



Friday, May 14, 2021

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

Re: ALS Workorder: 2104380  
Project Name: Postle IC 09-299 HNX  
Project Number:

Dear Mr. Trehus:

Two water samples were received from Great Western Operating Company, LLC, on 4/16/2021. 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

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
California (CA)	2926
Colorado (CO)	CO01099
Florida (FL)	E87914
Idaho (ID)	CO01099
Kansas (KS)	E-10381
Kentucky (KY)	90137
PJ-LA (DoD ELAP/ISO 170250)	95377
Maryland (MD)	285
Missouri (MO)	175
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

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.



## 2104380

### GC/MS Volatiles:

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

All surrogate recoveries were within acceptance criteria with the following exception:

Surrogate	Sample	Direction
Dibromofluoromethane	-1	Low

The low surrogate recovery is likely due to the high pH of the sample. No further action was taken.

All remaining 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.

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.

**Metals:**

The samples were analyzed following Methods for the Determination of Metals in Environmental Samples – Supplement 1 procedures. Analysis by Trace ICP followed method 200.7 and the current revision of SOP 834.

Sample 2104380-2 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
TDS	SM2540C	1101
Chloride	300.0 Revision 2.1	1113
Sulfate	300.0 Revision 2.1	1113

The samples were analyzed outside of hold time for TDS. (See NCR #15235)

All remaining acceptance criteria were met.

# ALS -- Fort Collins

## Sample Number(s) Cross-Reference Table

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**OrderNum:** 2104380

**Client Name:** Great Western Operating Company, LLC

**Client Project Name:** Postle IC 09-299 HNX

**Client Project Number:**

**Client PO Number:**

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Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
09-299 HNX	2104380-1		WATER	16-Apr-21	13:36
09-299 HNX	2104380-2		WATER	16-Apr-21	13:36



# 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 #		2104380																
TURNAROUND TIME		PAGE of																
PROJECT NAME	205TLE IC 09-299HNX																	
PROJECT No.																		
COMPANY NAME	Great Western																	
SEND REPORT TO	Max Trehus																	
ADDRESS																		
CITY / STATE / ZIP																		
PHONE																		
FAX																		
E-MAIL	MTrehus@GWP.com																	
PARAMETER/METHOD REQUEST FOR ANALYSIS																		
A Dissolved Gases																		
B BTEX																		
C DRD																		
D GRD																		
E Anions, Alk, TDS																		
F DS Metals																		
G TR Metals																		
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	09-299HNX A	W	4-16-21	13:36	3	-		X										
	09-299HNX B				3	HCL			X									
	09-299HNX C				3	HCL				X								
	09-299HNX D				3	HCL					X							
	09-299HNX E				1	-						X						
	09-299HNX F				1	-							X					
	09-299HNX G				1	HNO3								X				
Form 2029																		
SIGNATURE																		
RELINQUISHED BY																		
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RELINQUISHED BY																		
RECEIVED BY																		
DATE																		
4-16-21																		
4/16/21																		
TIME																		
16:47																		
16:47																		
PRINTED NAME																		
Kenny Pyatt																		
Shelby Sumner																		
REPORT LEVEL / QC REQUIRED																		
Summary (Standard QC)																		
LEVEL II (Standard QC)																		
LEVEL III (Std QC + forms)																		
LEVEL IV (Std QC + forms + raw)																		
Facility ID 453346																		
6 of 19																		
8.96 Custody Seal																		
PRESERVATION KEY																		
1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaOH/ZnAcetate 6-NaHSO4 7-4°C 8-Other																		



**ALS Environmental - Fort Collins**  
**CONDITION OF SAMPLE UPON RECEIPT FORM**

Client: GWOC Workorder No: 2104380  
 Project Manager: KMO Initials: TEM Date: 4/17/21

	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, <i>Sample Handling Guidelines</i> )		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*: #5		RAD ONLY
Cooler #: <u>1</u> Temperature (°C): <u>8.9</u> # of custody seals on cooler: <u>1</u> External µR/hr reading: <u>-</u> Background µR/hr reading: <u>11</u> Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? N/A			

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

11.) 380-1-2 read initial pH of 12; added 1.0mL HNO3 (lot# 234822) for final pH of 8

Were unpreserved bottles pH checked? N/A All client bottle ID's vs ALS lab ID's double-checked by: TM

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

Project Manager Signature / Date: [Signature] 4/19/21

Client: Great Western Operating Company, LLC

Date: 14-May-21

Project: Postle IC 09-299 HNX

Work Order: 2104380

Sample ID: 09-299 HNX

Lab ID: 2104380-1

Legal Location:

Matrix: WATER

Collection Date: 4/16/2021 13:36

Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>Alkalinity as Calcium Carbonate</b>		<b>SM2320B</b>			Prep Date: 4/26/2021	PrepBy: LRB
BICARBONATE AS CaCO3	ND		500	MG/L	1	4/26/2021
CARBONATE AS CaCO3	1700		500	MG/L	1	4/26/2021
TOTAL ALKALINITY AS CaCO3	11000		500	MG/L	1	4/26/2021
<b>Diesel Range Organics</b>		<b>SW8015M</b>			Prep Date: 4/19/2021	PrepBy: JRS
Diesel Range Organics	2.2		1	MG/L	1	4/27/2021 16:18
Surr: O-TERPHENYL	85		69-120	%REC	1	4/27/2021 16:18
<b>Dissolved Gasses</b>		<b>RSK175</b>			Prep Date: 4/24/2021	PrepBy: DMS
METHANE	930		1	UG/L	1	4/24/2021 13:22
ETHANE	490		2	UG/L	1	4/24/2021 13:22
PROPANE	330		1	UG/L	1	4/24/2021 13:22
<b>Gasoline Range Organics</b>		<b>SW8015</b>			Prep Date: 4/21/2021	PrepBy: DMS
GASOLINE RANGE ORGANICS	7.1		1	MG/L	10	4/21/2021 22:22
Surr: 2,3,4-TRIFLUOROTOLUENE	100		80-120	%REC	10	4/21/2021 22:22
<b>GC/MS Volatiles</b>		<b>SW8260_25</b>			Prep Date: 4/22/2021	PrepBy: AEW
BENZENE	48		25	UG/L	25	4/22/2021 22:37
TOLUENE	140		25	UG/L	25	4/22/2021 22:37
ETHYLBENZENE	460		25	UG/L	25	4/22/2021 22:37
M+P-XYLENE	1500		25	UG/L	25	4/22/2021 22:37
O-XYLENE	410		25	UG/L	25	4/22/2021 22:37
TOTAL XYLENES	1900		1	UG/L	1	4/22/2021 22:37
Surr: 4-BROMOFLUOROBENZENE	100		80-120	%REC	25	4/22/2021 22:37
Surr: DIBROMOFLUOROMETHANE	76	*	80-120	%REC	25	4/22/2021 22:37
Surr: TOLUENE-D8	97		80-120	%REC	25	4/22/2021 22:37
<b>Ion Chromatography</b>		<b>EPA300.0</b>			Prep Date: 5/11/2021	PrepBy: LMC
CHLORIDE	1200		40	MG/L	200	5/11/2021 20:20
SULFATE	820		200	MG/L	200	5/11/2021 20:20
<b>Total Recoverable Metals by 200.7</b>		<b>EPA200.7</b>			Prep Date: 4/22/2021	PrepBy: TXS
CALCIUM	87		10	MG/L	10	4/23/2021 13:27
POTASSIUM	5500		100	MG/L	100	4/23/2021 13:47
MAGNESIUM	ND		10	MG/L	10	4/23/2021 13:27
SODIUM	2400		100	MG/L	100	4/23/2021 13:47
<b>Total Dissolved Solids</b>		<b>SM2540C</b>			Prep Date: 5/4/2021	PrepBy: BMK
TOTAL DISSOLVED SOLIDS	24000		2000	MG/L	1	5/6/2021



Client: Great Western Operating Company, LLC

Date: 14-May-21

Project: Postle IC 09-299 HNX

Work Order: 2104380

Sample ID: 09-299 HNX

Lab ID: 2104380-2

Legal Location:

Matrix: WATER

Collection Date: 4/16/2021 13:36

Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
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**Dissolved Metals by 200.7****EPA200.7**

Prep Date: 4/22/2021

PrepBy: TXS

CALCIUM	88		10	MG/L	10	4/23/2021 13:28
POTASSIUM	5500		100	MG/L	100	4/23/2021 13:48
MAGNESIUM	ND		10	MG/L	10	4/23/2021 13:28
SODIUM	2400		100	MG/L	100	4/23/2021 13:48

Client: Great Western Operating Company, LLC

Date: 14-May-21

Project: Postle IC 09-299 HNX

Work Order: 2104380

Sample ID: 09-299 HNX

Lab ID: 2104380-2

Legal Location:

Matrix: WATER

Collection Date: 4/16/2021 13:36

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

## ALS -- Fort Collins

Date: 5/14/2021 1:01:

Client: Great Western Operating Company, LLC

## QC BATCH REPORT

Work Order: 2104380

Project: Postle IC 09-299 HNX

Batch ID: HC210419-81-1

Instrument ID FUELS-1

Method: SW8015M

LCS	Sample ID: HC210419-81				Units: MG/L		Analysis Date: 4/27/2021 10:12				
Client ID:	Run ID: HC210427-81A				Prep Date: 4/19/2021			DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Diesel Range Organics	6.95	1.07	8.33		83	53-120				20	
Surr: O-TERPHENYL	1.52		1.67		91	69-120					

LCSD	Sample ID: <b>HC210419-81</b>				Units: <b>MG/L</b>		Analysis Date: <b>4/27/2021 10:34</b>				
Client ID:	Run ID: <b>HC210427-81A</b>				Prep Date: <b>4/19/2021</b>			DF: <b>1</b>			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Diesel Range Organics	6.75	1.07	8.33		81	53-120		6.95	3	20	
Surr: O-TERPHENYL	1.53		1.67		92	69-120			1		

MB	Sample ID: HC210419-81	Units: MG/L	Analysis Date: 4/27/2021 09:51			
Client ID:	Run ID: HC210427-81A	Prep Date: 4/19/2021	DF: 1			
Analyte	Result	ReportLimit	Qual			
Diesel Range Organics	ND	1.1				
Surr: O-TERPHENYL	1.4	84	69-120			

The following samples were analyzed in this batch:

2104380-1

**Client:** Great Western Operating Company, LLC  
**Work Order:** 2104380  
**Project:** Postle IC 09-299 HNX

## QC BATCH REPORT

Batch ID: **HC210421-62-1** Instrument ID **FUELS-1** Method: **SW8015**

LCS		Sample ID: <b>HC210421-62</b>				Units: <b>MG/L</b>		Analysis Date: <b>4/21/2021 20:11</b>			
Client ID:		Run ID: <b>HC210421-61A</b>				Prep Date: <b>4/21/2021</b>		DF: <b>1</b>			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	0.463	0.1	0.5		93	80-120				20	
Surr: 2,3,4-TRIFLUOROTOLUENE	0.102		0.1		102	80-120					

LCSD		Sample ID: HC210421-62				Units: MG/L		Analysis Date: 4/21/2021 22:44			
Client ID:		Run ID: HC210421-61A				Prep Date: 4/21/2021		DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	0.537	0.1	0.5		107	80-120		0.463	15	20	
Surr: 2,3,4-TRIFLUOROTOLUENE	0.113		0.1		113	80-120			10		

MB		Sample ID: HC210421-62		Units: MG/L		Analysis Date: 4/21/2021 17:58	
Client ID:		Run ID: HC210421-61A		Prep Date: 4/21/2021		DF: 1	
Analyte		Result	ReportLimit	Qual			
GASOLINE RANGE ORGANICS		ND	0.1				
Surr: 2,3,4-TRIFLUOROTOLUENE		0.0948		95	80-120		

The following samples were analyzed in this batch:

2104380-1

**Client:** Great Western Operating Company, LLC  
**Work Order:** 2104380  
**Project:** Postle IC 09-299 HNX

## QC BATCH REPORT

Batch ID: **HC210424-91-1** Instrument ID **MEE-1** Method: **RSK175**

LCS	Sample ID: <b>HC210424-91</b>				Units: <b>UG/L</b>		Analysis Date: <b>4/24/2021 12:02</b>				
Client ID:	Run ID: <b>HC210424-91A</b>				Prep Date: <b>4/24/2021</b>			DF: <b>1</b>			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
METHANE	130	1	142		91	76-125				25	
ETHANE	247	2	267		92	70-120				25	
PROPANE	362	1	391		93	72-120				25	

LCSD	Sample ID: HC210424-91				Units: UG/L		Analysis Date: 4/24/2021 13:57				
Client ID:	Run ID: HC210424-91A				Prep Date: 4/24/2021			DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
METHANE	138	1	142		97	76-125		130	6	25	
ETHANE	260	2	267		97	70-120		247	5	25	
PROPANE	383	1	391		98	72-120		362	5	25	

MB	Sample ID: <b>HC210424-91</b>			Units: <b>UG/L</b>		Analysis Date: <b>4/24/2021 12:07</b>	
Client ID:	Run ID: <b>HC210424-91A</b>			Prep Date: <b>4/24/2021</b>		DF: <b>1</b>	
Analyte	Result	ReportLimit			Qual		
METHANE	ND	1					
ETHANE	ND	2					
PROPANE	ND	1					

The following samples were analyzed in this batch:

2104380-1

**Client:** Great Western Operating Company, LLC  
**Work Order:** 2104380  
**Project:** Postle IC 09-299 HNX

## QC BATCH REPORT

Batch ID: **IP210422-5-3** Instrument ID **ICPTTrace2** Method: **EPA200.7**

LCS	Sample ID: IP210422-5				Units: MG/L		Analysis Date: 4/23/2021 13:07				
Client ID:		Run ID: IT210423-1A7				Prep Date: 4/22/2021			DF: 1		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
CALCIUM	38.2	1	40		96	85-115				20	
MAGNESIUM	40.6	1	40		102	85-115				20	
POTASSIUM	40.6	1	40		101	85-115				20	
SODIUM	38.7	1	40		97	85-115				20	

LCSD	Sample ID: IP210422-5				Units: MG/L		Analysis Date: 4/23/2021 13:11				
Client ID:	Run ID: IT210423-1A7				Prep Date: 4/22/2021			DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
CALCIUM	38.2	1	40		95	85-115		38.2	0	20	
MAGNESIUM	40.8	1	40		102	85-115		40.6	0	20	
POTASSIUM	40.8	1	40		102	85-115		40.6	1	20	
SODIUM	39.1	1	40		98	85-115		38.7	1	20	

<b>MB</b>		Sample ID: <b>FP210419-5</b>		Units: <b>MG/L</b>		Analysis Date: <b>4/23/2021 13:05</b>	
Client ID:		Run ID: <b>IT210423-1A7</b>		Prep Date: <b>4/22/2021</b>		DF: <b>1</b>	
Analyte	Result	ReportLimit					Qual
CALCIUM	ND	1					
MAGNESIUM	ND	1					
POTASSIUM	ND	1					
SODIUM	ND	1					

<b>MB</b>		Sample ID: <b>IP210422-5</b>		Units: <b>MG/L</b>		Analysis Date: <b>4/23/2021 13:06</b>	
Client ID:		Run ID: <b>IT210423-1A7</b>		Prep Date: <b>4/22/2021</b>		DF: <b>1</b>	
Analyte	Result	ReportLimit					Qual
CALCIUM	ND	1					
MAGNESIUM	ND	1					
POTASSIUM	ND	1					
SODIUM	ND	1					

The following samples were analyzed in this batch:

2104380-1 2104380-2

Client: Great Western Operating Company, LLC  
 Work Order: 2104380  
 Project: Postle IC 09-299 HNX

# QC BATCH REPORT

Batch ID: **VL210422-3-2** Instrument ID **HPV1** Method: **SW8260\_25**

LCS		Sample ID: VL210422-3			Units: %REC		Analysis Date: 4/22/2021 12:28				
Client ID:		Run ID: VL210422-3A			Prep Date: 4/22/2021			DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Surr: 4-BROMOFLUOROBENZENE	25.1		25		100	80-120					
Surr: DIBROMOFLUOROMETHANE	25.7		25		103	80-120					
Surr: TOLUENE-D8	24		25		96	80-120					
BENZENE	9.02	1	10		90	80-120				20	
TOLUENE	8.96	1	10		90	80-120				20	
ETHYLBENZENE	9.38	1	10		94	80-120				20	
M+P-XYLENE	17.3	1	20		87	80-120				20	
O-XYLENE	9.09	1	10		91	80-120				20	

LCSD		Sample ID: VL210422-3			Units: %REC		Analysis Date: 4/22/2021 13:40				
Client ID:		Run ID: VL210422-3A			Prep Date: 4/22/2021			DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Surr: 4-BROMOFLUOROBENZENE	25.5		25		102	80-120			2		
Surr: DIBROMOFLUOROMETHANE	26		25		104	80-120			1		
Surr: TOLUENE-D8	24.8		25		99	80-120			4		
BENZENE	9.35	1	10		93	80-120		9.02	4	20	
TOLUENE	9.42	1	10		94	80-120		8.96	5	20	
ETHYLBENZENE	10	1	10		100	80-120		9.38	6	20	
M+P-XYLENE	18.3	1	20		91	80-120		17.3	5	20	
O-XYLENE	9.54	1	10		95	80-120		9.09	5	20	

MB		Sample ID: VL210422-3		Units: %REC		Analysis Date: 4/22/2021 13:17	
Client ID:		Run ID: VL210422-3A		Prep Date: 4/22/2021		DF: 1	
Analyte	Result	ReportLimit					Qual
Surr: 4-BROMOFLUOROBENZENE	26.3		105	80-120			
Surr: DIBROMOFLUOROMETHANE	25.7		103	80-120			
Surr: TOLUENE-D8	24.8		99	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:

2104380-1

**Client:** Great Western Operating Company, LLC  
**Work Order:** 2104380  
**Project:** Postle IC 09-299 HNX

## QC BATCH REPORT

Batch ID: **ak210426-1-1** Instrument ID **NONE** Method: **SM2320B**

LCS	Sample ID: <b>ak210426-1</b>			Units: <b>MG/L</b>			Analysis Date: <b>4/26/2021</b>				
Client ID:	Run ID: <b>AK210426-1A1</b>			Prep Date: <b>4/26/2021</b>			DF: <b>1</b>				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
TOTAL ALKALINITY AS CaCO3	97.6	5	100		98	85-115				15	

MB		Sample ID: ak210426-1		Units: MG/L		Analysis Date: 4/26/2021	
Client ID:		Run ID: AK210426-1A1		Prep Date: 4/26/2021		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:

2104380-1



**Client:** Great Western Operating Company, LLC  
**Work Order:** 2104380  
**Project:** Postle IC 09-299 HNX

## QC BATCH REPORT

Batch ID: **IC210511-1-1** Instrument ID **IC3** Method: **EPA300.0**

LCS	Sample ID: IC210511-1				Units: MG/L		Analysis Date: 5/11/2021 15:15				
Client ID:	Run ID: IC210511-1A1				Prep Date: 5/11/2021			DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
CHLORIDE	9.69	0.2	10		97	90-110				15	
SULFATE	47.7	1	50		95	90-110				15	

LCSD		Sample ID: IC210511-1				Units: MG/L		Analysis Date: 5/11/2021 17:53			
Client ID:		Run ID: IC210511-1A1				Prep Date: 5/11/2021			DF: 1		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
CHLORIDE	9.67	0.2	10		97	90-110		9.69	0	15	
SULFATE	48	1	50		96	90-110		47.7	1	15	

<b>MB</b>		Sample ID: <b>IC210511-1</b>		Units: <b>MG/L</b>		Analysis Date: <b>5/11/2021 15:28</b>	
Client ID:		Run ID: <b>IC210511-1A1</b>		Prep Date: <b>5/11/2021</b>		DF: <b>1</b>	
Analyte		Result	ReportLimit	Qual			
CHLORIDE		ND	0.2				
SULFATE		ND	1				

The following samples were analyzed in this batch:

2104380-1

**Client:** Great Western Operating Company, LLC  
**Work Order:** 2104380  
**Project:** Postle IC 09-299 HNX

## QC BATCH REPORT

Batch ID: **TD210504-1-2** Instrument ID **Balance** Method: **SM2540C**

LCS		Sample ID: TD210504-1				Units: MG/L		Analysis Date: 5/6/2021			
Client ID:		Run ID: TD210506-2A1				Prep Date: 5/4/2021			DF: 1		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
TOTAL DISSOLVED SOLIDS	382	20	400		95	85-115				14	

LCSD	Sample ID: TD210504-1			Units: MG/L			Analysis Date: 5/6/2021				
Client ID:	Run ID: TD210506-2A1			Prep Date: 5/4/2021			DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
TOTAL DISSOLVED SOLIDS	399	20	400		100	85-115		382	4	14	

MB		Sample ID: TD210504-1			Units: MG/L		Analysis Date: 5/6/2021	
Client ID:		Run ID: TD210506-2A1			Prep Date: 5/4/2021		DF: 1	
Analyte		Result	ReportLimit					
TOTAL DISSOLVED SOLIDS		ND	20					

The following samples were analyzed in this batch:

2104380-1

## CONTROLLED NON-CONFORMANCE REPORT

### Non-Conformance

**Initiated By:** Lisa M. Champagne on 5/11/2021

**Event Type:** Hold Time Exceeded

**Event Explanation:** Due to analyst oversight these samples were prepped out of hold.

**Action To**

**Prevent Recurrence:** Not Applicable

### Corrective Action

**Corrective Action:**

**Department Manager Approval:**

**Approval Date:**

**Corrective Action Comments:**

#### Workorders Affected

Workorder -- Procedure

Approved By

Approval Date

2104318 -- SM2540C  
2104320 -- SM2540C  
2104358 -- SM2540C  
2104361 -- SM2540C  
2104363 -- SM2540C  
2104378 -- SM2540C  
2104379 -- SM2540C  
2104380 -- SM2540C

No client contact information.

PENDING

### Associated Batches

The samples were originally associated with the following Batch(es):

All rework was completed in the following Batch(es):

TD210506-2A1 created on 5/6/2021  
TD210430-2A1 created on 4/30/2021

Not Applicable

### NCR Approval

**Project Manager Approval:**

**Department Manager Approval:**

**QA Manager Approval:**