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January 7, 2019

Tamarah Hancock
Scarsella Bros. Inc.
PO Box 68697
Seattle, Washington 98168

Emailed to: Tamarah.k@scarsellabros.com and Jenifer.m@scarsellabros.com

SUBJECT: SUMMARY STATUS REPORT — GROUNDWATER MONITORING WELL SAMPLE RESULTS AT THE FIRWOOD PIT PROPERTY IN EDGEWOOD, WA
SEPA PROJECT #1808 – CLEAR AND GRADE PERMIT #3492

Dear Ms. Hancock:

This letter report presents a summary of Galloway Environmental, Inc.'s (GEI's) findings from the groundwater monitoring event at the Firwood Pit property for December 2018.

The scope of work for this quarterly groundwater monitoring report is based on the City of Edgewood's Final Conditions for Firwood Pit Reclamation – Original SEPA project #1808, Clear and Grade Permit #3492 which was updated on November 26, 2018. This report includes: 1) Chemical analytical results of water sampled from four groundwater wells, and 2) Physical properties of groundwater in the monitoring wells.

INTRODUCTION

The Firwood Mine was a sand and gravel surface mine that was exhausted of its aggregate resource before March 1, 2000 when it was assigned and leased to Scarsella Bros., Inc. by the Tim Corliss and Son Company and is now in the reclamation process. The mine is located in the general area east of Freeman Road, adjacent to the west side of 90th Avenue East, south of 33rd Street East, and northeast of Simons Creek. The Site is in the City of Edgewood, Pierce County, Washington.

GROUNDWATER SAMPLING SUMMARY

On December 27, 2018, GEI collected groundwater samples from groundwater monitoring wells MW-1, MW-2, MW-3a, and MW-4 and submitted them to OnSite Environmental, Incorporated, located at 14648 NE 95th Street, Redmond, Washington (OnSite). The locations of the wells are shown on Figure 1 of this report.

Prior to initiating the sample collection process at well number MW-3a, GEI re-developed the well using a high capacity submersible pump to remove sedimentation from the well. As part of the re-development process, GEI removed approximately 8.7 well volumes from the well and monitored water quality parameters during the process.

Prior to sample collection, GEI gauged and purged each well to evaluate the current groundwater flow conditions and attain groundwater samples that were representative of the site. During the purging process, water quality parameters were measured using a multiparameter water quality meter (model YSI 556 MPS) fitted with a flow-through cell to measure pH, temperature, conductivity, and dissolved oxygen (DO). Additionally, per the updated clear and grade permit, GEI utilized a pH/ORP meter (model Extech SDL 100) to measure oxygen-reduction potential (ORP). Each meter was calibrated prior to use using a 3-point pH calibration process (pH valued at 4.02, 7.02, and 10.04). The YSI 556 MPS meter was further calibrated using a 3-point conductivity process (conductivity valued at 84 micrograms per centimeter [μg/cm], 1,413 μg/cm, and 12,880 μg/cm).

The pH measured at the conclusion of the purging process ranged from 5.96 to 6.44 using the YSI 556 MPS meter and 6.14 to 6.52 using the Extech SDL 100 meter. The variation among the pH measurements is likely due to variations in temperatures measured from each meter. The conductivity measured at the conclusion of the purging process ranged from 0.119 milliSiemens per centimeter (mS/cm) to 0.276 mS/cm. The DO measured at the conclusion of the purging process ranged from 0.25 milligrams per liter (mg/L) to 6.32 mg/L. The ORP measured at the conclusion of the purging process ranged from 27 millivolts (mV) to 48 mV. Turbidity was observed to be clear in all wells at the conclusion of the purging process. GEI purged a minimum of three well volumes from each well as indicated in Table 1, below.

Table 1 – Groundwater Volumes December 27, 2018

Well Number	Total Depth (feet below top of casing surface)	Depth to Water (feet)	Volume (gallons)	Volume Purged (gallons)
MW-1	20.10	8.48	1.86	5.75
MW-2	77.82	70.09	1.23	4.5
MW-3a	115.54	108.33	1.15	12.0
MW-4	107.28	99.21	1.29	4.5

The samples were analyzed for petroleum hydrocarbons using the Northwest Total Petroleum Hydrocarbons as Hydrocarbon Identification (NWTPH-HCID) method and total and dissolved arsenic using the United States Environmental Protection Agency (US EPA) method 200.8. Laboratory chemical analytical results are summarized as follows *(See Table 1 for a summary of the laboratory results).*

- Laboratory analyses did not result in the detection of petroleum hydrocarbons at a concentration equal to, or exceeding, their respective laboratory practical quantitation limits (PQLs) in any of the groundwater samples analyzed.
- Laboratory analyses resulted in the detections of total arsenic at concentrations of 13 micrograms per liter (μg/L) and 11 μg/L in the groundwater samples collected from MW-1 and MW-3a, respectively. Both detected concentrations exceed the MTCA Method A Cleanup Level of 5.0 μg/L and the Maximum Contaminant Level (MCL) of 10.0 μg/L.
- Laboratory analyses resulted in the detection of dissolved arsenic at a concentration of 11 μg/L in the groundwater sample collected from MW-1. The detected concentration of dissolved arsenic exceeds the MTCA Method A Cleanup Level of 5.0 μg/L and the MCL of 10.0 μg/L.

As per the City of Edgewood's Final Conditions for the Clear and Grade Permit (#3492), petroleum hydrocarbon compounds and dissolved arsenic will be tested quarterly; and polycyclic aromatic hydrocarbons (PAHs) will be tested annually for the wells.

Should you have any questions regarding this report or if you would like to discuss our findings, please contact us at any of the addresses listed on top of this letter.

Respectfully Submitted,
GALLOWAY ENVIRONMENTAL, INC.

Dylan Galloway, REA
President
cc: Jenifer A. Morrison, SBI

Table 2 — Groundwater Sample Results Summary, Units = µg/L (ppb-water)								
Sample ID	Sample Date	NWTPH-HCID	NWTPH Gx	BTEX	NWTPH -Dx	PAHs (EPA 8270 SIM)	Arsenic (EPA 7060)	Remarks
MW-1	2/3/12	ND	- - -	- - -	- - -	- - -	**14**	
"	5/2/12	ND	- - -	- - -	- - -	- - -	- - -	
"	7/19/12	ND	- - -	- - -	- - -	ND	ND	
"	10/29/12	ND	- - -	- - -	- - -	- - -	- - -	
"	1/14/13	ND	- - -	- - -	- - -	- - -	**26**	
"	4/19/13	ND	- - -	- - -	- - -	- - -	- - -	
"	7/23/13	ND	- - -	- - -	- - -	ND	**18**	
"	10/17/13	ND	- - -	- - -	- - -	- - -	- - -	
"	1/28/14	ND	- - -	- - -	- - -	- - -	**30**	
"	4/3/14	ND	- - -	- - -	- - -	- - -	- - -	
"	7/14/14	ND	- - -	- - -	- - -	ND	**26**	
"	10/10/14	ND	- - -	- - -	- - -	- - -	- - -	
"	12/20/14	ND	- - -	- - -	- - -	- - -	**29**	
"	4/28/15	ND	- - -	- - -	- - -	- - -	- - -	
"	6/25/15	ND	- - -	- - -	- - -	ND	**6.6**	
"	10/3/15	ND	- - -	- - -	- - -	- - -	- - -	
"	1/22/16	ND	- - -	- - -	- - -	- - -	**40**	
"	4/13/16	ND	- - -	- - -	- - -	- - -	- - -	
"	7/25/16	ND	- - -	- - -	- - -	ND	**15**	
"	10/17/16	ND	- - -	- - -	- - -	- - -	- - -	
"	1/27/17	ND	- - -	- - -	- - -	- - -	**22**	
"	4/13/17	Detect	ND	ND	Lube Oil 720	- - -	- - -	
"	11/4/17	ND	- - -	- - -	- - -	- - -	- - -	
"	1/30/18	ND	- - -	- - -	- - -	- - -	**8.7**	
"	4/30/18	ND	- - -	- - -	- - -	- - -	- - -	
"	6/29/18	ND	- - -	- - -	- - -	- - -	- - -	
"	9/27/18	ND	- - -	- - -	- - -	- - -	- - -	
"	12/27/18	ND	- - -	- - -	- - -	- - -	**13/11****	
MW-2	2/3/12	ND	- - -	- - -	- - -	- - -	ND	
"	5/2/12	ND	- - -	- - -	- - -	- - -	---	
"	7/19/12	ND	- - -	- - -	- - -	ND	ND	
"	10/29/12	ND	- - -	- - -	- - -	- - -	---	
"	1/14/13	ND	- - -	- - -	- - -	- - -	**7**	
"	4/19/13	ND	- - -	- - -	- - -	- - -	---	
"	7/23/13	ND	- - -	- - -	- - -	ND	ND	
"	10/17/13	ND	- - -	- - -	- - -	- - -	- - -	
"	1/28/14	ND	- - -	- - -	- - -	- - -	3.6	
"	4/3/14	ND	- - -	- - -	- - -	- - -	- - -	
"	7/14/14	ND	- - -	- - -	- - -	ND	**5.2**	

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Table 2 – Groundwater Sample Results Summary, Units = µg/L (ppb-water) (Continued)								
Sample ID	Date	NWTPH-HCID	NWTPH Gx	BTEX	NWTPH -Dx	PAHs (EPA 8270 SIM)	Arsenic (EPA 7060)	Remarks
MW-2 (Continued)								
"	10/10/14	ND	- - -	- - -	- - -	- - -	- - -	
"	12/20/14	ND	- - -	- - -	- - -	- - -	ND	
"	4/28/15	ND	- - -	- - -	- - -	- - -	- - -	
	6/25/15	ND	- - -	- - -	- - -	ND	ND	
"	10/3/15	ND	- - -	- - -	- - -	- - -	- - -	
"	1/22/16	ND	- - -	- - -	- - -	- - -	2.7	
"	4/13/16	ND	- - -	- - -	- - -	- - -	- - -	
"	7/25/16	ND	- - -	- - -	- - -	ND	3.6	Cr = 11, Pb = 3.4 ppb
"	10/17/16	ND	- - -	- - -	- - -	- - -	- - -	
"	1/27/17	ND	- - -	- - -	- - -	- - -	ND	
"	4/13/17	ND	- - -	- - -	- - -	- - -	- - -	
"	11/4/17	ND	- - -	- - -	- - -	- - -	- - -	
"	1/30/18	ND	- - -	- - -	- - -	- - -	ND	
"	4/30/18	ND	- - -	- - -	- - -	- - -	- - -	
	6/29/18	ND	- - -	- - -	- - -	ND	ND	
"	9/27/18	ND	- - -	- - -	- - -	- - -	- - -	
"	12/27/18	ND	- - -	- - -	- - -	- - -	ND/ND**	
MW-3	2/3/12	ND	- - -	- - -	- - -	- - -	- - -	MW-3 was not accessible for sampling
"	5/2/12	ND	- - -	- - -	- - -	- - -	ND	
"	7/19/12	ND	- - -	- - -	- - -	ND	ND	
"	10/29/12	ND	- - -	- - -	- - -	- - -	---	
"	1/14/13	ND	- - -	- - -	- - -	- - -	- - -	
"	4/19/13	ND	- - -	- - -	- - -	- - -	---	
"	7/23/13	ND	- - -	- - -	- - -	ND	ND	
"	10/17/13	Detect	- - -	- - -	Lube Oil 420	- - -	- - -	
"	1/28/14	ND	- - -	- - -	- - -	- - -	ND	
"	4/3/14	ND	- - -	- - -	- - -	- - -	- - -	
"	7/14/14	Detect	- - -	- - -	Lube Oil 510	ND	ND	
"	7/30/14	ND	- - -	- - -	- - -	- - -	- - -	Re-sample MW-3
"	10/10/14	ND	- - -	- - -	- - -	- - -	- - -	
"	12/20/14	- - -	- - -	- - -	- - -	- - -	- - -	Well plugged - no sample
"	4/28/15	- - -	- - -	- - -	- - -	- - -	- - -	Well plugged - no sample

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Table 2 – Groundwater Sample Results Summary, Units = µg/L (ppb-water) (Continued)								
Sample ID	Date	NWTPH-HCID	NWTPH Gx	BTEX	NWTPH -Dx	PAHs (EPA 8270 SIM)	Arsenic (EPA 7060)	Remarks
MW-3 (Continued)								
"	6/25/15	ND	- - -	- - -	- - -	ND - See note	**6.1**	ND except Benzo(a)anthracene = 0.012
"	10/3/15	- - -	- - -	- - -	- - -	- - -	- - -	Well covered - no sample
"	1/22/16	- - -	- - -	- - -	- - -	- - -	- - -	"
"	4/13/16	- - -	- - -	- - -	- - -	- - -	- - -	"
"	7/25/16	- - -	- - -	- - -	- - -	- - -	- - -	
"	10/17/16	- - -	- - -	- - -	- - -	- - -	- - -	"
"	4/13/16	- - -	- - -	- - -	- - -	- - -	- - -	"
"	7/25/16	- - -	- - -	- - -	- - -	- - -	- - -	
"	10/17/16	- - -	- - -	- - -	- - -	- - -	- - -	"
"	1/27/17	- - -	- - -	- - -	- - -	- - -	- - -	Well plugged (abandoned)
MW-3a	2/24/17	Detect	ND	ND	Lube Oil = 420	ND except 2-Methylnapthalene = 0.11 (not considered a carcinogen (cPAH))	- - -	New well replaced MW-3
"	4/13/17	ND	- - -	- - -	- - -	- - -	- - -	"
"	11/4/17	- - -	- - -	- - -	- - -	- - -	- - -	"
"	1/30/18	ND	- - -	- - -	- - -	- - -	**8.7**	"
"	4/30/18	ND	- - -	- - -	- - -	- - -	- - -	"
	6/29/18	ND	- - -	- - -	- - -	ND	ND	
"	9/27/18	ND	- - -	- - -	- - -	- - -	- - -	
"	12/27/18	ND	- - -	- - -	- - -	- - -	**11**/ND**	
MW-4	2/3/12	ND	- - -	- - -	- - -	- - -	ND	
"	5/2/12	ND	- - -	- - -	- - -	- - -	- - -	
"	7/19/12	ND	- - -	- - -	- - -	ND	ND	
"	10/29/12	ND	- - -	- - -	- - -	- - -	- - -	
"	1/14/13	ND	- - -	- - -	- - -	- - -	**5.1**	
"	4/19/13	ND	- - -	- - -	- - -	- - -	- - -	
"	7/23/13	ND	- - -	- - -	- - -	ND	6.7	
"	10/17/13	ND	- - -	- - -	- - -	- - -	- - -	
"	1/28/14	ND	- - -	- - -	- - -	- - -	- - -	
"	4/3/14	ND	- - -	- - -	- - -	- - -	- - -	
"	7/14/14	ND	- - -	- - -	- - -	ND	**11**	

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Table 2 – Groundwater Sample Results Summary, Units = µg/L (ppb-water) (Continued)								
Sample ID	Date	NWTPH-HCID	NWTPH Gx	BTEX	NWTPH -Dx	PAHs (EPA 8270 SIM)	Arsenic (EPA 7060)	Remarks
MW-4 (Continued)								
"	10/10/14	ND	- - -	- - -	- - -	- - -	- - -	
"	12/20/14	ND	- - -	- - -	- - -	- - -	**7.6**	
"	4/28/15	ND	- - -	- - -	- - -	- - -	- - -	
"	6/25/15	ND	- - -	- - -	- - -	ND	**6.1**	
"	10/3/15	ND	- - -	- - -	- - -	- - -	- - -	
"	1/22/16	ND	- - -	- - -	- - -	- - -	ND	
"	4/13/16	ND	- - -	- - -	- - -	- - -	- - -	
"	7/25/16	ND	- - -	- - -	- - -	ND	ND	
"	10/17/16	ND	- - -	- - -	- - -	- - -	- - -	
"	1/27/17	ND	- - -	- - -	- - -	- - -	ND	
"	4/13/17	ND	- - -	- - -	- - -	- - -	- - -	
"	11/4/17	ND	- - -	- - -	- - -	- - -	- - -	
"	1/30/18	ND	- - -	- - -	- - -	- - -	ND	
"	4/30/18	ND	- - -	- - -	- - -	- - -	- - -	
"	6/29/18	ND	- - -	- - -	- - -	ND	ND	
"	9/27/18	ND	- - -	- - -	- - -	- - -	- - -	
"	12/27/18	ND	- - -	- - -	- - -	- - -	ND/ND**	
MTCA A Potable Groundwater CULs			500	5/1000/ 700/1000	500	TEC=0.012	5.0/10.0[1]	

Notes:

See figure for sample locations
MTCA Method A or Method B
- - - = Not analyzed
ND = Not Detected at a concentration equal to or exceeding the laboratory PQL
** = Laboratory results presented as total arsenic on left and dissolved arsenic on right of "/"
1 = MTCA Method A Cleanup Level for groundwater is 5.0 µg/L. The Maximum Contaminant Level (MCL) for Drinking Water is 10.0 µg/L

Table 3 – Water Elevations and Sample Log Data Summary						
Date	Well #	Water Elevation (Feet amsl)	Temperature °C	pH	Conductivity µS	Color
2/3/2012	MW-1	35.11	9.5	7.22	525	clear
"	MW-2	35.10	12.0	7.20	191	clear
"	MW-3	- - -	- - -	- - -	- - -	No access to well
"	MW-4	35.11	12.9	7.20	284	clear
5/3/2012	MW-1	35.42	11.8	7.22	582	clear
"	MW-2	35.50	12.6	7.19	186	clear
"	MW-3	35.30	12.4	7.22	259	clear
"	MW-4	35.48	13.6	7.20	275	clear
7/19/2012	MW-1	34.47	13.2	7.19	271	clear
"	MW-2	34.60	13.3	7.16	182	clear
"	MW-3	34.51	13.3	7.20	222	clear
"	MW-4	34.66	13.6	7.21	260	clear
10/29/12	MW-1	32.66	11.5	7.19	328	clear
"	MW-2	32.70	11.9	7.16	198	clear
"	MW-3	32.64	11.4	7.20	262	clear
"	MW-4	32.55	11.4	7.21	285	clear
1/14/13	MW-1	33.95	9.2	7.23	519	clear
"	MW-2	33.94	9.1	7.23	373	clear
"	MW-3	33.90	9.2	7.23	372	clear
"	MW-4	33.89	9.1	7.23	285	clear
4/19/13	MW-1	34.46	12.2	7.20	432	clear
"	MW-2	34.52	11.1	7.21	236	clear
"	MW-3	34.50	11.3	7.22	302	clear
"	MW-4	34.41	11.5	7.21	382	clear
7/23/13	MW-1	32.45	13.1	7.15	232	clear
"	MW-2	32.50	12.8	7.20	236	clear
"	MW-3	32.43	12.9	7.21	282	clear
"	MW-4	32.46	12.6	7.21	312	clear
10/17/13	MW-1	33.44	13.1	7.21	415	clear
"	MW-2	33.49	12.8	7.22	185	clear
"	MW-3	33.20	10.8	7.21	227	clear
"	MW-4	35.36	12.1	7.22	268	clear

Table 3 – Water Elevations and Sample Log Data Summary (Continued)						
Date	Well #	Water Elevation (Feet amsl)	Temperature °C	pH	Conductivity µS	Color
1/28/14	MW-1	33.44	9.6	7.22	520	clear
"	MW-2	33.49	9.8	7.23	368	clear
"	MW-3	33.20	9.5	7.23	351	clear
"	MW-4	35.36	9.7	7.23	298	clear
4/3/14	MW-1	34.62	11.9	7.20	452	clear
"	MW-2	34.65	11.6	7.22	348	clear
	MW-3	34.64	11.4	7.23	335	clear
"	MW-4	34.58	11.1	7.22	298	clear
7/14/14	MW-1	34.12	12.9	7.23	283	clear
"	MW-2	34.13	12.3	7.20	201	clear
"	MW-3	34.19	12.7	7.21	229	clear
"	MW-4	34.20	12.8	7.22	282	clear
12/20/14	MW-1	34.43	13.0	7.20	386	clear
"	MW-2	34.44	12.8	7.22	210	clear
"	MW-3	- - -	- - -	- - -	- - -	Not sample
"	MW-4	32.47	13.0	7.21	385	clear
4/28/15	MW-1	33.96	12.8	7.20	393	clear
"	MW-2	33.99	12.4	7.21	224	clear
"	MW-3	- - -	- - -	- - -	- - -	Not sample
"	MW-4	32.49	13.4	7.22	396	clear
6/25/15	MW-1	33.97	14.3	6.82	352	clear
"	MW-2	34.10	13.4	7.14	199	clear
"	MW-3	34.01	15.3	7.03	264	clear
"	MW-4	34.16	15.3	7.01	242	clear
10/3/15	MW-1	32.56	14.9	7.13	314	clear
"	MW-2	32.91	12.9	7.16	206	clear
"	MW-3	- - -	- - -	- - -	- - -	Not sampled
"	MW-4	32.80	14.1	7.17	310	clear
1/22/16	MW-1	34.61	12.9	7.20	356	clear
"	MW-2	34.63	13.1	7.18	208	clear
"	MW-3	- - -	- - -	- - -	- - -	Not sampled
"	MW-4	34.57	13.6	7.22	298	clear

Table 3 – Water Elevations and Sample Log Data Summary (Continued)						
Date	Well #	Water Elevation (Feet amsl)	Temperature °C	pH	Conductivity µS	Color
4/13/16	MW-1	34.68	13.8	7.02	298	clear
"	MW-2	34.92	14.1	7.19	255	clear
"	MW-3	- - -	- - -	- - -	- - -	Not sampled
"	MW-4	34.86	14.5	7.21	296	clear
7/25/16	MW-1	34.14	14.2	7.02	298	clear
"	MW-2	34.53	13.5	7.19	255	clear
"	MW-3	- - -	- - -	- - -	- - -	Not sampled
"	MW-4	34.56	13.9	7.20	306	clear
10/17/16	MW-1	33.77	12.4	7.06	306	clear
"	MW-2	33.92	12.9	7.11	268	clear
"	MW-3	- - -	- - -	- - -	- - -	Not sampled
"	MW-4	33.96	13.5	7.18	312	clear
1/27/17	MW-1	34.52	12.4	7.06	268	clear
"	MW-2	34.66	12.9	7.11	245	clear
"	MW-3	- - -	- - -	- - -	- - -	Not sampled
"	MW-4	34.51	13.5	7.18	371	clear
2/24/17	MW-1	37.99	12.4	7.06	268	clear
"	MW-2	38.55	12.9	7.11	245	clear
"	MW-3a	38.44	13.2	7.07	412	clear
"	MW-4	38.36	13.5	7.18	371	clear
4/13/17	MW-1	38.32	12.4	7.08	279	clear
"	MW-2	38.94	12.9	7.10	230	clear
"	MW-3a	38.82	13.2	7.12	408	clear
"	MW-4	38.73	13.5	7.08	295	clear
11/4/17	MW-1	36.92	10.8	6.36	455.9	clear
"	MW-2	37.58	7.3	6.45	371.9	clear
"	MW-3a	37.42	11.4	7.61	3.8	clear
	MW-4	34.67	13.6	7.10	307	clear
1/30/18	MW-1	38.26	9.3	5.79	764.8	clear
"	MW-2	38.82	9.2	6.34	763.3	clear
"	MW-3a	38.68	9.8	6.52	762.9	clear
	MW-4	38.59	9.7	6.18	763.6	clear
4/30/18	MW-1	37.92	8.39	5.76	286	clear
"	MW-2	38.61	9.34	5.97	126	clear
"	MW-3a	38.47	9.35	6.23	410	clear
"	MW-4	38.49	9.74	5.61	207	clear

Table 3 – Water Elevations and Sample Log Data Summary (Continued)

Date	Well #	Water Elevation (Feet amsl)	Temperature °C	pH	Conductivity µS/cm	Color	DO (mg/L)	ORP (mV)
6/29/18	MW-1	36.26	9.58	6.48	330	clear	0.33	50.9
"	MW-2	36.91	9.68	6.88	193	clear	8.72	39.8
"	MW-3a	36.77	9.44	6.88	460	clear	2.42	23.6
"	MW-4	36.81	10.09	6.45	296	clear	3.47	34.0
9/27/18	MW-1	36.00	10.28	6.52	195	clear	0.62	NM
"	MW-2	36.77	9.84	6.34	115	clear	8.85	NM
"	MW-3a	36.64	9.95	6.41	292	brown	2.65	NM
"	MW-4	36.59	10.82	6.43	194	clear	3.61	NM
12/27/18	MW-1	36.97	9.63	6.24/6.49*	276	clear	0.25	27
"	MW-2	37.48	9.26	6.04/6.33*	119	clear	6.32	37
"	MW-3a	37.36	10.02	6.44/6.52*	199	clear	4.12	27
"	MW-4	37.32	9.81	5.96/6.14*	188	clear	3.24	48

Notes:

amsl = above mean sea level
µS = microSiemens per centimeter
DO = dissolved oxygen
mg/L = milligrams per liter
NM = not measured
mV = millivolts
* = First pH value was collected using the YSI 556 MPS meter. The second pH value was collected using the Extech SDL 100 meter

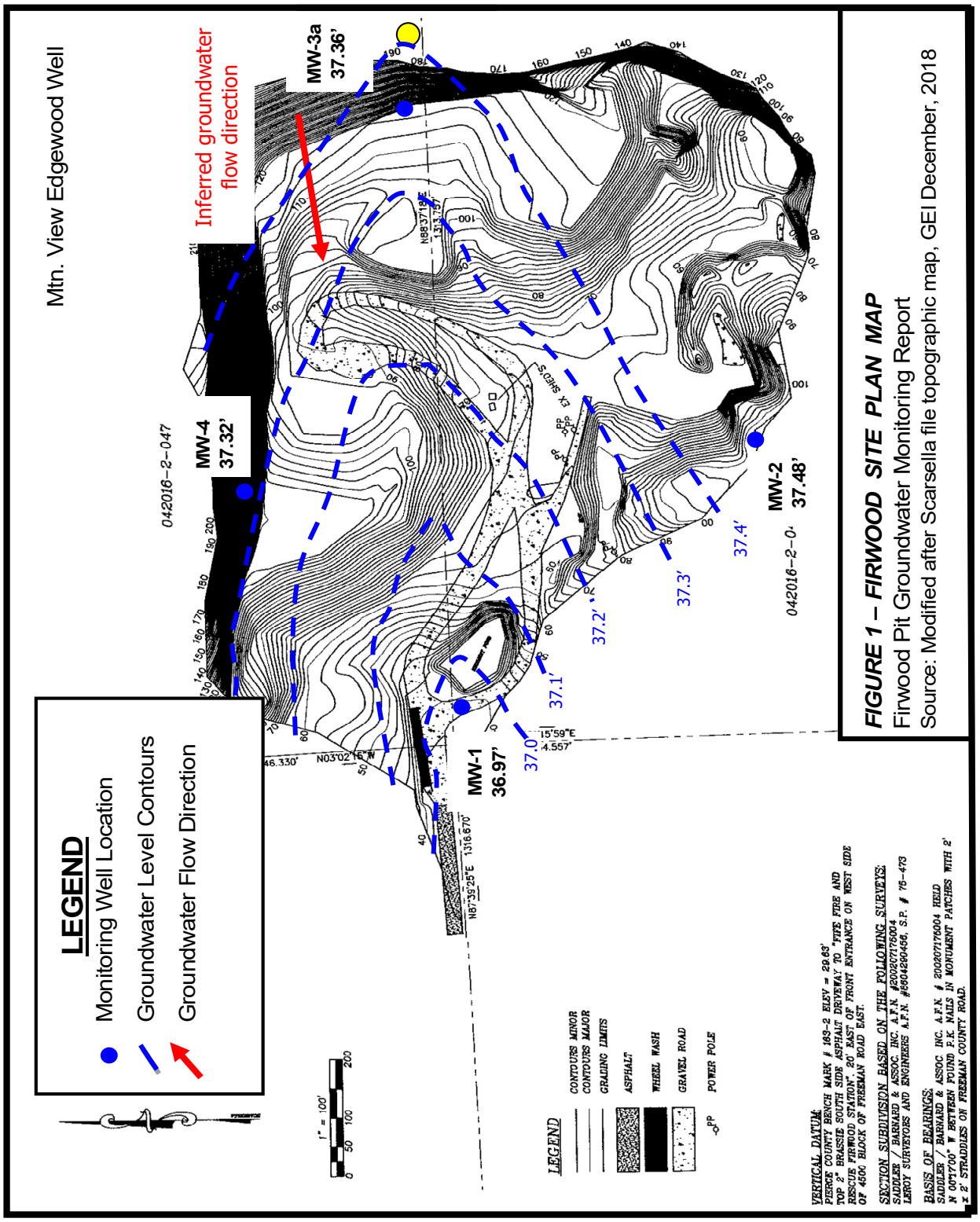

FIGURE 1 – FIRWOOD SITE PLAN MAP
Firwood Pit Groundwater Monitoring Report
Source: Modified after Scarsella file topographic map, GEI December, 2018

Attachment 1
Laboratory Analytical Reports

OnSite Environmental Inc.
14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

January 7, 2019

Dylan Galloway
Galloway Environmental, Inc.
15600 NE 8th Street, Suite B1, 617
Bellevue, WA 98008

Re: Analytical Data for Project 28027
Laboratory Reference No. 1812-253

Dear Dylan:

Enclosed are the analytical results and associated quality control data for samples submitted on December 28, 2018.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

Date of Report: January 7, 2019
Samples Submitted: December 28, 2018
Laboratory Reference: 1812-253
Project: 28027

Case Narrative

Samples were collected on December 27, 2018 and received by the laboratory on December 28, 2018. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that any and all soil sample results are reported on a dry-weight basis, unless otherwise noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

Date of Report: January 7, 2019
Samples Submitted: December 28, 2018
Laboratory Reference: 1812-253
Project: 28027

HYDROCARBON IDENTIFICATION
NWTPH-HCID

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-1**					
Laboratory ID:	12-253-01					
Gasoline Range Organics	**ND**	0.10	NWTPH-HCID	12-28-18	12-31-18	
Diesel Range Organics	**ND**	0.26	NWTPH-HCID	12-28-18	12-31-18	
Lube Oil Range Organics	**ND**	0.41	NWTPH-HCID	12-28-18	12-31-18	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*104*	*50-150*				
Client ID:	**MW-2**					
Laboratory ID:	12-253-02					
Gasoline Range Organics	**ND**	0.10	NWTPH-HCID	12-28-18	12-31-18	
Diesel Range Organics	**ND**	0.26	NWTPH-HCID	12-28-18	12-31-18	
Lube Oil Range Organics	**ND**	0.41	NWTPH-HCID	12-28-18	12-31-18	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*114*	*50-150*				
Client ID:	**MW-3a**					
Laboratory ID:	12-253-03					
Gasoline Range Organics	**ND**	0.10	NWTPH-HCID	12-28-18	12-31-18	
Diesel Range Organics	**ND**	0.26	NWTPH-HCID	12-28-18	12-31-18	
Lube Oil Range Organics	**ND**	0.41	NWTPH-HCID	12-28-18	12-31-18	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*105*	*50-150*				
Client ID:	**MW-4**					
Laboratory ID:	12-253-04					
Gasoline Range Organics	**ND**	0.10	NWTPH-HCID	12-28-18	12-31-18	
Diesel Range Organics	**ND**	0.26	NWTPH-HCID	12-28-18	12-31-18	
Lube Oil Range Organics	**ND**	0.41	NWTPH-HCID	12-28-18	12-31-18	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*109*	*50-150*				

Date of Report: January 7, 2019
Samples Submitted: December 28, 2018
Laboratory Reference: 1812-253
Project: 28027

HYDROCARBON IDENTIFICATION
NWTPH-HCID
QUALITY CONTROL

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1228W1					
Gasoline Range Organics	**ND**	0.10	NWTPH-HCID	12-28-18	12-31-18	
Diesel Range Organics	**ND**	0.25	NWTPH-HCID	12-28-18	12-31-18	
Lube Oil Range Organics	**ND**	0.40	NWTPH-HCID	12-28-18	12-31-18	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*95*	*50-150*				

Date of Report: January 7, 2019
Samples Submitted: December 28, 2018
Laboratory Reference: 1812-253
Project: 28027

TOTAL ARSENIC
EPA 200.8

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-1**					
Laboratory ID:	12-253-01					
Arsenic	**13**	3.3	EPA 200.8	1-3-19	1-3-19	
Client ID:	**MW-2**					
Laboratory ID:	12-253-02					
Arsenic	**ND**	3.3	EPA 200.8	1-3-19	1-3-19	
Client ID:	**MW-3a**					
Laboratory ID:	12-253-03					
Arsenic	**11**	3.3	EPA 200.8	1-3-19	1-3-19	
Client ID:	**MW-4**					
Laboratory ID:	12-253-04					
Arsenic	**ND**	3.3	EPA 200.8	1-3-19	1-3-19	

Date of Report: January 7, 2019
Samples Submitted: December 28, 2018
Laboratory Reference: 1812-253
Project: 28027

TOTAL ARSENIC
EPA 200.8
QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0103WM1					
Arsenic	**ND**	3.3	EPA 200.8	1-3-19	1-3-19	

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	12-262-09										
	ORIG	DUP									
Arsenic	**ND**	**ND**	NA	NA		NA		NA	NA	20	
MATRIX SPIKES											
Laboratory ID:	12-262-09										
	MS	MSD	MS	MSD		MS	MSD				
Arsenic	**216**	**225**	222	222	ND	**97**	**101**	75-125	4	20	

Date of Report: January 7, 2019
Samples Submitted: December 28, 2018
Laboratory Reference: 1812-253
Project: 28027

DISSOLVED ARSENIC
EPA 200.8

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-1**					
Laboratory ID:	12-253-01					
Arsenic	**11**	3.0	EPA 200.8		1-3-19	
Client ID:	**MW-2**					
Laboratory ID:	12-253-02					
Arsenic	**ND**	3.0	EPA 200.8		1-3-19	
Client ID:	**MW-3a**					
Laboratory ID:	12-253-03					
Arsenic	**ND**	3.0	EPA 200.8		1-3-19	
Client ID:	**MW-4**					
Laboratory ID:	12-253-04					
Arsenic	**ND**	3.0	EPA 200.8		1-3-19	

Date of Report: January 7, 2019
Samples Submitted: December 28, 2018
Laboratory Reference: 1812-253
Project: 28027

DISSOLVED ARSENIC
EPA 200.8
QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1228F1					
Arsenic	**ND**	3.0	EPA 200.8	12-28-18	1-3-19	

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	12-260-01										
	ORIG	DUP									
Arsenic	**ND**	**ND**	NA	NA		NA		NA	NA	20	
MATRIX SPIKES											
Laboratory ID:	12-260-01										
	MS	MSD	MS	MSD		MS	MSD				
Arsenic	**196**	**194**	200	200	ND	**98**	**97**	75-125	1	20	

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-naphthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in diesel range are impacting lube oil range results.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

X1- Sample extract treated with a sulfuric acid/silica gel cleanup procedure.

Y - The calibration verification for this analyte exceeded the 20% drift specified in method 8260C, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

Chain of Custody

Page 1 of 1

OnSite Environmental Inc.
Analytical Laboratory Testing Services
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Laboratory Number: 12-253

Company: Galloway Environmental
Project Number: 28027
Project Name: Firwood
Project Manager: D Galloway
Sampled by: D Galloway

Turnaround Request (in working days)
(Check One)
☐ Same Day ☐ 1 Day
☐ 2 Days ☐ 3 Days
☒ Standard (7 Days)
☐ _____ (other)

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx (☐ Acid / SG Clean-up)	Volatiles 8260C	Halogenated Volatiles 8260C	EDB EPA 8011 (Waters Only)	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082A	Organochlorine Pesticides 8081B	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA Metals	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A	Arsenic (Total & Dissolved)				% Moisture
1	MW-1	12/27/18	1220	W	7	X																	X				
2	MW-2	12/27/18	1325	W	7	X																	X				
3	MW-3a	12/27/18	1542	W	7	X																	X				
4	MW-4	12/27/18	1650	W	7	X																	X				

	Signature	Company	Date	Time
Relinquished		GEI	12/28/18	0905
Received		OSE	12.28.18	9:05A
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions
See pdy's for field filtered

Data Package: Standard ☐ Level III ☐ Level IV ☐

Chromatograms with final report ☐ Electronic Data Deliverables (EDDs) ☐