REVIEWED

By Mike Buchanan at 10:12 am, May 21, 2024



ENSOLUM

March 22, 2023

New Mexico Oil Conservation Division

New Mexico Energy, Minerals, and Natural Resources Departmentachieved for 1220 South St. Francis Drive Santa Fe, New Mexico 87505

Re: 2022 Annual Groundwater Monitoring Report

> Farmington B Com #1E San Juan County, New Mexico Hilcorp Energy Company

NMOCD Incident Number: NAUTOFAB000168

NMOCD Administrative Order: 3R-084

To Whom it May Concern:

Ensolum, LLC (Ensolum), on behalf of Hilcorp Energy Company and manganese. This 2022 Continue to sample (MACOR) Annual Groundwater Monitoring Report to the New Mexico Oil Constitution Constitutio to document groundwater monitoring activities conducted at the Frave been established E natural gas production well (Site) during 2022. The Site is located on privipelow the Wigner the corner of East Murray Drive and South Carlton Avenue in Farmington human healthico. Geographical coordinates for the Site are 36.721137 degrees (°) North and Currently, there are six monitoring wells on-Site that are gauge 4 Submit the 2023 uarterly. Well locations and general site features are presented on Figure 2.

SITE BACKGROUND

Conoco Inc., predecessor to ConocoPhillips Company (ConocoPhillips and operated the gas well between July 1991 and January 1997. 2025 on Oil & Gas Company (Merrion) purchased the property and assets from ConocoPhillips in 1997 and is the current property owner and well operator. With the purchase of San Juan Basin assets from ConocoPhillips, Hilcorp assumed environmental responsibility of the Site in April 2017.

Petroleum hydrocarbon-impacted soil was first discovered in March 1997 when a Phase II Environmental Site Assessment was performed at the Site prior to the transfer from ConocoPhillips to Merrion. Soil impacts were confirmed north of a production storage tank and west of a separator/dehydrator pit. Soil excavation of two impacted areas occurred in September 1997 and approximately 906 cubic yards of impacted soil was removed from the Site. During backfill of the excavation, approximately 10 gallons of liquid fertilizer was sprayed into both excavations to enhance in-situ biodegradation of residual petroleum hydrocarbons.

Groundwater monitoring wells MW-1 through MW-6 were installed at the Site in February and August 1998. Petroleum hydrocarbon impacts were not present in wells MW-2 through MW-6 during in the 1998 and 1999 sampling events; however, phase-separated hydrocarbon (PSH) was present in well MW-1 since its installation. Active and passive skimmers were installed in MW-1 in May 2004 to enhance recovery of PSH but were found to be ineffective. It was determined that

Annual Groundwater Monitoring Report for Farmington B Com #1E: Content Satisfactory 1. Groundwater monitoring may be suspended for monitoring wells: MW-2, MW-4 and MW-5 due to eight (8) consecutive quarters constituents below the NM WQCC health standards. 2 Iron may be suspended from sampling for all monitoring wells except MW-1 3. Continue with plans to conduct annual gauging and sampling of wells MW-1 for iron

Review of the 2022

NMOCD) stændards01° West (Figure 1). Annual Groundwater

Monitoring Report (if not already submitted) and the 2024 Annual Report to be submitted

Ensolum, LLC | Environmental, Engineering & Hydrogeologic Consultants 776 East 2nd Ave | Durango, CO 81301 | ensolum.com

an active skimmer was not a viable method of PSH recovery in MW-1 and passive skimming or periodic hand bailing was then proposed. Additionally, quarterly groundwater pumping events were conducted at MW-1 from October 2004 to March 2008 using a vacuum truck. PSH was last detected in monitoring well on March 18, 2011. A sheen of PSH was last measured on January 28, 2015.

By the fourth quarter of 2011, groundwater-sample results from all six monitoring wells indicated benzene, toluene, ethylbenzene, and total xylenes (BTEX) concentrations were below New Mexico Water Quality Control Commission (NMWQCC) standards for 12 consecutive quarters of sampling and as a result, BTEX analysis was discontinued following the December 2011 sampling event. Beginning in 2012, groundwater was sampled for dissolved iron and manganese, which are the two remaining constituents of concern (COCs) above NMWQCC standards at the Site. In order to reduce dissolved iron and manganese concentrations, two injection wells (TW-1 and TW-2) were drilled and installed east and west of MW-1 in order to perform in-situ chemical oxidation (ISCO) injections. A catalyzed sodium persulfate solution was injected into these wells and into MW-1 in November 2014, March 2015, and October 2016. Quarterly gauging and sampling for dissolved iron and manganese continued after the ISCO injections were completed.

SITE GROUNDWATER CLEANUP STANDARDS

The NMOCD requires groundwater-quality standards be met as presented by the NMWQCC and listed in Title 20, Chapter 6, Part 2, Section 3103 (20.6.2.3103) of the New Mexico Administrative Code (NMAC). The following standards are presented for COCs at the Site in milligrams per liter (mg/L).

Dissolved Iron: 1.0 mg/L

Dissolved Manganese: 0.2 mg/L

GROUNDWATER SAMPLING ACTIVITIES AND RESULTS

Quarterly groundwater sampling events were conducted in January, April, July, and October 2022 from wells MW-1 through MW-6. Prior to the collection of groundwater samples, depth-to-groundwater was measured in all Site wells using a Keck oil/water interface probe. The interface probe was decontaminated with Alconox™ soap and rinsed with distilled water prior to each measurement to prevent cross-contamination. Measured depths-to-groundwater and calculated groundwater elevations are presented in Table 1 and were used to develop groundwater potentiometric surface maps (Figures 3, 4, 5, and 6). The inferred groundwater flow direction is to the west.

GROUNDWATER SAMPLING

Groundwater from each monitoring well was purged and sampled using a disposable bailer. Purging was accomplished by removing stagnant groundwater from the monitoring well prior to collecting a sample. Field measurements of groundwater quality parameters were collected during the purging process and are presented in Table 2. Following well purging, groundwater samples were collected directly into laboratory-provided containers and labeled with the date and time of collection, well designation, project name, sample collector's name, and parameters to be analyzed. Samples were immediately sealed and packed on ice to preserve samples. Samples were submitted to Hall Environmental Analysis Laboratory (Hall) in Albuquerque, New Mexico for analysis of dissolved manganese and iron by Environmental Protection Agency (EPA) Method 200.7. Proper chain-of-custody procedures were followed documenting the date and time



sampled, sample number, type of sample, sample collector's name, preservative used, analyses required, and sample collector's signature.

GROUNDWATER ANALYTICAL RESULTS

Dissolved iron was detected at concentrations exceeding the NMWQCC standard in well MW-1 during the April, July, and October 2022 sampling events. Dissolved iron concentrations were in compliance with the NMWQCC standard in all other Site wells during all 2022 quarterly sampling events.

Dissolved manganese concentrations exceeding the NMWQCC standard were detected in wells MW-1, MW-3, and MW-6 during one or more quarterly sampling events in 2022. Dissolved manganese concentrations in wells MW-1 and MW-6 have been consistently elevated since sampling began in 2011; however, dissolved manganese concentrations in well MW-3 have generally been in compliance with the NMWQCC standard since sampling began with only occasional exceedances in previous years including 2013, 2016, 2017, and 2019.

Concentrations of dissolved iron and manganese in wells MW-2, MW-4, and MW-5 have been in compliance with NMWQCC standards for the past eight quarters. A summary of analytical results is presented in Table 3 and depicted on Figure 7, with complete laboratory analytical reports included as Appendix A.

CONCLUSIONS AND RECOMMENDATIONS

Based on historical data, the presence of dissolved iron has decreased over time and analytical results indicate iron concentrations are only present in well MW-1 at concentrations exceeding the NMWQCC standard.

Dissolved manganese concentrations in wells MW-1 and MW-6 have remained relatively stable over the last several years. Elevated dissolved manganese concentrations appear to be a result of generally low oxygen and reducing groundwater conditions in these wells. As groundwater conditions at the Site continue to equilibrate and dissolved oxygen increases, groundwater conditions will become increasingly aerobic. As this happens, dissolved manganese will likely precipitate out of solution resulting in decreased concentrations in groundwater.

Based on current and historical data gathered at the Site, Ensolum and Hilcorp recommend the following actions:

- Cease sampling wells MW-2, MW-4, and MW-5. All COC concentrations have been compliant with NMWQCC standards for more than eight consecutive quarters.
- Eliminate dissolved iron as a contaminant of concern in all wells except MW-1.
- Conduct annual gauging and sampling of wells MW-1 for dissolved iron and manganese and wells MW-3 and MW-6 for dissolved manganese. Once concentrations decrease to below NMWQCC standards, sampling frequency will again increase to quarterly until eight consecutive quarters indicate that iron and/or manganese concentrations are compliant with applicable standards.

Ensolum appreciates the opportunity to provide these environmental services to Hilcorp. Please contact either of the undersigned with any questions.



Sincerely,

Ensolum, LLC

Du

Stuart Hyde, LG Senior Geologist (970) 903-1607 shyde@ensolum.com



Daniel R. Moir, PG Senior Managing Geologist (303) 887-2946 dmoir@ensolum.com

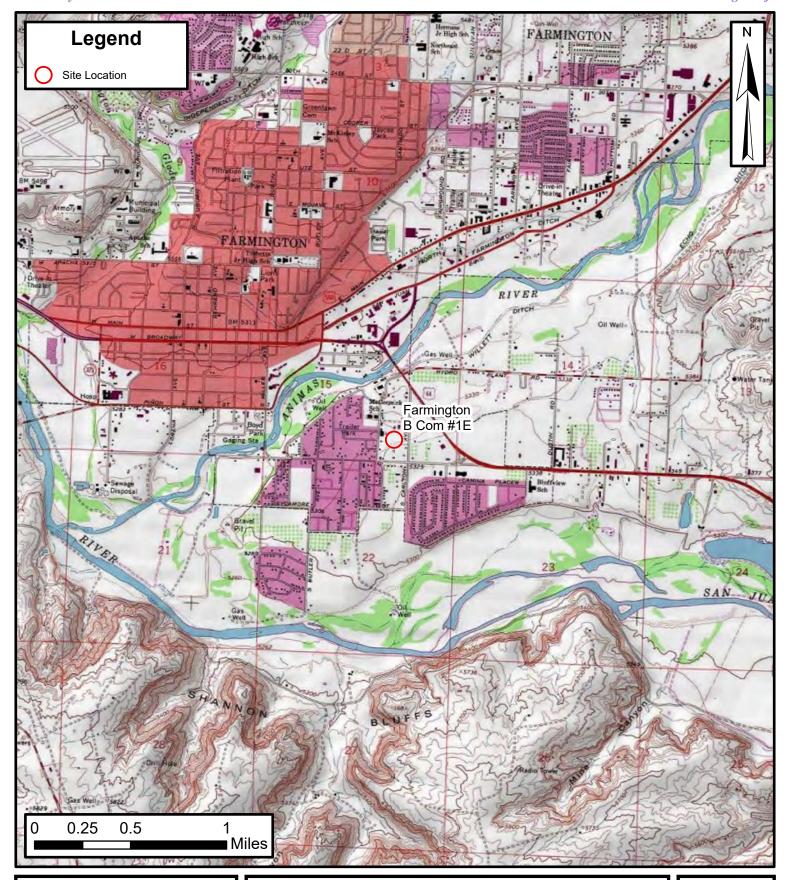
Attachments:

Figure 1	Site Location Map
Figure 2	Site Map
Figure 3	Q1 2022 Groundwater Elevation Contour Map
Figure 4	Q2 2022 Groundwater Elevation Contour Map
Figure 5	Q3 2022 Groundwater Elevation Contour Map
Figure 6	Q4 2022 Groundwater Elevation Contour Map
Figure 7	2022 Groundwater Analytical Results
Table 1	Groundwater Elevations
Table 2	Groundwater Quality Measurements
Table 3	Groundwater Analytical Results
Appendix A	Laboratory Analytical Reports





FIGURES





Site Location Map

Farmington B Com #1E Hilcorp Energy Company 36.72113, -108.19048 San Juan County, New Mexico **FIGURE**

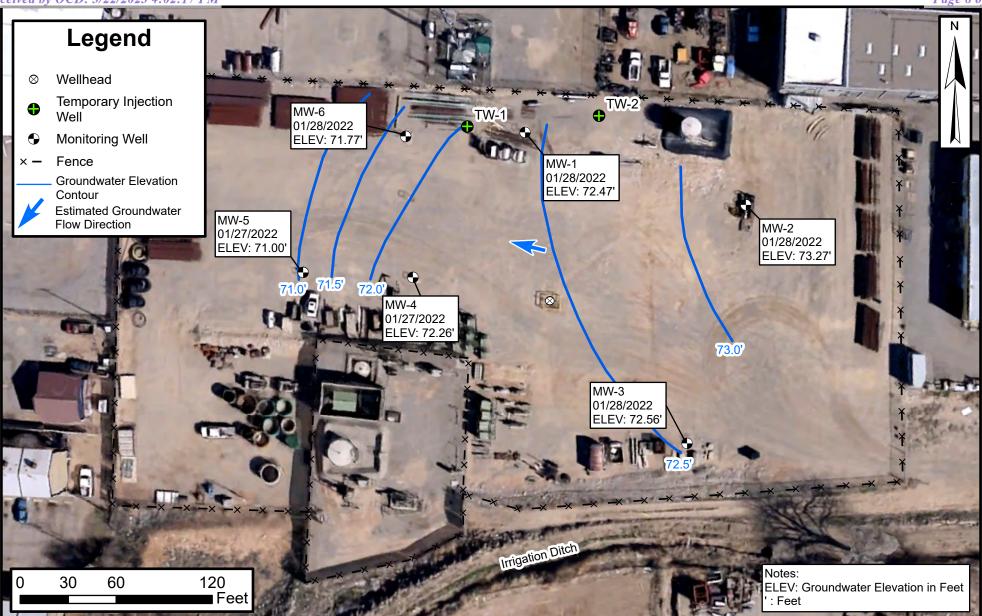
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Site Map

Farmington B Com #1E Hilcorp Energy Company 36.72113, -108.19048 San Juan County, New Mexico FIGURE 2





Q1 2022 Groundwater Elevation Contour Map

Farmington B Com #1E Hilcorp Energy Company 36.72113, -108.19048 San Juan County, New Mexico FIGURE

Sources: Google Earth





Q2 2022 Groundwater Elevation Contour Map

Farmington B Com #1E Hilcorp Energy Company 36.72113, -108.19048 San Juan County, New Mexico FIGURE

Sources: Google Earth



60

30

120

■ Feet

Q3 2022 Groundwater Elevation Contour Map

Farmington B Com #1E Hilcorp Energy Company 36.72113, -108.19048 San Juan County, New Mexico FIGURE **5**

ELEV: Groundwater Elevation in Feet

Notes:



60

30

120

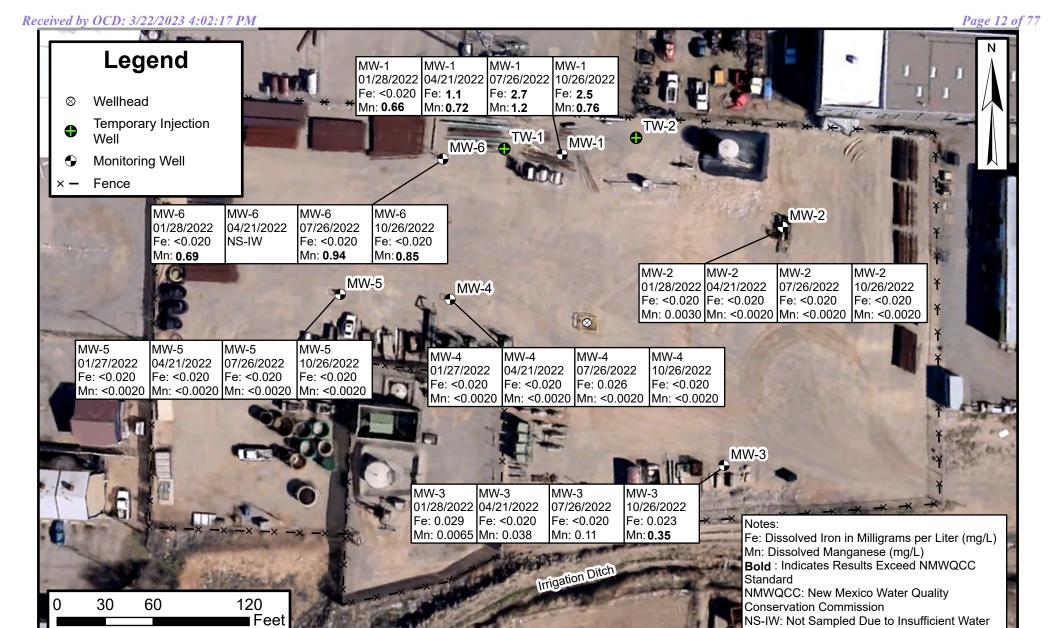
■ Feet

Q4 2022 Groundwater Elevation Contour Map

Farmington B Com #1E Hilcorp Energy Company 36.72113, -108.19048 San Juan County, New Mexico **FIGURE**

ELEV: Groundwater Elevation in Feet

6





2022 Groundwater Analytical Results

Farmington B Com #1E Hilcorp Energy Company 36.72113, -108.19048 San Juan County, New Mexico FIGURE **7**



TABLES



Farmington B Com #1E

Well ID	Top of Casing Elevation (1)	Sample Date	Depth to Product (feet BTOC)	Depth to Groundwater (feet BTOC)	Product Thickness (feet)	Adjusted Groundwater Elevation (2)
		5/9/2005	Sheen	28.30		73.07
		7/6/2005		26.50		74.87
		10/19/2005	Sheen	25.12		76.25
		2/16/2006		28.23		73.14
		5/15/2006		27.02		74.35
		8/2/2006		24.37		77.00
		11/14/2006	Sheen	26.48		74.89
		2/20/2007	Sheen	29.03		72.34
		5/15/2007		26.97		74.40
		8/21/2007	Sheen	25.20		76.17
		11/7/2007	26.10	26.30	0.20	75.23
		1/16/2008	27.88	29.24	1.36	73.22
		3/18/2008	Sheen	29.27		72.10
		7/24/2008	Sheen	25.73		75.64
		10/22/2008	Sheen	25.35		76.02
		1/21/2009	27.90	28.25	0.35	73.40
		4/1/2009		29.47		71.90
		6/10/2009		26.75		74.62
		10/1/2009		23.14		78.23
		12/17/2009		26.31		75.06
		3/29/2010	28.68	28.71	0.03	72.68
		6/11/2010	Sheen	25.98		75.39
MW-1	101.37	9/24/2010	Sheen	25.26		76.11
		2/7/2011	Sheen	28.83		72.54
		3/18/2011	29.71	29.73	0.02	71.66
		6/20/2011	Sheen	27.00		74.37
		9/30/2011	Sheen	24.32		77.05
		12/15/2011	Sheen	26.90		74.47
		9/21/2012	Sheen	24.52		76.85
		4/4/2013	Sheen	29.74		71.63
		9/30/2013	Sheen	24.92		76.45
		9/26/2014	Sheen	25.92		75.45
		12/18/2014		27.81		73.56
		1/28/2015	Sheen	28.87		72.50
		6/18/2015		27.33		74.04
		9/23/2015		26.52		74.85
		12/3/2015		27.85		73.52
		3/28/2016		30.13		71.24
		6/22/2016		29.53		71.84
		9/6/2016		26.71		74.66
		11/28/2016		27.85		73.52
		3/6/2017		30.16		71.21
		6/12/2017		28.00		73.37
		10/27/2017		26.49		74.88

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Farmington B Com #1E
Hilcorp Energy Company
San Juan County, New Mexic

			ilcorp Energy Compai Juan County, New Me			
Well ID	Top of Casing Elevation (1)	Sample Date	Depth to Product (feet BTOC)	Depth to Groundwater (feet BTOC)	Product Thickness (feet)	Adjusted Groundwater Elevation (2)
		3/13/2018		30.13		71.24
		6/28/2018		26.35		75.02
		9/6/2018		25.60		75.77
		12/19/2018		26.85		74.52
		3/5/2019		28.93		72.44
		5/21/2019		27.94		73.43
		8/26/2019		26.58		74.79
		10/30/2019		26.42		74.95
		1/29/2020		28.98		72.39
B804/4	404.07	4/21/2020		29.19		72.18
MW-1	101.37	7/16/2020		25.28		76.09
		10/1/2020		25.00		76.37
		1/6/2021		27.71		73.66
		4/9/2021		29.80		71.57
		9/23/2021		26.50		74.87
		12/2/2021		27.25		74.12
		1/28/2022		28.90		72.47
		4/21/2022		29.27		72.10
		7/26/2022		26.64		74.73
		10/26/2022		27.29		74.08
		5/9/2005		27.28		74.29
		7/6/2005		25.52		76.05
		10/19/2005		24.30		77.27
		2/16/2006		27.38		74.19
		5/15/2006		25.62		75.95
		8/2/2006		23.51		78.06
		11/14/2006		26.08		75.49
		2/20/2007		28.13		73.44
		5/15/2007		25.86		75.71
		8/21/2007		24.45		77.12
		11/7/2007		25.31		76.26
MW-2	101.57	1/16/2008		27.27		74.30
IVI VV - Z	101.57	3/18/2008		28.68		72.89
		7/24/2008		24.77		76.80
		10/22/2008		24.55		77.02
		1/21/2009		27.23		74.34
		4/1/2009		28.76		72.81
		6/10/2009		25.76		75.81
		10/1/2009		22.22		79.35
		12/17/2009		25.62		75.95
		3/29/2010		27.96		73.61
		6/11/2010		24.99		76.58
		9/24/2010		24.54		77.03
		2/7/2011		28.22		73.35

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Farmington B Com #1E Hilcorp Energy Company San Juan County, New Mexic

	San Juan County, New Mexico									
Well ID	Top of Casing Elevation (1)	Sample Date	Depth to Product (feet BTOC)	Depth to Groundwater (feet BTOC)	Product Thickness (feet)	Adjusted Groundwater Elevation (2)				
		3/18/2011		29.14		72.43				
		6/20/2011		26.20		75.37				
		9/30/2011		23.51		78.06				
		12/15/2011		26.22		75.35				
		9/21/2012		23.81		77.76				
		4/4/2013		29.16		72.41				
		9/30/2013		24.29		77.28				
		9/26/2014		25.18		76.39				
		12/18/2014		27.18		74.39				
		1/28/2015		NM						
		6/18/2015		27.73		73.84				
		9/23/2015		25.74		75.83				
		12/3/2015		27.23		74.34				
		3/28/2016		29.67		71.90				
		6/22/2016		27.20		74.37				
		9/6/2016		25.96		75.61				
		11/28/2016		27.20		74.37				
		3/6/2017		29.45		72.12				
		6/12/2017		27.11		74.46				
		10/27/2017		25.81		75.76				
MW-2	101.57	12/6/2017		26.79		74.78				
		3/13/2018		29.53		72.04				
		6/28/2018		25.45		76.12				
		9/6/2018		24.79		76.78				
		12/19/2018		26.21		75.36				
		3/5/2019		28.35		73.22				
		5/24/2019		27.07		74.50				
		8/26/2019		25.79		75.78				
		10/30/2019		25.70		75.87				
		1/29/2020		28.39		73.18				
		4/22/2020		27.89		73.68				
		7/17/2020		24.48		77.09				
		10/2/2020		24.37		77.20				
		1/7/2021		27.08		74.49				
		4/9/2021		29.09		72.48				
		9/23/2021		25.30		76.27				
		12/2/2021		26.59		74.98				
		1/28/2022		28.30		73.27				
		4/21/2022		28.19		73.38				
		7/26/2022		25.76		75.81				
		10/26/2022		26.53		75.04				

Ensolum 3 of 10



Farmington B Com #1E

			lilcorp Energy Compar I Juan County, New Me			
Well ID	Top of Casing Elevation (1)	Sample Date	Depth to Product (feet BTOC)	Depth to Groundwater (feet BTOC)	Product Thickness (feet)	Adjusted Groundwater Elevation (2)
		5/9/2005		27.81		74.29
		7/6/2005		26.03		76.07
		10/19/2005		25.06		77.04
		2/16/2006		28.57		73.53
		5/15/2006		26.15		75.95
		8/2/2006		23.83		78.27
		11/14/2006		26.75		75.35
		2/20/2007		29.31		72.79
		5/15/2007		26.23		75.87
		8/21/2007		25.00		77.10
		11/7/2007		26.12		75.98
		1/16/2008		28.46		73.64
		3/18/2008		29.97		72.13
		7/24/2008		25.27		76.83
		10/22/2008		25.35		76.75
		1/21/2009		28.56		73.54
		4/1/2009		30.20		71.90
		6/10/2009		26.55		75.55
		10/1/2009		23.00		79.10
		12/17/2009		26.86		75.24
		3/29/2010		29.41		72.69
		6/11/2010		25.62		76.48
MW-3	102.1	9/24/2010		25.23		76.87
		2/7/2011		29.47		72.63
		3/18/2011		30.40		71.70
		6/20/2011		26.83		75.27
		9/30/2011		23.95		78.15
		12/15/2011		27.41		74.69
		9/21/2012		24.55		77.55
		4/4/2013		30.52		71.58
		9/30/2013		25.27		76.83
		9/26/2014		25.91		76.19
		12/18/2014		28.30		73.80
		1/28/2015		NM		
		6/18/2015		27.53		74.57
		9/23/2015		26.33		75.77
		12/3/2015		28.33		73.77
		3/28/2016		30.99		71.11
		6/22/2016		27.88		74.22
		9/6/2016		26.66		75.44
		11/28/2016		28.32		73.78
		3/6/2017		30.78		71.32
		6/12/2017		27.71		74.39
		10/27/2017		26.66		75.44
		12/6/2017		27.89		74.21

Ensolum 4 of 10



Farmington B Com #1E
Hilcorp Energy Company
San Juan County, New Mexic

		San	Juan County, New Me	exico		
Well ID	Top of Casing Elevation (1)	Sample Date	Depth to Product (feet BTOC)	Depth to Groundwater (feet BTOC)	Product Thickness (feet)	Adjusted Groundwater Elevation (2)
		3/13/2018		30.79		71.31
		6/28/2018		25.68		76.42
		9/6/2018		25.55		76.55
		12/19/2018		27.36		74.74
		3/5/2019		28.60		73.50
		5/21/2019		27.75		74.35
		8/26/2019		26.24		75.86
		10/30/2019		26.38		75.72
		1/29/2020		29.58		72.52
MNA/ 0	400.4	4/22/2020		27.96		74.14
MW-3	102.1	7/17/2020		24.75		77.35
		10/2/2020		24.96		77.14
		1/7/2021		28.22		73.88
		4/9/2021		29.73		72.37
		9/22/2021		26.00		76.10
		12/2/2021		27.67		74.43
		1/28/2022		29.54		72.56
		4/21/2022		28.58		73.52
		7/26/2022		26.15		75.95
		10/26/2022		27.37		74.73
		5/9/2005		28.73		72.67
		7/6/2005		26.66		74.74
		10/19/2005		25.62		75.78
		2/16/2006		28.91		72.49
		5/15/2006		26.86		74.54
		8/2/2006		24.59		76.81
		11/14/2006		27.02		74.38
		2/20/2007		29.61		71.79
		5/15/2007		27.25		74.15
		8/21/2007		25.56		75.84
		11/7/2007		26.50		74.90
MW-4	101.4	1/16/2008		28.55		72.85
		3/18/2008		29.99		71.41
		7/24/2008		26.02		75.38
		10/22/2008		25.84		75.56
		1/21/2009		28.69		72.71
		4/1/2009		30.22		71.18
		6/10/2009		27.31		74.09
		10/1/2009		23.80		77.60
		12/17/2009		27.07		74.33
		3/29/2010		29.51		71.89
		6/11/2010		26.43		74.97
		9/24/2010		25.70		75.70

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Farmington B Com #1E Hilcorp Energy Company San Juan County, New Mexic

Well ID	Top of Casing Elevation (1)	Sample Date	Depth to Product (feet BTOC)	Depth to Groundwater (feet BTOC)	Product Thickness (feet)	Adjusted Groundwater Elevation (2)
		2/7/2011		29.49		71.91
		3/18/2011	+	30.38	+	71.02
		6/20/2011		27.34		74.06
		9/30/2011		24.68		76.72
		12/15/2011		27.58		73.82
					+	
		9/21/2012		25.01		76.39
		4/4/2013		30.46		70.94
		9/30/2013		25.55		75.85
		9/26/2014		26.27		75.13
		12/18/2014		28.38		73.02
		1/28/2015		NM		74.00
		6/18/2015		26.60		74.80
		9/23/2015		26.77		74.63
		12/3/2015		28.41		72.99
		3/28/2016		30.82		70.58
		6/22/2016		28.38		73.02
		9/6/2016		27.03		74.37
		11/28/2016		28.43		72.97
		3/6/2017		30.75		70.65
		6/12/2017		28.36		73.04
MW-4	101.4	10/27/2017		26.88		74.52
		12/6/2017		27.95		73.45
		3/13/2018		30.78		70.62
		6/28/2018		26.46		74.94
		9/6/2018		26.03		75.37
		12/19/2018		27.51		73.89
		3/5/2019	-	29.59		71.81
		5/24/2019	-	28.35		73.05
		8/26/2019		26.81		74.59
		10/29/2019		26.55		74.85
		1/28/2020		29.58		71.82
		4/21/2020	-	29.53		71.87
		7/16/2020		25.46		75.94
		10/1/2020		25.37		76.03
		1/6/2021		28.32		73.08
		4/8/2021		30.51		70.89
		9/23/2021		26.00		75.40
		12/1/2021		27.81		73.59
		1/27/2022		29.14		72.26
		4/21/2022		29.6		71.80
		7/26/2022		26.84		74.56
		10/26/2022	-	27.76		73.64

Ensolum 6 of 10



Farmington B Com #1E

			Hilcorp Energy Compar I Juan County, New Me			
Well ID	Top of Casing Elevation (1)	Sample Date	Depth to Product (feet BTOC)	Depth to Groundwater (feet BTOC)	Product Thickness (feet)	Adjusted Groundwater Elevation (2)
		5/9/2005		28.50		72.02
		7/6/2005		26.32		74.20
		10/19/2005		25.30		75.22
		2/16/2006		28.62		71.90
		5/15/2006		26.55		73.97
		8/2/2006		24.23		76.29
		11/14/2006		27.67		72.85
		2/20/2007		29.34		71.18
		5/15/2007		27.04		73.48
		8/21/2007		25.21		75.31
		11/7/2007		26.13		74.39
		1/16/2008		28.18		72.34
		3/18/2008		29.65		70.87
		7/24/2008		25.73		74.79
		10/22/2008		25.49		75.03
		1/21/2009		28.38		72.14
		4/1/2009		29.92		70.60
		6/10/2009		27.09		73.43
		10/1/2009		23.50		77.02
		12/17/2009		26.77		73.75
		3/29/2010		29.21		71.31
		6/11/2010		26.16		74.36
MW-5	100.52	9/24/2010		25.31		75.21
		2/7/2011		29.13		71.39
		3/18/2011		30.10		70.42
		6/20/2011		27.03		73.49
		9/30/2011		24.35		76.17
		12/15/2011		27.25		73.27
		9/21/2012		24.65		75.87
		4/4/2013		30.10		70.42
		9/30/2013		25.16		75.36
		9/26/2014		25.88		74.64
		12/18/2014		27.98		72.54
		1/28/2015		NM		
		6/18/2015		NM		
		9/23/2015		26.41		74.11
		12/3/2015		28.00		72.52
		3/28/2016		30.41		70.11
		6/22/2016		28.03		72.49
		9/6/2016		22.66		77.86
		11/28/2016		28.03		72.49
		3/6/2017		30.39		70.13
		6/12/2017		28.06		72.46
		10/27/2017		26.50		74.02
		12/6/2017		27.58		72.94

Ensolum 7 of 10



Farmington B Com #1E
Hilcorp Energy Company
San Juan County, New Mexic

			ilcorp Energy Compar Juan County, New Me			
Well ID	Top of Casing Elevation (1)	Sample Date	Depth to Product (feet BTOC)	Depth to Groundwater (feet BTOC)	Product Thickness (feet)	Adjusted Groundwater Elevation (2)
		3/13/2018		30.40		70.12
		6/28/2018		26.13		74.39
		9/6/2018		25.68		74.84
		12/19/2018		27.15		73.37
		3/5/2019		29.2		71.32
		5/24/2019		28.04		72.48
		8/26/2019		26.47		74.05
		10/29/2019		26.27		74.25
		1/28/2020		29.18		71.34
	400.50	4/21/2020		29.36		71.16
MW-5	100.52	7/16/2020		25.12		75.40
		10/1/2020		24.96		75.56
		1/6/2021		27.96		72.56
		4/8/2021		30.16		70.36
		9/23/2021		27.50		73.02
		12/1/2021		27.43		73.09
		1/27/2022		29.52		71.00
		4/21/2022		29.42		71.10
		7/26/2022		26.53		73.99
		10/26/2022		27.42		73.10
		5/9/2005		29.94		72.20
		7/6/2005		27.89		74.25
		10/19/2005		26.70		75.44
		2/16/2006		29.85		72.29
		5/15/2006		28.11		74.03
		8/2/2006		25.83		76.31
		11/14/2006		27.91		74.23
		2/20/2007		30.52		71.62
		5/15/2007		28.61		73.53
		8/21/2007		26.67		75.47
		11/7/2007		27.52		74.62
MW-6	102.14	1/16/2008		29.43		72.71
IAI AA -Q	102.14	3/18/2008		30.85		71.29
		7/24/2008		27.26		74.88
		10/22/2008		26.85		75.29
		1/21/2009		29.52		72.62
		4/1/2009		31.00		71.14
		6/10/2009		28.44		73.70
		10/1/2009		24.75		77.39
		12/17/2009		27.90		74.24
		3/29/2010		30.29		71.85
		6/11/2010		27.58		74.56
		9/24/2010		26.74		75.40
		2/7/2011		30.35		71.79

Ensolum 8 of 10



Farmington B Com #1E Hilcorp Energy Company San Juan County, New Mexic

	San Juan County, New Mexico								
Well ID	Top of Casing Elevation (1)	Sample Date	Depth to Product (feet BTOC)	Depth to Groundwater (feet BTOC)	Product Thickness (feet)	Adjusted Groundwater Elevation (2)			
		3/18/2011		31.21		70.93			
		6/20/2011		28.50		73.64			
		9/30/2011		25.85		76.29			
		12/15/2011		28.41		73.73			
		9/21/2012		26.03		76.11			
		4/4/2013		31.24		70.90			
		9/30/2013		25.43		76.71			
		9/26/2014		27.38		74.76			
		12/18/2014		29.28		72.86			
		1/28/2015		30.33		71.81			
		6/18/2015		28.73		73.41			
		9/23/2015		27.91		74.23			
		12/3/2015		29.31		72.83			
		3/28/2016		31.52		70.62			
		6/22/2016		28.00		74.14			
		9/6/2016		28.21		73.93			
		11/28/2016		29.33		72.81			
MW-6	102.14	3/6/2017		31.54		70.60			
IVIVV-0	102.14	6/12/2017		29.55		72.59			
		10/27/2017		27.92		74.22			
		12/6/2017		28.87		73.27			
		3/13/2018		31.59		70.55			
		6/28/2018		27.8		74.34			
		9/6/2018		27.12		75.02			
		12/19/2018		28.36		73.78			
		3/5/2019		30.39		71.75			
		5/21/2019		29.51		72.63			
		8/26/2019		28.00		74.14			
		10/29/2019		27.73		74.41			
		1/29/2020		30.46		71.68			
		4/21/2020		30.85		71.29			
		7/16/2020		26.73		75.41			
		10/1/2020		26.45		75.69			
		1/6/2021		29.19		72.95			
		4/8/2021		31.38		70.76			
		9/23/2021		26.00		76.14			

Ensolum 9 of 10



Farmington B Com #1E Hilcorp Energy Company San Juan County, New Mexico

Well ID	Top of Casing Elevation (1)	Sample Date	Depth to Product (feet BTOC)	Depth to Groundwater (feet BTOC)	Product Thickness (feet)	Adjusted Groundwater Elevation (2)
		12/1/2021		28.70		73.44
		1/28/2022		30.37		71.77
MW-6	102.14	4/21/2022		30.89		71.25
		7/26/2022		28.26		73.88
		10/26/2022		28.80		73.34

Notes:

(1): surface elevation based on an arbitrary datum of 100 feet

(2): groundwater elevation is adjusted using a density correction factor of 0.8 when product is present

bgs: below ground surface BTOC: below top of casing NM: Not measured

Ensolum 10 of 10



TABLE 2 GROUNDWATER QUALITY MEASUREMENTS Farmington B Com #1E Hilcorp Energy Company San Juan County, New Mexico

	Hilcorp Energy Company San Juan County, New Mexico									
Well ID	Sample Date	Temperature (°C)	рН	TDS (g/L)	Conductivity (uS/cm)	DO (mg/L)	ORP (mV)	Volume (gallons)		
	9/26/2014	18.30	7.17	0.824	1,268	1.60	-198.0	3.50		
	12/18/2014	18.93	12.95	10.310	15,860	25.02	-166.1	2.00		
	1/28/2015	18.78	11.91	4.202	6,495	10.54	-36.4	1.75		
	6/18/2015	17.81	9.44	13.390	21,782	1.34	42.0	3.25		
	9/23/2015	17.97	7.90	3.224	4,960	1.41	-127.6	2.50		
	12/3/2015	17.97	7.92	1.311	2,016	2.45	-200.0	2.25		
	3/28/2016	18.35	7.35	0.800	1,190	3.77	-101.0	2.00		
	6/22/2016	16.70	7.30		2,620	0.50	-176.1	2.25		
	9/7/2016	17.54	6.65	2.083	3,205	1.10	-127.8	3.50		
	3/6/2017	15.98	8.72	1.564	2,398	0.86	-247.1	2.00		
	6/12/2017	15.98	7.76	3.880	5,967	1.27	-103.8	2.75		
	10/27/2017	18.65	7.22	0.783	1,273	5.27	-125.9	3.75		
	12/6/2017	17.04	6.92	2.783	1,202	1.21	55.6	3.25		
	3/13/2018	17.41	7.25		1,109	-0.05*	-125.4	1.80		
	6/28/2018	17.65	7.03		1,593	1.07	-109.6	3.75		
	9/6/2018	18.50	7.40		2,248	1.60	-116.7	4.00		
MW-1	3/5/2019	16.90	7.46		1,090		-22.5	4.00		
	5/21/2019	16.90	7.19	0.550	1,100	<u></u>	-19.8	2.75		
	8/26/2019	21.70	7.19	0.640	1,100		-17.8	3.50		
		ļ								
	10/30/2019		6.31	0.710	1,290		12.1	3.50		
	1/29/2020	13.00	6.60	0.510	1,050	20.17*	-14.3			
	4/21/2020	17.50	6.33	0.580	1,160	1.66	7.1			
	7/16/2020	22.20	6.23	1.120	2,230	0.76	7.8			
	10/1/2020	22.00	6.39	0.740	1,450	1.70	7.3	4.33		
	1/6/2021	15.20	6.41	0.570	1,140	2.61	5.4	3.00		
	4/9/2021	14.40	6.58	0.530	1,020	2.49	-0.3	2.00		
	9/23/2021	20.00	7.00		3,040			2.46		
	12/2/2021	14.30	6.39		1,040			3.25		
	1/28/2022	10.80	6.63		940			2.50		
	4/21/2022	18.60	6.35	0.490	990			2.25		
	7/26/2022	19.50	6.27	0.640	1,280			3.50		
	10/26/2022	18.50	6.61	0.480	950			3.00		
	9/23/2015	18.01	7.11	0.782	1,204	2.86	0.9	3.50		
	9/7/2016	17.45	6.95	0.703	1,081	3.89	5.7	4.00		
	3/13/2018	17.86	7.23		1,046	2.50	48.5	1.80		
	6/28/2018	17.19	7.02		1,142	3.47	45.1	4.50		
	9/6/2018	23.70	7.30		1,199	2.63	-7.4	5.00		
	3/5/2019	25.70					-7			
	5/21/2019				-					
	8/26/2019		<u>-</u>			<u></u>				
	10/30/2019	16.20	6.38	0.550	1,100		-28.5	4.25		
	1/29/2020	1			+		ł	4.25		
MW-2		14.90	6.55	0.590	1,180	13.5*	-30.5			
IVIVV-∠	4/22/2020	15.10	6.52	0.500	1,010	3.09	-18.1			
	7/17/2020	18.80	6.52	0.650	1,320	2.87	-11.6			
	10/2/2020	15.50	6.54	0.550	1,090	4.64	-20.4	4.91		
	1/7/2021	13.10	6.76	0.560	1,100	2.11	-19.5	3.59		
	4/9/2021	15.70	6.43	0.470	950	3.01	-29.9	2.50		
	9/23/2021	22.10	7.04		3,310			4.14		
	12/2/2021	15.90	6.49		1,040			4.00		
	1/28/2022	12.20	6.48		960			3.00		
	4/21/2022	18.20	6.55	0.450	900			2.00		
	7/26/2022	19.40	6.34	0.510	1,020			4.25		
	10/26/2022	18.20	6.78	0.490	980			3.50		

Ensolum 1 of 3



TABLE 2 GROUNDWATER QUALITY MEASUREMENTS Farmington B Com #1E Hilcorp Energy Company San Juan County, New Mexico

Farmington B Com #1E Hilcorp Energy Company San Juan County, New Mexico								
Well ID	Sample Date	Temperature (°C)	рН	TDS (g/L)	Conductivity (uS/cm)	DO (mg/L)	ORP (mV)	Volume (gallons)
	9/23/2015	17.49	7.28	0.787	1,211	9.40	-45.2	3.25
	9/7/2016	16.37	6.81	0.673	1,035	3.54	17.5	3.50
	11/28/2016	16.68	7.92		1,072	4.09	62.3	3.50
	3/6/2017	15.38	7.65	0.782	1,202	3.26	-117.1	1.50
	6/12/2017	14.88 17.27	7.33	0.612	943	4.51	-95.6	3.00
	10/27/2017 12/6/2017	16.08	7.37 7.01	0.596	800 918	6.11 3.42	35.0 -56.9	3.75 3.00
	3/13/2018	16.97	7.21	0.590	1,034	0.06	35.9	1.50
	6/28/2018	18.39	7.53		676	3.88	47.0	4.25
	9/6/2018	18.17	8.14		583	2.84	6.6	4.25
	3/5/2019	NA	7.47	0.530	1,050	NA	-24.6	
	5/21/2019	16.30	7.25	0.310	560		-28.1	3.00
MW-3	8/26/2019	21.50	7.46	0.500	1,000	-	-28.7	3.75
	10/30/2019	17.40	6.60	0.990	990		-45.1	3.75
	1/29/2020	13.00	6.78	0.500	1,000	15.04*	-42.5	
	4/22/2020	17.10	6.57	0.550	1,090	3.63	-23.3	
	7/17/2020 10/2/2020	18.60 14.80	6.85	0.300 0.290	600 580	2.97 5.57	-53.7 -44.0	4.44
	1/7/2021	14.10	6.70	0.290	720	2.29	-37.2	2.84
	4/9/2021	17.70	6.71	0.540	1,070	2.29	-29.2	2.00
	9/22/2021	18.60	7.00		1,148			3.30
	12/2/2021	16.20	6.59		850	-	-	3.00
	1/28/2022	14.10	6.77		940			2.00
	4/21/2022	17.90	6.60	0.450	890	-	-	2.75
	7/26/2022	18.10	6.83	0.380	760			4.00
	10/26/2022	15.90	6.44	0.420	840			2.50
	9/23/2015	17.73	7.52	0.411	632	10.50	-18.5	3.25
	9/7/2016	16.75	6.80	0.693	1,066	3.59	14.9	2.50
	11/28/2016	16.93	7.32		1,003	3.11	113.1	2.00
	3/13/2018	17.12	7.24		985	2.19	52.4	0.68
	6/28/2018	19.87	7.07	-	1,098	3.62	61.6	3.00
	9/6/2018	18.26	7.49		1,007	2.94	44.0	4.00
	3/5/2019 5/21/2019						-	
	8/26/2019							
	10/30/2019	15.90	6.44	0.630	1,250		-24.6	2.75
	1/28/2020	14.30	6.63	0.530	1,050	11.56*	-25.7	-
MW-4	4/21/2020	18.30	6.28	0.540	1,080	4.51	-20.5	
	7/16/2020	21.40	6.51	0.640	1,280	2.76	-19.9	
	10/1/2020	17.90	6.61	0.510	1,020	4.82	-30.0	3.37
	1/6/2021	12.90	6.37	0.500	980	3.21	-21.5	1.93
	4/8/2021	17.70	6.41	0.520	1,030	6.72	-21.0	0.75
	9/23/2021	19.50	6.99 6.54		3,320			3.75 2.25
	12/1/2021 1/27/2022	15.90 12.50	6.42		1,100 1,080			1.50
	4/21/2022	18.60	6.72	0.460	910	<u></u>		0.50
	7/26/2022	19.10	6.29	0.510	1,010			2.75
	10/26/2022	17.10	6.52	0.540	1,080			1.75
	9/23/2015	18.12	7.04	0.892	1,373	6.29	-109.5	2.75
	9/7/2016	16.82	6.90	0.931	1,433	6.49	41.1	4.50
	11/28/2016	17.58	7.37		1,141	6.64	104.1	2.00
	3/13/2018	16.60	7.23		1,033	1.80	51.1	0.81
	6/8/2018	16.38	7.12		1,097	6.17	70.5	3.00
MW-5	9/6/2018	17.90	7.28		1,023	7.28	51.6	3.25
	3/5/2019					-		
	5/21/2019						-	
	8/26/2019							
	10/30/2019	14.70	6.78	0.880	1,460		-26.3	2.75
	1/28/2020 4/21/2020	12.50 16.20	6.92	0.520	1,080 1,070	6.61 4.80	-28.6 -25.0	
	4/2 1/2020	10.20	0.20	0.530	1,070	4.00	-20.0	

Ensolum 2 of 3



TABLE 2 GROUNDWATER QUALITY MEASUREMENTS Farmington B Com #1E Hilcorp Energy Company San Juan County, New Mexico								
Well ID	Sample Date	Temperature (°C)	рН	TDS (g/L)	Conductivity (uS/cm)	DO (mg/L)	ORP (mV)	Volume (gallons)
	7/16/2020	20.70	6.40	0.650	1,320	4.34	-23.3	
	10/1/2020	16.60	6.64	0.500	1,060	5.89	-37.6	3.48
	1/6/2021	11.80	6.63	0.460	880	6.28	-38.1	2.01
	4/8/2021	14.30	6.40	0.570	1,180	2.42	-25.1	1.00
	9/23/2021	18.10	7.01		3,350			3.00
MW-5	12/1/2021	15.90	6.55		1,040	-		2.25
	1/27/2022	15.30	6.37		1,000			1.00
	4/21/2022	18.60	6.94	0.460	910	_		1.50
	7/26/2022	18.80	6.35	0.470	980			2.75
	10/26/2022	17.10	6.80	0.510	1,020		-	2.25
	9/26/2014	17.65	7.22	0.712	1,096	1.38	-39.5	2.75
	12/18/2014	18.31	7.87	0.985	1,515	1.99	-161.7	2.25
	1/28/2015	17.73	7.52	0.868	1,335	4.17	-122.1	1.50
	6/18/2015	17.09	8.18	1.194	1,836	1.81	-89.5	2.50
	9/23/2015	17.98	8.10	1.014	1,559	2.45	-73.5	3.00
	12/3/2015	18.04	8.06	0.931	1,433	4.07	-177.6	2.25
	3/28/2016	18.05	7.04	0.600	1,000	5.16	-9.0	1.25
	6/22/2016	17.00	7.38		1,060	1.63	1.8	3.00
	9/7/2016	16.94	7.03	0.777	1,196	2.46	8.5	2.50
	11/28/2016	17.79	9.12		3,150	3.50	115.9	2.00
	3/6/2017	15.90	7.42	0.810	1,247	1.53	-160.6	1.50
	6/12/2017	15.22	7.42	0.763	1,174	2.56	-116.3	2.00
	10/27/2017	17.98	7.21		1,196	3.06	74.1	3.00
	12/6/2017	16.64	7.09	0.851	1,307	2.53	-63.8	2.50
	3/13/2018	17.05	7.23		1,043	0.15	14.6	1.14
	6/28/2018	17.56	7.08		1,198	1.28	60.1	3.00
MW-6	9/6/2018	18.06	7.43		1,395	1.31	51.6	3.50
	3/5/2019	14.20	7.56		1,370		-24.4	
	5/21/2019	14.30	7.26	0.500	1,010		-29.6	2.00
	8/26/2019	19.10	7.05	0.580	1,170	-	-25.2	2.75
	10/29/2019	17.70	6.47	0.630	1,300	-	-25.6	3.00
	1/29/2020	12.20	6.80	0.540	1,070	6.75	-26.2	
	4/21/2020	18.80	6.55	0.580	1,180	3.10	-20.0	-
	7/16/2020	22.30	6.37	0.770	1,550	2.17	-11.6	
	10/1/2020	19.20	6.78	0.730	1,460	3.69	-22.2	3.64
	1/6/2021	12.20	6.57	0.530	1,080	2.44	-26.2	2.30
	4/8/2021	18.90	6.64	0.500	1,000	1.62	-17.4	1.25
	9/23/2021	19.00	7.10		2,780	1	-	2.93
	12/1/2021	16.90	6.65	-	1,030	-	-	2.50
	1/28/2022	9.10	6.80		950			1.75
	4/21/2022			Insuffic	ient water volume to	o sample		
	7/26/2022	19.40	6.38	0.480	960			2.75
	10/26/2022	17.50	6.66	0.460	910		-	2.50
TMW-1	12/3/2015	17.12	8.23	2.072	3,188	7.40	-205.6	
TMW-2	12/3/2015	17.54	9.40	5.043	7,761	2.47	-231.2	

Notes:

°C: degrees Celcius

DO: dissolved oxygen

g/L: grams per liter

uS/cm: microsiemens per centimeter

mg/L: milligrams per liter

mV: millivolts

ORP: oxidation-reduction potential

TDS: total dissolved solids

--: data not collected

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TABLE 3 **GROUNDWATER ANALYTICAL RESULTS** Farmington B Com #1E Hilcorp Energy Company San Juan County, New Mexico Manganese Sample Iron (dissolved) Well ID Sample Date (dissolved) Type (mg/L) (mg/L) NMWQCC Standards 1.0 0.20 2/19/1998 (orig) 12/29/1998 (orig) 5/9/2005 10/19/2005 11/14/2006 (orig) 11/7/2007 (orig) 7/24/2008 (orig) 7/24/2008 (Duplicate) 10/22/2008 (orig) 10/22/2008 (Duplicate) Free Product - Not Sampled 1/21/2009 4/1/2009 (orig) 6/10/2009 10/1/2009 (orig) 0.233 12/17/2009 (orig) 0.521 0.0803 3/29/2010 (orig) 6/11/2010 (orig) 0.0217 9/24/2010 (orig) 0.0285 2/7/2011 (orig) 0.459 3/18/2011 (orig) < 0.02 0.477 6/20/2011 (orig) 0.157 0.424 MW-1 6/20/2011 (Duplicate) 9/30/2011 0.268 9/30/2011 (Duplicate) 12/15/2011 (orig) 1.91 0.35 12/15/2011 (Duplicate) 9/21/2012 (orig) 0.27 4/4/2013 (orig) 1.8 9/30/2013 (orig) 1.7 (orig) 11/5/2014 CHEMICAL OXIDATION INJECTION EVENT 12/18/2014 (orig) 0.0805 1/28/2015 (orig) 3/17/2015 **CHEMICAL OXIDATION - 2nd INJECTION** 6/18/2015 (orig) 6/18/2015 (Duplicate) 9/23/2015 (orig) 9/23/2015 (Duplicate) 0.678 (orig) 0.568 12/3/2015 (Duplicate) 0.776 0.597 3/28/2016 (orig) 0.454 3/28/2016 (Duplicate) 0.445

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(orig)

16.2

1.72

6/22/2016



TABLE 3 **GROUNDWATER ANALYTICAL RESULTS** Farmington B Com #1E Hilcorp Energy Company San Juan County, New Mexico Manganese Iron (dissolved) Sample Well ID Sample Date (dissolved) Type (mg/L) (mg/L) NMWQCC Standards 1.0 0.20 7.66 1.63 (orig) 9/7/2016 (Duplicate) 10.2 1.77 10/18/2016 **CHEMICAL OXIDATION - 3rd INJECTION** 3/6/2017 (orig) 6/12/2017 (orig) 10/27/2017 (orig) 6.69 1.15 12/06/2017 (orig) 4.89 1.02 3/13/2018 3.44 0.961 (orig) 6/28/2018 8.15 1.14 (orig) 9/6/2018 (orig) 9.04 3.76 12/19/2018 (orig) 0.86 3/5/2019 (orig) 1.07 5/21/2019 (orig) 1.02 (orig) 1.07 MW-1 10/30/2019 (orig) 1.01 1/29/2020 1.14 (orig) 4/21/2020 (orig) 1.20 Q3 Invalid Sample due to lab issues 10/1/2020 0.11 2.91 (orig) 1/6/2021 1.10 < 0.10 (orig) 4/9/2021 <0.10 1.00 (orig) 9/23/2021 (orig) 5.5 1.1 12/2/2021 0.22 0.72 (orig) 1/28/2022 <0.020 0.66 (orig) 4/21/2022 (orig) 1.1 0.72 7/26/2022 (orig) 2.7 1.2 10/26/2022 2.5 0.76 (orig) 0.046 4/4/2013 (orig) 9/30/2013 0.0077 (orig) 9/23/2015 (orig) 9/7/2016 (orig) < 0.05 0.0167 3/13/2018 (orig) 6/28/2018 (orig) < 0.05 < 0.005 9/6/2018 (orig) < 0.05 12/19/2018 (orig) 10/30/2019 < 0.10 (orig) 1/29/2020 (orig) < 0.10 MW-2 4/21/2020 (orig) Q3 Invalid Sample due to lab issues 10/2/2020 (orig) 1/7/2021 (orig) < 0.10 < 0.010 4/9/2021 (orig) < 0.020 0.013 9/22/2021 (orig) < 0.020 0.0026 12/2/2021 (orig) 1/28/2022 (orig) 0.0030 4/21/2022 (orig) 7/26/2022 (orig) 10/26/2022 (orig) < 0.020 < 0.0020

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0.069

< 0.005

0.0094

0.0066

0.0063

< 0.010

TABLE 3 **GROUNDWATER ANALYTICAL RESULTS** Farmington B Com #1E Hilcorp Energy Company San Juan County, New Mexico Manganese Iron (dissolved) Sample Well ID Sample Date (dissolved) Type (mg/L) (mg/L) NMWQCC Standards 1.0 0.20 0.246 0.112 (orig) 4/4/2013 0.34 (orig) 0.28 9/30/2013 0.047 (orig) 9/23/2015 0.121 (orig) (orig) 0.85 11/28/2016 0.218 0.0959 (orig) 3/6/2017 0.149 (orig) 0.211 6/12/2017 0.0726 0.0604 (orig) 10/27/2017 0.136 (orig) 12/06/2017 (orig) 0.0361 3/13/2018 (orig) 0.084 6/18/2018 0.0336 (orig) 6/6/2018 (orig) 0.143 12/19/2018 0.157 (orig) 3/5/2019 0.0341 (orig) MW-3 5/21/2019 (orig) 8/26/2019 < 0.10 0.249 (orig) 10/30/2019 < 0.10 0.145 (orig) 1/29/2020 < 0.10 0.066 (orig) (orig) 0.0156 4/21/2020 Q3 Invalid Sample due to lab issues 10/2/2020 (orig) < 0.10 0.041 1/7/2021 < 0.10 0.0243 (orig) 4/9/2021 < 0.020 0.016 (orig) (orig) 9/22/2021 < 0.020 0.13 0.065 12/2/2021 < 0.020 (orig) 1/28/2022 0.029 0.0065 (orig) 4/21/2022 0.038 (orig) 7/26/2022 <0.020 0.11 (orig) 10/26/2022 0.023 0.35 (orig)

< 0.05

< 0.05

< 0.05

< 0.05

< 0.10

Invalid Sample due to lab issues

4/4/2013

9/30/2013

9/23/2015

9/7/2016

11/28/2016

3/13/2018

6/28/2018

9/6/2018

12/19/2018

10/29/2019

1/29/2020

4/21/2020

Q3 10/2/2020

1/6/2021

4/8/2021

9/23/2021

MW-4

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TABLE 3 GROUNDWATER ANALYTICAL RESULTS

Well ID	Sample Date	Sample Type	Iron (dissolved) (mg/L)	Manganese (dissolved) (mg/L)
	NMWQCC Standards		1.0	0.20
	12/1/2021	(orig)	<0.020	<0.0020
	1/27/2022	(orig)	<0.020	<0.0020
MW-4	4/21/2022	(orig)	<0.020	<0.0020
	7/26/2022	(orig)	0.026	<0.0020
	10/26/2022	(orig)	<0.020	<0.0020
	4/4/2013	(orig)	< 0.05	< 0.005
	4/4/2013	(Duplicate)	0.62	0.025
	9/30/2013	(orig)	< 0.05	< 0.005
	9/23/2015	(orig)	< 0.05	< 0.005
	9/7/2016	(orig)	< 0.05	< 0.005
	11/28/2016	(orig)	0.186	0.0083
	03/13/2018	(orig)	0.0668	< 0.05
	6/28/2018	(orig)	< 0.05	< 0.005
	9/6/2018	(orig)	< 0.05	< 0.005
	12/19/2018	(orig)	< 0.10	< 0.010
	10/29/2019	(orig)	< 0.10	< 0.010
MW-5	1/29/2020	(orig)	< 0.10	< 0.010
	4/21/2020	(orig)	< 0.10	< 0.010
	Q3	Inva	lid Sample due to lab iss	sues
	10/1/2020	(orig)	<0.10	0.0131
	1/6/2021	(orig)	<0.10	<0.01
	4/8/2021	(orig)	<0.020	<0.002
	9/23/2021	(orig)	<0.020	0.0037
	12/1/2021	(orig)	<0.020	<0.0020
	1/27/2022	(orig)	<0.020	<0.0020
	4/21/2022	(orig)	<0.020	<0.0020
	7/26/2022	(orig)	<0.020	<0.0020
	10/26/2022	(orig)	<0.020	<0.0020
	9/15/1998	(orig)		
	12/29/1998	(orig)		
	3/3/1999	(orig)		
	6/15/1999	(orig)		
	9/15/1999	(orig)		
	12/14/1999	(orig)	-	
	1/22/2004	(orig)	-	
	5/9/2005	(orig)		
	10/19/2005	(orig)		
	11/14/2006	(orig)		
MW-6	11/7/2007	(orig)		
	7/24/2008	(orig)		
	10/22/2008	(orig)		
	1/21/2009	(orig)		
	4/1/2009	(orig)		
	6/10/2009	(orig)		
	10/1/2009	(orig)	< 0.02	
	12/17/2009	(orig)	0.0511	
	3/29/2010	(orig)	< 0.0200	
	6/11/2010	(orig)	< 0.0200	
	9/24/2010	(orig)	< 0.0200	

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TABLE 3 **GROUNDWATER ANALYTICAL RESULTS** Farmington B Com #1E Hilcorp Energy Company San Juan County, New Mexico Manganese Iron (dissolved) Sample Well ID Sample Date (dissolved) Type (mg/L) (mg/L) NMWQCC Standards 1.0 0.20 0.0679 (orig) 6/20/2011 (orig) 9/30/2011 0.0261 (orig) 12/15/2011 0.429 (orig) 1.06 9/21/2012 (orig) 0.058 9/21/2012 (Duplicate) 0.055 4/4/2013 0.056 (orig) 0.33 9/30/2013 0.17 (orig) 9/30/2013 0.17 (Duplicate) 9/26/2014 (orig) 0.24 0.44 9/26/2014 (Duplicate) 0.41 CHEMICAL OXIDATION INJECTION EVENT 11/5/2014 12/18/2014 (orig) 1.33 12/18/2014 (Duplicate) 0.255 1.11 1/28/2015 (orig) 0.402 3/17/2015 **CHEMICAL OXIDATION - 2nd INJECTION** 6/18/2015 (orig) 0.0636 0.0225 9/23/2015 0.0152 (orig) 12/3/2015 0.0709 0.194 (orig) 3/28/2016 0.456 (orig) 6/22/2016 < 0.05 0.463 (orig) MW-6 9/7/2016 (orig) < 0.05 0.409 10/18/2016 **CHEMICAL OXIDATION - 3rd INJECTION** 11/28/2016 < 0.05 0.0051 (orig) 3/6/2017 (orig) 0.0598 0.428 6/12/2017 0.0543 0.0618 (orig) 10/27/2017 < 0.05 0.218 (orig) 12/06/2017 < 0.05 0.311 (orig) 3/13/2018 < 0.05 (orig) 0.925 6/28/2018 < 0.05 (orig) 0.973 9/6/2018 0.848 < 0.05 (orig) 12/19/2018 0.306 < 0.10 (orig) 3/05/2019 < 0.10 0.617 (orig) 5/21/2019 (orig) < 0.10 0.420 8/26/2019 0.357 (orig) < 0.10 10/29/2019 0.211 < 0.10 (orig) 1/29/2020 < 0.10 0.524 (orig) 4/21/2020 0.556 < 0.10 (orig) Invalid Sample due to lab issues Q3 10/1/2020 (orig) < 0.10 < 0.010

(orig)

(orig)

< 0.10

< 0.020

0.438

0.51

1/6/2021

4/8/2021



TABLE 3 GROUNDWATER ANALYTICAL RESULTS Farmington B Com #1E Hilcorp Energy Company San Juan County, New Mexico Manganese Sample Iron (dissolved) Well ID Sample Date (dissolved) Туре (mg/L) (mg/L) NMWQCC Standards 1.0 0.20 (orig) 0.53 12/1/2021 (orig) 0.80 1/28/2022 (orig) 0.69 MW-6 4/21/2022 Insufficient water volume to sample 7/26/2022 (orig) 10/26/2022 (orig) < 0.020 0.85

Notes:

mg/L: milligrams per liter

ND: not detected, practical quantitation limit unknown

NMWQCC: New Mexico Water Quality Control Commission

Concentrations in **bold** and shaded exceed the New Mexico Water Quality Control Commission Standards, 20.6.2 of the New Mexico Administrative Code

^{--:} not analyzed

<0.037: indicates result less than the stated laboratory reporting limit (PQL)



APPENDIX A

Laboratory Analytical Reports



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

OrderNo.: 2201B35

February 21, 2022

Kate Kaufman HILCORP ENERGY PO Box 4700 Farmington, NM 87499

TEL: (505) 564-0733

FAX:

RE: Farmington B Com No 1E

Dear Kate Kaufman:

Hall Environmental Analysis Laboratory received 6 sample(s) on 1/29/2022 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman

Laboratory Manager

and st

4901 Hawkins NE

Albuquerque, NM 87109

Analytical Report

Lab Order **2201B35**Date Reported: **2/21/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY Client Sample ID: MW-1

Project: Farmington B Com No 1E
 Collection Date: 1/28/2022 10:35:00 AM

 Lab ID: 2201B35-001
 Matrix: AQUEOUS
 Received Date: 1/29/2022 9:00:00 AM

Analyses	Result	RL Qua	al Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS					Analyst: JMT
Sulfate	48	5.0	mg/L	10	1/31/2022 12:37:13 PM
EPA METHOD 200.7: DISSOLVED METALS					Analyst: ELS
Iron	ND	0.020	mg/L	1	2/1/2022 10:38:14 AM
Manganese	0.66	0.0020 *	mg/L	1	2/1/2022 10:38:14 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix interference
- B Analyte detected in the associated Method Blank
- E Estimated value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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Analytical Report

Lab Order **2201B35**Date Reported: **2/21/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY Client Sample ID: MW-2

Project: Farmington B Com No 1E
 Collection Date: 1/28/2022 12:05:00 PM

 Lab ID: 2201B35-002
 Matrix: AQUEOUS
 Received Date: 1/29/2022 9:00:00 AM

Analyses	Result	RL Qual Units		DF Date Analyzed	
EPA METHOD 200.7: DISSOLVED METALS					Analyst: ELS
Iron	ND	0.020	mg/L	1	2/1/2022 10:39:52 AM
Manganese	0.0030	0.0020	mg/L	1	2/1/2022 10:39:52 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix interference
- B Analyte detected in the associated Method Blank
- E Estimated value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- Reporting Limit

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Lab Order **2201B35**Date Reported: **2/21/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY Client Sample ID: MW-3

Project: Farmington B Com No 1E
 Collection Date: 1/28/2022 1:10:00 PM

 Lab ID: 2201B35-003
 Matrix: AQUEOUS
 Received Date: 1/29/2022 9:00:00 AM

Analyses	Result	RL Qua	al Units	DF	Date Analyzed
EPA METHOD 200.7: DISSOLVED METALS					Analyst: ELS
Iron	0.029	0.020	mg/L	1	2/1/2022 10:41:30 AM
Manganese	0.0065	0.0020	mg/L	1	2/1/2022 10:41:30 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix interference
- B Analyte detected in the associated Method Blank
- E Estimated value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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Date Reported: 2/21/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY Client Sample ID: MW-4

 Project:
 Farmington B Com No 1E
 Collection Date: 1/27/2022 12:55:00 PM

 Lab ID:
 2201B35-004
 Matrix: AQUEOUS
 Received Date: 1/29/2022 9:00:00 AM

Analyses	Result	RL Qual	Units	DF	Date Analyzed
EPA METHOD 200.7: DISSOLVED METALS					Analyst: ELS
Iron	ND	0.020	mg/L	1	2/1/2022 10:43:08 AM
Manganese	ND	0.0020	mg/L	1	2/1/2022 10:43:08 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix interference
- B Analyte detected in the associated Method Blank
- E Estimated value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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Date Reported: 2/21/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY Client Sample ID: MW-5

Project: Farmington B Com No 1E
 Collection Date: 1/27/2022 2:00:00 PM

 Lab ID: 2201B35-005
 Matrix: AQUEOUS
 Received Date: 1/29/2022 9:00:00 AM

Analyses	Result	RL Qual	Units	DF	Date Analyzed
EPA METHOD 200.7: DISSOLVED METALS					Analyst: ELS
Iron	ND	0.020	mg/L	1	2/1/2022 10:44:46 AM
Manganese	ND	0.0020	mg/L	1	2/1/2022 10:44:46 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix interference
- B Analyte detected in the associated Method Blank
- E Estimated value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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Date Reported: 2/21/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY Client Sample ID: MW-6

Project: Farmington B Com No 1E
 Collection Date: 1/28/2022 9:20:00 AM

 Lab ID: 2201B35-006
 Matrix: AQUEOUS
 Received Date: 1/29/2022 9:00:00 AM

Analyses	Result	RL Qual Un	nits D	OF	Date Analyzed
EPA METHOD 300.0: ANIONS					Analyst: JMT
Sulfate	69	5.0 m	g/L	10	1/31/2022 1:02:59 PM
EPA METHOD 200.7: DISSOLVED METALS					Analyst: ELS
Iron	ND	0.020 m	g/L	1	2/1/2022 10:46:27 AM
Manganese	0.69	0.010 * m	g/L	5	2/1/2022 11:05:43 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix interference
- B Analyte detected in the associated Method Blank
- E Estimated value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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OC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2201B35**

22-Feb-22

Client: HILCORP ENERGY
Project: Farmington B Com No 1E

Sample ID: MB SampType: MBLK TestCode: EPA Method 200.7: Dissolved Metals

Client ID: PBW Batch ID: A85527 RunNo: 85527

Prep Date: Analysis Date: 2/1/2022 SeqNo: 3010206 Units: mg/L

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual

 Iron
 ND
 0.020

 Manganese
 ND
 0.0020

Sample ID: LLLCS SampType: LCSLL TestCode: EPA Method 200.7: Dissolved Metals

Client ID: BatchQC Batch ID: A85527 RunNo: 85527

Prep Date: Analysis Date: 2/1/2022 SeqNo: 3010208 Units: mg/L

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual

 Iron
 0.025
 0.020
 0.02000
 0
 123
 50
 150

 Manganese
 0.0024
 0.0020
 0.002000
 0
 121
 50
 150

Sample ID: LCS SampType: LCS TestCode: EPA Method 200.7: Dissolved Metals

Client ID: LCSW Batch ID: A85527 RunNo: 85527

Prep Date: Analysis Date: 2/1/2022 SeqNo: 3010232 Units: mg/L

SPK value SPK Ref Val %REC %RPD **RPDLimit** Analyte Result **PQL** LowLimit HighLimit Qual 0.52 0.020 0.5000 O 104 85 115 Iron

Manganese 0.49 0.0020 0.5000 0 98.6 85 115

Sample ID: MB SampType: MBLK TestCode: EPA Method 200.7: Dissolved Metals

Client ID: PBW Batch ID: B85527 RunNo: 85527

Prep Date: Analysis Date: 2/1/2022 SeqNo: 3010233 Units: mg/L

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual

 Iron
 ND
 0.020

 Manganese
 ND
 0.0020

Sample ID: LLLCS SampType: LCSLL TestCode: EPA Method 200.7: Dissolved Metals

Client ID: BatchQC Batch ID: B85527 RunNo: 85527

Prep Date: Analysis Date: 2/1/2022 SeqNo: 3010234 Units: mg/L

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual

 Iron
 0.023
 0.020
 0.02000
 0
 114
 50
 150

 Manganese
 0.0021
 0.0020
 0.002000
 0
 107
 50
 150

Sample ID: LCS SampType: LCS TestCode: EPA Method 200.7: Dissolved Metals

Client ID: LCSW Batch ID: B85527 RunNo: 85527

Prep Date: Analysis Date: 2/1/2022 SeqNo: 3010235 Units: mg/L

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual

Qualifiers:

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix interference
- B Analyte detected in the associated Method Blank
- E Estimated value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Page 7 of 9

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2201B35 22-Feb-22**

Client: HILCORP ENERGY
Project: Farmington B Com No 1E

Sample ID: LCS SampType: LCS TestCode: EPA Method 200.7: Dissolved Metals

Client ID: LCSW Batch ID: B85527 RunNo: 85527

Prep Date: Analysis Date: 2/1/2022 SeqNo: 3010235 Units: mg/L

Analyte SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual 0.47 0 94.3 85 115 0.020 0.5000 Iron Manganese 0.48 0.0020 0.5000 0 96.1 85 115

Sample ID: 2201B35-006BMS SampType: MS TestCode: EPA Method 200.7: Dissolved Metals

Client ID: MW-6 Batch ID: A85527 RunNo: 85527

Prep Date: Analysis Date: 2/1/2022 SeqNo: 3010282 Units: mg/L

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual

Manganese 3.1 0.010 2.500 0.6874 94.7 70 130

Sample ID: 2201B35-006BMSD SampType: MSD TestCode: EPA Method 200.7: Dissolved Metals

Client ID: MW-6 Batch ID: A85527 RunNo: 85527

Prep Date: Analysis Date: 2/1/2022 SeqNo: 3010286 Units: mg/L

Analyte **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Manganese 0.010 2.500 0.6874 96.5 70 130 1.41 20

Qualifiers:

Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

S % Recovery outside of range due to dilution or matrix interference

B Analyte detected in the associated Method Blank

E Estimated value

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

Page 8 of 9

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2201B35 22-Feb-22**

Client: HILCORP ENERGY
Project: Farmington B Com No 1E

Sample ID: MB SampType: mblk TestCode: EPA Method 300.0: Anions

Client ID: PBW Batch ID: R85526 RunNo: 85526

Prep Date: Analysis Date: 1/31/2022 SeqNo: 3010152 Units: mg/L

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual

Sulfate ND 0.50

Sample ID: LCS SampType: Ics TestCode: EPA Method 300.0: Anions

Client ID: LCSW Batch ID: R85526 RunNo: 85526

Prep Date: Analysis Date: 1/31/2022 SeqNo: 3010158 Units: mg/L

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual

Sulfate 9.2 0.50 10.00 0 91.6 90 110

Qualifiers:

Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

S % Recovery outside of range due to dilution or matrix interference

B Analyte detected in the associated Method Blank

E Estimated value

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

Page 9 of 9



Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquerque, NM 87109

TEL: 505-345-3975 FAX: 505-345-4107 Website: clients.hallenvironmental.com

Sample Log-In Check List

Client Name: HILCORP E	NERGY	Work	Order Numb	per: 220 1	B35		RcptNo: 1
Received By: Sean Livin Completed By: Cheyenne Reviewed By:		1/29/202 1 /29/ 1/31/22	22 9:00:00 / 98 Z 3	ΑМ		SC	izot-
Chain of Custody 1. Is Chain of Custody completed. 2. How was the sample deliver		u.		Yes <u>Cou</u> l		No 🗌	Not Present
Log In 3. Was an attempt made to co	ool the sampl	les?		Yes	✓	No 🗌	NA 🗆
4. Were all samples received	at a tempera	ture of >0° C t	o 6.0°C	Yes	✓	No 🗆	NA 🗆
5. Sample(s) in proper contain	ner(s)?			Yes	✓	No 🗌	
6. Sufficient sample volume for7. Are samples (except VOA a			d?	10.50	V	No 🗌	
8. Was preservative added to	bottles?			Yes	~	No 🗌	NA \square
Received at least 1 vial with Were any sample containe			OA?	Yes Yes		No ☐ No ✔	HNO3 NA ✓ # of preserved ✓
11. Does paperwork match bott (Note discrepancies on cha)		Yes	v	No 🗌	for pH: (<2 or >12 unless noted)
12. Are matrices correctly ident	ified on Chair	n of Custody?		Yes	V	No 🗌	Adjusted? Y
13. Is it clear what analyses we		?		Yes	V	No 🗌	Checked by the 1/31/22
 Were all holding times able (If no, notify customer for an 	uthorization.)			Yes	V	No 📙	Checked by the 113112
Special Handling (if app 15. Was client notified of all dis		with this order?		Yes		No 🗌	NA 🗹
Person Notified: By Whom: Regarding: Client Instructions:			Date Via:	eM	ail [Phone Fax	⟨
16. Additional remarks:	d ~125ml fro to filtered 12	m unpresereve	ed 500ml bo	ottles for r	netals	analysis on sam	nples 001-006. Filter lot NO 134 9
17. Cooler Information						70.1	
Cooler No Temp °C	Condition	Seal Intact	Seal No	Seal D	ate	Signed By	
1 0.5 2 1.9	Good	Yes					
2 1.9	Good	Yes					

Cha	in-of-	Chain-of-Custody Record	Turn-Around Time:	ne:										
Client: Hilcorp	Hilcorp Farmington NM	ion NM	X Standard	□ Rush			П	HAL	HALL ENVIRONMENTAL	일 [EN S	Z C	ved b
			Project Name:						MARISTS LAD		ב ב	5	5	
Mailing Addres	s: 382 Ro	Mailing Address: 382 Road 3100 Aztec, NM 87410		Farmington E	Farmington B-Com No 1E	49	01 Haw	kins NE	www.naireilyilollillellal.collil 4901 Hawkins NE - Albuquerque, NM 87109	raue. N	M 871	60		D: 3
Billing Address	: PO Box	Billing Address: PO Box 61529 Houston, TX 77208	Project #:			ř	el. 505-	Tel. 505-345-3975	Fax 5	Fax 505-345-4107	5-4107			/22/.
Phone #:	505-486-9543	-9543							∖na	senbe	#			2023
email or Fax#:	- 1	khoekstra@hilcorp.com 🖈	Project Manager:		,	_	1			_				4:
QA/QC Package:		KKG wf man ehillop.	Con	107	K. Keiting		<u>الم</u>							02:1
□ Standard		☐ Level 4 (Full Validation)			Clare W. Ca.		1							17 P.
Accreditation:	□ Az Cc	mpliance	Sampler:	Kurt Hoekstra	Б		£ 5							M
□ NELAC	□ Other		On Ice:	☑Yes	□ No		3	_						
□ EDD (Type)			# of Coolers:	2			10	_						
			Cooler Temp(including CF): 0. 4	uding CF): 0.4	+0.1=0.50+	107/2015/00	ひけ							
			Container Type Preservative	Preservative	1.4 to 1.5 (.9 %) HEAL No.	solve	TV'							-
Date Time	Matrix	Sample Name	and #	Туре	2201835		7			_				
1-28 10:35	Water	MW-1	500 ml Plastic	Cool	30(×								
5051 82-1		MW-2	500 ml Plastic	Cool	200	×				-		,		
1-28 1:10	Water	MW-3	500 ml Plastic	Cool	683	×								
1-27 12:55	Water	MW-4	500 ml Plastic	Cool	334	×					- 51			
1-27 2:00	Water	MW-5	500 ml Plastic	Cool	605	×							_	
1-28 9:20	Water	MW-6	500 ml Plastic	Cool	200	×						-		
•														
Date: Time:	Relinquished by	od by //	Received by:	Via:	Date Time	Remark	s:*Dissolv	ed Mn and	Remarks:*Dissolved Mn and Fe are to be filtered and preserved in the lab.	filtered a	and pres	erved in	the lab	
1 - 48 / JM Date: Time:	Refinquished by:	of the factor	Received by: Viz	Via:	Date Time	Т								
JUST 25/20/	0	Month []	Ser contr		(/24/2C 9;00									Pa
- 8	If necessary,	If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.	ubcontracted to other ac	credited laboratorie	is. This serves as notice of	f this possibility.	Any sub-co	intracted da	a will be clearly	notated or	in the ana	llytical rep	ort.	ge 45 o



Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquerque, NM 87109 TEL: 505-345-3975 FAX: 505-345-4107 Website: www.hallenvironmental.com

May 06, 2022

Mitch Killough HILCORP ENERGY PO Box 4700 Farmington, NM 87499

TEL: (505) 564-0733

FAX:

RE: Farmington B Com No 1E OrderNo.: 2204A02

Dear Mitch Killough:

Hall Environmental Analysis Laboratory received 5 sample(s) on 4/22/2022 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman

Laboratory Manager

Indes

4901 Hawkins NE

Albuquerque, NM 87109

CLIENT: HILCORP ENERGY

Analytical Report

Lab Order **2204A02**Date Reported: **5/6/2022**

Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: MW-1

Lab ID: 2204A02-001 **Matrix:** AQUEOUS **Received Date:** 4/22/2022 8:00:00 AM

Analyses	Result	RL Q	ual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: JMT
Sulfate	70	2.5		mg/L	5	4/22/2022 1:17:05 PM
EPA METHOD 200.7: DISSOLVED METALS						Analyst: ELS
Iron	1.1	0.10	*	mg/L	5	4/25/2022 11:03:10 AM
Manganese	0.72	0.0020	*	mg/L	1	4/25/2022 10:17:16 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

S % Recovery outside of range due to dilution or matrix interference

B Analyte detected in the associated Method Blank

E Estimated value

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

Page 1 of 7

Lab Order **2204A02**Date Reported: **5/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY Client Sample ID: MW-2

 Project:
 Farmington B Com No 1E
 Collection Date: 4/21/2022 12:35:00 PM

 Lab ID:
 2204A02-002
 Matrix: AQUEOUS
 Received Date: 4/22/2022 8:00:00 AM

Analyses	Result	RL Qua	al Units	DF	Date Analyzed
EPA METHOD 200.7: DISSOLVED METALS					Analyst: ELS
Iron	ND	0.020	mg/L	1	4/25/2022 10:18:31 AM
Manganese	ND	0.0020	mg/L	1	4/25/2022 10:18:31 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

QL Practical Quanitative Limit

S % Recovery outside of range due to dilution or matrix interference

B Analyte detected in the associated Method Blank

E Estimated value

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

Page 2 of 7

CLIENT: HILCORP ENERGY

Analytical Report

Lab Order **2204A02**Date Reported: **5/6/2022**

Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: MW-3

Project: Farmington B Com No 1E Collection Date: 4/21/2022 12:56:00 PM

Lab ID: 2204A02-003 **Matrix:** AQUEOUS **Received Date:** 4/22/2022 8:00:00 AM

Analyses	Result	RL Qua	l Units	DF	Date Analyzed
EPA METHOD 200.7: DISSOLVED METALS					Analyst: ELS
Iron	ND	0.020	mg/L	1	4/25/2022 10:19:59 AM
Manganese	0.038	0.0020	mg/L	1	4/25/2022 10:19:59 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix interference
- B Analyte detected in the associated Method Blank
- E Estimated value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Page 3 of 7

Lab Order **2204A02**Date Reported: **5/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY Client Sample ID: MW-4

Project: Farmington B Com No 1E
 Collection Date: 4/21/2022 1:20:00 PM

 Lab ID: 2204A02-004
 Matrix: AQUEOUS
 Received Date: 4/22/2022 8:00:00 AM

Analyses Result **RL Qual Units** DF **Date Analyzed EPA METHOD 200.7: DISSOLVED METALS** Analyst: ELS ND 0.020 mg/L 1 4/25/2022 10:21:28 AM ND mg/L 1 4/25/2022 10:21:28 AM Manganese 0.0020

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

S % Recovery outside of range due to dilution or matrix interference

B Analyte detected in the associated Method Blank

E Estimated value

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

Page 4 of 7

Lab Order **2204A02**Date Reported: **5/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY Client Sample ID: MW-5

Project: Farmington B Com No 1E
 Collection Date: 4/21/2022 1:42:00 PM

 Lab ID: 2204A02-005
 Matrix: AQUEOUS
 Received Date: 4/22/2022 8:00:00 AM

Analyses Result **RL Qual Units** DF **Date Analyzed EPA METHOD 200.7: DISSOLVED METALS** Analyst: ELS ND 0.020 4/25/2022 10:28:29 AM mg/L 1 ND mg/L 1 4/25/2022 10:28:29 AM Manganese 0.0020

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix interference
- B Analyte detected in the associated Method Blank
- E Estimated value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Page 5 of 7

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2204A02**

06-May-22

Client: HILCORP ENERGY
Project: Farmington B Com No 1E

Sample ID: MB SampType: MBLK TestCode: EPA Method 200.7: Dissolved Metals

Client ID: PBW Batch ID: A87473 RunNo: 87473

Prep Date: Analysis Date: 4/25/2022 SeqNo: 3095225 Units: mg/L

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual

 Iron
 ND
 0.020

 Manganese
 ND
 0.0020

Sample ID: LLLCS SampType: LCSLL TestCode: EPA Method 200.7: Dissolved Metals

Client ID: BatchQC Batch ID: A87473 RunNo: 87473

Prep Date: Analysis Date: 4/25/2022 SeqNo: 3095227 Units: mg/L

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual 0.022 0.020 0.02000 0 109 50

Manganese ND 0.0020 0.002000 0 95.3 50 150

Sample ID: LCS SampType: LCS TestCode: EPA Method 200.7: Dissolved Metals

Client ID: LCSW Batch ID: A87473 RunNo: 87473

Prep Date: Analysis Date: 4/25/2022 SeqNo: 3095229 Units: mg/L

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual

Iron 0.49 0.020 0.5000 0 97.8 85 115 0 95.6 Manganese 0.48 0.0020 0.5000 85 115

Qualifiers:

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix interference
- B Analyte detected in the associated Method Blank
- E Estimated value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Page 6 of 7

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2204A02

06-May-22

Client: HILCORP ENERGY **Project:** Farmington B Com No 1E

Sample ID: MB SampType: mblk TestCode: EPA Method 300.0: Anions

Client ID: PBW Batch ID: R87465 RunNo: 87465

Prep Date: Analysis Date: 4/22/2022 SeqNo: 3094548 Units: mg/L

SPK value SPK Ref Val %REC HighLimit %RPD **RPDLimit** Analyte Result **PQL** LowLimit Qual

Sulfate ND 0.50

Sample ID: LCS SampType: Ics TestCode: EPA Method 300.0: Anions

Client ID: LCSW Batch ID: R87465 RunNo: 87465

Prep Date: Analysis Date: 4/22/2022 SeqNo: 3094549 Units: mg/L

%RPD **RPDLimit** Analyte Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit Qual

Sulfate 10 0.50 10.00 99.5 90 110

Sample ID: 2204A02-001AMS TestCode: EPA Method 300.0: Anions SampType: ms

Client ID: MW-1 Batch ID: R87465 RunNo: 87465

Prep Date: Analysis Date: 4/22/2022 SeqNo: 3094570 Units: mg/L

Analyte Result POI SPK value SPK Ref Val %REC HighLimit %RPD **RPDLimit** Qual LowLimit

Sulfate 120 50.00 69.93 2.5

Sample ID: 2204A02-001AMSD SampType: msd TestCode: EPA Method 300.0: Anions

Client ID: Batch ID: R87465 RunNo: 87465

2.5

120

Prep Date: Analysis Date: 4/22/2022 SeqNo: 3094571 Units: mg/L

50.00

Analyte Result **PQL** SPK value SPK Ref Val %REC HighLimit %RPD **RPDLimit** Qual LowLimit 69.93

101

90.5

112

0.286

20

Qualifiers:

Sulfate

Value exceeds Maximum Contaminant Level

D Sample Diluted Due to Matrix

Н Holding times for preparation or analysis exceeded

Not Detected at the Reporting Limit PQL Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix interference

Analyte detected in the associated Method Blank

Estimated value

Analyte detected below quantitation limits

Sample pH Not In Range

RL Reporting Limit Page 7 of 7

LABORATORY

Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquerque. NM 87109

TEL: 505-345-3975 FAX: 505-345-4107 Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name:	HILCORP ENERGY	Work Order Numbe	r: 2204A02		RcptNo: 1	
Received By:	Tracy Casarrubias	4/22/2022 8:00:00 AN	1			
Completed By:	Tracy Casarrubias	4/22/2022 9:24:25 AN				
Reviewed By: (- W		I,			
Constitution by:		4/22/2				
Chain of Cust	<u>ody</u>					
1. Is Chain of Cu	stody complete?		Yes 🗸	No 🗌	Not Present	
2. How was the s	ample delivered?		Courier		-	
<u>Log In</u>						
Was an attempt	t made to cool the sample	ss?	Yes 🗸	No 🗌	NA 🗆	
4. Were all sample	es received at a temperatu	ire of >0° C to 6.0°C	Yes 🗸	No 🗌	NA 🗆	
5. Sample(s) in pr	oper container(s)?		Yes 🗸	No 🗌		
6. Sufficient samp	le volume for indicated tes	t(s)?	Yes 🗸	No 🗆	1-2/22.	
	cept VOA and ONG) prop		Yes 🗸	No 🗆	24/2015	
	e added to bottles?	.,, p	Yes 🖳	No 🗸	~4/22/22.	
9. Received at least	st 1 vial with headspace <	1/4" for AQ VOA?	Yes	No 🗆	NA 🔽	
	ele containers received bro		Yes	No 🗹	# of preserved	
11. Does paperwork (Note discrepand	match bottle labels? cies on chain of custody)		Yes 🗹	No 🗆	bottles checked for pH:	
	rectly identified on Chain	of Custody?	Yes 🗸	No 🗌	(<2)or >12 unless noted) Adjusted?	
	nalyses were requested?		Yes 🗸	No 🗌		
14. Were all holding (If no, notify cust	times able to be met? comer for authorization.)		Yes 🗸	No 🗆	Checked by: JN 4/22/	7
Special Handlin	g (if applicable)					
15. Was client notifi	ed of all discrepancies wit	h this order?	Yes	No 🗌	NA 🗹	
Person No	otified:	Date:	Parkers Albert & Street Street	the state of the s		
By Whom Regarding		Via:] eMail 🔲 Ph	hone Fax [_ In Person	
Client Inst	ructions:	Andrew Are and the control of the co	AND THE PERSON NAMED IN COLUMN	Carlo Control Carlo Carl	grass refrests retraining a risk of the refrest accordance residence.	
16. Additional rema	rks: Filtered 12	Sml from all	unpres	erued b	ottles. Added o. Un	ſ
17. Cooler Informa	tion OF HWO3	to sample	0113.00	02A-00	SA For PULZ.	ı
Cooler No						
1 3		es	ai Dale .		used 5 fiters	
		- Anna de la companya			from Lot FJ482	0
					11/22/22.	
					JU 7120/20.	
Page 1 of 1						

Š.	in-of-	Chain-of-Custody Record	Turn-Around Time:	me:		Г								nece	Rece
Client: Hilcord	Hilcorp Farmington NM	NN NN	į					Y	HALL ENVIRONMENTAL	VVIR	SON	Z	F		ive
- 1	5		X Standard	□ Rush				A	ANALYSIS LABORATORY	ISI	ABC	OR/	OF		d h
			Project Name:					WW	www hallenvironmental com	ronment	a collection) !)		, 00
Mailing Addres	ss: 382 Ro	Mailing Address: 382 Road 3100 Aztec, NM 87410	_	Farmington B-Com No 1E	-Com No 1E		4901 F	awkins	4901 Hawkins NE - Albuquerque NM 87109	naneran	N N	87109		D. 3	(D): 3
Billing Address	: PO Box	Billing Address: PO Box 61529 Houston, TX 77208	Project #:			_	Tel. 5(505-345-3975	975 F	Fax 505-	505-345-4107	107		1221	/22/
Phone #:	505-486-9543	-9543							Analy		nest			202	202
email or Fax#:	1	Brandon.Sinclair@hilcorp.com	Project Manager:	ي										7.	21.
QA/QC Package:	L:			, , ,	1									02.1	02.
□ Standard		☐ Level 4 (Full Validation)	Mitch	yenoll: >	40									. / 1	17 P
Accreditation:	□ Az Co	☐ Az Compliance	Sampler:	Brandon Sinclair	lair No	I PJ br	DbE							171	M
☐ FDD (Type)			# of Coolers.		000	n ar	ΗΙ		-					- 1	
			Cooler Temp(including cF): 3 . 1 - 0 · 1 = 3 . 0	uding CF): 3 . -	.0.1=3.0	M be	u00 <u>c</u>								
			ner	Type Preservative	HEAL NO	evios	fate :								
Date Time	Matrix	Sample Name	and #	Туре		siQ	ılng								
4-21 1205	Water	MW-1	500 ml Plastic	Cool		×	×								
1 1235	Water	MW-2	500 ml Plastic	Cool		×									
1256	Water	MW-3	500 ml Plastic	Cool		×									
1320	Water	MW-4	500 ml Plastic	Cool		×									
1342	Water	MW-5	500 ml Plastic	Cool		×									
	Water	MW-8	500 ml Plastic	Cool		*	*)							
T	:														
7/2 15/2	Kelinduished by:		Received by:	Via:	$\frac{1}{2\sqrt{2}}$	Rem	arks:*Dis	solved Mr	Remarks:*Dissolved Mn and Fe are to be filtered and preserved in the lab.	to be filter	red and p	preserve	d in the	lab.	
1	T.	ed by:	Received by:	Via: egm	Tim	_	4	3	3) = =	Cel p. c) 2				
1202 1202	N S	Unother Woode		7	4122/22 8100									1 ug	Pa
	If necessary,	If hecessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.	subcontracted to other ac	scredited laboratories	s. This serves as notice of t	his possib	ility. Any su	b-contracte	d data will be	clearly notat	ted on the	analytica	il report.	; e 55 t	ge 55 a



Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquerque, NM 87109 TEL: 505-345-3975 FAX: 505-345-4107 Website: www.hallenvironmental.com

OrderNo.: 2207D31

August 09, 2022

Mitch Killough

Hilcorp Energy PO Box 61529

Houston, TX 77208-1529 TEL: (337) 276-7676

FAX:

RE: Farmington B Com No 1E

Dear Mitch Killough:

Hall Environmental Analysis Laboratory received 6 sample(s) on 7/27/2022 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman

Laboratory Manager

Indes

4901 Hawkins NE

Albuquerque, NM 87109

Lab Order **2207D31**Date Reported: **8/9/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Hilcorp Energy Client Sample ID: MW-1

 Project:
 Farmington B Com No 1E
 Collection Date: 7/26/2022 1:28:00 PM

 Lab ID:
 2207D31-001
 Matrix: AQUEOUS
 Received Date: 7/27/2022 7:00:00 AM

Analyses	Result	RL (Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 200.7: DISSOLVED METALS						Analys	t: JRR
Iron	2.7	0.10	*	mg/L	5	8/4/2022 1:18:38 PM	C90046
Manganese	1.2	0.010	*	mg/L	5	8/4/2022 1:18:38 PM	C90046

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix interference
- B Analyte detected in the associated Method Blank
- E Estimated value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Page 1 of 7

Lab Order **2207D31**Date Reported: **8/9/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Hilcorp Energy Client Sample ID: MW-2

 Project:
 Farmington B Com No 1E
 Collection Date: 7/26/2022 1:56:00 PM

 Lab ID:
 2207D31-002
 Matrix: AQUEOUS
 Received Date: 7/27/2022 7:00:00 AM

Analyses	Result	RL Qu	ıal Units	DF	Date Analyzed	Batch
EPA METHOD 200.7: DISSOLVED METALS					Analys	t: JRR
Iron	ND	0.020	mg/L	1	8/4/2022 1:24:37 PM	C90046
Manganese	ND	0.0020	mg/L	1	8/4/2022 1:24:37 PM	C90046

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix interference
- B Analyte detected in the associated Method Blank
- E Estimated value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Page 2 of 7

Lab Order **2207D31**Date Reported: **8/9/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Hilcorp Energy Client Sample ID: MW-3

Project: Farmington B Com No 1E **Collection Date:** 7/26/2022 11:30:00 AM

Lab ID: 2207D31-003 **Matrix:** AQUEOUS **Received Date:** 7/27/2022 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 200.7: DISSOLVED METALS						Analys	t: JRR
Iron	ND	0.020		mg/L	1	8/4/2022 1:28:52 PM	C90046
Manganese	0.11	0.0020	*	mg/L	1	8/4/2022 1:28:52 PM	C90046

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix interference
- B Analyte detected in the associated Method Blank
- E Estimated value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Page 3 of 7

Lab Order **2207D31**Date Reported: **8/9/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Hilcorp Energy Client Sample ID: MW-4

 Project:
 Farmington B Com No 1E
 Collection Date: 7/26/2022 12:00:00 PM

 Lab ID:
 2207D31-004
 Matrix: AQUEOUS
 Received Date: 7/27/2022 7:00:00 AM

Analyses	Result	RL Qu	ıal Units	DF	Date Analyzed	Batch
EPA METHOD 200.7: DISSOLVED METALS					Analys	t: JRR
Iron	0.026	0.020	mg/L	1	8/4/2022 1:33:09 PM	C90046
Manganese	ND	0.0020	mg/L	1	8/4/2022 1:33:09 PM	C90046

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix interference
- B Analyte detected in the associated Method Blank
- E Estimated value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Page 4 of 7

CLIENT: Hilcorp Energy

Analytical Report

Lab Order **2207D31**Date Reported: **8/9/2022**

Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: MW-5

 Project:
 Farmington B Com No 1E
 Collection Date: 7/26/2022 12:27:00 PM

 Lab ID:
 2207D31-005
 Matrix: AQUEOUS
 Received Date: 7/27/2022 7:00:00 AM

Analyses Result **RL Qual Units DF** Date Analyzed **Batch EPA METHOD 200.7: DISSOLVED METALS** Analyst: JRR Iron ND 0.020 mg/L 8/4/2022 1:46:20 PM C90046 Manganese ND 0.0020 mg/L 8/4/2022 1:46:20 PM C90046

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix interference
- B Analyte detected in the associated Method Blank
- E Estimated value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Page 5 of 7

Lab Order **2207D31**

Hall Environmental Analysis Laboratory, Inc. Date Reported: 8/9/2022

CLIENT: Hilcorp Energy Client Sample ID: MW-6

 Project:
 Farmington B Com No 1E
 Collection Date: 7/26/2022 12:58:00 PM

 Lab ID:
 2207D31-006
 Matrix: AQUEOUS
 Received Date: 7/27/2022 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 200.7: DISSOLVED METALS						Analys	t: JRR
Iron	ND	0.020		mg/L	1	8/4/2022 1:50:29 PM	C90046
Manganese	0.94	0.0020	*	mg/L	1	8/4/2022 1:50:29 PM	C90046

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix interference
- B Analyte detected in the associated Method Blank
- E Estimated value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Page 6 of 7

OC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2207D31**

09-Aug-22

Client: Hilcorp Energy

Project: Farmington B Com No 1E

Sample ID: MB-C SampType: MBLK TestCode: EPA Method 200.7: Dissolved Metals

Client ID: PBW Batch ID: C90046 RunNo: 90046

Prep Date: Analysis Date: 8/4/2022 SeqNo: 3209413 Units: mq/L

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual

 Iron
 ND
 0.020

 Manganese
 ND
 0.0020

Sample ID: LCS-C

Sample ID: LLLCS-C SampType: LCSLL TestCode: EPA Method 200.7: Dissolved Metals

Client ID: BatchQC Batch ID: C90046 RunNo: 90046

Prep Date: Analysis Date: 8/4/2022 SeqNo: 3209414 Units: mg/L

HighLimit Analyte Result PQL SPK value SPK Ref Val %REC I owl imit %RPD **RPDLimit** Qual 0.025 0.020 0.02000 0 123 50 150 Iron

TestCode: EPA Method 200.7: Dissolved Metals

Manganese 0.0022 0.0020 0.002000 0 110 50 150

Client ID: LCSW Batch ID: C90046 RunNo: 90046

SampType: LCS

Prep Date: Analysis Date: 8/4/2022 SeqNo: 3209415 Units: mg/L

SPK Ref Val %REC %RPD **RPDLimit** Analyte Result POI SPK value LowLimit HighLimit Qual Iron 0.50 0.020 0.5000 0 99.7 85 115

Manganese 0.50 0.0020 0.5000 0 99.3 85 115

Sample ID: 2207D31-001AMS SampType: MS TestCode: EPA Method 200.7: Dissolved Metals

Client ID: MW-1 Batch ID: C90046 RunNo: 90046

Prep Date: Analysis Date: 8/4/2022 SegNo: 3209526 Units: mg/L

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual

Manganese 3.8 0.010 2.500 1.157 106 70 130

Sample ID: 2207D31-001AMSD SampType: MSD TestCode: EPA Method 200.7: Dissolved Metals

Client ID: MW-1 Batch ID: C90046 RunNo: 90046

Prep Date: Analysis Date: 8/4/2022 SeqNo: 3209527 Units: mg/L

%RPD **RPDLimit** Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit Qual Manganese 3.8 0.010 2.500 1.157 106 70 130 0.0711 20

Qualifiers:

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quantitative Limit
- S % Recovery outside of range due to dilution or matrix interference
- B Analyte detected in the associated Method Blank
- E Estimated value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Page 7 of 7



Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquerque, NM 87109

TEL: 505-345-3975 FAX: 505-345-4107 Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name:	Hilcorp Ene	rgy	Work	Order Nun	nber: 2207[031		RcptNo: 1
Received By:	Cheyenne	Cason	7/27/20	22 7:00:00	АМ		Chul	
Completed By:	Sean Livir	ngston	7/27/20	22 8:46:27	AM		Chul S-/	/
Reviewed By:	M 7.27	.22					JL	1701-
hain of Cus	stody							
. Is Chain of C	custody compl	ete?			Yes	✓	No 🗌	Not Present
. How was the	sample delive	ered?			Courie	<u>er</u>		
Log In						_		_
. Was an atten	npt made to c	ool the samp	les?		Yes	/	No 🗌	NA 🗆
. Were all sam	ples received	at a tempera	ture of >0° C	to 6.0°C	Yes [V	No 🗆	NA 🗆
. Sample(s) in	proper contain	ner(s)?			Yes [V	No 🗌	
Sufficient sam	nple volume fo	or indicated to	est(s)?		Yes 🛚	/	No 🗌	
Are samples ((except VOA a	and ONG) pro	perly preserve	ed?	Yes 🛚	/	No 🗌	
. Was preserva	ative added to	bottles?			Yes 🛚		No 🗌	NA 🗆
Received at le	east 1 vial with	headspace	<1/4" for AQ \	OA?	Yes [No 🗌	HNO3 NA ☑
. Were any sar					Yes		No 🗸	# of preserved
. Does paperwo	ork match bott	le labels?			Yes 🖢		No 🗌	bottles checked for pH:
(Note discrepa								(<2)or >12 unless noted
Are matrices					Yes 🕨		No 🗌	Adjusted? JES
ls it clear wha			?		Yes		No 🗌	واحماد
. Were all holdi (If no, notify c					Yes 🕨		No 📙	Checked by: JN + 27
ecial Handl	ling (if app	licable)						
. Was client no	otified of all dis	crepancies v	vith this order?	•	Yes [No 🗌	NA 🗹
Person	Notified:	** \$ \$ \$ \$ \$ \$ \$ \$		Date	: [
By Who				Via:	eMail	□ F	Phone 🗌 Fax	☐ In Person
Regard	,							The second secon
Client Ir	nstructions:							
6. Additional re								
Cooler Infe	off ~100mL fr	om sample b	ottle provided	for 001-006	SA, adding ~	-0.4mL	. HNO3 to 001	-006A, checked for proper pH<2 - J ✓ ¬
Cooler Infor	mation	Condition	Seal Intact	Seal No	Seal Date		Signed By	Used 6 filters from
4	2.9	Good	Jour Intuot	5001140	Ocai Dali	-	olytica by	Lot FJC168
Į I	2.0	Cood						

Ch	in-of-	Chain-of-Custody Record	Turn-Around Time:	ne:				
Client: Hilcorp	Hilcorp Farmington NM	on NM	X Standard	□ Rush			HALL ENVIRONMENTAL ANALYSTS LABORATORY	ENTAL MATODA
			Project Name:				Model of the manufacture of the	
Mailing Addres	s: 382 Ro	Mailing Address: 382 Road 3100 Aztec, NM 87410	T	Farmington B-Com No 1E	-Com No 1E	4901 }	www.nanellyhollilelital.com 4901 Hawkins NE - Albuquerque, NM 87109	<i>CD:</i> .
Billing Address	: PO Box	Billing Address: PO Box 61529 Houston, TX 77208	Project #:			Tel. 5	Tel. 505-345-3975 Fax 505-345-4107	
Phone #:	505-486-9543	-9543					na	/202
email or Fax#:		Brandon.Sinclair@hilcorp.com	Project Manager:	Ŀ				3 4.
QA/QC Package:	**							:02:
□ Standard		☐ Level 4 (Full Validation)	Mitch	Killough	No			171
Accreditation:	□ Az Cc	☐ Az Compliance		Sil	lair			PM
□ NELAC	Other		1	√ Yes	SP43000 10	-		
□ EDD (Type)			# of Coolers:	200000000000000000000000000000000000000	\$ 40.122.9			,
			Cooler Temp(incl.	np(including CF): 3, 6	3,6+0.1-3.7			
Date Time	Matrix	Sample Name	Container Type and #	Type Preservative Type	HEAL No.	vlossi(etsilbi		
		MW-1	500 ml Plastic	Cool	100	76		
	-	MW-2	500 ml Plastic	Cool	200	+		
1130	_	MW-3	500 ml Plastic	Cool	500	×		
0071	_	MW-4	500 ml Plastic	Cool	700	×		
1227	Water	MW-5	500 ml Plastic	Cool	Soo	×		
1258	Water	MW-6	500 ml Plastic	Cool	W.	(M)		
						-		
				3				
Date: Time: 7-26 [162]	Relinquished by:	ed by	13	via: Naela	Oute Time 7/621		Remarks: Dissolved Mn and Fe are to be filtered and preserved in the lab.	rved in the lab.
Date: Time:		ed by:	Received by:	/ia:	Date ' Time		2	
	\neg	ary, samples submitted to Hall Environmental may be s	Subcontracted to other ac	credited laboratories	112112 01/00 oratories. This serves as notice of the	is possibility. Any s	If the Court of this possibility. Any sub-contracted data will be clearly notated on the analytical report.	Page vical report.
)							



Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquerque, NM 87109 TEL: 505-345-3975 FAX: 505-345-4107 Website: www.hallenvironmental.com

OrderNo.: 2210D62

November 30, 2022

Mitch Killough HILCORP ENERGY PO Box 4700 Farmington, NM 87499 TEL: (505) 564-0733

FAX

RE: Farmington B Com No 1E

Dear Mitch Killough:

Hall Environmental Analysis Laboratory received 6 sample(s) on 10/27/2022 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman

Laboratory Manager

Indes

4901 Hawkins NE

Albuquerque, NM 87109

Date Reported: 11/30/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY Client Sample ID: MW-1

 Project:
 Farmington B Com No 1E
 Collection Date: 10/26/2022 12:20:00 PM

 Lab ID:
 2210D62-001
 Matrix: AQUEOUS
 Received Date: 10/27/2022 6:45:00 AM

Analyses	Result	RL ()ual	Units	DF	Date Analyzed
EPA METHOD 200.7: DISSOLVED METALS						Analyst: JRR
Iron	2.5	0.10	*	mg/L	5	11/21/2022 2:00:43 PM
Manganese	0.76	0.0020	*	mg/L	1	11/21/2022 1:57:54 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

QL Practical Quanitative Limit

S % Recovery outside of standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank

E Above Quantitation Range/Estimated Value

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

orting Limit Page 1 of 8

Date Reported: 11/30/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY Client Sample ID: MW-2

 Project:
 Farmington B Com No 1E
 Collection Date: 10/26/2022 12:45:00 PM

 Lab ID:
 2210D62-002
 Matrix: AQUEOUS
 Received Date: 10/27/2022 6:45:00 AM

Analyses	Result	RL Qua	al Units	DF	Date Analyzed
EPA METHOD 200.7: DISSOLVED METALS					Analyst: JRR
Iron	ND	0.020	mg/L	1	11/21/2022 2:03:42 PM
Manganese	ND	0.0020	mg/L	1	11/21/2022 2:03:42 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

porting Limit Page 2 of 8

Date Reported: 11/30/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY Client Sample ID: MW-3

Project: Farmington B Com No 1E **Collection Date:** 10/26/2022 10:20:00 AM 2210D62-003 Lab ID: Matrix: AQUEOUS Received Date: 10/27/2022 6:45:00 AM

Analyses	Result	RL Qual Units	DF	Date Analyzed
EPA METHOD 200.7: DISSOLVED METALS				Analyst: JRR
Iron	0.023	0.020 mg/L	1	11/21/2022 2:09:34 PM
Manganese	0.35	0.0020 * mg/L	1	11/21/2022 2:09:34 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- Practical Quanitative Limit
- % Recovery outside of standard limits. If undiluted results may be estimated.
- Analyte detected in the associated Method Blank
- Ε Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- Sample pH Not In Range
- RL Reporting Limit

Page 3 of 8

Date Reported: 11/30/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY Client Sample ID: MW-4

 Project:
 Farmington B Com No 1E
 Collection Date: 10/26/2022 10:50:00 AM

 Lab ID:
 2210D62-004
 Matrix: AQUEOUS
 Received Date: 10/27/2022 6:45:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 200.7: DISSOLVED METALS					Analyst: JRR
Iron	ND	0.020	mg/L	1	11/21/2022 2:22:46 PM
Manganese	ND	0.0020	mg/L	1	11/21/2022 2:22:46 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Page 4 of 8

Date Reported: 11/30/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY Client Sample ID: MW-5

 Project:
 Farmington B Com No 1E
 Collection Date: 10/26/2022 11:15:00 AM

 Lab ID:
 2210D62-005
 Matrix: AQUEOUS
 Received Date: 10/27/2022 6:45:00 AM

Analyses	Result	RL Qua	l Units	DF	Date Analyzed
EPA METHOD 200.7: DISSOLVED METALS					Analyst: JRR
Iron	ND	0.020	mg/L	1	11/21/2022 2:28:40 PM
Manganese	ND	0.0020	mg/L	1	11/21/2022 2:28:40 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

S % Recovery outside of standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank

E Above Quantitation Range/Estimated Value

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

porting Limit Page 5 of 8

Date Reported: 11/30/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY Client Sample ID: MW-6

 Project:
 Farmington B Com No 1E
 Collection Date: 10/26/2022 11:45:00 AM

 Lab ID:
 2210D62-006
 Matrix: AQUEOUS
 Received Date: 10/27/2022 6:45:00 AM

Analyses	Result	RL Qua	l Units	DF	Date Analyzed
EPA METHOD 200.7: DISSOLVED METALS					Analyst: JRR
Iron	ND	0.020	mg/L	1	11/21/2022 2:46:36 PM
Manganese	0.85	0.0020 *	mg/L	1	11/21/2022 2:46:36 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

orting Limit Page 6 of 8

OC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2210D62**

30-Nov-22

Client:	HILCORP ENERGY	
Project:	Farmington B Com No 1E	
Sample ID: MB	-A SampType: MBLK	TestCode: EPA Method 200.7: Dissolved Metals
Client ID: PB	W Batch ID: A92759	RunNo: 92759

Prep Date: Analysis Date: 11/21/2022 SeqNo: 3338403 Units: mg/L

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual

 Iron
 ND
 0.020

 Manganese
 ND
 0.0020

Sample ID: LLLCS-A SampType: LCSLL TestCode: EPA Method 200.7: Dissolved Metals Client ID: BatchQC Batch ID: A92759 RunNo: 92759 Prep Date: Analysis Date: 11/21/2022 SeqNo: 3338404 Units: mg/L HighLimit %RPD Analyte Result PQL SPK value SPK Ref Val %REC LowLimit **RPDLimit** Qual 0.023 0.020 0.02000 0 115 50 150 0 Manganese ND 0.0020 0.002000 93.0 50 150

Sample ID: LCS-A SampType: LCS TestCode: EPA Method 200.7: Dissolved Metals Client ID: LCSW Batch ID: A92759 RunNo: 92759 Prep Date: Analysis Date: 11/21/2022 SeqNo: 3338405 Units: mg/L %REC SPK value SPK Ref Val %RPD **RPDLimit** Analyte Result PQL LowLimit HighLimit Qual Iron 0.50 0.020 0.5000 0 100 85 115 0 96.7 Manganese 0.48 0.0020 0.5000 85 115

Sample ID: MB-B TestCode: EPA Method 200.7: Dissolved Metals SampType: MBLK Client ID: PBW Batch ID: **B92759** RunNo: 92759 Prep Date: Analysis Date: 11/21/2022 SeqNo: 3338406 Units: mg/L SPK value SPK Ref Val %REC LowLimit %RPD **RPDLimit** Analyte Result PQL HighLimit Qual ND 0.020 Iron

Sample ID: LLLCS-B SampType: LCSLL TestCode: EPA Method 200.7: Dissolved Metals
Client ID: BatchQC Batch ID: B92759 RunNo: 92759

Prep Date: Analysis Date: 11/21/2022 SeqNo: 3338407 Units: mg/L

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual

 Analyte
 Result
 Fig.
 SFR Value
 SFR Valu

Sample ID: LCS-B SampType: LCS TestCode: EPA Method 200.7: Dissolved Metals

Client ID: LCSW Batch ID: B92759 RunNo: 92759

Prep Date: Analysis Date: 11/21/2022 SeqNo: 3338408 Units: mg/L

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual

Qualifiers:

Manganese

- Value exceeds Maximum Contaminant Level
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quantitative Limit

ND

0.0020

- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

0.49

0.0020

0.5000

WO#: **2210D62**

30-Nov-22

Client: HILCORP ENERGY
Project: Farmington B Com No 1E

Sample ID: LCS-B SampType: LCS TestCode: EPA Method 200.7: Dissolved Metals Client ID: LCSW Batch ID: **B92759** RunNo: 92759 Prep Date: Analysis Date: 11/21/2022 SeqNo: 3338408 Units: mg/L PQL SPK value SPK Ref Val %REC HighLimit %RPD **RPDLimit** Analyte Result LowLimit Qual 0.020 Iron 0.50 0.5000 0 101 85 115 Manganese 0.48 0.0020 0.5000 0 96.0 85 115

Sample ID: 2210D62-005AMS TestCode: EPA Method 200.7: Dissolved Metals SampType: MS Client ID: MW-5 Batch ID: A92759 RunNo: 92759 Prep Date: Analysis Date: 11/21/2022 SeqNo: 3338458 Units: mg/L Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual 70 0.52 0.020 0.5000 0 105 130 0 98.7 70 Manganese 0.49 0.0020 0.5000 130

Sample ID: 2210D62-005AMSD SampType: MSD TestCode: EPA Method 200.7: Dissolved Metals Client ID: MW-5 Batch ID: A92759 RunNo: 92759 Prep Date: Analysis Date: 11/21/2022 SeqNo: 3338459 Units: mg/L SPK value SPK Ref Val %RPD **RPDLimit** %REC HighLimit Qual Analyte Result PQL LowLimit Iron 0.51 0.020 0.5000 0 103 70 130 1.70 20

0

97.6

70

130

1.12

Qualifiers:

Manganese

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quantitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquerque, NM 87109

Sample Log-In Check List

Lot FJ 6168.

TEL: 505-345-3975 FAX: 505-345-4107 Website: www.hallenvironmental.com Client Name: HILCORP ENERGY Work Order Number: 2210D62 RcptNo: 1 Hunsay Received By: Juan Rojas 10/27/2022 6:45:00 AM Completed By: **Tracy Casarrubias** 10/27/2022 9:24:11 AM Reviewed By: KVA 10-27-27 Chain of Custody 1. Is Chain of Custody complete? Yes 🗸 No 🗌 Not Present 2. How was the sample delivered? Courier Log In 3. Was an attempt made to cool the samples? No 🗌 Yes 🗸 NA 🗌 No 🗌 4. Were all samples received at a temperature of >0° C to 6.0°C Yes 🗸 NA 🗌 5. Sample(s) in proper container(s)? Yes 🗸 No 🗌 6. Sufficient sample volume for indicated test(s)? No 🗌 Yes 🗸 7. Are samples (except VOA and ONG) properly preserved? Yes 🗸 8. Was preservative added to bottles? Yes 🔽 NA 🗌 9. Received at least 1 vial with headspace <1/4" for AQ VOA? No 🗌 NA V Yes \square Yes \square 10. Were any sample containers received broken? No 🗸 # of preserved bottles checked 11. Does paperwork match bottle labels? Yes 🗸 No 🗌 for pH: (Note discrepancies on chain of custody) (<2 or >12 unless noted) Adjusted? 12. Are matrices correctly identified on Chain of Custody? Yes 🗸 No 🗌 13. Is it clear what analyses were requested? Yes 🗸 No 🗌 JU 10/27/22 14. Were all holding times able to be met? Checked by: Yes 🗹 No 🗌 (If no, notify customer for authorization.) Special Handling (if applicable) 15. Was client notified of all discrepancies with this order? Yes No \square NA 🗸 Person Notified: Date: By Whom: Via: eMail Phone Fax In Person Regarding: Client Instructions: 16. Additional remarks: Fittered 125 ml from original value provided. Proceeded to add 40 ml of HNS3 for pH
The 10(27/27

Cooler No Temp °C Condition Seal Intact Seal No Seal Date Signed By Used 6 fifters from

1 0.8 Good Yes

0.8

Good

Yes

Ch	in-of-	Chain-of-Custody Record	Turn-Around Time:	ne:				
Client: Hilcor	Hilcorp Farmington NM	ton NM	X Standard	□ Rush			HALL ENVIRONMENTAL ANALYSTS LABORATORY	ENTAL PARTY OF THE
			Project Name:				www hallenvironmental com	
Mailing Addre	ss: 382 Ro	Mailing Address: 382 Road 3100 Aztec, NM 87410		Farmington E	Farmington B-Com No 1E	4901 Hg	4901 Hawkins NE - Albuquerque, NM 87109	
Billing Addres	3: PO Box	Billing Address: PO Box 61529 Houston, TX 77208	Project #:			Tel. 50	Tel. 505-345-3975 Fax 505-345-4107	
Phone #:	505-486-9543	3-9543				THE RESERVE OF THE PERSON NAMED IN	na	202
email or Fax#:		Brandon.Sinclair@hilcorp.com	Project Manager:	Ľ				8 4:
QA/QC Package:	'ni		, ,		,			02:1
□ Standard		☐ Level 4 (Full Validation)	Mitch	\ \ \	11049h			(7 P
Accreditation: ☐ NFLAC	□ Az Co	☐ Az Compliance ☐ Other	Sampler: On Ice:	Brandon Sinclai	olair No	e∃ bn		<i>M</i>
□ EDD (Type)			# of Coolers:		2	្វ ប្រ		
			Cooler Temp(including CF):		10.640.220.8	√l bə		
Date Time	Matrix	Sample Name	Container Type and #	Type Preservative Type	HEAL No.	vlossi(
			500 ml Plastic	Cool	30,000) ×		
5671		MW-2	500 ml Plastic	Cool	200	×		
1020	Water	MW-3	500 ml Plastic	Cool	503	×		
1050	Water	MW-4	500 ml Plastic	Cool	h00	×		
1115	Water	MW-5	500 ml Plastic	Cool	500	×		
11145	Water	MW-6	500 ml Plastic	Cool	900	×		
					L			
	77.							
		e						
Date: Time: 10-2 6 154 1	Relinquished by:	hed by:	7	via: Male	Date Time 15/22/22 1541	Remarks:*Dissolved Mn and F Special pricing, see Andy.	Remarks:*Dissolved Mn and Fe are to be filtered and preserved in the lab Special pricing, see Andy.	erved in the lab.
Date: Time: 10/20/201866	Relinquished by:	ned by:	Received by:	Via:	Date ' Time ' Time ' 10/29/2)		
	If necessary	If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.	subcontracted to other ac	credited laboratori	es. This serves as notice of th	is possibility. Any suk	-contracted data will be clearly notated on the analy	ytical report.

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720

District II 811 S. First St., Artesia, NM 88210 Phone:(575) 748-1283 Fax:(575) 748-9720

District III 1000 Rio Brazos Rd., Aztec, NM 87410 Phone:(505) 334-6178 Fax:(505) 334-6170

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 199920

CONDITIONS

Operator:	OGRID:
HILCORP ENERGY COMPANY	372171
1111 Travis Street	Action Number:
Houston, TX 77002	199920
	Action Type:
	[UF-GWA] Ground Water Abatement (GROUND WATER ABATEMENT)

CONDITIONS

Created By	Condition	Condition Date
michael.buchanan	Review of the 2022 Annual Groundwater Monitoring Report for Farmington B Com #1E: Content Satisfactory 1. Groundwater monitoring may be suspended for monitoring wells: MW-2, MW-4 and MW-5 due to eight (8) consecutive quarters achieved for constituents below the NM WQCC health standards. 2 Iron may be suspended from sampling for all monitoring wells except MW-1 3. Continue with plans to conduct annual gauging and sampling of wells MW-1 for iron and manganese. Continue to sample quarterly once COCs have been established below the WQCC human health standards. 4. Submit the 2023 Annual Groundwater Monitoring Report (if not already submitted) and the 2024 Annual Report to be submitted no later than April 1, 2025.	5/21/2024