



Tuesday, November 23, 2021

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

Re: ALS Workorder: 2111095
Project Name: Raindance FD 20-322 HN
Project Number:

Dear Mr. Trehus:

Two water samples were received from Great Western Operating Company, LLC, on 11/3/2021. 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. O'Brien
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.



2111095

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.

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 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 2111095-2 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

All acceptance criteria were met.

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Sample Number(s) Cross-Reference Table

OrderNum: 2111095

Client Name: Great Western Operating Company, LLC

Client Project Name: Raindance FD 20-322 HN

Client Project Number:

Client PO Number:

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
20-322 HN - A	2111095-1		WATER	03-Nov-21	11:31
20-322 HN - B	2111095-2		WATER	03-Nov-21	11:31



ALS Environmental

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

2111095

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 #

PROJECT NAME PROJECT No.	Raindance FD 20-322HN		TURNAROUND TIME	SAMPLER	PAGE	of	DISPOSAL	BY LAB	or	RETURN								
COMPANY NAME	Great Western		EDD FORMAT		PARAMETER/METHOD REQUEST FOR ANALYSIS													
SEND REPORT TO	Max Trehus		PURCHASE ORDER		A Dissolved Gases													
ADDRESS			BILL TO COMPANY		B BTEX													
CITY / STATE / ZIP			INVOICE ATTN TO		C DRD													
PHONE			ADDRESS		D GRO													
FAX			CITY / STATE / ZIP		E Anions Hk TDS													
E-MAIL	M.Trehus@GWP.com		PHONE		F DS Metals													
			FAX		G TR Metals													
			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	20-322HN A	W	11/3/21	11:31	3	-		X										
	20-322HN B				3	HCL			X									
	20-322HN B				3	HCL				X								
	20-322HN A				3	HCL					X							
	20-322HN A				1	-						X						
2	20-322HN B				1	-							X					
1	20-322HN A				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

Form 20209		SIGNATURE		PRINTED NAME		DATE		TIME	
RELINQUISHED BY		RECEIVED BY		Kenny Pryor		11-3-21		16:58	
RELINQUISHED BY		RECEIVED BY		Amy Kepner		11-3-21		17:00	
RELINQUISHED BY		RECEIVED BY							
PRESERVATION KEY		1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaOH/7-Arsenate 8-Nitrate 9-Nitrite							

Facility ID	451094
REPORT LEVEL / QC REQUIRED	
Summary (Standard QC)	
LEVEL II (Standard QC)	
LEVEL III (Std QC + forms)	
LEVEL IV (Std QC + forms + raw)	



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CONDITION OF SAMPLE UPON RECEIPT FORM

Client: GWO Workorder No: 2111095
 Project Manager: KMO Initials: AXK Date: 11/03/2021

	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>10.6</u> # of custody seals on cooler: <u>0</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? NA (If no, see Form 008.)			

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

on ice

Were unpreserved bottles pH checked? NA All client bottle ID's vs ALS lab ID's double-checked by: AK
 If applicable, was the client contacted? YES / NO / NA Contact: _____ Date/Time: 11/05/21
 Project Manager Signature / Date: [Signature]

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SAMPLE SUMMARY REPORT

Client: Great Western Operating Company, LLC

Date: 23-Nov-21

Project: Raindance FD 20-322 HN

Work Order: 2111095

Sample ID: 20-322 HN - A

Lab ID: 2111095-1

Legal Location:

Matrix: WATER

Collection Date: 11/3/2021 11:31

Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Alkalinity as Calcium Carbonate		SM2320B			Prep Date: 11/12/2021	PrepBy: BMK
BICARBONATE AS CaCO3	ND		50	MG/L	1	11/12/2021
CARBONATE AS CaCO3	860		50	MG/L	1	11/12/2021
TOTAL ALKALINITY AS CaCO3	9600		50	MG/L	1	11/12/2021
Diesel Range Organics		SW8015M			Prep Date: 11/9/2021	PrepBy: JRS
Diesel Range Organics	6.7		1	MG/L	1	11/16/2021 10:38
Surr: O-TERPHENYL	112		69-120	%REC	1	11/16/2021 10:38
Dissolved Gasses		RSK175			Prep Date: 11/9/2021	PrepBy: JRS
METHANE	55		1	UG/L	1	11/9/2021 17:10
ETHANE	52		2	UG/L	1	11/9/2021 17:10
PROPANE	48		1	UG/L	1	11/9/2021 17:10
Gasoline Range Organics		SW8015			Prep Date: 11/8/2021	PrepBy: JRS
GASOLINE RANGE ORGANICS	3.1		0.1	MG/L	1	11/8/2021 19:59
Surr: 2,3,4-TRIFLUOROTOLUENE	111		80-120	%REC	1	11/8/2021 19:59
GC/MS Volatiles		SW8260_25			Prep Date: 11/8/2021	PrepBy: DJL
BENZENE	110		5	UG/L	5	11/8/2021 17:51
TOLUENE	160		5	UG/L	5	11/8/2021 17:51
ETHYLBENZENE	32		5	UG/L	5	11/8/2021 17:51
M+P-XYLENE	120		5	UG/L	5	11/8/2021 17:51
O-XYLENE	76		5	UG/L	5	11/8/2021 17:51
TOTAL XYLENES	200		1	UG/L	1	11/8/2021 17:51
Surr: 4-BROMOFLUOROBENZENE	101		80-120	%REC	5	11/8/2021 17:51
Surr: DIBROMOFLUOROMETHANE	26	*	80-120	%REC	5	11/8/2021 17:51
Surr: TOLUENE-D8	100		80-120	%REC	5	11/8/2021 17:51
Ion Chromatography		EPA300.0			Prep Date: 11/15/2021	PrepBy: AOW
CHLORIDE	810		100	MG/L	500	11/15/2021 12:11
SULFATE	ND		500	MG/L	500	11/15/2021 12:11
Total Recoverable Metals by 200.7		EPA200.7			Prep Date: 11/9/2021	PrepBy: WJS
CALCIUM	100		10	MG/L	10	11/10/2021 12:03
POTASSIUM	4900		100	MG/L	100	11/10/2021 12:18
MAGNESIUM	ND		10	MG/L	10	11/10/2021 12:03
SODIUM	2000		100	MG/L	100	11/10/2021 12:18
Total Dissolved Solids		SM2540C			Prep Date: 11/8/2021	PrepBy: BMK
TOTAL DISSOLVED SOLIDS	11000		1000	MG/L	1	11/15/2021

Client: Great Western Operating Company, LLC

Date: 23-Nov-21

Project: Raindance FD 20-322 HN

Work Order: 2111095

Sample ID: 20-322 HN - B

Lab ID: 2111095-2

Legal Location:

Matrix: WATER

Collection Date: 11/3/2021 11:31

Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Dissolved Metals by 200.7			EPA200.7		Prep Date: 11/9/2021	PrepBy: WJS
CALCIUM	100		10	MG/L	10	11/10/2021 12:04
POTASSIUM	4800		100	MG/L	100	11/10/2021 12:19
MAGNESIUM	ND		10	MG/L	10	11/10/2021 12:04
SODIUM	2000		100	MG/L	100	11/10/2021 12:19

Client: Great Western Operating Company, LLC

Date: 23-Nov-21

Project: Raindance FD 20-322 HN

Work Order: 2111095

Sample ID: 20-322 HN - B

Lab ID: 2111095-2

Legal Location:

Matrix: WATER

Collection Date: 11/3/2021 11:31

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: 11/23/2021 12:4

Client: Great Western Operating Company, LLC

QC BATCH REPORT

Work Order: 2111095

Project: Raindance FD 20-322 HN

Batch ID: HC211108-62-1

Instrument ID FUELS-1

Method: SW8015

LCS	Sample ID: HC211108-62				Units: MG/L		Analysis Date: 11/8/2021 21:02				
Client ID:	Run ID: HC211122-61A				Prep Date: 11/8/2021			DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	0.597	0.1	0.5		119	80-120				20	
Surr: 2,3,4-TRIFLUOROTOLUENE	0.106		0.1		106	80-120					

LCSD	Sample ID: HC211108-62				Units: MG/L		Analysis Date: 11/8/2021 23:07				
Client ID:	Run ID: HC211122-61A				Prep Date: 11/8/2021			DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	0.547	0.1	0.5		109	80-120		0.597	9	20	
Surr: 2,3,4-TRIFLUOROTOLUENE	0.106		0.1		106	80-120			1		

MB		Sample ID: HC211108-62		Units: MG/L		Analysis Date: 11/8/2021 14:34	
Client ID:		Run ID: HC211122-61A		Prep Date: 11/8/2021		DF: 1	
Analyte		Result	ReportLimit	Qual			
GASOLINE RANGE ORGANICS		ND	0.1				
Surr: 2,3,4-TRIFLUOROTOLUENE		0.102		102	80-120		

The following samples were analyzed in this batch:

2111095-1

Client: Great Western Operating Company, LLC
Work Order: 2111095
Project: Raindance FD 20-322 HN

QC BATCH REPORT

Batch ID: **HC211109-81-1** Instrument ID **FUELS-1** Method: **SW8015M**

LCS	Sample ID: HC211109-81			Units: MG/L		Analysis Date: 11/16/2021 05:15					
Client ID:		Run ID: HC211115-81A			Prep Date: 11/9/2021				DF: 1		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Diesel Range Organics	7.97	1.07	8.33		96	53-120				20	
Surr: O-TERPHENYL	1.88		1.67		113	69-120					

LCSD		Sample ID: HC211109-81				Units: MG/L		Analysis Date: 11/16/2021 05:36			
Client ID:		Run ID: HC211115-81A				Prep Date: 11/9/2021			DF: 1		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Diesel Range Organics	8.22	1.07	8.33		99	53-120		7.97	3	20	
Surr: O-TERPHENYL	1.85		1.67		111	69-120			2		

MB		Sample ID: HC211109-81				Units: MG/L		Analysis Date: 11/16/2021 04:53	
Client ID:		Run ID: HC211115-81A				Prep Date: 11/9/2021		DF: 1	
Analyte		Result	ReportLimit				Qual		
Diesel Range Organics		ND	1.1						
Surr: O-TERPHENYL		1.83	110 69-120						

The following samples were analyzed in this batch:

2111095-1

Client: Great Western Operating Company, LLC
Work Order: 2111095
Project: Raindance FD 20-322 HN

QC BATCH REPORT

Batch ID: **HC211109-91-1** Instrument ID **MEE-1** Method: **RSK175**

LCS	Sample ID: HC211109-91				Units: UG/L		Analysis Date: 11/9/2021 15:29				
Client ID:	Run ID: HC211109-91A				Prep Date: 11/9/2021			DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
METHANE	151	1	142		106	76-125				25	
ETHANE	287	2	267		108	70-120				25	
PROPANE	427	1	391		109	72-120				25	

LCSD	Sample ID: HC211109-91				Units: UG/L		Analysis Date: 11/9/2021 16:28				
Client ID:	Run ID: HC211109-91A				Prep Date: 11/9/2021			DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
METHANE	154	1	142		108	76-125		151	2	25	
ETHANE	292	2	267		109	70-120		287	2	25	
PROPANE	433	1	391		111	72-120		427	1	25	

MB	Sample ID: HC211109-91			Units: UG/L		Analysis Date: 11/9/2021 15:34	
Client ID:	Run ID: HC211109-91A			Prep Date: 11/9/2021		DF: 1	
Analyte	Result	ReportLimit			Qual		
METHANE	ND	1					
ETHANE	ND	2					
PROPANE	ND	1					

The following samples were analyzed in this batch:

2111095-1

Client: Great Western Operating Company, LLC
 Work Order: 2111095
 Project: Raindance FD 20-322 HN

QC BATCH REPORT

Batch ID: **IP211109-1-3** Instrument ID **ICPTTrace2** Method: **EPA200.7**

LCS	Sample ID: IP211109-1			Units: MG/L			Analysis Date: 11/10/2021 11:48				
Client ID:		Run ID: IT211110-1A4				Prep Date: 11/9/2021			DF: 1		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
CALCIUM	39.4	1	40		99	85-115				20	
MAGNESIUM	40.5	1	40		101	85-115				20	
POTASSIUM	42.5	1	40		106	85-115				20	
SODIUM	41.4	1	40		104	85-115				20	

LCSD	Sample ID: IP211109-1			Units: MG/L			Analysis Date: 11/10/2021 11:49				
Client ID:	Run ID: IT211110-1A4			Prep Date: 11/9/2021			DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
CALCIUM	39.1	1	40		98	85-115		39.4	1	20	
MAGNESIUM	40.3	1	40		101	85-115		40.5	1	20	
POTASSIUM	42.3	1	40		106	85-115		42.5	1	20	
SODIUM	41.1	1	40		103	85-115		41.4	1	20	

MB		Sample ID: FP211108-1		Units: MG/L		Analysis Date: 11/10/2021 11:45	
Client ID:		Run ID: IT211110-1A4		Prep Date: 11/9/2021		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:

2111095-1	2111095-2
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Client: Great Western Operating Company, LLC
 Work Order: 2111095
 Project: Raindance FD 20-322 HN

QC BATCH REPORT

Batch ID: VL211108-3-5 Instrument ID: HPV1 Method: SW8260_25

LCS		Sample ID: VL211108-3			Units: %REC		Analysis Date: 11/8/2021 10:08				
Client ID:		Run ID: VL211108-3a			Prep Date: 11/8/2021			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					
Surr: DIBROMOFLUOROMETHANE	24.7		25		99	80-120					
Surr: TOLUENE-D8	25.4		25		101	80-120					
BENZENE	10.9	1	10		109	80-120				20	
TOLUENE	10.9	1	10		109	80-120				20	
ETHYLBENZENE	10.6	1	10		106	80-120				20	
M+P-XYLENE	21.4	1	20		107	80-120				20	
O-XYLENE	10.7	1	10		107	80-120				20	

LCSD		Sample ID: VL211108-3				Units: %REC		Analysis Date: 11/8/2021 10:30			
Client ID:		Run ID: VL211108-3a				Prep Date: 11/8/2021			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			0		
Surr: DIBROMOFLUOROMETHANE	24.9		25		100	80-120			1		
Surr: TOLUENE-D8	25.6		25		102	80-120			1		
BENZENE	10.5	1	10		105	80-120		10.9	4	20	
TOLUENE	10.8	1	10		108	80-120		10.9	1	20	
ETHYLBENZENE	10.5	1	10		105	80-120		10.6	1	20	
M+P-XYLENE	21.4	1	20		107	80-120		21.4	0	20	
O-XYLENE	10.4	1	10		104	80-120		10.7	3	20	

MB		Sample ID: VL211108-3		Units: %REC		Analysis Date: 11/8/2021 12:20	
Client ID:		Run ID: VL211108-3a		Prep Date: 11/8/2021		DF: 1	
Analyte		Result	ReportLimit			Qual	
Surr: 4-BROMOFLUOROBENZENE		25.1		101	80-120		
Surr: DIBROMOFLUOROMETHANE		25.2		101	80-120		
Surr: TOLUENE-D8		25.1		100	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:

2111095-1

Client: Great Western Operating Company, LLC
Work Order: 2111095
Project: Raindance FD 20-322 HN

QC BATCH REPORT

Batch ID: **AK211112-1-1** Instrument ID **NONE** Method: **SM2320B**

LCS		Sample ID: AK211112-1			Units: MG/L		Analysis Date: 11/12/2021				
Client ID:		Run ID: AK211112-1A1					Prep Date: 11/12/2021			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	97.4	5	100		97	85-115				15	

MB		Sample ID: AK211112-1		Units: MG/L		Analysis Date: 11/12/2021	
Client ID:		Run ID: AK211112-1A1		Prep Date: 11/12/2021		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:

2111095-1

Client: Great Western Operating Company, LLC
Work Order: 2111095
Project: Raindance FD 20-322 HN

QC BATCH REPORT

Batch ID: **IC211115-1-1** Instrument ID **IC3** Method: **EPA300.0**

LCS	Sample ID: IC211115-1			Units: MG/L			Analysis Date: 11/15/2021 16:07				
Client ID:		Run ID: IC211115-1A1			Prep Date: 11/15/2021			DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
CHLORIDE	10.6	0.2	10		106	90-110				15	
SULFATE	50.3	1	50		101	90-110				15	

LCSD		Sample ID: IC211115-1			Units: MG/L		Analysis Date: 11/15/2021 11:16				
Client ID:		Run ID: IC211115-1A1			Prep Date: 11/15/2021			DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
CHLORIDE	10.3	0.2	10		103	90-110		10.6	3	15	
SULFATE	48	1	50		96	90-110		50.3	5	15	

MB		Sample ID: IC211115-1		Units: MG/L		Analysis Date: 11/15/2021 10:09	
Client ID:		Run ID: IC211115-1A1		Prep Date: 11/15/2021		DF: 1	
Analyte		Result	ReportLimit				
CHLORIDE		ND	0.2				
SULFATE		ND	1				

The following samples were analyzed in this batch:

2111095-1

Client: Great Western Operating Company, LLC
Work Order: 2111095
Project: Raindance FD 20-322 HN

QC BATCH REPORT

Batch ID: **TD211108-2-1** Instrument ID **Balance** Method: **SM2540C**

LCS		Sample ID: TD211108-2			Units: MG/L		Analysis Date: 11/15/2021				
Client ID:		Run ID: TD211115-1A1					Prep Date: 11/8/2021			DF: 1	
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
TOTAL DISSOLVED SOLIDS	416	20	400		104	85-115				14	

LCSD		Sample ID: TD211108-2			Units: MG/L		Analysis Date: 11/15/2021				
Client ID:		Run ID: TD211115-1A1					Prep Date: 11/8/2021		DF: 1		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
TOTAL DISSOLVED SOLIDS	362	20	400		90	85-115		416	14	14	

MB		Sample ID: TD211108-2		Units: MG/L		Analysis Date: 11/15/2021	
Client ID:		Run ID: TD211115-1A1		Prep Date: 11/8/2021		DF: 1	
Analyte		Result	ReportLimit				
TOTAL DISSOLVED SOLIDS		ND	20				

The following samples were analyzed in this batch:

2111095-1