

Stratum Group

P.O. Box 2546
Bellingham, WA 98227
Phone: (360) 714-9409

July 3, 2018

Ed Lowery
184 North Shore Road
Bellingham, WA 98225

Report Ground Water Sampling
Highway 20 and Avon-Allen Road
Bellingham, Washington

Dear Mr. Lowery:

We herein present the results of the ground water sampling for the station at Highway 20 and Avon-Allen Road on June 18, 2018 in Mount Vernon, Washington.

The well numbers are based on a previous sketch plan of the site. The well numbers could not be identified on the site but are consistent with the numbers used by Stratum Group in 2001.

Three of the wells are in very poor condition and no samples could be collected from two of the wells. MW-1 was filled with dirt and some asphalt and the cap was broken and pushed down into the well. The cap could not be pulled out of the well and no water was collected. MW-2 could not be sampled due to the well having been bent. This was the case in 2001 as well. Water was collected from MW-5, but the asphalt pavement around the well as broken apart and the well cover is now located within an area that appears to periodically become a puddle with surface water getting into the well.

The water samples were analyzed by CCI Laboratories of Everett, Washington for gasoline-range petroleum hydrocarbons, benzene, toluene, ethyl-benzene, and xylenes using WTPH-GX and EPA-8021 methodologies. MW-5 was analyzed for diesel-range petroleum hydrocarbons using WTPH-D Extended methodology. The laboratory results are attached and summarized along with previous sampling results in Table 1. Cleanup standards listed in Table 1 are derived from the Model Toxics Control Act (MTCA) Cleanup Regulation (WAC 173-340).

Table 1
Analytical Results

Well	Date	TPH-Gasoline-Range (µg/L)	MTBE (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Xylenes (µg/L)	TPH-Diesel Range (µg/L)
MW-1	9/97	1,210	Not Tested	114	2	123	221	ND < 250
	9/01	ND < 50	ND < 3	ND < 1	ND < 1	ND < 1	ND < 3	Not Tested
	6/18	NS	NS	NS	NS	NS	NS	NS
MW-2	9/97	16,000	Not Tested	49	3	367	1,354	ND < 250
	9/01	NS	NS	NS	NS	NS	NS	NS
	6/18	NS	NS	NS	NS	NS	NS	NS
MW-3	9/97	11,200	Not Tested	98	5	368	1,398	ND < 250
	9/01	16,000	ND < 30*	58	ND < 10	460	870	Not Tested
	6/18	22,000	Not Tested	ND < 1	ND < 1	780	680	Not Tested
MW-4	9/97	866	Not Tested	55	4	48	80	ND < 250
	9/01	1,400	ND < 3	11	ND < 1	98	100	Not Tested
	6/18	ND < 50	ND < 3	ND < 1	ND < 1	ND < 1	ND < 3	Not Tested
MW-5	9/97	3,480	Not Tested	132	12	153	147	ND < 250
	9/01	10,000	ND < 15	ND < 5	ND < 5	79	160	810
	6/18	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	2,600
WAC 173-340 Method A Cleanup Standard		800	20	5	1,000	700	1,000	500

µg/L = parts-per-billion

Shaded cells indicate concentrations exceed the WAC 173-340 Method A Cleanup Standard

* Detection limit is higher than Cleanup Standard due to interference from other hydrocarbons and the need to dilute the sample.

Based on the laboratory analytical results, we conclude that the MTCA Method A Cleanup Levels were exceeded for gasoline-range petroleum hydrocarbons and benzene in MW-3. MTCA Method A Cleanup Levels for diesel-range petroleum hydrocarbons were exceeded in MW-5.

Comparison of previous results shows that gasoline-range concentrations have improved very significantly at MW-4 such that no gasoline-range petroleum hydrocarbons or BTEX compounds were detected at MW-4. Gasoline-range petroleum hydrocarbons levels have remained at similar levels at MW-3; however, benzene and toluene are no longer present.

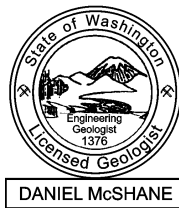
Diesel-range petroleum hydrocarbons remain in MW- 5. However, the lab indicated that the chromatogram indicated lube oil. This may be the result of surface water runoff entering the well due to the damage around the well cap.

Stratum Group appreciates the opportunity to be of service to you. If you have any questions, please do not hesitate to contact us at (360) 714-9409.

Sincerely,
Stratum Group



Dan McShane, M.Sc., L.E.G.
WA Licensed Engineering Geologist #1376



Lab Report Attached



June 21, 2018

Mr. Dan McShane
Stratum Group
P.O. Box 2546
Bellingham, WA 98227

Dear Mr. McShane,

On June 18th, 3 samples were received by our laboratory and assigned our laboratory project number EV18060110. The project was identified as your Allen / Aron. The sample identification and requested analyses are outlined on the attached chain of custody record.

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

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

Sincerely,

ALS Laboratory Group

Rick Bagan
Laboratory Director

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ALS Group USA, Corp dba ALS Environmental

Environmental 

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



CERTIFICATE OF ANALYSIS

CLIENT: Stratum Group
P.O. Box 2546
Bellingham, WA 98227
CLIENT CONTACT: Dan McShane
CLIENT PROJECT: Allen / Aron
CLIENT SAMPLE ID: B

DATE: 6/21/2018
ALS JOB#: EV18060110
ALS SAMPLE#: EV18060110-01
DATE RECEIVED: 06/18/2018
COLLECTION DATE: 6/18/2018 12:30:00 PM
WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	50	1	UG/L	06/19/2018	JMK
Methyl T-Butyl Ether	EPA-8021	U	3.0	1	UG/L	06/19/2018	JMK
Benzene	EPA-8021	U	1.0	1	UG/L	06/19/2018	JMK
Toluene	EPA-8021	U	1.0	1	UG/L	06/19/2018	JMK
Ethylbenzene	EPA-8021	U	1.0	1	UG/L	06/19/2018	JMK
Xylenes	EPA-8021	U	3.0	1	UG/L	06/19/2018	JMK

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	91.5	06/19/2018	JMK
TFT	EPA-8021	94.1	06/19/2018	JMK

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



CERTIFICATE OF ANALYSIS

CLIENT: Stratum Group
P.O. Box 2546
Bellingham, WA 98227
CLIENT CONTACT: Dan McShane
CLIENT PROJECT: Allen / Aron
CLIENT SAMPLE ID: C

DATE: 6/21/2018
ALS JOB#: EV18060110
ALS SAMPLE#: EV18060110-02
DATE RECEIVED: 06/18/2018
COLLECTION DATE: 6/18/2018 1:00:00 PM
WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	22000	1200	25	UG/L	06/19/2018	JMK
Methyl T-Butyl Ether	EPA-8021	U	3.0	1	UG/L	06/19/2018	JMK
Benzene	EPA-8021	U	1.0	1	UG/L	06/19/2018	JMK
Toluene	EPA-8021	U	1.0	1	UG/L	06/19/2018	JMK
Ethylbenzene	EPA-8021	780	25	25	UG/L	06/19/2018	JMK
Xylenes	EPA-8021	680	75	25	UG/L	06/19/2018	JMK

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT 25X Dilution	NWTPH-GX	3.81	06/19/2018	JMK
TFT 25X Dilution	EPA-8021	3.96	06/19/2018	JMK
TFT	EPA-8021	109	06/19/2018	JMK

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



CERTIFICATE OF ANALYSIS

CLIENT: Stratum Group
P.O. Box 2546
Bellingham, WA 98227
CLIENT CONTACT: Dan McShane
CLIENT PROJECT: Allen / Aron
CLIENT SAMPLE ID: F
DATE: 6/21/2018
ALS JOB#: EV18060110
ALS SAMPLE#: EV18060110-03
DATE RECEIVED: 06/18/2018
COLLECTION DATE: 6/18/2018 2:00:00 PM
WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	650	5	UG/L	06/20/2018	GAP
TPH-Oil Range	NWTPH-DX	2600	1200	5	UG/L	06/20/2018	GAP

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 5X Dilution	NWTPH-DX	8.39 SUR12	06/20/2018	GAP

U - Analyte analyzed for but not detected at level above reporting limit.
SUR12 - Surrogate recoveries were outside of the control limits due to matrix interference.
Chromatogram indicates that it is likely that sample contains lube oil.



CERTIFICATE OF ANALYSIS

CLIENT: Stratum Group
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CLIENT CONTACT: Dan McShane
CLIENT PROJECT: Allen / Aron

DATE: 6/21/2018
ALS SDG#: EV18060110
WDOE ACCREDITATION: C601

LABORATORY BLANK RESULTS

MBG-061818W2 - Batch 129561 - Water by NWTPH-GX

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	UG/L	50	06/18/2018	JMK

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

MB-061818W2 - Batch 129561 - Water by EPA-8021

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Methyl T-Butyl Ether	EPA-8021	U	UG/L	3.0	06/18/2018	JMK
Benzene	EPA-8021	U	UG/L	1.0	06/18/2018	JMK
Toluene	EPA-8021	U	UG/L	1.0	06/18/2018	JMK
Ethylbenzene	EPA-8021	U	UG/L	1.0	06/18/2018	JMK
Xylenes	EPA-8021	U	UG/L	3.0	06/18/2018	JMK

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

MB-062018W - Batch 129657 - Water by NWTPH-DX

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	UG/L	130	06/20/2018	GAP
TPH-Oil Range	NWTPH-DX	U	UG/L	250	06/20/2018	GAP

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

**CERTIFICATE OF ANALYSIS**

CLIENT: Stratum Group
P.O. Box 2546
Bellingham, WA 98227
CLIENT CONTACT: Dan McShane
CLIENT PROJECT: Allen / Aron

DATE: 6/21/2018
ALS SDG#: EV18060110
WDOE ACCREDITATION: C601

LABORATORY CONTROL SAMPLE RESULTS**ALS Test Batch ID: 129561 - Water by NWTPH-GX**

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
TPH-Volatile Range - BS	NWTPH-GX	85.8			66.5	122.7	06/18/2018	JMK
TPH-Volatile Range - BSD	NWTPH-GX	89.9	5		66.5	122.7	06/18/2018	JMK

ALS Test Batch ID: 129561 - Water by EPA-8021

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
Methyl T-Butyl Ether - BS	EPA-8021	86.2			69.2	133	06/18/2018	JMK
Methyl T-Butyl Ether - BSD	EPA-8021	88.2	2		69.2	133	06/18/2018	JMK
Benzene - BS	EPA-8021	95.3			83	120	06/18/2018	JMK
Benzene - BSD	EPA-8021	97.3	2		83	120	06/18/2018	JMK
Toluene - BS	EPA-8021	94.0			85	115	06/18/2018	JMK
Toluene - BSD	EPA-8021	95.6	2		85	115	06/18/2018	JMK
Ethylbenzene - BS	EPA-8021	94.0			85	113	06/18/2018	JMK
Ethylbenzene - BSD	EPA-8021	95.1	1		85	113	06/18/2018	JMK
Xylenes - BS	EPA-8021	95.3			85	116	06/18/2018	JMK
Xylenes - BSD	EPA-8021	96.6	1		85	116	06/18/2018	JMK

ALS Test Batch ID: 129657 - Water by NWTPH-DX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
TPH-Diesel Range - BS	NWTPH-DX	104			67	125.2	06/20/2018	GAP
TPH-Diesel Range - BSD	NWTPH-DX	107	3		67	125.2	06/20/2018	GAP

APPROVED BY

Laboratory Director



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<http://www.alsglobal.com>

ALS Job# (Laboratory Use Only)

EV18060110

Date 6/18/18 Page 1 Of 1

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SIGNATURES (Name, Company, Date, Time):
 [Signature] MFL - Scott Co. 6/18/18 3:15
 TURNAROUND REQUESTED in Business Days*
 Organic, Metals & Inorganic Analysis
 OTHER:

SIGNATURES (Name, Company Date, Time): *MM* *6/15/18* *3:15*

1. Relinquished By: Donna M. Smith 2-19-18
Received By: Walter A. Smith 6-18-18, 3-15

Specify: _____

Fuels & Hydrocarbon Analysis

Turnaround request less than standard may incur Rush Charges