



October 10, 2023

New Mexico Oil Conservation Division

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

Re: Third Quarter 2023 – SVE System Update

Sullivan GC D #1E
San Juan County, New Mexico
Hilcorp Energy Company
NMOCD Incident Number: NCS1518952648

1. Follow the recommendations provided.
2. OCD will require quarterly report for 2023. Next report due no later than January 15, 2024.
3. Since the system was re-started in December 2021, OCD will accept bi-annual (twice a year) reporting initiating in 2024.

To Whom it May Concern:

Ensolum, LLC (Ensolum), on behalf of Hilcorp Energy Company (Hilcorp), presents this *Third Quarter 2023 – SVE System Update* report summarizing the soil vapor extraction (SVE) system performance at the Sullivan GC D #1E natural gas production well (Site), located in Unit F of Section 26, Township 29 North, Range 11 West in San Juan County, New Mexico (Figure 1). Specifically, this report summarizes Site activities performed in July, August, and September 2023 to the New Mexico Oil Conservation Division (NMOCD).

SVE SYSTEM SPECIFICATIONS

The original SVE system was installed at the Site in April 2016 by XTO Energy, the previous Site owner, in response to a release originating from a broken fiberglass line used to transfer natural gas condensate. The original SVE system was purchased from Geotech Environmental Equipment, Inc. (Geotech) and operated successfully until the summer of 2018. Due to a broken SVE blower motor, the Site’s SVE system did not operate between 2018 and March of 2022; however, a rental SVE system was brought onto the Site and began operation on December 2, 2021. The blower motor from the original Geotech system was replaced on March 21, 2022, and the Geotech SVE system was put back into service.

The current Geotech SVE system is configured with vacuum applied to wells PR-1, MW-01, MW-02, MW-05, and MW-06 (shown on Figure 2). The SVE system consists of a 3 horsepower Rotron Model EN656 regenerative blower capable of producing 212 standard cubic feet per minute (scfm) of flow and 73 inches of water column (IWC) vacuum. The layout of the SVE system and piping is shown on Figure 2.

THIRD QUARTER 2023 ACTIVITIES

During the third quarter of 2023, Ensolum and Hilcorp personnel performed bi-weekly operation and maintenance (O&M) visits to verify the system was operating as designed and to perform any required maintenance. Field notes taken during O&M visits are presented in Appendix A. During the third quarter of 2023, all SVE wells (PR-1, MW-01, MW-02, MW-05, and MW-06) were operated in order to induce air flow through impacted soil within the source area. Between June 23 and September 26, 2023, the SVE system operated for 2,269 hours, with a runtime efficiency of 100 percent (%). Appendix B presents

photographs of the runtime meter for calculating the third quarter runtime efficiency. Table 1 presents the SVE system operational hours and percent runtime.

A third quarter emissions sample was collected from the SVE system on August 18, 2023, from a sample port located between the SVE piping manifold and the SVE blower using a high vacuum air sampler. Prior to collection, the emission sample was field screened with a photoionization detector (PID) for organic vapor monitoring (OVM). The emission sample was collected directly into two 1-Liter Tedlar® bags and submitted to Hall Environmental Analysis Laboratory (Hall), located in Albuquerque, New Mexico, for analysis of total volatile petroleum hydrocarbons (TVPH, also referred to as total petroleum hydrocarbons – gasoline range organics (TPH-GRO)) following United States Environmental Protection Agency (EPA) Method 8015D, volatile organic compounds (VOCs) following EPA Method 8260B, and fixed gas analysis of oxygen and carbon dioxide following Gas Processor Association (GPA) Method 2261. Table 2 presents a summary of analytical data collected during this sampling event and previous sampling events, with the full laboratory analytical report included in Appendix C.

Emission sample data and measured stack flow rates are used to estimate total mass recovered and total emissions generated by the SVE system (Table 3). Based on these estimates, 89,989 pounds (45 tons) of TVPH have been removed by the system to date.

RECOMMENDATIONS

Bi-weekly O&M visits will continue to be performed by Ensolum and/or Hilcorp personnel to verify the SVE system is operating within normal working ranges (i.e., temperature, pressure, and vacuum). Deviations from regular operations will be noted on field logs and included in the following quarterly report.

We appreciate the opportunity to provide this report to the NMOCD. If you should have any questions or comments regarding this report, please contact the undersigned.

Sincerely,
Ensolum, LLC

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:

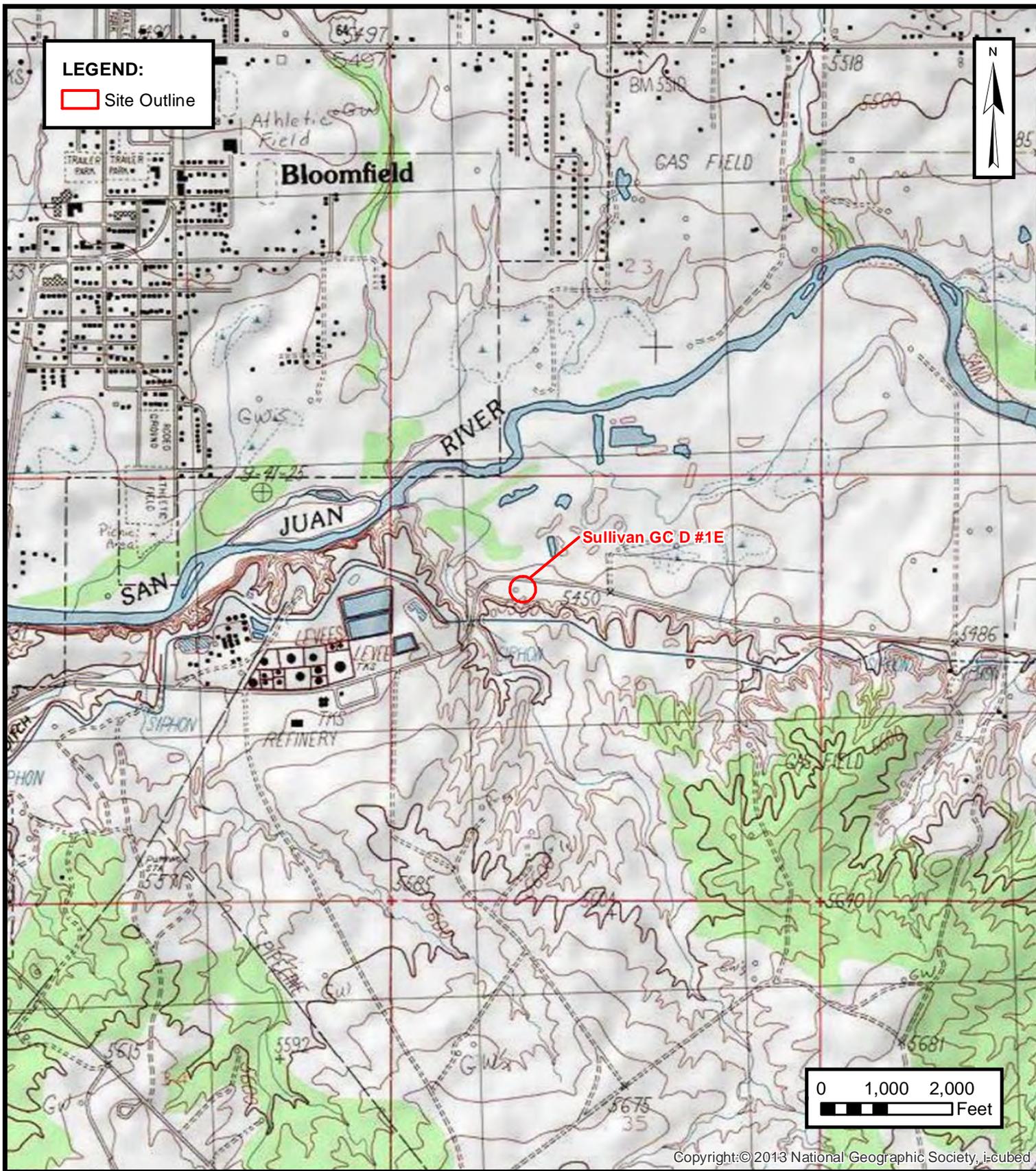
- Figure 1 Site Location
- Figure 2 SVE System Layout

- Table 1 Soil Vapor Extraction System Runtime Calculations
- Table 2 Soil Vapor Extraction System Emission Analytical Results
- Table 3 Soil Vapor Extraction System Mass Removal and Emissions

- Appendix A Field Notes
- Appendix B Project Photographs
- Appendix C Laboratory Analytical Reports



FIGURES



ENSOLUM
Environmental & Hydrogeologic Consultants

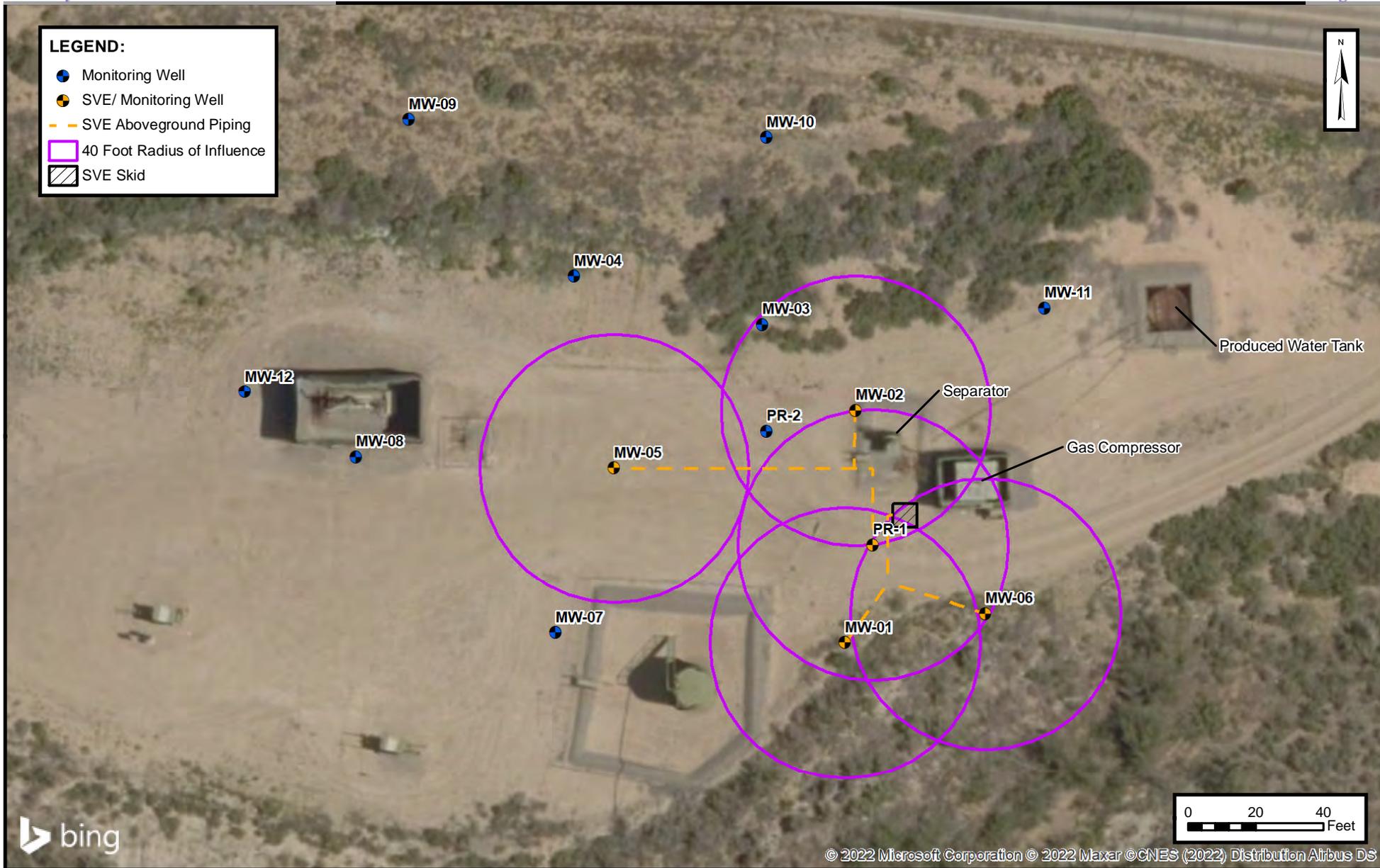
SITE LOCATION

HILLCORP ENERGY COMPANY
SULLIVAN GC D #1E
San Juan County, New Mexico
36.885855° N, 107.899525° W

PROJECT NUMBER: 07A1988029

FIGURE

1



ENSOLUM
Environmental & Hydrogeologic Consultants

SVE SYSTEM LAYOUT

HILCORP ENERGY COMPANY
SULLIVAN GC D #1E
San Juan County, New Mexico
36.885855° N, 107.899525° W

PROJECT NUMBER:07A1988029

FIGURE

2



TABLES



TABLE 1
SOIL VAPOR EXTRACTION SYSTEM RUNTIME CALCULATIONS
Sullivan GC D#1E
Hilcorp Energy Company
San Juan County, New Mexico

Permanent Geotech SVE Skid Runtime Operation

| Date | Total Operational Hours | Delta Hours | Days | % Runtime |
|-------------|--------------------------------|--------------------|-------------|------------------|
| 6/23/2023 | 10,990 | -- | -- | -- |
| 9/26/2023 | 13,259 | 2,269 | 95 | 100% |



TABLE 2
SOIL VAPOR EXTRACTION SYSTEM EMISSIONS ANALYTICAL RESULTS

Sullivan GC D#1E
Hilcorp Energy Company
San Juan County, New Mexico

| Date | PID (ppm) | Benzene (µg/L) | Toluene (µg/L) | Ethylbenzene (µg/L) | Total Xylenes (µg/L) | TVPH/GRO (µg/L) | Oxygen (%) | Carbon Dioxide (%) |
|------------|-----------|----------------|----------------|---------------------|----------------------|-----------------|------------|--------------------|
| 4/18/2016 | -- | 840 | 1,900 | 87 | 840 | 140,000 | -- | -- |
| 4/20/2016 | 2,375 | 840 | 1,900 | 87 | 840 | 140,000 | -- | -- |
| 4/29/2017 | 3,520 | 280 | 1,000 | 64 | 630 | 65,000 | -- | -- |
| 8/11/2016 | 4,215 | 92 | 700 | 90 | 910 | 23,000 | -- | -- |
| 1/24/2018 | 2,837 | 46 | 140 | <5.0 | 410 | 21,000 | -- | -- |
| 6/29/2018 | 3,000 | 63 | 210 | <5.0 | 410 | 27,000 | -- | -- |
| 12/2/2021 | 741 | 15 | <5.0 | <5.0 | 99 | 33,000 | -- | -- |
| 3/16/2022 | 982 | <0.10 | <0.10 | <0.10 | 1.1 | 64 | 19.40 | 1.23 |
| 6/17/2022 | 327 | <0.10 | <0.10 | <0.10 | 0.25 | 10 | 21.54 | 0.29 |
| 9/22/2022 | 266 | <0.10 | <0.10 | <0.10 | <0.15 | <5.0 | 20.57 | 1.00 |
| 12/10/2022 | 68 | 0.75 | 4.9 | 0.49 | 9.0 | 490 | 21.02 | 0.65 |
| 3/13/2023 | 69 | 0.81 | 4.4 | 0.30 | 5.7 | 300 | 21.15 | 0.51 |
| 6/23/2023 | 139 | 5.9 | 12 | 3.0 | 6.7 | 840 | 21.01 | 0.55 |
| 8/18/2023 | 76 | 2.4 | 2.9 | <1.0 | 1.8 | 340 | 20.83 | 0.68 |

Notes:

GRO: gasoline range hydrocarbons

µg/L: microgram per liter

PID: photoionization detector

ppm: parts per million

TVPH: total volatile petroleum hydrocarbons

%: percent

--: not sampled

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



TABLE 3
SOIL VAPOR EXTRACTION SYSTEM MASS REMOVAL AND EMISSIONS
 Sullivan GC D#1E
 Hilcorp Energy Company
 San Juan County, New Mexico

Flow and Laboratory Analysis

| Date | PID (ppm) | Benzene (µg/L) | Toluene (µg/L) | Ethylbenzene (µg/L) | Total Xylenes (µg/L) | TVPH (µg/L) |
|----------------|-----------|----------------|----------------|---------------------|----------------------|-------------|
| 4/18/2016 | -- | 840 | 1,900 | 87 | 840 | 140,000 |
| 4/20/2016 | 2,375 | 840 | 1,900 | 87 | 840 | 140,000 |
| 4/29/2017 | 3,520 | 280 | 1,000 | 64 | 630 | 65,000 |
| 8/11/2016 | 4,215 | 92 | 700 | 90 | 910 | 23,000 |
| 1/24/2018 | 2,837 | 46 | 140 | 5.0 | 410 | 21,000 |
| 6/29/2018 | 3,000 | 63 | 210 | 5.0 | 410 | 27,000 |
| 12/2/2021 | 741 | 15 | 5.0 | 5.0 | 99 | 33,000 |
| 3/16/2022 | 982 | 0.10 | 0.10 | 0.10 | 1.1 | 64 |
| 6/17/2022 | 327 | 0.10 | 0.10 | 0.10 | 0.25 | 10 |
| 9/22/2022 | 266 | 0.10 | 0.10 | 0.10 | 0.15 | 5.0 |
| 12/10/2022 | 68 | 0.75 | 4.9 | 0.49 | 9.0 | 490 |
| 3/13/2023 | 69 | 0.81 | 4.4 | 0.30 | 5.7 | 300 |
| 6/23/2023 | 139 | 5.9 | 12 | 3.0 | 6.7 | 840 |
| 8/18/2023 | 76 | 2.4 | 2.9 | 1.0 | 1.8 | 340 |
| Average | 1,432 | 156 | 420 | 25 | 297 | 32,218 |

Vapor Extraction Summary

| Date | Flow Rate (cfm) | Total System Flow (cf) | Delta Flow (cf) | Benzene (lb/hr) | Toluene (lb/hr) | Ethylbenzene (lb/hr) | Total Xylenes (lb/hr) | TVPH (lb/hr) |
|----------------|----------------------------------|------------------------|-----------------|-----------------|-----------------|----------------------|-----------------------|--------------|
| 4/18/2016 | 90 | 0 | 0 | 0.28 | 0.64 | 0.029 | 0.28 | 47 |
| 4/20/2016 | 109 | 313,920 | 313,920 | 0.34 | 0.77 | 0.035 | 0.34 | 57 |
| 4/29/2017 | 90 | 1,480,320 | 1,166,400 | 0.19 | 0.49 | 0.025 | 0.25 | 35 |
| 8/11/2016 | 70 | 6,923,520 | 5,443,200 | 0.049 | 0.22 | 0.020 | 0.20 | 12 |
| 1/24/2018 | 60 | -- | -- | 0.015 | 0.094 | 0.011 | 0.15 | 4.9 |
| 6/29/2018 | 41 | 53,246,160 | 46,322,640 | 0.0084 | 0.027 | 0.001 | 0.063 | 3.7 |
| 12/2/2021 | Rental SVE System Startup | | | | | | | |
| 12/2/2021 | 49 | 53,246,160 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3/16/2022 | 49 | 60,581,754 | 7,335,594 | 0.0014 | 0.00047 | 0.00047 | 0.0092 | 3.0 |
| 6/17/2022 | 80 | 70,724,634 | 10,142,880 | 0.000030 | 0.000030 | 0.000030 | 0.0002 | 0.011 |
| 9/22/2022 | 68 | 80,221,650 | 9,497,016 | 0.000025 | 0.000025 | 0.000025 | 0.000051 | 0.0019 |
| 12/10/2022 | 80 | 89,341,170 | 9,119,520 | 0.00013 | 0.00075 | 0.000088 | 0.0014 | 0.074 |
| 3/13/2023 | 75 | 99,328,020 | 9,986,850 | 0.00022 | 0.0013 | 0.00011 | 0.0021 | 0.11 |
| 6/23/2023 | 76 | 110,408,820 | 11,080,800 | 0.00095 | 0.0023 | 0.00047 | 0.0018 | 0.16 |
| 8/18/2023 | 80 | 116,845,620 | 6,436,800 | 0.0012 | 0.0022 | 0.00060 | 0.0013 | 0.18 |
| Average | | | | 0.064 | 0.16 | 0.0088 | 0.093 | 12 |

Flow and Laboratory Analysis

| Date | Total SVE System Hours | Delta Hours | Benzene (pounds) | Toluene (pounds) | Ethylbenzene (pounds) | Total Xylenes (pounds) | TVPH (pounds) | TVPH (tons) |
|------------------------------------|-------------------------------------|-------------|------------------|------------------|-----------------------|------------------------|---------------|-------------|
| 4/18/2016 | 0 | 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 4/20/2016 | 48 | 48 | 16 | 37 | 1.7 | 16 | 2,740 | 1.4 |
| 4/29/2017 | 264 | 216 | 41 | 105 | 5.5 | 53 | 7,452 | 3.7 |
| 8/11/2016 | 1,560 | 1,296 | 63 | 288 | 26 | 261 | 14,929 | 7.5 |
| 1/24/2018 | -- | -- | -- | -- | -- | -- | -- | -- |
| 6/29/2018 | 16,848 | 15,288 | 128 | 410 | 12 | 961 | 56,264 | 28 |
| 12/2/2021 | Rental SVE System Startup | | | | | | | |
| 12/2/2021 | 968 | 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3/16/2022 | 3,463 | 2,495 | 3.5 | 1.2 | 1.2 | 23 | 7,559 | 3.8 |
| 3/21/2022 | Permanent SVE System Startup | | | | | | | |
| 3/21/2022 | 0 | 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/17/2022 | 2,113 | 2,113 | 0.063 | 0.063 | 0.063 | 0.43 | 23 | 0.012 |
| 9/22/2022 | 4,441 | 2,328 | 0.059 | 0.059 | 0.059 | 0.12 | 4.4 | 0.0022 |
| 12/10/2022 | 6,341 | 1,900 | 0.24 | 1.4 | 0.17 | 2.6 | 141 | 0.070 |
| 3/13/2023 | 8,560 | 2,219 | 0.49 | 2.9 | 0.25 | 4.6 | 246 | 0.12 |
| 6/23/2023 | 10,990 | 2,430 | 2.3 | 5.7 | 1.1 | 4.3 | 394 | 0.20 |
| 8/18/2023 | 12,331 | 1,341 | 1.7 | 3.0 | 0.80 | 1.7 | 237 | 0.12 |
| Total Mass Recovery to Date | | | 256 | 856 | 49 | 1,329 | 89,989 | 45 |

Notes:

cf: cubic feet

cfm: cubic feet per minute

µg/L: micrograms per liter

lb/hr: pounds per hour

--: not sampled

PID: photoionization detector

ppm: parts per million

TVPH: total volatile petroleum hydrocarbons

gray: laboratory reporting limit used for calculating emissions



APPENDIX A

Field Notes



APPENDIX B

Project Photographs

PROJECT PHOTOGRAPHS
Sullivan GC D #1E
San Juan County, New Mexico
Hilcorp Energy Company

| | |
|---|---|
| <p>Photograph 1</p> <p>Runtime meter taken on June 23, 2023 at 1:33 PM Hours = 10,990</p> |  <p>DIRECTION 19 deg(T) 36.78014°N 107.96441°W ACCURACY 4 m DATUM WGS84</p> <p>SULLIVAN GC D1E</p> <p>HOURS</p> <p>SVE RUNTIME</p> <p>2023-06-23 13:33:44-06:00</p> |
| <p>Photograph 2</p> <p>Runtime meter taken on September 26, 2023 at 3:32 PM Hours = 13,259</p> |  <p>DIRECTION 9 deg(T) 36.78017°N 107.96440°W ACCURACY 4 m DATUM WGS84</p> <p>SULLIVAN GC D1E</p> <p>HOURS</p> <p>SVE RUNTIME</p> <p>2023-09-26 15:32:09-06:00</p> |



APPENDIX C

Laboratory Analytical Reports



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

September 07, 2023

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

RE: Sullivan GC D 1E

OrderNo.: 2308A91

Dear Kate Kaufman:

Hall Environmental Analysis Laboratory received 1 sample(s) on 8/19/2023 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,

A handwritten signature in black ink, appearing to read "Andy Freeman", is written over a white background.

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report

Lab Order **2308A91**

Date Reported: **9/7/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY

Client Sample ID: SVE-1

Project: Sullivan GC D 1E

Collection Date: 8/18/2023 12:30:00 PM

Lab ID: 2308A91-001

Matrix: AIR

Received Date: 8/19/2023 10:15:00 AM

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|------------------------------------|--------|-----|------|-------|----|----------------------|
| EPA METHOD 8260B: VOLATILES | | | | | | Analyst: CCM |
| Benzene | 2.4 | 1.0 | | µg/L | 10 | 8/29/2023 3:29:00 PM |
| Toluene | 2.9 | 1.0 | | µg/L | 10 | 8/29/2023 3:29:00 PM |
| Ethylbenzene | ND | 1.0 | | µg/L | 10 | 8/29/2023 3:29:00 PM |
| Methyl tert-butyl ether (MTBE) | ND | 1.0 | | µg/L | 10 | 8/29/2023 3:29:00 PM |
| 1,2,4-Trimethylbenzene | ND | 1.0 | | µg/L | 10 | 8/29/2023 3:29:00 PM |
| 1,3,5-Trimethylbenzene | ND | 1.0 | | µg/L | 10 | 8/29/2023 3:29:00 PM |
| 1,2-Dichloroethane (EDC) | ND | 1.0 | | µg/L | 10 | 8/29/2023 3:29:00 PM |
| 1,2-Dibromoethane (EDB) | ND | 1.0 | | µg/L | 10 | 8/29/2023 3:29:00 PM |
| Naphthalene | ND | 2.0 | | µg/L | 10 | 8/29/2023 3:29:00 PM |
| 1-Methylnaphthalene | ND | 4.0 | | µg/L | 10 | 8/29/2023 3:29:00 PM |
| 2-Methylnaphthalene | ND | 4.0 | | µg/L | 10 | 8/29/2023 3:29:00 PM |
| Acetone | ND | 10 | | µg/L | 10 | 8/29/2023 3:29:00 PM |
| Bromobenzene | ND | 1.0 | | µg/L | 10 | 8/29/2023 3:29:00 PM |
| Bromodichloromethane | ND | 1.0 | | µg/L | 10 | 8/29/2023 3:29:00 PM |
| Bromoform | ND | 1.0 | | µg/L | 10 | 8/29/2023 3:29:00 PM |
| Bromomethane | ND | 2.0 | | µg/L | 10 | 8/29/2023 3:29:00 PM |
| 2-Butanone | ND | 10 | | µg/L | 10 | 8/29/2023 3:29:00 PM |
| Carbon disulfide | ND | 10 | | µg/L | 10 | 8/29/2023 3:29:00 PM |
| Carbon tetrachloride | ND | 1.0 | | µg/L | 10 | 8/29/2023 3:29:00 PM |
| Chlorobenzene | ND | 1.0 | | µg/L | 10 | 8/29/2023 3:29:00 PM |
| Chloroethane | ND | 2.0 | | µg/L | 10 | 8/29/2023 3:29:00 PM |
| Chloroform | ND | 1.0 | | µg/L | 10 | 8/29/2023 3:29:00 PM |
| Chloromethane | ND | 1.0 | | µg/L | 10 | 8/29/2023 3:29:00 PM |
| 2-Chlorotoluene | ND | 1.0 | | µg/L | 10 | 8/29/2023 3:29:00 PM |
| 4-Chlorotoluene | ND | 1.0 | | µg/L | 10 | 8/29/2023 3:29:00 PM |
| cis-1,2-DCE | ND | 1.0 | | µg/L | 10 | 8/29/2023 3:29:00 PM |
| cis-1,3-Dichloropropene | ND | 1.0 | | µg/L | 10 | 8/29/2023 3:29:00 PM |
| 1,2-Dibromo-3-chloropropane | ND | 2.0 | | µg/L | 10 | 8/29/2023 3:29:00 PM |
| Dibromochloromethane | ND | 1.0 | | µg/L | 10 | 8/29/2023 3:29:00 PM |
| Dibromomethane | ND | 2.0 | | µg/L | 10 | 8/29/2023 3:29:00 PM |
| 1,2-Dichlorobenzene | ND | 1.0 | | µg/L | 10 | 8/29/2023 3:29:00 PM |
| 1,3-Dichlorobenzene | ND | 1.0 | | µg/L | 10 | 8/29/2023 3:29:00 PM |
| 1,4-Dichlorobenzene | ND | 1.0 | | µg/L | 10 | 8/29/2023 3:29:00 PM |
| Dichlorodifluoromethane | ND | 1.0 | | µg/L | 10 | 8/29/2023 3:29:00 PM |
| 1,1-Dichloroethane | ND | 1.0 | | µg/L | 10 | 8/29/2023 3:29:00 PM |
| 1,1-Dichloroethene | ND | 1.0 | | µg/L | 10 | 8/29/2023 3:29:00 PM |
| 1,2-Dichloropropane | ND | 1.0 | | µg/L | 10 | 8/29/2023 3:29:00 PM |
| 1,3-Dichloropropane | ND | 1.0 | | µg/L | 10 | 8/29/2023 3:29:00 PM |
| 2,2-Dichloropropane | ND | 1.0 | | µg/L | 10 | 8/29/2023 3:29:00 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 Quantitative Limit | RL Reporting Limit |
| | S % Recovery outside of standard limits. If undiluted results may be estimated. | |

Analytical Report

Lab Order **2308A91**

Date Reported: **9/7/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY

Client Sample ID: SVE-1

Project: Sullivan GC D 1E

Collection Date: 8/18/2023 12:30:00 PM

Lab ID: 2308A91-001

Matrix: AIR

Received Date: 8/19/2023 10:15:00 AM

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|--------|--------|------|-------|----|----------------------|
| EPA METHOD 8260B: VOLATILES | | | | | | Analyst: CCM |
| 1,1-Dichloropropene | ND | 1.0 | | µg/L | 10 | 8/29/2023 3:29:00 PM |
| Hexachlorobutadiene | ND | 1.0 | | µg/L | 10 | 8/29/2023 3:29:00 PM |
| 2-Hexanone | ND | 10 | | µg/L | 10 | 8/29/2023 3:29:00 PM |
| Isopropylbenzene | ND | 1.0 | | µg/L | 10 | 8/29/2023 3:29:00 PM |
| 4-Isopropyltoluene | ND | 1.0 | | µg/L | 10 | 8/29/2023 3:29:00 PM |
| 4-Methyl-2-pentanone | ND | 10 | | µg/L | 10 | 8/29/2023 3:29:00 PM |
| Methylene chloride | ND | 3.0 | | µg/L | 10 | 8/29/2023 3:29:00 PM |
| n-Butylbenzene | ND | 3.0 | | µg/L | 10 | 8/29/2023 3:29:00 PM |
| n-Propylbenzene | ND | 1.0 | | µg/L | 10 | 8/29/2023 3:29:00 PM |
| sec-Butylbenzene | ND | 1.0 | | µg/L | 10 | 8/29/2023 3:29:00 PM |
| Styrene | ND | 1.0 | | µg/L | 10 | 8/29/2023 3:29:00 PM |
| tert-Butylbenzene | ND | 1.0 | | µg/L | 10 | 8/29/2023 3:29:00 PM |
| 1,1,1,2-Tetrachloroethane | ND | 1.0 | | µg/L | 10 | 8/29/2023 3:29:00 PM |
| 1,1,1,2,2-Tetrachloroethane | ND | 1.0 | | µg/L | 10 | 8/29/2023 3:29:00 PM |
| Tetrachloroethene (PCE) | ND | 1.0 | | µg/L | 10 | 8/29/2023 3:29:00 PM |
| trans-1,2-DCE | ND | 1.0 | | µg/L | 10 | 8/29/2023 3:29:00 PM |
| trans-1,3-Dichloropropene | ND | 1.0 | | µg/L | 10 | 8/29/2023 3:29:00 PM |
| 1,2,3-Trichlorobenzene | ND | 1.0 | | µg/L | 10 | 8/29/2023 3:29:00 PM |
| 1,2,4-Trichlorobenzene | ND | 1.0 | | µg/L | 10 | 8/29/2023 3:29:00 PM |
| 1,1,1-Trichloroethane | ND | 1.0 | | µg/L | 10 | 8/29/2023 3:29:00 PM |
| 1,1,2-Trichloroethane | ND | 1.0 | | µg/L | 10 | 8/29/2023 3:29:00 PM |
| Trichloroethene (TCE) | ND | 1.0 | | µg/L | 10 | 8/29/2023 3:29:00 PM |
| Trichlorofluoromethane | ND | 1.0 | | µg/L | 10 | 8/29/2023 3:29:00 PM |
| 1,2,3-Trichloropropane | ND | 2.0 | | µg/L | 10 | 8/29/2023 3:29:00 PM |
| Vinyl chloride | ND | 1.0 | | µg/L | 10 | 8/29/2023 3:29:00 PM |
| Xylenes, Total | 1.8 | 1.5 | | µg/L | 10 | 8/29/2023 3:29:00 PM |
| Surr: Dibromofluoromethane | 109 | 70-130 | | %Rec | 10 | 8/29/2023 3:29:00 PM |
| Surr: 1,2-Dichloroethane-d4 | 102 | 70-130 | | %Rec | 10 | 8/29/2023 3:29:00 PM |
| Surr: Toluene-d8 | 106 | 70-130 | | %Rec | 10 | 8/29/2023 3:29:00 PM |
| Surr: 4-Bromofluorobenzene | 120 | 70-130 | | %Rec | 10 | 8/29/2023 3:29:00 PM |
| EPA METHOD 8015D: GASOLINE RANGE | | | | | | Analyst: CCM |
| Gasoline Range Organics (GRO) | 340 | 50 | | µg/L | 10 | 8/29/2023 3:29:00 PM |
| Surr: BFB | 96.5 | 70-130 | | %Rec | 10 | 8/29/2023 3:29:00 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 Quantitative Limit | RL Reporting Limit |
| | S % Recovery outside of standard limits. If undiluted results may be estimated. | |



ANALYTICAL SUMMARY REPORT

September 06, 2023

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

Work Order: B23082121 Quote ID: B15626

Project Name: Not Indicated

Energy Laboratories Inc Billings MT received the following 1 sample for Hall Environmental on 8/22/2023 for analysis.

| Lab ID | Client Sample ID | Collect Date | Receive Date | Matrix | Test |
|---------------|---------------------|----------------|--------------|--------|---|
| B23082121-001 | 2308A91-001B, SVE-1 | 08/18/23 12:30 | 08/22/23 | 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:



Trust our People. Trust our Data.
www.energylab.com

Billings, MT 406.252.6325 • Casper, WY 307.235.0515
Gillette, WY 307.686.7175 • Helena, MT 406.442.0711

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Hall Environmental
Project: Not Indicated
Lab ID: B23082121-001
Client Sample ID: 2308A91-001B, SVE-1

Report Date: 09/06/23
Collection Date: 08/18/23 12:30
Date Received: 08/22/23
Matrix: Air

| Analyses | Result | Units | Qualifiers | RL | MCL/ QCL | Method | Analysis Date / By |
|---|---------|-------|------------|-------|-------------|-------------|----------------------|
| GAS CHROMATOGRAPHY ANALYSIS REPORT | | | | | | | |
| Oxygen | 20.83 | Mol % | | 0.01 | | GPA 2261-95 | 08/23/23 09:12 / jrj |
| Nitrogen | 78.21 | Mol % | | 0.01 | | GPA 2261-95 | 08/23/23 09:12 / jrj |
| Carbon Dioxide | 0.68 | Mol % | | 0.01 | | GPA 2261-95 | 08/23/23 09:12 / jrj |
| Hydrogen Sulfide | <0.01 | Mol % | | 0.01 | | GPA 2261-95 | 08/23/23 09:12 / jrj |
| Methane | 0.25 | Mol % | | 0.01 | | GPA 2261-95 | 08/23/23 09:12 / jrj |
| Ethane | 0.03 | Mol % | | 0.01 | | GPA 2261-95 | 08/23/23 09:12 / jrj |
| Propane | <0.01 | Mol % | | 0.01 | | GPA 2261-95 | 08/23/23 09:12 / jrj |
| Isobutane | <0.01 | Mol % | | 0.01 | | GPA 2261-95 | 08/23/23 09:12 / jrj |
| n-Butane | <0.01 | Mol % | | 0.01 | | GPA 2261-95 | 08/23/23 09:12 / jrj |
| Isopentane | <0.01 | Mol % | | 0.01 | | GPA 2261-95 | 08/23/23 09:12 / jrj |
| n-Pentane | <0.01 | Mol % | | 0.01 | | GPA 2261-95 | 08/23/23 09:12 / jrj |
| Hexanes plus | <0.01 | Mol % | | 0.01 | | GPA 2261-95 | 08/23/23 09:12 / jrj |
| Propane | < 0.001 | gpm | | 0.001 | | GPA 2261-95 | 08/23/23 09:12 / jrj |
| Isobutane | < 0.001 | gpm | | 0.001 | | GPA 2261-95 | 08/23/23 09:12 / jrj |
| n-Butane | < 0.001 | gpm | | 0.001 | | GPA 2261-95 | 08/23/23 09:12 / jrj |
| Isopentane | < 0.001 | gpm | | 0.001 | | GPA 2261-95 | 08/23/23 09:12 / jrj |
| n-Pentane | < 0.001 | gpm | | 0.001 | | GPA 2261-95 | 08/23/23 09:12 / jrj |
| Hexanes plus | < 0.001 | gpm | | 0.001 | | GPA 2261-95 | 08/23/23 09:12 / jrj |
| GPM Total | < 0.001 | gpm | | 0.001 | | GPA 2261-95 | 08/23/23 09:12 / jrj |
| GPM Pentanes plus | < 0.001 | gpm | | 0.001 | | GPA 2261-95 | 08/23/23 09:12 / jrj |

CALCULATED PROPERTIES

| | | | | | | | |
|---------------------------------------|-------|--|--|-------|--|-------------|----------------------|
| Gross BTU per cu ft @ Std Cond. (HHV) | 3 | | | 1 | | GPA 2261-95 | 08/23/23 09:12 / jrj |
| Net BTU per cu ft @ std cond. (LHV) | 3 | | | 1 | | GPA 2261-95 | 08/23/23 09:12 / jrj |
| Pseudo-critical Pressure, psia | 547 | | | 1 | | GPA 2261-95 | 08/23/23 09:12 / jrj |
| Pseudo-critical Temperature, deg R | 241 | | | 1 | | GPA 2261-95 | 08/23/23 09:12 / jrj |
| Specific Gravity @ 60/60F | 0.999 | | | 0.001 | | D3588-81 | 08/23/23 09:12 / jrj |
| Air, % | 95.16 | | | 0.01 | | GPA 2261-95 | 08/23/23 09:12 / jrj |

- The analysis was not corrected for air.

COMMENTS

- 08/23/23 09:12 / jrj

- 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)



Trust our People. Trust our Data.
www.energylab.com

Billings, MT 406.252.6325 • Casper, WY 307.239.0515
Gillette, WY 307.686.7175 • Helena, MT 406.442.0711

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Hall Environmental

Work Order: B23082121

Report Date: 09/06/23

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|----------------------------------|------------------------------|--------|-------|------|------|----------------------|------------|-----|----------------|------|
| Method: GPA 2261-95 | | | | | | | | | | |
| Batch: R407555 | | | | | | | | | | |
| Lab ID: B23082121-001ADUP | 12 Sample Duplicate | | | | | Run: GCNGA-B_230823A | | | 08/23/23 09:39 | |
| Oxygen | | 20.8 | Mol % | 0.01 | | | | 0.1 | 20 | |
| Nitrogen | | 78.2 | Mol % | 0.01 | | | | 0 | 20 | |
| Carbon Dioxide | | 0.69 | Mol % | 0.01 | | | | 1.5 | 20 | |
| Hydrogen Sulfide | | <0.01 | Mol % | 0.01 | | | | | 20 | |
| Methane | | 0.24 | Mol % | 0.01 | | | | 4.1 | 20 | |
| Ethane | | 0.03 | Mol % | 0.01 | | | | 0.0 | 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 | | <0.01 | Mol % | 0.01 | | | | | 20 | |
| Lab ID: LCS082323 | 11 Laboratory Control Sample | | | | | Run: GCNGA-B_230823A | | | 08/23/23 11:19 | |
| Oxygen | | 0.64 | Mol % | 0.01 | 128 | 70 | 130 | | | |
| Nitrogen | | 6.10 | Mol % | 0.01 | 102 | 70 | 130 | | | |
| Carbon Dioxide | | 1.00 | Mol % | 0.01 | 101 | 70 | 130 | | | |
| Methane | | 74.3 | Mol % | 0.01 | 99 | 70 | 130 | | | |
| Ethane | | 6.03 | Mol % | 0.01 | 100 | 70 | 130 | | | |
| Propane | | 5.10 | Mol % | 0.01 | 103 | 70 | 130 | | | |
| Isobutane | | 2.01 | Mol % | 0.01 | 100 | 70 | 130 | | | |
| n-Butane | | 2.04 | Mol % | 0.01 | 102 | 70 | 130 | | | |
| Isopentane | | 1.00 | Mol % | 0.01 | 100 | 70 | 130 | | | |
| n-Pentane | | 1.00 | Mol % | 0.01 | 100 | 70 | 130 | | | |
| Hexanes plus | | 0.80 | Mol % | 0.01 | 100 | 70 | 130 | | | |

Qualifiers:

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)



Trust our People. Trust our Data.
www.energylab.com

Billings, MT 406.252.6325 • Casper, WY 307.235.0515
Gillette, WY 307.686.7175 • Helena, MT 406.442.0711

Work Order Receipt Checklist

Hall Environmental

B23082121

Login completed by: Yvonna E. Smith

Date Received: 8/22/2023

Reviewed by: cindy

Received by: lel

Reviewed Date: 8/25/2023

Carrier name: UPS

- 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: 22.4°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



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

Form containing fields for SUB CONTRACTOR (Energy Labs -Billings), COMPANY (Energy Laboratories), ADDRESS (1120 South 27th Street, Billings, MT 59107), PHONE, FAX, and a table for ANALYTICAL COMMENTS (Natural Gas Analysis - O2 + CO2).

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.

Form for Relinquished By (Date, Time, Signature), Received By (Date, Time, Signature), and TAT (Standard, RUSH) with checkboxes for report transmission (Hardcopy, Fax, Email, Online).

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2308A91

07-Sep-23

Client: HILCORP ENERGY

Project: Sullivan GC D 1E

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|--------------------------------|--------|-----|-----------|-------------|------|----------|-----------|-------|----------|------|
| Benzene | 2.3 | 1.0 | | | | | | 1.44 | 20 | |
| Toluene | 2.9 | 1.0 | | | | | | 0.341 | 20 | |
| Ethylbenzene | ND | 1.0 | | | | | | 0 | 20 | |
| Methyl tert-butyl ether (MTBE) | ND | 1.0 | | | | | | 0 | 20 | |
| 1,2,4-Trimethylbenzene | ND | 1.0 | | | | | | 0 | 20 | |
| 1,3,5-Trimethylbenzene | ND | 1.0 | | | | | | 0 | 20 | |
| 1,2-Dichloroethane (EDC) | ND | 1.0 | | | | | | 0 | 20 | |
| 1,2-Dibromoethane (EDB) | ND | 1.0 | | | | | | 0 | 20 | |
| Naphthalene | ND | 2.0 | | | | | | 0 | 20 | |
| 1-Methylnaphthalene | ND | 4.0 | | | | | | 0 | 20 | |
| 2-Methylnaphthalene | ND | 4.0 | | | | | | 0 | 20 | |
| Acetone | ND | 10 | | | | | | 0 | 20 | |
| Bromobenzene | ND | 1.0 | | | | | | 0 | 20 | |
| Bromodichloromethane | ND | 1.0 | | | | | | 0 | 20 | |
| Bromoform | ND | 1.0 | | | | | | 0 | 20 | |
| Bromomethane | ND | 2.0 | | | | | | 0 | 20 | |
| 2-Butanone | ND | 10 | | | | | | 0 | 20 | |
| Carbon disulfide | ND | 10 | | | | | | 0 | 20 | |
| Carbon tetrachloride | ND | 1.0 | | | | | | 0 | 20 | |
| Chlorobenzene | ND | 1.0 | | | | | | 0 | 20 | |
| Chloroethane | ND | 2.0 | | | | | | 0 | 20 | |
| Chloroform | ND | 1.0 | | | | | | 0 | 20 | |
| Chloromethane | ND | 1.0 | | | | | | 0 | 20 | |
| 2-Chlorotoluene | ND | 1.0 | | | | | | 0 | 20 | |
| 4-Chlorotoluene | ND | 1.0 | | | | | | 0 | 20 | |
| cis-1,2-DCE | ND | 1.0 | | | | | | 0 | 20 | |
| cis-1,3-Dichloropropene | ND | 1.0 | | | | | | 0 | 20 | |
| 1,2-Dibromo-3-chloropropane | ND | 2.0 | | | | | | 0 | 20 | |
| Dibromochloromethane | ND | 1.0 | | | | | | 0 | 20 | |
| Dibromomethane | ND | 2.0 | | | | | | 0 | 20 | |
| 1,2-Dichlorobenzene | ND | 1.0 | | | | | | 0 | 20 | |
| 1,3-Dichlorobenzene | ND | 1.0 | | | | | | 0 | 20 | |
| 1,4-Dichlorobenzene | ND | 1.0 | | | | | | 0 | 20 | |
| Dichlorodifluoromethane | ND | 1.0 | | | | | | 0 | 20 | |
| 1,1-Dichloroethane | ND | 1.0 | | | | | | 0 | 20 | |
| 1,1-Dichloroethene | ND | 1.0 | | | | | | 0 | 20 | |
| 1,2-Dichloropropane | ND | 1.0 | | | | | | 0 | 20 | |
| 1,3-Dichloropropane | ND | 1.0 | | | | | | 0 | 20 | |
| 2,2-Dichloropropane | ND | 1.0 | | | | | | 0 | 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 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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2308A91

07-Sep-23

Client: HILCORP ENERGY

Project: Sullivan GC D 1E

| | | |
|-----------------------------------|---------------------------------|--|
| Sample ID: 2308A91-001adup | SampType: DUP | TestCode: EPA Method 8260B: Volatiles |
| Client ID: SVE-1 | Batch ID: R99331 | RunNo: 99331 |
| Prep Date: | Analysis Date: 8/29/2023 | SeqNo: 3624292 Units: µg/L |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|-----------------------------|--------|-----|-----------|-------------|------|----------|-----------|------|----------|------|
| 1,1-Dichloropropene | ND | 1.0 | | | | | | 0 | 20 | |
| Hexachlorobutadiene | ND | 1.0 | | | | | | 0 | 20 | |
| 2-Hexanone | ND | 10 | | | | | | 0 | 20 | |
| Isopropylbenzene | ND | 1.0 | | | | | | 0 | 20 | |
| 4-Isopropyltoluene | ND | 1.0 | | | | | | 0 | 20 | |
| 4-Methyl-2-pentanone | ND | 10 | | | | | | 0 | 20 | |
| Methylene chloride | ND | 3.0 | | | | | | 0 | 20 | |
| n-Butylbenzene | ND | 3.0 | | | | | | 0 | 20 | |
| n-Propylbenzene | ND | 1.0 | | | | | | 0 | 20 | |
| sec-Butylbenzene | ND | 1.0 | | | | | | 0 | 20 | |
| Styrene | ND | 1.0 | | | | | | 0 | 20 | |
| tert-Butylbenzene | ND | 1.0 | | | | | | 0 | 20 | |
| 1,1,1,2-Tetrachloroethane | ND | 1.0 | | | | | | 0 | 20 | |
| 1,1,2,2-Tetrachloroethane | ND | 1.0 | | | | | | 0 | 20 | |
| Tetrachloroethene (PCE) | ND | 1.0 | | | | | | 0 | 20 | |
| trans-1,2-DCE | ND | 1.0 | | | | | | 0 | 20 | |
| trans-1,3-Dichloropropene | ND | 1.0 | | | | | | 0 | 20 | |
| 1,2,3-Trichlorobenzene | ND | 1.0 | | | | | | 0 | 20 | |
| 1,2,4-Trichlorobenzene | ND | 1.0 | | | | | | 0 | 20 | |
| 1,1,1-Trichloroethane | ND | 1.0 | | | | | | 0 | 20 | |
| 1,1,2-Trichloroethane | ND | 1.0 | | | | | | 0 | 20 | |
| Trichloroethene (TCE) | ND | 1.0 | | | | | | 0 | 20 | |
| Trichlorofluoromethane | ND | 1.0 | | | | | | 0 | 20 | |
| 1,2,3-Trichloropropane | ND | 2.0 | | | | | | 0 | 20 | |
| Vinyl chloride | ND | 1.0 | | | | | | 0 | 20 | |
| Xylenes, Total | 1.9 | 1.5 | | | | | | 1.41 | 20 | |
| Surr: Dibromofluoromethane | 10 | | 10.00 | | 105 | 70 | 130 | 0 | 0 | |
| Surr: 1,2-Dichloroethane-d4 | 9.5 | | 10.00 | | 94.8 | 70 | 130 | 0 | 0 | |
| Surr: Toluene-d8 | 11 | | 10.00 | | 110 | 70 | 130 | 0 | 0 | |
| Surr: 4-Bromofluorobenzene | 12 | | 10.00 | | 119 | 70 | 130 | 0 | 0 | |

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 Quantitative Limit | RL Reporting Limit |
| S % Recovery outside of standard limits. If undiluted results may be estimated. | |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2308A91

07-Sep-23

Client: HILCORP ENERGY

Project: Sullivan GC D 1E

| Sample ID: 2308A91-001adup | SampType: DUP | TestCode: EPA Method 8015D: Gasoline Range | | | | | | | | |
|-----------------------------------|---------------------------------|---|-----------|-------------|--------------------|----------|-----------|------|----------|------|
| Client ID: SVE-1 | Batch ID: G99331 | RunNo: 99331 | | | | | | | | |
| Prep Date: | Analysis Date: 8/29/2023 | SeqNo: 3624378 | | | Units: µg/L | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Gasoline Range Organics (GRO) | 350 | 50 | | | | | | 5.22 | 20 | |
| Surr: BFB | 9600 | | 10000 | | 96.4 | 70 | 130 | 0 | 0 | |

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 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



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: 2308A91 RcptNo: 1

Received By: Tracy Casarrubias 8/19/2023 10:15:00 AM
Completed By: Tracy Casarrubias 8/19/2023 12:13:11 PM
Reviewed By: [Signature] 8-19-23 8-21-23

Chain of Custody

- 1. Is Chain of Custody complete? Yes [] No [x] Not Present []
2. How was the sample delivered? Courier

Log In

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

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

Adjusted?

Checked by: [Signature]

Special Handling (if applicable)

- 15. Was client notified of all discrepancies with this order? Yes [] No [] NA [x]

Person Notified: [] Date: []
By Whom: [] Via: [] eMail [] Phone [] Fax [] In Person []
Regarding: []
Client Instructions: Mailing address and phone number are missing on COC- TMC 8/19/23

16. Additional remarks:

17. Cooler Information

Table with 7 columns: Cooler No, Temp °C, Condition, Seal Intact, Seal No, Seal Date, Signed By. Row 1: 1, N.A, Good, Yes, [], [], []

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 275067

CONDITIONS

| | |
|--|--|
| Operator: HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002 | OGRID: 372171 |
| | Action Number: 275067 |
| | Action Type: [UF-GWA] Ground Water Abatement (GROUND WATER ABATEMENT) |

CONDITIONS

| Created By | Condition | Condition Date |
|------------|--|----------------|
| nvez | 1. Follow the recommendations provided. 2. OCD will require quarterly report for 2023. Next report due no later than January 15, 2024. 3. Since the system was re-started in December 2021, OCD will accept bi-annual (twice a year) reporting initiating in 2024. | 10/27/2023 |