NV

TIMBERWOLF ENVIRONMENTAL

1115 Welsh Ave., Suite B
College Station, Texas 77840
979.324.2139
www.teamtimberwolf.com

July 13, 2023

Mr. Nelson Velez, Environmental Specialist – Advanced
New Mexico Oil Conservation Division – District 3
1000 Rio Brazos Road
Aztec, New Mexico 87410

Re: Status Report – 2nd Quarter 2023
Fifield 5 No. 1 (SE ¼, SW ¼, Sec. 5, T29N, R11W)
Hilcorp Energy Company
San Juan County, New Mexico
OCD Incident No. NVF1718155324

Dear Mr. Velez:

On behalf of Hilcorp Energy Company (Hilcorp), Timberwolf Environmental, LLC (Timberwolf) presents this report to document activities conducted during the 2nd quarter of 2023 (2Q23) at the Fifield 5 No. 1 (Site). The Site is a plugged well site in northeast San Juan County, New Mexico (Figures 1 through 3).

Environmental Setting and Site Geology

The area immediately surrounding the Site consists of sparse vegetative cover comprised primarily of scrub brush. Area topography consists of ridges divided by shallow valleys with intermittent streams that flow south into the San Juan River. The Site is situated east of an unnamed mesa, with an average Site elevation of approximately 5,786 feet (ft). The nearest waterway is an unnamed intermittent stream located approximately 1,350 ft west of the Site. The intermittent stream empties into the San Juan River, approximately 3.4 miles south of the Site.

According to the U.S. Department of Agriculture – Natural Resources Conservation Service (USDA-NRCS), the Site soil consists of the Gypsiorthids-Badland-Stumble complex, with 5 to 30 percent slopes. The surface layer consists of sandy loam, underlain by lithic bedrock encountered between 16 to 20 inches below ground surface (bgs). Native salinity of the soil is very slightly saline to slightly saline (2.0 to 4.0 millimhos per centimeter (mmhos/cm)).

Site History

Release Event

The Fifield 5 No. 1 well has been plugged and all surface equipment removed from the Site; however, Hilcorp's Hali Meador #005R is located immediately west of the Site and remains active. Historically, the Site has consisted of a wellhead, line heater, and separator with the associated below-grade tank (BGT) for produced water, sales meter, and tank battery comprised of one above-ground storage tank (AST) and one BGT. On approximately 06/01/17, removal and closure of the BGT revealed historical

contamination beneath the BGT. All surface equipment was removed, and the well was plugged and abandoned.

Investigation and Site Characterization

Initial assessment efforts were conducted by Rule Engineering, LLC (Rule), a subcontractor of ConocoPhillips Company (ConocoPhillips). Hilcorp acquired the property in 2017 and Rule conducted additional assessments in 2018. All findings by Rule Engineering are documented in Timberwolf's *Site Characterization and Remedial Action Plan*, dated February 28, 2019. The initial assessment identified the following constituents of concern (COCs): benzene, toluene, ethylbenzene, and xylene (BTEX) and total petroleum hydrocarbons (TPH).

On 03/20/19, additional borings were installed at the Site to delineate petroleum hydrocarbon impacts vertically and horizontally in soil. All findings are documented in Timberwolf's *Site Characterization Report and Remedial Action Plan,* dated June 14, 2019.

Remediation – SVE System

In 2019, Hilcorp installed a soil vapor extraction (SVE) system to treat impacted soil related to historical pit tank releases. The SVE system is comprised of 18 SVE wells, 6 vent wells, and an SVE trailer (housing: control valves, flow and vacuum gauges, manifolds, fluid-air separator, automated controls, and a vacuum pump). The system remained inoperative while awaiting a power source.

In September 2021, Hilcorp installed a power source for the SVE system. The power source is a skid-mounted gas-fired motor with a pulley and belt drive apparatus to transfer power to a vacuum pump. The new vacuum pump was plumbed into the existing SVE trailer; the automation system was by-passed so that all legs remain open.

Work conducted at this Site is documented in the following reports:

- *Site Characterization and Remedial Action Plan*, dated 02/28/19
- *Site Characterization and Remedial Action Plan*, dated 07/14/19
- *Status Report – 1st Quarter 2020,* dated 09/20/21
- *Status Report – 2nd Quarter 2020,* dated 09/27/21
- *Status Report – 3rd Quarter 2020,* dated 09/27/21
- *Status Report – 4th Quarter 2020,* dated 09/27/21
- *Status Report – 1st Quarter 2021,* dated 09/27/21
- *Status Report – 2nd Quarter 2021,* dated 09/27/21
- *Status Report – 3rd Quarter 2021,* dated 11/01/21
- *Status Report – 4th Quarter 2021,* dated 01/29/22
- *Status Report – 1st Quarter 2022,* dated 04/15/22
- *Status Report – 2nd Quarter 2022,* dated 07/14/22
- *Status Report – 3rd Quarter 2022,* dated 10/14/22
- *Status Report – 4th Quarter 2022,* dated 01/13/23
- *Status Report – 1st Quarter 2023,* dated 04/14/23

SVE System Operations

The SVE system is equipped with four independent legs (i.e., Leg 1, Leg 2, Leg 3, and Leg 4). Leg 1 provides vacuum to the shallow wells and Legs 2, 3, and 4 provide vacuum extraction to the deep SVE wells. The automation panel is currently bypassed, and the valves are intermittently changed to only run two legs at a time.

Water and condensate are recovered with a moisture separator, which is fitted with a 1-inch PVC pipe to transfer fluids to an open-top tank fitted with bird netting. Ten gallons of water or condensate were recovered during 2Q23. SVE system runtime for 2Q23 is documented in Table 1 below.

Table 1. System Runtime – 2Q23

Date	Hour Meter
03/23/23	1,738
04/06/23	2,073
04/18/23	2,361
05/09/23	2,860
05/10/23	2,888
05/18/23	3,082
06/06/23	3,540
06/21/23	3,905
Total Runtime	**2,167**

System runtime between the last 1Q23 reading (03/23/23) and the latest 2Q23 reading (06/21/23) was 2,167 hours. The available hours during this period were 2,167; therefore, yielding a runtime percentage (%) of 100 for 2Q23. Photographs of relevant meter readings are documented in the attached Photographic Log.

During 2Q23, Hilcorp personnel conducted six (6) operational checks, and Timberwolf personnel conducted one (1) operation and maintenance (O&M) event. Additionally, Hilcorp conducted one (1) maintenance event concurrently; seven (7) O&M events in total. Maintenance included PVC repair on the manifold. A field log of O&M events and maintenance performed is provided in the Attached Table A-1.

Collection and Analysis of Quarterly Soil-Gas Sample

On 06/21/23, a composite soil-gas sample was collected from SVE Legs 1 and 3 using a single Tedlar® bag. The Tedlar® bag was connected to the SVE trailer sampling port, which is situated downstream of the 4-leg manifold and upstream of the air-water separator. The sampling port valve was opened to purge air within the tubing between the sampling port and Tedlar® bag. After purging, the Tedlar® bag valve was opened to collect the air sample.

The soil-gas sample (i.e., SVE-1) was transported to Hall Environmental and Analytical Laboratory (HEAL) in Albuquerque, New Mexico. HEAL analyzed the sample for volatile organic compounds (VOCs) and subcontracted other gas analyses to Energy Laboratories in Billings, Montana. All sample transfers were conducted under proper chain-of-custody protocol.

The sample was analyzed for VOCs using EPA Method 8260B, Organic Compounds (GC) by GPA 2261-95, and Gasoline Range Organics by EPA Method 8015D. The laboratory report and chain-of-custody documents are attached.

Laboratory results of constituents that exceeded laboratory detection limits are presented in Table 2; analytical results of all constituents are presented in the Attached Table A-2.

Table 2. Quarterly Soil-Gas Analysis – 06/21/23

Constituents	SVE-1
Volatile Organic Compounds, mg/m^3	
Benzene	8.90
Ethylbenzene	1.30
Toluene	29.0
1,3,5-Trimethylbenzene	0.66
Total Xylenes	17.0
Gasoline Range, mg/m^3	
TPH (GC/MS) Low Fraction (i.e., GRO)	1,700
Gases, Mol %	
Oxygen	21.75
Carbon Dioxide	0.15

mg/m^3 – milligrams per cubic meter
Mol % – mole percent
TPH – total petroleum hydrocarbons
GRO – gasoline range organics

Mass Removal

Timberwolf used the laboratory results from the soil-gas analysis (as reported in Table 2), flow rates, and runtimes to calculate constituent mass removal. Mass removal of GRO, BTEX, and associated recovered volumes for 2Q23 are presented in Table 3 below.

Table 3. Mass Removal and Associated Volume – 2Q23

Constituent	Mass Removal (kg)[1]	Total Mass Removed (lbs)[2]	Recovered Volume (bbl)
GRO	306.6	674.6	2.50
Benzene	1.61	3.53	0.01
Toluene	5.23	11.5	0.04
Ethylbenzene	0.23	0.52	0.00
Xylenes	3.07	6.75	0.03

[1]Calculation = minutes ran * CFM * Concentration (mg/m^3) * 1 M^3/35.3147 ft^3 *1g/1000 mg * 1 kg/1000 g
[2]Calculation = [Mass Removal] * 2.2 lbs/kg
GRO = from TPH (GC/MS) Low Fraction (i.e., gasoline range organics)
kg – kilograms lbs – pounds
bbl – barrel

Assumptions:
- API Gravity = 52
- Concentrations of VOCs in soil-gas vapors have remained static throughout the quarter
- Runtime calculations based on hour meter readings on 03/23/23 and 06/21/23.

Summary

System runtime during 2Q23 was 100% based on hour meter readings between 03/23/23 and 06/21/23. Cygnet remote monitoring system confirms operation throughout the quarter.

During 2Q23, ten (10) gallons of water and/or condensate were recovered. Additionally, mass removal calculations indicated the following recovery during the quarter:

- 2.50 bbl of GRO
- 3.53 lbs of benzene
- 11.5 lbs of toluene
- 0.52 lbs of ethylbenzene
- 6.75 lbs of xylene

Further Actions – 3rd Quarter 2023

During 3Q23, the following activities are planned for the Site:

- Conduct bi-weekly Site O&M to ensure proper system function and drain any water/condensate accumulation in the moisture separator as needed
- Collect a quarterly soil-gas sample for laboratory analysis
- Prepare a 3Q23 status report

If you have any questions regarding this report, please call us at (979) 324-2139.

Sincerely,
Timberwolf Environmental, LLC

Berenice Marquez
Staff Scientist

Jim Foster
President

Attachments: Figures
Attached Tables
Photographic Log
Laboratory Report and Chain-of-Custody Documents

cc: Kate Kaufman, Hilcorp Energy Company

Figures

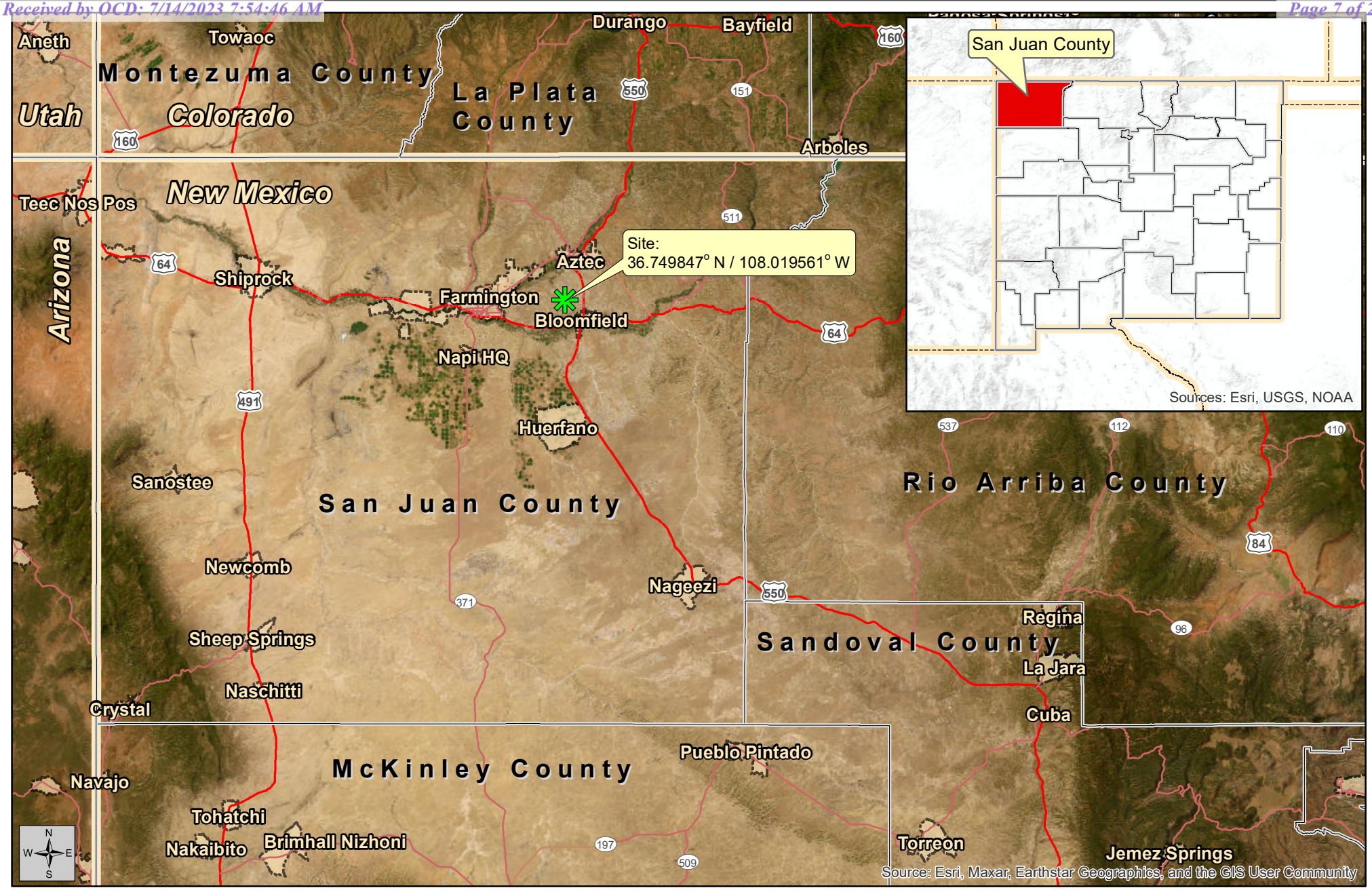

Figure 1 **Site Location Map**	**Status Report - 2nd Quarter 2023**	**July 6, 2023**
TIMBERWOLF ENVIRONMENTAL	1:1,250,000 0 20 40 60 80 100 120 Miles **Fifield 5 No. 1 (OCD Incident No. NVF1718155324)** **Hilcorp Energy Company** **San Juan County, New Mexico**	Site
Created By: Brett Berno TE Project No.: HEC-190009	Datum: NAD83 Imagery Source: ESRI Vector Source: ESRI and TE	

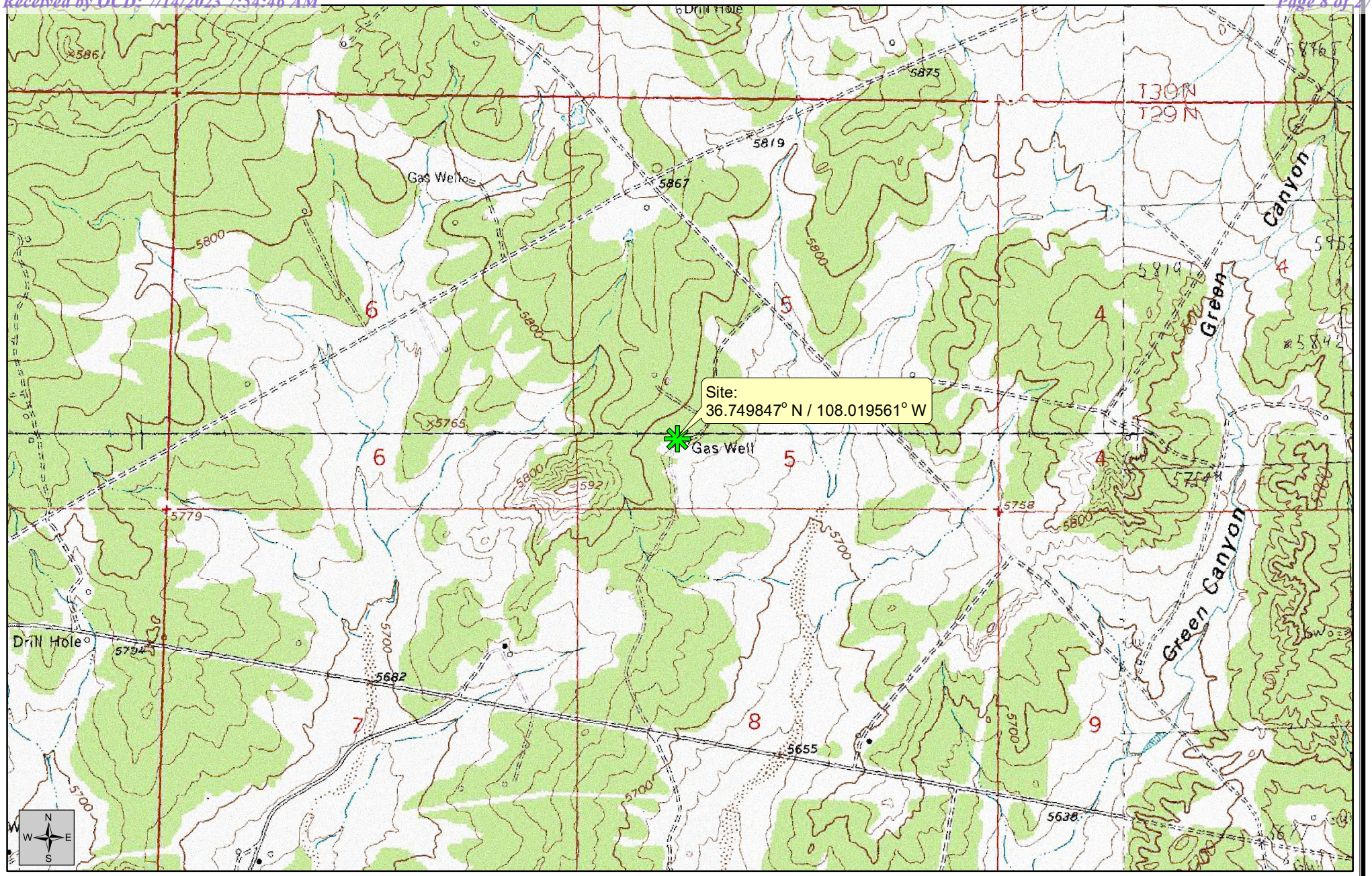

Figure 2 **Topographic Map**	**Status Report - 2nd Quarter 2023**	**July 6, 2023**
TIMBERWOLF ENVIRONMENTAL	1:24,000 0 0.5 1 1.5 2 Miles **Fifield 5 No. 1 (OCD Incident No. NVF1718155324)** **Hilcorp Energy Company** **San Juan County, New Mexico**	Site
Created By: Brett Berno TE Project No.: HEC-190009	Datum: NAD83 Imagery Source: USGS Quads: Aztec, Bloomfield, Flora Vista, Horn Canyon Vector Source: TE	

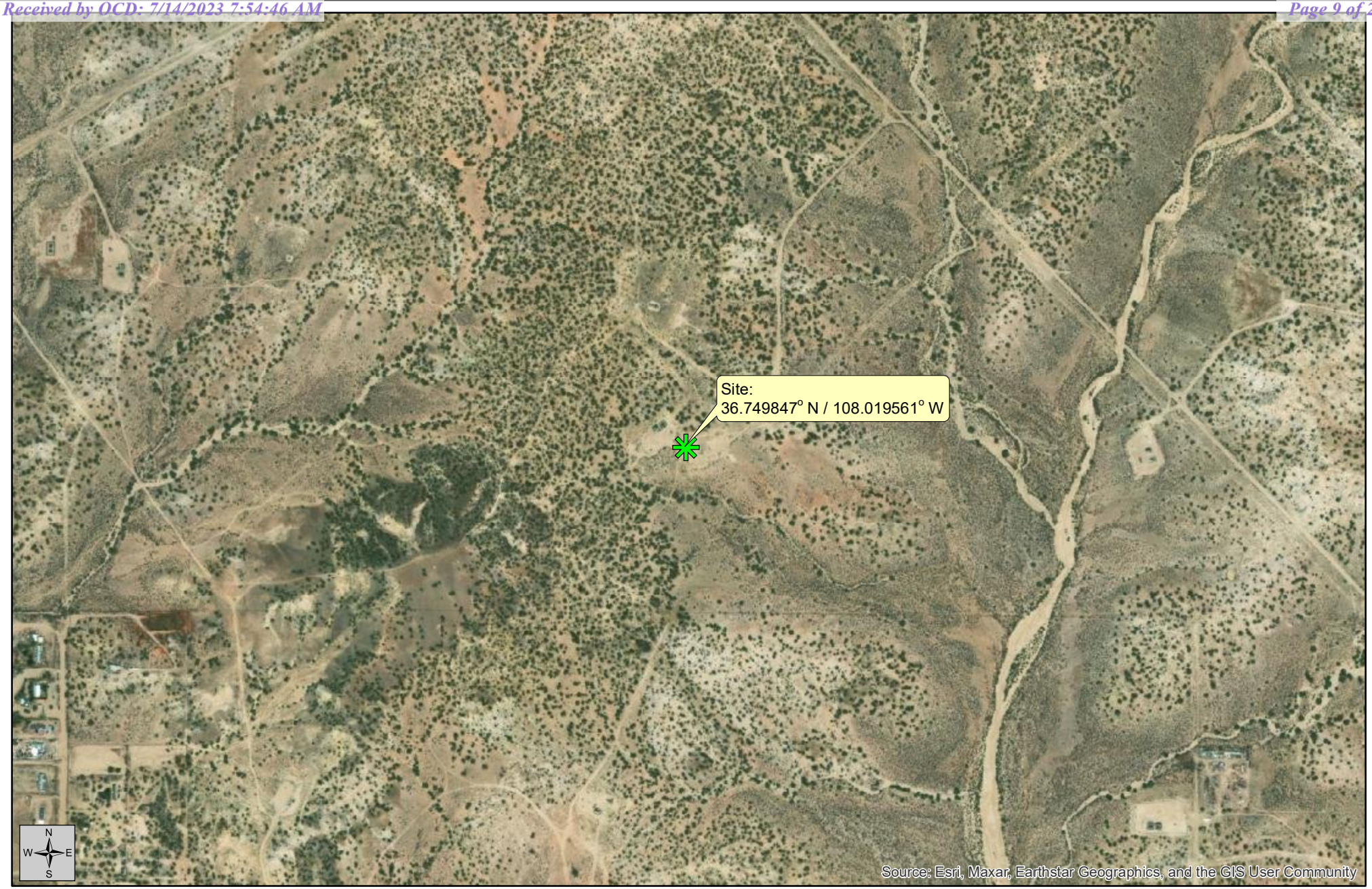

Figure 3
Aerial Map

Status Report - 2nd Quarter 2023

July 6, 2023

1:10,000

0 0.25 0.5 0.75 1 Miles

Fifield 5 No. 1 (OCD Incident No. NVF1718155324)
Hilcorp Energy Company
San Juan County, New Mexico

Created By:
Brett Berno
TE Project No.: HEC-190009

Datum: NAD83
Imagery Source: ESRI
Vector Source: TE

Site

TIMBERWOLF ENVIRONMENTAL

Attached Tables

Table A-1. Operation and Maintenance Events
Status Report - 2nd Quarter 2023
Fifield 5 No. 1 (OCD Incident No. NVF1718155324)
San Juan County, New Mexico

Date	Hour Meter (hrs)	Water/Condenstate Recovered (gal)	Maintenance Performed
04/06/23	2,073	10	• Brandon Sinclair with Hilcorp performed SVE system O&M checks. • Hilcorp personnel repaired PVC on the manifold.
04/18/23	2,361	0	• Brandon Sinclair with Hilcorp performed SVE system O&M checks.
05/09/23	2,860	0	• Jim Foster with Timberwolf performed SVE system reconfiguration and O&M checks. Leg 1: vacuum balanced to 1.6 in-Hg at 45 CFM; Leg 2 closed; Leg 3 closed; Leg 4: vacuum balanced to 1.0 in-Hg at 22 CFM.
05/10/23	2,888	0	• Brandon Sinclair with Hilcorp performed SVE system O&M checks.
05/18/23	3,082	0	• Brandon Sinclair with Hilcorp performed SVE system O&M checks.
06/06/23	3,540	0	• Brandon Sinclair with Hilcorp performed SVE system O&M checks.
06/21/23	3,905	0	• Brandon Sinclair with Hilcorp performed SVE system O&M checks.

gal – gallons

hrs – hours

Table A-2. Soil-Gas Analysis - 06/21/23
Status Report - 2nd Quarter 2023
Fifield 5 No. 1 (OCD Incident No. NVF1718155324)
San Juan County, New Mexico

Constituents	SVE-1
Volatiles (µg/m^3)	
Acetone	< 5,000
Benzene	8,900
Bromodichloromethane	< 500
Bromoform	< 500
Bromomethane	< 1,000
Carbon disulfide	< 5,000
Carbon tetrachloride	< 500
Chlorobenzene	< 500
Chloroethane	< 1,000
Chloroform	< 500
Chloromethane	< 500
2-Chlorotoluene	< 500
Cyclohexane	--
Dibromochloromethane	< 500
1,2-Dibromoethane	< 500
1,2-Dichlorobenzene	< 500
1,3-Dichlorobenzene	< 500
1,4-Dichlorobenzene	< 500
1,2-Dichloroethane	< 500
1,1-Dichloroethane	< 500
1,1-Dichloroethene	< 500
cis-1,2-Dichloroethene	< 500
trans-1,2-Dichloroethene	< 500
1,2-Dichloropropane	< 500
cis-1,3-Dichloropropene	< 500
trans-1,3-Dichloropropene	< 500
Ethylbenzene	1,300
Trichlorofluoromethane	< 500
Dichlorodifluoromethane	< 500
Heptane	--
Hexachloro-1,3-butadiene	< 500
n-Hexane	--
Isopropylbenzene	< 500
Methylene Chloride	< 1,500
Methyl Cyclohexane	--
2-Butanone (MEK)	< 5,000
4-Methyl-2-pentanone (MIBK)	< 5,000
MTBE	< 500
Naphthalene	< 1,000
Styrene	< 500
1,1,2,2-Tetrachloroethane	< 500

Table A-2. Soil-Gas Analysis - 06/21/23
Status Report - 2nd Quarter 2023
Fifield 5 No. 1 (OCD Incident No. NVF1718155324)
San Juan County, New Mexico

Constituents	SVE-1
Toluene	29,000
1,2,4-Trichlorobenzene	< 500
1,1,1-Trichloroethane	< 500
1,1,2-Trichloroethane	< 500
1,2,4-Trimethylbenzene	< 500
1,3,5-Trimethylbenzene	660
2,2,4-Trimethylpentane	--
Vinyl chloride	< 500
Total Xylenes	17,000
Gasoline Range (µg/m^3)	
Gasoline Range Organics (GRO)	1,700,000
Gases (Mol %)	
Oxygen	21.75
Carbon Dioxide	0.15
Methane	< 0.01

µg/m^3 – Micrograms per cubic meter

Mol % – mole percent

-- – Analyte not reported

Photographic Log

TIMBERWOLF ENVIRONMENTAL

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College Station, TX 77840
979.324.2139
www.teamtimberwolf.com

PHOTOGRAPHIC LOG

Project No.:	HEC-190009	**Client:**	Hilcorp Energy Company
Project Name:	Fifield 5 No. 1	**Site Location:**	San Juan County, New Mexico
Task Description:	Status Report – 2nd Quarter 2023	**Date:**	April – June, 2023

Photo No.: 1

Direction: N/A

Comments: View of hour meter on 03/23/23.

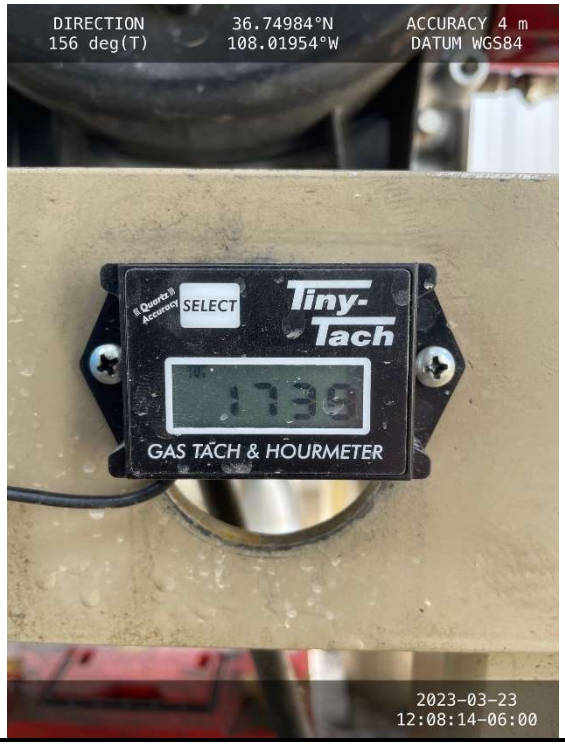
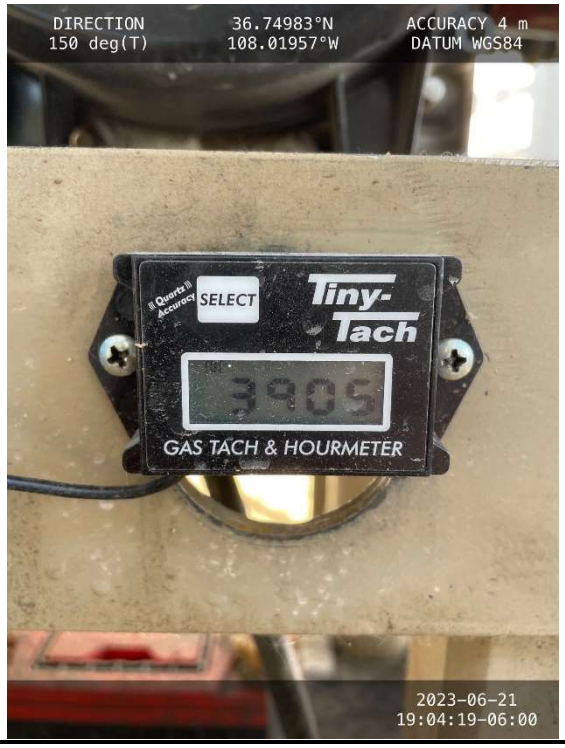


Photo No.: 2

Direction: N/A

Comments: View of hour meter on 06/21/23.



Laboratory Report and Chain-of-Custody Documents

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

July 11, 2023

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

RE: Fifield 5 1 OrderNo.: 2306C80

Dear Mitch Killough:

Hall Environmental Analysis Laboratory received 1 sample(s) on 6/24/2023 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued June 29, 2023.

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. 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. All samples are reported as received unless otherwise indicated.

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
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2306C80**
Date Reported: **7/11/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: SVE-1
Project: Fifield 5 1
Collection Date: 6/21/2023 7:20:00 PM
Lab ID: 2306C80-001 **Matrix:** AIR
Received Date: 6/24/2023 7:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	1700	25		µg/L	5	6/26/2023 1:49:37 PM
Surr: BFB	237	15-412		%Rec	5	6/26/2023 1:49:37 PM
EPA METHOD 8260B: VOLATILES						Analyst: **JR**
Benzene	8.9	0.50		µg/L	5	7/5/2023 12:15:20 PM
Toluene	29	0.50		µg/L	5	7/5/2023 12:15:20 PM
Ethylbenzene	1.3	0.50		µg/L	5	7/5/2023 12:15:20 PM
Methyl tert-butyl ether (MTBE)	ND	0.50		µg/L	5	7/5/2023 12:15:20 PM
1,2,4-Trimethylbenzene	ND	0.50		µg/L	5	7/5/2023 12:15:20 PM
1,3,5-Trimethylbenzene	0.66	0.50		µg/L	5	7/5/2023 12:15:20 PM
1,2-Dichloroethane (EDC)	ND	0.50		µg/L	5	7/5/2023 12:15:20 PM
1,2-Dibromoethane (EDB)	ND	0.50		µg/L	5	7/5/2023 12:15:20 PM
Naphthalene	ND	1.0		µg/L	5	7/5/2023 12:15:20 PM
1-Methylnaphthalene	ND	2.0		µg/L	5	7/5/2023 12:15:20 PM
2-Methylnaphthalene	ND	2.0		µg/L	5	7/5/2023 12:15:20 PM
Acetone	ND	5.0		µg/L	5	7/5/2023 12:15:20 PM
Bromobenzene	ND	0.50		µg/L	5	7/5/2023 12:15:20 PM
Bromodichloromethane	ND	0.50		µg/L	5	7/5/2023 12:15:20 PM
Bromoform	ND	0.50		µg/L	5	7/5/2023 12:15:20 PM
Bromomethane	ND	1.0		µg/L	5	7/5/2023 12:15:20 PM
2-Butanone	ND	5.0		µg/L	5	7/5/2023 12:15:20 PM
Carbon disulfide	ND	5.0		µg/L	5	7/5/2023 12:15:20 PM
Carbon tetrachloride	ND	0.50		µg/L	5	7/5/2023 12:15:20 PM
Chlorobenzene	ND	0.50		µg/L	5	7/5/2023 12:15:20 PM
Chloroethane	ND	1.0		µg/L	5	7/5/2023 12:15:20 PM
Chloroform	ND	0.50		µg/L	5	7/5/2023 12:15:20 PM
Chloromethane	ND	0.50		µg/L	5	7/5/2023 12:15:20 PM
2-Chlorotoluene	ND	0.50		µg/L	5	7/5/2023 12:15:20 PM
4-Chlorotoluene	ND	0.50		µg/L	5	7/5/2023 12:15:20 PM
cis-1,2-DCE	ND	0.50		µg/L	5	7/5/2023 12:15:20 PM
cis-1,3-Dichloropropene	ND	0.50		µg/L	5	7/5/2023 12:15:20 PM
1,2-Dibromo-3-chloropropane	ND	1.0		µg/L	5	7/5/2023 12:15:20 PM
Dibromochloromethane	ND	0.50		µg/L	5	7/5/2023 12:15:20 PM
Dibromomethane	ND	1.0		µg/L	5	7/5/2023 12:15:20 PM
1,2-Dichlorobenzene	ND	0.50		µg/L	5	7/5/2023 12:15:20 PM
1,3-Dichlorobenzene	ND	0.50		µg/L	5	7/5/2023 12:15:20 PM
1,4-Dichlorobenzene	ND	0.50		µg/L	5	7/5/2023 12:15:20 PM
Dichlorodifluoromethane	ND	0.50		µg/L	5	7/5/2023 12:15:20 PM
1,1-Dichloroethane	ND	0.50		µg/L	5	7/5/2023 12:15:20 PM
1,1-Dichloroethene	ND	0.50		µg/L	5	7/5/2023 12:15:20 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2306C80**
Date Reported: **7/11/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: SVE-1
Project: Fifield 5 1
Collection Date: 6/21/2023 7:20:00 PM
Lab ID: 2306C80-001 **Matrix:** AIR
Received Date: 6/24/2023 7:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: **JR**
1,2-Dichloropropane	ND	0.50		µg/L	5	7/5/2023 12:15:20 PM
1,3-Dichloropropane	ND	0.50		µg/L	5	7/5/2023 12:15:20 PM
2,2-Dichloropropane	ND	0.50		µg/L	5	7/5/2023 12:15:20 PM
1,1-Dichloropropene	ND	0.50		µg/L	5	7/5/2023 12:15:20 PM
Hexachlorobutadiene	ND	0.50		µg/L	5	7/5/2023 12:15:20 PM
2-Hexanone	ND	5.0		µg/L	5	7/5/2023 12:15:20 PM
Isopropylbenzene	ND	0.50		µg/L	5	7/5/2023 12:15:20 PM
4-Isopropyltoluene	ND	0.50		µg/L	5	7/5/2023 12:15:20 PM
4-Methyl-2-pentanone	ND	5.0		µg/L	5	7/5/2023 12:15:20 PM
Methylene chloride	ND	1.5		µg/L	5	7/5/2023 12:15:20 PM
n-Butylbenzene	ND	1.5		µg/L	5	7/5/2023 12:15:20 PM
n-Propylbenzene	ND	0.50		µg/L	5	7/5/2023 12:15:20 PM
sec-Butylbenzene	ND	0.50		µg/L	5	7/5/2023 12:15:20 PM
Styrene	ND	0.50		µg/L	5	7/5/2023 12:15:20 PM
tert-Butylbenzene	ND	0.50		µg/L	5	7/5/2023 12:15:20 PM
1,1,1,2-Tetrachloroethane	ND	0.50		µg/L	5	7/5/2023 12:15:20 PM
1,1,2,2-Tetrachloroethane	ND	0.50		µg/L	5	7/5/2023 12:15:20 PM
Tetrachloroethene (PCE)	ND	0.50		µg/L	5	7/5/2023 12:15:20 PM
trans-1,2-DCE	ND	0.50		µg/L	5	7/5/2023 12:15:20 PM
trans-1,3-Dichloropropene	ND	0.50		µg/L	5	7/5/2023 12:15:20 PM
1,2,3-Trichlorobenzene	ND	0.50		µg/L	5	7/5/2023 12:15:20 PM
1,2,4-Trichlorobenzene	ND	0.50		µg/L	5	7/5/2023 12:15:20 PM
1,1,1-Trichloroethane	ND	0.50		µg/L	5	7/5/2023 12:15:20 PM
1,1,2-Trichloroethane	ND	0.50		µg/L	5	7/5/2023 12:15:20 PM
Trichloroethene (TCE)	ND	0.50		µg/L	5	7/5/2023 12:15:20 PM
Trichlorofluoromethane	ND	0.50		µg/L	5	7/5/2023 12:15:20 PM
1,2,3-Trichloropropane	ND	1.0		µg/L	5	7/5/2023 12:15:20 PM
Vinyl chloride	ND	0.50		µg/L	5	7/5/2023 12:15:20 PM
Xylenes, Total	17	0.75		µg/L	5	7/5/2023 12:15:20 PM
Surr: Dibromofluoromethane	108	70-130		%Rec	5	7/5/2023 12:15:20 PM
Surr: 1,2-Dichloroethane-d4	111	70-130		%Rec	5	7/5/2023 12:15:20 PM
Surr: Toluene-d8	102	70-130		%Rec	5	7/5/2023 12:15:20 PM
Surr: 4-Bromofluorobenzene	102	70-130		%Rec	5	7/5/2023 12:15:20 PM

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

Qualifiers:

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

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ANALYTICAL SUMMARY REPORT

June 28, 2023

Hall Environmental
4901 Hawkins St NE Ste D
Albuquerque, NM 87109-4372

Work Order: B23062207 Quote ID: B15626

Project Name: Not Indicated

Energy Laboratories Inc Billings MT received the following 1 sample for Hall Environmental on 6/27/2023 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B23062207-001	2306C80-001B, SVE-1	06/21/23 19:20	06/27/23	Air	Air Correction Calculations Appearance and Comments Calculated Properties GPM @ std cond,/1000 cu. ft., moist. Free Natural Gas Analysis Specific Gravity @ 60/60

The analyses presented in this report were performed by Energy Laboratories, Inc., 1120 S 27th St., Billings, MT 59101, unless otherwise noted. Any exceptions or problems with the analyses are noted in the report package. Any issues encountered during sample receipt are documented in the Work Order Receipt Checklist.

The results as reported relate only to the item(s) submitted for testing. This report shall be used or copied only in its entirety. Energy Laboratories, Inc. is not responsible for the consequences arising from the use of a partial report.

If you have any questions regarding these test results, please contact your Project Manager.

Report Approved By:

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LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Hall Environmental
Project: Not Indicated
Lab ID: B23062207-001
Client Sample ID: 2306C80-001B, SVE-1

Report Date: 06/28/23
Collection Date: 06/21/23 19:20
DateReceived: 06/27/23
Matrix: Air

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
GAS CHROMATOGRAPHY ANALYSIS REPORT							
Oxygen	21.75	Mol %		0.01		GPA 2261-95	06/27/23 14:52 / ikc
Nitrogen	78.05	Mol %		0.01		GPA 2261-95	06/27/23 14:52 / ikc
Carbon Dioxide	0.15	Mol %		0.01		GPA 2261-95	06/27/23 14:52 / ikc
Hydrogen Sulfide	<0.01	Mol %		0.01		GPA 2261-95	06/27/23 14:52 / ikc
Methane	<0.01	Mol %		0.01		GPA 2261-95	06/27/23 14:52 / ikc
Ethane	<0.01	Mol %		0.01		GPA 2261-95	06/27/23 14:52 / ikc
Propane	<0.01	Mol %		0.01		GPA 2261-95	06/27/23 14:52 / ikc
Isobutane	<0.01	Mol %		0.01		GPA 2261-95	06/27/23 14:52 / ikc
n-Butane	<0.01	Mol %		0.01		GPA 2261-95	06/27/23 14:52 / ikc
Isopentane	<0.01	Mol %		0.01		GPA 2261-95	06/27/23 14:52 / ikc
n-Pentane	<0.01	Mol %		0.01		GPA 2261-95	06/27/23 14:52 / ikc
Hexanes plus	0.05	Mol %		0.01		GPA 2261-95	06/27/23 14:52 / ikc
Propane	< 0.001	gpm		0.001		GPA 2261-95	06/27/23 14:52 / ikc
Isobutane	< 0.001	gpm		0.001		GPA 2261-95	06/27/23 14:52 / ikc
n-Butane	< 0.001	gpm		0.001		GPA 2261-95	06/27/23 14:52 / ikc
Isopentane	< 0.001	gpm		0.001		GPA 2261-95	06/27/23 14:52 / ikc
n-Pentane	< 0.001	gpm		0.001		GPA 2261-95	06/27/23 14:52 / ikc
Hexanes plus	0.021	gpm		0.001		GPA 2261-95	06/27/23 14:52 / ikc
GPM Total	0.021	gpm		0.001		GPA 2261-95	06/27/23 14:52 / ikc
GPM Pentanes plus	0.021	gpm		0.001		GPA 2261-95	06/27/23 14:52 / ikc
CALCULATED PROPERTIES							
Gross BTU per cu ft @ Std Cond. (HHV)	2			1		GPA 2261-95	06/27/23 14:52 / ikc
Net BTU per cu ft @ std cond. (LHV)	2			1		GPA 2261-95	06/27/23 14:52 / ikc
Pseudo-critical Pressure, psia	545			1		GPA 2261-95	06/27/23 14:52 / ikc
Pseudo-critical Temperature, deg R	239			1		GPA 2261-95	06/27/23 14:52 / ikc
Specific Gravity @ 60/60F	0.999			0.001		D3588-81	06/27/23 14:52 / ikc
Air, %	99.39			0.01		GPA 2261-95	06/27/23 14:52 / ikc
- The analysis was not corrected for air.							
COMMENTS							
-						-	06/27/23 14:52 / ikc

- BTU, GPM, and specific gravity are corrected for deviation from ideal gas behavior.
- GPM = gallons of liquid at standard conditions per 1000 cu. ft. of moisture free gas @ standard conditions.
- To convert BTU to a water-saturated basis @ standard conditions, multiply by 0.9825.
- Standard conditions: 60 F & 14.73 psi on a dry basis.

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

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QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Hall Environmental **Work Order:** B23062207 **Report Date:** 06/28/23

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: **GPA 2261-95**										Batch: R404488
Lab ID: **LCS062723**	11	Laboratory Control Sample				Run: GCNGA-B_230627A				06/27/23 11:57
Oxygen		0.60	Mol %	0.01	120	70	130			
Nitrogen		5.92	Mol %	0.01	99	70	130			
Carbon Dioxide		0.99	Mol %	0.01	100	70	130			
Methane		74.4	Mol %	0.01	100	70	130			
Ethane		6.00	Mol %	0.01	100	70	130			
Propane		5.34	Mol %	0.01	108	70	130			
Isobutane		1.98	Mol %	0.01	99	70	130			
n-Butane		1.99	Mol %	0.01	99	70	130			
Isopentane		1.00	Mol %	0.01	100	70	130			
n-Pentane		1.00	Mol %	0.01	100	70	130			
Hexanes plus		0.78	Mol %	0.01	98	70	130			
Lab ID: **B23062211-001ADUP**	12	Sample Duplicate				Run: GCNGA-B_230627A				06/27/23 14:25
Oxygen		17.0	Mol %	0.01				0.2	20	
Nitrogen		79.0	Mol %	0.01				0.0	20	
Carbon Dioxide		3.64	Mol %	0.01				0.3	20	
Hydrogen Sulfide		<0.01	Mol %	0.01					20	
Methane		<0.01	Mol %	0.01					20	
Ethane		<0.01	Mol %	0.01					20	
Propane		<0.01	Mol %	0.01					20	
Isobutane		<0.01	Mol %	0.01					20	
n-Butane		<0.01	Mol %	0.01					20	
Isopentane		<0.01	Mol %	0.01					20	
n-Pentane		<0.01	Mol %	0.01					20	
Hexanes plus		0.39	Mol %	0.01				2.6	20	
Lab ID: **LCS062823**	11	Laboratory Control Sample				Run: GCNGA-B_230627A				06/28/23 09:16
Oxygen		0.60	Mol %	0.01	120	70	130			
Nitrogen		5.94	Mol %	0.01	99	70	130			
Carbon Dioxide		0.99	Mol %	0.01	100	70	130			
Methane		74.4	Mol %	0.01	100	70	130			
Ethane		5.95	Mol %	0.01	99	70	130			
Propane		5.52	Mol %	0.01	112	70	130			
Isobutane		1.97	Mol %	0.01	98	70	130			
n-Butane		1.97	Mol %	0.01	98	70	130			
Isopentane		0.96	Mol %	0.01	96	70	130			
n-Pentane		0.97	Mol %	0.01	97	70	130			
Hexanes plus		0.76	Mol %	0.01	95	70	130			

Qualifiers:

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

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Work Order Receipt Checklist

Hall Environmental

B23062207

Login completed by: Yvonna E. Smith
Date Received: 6/27/2023
Reviewed by: darcy
Received by: lel
Reviewed Date: 6/28/2023
Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☐	No ☑	Not Applicable ☐
Container/Temp Blank temperature:	17.8°C No Ice		
Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4").	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	Not Applicable ☑

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

The reference date for Radon analysis is the sample collection date. The reference date for all other Radiochemical analyses is the analysis date. Radiochemical precision results represent a 2-sigma Total Measurement Uncertainty.

Contact and Corrective Action Comments:

None

HALL ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

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

SUB CONTRATOR: Energy Labs -Billings	COMPANY: Energy Laboratories	PHONE: (406) 869-6253	FAX: (406) 252-6069
ADDRESS: 1120 South 27th Street		ACCOUNT #:	EMAIL:
CITY, STATE, ZIP: Billings, MT 59107			

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS
1	2306C80-001B	SVE-1	TEDLAR	Air	6/21/2023 7:20:00 PM	1	~~**3 DAY~~ Next Day TAT** Natural Gas Analysis, O2, CO2

B23062207

conc Gluten

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

Relinquished By:	Date: 6/24/2023	Time: 9:32 AM	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By: Lydia LaRowe	Date: 6/27/23	Time: 09:25

TAT: Standard ☐ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:
☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY
Temp of samples ____ °C Attempt to Cool ? ____
Comments: ____

HALL ENVIRONMENTAL ANALYSIS 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 Number: 2306C80 RcptNo: 1

Received By: Tracy Casarrubias 6/24/2023 7:45:00 AM

Completed By: Tracy Casarrubias 6/24/2023 9:27:39 AM

Reviewed By: JN 6/26/23

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?	Yes ☐	No ☐	NA ☑
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☐	No ☐	NA ☑
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA?	Yes ☐	No ☐	NA ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)

Adjusted? _____

Checked by: TMC 6/24/23

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: Mailing address and phone number are missing on COC- TMC 6/24/23

16. Additional remarks:

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	N/A	Good	Yes			

Chain-of-Custody Record

Client: Hilcorp

Mailing Address:

Phone #:

email or Fax#: brandon.sinclair@hilcorp.com

QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other
☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush 6-27

Project Name: Fifield 5 #1

Project #:

Project Manager: Kate Kayfman

Sampler: Brandon Sinclair

On Ice: ☐ Yes ☒ No

# of Coolers: 1

Cooler Temp(Including CF): N/A (°C)

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No.	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)	8015 TVPH	Fixed gases O_2 & CO_2				
6-21	1920	air	SVE-1	2 Tedlar		23060800 1											✓	✓				

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
6-23				courier		7:45
Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
					6/24/23	

Remarks:

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.

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

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

CONDITIONS

Action 240225

CONDITIONS

Operator:	OGRID:
HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	372171
	Action Number: 240225
	Action Type: [UF-GWA] Ground Water Abatement (GROUND WATER ABATEMENT)

CONDITIONS

Created By	Condition	Condition Date
nvelez	Accepted for the record. See app ID 275320 for most updated status.	10/27/2023