

**STORMWATER BIOSWALE REMEDIATION
PILOT TRAVEL CENTER #583
1678 MAIN STREET
FERNDALE, WASHINGTON**

prepared for:

Pilot Travel Centers LLC
5508 Lonas Road
Knoxville, TN, 37909

October 16, 2013



*soil | water | air
compliance consulting*

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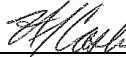
Prepared for:

Pilot Travel Centers LLC
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Prepared by:

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October 16, 2013


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1.0 INTRODUCTION

Whatcom Environmental Services, Inc. has completed the documentation of the remedial action conducted in the stormwater bioswale at the Pilot #583 site in Ferndale, Washington. The property location is shown on Figure 1. The bioswale is located on the northeastern portion of the facility, adjacent to a large paved truck parking area. The bioswale captures stormwater runoff from Pilot's truck parking area as well as from adjacent properties and parking areas to the west, and discharges to a vegetated wetland.

On February 22, 2013, a petroleum spill (presumed to be diesel) caused by a third party occurred in the parking area off Pilot Travel Center's property up-gradient of the bioswale. The spill occurred during a rainfall event, and the petroleum was washed onto Pilot's property and into the bioswale. The spill was reported to the Washington Department of Ecology and information related to the spill was recorded in the Environmental Report Tracking System (ERTS #639474). The ERTS report is included in Appendix A.

Based on the ERTS report of a diesel spill, soil samples were analyzed for diesel and oil range total petroleum hydrocarbons (TPH). Per WAC 173-303-515 (Standards for the Management of Used Oil (Ecology, 2009)), soil samples were also analyzed for arsenic, cadmium, chromium, and lead.

The bioswale is located in the flood plain for Barrett Lake, and is frequently inundated during the wet season. During site inspections and after the initial spill cleanup in February, the Department of Ecology stated that the spill had been sufficiently stabilized to allow for final cleanup to be delayed until drier weather, which would allow the swale to dry out as well as reduce the impact on the adjacent wetlands and lake.

On September 12 and September 19, 2013, petroleum contaminated soil (PCS) was removed from the bioswale. Approximately 37 tons of soil were removed from the site for offsite disposal. Twelve discrete clean confirmation soil samples were collected after completion of the remedial action. Laboratory analytical results indicated that there are no petroleum concentrations remaining in soil at the site that exceed the target cleanup levels.

2.0 SELECTION OF CLEANUP STANDARDS

The laboratory analytical results were compared to the Washington State Model Toxics Control Act (MTCA) Priority Contaminants of Ecological Concern cleanup levels for unrestricted land use (WAC 173-340-900, Table 749-2 (Ecology, 2007)). Those cleanup levels are based on protection of terrestrial plants or animals exposed to hazardous substances in soil. The Table 749-2 cleanup level for diesel range TPH is 460 mg/kg. A cleanup level is not provided for oil range TPH, however to be conservative the oil range TPH concentrations detected in the bioswale soil were compared to the diesel range TPH cleanup level.

Laboratory analytical results were also compared to the Natural Background Soil Metals Concentrations (Publication #94-115, Washington State Department of Ecology, 1994). “Natural background” is defined in the MTCA Statute and Regulation (WAC 173-340-200) as the “...concentration of hazardous substance consistently present in the environment which has not been influenced by localized human activities...” Whatcom and Skagit Counties and Pacific Coast (Grays Harbor, Lewis, and Pacific Counties) have been designated as Group “W”. The 90th percentile natural background concentration values for Group “W” are as follows: Arsenic = 8.47 mg/kg; Cadmium = 0.1 mg/kg; Chromium = 78.5 mg/kg; Lead = 10.9 mg/kg.

3.0 PRE-CLEANUP ACTIVITIES

Soil samples were collected from the bioswale soil prior to the cleanup in order to determine the depth of penetration of the surface staining and to characterize the material for offsite disposal.

3.1 PRE-CLEANUP SOIL SAMPLE COLLECTION AND ANALYSIS

On June 26, 2013, Whatcom Environmental Services personnel collected nine discrete shallow soil samples to determine the extent to which the petroleum release had impacted soil in the bioswale. Soil samples were collected from areas where visible surface staining was observed and from depths of 0-3 inches below ground surface (bgs) and 3-6 inches bgs from the floor of the bioswale to determine the depth of penetration of the surface staining. The Pre-Cleanup soil sampling locations are shown on Figure 2.

The soil samples were field screened for evidence of petroleum contamination. The soil was field screened for organic vapors using a photoionization detector (PID) and for evidence of petroleum products by conducting sheen tests. No organic vapors were detected using the PID; however slight to moderate sheens were observed emanating from the surface stained soils. Based on the field screening results observed during the Pre-Cleanup soil sampling event, use of the PID was discontinued during the remainder of the project.

Soil samples were collected using clean stainless steel sampling tools. The samples were placed in sample containers provided by the lab, stored in a cooler with ice, and delivered to ALS Environmental laboratory in Everett, Washington. ALS is accredited by the Washington Department of Ecology. All samples were analyzed for diesel and oil-range TPH using Method NWTPH-Dx with silica gel cleanup. One soil sample was also analyzed for metals including arsenic, cadmium, chromium, and lead using Method EPA-6020.

3.2 PRE-CLEANUP SOIL SAMPLE RESULTS

The Pre-Cleanup soil sample laboratory analytical results indicated that stained surface soils at 0-3 inches bgs contained diesel range TPH concentrations ranging up to 6,400 mg/kg, and oil range concentrations ranging up to 14,000 mg/kg, which exceeded the target cleanup level of 460 mg/kg. However all soil samples collected from a depth of 3-6 inches bgs met the target cleanup levels for TPH. Soil sample SS-2 also contained chromium at a concentration of 45 mg/kg, which exceeded the target cleanup level of 42 mg/kg.

The Pre-Cleanup soil sample descriptions are provided in Table 1. The Pre-Cleanup soil sample analytical results are summarized in Table 2. The Pre-Cleanup soil sample laboratory analytical data reports are included in Appendix B.

4.0 REMEDIAL ACTION

Based upon the laboratory analytical data, it was determined that removal of the top three inches of material from the entire bioswale floor would be sufficient to achieve compliance with the target cleanup levels. Stremler Gravel Inc. provided soil removal services during the project. Whatcom Environmental personnel were onsite during the PCS removal activities. An excavator was used to remove the top three inches of soil from the impacted areas. The original soil erosion control measures present during the petroleum spill, including jute matting and straw wattles, were also removed from the site for disposal. Additional soil removal was conducted in areas as needed based upon the presence of visual soil staining and laboratory analytical results.

Initial removal of the top three inches of soil was conducted on September 12, 2013 at three distinct areas which were impacted by the diesel release. Those areas included:

- 1) The grassy slope where parking lot sheet-flow runs under the chain link fence and enters the bioswale.
- 2) The floor of the bioswale.
- 3) Immediately downstream of the bioswale where the final storm basin (Basin #2) discharges into a vegetated wetland area.

Additional soil removal was conducted on September 19, 2013 in two areas where soil sample results exceeded target cleanup levels. Those areas included:

- 1) A portion of the bioswale floor adjacent to the inlet pipe which required removal of an additional six inches of soil.
- 2) The bioswale outlet (Basin #2 discharge point) which required the removal of an additional thirty-six inches of material.

Approximately 37 tons of soil were removed from the site during the PCS removal action and transported to Waste Management, Inc in Seattle, Washington for disposal. Waste Management is a licensed soil disposal facility. The Waste Management soil disposal records are provided in Appendix C.

5.0 POST-CLEANUP ACTIVITIES

Soil samples were collected at the completion of the PCS removal action to document the completeness of the remedial action.

5.1 POST-CLEANUP SOIL SAMPLE COLLECTION AND ANALYSIS

Whatcom Environmental Services personnel were onsite on September 12, 2013 and collected soil samples immediately following the completion of the PCS removal action. All Post-Cleanup soil samples were analyzed for diesel and oil range TPH using Method NWTPH-Dx with silica gel cleanup. Selected samples were also analyzed for arsenic, cadmium, chromium, and lead using Method EPA-6020.

Twelve discrete post-cleanup soil samples were collected on September 12, 2013, to confirm the success of the remedial action. One soil sample (labeled CS-11) was collected from the parking lot sheet-flow path at the same location as the pre-cleanup sample labeled SS-1. Ten soil samples (labeled CS-1 through CS-9 and CS-12) were collected from the bioswale floor generally spaced at twenty to twenty-five foot intervals. One sample (labeled CS-10) was collected just east of the bioswale discharge point. The soil sample descriptions are provided in Table 1. Post-Cleanup soil sample locations are shown on Figure 3.

Two additional samples were collected after additional PCS removal activities were completed on September 19, 2013. The samples were given the suffix OE (over-excavated). Soil sample CS-1 OE was collected from the same location as CS-1, and CS-10 OE was collected from the same location as CS-10.

5.2 POST-CLEANUP SOIL SAMPLE RESULTS

Results from the September 12, 2013 Post-Cleanup soil sampling indicated that concentrations in two of the discrete samples exceeded the target cleanup levels presented in Table 749-2. Sample CS-1 was collected at the northernmost point of the bioswale floor and had a chromium concentration of 64 mg/kg, which exceeded the target clean up level of 42 mg/kg. Sample CS-10 was collected east of the bioswale discharge point and had an oil range TPH concentration of 510 mg/kg, which exceeded the target cleanup level of 460 mg/kg. Soil in the vicinity of these two samples were over-excavated and then re-sampled.

CS-1 OE contained chromium at a concentration of 62 mg/kg which exceeded the target cleanup level. That result was unexpected due to the fact the native brown clay sampled showed no indication of petroleum contamination (no sheen) and appeared visually clean (Table 1). Upon review of the natural background metals concentrations (Ecology, 1994) it became apparent that the detected concentration of 62 mg/kg was lower than the natural background concentration of 79 mg/kg. Therefore it became evident that the detected chromium concentration is not a result of the spill that occurred February 22, 2013. A summary of the final Post-Cleanup soil sample analytical data is provided in Table 3. The original laboratory analytical data report is included in Appendix D.

Post-cleanup soil sample analytical results indicated that the bioswale soil has been remediated to concentrations which meet the target cleanup levels.

6.0 INFRASTRUCTURE CLEANING

Bayside Services, of Bellingham, Washington, provided stormwater infrastructure cleaning services on August 27, 2013. An industrial sewer cleaning truck utilizing high pressure water and fluid vacuuming was used to wash the stormwater infrastructure including the parking lot catch basin and underground piping which initially conveyed the spilled product to the bioswale, and the oily water separator located inside the bioswale. Approximately 1,500 gallons of wash water were removed from the site for disposal.

Stremler Gravel personnel reported that accumulated sediment in the bioswale discharge catch basin (Basin #2) was removed and properly disposed of during site cleanup activities.

7.0 CONCLUSIONS

A PCS removal action has been completed at the Pilot #583 site in response to a petroleum spill that occurred on the off-site paved area that flows into the stormwater bioswale on Pilot's property. The associated stormwater conveyance infrastructure was also cleaned. Approximately 37 tons of PCS were excavated from the impacted area and removed for offsite disposal at Waste Management, Inc in Seattle, Washington. Twelve clean confirmation soil samples were collected in order to demonstrate the effectiveness of the remedial activities conducted at the site.

Based upon the laboratory analytical data from the Post-Cleanup soil sampling, it has been determined that soils throughout the site meet the selected target cleanup levels. The bioswale has been reconstructed to the original Department of Ecology specifications.

On behalf of Whatcom Environmental Services, I appreciate the opportunity to provide assistance at the Ferndale Pilot Travel Center #583 Bioswale site. If you have any questions regarding the report findings or recommendations please call me at (360) 752-9571.

8.0 LIMITATIONS

No site assessment can wholly eliminate uncertainty regarding the potential for contamination in connection with a property. The interpretation of soil and groundwater conditions is based on field observations and chemical analytical data collected from relatively widely spaced sampling locations at the site. It is possible that contamination exists beneath portions of the site that were not explored, sampled, or analyzed. No warranty, express or implied, is given regarding the presence of hidden or unidentified sources of contamination of the subject property. Performance of this investigation by Whatcom Environmental is intended to reduce, but not eliminate, uncertainty regarding the potential for environmental contamination in connection with the subject property. In addition, no warranty, express or implied is given regarding geotechnical or geologic hazards.

Within the limitations of scope, schedule, and budget, our services have been executed in accordance with generally accepted environmental practices in this area at the time this report was prepared. No warranty or other conditions, express or implied, should be understood.

Whatcom Environmental Services has prepared this report for the exclusive use of Pilot Travel Centers LLC, their authorized agents, and regulatory agencies. Whatcom Environmental prepares a report for the client's exclusive use for a particular project and in accordance with generally accepted practices at the time of investigation. This report was prepared for exclusive use by the client and its authorized agents and may not be used, relied upon, or assigned to a third party without written consent from Whatcom Environmental Services. This report is not intended for use by others, and the information contained herein is not applicable to other sites. This report may be made available to regulatory agencies.

9.0 REFERENCES

Washington State Department of Ecology. 1994. Natural Background Soil Metals Concentrations in Washington State. Publication No. 94-115.

Washington State Department of Ecology. 2007. Model Toxics Control Act Cleanup Regulation Chapter 173-340 WAC. Publication No. 94-06. February 12, 2001.

Washington State Department of Ecology. 2009. Dangerous Waste Regulations. Chapter 173-303 WAC.

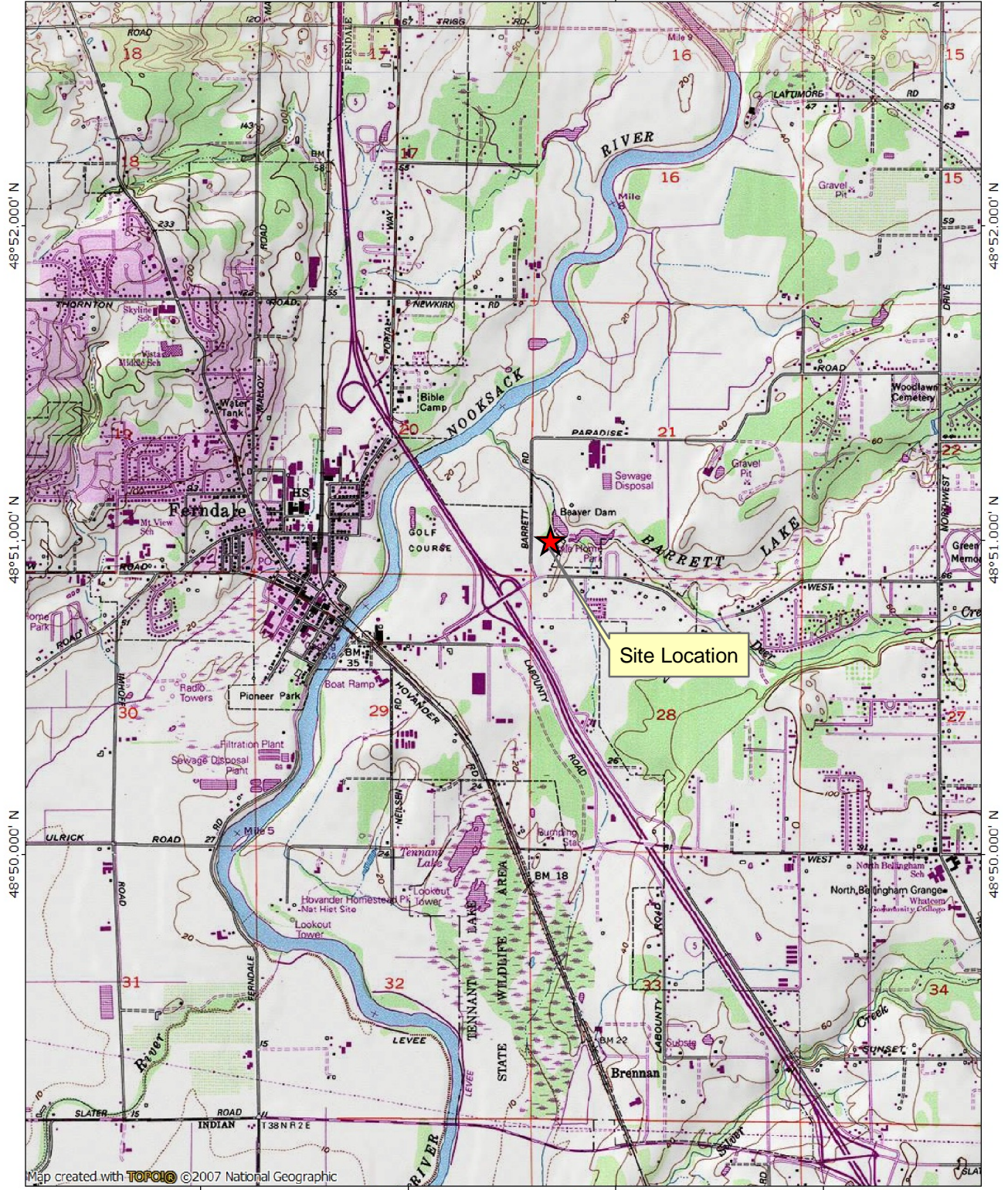
TOPO! map printed on 10/04/13

122°36.000' W

122°35.000' W

122°34.000' W

WGS84 122°33.000' W



48°52.000' N

48°51.000' N

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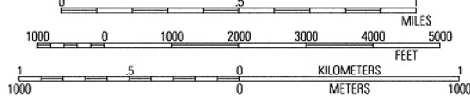
Map created with TOPO! ©2007 National Geographic

122°36.000' W

122°35.000' W

122°34.000' W

WGS84 122°33.000' W



TN / MN
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Prepared for:



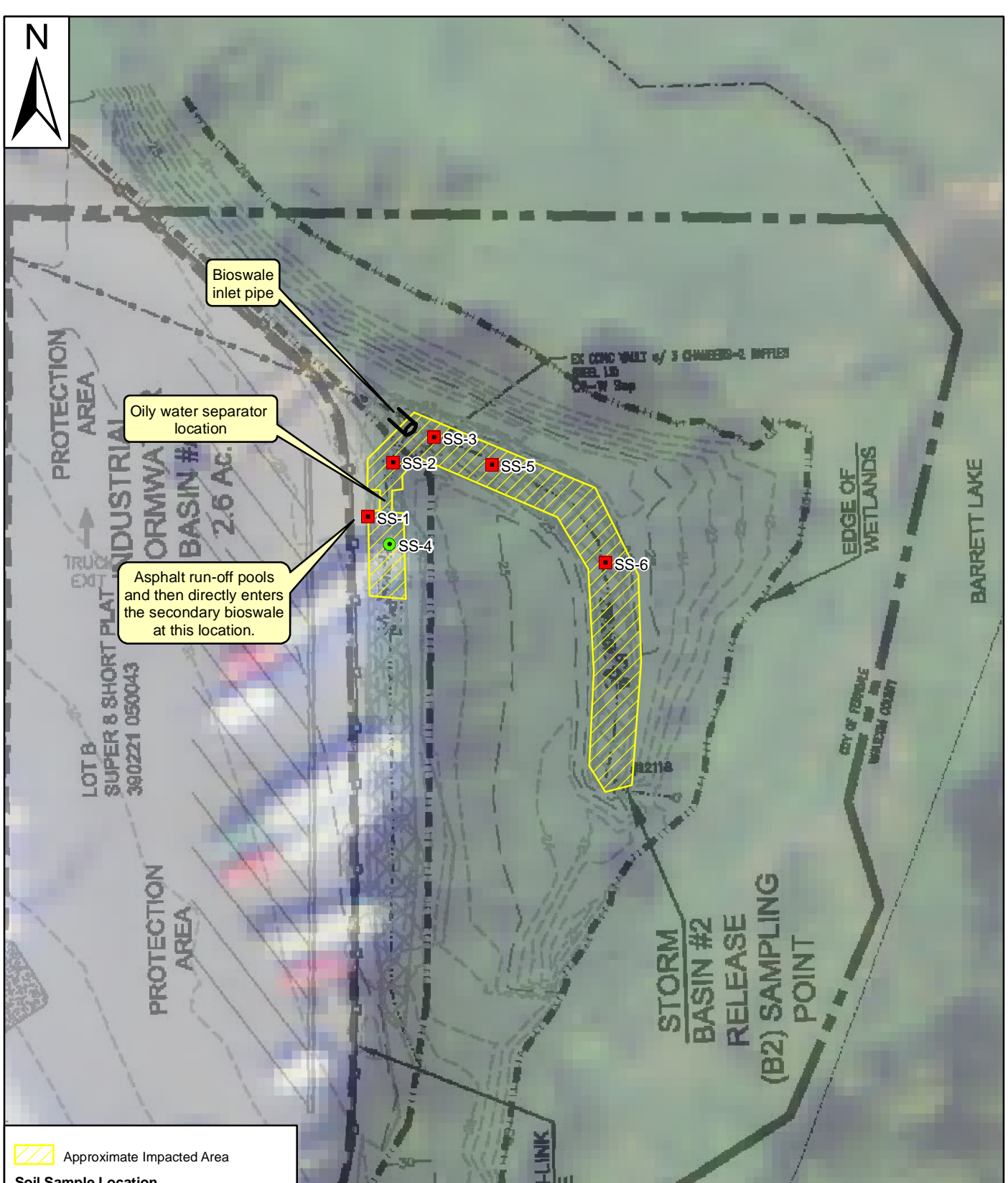
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Site Location Map

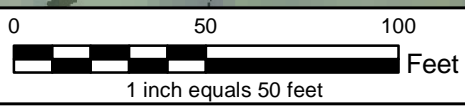
Ferndale Pilot
Bioswale
10/04/13

Figure 1



-  Approximate Impacted Area
- Soil Sample Location**
-  Above MTCA Table 749-2 CUL
-  Below MTCA Table 749-2 CUL

All data are approximate and should be used for relative location reference only.



Prepared for:



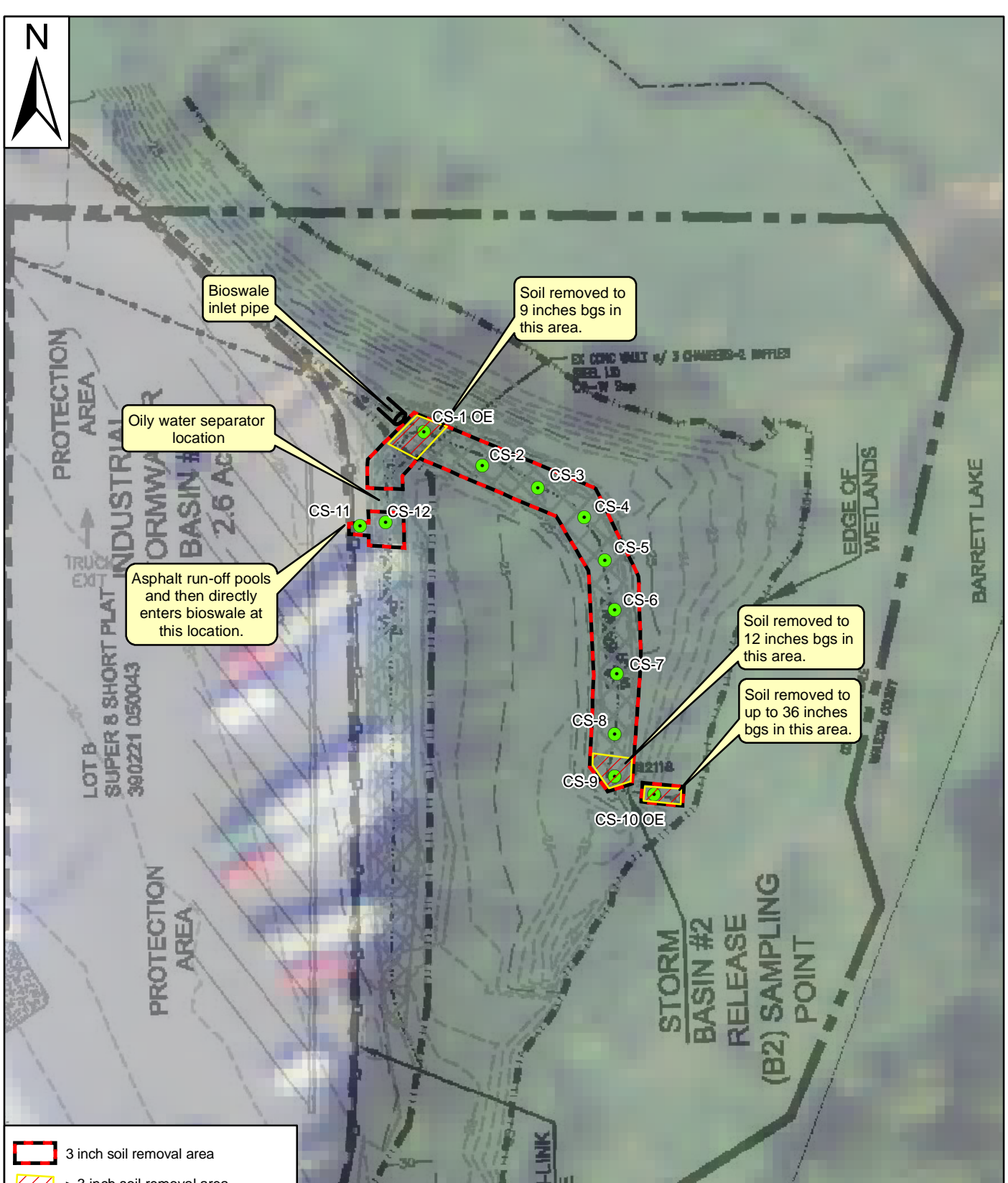
Prepared by:






Pre-Cleanup Soil Sample Location Map

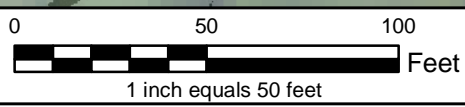
Ferndale Pilot
Bioswale
7/10/13

Figure 2




 3 inch soil removal area
 > 3 inch soil removal area
Soil Sample Location Post-cleanup
 Below MTCA Table 749-2 CUL

All data are approximate and should be used for relative location reference only.



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Post-Cleanup Soil Sample Location Map

Ferndale Pilot Bioswale 9/19/13	<h1 style="margin: 0;">Figure 3</h1>
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Table 1. Soil Sample Descriptions - Pilot #583 Bioswale

Sample ID	Date	Location and Description	PID (ppm)	Sheen Test*
<u>Pre-Cleanup Soil Samples</u>				
SS-1 (0-1")	6/26/13	Collected approximately 30 ft south of the swale inlet pipe, where the parking lot sheet-flow runs under the fence. Collected 3.5 ft east of the fence at 0-1" bgs. Collected from stained surface material/jute matting. Silty sediment with jute matting, black, loose, wet	0	SS
SS-2 (0-1")	6/26/13	Collected approximately 10 ft south of the swale inlet pipe. Collected from the center of the ditch at 0-1" bgs. Stained surface materials. Silty sediment with organics (leaves, twigs, straw) black, loose, wet	0	SS
SS-3 (0-1")	6/26/13	Collected 7 ft east of the swale inlet pipe, from the center of the ditch at 0-1" bgs. Sediment was collected from behind the straw waddle. Silty sediment with organics (leaves, twigs, jute, earth worms), black, wet	0	VSS
SS-4 (0-3")	6/26/13	Collected 40 ft south of the swale inlet pipe from the center of the ditch at 0-3" bgs. Sandy silt, reddish brown, loose, wet, minor organics (leaves, jute).	0	NS
SS-4 (3"-6")	6/26/13	Same location as SS-4 (0-3"), at 3"-6" bgs. Sandy silt and silty clay, brown, firm, moist	0	NS
SS-5 (0-3")	6/26/13	Collected 35 ft east of the main inlet from the center of the ditch at 0-3" bgs. Sandy silt w/ organics (leaves, jute), dark brown, loose, wet	0	VSS
SS-5 (3"-6")	6/26/13	Same location as SS-5 (0-3"), at 3"-6" bgs. Clayey silt, brown, firm, wet	0	NS
SS-6 (0-3")	6/26/13	Collected 90 ft east of the swale inlet from the center of the ditch at 0-3" bgs. Sandy silt w/ organics (leaves) brown, loose, wet	0	NS
SS-6 (3-6")	6/26/13	Same location as SS-6 (0-3"), at 3"-6" bgs. Sandy silt, reddish brown, loose, wet	0	SS

Table 1. Soil Sample Descriptions - Pilot #583 Bioswale

Sample ID	Date	Location and Description	PID (ppm)	Sheen Test*
<u>Post-Cleanup Soil Samples</u>				
CS-1	9/12/13	Collected from bioswale floor approximately 4 feet east of bioswale inlet pipe. Collected from soil remaining in place after remediation activities (removal of ~ 3 inches of soil). Clay, light brown, compact, plastic, moist	N/A	VSS
CS-2	9/12/13	Collected from center of bioswale floor, approximately 30 feet east of inlet pipe. Collected from soil remaining in place after remediation activities (removal of ~ 3 inches of soil). Medium sandy silt, brown, loose, moist with minor rootlets.	N/A	NS
CS-3	9/12/13	Collected from center bioswale floor approximately 55 ft east of inlet. Collected from soil remaining in place after remediation activities (removal of ~ 3 inches of soil). Sandy silt with trace amounts of grey clay. Brown, loose, moist, rootlets	N/A	NS
CS-4	9/12/13	Collected from center of bioswale floor approximately 80 feet east of inlet. Collected from soil remaining in place after remediation activities (removal of ~ 3 inches of soil). Sandy silt, brown, loose, moist	N/A	NS
CS-5	9/12/13	Collected from center of bioswale floor approximately 100 feet downstream of inlet. Collected from soil remaining in place after remediation activities (removal of ~ 3 inches of soil). Sandy silt, brown, loose, moist	N/A	NS
CS-6	9/12/13	Collected from center of bioswale floor approximately 120 feet downstream of inlet. Collected from soil remaining in place after remediation activities (removal of ~ 3 inches of soil). Sandy silt, brown, loose, moist	N/A	NS

Table 1. Soil Sample Descriptions - Pilot #583 Bioswale

Sample ID	Date	Location and Description	PID (ppm)	Sheen Test*
CS-7	9/12/13	Collected from center of bioswale floor approximately 140 feet downstream of inlet. Collected from soil remaining in place after remediation activities (removal of ~ 3 inches of soil). Sandy silt, brown, loose, moist	N/A	NS
CS-8	9/12/13	Collected from center of bioswale floor approximately 160 feet downstream of inlet. Collected from soil remaining in place after remediation activities (removal of ~ 3 inches of soil). Sandy silt, brown, loose, moist	N/A	SS
CS-9	9/12/13	Collected 3 feet NW of final bioswale catch basin before water is discharged offsite. Collected from soil remaining in place after remediation activities (removal of ~10 inches of soil). Silty clay, light brown, sticky, moist	N/A	VSS
CS-10	9/12/13	Collected 4 feet east of the final catch basin outlet pipe after removing top layer of vegetation and rocks/spalls. Silt with organics (rootlets, grass bits) dark brown, loose, moist	N/A	MS
CS-11	9/12/13	Collected where asphalt sheet flow crosses under fence and flows into swale. Collected after remediation activities (removal of ~6 inches of soil). (Same location as SS-1). Silty clay, brown and grey, compact, moist, with slight organics	N/A	MS
CS-12	9/12/13	Collected from bioswale floor ~9 feet east of CS-11 and 3 feet south of oily water separator inlet pipe. Collected from soil remaining in place after remediation activities (removal of ~ 6 inches of soil). Very fine sandy silt, brown, loose, wet	N/A	SS

Table 1. Soil Sample Descriptions - Pilot #583 Bioswale

Sample ID	Date	Location and Description	PID (ppm)	Sheen Test*
CS-1 OE	9/19/13	Collected at same location of CS-1 after additional remediation activities to reach native soils (removal of ~6 more inches of soil). Clay, light brown, compact, moist.	N/A	NS
CS-10 OE	9/19/13	Collected at same location of CS-10 after additional remediation activities to reach native soils (removal of ~36 more inches of soil). Silty clay, brown, sticky, moist	N/A	NS

* **NS** = No Sheen; **VSS** = Very Slight Sheen; **SS** = Slight Sheen **MS** = Moderate Sheen

Table 2. Pre-Cleanup Soil Sample Analytical Results - Pilot #583 Bioswale

Sample ID	Date	NWTPH-Dx	NWTPH-Dx	EPA-6020	EPA-6020	EPA-6020	EPA-6020
		Diesel Range	Oil Range	Arsenic	Cadmium	Chromium	Lead
		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Cleanup Levels: (MTCA Table 749-2)		460	460	20	25	42	220
SS-1 (0-1")	6/26/13	ND(<120)	2,100	NA	NA	NA	NA
SS-2 (0-1")	6/26/13	6,400	14,000	5.8	2.4	45	28
SS-3 (0-1")	6/26/13	1,600	4,200	NA	NA	NA	NA
SS-4 (0-3")	6/26/13	50	140	NA	NA	NA	NA
SS-4 (3"-6")	6/26/13	ND(<25)	ND(<51)	NA	NA	NA	NA
SS-5 (0-3")	6/26/13	380	780	NA	NA	NA	NA
SS-5 (3"-6")	6/26/13	44	130	NA	NA	NA	NA
SS-6 (0-3")	6/26/13	240	590	NA	NA	NA	NA
SS-6 (3"-6")	6/26/13	ND(<25)	52	NA	NA	NA	NA

ND indicates analyte was Not Detected at level above reporting limit (shown in parentheses)

NA indicates sample was Not Analyzed for specified analyte

Bold indicates analyte exceeded the applicable cleanup level

Table 3. Post-Cleanup Soil Sample Analytical Results - Pilot #583 Bioswale

Sample ID	Date	NWTPH-Dx	NWTPH-Dx	EPA-6020	EPA-6020	EPA-6020	EPA-6020
		Diesel Range	Oil Range	Arsenic	Cadmium	Chromium	Lead
		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Cleanup Levels:							
(MTCA Table 749-2)		460	460	20	25	42	220
Natural Background ^a		--	--	8	0.1	79	11
CS-1^b	9/12/13	ND(<25)	ND(<50)	7.9	ND(<0.50)	64	12
CS-1 OE	9/19/13	ND(<25)	ND(<50)	10	ND(<0.10)	62	15
CS-2	9/12/13	ND(<25)	ND(<50)	NA	NA	NA	NA
CS-3	9/12/13	ND(<25)	ND(<50)	NA	NA	NA	NA
CS-4	9/12/13	ND(<25)	ND(<50)	5.7	ND(<0.50)	28	5.5
CS-5	9/12/13	ND(<25)	ND(<50)	NA	NA	NA	NA
CS-6	9/12/13	ND(<25)	ND(<50)	NA	NA	NA	NA
CS-7	9/12/13	ND(<25)	ND(<50)	NA	NA	NA	NA
CS-8	9/12/13	ND(<25)	ND(<50)	5.2	ND(<0.50)	31	4.7
CS-9	9/12/13	ND(<25)	ND(<50)	NA	NA	NA	NA
CS-10^b	9/12/13	ND(<25)	510	NA	NA	NA	NA
CS-10 OE	9/19/13	ND(<25)	ND(<50)	NA	NA	NA	NA
CS-11	9/12/13	ND(<25)	57	6.5	ND(<0.50)	41	12
CS-12	9/12/13	ND(<25)	ND(<50)	6.4	ND(<0.50)	29	11

^a Background concentrations provided in Ecology Publication #94-115

^b Samples CS-1 and CS-10 were over-excavated

ND indicates analyte was Not Detected at level above reporting limit (shown in parentheses)

NA indicates sample was Not Analyzed for specified analyte

Bold indicates analyte exceeded the applicable cleanup level



Photo 1. Stormwater bioswale prior to cleanup.



Photo 2. The stained soil was removed using an excavator.



Photo 3. Excavated material was placed in a backhoe for removal from the site.



Photo 4. View of cleaned bioswale.



Photo 5. Topsoil was replaced in the clean bioswale.



Photo 6. Jute matting and straw wattles were placed over the new topsoil.



Photo 7. Rock was removed and replaced at the upper end of the bioswale below the inflow pipes.



Photo 8. View of cleaned parking lot catch basin.

APPENDIX A

Environmental Report Tracking System #639474

Department of Ecology - Environmental Report Tracking System

ERTS # 639474

Initial Report

External Reference #

Caller Information

Where did it happen

First Name JUSTIN
Last Name LVERSON
Business Name WHATCOM COUNTY FIRE
Street Address
Other Address
City **State** WA **Zip**
E-mail **Confidential_FL**
Phone **Ext** **Type**
 (360) 739-7658 Business

Berth **Anchorage**
Location Name
Street Address W Axton and Barrett Rd
Other Address
City/Place FERNDALE **State** WA **Zip**
County - Region **WHATCOM** NWRO FS ID
WIRA #
Waterway **Type**
Latitude **Longitude**
Topo Quad 1:24:000 FERNDALE
Direction/Landmark (mile post, cross roads, township/range)

What happened

Spills Program Oil Spill? Y

Incident Date 2/22/2013 **Received Date** 2/22/2013 10:00

Medium Impermeable surface

Material Diesel Oil
Sheen Only **Quantity** **To Water**
 0 0

Primary Potentially Responsible Party Information

First Name **Last Name**
Name UN KNOWN

Source Other - Vehicle
Type Vehicle **Primary**

Business Name
Street Address

Cause

Incident Type Other Accident (vehicular)
Activity Other
Impact CONTAMINATED ROADWAY/PARKING LOT

Other Address
City **State** WA **Zip**
Phone **Ext** **Type**
E-mail

Vessel Name
Hull Number

Additional Contact Information

Name **Phone** **Ext** **Type**
 VAN MIAL, TONY (360) 815-3164 Business

More Information

JUSTIN IVERSON

WHATCOM COUNTY FIRE JUSTIN IVERSON (360) 739-7658. STATED THERE HAD BEEN A VEHICLE WRECK IN THE PARKING LOT BEHIND THE SUPER 8 AT W AXTON AND BARRETT RD IN FERNDALE. WITH A POSSIBLE CAPACITY OF 20-25 GALLONS OF DIESEL FUEL IMPACTING PAVEMENT AND A POSSIBLE WEIR SYSTEM ON SITE. WEIR SYSTEM HAS BEEN OVERWHELMED AND PRODUCT MAY POSE A THREAT TO NEARBY WETLANDS. WILL CONTACT IN A COUPLE MINUTES WHEN MORE IS KNOWN.

LAT AND LONG- 48.849806 N AND 122.571995 W

Entry Person ELLEDGE, SARAH

Entry Date 2/22/2013

ERTS # 639474

Referral

<p>Referral Method</p> <p><input type="radio"/> E-mail ERTS number</p> <p><input checked="" type="radio"/> E-mail attachment</p> <p><input type="radio"/> Print</p> <p><input type="radio"/> Telephone</p>	<p>Person Referred to Schwatka, Chad</p> <p>Phone (425) 649-7092 Fax</p> <p>E-mail chsc461@ecy.wa.gov</p> <p>Program/Organization SPILLS, PREVENTION, PREPAREDNESS AND RESPONSE</p> <p>Address</p> <p>City Bellevue WA</p> <p>Region/Location NWRO</p> <p>Referral Date 2/22/2013</p>	<p>Referral # 165674</p> <p>Primary <input type="checkbox"/></p>
<p>Referral Method</p> <p><input type="radio"/> E-mail ERTS number</p> <p><input checked="" type="radio"/> E-mail attachment</p> <p><input type="radio"/> Print</p> <p><input type="radio"/> Telephone</p>	<p>Person Referred to MAGINNIS, CHRISTINA</p> <p>Phone (360) 715-5212 Fax (360) 715-5225</p> <p>E-mail christina.maginnis@ecy.wa.gov</p> <p>Program/Organization WATER QUALITY</p> <p>Address 1440 10TH ST</p> <p>City BELLINGHAM WA 98225-7028</p> <p>Region/Location BFO</p> <p>Referral Date 2/22/2013</p>	<p>Referral # 165699</p> <p>Primary <input type="checkbox"/></p>
<p>Referral Method</p> <p><input type="radio"/> E-mail ERTS number</p> <p><input checked="" type="radio"/> E-mail attachment</p> <p><input type="radio"/> Print</p> <p><input type="radio"/> Telephone</p>	<p>Person Referred to CITY OF FERNDALE, WENDY LAROCQUE</p> <p>Phone Fax</p> <p>E-mail wendylarocque@cityofferndale.org</p> <p>Program/Organization CITY OF FERNDALE</p> <p>Address SURFACE / STORMWATER MGR</p> <p>City FERNDALE WA 98248-</p> <p>Region/Location NWRO/BFO</p> <p>Referral Date 2/22/2013</p>	<p>Referral # 165704</p> <p>Primary <input type="checkbox"/></p>

ERTS # 639474

Followup

Inspector Information

Referral # 165674
 Lead Inspector Schwatka, Chad
Program/Organization SPILLS, PREVENTION, PREPAREDNESS AND RESPONSE
 * **Region/Location** NWRO
of Ecology Staff 1 **Overtime**

Where did it happen

Berth Anchorage
Location Name
Street Address W Axton and Barrett Rd
Other Address
City/Place FERNDALE **State** WA **Zip**
County WHATCOM **Region** NWRO **FS ID**
Waterway **Type**
WRIA #

Followup #1

Action

FIELD RESPONSE - INVESTIGATION **Start Date** 2/22/2013 **End Date** 2/22/2013

What happened

Incident Date 2/22/2013 **Spills Program Oil Spill?** Y

Latitude 48.849806 **Longitude** 122.571995
Topo Quad 1:24,000 FERNDALE
Direction/Landmark (mile post, cross roads, township/range)

Medium

Impermeable surface

Material

Diesel Oil **Sheen Only**

Quantity	To Water	To Imperm	Recover	NRDA	Est
0	0	0	0	0	<input type="checkbox"/>

Potentially Responsible Party Information

Check if the primary PRP provided notice to Ecology

Source

Regulated?
Other - Vehicle
Type Vehicle **Primary**

Primary **First** **Last**

Name UN KNOWN

Business Name

Street Address

Other Address

City **State** WA **Zip**

Phone **Ext** **Type**

E-mail

Cause

Type Unknown **Primary**

Incident Type

Oil Spill (without precursor incident)

Activity

Unknown

Impact

CONTAMINATED ROADWAY/PARKING LOT

Vessel

Narrative

Received a transferred call from the front desk. Whatcom County Fire Justin Iverson (360) 739-7658. Stated there had been a vehicle wreck in the parking lot behind the Super 8 at W Axton and Barrett Rd in Ferndale. With a possible capacity of 20-25 gallons of diesel fuel impacting pavement and a possible weir system on site. I requested pictures of the site and left him my email address. He was unsure on RP and actual impacts to the weir system or runoff into the nearby wetlands at this time. Will contact in a couple minutes when more is known.

Fire department has absorbents on site and feels actual spill may be just sheen that was present in the weir system before it failed and no spill response assistance is needed. Absorbents are being applied to parking lot sheen a run off. He said he just wanted to report the possibility of a failing or failed weir system within the truck parking lot to Ecology. He believes it may have an impact to nearby wetlands in the future. In this case he believes the weir system is definitely overwhelmed with minimal rains today. Will be referring to water resources after pictures are acquired.

NOFA action by CS at this time.

Vessel Emergency

Entry Person: Schwatka, Chad

Entry Date 2/22/2013

APPENDIX B

Pre-Cleanup Soil Sample Original Laboratory Analytical Data



July 3, 2013

Mr. Harold Cashman
Whatcom Environmental Svcs., Inc.
228 E. Champion St., Suite 101
Bellingham, WA 98225

Dear Mr. Cashman,

On June 27th, 9 samples were received by our laboratory and assigned our laboratory project number EV13060150. The project was identified as your Pilot #583 Bioswale. The sample identification and requested analyses are outlined on the attached chain of custody record.

No abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rick Bagan
Laboratory Director



CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	7/3/2013
CLIENT CONTACT:	Harold Cashman	ALS JOB#:	EV13060150
CLIENT PROJECT:	Pilot #583 Bioswale	ALS SAMPLE#:	-01
CLIENT SAMPLE ID	SS-1 0-1"	DATE RECEIVED:	6/27/2013
		COLLECTION DATE:	6/26/2013 11:45:00 AM
		WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	U	120	5	MG/KG-dry	07/03/2013	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	2100	250	5	MG/KG-dry	07/03/2013	EBS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 5X Dilution	NWTPH-DX w/ SGA	79.1	07/03/2013	EBS

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains lube oil.



CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	7/3/2013
CLIENT CONTACT:	Harold Cashman	ALS JOB#:	EV13060150
CLIENT PROJECT:	Pilot #583 Bioswale	ALS SAMPLE#:	-02
CLIENT SAMPLE ID	SS-2 0-1"	DATE RECEIVED:	6/27/2013
		COLLECTION DATE:	6/26/2013 12:10:00 PM
		WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	6400	250	10	MG/KG-dry	07/03/2013	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	14000	500	10	MG/KG-dry	07/03/2013	EBS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 10X Dilution	NWTPH-DX w/ SGA	147 DS2	07/03/2013	EBS

DS2 - Due to high dilution factor surrogate results should be considered uncontrolled. Chromatogram indicates that it is likely that sample contains highly weathered diesel and lube oil. Diesel range product results biased high due to oil range product overlap.



CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	7/3/2013
CLIENT CONTACT:	Harold Cashman	ALS JOB#:	EV13060150
CLIENT PROJECT:	Pilot #583 Bioswale	ALS SAMPLE#:	-03
CLIENT SAMPLE ID	SS-3 0-1"	DATE RECEIVED:	6/27/2013
		COLLECTION DATE:	6/26/2013 12:30:00 PM
		WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	1600	120	5	MG/KG-dry	07/03/2013	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	4200	250	5	MG/KG-dry	07/03/2013	EBS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 5X Dilution	NWTPH-DX w/ SGA	117	07/03/2013	EBS

Chromatogram indicates that it is likely that sample contains highly weathered diesel and lube oil.
Diesel range product results biased high due to oil range product overlap.

CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	7/3/2013
CLIENT CONTACT:	Harold Cashman	ALS JOB#:	EV13060150
CLIENT PROJECT:	Pilot #583 Bioswale	ALS SAMPLE#:	-04
CLIENT SAMPLE ID	SS-4 0-3"	DATE RECEIVED:	6/27/2013
		COLLECTION DATE:	6/26/2013 12:40:00 PM
		WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	50	25	1	MG/KG-dry	07/03/2013	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	140	50	1	MG/KG-dry	07/03/2013	EBS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	88.7	07/03/2013	EBS

Chromatogram indicates that it is likely that sample contains highly weathered diesel and lube oil.
Diesel range product results biased high due to oil range product overlap.



CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	7/3/2013
CLIENT CONTACT:	Harold Cashman	ALS JOB#:	EV13060150
CLIENT PROJECT:	Pilot #583 Bioswale	ALS SAMPLE#:	-05
CLIENT SAMPLE ID	SS-4 3"-6"	DATE RECEIVED:	6/27/2013
		COLLECTION DATE:	6/26/2013 12:40:00 PM
		WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	U	25	1	MG/KG-dry	07/03/2013	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	U	51	1	MG/KG-dry	07/03/2013	EBS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	89.7	07/03/2013	EBS

U - Analyte analyzed for but not detected at level above reporting limit.
 Chromatogram indicates that it is likely that sample contains highly weathered diesel and lube oil.
 Diesel range product results biased high due to oil range product overlap.



CERTIFICATE OF ANALYSIS

CLIENT: Whatcom Environmental Svcs., Inc. DATE: 7/3/2013
228 E. Champion St., Suite 101 ALS JOB#: EV13060150
Bellingham, WA 98225 ALS SAMPLE#: -06
CLIENT CONTACT: Harold Cashman DATE RECEIVED: 6/27/2013
CLIENT PROJECT: Pilot #583 Bioswale COLLECTION DATE: 6/26/2013 1:00:00 PM
CLIENT SAMPLE ID: SS-5 0-3" WDOE ACCREDITATION: C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	380	50	2	MG/KG-dry	07/03/2013	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	780	100	2	MG/KG-dry	07/03/2013	EBS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 2X Dilution	NWTPH-DX w/ SGA	119	07/03/2013	EBS

Chromatogram indicates that it is likely that sample contains highly weathered diesel and lube oil.
Diesel range product results biased high due to oil range product overlap.



CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	7/3/2013
CLIENT CONTACT:	Harold Cashman	ALS JOB#:	EV13060150
CLIENT PROJECT:	Pilot #583 Bioswale	ALS SAMPLE#:	-07
CLIENT SAMPLE ID	SS-5 3"-6"	DATE RECEIVED:	6/27/2013
		COLLECTION DATE:	6/26/2013 1:00:00 PM
		WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	44	25	1	MG/KG-dry	07/03/2013	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	130	50	1	MG/KG-dry	07/03/2013	EBS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	86.5	07/03/2013	EBS

Chromatogram indicates that it is likely that sample contains highly weathered diesel and lube oil.
Diesel range product results biased high due to oil range product overlap.



CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	7/3/2013
CLIENT CONTACT:	Harold Cashman	ALS JOB#:	EV13060150
CLIENT PROJECT:	Pilot #583 Bioswale	ALS SAMPLE#:	-08
CLIENT SAMPLE ID	SS-6 0-3"	DATE RECEIVED:	6/27/2013
		COLLECTION DATE:	6/26/2013 1:20:00 PM
		WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	240	50	2	MG/KG-dry	07/03/2013	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	590	100	2	MG/KG-dry	07/03/2013	EBS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 2X Dilution	NWTPH-DX w/ SGA	95.2	07/03/2013	EBS

Chromatogram indicates that it is likely that sample contains highly weathered diesel and lube oil.
Diesel range product results biased high due to oil range product overlap.



CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	7/3/2013
CLIENT CONTACT:	Harold Cashman	ALS JOB#:	EV13060150
CLIENT PROJECT:	Pilot #583 Bioswale	ALS SAMPLE#:	-09
CLIENT SAMPLE ID	SS-6 3"-6"	DATE RECEIVED:	6/27/2013
		COLLECTION DATE:	6/26/2013 1:20:00 PM
		WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	U	25	1	MG/KG-dry	07/03/2013	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	52	50	1	MG/KG-dry	07/03/2013	EBS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	92.4	07/03/2013	EBS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: Whatcom Environmental Svcs., Inc. DATE: 7/3/2013
228 E. Champion St., Suite 101 ALS SDG#: EV13060150
Bellingham, WA 98225 WDOE ACCREDITATION: C601
CLIENT CONTACT: Harold Cashman
CLIENT PROJECT: Pilot #583 Bioswale

LABORATORY BLANK RESULTS

MB-070213S - Batch 3878 - Soil by NWTPH-DX

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	25	1	MG/KG	07/02/2013	EBS
TPH-Oil Range	NWTPH-DX	U	50	1	MG/KG	07/02/2013	EBS



CERTIFICATE OF ANALYSIS

CLIENT: Whatcom Environmental Svcs., Inc. DATE: 7/3/2013
228 E. Champion St., Suite 101 ALS SDG#: EV13060150
Bellingham, WA 98225 WDOE ACCREDITATION: C601
CLIENT CONTACT: Harold Cashman
CLIENT PROJECT: Pilot #583 Bioswale

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 3878 - Soil by NWTPH-DX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range - BS	NWTPH-DX	84.5			07/02/2013	EBS
TPH-Diesel Range - BSD	NWTPH-DX	85.3	1		07/02/2013	EBS

APPROVED BY

Laboratory Director



ALS Environmental
 8620 Holly Drive, Suite 100
 Everett, WA 98208
 Phone (425) 356-2600
 Fax (425) 356-2626
 http://www.alsglobal.com

**Chain Of Custody/
 Laboratory Analysis Request**

ALS Job # _____ (Laboratory Use Only)
 EN1306 0150

Date 6-26-13 Page 1 of 1

PROJECT ID: PICOT #583 BIOSVALE
 REPORT TO COMPANY: WATSON ENVIRONMENTAL
 PROJECT MANAGER: HAROLD CASHMAN
 ADDRESS: 228 E CAMPBELL ST. #101
REWALKIN, WA 98225
 PHONE: (360) 752-9571 FAX: _____
 PO #: _____ EMAIL: NICK@WATSONENV.COM
 INVOICE TO COMPANY: SAME AS ABOVE
 ATTENTION: _____
 ADDRESS: _____

SAMPLE I.D.	DATE	TIME	TYPE	LAB#	ANALYSIS REQUESTED	OTHER (Specify)	NUMBER OF CONTAINERS	RECEIVED IN GOOD CONDITION?
1. <u>SS-1 0-1"</u>	<u>6-26</u>	<u>11:45</u>	<u>SOIL</u>	<u>1</u>	NWTPH-HCID NWTPH-DX <u>W/ SILICA GEL</u> NWTPH-GX BTEX by EPA-8021 MTBE by EPA-8021 <input type="checkbox"/> EPA-8260 <input type="checkbox"/> Halogenated Volatiles by EPA 8260 Volatile Organic Compounds by EPA 8260 EDB / EDC by EPA 8260 SIM (water) EDB / EDC by EPA 8260 (soil) Semivolatile Organic Compounds by EPA 8270 Polycyclic Aromatic Hydrocarbons (PAH) by EPA-8270 SIM <input type="checkbox"/> PCB <input type="checkbox"/> Pesticides <input type="checkbox"/> by EPA 8081/8082 Metals-MTCA-5 <input type="checkbox"/> RCRA-8 <input type="checkbox"/> Pri Pol <input type="checkbox"/> TAL <input type="checkbox"/> Metals Other (Specify) TCLP-Metals <input type="checkbox"/> VOA <input type="checkbox"/> Semi-Vol <input type="checkbox"/> Pest <input type="checkbox"/> Herbs <input type="checkbox"/>			
2. <u>SS-2 0-1"</u>		<u>12:10</u>		<u>2</u>	X			
3. <u>SS-3 0-1"</u>		<u>12:30</u>		<u>3</u>	X			
4. <u>SS-4 0-3"</u>		<u>12:40</u>		<u>4</u>	X			
5. <u>SS-4 3-6"</u>		<u>12:40</u>		<u>5</u>	X			
6. <u>SS-5 0-3"</u>		<u>1:00</u>		<u>6</u>	X			
7. <u>SS-5 3-6"</u>		<u>1:00</u>		<u>7</u>	X			
8. <u>SS-6 0-3"</u>		<u>1:20</u>		<u>8</u>	X			
9. <u>SS-6 3-6"</u>		<u>1:20</u>		<u>9</u>	X			
10.								

SPECIAL INSTRUCTIONS

SIGNATURES (Name, Company, Date, Time):

1. Relinquished By: Tan Hy 7-1, WES, 6-26-13, 2:15

Received By: _____

2. Relinquished By: Shush Roban AHS 6/27/13 9:50

TURNAROUND REQUESTED in Business Days*
 OTHER: _____

Organic, Metals & Inorganic Analysis
 10 5 3 2 1 SAME DAY

Fuels & Hydrocarbon Analysis
 3 1 SAME DAY

Specify: _____

* Turnaround request less than standard may incur Rush Charges



July 17, 2013

Mr. Harold Cashman
Whatcom Environmental Svcs., Inc.
228 E. Champion St., Suite 101
Bellingham, WA 98225

Dear Mr. Cashman,

On June 27th, 1 sample was received by our laboratory and assigned our laboratory project number EV13070060. The project was identified as your Pilot #583 Bioswale. The sample identification and requested analyses are outlined on the attached chain of custody record.

No abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rick Bagan
Laboratory Director



CERTIFICATE OF ANALYSIS

CLIENT: Whatcom Environmental Svcs., Inc.
 228 E. Champion St., Suite 101
 Bellingham, WA 98225

DATE: 7/17/2013
 ALS JOB#: EV13070060
 ALS SAMPLE#: -01
 DATE RECEIVED: 6/27/2013
 COLLECTION DATE: 6/26/2013 12:10:00 PM
 WDOE ACCREDITATION: C601

CLIENT CONTACT: Harold Cashman
 CLIENT PROJECT: Pilot #583 Bioswale
 CLIENT SAMPLE ID: SS-2 0-1"

DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Mercury	EPA-7471	0.075	0.020	1	MG/KG	07/11/2013	RAL
Arsenic	EPA-6020	5.8	2.3	5	MG/KG	07/15/2013	RAL
Barium	EPA-6020	300	0.50	5	MG/KG	07/15/2013	RAL
Cadmium	EPA-6020	2.4	0.72	5	MG/KG	07/15/2013	RAL
Chromium	EPA-6020	45	1.2	5	MG/KG	07/15/2013	RAL
Lead	EPA-6020	28	0.75	5	MG/KG	07/15/2013	RAL
Selenium	EPA-6020	U	10	5	MG/KG	07/15/2013	RAL
Silver	EPA-6020	U	0.73	5	MG/KG	07/15/2013	RAL

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: Whatcom Environmental Svcs., Inc. **DATE:** 7/17/2013
 228 E. Champion St., Suite 101 **ALS SDG#:** EV13070060
 Bellingham, WA 98225 **WDOE ACCREDITATION:** C601
CLIENT CONTACT: Harold Cashman
CLIENT PROJECT: Pilot #583 Bioswale

LABORATORY BLANK RESULTS

MBLK-7112013 - Batch R81994 - Soil by EPA-7471

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Mercury	EPA-7471	U	0.020	1	MG/KG	07/11/2013	RAL

MB-071113S - Batch 3912 - Soil by EPA-6020

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Arsenic	EPA-6020	U	0.20	1	MG/KG	07/12/2013	RAL
Barium	EPA-6020	U	0.10	1	MG/KG	07/12/2013	RAL
Cadmium	EPA-6020	U	0.10	1	MG/KG	07/12/2013	RAL
Chromium	EPA-6020	U	0.10	1	MG/KG	07/12/2013	RAL
Lead	EPA-6020	U	0.10	1	MG/KG	07/12/2013	RAL
Selenium	EPA-6020	U	1.0	1	MG/KG	07/12/2013	RAL
Silver	EPA-6020	U	0.10	1	MG/KG	07/12/2013	RAL



CERTIFICATE OF ANALYSIS

CLIENT: Whatcom Environmental Svcs., Inc.
228 E. Champion St., Suite 101
Bellingham, WA 98225

DATE: 7/17/2013
ALS SDG#: EV13070060
WDOE ACCREDITATION: C601

CLIENT CONTACT: Harold Cashman
CLIENT PROJECT: Pilot #583 Bioswale

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: R81994 - Soil by EPA-7471

Table with 7 columns: SPIKED COMPOUND, METHOD, %REC, RPD, QUAL, ANALYSIS DATE, ANALYSIS BY. Rows include Mercury - BS and Mercury - BSD.

ALS Test Batch ID: 3912 - Soil by EPA-6020

Table with 7 columns: SPIKED COMPOUND, METHOD, %REC, RPD, QUAL, ANALYSIS DATE, ANALYSIS BY. Rows include various elements like Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, and Silver.

APPROVED BY

Handwritten signature of Paul Baggett

Laboratory Director

APPENDIX C

Soil Disposal Records

Alaska Street Reload and Recycling

70 South Alaska Street, Seattle Washington 98134

Profile # 108066WA

PERMIT TO DISPOSE OF NON-HAZARDOUS MATERIALS

This permit authorizes disposal of Customer's waste materials in accordance with the Industrial Waste & Disposal Services Agreement dated _____.


EXPIRES: 8/21/2014

GENERATOR: PILOT TRUCK STOP

DESCRIPTION: <i>PCS - DIESEL</i>	VOLUME: <i>50 TONS</i>
<input type="checkbox"/> DRUMS <input type="checkbox"/> BR <input checked="" type="checkbox"/> ADC <input checked="" type="checkbox"/> CLEAN UP	
LOCATION: <i>FERNDALE, WASHINGTON 1678 MAIN STREET</i>	COUNTY: <i>* WHATCOM</i>
CONTACT: <i>MIKE RODERICK</i>	PHONE: <i>360-354-8585</i>
	FAX: <i>MIKE@STREMLERGRAVEL. NET</i>
Recertification: <input type="checkbox"/> Yes <input type="checkbox"/> No	

BILLING: <i>LANDFILL ACCOUNT STREMLER GRAVEL</i>	PO#: <i>583 BIOSWALE</i>	JOB#: <i>N/A</i>
--	--------------------------	------------------

TYPE OF DISPOSAL/SPECIAL HANDLING : <i>BULK, ADC, NO FREE LIQUIDS</i>
***** FAILURE TO SCHEDULE LOADS MAY RESULT IN REFUSAL AT GATE*****

APPROVED:  <i>KRISTIN CASTNER</i> DATE: <i>08/21/13 4:08:16 PM</i>

A COPY OF THIS PERMIT MUST BE SHOWN BY EACH DRIVER

PROJECTS MUST BE SCHEDULED PRIOR TO
SHIPPING CALL : 206-763-5025



WASTE MANAGEMENT
HAZARDOUS WASTE IS STRICTLY PROHIBITED

Customer Summary Report

Criteria: 09/02/2013 12:00 AM to 09/13/2013 11:59 PM

Business Unit Name: AK St Reload and Recycle Facility - S07325 (USA)

Customer Name: STREMLER GRAVEL INC (STREMLER GRAVEL INC)

Ticket Date	Ticket ID	Cust Code	Generator	Profile	Truck	Tons	Total
9/13/2013	67723	0000294	WA-PILOT TRUCK STOP	108066WA	SG10	26.5	\$1,459.10
Customer Total	1					26.5	\$1,459.10

Customer Summary Report

Criteria: 09/16/2013 12:00 AM to 09/30/2013 11:59 PM

Business Unit Name: AK St Reload and Recycle Facility - S07325 (USA)

Customer Name: STREMLER GRAVEL INC (STREMLER GRAVEL INC)

Ticket Date	Ticket ID	Cust Code	Generator	Profile	Truck	Tons	Total
9/19/2013	68140	0000294	WA-PILOT TRUCK STOP	108066WA	SG10S	10.44	\$574.83
Customer Total	1					10.44	\$574.83



Alaska Street
70 S Alaska Street
Seattle, WA, 98134

Ph: 206 763 5025

Reprint
Ticket# 67723

Customer Name STREMLER GRAVEL INC STREMLER
Ticket Date 09/13/2013
Payment Type Credit Account
Manual Ticket#
Route AK
Hauling Ticket#
Destination
PO# 583 BIOSWALE

Carrier SELF HAULER *
Vehicle# SG10
Container
Driver DAVE BOWMAN
Check#
Billing# 0000294
Grid

Volume

	Time	Scale	Operator	Inbound	Gross	
In	09/13/2013 07:04:15	SCALE 1	lmercer		94420	1b
Out	09/13/2013 07:04:15		lmercer		41420	1b
					53000	1b
Comments	STREMLER GRAVEL - GD				Tons	26.50

Product	LD%	Qty	UOM	Rate	Tax	Amount	Origin
1 ENVCLEANUP RGCPES-Tons-E	100	26.50	Tons				
2 GONDOLA 16.77/TN-GONDOLA	100	26.50	Tons				WHATCOM
3 ENVFEE\$8.16-Env Fee \$8.1	100	26.50	Tons				

Total Tax
Total Ticket

2013 Wmver's Signature

TX1100089 (ALL)

Made by WorkflowOne



Alaska Street
70 S Alaska Street
Seattle, WA, 98134

Original
Ticket # 8891
Date 09/19/2013

Customer Name: STREAMER GRAVEL INC STREAMER
Ticket Date: 09/19/2013
Payment Type: Credit Account
Manual Ticket#:
Route: AK
Hauling Ticket#:
Destination:
PO#: 583 BIOSWALE
Carrier: SELF Hauler
Vehicle#: 5G103
Container#:
Driver: DAVE BOWMAN
Check#:
Billing#: 0000294
Grid:

Volume

	Time	Scale	Operator	Inbound	Gross	
In	09/19/2013 13:54:41	SCALE 1	Imercer		47540	lb
Out	09/19/2013 14:23:29	SCALE 1	Imercer		26660	lb
					Net	20880
					Tare	10.44

Comments: STREAMER GRAVEL 60 (108066WA)

Product	Rate	Tax	Amount	Origin
1 ENVI 80007 8601'S Tons F	100	10.44	Tons	WHATCOM
2 GONDOLI 16.77/14-GONDOLI 0	100	10.44	Tons	WHATCOM
3 ENVFEE 18.16-Env Fee 18.1	100	10.44	Tons	WHATCOM

Total Tax
Total Ticket

209Waste Management's Signature

APPENDIX D

Post-Cleanup Soil Sample Original Laboratory Analytical Data



September 13, 2013

Mr. Harold Cashman
Whatcom Environmental Svcs., Inc.
228 E. Champion St., Suite 101
Bellingham, WA 98225

Dear Mr. Cashman,

On September 12th, 12 samples were received by our laboratory and assigned our laboratory project number EV13090084. The project was identified as your Pilot #583 Bioswale. The sample identification and requested analyses are outlined on the attached chain of custody record.

No abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rick Bagan
Laboratory Director



CERTIFICATE OF ANALYSIS

CLIENT: Whatcom Environmental Svcs., Inc.
 228 E. Champion St., Suite 101
 Bellingham, WA 98225

DATE: 9/13/2013
 ALS JOB#: EV13090084
 ALS SAMPLE#: -01
 DATE RECEIVED: 9/12/2013
 COLLECTION DATE: 9/12/2013 10:30:00 AM
 WDOE ACCREDITATION: C601

CLIENT CONTACT: Harold Cashman
 CLIENT PROJECT: Pilot #583 Bioswale
 CLIENT SAMPLE ID: CS-1

DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	U	25	1	MG/KG	09/12/2013	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	U	50	1	MG/KG	09/12/2013	EBS
Arsenic	EPA-6020	7.9	1.1	5	MG/KG	09/13/2013	RAL
Cadmium	EPA-6020	U	0.50	5	MG/KG	09/13/2013	RAL
Chromium	EPA-6020	64	0.56	5	MG/KG	09/13/2013	RAL
Lead	EPA-6020	12	0.50	5	MG/KG	09/13/2013	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	99.6	09/12/2013	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	9/13/2013
CLIENT CONTACT:	Harold Cashman	ALS JOB#:	EV13090084
CLIENT PROJECT:	Pilot #583 Bioswale	ALS SAMPLE#:	-02
CLIENT SAMPLE ID	CS-2	DATE RECEIVED:	9/12/2013
		COLLECTION DATE:	9/12/2013 10:35:00 AM
		WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	U	25	1	MG/KG	09/12/2013	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	U	50	1	MG/KG	09/12/2013	EBS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	95.6	09/12/2013	EBS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	9/13/2013
CLIENT CONTACT:	Harold Cashman	ALS JOB#:	EV13090084
CLIENT PROJECT:	Pilot #583 Bioswale	ALS SAMPLE#:	-03
CLIENT SAMPLE ID	CS-3	DATE RECEIVED:	9/12/2013
		COLLECTION DATE:	9/12/2013 10:40:00 AM
		WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	U	25	1	MG/KG	09/13/2013	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	U	50	1	MG/KG	09/13/2013	EBS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	95.4	09/13/2013	EBS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	9/13/2013
CLIENT CONTACT:	Harold Cashman	ALS JOB#:	EV13090084
CLIENT PROJECT:	Pilot #583 Bioswale	ALS SAMPLE#:	-04
CLIENT SAMPLE ID	CS-4	DATE RECEIVED:	9/12/2013
		COLLECTION DATE:	9/12/2013 10:45:00 AM
		WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	U	25	1	MG/KG	09/13/2013	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	U	50	1	MG/KG	09/13/2013	EBS
Arsenic	EPA-6020	5.7	1.0	5	MG/KG	09/13/2013	RAL
Cadmium	EPA-6020	U	0.50	5	MG/KG	09/13/2013	RAL
Chromium	EPA-6020	28	0.50	5	MG/KG	09/13/2013	RAL
Lead	EPA-6020	5.5	0.50	5	MG/KG	09/13/2013	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	94.2	09/13/2013	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	9/13/2013
CLIENT CONTACT:	Harold Cashman	ALS JOB#:	EV13090084
CLIENT PROJECT:	Pilot #583 Bioswale	ALS SAMPLE#:	-05
CLIENT SAMPLE ID	CS-5	DATE RECEIVED:	9/12/2013
		COLLECTION DATE:	9/12/2013 10:50:00 AM
		WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	U	25	1	MG/KG	09/13/2013	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	U	50	1	MG/KG	09/13/2013	EBS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	104	09/13/2013	EBS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: Whatcom Environmental Svcs., Inc. DATE: 9/13/2013
228 E. Champion St., Suite 101 ALS JOB#: EV13090084
Bellingham, WA 98225 ALS SAMPLE#: -06
CLIENT CONTACT: Harold Cashman DATE RECEIVED: 9/12/2013
CLIENT PROJECT: Pilot #583 Bioswale COLLECTION DATE: 9/12/2013 10:55:00 AM
CLIENT SAMPLE ID CS-6 WDOE ACCREDITATION: C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	U	25	1	MG/KG	09/13/2013	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	U	50	1	MG/KG	09/13/2013	EBS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	97.8	09/13/2013	EBS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	9/13/2013
CLIENT CONTACT:	Harold Cashman	ALS JOB#:	EV13090084
CLIENT PROJECT:	Pilot #583 Bioswale	ALS SAMPLE#:	-07
CLIENT SAMPLE ID	CS-7	DATE RECEIVED:	9/12/2013
		COLLECTION DATE:	9/12/2013 11:00:00 AM
		WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	U	25	1	MG/KG	09/12/2013	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	U	50	1	MG/KG	09/12/2013	EBS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	97.1	09/12/2013	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	9/13/2013
CLIENT CONTACT:	Harold Cashman	ALS JOB#:	EV13090084
CLIENT PROJECT:	Pilot #583 Bioswale	ALS SAMPLE#:	-08
CLIENT SAMPLE ID	CS-8	DATE RECEIVED:	9/12/2013
		COLLECTION DATE:	9/12/2013 11:05:00 AM
		WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	U	25	1	MG/KG	09/12/2013	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	U	50	1	MG/KG	09/12/2013	EBS
Arsenic	EPA-6020	5.2	1.0	5	MG/KG	09/13/2013	RAL
Cadmium	EPA-6020	U	0.50	5	MG/KG	09/13/2013	RAL
Chromium	EPA-6020	31	0.50	5	MG/KG	09/13/2013	RAL
Lead	EPA-6020	4.7	0.50	5	MG/KG	09/13/2013	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	91.0	09/12/2013	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	9/13/2013
CLIENT CONTACT:	Harold Cashman	ALS JOB#:	EV13090084
CLIENT PROJECT:	Pilot #583 Bioswale	ALS SAMPLE#:	-09
CLIENT SAMPLE ID	CS-9	DATE RECEIVED:	9/12/2013
		COLLECTION DATE:	9/12/2013 11:30:00 AM
		WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	U	25	1	MG/KG	09/12/2013	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	U	50	1	MG/KG	09/12/2013	EBS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	81.3	09/12/2013	EBS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	9/13/2013
CLIENT CONTACT:	Harold Cashman	ALS JOB#:	EV13090084
CLIENT PROJECT:	Pilot #583 Bioswale	ALS SAMPLE#:	-10
CLIENT SAMPLE ID	CS-10	DATE RECEIVED:	9/12/2013
		COLLECTION DATE:	9/12/2013 11:40:00 AM
		WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	U	25	1	MG/KG	09/13/2013	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	510	50	1	MG/KG	09/13/2013	EBS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	89.3	09/13/2013	EBS

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains lube oil.



CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	9/13/2013
CLIENT CONTACT:	Harold Cashman	ALS JOB#:	EV13090084
CLIENT PROJECT:	Pilot #583 Bioswale	ALS SAMPLE#:	-11
CLIENT SAMPLE ID	CS-11	DATE RECEIVED:	9/12/2013
		COLLECTION DATE:	9/12/2013 12:15:00 PM
		WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	U	25	1	MG/KG	09/12/2013	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	57	50	1	MG/KG	09/12/2013	EBS
Arsenic	EPA-6020	6.5	1.0	5	MG/KG	09/13/2013	RAL
Cadmium	EPA-6020	U	0.50	5	MG/KG	09/13/2013	RAL
Chromium	EPA-6020	41	0.50	5	MG/KG	09/13/2013	RAL
Lead	EPA-6020	12	0.50	5	MG/KG	09/13/2013	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	102	09/12/2013	EBS

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains lube oil.



CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	9/13/2013
CLIENT CONTACT:	Harold Cashman	ALS JOB#:	EV13090084
CLIENT PROJECT:	Pilot #583 Bioswale	ALS SAMPLE#:	-12
CLIENT SAMPLE ID	CS-12	DATE RECEIVED:	9/12/2013
		COLLECTION DATE:	9/12/2013 12:20:00 PM
		WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	U	25	1	MG/KG	09/12/2013	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	U	50	1	MG/KG	09/12/2013	EBS
Arsenic	EPA-6020	6.4	1.0	5	MG/KG	09/13/2013	RAL
Cadmium	EPA-6020	U	0.50	5	MG/KG	09/13/2013	RAL
Chromium	EPA-6020	29	0.50	5	MG/KG	09/13/2013	RAL
Lead	EPA-6020	11	0.50	5	MG/KG	09/13/2013	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	97.1	09/12/2013	EBS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	9/13/2013
CLIENT CONTACT:	Harold Cashman	ALS SDG#:	EV13090084
CLIENT PROJECT:	Pilot #583 Bioswale	WDOE ACCREDITATION:	C601

LABORATORY BLANK RESULTS

MB-091213S - Batch 7044 - Soil by NWTPH-DX

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	25	1	MG/KG	09/12/2013	EBS
TPH-Oil Range	NWTPH-DX	U	50	1	MG/KG	09/12/2013	EBS

MB-091313S - Batch 7049 - Soil by EPA-6020

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Arsenic	EPA-6020	U	0.20	1	MG/KG	09/13/2013	RAL
Cadmium	EPA-6020	U	0.10	1	MG/KG	09/13/2013	RAL
Chromium	EPA-6020	U	0.10	1	MG/KG	09/13/2013	RAL
Lead	EPA-6020	U	0.10	1	MG/KG	09/13/2013	RAL



CERTIFICATE OF ANALYSIS

CLIENT: Whatcom Environmental Svcs., Inc. DATE: 9/13/2013
228 E. Champion St., Suite 101 ALS SDG#: EV13090084
Bellingham, WA 98225 WDOE ACCREDITATION: C601
CLIENT CONTACT: Harold Cashman
CLIENT PROJECT: Pilot #583 Bioswale

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 7044 - Soil by NWTPH-DX

Table with 7 columns: SPIKED COMPOUND, METHOD, %REC, RPD, QUAL, ANALYSIS DATE, ANALYSIS BY. Rows include TPH-Diesel Range - BS and TPH-Diesel Range - BSD.

ALS Test Batch ID: 7049 - Soil by EPA-6020

Table with 7 columns: SPIKED COMPOUND, METHOD, %REC, RPD, QUAL, ANALYSIS DATE, ANALYSIS BY. Rows include Arsenic, Cadmium, Chromium, and Lead in various forms.

APPROVED BY

Handwritten signature of Paul Baggett

Laboratory Director



September 20, 2013

Mr. Harold Cashman
Whatcom Environmental Svcs., Inc.
228 E. Champion St., Suite 101
Bellingham, WA 98225

Dear Mr. Cashman,

On September 19th, 2 samples were received by our laboratory and assigned our laboratory project number EV13090119. The project was identified as your Pilot Bioswale. The sample identification and requested analyses are outlined on the attached chain of custody record.

No abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rick Bagan
Laboratory Director



CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	9/20/2013
CLIENT CONTACT:	Harold Cashman	ALS JOB#:	EV13090119
CLIENT PROJECT:	Pilot Bioswale	ALS SAMPLE#:	-01
CLIENT SAMPLE ID	CS-1 OE	DATE RECEIVED:	9/19/2013
		COLLECTION DATE:	9/19/2013 10:30:00 AM
		WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	25	1	MG/KG	09/19/2013	EBS
TPH-Oil Range	NWTPH-DX	U	50	1	MG/KG	09/19/2013	EBS
Arsenic	EPA-6020	10	1.1	5	MG/KG	09/20/2013	RAL
Cadmium	EPA-6020	U	0.50	5	MG/KG	09/20/2013	RAL
Chromium	EPA-6020	62	0.55	5	MG/KG	09/20/2013	RAL
Lead	EPA-6020	15	0.50	5	MG/KG	09/20/2013	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	101	09/19/2013	EBS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	9/20/2013
CLIENT CONTACT:	Harold Cashman	ALS JOB#:	EV13090119
CLIENT PROJECT:	Pilot Bioswale	ALS SAMPLE#:	-02
CLIENT SAMPLE ID	CS-10 OE	DATE RECEIVED:	9/19/2013
		COLLECTION DATE:	9/19/2013 9:50:00 AM
		WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	25	1	MG/KG	09/19/2013	EBS
TPH-Oil Range	NWTPH-DX	U	50	1	MG/KG	09/19/2013	EBS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	86.6	09/19/2013	EBS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: Whatcom Environmental Svcs., Inc. DATE: 9/20/2013
228 E. Champion St., Suite 101 ALS SDG#: EV13090119
Bellingham, WA 98225 WDOE ACCREDITATION: C601
CLIENT CONTACT: Harold Cashman
CLIENT PROJECT: Pilot Bioswale

LABORATORY BLANK RESULTS

MB-091613S - Batch 7085 - Soil by NWTPH-DX

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	25	1	MG/KG	09/17/2013	EBS
TPH-Oil Range	NWTPH-DX	U	50	1	MG/KG	09/17/2013	EBS

MB-091913S - Batch 7142 - Soil by EPA-6020

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Arsenic	EPA-6020	U	0.20	1	MG/KG	09/20/2013	RAL
Cadmium	EPA-6020	U	0.10	1	MG/KG	09/20/2013	RAL
Chromium	EPA-6020	U	0.10	1	MG/KG	09/20/2013	RAL
Lead	EPA-6020	U	0.10	1	MG/KG	09/20/2013	RAL



CERTIFICATE OF ANALYSIS

CLIENT: Whatcom Environmental Svcs., Inc.
228 E. Champion St., Suite 101
Bellingham, WA 98225

DATE: 9/20/2013
ALS SDG#: EV13090119
WDOE ACCREDITATION: C601

CLIENT CONTACT: Harold Cashman
CLIENT PROJECT: Pilot Bioswale

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 7085 - Soil by NWTPH-DX

Table with 7 columns: SPIKED COMPOUND, METHOD, %REC, RPD, QUAL, ANALYSIS DATE, ANALYSIS BY. Rows include TPH-Diesel Range - BS and TPH-Diesel Range - BSD.

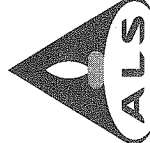
ALS Test Batch ID: 7142 - Soil by EPA-6020

Table with 7 columns: SPIKED COMPOUND, METHOD, %REC, RPD, QUAL, ANALYSIS DATE, ANALYSIS BY. Rows include Arsenic, Cadmium, Chromium, and Lead in various forms.

APPROVED BY

Handwritten signature of Paul Baggett

Laboratory Director



ALS Environmental
8620 Holly Drive, Suite 100
Everett, WA 98208
Phone (425) 356-2600
Fax (425) 356-2626
http://www.alsglobal.com

Chain Of Custody/ Laboratory Analysis Request

ALS Job# (Laboratory Use Only)

EV13090119

Date 9/19/13 Page 1 Of 1

PROJECT ID:	ANALYSIS REQUESTED				OTHER (Specify)	NUMBER OF CONTAINERS	RECEIVED IN GOOD CONDITION?													
	REPORT TO COMPANY:	PROJECT MANAGER:	ADDRESS:	PHONE:																
P101 Bioswale	Whatcom Environmental Services	Harold Cochman	278 E. Champion St. Sult 101 Bellingham, WA 98225	360-752-9571																
INVOICE TO COMPANY:	E-MAIL: <u>hjrashman@whatcom.com</u>																			
ATTENTION:	SAME AS ABOVE																			
ADDRESS:																				
SAMPLE I.D.	DATE	TIME	TYPE	LAB#	NWTPH-HCID	NWTPH-DX	NWTPH-GX	BTEX by EPA-8021	MTBE by EPA-8021	Halogenated Volatiles by EPA 8260	Volatile Organic Compounds by EPA 8260	EDB / EDC by EPA 8260 SIM (water)	EDB / EDC by EPA 8260 (soil)	Semivolatile Organic Compounds by EPA 8270	Polycyclic Aromatic Hydrocarbons (PAH) by EPA-8270 SIM	PCB Pesticides by EPA 8081/8082	Metals-MTCA-5 RCRA-8 TAL	Metals Other (Specify)	TCLP-Metals VOA Semi-Vol Pest Herbs	
1. CS-1 OE	9/19/13	10:30	SOIL	1	X													X	Pb, Cr, Cd	
2. CS-10 OE	9/19/13	9:50	SOIL	2	X															
3.																				
4.																				
5.																				
6.																				
7.																				
8.																				
9.																				
10.																				

SPECIAL INSTRUCTIONS

SIGNATURES (Name, Company, Date, Time):

1. Relinquished By: Jake Rejm WES 9/19/13 12:25
 Received By: [Signature]
 2. Relinquished By: ALS 9/19/13 12:25
 Received By: _____

TURNAROUND REQUESTED IN BUSINESS DAYS*
 Organic, Metals & Inorganic Analysis

Standard 10 5 3 2 1
 SAME DAY

Fuels & Hydrocarbon Analysis
 Standard 5 3 1
 SAME DAY

Specify: _____

OTHER: _____

Received By: _____

* Turnaround request less than standard may incur Rush Charges