Tuesday, April 11, 2017

Rick Allison
COGCC
1120 Lincoln St. #801
Denver, CO 80203

Re: ALS Workorder: 1703628
Project Name: Severin + Co. #1
Project Number:

Dear Mr. Allison:

One soil sample was received from COGCC, on 3/31/2017. The sample was scheduled for the following analyses:

GC/MS Volatiles
Total Extractable Petroleum Hydrocarbons (Diesel)

The results for these analyses are contained in the enclosed reports.

The data contained in the following report have been reviewed and approved by the personnel listed below. In addition, ALS certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

Thank you for your confidence in ALS Environmental. Should you have any questions, please call.

Sincerely,

ALS Environmental
Shiloh J. Summy
Project Manager

ALS Environmental – Fort Collins is accredited by the following accreditation bodies for various testing scopes in accordance with requirements of each accreditation body. All testing is performed under the laboratory management system, which is maintained to meet these requirement and regulations. Please contact the laboratory or accreditation body for the current scope testing parameters.

ALS Environmental – Fort Collins	
Accreditation Body	License or Certification Number
AIHA	214884
Alaska (AK)	UST-086
Alaska (AK)	CO01099
Arizona (AZ)	AZ0742
California (CA)	06251CA
Colorado (CO)	CO01099
Connecticut (CT)	PH-0232
Florida (FL)	E87914
Idaho (ID)	CO01099
Kansas (KS)	E-10381
Kentucky (KY)	90137
L-A-B (DoD ELAP/ISO 170250)	L2257
Louisiana (LA)	05057
Maryland (MD)	285
Missouri (MO)	175
Nebraska(NE)	NE-OS-24-13
Nevada (NV)	CO000782008A
New York (NY)	12036
North Dakota (ND)	R-057
Oklahoma (OK)	1301
Pennsylvania (PA)	68-03116
Tennessee (TN)	2976
Texas (TX)	T104704241
Utah (UT)	CO01099
Washington (WA)	C1280

1703628

GC/MS Volatiles:
The sample was analyzed using GC/MS following the current revision of SOP 525 based on SW-846 Method 8260C. The sample was also analyzed for Gasoline Range Organics (GRO).

It is a standard ALS practice that all methanol extracts are analyzed at a dilution. Due to the concentration of target analytes, the sample was analyzed at a further dilution. All client-requested reporting limits were met. The reporting limits have been adjusted accordingly.

All remaining acceptance criteria were met.

DRO:
The sample was analyzed following the current revision of SOP 406 generally based on SW-846 Methods 8000C and 8015D. TEPH is a multicomponent mixture and is quantitated by summing the entire carbon range, rather than individual peaks. The carbon range integrated in this test extends from C10 to C28.

The matrix spike was not analyzed due to the high concentration of target analytes in the native sample.

Due to dilution requirements, the surrogates for samples 1703628-1 and -1DUP were not recoverable. All other surrogate recoveries were within acceptance criteria.

All remaining acceptance criteria were met.

ALS -- Fort Collins

Sample Number(s) Cross-Reference Table

OrderNum: 1703628
Client Name: COGCC
Client Project Name: Severin + Co. #1
Client Project Number:
Client PO Number:

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
Severin + Co. #1	1703628-1		SOIL	31-Mar-17	8:40

ALS Environmental

225 Commerce Drive, Fort Collins, Colorado 80524
TF: (800) 443-1511 PH: (970) 490-1511 FX: (970) 490-1522

Chain-of-Custody

Turnaround time for samples received after 2 p.m. will be calculated beginning from the next business day.

Turnaround time for samples received Saturday will be calculated beginning from the next business day.

ALS WORKORDER # 1703628

PAGE 1 of 1

DISPOSAL (BY LAB) or RETURN

PROJECT NAME	Severin + Co. #1	TURNAROUND TIME	
PROJECT No.		SITE ID	242670
		EDD FORMAT	COGCC
COMPANY NAME	COGCC	PURCHASE ORDER	
SEND REPORT TO	Rick Allison	BILL TO COMPANY	COGCC
ADDRESS	—	INVOICE ATTN TO	Rick Allison
CITY / STATE / ZIP	—	ADDRESS	—
PHONE	970-461-2970	CITY / STATE / ZIP	—
FAX	—	PHONE	970-461-[illegible]
E-MAIL	rick.allison@state.co.us	FAX	—
		E-MAIL	rick.allison@state.co.us
		SAMPLER	R. Allison

PARAMETER/METHOD REQUEST FOR ANALYSIS

A	BTEX, TPH-GRO 8260
B	TPH-DRO 8015M
C	
D	
E	
F	
G	
H	
I	
J	

LAB ID	FIELD ID	MATRIX	SAMPLE DATE	SAMPLE TIME	# OF BOTTLES	PRESERVATIVE	QC	A	B	C	D	E	F	G	H	I	J	SEE NOTES SECTION
①	Severin + Co. #1	S	3/31/17	9:40	2	7	Sum	X	X									

*Time Zone (Circle): EST CST MST PST Matrix: O = oil S = soil NS = non-soil solid W = water L = liquid E = extract F = filter

NOTES

REPORT LEVEL / QC REQUIRED	
X	Summary (Standard QC)
	LEVEL II (Standard QC)
	LEVEL III (Std QC + forms)
	LEVEL IV (Std QC + forms + raw)

PRESERVATION KEY: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaOH/ZnAcetate 6-NaHSO4 7-4°C 8-Other

Form 202r9

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY		Rick Allison	3/31/17	10:43
RECEIVED BY		[illegible]	3/31/17	10 CST
RELINQUISHED BY				
RECEIVED BY				
RELINQUISHED BY				
RECEIVED BY				

ALS Environmental - Fort Collins
CONDITION OF SAMPLE UPON RECEIPT FORM

Client: COGCC Workorder No: 1703628

Project Manager: SJS Initials: VT Date: 3/31/17

1. Does this project require any special handling in addition to standard ALS procedures?		YES	(NO)
2. Are custody seals on shipping containers intact?	(NONE)	YES	NO
3. Are Custody seals on sample containers intact?	(NONE)	YES	NO
4. Is there a COC (Chain-of-Custody) present or other representative documents?		(YES)	NO
5. Are the COC and bottle labels complete and legible?		(YES)	NO
6. Is the COC in agreement with samples received? (IDs, dates, times, no. of samples, no. of containers, matrix, requested analyses, etc.)		(YES)	NO
7. Were airbills / shipping documents present and/or removable?	(DROP OFF)	YES	NO
8. Are all aqueous samples requiring preservation preserved correctly? (excluding volatiles)	(N/A)	YES	NO
9. Are all aqueous non-preserved samples pH 4-9?	(N/A)	YES	NO
10. Is there sufficient sample for the requested analyses?		(YES)	NO
11. Were all samples placed in the proper containers for the requested analyses?		(YES)	NO
12. Are all samples within holding times for the requested analyses?		(YES)	NO
13. Were all sample containers received intact? (not broken or leaking, etc.)		(YES)	NO
14. Are all samples requiring no headspace (VOC, GRO, RSK/MEE, Rx CN/S, radon) headspace free? Size of bubble: ____ < green pea ____ > green pea	(N/A)	YES	NO
15. Do any water samples contain sediment? Amount Amount of sediment: ____ dusting ____ moderate ____ heavy	(N/A)	YES	NO
16. Were the samples shipped on ice?		(YES)	NO
17. Were cooler temperatures measured at 0.1-6.0°C? IR gun used*: #2 #4	RAD ONLY	(YES)	NO

Cooler #:	1							
Temperature (°C):	5.7							
No. of custody seals on cooler:	N/A							
DOT Survey/ Acceptance Information — External µR/hr reading:	N/A							
Background µR/hr reading:	10							

Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? **YES / NO / NA** (If no, see Form 008.)

Additional Information: PROVIDE DETAILS BELOW FOR A NO RESPONSE TO ANY QUESTION ABOVE, EXCEPT #1 AND #16.

If applicable, was the client contacted? **YES / NO / NA** Contact: _____ Date/Time: _____

Project Manager Signature / Date: Sheila Lumy

*IR Gun #2: Oakton, SN 29922500201-0066
*IR Gun #4: Oakton, SN 2372220101-0002

Form 201r24.xls (06/04/2012)

Client: COGCC **Date:** *11-Apr-17*
Project: Severin + Co. #1 **Work Order:** 1703628
Sample ID: Severin + Co. #1 **Lab ID:** 1703628-1
Legal Location: **Matrix:** SOIL
Collection Date: 3/31/2017 08:40 **Percent Moisture:**

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Diesel Range Organics			**SW8015M**	Prep Date: **4/5/2017**		PrepBy: **JFN**
Diesel Range Organics	**3400**	LDMH	**120**	**MG/KG**	25	4/5/2017 17:16
Surr: O-TERPHENYL		X	*49-114*	*%REC*	25	4/5/2017 17:16
GC/MS Volatiles			**SW8260**	Prep Date: **4/6/2017**		PrepBy: **TWK**
BENZENE	**2500**		**250**	**UG/KG**	50	4/6/2017 17:05
TOLUENE	ND		250	UG/KG	50	4/6/2017 17:05
ETHYLBENZENE	**12000**		**250**	**UG/KG**	50	4/6/2017 17:05
M+P-XYLENE	**38000**		**250**	**UG/KG**	50	4/6/2017 17:05
O-XYLENE	**19000**		**250**	**UG/KG**	50	4/6/2017 17:05
Surr: DIBROMOFLUOROMETHANE	*106*		*61-134*	*%REC*	50	4/6/2017 17:05
Surr: DIBROMOFLUOROMETHANE	*106*		*61-134*	*%REC*	1000	4/6/2017 16:38
Surr: TOLUENE-D8	*105*		*57-135*	*%REC*	50	4/6/2017 17:05
Surr: TOLUENE-D8	*110*		*57-135*	*%REC*	1000	4/6/2017 16:38
Surr: 4-BROMOFLUOROBENZENE	*100*		*52-151*	*%REC*	50	4/6/2017 17:05
Surr: 4-BROMOFLUOROBENZENE	*102*		*52-151*	*%REC*	1000	4/6/2017 16:38
GASOLINE RANGE ORGANICS	**1300000**		**500000**	**UG/KG**	1000	4/6/2017 16:38

Client:	COGCC	**Date:**	*11-Apr-17*
Project:	Severin + Co. #1	**Work Order:**	1703628
Sample ID:	Severin + Co. #1	**Lab ID:**	1703628-1
Legal Location:		**Matrix:**	SOIL
Collection Date:	3/31/2017 08:40	**Percent Moisture:**	

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed

Explanation of Qualifiers

Radiochemistry:

U or ND - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

W - DER is greater than Warning Limit of 1.42

* - Aliquot Basis is 'As Received' while the Report Basis is 'Dry Weight'.

- Aliquot Basis is 'Dry Weight' while the Report Basis is 'As Received'.

G - Sample density differs by more than 15% of LCS density.

D - DER is greater than Control Limit

M - Requested MDC not met.

LT - Result is less than requested MDC but greater than achieved MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS, Matrix Spike Recovery within control limits.

N - Matrix Spike Recovery outside control limits

NC - Not Calculated for duplicate results less than 5 times MDC

B - Analyte concentration greater than MDC.

B3 - Analyte concentration greater than MDC but less than Requested MDC.

Inorganics:

B - Result is less than the requested reporting limit but greater than the instrument method detection limit (MDL).

U or ND - Indicates that the compound was analyzed for but not detected.

E - The reported value is estimated because of the presence of interference. An explanatory note may be included in the narrative.

M - Duplicate injection precision was not met.

N - Spiked sample recovery not within control limits. A post spike is analyzed for all ICP analyses when the matrix spike and or spike duplicate fail and the native sample concentration is less than four times the spike added concentration.

Z - Spiked recovery not within control limits. An explanatory note may be included in the narrative.

* - Duplicate analysis (relative percent difference) not within control limits.

S - SAR value is estimated as one or more analytes used in the calculation were not detected above the detection limit.

Organics:

U or ND - Indicates that the compound was analyzed for but not detected.

B - Analyte is detected in the associated method blank as well as in the sample. It indicates probable blank contamination and warns the data user.

E - Analyte concentration exceeds the upper level of the calibration range.

J - Estimated value. The result is less than the reporting limit but greater than the instrument method detection limit (MDL).

A - A tentatively identified compound is a suspected aldol-condensation product.

X - The analyte was diluted below an accurate quantitation level.

* - The spike recovery is equal to or outside the control criteria used.

+ - The relative percent difference (RPD) equals or exceeds the control criteria.

G - A pattern resembling gasoline was detected in this sample.

D - A pattern resembling diesel was detected in this sample.

M - A pattern resembling motor oil was detected in this sample.

C - A pattern resembling crude oil was detected in this sample.

4 - A pattern resembling JP-4 was detected in this sample.

5 - A pattern resembling JP-5 was detected in this sample.

H - Indicates that the fuel pattern was in the heavier end of the retention time window for the analyte of interest.

L - Indicates that the fuel pattern was in the lighter end of the retention time window for the analyte of interest.

Z - This flag indicates that a significant fraction of the reported result did not resemble the patterns of any of the following petroleum hydrocarbon products:
- gasoline
- JP-8
- diesel
- mineral spirits
- motor oil
- Stoddard solvent
- bunker C

Batch ID: **HC170405-101-1** Instrument ID: **FUELS-1** Method: **SW8015M**

DUP Sample ID: **1703628-1** Units: **MG/KG** Analysis Date: **4/5/2017 17:39**
Client ID: **Severin + Co. #1** Run ID: **HC170405-8A** Prep Date: **4/5/2017** DF: **25**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Diesel Range Organics	3640	125						3400		30	LDMH
Surr: O-TERPHENYL			6.23			49-114					X

LCS Sample ID: **HC170405-101** Units: **MG/KG** Analysis Date: **4/5/2017 14:48**
Client ID: Run ID: **HC170405-8A** Prep Date: **4/5/2017** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Diesel Range Organics	68.9	5	62.5		110	81-129				20	
Surr: O-TERPHENYL	5.33		6.25		85	49-114					

LCSD Sample ID: **HC170405-101** Units: **MG/KG** Analysis Date: **4/5/2017 15:12**
Client ID: Run ID: **HC170405-8A** Prep Date: **4/5/2017** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Diesel Range Organics	68.3	5	62.5		109	81-129		68.9	1	20	
Surr: O-TERPHENYL	5.25		6.25		84	49-114			2		

MB Sample ID: **HC170405-101** Units: **MG/KG** Analysis Date: **4/5/2017 13:38**
Client ID: Run ID: **HC170405-8A** Prep Date: **4/5/2017** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Diesel Range Organics	ND	5									
Surr: O-TERPHENYL	4.25		6.25		68	49-114					

The following samples were analyzed in this batch: 1703628-1

Client: COGCC
Work Order: 1703628
Project: Severin + Co. #1

QC BATCH REPORT

Batch ID: **VL170406-2-1** Instrument ID: **HPV2** Method: **SW8260**

LCS Sample ID: **VL170406-2** Units: **UG/KG** Analysis Date: **4/6/2017 08:47**

Client ID: Run ID: **VL170406-2A** Prep Date: **4/6/2017** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BENZENE	38.4	5	40		96	73-126				30	
TOLUENE	38.2	5	40		95	71-127				30	
ETHYLBENZENE	38	5	40		95	74-127				30	
M+P-XYLENE	77.9	5	80		97	79-126				30	
O-XYLENE	37.6	5	40		94	77-125				30	
Surr: DIBROMOFLUOROMETHANE	53		50		106	61-134					
Surr: TOLUENE-D8	54.3		50		109	57-135					
Surr: 4-BROMOFLUOROBENZENE	51.2		50		102	52-151					

LCSD Sample ID: **VL170406-2** Units: **UG/KG** Analysis Date: **4/6/2017 09:09**

Client ID: Run ID: **VL170406-2A** Prep Date: **4/6/2017** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BENZENE	44.8	5	40		112	73-126		38.4	15	30	
TOLUENE	45.1	5	40		113	71-127		38.2	17	30	
ETHYLBENZENE	45.3	5	40		113	74-127		38	18	30	
M+P-XYLENE	91.6	5	80		115	79-126		77.9	16	30	
O-XYLENE	44.6	5	40		112	77-125		37.6	17	30	
Surr: DIBROMOFLUOROMETHANE	51.9		50		104	61-134			2		
Surr: TOLUENE-D8	54.7		50		109	57-135			1		
Surr: 4-BROMOFLUOROBENZENE	51.4		50		103	52-151			0		

MB Sample ID: **VL170406-2** Units: **UG/KG** Analysis Date: **4/6/2017 10:54**

Client ID: Run ID: **VL170406-2A** Prep Date: **4/6/2017** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BENZENE	ND	5									
TOLUENE	ND	5									
ETHYLBENZENE	ND	5									
M+P-XYLENE	ND	5									
O-XYLENE	ND	5									
Surr: DIBROMOFLUOROMETHANE	53.4		50		107	61-134					
Surr: TOLUENE-D8	53.7		50		107	57-135					
Surr: 4-BROMOFLUOROBENZENE	50.8		50		102	52-151					

Client: COGCC
Work Order: 1703628
Project: Severin + Co. #1

QC BATCH REPORT

Batch ID: **VL170406-2-1** Instrument ID: **HPV2** Method: **SW8260**

MB Sample ID: **VL170406-2M** Units: **UG/KG** Analysis Date: **4/6/2017 15:49**

Client ID: Run ID: **VL170406-2A** Prep Date: **4/6/2017** DF: **50**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BENZENE	ND	250									
TOLUENE	ND	250									
ETHYLBENZENE	ND	250									
M+P-XYLENE	ND	250									
O-XYLENE	ND	250									
Surr: DIBROMOFLUOROMETHANE	2940		2500		118	61-134					
Surr: TOLUENE-D8	3050		2500		122	57-135					
Surr: 4-BROMOFLUOROBENZENE	3160		2500		126	52-151					

The following samples were analyzed in this batch: 1703628-1

Client: COGCC
Work Order: 1703628
Project: Severin + Co. #1

QC BATCH REPORT

Batch ID: **VL170406-2-2** Instrument ID: **HPV2** Method: **SW8260**

LCS Sample ID: **VL170406-2** Units: **UG/KG** Analysis Date: **4/6/2017 08:47**
Client ID: Run ID: **VL170406-2A** Prep Date: **4/6/2017** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	2260	500	2000		113	80-120				20	

LCSD Sample ID: **VL170406-2** Units: **UG/KG** Analysis Date: **4/6/2017 09:09**
Client ID: Run ID: **VL170406-2A** Prep Date: **4/6/2017** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	2250	500	2000		113	80-120		2260	0	20	

MB Sample ID: **VL170406-2** Units: **UG/KG** Analysis Date: **4/6/2017 10:54**
Client ID: Run ID: **VL170406-2A** Prep Date: **4/6/2017** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	ND	500									

MB Sample ID: **VL170406-2M** Units: **UG/KG** Analysis Date: **4/6/2017 15:49**
Client ID: Run ID: **VL170406-2A** Prep Date: **4/6/2017** DF: **50**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	ND	25000									

The following samples were analyzed in this batch: 1703628-1