Monday, February 10, 2020

Ty Woodworth
Great Western Operating Company, LLC
4093 Specialty Place, Unit B
Longmont, CO 80504

Re: ALS Workorder: 2001442
Project Name: Sharp 2635-1-15HC
Project Number:

Dear Mr. Woodworth:

Two water samples were received from Great Western Operating Company, LLC, on 1/29/2020. The samples were scheduled for the following analyses:

Dissolved Gasses
GC/MS Volatiles
Inorganics
Metals
Total Extractable Petroleum Hydrocarbons (Diesel)
Total Volatile Petroleum Hydrocarbons (Gasoline)

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. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental.

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

Sincerely,

ALS Environmental
Katie M. OBrien
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
Florida (FL)	E87914
Idaho (ID)	CO01099
Kansas (KS)	E-10381
Kentucky (KY)	90137
PJ-LA (DoD ELAP/ISO 170250)	95377
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

2001442

GC/MS Volatiles:
The sample was analyzed using GC/MS following the current revision of SOP 525 based on SW-846 Method 8260C.

All acceptance criteria were met.

Dissolved Gasses:
The sample was prepared and analyzed according to method RSK-175 procedures and the current revision of SOP 449.

All acceptance criteria were met.

GRO:
The sample was analyzed following the current revision of SOP 425 generally based on SW-846 Methods 8000C and 8015D. TVPH 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 C6 to C10.

All 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.

All acceptance criteria were met.

Metals:
The sample was analyzed following Methods for the Determination of Metals in Environmental Samples – Supplement 1 procedures. Analysis by ICPMS followed method 200.8 and the current revision of SOP 827.

The sample could not be filtered for dissolved metals and therefore was cancelled.

All acceptance criteria were met.

Inorganics:
The sample was analyzed following EMSL and Standard Method procedures for the current revisions of the following SOPs and methods:

Analyte	Method	SOP #
Alkalinity	SM2320B	1106
Bicarbonate	SM2320B	1106
Carbonate	SM2320B	1106
TDS	SM2540C	1101
Chloride	300.0 Revision 2.1	1113
Sulfate	300.0 Revision 2.1	1113

All acceptance criteria were met.

ALS -- Fort Collins

Sample Number(s) Cross-Reference Table

OrderNum: 2001442
Client Name: Great Western Operating Company, LLC
Client Project Name: Sharp 2635-1-15HC
Client Project Number:
Client PO Number:

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
2635-1-15HC A through E, G	2001442-1		WATER	28-Jan-20	15:10
2635-1-15HC F	2001442-2		WATER	28-Jan-20	15:10

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 #
2001442

TURNAROUND TIME		SAMPLER		PAGE	of
PROJECT NAME	Sharp 2635-1-15HC	SITE ID		DISPOSAL	BY LAB or RETURN
PROJECT No.		EDD FORMAT		PARAMETER/METHOD REQUEST FOR ANALYSIS	
		PURCHASE ORDER		A	Dissolved Gasses
COMPANY NAME	Great Western	BILL TO COMPANY		B	BTEX
SEND REPORT TO	MTrehus@gwp.com	INVOICE ATTN TO		C	DRO
ADDRESS		ADDRESS		D	GRO
CITY / STATE / ZIP		CITY / STATE / ZIP		E	Anions, Alks, TDS
PHONE		PHONE		F	DS Metals
FAX		FAX		G	TP Metals
E-MAIL		E-MAIL		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	2635-1-15HC A	W	1-28-20	15:10	3	—		X										
	2635-1-15HC B	W			3	HCL			X									
	2635-1-15HC C	W			3	HCL				X								
	2635-1-15HC D	W			3	HCL					X							
↓	2635-1-15HC E	W			1	—						X						
2	2635-1-15HC F	W			1	—							X2					
1	2635-1-15HC G	W	↓	↓	1	HNO3								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
	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		Kenny Pyatt	1-29-20	9:30
RECEIVED BY	C Trimble	C Trimble	1-29-20	0930
RELINQUISHED BY				
RECEIVED BY				
RELINQUISHED BY				
RECEIVED BY				

ALS Environmental - Fort Collins
CONDITION OF SAMPLE UPON RECEIPT FORM

Client: Great Western O&G Workorder No: 2001442

Project Manager: KO Initials: CDT Date: 1-29-20

1.	Are airbills / shipping documents present and/or removable?	DROP OFF	~~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?		YES	NO *
5.	Is the COC in agreement with samples received? (IDs, dates, times, # of samples, # of containers, matrix, requested analyses, etc.)		YES	NO *
6.	Are short-hold samples present?		YES	NO
7.	Are all samples within holding times for the requested analyses?		YES	NO *
8.	Were all sample containers received intact? (not broken or leaking)		YES	NO *
9.	Is there sufficient sample for the requested analyses?		YES	NO *
10.	Are samples in proper containers for requested analyses? (form 250, *Sample Handling Guidelines*)		YES	NO *
11.	Are all aqueous samples preserved correctly, if required? (excluding volatiles)	N/A	YES	NO *
12.	Are all samples requiring no headspace (VOC, GRO, RSK/MEE, radon) free of bubbles > 6 mm (1/4 inch) diameter? (i.e. size of green pea)	N/A	YES	NO
13.	Were the samples shipped on ice?		YES	NO
14.	Were cooler temperatures measured at 0.1-6.0°C? IR gun used*: #3 (#5)	RAD ONLY	YES	NO

Cooler #:	1									
Temperature (°C):	2.6									
# of custody seals on cooler:	0									
External mR/hr reading:	NA									
Background mR/hr reading:	NA									

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

*** Please provide details here for NO responses to gray boxes above - for 2 thru 5 & 7 thru 12, notify PM & continue w/ login.**

11. Bottle 2001442-1-14 initial pH 11. Added 1.0 ml HNO_3 (the max) @ 1115, 1-29-20. Final pH 2.5. HNO_3 lot no.

12. Headspace: 2001442-1-8
2001442-1-11
2001442-1-12

Were unpreserved bottles pH checked? YES / NA All client bottle ID's vs ALS lab ID's double-checked by: CDT

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

Project Manager Signature / Date: 1/29/20

Form 201r29.xls
(10/15/2019)

*IR Gun #3, VWR SN 170647571
*IR Gun #5, VWR SN 192272629

Client: Great Western Operating Company, LLC **Date:** *10-Feb-20*
Project: Sharp 2635-1-15HC **Work Order:** 2001442
Sample ID: 2635-1-15HC A through E, G **Lab ID:** 2001442-1
Legal Location: **Matrix:** WATER
Collection Date: 1/28/2020 15:10 **Percent Moisture:**

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Alkalinity as Calcium Carbonate			**SM2320B**		Prep Date: **2/3/2020**	PrepBy: **KJS**
BICARBONATE AS CaCO3	**110**		**20**	**MG/L**	1	2/3/2020
CARBONATE AS CaCO3	**140**		**20**	**MG/L**	1	2/3/2020
TOTAL ALKALINITY AS CaCO3	**250**		**20**	**MG/L**	1	2/3/2020
Diesel Range Organics			**SW8015M**		Prep Date: **2/3/2020**	PrepBy: **CCL**
Diesel Range Organics	**18**	D	**10**	**MG/L**	10	2/4/2020 13:58
Surr: O-TERPHENYL	*80*		*63-126*	*%REC*	10	2/4/2020 13:58
Dissolved Gasses			**RSK175**		Prep Date: **2/3/2020**	PrepBy: **CCL**
METHANE	**390**		**1**	**UG/L**	1	2/3/2020 12:02
ETHANE	**53**		**2**	**UG/L**	1	2/3/2020 12:02
PROPANE	**18**		**1**	**UG/L**	1	2/3/2020 12:02
Gasoline Range Organics			**SW8015**		Prep Date: **1/31/2020**	PrepBy: **CCL**
GASOLINE RANGE ORGANICS	**5**	GH	**0.5**	**MG/L**	5	1/31/2020 13:38
Surr: 2,3,4-TRIFLUOROTOLUENE	*102*		*74-129*	*%REC*	5	1/31/2020 13:38
GC/MS Volatiles			**SW8260_25**		Prep Date: **1/29/2020**	PrepBy: **JXK**
BENZENE	**86**		**50**	**UG/L**	50	1/29/2020 14:31
TOLUENE	**320**		**50**	**UG/L**	50	1/29/2020 14:31
ETHYLBENZENE	**110**		**50**	**UG/L**	50	1/29/2020 14:31
M+P-XYLENE	**370**		**50**	**UG/L**	50	1/29/2020 14:31
O-XYLENE	**260**		**50**	**UG/L**	50	1/29/2020 14:31
TOTAL XYLENES	**630**		**1**	**UG/L**	1	1/29/2020 14:31
Surr: 4-BROMOFLUOROBENZENE	*98*		*85-115*	*%REC*	50	1/29/2020 14:31
Surr: DIBROMOFLUOROMETHANE	*105*		*84-118*	*%REC*	50	1/29/2020 14:31
Surr: TOLUENE-D8	*97*		*85-115*	*%REC*	50	1/29/2020 14:31
Ion Chromatography			**EPA300.0**		Prep Date: **1/30/2020**	PrepBy: **KJS**
CHLORIDE	**8300**		**100**	**MG/L**	500	1/30/2020 13:11
SULFATE	**1100**		**100**	**MG/L**	100	1/30/2020 12:57
Total Recoverable Metals by 200.8			**EPA200.8**		Prep Date: **1/31/2020**	PrepBy: **JML**
CALCIUM	**3200000**		**1000**	**UG/L**	10	2/5/2020 21:18
POTASSIUM	**280000**		**1000**	**UG/L**	10	2/5/2020 21:18
MAGNESIUM	**150**		**100**	**UG/L**	10	2/5/2020 21:18
SODIUM	**960000**		**1000**	**UG/L**	10	2/5/2020 21:18
Total Dissolved Solids			**SM2540C**		Prep Date: **2/3/2020**	PrepBy: **LMC**
TOTAL DISSOLVED SOLIDS	**16000**		**400**	**MG/L**	1	2/5/2020

Client:	Great Western Operating Company, LLC	**Date:**	*10-Feb-20*
Project:	Sharp 2635-1-15HC	**Work Order:**	2001442
Sample ID:	2635-1-15HC F	**Lab ID:**	2001442-2
Legal Location:		**Matrix:**	WATER
Collection Date:	1/28/2020 15:10	**Percent Moisture:**	

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed

Explanation of Qualifiers

Radiochemistry:

- "Report Limit" is the MDC
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.
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: **HC200131-61-1** Instrument ID **FUELS-1** Method: **SW8015**

LCS Sample ID: **HC200131-61** Units: **MG/L** Analysis Date: **1/31/2020 11:05**

Client ID: Run ID: **HC200131-6A** Prep Date: **1/31/2020** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	0.584	0.1	0.5		117	79-118				20	
Surr: 2,3,4-TRIFLUOROTOLUENE	0.0997		0.1		100	74-129					

LCSD Sample ID: **HC200131-61** Units: **MG/L** Analysis Date: **1/31/2020 13:59**

Client ID: Run ID: **HC200131-6A** Prep Date: **1/31/2020** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	0.488	0.1	0.5		98	79-118		0.584	18	20	
Surr: 2,3,4-TRIFLUOROTOLUENE	0.107		0.1		107	74-129			7		

MB Sample ID: **HC200131-61** Units: **MG/L** Analysis Date: **1/31/2020 11:27**

Client ID: Run ID: **HC200131-6A** Prep Date: **1/31/2020** DF: **1**

Analyte	Result	ReportLimit	%REC	Control Limit	Qual
GASOLINE RANGE ORGANICS	ND	0.1			
Surr: 2,3,4-TRIFLUOROTOLUENE	0.0964		96	74-129	

The following samples were analyzed in this batch: 2001442-1

Batch ID: **HC200203-82-1** Instrument ID **FUELS-1** Method: **SW8015M**

LCS Sample ID: **HC200203-82** Units: **MG/L** Analysis Date: **2/4/2020 12:55**
Client ID: Run ID: **HC200204-8A** Prep Date: **2/3/2020** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Diesel Range Organics	7.4	1.07	8.33		89	36-150				20	
Surr: O-TERPHENYL	1.64		1.67		99	63-126					

LCSD Sample ID: **HC200203-82** Units: **MG/L** Analysis Date: **2/4/2020 13:16**
Client ID: Run ID: **HC200204-8A** Prep Date: **2/3/2020** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Diesel Range Organics	7.54	1.07	8.33		90	36-150		7.4	2	20	
Surr: O-TERPHENYL	1.67		1.67		100	63-126			2		

MB Sample ID: **HC200203-82** Units: **MG/L** Analysis Date: **2/4/2020 12:12**
Client ID: Run ID: **HC200204-8A** Prep Date: **2/3/2020** DF: **1**

Analyte	Result	ReportLimit	Qual
Diesel Range Organics	ND	1.1	
Surr: O-TERPHENYL	1.15		

The following samples were analyzed in this batch: 2001442-1

QC BATCH REPORT

Batch ID: **HC200203-91-2** Instrument ID **MEE-1** Method: **RSK175**

LCS Sample ID: **HC200203-91** Units: **UG/L** Analysis Date: **2/3/2020 11:42**
Client ID: Run ID: **HC200203-9A** Prep Date: **2/3/2020** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
METHANE	139	1	142		98	80-120				25	
ETHANE	240	2	267		90	80-120				25	
PROPANE	356	1	391		91	80-120				25	

LCSD Sample ID: **HC200203-91** Units: **UG/L** Analysis Date: **2/3/2020 12:12**
Client ID: Run ID: **HC200203-9A** Prep Date: **2/3/2020** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
METHANE	137	1	142		96	80-120		139	2	25	
ETHANE	232	2	267		87	80-120		240	3	25	
PROPANE	342	1	391		87	80-120		356	4	25	

MB Sample ID: **HC200203-91** Units: **UG/L** Analysis Date: **2/3/2020 11:45**
Client ID: Run ID: **HC200203-9A** Prep Date: **2/3/2020** DF: **1**

Analyte	Result	ReportLimit	Qual
METHANE	ND	1	
ETHANE	ND	2	
PROPANE	ND	1	

The following samples were analyzed in this batch: 2001442-1

Batch ID: **IP200131-3-4** Instrument ID **ICPMS2** Method: **EPA200.8**

LCS Sample ID: **IM200131-3** Units: **UG/L** Analysis Date: **2/5/2020 20:15**

Client ID: Run ID: **IM200205-10A12** Prep Date: **1/31/2020** DF: **10**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
CALCIUM	10200	1000	10000		102	85-115				20	
MAGNESIUM	9760	100	10000		98	85-115				20	
POTASSIUM	4770	1000	5000		95	85-115				20	
SODIUM	9110	1000	10000		91	85-115				20	

MB Sample ID: **IP200131-3** Units: **UG/L** Analysis Date: **2/5/2020 20:12**

Client ID: Run ID: **IM200205-10A12** Prep Date: **1/31/2020** DF: **10**

Analyte	Result	ReportLimit	Qual
CALCIUM	ND	1000	
MAGNESIUM	ND	100	
POTASSIUM	ND	1000	
SODIUM	ND	1000	

The following samples were analyzed in this batch: 2001442-1

Batch ID: **VL200129-3-3** Instrument ID **HPV3** Method: **SW8260_25**

LCS Sample ID: **VL200129-3** Units: **%REC** Analysis Date: **1/29/2020 11:10**

Client ID: Run ID: **VL200129-3A** Prep Date: **1/29/2020** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Surr: 4-BROMOFLUOROBENZENE	24.6		25		98	85-115					
Surr: DIBROMOFLUOROMETHANE	25.8		25		103	84-118					
Surr: TOLUENE-D8	24.7		25		99	85-115					
BENZENE	9.5	1	10		95	83-117				20	
TOLUENE	9.38	1	10		94	82-113				20	
ETHYLBENZENE	9.4	1	10		94	81-113				20	
M+P-XYLENE	18.8	1	20		94	82-115				20	
O-XYLENE	9.11	1	10		91	81-115				20	

LCSD Sample ID: **VL200129-3** Units: **%REC** Analysis Date: **1/29/2020 11:30**

Client ID: Run ID: **VL200129-3A** Prep Date: **1/29/2020** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Surr: 4-BROMOFLUOROBENZENE	24.8		25		99	85-115			1		
Surr: DIBROMOFLUOROMETHANE	25.8		25		103	84-118			0		
Surr: TOLUENE-D8	24.6		25		98	85-115			0		
BENZENE	9.51	1	10		95	83-117		9.5	0	20	
TOLUENE	9.47	1	10		95	82-113		9.38	1	20	
ETHYLBENZENE	9.38	1	10		94	81-113		9.4	0	20	
M+P-XYLENE	18.5	1	20		93	82-115		18.8	2	20	
O-XYLENE	9.06	1	10		91	81-115		9.11	0	20	

MB Sample ID: **VL200129-3** Units: **%REC** Analysis Date: **1/29/2020 12:12**

Client ID: Run ID: **VL200129-3A** Prep Date: **1/29/2020** DF: **1**

Analyte	Result	ReportLimit									Qual
Surr: 4-BROMOFLUOROBENZENE	24.5				98	85-115					
Surr: DIBROMOFLUOROMETHANE	25.8				103	84-118					
Surr: TOLUENE-D8	25.1				101	85-115					
BENZENE	ND	1									
TOLUENE	ND	1									
ETHYLBENZENE	ND	1									
M+P-XYLENE	ND	1									
O-XYLENE	ND	1									
TOTAL XYLENES	ND	1									

The following samples were analyzed in this batch: 2001442-1

QC BATCH REPORT

Batch ID: **AK200203-1-1** Instrument ID **NONE** Method: **SM2320B**

LCS Sample ID: **AK200203-1** Units: **MG/L** Analysis Date: **2/3/2020**
Client ID: Run ID: **AK200203-1a1** Prep Date: **2/3/2020** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
TOTAL ALKALINITY AS CaCO3	101	5	100		101	85-115				15	

LCSD Sample ID: **AK200203-1** Units: **MG/L** Analysis Date: **2/3/2020**
Client ID: Run ID: **AK200203-1a1** Prep Date: **2/3/2020** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
TOTAL ALKALINITY AS CaCO3	99.3	5	100		99	85-115		101	2	15	

MB Sample ID: **AK200203-1** Units: **MG/L** Analysis Date: **2/3/2020**
Client ID: Run ID: **AK200203-1a1** Prep Date: **2/3/2020** DF: **1**

Analyte	Result	ReportLimit	Qual
BICARBONATE AS CaCO3	ND	5	
CARBONATE AS CaCO3	ND	5	
TOTAL ALKALINITY AS CaCO3	ND	5	

The following samples were analyzed in this batch: 2001442-1

Batch ID: **IC200130-1-1** Instrument ID **IC3** Method: **EPA300.0**

LCS Sample ID: **IC200130-1** Units: **MG/L** Analysis Date: **1/30/2020 11:25**

Client ID: Run ID: **IC200130-1a1** Prep Date: **1/30/2020** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
CHLORIDE	10.1	0.2	10		101	90-110				15	
SULFATE	50.7	1	50		101	90-110				15	

LCSD Sample ID: **IC200130-1** Units: **MG/L** Analysis Date: **1/30/2020 14:03**

Client ID: Run ID: **IC200130-1a1** Prep Date: **1/30/2020** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
CHLORIDE	10.1	0.2	10		101	90-110		10.1	0	15	
SULFATE	50.3	1	50		101	90-110		50.7	1	15	

MB Sample ID: **IC200130-1** Units: **MG/L** Analysis Date: **1/30/2020 11:38**

Client ID: Run ID: **IC200130-1a1** Prep Date: **1/30/2020** DF: **1**

Analyte	Result	ReportLimit	Qual
CHLORIDE	ND	0.2	
SULFATE	ND	1	

The following samples were analyzed in this batch: 2001442-1

QC BATCH REPORT

Batch ID: **TD200203-1-1** Instrument ID **Balance** Method: **SM2540C**

LCS Sample ID: **TD200203-1** Units: **MG/L** Analysis Date: **2/5/2020**
Client ID: Run ID: **TD200205-1A1** Prep Date: **2/3/2020** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
TOTAL DISSOLVED SOLIDS	379	20	400		95	85-115				14	

MB Sample ID: **TD200203-1** Units: **MG/L** Analysis Date: **2/5/2020**
Client ID: Run ID: **TD200205-1A1** Prep Date: **2/3/2020** DF: **1**

Analyte	Result	ReportLimit	Qual
TOTAL DISSOLVED SOLIDS	ND	20	

The following samples were analyzed in this batch: 2001442-1