



Thursday, August 11, 2022

Max Trehus
Great Western Operating Company, LLC
4093 Specialty Place, Unit B
Longmont, CO 80504

Re: ALS Workorder: 2207538
Project Name: Volt 10N BH
Project Number:

Dear Mr. Trehus:

Two water samples were received from Great Western Operating Company, LLC, on 7/22/2022. 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)
- TDS - Subcontracted to ALS Holland, MI

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,

 FOR

ALS Environmental
Katie M. OBrien
Project Manager

	<h1>Accreditations</h1>	Effective June 7, 2022
	ALS Environmental – Fort Collins	

Accreditations: 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
Arizona	AZ0828
California (CA)	2926
Colorado (CO)	CO01099
Florida (FL)	E87914
Idaho (ID)	CO01099
Kansas (KS)	E-10381
Kentucky (KY)	90137
Oklahoma	1301
Louisiana	197538
Maryland (MD)	285
PJLA (DoD ELAP/ISO 170250)	95377
PJLA (DOE-AP/ISO 17025)	95377
Nebraska(NE)	NE-OS-24-13
Nevada (NV)	CO010992018-1
New York (NY)	12036
North Dakota (ND)	R-057
Oklahoma (OK)	1301
Pennsylvania (PA)	68-03116
Tennessee (TN)	TN02976
Texas (TX)	T104704241
Utah (UT)	CO01099
Washington (WA)	C1280
Virginia	460305

40 CFR Part 136: All analyses for Clean Water Act samples are analyzed using the 40 CFR Part 136 specified method and include all the QC requirements.



2207538

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.

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.

A surrogate recovery could not be reported for sample -1 due to the dilution of the sample.

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 surrogate recoveries were within acceptance criteria with the following exceptions:

Surrogate	Sample	Direction
2,3,4-Trifluorotoluene	MB, LCS/LCSD and -1	High

The hardware that delivers the surrogate to the sample was malfunctioning and not properly aliquoting the surrogate. Since this hardware only delivers the surrogate and does not otherwise interact with the sample, the discrepancy does not affect sample quantification, as demonstrated by the passing CCV's.



All remaining acceptance criteria were met.

Metals:

The samples were 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.

Sample 2207538-2 was to be analyzed for dissolved metals. The sample was filtered through a 0.45 micron filter and preserved with nitric acid to a pH less than two prior to analysis.

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:

<u>Analyte</u>	<u>Method</u>	<u>SOP #</u>
Alkalinity	SM2320B	1106
Bicarbonate	SM2320B	1106
Carbonate	SM2320B	1106
Chloride	300.0 Revision 2.1	1113
Sulfate	300.0 Revision 2.1	1113

All acceptance criteria were met.

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Sample Number(s) Cross-Reference Table

OrderNum: 2207538

Client Name: PDC Energy

Client Project Name: Volt 10N BH

Client Project Number:

Client PO Number:

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
V-10N A	2207538-1		WATER	21-Jul-22	9:45
V-10N B	2207538-2		WATER	21-Jul-22	9:45



ALS Environmental

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

Chain-of-Custody

Form 2026

PROJECT NAME VOLT 10N BH		SAMPLER Max Trehus		WORKORDER # 2207538			
PROJECT No.	EDD FORMAT	DATE	TURNAROUND	DISPOSAL	PAGE		
COMPANY NAME DCL	PURCHASE ORDER				of		
SEND REPORT TO Max Trehus	BILL TO COMPANY				By Lab or Return to Client		
ADDRESS Jennifer Bahlerman	INVOICE ATTN TO						
CITY/STATE/ZIP	ADDRESS						
PHONE	CITY/STATE/ZIP						
FAX	PHONE						
E-MAIL	FAX						
	E-MAIL						
Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC
	V-10N A	W	7/2/02 GAS		3	-	X
	V-10N A				3	1	X
	V-10N A				3	1	X
	V-10N A				3	1	X
	V-10N A				1	-	X
2	V-10N B				1	-	X
1	V-10N A				1	2	X

Dissoived bases
 BTEX
 DCO
 GLO
 Aromatics
 DS Meth
 TR Meth

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

For metals or anions, please detail analytes below.

Comments:
 Facility ID: A66567
 S.S.O

RELINQUISHED BY	SIGNATURE	PRINTED NAME	DATE	TIME
RECEIVED BY	<i>Max Trehus</i>	Max Trehus	7/2/02	9:30
RELINQUISHED BY	<i>Cherie Thomas</i>	Cherie Thomas	7/22/02	0930
RECEIVED BY				
RELINQUISHED BY				
RECEIVED BY				

Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035



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CONDITION OF SAMPLE UPON RECEIPT FORM

Client: PDC Energy Workorder No: 2207538
 Project Manager: KMO Initials: CXT Date: 7-22-2022

		N/A	YES	NO
1.	Are airbills / shipping documents present and/or removable?	X		
	Tracking number:			
2.	Are custody seals on shipping containers intact?	X		
3.	Are custody seals on sample containers intact?	X		
4.	Is there a COC (chain-of-custody) present?		X	
5.	Is the COC in agreement with samples received? (IDs, dates, times, # of samples, # of containers, matrix, requested analyses, etc.)		X	
6.	Are short-hold samples present?			X
7.	Are all samples within holding times for the requested analyses?		X	
8.	Were all sample containers received intact? (not broken or leaking)		X	
9.	Is there sufficient sample for the requested analyses?		X	
10.	Are samples in proper containers for requested analyses? (form 250, Sample Handling Guidelines)		X	
11.	Are all aqueous samples preserved correctly, if required? (excluding volatiles)		X	
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)		X	
13.	Were the samples shipped on ice?		X	
14.	Were cooler temperatures measured at 0.1-6.0°C?	IR gun used*: #6	RAD ONLY X	
Cooler #: <u>1</u>				
Temperature (°C): <u>5.5</u>				
# of custody seals on cooler: <u>0</u>				
External µR/hr reading: <u>NA</u>				
Background µR/hr reading: <u>12</u>				
Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? <u>NA</u>				

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

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

If applicable, was the client contacted? YES / NO / NA Contact: Margaret G. O'Brien Date/Time: 7/24/22

Project Manager Signature / Date: Margaret G. O'Brien

Client: PDC Energy
 Project: Volt 10N BH
 Sample ID: V-10N A
 Legal Location:
 Collection Date: 7/21/2022 09:45

Date: 04-Aug-22
 Work Order: 2207538
 Lab ID: 2207538-1
 Matrix: WATER
 Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Alkalinity as Calcium Carbonate			SM2320B			Prep Date: 7/28/2022 PrepBy: AOW
BICARBONATE AS CaCO3	ND		20	MG/L	1	7/28/2022
CARBONATE AS CaCO3	480		20	MG/L	1	7/28/2022
TOTAL ALKALINITY AS CaCO3	550		20	MG/L	1	7/28/2022
Diesel Range Organics			SW8015M			Prep Date: 7/28/2022 PrepBy: JRS
Diesel Range Organics	1200		100	MG/L	100	8/2/2022 11:46
Surr: O-TERPHENYL		X	69-120	%REC	100	8/2/2022 11:46
Dissolved Gasses			RSK175			Prep Date: 8/4/2022 PrepBy: JRS
METHANE	4100		4	UG/L	2	8/4/2022 15:06
ETHANE	2000		8	UG/L	2	8/4/2022 15:06
PROPANE	1700		12	UG/L	2	8/4/2022 15:06
Gasoline Range Organics			SW8015			Prep Date: 8/2/2022 PrepBy: JRS
GASOLINE RANGE ORGANICS	260		10	MG/L	100	8/3/2022 15:59
Surr: 2,3,4-TRIFLUOROTOLUENE	161	*	80-120	%REC	100	8/3/2022 15:59
GC/MS Volatiles			SW8260_25			Prep Date: 7/26/2022 PrepBy: TWK
BENZENE	700		100	UG/L	100	7/26/2022 22:07
TOLUENE	1700		100	UG/L	100	7/26/2022 22:07
ETHYLBENZENE	190		100	UG/L	100	7/26/2022 22:07
M+P-XYLENE	1500		100	UG/L	100	7/26/2022 22:07
O-XYLENE	440		100	UG/L	100	7/26/2022 22:07
TOTAL XYLENES	1900		1	UG/L	1	7/26/2022 22:07
Surr: 4-BROMOFLUOROBENZENE	107		80-120	%REC	100	7/26/2022 22:07
Surr: DIBROMOFLUOROMETHANE	85		80-120	%REC	100	7/26/2022 22:07
Surr: TOLUENE-D8	108		80-120	%REC	100	7/26/2022 22:07
Ion Chromatography			EPA300.0			Prep Date: 7/28/2022 PrepBy: AOW
CHLORIDE	550		10	MG/L	50	7/28/2022 15:37
SULFATE	95		50	MG/L	50	7/28/2022 15:37
Total Recoverable Metals by 200.7			EPA200.7			Prep Date: 7/28/2022 PrepBy: ETC
CALCIUM	170		100	MG/L	10	7/29/2022 13:28
POTASSIUM	330		100	MG/L	10	7/29/2022 13:28
MAGNESIUM	ND		100	MG/L	10	7/29/2022 13:28
SODIUM	560		100	MG/L	10	7/29/2022 13:28

Client: PDC Energy
 Project: Volt 10N BH
 Sample ID: V-10N B
 Legal Location:
 Collection Date: 7/21/2022 09:45

Date: 04-Aug-22
 Work Order: 2207538
 Lab ID: 2207538-2
 Matrix: WATER
 Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Dissolved Metals by 200.7			EPA200.7		Prep Date: 7/28/2022	PrepBy: ETC
CALCIUM	160		100	MG/L	10	7/29/2022 13:29
POTASSIUM	330		100	MG/L	10	7/29/2022 13:29
MAGNESIUM	ND		100	MG/L	10	7/29/2022 13:29
SODIUM	550		100	MG/L	10	7/29/2022 13:29

Client: PDC Energy
Project: Volt 10N BH
Sample ID: V-10N B
Legal Location:
Collection Date: 7/21/2022 09:45

Date: 04-Aug-22
Work Order: 2207538
Lab ID: 2207538-2
Matrix: WATER
Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
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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

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Date: 8/4/2022 3:55:52

Client: PDC Energy
 Work Order: 2207538
 Project: Volt 10N BH

QC BATCH REPORT

Batch ID: **HC220728-81-1** Instrument ID: **FUELS-1** Method: **SW8015M**

LCS Sample ID: **HC220728-81** Units: **MG/L** Analysis Date: **8/1/2022 15:07**
 Client ID: Run ID: **HC220802-81A** Prep Date: **7/28/2022** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref Value	RPD	RPD Limit	Qual
Diesel Range Organics	7.26	1.07	8.33		87	53-120				20	
Surr: O-TERPHENYL	1.64		1.67		99	69-120					

LCSD Sample ID: **HC220728-81** Units: **MG/L** Analysis Date: **8/1/2022 15:28**
 Client ID: Run ID: **HC220802-81A** Prep Date: **7/28/2022** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref Value	RPD	RPD Limit	Qual
Diesel Range Organics	7.3	1.07	8.33		88	53-120		7.26	1	20	
Surr: O-TERPHENYL	1.64		1.67		98	69-120			0		

MB Sample ID: **HC220728-81** Units: **MG/L** Analysis Date: **8/1/2022 14:45**
 Client ID: Run ID: **HC220802-81A** Prep Date: **7/28/2022** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref Value	RPD	RPD Limit	Qual
Diesel Range Organics	ND	1.1									
Surr: O-TERPHENYL	1.43				86	69-120					

The following samples were analyzed in this batch:

Client: PDC Energy
 Work Order: 2207538
 Project: Volt 10N BH

QC BATCH REPORT

Batch ID: **HC220802-61-1** Instrument ID: **FUELS-1** Method: **SW8015**

LCS		Sample ID: HC220802-61			Units: MG/L		Analysis Date: 8/3/2022 14:56				
Client ID:		Run ID: HC220804-61A			Prep Date: 8/2/2022		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref Value	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	0.479	0.1	0.5		96	80-120				20	
Surr: 2,3,4-TRIFLUOROTOLUENE	0.125		0.1		125	80-120					*

LCSD		Sample ID: HC220802-61			Units: MG/L		Analysis Date: 8/3/2022 15:12				
Client ID:		Run ID: HC220804-61A			Prep Date: 8/2/2022		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref Value	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	0.458	0.1	0.5		92	80-120		0.479	4	20	
Surr: 2,3,4-TRIFLUOROTOLUENE	0.121		0.1		121	80-120			3		*

MB		Sample ID: HC220802-61			Units: MG/L		Analysis Date: 8/3/2022 15:28					
Client ID:		Run ID: HC220804-61A			Prep Date: 8/2/2022		DF: 1					
Analyte	Result	ReportLimit										Qual
GASOLINE RANGE ORGANICS	ND	0.1										
Surr: 2,3,4-TRIFLUOROTOLUENE	0.121				121	80-120						*

The following samples were analyzed in this batch:

Client: PDC Energy
 Work Order: 2207538
 Project: Volt 10N BH

QC BATCH REPORT

Batch ID: **HC220804-91-1** Instrument ID: **MEE-1** Method: **RSK175**

LCS		Sample ID: HC220804-91			Units: UG/L		Analysis Date: 8/4/2022 14:48				
Client ID:		Run ID: HC220804-91A			Prep Date: 8/4/2022		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref Value	RPD	RPD Limit	Qual
METHANE	140	2	142		98	76-125				25	
ETHANE	264	4	267		99	70-120				25	
PROPANE	392	6	391		100	72-120				25	

LCSD		Sample ID: HC220804-91			Units: UG/L		Analysis Date: 8/4/2022 15:22				
Client ID:		Run ID: HC220804-91A			Prep Date: 8/4/2022		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref Value	RPD	RPD Limit	Qual
METHANE	121	2	142		85	76-125		140	15	25	
ETHANE	229	4	267		86	70-120		264	14	25	
PROPANE	342	6	391		87	72-120		392	14	25	

MB		Sample ID: HC220804-91			Units: UG/L		Analysis Date: 8/4/2022 14:58				
Client ID:		Run ID: HC220804-91A			Prep Date: 8/4/2022		DF: 1				
Analyte	Result	ReportLimit	Qual								
METHANE	ND	2									
ETHANE	ND	4									
PROPANE	ND	6									

The following samples were analyzed in this batch:

Client: PDC Energy
 Work Order: 2207538
 Project: Volt 10N BH

QC BATCH REPORT

Batch ID: IP220728-2-3 Instrument ID: ICP5900 Method: EPA200.7

LCS		Sample ID: IP220728-2			Units: MG/L			Analysis Date: 7/29/2022 13:19			
Client ID:		Run ID: IT220729-1A3			Prep Date: 7/28/2022			DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref Value	RPD	RPD Limit	Qual
CALCIUM	39.5	1	40		99	85-115				20	
MAGNESIUM	39.2	1	40		98	85-115				20	
POTASSIUM	39.9	1	40		100	85-115				20	
SODIUM	40.9	1	40		102	85-115				20	

LCSD		Sample ID: IP220728-2			Units: MG/L			Analysis Date: 7/29/2022 13:20			
Client ID:		Run ID: IT220729-1A3			Prep Date: 7/28/2022			DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref Value	RPD	RPD Limit	Qual
CALCIUM	38.7	1	40		97	85-115		39.5	2	20	
MAGNESIUM	38.7	1	40		97	85-115		39.2	1	20	
POTASSIUM	39.6	1	40		99	85-115		39.9	1	20	
SODIUM	40.6	1	40		102	85-115		40.9	1	20	

MB		Sample ID: FP220726-2			Units: MG/L			Analysis Date: 7/29/2022 13:18				
Client ID:		Run ID: IT220729-1A3			Prep Date: 7/28/2022			DF: 1				
Analyte	Result	ReportLimit										Qual
CALCIUM	ND	1										
MAGNESIUM	ND	1										
POTASSIUM	ND	1										
SODIUM	ND	1										

The following samples were analyzed in this batch:

Client: PDC Energy
 Work Order: 2207538
 Project: Volt 10N BH

QC BATCH REPORT

Batch ID: VL220726-4-2 Instrument ID: HPV4 Method: SW8260_25

LCS		Sample ID: VL220726-4			Units: %REC		Analysis Date: 7/26/2022 13:45				
Client ID:		Run ID: VL220726-4A			Prep Date: 7/26/2022		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref Value	RPD	RPD Limit	Qual
Surr: 4-BROMOFLUOROBENZENE	24.9		25		100	80-120					
Surr: DIBROMOFLUOROMETHANE	24		25		96	80-120					
Surr: TOLUENE-D8	25.4		25		102	80-120					
BENZENE	8.94	1	10		89	80-120				20	
TOLUENE	9.22	1	10		92	80-120				20	
ETHYLBENZENE	9.26	1	10		93	80-120				20	
M+P-XYLENE	18.8	1	20		94	80-120				20	
O-XYLENE	9.39	1	10		94	80-120				20	

LCSD		Sample ID: VL220726-4			Units: %REC		Analysis Date: 7/26/2022 14:06				
Client ID:		Run ID: VL220726-4A			Prep Date: 7/26/2022		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref Value	RPD	RPD Limit	Qual
Surr: 4-BROMOFLUOROBENZENE	24.8		25		99	80-120			0		
Surr: DIBROMOFLUOROMETHANE	23.8		25		95	80-120			1		
Surr: TOLUENE-D8	25.1		25		100	80-120			1		
BENZENE	9.13	1	10		91	80-120		8.94	2	20	
TOLUENE	9.34	1	10		93	80-120		9.22	1	20	
ETHYLBENZENE	9.45	1	10		95	80-120		9.26	2	20	
M+P-XYLENE	19	1	20		95	80-120		18.8	1	20	
O-XYLENE	9.58	1	10		96	80-120		9.39	2	20	

MB		Sample ID: VL220726-4			Units: %REC		Analysis Date: 7/26/2022 15:10				
Client ID:		Run ID: VL220726-4A			Prep Date: 7/26/2022		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref Value	RPD	RPD Limit	Qual
Surr: 4-BROMOFLUOROBENZENE	27.5				110	80-120					
Surr: DIBROMOFLUOROMETHANE	23.3				93	80-120					
Surr: TOLUENE-D8	26.1				104	80-120					
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:

Client: PDC Energy
 Work Order: 2207538
 Project: Volt 10N BH

QC BATCH REPORT

Batch ID: **AK220728-1-2** Instrument ID: **NONE** Method: **SM2320B**

LCS		Sample ID: AK220728-1			Units: MG/L		Analysis Date: 7/28/2022				
Client ID:		Run ID: AK220728-1A1			Prep Date: 7/28/2022		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref Value	RPD	RPD Limit	Qual
TOTAL ALKALINITY AS CaCO3	102	5	100		102	85-115				15	

MB		Sample ID: AK220728-1			Units: MG/L		Analysis Date: 7/28/2022				
Client ID:		Run ID: AK220728-1A1			Prep Date: 7/28/2022		DF: 1				
Analyte	Result	ReportLimit									
BICARBONATE AS CaCO3	ND	5									
CARBONATE AS CaCO3	ND	5									
TOTAL ALKALINITY AS CaCO3	ND	5									

The following samples were analyzed in this batch:

Client: PDC Energy
 Work Order: 2207538
 Project: Volt 10N BH

QC BATCH REPORT

Batch ID: **IC220728-2-1** Instrument ID: **IC3** Method: **EPA300.0**

LCS		Sample ID: IC220728-2			Units: MG/L		Analysis Date: 7/28/2022 12:59				
Client ID:		Run ID: IC220728-2A1			Prep Date: 7/28/2022		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref Value	RPD	RPD Limit	Qual
CHLORIDE	9.92	0.2	10		99	90-110				15	
SULFATE	49.5	1	50		99	90-110				15	

LCSD		Sample ID: IC220728-2			Units: MG/L		Analysis Date: 7/28/2022 14:12				
Client ID:		Run ID: IC220728-2A1			Prep Date: 7/28/2022		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref Value	RPD	RPD Limit	Qual
CHLORIDE	9.94	0.2	10		99	90-110		9.92	0	15	
SULFATE	49.7	1	50		99	90-110		49.5	0	15	

MB		Sample ID: IC220728-2			Units: MG/L		Analysis Date: 7/28/2022 13:11					
Client ID:		Run ID: IC220728-2A1			Prep Date: 7/28/2022		DF: 1					
Analyte	Result	ReportLimit										Qual
CHLORIDE	ND	0.2										
SULFATE	ND	1										

The following samples were analyzed in this batch:



01-Aug-2022

Katie O'Brien
ALS Environmental
225 Commerce Dr
Ft. Collins, CO 80524

Re: **2207538**

Work Order: **22072256**

Dear Katie,

ALS Environmental received 1 sample on 26-Jul-2022 03:30 PM 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 8.

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 that reads "Jodi Blouw".

Electronically approved by: Jodi Blouw

Jodi Blouw

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 

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

Client: ALS Environmental
Project: 2207538
Work Order: 22072256

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>
22072256-01	V-10N A	Water		7/21/2022 09:45	7/26/2022 15:30	<input type="checkbox"/>

Client: ALS Environmental
Project: 2207538
WorkOrder: 22072256

**QUALIFIERS,
ACRONYMS, UNITS**

<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
n	Analyte accreditation is not offered
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>
mg/L	Milligrams per Liter

Client: ALS Environmental
Project: 2207538
Work Order: 22072256

Case Narrative

Samples for the above noted Work Order were received on 07/26/2022. The attached "Sample Receipt Checklist" documents the status of custody seals, container integrity, preservation, and temperature compliance.

Samples were analyzed according to the analytical methodology previously transmitted in the "Work Order Acknowledgement". Methodologies are also documented in the "Analytical Result" section for each sample. Quality control results are listed in the "QC Report" section. Sample association for the reported quality control is located at the end of each batch summary. If applicable, results are appropriately qualified in the Analytical Result and QC Report sections. The "Qualifiers" section documents the various qualifiers, units, and acronyms utilized in reporting. A copy of the laboratory's scope of accreditation is available upon request.

With the following exceptions, all sample analyses achieved analytical criteria.

Wet Chemistry:

No deviations or anomalies were noted.

ALS Group USA, Corp

Date: 01-Aug-22

CLIENT: ALS Environmental
Project: 2207538

Work Order: 22072256

Lab ID: 22072256-01A

Collection Date: 7/21/2022 9:45:00 AM

Client Sample ID: V-10N A

Matrix: WATER

Analyses	Result	Report Limit	MDL	Qual	Units	Dilution Factor	Date Analyzed
TOTAL DISSOLVED SOLIDS			A2540 C-11				Analyst: LAD
Total Dissolved Solids	19,000	150	110		mg/L	1	8/1/2022 11:23 AM

Qualifiers: U - Analyzed for but Not Detected S - Spike Recovery outside accepted recovery limits
J - Analyte detected below quantitation limits P - Dual Column results RPD > 40%
B - Analyte detected in the associated Method Blank E - Value above quantitation range
* - Value exceeds Maximum Contaminant Level H - Analyzed outside of Hold Time

AR Page 1 of 1

Client: ALS Environmental
 Work Order: 22072256
 Project: 2207538

QC BATCH REPORT

Batch ID: **200398** Instrument ID **TDS** Method: **A2540 C-11**

MBLK		Sample ID: MBLK-200398-200398				Units: mg/L		Analysis Date: 8/1/2022 11:23 AM			
Client ID:		Run ID: TDS_220801A				SeqNo: 8667392		Prep Date: 7/27/2022		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids	U	22	30								

LCS		Sample ID: LCS-200398-200398				Units: mg/L		Analysis Date: 8/1/2022 11:23 AM			
Client ID:		Run ID: TDS_220801A				SeqNo: 8667391		Prep Date: 7/27/2022		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids	512	22	30	495	0	103	85-109	0			

DUP		Sample ID: 22072215-01A DUP				Units: mg/L		Analysis Date: 8/1/2022 11:23 AM			
Client ID:		Run ID: TDS_220801A				SeqNo: 8667378		Prep Date: 7/27/2022		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids	920	74	100	0	0	0	0-0	953.3	3.56	10	

DUP		Sample ID: 22072215-04A DUP				Units: mg/L		Analysis Date: 8/1/2022 11:23 AM			
Client ID:		Run ID: TDS_220801A				SeqNo: 8667382		Prep Date: 7/27/2022		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids	610	37	50	0	0	0	0-0	583.3	4.47	10	

The following samples were analyzed in this batch:

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

Sample Receipt Checklist

Client Name: **ALS - FORT COLLINS**

Date/Time Received: **26-Jul-22 15:30**

Work Order: **22072256**

Received by: **KRW**

Checklist completed by Keith Wierenga 27-Jul-22
eSignature Date

Reviewed by: Jadi Blawie 27-Jul-22
eSignature Date

Matrices: **Water**

Carrier name: **FedEx**

Shipping container/cooler in good condition? Yes No Not Present

Custody seals intact on shipping container/cooler? Yes No Not Present

Custody seals intact on sample bottles? Yes No Not Present

Chain of custody present? Yes No

Chain of custody signed when relinquished and received? Yes No

Chain of custody agrees with sample labels? Yes No

Samples in proper container/bottle? Yes No

Sample containers intact? Yes No

Sufficient sample volume for indicated test? Yes No

All samples received within holding time? Yes No

Container/Temp Blank temperature in compliance? Yes No

Sample(s) received on ice? Yes No

Temperature(s)/Thermometer(s): 2.8/3.8 C IR3

Cooler(s)/Kit(s):

Date/Time sample(s) sent to storage: 7/27/2022 9:07:24 AM

Water - VOA vials have zero headspace? Yes No No VOA vials submitted

Water - pH acceptable upon receipt? Yes No N/A

pH adjusted? Yes No N/A

pH adjusted by:

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction: