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www.GreenAnalytical.com

Hilcorp
382 Road 3100
Aztec NM, 87410

Project: Formation Comparison
Project Name / Number: [none]
Project Manager: Bill Eaves

Reported:
12/15/20 16:26

30-6 44A Braiden Head 3003925637
Area 12

2012107-02 (Produced Water)

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

Alkalinity, Bicarbonate as CaCO ₃ *	2040	10.0	7.16	mg/L	20	12/11/20 12:50	2320 B		VJW
Alkalinity, Carbonate as CaCO ₃ *	1400	10.0		mg/L	20	12/11/20 12:50	2320 B		VJW
Chloride*	330	100	33.6	mg/L	10	12/15/20 14:30	4500-Cl- C		AES
pH*	7.70			pH Units	1	12/11/20 11:35	EPA150.1	H4	VJW
Total Dissolved Solids*	3700	200		mg/L	20	12/11/20 15:35	EPA160.1		VJW
Sulfate	2820	500	84.0	mg/L	50	12/14/20 16:00	4500-SO42- E		AES

Potentially Dissolved Metals by ICP

Calcium*	306	2.00	0.332	mg/L	20	12/15/20 11:05	EPA200.7		AES
Iron*	963	1.00	0.368	mg/L	20	12/15/20 11:05	EPA200.7		AES
Magnesium*	7.86	2.00	0.470	mg/L	20	12/15/20 11:05	EPA200.7		AES
Manganese*	5.85	0.400	0.031	mg/L	20	12/15/20 11:05	EPA200.7		AES
Sodium*	784	20.0	2.01	mg/L	20	12/15/20 11:05	EPA200.7		AES

Green Analytical Laboratories

A handwritten signature in black ink that reads 'Debbie Zufelt'.

Debbie Zufelt, Reports Manager

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382 Road 3100
Aztec NM, 87410

Project: Formation Comparison
Project Name / Number: [none]
Project Manager: Bill Eaves

Reported:
12/15/20 16:26

30-6 44A wellhead 3003925637
Area 12

2012107-03 (Produced Water)

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

Alkalinity, Bicarbonate as CaCO ₃ *	580	10.0	7.16	mg/L	20	12/11/20 12:50	2320 B		VJW
Alkalinity, Carbonate as CaCO ₃ *	<10.0	10.0		mg/L	20	12/11/20 12:50	2320 B		VJW
Chloride*	200	100	33.6	mg/L	10	12/15/20 14:30	4500-Cl- C		AES
pH*	6.64			pH Units	1	12/11/20 11:35	EPA150.1	H4	VJW
Total Dissolved Solids*	3900	200		mg/L	20	12/11/20 15:35	EPA160.1		VJW
Sulfate	3230	500	84.0	mg/L	50	12/14/20 16:00	4500-SO42- E		AES

Potentially Dissolved Metals by ICP

Calcium*	140	2.00	0.332	mg/L	20	12/15/20 11:09	EPA200.7		AES
Iron*	198	1.00	0.368	mg/L	20	12/15/20 11:09	EPA200.7		AES
Magnesium*	6.49	2.00	0.470	mg/L	20	12/15/20 11:09	EPA200.7		AES
Manganese*	2.96	0.400	0.031	mg/L	20	12/15/20 11:09	EPA200.7		AES
Sodium*	1130	20.0	2.01	mg/L	20	12/15/20 11:09	EPA200.7		AES

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Debbie Zufelt, Reports Manager

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Notes and Definitions

J Estimated concentration. Analyte concentration between MDL and RL.

H4 pH analysis performed more than 48 hours after sampling.

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

CONDITIONS

Action 12775

CONDITIONS OF APPROVAL

Operator:	HILCORP ENERGY COMPANY	1111 Travis Street	Houston, TX77002	OGRID:	372171	Action Number:	12775	Action Type:	GAS ANALYSIS
OCD Reviewer	Condition								
mkuehling	None								