

April 15, 2024

New Mexico Oil Conservation Division

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

Re: First Quarter 2024 – SVE System Update

Sullivan GC D #1E

San Juan County, New Mexico Hilcorp Energy Company

NMOCD Incident Number: NCS1518952648

To Whom it May Concern:

Ensolum, LLC (Ensolum), on behalf of Hilcorp Energy Company (Hilcorp), presents this *First Quarter 2024 – 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 January, February, and March 2024 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.

FIRST QUARTER 2024 ACTIVITIES

During the first quarter of 2024, 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 first quarter of 2024, 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 December 18, 2023, and March 22, 2024, the SVE system operated for 2,276 hours, with a runtime efficiency of 100 percent (%). Appendix B

Hilcorp Energy Company First Quarter 2024 – SVE System Update Sullivan GC D#1E



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

A first quarter 2024 vapor sample was collected on March 4, 2024, 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 vapor sample was collected directly into two 1-Liter Tedlar® bags and submitted to Eurofins Environment Testing (Formerly Hall Environmental Analysis Laboratory), 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.

Vapor 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, 90,794 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

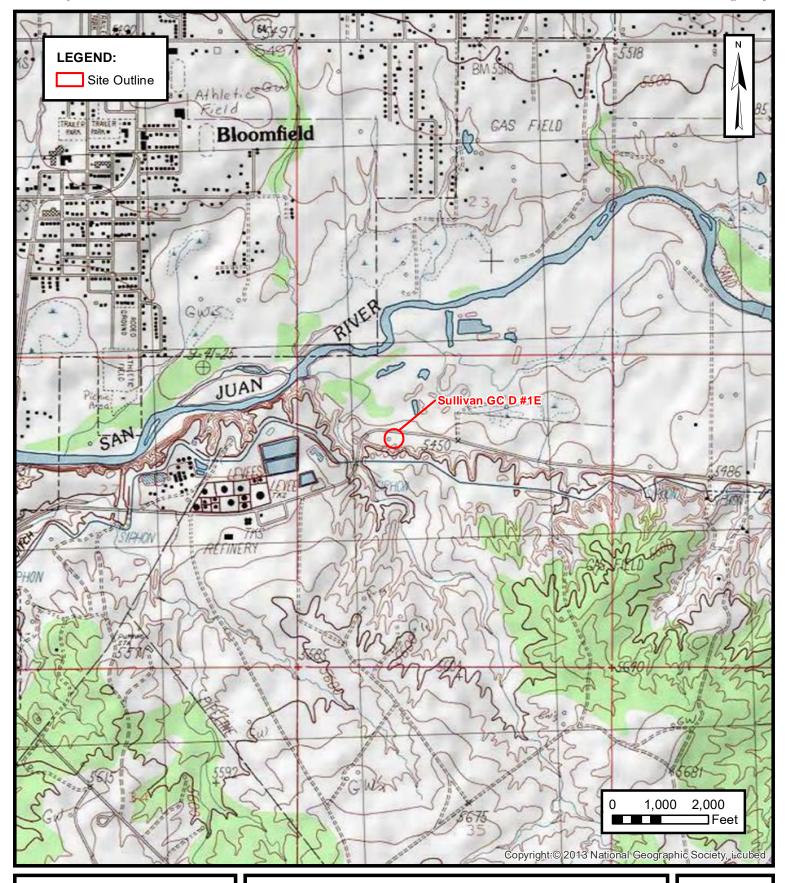
Appendix A Field Notes

Appendix B Project Photographs

Appendix C Laboratory Analytical Reports



Figures



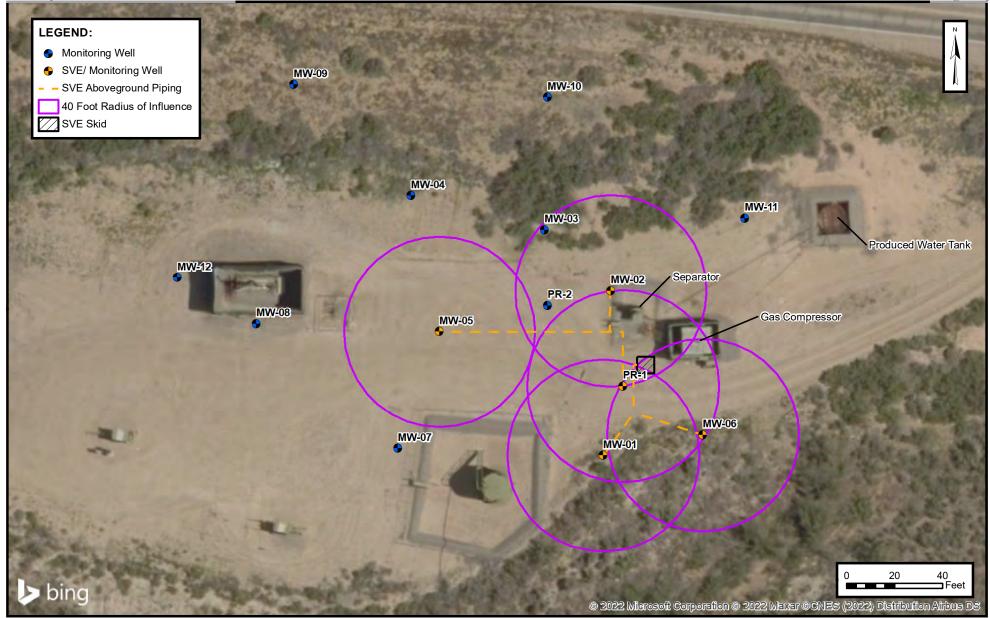


SITE LOCATION

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

PROJECT NUMBER: 07A1988029

FIGURE





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



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
12/18/2023	15,249	-	-	
3/22/2024	17,525	2,276	95	100%

Ensolum 1 of 1

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
11/21/2023	186	2.8	18	1.7	18	480	20.94	0.51
3/4/2024	212	4.0	29.0	2.7	31	580	21.41	0.51

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

<: gray indicates result less than the stated laboratory reporting limit (RL)</p>

1 of 1



TABLE 3

SOIL VAPOR EXTRACTION SYSTEM MASS REMOVAL AND EMISSIONS

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

			Laboratory Analysi			
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		•	Rental SVE S	ystem Startup		
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
3/21/2022		•	Permanent SVE	System Startup		
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
11/21/2023	186	2.8	18	1.7	18	480
3/4/2024	212	4.0	29.0	2.7	31.0	580
Average	1,268	137	370	22	263	28,257

Vapor Extraction Summary

			Tupe	DI EXTRACTION SUM				
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 S	ystem 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
3/21/2022				Permanent SVE	System Startup			
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	0.00124	0.0022	0.00060	0.0013	0.18
11/21/2023	75	127,065,120	10,219,500	0.00073	0.0029	0.00038	0.0028	0.12
3/4/2024	110	143,512,320	16,447,200	0.00140	0.0097	0.00091	0.0101	0.22
			Average	0.056	0.142	0.008	0.082	10.171

Mass Recovery

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 S	ystem 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
11/21/2023	14,602	2,271	1.7	6.7	0.86	6.3	261	0.13
3/4/2024	17,094	2,492	3.5	24.1	2.26	25.1	543	0.27
	Total Mass	Recovery to Date	261	886	52	1,360	90,794	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

SULLIVAN GC D#IE SVE SYSTEM (RENTAL UNIT) BIWEEKLY O&M FORM

TIME ONSITE	1-23-24	TIME OFFSITE I		
		E SYSTEM - MONTHLY O&M		
SVI ALARMS		HGII/LOW VACUUM		
(check if applicable)		O TANK HIGH LEVEL		
		HIGH EXHAUST TEMPERATURE		
Product Skimmer		SVE SYSTEM RL	ADING TI	ME
Heurs (take photo)	19802 Er	Blower Hours (take photo)	7 7 7 70 11	1150
Volume in bbl		Pre K/O Vacuum (IWC)		1150
Volume removed		Post K/O Vacuum (IWC)	3.7	1150
Volume removed to date		Total Flow (cfin)	85	11.3
		Zone I/ Leg A Flow (cfm)		
		Inlet PID (ppin)	102.7	1155
		Exhaust Post GAC PID (ppm)	261	1155
		Liquid in K.O Sight Tube (Y/N)	oo duty	
HOUSEKEEPING	Charl	K/O Liquid Drained (gallens)	- /	
Inline Filter Clean	CHECK			
Clean tank level alarm on skimmer				
c real lank reset and to a skirtliker				
0 1 km =	SVE	SYSTEM - QUARTERLY SAMPLING		
SAMPLE ID:		SAMPLE TIME:		
OPERATING WELLS	TVPH (8015), VOCs (8260), F	ixed Gas (CO/CO2/O2)		
ZONES Change in Well Operation:				
Change in Well Operation: 1/ Leg A				
Change in Well Operation: 1/ Leg A LOCATION	VACUUM (IWC)	VELOCITY (fpm)	PID HEADSPACE (PPM)	ADJUSTMENTS
Change in Well Operation: 1/ Leg A LOCATION MW-01	VACUUM (IWC)	VELOCITY (fpm)	4.2	ADJUSTMENTS
Change in Well Operation: 1/ Leg A LOCATION MW-01 MW-02	11.3	VELOCITY (fpm)	23.3	ADJUSTMENTS
Change in Well Operation: 1/ Leg A 1.0CATION MW-01 MW-02 MW-05	11.6	VELOCITY (fpan)	4.2	ADJUSTMENTS
Change in Well Operation: 1/ Leg A 1.0CATION MW-01 MW-02 MW-05 MW-06	11.6	VELOCITY (fpm)	23.3	ADJUSTMENTS
Change in Well Operation: / Leg A	11.6	VELOCITY (fpm)	23.3	ADJUSTMENTS
Change in Well Operation: 1/ Leg A 1.0CATION MW-01 MW-02 MW-05 MW-06	11.6		23.3 25.2 145	
Change in Well Operation: 1/ Leg A LOCATION MW-01 MW-02 MW-05 MW-06 PR-	10.5	VELOCITY (fpm) Product removed from Sock (volume and color)	23.3	
Change in Well Operation: 1/ Leg A LOCATION MW-01 MW-02 MW-05 MW-06 PR-	10.5		23.3 25.2 145	
Change in Well Operation: 1/ Leg A LOCATION MW-01 MW-02 MW-05 MW-06 PR- Product Recovery	10.5		23.3 25.2 145	
Change in Well Operation: 1/ Leg A LOCATION MW-01 MW-02 MW-05 MW-06 PR- Product Recovery	10.5		23.3 25.2 145	
Change in Well Operation: 1/ Leg A LOCATION MW-01 MW-02 MW-05 MW-06 PR- Product Recovery	10.5		23.3 25.2 145	
Change in Well Operation: 1/ Leg A LOCATION MW-01 MW-02 MW-05 MW-06 PR- Product Recovery	10.5		23.3 25.2 145	
Change in Well Operation: 1/ Leg A LOCATION MW-01 MW-02 MW-05 MW-06 PR- Product Recovery	10.5		23.3 25.2 145	
Change in Well Operation: 1/ Leg A LOCATION MW-01 MW-02 MW-05 MW-06 PR- Product Recovery	10.5		23.3 25.2 145	
Change in Well Operation: 1/ Leg A LOCATION MW-01 MW-02 MW-05 MW-06 PR- Product Recovery	10.5		23.3 25.2 145	
Change in Well Operation: 1/ Leg A LOCATION MW-01 MW-02 MW-05 MW-06 PR-	10.5		23.3 25.2 145	
Change in Well Operation: 1/ Leg A LOCATION MW-01 MW-02 MW-05 MW-06 PR-	10.5		23.3 25.2 145	
Change in Well Operation: 1/ Leg A LOCATION MW-01 MW-02 MW-05 MW-06 PR-	10.5		23.3 25.2 145	

MMENTS/OTHER MAINTENANCE:

SULLIVAN GC D#1E SVE SYSTEM (RENTAL UNIT) BIWEEKLY O&M FORM

		SVE SYSTEM - MONTHLY O&M		
SVE ALARMS: (check if applicable)		HIGH/LOW VACUUM KO TANK HIGH LEVEL HIGH EXHAUST TEMPERATURE		
Product Skimmer Hours (take photo) Volume in bbl Volume removed Volume removed to date		SVE SYSTEM Blower Hours (take photo) Pre K/O Vacuum (IWC) Post K/O Vacuum (IWC) Total Flow (cfm) Zone 1/ Leg A Flow (cfm) Inlet PID (ppm) Exhaust Post GAC PID (ppm) Liquid in K/O Sight Tube (Y/N) K/O Liquid Drained (gallons)	16947	TIME 1008
HOUSEKEEPING (Inline Filter Clean	Check			
Clean tank level alarm on skimmer				
	SV	E SYSTEM - QUARTERLY SAMPLING		
SAMPLE ID: Analytes:	TVPH (8015), VOCs (8260), I	Fixed Gas (CO/CO2/O2) SAMPLE TIME:		
OPERATING WELLS				
ZONES				
Change in Well Operation:				
1/ Leg A LOCATION	VACUUM (IWC)	VELOCITY (fpm)	PID HEADSPACE (PPM)	ADJUSTMENTS
MW-01	12.43		39.3	
MW-02 MW-05	11.23		39.9 52 9	
MW-06	19.92		51.7	
Product Recovery				
LOCATION	Product thickness	Product removed from Sock (volume and color)	Volume removed total (gal or oz?)	Replace Sock? (Y/N0
MMENTS/OTHER MAINTENANCE: Drained 1/4 0	f over t	Ion tank.		
	The state of the s		Marian Maria San San San San San San San San San Sa	

SULLIVAN GC D#1E SVE SYSTEM (RENTAL UNIT) BIWEEKLY O&M FORM

DATE: TIME ONSITE:	3-4	O&M PERSONNEL: TIME OFFSITE:	B Sinclair	
SVE ALARMS: (check if applicable)		SVE SYSTEM - MONTHLY O&M HIGH/LOW VACUUM KO TANK HIGH LEVEL HIGH EXHAUST TEMPERATURE		
Product Skimmer Hours (take photo) Volume in bbl Volume removed Volume removed to date HOUSEKEEPING		SVE SYSTEM Blower Hours (take photo) Pre K/O Vacuum (IWC) Post K/O Vacuum (IWC) Total Flow (cfin) Zone 1/ Leg A Flow (cfin) Inlet PID (ppm) Exhaust Post GAC PID (ppm) Liquid in K/O Sight Tube (Y/N) K/O Liquid Drained (gallons)	27 32 (10 212.1 42.6	TIME 1919
Inline Filter Clean Clean tank level alarm on skimmer				
SAMPLE ID: Analytes: OPERATING WELLS	5 VE - L TVPH (8015), VOCs (8260), F	E SYSTEM - QUARTERLY SAMPLING SAMPLE TIME: Fixed Gas (CO/CO2/O2)	1419	
ZONES				
Change in Well Operation: Zone 1/ Leg A LOCATION MW-01 MW-02 MW-05 MW-06 PR-1	VACUUM (IWC) 10.11 11.22 10.08 10.69	VELOCITY (fpm)	PID HEADSPACE (PPM) 135.1 69.4 84.5 170.6 59.2	ADJUSTMENTS
Product Recovery Well LOCATION	Product thickness	Product removed from Sock (volume and color)	Volume removed total (gal or oz?)	Replace Sock? (Y/N0
COMMENTS/OTHER MAINTENANCE:				



APPENDIX B

Project Photographs

PROJECT PHOTOGRAPHS

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

Photograph 1

Runtime meter taken on December 18, 2023 at 2:05 PM Hours = 15,249



Photograph 2

Runtime meter taken on March 22, 2024 at 4:06 PM Hours = 17,525





APPENDIX C

Laboratory Analytical Reports

Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Mitch Killough Hilcorp Energy PO BOX 4700 Farmington, New Mexico 87499

Generated 3/20/2024 5:23:51 PM

JOB DESCRIPTION

Sullivan GC D 1E

JOB NUMBER

885-709-1

Eurofins Albuquerque 4901 Hawkins NE Albuquerque NM 87109

Eurofins Albuquerque

Job Notes

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing South Central, LLC Project Manager.

Authorization

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Authorized for release by Andy Freeman, Business Unit Manager andy.freeman@et.eurofinsus.com (505)345-3975

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Client: Hilcorp Energy
Laboratory Job ID: 885-709-1
Project/Site: Sullivan GC D 1E

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Definitions/Glossary

Client: Hilcorp Energy Job ID: 885-709-1

Project/Site: Sullivan GC D 1E

Glossary

DLC

EDL

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample

LOD Limit of Detection (DoD/DOE)

LOQ Limit of Quantitation (DoD/DOE)

MCL EPA recommended "Maximum Contaminant Level"

MDA Minimum Detectable Activity (Radiochemistry)

Estimated Detection Limit (Dioxin)

MDC Minimum Detectable Concentration (Radiochemistry)
MDL Method Detection Limit
ML Minimum Level (Dioxin)
MPN Most Probable Number
MQL Method Quantitation Limit

NC Not Calculated

ND Not Detected at the reporting limit (or MDL or EDL if shown)

Decision Level Concentration (Radiochemistry)

NEG Negative / Absent
POS Positive / Present

PQL Practical Quantitation Limit

PRES Presumptive
QC Quality Control

RER Relative Error Ratio (Radiochemistry)

RL Reporting Limit or Requested Limit (Radiochemistry)

RPD Relative Percent Difference, a measure of the relative difference between two points

TEF Toxicity Equivalent Factor (Dioxin)
TEQ Toxicity Equivalent Quotient (Dioxin)

TNTC Too Numerous To Count

Eurofins Albuquerque

Case Narrative

Client: Hilcorp Energy

Job ID: 885-709-1

Project: Sullivan GC D 1E

Job ID: 885-709-1 Eurofins Albuquerque

Job Narrative 885-709-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to
 demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the
 method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The sample was received on 3/7/2024 7:15 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice.

Subcontract Work

Method Fixed Gases: This method was subcontracted to Energy Laboratories, Inc. The subcontract laboratory certification is different from that of the facility issuing the final report. The subcontract report is appended in its entirety.

GC/MS VOA

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

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Client Sample Results

Client: Hilcorp Energy Job ID: 885-709-1

Project/Site: Sullivan GC D 1E

Lab Sample ID: 885-709-1 **Client Sample ID: SVE-1**

Date Collected: 03/04/24 14:10 Matrix: Air

Date Received: 03/07/24 07:15 Sample Container: Tedlar Bag 1L

ı	Method: SW846 8015D	 Nonhalogenated Organics usin 	ig GC/MS	6 -Modified (Gasoline	e F	Range Organics	s)
П	Analysta	Popult Qualifier	DI	l Init	D	Droporod	A no.

Analyzed Dil Fac Gasoline Range Organics [C6 -25 03/12/24 13:38 ug/L **580**

C10]

Surrogate	%Recovery Qualific	ier Limits	Prepared Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101	70 - 130	03/12/24 13:38	5

Analyte	Result Qualifier	RL	Unit	D Prepared	Analyzed	Dil Fa
1,1,1,2-Tetrachloroethane	ND	0.50	ug/L		03/12/24 13:38	
1,1,1-Trichloroethane	ND	0.50	ug/L		03/12/24 13:38	
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L		03/12/24 13:38	
1,1,2-Trichloroethane	ND	0.50	ug/L		03/12/24 13:38	
1,1-Dichloroethane	ND	0.50	ug/L		03/12/24 13:38	
1,1-Dichloroethene	ND	0.50	ug/L		03/12/24 13:38	
1,1-Dichloropropene	ND	0.50	ug/L		03/12/24 13:38	
1,2,3-Trichlorobenzene	ND	0.50	ug/L		03/12/24 13:38	
1,2,3-Trichloropropane	ND	1.0	ug/L		03/12/24 13:38	
1,2,4-Trichlorobenzene	ND	0.50	ug/L		03/12/24 13:38	
1,2,4-Trimethylbenzene	1.3	0.50	ug/L		03/12/24 13:38	
1,2-Dibromo-3-Chloropropane	ND	1.0	ug/L		03/12/24 13:38	
1,2-Dibromoethane (EDB)	ND	0.50	ug/L		03/12/24 13:38	
1,2-Dichlorobenzene	ND	0.50	ug/L		03/12/24 13:38	
1,2-Dichloroethane (EDC)	ND	0.50	ug/L		03/12/24 13:38	
1,2-Dichloropropane	ND	0.50	ug/L		03/12/24 13:38	
1,3,5-Trimethylbenzene	1.2	0.50	ug/L		03/12/24 13:38	
1,3-Dichlorobenzene	ND	0.50	ug/L		03/12/24 13:38	
1,3-Dichloropropane	ND	0.50	ug/L		03/12/24 13:38	
1,4-Dichlorobenzene	ND	0.50	ug/L		03/12/24 13:38	
1-Methylnaphthalene	ND	2.0	ug/L		03/12/24 13:38	
2,2-Dichloropropane	ND	1.0	ug/L		03/12/24 13:38	
2-Butanone	ND	5.0	ug/L		03/12/24 13:38	
2-Chlorotoluene	ND	0.50	ug/L		03/12/24 13:38	
2-Hexanone	ND	5.0	ug/L		03/12/24 13:38	
2-Methylnaphthalene	ND	2.0	ug/L		03/12/24 13:38	
4-Chlorotoluene	ND	0.50	ug/L		03/12/24 13:38	
1-Isopropyltoluene	ND	0.50	ug/L		03/12/24 13:38	
4-Methyl-2-pentanone	ND	5.0	ug/L		03/12/24 13:38	
Acetone	ND	5.0	ug/L		03/12/24 13:38	
Benzene	4.0	0.50	ug/L		03/12/24 13:38	
Bromobenzene	ND	0.50	ug/L		03/12/24 13:38	
Bromodichloromethane	ND	0.50	ug/L		03/12/24 13:38	
Dibromochloromethane	ND	0.50	ug/L		03/12/24 13:38	
Bromoform	ND	0.50	ug/L		03/12/24 13:38	
Bromomethane	ND	1.5	ug/L		03/12/24 13:38	
Carbon disulfide	ND	5.0	ug/L		03/12/24 13:38	
Carbon tetrachloride	ND	0.50	ug/L		03/12/24 13:38	
Chlorobenzene	ND	0.50	ug/L		03/12/24 13:38	
Chloroethane	ND	1.0	ug/L		03/12/24 13:38	
Chloroform	ND	0.50	ug/L		03/12/24 13:38	

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Job ID: 885-709-1

Client: Hilcorp Energy Project/Site: Sullivan GC D 1E

Client Sample ID: SVE-1

Lab Sample ID: 885-709-1

Matrix: Air

Date Collected: 03/04/24 14:10
Date Received: 03/07/24 07:15
Sample Container: Tedlar Bag 1L

Analyte	Result Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	ND -	1.5	ug/L			03/12/24 13:38	5
cis-1,2-Dichloroethene	ND	0.50	ug/L			03/12/24 13:38	5
cis-1,3-Dichloropropene	ND	0.50	ug/L			03/12/24 13:38	5
Dibromomethane	ND	0.50	ug/L			03/12/24 13:38	5
Dichlorodifluoromethane	ND	0.50	ug/L			03/12/24 13:38	5
Ethylbenzene	2.7	0.50	ug/L			03/12/24 13:38	5
Hexachlorobutadiene	ND	0.50	ug/L			03/12/24 13:38	5
Isopropylbenzene	ND	0.50	ug/L			03/12/24 13:38	5
Methyl-tert-butyl Ether (MTBE)	ND	0.50	ug/L			03/12/24 13:38	5
Methylene Chloride	ND	1.5	ug/L			03/12/24 13:38	5
n-Butylbenzene	ND	1.5	ug/L			03/12/24 13:38	5
N-Propylbenzene	ND	0.50	ug/L			03/12/24 13:38	5
Naphthalene	ND	1.0	ug/L			03/12/24 13:38	5
sec-Butylbenzene	ND	0.50	ug/L			03/12/24 13:38	5
Styrene	ND	0.50	ug/L			03/12/24 13:38	5
tert-Butylbenzene	ND	0.50	ug/L			03/12/24 13:38	5
Tetrachloroethene (PCE)	ND	0.50	ug/L			03/12/24 13:38	5
Toluene	29	0.50	ug/L			03/12/24 13:38	5
trans-1,2-Dichloroethene	ND	0.50	ug/L			03/12/24 13:38	5
trans-1,3-Dichloropropene	ND	0.50	ug/L			03/12/24 13:38	5
Trichloroethene (TCE)	ND	0.50	ug/L			03/12/24 13:38	5
Trichlorofluoromethane	ND	0.50	ug/L			03/12/24 13:38	5
Vinyl chloride	ND	0.50	ug/L			03/12/24 13:38	5
Xylenes, Total	31	0.75	ug/L			03/12/24 13:38	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	93		70 - 130		03/12/24 13:38	5
Toluene-d8 (Surr)	109		70 - 130		03/12/24 13:38	5
4-Bromofluorobenzene (Surr)	102		70 - 130		03/12/24 13:38	5
Dibromofluoromethane (Surr)	99		70 - 130		03/12/24 13:38	5

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Job ID: 885-709-1 Client: Hilcorp Energy

Project/Site: Sullivan GC D 1E

Client Sample ID: Method Blank

Method: 8015D - Nonhalogenated Organics using GC/MS -Modified (Gasoline Range Organics)

Lab Sample ID: MB 885-1848/3

Matrix: Air

Analysis Batch: 1848

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Prep Type: Total/NA	4

MB MB Result Qualifier RL Unit Dil Fac Analyte D Prepared Analyzed 03/12/24 13:14 Gasoline Range Organics [C6 - C10] ND 5.0 ug/L

MB MB

LCS LCS

Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac 4-Bromofluorobenzene (Surr) 95 70 - 130 03/12/24 13:14

Lab Sample ID: LCS 885-1848/2 **Client Sample ID: Lab Control Sample** Prep Type: Total/NA

Matrix: Air

Analysis Batch: 1848

LCS LCS Spike %Rec Analyte Added Result Qualifier Unit %Rec Limits

500 478 ug/L 96 Gasoline Range Organics [C6 -

C10]

Surrogate %Recovery Qualifier

Limits 4-Bromofluorobenzene (Surr) 101 70 - 130

Lab Sample ID: 885-709-1 DU **Client Sample ID: SVE-1** Prep Type: Total/NA

Matrix: Air

Analysis Batch: 1848

DU DU **RPD** Sample Sample Analyte Result Qualifier Result Qualifier Unit D **RPD** Limit Gasoline Range Organics [C6 -580 595 20 ug/L

C10]

DU DU

Surrogate %Recovery Qualifier Limits 4-Bromofluorobenzene (Surr) 103 70 - 130

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 885-1628/3

Released to Imaging: 5/1/2024 3:21:02 PM

Matrix: Air

Analysis Batch: 1628

Client Sample ID: Method Blank Prep Type: Total/NA

MR MR Analyte Result Qualifier RL Unit D Prepared Analyzed Dil Fac 0.10 1,1,1,2-Tetrachloroethane 03/12/24 13:14 ND ug/L 1,1,1-Trichloroethane ND 0.10 ug/L 03/12/24 13:14 1,1,2,2-Tetrachloroethane ND 0.20 ug/L 03/12/24 13:14 1.1.2-Trichloroethane ND 0.10 ug/L 03/12/24 13:14 ND 1.1-Dichloroethane 0.10 ug/L 03/12/24 13:14 1,1-Dichloroethene ND 0.10 ug/L 03/12/24 13:14 ND 0.10 03/12/24 13:14 1,1-Dichloropropene ug/L 1,2,3-Trichlorobenzene ND 0.10 ug/L 03/12/24 13:14 1,2,3-Trichloropropane ND 0.20 ug/L 03/12/24 13:14 ND 1,2,4-Trichlorobenzene 0.10 ug/L 03/12/24 13:14 1.2.4-Trimethylbenzene ND 0.10 ug/L 03/12/24 13:14 1,2-Dibromo-3-Chloropropane ND 0.20 ug/L 03/12/24 13:14 1,2-Dibromoethane (EDB) ND 0.10 ug/L 03/12/24 13:14 1,2-Dichlorobenzene ND 03/12/24 13:14 0.10 ug/L

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Client: Hilcorp Energy Job ID: 885-709-1

Project/Site: Sullivan GC D 1E

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 885-1628/3

Matrix: Air

Client Sample ID: Method Blank

Prep Type: Total/NA

		MB						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane (EDC)	ND		0.10	ug/L			03/12/24 13:14	1
1,2-Dichloropropane	ND		0.10	ug/L			03/12/24 13:14	1
1,3,5-Trimethylbenzene	ND		0.10	ug/L			03/12/24 13:14	1
1,3-Dichlorobenzene	ND		0.10	ug/L			03/12/24 13:14	1
1,3-Dichloropropane	ND		0.10	ug/L			03/12/24 13:14	1
1,4-Dichlorobenzene	ND		0.10	ug/L			03/12/24 13:14	1
1-Methylnaphthalene	ND		0.40	ug/L			03/12/24 13:14	1
2,2-Dichloropropane	ND		0.20	ug/L			03/12/24 13:14	1
2-Butanone	ND		1.0	ug/L			03/12/24 13:14	1
2-Chlorotoluene	ND		0.10	ug/L			03/12/24 13:14	1
2-Hexanone	ND		1.0	ug/L			03/12/24 13:14	1
2-Methylnaphthalene	ND		0.40	ug/L			03/12/24 13:14	1
4-Chlorotoluene	ND		0.10	ug/L			03/12/24 13:14	1
4-Isopropyltoluene	ND		0.10	ug/L			03/12/24 13:14	1
4-Methyl-2-pentanone	ND		1.0	ug/L			03/12/24 13:14	1
Acetone	ND		1.0	ug/L			03/12/24 13:14	1
Benzene	ND		0.10	ug/L			03/12/24 13:14	1
Bromobenzene	ND		0.10	ug/L			03/12/24 13:14	1
Bromodichloromethane	ND		0.10	ug/L			03/12/24 13:14	1
Dibromochloromethane	ND		0.10	ug/L			03/12/24 13:14	1
Bromoform	ND		0.10	ug/L			03/12/24 13:14	
Bromomethane	ND		0.30	ug/L			03/12/24 13:14	1
Carbon disulfide	ND		1.0	ug/L			03/12/24 13:14	
Carbon tetrachloride	ND		0.10	ug/L			03/12/24 13:14	1
Chlorobenzene	ND		0.10	ug/L			03/12/24 13:14	1
Chloroethane	ND		0.20	ug/L			03/12/24 13:14	
Chloroform	ND ND		0.20	-			03/12/24 13:14	1
Chloromethane	ND ND		0.30	ug/L ug/L			03/12/24 13:14	
	ND		0.30				03/12/24 13:14	1
cis-1,2-Dichloroethene				ug/L				1
cis-1,3-Dichloropropene	ND		0.10	ug/L			03/12/24 13:14	1
Dibromomethane	ND		0.10	ug/L			03/12/24 13:14	1
Dichlorodifluoromethane	ND		0.10	ug/L			03/12/24 13:14	1
Ethylbenzene	ND		0.10	ug/L			03/12/24 13:14	1
Hexachlorobutadiene	ND		0.10	ug/L			03/12/24 13:14	1
Isopropylbenzene	ND		0.10	ug/L			03/12/24 13:14	1
Methyl-tert-butyl Ether (MTBE)	ND		0.10	ug/L			03/12/24 13:14	1
Methylene Chloride	ND		0.30	ug/L			03/12/24 13:14	1
n-Butylbenzene	ND		0.30	ug/L			03/12/24 13:14	1
N-Propylbenzene	ND		0.10	ug/L			03/12/24 13:14	1
Naphthalene	ND		0.20	ug/L			03/12/24 13:14	1
sec-Butylbenzene	ND		0.10	ug/L			03/12/24 13:14	1
Styrene	ND		0.10	ug/L			03/12/24 13:14	1
tert-Butylbenzene	ND		0.10	ug/L			03/12/24 13:14	1
Tetrachloroethene (PCE)	ND		0.10	ug/L			03/12/24 13:14	1
Toluene	ND		0.10	ug/L			03/12/24 13:14	1
trans-1,2-Dichloroethene	ND		0.10	ug/L			03/12/24 13:14	1
trans-1,3-Dichloropropene	ND		0.10	ug/L			03/12/24 13:14	1
Trichloroethene (TCE)	ND		0.10	ug/L			03/12/24 13:14	1
Trichlorofluoromethane	ND		0.10	ug/L			03/12/24 13:14	1

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Client: Hilcorp Energy Job ID: 885-709-1

Project/Site: Sullivan GC D 1E

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 885-1628/3 Matrix: Air

Analyte

Vinyl chloride

Xylenes, Total

Analysis Batch: 1628

Client Sample ID: Method Blank Prep Type: Total/NA

MB MB Result Qualifier RL Unit Prepared Analyzed Dil Fac ND 0.10 ug/L 03/12/24 13:14 ND 0.15 ug/L 03/12/24 13:14

MB MB Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac 1,2-Dichloroethane-d4 (Surr) 105 70 - 130 03/12/24 13:14 Toluene-d8 (Surr) 94 70 - 130 03/12/24 13:14 4-Bromofluorobenzene (Surr) 100 70 - 130 03/12/24 13:14 Dibromofluoromethane (Surr) 106 70 - 130 03/12/24 13:14

Lab Sample ID: STOBLK 885-1628/11

Matrix: Air

Analysis Batch: 1628

-1628/11 Client Sample ID: Method Blank
Prep Type: Total/NA

•	STOBLK	STOBLK						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0	ug/L			03/12/24 16:30	1
1,1,1-Trichloroethane	ND		1.0	ug/L			03/12/24 16:30	1
1,1,2,2-Tetrachloroethane	ND		2.0	ug/L			03/12/24 16:30	1
1,1,2-Trichloroethane	ND		1.0	ug/L			03/12/24 16:30	1
1,1-Dichloroethane	ND		1.0	ug/L			03/12/24 16:30	1
1,1-Dichloroethene	ND		1.0	ug/L			03/12/24 16:30	1
1,1-Dichloropropene	ND		1.0	ug/L			03/12/24 16:30	1
1,2,3-Trichlorobenzene	ND		1.0	ug/L			03/12/24 16:30	1
1,2,3-Trichloropropane	ND		2.0	ug/L			03/12/24 16:30	1
1,2,4-Trichlorobenzene	ND		1.0	ug/L			03/12/24 16:30	1
1,2,4-Trimethylbenzene	ND		1.0	ug/L			03/12/24 16:30	1
1,2-Dibromo-3-Chloropropane	ND		2.0	ug/L			03/12/24 16:30	1
1,2-Dibromoethane (EDB)	ND		1.0	ug/L			03/12/24 16:30	1
1,2-Dichlorobenzene	ND		1.0	ug/L			03/12/24 16:30	1
1,2-Dichloroethane (EDC)	ND		1.0	ug/L			03/12/24 16:30	1
1,2-Dichloropropane	ND		1.0	ug/L			03/12/24 16:30	1
1,3,5-Trimethylbenzene	ND		1.0	ug/L			03/12/24 16:30	1
1,3-Dichlorobenzene	ND		1.0	ug/L			03/12/24 16:30	1
1,3-Dichloropropane	ND		1.0	ug/L			03/12/24 16:30	1
1,4-Dichlorobenzene	ND		1.0	ug/L			03/12/24 16:30	1
1-Methylnaphthalene	ND		4.0	ug/L			03/12/24 16:30	1
2,2-Dichloropropane	ND		2.0	ug/L			03/12/24 16:30	1
2-Butanone	ND		10	ug/L			03/12/24 16:30	1
2-Chlorotoluene	ND		1.0	ug/L			03/12/24 16:30	1
2-Hexanone	ND		10	ug/L			03/12/24 16:30	1
2-Methylnaphthalene	ND		4.0	ug/L			03/12/24 16:30	1
4-Chlorotoluene	ND		1.0	ug/L			03/12/24 16:30	1
4-Isopropyltoluene	ND		1.0	ug/L			03/12/24 16:30	1
4-Methyl-2-pentanone	ND		10	ug/L			03/12/24 16:30	1
Acetone	ND		10	ug/L			03/12/24 16:30	1
Benzene	ND		1.0	ug/L			03/12/24 16:30	1
Bromobenzene	ND		1.0	ug/L			03/12/24 16:30	1
Bromodichloromethane	ND		1.0	ug/L			03/12/24 16:30	1
Dibromochloromethane	ND		1.0	ug/L			03/12/24 16:30	1

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Released to Imaging: 5/1/2024 3:21:02 PM

Client: Hilcorp Energy Job ID: 885-709-1

Project/Site: Sullivan GC D 1E

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: STOBLK 885-1628/11

Matrix: Air

Analysis Batch: 1628

Client Sample ID: Method Blank

Prep Type: Total/NA

STOBLK STOBLK Analyte Result Qualifier RL Unit Prepared Analyzed Dil Fac Bromoform ND 1 0 ug/L 03/12/24 16:30 Bromomethane ND 3.0 ug/L 03/12/24 16:30 Carbon disulfide ND 10 03/12/24 16:30 ug/L Carbon tetrachloride ND 1.0 ug/L 03/12/24 16:30

Chlorobenzene ND 1.0 ug/L 03/12/24 16:30 2.0 Chloroethane ND ug/L 03/12/24 16:30 Chloroform ND 1.0 ug/L 03/12/24 16:30 ND ug/L Chloromethane 3.0 03/12/24 16:30 cis-1,2-Dichloroethene ND 1.0 ug/L 03/12/24 16:30

cis-1,3-Dichloropropene ND 1.0 ug/L 03/12/24 16:30 Dibromomethane ug/L ND 1.0 03/12/24 16:30 Dichlorodifluoromethane ND 1.0 ug/L 03/12/24 16:30 Ethylbenzene ND ug/L 03/12/24 16:30 1.0 ND ug/L Hexachlorobutadiene 1.0 03/12/24 16:30 Isopropylbenzene ND 1.0 ug/L 03/12/24 16:30

Methyl-tert-butyl Ether (MTBE) ND ug/L 1.0 03/12/24 16:30 ug/L Methylene Chloride ND 3.0 03/12/24 16:30 n-Butylbenzene ND 3.0 ug/L 03/12/24 16:30 N-Propylbenzene ND 1.0 ug/L 03/12/24 16:30 Naphthalene ND 2.0 ug/L 03/12/24 16:30 sec-Butylbenzene ND 1.0 ug/L 03/12/24 16:30

Styrene ND 1.0 ug/L 03/12/24 16:30 tert-Butylbenzene ND 1.0 ug/L 03/12/24 16:30 Tetrachloroethene (PCE) ND 1.0 ug/L 03/12/24 16:30 Toluene ND ug/L 1.0 03/12/24 16:30 trans-1,2-Dichloroethene ND 1.0 ug/L 03/12/24 16:30

trans-1,3-Dichloropropene ND 1.0 ug/L 03/12/24 16:30 Trichloroethene (TCE) ND 1.0 ug/L 03/12/24 16:30 Trichlorofluoromethane ND 1.0 ug/L 03/12/24 16:30 Vinyl chloride ND 1.0 ug/L 03/12/24 16:30 Xylenes, Total ND 1.5 ug/L 03/12/24 16:30

STOBLK STOBLK

Surrogate	%Recovery Qualifier	Limits	Prepared A	nalyzed	Dil Fac	
1,2-Dichloroethane-d4 (Surr)	104	70 - 130	03/1	2/24 16:30	1	
Toluene-d8 (Surr)	96	70 - 130	03/1	2/24 16:30	1	
4-Bromofluorobenzene (Surr)	98	70 - 130	03/1	2/24 16:30	1	
Dibromofluoromethane (Surr)	105	70 - 130	0.3/1	2/24 16:30	1	

Lab Sample ID: STOBLK 885-1628/12

Matrix: Air

Analysis Batch: 1628

Client Sample ID: Method Blank

Prep Type: Total/NA

	STOBLK	STOBLK						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0	ug/L			03/12/24 16:54	1
1,1,1-Trichloroethane	ND		1.0	ug/L			03/12/24 16:54	1
1,1,2,2-Tetrachloroethane	ND		2.0	ug/L			03/12/24 16:54	1
1,1,2-Trichloroethane	ND		1.0	ug/L			03/12/24 16:54	1
1,1-Dichloroethane	ND		1.0	ug/L			03/12/24 16:54	1

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Client: Hilcorp Energy Job ID: 885-709-1

Project/Site: Sullivan GC D 1E

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: STOBLK 885-1628/12

Matrix: Air

Analysis Batch: 1628

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	STOBLK Result	STOBLK Qualifier	RL	Unit	D Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		1.0	ug/L		03/12/24 16:54	1
1,1-Dichloropropene	ND		1.0	ug/L		03/12/24 16:54	1
1,2,3-Trichlorobenzene	ND		1.0	ug/L		03/12/24 16:54	1
1,2,3-Trichloropropane	ND		2.0	ug/L		03/12/24 16:54	1
1,2,4-Trichlorobenzene	ND		1.0	ug/L		03/12/24 16:54	1
1,2,4-Trimethylbenzene	ND		1.0	ug/L		03/12/24 16:54	1
1,2-Dibromo-3-Chloropropane	ND		2.0	ug/L		03/12/24 16:54	1
1,2-Dibromoethane (EDB)	ND		1.0	ug/L		03/12/24 16:54	1
1,2-Dichlorobenzene	ND		1.0	ug/L		03/12/24 16:54	1
1,2-Dichloroethane (EDC)	ND		1.0	ug/L		03/12/24 16:54	1
1,2-Dichloropropane	ND		1.0	ug/L		03/12/24 16:54	1
1,3,5-Trimethylbenzene	ND		1.0	ug/L		03/12/24 16:54	1
1,3-Dichlorobenzene	ND		1.0	ug/L		03/12/24 16:54	1
1,3-Dichloropropane	ND		1.0	ug/L		03/12/24 16:54	1
1,4-Dichlorobenzene	ND		1.0	ug/L		03/12/24 16:54	1
1-Methylnaphthalene	ND		4.0	ug/L		03/12/24 16:54	1
2,2-Dichloropropane	ND		2.0	ug/L		03/12/24 16:54	1
2-Butanone	ND		10	ug/L		03/12/24 16:54	1
2-Chlorotoluene	ND		1.0	ug/L		03/12/24 16:54	1
2-Hexanone	ND		10	ug/L		03/12/24 16:54	1
2-Methylnaphthalene	ND		4.0	ug/L		03/12/24 16:54	1
4-Chlorotoluene	ND		1.0	ug/L		03/12/24 16:54	1
4-Isopropyltoluene	ND		1.0	ug/L		03/12/24 16:54	1
4-Methyl-2-pentanone	ND		10	ug/L		03/12/24 16:54	1
Acetone	ND		10	ug/L		03/12/24 16:54	1
Benzene	ND		1.0	ug/L		03/12/24 16:54	1
Bromobenzene	ND		1.0	ug/L		03/12/24 16:54	1
Bromodichloromethane	ND		1.0	ug/L		03/12/24 16:54	1
Dibromochloromethane	ND		1.0	ug/L		03/12/24 16:54	1
Bromoform	ND		1.0	ug/L		03/12/24 16:54	1
Bromomethane	ND		3.0	ug/L		03/12/24 16:54	1
Carbon disulfide	ND		10	ug/L		03/12/24 16:54	1
Carbon tetrachloride	ND		1.0	ug/L		03/12/24 16:54	1
Chlorobenzene	ND		1.0	ug/L		03/12/24 16:54	1
Chloroethane	ND		2.0	ug/L		03/12/24 16:54	1
Chloroform	ND		1.0	ug/L		03/12/24 16:54	1
Chloromethane	ND		3.0	ug/L		03/12/24 16:54	1
cis-1,2-Dichloroethene	ND		1.0	ug/L		03/12/24 16:54	1
cis-1,3-Dichloropropene	ND		1.0	ug/L		03/12/24 16:54	1
Dibromomethane	ND		1.0	ug/L		03/12/24 16:54	1
Dichlorodifluoromethane	ND		1.0	ug/L		03/12/24 16:54	1
Ethylbenzene	ND		1.0	ug/L		03/12/24 16:54	1
Hexachlorobutadiene	ND		1.0	ug/L		03/12/24 16:54	1
Isopropylbenzene	ND		1.0	ug/L		03/12/24 16:54	1
Methyl-tert-butyl Ether (MTBE)	ND		1.0	ug/L		03/12/24 16:54	1
Methylene Chloride	ND		3.0	ug/L		03/12/24 16:54	1
n-Butylbenzene	ND		3.0	ug/L		03/12/24 16:54	1
N-Propylbenzene	ND		1.0	ug/L		03/12/24 16:54	1
Naphthalene	ND		2.0	ug/L		03/12/24 16:54	1
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Client: Hilcorp Energy

Job ID: 885-709-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: STOBLK 885-1628/12

Matrix: Air

Analysis Batch: 1628

Project/Site: Sullivan GC D 1E

Prep Type: Total/NA

ug/L

Client Sample ID: Method Blank

03/12/24 16:54

STOBLK STOBLK Analyte Result Qualifier RL Unit Prepared Analyzed Dil Fac sec-Butylbenzene ND 1.0 ug/L 03/12/24 16:54 Styrene ND 1.0 ug/L 03/12/24 16:54 tert-Butylbenzene ND 03/12/24 16:54 1.0 ug/L Tetrachloroethene (PCE) ND 1.0 ug/L 03/12/24 16:54 Toluene ND 1.0 ug/L 03/12/24 16:54 trans-1,2-Dichloroethene ND 1.0 ug/L 03/12/24 16:54 trans-1,3-Dichloropropene ND 1.0 ug/L 03/12/24 16:54 Trichloroethene (TCE) ND ug/L 1.0 03/12/24 16:54 Trichlorofluoromethane ND ug/L 03/12/24 16:54 1.0 Vinyl chloride ND 1.0 ug/L 03/12/24 16:54

STOBLK STOBLK

ND

	OTOBER OTOBER				
Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105	70 - 130		03/12/24 16:54	1
Toluene-d8 (Surr)	95	70 - 130		03/12/24 16:54	1
4-Bromofluorobenzene (Surr)	101	70 - 130		03/12/24 16:54	1
Dibromofluoromethane (Surr)	103	70 - 130		03/12/24 16:54	1

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Lab Sample ID: LCS 885-1628/2

Matrix: Air

Xylenes, Total

Analysis Batch: 1628

Client Sample ID: Lab Control Sample Prep Type: Total/NA

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
1,1-Dichloroethene	20.1	18.4		ug/L		91		
Benzene	20.1	19.4		ug/L		97		
Chlorobenzene	20.1	19.5		ug/L		97		
Toluene	20.2	19.0		ug/L		94		
Trichloroethene (TCE)	20.2	18.8		ug/L		93		

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	103		70 - 130
Toluene-d8 (Surr)	98		70 - 130
4-Bromofluorobenzene (Surr)	103		70 - 130
Dibromofluoromethane (Surr)	104		70 - 130

Lab Sample ID: 885-709-1 DU

Matrix: Air

Analysis Batch: 1628

Client Sam	ple ID: SVE-1
Prep Ty	ype: Total/NA

	Sample	Sample	DU	DU				RPD
Analyte	Result	Qualifier	Result	Qualifier	Unit	D	RPD	Limit
1,1,1,2-Tetrachloroethane	ND		ND		ug/L		NC	20
1,1,1-Trichloroethane	ND		ND		ug/L		NC	20
1,1,2,2-Tetrachloroethane	ND		ND		ug/L		NC	20
1,1,2-Trichloroethane	ND		ND		ug/L		NC	20
1,1-Dichloroethane	ND		ND		ug/L		NC	20
1,1-Dichloroethene	ND		ND		ug/L		NC	20
1,1-Dichloropropene	ND		ND		ug/L		NC	20
1,2,3-Trichlorobenzene	ND		ND		ug/L		NC	20
1,2,3-Trichioropenzene	ND		ND		ug/L		NC	20

Eurofins Albuquerque

Client: Hilcorp Energy Job ID: 885-709-1

Project/Site: Sullivan GC D 1E

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

ND

Lab Sample ID: 885-709-1 DU

Matrix: Air

2-Chlorotoluene

Analysis Batch: 1628

Client Sample ID: SVE-1

Prep Type: Total/NA

DU DU **RPD** Sample Sample Analyte Result Qualifier Result Qualifier Unit **RPD** Limit 1,2,3-Trichloropropane ND ND ug/L NC 20 ug/L 1,2,4-Trichlorobenzene ND ND NC 20 1,2,4-Trimethylbenzene ug/L 20 1.3 1.39 3

1,2-Dibromo-3-Chloropropane ND ND ug/L NC ug/L ND ND NC 1,2-Dibromoethane (EDB) 1,2-Dichlorobenzene ND ND ug/L NC 1,2-Dichloroethane (EDC) ND ND ug/L NC ND ND NC 1,2-Dichloropropane ug/L 1,3,5-Trimethylbenzene 1.2 1.19 ug/L 0

20 ND ND ug/L NC 1,3-Dichlorobenzene 20 ND ND ug/L 20 1,3-Dichloropropane NC ND ND NC 20 1,4-Dichlorobenzene ug/L 1-Methylnaphthalene ND ND ug/L NC 20 ug/L ND ND NC 20 2,2-Dichloropropane 2-Butanone ND ND ug/L NC 20

ug/L 2-Hexanone ND ND ug/L NC 2-Methylnaphthalene ND ND ug/L NC ND 4-Chlorotoluene ND ug/L NC ug/L 4-Isopropyltoluene ND ND NC 4-Methyl-2-pentanone ND ND ug/L NC Acetone ND ND ug/L NC

ND

Benzene 4.0 4.15 ug/L 5 20 ND ND ug/L NC 20 Bromobenzene ND ND NC 20 Bromodichloromethane ug/L Dibromochloromethane ND ND ug/L NC 20 **Bromoform** ND ND NC 20 ug/L Bromomethane ND ND ug/L NC 20 ug/L Carbon disulfide ND ND NC 20 Carbon tetrachloride ND ND ug/L NC 20 Chlorobenzene ND ND ug/L NC

20 ND Chloroethane ND ug/L NC 20 Chloroform ND ND ug/L NC 20 Chloromethane ND ND ug/L NC 20 cis-1,2-Dichloroethene ND ND ug/L NC 20 cis-1,3-Dichloropropene ND ND ug/L NC 20 Dibromomethane ND ND ug/L NC 20 ND ND ug/L NC 2.7 2.74 ug/L 1

Dichlorodifluoromethane 20 Ethylbenzene 20 ND NC Hexachlorobutadiene ND ug/L 20 Isopropylbenzene ND ND ug/L NC 20 ug/L ND ND 20 Methyl-tert-butyl Ether (MTBE) NC Methylene Chloride ND ND ug/L NC 20 n-Butylbenzene ND ND NC 20 ug/L ND N-Propylbenzene ND ug/L NC 20 20

Naphthalene ND ND ug/L NC sec-Butylbenzene ND ND ug/L NC ug/L ND Styrene ND NC tert-Butylbenzene ND ND NC ug/L

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NC

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Client: Hilcorp Energy Job ID: 885-709-1

Project/Site: Sullivan GC D 1E

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Matrix: Air

Analysis Batch: 1628

Lab Sample ID: 885-709-1 DU **Client Sample ID: SVE-1 Prep Type: Total/NA**

			DU				RPD
Result	Qualifier	Result	Qualifier	Unit	D	RPD	Limit
ND		ND		ug/L		NC	20
29		29.3		ug/L		2	20
ND		ND		ug/L		NC	20
ND		ND		ug/L		NC	20
ND		ND		ug/L		NC	20
ND		ND		ug/L		NC	20
ND		ND		ug/L		NC	20
31		31.4		ug/L		0.3	20
	ND 29 ND ND ND ND ND	29 ND ND ND ND ND	ND ND 29 29.3 ND ND ND ND	ND ND 29 29.3 ND ND ND ND ND ND ND ND ND ND ND ND ND ND	ND ug/L 29 29.3 ug/L ND ND ug/L	ND ug/L 29 29.3 ug/L ND ND ug/L	ND ND ug/L NC 29 29.3 ug/L 2 ND ND ug/L NC ND ND ug/L NC

	DU	DU	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	96		70 - 130
Toluene-d8 (Surr)	108		70 - 130
4-Bromofluorobenzene (Surr)	103		70 - 130
Dibromofluoromethane (Surr)	99		70 - 130

QC Association Summary

Client: Hilcorp Energy

Job ID: 885-709-1

Project/Site: Sullivan GC D 1E

GC/MS VOA

Analysis Batch: 1628

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-709-1	SVE-1	Total/NA	Air	8260B	
MB 885-1628/3	Method Blank	Total/NA	Air	8260B	
STOBLK 885-1628/11	Method Blank	Total/NA	Air	8260B	
STOBLK 885-1628/12	Method Blank	Total/NA	Air	8260B	
LCS 885-1628/2	Lab Control Sample	Total/NA	Air	8260B	
885-709-1 DU	SVE-1	Total/NA	Air	8260B	

Analysis Batch: 1848

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-709-1	SVE-1	Total/NA	Air	8015D	
MB 885-1848/3	Method Blank	Total/NA	Air	8015D	
LCS 885-1848/2	Lab Control Sample	Total/NA	Air	8015D	
885-709-1 DU	SVE-1	Total/NA	Air	8015D	

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Lab Chronicle

Client: Hilcorp Energy Job ID: 885-709-1

Project/Site: Sullivan GC D 1E

Client Sample ID: SVE-1 Lab Sample ID: 885-709-1

Matrix: Air

Date Collected: 03/04/24 14:10 Date Received: 03/07/24 07:15

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Analysis	8015D		5	1848	СМ	EET ALB	03/12/24 13:38
Total/NA	Analysis	8260B		5	1628	CM	EET ALB	03/12/24 13:38

Laboratory References:

= , 1120 South 27th Street, Billings, MT 59107

EET ALB = Eurofins Albuquerque, 4901 Hawkins NE, Albuquerque, NM 87109, TEL (505)345-3975

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Accreditation/Certification Summary

Client: Hilcorp Energy Job ID: 885-709-1

Project/Site: Sullivan GC D 1E

8260B

Laboratory: Eurofins Albuquerque

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Progr	am	Identification Number	Expiration Date
New Mexico	State		NM9425, NM0901	02-26-25
• ,	s are included in this repo does not offer certification	•	not certified by the governing autho	ority. This list may include analy
Analysis Method	Prep Method	Matrix	Analyte	
8015D		Air	Gasoline Range Organi	cs [C6 - C10]
8260B		Air	1,1,1,2-Tetrachloroethar	ne
8260B		Air	1,1,1-Trichloroethane	
8260B		Air	1,1,2,2-Tetrachloroethar	ne
8260B		Air	1,1,2-Trichloroethane	
8260B		Air	1,1-Dichloroethane	
8260B		Air	1,1-Dichloroethene	
8260B		Air	1,1-Dichloropropene	
8260B		Air	1,2,3-Trichlorobenzene	
8260B		Air	1,2,3-Trichloropropane	
8260B		Air	1,2,4-Trichlorobenzene	
8260B		Air	1,2,4-Trimethylbenzene	
8260B		Air	1,2-Dibromo-3-Chloropr	ropane
8260B		Air	1,2-Dibromoethane (ED	B)
8260B		Air	1,2-Dichlorobenzene	
8260B		Air	1,2-Dichloroethane (ED	C)
8260B		Air	1,2-Dichloropropane	
8260B		Air	1,3,5-Trimethylbenzene	

Air

1,3-Dichlorobenzene

1,3-Dichloropropane

1,4-Dichlorobenzene

1-Methylnaphthalene

2,2-Dichloropropane

2-Methylnaphthalene

2-Butanone

2-Hexanone

Acetone

Benzene

Bromoform

2-Chlorotoluene

4-Chlorotoluene

Bromobenzene

Bromomethane

Carbon disulfide

Chlorobenzene

Chloromethane

cis-1,2-Dichloroethene

cis-1,3-Dichloropropene

Dibromochloromethane

Chloroethane

Chloroform

Carbon tetrachloride

4-Isopropyltoluene

4-Methyl-2-pentanone

Bromodichloromethane

Eurofins Albuquerque

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Accreditation/Certification Summary

Client: Hilcorp Energy Job ID: 885-709-1

Project/Site: Sullivan GC D 1E

Laboratory: Eurofins Albuquerque (Continued)

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

nority	Progr	am	Identification Number Expiration Date
The following analyte	s are included in this repo	rt, but the laboratory is r	not certified by the governing authority. This list may include analy
for which the agency	does not offer certification	i.	
Analysis Method	Prep Method	Matrix	Analyte
8260B		Air	Dibromomethane
8260B		Air	Dichlorodifluoromethane
8260B		Air	Ethylbenzene
8260B		Air	Hexachlorobutadiene
8260B		Air	Isopropylbenzene
8260B		Air	Methylene Chloride
8260B		Air	Methyl-tert-butyl Ether (MTBE)
8260B		Air	Naphthalene
8260B		Air	n-Butylbenzene
8260B		Air	N-Propylbenzene
8260B		Air	sec-Butylbenzene
8260B		Air	Styrene
8260B		Air	tert-Butylbenzene
8260B		Air	Tetrachloroethene (PCE)
8260B		Air	Toluene
8260B		Air	trans-1,2-Dichloroethene
8260B		Air	trans-1,3-Dichloropropene
8260B		Air	Trichloroethene (TCE)
8260B		Air	Trichlorofluoromethane
8260B		Air	Vinyl chloride
8260B		Air	Xylenes, Total
jon	NELA	D .	NM100001 02-26-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015D		Air	Gasoline Range Organics [C6 - C10]
8260B		Air	1,1,1,2-Tetrachloroethane
8260B		Air	1,1,1-Trichloroethane
8260B		Air	1,1,2,2-Tetrachloroethane
8260B		Air	1,1,2-Trichloroethane
8260B		Air	1,1-Dichloroethane
8260B		Air	1,1-Dichloroethene
8260B		Air	1,1-Dichloropropene
8260B		Air	1,2,3-Trichlorobenzene
8260B		Air	1,2,3-Trichloropropane
8260B		Air	1,2,4-Trichlorobenzene
8260B		Air	1,2,4-Trimethylbenzene
8260B		Air	1,2-Dibromo-3-Chloropropane
8260B		Air	1,2-Dibromoethane (EDB)
8260B		Air	1,2-Dichlorobenzene
8260B		Air	1,2-Dichloroethane (EDC)
8260B		Air	1,2-Dichloropropane
8260B		Air	1,3,5-Trimethylbenzene
8260B		Air	1,3-Dichlorobenzene
8260B		Air	1,3-Dichloropropane
8260B		Air	1,4-Dichlorobenzene

Eurofins Albuquerque

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Accreditation/Certification Summary

Client: Hilcorp Energy Job ID: 885-709-1

Project/Site: Sullivan GC D 1E

Laboratory: Eurofins Albuquerque (Continued)
Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

ority	Progra	am	Identification Number Expiration Date
• •	s are included in this repo does not offer certification	•	not certified by the governing authority. This list may include analy
Analysis Method	Prep Method	Matrix	Analyte
8260B		Air	1-Methylnaphthalene
8260B		Air	2,2-Dichloropropane
8260B		Air	2-Butanone
8260B		Air	2-Chlorotoluene
8260B		Air	2-Hexanone
8260B		Air	2-Methylnaphthalene
8260B		Air	4-Chlorotoluene
8260B		Air	4-Isopropyltoluene
8260B		Air	4-Methyl-2-pentanone
8260B		Air	Acetone
8260B		Air	Benzene
8260B		Air	Bromobenzene
8260B		Air	Bromodichloromethane
8260B		Air	Bromoform
8260B		Air	Bromomethane
8260B		Air	Carbon disulfide
8260B		Air	Carbon tetrachloride
8260B		Air	Chlorobenzene
8260B		Air	Chloroethane
8260B		Air	Chloroform
8260B		Air	Chloromethane
8260B		Air	cis-1,2-Dichloroethene
8260B		Air	cis-1,3-Dichloropropene
8260B		Air	Dibromochloromethane
8260B		Air	Dibromomethane
8260B		Air	Dichlorodifluoromethane
8260B		Air	Ethylbenzene
8260B		Air	Hexachlorobutadiene
8260B		Air	Isopropylbenzene
8260B		Air	Methylene Chloride
8260B		Air	Methyl-tert-butyl Ether (MTBE)
8260B		Air	Naphthalene
8260B		Air	n-Butylbenzene
8260B		Air	N-Propylbenzene
8260B		Air	sec-Butylbenzene
8260B		Air	Styrene
8260B		Air	tert-Butylbenzene
8260B		Air	Tetrachloroethene (PCE)
8260B		Air	Toluene
8260B		Air	trans-1,2-Dichloroethene
8260B		Air	trans-1,3-Dichloropropene
8260B		Air	Trichloroethene (TCE)
8260B		Air	Trichlorofluoromethane
8260B		Air	Vinyl chloride
8260B		Air	Xylenes, Total

Eurofins Albuquerque

Method Summary

Proj

Job ID: 885-709-1

nent. Hilcorp Energy	JOD ID. 665-709-1
roject/Site: Sullivan GC D 1E	

Method	Method Description	Protocol	Laboratory
8015D	Nonhalogenated Organics using GC/MS -Modified (Gasoline Range Organics)	SW846	EET ALB
8260B	Volatile Organic Compounds (GC/MS)	SW846	EET ALB
Subcontract	Fixed Gases	None	
5030C	Collection/Prep Tedlar Bag (P&T)	SW846	EET ALB

Protocol References:

None = None

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

= , 1120 South 27th Street, Billings, MT 59107

EET ALB = Eurofins Albuquerque, 4901 Hawkins NE, Albuquerque, NM 87109, TEL (505)345-3975

Eurofins Albuquerque

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ANALYTICAL SUMMARY REPORT

March 19, 2024

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

Work Order: B24030512 Quote ID: B15626

Project Name: Sullivan GC D 1E

Energy Laboratories Inc Billings MT received the following 1 sample for Hall Environmental on 3/8/2024 for analysis.

Lab ID	Client Sample ID	Collect Date Receive Date	Matri x	Test
B24030512-001	SVE-1 (885-709-1)	03/04/24 14:10 03/08/24	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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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

Hall Environmental Client: Report Date: 03/19/24 Project: Sullivan GC D 1E Collection Date: 03/04/24 14:10 Lab ID: B24030512-001 DateReceived: 03/08/24 Client Sample ID: SVE-1 (885-709-1) Matrix: Air

					MCL/		
Analyses	Result	Units	Qualifiers	RL	QCL	Method	Analysis Date / By
GAS CHROMATOGRAPHY ANALYSIS	REPORT						
Oxygen	21.41	Mol %		0.01		GPA 2261-95	03/12/24 11:48 / jrj
Nitrogen	77.08	Mol %		0.01		GPA 2261-95	03/12/24 11:48 / jrj
Carbon Dioxide	0.51	Mol %		0.01		GPA 2261-95	03/12/24 11:48 / jrj
Hydrogen Sulfide	<0.01	Mol %		0.01		GPA 2261-95	03/12/24 11:48 / jrj
Methane	0.81	Mol %		0.01		GPA 2261-95	03/12/24 11:48 / jrj
Ethane	0.10	Mol %		0.01		GPA 2261-95	03/12/24 11:48 / jrj
Propane	0.04	Mol %		0.01		GPA 2261-95	03/12/24 11:48 / jrj
Isobutane	0.01	Mol %		0.01		GPA 2261-95	03/12/24 11:48 / jrj
n-Butane	0.01	Mol %		0.01		GPA 2261-95	03/12/24 11:48 / jrj
Isopentane	0.01	Mol %		0.01		GPA 2261-95	03/12/24 11:48 / jrj
n-Pentane	< 0.01	Mol %		0.01		GPA 2261-95	03/12/24 11:48 / jrj
Hexanes plus	0.02	Mol %		0.01		GPA 2261-95	03/12/24 11:48 / jrj
Propane	0.011	gpm		0.001		GPA 2261-95	03/12/24 11:48 / jrj
Isobutane	0.003	gpm		0.001		GPA 2261-95	03/12/24 11:48 / jrj
n-Butane	0.003	gpm		0.001		GPA 2261-95	03/12/24 11:48 / jrj
sopentane	0.004	gpm		0.001		GPA 2261-95	03/12/24 11:48 / jrj
n-Pentane	< 0.001	gpm		0.001		GPA 2261-95	03/12/24 11:48 / jrj
Hexanes plus	0.008	gpm		0.001		GPA 2261-95	03/12/24 11:48 / jrj
GPM Total	0.030	gpm		0.001		GPA 2261-95	03/12/24 11:48 / jrj
GPM Pentanes plus	0.012	gpm		0.001		GPA 2261-95	03/12/24 11:48 / jrj
CALCULATED PROPERTIES							
Gross BTU per cu ft @ Std Cond. (HHV)	13			1		GPA 2261-95	03/12/24 11:48 / jrj
Net BTU per cu ft @ std cond. (LHV)	12			1		GPA 2261-95	03/12/24 11:48 / jrj
Pseudo-critical Pressure, psia	548			1		GPA 2261-95	03/12/24 11:48 / jrj
Pseudo-critical Temperature, deg R	242			1		GPA 2261-95	03/12/24 11:48 / jrj
Specific Gravity @ 60/60F	0.998			0.001		D3588-81	03/12/24 11:48 / jrj
Air, % - The analysis was not corrected for air.	97.82			0.01		GPA 2261-95	03/12/24 11:48 / jrj

COMMENTS

03/12/24 11:48 / 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 RL - Analyte Reporting Limit **Definitions:**

QCL - Quality Control Limit

MCL - Maximum Contaminant Level

ND - Not detected at the Reporting Limit (RL)



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

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Hall Environmental Work Order: B24030512 Report Date: 03/19/24

Analyte		Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	GPA 2261-95									Batch:	R417974
Lab ID:	B24030510-001ADUP	12 Saı	mple Duplic	ate		F	Run: GCNG	A-B_240312A		03/12/	24 10:57
Oxygen			22.3	Mol %	0.01				0.3	20	
Nitrogen			77.4	Mol %	0.01				0.1	20	
Carbon D	ioxide		0.10	Mol %	0.01				0.0	20	
Hydrogen	Sulfide		<0.01	Mol %	0.01					20	
Methane			0.14	Mol %	0.01				13	20	
Ethane			0.01	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	
Isopentan	ie		<0.01	Mol %	0.01					20	
n-Pentane	е		<0.01	Mol %	0.01					20	
Hexanes	plus		0.01	Mol %	0.01				0.0	20	
Lab ID:	LCS031224	11 Lab	ooratory Co	ntrol Sample		Run: GCNGA-B_240312A				03/12/	24 03:08
Oxygen			0.63	Mol %	0.01	126	70	130			
Nitrogen			6.14	Mol %	0.01	102	70	130			
Carbon D	ioxide		0.99	Mol %	0.01	100	70	130			
Methane			74.7	Mol %	0.01	100	70	130			
Ethane			6.04	Mol %	0.01	101	70	130			
Propane			5.03	Mol %	0.01	102	70	130			
Isobutane	•		1.66	Mol %	0.01	83	70	130			
n-Butane			2.00	Mol %	0.01	100	70	130			
Isopentan	e		0.99	Mol %	0.01	99	70	130			
n-Pentane	e		1.00	Mol %	0.01	100	70	130			
Hexanes	plus		0.78	Mol %	0.01	98	70	130			

Qualifiers:

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

Login completed by: Crystal M. Jones

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

Date Received: 3/8/2024

Work Order Receipt Checklist

Hall Environmental B24030512

Login completed by. Orystal W. Cones		Date	(CCCIVCA: 0/0/2024
Reviewed by: gmccartney		Red	eived by: CMJ
Reviewed Date: 3/13/2024		Carr	ier 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 CI, Sulfite, Ferrous Iron, etc.)	Yes ✓	No 🗌	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes	No 🔽	Not Applicable
Container/Temp Blank temperature:	9.8°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.

For methods that require zero headspace or require preservation check at the time of analysis due to potential interference, the pH is verified at analysis. Nonconforming sample pH is documented as part of the analysis and included in the sample analysis comments.

Contact and Corrective Action Comments:

None

Eurofins Albuquerque

4901 Hawkins NE Albuquerque, NM 87109

Chain of Custody Record

DOCK W.	
EL Tarre	
Marie Land	
- Table 1	

eurofins :

Phone: 505-345-3975 Fax: 505-345-4107												-76	2					i chanomient is	SLIII
Client Information (Sub Contract Lab)	er: Lab PM: Freeman, Andy						Carrier Tracking No(s):							COC No: 885-91.1					
Client Contact: Shipping/Receiving	Phone:						andy.freeman@et.eurofinsus.com New M						of Origin:				Page: Page 1 of 1		
Company: Energy Laboratories, Inc.							ons Requ Orego				xico						Job #: 885-709-1		
Address: 1120 South 27th Street,	Due Date Reques	ted:			-		Ciogo	ii, Oldi					7			_	Preservation Co	odes:	_
City:	3/14/2024 TAT Requested (days):							Ana	ysis	Req	ueste	d		_	- Sales	A - HCL	M - Hexane N - None	
Billings																	B - NaOH C - Zn Acetate	O - AsNaO2	
State, Zip: MT, 59107																	D - Nitric Acid E - NaHSO4	P - Na2O4S Q - Na2SO3	
Phone:	PO #:																F - MeOH G - Amchlor	R - Na2S2O3 S - H2SO4 T - TSP Dodecahydr	
Email:	WO #:				N N	(o)			1								H - Ascorbic Acid I - Ice J - DI Water	U - Acetone V - MCAA	ate
Project Name: Sullivan GC D 1E	Project #:				(Yes	Ses) Fixed Gases										9	K - EDTA	W - pH 4-5 Y - Trizma	
Site:	88500415 SSOW#:				- lale	Fixed										1 2	L - EDA Other:	Z - other (specify)	
					San	Ses /							1			ofo	Other:		
Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=A	Field Filtered	2 2										Total Number	Special II	nstructions/Note:	
		\sim	Preserv	ation Code:	\square											X			4
SVE-1 (885-709-1)	3/4/24	14:10 Mountain		Air		X										1	B240	40511	
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Note: Since laboratory accreditations are subject to change, Eurofins Em laboratory does not currently maintain accreditation in the State of Origin accreditation status should be brought to Eurofins Environment Testing S																			
Possible Hazard Identification																	l longer than 1		
Unconfirmed						\Box_{F}	Return	To Clie	ent		Dis	posal B	y Lat	,		rchive		Months	
Deliverable Requested: I, II, III, IV, Other (specify)	Primary Delivera	able Rank: 2	2				Instru			equire	ments	3:							
Empty Kit Relinquished by:		Date:			Time					_		Meth	od of	Shipment	n' .				_
Relinquished by:	Date/Time	.1 10	126	Company		Rec	eived by	r:						Date/Tim	10:			Company	
Relinquished by:	>1712 Date/Time:	9 19	.20	Company		0	alored to												
	Date/ Infile.			Company		Kec	eived by							Date/Tim	ne:			Company	
Relinquished by:	Date/Time:	te/Time; Company				Received by					Date/Time:				ne:	- 20	13.10	Company	
Custody Seals Intact: Custody Seal No.:						Cooler Temperature(s) & and Other F					de	Dres 3/8/24 0				0	750	ELI	
Δ Yes Δ No					/	7	Teros	er ature	(s) Ca	na Oth	er Kem	iai KS;							4

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Preservative None

Container Type Tedlar Bag 1L

ICOC No: 885-91 Containers Count

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Client:	Hilcon	ρ	ıstody Record	Turn-Around Time: Standard Rush Project Name: W. Standard Rush Project Name: W. Standard Rush ANALYSIS LABORATORY Www.hallenvironmental.com 4901 Hawkins NE - Albuquerque, NM 87109 Project #:												Kecewea by OCD: 4)			
				Project #:	n 6C	0 1=													7/61
Phone :	#:			1			Tel. 505-345-3975 Fax 505-345-4107 Analysis Request								1				
	Package: idard		□ Level 4 (Full Validation)	Project Mana Mitch Sampler: B	Killoug	h	TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	(1)	PAHs by 8310 or 8270SIMS		NO ₂ , PO ₄ , SO ₄		Total Coliform (Present/Absent)	H	0, 8 00,		MIV CO:77:T
□ NEL		□ Other		# of Coolers:	□ Yes	∑ No	MTBE / 1	D(GRO/	ticides/8	hod 504	8310 or 8		်ီ	ni-VOA)	form (Pre	TVPH	98.5		
Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type		BTEX / N	TPH:8015	8081 Pes	EDB (Method 504.1)	PAHs by	RCRA 8 Metals	Cl, F, Br, N	8270 (Semi-VOA)	Total Coli	8015	Fixed		
3-4	1410	air	SVE-I	2 Tellor		885-709 COC —							\/ 			✓ 	✓ 		
Date: Date: Date:	Time: 1232 Time: 1738	Relinquish Relinquish	Link	Received by: Received by:	Via: Via: Via: Via:	Date Time 3/4/24 1233 Date Time 7/24 07/5	Rer	l nark	s:						1				rage 40







Login Sample Receipt Checklist

Client: Hilcorp Energy Job Number: 885-709-1

Login Number: 709 List Source: Eurofins Albuquerque

List Number: 1

Creator: Lowman, Nick		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td>	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	N/A	
Cooler Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	

N/A

Residual Chlorine Checked.

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 333290

CONDITIONS

Operator:	OGRID:
HILCORP ENERGY COMPANY	372171
1111 Travis Street	Action Number:
Houston, TX 77002	333290
	Action Type:
	[REPORT] Alternative Remediation Report (C-141AR)

CONDITIONS

Created By	Condition	Condition Date
nvelez	1. Continue with O & M schedule. 2. Submit next bi-annual report by October 15, 2024.	5/1/2024