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[www.greenanalytical.com](http://www.greenanalytical.com)

07 August 2020

David Bounds  
Hilcorp  
382 Road 3100  
Aztec, NM 87410  
RE: Braden Head

Enclosed are the results of analyses for samples received by the laboratory on 07/24/20 15:36.  
If you need any further assistance, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads 'Debbie Zufelt'. The script is cursive and fluid, with the first name 'Debbie' and last name 'Zufelt' clearly legible.

Debbie Zufelt  
Reports Manager

All accredited analytes contained in this report are denoted by an asterisk (\*). For a complete list of accredited analytes please do not hesitate to contact us via any of the contact information contained in this report. All of our certifications can be viewed at <http://greenanalytical.com/certifications/>

Green Analytical Laboratories is NELAP accredited through the Texas Commission on Environmental Quality. Accreditation applies to drinking water and non-potable water matrices for trace metals and a variety of inorganic parameters. Green Analytical Laboratories is also accredited through the Colorado Department of Public Health and Environment and EPA region 8 for trace metals, Cyanide, Fluoride, Nitrate, and Nitrite in drinking water.

Our affiliate laboratory, Cardinal Laboratories, is also NELAP accredited through the Texas Commission on Environmental Quality for a variety of organic constituents in drinking water, non-potable water and solid matrices. Cardinal is also accredited for regulated VOCs, TTHM, and HAA-5 in drinking water through the Colorado Department of Public Health and Environment and EPA region 8.



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Hilcorp  
382 Road 3100  
Aztec NM, 87410

Project: Braden Head  
Project Name / Number: [none]  
Project Manager: David Bounds

**Reported:**  
08/07/20 07:32

#### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
Pierce Federal A 2E	2007286-01	Water	07/24/20 00:00	07/24/20 15:36	
Zachry 10	2007286-02	Water	07/24/20 00:00	07/24/20 15:36	
Zachry 60	2007286-03	Water	07/24/20 00:00	07/24/20 15:36	

Green Analytical Laboratories

Debbie Zufelt, Reports Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety. In no event shall Green Analytical Laboratories be liable for incidental or consequential damages. GALs liability, and clients exclusive remedy for any claim arising, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever, shall be deemed waived unless made in writing and received within thirty days after completion of the applicable service.



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Project Manager: David Bounds

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08/07/20 07:32

**Pierce Federal A 2E**

**2007286-01 (Produced Water)**

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

Chloride*	37.8	50.0	4.43	mg/L	50	08/05/20 20:06	EPA300.0		AES
pH*	10.9			pH Units	1	07/28/20 13:10	EPA150.1	H1	VJW
Total Dissolved Solids*	3650	10.0		mg/L	1	07/29/20 10:55	EPA160.1		VJW
Sulfate*	2440	100	15.2	mg/L	100	08/06/20 08:22	EPA300.0		AES

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**Zachry 10****2007286-02 (Produced Water)**

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

Chloride*	36.9	50.0	4.43	mg/L	50	08/05/20 20:26	EPA300.0		AES
pH*	9.08			pH Units	1	07/28/20 13:10	EPA150.1	H1	VJW
Total Dissolved Solids*	3180	10.0		mg/L	1	07/29/20 10:55	EPA160.1		VJW
Sulfate*	2300	50.0	7.62	mg/L	50	08/05/20 20:26	EPA300.0		AES

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**Reported:**  
08/07/20 07:32

**Zachry 60**

**2007286-03 (Produced Water)**

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

Chloride*	117	200	17.7	mg/L	200	08/05/20 20:46	EPA300.0		AES
pH*	12.1			pH Units	1	07/28/20 13:10	EPA150.1	H1	VJW
Total Dissolved Solids*	13900	20.0		mg/L	2	07/29/20 10:55	EPA160.1		VJW
Sulfate*	9430	200	30.5	mg/L	200	08/05/20 20:46	EPA300.0		AES

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08/07/20 07:32

### Notes and Definitions

H1 Sample was received several days after collected and subsequently analyzed past hold time.

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

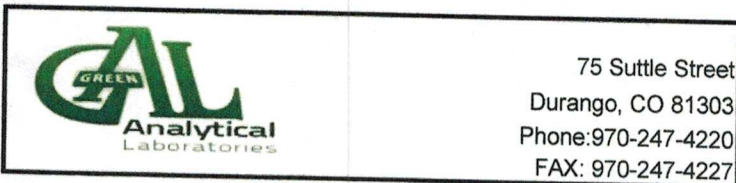
MDL Method Detection Limit

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Client: <b>Hilcorp</b>	Asset: <b>South</b>	Phone# <b>505-419-3410</b>	Contact <b>David Bounds</b>
Address: 9A CR# 5793, Farmington NM 87401		E-Mail Address <a href="mailto:dbounds@hilcorp.com">dbounds@hilcorp.com</a>	



CHAIN OF CUSTODY RECORD	
GAL Work Order #	
PO#	
Project Name:	

Sample Location:

- (1)BumperSpring, (2)CompressorDischarge, (3)Flowline, (4)Meter, (5)Oil Tank  
 (6)PigLauncher, (7)PigReceiver, (8)Pipeline, (9)Pit Tank, (10)PostFilter, (11)PreFilter  
 (12)SeparatorInlet, (13)SeparatorOutlet, (14)SeparatorDump, (15)SWDInlet  
 (16)SWDOutlet, (17)TransferPump, (18)ValveCan, (19)WaterTank, (20)Wellhead  
 (21)Other

Sample Type:

- (1)Casing, (2)CO2GasTube, (3)Coupon, (4)Water, (5)H2SGasTube, (6)Metals  
 (7)O2GasTube, (8)PipeSection, (9)Residual, (10)Sludge, (11)Solid, (12)Tubing, (13)Other

Collection								Preservative			Analyses Required				
Well Name (Sample Name)	Area	Date	Time	Collected By: (Init.)	Sample Location	Sample Type	No. of Containers	Filtered: Y / N	Unpreserved	H2SO4	Other:	Iron and Manganese	Phosphate	Full Water API	Brackish
1. Pierce Federal A 2E	7	7/24		RS	20	4	1	N	✓						X
2. Zachry 10	7	7/24		RS	20	4	1	N	✓						X
3. Zachry 60	7	7/24		RS	20	4	1	N	✓						X
4.															
5.															
6.															
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19.															
20.															

Relinquished by: <i>[Signature]</i>	Date: 072420	Time: 1536	Received By: <i>[Signature]</i>	Date: 7/24/20	Time: 1536
<i>Karyn Express</i>	7/27/20	1455	<i>Rafaelo Lopez</i>		
	7/28/20	0900	<i>Clara Bui</i>		

5.6/5.7°C  
on ice  
laser #1