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Hilcorp	Project: Braden Head	
382 CR 3100	Project Name / Number: North	Reported:
Aztec NM, 87410	Project Manager: Kevin Fredrickson	07/25/23 16:01

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
Calloway 2	2307190-02	Water	07/19/23 08:00	07/20/23 12:15	

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Veronica Wells, Project Manager

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Hilcorp 382 CR 3100 Aztec NM, 87410	Project: Braden Head Project Name / Number: North Project Manager: Kevin Fredrickson	Reported: 07/25/23 16:01
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Calloway 2

2307190-02 (Produced Water)

Sampled Date: 07/19/23 08:00

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
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General Chemistry

Chloride*	3470	100	5.55	mg/L	100	07/21/23 00:16	EPA300.0		AWG
pH*	11.7			pH Units	1	07/20/23 14:00	EPA150.1		KRW
pH Temperature, degrees C	19.3			pH Units	1	07/20/23 14:00	EPA150.1		KRW
Sulfate*	4290	100	12.4	mg/L	100	07/21/23 00:16	EPA300.0		AWG
Total Dissolved Solids*	12200	20.0		mg/L	2	07/21/23 14:12	EPA160.1		CAI

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Hilcorp 382 CR 3100 Aztec NM, 87410	Project: Braden Head Project Name / Number: North Project Manager: Kevin Fredrickson	Reported: 07/25/23 16:01
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General Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B232090 - IC- Ion Chromatograph										
Blank (B232090-BLK1) Prepared & Analyzed: 07/20/23										
Chloride	ND	1.00	mg/L							
Sulfate	ND	1.00	mg/L							
LCS (B232090-BS1) Prepared & Analyzed: 07/20/23										
Chloride	25.8	1.00	mg/L	25.0		103	90-110			
Sulfate	24.8	1.00	mg/L	25.0		99.1	90-110			
LCS Dup (B232090-BSD1) Prepared & Analyzed: 07/20/23										
Chloride	25.9	1.00	mg/L	25.0		103	90-110	0.0813	20	
Sulfate	24.8	1.00	mg/L	25.0		99.4	90-110	0.282	20	
Batch B232092 - General Prep - Wet Chem										
Reference (B232092-SRM1) Prepared & Analyzed: 07/20/23										
pH	10.1		pH Units	10.0		101	98.57-101.42			
Batch B232097 - General Prep - Wet Chem										
Blank (B232097-BLK1) Prepared & Analyzed: 07/21/23										
Total Dissolved Solids	ND	10.0	mg/L							
Reference (B232097-SRM1) Prepared & Analyzed: 07/21/23										
Total Dissolved Solids	375	10.0	mg/L	400		93.7	85-115			

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Hilcorp	Project: Braden Head	
382 CR 3100	Project Name / Number: North	Reported:
Aztec NM, 87410	Project Manager: Kevin Fredrickson	07/25/23 16:01

Notes and Definitions

- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
*Results reported on as received basis unless designated as dry.
- RPD Relative Percent Difference
- LCS Laboratory Control Sample (Blank Spike)
- RL Report Limit
- MDL Method Detection Limit

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Veronica J wells

Veronica Wells, Project Manager

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Hilcorp
382 CR 3100
Aztec NM, 87410

Project: Formation Comparison
Project Name / Number: North
Project Manager: Kevin Fredrickson

Reported:
07/26/23 11:10

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
Calloway 2	2307200-01	Water	07/19/23 08:00	07/21/23 08:30	

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Hilcorp 382 CR 3100 Aztec NM, 87410	Project: Formation Comparison Project Name / Number: North Project Manager: Kevin Fredrickson	Reported: 07/26/23 11:10
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Calloway 2

2307200-01 (Produced Water)

Sampled Date: 07/19/23 08:00

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
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General Chemistry

Alkalinity, Total as CaCO3*	1020	10.0	6.06	mg/L	2	07/25/23 00:00	2320 B		AES
Alkalinity, Hydroxide as CaCO3*	<10.0	10.0	6.06	mg/L	2	07/25/23 00:00	2320 B		AES
Alkalinity, Carbonate as CaCO3*	164	10.0	6.06	mg/L	2	07/25/23 00:00	2320 B		AES
Alkalinity, Bicarbonate as CaCO3*	852	10.0	6.06	mg/L	2	07/25/23 00:00	2320 B		AES
Chloride*	5050	100	5.55	mg/L	100	07/24/23 22:17	EPA300.0		AWG
Sulfate*	<12.4	100	12.4	mg/L	100	07/24/23 22:17	EPA300.0		AWG
Total Dissolved Solids*	8970	20.0		mg/L	2	07/21/23 14:22	EPA160.1		CAI

Potentially Dissolved Metals by ICP

Calcium*	31.2	2.00	1.24	mg/L	20	07/25/23 11:58	EPA200.7		AES
Iron*	10.2	1.00	0.302	mg/L	20	07/25/23 11:58	EPA200.7		AES
Magnesium*	6.45	2.00	0.702	mg/L	20	07/25/23 11:58	EPA200.7		AES
Sodium*	3120	20.0	8.18	mg/L	20	07/25/23 11:58	EPA200.7		AES

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Hilcorp 382 CR 3100 Aztec NM, 87410	Project: Formation Comparison Project Name / Number: North Project Manager: Kevin Fredrickson	Reported: 07/26/23 11:10
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General Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B232097 - General Prep - Wet Chem										
Blank (B232097-BLK1) Prepared & Analyzed: 07/21/23										
Total Dissolved Solids	ND	10.0	mg/L							
Reference (B232097-SRM1) Prepared & Analyzed: 07/21/23										
Total Dissolved Solids	375	10.0	mg/L	400		93.7	85-115			
Batch B232107 - IC- Ion Chromatograph										
Blank (B232107-BLK1) Prepared & Analyzed: 07/24/23										
Chloride	ND	1.00	mg/L							
Sulfate	ND	1.00	mg/L							
LCS (B232107-BS1) Prepared & Analyzed: 07/24/23										
Chloride	24.7	1.00	mg/L	25.0		98.7	90-110			
Sulfate	23.9	1.00	mg/L	25.0		95.5	90-110			
LCS Dup (B232107-BSD1) Prepared & Analyzed: 07/24/23										
Chloride	24.7	1.00	mg/L	25.0		98.8	90-110	0.00810	20	
Sulfate	23.9	1.00	mg/L	25.0		95.8	90-110	0.322	20	
Batch B232121 - General Prep - Wet Chem										
Blank (B232121-BLK1) Prepared: 07/24/23 Analyzed: 07/25/23										
Alkalinity, Bicarbonate as CaCO3	ND	10.0	mg/L							
Alkalinity, Carbonate as CaCO3	ND	10.0	mg/L							
Alkalinity, Hydroxide as CaCO3	ND	10.0	mg/L							
Alkalinity, Total as CaCO3	ND	10.0	mg/L							
LCS (B232121-BS1) Prepared: 07/24/23 Analyzed: 07/25/23										
Alkalinity, Total as CaCO3	92.0	10.0	mg/L	100		92.0	85-115			
LCS Dup (B232121-BSD1) Prepared: 07/24/23 Analyzed: 07/25/23										
Alkalinity, Total as CaCO3	99.0	10.0	mg/L	100		99.0	85-115	7.33	20	
Reference (B232121-SRM1) Prepared: 07/24/23 Analyzed: 07/25/23										
Alkalinity, Total as CaCO3	79.0	10.0	mg/L	72.7		109	85-115			

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Potentially Dissolved Metals by ICP - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B232127 - Potentially Dissolved ICP

Blank (B232127-BLK1)

Prepared & Analyzed: 07/25/23

Calcium	ND	0.100	mg/L							
Iron	ND	0.050	mg/L							
Magnesium	ND	0.100	mg/L							
Sodium	ND	1.00	mg/L							

LCS (B232127-BS1)

Prepared & Analyzed: 07/25/23

Calcium	3.84	0.100	mg/L	4.00		96.0	85-115			
Iron	3.88	0.050	mg/L	4.00		97.1	85-115			
Magnesium	19.7	0.100	mg/L	20.0		98.5	85-115			
Sodium	3.34	1.00	mg/L	3.24		103	85-115			

LCS Dup (B232127-BSD1)

Prepared & Analyzed: 07/25/23

Calcium	3.86	0.100	mg/L	4.00		96.4	85-115	0.355	20	
Iron	3.91	0.050	mg/L	4.00		97.6	85-115	0.591	20	
Magnesium	19.7	0.100	mg/L	20.0		98.6	85-115	0.121	20	
Sodium	3.34	1.00	mg/L	3.24		103	85-115	0.0127	20	

Notes and Definitions

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*Results reported on as received basis unless designated as dry.
- RPD Relative Percent Difference
- LCS Laboratory Control Sample (Blank Spike)
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 Phone:(505) 334-6178 Fax:(505) 334-6170

District IV
 1220 S. St Francis Dr., Santa Fe, NM 87505
 Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 244728

CONDITIONS

Operator: HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	OGRID: 372171
	Action Number: 244728
	Action Type: [UF-GA] Gas Analysis (GAS ANALYSIS)

CONDITIONS

Created By	Condition	Condition Date
mkuehling	tds 325	9/20/2023