



11-Feb-2019

Rachel Kattnig
SGM Inc.
118 W. 6th Street
Suite 200
Glenwood Springs, CO 81601

Re: **Mustang Resources**

Work Order: **1902233**

Dear Rachel,

ALS Environmental received 1 sample on 06-Feb-2019 11:30 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental - Holland and for only the analyses requested.

Sample results are compliant with industry accepted practices and Quality Control results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 23.

If you have any questions regarding this report, please feel free to contact me:

ADDRESS: 3352 128th Avenue, Holland, MI, USA
PHONE: +1 (616) 399-6070 FAX: +1 (616) 399-6185

Sincerely,

A handwritten signature in black ink, appearing to read "Chad Whelton".

Electronically approved by: Chad Whelton

Chad Whelton
Project Manager

Report of Laboratory Analysis

Certificate No: MN 026-999-449

ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company

Environmental 

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RIGHT SOLUTIONS RIGHT PARTNER

Client: SGM Inc.
Project: Mustang Resources
Work Order: 1902233**Work Order Sample Summary**

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
1902233-01	Sample Site 4	Soil		2/2/2019 12:30	2/6/2019 11:30	<input type="checkbox"/>

Client: SGM Inc.
Project: Mustang Resources
Work Order: 1902233

Case Narrative

Batch 131607, Method ICP_6010_S, Sample 1902233-01A MSD: The MSD recoveries were outside of the control limits for Barium and Zinc; however, the results in the parent sample are greater than 4x the spike amount. No qualification is required.

Batch 131607, Method ICP_6010_S, Sample 1902233-01A MSD: The MSD recovery was outside of the control limit for Chromium. However, the MS recovery and the RPD between the MS and MSD was in control. No qualification is required.

<u>Qualifier</u>	<u>Description</u>
*	Value exceeds Regulatory Limit
**	Estimated Value
a	Analyte is non-accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
Hr	BOD/CBOD - Sample was reset outside Hold Time, value should be considered estimated.
J	Analyte is present at an estimated concentration between the MDL and Report Limit
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

<u>Acronym</u>	<u>Description</u>
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

<u>Units Reported</u>	<u>Description</u>
% of sample	Percent of Sample
µg/Kg-dry	Micrograms per Kilogram Dry Weight
mg/Kg	Milligrams per Kilogram
mg/Kg-dry	Milligrams per Kilogram Dry Weight
mg/L	Milligrams per Liter
mmhos/cm @25°C	Millimhos-Centimeter at 25 Degrees Celcius
none	

s.u. Standard Units

ALS Group, USA

Date: 11-Feb-19

Client: SGM Inc.
Project: Mustang Resources
Sample ID: Sample Site 4
Collection Date: 2/2/2019 12:30 PM

Work Order: 1902233
Lab ID: 1902233-01
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID							
			Method: SW8015M		Prep: SW3546 / 2/7/19		Analyst: RP
DRO (C10-C28)	U		3.6	6.3	mg/Kg-dry	1	2/7/2019 13:58
Surr: 4-Terphenyl-d14	73.1			33-111	%REC	1	2/7/2019 13:58
GASOLINE RANGE ORGANICS BY GC-FID							
			Method: SW8015D		Prep: SW5035 / 2/6/19		Analyst: RP
GRO (C6-C10)	U		2.1	5.0	mg/Kg	1	2/6/2019 22:16
Surr: Toluene-d8	93.0			71-123	%REC	1	2/6/2019 22:16
MERCURY BY CVAA							
			Method: SW7471B		Prep: SW7471 / 2/7/19		Analyst: RSH
Mercury	0.016	J	0.0020	0.020	mg/Kg-dry	1	2/7/2019 12:16
METALS ANALYSIS BY ICP							
			Method: SW846 6010C		Prep: SW3050B / 2/7/19		Analyst: ABL
Arsenic	5.7		0.11	0.42	mg/Kg-dry	1	2/7/2019 13:22
Barium	130		0.17	0.42	mg/Kg-dry	1	2/7/2019 13:22
Boron	16		0.42	1.7	mg/Kg-dry	1	2/7/2019 13:22
Cadmium	0.37	J	0.040	0.83	mg/Kg-dry	1	2/7/2019 13:22
Chromium	7.1		0.023	0.42	mg/Kg-dry	1	2/7/2019 13:22
Copper	12		0.18	0.83	mg/Kg-dry	1	2/7/2019 13:22
Lead	9.2		0.089	0.42	mg/Kg-dry	1	2/7/2019 13:22
Nickel	9.7		0.17	0.42	mg/Kg-dry	1	2/7/2019 13:22
Selenium	0.36	J	0.23	0.83	mg/Kg-dry	1	2/7/2019 13:22
Silver	U		0.052	0.42	mg/Kg-dry	1	2/7/2019 13:22
Zinc	44		0.067	0.83	mg/Kg-dry	1	2/7/2019 13:22
SOLUBLE CATIONS FOR SAR							
			Method: SW6020A		Prep: USDA Method 20B / 2/11/19		Analyst: STP
Calcium	89		0.86	5.0	mg/L	10	2/11/2019 15:49
Magnesium	16		0.068	2.0	mg/L	10	2/11/2019 15:49
Sodium	200		0.34	2.0	mg/L	10	2/11/2019 15:49
SODIUM ADSORPTION RATIO							
			Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 2/11/19		Analyst: STP
Sodium Adsorption Ratio	5.2		0.010	0.010	none	1	2/11/2019
SEMI-VOLATILE ORGANIC COMPOUNDS							
			Method: SW846 8270D		Prep: SW3546 / 2/7/19		Analyst: EE
Acenaphthene	U		6.1	8.4	µg/Kg-dry	1	2/7/2019 15:50
Anthracene	U		5.9	8.4	µg/Kg-dry	1	2/7/2019 15:50
Benzo(a)anthracene	U		7.3	8.4	µg/Kg-dry	1	2/7/2019 15:50
Benzo(a)pyrene	U		5.2	8.4	µg/Kg-dry	1	2/7/2019 15:50
Benzo(b)fluoranthene	U		6.3	8.4	µg/Kg-dry	1	2/7/2019 15:50
Benzo(k)fluoranthene	U		6.4	8.4	µg/Kg-dry	1	2/7/2019 15:50
Chrysene	U		6.8	8.4	µg/Kg-dry	1	2/7/2019 15:50
Dibenzo(a,h)anthracene	U		4.5	8.4	µg/Kg-dry	1	2/7/2019 15:50

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 11-Feb-19

Client: SGM Inc.
Project: Mustang Resources
Sample ID: Sample Site 4
Collection Date: 2/2/2019 12:30 PM

Work Order: 1902233
Lab ID: 1902233-01
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Fluoranthene	U		4.0	8.4	µg/Kg-dry	1	2/7/2019 15:50
Fluorene	U		6.1	8.4	µg/Kg-dry	1	2/7/2019 15:50
Indeno(1,2,3-cd)pyrene	U		5.9	8.4	µg/Kg-dry	1	2/7/2019 15:50
Naphthalene	U		5.4	8.4	µg/Kg-dry	1	2/7/2019 15:50
Pyrene	U		1.5	8.4	µg/Kg-dry	1	2/7/2019 15:50
Surr: 2-Fluorobiphenyl	52.8			44-107	%REC	1	2/7/2019 15:50
Surr: 4-Terphenyl-d14	68.4			52-123	%REC	1	2/7/2019 15:50
Surr: Nitrobenzene-d5	56.2			41-94	%REC	1	2/7/2019 15:50
VOLATILE ORGANIC COMPOUNDS			Method: SW8260C		Prep: SW5035 / 2/6/19		Analyst: WH
Benzene	U		0.0078	0.046	mg/Kg	1	2/7/2019 12:12
Ethylbenzene	U		0.0096	0.046	mg/Kg	1	2/7/2019 12:12
m,p-Xylene	U		0.022	0.091	mg/Kg	1	2/7/2019 12:12
o-Xylene	U		0.018	0.046	mg/Kg	1	2/7/2019 12:12
Toluene	U		0.012	0.046	mg/Kg	1	2/7/2019 12:12
Xylenes, Total	U		0.039	0.14	mg/Kg	1	2/7/2019 12:12
Surr: 1,2-Dichloroethane-d4	98.8			70-130	%REC	1	2/7/2019 12:12
Surr: 4-Bromofluorobenzene	101			70-130	%REC	1	2/7/2019 12:12
Surr: Dibromofluoromethane	95.0			70-130	%REC	1	2/7/2019 12:12
Surr: Toluene-d8	98.0			70-130	%REC	1	2/7/2019 12:12
ELECTRICAL CONDUCTIVITY (SAR)			Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 2/11/19		Analyst: JB
Electrical Conductivity @ Saturation	1.6		0.011	0.10	mmhos/cm @25°	20	2/11/2019 15:00
CHROMIUM, TRIVALENT			Method: CALCULATION				Analyst: JB
Chromium, Trivalent	7.1		0.39	1.3	mg/Kg-dry	1	2/8/2019 12:10
CHROMIUM, HEXAVALENT			Method: SW7196A		Prep: SW3060A / 2/7/19		Analyst: JEB
Chromium, Hexavalent	U		1.1	1.2	mg/Kg-dry	1	2/7/2019 16:30
MOISTURE			Method: SW3550C				Analyst: RZM
Moisture	21		0.10	0.10	% of sample	1	2/7/2019 09:47
PH			Method: SW9045D		Prep: EXTRACT / 2/7/19		Analyst: RZM
pH	8.24		0.10	0.100	s.u.	1	2/7/2019 15:01
Temperature	22.4		0.10	0.100	C	1	2/7/2019 15:01

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: SGM Inc.
 Work Order: 1902233
 Project: Mustang Resources

QC BATCH REPORT

Batch ID: **131617** Instrument ID **GC8** Method: **SW8015M**

MBLK		Sample ID: DBLKS1-131617-131617				Units: mg/Kg		Analysis Date: 2/7/2019 03:55 PM		
Client ID:		Run ID: GC8_190207A				SeqNo: 5513158		Prep Date: 2/7/2019		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	U	5.0								
<i>Surr: 4-Terphenyl-d14</i>	2.609	0	3.33	0	78.4	33-111	0			

LCS		Sample ID: DLCSS1-131617-131617				Units: mg/Kg		Analysis Date: 2/7/2019 03:26 PM		
Client ID:		Run ID: GC8_190207A				SeqNo: 5513157		Prep Date: 2/7/2019		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	273.1	5.0	333	0	82	58-111	0			
<i>Surr: 4-Terphenyl-d14</i>	2.64	0	3.33	0	79.3	33-111	0			

MS		Sample ID: 1902233-01A MS				Units: mg/Kg		Analysis Date: 2/7/2019 02:27 PM		
Client ID: Sample Site 4		Run ID: GC8_190207A				SeqNo: 5511829		Prep Date: 2/7/2019		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	291.5	5.0	331.5	0	87.9	58-111	0			
<i>Surr: 4-Terphenyl-d14</i>	2.453	0	3.315	0	74	33-111	0			

MSD		Sample ID: 1902233-01A MSD				Units: mg/Kg		Analysis Date: 2/7/2019 02:57 PM		
Client ID: Sample Site 4		Run ID: GC8_190207A				SeqNo: 5513156		Prep Date: 2/7/2019		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	256.3	4.9	329.3	0	77.8	58-111	291.5	12.8	30	
<i>Surr: 4-Terphenyl-d14</i>	3.006	0	3.293	0	91.3	33-111	2.453	20.3	30	

The following samples were analyzed in this batch: 1902233-01A

Client: SGM Inc.
 Work Order: 1902233
 Project: Mustang Resources

QC BATCH REPORT

Batch ID: **131574** Instrument ID **GC10** Method: **SW8015D**

MBLK		Sample ID: MBLK-131574-131574				Units: µg/Kg-dry		Analysis Date: 2/6/2019 08:20 PM		
Client ID:		Run ID: GC10_190206A				SeqNo: 5511295		Prep Date: 2/6/2019		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	2318	5,000								J
Surr: Toluene-d8	4760	0	5000	0	95.2	71-123	0			

LCS		Sample ID: LCS-131574-131574				Units: µg/Kg-dry		Analysis Date: 2/6/2019 07:21 PM		
Client ID:		Run ID: GC10_190206A				SeqNo: 5511294		Prep Date: 2/6/2019		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	493500	5,000	500000	0	98.7	71-123	0			
Surr: Toluene-d8	4796	0	5000	0	95.9	71-123	0			

MS		Sample ID: 1902124-01A MS				Units: µg/Kg-dry		Analysis Date: 2/6/2019 11:15 PM		
Client ID:		Run ID: GC10_190206A				SeqNo: 5511301		Prep Date: 2/6/2019		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	934900	8,200	815800	0	115	71-123	0			
Surr: Toluene-d8	7946	0	8158	0	97.4	71-123	0			

MSD		Sample ID: 1902124-01A MSD				Units: µg/Kg-dry		Analysis Date: 2/6/2019 11:44 PM		
Client ID:		Run ID: GC10_190206A				SeqNo: 5511302		Prep Date: 2/6/2019		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	898900	8,000	801000	0	112	71-123	934900	3.92	30	
Surr: Toluene-d8	7675	0	8010	0	95.8	71-123	7946	3.46	30	

The following samples were analyzed in this batch: 1902233-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: SGM Inc.
 Work Order: 1902233
 Project: Mustang Resources

QC BATCH REPORT

Batch ID: **131620** Instrument ID **HG4** Method: **SW7471B**

MBLK		Sample ID: MBLK-131620-131620				Units: mg/Kg		Analysis Date: 2/7/2019 12:24 PM		
Client ID:		Run ID: HG4_190207A				SeqNo: 5511623		Prep Date: 2/7/2019		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury U 0.020

LCS		Sample ID: LCS-131620-131620				Units: mg/Kg		Analysis Date: 2/7/2019 12:14 PM		
Client ID:		Run ID: HG4_190207A				SeqNo: 5511619		Prep Date: 2/7/2019		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1782 0.020 0.1665 0 107 80-120 0

MS		Sample ID: 1902233-01A MS				Units: mg/Kg		Analysis Date: 2/7/2019 12:19 PM		
Client ID: Sample Site 4		Run ID: HG4_190207A				SeqNo: 5511621		Prep Date: 2/7/2019		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1203 0.015 0.1276 0.0126 84.4 75-125 0

MSD		Sample ID: 1902233-01A MSD				Units: mg/Kg		Analysis Date: 2/7/2019 12:21 PM		
Client ID: Sample Site 4		Run ID: HG4_190207A				SeqNo: 5511622		Prep Date: 2/7/2019		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1347 0.016 0.1291 0.0126 94.6 75-125 0.1203 11.3 35

The following samples were analyzed in this batch:

1902233-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: SGM Inc.
 Work Order: 1902233
 Project: Mustang Resources

QC BATCH REPORT

Batch ID: **131607** Instrument ID **ICP2** Method: **SW846 6010C**

MBLK		Sample ID: MBLK-131607-131607				Units: mg/Kg		Analysis Date: 2/7/2019 01:10 PM		
Client ID:		Run ID: ICP2_190207A				SeqNo: 5511669		Prep Date: 2/7/2019		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	U	0.24								
Barium	U	0.24								
Boron	0.555	0.97								J
Cadmium	U	0.49								
Chromium	0.02863	0.24								J
Copper	U	0.49								
Lead	U	0.24								
Nickel	U	0.24								
Selenium	U	0.49								
Silver	U	0.24								
Zinc	0.05599	0.49								J

LCS		Sample ID: LCS-131607-131607				Units: mg/Kg		Analysis Date: 2/7/2019 01:16 PM		
Client ID:		Run ID: ICP2_190207A				SeqNo: 5511670		Prep Date: 2/7/2019		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	4.443	0.24	4.721	0	94.1	80-120	0			
Barium	4.698	0.24	4.721	0	99.5	80-120	0			
Boron	23.66	0.94	23.61	0	100	80-120	0			
Cadmium	4.74	0.47	4.721	0	100	80-120	0			
Chromium	4.737	0.24	4.721	0	100	80-120	0			
Copper	4.98	0.47	4.721	0	105	80-120	0			
Lead	4.741	0.24	4.721	0	100	80-120	0			
Nickel	4.759	0.24	4.721	0	101	80-120	0			
Selenium	4.358	0.47	4.721	0	92.3	80-120	0			
Silver	4.747	0.24	4.721	0	101	80-120	0			
Zinc	4.717	0.47	4.721	0	99.9	80-120	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: SGM Inc.
 Work Order: 1902233
 Project: Mustang Resources

QC BATCH REPORT

Batch ID: 131607 Instrument ID ICP2 Method: SW846 6010C

MS					Sample ID: 1902233-01AMS		Units: mg/Kg		Analysis Date: 2/7/2019 01:28 PM		
Client ID: Sample Site 4				Run ID: ICP2_190207A		SeqNo: 5511672		Prep Date: 2/7/2019		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Arsenic	10.17	0.37	7.353	4.512	76.9	75-125	0				
Barium	107.4	0.37	7.353	98.99	114	75-125	0			O	
Boron	45.94	1.5	36.76	12.71	90.4	75-125	0				
Cadmium	6.993	0.74	7.353	0.2949	91.1	75-125	0				
Chromium	14.46	0.37	7.353	5.592	121	75-125	0				
Copper	16.62	0.74	7.353	9.212	101	75-125	0				
Lead	13.03	0.37	7.353	7.259	78.5	75-125	0				
Nickel	13.96	0.37	7.353	7.632	86	75-125	0				
Selenium	6.441	0.74	7.353	0.2856	83.7	75-125	0				
Silver	7.228	0.37	7.353	-0.1623	101	75-125	0				
Zinc	41.56	0.74	7.353	34.49	96.2	75-125	0			O	

MSD				Sample ID: 1902233-01AMS			Units: mg/Kg		Analysis Date: 2/7/2019 01:34 PM		
Client ID: Sample Site 4			Run ID: ICP2_190207A		SeqNo: 5511673		Prep Date: 2/7/2019		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Arsenic	9.986	0.32	6.321	4.512	86.6	75-125	10.17	1.82	20		
Barium	117.5	0.32	6.321	98.99	293	75-125	107.4	9	20	SO	
Boron	42.2	1.3	31.61	12.71	93.3	75-125	45.94	8.47	20		
Cadmium	6.049	0.63	6.321	0.2949	91	75-125	6.993	14.5	20		
Chromium	13.84	0.32	6.321	5.592	130	75-125	14.46	4.37	20	S	
Copper	16.27	0.63	6.321	9.212	112	75-125	16.62	2.17	20		
Lead	12.68	0.32	6.321	7.259	85.8	75-125	13.03	2.71	20		
Nickel	13.53	0.32	6.321	7.632	93.3	75-125	13.96	3.13	20		
Selenium	5.349	0.63	6.321	0.2856	80.1	75-125	6.441	18.5	20		
Silver	6.359	0.32	6.321	-0.1623	103	75-125	7.228	12.8	20		
Zinc	43.25	0.63	6.321	34.49	139	75-125	41.56	3.99	20	SO	

The following samples were analyzed in this batch:

1902233-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: SGM Inc.
Work Order: 1902233
Project: Mustang Resources

QC BATCH REPORT

Batch ID: **131760** Instrument ID **ICPMS3** Method: **SW6020A**

DUP		Sample ID: 1902233-01BDUP				Units: mg/L		Analysis Date: 2/11/2019 03:50 PM		
Client ID: Sample Site 4		Run ID: ICPMS3_190211A				SeqNo: 5515825		Prep Date: 2/11/2019		DF: 10
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	158.8	5.0	0	0	0	0-0	89.02	56.3		
Magnesium	27.63	2.0	0	0	0	0-0	15.66	55.3		
Sodium	369.1	2.0	0	0	0	0-0	203.6	57.8		

The following samples were analyzed in this batch:

1902233-01B

Batch ID: **131760** Instrument ID **SAR** Method: **USDA H60 Metho**

DUP		Sample ID: 1902233-01BDUP				Units: none		Analysis Date: 2/11/2019		
Client ID: Sample Site 4		Run ID: SAR_190211A				SeqNo: 5515872		Prep Date: 2/11/2019		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sodium Adsorption Ratio	7.11	0.010	0	0	0		5.231	30.5	50	

The following samples were analyzed in this batch:

1902233-01B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: SGM Inc.
 Work Order: 1902233
 Project: Mustang Resources

QC BATCH REPORT

Batch ID: 131616 Instrument ID SVMS9 Method: SW846 8270D

MBLK				Sample ID: SBLKS1-131616-131616				Units: µg/Kg		Analysis Date: 2/7/2019 04:35 PM	
Client ID:			Run ID: SVMS9_190207A			SeqNo: 5512151		Prep Date: 2/7/2019		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Acenaphthene	U	6.7									
Anthracene	U	6.7									
Benzo(a)anthracene	U	6.7									
Benzo(a)pyrene	U	6.7									
Benzo(b)fluoranthene	U	6.7									
Benzo(k)fluoranthene	U	6.7									
Chrysene	U	6.7									
Dibenzo(a,h)anthracene	U	6.7									
Fluoranthene	U	6.7									
Fluorene	U	6.7									
Indeno(1,2,3-cd)pyrene	U	6.7									
Naphthalene	U	6.7									
Pyrene	U	6.7									
Surr: 2-Fluorobiphenyl	2093	0	3333	0	62.8	44-107	0				
Surr: 4-Terphenyl-d14	2581	0	3333	0	77.4	52-123	0				
Surr: Nitrobenzene-d5	2301	0	3333	0	69	41-94	0				

LCS				Sample ID: SLCSS1-131616-131616			Units: µg/Kg		Analysis Date: 2/7/2019 02:43 PM		
Client ID:			Run ID: SVMS9_190207A			SeqNo: 5512084		Prep Date: 2/7/2019		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Acenaphthene	941.3	6.7	1333	0	70.6	55-101	0				
Anthracene	1117	6.7	1333	0	83.8	67-105	0				
Benzo(a)anthracene	1093	6.7	1333	0	82	68-105	0				
Benzo(a)pyrene	1155	6.7	1333	0	86.6	68-110	0				
Benzo(b)fluoranthene	1113	6.7	1333	0	83.5	65-110	0				
Benzo(k)fluoranthene	1141	6.7	1333	0	85.6	66-113	0				
Chrysene	1132	6.7	1333	0	84.9	68-108	0				
Dibenzo(a,h)anthracene	1121	6.7	1333	0	84.1	62-119	0				
Fluoranthene	1138	6.7	1333	0	85.4	67-106	0				
Fluorene	977.3	6.7	1333	0	73.3	59-107	0				
Indeno(1,2,3-cd)pyrene	1181	6.7	1333	0	88.6	56-120	0				
Naphthalene	982	6.7	1333	0	73.7	46-98	0				
Pyrene	1110	6.7	1333	0	83.3	60-119	0				
Surr: 2-Fluorobiphenyl	2338	0	3333	0	70.1	44-107	0				
Surr: 4-Terphenyl-d14	2686	0	3333	0	80.6	52-123	0				
Surr: Nitrobenzene-d5	2509	0	3333	0	75.3	41-94	0				

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: SGM Inc.
 Work Order: 1902233
 Project: Mustang Resources

QC BATCH REPORT

Batch ID: 131616 Instrument ID SVMS9 Method: SW846 8270D

MS				Sample ID: 1902227-03B MS			Units: µg/Kg		Analysis Date: 2/7/2019 06:49 PM	
Client ID:				Run ID: SVMS9_190207A			SeqNo: 5512696		Prep Date: 2/7/2019	
									DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	713.3	6.5	1290	460.3	19.6	55-101	0			S
Anthracene	861	6.5	1290	284	44.7	67-105	0			S
Benzo(a)anthracene	821	6.5	1290	69.35	58.3	68-105	0			S
Benzo(a)pyrene	793.2	6.5	1290	47.55	57.8	68-110	0			S
Benzo(b)fluoranthene	779.7	6.5	1290	60.1	55.8	65-110	0			S
Benzo(k)fluoranthene	729.4	6.5	1290	21.13	54.9	66-113	0			S
Chrysene	795.8	6.5	1290	56.14	57.4	68-108	0			S
Dibenzo(a,h)anthracene	690.7	6.5	1290	0	53.6	62-119	0			S
Fluoranthene	895.8	6.5	1290	532.3	28.2	67-106	0			S
Fluorene	694.6	6.5	1290	61.42	49.1	59-107	0			S
Indeno(1,2,3-cd)pyrene	766.2	6.5	1290	34.34	56.8	56-120	0			
Naphthalene	767.4	6.5	1290	0	59.5	46-98	0			
Pyrene	768.1	6.5	1290	410.8	27.7	60-119	0			S
Surr: 2-Fluorobiphenyl	1752	0	3224	0	54.3	44-107	0			
Surr: 4-Terphenyl-d14	1673	0	3224	0	51.9	52-123	0			S
Surr: Nitrobenzene-d5	1818	0	3224	0	56.4	41-94	0			

The following samples were analyzed in this batch:

1902233-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: SGM Inc.
 Work Order: 1902233
 Project: Mustang Resources

QC BATCH REPORT

Batch ID: 131573 Instrument ID VMS7 Method: SW8260C

MBLK Sample ID: MBLK-131573-131573				Units: µg/Kg-dry		Analysis Date: 2/6/2019 11:49 AM				
Client ID:		Run ID: VMS7_190206A		SeqNo: 5509665		Prep Date: 2/6/2019		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	U	30								
Ethylbenzene	U	30								
m,p-Xylene	U	60								
o-Xylene	U	30								
Toluene	U	30								
Xylenes, Total	U	90								
Surr: 1,2-Dichloroethane-d4	978	0	1000	0	97.8	70-130	0			
Surr: 4-Bromofluorobenzene	986	0	1000	0	98.6	70-130	0			
Surr: Dibromofluoromethane	950.5	0	1000	0	95	70-130	0			
Surr: Toluene-d8	988.5	0	1000	0	98.8	70-130	0			

LCS Sample ID: LCS-131573-131573				Units: µg/Kg-dry		Analysis Date: 2/6/2019 11:02 AM				
Client ID:		Run ID: VMS7_190206A		SeqNo: 5509664		Prep Date: 2/6/2019		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	944.5	30	1000	0	94.4	75-125	0			
Ethylbenzene	917	30	1000	0	91.7	75-125	0			
m,p-Xylene	1861	60	2000	0	93	80-125	0			
o-Xylene	922.5	30	1000	0	92.2	75-125	0			
Toluene	964	30	1000	0	96.4	70-125	0			
Xylenes, Total	2784	90	3000	0	92.8	75-125	0			
Surr: 1,2-Dichloroethane-d4	980.5	0	1000	0	98	70-130	0			
Surr: 4-Bromofluorobenzene	1008	0	1000	0	101	70-130	0			
Surr: Dibromofluoromethane	991	0	1000	0	99.1	70-130	0			
Surr: Toluene-d8	1022	0	1000	0	102	70-130	0			

MS Sample ID: 1902124-01A MS				Units: µg/Kg-dry		Analysis Date: 2/6/2019 05:47 PM				
Client ID:		Run ID: VMS7_190206A		SeqNo: 5510730		Prep Date: 2/6/2019		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1760	49	1632	0	108	75-125	0			
Ethylbenzene	1666	49	1632	11.38	101	75-125	0			
m,p-Xylene	3381	98	3263	23.52	103	80-125	0			
o-Xylene	1708	49	1632	18.21	104	75-125	0			
Toluene	1782	49	1632	0	109	70-125	0			
Xylenes, Total	5089	150	4895	42	103	75-125	0			
Surr: 1,2-Dichloroethane-d4	1623	0	1632	0	99.4	70-130	0			
Surr: 4-Bromofluorobenzene	1669	0	1632	0	102	70-130	0			
Surr: Dibromofluoromethane	1600	0	1632	0	98	70-130	0			
Surr: Toluene-d8	1628	0	1632	0	99.8	70-130	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: SGM Inc.
Work Order: 1902233
Project: Mustang Resources

QC BATCH REPORT

Batch ID: **131573** Instrument ID **VMS7** Method: **SW8260C**

MSD				Sample ID: 1902124-01A MSD			Units: µg/Kg-dry		Analysis Date: 2/6/2019 06:02 PM		
Client ID:			Run ID: VMS7_190206A			SeqNo: 5510731		Prep Date: 2/6/2019		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	1630	48	1602	0	102	75-125	1760	7.69	30		
Ethylbenzene	1550	48	1602	11.38	96	75-125	1666	7.21	30		
m,p-Xylene	3160	96	3204	23.52	97.9	80-125	3381	6.75	30		
o-Xylene	1591	48	1602	18.21	98.2	75-125	1708	7.12	30		
Toluene	1635	48	1602	0	102	70-125	1782	8.64	30		
Xylenes, Total	4751	140	4806	42	98	75-125	5089	6.87	30		
Surr: 1,2-Dichloroethane-d4	1581	0	1602	0	98.7	70-130	1623	2.59	30		
Surr: 4-Bromofluorobenzene	1636	0	1602	0	102	70-130	1669	2.03	30		
Surr: Dibromofluoromethane	1570	0	1602	0	98	70-130	1600	1.88	30		
Surr: Toluene-d8	1592	0	1602	0	99.4	70-130	1628	2.23	30		

The following samples were analyzed in this batch: 1902233-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: SGM Inc.
Work Order: 1902233
Project: Mustang Resources

QC BATCH REPORT

Batch ID: **131657** Instrument ID **WETCHEM** Method: **SW9045D**

LCS				Sample ID: LCS-131657-131657				Units: s.u.			Analysis Date: 2/7/2019 03:01 PM		
Client ID:			Run ID: WETCHEM_190207L				SeqNo: 5511916			Prep Date: 2/7/2019		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual		
pH		3.91	0.10	4	0	97.8	90-110	0					

DUP				Sample ID: 1902233-01A DUP				Units: s.u.			Analysis Date: 2/7/2019 03:01 PM			
Client ID: Sample Site 4				Run ID: WETCHEM_190207L				SeqNo: 5511921			Prep Date: 2/7/2019		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual			
pH		8.1	0.10	0	0	0	0-0	8.24	1.71	20				
Temperature		22.2	0.10	0	0	0		22.4	0.897					

The following samples were analyzed in this batch:

1902233-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: SGM Inc.
 Work Order: 1902233
 Project: Mustang Resources

QC BATCH REPORT

Batch ID: **131667** Instrument ID **WETCHEM** Method: **SW7196A**

MBLK		Sample ID: MBLK-131667-131667				Units: mg/Kg		Analysis Date: 2/7/2019 04:30 PM		
Client ID:		Run ID: WETCHEM_190207S		SeqNo: 5512140		Prep Date: 2/7/2019		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent U 1.0

LCS		Sample ID: LCS-131667-131667				Units: mg/Kg		Analysis Date: 2/7/2019 04:30 PM		
Client ID:		Run ID: WETCHEM_190207S		SeqNo: 5512141		Prep Date: 2/7/2019		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 5.29 1.0 5 0 106 80-120 0

MS		Sample ID: 1902186-03B MS				Units: mg/Kg		Analysis Date: 2/7/2019 04:30 PM		
Client ID:		Run ID: WETCHEM_190207S		SeqNo: 5512143		Prep Date: 2/7/2019		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 18.38 1.0 5 6.126 245 75-125 0 S

MS		Sample ID: 1902186-03B MSI				Units: mg/Kg		Analysis Date: 2/7/2019 04:30 PM		
Client ID:		Run ID: WETCHEM_190207S		SeqNo: 5512145		Prep Date: 2/7/2019		DF: 100		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 13250 1,000 24300 6.126 54.5 75-125 0 S

MSD		Sample ID: 1902186-03B MSD				Units: mg/Kg		Analysis Date: 2/7/2019 04:30 PM		
Client ID:		Run ID: WETCHEM_190207S		SeqNo: 5512144		Prep Date: 2/7/2019		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 5.859 1.0 5.051 6.126 -5.3 75-125 18.38 103 20 SR

The following samples were analyzed in this batch:

1902233-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: SGM Inc.
Work Order: 1902233
Project: Mustang Resources

QC BATCH REPORT

Batch ID: **131760** Instrument ID **WETCHEM** Method: **USDA H60 Metho**

DUP		Sample ID: 1902233-01B DUP				Units: mmhos/cm @25°		Analysis Date: 2/11/2019 03:00 PM		
Client ID: Sample Site 4		Run ID: WETCHEM_190211J		SeqNo: 5515619		Prep Date: 2/11/2019		DF: 20		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Electrical Conductivity @ Saturation	1.6	0.10	0	0	0		1.562	2.4	50	

The following samples were analyzed in this batch:

1902233-01B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: SGM Inc.
Work Order: 1902233
Project: Mustang Resources

QC BATCH REPORT

Batch ID: **R254456** Instrument ID **MOIST** Method: **SW3550C**

MBLK		Sample ID: WBLKS-R254456				Units: % of sample		Analysis Date: 2/7/2019 09:47 AM		
Client ID:		Run ID: MOIST_190207A				SeqNo: 5511989		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture U 0.10

LCS		Sample ID: LCS-R254456				Units: % of sample		Analysis Date: 2/7/2019 09:47 AM		
Client ID:		Run ID: MOIST_190207A				SeqNo: 5511988		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 100 0.10 100 0 100 98-102 0

DUP		Sample ID: 1902253-01B DUP				Units: % of sample		Analysis Date: 2/7/2019 09:47 AM		
Client ID:		Run ID: MOIST_190207A				SeqNo: 5511987		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 18.96 0.10 0 0 0 0-0 18.27 3.71 10

The following samples were analyzed in this batch:

1902233-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

ALS Environmental

225 Commerce Drive, Fort Collins, Colorado 80524

TE: (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 #

1902233

[illegible]

*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	
SRZ 3.2°C			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		Rachel Kattag	Rachel Kattag	2/4/19	4:04 pm
RECEIVED BY		MM	MM	2-4-19	4:04
RELINQUISHED BY		MM	MM	2-4-19	4:10
RECEIVED BY		MM	Diane F. Shaw	2/6/19	1130
RELINQUISHED BY					
RECEIVED BY					

Sample Receipt Checklist

Client Name: **SGM**

Date/Time Received: **06-Feb-19 11:30**

Work Order: **1902233**

Received by: **DS**

Checklist completed by Diane Shaw
eSignature

06-Feb-19
Date

Reviewed by: Chad Whelton
eSignature

07-Feb-19
Date

Matrices: **Soil**

Carrier name: **FedEx**

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample(s) received on ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temperature(s)/Thermometer(s):	<u>3.2/3.2 c</u>		<u>SR2</u>
Cooler(s)/Kit(s):	<u></u>		
Date/Time sample(s) sent to storage:	<u>2/6/2019 3:01:44 PM</u>		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted by:	<u>-</u>		

Login Notes:

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction: