Soil samples were transported to the FBI laboratory in a shipping cooler packed with absorbent material and blue ice to maintain the cooler at $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$ during shipment.
6. The signed Chain-of-Custody forms were taped on the underside of the cooler lid in a sealed plastic bag.
7. The lid of the cooler was secured with strapping tape and custody seals were affixed across the lid/cooler interface. Appropriate waybills were taped to the top of the cooler.
8. The samples were transported to the FBI laboratory via commercial carrier.

Excavation Groundwater Sampling Methodology

To collect groundwater samples, Sage used the methodology outlined below.

1. Select a new sample jar with an adequate volume for the appropriate analysis.
2. Using new vinyl gloves, immerse the sample container under the groundwater surface.
3. Replace the sample container cap underwater and invert to ensure there is no airspace in the sample.
4. Label the sample container with a unique identification number, the analytical procedure to be used, the time and date of sample collection and the name of the person collecting the sample.
5. Enter the sample on the Chain-of-Custody form and the Field Sampling Log.
6. Place the sample in wet ice to cool the sample to approximately four (4) degrees Celsius.
7. Place the samples in a shipping cooler packed with absorbent material and blue ice for shipment.
8. Secure the Chain-of-Custody form to the underside of the cooler lid in a sealable plastic bag with tape.
9. Upon completion of sampling activities, secure the lid of the cooler with strapping tape and affix custody seals across the lid/cooler interface. Place appropriate shipping waybills atop the cooler.
10. Ship the samples to the laboratory via commercial courier.

Appendix C



Field Crew Rod Hunt

Date 02-08-10

Project # CT-0310

Page 1 of

Time	Sample #	Sample Location	Matrix	Staining	Odor	Depth	TOV	TLC	
8:09	CT-0310-S1	EXC. N.W. CORN FLOOR-WALL I.F.	Soil	None	None	6-0"	NA	ND	
8:17	CT-0310-S2	EXC. N.W.	Soil	None	None	6-1"		ND	
9:05	CT-0310-S3	EXC West side		None	None	6-0"		ND	
9:21	CT-0310-S4	EXC West side		None	None	5-11"		N/D	
9:39	CT-0310-S5	EXC S. West side		None	None	6-0"		N/D	
10:04	CT-0310-S6	EXC. N.W. Midway Current		None	None	6-0"		N/D	
10:41	CT-0310-S7	EXC. West midway Current		None	None	6-9"		N/D	
3:35	CT-0310-SP8	PCS stock pile North		Gray	6-9"	1-0"		NA	N/D
3:40	CT-0310-SP9	PCS Stock pile Central		Gray	Diesel	2-0"			↓
3:49	CT-0310-SP10	PCS Stock pile N Central		Blue	Diesel	1-0"			
4:01	CT-0310-SP11	PCS Stock pile N. East		Gray/Blue	Diesel	2-0"			
4:20	CT-0310-SP12	PCS Stock pile S.E.		Gray/Blue	Diesel	0-6"			

Ambient Vapors
TLC Standards

1000ppm Units
Diesel, 10,000ppm
Diesel



Field Crew Rod Leit Date 02-09-10

Project # CT-0310 Page 1 of 1

Time	Sample #	Sample Location	Matrix	Staining	Odor	Depth	TOV	TLC
9:05	CT-0310-S13	Floor Exc. west & south	SOIL	None	None	6-0'	NA	N.D
9:20	CT-0310-S14	Floor Exc. Centered west	SOIL	None	None	6-3'	↓	N.D
1:03	CT-0310-S15	Floor Exc. S.W. limits	SOIL	None	None	6-2'	↓	N.D

Ambient Vapors Units
 TLC Standards 1000 ppm diesel
 10,000 ppm diesel



Field Crew Rod Weir

Date 2-10-10

Project # CT-0310

Page 1 of 1

Time	Sample #	Sample Location	Matrix	Staining	Odor	Depth	TOV	TLC
8:00	CT-0310-516	South Central Exc Floor	Soil	None	None	6-0'	NA	N.D
8:20	CT-0310-517	S. Exc Limits Floor Wall I.F.	Soil	None	None	6-2'		ND
8:39	CT-0310-518	Exc. Central Floor Near RMW5	Soil	None	None	6-3'		ND
10:30	CT-0310-519	Exc NORTH Limits Floor	Soil	None	None	6-0'		N.D
2:05	CT-0310-520	Exc N. East Central Current	Soil	None	None	5-11'	↓	ND

Ambient Vapors
TLC Standards

Units
1000 ppm diesel
10,000 ppm diesel



Field Crew Rodney Heit Date 2-19-10

Project # CT-0310 Page 1 of 1

Time	Sample #	Sample Location	Matrix	Staining	Odor	Depth	TOV	TLC
10:40	CT-0310-S30	South East KFC Extent	Soil	None	None	5-0"	NA	N.D
11:10	CT-0310-S31	Northern Arm Extent. KFC.	Soil	None	None	4-10"	NA	N.D

Ambient Vapors _____ Units
 TLC Standards 1000 ppm diesel
10,000 ppm diesel



Field Crew Rod Heit Date 2-22-10

Project # CT-0310 Page 1 of 1

Time	Sample #	Sample Location	Matrix	Staining	Odor	Depth	TOV	TLC
8:35	CT-0310-532	NORTH EAST ARM PEGGING	SOIL	NONE	NONE	4-6"	NA	N.D
8:40	CT-0310-533	NORTH EAST East side EXC.	SOIL	NONE	NONE	4-8"	↓	N.D
8:55	CT-0310-534	Exc. East Wall Floor interface	SOIL	NONE	NONE	4-6"		N.D
9:15	CT-0310-535	Exc. - EASTERN Side floor	SOIL	NONE	NONE	4-5'		N.D
9:30	CT-0310-536	Exc. East Wall Floor interface	SOIL	NONE	NONE	4-8"		~30
9:41	CT-0310-537	Exc. S. EAST Side Floor	SOIL	NONE	NONE	4-9"		~50
9:50	CT-0310-538	SOUTH EAST EXC. EXTENT FLOOR	SOIL	NONE	NONE	5-0'		~20
10:05	CT-0310-SP39	Stackpile Pushed out South	SOIL	NONE	NONE	1-0'		N.D
10:15	CT-0310-SP40	Stackpile Pushed out East	SOIL	NONE	NONE	2-0'		N.D.
10:23	CT-0310-SP41	Stackpile Pushed out West	SOIL	NONE	NONE	1-0'		N.D.
10:31	CT-0310-SP42	Stackpile Pushed out North	SOIL	NONE	NONE	0-8"		N.D.
10:46	CT-0310-SP43	Stackpile Highstack South	SOIL	NONE	NONE	3-0"	N.D.	
10:59	CT-0310-SP44	" " North	SOIL	NONE	NONE	4-0"	N.D.	
11:05	CT-0310-SP45	" " East	SOIL	NONE	NONE	2-0"	↓	N.D

Ambient Vapors Units
 TLC Standards 1000 ppm diesel
10,000 ppm diesel



Field Crew Rod Heit

Date 2-24-10

Project # CT-0310

Page 1 of

Time	Sample #	Sample Location	Matrix	Staining	Odor	Depth	TOV	TLC
8:30	CT-0310-SP53	Cln Stack Pile High stack	Soil	Bluish black	None	1'-0"	NA	NA
8:25	CT-0310-SP54	Cln Stack Pile High stack South	Soil	None	None	2'-0"	NA	NA
8:10	CT-0310-SP55	Cln Stack Pile South lot	Soil	None	None	4'-0"	NA	NA
8:05	CT-0310-W56	Exc. Central East open Pit	Water	Shiny None	Diesel	5'-6"	NA	NA

Ambient Vapors _____ Units
 TLC Standards _____

Appendix D

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Charlene Morrow, M.S.
Yelena Aravkina, M.S.
Bradley T. Benson, B.S.
Kurt Johnson, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
TEL: (206) 285-8282
FAX: (206) 283-5044
e-mail: fbi@isomedia.com

February 18, 2010

Rodney Heit, Project Manager
Sage Earth Sciences, Inc.
1705 S 24th Ave
Yakima, WA 98902

Dear Mr. Heit:

Included are the results from the testing of material submitted on February 12, 2010 from the CT-0310, F&BI 002126 project. There are 5 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures
SES0218R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on February 12, 2010 by Friedman & Bruya, Inc. from the Sage Earth Sciences, Inc. CT-0310, F&BI 002126 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Sage Earth Sciences, Inc.</u>
002126-01	CT-0310-S1
002126-02	CT-0310-S2
002126-03	CT-0310-S3
002126-04	CT-0310-S4
002126-05	CT-0310-S5
002126-06	CT-0310-S6
002126-07	CT-0310-S7
002126-08	CT-0310-SP8
002126-09	CT-0310-SP9
002126-10	CT-0310-SP10
002126-11	CT-0310-SP11
002126-12	CT-0310-SP12
002126-13	CT-0310-S13
002126-14	CT-0310-S14
002126-15	CT-0310-S15
002126-16	CT-0310-S16
002126-17	CT-0310-S17
002126-18	CT-0310-S18
002126-19	CT-0310-S19
002126-20	CT-0310-S20

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 02/18/10
Date Received: 02/12/10
Project: CT-0310, F&BI 002126
Date Extracted: 02/12/10
Date Analyzed: 02/12/10

**RESULTS FROM THE ANALYSIS OF SOIL SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS
DIESEL AND MOTOR OIL
USING METHOD NWTPH-Dx**
Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C ₁₀ -C ₂₅)	<u>Motor Oil Range</u> (C ₂₅ -C ₃₆)	<u>Surrogate</u> (% Recovery) (Limit 67-127)
CT-0310-S1 002126-01	<50	<250	94
CT-0310-S3 002126-03	<50	<250	94
CT-0310-S5 002126-05	<50	<250	91
CT-0310-S6 002126-06	<50	<250	93
CT-0310-S13 002126-13	<50	<250	87
CT-0310-S14 002126-14	<50	<250	92
CT-0310-S15 002126-15	<50	<250	99
CT-0310-S17 002126-17	<50	<250	88
CT-0310-S18 002126-18	<50	<250	95
CT-0310-S19 002126-19	<50	<250	90

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 02/18/10
Date Received: 02/12/10
Project: CT-0310, F&BI 002126
Date Extracted: 02/12/10
Date Analyzed: 02/12/10

**RESULTS FROM THE ANALYSIS OF SOIL SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS
DIESEL AND MOTOR OIL
USING METHOD NWTPH-D_x**
Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C ₁₀ -C ₂₅)	<u>Motor Oil Range</u> (C ₂₅ -C ₃₆)	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 67-127)
CT-0310-S20 002126-20	<50	<250	85
Method Blank 00-190 MB	<50	<250	95

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 02/18/10
Date Received: 02/12/10
Project: CT-0310, F&BI 002126

**QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS
DIESEL EXTENDED USING METHOD NWTPH-Dx**

Laboratory Code: 002104-10 (Matrix Spike)

Analyte	Reporting Units	Spike Level	(Wet wt) Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	<50	95	95	78-126	0

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	92	70-127

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

A1 - More than one compound of similar molecule structure was identified with equal probability.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for this range fell outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte indicated may be due to carryover from previous sample injections.

d - The sample was diluted. Detection limits may be raised due to dilution.

ds - The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

dv - Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.

fb - Analyte present in the blank and the sample.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. The variability is attributed to sample inhomogeneity.

ht - Analysis performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of normal control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The result is below normal reporting limits. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.

jr - The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the compound indicated is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received in a container not approved by the method. The value reported should be considered an estimate.

pr - The sample was received with incorrect preservation. The value reported should be considered an estimate.

ve - Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

002126



CHAIN OF CUSTODY

1705 South 24th Avenue
Yakima, WA 98902
Phone (509) 834-2333
Fax (509) 834-2334
info@sage-earth-sciences.com

ME 2/22/10 205

Sampler: Rod Heit
Project ID: CT-0310
Location: Comet Tracker Site
Turn-around Time: 57 minutes
Sampler Signature: Rod Heit
Date: 02/03/10

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	Sample Size	# of Containers	NWTPH-HCID	NWTPH-Gx	NWTPH-Dx	Method 8260B	Method 8270	Method 6010	Methamphetamine (Methanol Solvent)	Asbestos by Bulk PLM	Lab Archive	Notes:
CT-0310-S1	01	02/02/10	8:09	Soil	Box	1			X						X	
CT-0310-S2	02		8:17			1			X						X	
CT-0310-S3	03		9:05			1			X						X	
CT-0310-S4	04		9:21			1			X						X	
CT-0310-S5	05		9:39			1			X						X	
CT-0310-S6	06		10:04			1			X						X	
CT-0310-S7	07		10:41			1			X						X	
CT-0310-S8	08		3:35			1			X						X	
CT-0310-S9	09		3:40			1			X						X	
CT-0310-SP10	10		3:49			1			X						X	
CT-0310-SP11	11		4:01			1			X						X	
CT-0310-SP12	12		4:20			1			X						X	

Laboratory Destination:

Friedman & Bryna, Inc.
3012 - 16th Avenue West
Seattle, WA 98119-2029
Phone (206) 285-8282
Fax (206) 283-5044

SIGNATURE	PRINTED NAME	COMPANY	DATE	TIME
<i>Rodney Heit</i>	RODNEY L HEIT	Sage Earth Sciences, Inc.	2-11-10	9:05 am
<i>Fiona Weiss</i>	HONG WEISS	EBI	2/12/10	8:50
	Received By			
	Relinquished By			
	Received By			

Samples received at *EBI*

002126



SAGEESI982D1

CHAIN OF CUSTODY
1705 South 24th Avenue
Yakima, WA 98902
Phone (509) 834-2333
Fax (509) 834-2334
info@sagee-earth-sciences.com

ME 2/12/10 C05

Sampler: Rodney Hill
Project ID: Comet Trailer
Location: Selah, WA
Turn-around Time: STORAGED
Sampler Signature: Rodney Hill
Date: 02-09-10 thru 02-10-10

Table with columns: Sample ID, Lab ID, Date Sampled, Time Sampled, Sample Type, Sample Size, # of Containers, NWTPH-HCID, NWTPH-Gx, NWTPH-Dx, Method 8260B, Method 8270, Method 6010, Methamphetamine (Methanol Solvent), Asbestos by Bulk PLM, Lab Archive, Notes.

Laboratory Destination:

Friedman & Bruya, Inc.
3012 - 16th Avenue West
Seattle, WA 98119-2029
Phone (206) 285-8282
Fax (206) 283-5044

Table with columns: SIGNATURE, PRINTED NAME, COMPANY, DATE, TIME. Includes rows for Relinquished By, Received By, Relinquished By, and Received By.

Samples received at 8°C

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Charlene Morrow, M.S.
Yelena Aravkina, M.S.
Bradley T. Benson, B.S.
Kurt Johnson, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
TEL: (206) 285-8282
FAX: (206) 283-5044
e-mail: fbi@isomedia.com

March 4, 2010

Rodney Heit, Project Manager
Sage Earth Sciences, Inc.
1705 S 24th Ave
Yakima, WA 98902

Dear Mr. Heit:

Included are the results from the testing of material submitted on February 25, 2010 from the CT-0310, F&BI 002238 project. There are 11 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures
SES0304R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on February 25, 2010 by Friedman & Bruya, Inc. from the Sage Earth Sciences, Inc. CT-0310, F&BI 002238 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Sage Earth Sciences, Inc.</u>
002238-01	CT-0310-S21
002238-02	CT-0310-S22
002238-03	CT-0310-S23
002238-04	CT-0310-S24
002238-05	CT-0310-S25
002238-06	CT-0310-S26
002238-07	CT-0310-S27
002238-08	CT-0310-S28
002238-09	CT-0310-S29
002238-10	CT-0310-S30
002238-11	CT-0310-S31
002238-12	CT-0310-S32
002238-13	CT-0310-S33
002238-14	CT-0310-S34
002238-15	CT-0310-S35
002238-16	CT-0310-S36
002238-17	CT-0310-S37
002238-18	CT-0310-S38
002238-19	CT-0310-SP39
002238-20	CT-0310-SP40
002238-21	CT-0310-SP41
002238-22	CT-0310-SP42
002238-23	CT-0310-SP43
002238-24	CT-0310-SP44
002238-25	CT-0310-SP45
002238-26	CT-0310-SP46
002238-27	CT-0310-SP47
002238-28	CT-0310-SP48
002238-29	CT-0310-SP49
002238-30	CT-0310-SP50
002238-31	CT-0310-SP51
002238-32	CT-0310-SP52
002238-33	CT-0310-SP53
002238-34	CT-0310-SP54
002238-35	CT-0310-SP55
002238-36	CT-0310-W56

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE (continued)

The NWTPH-Dx relative percent difference between the laboratory control sample and laboratory control sample duplicate failed the acceptance criteria. The data were flagged accordingly.

All other quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/04/10
Date Received: 02/25/10
Project: CT-0310, F&BI 002238
Date Extracted: 02/25/10 and 03/01/10
Date Analyzed: 02/25/10, 02/26/10, and 03/01/10

**RESULTS FROM THE ANALYSIS OF SOIL SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS
DIESEL AND MOTOR OIL
USING METHOD NWTPH-Dx**

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C ₁₀ -C ₂₅)	<u>Motor Oil Range</u> (C ₂₅ -C ₃₆)	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 50-150)
CT-0310-S22 002238-02	<50	<250	91
CT-0310-S23 002238-03	<50	<250	91
CT-0310-S24 002238-04	<50	<250	90
CT-0310-S25 002238-05	<50	<250	90
CT-0310-S27 002238-07	<50	<250	96
CT-0310-S28 002238-08	<50	<250	94
CT-0310-S30 002238-10	<50	<250	92
CT-0310-S31 002238-11	<50	<250	90
CT-0310-S32 002238-12	<50	<250	94
CT-0310-S33 002238-13	<50	<250	90
CT-0310-S34 002238-14	<50	<250	97
CT-0310-S36 002238-16	<50	<250	88

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/04/10
 Date Received: 02/25/10
 Project: CT-0310, F&BI 002238
 Date Extracted: 02/25/10 and 03/01/10
 Date Analyzed: 02/25/10, 02/26/10, and 03/01/10

**RESULTS FROM THE ANALYSIS OF SOIL SAMPLES
 FOR TOTAL PETROLEUM HYDROCARBONS AS
 DIESEL AND MOTOR OIL
 USING METHOD NWTPH-Dx**

Results Reported on a Dry Weight Basis
 Results Reported as mg/kg (ppm)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C ₁₀ -C ₂₅)	<u>Motor Oil Range</u> (C ₂₅ -C ₃₆)	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 50-150)
CT-0310-S38 002238-18	<50	<250	93
CT-0310-SP39 002238-19	<50	<250	93
CT-0310-SP40 002238-20	<50	<250	93
CT-0310-SP41 002238-21	<50	<250	93
CT-0310-SP42 002238-22	<50	<250	94
CT-0310-SP43 002238-23	<50	<250	90
CT-0310-SP44 002238-24	<50	<250	92
CT-0310-SP45 002238-25	<50	<250	92
CT-0310-SP46 002238-26	<50	<250	92
CT-0310-SP47 002238-27	<50	<250	89
CT-0310-SP48 002238-28	<50	<250	93
CT-0310-SP49 002238-29	<50	<250	89

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/04/10
Date Received: 02/25/10
Project: CT-0310, F&BI 002238
Date Extracted: 02/25/10 and 03/01/10
Date Analyzed: 02/25/10, 02/26/10, and 03/01/10

**RESULTS FROM THE ANALYSIS OF SOIL SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS
DIESEL AND MOTOR OIL
USING METHOD NWTPH-Dx**

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C ₁₀ -C ₂₅)	<u>Motor Oil Range</u> (C ₂₅ -C ₃₆)	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 50-150)
CT-0310-SP50 002238-30	<50	<250	92
Method Blank 00-256 MB	<50	<250	87
Method Blank 00-257 MB	<50	<250	87
Method Blank 00-0281 MB	<50	<250	88

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/04/10
Date Received: 02/25/10
Project: CT-0310, F&BI 002238
Date Extracted: 02/26/10
Date Analyzed: 03/01/10

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS
DIESEL AND MOTOR OIL
USING METHOD NWTPH-Dx
Results Reported as ug/L (ppb)**

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C ₁₀ -C ₂₅)	<u>Motor Oil Range</u> (C ₂₅ -C ₃₆)	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 50-150)
CT-0310-W56 002238-36 1/10	52,000 jr	2,600 x, jr	ip
Method Blank 00-0261 MB	<50	<250	97

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/04/10
Date Received: 02/25/10
Project: CT-0310, F&BI 002238

**QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS
DIESEL EXTENDED USING METHOD NWTPH-Dx**

Laboratory Code: 002238-20 (Matrix Spike)

Analyte	Reporting Units	Spike Level	(Wet wt) Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	<50	107	103	63-146	4

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	104	79-144

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/04/10

Date Received: 02/25/10

Project: CT-0310, F&BI 002238

**QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS
DIESEL EXTENDED USING METHOD NWTPH-Dx**

Laboratory Code: 002231-05 (Matrix Spike)

Analyte	Reporting Units	Spike Level	(Wet wt) Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	<50	104	107	63-146	3

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	102	79-144

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/04/10
Date Received: 02/25/10
Project: CT-0310, F&BI 002238

**QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS
DIESEL EXTENDED USING METHOD NWTPH-Dx**

Laboratory Code: 002238-14 (Matrix Spike)

Analyte	Reporting Units	Spike Level	(Wet wt) Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	<50	101	98	63-146	3

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	98	79-144

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/04/10

Date Received: 02/25/10

Project: CT-0310, F&BI 002238

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS
DIESEL EXTENDED USING METHOD NWTPH-Dx**

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	95	120	69-135	23 vo

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

A1 - More than one compound of similar molecule structure was identified with equal probability.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for this range fell outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte indicated may be due to carryover from previous sample injections.

d - The sample was diluted. Detection limits may be raised due to dilution.

ds - The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

dv - Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.

fb - Analyte present in the blank and the sample.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. The variability is attributed to sample inhomogeneity.

ht - Analysis performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of normal control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The result is below normal reporting limits. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.

jr - The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the compound indicated is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received in a container not approved by the method. The value reported should be considered an estimate.

pr - The sample was received with incorrect preservation. The value reported should be considered an estimate.

ve - Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

002238



CHAIN OF CUSTODY
 1705 South 24th Avenue
 Yakima, WA 98902
 Phone (509) 834-2333
 Fax (509) 834-2334
 info@sage-earth-sciences.com

ME 02/25/10
 Sampler: Rodney Heit
 Project ID: CT-0310
 Location: comet, Selah
 Turn-around Time: St Andrews
 Sampler Signature: Rodney Heit
 Date: 2-18-10 - 2-19-10

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	Sample Size	# of Containers	NWTPH-HCID	NWTPH-Gx	NWTPH-Dx	Method 8260B	Method 8270	Method 6010	Methamphetamine (Methanol Solvent)	Asbestos by Bulk PLM	Lab Archive	Notes:
CT-0310-S21	01	2-18-10	10:25	Soil	Bot	1			*							* canceled per RH and Ds 2/25/10 MS
CT-0310-S22	02		10:30			1			*							
CT-0310-S23	03		10:50			1			*							
CT-0310-S24	04		10:59			1			*							
CT-0310-S25	05		11:10			1			*							
CT-0310-S26	06		2:00			1			*							
CT-0310-S27	07		2:15			1			*							
CT-0310-S28	08		2:47		Bot	1			*							
CT-0310-S29	09		3:30		Bot	1			*							
CT-0310-S30	10	2-19-10	10:40			1			*							
CT-0310-S31	11		11:10			1			*							
CT-0310-S32	12	2-22-10	8:35			1			*							
CT-0310-S33	13		8:40			1			*							
CT-0310-S34	14		8:55			1			*							

Laboratory Destination:
 Friedman & Bruya, Inc.
 3012 - 16th Avenue West
 Seattle, WA 98119-2029
 Phone (206) 285-8282
 Fax (206) 283-5044

SIGNATURE		PRINTED NAME		COMPANY		DATE	TIME
<i>Rodney Heit</i>	<i>Rodney Heit</i>	Rodney Heit	Sage Earth Sciences, Inc.	2-24-10	11:00 AM		
<i>Melany</i>	<i>Melany</i>	Melany		2/25/10	09:30		
<i>Received By</i>	<i>Received By</i>						
<i>Relinquished By</i>	<i>Relinquished By</i>						

Samples received at 2 °C

062238

ME 02/25/10

Day



SAMPLE CHAIN OF CUSTODY
 1705 South 24th Avenue
 Yakima, WA 98902
 Phone (509) 834-2333
 Fax (509) 834-2334
 info@sage-earth-sciences.com

Sampler: Rodney Heist
 Project ID: CT-0310
 Location: Comet, Selah
 Turn-around Time: STRADDLED
 Sampler Signature: Rodney Heist
 Date: 2-22-10 - 2-23-10

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	Sample Size	# of Containers	NWTPH-HCID	NWTPH-Gx	NWTPH-Dx	Method 8260B	Method 8270	Method 6010	Methamphetamine (Methanol Solvent)	Asbestos by Bulk PLM	Lab Archive	Notes:
CT-0310-535	15		9:15	Soil	1/oz	1			*							
CT-0310-536	16		9:30			1			*							
CT-0310-537	17		9:41			1			X							
CT-0310-538	18		9:50			1			X							
CT-0310-539	19		10:05			1			X							
CT-0310-540	20		10:15			1			X							
CT-0310-541	21		10:23			1			X							
CT-0310-542	22		10:31			1			X							
CT-0310-543	23		10:46			1			X							
CT-0310-544	24		10:59			1			X							
CT-0310-545	25		11:05			1			X							
CT-0310-546	26	2-23-10	12:01			1			X							
CT-0310-547	27		12:30			1			X							
CT-0318-548	28		12:36			1			X							

Laboratory Destination:

Seattle Asbestos Test
 19711 Scriber Lake Road, Suite D
 Lynnwood, WA 98036
 (425) 673-9850
 Fax (425) 673-9810

	SIGNATURE	PRINTED NAME	COMPANY	DATE	TIME
Relinquished By	<u>Rodney Heist</u>	<u>Rodney Heist</u>	Sage Earth Sciences, Inc.	2-24-10	11:00 AM
Received By	<u>my [unclear]</u>	<u>Nihan Pham</u>	FEBI	2/25/10	0930
Relinquished By					
Received By					

Samples received at 2 °C

002238



CHAIN OF CUSTODY

1705 South 24th Avenue
Yakima, WA 98902
Phone (509) 834-2333
Fax (509) 834-2334
info@sage-earth-sciences.com

ME 02/25/10

Doc

Sampler: *Rodney West*
Project ID: *CT-0510*
Location: *Conestoga School*
Turn-around Time: *Standard*
Sampler Signature: *Rodney West*
Date: *2-23-10* - 2-24-10

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	Sample Size	# of Containers	NWTPH-HCID	NWTPH-Gx	NWTPH-Dx	Method 8260B	Method 8270	Method 6010	Methamphetamine (Methanol Solvent)	Asbestos by Bulk PLM	Lab Archive	Notes:
CT-0310-SP19	24	2-23-10	12:42	Soil	4oz	1			X							
CT-0310-SP50	30		1:05			1			X							
CT-0310-SP51	31		1:21			1			X							
CT-0310-SP52	32		1:32			1			X							
CT-0310-SP53	33	2-24-10	8:30						X							
CT-0310-SP54	34		8:25						X							
CT-0310-SP55	35		8:18						X							
CT-0310-W56	36		8:05	Water	500 ml	1			X							

Laboratory Destination:

Friedman & Bruya, Inc.
3012 - 16th Avenue West
Seattle, WA 98119-2029
Phone (206) 285-8282
Fax (206) 283-5044

SIGNATURE		PRINTED NAME		COMPANY		DATE	TIME
<i>Rodney West</i>	<i>Rodney West</i>	Sage Earth Sciences, Inc.	2-24-10	11:02 AM			
<i>Ym Long Evans</i>	<i>Ym Long Evans</i>	FBI	2/25/10	0930			
		Received By					

Samples received at 2 °C

Appendix E

Table 720-1
Method A Cleanup Levels for Ground Water.^a

Hazardous Substance	CAS Number	Cleanup Level
Arsenic	7440-38-2	5 ug/liter ^b
Benzene	71-43-2	5 ug/liter ^c
Benzo(a)pyrene	50-32-8	0.1 ug/liter ^d
Cadmium	7440-43-9	5 ug/liter ^e
Chromium (Total)	7440-47-3	50 ug/liter ^f
DDT	50-29-3	0.3 ug/liter ^g
1,2 Dichloroethane (EDC)	107-06-2	5 ug/liter ^h
Ethylbenzene	100-41-4	700 ug/liter ⁱ
Ethylene dibromide (EDB)	106-93-4	0.01 ug/liter ^j
Gross Alpha Particle Activity		15 pCi/liter ^k
Gross Beta Particle Activity		4 mrem/yr ^l
Lead	7439-92-1	15 ug/liter ^m
Lindane	58-89-9	0.2 ug/liter ⁿ
Methylene chloride	75-09-2	5 ug/liter ^o
Mercury	7439-97-6	2 ug/liter ^p
MTBE	1634-04-4	20 ug/liter ^q
Naphthalenes	91-20-3	160 ug/liter ^r
PCB mixtures		0.1 ug/liter ^s
Radium 226 and 228		5 pCi/liter ^t
Radium 226		3 pCi/liter ^u
Tetrachloroethylene	127-18-4	5 ug/liter ^v
Toluene	108-88-3	1,000 ug/liter ^w
Total Petroleum Hydrocarbons^x		
[Note: Must also test for and meet cleanup levels for other petroleum components--see footnotes!]		
Gasoline Range Organics		800 ug/liter
Benzene present in ground water		1,000 ug/liter
No detectable benzene in ground water		
Diesel Range Organics		500 ug/liter
Heavy Oils		500 ug/liter
Mineral Oil		1,000 ug/liter
1,1,1 Trichloroethane	71-55-6	200 ug/liter ^y
Trichloroethylene	79-01-5	5 ug/liter ^z
Vinyl chloride	75-01-4	0.2 ug/liter ^{aa}
Xylenes	1330-20-7	1,000 ug/liter ^{bb}

Footnotes:

- a **Caution on misusing this table.** This table has been developed for specific purposes. It is intended to provide conservative cleanup levels for drinking water beneficial uses at sites undergoing routine cleanup actions or those sites with relatively few hazardous substances. This table may not be appropriate for defining cleanup levels at other sites. For these reasons, the values in this table should not automatically be used to define cleanup levels that must be met for financial, real estate, insurance coverage or placement, or similar transactions or purposes. Exceedances of the values in this table do not necessarily mean the ground water must be restored to those levels at all sites. The level of restoration depends on the remedy selected under WAC 173-340-350 through 173-340-390.
- b **Arsenic.** Cleanup level based on background concentrations for state of Washington.
- c **Benzene.** Cleanup level based on applicable state and federal law (WAC 246-290-310 and 40 C.F.R. 141.61).
- d **Benzo(a)pyrene.** Cleanup level based on applicable state and federal law (WAC 246-290-310 and 40 C.F.R. 141.61), adjusted to a 1×10^{-5} risk. This value may also be used as the total concentration that all carcinogenic PAHs must meet using the toxicity equivalency methodology in WAC 173-340-708(8).
- e **Cadmium.** Cleanup level based on applicable state and federal law (WAC 246-290-310 and 40 C.F.R. 141.62).
- f **Chromium (Total).** Cleanup level based on concentration derived using Equation 720-1 for hexavalent chromium. This is a total value for chromium III and chromium VI. If just chromium III is present at the site, a cleanup level of 100 ug/l may be used (based on WAC 246-290-310 and 40 C.F.R. 141.62).
- g **DDT (dichlorodiphenyltrichloroethane).** Cleanup levels based on concentration derived using Equation 720-2.
- h **1,2 Dichloroethane (ethylene dichloride or EDC).** Cleanup level based on applicable state and federal law (WAC 246-290-310 and 40 C.F.R. 141.61).
- i **Ethylbenzene.** Cleanup level based on applicable state and federal law (WAC 246-290-310 and 40 C.F.R. 141.61).
- j **Ethylene dibromide (1,2 dibromoethane or EDB).** Cleanup level based on concentration derived using Equation 720-2, adjusted for the practical quantitation limit.
- k **Gross Alpha Particle Activity, excluding uranium.** Cleanup level based on applicable state and federal law (WAC 246-290-310 and 40 C.F.R. 141.15).
- l **Gross Beta Particle Activity, including gamma activity.** Cleanup level based on applicable state and federal law (WAC 246-290-310 and 40 C.F.R. 141.15).
- m **Lead.** Cleanup level based on applicable state and federal law (40 C.F.R. 141.80).
- n **Lindane.** Cleanup level based on applicable state and federal law (WAC 246-290-310 and 40 C.F.R. 141.61).
- o **Methylene chloride (dichloromethane).** Cleanup level based on applicable state and federal law (WAC 246-290-310 and 40 C.F.R. 141.61).
- p **Mercury.** Cleanup level based on applicable state and federal law (WAC 246-290-310 and 40 C.F.R. 141.62).
- q **Methyl tertiary-butyl ether (MTBE).** Cleanup level based on federal drinking water advisory level (EPA-822-F-97-009, December 1997).
- r **Naphthalenes.** Cleanup level based on concentration derived using Equation 720-1. This is a total value for naphthalene, 1-methyl naphthalene and 2-methyl naphthalene.
- s **PCB mixtures.** Cleanup level based on concentration derived using Equation 720-2, adjusted for the practical quantitation limit. This cleanup level is a total value for all PCBs.
- t **Radium 226 and 228.** Cleanup level based on applicable state and federal law (WAC 246-290-310 and 40 C.F.R. 141.15).
- u **Radium 226.** Cleanup level based on applicable state law (WAC 246-290-310).
- v **Tetrachloroethylene.** Cleanup level based on applicable state and federal law (WAC 246-290-310 and 40 C.F.R. 141.61).
- w **Toluene.** Cleanup level based on applicable state and federal law (WAC 246-290-310 and 40 C.F.R. 141.61).
- x **Total Petroleum Hydrocarbons (TPH).** TPH cleanup values have been provided for the most common petroleum products encountered at contaminated sites. Where there is a mixture of products or the product composition is unknown, samples must be tested using both the NWTPH-Gx and NWTPH-Dx methods and the lowest applicable TPH cleanup level must be met.
- **Gasoline range organics** means organic compounds measured using method NWTPH-Gx. Examples are aviation and automotive gasoline. The cleanup level is based on protection of ground water for noncarcinogenic effects during drinking water use. Two cleanup levels are provided. The higher value is based on the assumption that no benzene is present in the ground water sample. If any detectable amount of benzene is present in the ground water sample, the lower TPH cleanup level must be used. No interpolation between these cleanup levels is allowed. The ground water cleanup level for any carcinogenic components of the petroleum [such as benzene, EDB and EDC] and any noncarcinogenic components [such as ethylbenzene, toluene, xylenes and MTBE], if present at the site, must also be met. See Table 830-1 for the minimum testing requirements for gasoline releases.
- **Diesel range organics** means organic compounds measured using NWTPH-Dx. Examples are diesel, kerosene, and #1 and #2 heating oil. The cleanup level is based on protection from noncarcinogenic effects during drinking water use. The ground water cleanup level for any carcinogenic components of the petroleum [such as benzene and PAHs] and any noncarcinogenic components [such as ethylbenzene, toluene, xylenes and naphthalenes], if present at the site, must also be met. See Table 830-1 for the minimum testing requirements for diesel releases.
- **Heavy oils** means organic compounds measured using NWTPH-Dx. Examples are #6 fuel oil, bunker C oil, hydraulic oil and waste oil. The cleanup level is based on protection from noncarcinogenic effects during drinking water use, assuming a product composition similar to diesel fuel. The ground water cleanup level for any carcinogenic components of the petroleum [such as benzene, PAHs and PCBs] and any noncarcinogenic components [such as ethylbenzene, toluene, xylenes and naphthalenes], if present at the site, must also be met. See Table 830-1 for the minimum testing requirements for heavy oil releases.
- **Mineral oil** means non-PCB mineral oil, typically used as an insulator and coolant in electrical devices such as transformers and capacitors measured using NWTPH-Dx. The cleanup level is based on protection from noncarcinogenic

effects during drinking water use. Sites using this cleanup level must analyze ground water samples for PCBs and meet the PCB cleanup level in this table unless it can be demonstrated that: (1) The release originated from an electrical device manufactured after July 1, 1979; or (2) oil containing PCBs was never used in the equipment suspected as the source of the release; or (3) it can be documented that the oil released was recently tested and did not contain PCBs. Method B (or Method C, if applicable) must be used for releases of oils containing greater than 50 ppm PCBs. See Table 830-1 for the minimum testing requirements for mineral oil releases.

- y** **1,1,1 Trichloroethane.** Cleanup level based on applicable state and federal law (WAC 246-290-310 and 40 C.F.R. 141.61).
- z** **Trichloroethylene.** Cleanup level based on applicable state and federal law (WAC 246-290-310 and 40 C.F.R. 141.61).
- aa** **Vinyl chloride.** Cleanup level based on applicable state and federal law (WAC 246-290-310 and 40 C.F.R. 141.61), adjusted to a 1×10^{-5} risk.
- bb** **Xylenes.** Cleanup level based on xylene not exceeding the maximum allowed cleanup level for total petroleum hydrocarbons and on prevention of adverse aesthetic characteristics. This is a total value for all xylenes.

Table 740-1
Method A Soil Cleanup Levels for Unrestricted Land Uses.^a

Hazardous Substance	CAS Number	Cleanup Level
Arsenic	7440-38-2	20 mg/kg ^b
Benzene	71-43-2	0.03 mg/kg ^c
Benzo(a)pyrene	50-32-8	0.1 mg/kg ^d
Cadmium	7440-43-9	2 mg/kg ^e
Chromium		
Chromium VI	18540-29-9	19 mg/kg ^{fl}
Chromium III	16065-83-1	2,000 mg/kg ^{f2}
DDT	50-29-3	3 mg/kg ^g
Ethylbenzene	100-41-4	6 mg/kg ^h
Ethylene dibromide (EDB)	106-93-4	0.005 mg/kg ⁱ
Lead	7439-92-1	250 mg/kg ^j
Lindane	58-89-9	0.01 mg/kg ^k
Methylene chloride	75-09-2	0.02 mg/kg ^l
Mercury (inorganic)	7439-97-6	2 mg/kg ^m
MTBE	1634-04-4	0.1 mg/kg ⁿ
Naphthalenes	91-20-3	5 mg/kg ^o
PCB Mixtures		1 mg/kg ^p
Tetrachloroethylene	127-18-4	0.05 mg/kg ^q
Toluene	108-88-3	7 mg/kg ^r
Total Petroleum Hydrocarbons^s		
[Note: Must also test for and meet cleanup levels for other petroleum components--see footnotes!]		
Gasoline Range Organics		100 mg/kg
Gasoline mixtures Without benzene and consisting of no more than 20% aromatic hydrocarbons between EC 8 and EC 16		30 mg/kg
All other gasoline mixtures		2,000 mg/kg
Diesel Range Organics		2,000 mg/kg
Heavy Oils		2,000 mg/kg
Mineral Oil		4,000 mg/kg
1,1,1 Trichloroethane	71-55-6	2 mg/kg ^t
Trichloroethylene	79-01-5	0.03 mg/kg ^u
Xylenes	1330-20-7	9 mg/kg ^v

Footnotes:

- a **Caution on misusing this table.** This table has been developed for specific purposes. It is intended to provide conservative cleanup levels for sites undergoing routine cleanup actions or for sites with relatively few hazardous substances, and the site qualifies under WAC 173-340-7491 for an exclusion from conducting a simplified or site-specific terrestrial ecological evaluation, or it can be demonstrated using a terrestrial ecological evaluation under WAC 173-340-7492 or 173-340-7493 that the values in this table are ecologically protective for the site. This table may not be appropriate for defining cleanup levels at other sites. For these reasons, the values in this table should not automatically be used to define cleanup levels that must be met for financial, real estate, insurance coverage or placement, or similar transactions or purposes. Exceedances of the values in this table do not necessarily mean the soil must be restored to these levels at a site. The level of restoration depends on the remedy selected under WAC 173-340-350 through 173-340-390.
- b **Arsenic.** Cleanup level based on direct contact using Equation 740-2 and protection of ground water for drinking water use using the procedures in WAC 173-340-747(4), adjusted for natural background for soil.
- c **Benzene.** Cleanup level based on protection of ground water for drinking water use, using the procedures in WAC 173-340-747(4) and (6).
- d **Benzo(a)pyrene.** Cleanup level based on direct contact using Equation 740-2. This value may also be used as the total concentration that all carcinogenic PAHs must meet using the toxicity equivalency methodology in WAC 173-340-708(8).
- e **Cadmium.** Cleanup level based on protection of ground water for drinking water use, using the procedures described in WAC 173-340-747(4), adjusted for the practical quantitation limit for soil.
- fl **Chromium VI.** Cleanup level based on protection of ground water for drinking water use, using the procedures described in WAC 173-340-747(4).
- f2 **Chromium III.** Cleanup level based on protection of ground water for drinking water use, using the procedures described in WAC 173-340-747(4). Chromium VI must also be tested for and the cleanup level met when present at a site.
- g **DDT (dichlorodiphenyltrichloroethane).** Cleanup level based on direct contact using Equation 740-2.
- h **Ethylbenzene.** Cleanup level based on protection of ground water for drinking water use, using the procedures described in WAC 173-340-747(4).
- i **Ethylene dibromide (1,2 dibromoethane or EDB).** Cleanup level based on protection of ground water for drinking water use, using the procedures described in WAC 173-340-747(4), adjusted for the practical quantitation limit for soil.
- j **Lead.** Cleanup level based on preventing unacceptable blood lead levels.
- k **Lindane.** Cleanup level based on protection of ground water for drinking water use, using the procedures described in WAC 173-340-747(4), adjusted for the practical quantitation limit.
- l **Methylene chloride (dichloromethane).** Cleanup level based on protection of ground water for drinking water use, using the procedures described in WAC 173-340-747(4).
- m **Mercury.** Cleanup level based on protection of ground water for drinking water use, using the procedures described in WAC 173-340-747(4).
- n **Methyl tertiary-butyl ether (MTBE).** Cleanup level based on protection of ground water for drinking water use, using the procedures described in WAC 173-340-747(4).
- o **Naphthalenes.** Cleanup level based on protection of ground water for drinking water use, using the procedures described in WAC 173-340-747(4). This is a total value for naphthalene, 1-methyl naphthalene and 2-methyl naphthalene.
- p **PCB Mixtures.** Cleanup level based on applicable federal law (40 C.F.R. 761.61). This is a total value for all PCBs.
- q **Tetrachloroethylene.** Cleanup level based on protection of ground water for drinking water use, using the procedures described in WAC 173-340-747(4).
- r **Toluene.** Cleanup level based on protection of ground water for drinking water use, using the procedures described in WAC 173-340-747(4).
- s **Total Petroleum Hydrocarbons (TPH).** TPH cleanup values have been provided for the most common petroleum products encountered at contaminated sites. Where there is a mixture of products or the product composition is unknown, samples must be tested using both the NWTPH-Gx and NWTPH-Dx methods and the lowest applicable TPH cleanup level must be met.
- **Gasoline range organics** means organic compounds measured using method NWTPH-Gx. Examples are aviation and automotive gasoline. The cleanup level is based on protection of ground water for noncarcinogenic effects during drinking water use using the procedures described in WAC 173-340-747(6). Two cleanup levels are provided. The lower value of 30 mg/kg can be used at any site. When using this lower value, the soil must also be tested for and meet the benzene soil cleanup level. The higher value of 100 mg/kg can only be used if the soil is tested and found to contain no benzene and less than 20% of the gasoline mixture consists of aromatic petroleum hydrocarbons between EC 8 and EC 16. No interpolation between these cleanup levels is allowed. In both cases, the soil cleanup level for any other carcinogenic components of the petroleum [such as EDB and EDC], if present at the site, must also be met. Also, in both cases, soil cleanup levels for any noncarcinogenic components [such as toluene, ethylbenzene, xylenes, naphthalene, and MTBE], also must be met if these substances are found to exceed ground water cleanup levels at the site. See Table 830-1 for the minimum testing requirements for gasoline releases.
- **Diesel range organics** means organic compounds measured using method NWTPH-Dx. Examples are diesel, kerosene, and #1 and #2 heating oil. The cleanup level is based on preventing the accumulation of free product on the ground water, as described in WAC 173-340-747(10). The soil cleanup level for any carcinogenic components of the petroleum [such as benzene and PAHs], if present at the site, must also be met. Soil cleanup levels for any noncarcinogenic components [such as toluene, ethylbenzene, xylenes and naphthalenes], also must be met if these substances are found to exceed the ground water cleanup levels at the site. See Table 830-1 for the minimum testing requirements for diesel releases.
- **Heavy oils** means organic compounds measured using NWTPH-Dx. Examples are #6 fuel oil, bunker C oil, hydraulic oil and waste oil. The cleanup level is based on preventing the accumulation of free product on the ground water, as described in WAC 173-340-747(10) and assuming a product composition similar to diesel fuel. The soil cleanup level for any carcinogenic components of the petroleum [such as benzene, PAHs and PCBs], if present at the site, must also be met. Soil cleanup levels for any noncarcinogenic components [such as toluene, ethylbenzene, xylenes and naphthalenes], also must be met if found to exceed the ground water cleanup levels at the site. See Table 830-1 for the minimum testing requirements for heavy oil releases.
- **Mineral oil** means non-PCB mineral oil, typically used as an insulator and coolant in electrical devices such as transformers

and capacitors, measured using NWTPH-Dx. The cleanup level is based on preventing the accumulation of free product on the ground water, as described in WAC 173-340-747(10). Sites using this cleanup level must also analyze soil samples and meet the soil cleanup level for PCBs, unless it can be demonstrated that: (1) The release originated from an electrical device that was manufactured after July 1, 1979; or (2) oil containing PCBs was never used in the equipment suspected as the source of the release; or (3) it can be documented that the oil released was recently tested and did not contain PCBs. Method B must be used for releases of oils containing greater than 50 ppm PCBs. See Table 830-1 for the minimum testing requirements for mineral oil releases.

- t **1,1,1 Trichloroethane.** Cleanup level based on protection of ground water for drinking water use, using the procedures described in WAC 173-340-747(4).
- u **Trichloroethylene.** Cleanup level based on protection of ground water for drinking water use, using the procedures described in WAC 173-340-747(4).
- v **Xylenes.** Cleanup level based on protection of ground water for drinking water use, using the procedures described in WAC 173-340-747(4). This is a total value for all xylenes.