February 3, 2020

Nick Acklam, Toxics Cleanup Program
Department of Ecology
P.O Box 47600
Olympia, WA 98504-7600

Subject: 2019 Annual Status Report
Bud Clary Subaru
961 Commerce Way, Longview, Washington
VCP # Pending

Dear Mr. Acklam

This report presents the 2019 quarterly groundwater monitoring at the Bud Clary Subaru dealership in Longview, Washington (the Site). In addition, the report summarizes site background, field activities, analytical reports, and results of quarterly monitoring.

Site Background

Below is a summary of the environmental actions completed at the Site. A complete background of the Site is discussed in the Blue Sage Environmental (BSE) *Site Investigation Interim Cleanup Action Report*, dated January 8, 2019.

The Site is located in a commercial and retail area of Longview, with other auto dealerships, businesses, and the offices of the Cowlitz County Public Utilities Division located nearby (***Figure 1***). In early 2018, a building was demolished to make way for the construction of a new showroom and service building for the Bud Clary Auto Group dealership. The 2018 redevelopment initiated a cycle of site investigations, remedial excavations, and other cleanup actions on the property, which are summarized below.

In April 2018, Cowlitz Clean Sweep, Inc. (CCS), completed several test pits across the north end of the Site, which discovered soils with petroleum odors and an oily sludge. In July 2018, CCS and Environmental Partners, Inc. (EPI) completed additional test pits and exploratory borings to characterize the discovered contaminants on the property (***Figure 2***).

In August 2018, Blue Sage Environmental (BSE) directed a remedial excavation to a depth of 11 feet in the area of contamination identified by EPI. Confirmation

soil samples collected from the bottom of the remedial excavation contained concentrations of lube oil above MTCA Method A Cleanup Levels (CULs) for unrestricted land use.

In August 2018, BSE coordinated with BB&A of Wilsonville, Oregon to inject 4,350 gallons of Boss 200, an activated carbon and biological culture mixture with nutrients to affect an in-situ biological remediation.

Scope of Work

As discussed in the January 8, 2019 *Site Investigation Interim Cleanup Action Report* (Blue Sage, 2019), the progress of bioremediation is being monitored with quarterly groundwater sampling. To accomplish this, five groundwater monitoring wells were installed in April 2019. A discussion of the well installations and groundwater sampling completed in 2019 are discussed below.

Soil Borings/Monitoring Wells

BSE directed the drilling of five soil borings in April 2019 at the locations shown on ***Figure 3***. Each boring was completed as a groundwater monitoring well. Monitoring wells were installed by BB&A Environmental of Wilsonville, Oregon, a Washington State licensed driller. Each monitoring well was constructed out of 2" diameter, schedule 40 PVC slotted screen and pipe. The screened interval of each well straddled the water table and from four feet below ground surface (bgs) to 14 feet bgs. Boring logs for the five monitoring wells are attached in ***Appendix A***. Soil samples were collected from each boring at various depths.

Well Development

Individual monitoring wells were developed a minimum of 48 hours after completion. Each monitoring well was developed by continuous pumping until the pump discharge was free of visible turbidity. The main purpose of developing new monitoring wells is to re-establish the natural hydraulic flow conditions of the formations which may have been disturbed during well construction.

Monitoring Well Survey

BSE coordinated with Gibbs & Olson Civil Engineers and Land Surveyors (Gibbs & Olson) to obtain NAVD88 elevation information for the newly installed monitoring wells. The elevations of each well are listed in Table 2.

Groundwater Sampling Procedures

Prior to sampling the monitoring wells, depth to water referenced to the top of the well casing, were measured and recorded. The static water level was measured in each monitoring well using a Slope Indicator Company, model 51453 water level indicator. The water level probe was lowered into the well until the instrument detected water. The cable on the indicator is laser-marked in 0.01-foot graduations with labels at 0.1-foot and 1.0-foot intervals.

Groundwater was sampled in each well using a peristaltic pump in accordance with the following protocol:

- The height of the water column within the well was calculated by subtracting the depth to water from the total depth of the well.
- Ground water samples were collected from the well casing following EPA low stress and purging procedures.
- Purge water was collected for proper disposal (based on analytical results).
- The contract laboratory prepared the sample containers to conform to EPA-recommended preservation techniques for the analytes of concern.
- Groundwater samples were collected with a peristaltic pump. Sample containers were open only as long as necessary to collect the samples.
- Dedicated tubing was used at each sampling location.
- Prior to sampling each monitoring well each well was purged at a nominal discharge rate of 500 ml/minute in order to affect limited draw-down. Purging continued until a minimum of three volumes were removed from each casing. Pumping continued at the low constant-rate throughout sampling at each monitoring well (*USEPA*, *November 1992*).

Quality Assurance/Quality Control (QA/QC) included generally accepted procedures for sample collection, storage, tracking, documentation, and analysis. Sampling equipment is decontaminated with an anionic, biodegradable detergent wash and water rinse before the collection of samples. Samples were collected into laboratory supplied containers. Each container was labeled with a sample number, date of sampling, project identifier, and analytical method. Sample bottles were placed inside zip-lock™ bags, and stored inside a cooler/shipping container packed with ice. Samples were delivered to an Ecology-certified

analytical laboratory under chain-of-custody (COC) within 24-hours of being collected.

Purge Logs

Well purge and development forms are provided in ***Appendix B***.

Laboratory Analysis

The analytical protocols followed for soil and groundwater samples collected at the Site include the required testing for petroleum releases for gasoline range organics (GRO), diesel range organics (DRO), and Waste Oil as described in Table 830-1, MTCA Cleanup Regulations, Chapter 173-340 WAC.

Analytical methods used for soil samples included:

- Gasoline by Northwest Method NWTPH-Gx;
- Diesel & Oils by Northwest Method NWTPH-Dx/Dx Extended;
- BTEX (benzene, toluene, ethylbenzene and total xylenes) by EPA Method 8260.

Analytical methods used for groundwater samples included:

- Gasoline by Northwest Method NWTPH-Gx;
- Diesel & Oils by Northwest Method NWTPH-Dx/Dx Extended;
- Volatile Organic Compounds by EPA Method 8260;
- Polynuclear Aromatic Hydrocarbons (PAH's) by EPA Method 8270
- Polychlorinated Biphenyls (PCB's) by EPA Method 8082
- Lead by EPA Method 6020

Soil Sample Analytical Results

A review of the analytical results for soil samples collected from borings B6/MW-1, B9/MW-4, and B10/MW-5 did not identify any analytes at concentrations above the laboratory reporting limits (non-detect). However, analytical results for soil samples collected from borings B7/MW-2 and B8/MW-3 identified concentrations of gasoline (Gx), benzene (B), diesel (Dx), and lube oil above CULs.

Boring	Depth (ft)	Gasoline (mg/kg)	Diesel (mg/kg)	Lube Oil (mg/kg)	Benzene (mg/kg)
B7	13	5,700	14,000	370,000	0.09
B7	15	11	210	30,000	0.08
B8	11	5,900	4,200	210,000	<0.02

Analytical results for soil samples are summarized in ***Table 1***.

Groundwater Sample Analytical Results

Laboratory analytical results from the groundwater monitoring events were compared to applicable MTCA Method A CULs for groundwater.

In 2019 groundwater samples were collected and analyzed from each of the five monitoring wells in June, September, and December. Site contaminants of concern were not detected in any of the five wells collected at each sampling event. The analytical results are summarized in ***Table 2***.

Data Quality Review

A QA/QC review of the analytical results was completed by the ESN Northwest laboratory. Samples were accepted at the laboratory within 48 hours of collection under chain of custody protocol. The quality control criteria were acceptable for the samples; therefore, the analytical results are usable to meet the project objectives. Copies of 2019 laboratory analytical reports are provided in ***Appendix C***

Groundwater Contours

Using the measured depths to groundwater from each sampling event, and the survey information from the Gibbs & Olson survey water table elevations were calculated as shown in Table 2. Groundwater contours were inferred and are presented on ***Figures WC-1, WC-2***, and ***WC-3***.

The groundwater flow direction varies with seasonally. Specifically, the flow direction is observed to be to the north/northwest and west in June and September, and to the east in December. The water table across the Site is very flat. The greatest difference (0.09 feet) was between the highest and lowest

elevations in June 2019. The smallest difference (0.02 feet) was recorded for September 2019.

Summary of Findings

Elevated concentrations of Gx, Dx, and benzene in soil were detected in borings B-7 and B-8 below 10 feet bgs. There is a layer of Gx and Dx contamination across this area that extends down to 15 feet bgs. Contaminants of concern (COC) in soil continue to be DRO and GRO.

Groundwater samples obtained from monitoring wells located on the property have reported no concentrations of petroleum compounds, e.g., gasoline, diesel, oil, and BTEX above their MTCA Method A cleanup levels in 2019. No PAHs or PCBs were detected above laboratory detection limits in groundwater. COCs in groundwater continue to be DRO, GRO, and BTEX.

Recommendations

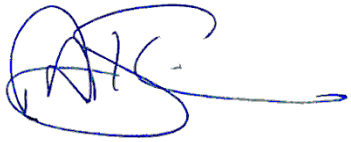
Quarterly groundwater monitoring will continue in 2020. Remediation strategies will be developed to address the layer of heavy oil contamination in soil that remains between 10 feet to approximately 15 feet bgs. This may involve adding additional nutrients to stimulate biological degradation of residual contamination in soil, oxidation methodologies, or additional excavation.

Limitations

This report has been prepared for the exclusive use of Bud Clary Subaru, Kelly and Bryce Clary, and their designated representatives for specific application to the Bud Clary Subaru Longview dealership. Reuse of information, conclusions, and recommendations provided herein for extensions of the project or for any other project, without review and authorization by Blue Sage Environmental/Hayman Environmental, shall be at the user's sole risk. Within the limitations of scope, schedule, and budget, this report was completed in a manner consistent with that level of care and skill exercised by members of the profession currently practicing in the same locality under similar conditions as this project. No warranty is either express or implied.

Sincerely,

Blue Sage Environmental, Inc./Hayman Environmental, LLC



Alexander H. Koch
Project Manager

Glenn A. Hayman, LHg No. 1904
Senior Hydrogeologist

cc: Kelly Clary
Bryce Clary

ATTACHMENTS

Figures

Figure 1 – Site Location Maps

Figure 2 – BSE Test Pits & Soil Borings

Figure 3 – Monitoring Well Locations

Figure WC-1 – Groundwater Elevation Contour Map, June 27, 2019

Figure WC-2 – Groundwater Elevation Contour Map, September 6, 2019

Figure WC-3 – Groundwater Elevation Contour Map, December 2, 2019

Tables

Table 1 – Soil Analytical Results

Table 1 – Groundwater Analytical Results

Appendices

Appendix A – Boring Logs

Appendix B – Well Purge and Development Forms

Appendix C – Laboratory Reports

References

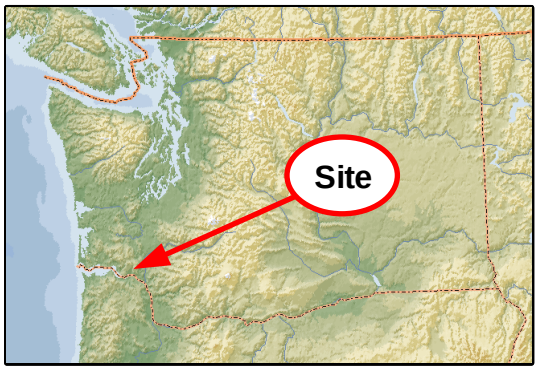
Washington Department of Ecology, ***Guidance for Remediation of Petroleum Contaminated Soils***, Publication No. 10-09-057, September 2011.

Washington Department of Ecology, Toxics Cleanup Program, ***Model Toxics Control Act Cleanup Regulation, Chapter 173-340 WAC***, Publication No. 94-06, Revised 2013, Olympia, Washington.

Blue Sage Environmental, Inc., January 8, 2019, ***Site Investigation/Interim Cleanup Action Report***, Kennewick, Washington, Consultants Report to Client.

FIGURES

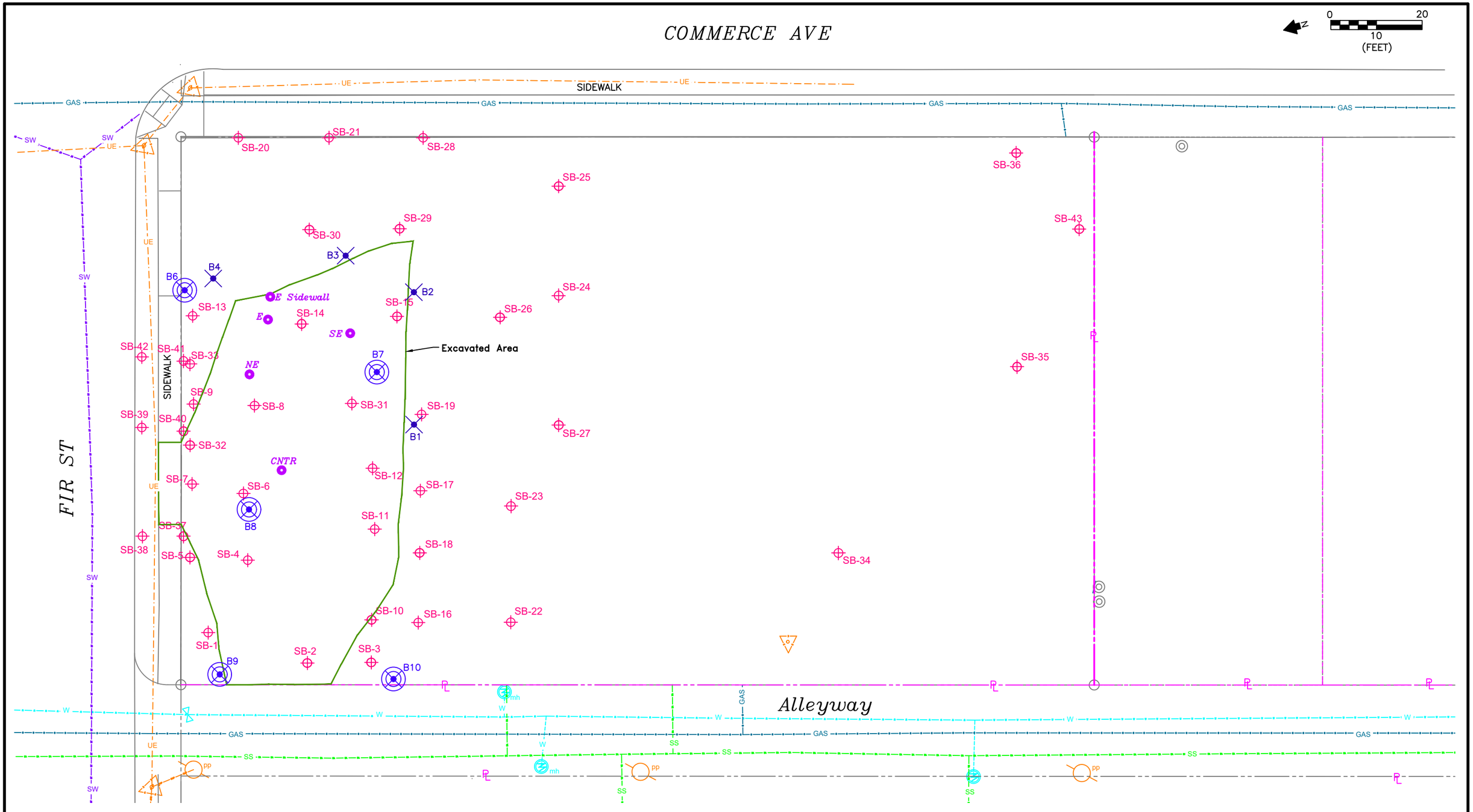
Bud Clary Subaru
961 Commerce Avenue
Longview, WA



BLUE SAGE ENVIRONMENTAL INC KENNEWICK, WA	***Site Location Maps*** ***Bud Clary Subaru*** ***961 Commerce Avenue*** ***Longview, Washington***	Figure 1

Project File: 01-0011-A-F1 revised.vsd

Mapping Reference: Delorme, City of Longview GIS mapping, Bing, and Google Maps



LEGEND

SB-33 Soil Boring Location and Identification Number (By EPI)	SS Sanitary Sewer Line
PL Property Line	W Water Line
SW Stormwater Line	UE Underground Power Line
GAS Natural Gas Line	pp Power Pole
B1 Soil Boring Location and Identification Number (By BSE)	
Catch Basin	
mh Manhole	
B1 Soil Boring Location and Identification Number (By BSE)	
NE Test Pit Location and Identification Number (By BSE)	

BLUE SAGE ENVIRONMENTAL INC
KENNEWICK, WA

Test Pits & Soil Borings
Bud Clary Subaru

961 Commerce Avenue
Longview, Washington

Date: 02/07/20

Figure 2

COMMERCE AVE

N

0 20
10
(FEET)

SIDEWALK

GAS

UE

SW

Excavated Area

MW-1

MW-2

MW-3

MW-4

MW-5

NEW DEALERSHIP BUILDING

SIDEWALK

FIR ST

Alleyway

W

SS

PP

mh

PL

LEGEND

MW-1 Monitoring Well Location and Identification Number (By BSE 5/14/2019)	SS Sanitary Sewer Line
PL Property Line	W Water Line
SW Stormwater Line	UE Underground Power Line
GAS Natural Gas Line	PP Power Pole
	Catch Basin
	mh Manhole

BLUE SAGE ENVIRONMENTAL INC
KENNEWICK, WA

Monitoring Well Locations
Bud Clary Subaru
961 Commerce Avenue
Longview, Washington

Date: 02/07/20

Figure 3

TABLES

Bud Clary Subaru
961 Commerce Avenue
Longview, WA

TABLE 1 BSE Soil Sample Detected Analyte Concentrations - Borings/Monitoring Wells
Bud Clary Subaru
961 Commerce Avenue, Longview, WA

Sample Date	Sample Number	Monitirng Well	Sample Depth (ft)	Diesel mg/kg	Lube Oil mg/kg	Gasoline mg/kg	Benzene mg/kg	Toluene mg/kg	Ethyl-benzene mg/kg	Xylenes mg/kg
04/29/19	B6-15	MW-1	15	<50	<100	<10	<0.02	<0.05	<0.05	<0.15
04/29/19	B7-13	MW-2	13	**14000**	**370,000**	**5,700**	**0.09**	**0.48**	**1.4**	**5.8**
04/29/19	B7-15		15	**210**	**30,000**	**11**	**0.08**	**0.05**	<0.05	<0.15
04/29/19	B8-11	MW-3	11	**4200**	**210,000**	**5,900**	<0.02	<0.05	<0.05	<0.15
04/29/19	B8-15		15	<50	<100	<10	<0.02	<0.05	<0.05	<0.15
04/29/19	B9-11	MW-4	11	<50	<100	<10	<0.02	<0.05	<0.05	<0.15
04/29/19	B10-15	MW-5	15	<50	<100	<10	<0.02	<0.05	<0.05	<0.15
MTCA Method A Cleanup Level for Unrestricted Land Use				***2000***	***2000***	***30/100****	***0.03***	***7***	***6***	***9***

Notes:

-	Contaminant not analyzed
5.9	Bold number(s) indicate contaminant detected
31	Shaded numbers indicate a concentration above MTCA Method A Cleanup Level for Unrestricted Land Use
*	30 mg/kg if benzene is not present, 100 mg/kg if benzene is present

TABLE 2 BSE Groundwater Analytical Results
Bud Clary Subaru
961 Commerce Avenue, Longview, WA

Sample Date	Monitoring Well	Diesel (µg/L)	Lube Oil (µg/L)	Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Xylenes (µg/L)	Total Lead (µg/L)	MTBE (µg/L)	EDB (µg/L)	EDC (µg/L)	c-PAH (µg/L)	PCB (µg/L)	Elevation TOC (MSL)	Depth to Water (ft)	Water Table Elevation (MSL)
06/27/19	MW-1	<250	<250	<100	<1	<1	<1	<3	<1	<1	<1	<1	<0.1	-	16.95	8.94	8.01
09/10/19		<250	<250	<100	<1	<1	<1	<3	-	<1	<1	<1	<0.1	<0.1	16.95	9.65	7.30
12/02/19		<250	<250	<100	<1	<1	<1	<3	-	<1	<1	<1	<0.1	<0.1	16.95	9.36	7.59
06/27/19	MW-2	<250	<250	<100	<1	<1	<1	<3	<1	<1	<1	<1	<0.1	-	17.20	9.15	8.05
09/10/19		<250	<250	<100	<1	<1	<1	<3	-	<1	<1	<1	<0.1	<0.1	17.20	9.90	7.30
12/02/19		<250	<250	<100	<1	<1	<1	<3	-	<1	<1	<1	<0.1	<0.1	17.20	9.60	7.60
06/27/19	MW-3	<250	<250	<100	<1	<1	<1	<3	<1	<1	<1	<1	<0.1	-	17.32	9.28	8.04
09/10/19		<250	<250	<100	<1	<1	<1	<3	-	<1	<1	<1	<0.1	<0.1	17.32	10.02	7.30
12/02/19		<250	<250	<100	<1	<1	<1	<3	-	<1	<1	<1	<0.1	<0.1	17.32	9.76	7.56
06/27/19	MW-4	<250	<250	<100	<1	<1	<1	<3	<1	<1	<1	<1	<0.1	-	17.30	9.29	8.01
09/10/19		<250	<250	<100	<1	<1	<1	<3	-	<1	<1	<1	<0.1	<0.1	17.30	10.00	7.30
12/02/19		<250	<250	<100	<1	<1	<1	<3	-	<1	<1	<1	<0.1	<0.1	17.30	9.73	7.57
06/27/19	MW-5	<250	<250	<100	<1	<1	<1	<3	<1	<1	<1	<1	<0.1	-	17.16	9.20	7.96
09/10/19		<250	<250	<100	<1	<1	<1	<3	-	<1	<1	<1	<0.1	<0.1	17.16	9.88	7.28
12/02/19		<250	<250	<100	<1	<1	<1	<3	-	<1	<1	<1	<0.1	<0.1	17.16	9.63	7.53
MTCA Method A Cleanup Level		***500***	***500***	***800***	***50***	***1000***	***700***	***1000***	***15***	***20***	***0.01***	***5***	***0.1***	***0.1***			

Notes:

- Contaminant not analyzed

5.9 Bold number(s) indicate contaminant detected

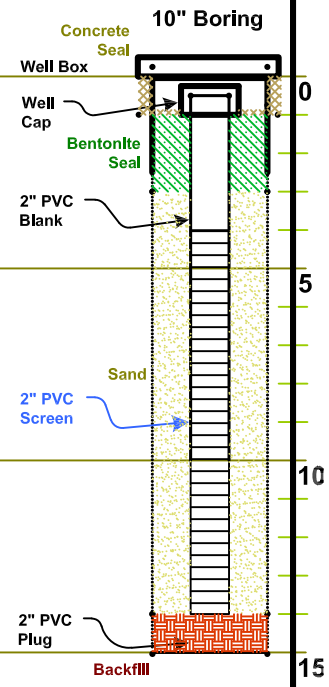
31 Shaded numbers indicate a concentration above the MTCA Method A Cleanup Level

APPENDIX A

Bud Clary Subaru
961 Commerce Avenue
Longview, WA

BSE Monitoring Well Boring Logs

Depth	BLOWS/6 inches	INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)
				Asphalt Surface			
0				Crushed Rock (imported cover), gray, dry,	60	GW	
				medium, no odor		SM/GM	
				Sand & Gravel Mix: brown, damp, medium, no		SM	
				odor			
				Silty Sand: brown, damp, medium, no odor			
5				Silty Sand: brown, moist, medium, no odor	100	SM	
				Silty Sand: gray, wet, medium, no odor		SM	
10				Sand: brown, moist, loose, no odor	100	SW	
				Sand: gray, damp, loose, no odor		SW	
15				EOB at 15'			
20							
25							
30	Depth in feet						



Drilling Method: Direct Push	Date: 4/29/19	Other Information: BHU-745
Drilling Company: ESN Northwest	Weather: Overcast and warm	
Boring Diameter: Two inches	Page 1 of 1	
Logged By: Alex Koch		

BLUE SAGE ENVIRONMENTAL INC
KENNEWICK, WA

Boring/Well Log
Bud Clary Subaru

961 Commerce Avenue
Longview, Washington

B-6/MW-1

Depth	BLOWS/6 inches	INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
				Asphalt Surface				10" Boring; Concrete Seal; Well Box
0				Crushed Rock (imported cover), gray, dry,	40	GW		Well Cap
				medium, no odor				
				Sand & Gravel Mix: brown, damp, medium, no		SM/GM		Bentonite Seal
				odor				
				Silty Sand: brown, damp, medium, no odor		SM		2" PVC Blank
5				Silty Sand: brown, damp, medium, no odor	25	SM		
								Sand
								2" PVC Screen
				Gravel-Sand-Silt Mix: Gray, wet, medium, no odor		GM		
10				Silty Sand: gray, wet, medium, oil odor	50	SM		
				Sand: brown, wet, medium, no odor		SW		2" PVC Plug
15				EOB at 15'				Backfill
20								
25								
30								

Depth in feet

Drilling Method: Direct Push	Date: 4/29/19	Other Information: BHU-746
Drilling Company: ESN Northwest	Weather: Overcast and warm	
Boring Diameter: Two inches	Page 1 of 1	
Logged By: Alex Koch		

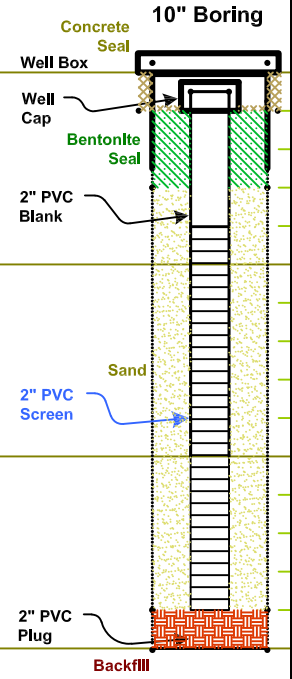
BLUE SAGE ENVIRONMENTAL INC
KENNEWICK, WA

Boring/Well Log
Bud Clary Subaru

961 Commerce Avenue
Longview, Washington

B-7/MW-2

BLOWS/6 inches	INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
			Pavers Surface				
0			Sand & Gravel Mix: brown, damp, medium, no odor	100	SM/GM		
			Rock (imported fill): gray, damp, dense, no odor		GW		
5			Rock (imported fill): gray, damp, dense, no odor	100	GW		
10			Sand: black, wet, loose, oil odor @ 11'	100	SW		
15			EOB at 15'				
20							
25							
30	Depth in feet						



Drilling Method: Direct Push	Date: 4/29/19	Other Information: BHU-747
Drilling Company: ESN Northwest	Weather: Overcast and warm	
Boring Diameter: Two inches	Page 1 of 1	
Logged By: Alex Koch		

BLUE SAGE ENVIRONMENTAL INC
KENNEWICK, WA

Boring/Well Log
Bud Clary Subaru

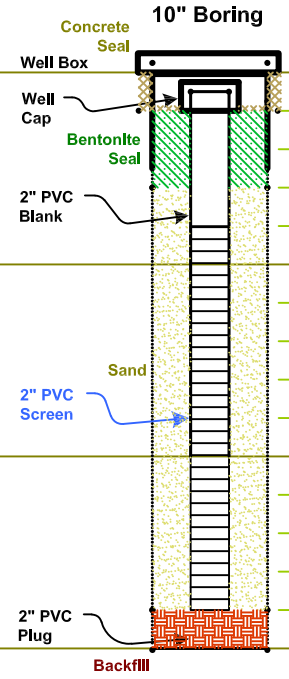
961 Commerce Avenue
Longview, Washington

B-8/MW-3

Depth	BLOWS/6 inches	INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)
				Large Rock (imported cover)			
0				Sand & Gravel Mix: gray, damp, medium, no odor	50	SM/GM	
				Silty Sand: brown, damp, medium, no odor		SM	
5				Silty Sand: brown, damp, medium, no odor	100	SM	
				Silty Sand: brown, moist, medium, no odor		SM	
10				Silty Sand: gray, wet, medium, no odor	100	SM	
				Sand: black, wet, medium, no odor		SW	
15				EOB at 15'			
20							
25							
30							

Depth in feet

WELL CONSTRUCTION



Drilling Method: Direct Push	Date: 4/29/19	Other Information: BHU-748
Drilling Company: ESN Northwest	Weather: Overcast and warm	
Boring Diameter: Two inches	Page 1 of 1	
Logged By: Alex Koch		

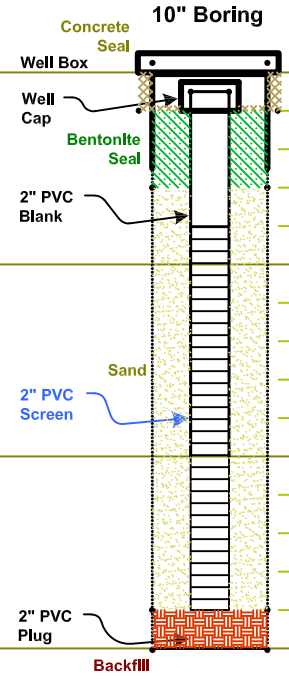
BLUE SAGE ENVIRONMENTAL INC
KENNEWICK, WA

Boring/Well Log
Bud Clary Subaru

961 Commerce Avenue
Longview, Washington

B-9/MW-4

Depth	BLOWS/6 inches	INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
				Pavers Surface				
0				Sand & Gravel Mix: gray, damp, medium, no odor	100	SM/GM		
				Sand: gray, damp, medium, no odor		SW		
				Silty Sand: brown, damp, medium, no odor		SM		
5				Silty Sand: brown, moist, medium, no odor	100	SM		
				Silty Sand: gray, moist, medium, no odor		SM		
10				Silty Sand: gray, wet, medium, no odor	100	SM		
				Sand: black, wet, medium, no odor		SW		
15				EOB at 15'				
20								
25								
30	Depth in feet							



Drilling Method: Direct Push	Date: 4/29/19	Other Information: BHU-749
Drilling Company: ESN Northwest	Weather: Overcast and warm	
Boring Diameter: Two inches	Page 1 of 1	
Logged By: Alex Koch		

BLUE SAGE ENVIRONMENTAL INC
KENNEWICK, WA

Boring/Well Log
Bud Clary Subaru

961 Commerce Avenue
Longview, Washington

B-10/MW-5

APPENDIX B

Bud Clary Subaru
961 Commerce Avenue
Longview, WA

BSE Monitoring Well Purge and Development Logs

GROUNDWATER SAMPLING FIELD DATA

961 Commerce Ave
Longview, WA

Project Code:
Date: 5/21/19
Sampler: Chris Cremer

Diameter	Volume = X
The well diameter in inches is:	The volume per linear foot in gallons is:
1	0.00545
2	0.163
4	0.690
6	1.470

1.5" = 0.092

Notes or Observations:
MW-1 → Very silty at first, brown
MW-2 → Black, oily
MW-3 → Dark, oily
MW-4 → Brown, silty, oil on surface (possibly from previous)
MW-5 → Dark brown to black silt

2, 3, 5 smelled oily

Generalized Equations: $A = \pi r^2$; $V = xr^2 * \frac{7.48}{ft^3} * \text{height of water}$; $V = X * h = \text{gallons}$

Monitoring Well		Time		Well Depth (TD) from top of PVC (feet)	Depth to water (DTW) from top of PVC (feet)	H=TD*DTW	Purge volume required V=H*X*3	Temp (°C)	Cond. or Other	Total volume of H²O purged	Remarks (i.e., clarity of water, recharge rate)
NO.	Well diameter	Start	End								
1	2	10:35	11:05	14.7	8.3					~14gal	
2	~~2~~	10:37	11:30	~~14.7~~ 14.8	8.6					~10gal	
3	2	10:39	12:15	14.7	8.8					~6gal	
4	2	10:41	12:25	14.85	8.75					~7gal	
5	2	10:43	12:50	14.8	8.6					~10gal	
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											

High Recharge

GROUNDWATER DATA SHEET

Project: Bud Clary Subaru
Location: Longview WA
Project Code: BSE-BUD

Date: 6-27-19
Recorded by: RLB
Conditions/Comments: Cloudy

Monitoring Well	Time - start	Time - finish	Depth to Water (feet)	Well Depth (feet)	Head (feet)	Purge Volume (gallons)	pH (SU)	Conductivity (mS/m)	Turbidity (NTU)	DO (mg/L)	Temperature (degree C)	TDS (mg/L)	ORP (mV)	
1	0737	0745	8.94	15	6.06	2.96	6.74	24.8	82	3.69	14.0	0.16	-84	1
							6.71	24.5	61	1.42	13.9	0.25	-90	2
							6.71	23.7	63	6.44	14.0	0.15	-23	3
2	0745	0750	9.15	15	5.85	2.86	6.42	0.153	77	2.52	15.2	1.0	163	1
							6.14	0.153	56	1.69	15.6	1.0	194	2
							6.11	0.153	56	1.74	15.6	1.0	206	3
3	0850	0815	9.28	15	5.72	2.80	6.05	0.144	198	5.23	13.7	0.90	167	1
							5.98	0.146	170	3.85	14.0	0.90	224	2
							5.94	0.147	160	3.25	14.0	0.90	251	3

GROUNDWATER DATA SHEET

Project: Bud Clary Subaru
Location: Longmont, CO
Project Code: BSE-BUD

Date: 6-27-19
Recorded by: RLB
Conditions/Comments: Cloudy

Monitoring Well	Time - start	Time - finish	Depth to Water feet	Well Depth feet	Head feet	Purge Volume gallons	pH SU	Conductivity mS/m	Turbidity NTU	DO mg/L	Temperature degree C	TDS mg/L	ORP mV	
								S/m						
4	0823	0830	7.29	15	5.71	2.79	6.28	0.147	250	2.42	13.2	0.76	159	1 g
							6.38	0.111	220	1.57	13.2	0.76	130	2 g
							6.41	0.106	200	1.46	13.1	0.75	121	3 g
								S/m						
5	0842	0900	7.20	15	5.80	2.84	6.78	0.097	210	2.32	13.5	0.68	-134	1 g
							6.79	91.7	150	1.52	13.5	0.58	-137	2 g
						mS/m	6.81	87.2	150	1.40	13.5	0.58	-141	3 g

GROUNDWATER SAMPLING FIELD DATA

Project Name: Bud Clary
Date: 9-6-19 Subaru
Sampler: RSB

Diameter	Volume = X
The well diameter in inches is:	The volume per linear foot in gallons is:
1	0.00545
2	0.163
4	0.690
6	1.470

Notes or Observations:

- Gx
- Dx
- BTEX
- PCB's (c-PAH)

Generalized Equations: $A = \pi r^2$; $V = xr^2 * \frac{7.48}{ft^3} *$ height of water; $V = X * h =$ gallons

Monitoring Well		Time		Well Depth (TD) from top of PVC (feet)	Depth to water (DTW) from top of PVC (feet)	H=TD*DTW	Purge volume required V=H*X*3	Temp (°C)	Cond. or Other	Total volume of H²O purged	Remarks (i.e., clairty of water, recharge rate)
NO.	Well diameter	Start	End								
1	2	0637	0655	15'	9.65	5.35	1.51	—	—	2.50g	Lt. Brown / Clear
2	↓	0622	0635	↓	9.90	5.10	1.44	—	—	2.50g	Sheen / Clear
3	↓	0651	0700	↓	10.02	4.98	1.40	—	—	2.50g	Sheen Lt. Brown / Clear
4	↓	0703	0715	↓	10.00	5.00	1.41	—	—	2.50g	Sheen Lt. Brown / Clear
5	2	0716	0730	15	9.88	5.12	1.44	—	—	2.50g	Clear / Clear
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											

GROUNDWATER SAMPLING FIELD DATA

Project: BUD CLARY SUBARU
Date: 12-3-19
Sampler: LPB

Diameter	Volume = X
The well diameter in inches is:	The volume per linear foot in gallons is:
1	0.00545
2	0.163
4	0.690
6	1.470

Notes or Observations: BUD CLARY SUBARU 4

1
3
5
2

- GX
- DX
- BTEX
- PCB's
- C-PAH

Generalized Equations: $A = \pi r^2$; $V = xr^2 * \frac{7.48}{ft^3} *$ height of water; $V = X * h$ = gallons

Monitoring Well		Time		Well Depth (TD) from top of PVC (feet)	Depth to water (DTW) from top of PVC (feet)	H=TD*DTW	Purge volume required V=H*X*3	Temp (°C)	Cond. or Other	Total volume of H^2O purged	Remarks (i.e., clairty of water, recharge rate)
NO.	Well diameter	Start	End								
1	2	0512	0525	15'	9.36	5.64	2.76	—	—	2.5 g	Clear/Clear
2		0527	0540		9.60	5.40	2.64	—	—	2.5 g	Clear/Clear
3		0537	0550		9.76	5.24	2.56	—	—	2.5 g	Clear/Clear
4		0547	0555		9.73	5.27	2.58	—	—	2.5 g	Clear/Clear
5	2	0557	0610	15'	9.63	5.37	2.63	—	—	2.5 g	Clear/Clear
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											

APPENDIX C

Bud Clary Subaru
961 Commerce Avenue
Longview, WA

ESN Northwest Laboratory Reports

ESN NORTHWEST
Environmental
Services Network

May 13, 2019

Alex Koch
Blue Sage Environmental
198007 E 30th Ave
Kennewick, WA 99337

Dear Mr. Koch:

Please find enclosed the analytical data reports for the Subaru Groundwater Project in Longview, Washington. Soil samples were analyzed for Diesel and Oil by NWTPH-Dx/Dx Extended, Gasoline by NWTPH-Gx and BTEX by Method 8260 on May 2, 2019.

The results of the analyses are summarized in the attached tables. All soil values are reported on a dry weight basis. Applicable detection limits and QA/QC data are included. A copy of the invoice for this work is enclosed for your records.

ESN Northwest appreciates the opportunity to have provided these services to Blue Sage Environmental for this project. If you have any further questions about the data report, please give us a call. It was a pleasure working with you on this project, and we are looking forward to the next opportunity to work together.

Sincerely,

Michael A Korosec

Michael A. Korosec
President

1210 Eastside Street SE, Suite 200 ■ Olympia, Washington 98501 ■ 360.459.4670 ■ FAX 360.459.3432
Web Site: *www.esnnw.com* E-Mail: *info@esnnw.com*

ESN NORTHWEST CHEMISTRY LABORATORY

Bud Clary
PROJECT SUBARU GROUNDWATER
Longview, Washington

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(360) 459-4670 (360) 459-3432 Fax
lab@esnnw.com

Analysis of Diesel Range Organics & Lube Oil Range Organics in Soil
by Method NWTPH-Dx Extended

Sample Number	Date Prepared	Date Analyzed	Surrogate Recovery (%)	Diesel Range Organics (mg/kg)	Lube Oil Range Organics (mg/kg)
Method Blank	5/2/2019	5/2/2019	94	nd	nd
LCS	5/2/2019	5/2/2019	69	111%	---
B6-15	5/2/2019	5/2/2019	63	nd	nd
B7-13	5/2/2019	5/2/2019	81	**14,000**	**370,000**
B7-15	5/2/2019	5/2/2019	74	**210**	**30,000**
B8-11	5/2/2019	5/2/2019	95	**4200**	**210,000**
B8-15	5/2/2019	5/2/2019	56	nd	nd
B9-11	5/2/2019	5/2/2019	63	nd	nd
B10-15	5/2/2019	5/2/2019	57	nd	nd
B10-15 Duplicate	5/2/2019	5/2/2019	57	nd	nd
Reporting Limits				50	100

"nd" Indicates not detected at the listed detection limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 50% TO 150%

ESN NORTHWEST CHEMISTRY LABORATORY

Bud Clary
PROJECT SUBARU GROUNDWATER
Longview, Washington

ESN Northwest
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Olympia, WA 98501
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lab@esnnw.com

Analysis of Gasoline Range Organics & BTEX in Soil by Method NWTPH-Gx/8260

Sample Number	Date Prepared	Date Analyzed	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	Gasoline Range Organics (mg/kg)	Surrogate Recovery (%)
Method Blank	4/29/2019	5/2/2019	nd	nd	nd	nd	nd	114
LCS	4/29/2019	5/2/2019	105%	99%	117%	113%	149%	110
LCSD	4/29/2019	5/2/2019	106%	99%	115%	117%	---	110
B6-15	4/29/2019	5/2/2019	nd	nd	nd	nd	nd	107
B7-13	4/29/2019	5/2/2019	**0.09**	**0.48**	**1.4**	**5.8**	**5700**	122
B7-15	4/29/2019	5/2/2019	**0.08**	**0.05**	nd	nd	**11**	109
B8-11	4/29/2019	5/2/2019	nd	nd	nd	nd	**5900**	114
B8-15	4/29/2019	5/2/2019	nd	nd	nd	nd	nd	107
B9-11	4/29/2019	5/2/2019	nd	nd	nd	nd	nd	116
B10-15	4/29/2019	5/2/2019	nd	nd	nd	nd	nd	109
B10-15 Duplicate	4/29/2019	5/2/2019	nd	nd	nd	nd	nd	104
Reporting Limits			0.02	0.05	0.05	0.15	10	

"---" Indicates not tested for component.
"nd" Indicates not detected at the listed detection limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Bromoflurorbenzene) & LCS : 65% TO 135%

ESN NORTHWEST, INC. | Environmental Services Network

CHAIN-OF-CUSTODY RECORD

CLIENT: BUDCLARY AUTO GROUP (BCS) | DATE: 4-29-19 | PAGE ____ OF ____

ADDRESS: LONGVIEW | PROJECT NAME: SUBARU GROUNDWATER

PHONE: ____ FAX: ____ | LOCATION: LONGVIEW

CLIENT PROJECT #: ____ | PROJECT MANAGER: AKOCH | COLLECTOR: AHK | DATE OF COLLECTION: 4/29/19

Sample Number	Depth	Time	Sample Type	Container Type	TPH - HCID	TPH - Diesel & Oil	TPH - Gasoline	BTEX	VOC 8260CL	VOC 8260	SemiVol 8270	PAH's 8270	PCB's 8082	CL Pesticides 8081	RCRA 8 Metals	MTCA 5 Metals	Pb	Asbestos - PLM	GRO Suite	DRO Suite	WO Suite	NOTES	Total Number of Containers	Laboratory Note Number
1. BCS-B6-15	15	820	SOIL	VOA/4OZ		X	X	X															3	
2. BCS-B7-13	13	915	↓	↓		↓	↓	↓															3	
3. BCS-B7-15	15	920																					3	
4. BCS-B8-11	11	1000																					3	
5. BCS-B8-15	15	1005																					3	
6. BCS-B9-11	11	1045																					3	
7. BCS-B10-15	15	1110	↓	↓		↓	↓	↓															3	
8.																								
9.																								
10.																								
11.																								
12.																								
13.																								
14.																								
15.																								
16.																								
17.																								
18.																								

RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)	DATE/TIME
[signature]	5/1/19	[signature]	5-1-19
RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)	DATE/TIME

SAMPLE RECEIPT	
TOTAL NUMBER OF CONTAINERS	
CHAIN OF CUSTODY SEALS Y/N/NA	
SEALS INTACT? Y/N/NA	
RECEIVED GOOD COND./COLD	
NOTES:	

LABORATORY NOTES:

Turn Around Time: 24 HR 48 HR (5 DAY)

1210 Eastside Street SE, Suite 200
Olympia, Washington 98501
Phone: 360-459-4670
Fax: 360-459-3432
Website: www.esnnw.com
E-Mail: info@esnnw.com

ESN NORTHWEST
Environmental
Services Network

July 11, 2019

Alex Koch
Blue Sage Environmental
198007 E 30th Ave
Kennewick, WA 99337

Dear Mr. Koch:

Please find enclosed the analytical data reports for the GW Remediation Project in Washington. Water samples were analyzed for Diesel and Oil by NWTPH-Dx/Dx Extended, Gasoline by NWTPH-Gx, VOC's by Method 8260, PAH's by Method 8270, and Pb by Method 6020 on June 27 – 29, 2019.

The results of the analyses are summarized in the attached tables. Applicable detection limits and QA/QC data are included. A copy of the invoice for this work is enclosed for your records.

ESN Northwest appreciates the opportunity to have provided these services to Blue Sage Environmental for this project. If you have any further questions about the data report, please give us a call. It was a pleasure working with you on this project, and we are looking forward to the next opportunity to work together.

Sincerely,

Michael A Korosec

Michael A. Korosec
President

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ESN NORTHWEST CHEMISTRY LABORATORY

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PROJECT GW REMEDIATION
Washington

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lab@esnnw.com

Analysis of Diesel Range Organics & Lube Oil Range Organics in Water by Method NWTPH-Dx

Sample Number	Date Prepared	Date Analyzed	Surrogate Recovery (%)	Diesel Range Organics (ug/L)	Lube Oil Range Organics (ug/L)
Method Blank	6/28/2019	6/28/2019	126	nd	nd
LCS	6/28/2019	6/28/2019	112	89%	---
MW-1	6/28/2019	6/28/2019	146	nd	nd
MW-2	6/28/2019	6/28/2019	117	nd	nd
MW-3	6/28/2019	6/28/2019	125	nd	nd
MW-4	6/28/2019	6/28/2019	129	nd	nd
MW-5	6/28/2019	6/28/2019	142	nd	nd
Reporting Limits				250	250

"---" Indicates not tested for component.
"nd" Indicates not detected at the listed detection limits.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 50% TO 150%

ESN NORTHWEST CHEMISTRY LABORATORY

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Analysis of Gasoline Range Organics in Water
by Method NWTPH-Gx

Sample Number	Date Analyzed	Surrogate Recovery (%)	Gasoline Range Organics (ug/L)
Method Blank	7/3/2019	111	nd
LCS	7/3/2019	103	103%
MW-1	7/3/2019	107	nd
MW-2	7/3/2019	100	nd
MW-3	7/3/2019	101	nd
MW-4	7/3/2019	101	nd
MW-5	7/3/2019	100	nd
MW-5 Duplicate	7/3/2019	106	nd
Reporting Limits			100

"nd" Indicates not detected at the listed detection limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 50% TO 150%

ESN NORTHWEST CHEMISTRY LABORATORY

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Analysis of Volatile Organic Compounds in Water by Method 8260C/5030C

Analytical Results

	RL	MB	LCS	LCSD	MW-1	MW-2	MW-3	MW-4
Date analyzed	(ug/L)	07/03/19	07/03/19	07/03/19	07/03/19	07/03/19	07/03/19	07/03/19
Dichlorodifluoromethane	1.0	nd			nd	nd	nd	nd
Chloromethane	1.0	nd			nd	nd	nd	nd
Vinyl chloride	0.2	nd	111%	81%	nd	nd	nd	nd
Bromomethane	1.0	nd			nd	nd	nd	nd
Chloroethane	1.0	nd			nd	nd	nd	nd
Trichlorofluoromethane	1.0	nd			nd	nd	nd	nd
Acetone	10.0	nd			nd	nd	nd	nd
1,1-Dichloroethene	1.0	nd	96%	98%	nd	nd	nd	nd
Methylene chloride	1.0	nd			nd	nd	nd	nd
Methyl-t-butyl ether (MTBE)	1.0	nd			nd	nd	nd	nd
trans-1,2-Dichloroethene	1.0	nd			nd	nd	nd	nd
1,1-Dichloroethane	1.0	nd			nd	nd	nd	nd
2-Butanone (MEK)	10.0	nd			nd	nd	nd	nd
cis-1,2-Dichloroethene	1.0	nd			nd	nd	nd	nd
2,2-Dichloropropane	1.0	nd			nd	nd	nd	nd
Chloroform	1.0	nd	106%	117%	nd	nd	nd	nd
Bromochloromethane	1.0	nd			nd	nd	nd	nd
1,1,1-Trichloroethane	1.0	nd			nd	nd	nd	nd
1,2-Dichloroethane (EDC)	1.0	nd			nd	nd	nd	nd
1,1-Dichloropropene	1.0	nd			nd	nd	nd	nd
Carbon tetrachloride	1.0	nd			nd	nd	nd	nd
Benzene	1.0	nd	106%	120%	nd	nd	nd	nd
Trichloroethene (TCE)	1.0	nd	106%	116%	nd	nd	nd	nd
1,2-Dichloropropane	1.0	nd	90%	98%	nd	nd	nd	nd
Dibromomethane	1.0	nd			nd	nd	nd	nd
Bromodichloromethane	1.0	nd			nd	nd	nd	nd
4-Methyl-2-pentanone (MIBK)	1.0	nd			nd	nd	nd	nd
cis-1,3-Dichloropropene	1.0	nd			nd	nd	nd	nd
Toluene	1.0	nd	116%	114%	nd	nd	nd	nd
trans-1,3-Dichloropropene	1.0	nd			nd	nd	nd	nd
1,1,2-Trichloroethane	1.0	nd			nd	nd	nd	nd
2-Hexanone	1.0	nd			nd	nd	nd	nd
1,3-Dichloropropane	1.0	nd			nd	nd	nd	nd
Dibromochloromethane	1.0	nd			nd	nd	nd	nd
Tetrachloroethene (PCE)	1.0	nd	109%	119%	nd	nd	nd	nd
1,2-Dibromoethane (EDB)	1.0	nd			nd	nd	nd	nd
Chlorobenzene	1.0	nd	109%	117%	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	1.0	nd			nd	nd	nd	nd
Ethylbenzene	1.0	nd	108%	114%	nd	nd	nd	nd
Xylenes	3.0	nd	107%	109%	nd	nd	nd	nd
Styrene	1.0	nd			nd	nd	nd	nd
Bromoform	1.0	nd			nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	1.0	nd			nd	nd	nd	nd
Isopropylbenzene	1.0	nd			nd	nd	nd	nd
1,2,3-Trichloropropane	1.0	nd			nd	nd	nd	nd
Bromobenzene	1.0	nd			nd	nd	nd	nd

ESN NORTHWEST CHEMISTRY LABORATORY

Bud Clary Subaru
PROJECT GW REMEDIATION
Washington

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lab@esnnw.com

Analysis of Volatile Organic Compounds in Water by Method 8260C/5030C

Analytical Results

	RL	MB	LCS	LCSD	MW-1	MW-2	MW-3	MW-4
Date analyzed	(ug/L)	07/03/19	07/03/19	07/03/19	07/03/19	07/03/19	07/03/19	07/03/19
n-Propylbenzene	1.0	nd			nd	nd	nd	nd
2-Chlorotoluene	1.0	nd			nd	nd	nd	nd
4-Chlorotoluene	1.0	nd			nd	nd	nd	nd
1,3,5-Trimethylbenzene	1.0	nd			nd	nd	nd	nd
tert-Butylbenzene	1.0	nd			nd	nd	nd	nd
1,2,4-Trimethylbenzene	1.0	nd			nd	nd	nd	nd
sec-Butylbenzene	1.0	nd			nd	nd	nd	nd
1,3-Dichlorobenzene	1.0	nd			nd	nd	nd	nd
1,4-Dichlorobenzene	1.0	nd			nd	nd	nd	nd
Isopropyltoluene	1.0	nd			nd	nd	nd	nd
1,2-Dichlorobenzene	1.0	nd			nd	nd	nd	nd
n-Butylbenzene	1.0	nd			nd	nd	nd	nd
1,2-Dibromo-3-Chloropropane	1.0	nd			nd	nd	nd	nd
1,2,4-Trichlorobenzene	1.0	nd			nd	nd	nd	nd
Naphthalene	1.0	nd			nd	nd	nd	nd
Hexachloro-1,3-butadiene	1.0	nd			nd	nd	nd	nd
1,2,3-Trichlorobenzene	1.0	nd			nd	nd	nd	nd
Surrogate recoveries								
Dibromofluoromethane		113%	105%	113%	117%	119%	123%	123%
Toluene-d8		104%	97%	100%	105%	105%	110%	106%
4-Bromofluorobenzene		111%	104%	97%	107%	100%	101%	101%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits
Acceptable Recovery limits: 65% TO 135%
Acceptable RPD limit: 35%

ESN NORTHWEST CHEMISTRY LABORATORY

Bud Clary Subaru
PROJECT GW REMEDIATION
Washington

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lab@esnnw.com

Analysis of Volatile Organic Compounds in Water by Method 8260C/5030C

Analytical Results

	RL	MW-5
Date analyzed	(ug/L)	07/03/19
Dichlorodifluoromethane	1.0	nd
Chloromethane	1.0	nd
Vinyl chloride	0.2	nd
Bromomethane	1.0	nd
Chloroethane	1.0	nd
Trichlorofluoromethane	1.0	nd
Acetone	10.0	nd
1,1-Dichloroethene	1.0	nd
Methylene chloride	1.0	nd
Methyl-t-butyl ether (MTBE)	1.0	nd
trans-1,2-Dichloroethene	1.0	nd
1,1-Dichloroethane	1.0	nd
2-Butanone (MEK)	10.0	nd
cis-1,2-Dichloroethene	1.0	nd
2,2-Dichloropropane	1.0	nd
Chloroform	1.0	nd
Bromochloromethane	1.0	nd
1,1,1-Trichloroethane	1.0	nd
1,2-Dichloroethane (EDC)	1.0	nd
1,1-Dichloropropene	1.0	nd
Carbon tetrachloride	1.0	nd
Benzene	1.0	nd
Trichloroethene (TCE)	1.0	nd
1,2-Dichloropropane	1.0	nd
Dibromomethane	1.0	nd
Bromodichloromethane	1.0	nd
4-Methyl-2-pentanone (MIBK)	1.0	nd
cis-1,3-Dichloropropene	1.0	nd
Toluene	1.0	nd
trans-1,3-Dichloropropene	1.0	nd
1,1,2-Trichloroethane	1.0	nd
2-Hexanone	1.0	nd
1,3-Dichloropropane	1.0	nd
Dibromochloromethane	1.0	nd
Tetrachloroethene (PCE)	1.0	nd
1,2-Dibromoethane (EDB)	1.0	nd
Chlorobenzene	1.0	nd
1,1,1,2-Tetrachloroethane	1.0	nd
Ethylbenzene	1.0	nd
Xylenes	3.0	nd
Styrene	1.0	nd
Bromoform	1.0	nd
1,1,2,2-Tetrachloroethane	1.0	nd
Isopropylbenzene	1.0	nd
1,2,3-Trichloropropane	1.0	nd
Bromobenzene	1.0	nd

ESN NORTHWEST CHEMISTRY LABORATORY

Bud Clary Subaru
PROJECT GW REMEDIATION
Washington

ESN Northwest
1210 Eastside Street SE Suite 200
Olympia, WA 98501
(360) 459-4670 (360) 459-3432 Fax
lab@esnnw.com

Analysis of Volatile Organic Compounds in Water by Method 8260C/5030C

Analytical Results

	RL	MW-5
Date analyzed	(ug/L)	07/03/19
n-Propylbenzene	1.0	nd
2-Chlorotoluene	1.0	nd
4-Chlorotoluene	1.0	nd
1,3,5-Trimethylbenzene	1.0	**1.1**
tert-Butylbenzene	1.0	nd
1,2,4-Trimethylbenzene	1.0	nd
sec-Butylbenzene	1.0	nd
1,3-Dichlorobenzene	1.0	nd
1,4-Dichlorobenzene	1.0	nd
Isopropyltoluene	1.0	nd
1,2-Dichlorobenzene	1.0	nd
n-Butylbenzene	1.0	nd
1,2-Dibromo-3-Chloropropane	1.0	nd
1,2,4-Trichlorobenzene	1.0	nd
Naphthalene	1.0	nd
Hexachloro-1,3-butadiene	1.0	nd
1,2,3-Trichlorobenzene	1.0	nd

Surrogate recoveries	
Dibromofluoromethane	118%
Toluene-d8	107%
4-Bromofluorobenzene	100%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits
Acceptable Recovery limits: 65% TO 135%
Acceptable RPD limit: 35%

ESN NORTHWEST CHEMISTRY LABORATORY

Bud Clary Subaru
PROJECT GW REMEDIATION
Washington

ESN Northwest
1210 Eastside Street SE Suite 200
Olympia, WA 98501
(360) 459-4670 (360) 459-3432 Fax
lab@esnnw.com

Analysis of Polynuclear Aromatic Hydrocarbons in Water by Method 8270

Analytical Results

	Reporting	MTH BLK	LCS	MW-1	MW-2	MW-3	MW-4	MW-5
Date extracted	Limits	06/28/19	06/28/19	06/28/19	06/28/19	06/28/19	06/28/19	06/28/19
Date analyzed	(ug/L)	06/28/19	06/28/19	06/28/19	06/28/19	06/28/19	06/28/19	06/28/19
Naphthalene	0.1	nd	103%	nd	nd	nd	nd	nd
2-Methylnaphthalene	0.1	nd	99%	nd	nd	nd	nd	nd
1-Methylnaphthalene	0.1	nd	105%	nd	nd	nd	nd	nd
Acenaphthylene	0.1	nd	153%	nd	nd	nd	nd	nd
Acenaphthene	0.1	nd	107%	nd	nd	nd	nd	nd
Fluorene	0.1	nd	92%	nd	nd	nd	nd	nd
Phenanthrene	0.1	nd	95%	nd	nd	nd	nd	nd
Anthracene	0.1	nd	102%	nd	nd	nd	nd	nd
Fluoranthene	0.1	nd	115%	nd	nd	nd	nd	nd
Pyrene	0.1	nd	115%	nd	nd	nd	nd	nd
Benzo(a)anthracene*	0.1	nd	134%	nd	nd	nd	nd	nd
Chrysene*	0.1	nd	89%	nd	nd	nd	nd	nd
Benzo(b)fluoranthene*	0.1	nd	72%	nd	nd	nd	nd	nd
Benzo(k)fluoranthene*	0.1	nd	83%	nd	nd	nd	nd	nd
Benzo(a)pyrene*	0.1	nd	58%	nd	nd	nd	nd	nd
Indeno(1,2,3-cd)pyrene*	0.1	nd	72%	nd	nd	nd	nd	nd
Dibenzo(a,h)anthracene*	0.1	nd	67%	nd	nd	nd	nd	nd
Benzo(ghi)perylene	0.1	nd	83%	nd	nd	nd	nd	nd
Total Carcinogens				nd	nd	nd	nd	nd
Surrogate recoveries:								
2-Fluorobiphenyl		88%	124%	111%	132%	143%	103%	139%
p-Terphenyl-d14		119%	121%	139%	123%	137%	142%	132%

Data Qualifiers and Analytical Comments

* - Carcinogenic Analyte
nd - not detected at listed reporting limits
ns - not spiked
Acceptable Recovery limits: 50% TO 150%
Acceptable RPD limit: 35%

ACCU LABORATORY

12524 130th Lane NE
Kirkland WA 98034

Tel: (425) 214-5858
(425) 214-5868
Email: lisa@accu-lab.com
Website: www.accu-lab.com

Analytical Report

Client	**ESN NW, Inc**	**Acculab WO#**	**19-AL0628-4**
	1210 Eastside Street SE, Suite #200		
	Olympia, WA 98501	Date Sampled	6/27/2019
Project Manager	Steve Loague	Date Received	6/28/2019
Project Name	**Bud Clary Subaru**	Date Reported	7/5/2019
Client Project#			

Total Metals in Water by EPA 6020B/EPA3010A

Accu Lab Batch# AL062919-13

Client sample ID					**MW-1**	**MW-2**	**MW-3**	**MW-4**	**MW-5**
Lab ID	**MRL**	**Unit**	**MTH BLK**	**LCS**	19-AL0628-4-1	19-AL0628-4-2	19-AL0628-4-3	19-AL0628-4-4	19-AL0628-4-5
Matrix			Water	Water	Water	Water	Water	Water	Water
Date Digested			6/29/2019	6/29/2019	6/29/2019	6/29/2019	6/29/2019	6/29/2019	6/29/2019
Date Analyzed			6/29/2019	6/29/2019	6/29/2019	6/29/2019	6/29/2019	6/29/2019	6/29/2019
Lead (Pb)	1.0	ug/L	nd	102%	nd	nd	nd	nd	nd

Acceptable Recovery Limits:

LCS	*80-120%*
MS/MSD	*75-125%*
Acceptable RPD limit:	*20%*

ACCU LABORATORY

12524 130th Lane NE
Kirkland WA 98034

Tel: (425) 214-5858
(425) 214-5868
Email: lisa@accu-lab.com
Website: www.accu-lab.com

Analytical Report

Client	**ESN NW, Inc**	**Acculab WO#**	**19-AL0628-4**
	1210 Eastside Street SE, Suite #200		
	Olympia, WA 98501	Date Sampled	6/27/2019
Project Manager	Steve League	Date Received	6/28/2019
Project Name	**Bud Clary Subaru**	Date Reported	7/5/2019
Project#			

Data Qualifiers and Comments:

MRL- Method Reporting Limit

nd- Indicates the analyte is not detected at the listing reporting limit.

C- Coelution with other compounds.

M- % Recovery of surrogate, MS/MSD is out of the acceptable limit due to matrix effect.

B- Indicates the analyte is detected in the method blank associated with the sample.

J- The analyte is detected at below the reporting limit.

E- The result reported exceeds the calibration range, and is an estimate.

D- Sample required dilution due to matrix. Method Reporting Limits were elevated due to dilutions.

H- Sample was received or analyzed past holding time.

Q- Sample was received with head space, improper preserved or above recommended temperature.

I- Due to insufficient sample, LCS/LCS DUP were analyzed in place of MS/MSD.

R- The recovery of this analyte in QC sample failed high, but the analyte was not detected in all related samples. No action was taken.

R-1- The RPD value for the MS/MSD was outside of QC acceptance limits however both recoveries were acceptable. All related samples were "nd". No action was taken.

ESN NORTHWEST, INC. | Environmental Services Network

CHAIN-OF-CUSTODY RECORD

CLIENT: BUD CLARY SUBARU (BSE)
ADDRESS: LONGVIEW
PHONE: _____ FAX: _____
CLIENT PROJECT #: _____ PROJECT MANAGER: AKOCH

DATE: 6-27-19 PAGE _____ OF _____
PROJECT NAME: GW REMEDIATION
LOCATION: 961 COMMERCE AVE
COLLECTOR: _____ DATE OF COLLECTION: _____

Sample Number	Depth	Time	Sample Type	Container Type	TPH - HCID	TPH - Diesel & Oil	TPH - Gasoline	BTEX	VOC 8260CL	VOC 8260	SemiVol 8270	PAH's 8270	PCB's 8082	CL Pesticides 8081	RCRA 8 Metals	MTCA 5 Metals	Pb	Asbestos - PLM	GRO Suite	DRO Suite	WO Suite	NOTES	Total Number of Containers	Laboratory Note Number
1. MW-1		0715	H2O	VOA/AMBER/POLY	X	X			X		X	X				X							5	
2. MW-2		0730																					5	
3. MW-3		0815																					5	
4. MW-4		0830																					5	
5. MW-5		0900																					5	
6.																								
7.																								
8.																								
9.																								
10.																								
11.																								
12.																								
13.																								
14.																								
15.																								
16.																								
17.																								
18.																								

RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)	DATE/TIME
[signature]	6-27-19	[signature]	6/27/19
RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)	DATE/TIME
			1:25

SAMPLE RECEIPT	
TOTAL NUMBER OF CONTAINERS	
CHAIN OF CUSTODY SEALS Y/N/NA	
SEALS INTACT? Y/N/NA	
RECEIVED GOOD COND./COLD	
NOTES:	

LABORATORY NOTES: No PCB's - Not enough Sample

Turn Around Time: 24 HR 48 HR (5 DAY)

1210 Eastside Street SE, Suite 200
Olympia, Washington 98501
Phone: 360-459-4670
Fax: 360-459-3432
Website: www.esnnw.com
E-Mail: info@esnnw.com

ESN NORTHWEST
Environmental
Services Network

September 19, 2019

Alex Koch
Blue Sage Environmental
198007 E 30th Ave
Kennewick, WA 99337

Dear Mr. Koch:

Please find enclosed the analytical data reports for the GW Remediation Project in Washington. Water samples were analyzed for Diesel and Oil by NWTPH-Dx/Dx Extended, Gasoline by NWTPH-Gx, BTEX by Method 8260, and PCB's by Method 8082 on September 10 – 13, 2019.

The results of the analyses are summarized in the attached tables. All soil values are reported on a dry weight basis. Applicable detection limits and QA/QC data are included. A copy of the invoice for this work is enclosed for your records.

ESN Northwest appreciates the opportunity to have provided these services to Blue Sage Environmental for this project. If you have any further questions about the data report, please give us a call. It was a pleasure working with you on this project, and we are looking forward to the next opportunity to work together.

Sincerely,

Michael A Korosec

Michael A. Korosec
President

1210 Eastside Street SE, Suite 200 ■ Olympia, Washington 98501 ■ 360.459.4670 ■ FAX 360.459.3432
Web Site: *www.esnnw.com* E-Mail: *info@esnnw.com*

ESN NORTHWEST CHEMISTRY LABORATORY

BSE (Bud Clary Subaru)
GW REMEDIATION PROJECT
Washington

ESN Northwest
1210 Eastside Street SE Suite 200
Olympia, WA 98501
(360) 459-4670 (360) 459-3432 Fax
lab@esnnw.com

Analysis of Diesel Range Organics & Lube Oil Range Organics in Water by Method NWTPH-Dx

Sample Number	Date Prepared	Date Analyzed	Surrogate Recovery (%)	Diesel Range Organics (ug/L)	Lube Oil Range Organics (ug/L)
Method Blank	9/10/2019	9/10/2019	131	nd	nd
LCS	9/10/2019	9/10/2019	125	86%	---
BCS-MW-1	9/10/2019	9/10/2019	88	nd	nd
BCS-MW-2	9/10/2019	9/10/2019	140	nd	nd
BCS-MW-3	9/10/2019	9/10/2019	147	nd	nd
BCS-MW-4	9/10/2019	9/10/2019	85	nd	nd
BCS-MW-5	9/10/2019	9/10/2019	79	nd	nd
Reporting Limits				250	250

"---" Indicates not tested for component.
"nd" Indicates not detected at the listed detection limits.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 50% TO 150%

ESN NORTHWEST CHEMISTRY LABORATORY

BSE (Bud Clary Subaru)
GW REMEDIATION PROJECT
Washington

ESN Northwest
1210 Eastside Street SE Suite 200
Olympia, WA 98501
(360) 459-4670 (360) 459-3432 Fax
lab@esnnw.com

Analysis of Gasoline Range Organics & BTEX in Water by Method NWTPH-Gx/8260

Sample Number	Date Analyzed	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	Gasoline Range Organics (ug/L)	Surrogate Recovery (%)
Method Blank	9/10/2019	nd	nd	nd	nd	nd	107
LCS	9/10/2019	126%	99%	107%	116%	97%	88
LCSD	9/10/2019	113%	106%	102%	114%	---	96
BCS-MW-1	9/10/2019	nd	nd	nd	nd	nd	107
BCS-MW-2	9/10/2019	nd	nd	nd	nd	nd	106
BCS-MW-3	9/10/2019	nd	nd	nd	nd	nd	88
BCS-MW-4	9/10/2019	nd	nd	nd	nd	nd	102
BCS-MW-5	9/10/2019	nd	nd	nd	nd	nd	109
TRIP BLANK	9/10/2019	nd	nd	nd	nd	nd	99%
Reporting Limits		1.0	1.0	1.0	3.0	100	

"nd" Indicates not detected at the listed detection limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Bromoflurorbenzene) & LCS: 65% TO 135%

ACCU LABORATORY

12524 130th Lane NE
Kirkland WA 98034

Tel: (425) 214-5858
(425) 214-5868
Email: lisa@accu-lab.com
Website: www.accu-lab.com

Analytical Report

Client	**ESN NW, Inc**	**Acculab WO#**	**19-AL0909-2**
	1210 Eastside Street SE, Suite #200		
	Olympia, WA 98501	Date Sampled	9/6/2019
Project Manager	Steve Loague	Date Received	9/9/2019
Project Name	**Bud Clary Subaru**	Date Reported	9/13/2019
Project #			

Polychlorinated Biphenyls in Water by EPA 8082A/3510C

Accu Lab Batch# AL090919-8

Client sample ID					**BCS-MW-1**	**BCS-MW-2**	**BCS-MW-3**	**BCS-MW-4**	**BCS-MW-5**
Lab ID	**MRL**	**Unit**	**MTH BLK**	**LCS**	19-AL0909-2-1	19-AL0909-2-2	19-AL0909-2-3	19-AL0909-2-4	19-AL0909-2-5
Matrix			Water	Water	Water	Water	Water	Water	Water
Date Extracted			9/9/2019	9/9/2019	9/9/2019	9/9/2019	9/9/2019	9/9/2019	9/9/2019
Date Analyzed			9/13/2019	9/13/2019	9/13/2019	9/13/2019	9/13/2019	9/13/2019	9/13/2019
A1016	0.10	ug/L	nd		nd	nd	nd	nd	nd
A1221	0.10	ug/L	nd		nd	nd	nd	nd	nd
A1232	0.10	ug/L	nd		nd	nd	nd	nd	nd
A1242	0.10	ug/L	nd		nd	nd	nd	nd	nd
A1248	0.10	ug/L	nd		nd	nd	nd	nd	nd
A1254	0.10	ug/L	nd		nd	nd	nd	nd	nd
A1260	0.10	ug/L	nd	93%	nd	nd	nd	nd	nd
A1262	0.10	ug/L	nd		nd	nd	nd	nd	nd
Surrogate Recoveries									
Decachlorobiphenyl			80%	79%	106%	101%	134%	104%	96%
Tetrachloro-m-xylene			76%	74%	116%	103%	116%	99%	102%

Acceptable Recovery Limits:

Surrogates/LCS	*60-150%*
MS/MSD	*50-150%*
Acceptable RPD limit:	*30%*

ACCU LABORATORY

12524 130th Lane NE
Kirkland WA 98034

Tel: (425) 214-5858
(425) 214-5868
Email: lisa@accu-lab.com
Website: www.accu-lab.com

Analytical Report

Client	**ESN NW, Inc**	**Acculab WO#**	**19-AL0909-2**
	1210 Eastside Street SE, Suite #200		
	Olympia, WA 98501	Date Sampled	9/6/2019
Project Manager	Steve Loague	Date Received	9/9/2019
Project Name	**Bud Clary Subaru**	Date Reported	9/13/2019
Project#			

Data Qualifiers and Comments:

MRL- Method Reporting Limit

nd- Indicates the analyte is not detected at the listing reporting limit.

C- Coelution with other compounds.

M- % Recovery of surrogate, MS/MSD is out of the acceptable limit due to matrix effect.

B- Indicates the analyte is detected in the method blank associated with the sample.

J- The analyte is detected at below the reporting limit.

E- The result reported exceeds the calibration range, and is an estimate.

D- Sample required dilution due to matrix. Method Reporting Limits were elevated due to dilutions.

H- Sample was received or analyzed past holding time.

Q- Sample was received with head space, improper preserved or above recommended temperature.

I- Due to insufficient sample, LCS/LCS DUP were analyzed in place of MS/MSD.

R- The recovery of this analyte in QC sample failed high, but the analyte was not detected in all related samples. No action was taken.

R-1- The RPD value for the MS/MSD was outside of QC acceptance limits however both recoveries were acceptable. All related samples were "nd". No action was taken.

~~APEX LABS~~

CHAIN OF CUSTODY

1210 Eastside St. SE Olympia, WA

~~12232 S.W. Garden Place, Tigard, OR 97223 Ph: 503-718-2323 Fax: 503-718-0333~~ (360) 459-4670

COC 1 OF 1

Lab # _____

Company: ~~BB&A Environmental~~ BLUE SAGE	Project Mgr: ~~Jim A. Kooiman~~ ALEX KOCH	Project Name: BUD CLARK SUBARU	Project # BSE-BUD
Address: 32986 Roberts Court, Eugene, Oregon 97408		Phone: (541) 484-9484	Fax: (541) 484-4188
Sampled by: RLB			Email: ~~jakooiman@bbaenv.com~~

Site Location: OR (WA)

Other:

SAMPLE ID	LAB ID #	DATE	TIME	MATRIX	# OF CONTAINERS	NWTPH-HCID	NWTPH-Dx	NWTPH-Gx	8260 BTEX	8260 RBDM VOCs	8260 Halo VOCs	8260 VOCs	8270 SIM PAHs	8082 PCBs	8081A Chlor. Pest	RCRA Metals (8)	Priority Metals (13)	Al, Sb, As, Ba, Be, Cd Ca, Cr, Co, Cu, Fe, Pb Hg, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn	TCLP Metals (8)	1200- COLS	1200-Z	8141A Phosph. Pest	8151A Chlor. Herb	Total Lead	Total Arsenic		5035 Extract & Hold	
BCS-MW-1		9-6-19	0650	W	4		✓	✓	✓				X	✓														
BCS-MW-2			0635		4		✓	✓	✓				X	✓														
BCS-MW-3			0700		4		✓	✓	✓				X	✓														
BCS-MW-4			0715		4		✓	✓	✓				X	✓														
BCS-MW-5			0730	✓	4		✓	✓	✓				X	✓														
BCS-Trip Blank			—	W	1		✓	✓	✓																			

*Call Alex if need to analyze. *
Trip Blank

Normal Turn Around Time (TAT) = 5-10 Business Days

TAT Requested (circle)

24 HR 48 HR 72 HR

4 DAY 5 DAY Other: _____

SAMPLES ARE HELD FOR 30 DAYS

SPECIAL INSTRUCTIONS:

Call with DRAFT results for possible further analyses.

C-PAH

Call Alex Koch

RELINQUISHED BY:		RECEIVED BY:	
Signature:	Date: 9-6-19	Signature:	Date: 9/6/19
Printed Name: ~~Jim A. Kooiman~~ Robert BOESE	Time: 0820am	Printed Name:	Time: 8:50
Company: BLUE SAGE / BB&A Environmental		Company:	

RELINQUISHED BY:		RECEIVED BY:	
Signature:	Date:	Signature:	Date:
Printed Name:	Time:	Printed Name:	Time:
Company:		Company:	

ESN NORTHWEST
Environmental
Services Network

December 11, 2019

Alex Koch
Blue Sage Environmental
198007 E 30th Ave
Kennewick, WA 99337

Dear Mr. Koch:

Please find enclosed the analytical data reports for the Bud Clary Subaru Project in Auburn, Washington. Water samples were analyzed for Diesel and Oil by NWTPH-Dx/Dx Extended, Gasoline by NWTPH-Gx, BTEX by Method 8260, and PCB's by Method 8082 on December 3 – 6, 2019.

The results of the analyses are summarized in the attached tables. Applicable detection limits and QA/QC data are included. A copy of the invoice for this work is enclosed for your records.

ESN Northwest appreciates the opportunity to have provided these services to Blue Sage Environmental for this project. If you have any further questions about the data report, please give us a call. It was a pleasure working with you on this project, and we are looking forward to the next opportunity to work together.

Sincerely,

Michael A Korosec

Michael A. Korosec
President

1210 Eastside Street SE, Suite 200 ■ Olympia, Washington 98501 ■ 360.459.4670 ■ FAX 360.459.3432
Web Site: www.esnnw.com
E-Mail: info@esnnw.com

ESN NORTHWEST CHEMISTRY LABORATORY

BSE
BUD CLARY SUBARU PROJECT
Aurburn, Washington

ESN Northwest
1210 Eastside Street SE Suite 200
Olympia, WA 98501
(360) 459-4670 (360) 459-3432 Fax
lab@esnnw.com

Analysis of Diesel Range Organics & Lube Oil Range Organics in Water by Method NWTPH-Dx

Sample Number	Date Prepared	Date Analyzed	Surrogate Recovery (%)	Diesel Range Organics (ug/L)	Lube Oil Range Organics (ug/L)
Method Blank	12/3/2019	12/3/2019	141	nd	nd
LCS	12/3/2019	12/3/2019	145	98%	---
BCS-MW-1	12/3/2019	12/3/2019	137	nd	nd
BCS-MW-1 duplicate	12/3/2019	12/3/2019	132	nd	nd
BCS-MW-2	12/3/2019	12/3/2019	115	nd	nd
BCS-MW-3	12/3/2019	12/3/2019	136	nd	nd
BCS-MW-4	12/3/2019	12/3/2019	120	nd	nd
BCS-MW-5	12/3/2019	12/3/2019	142	nd	nd
Reporting Limits				250	250

"---" Indicates not tested for component.
"nd" Indicates not detected at the listed detection limits.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 50% TO 150%

ESN NORTHWEST CHEMISTRY LABORATORY

BSE
BUD CLARY SUBARU PROJECT
Aurburn, Washington

ESN Northwest
1210 Eastside Street SE Suite 200
Olympia, WA 98501
(360) 459-4670 (360) 459-3432 Fax
lab@esnnw.com

Analyses of Gasoline Range Organics in Water by Method NWTPH-Gx

Sample Number	Date Analyzed	Surrogate Recovery (%)	Gasoline Range Organics (ug/L)
Method Blank	12/4/2019	102	nd
LCS	12/4/2019	104	89%
BCS-MW-1	12/4/2019	106	nd
BCS-MW-1 duplicate	12/5/2019	103	nd
BCS-MW-2	12/4/2019	102	nd
BCS-MW-3	12/5/2019	97	nd
BCS-MW-4	12/5/2019	99	nd
BCS-MW-5	12/5/2019	99	nd
BCS-TRIP BLANK	12/5/2019	104	nd
Reporting Limits			100

"nd" Indicates not detected at the listed detection limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE: 65% TO 135%

ESN NORTHWEST CHEMISTRY LABORATORY

BSE
BUD CLARY SUBARU PROJECT
Aurburn, Washington

ESN Northwest
1210 Eastside Street SE Suite 200
Olympia, WA 98501
(360) 459-4670 (360) 459-3432 Fax
lab@esnnw.com

Analyses of BTEX in Water by Method 8260D

Sample Number	Date Analyzed	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	Surrogate Recovery (%)
Method Blank	12/4/2019	nd	nd	nd	nd	103
LCS	12/4/2019	83%	83%	80%	84%	95
BCS-MW-2 MS	12/5/2019	78%	100%	119%	118%	90
BCS-MW-1	12/4/2019	nd	nd	nd	nd	106
BCS-MW-1 duplicate	12/5/2019	nd	nd	nd	nd	104
BCS-MW-2	12/4/2019	nd	nd	nd	nd	103
BCS-MW-3	12/5/2019	nd	nd	nd	nd	98
BCS-MW-4	12/5/2019	nd	nd	nd	nd	100
BCS-MW-5	12/5/2019	nd	nd	nd	nd	100
BCS-TRIP BLANK	12/5/2019	nd	nd	nd	nd	106
Reporting Limits		1.0	1.0	1.0	3.0	

"nd" Indicates not detected at the listed detection limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (4-Bromofluorobenzene) & LCS : 65% TO 135%

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12/06/2019

ESN Northwest
1210 Eastside St SE
Suite 200
Olympia, WA 98501
Attn: Julie Woods

Project:	Bud Clary Subaru
Client ID:	BCS-MW-1
Sample Matrix:	Water
Date Sampled:	
Date Received:	12/02/2019
Spectra Project:	2019120007
Spectra Number:	1

Analyte	Result	Units	Method
PCB	<0.1	µg/L	SW846 8082A

Surrogate	Recovery	Method
Decachlorobiphenyl	114	SW846 8082A

SPECTRA LABORATORIES

Jeffrey Cooper, Laboratory Manager

sb/ dis

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12/06/2019

ESN Northwest
1210 Eastside St SE
Suite 200
Olympia, WA 98501
Attn: Julie Woods

Project:	Bud Clary Subaru
Client ID:	BCS-MW-2
Sample Matrix:	Water
Date Sampled:	
Date Received:	12/02/2019
Spectra Project:	2019120007
Spectra Number:	2

Analyte	Result	Units	Method
PCB	<0.1	µg/L	SW846 8082A

Surrogate	Recovery	Method
Decachlorobiphenyl	119	SW846 8082A

SPECTRA LABORATORIES

Jeffrey Cooper, Laboratory Manager

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12/06/2019

ESN Northwest
1210 Eastside St SE
Suite 200
Olympia, WA 98501
Attn: Julie Woods

Project:	Bud Clary Subaru
Client ID:	BCS-MW-3
Sample Matrix:	Water
Date Sampled:	
Date Received:	12/02/2019
Spectra Project:	2019120007
Spectra Number:	3

Analyte	Result	Units	Method
PCB	<0.1	µg/L	SW846 8082A

Surrogate	Recovery	Method
Decachlorobiphenyl	117	SW846 8082A

SPECTRA LABORATORIES

Jeffrey Cooper, Laboratory Manager

jw/djs

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12/06/2019

ESN Northwest
1210 Eastside St SE
Suite 200
Olympia, WA 98501
Attn: Julie Woods

Project: Bud Clary Subaru
Client ID: BCS-MW-4
Sample Matrix: Water
Date Sampled:
Date Received: 12/02/2019
Spectra Project: 2019120007
Spectra Number: 4

Analyte	Result	Units	Method
PCB	<0.1	µg/L	SW846 8082A

Surrogate	Recovery	Method
Decachlorobiphenyl	120	SW846 8082A

SPECTRA LABORATORIES

Jeffrey Cooper, Laboratory Manager

ag/ds

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12/06/2019

ESN Northwest
1210 Eastside St SE
Suite 200
Olympia, WA 98501
Attn: Julie Woods

Project:	Bud Clary Subaru
Client ID:	BCS-MW-5
Sample Matrix:	Water
Date Sampled:	
Date Received:	12/02/2019
Spectra Project:	2019120007
Spectra Number:	5

Analyte	Result	Units	Method
PCB	<0.1	µg/L	SW846 8082A

Surrogate	Recovery	Method
Decachlorobiphenyl	106	SW846 8082A

SPECTRA LABORATORIES

Jeffrey Cooper, Laboratory Manager

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December 9, 2019

ESN Northwest
1210 Eastside St SE
Suite 210
Olympia, WA 98501
Attn: Julie Woods

Method: EPA Method 8082A
Sample Matrix: Water
Units: ug/L
Spectra Project: 2019120007
Applies to Spectra # 1-5

PCB ANALYSIS
QUALITY CONTROL RESULTS

BLANK SPIKE (LCS)

Spiked Sample: LCS

Date Extracted: 12/2/2019
Date Analyzed: 12/4/2019

Compound	Sample Result	Spike Amount Added	Spike Amount Found	Percent Recovery
AR1260	<0.1	0.5	0.574	115%

METHOD BLANK

Date Extracted: 12/2/2019

Date Analyzed: 12/4/2019

PCB's	<0.1
Surrogate Recovery:	
Decachlorobiphenyl	118%

SPECTRA LABORATORIES

Jeffrey Cooper, Laboratory Manager

~~APEX LABS~~

CHAIN OF CUSTODY

1220 Eastside St. SE Olympia, WA (360) 459-4670

~~12232 S.W. Garden Place, Tigard, OR 97223 Ph: 503-718-2323 Fax: 503-718-0333~~

COC 1 OF 1

Lab # _____

Company: Blue Sage BB&A Environmental	Project Mgr: ALEX KOCH	Project Name: Bud Clary Subaru	Project # BSE-BUD
Address: 32986 Roberts Court, Eugene, Oregon 97408	Phone: (541) 484-9484	Fax: (541) 484-4188	Email: @bbaenv.com
Sampled by: LLB			

Site Location: OR (WA)

Other:

SAMPLE ID	LAB ID #	DATE	TIME	MATRIX	# OF CONTAINERS	NWTPH-HCID	NWTPH-Dx	NWTPH-Gx	8260 BTEX	8260 RBDM VOCs	8260 Halo VOCs	8260 VOCs	8270 SIM PAHs	8082 PCBs (C-PAH)	8081A Chlor. Pest	RCRA Metals (8)	Priority Metals (13)	Al, Sb, As, Ba, Be, Cd Ca, Cr, Co, Cu, Fe, Pb Hg, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn	TCLP Metals (8)	1200- COLS	1200-Z	8141A Phosph. Pest	8151A Chlor. Herb	Total Lead	Total Arsenic		5035 Extract & Hold	
BCS-MW-1		12-1-10	0825	W	5		✓	✓	✓				✓	✓														
BCS-MW-2			0510		5		✓	✓	✓				✓	✓														
BCS-MW-3			0540		5		✓	✓	✓				✓	✓														
BCS-MW-4			0535		5		✓	✓	✓				✓	✓														
BCS-MW-5			0610		5		✓	✓	✓				✓	✓														
BCS-Trip Blank				W	1			✓	✓																			

Normal Turn Around Time (TAT) = 5-10 Business Days

TAT Requested (circle) 24 HR 48 HR 72 HR 4 DAY 5 DAY Other: _____

SAMPLES ARE HELD FOR 30 DAYS

SPECIAL INSTRUCTIONS:

Call with DRAFT results for possible further analyses.

C-PAH → Call Alex Koch

RELINQUISHED BY:		RECEIVED BY:	
Signature: Robert Boese	Date: 12-2-10	Signature: Anna Harrison	Date: 12-2-10
Printed Name: Robert Boese	Time: 9:30	Printed Name:	Time: 9:30AM
Company: Blue Sage BB&A Environmental, INC.		Company:	

RELINQUISHED BY:		RECEIVED BY:	
Signature:	Date:	Signature:	Date:
Printed Name:	Time:	Printed Name:	Time:
Company:		Company:	