ENSOLUM

REVIEWED
By Mike Buchanan at 10:55 am, Apr 02, 2024

January 11, 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: Fourth Quarter 2023 – SVE System Update
San Juan 28-6 #31
Rio Arriba County, New Mexico
Hilcorp Energy Company
NMOCD Incident Number: NVF1816655680

Accepted for the record: 4Q2023 SVE System Update, San Juan 28-6 #31: Content Satisfactory
1. Continue to conduct biweekly O&M as scheduled
2. Continue to operate system
3. Continue to send report updates as scheduled either annually or biannually or with next groundwater monitoring event, if applicable.

To Whom it May Concern:

Ensolum, LLC (Ensolum), on behalf of Hilcorp Energy Company (Hilcorp), presents this *Fourth Quarter 2023 – SVE System Update* report summarizing the soil vapor extraction (SVE) system performance at the San Juan 28-6 #31 natural gas production well (Site) located in Unit M, Section 28, Township 28 North, Range 6 West in Rio Arriba County, New Mexico (Figure 1). Specifically, this report summarizes Site activities performed in October, November, and December 2023 for submittal to the New Mexico Oil Conservation Division (NMOCD).

SVE SYSTEM SPECIFICATIONS

The current SVE system consists of a three-phase, 3 horsepower (HP) Ametek Rotron Model EN656 regenerative blower capable of producing 100 standard cubic feet per minute (scfm) of flow and 50 inches of water column (IWC). In total, 19 SVE wells are installed at the Site at varying depth intervals in order to induce air flow through the impacted zones in the subsurface. SVE well locations are presented on Figure 2. Additionally, the power for the SVE system was converted from generator to a permanent power drop on April 20, 2022. Specifically, the voltage capacity of the power drop at the Site was increased in order to run the SVE system and negate the need for a generator to power the system. This was determined to be necessary based on reliability issues with the generators used at the Site.

FOURTH QUARTER 2023 ACTIVITIES

During the fourth quarter of 2023, Ensolum and Hilcorp personnel performed bi-weekly operation and maintenance (O&M) visits to ensure the system was operating as designed and to perform any required maintenance. Field notes taken during O&M visits are presented in Appendix A. Between September 28 and December 19, 2023, the SVE system operated for 1,967 hours for a runtime efficiency of 99.9 percent (%). Table 1 presents the SVE system operational hours and percent runtime. Appendix B presents photographs of the runtime meter for calculating the fourth quarter runtime efficiency. During the fourth quarter 2023, all zones were operating with 13 of the 19 wells operational. SVE wells SVE-6, SVE-7S, SVE-7D, SVE-8, SVE-9, and SVE-15 have been turned off based on the low photoionization detector (PID) readings collected during previous sampling events and in order to achieve higher flow and vacuum rates in the other operating wells.

An air sample for the fourth quarter 2023 was collected on November 22, 2023. The fourth quarter 2023 emissions sample was collected from the sample port located between the SVE piping manifold

(collected from the total combined air flow from all active wells) and the SVE blower using a high vacuum air sampler. Prior to collection, the emissions sample was field screened with a PID for organic vapor monitoring (OVM). The emissions 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 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 systems (Table 3). Based on these estimates, a total of 22,676 pounds (11 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 ensure that 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. Hilcorp will continue operating the SVE until asymptotic emissions are observed. At that time, an evaluation of residual petroleum hydrocarbons will be assessed and further recommendations for remedial actions, if any, will be provided to NMOCD.

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

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Attachments:

Figure 1	Site Location Map
Figure 2	SVE System Configuration
Table 1	Soil Vapor Extraction System Runtime Calculations
Table 2	Soil Vapor Extraction System Air 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

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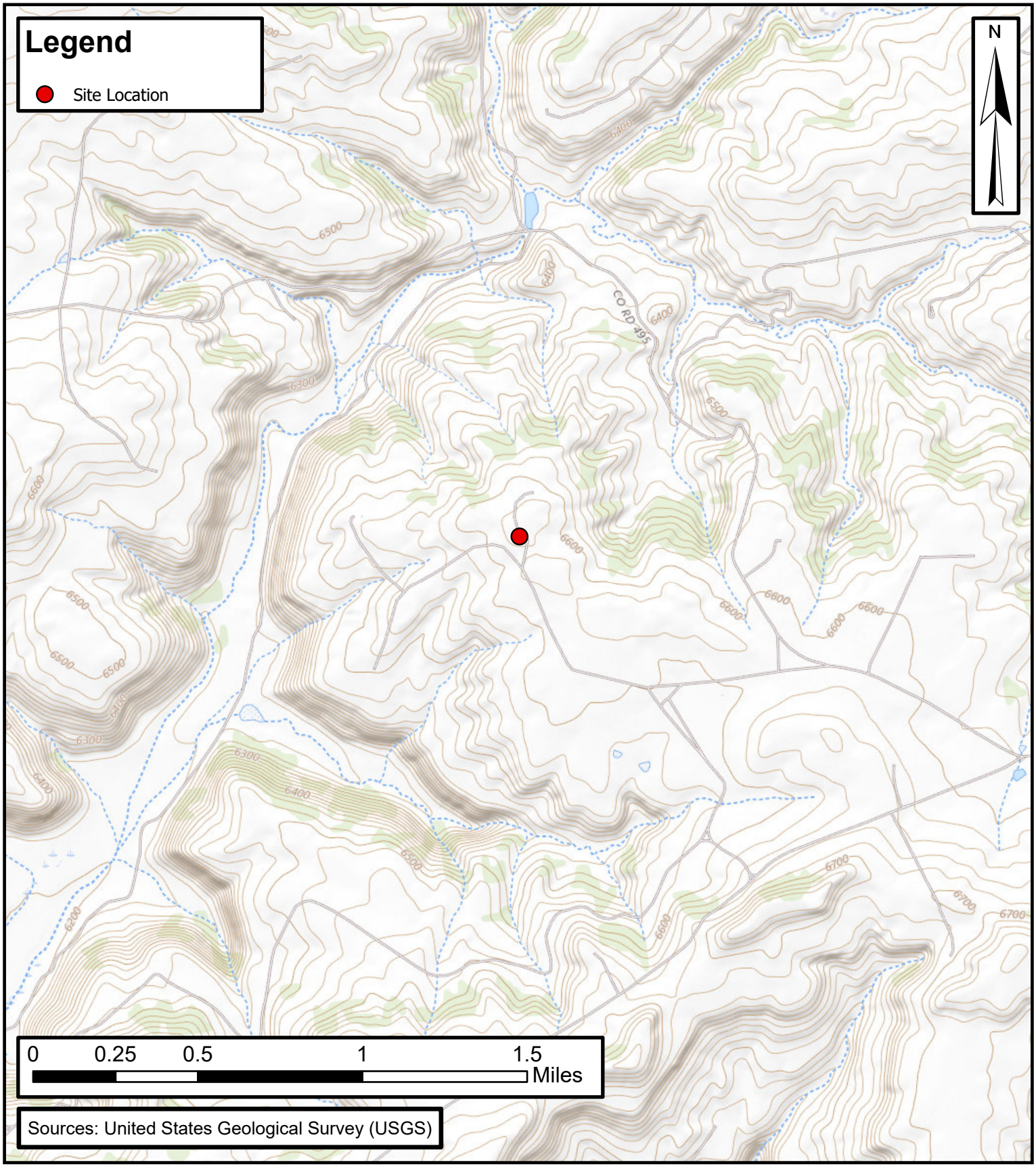
FIGURES



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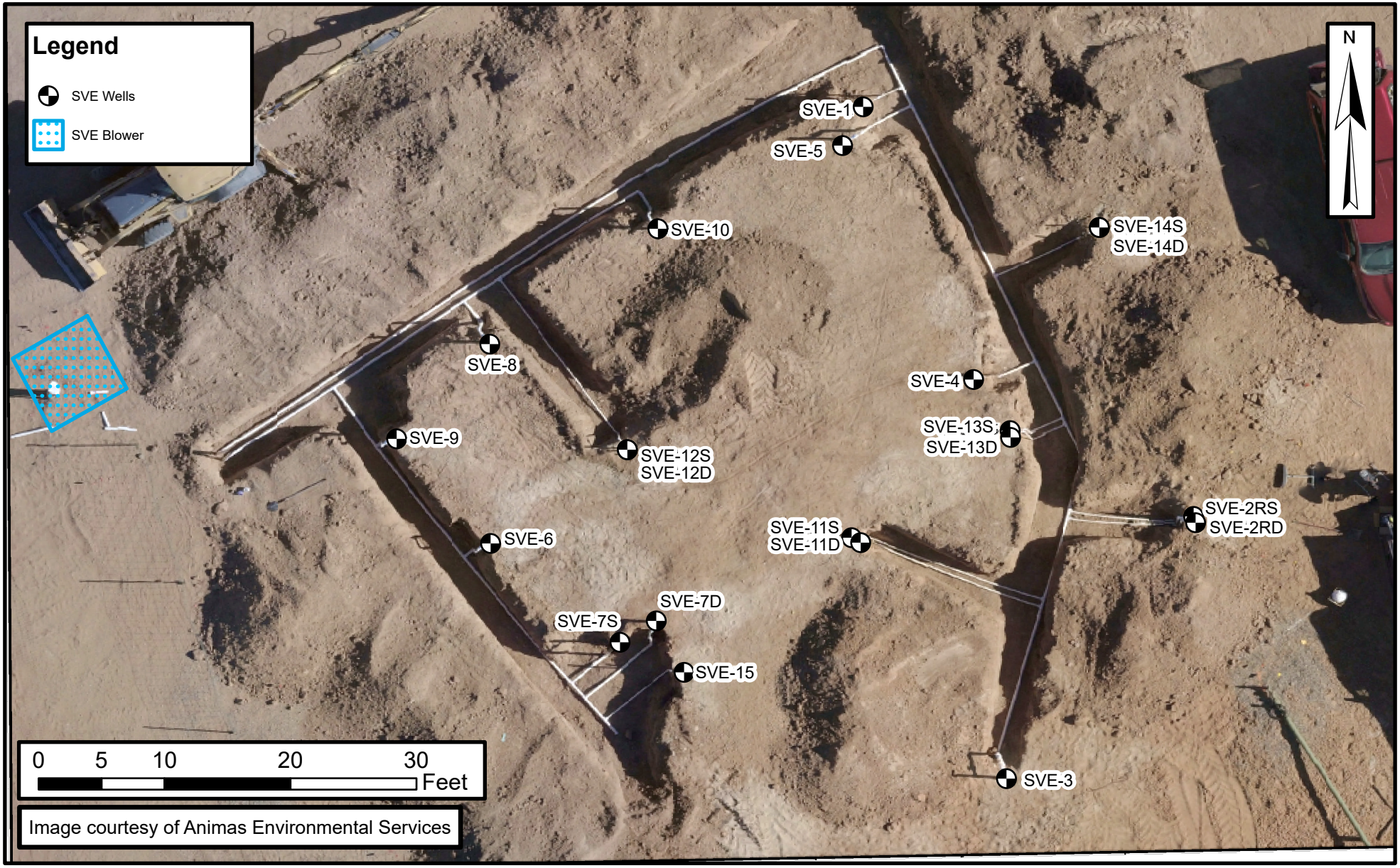
Environmental & Hydrogeologic Consultants

Site Location Map

San Juan 28-6 #31
Hilcorp Energy Company
36.6277°N, -107.4781°W
Rio Arriba County, NM

FIGURE
1



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Environmental & Hydrogeologic Consultants

SVE System Configuration

San Juan 28-6 #31
Hilcorp Energy Company
36.6277° N, -107.4781° W
Rio Arriba County, NM

FIGURE
2

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TABLES

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TABLE 1
SOIL VAPOR EXTRACTION SYSTEM RUNTIME CALCULATIONS
San Juan 28-6 #31
Hilcorp Energy Company
Rio Arriba County, New Mexico

Date	SVE Runtime Hours	Delta Hours	Days	% Runtime
9/28/2023	14,343	--	--	--
12/19/2023	16,310	1,967	82	99.9%

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TABLE 2
SOIL VAPOR EXTRACTION SYSTEM AIR ANALYTICAL RESULTS
San Juan 28-6 #31
Hilcorp Energy Company
Rio Arriba County, New Mexico

Date	Sample Identification	Operating SVE Zones	PID (ppm)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	TVPH/GRO (µg/L)	Oxygen (%)	Carbon Dioxide (%)
9/20/2021	Pilot Test	All Zones	1,287	720	1,600	15	320	250,000	17.87%	2.05%
9/28/2021	Influent A+B	All Zones	736	240	720	27	350	53,000	---	---
10/21/2021	Influent A+B	All Zones	615	60	170	6.7	74	13,000	---	---
11/5/2021	Leg A Deep	Leg A Deep	1,177	620	1,700	29	390	72,000	---	---
12/16/2021	Leg A Deep	Leg A Deep	1,398	470	950	11	190	96,000	21.00%	0.83%
12/16/2021	Leg A Shallow	Leg A Shallow	298	10	32	1.1	19	2,300	22.00%	0.12%
1/6/2022	Leg A Shallow	Leg A Shallow	283	12	34	1.2	15	2,500	22.13%	0.13%
1/6/2022	Leg B-1	Leg B-1	158	2.3	10	<0.50	6.7	1,100	21.97%	0.10%
3/24/2022	Influent All Wells	All Zones	604	48	92	1.2	19	6,300	22.10%	0.18%
6/13/2022	Influent All Wells	All Zones	414	30	89	<2.0	29	4,600	21.57%	0.25%
9/30/2022	Influent 9-30	All Zones	410	19	65	2.1	26	3,700	21.57%	0.28%
12/6/2022	SVE-1	All Zones	284	85	220	<5.0	58	22,000	21.69%	0.23%
3/8/2023	SVE-1	All Zones	381	13	54	<5.0	16	52	21.66%	0.19%
6/22/2023	SVE-1	All Zones	356	8.4	39	1.2	17	3,000	21.66%	0.20%
8/22/2023	SVE-1	All Zones	386	14	49	<5.0	17	2,800	21.68%	0.20%
11/22/2023	SVE-1	All Zones	396	14	56	<5.0	20	2,800	21.45%	0.19%

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

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TABLE 3
SOIL VAPOR EXTRACTION SYSTEM MASS REMOVAL AND EMISSIONS
San Juan 28-6 #31
Hilcorp Energy Company
Rio Arriba County, New Mexico

Laboratory Analysis

Date	PID (ppm)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	TVPH (µg/L)
9/28/2021	736	240	720	27	350	53,000
10/21/2021	615	60	170	6.7	74	13,000
11/5/2021	1,177	620	1,700	29	390	72,000
12/16/2021	298	10	32	1.1	19	2,300
1/6/2022	158	2.3	10	*0.50*	6.7	1,100
3/24/2022	604	48	92	1.2	19	6,300
6/13/2022	414	30	89	*2.0*	29	4,600
9/30/2022 (1)	410	19	65	2.1	26	3,700
12/6/2022	284	85	220	*5.0*	58	22,000
3/8/2023	381	13	54	*5.0*	16	52
6/22/2023	356	8.4	39	1.2	17	3,000
8/22/2023	386	14	49	*5.0*	17	2,800
11/22/2023	396	14	56	*5.0*	20	2,800
Average	478	90	254	7.0	80	14,358

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)
9/28/2021	60	17,280	17,280	0.054	0.16	0.0061	0.079	12
10/21/2021	50	1,648,680	1,631,400	0.028	0.083	0.0032	0.040	6.2
11/5/2021	8	1,864,392	215,712	0.010	0.028	0.00053	0.0069	1.3
12/16/2021	12	2,496,696	632,304	0.014	0.039	0.00068	0.0092	1.7
1/6/2022	32	3,352,056	855,360	0.00072	0.0025	0.000096	0.0015	0.20
3/24/2022	12	4,610,688	1,258,632	0.0011	0.0023	0.000038	0.00058	0.17
6/13/2022	61	11,659,482	7,048,794	0.0089	0.021	0.00037	0.0055	1.2
9/19/2022 (1)	52	18,819,882	7,160,400	0.0048	0.015	0.00040	0.0053	0.81
12/6/2022	55	24,971,082	6,151,200	0.011	0.029	0.00073	0.0086	2.6
3/8/2023	50	31,583,082	6,612,000	0.0092	0.026	0.00094	0.0069	2.1
6/22/2023	55	39,941,982	8,358,900	0.0022	0.0096	0.00064	0.0034	0.31
8/22/2023	60	45,183,582	5,241,600	0.0025	0.0099	0.00070	0.0038	0.65
11/22/2023	60	53,117,982	7,934,400	0.0031	0.012	0.0011	0.0042	0.63
			Average	0.011	0.034	0.001	0.013	2.3

Mass Recovery

Date	Total Operational Hours (2)	Delta Hours	Benzene (pounds)	Toluene (pounds)	Ethylbenzene (pounds)	Total Xylenes (pounds)	TVPH (pounds)	TVPH (tons)
9/28/2021	5	5	0.26	0.78	0.029	0.4	57	0.029
10/21/2021	549	544	15	45	1.7	21.6	3,356	1.7
11/9/2021 (3)	998	449	4.6	13	0.24	3.1	571	0.29
12/16/2021	1,876	878	12	34	0.59	8.1	1,464	0.73
1/6/2022	2,322	446	0.32	1.1	0.043	0.7	91	0.045
3/24/2022	4,070	1,748	2.0	4.0	0.067	1.0	290	0.15
6/13/2022	5,996	1,926	17	40	0.70	11	2,395	1.2
9/19/2022 (1)	8,291	2,295	11	34	0.9	12	1,852	0.93
12/6/2022	10,155	1,864	20	55	1.4	16	4,927	2.5
3/8/2023	12,359	2,204	20	56	2	15	4,544	2.3
6/22/2023	14,892	2,533	5.6	24	1.6	8.6	795	0.40
8/22/2023	16,348	1,456	3.7	14	1.0	5.6	948	0.47
11/22/2023	18,552	2,204	6.9	26	2.5	9.1	1,385	0.69
		Total Mass Recovery to Date	119	348	12.8	112	22,676	11

Notes:

(1): an emissions air sample was recollected on 9/30/2022 due to air-collection errors during the 9/19/2022 site visit. Flow rates collected during the 9/19/2022 visit are used for emissions calculations

(2): total operational hours are a summation of runtime hours collected from several generators and blower runtime meters used since system startup

(3): runtime hours collected during a site visit on 11/9/2021

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

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APPENDIX A

Field Notes

28-6 #31 SVE SYSTEM
BIWEEKLY O&M FORM

DATE: 10-13
TIME ONSITE: _____

O&M PERSONNEL: B Sinclair
TIME OFFSITE: _____

SVE SYSTEM - MONTHLY O&M

SVE ALARMS:		KO TANK HIGH LEVEL

GENERATOR

Hours **(take photo)** _____
Hertz _____
Voltage _____
Battery Voltage _____
Oil Pressure _____
Oil Temp _____

SVE SYSTEM	READING	TIME
Blower Hours **(take photo)**	19703	1148
Pre K/O Vacuum (IWC)	-32	
Post K/O Vacuum (IWC)	-26	
Pitot Tube 3" Flow (cfm)	60	
Leg A Rotameter (scfm)	28	
Leg B Rotameter (scfm)	29	
Inlet PID	240.9	
Exhaust Post GAC PID	410.9	
Liquid in K/O Sight Tube (Y/N)		
K/O Liquird Drained (gallons)		

HOUSEKEEPING Check

Generator Lubrication	
Inline Filter Clean	
Clean Wye Strainer	

SVE SYSTEM - QUARTERLY SAMPLING

SAMPLE ID:	**SAMPLE TIME:**
Analytes:	TVPH (8015), VOCs (8260), Fixed Gas (CO/CO2/O2)
OPERATING WELLS	

ZONES

Change in Well Operation:

LEG A DEEP

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-2RD		1592	
SVE-3		796.7	
SVE-5		1399	
SVE-11D		1933	
SVE-13D		1658	

LEG A SHALLOW

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-1		238.1	
SVE-2RS		1302	
SVE-4		656.3	
SVE-11S		1836	
SVE-13S		1574	
SVE-14S		2273	

LEG B-1

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-7D			
SVE-10		156.1	
SVE-12S		1756	
SVE-15			

LEG B-2

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-6			
SVE-7S			
SVE-8			
SVE-9			

COMMENTS/OTHER MAINTENANCE:

28-6 #31 SVE SYSTEM
BIWEEKLY O&M FORM

DATE: 10-25
TIME ONSITE:

O&M PERSONNEL: B Sinclair
TIME OFFSITE:

SVE SYSTEM - MONTHLY O&M

SVE ALARMS: | KO TANK HIGH LEVEL

GENERATOR

Hours **(take photo)**	
Hertz	
Voltage	
Battery Voltage	
Oil Pressure	
Oil Temp	

SVE SYSTEM	READING	TIME
Blower Hours **(take photo)**	14992	1349
Pre K/O Vacuum (IWC)	-31	
Post K/O Vacuum (IWC)	-25	
Pitot Tube 3" Flow (cfm)	60	
Leg A Rotameter (scfm)	27	
Leg B Rotameter (scfm)	23	
Inlet PID	336.4	
Exhaust Post GAC PID	392.1	
Liquid in K/O Sight Tube (Y/N)		
K/O Liquird Drained (gallons)		

HOUSEKEEPING

	Check
Generator Lubrication	
Inline Filter Clean	
Clean Wye Strainer	

SVE SYSTEM - QUARTERLY SAMPLING

SAMPLE ID: **SAMPLE TIME:**
Analytes: TVPH (8015), VOCs (8260), Fixed Gas (CO/CO2/O2)
OPERATING WELLS

ZONES

Change in Well Operation:

LEG A DEEP

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-2RD		1008	
SVE-3		709.7	
SVE-5		1010	
SVE-11D		1881	
SVE-13D		1917	

LEG A SHALLOW

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-1		393.1	
SVE-2RS		874.4	
SVE-4		720.5	
SVE-11S		1624	
SVE-13S		1356	
SVE-14S		1770	

LEG B-1

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-7D			
SVE-10		162.6	
SVE-12S		1359	
SVE-15			

LEG B-2

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-6			
SVE-7S			
SVE-8			
SVE-9			

COMMENTS/OTHER MAINTENANCE:

28-6 #31 SVE SYSTEM
BIWEEKLY O&M FORM

DATE: 11-10
TIME ONSITE:

O&M PERSONNEL: B Sinclair
TIME OFFSITE:

SVE SYSTEM - MONTHLY O&M

SVE ALARMS: | KO TANK HIGH LEVEL

GENERATOR

Hours **(take photo)**
Hertz
Voltage
Battery Voltage
Oil Pressure
Oil Temp

SVE SYSTEM	READING	TIME
Blower Hours **(take photo)**	15374	1058
Pre K/O Vacuum (IWC)	-32	
Post K/O Vacuum (IWC)	-26	
Pitot Tube 3" Flow (cfm)	55	
Leg A Rotameter (scfm)	28	
Leg B Rotameter (scfm)	24	
Inlet PID	277.8	
Exhaust Post GAC PID	392.2	
Liquid in K/O Sight Tube (Y/N)		
K/O Liquird Drained (gallons)		

HOUSEKEEPING Check

Generator Lubrication	
Inline Filter Clean	
Clean Wye Strainer	

SVE SYSTEM - QUARTERLY SAMPLING

SAMPLE ID: **SAMPLE TIME:**
Analytes: TVPH (8015), VOCs (8260), Fixed Gas (CO/CO2/O2)
OPERATING WELLS

ZONES

Change in Well Operation:

LEG A DEEP

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-2RD		1373	
SVE-3		252.1	
SVE-5		1104	
SVE-11D		1748	
SVE-13D		1661	

LEG A SHALLOW

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-1		368.6	
SVE-2RS		999.8	
SVE-4		862.9	
SVE-11S		1057	
SVE-13S		1624	
SVE-14S		1967	

LEG B-1

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-7D			
SVE-10		170.5	
SVE-12S		1601	
SVE-15			

LEG B-2

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-6			
SVE-7S			
SVE-8			
SVE-9			

COMMENTS/OTHER MAINTENANCE:

28-6 #31 SVE SYSTEM
BIWEEKLY O&M FORM

DATE: 11-22
TIME ONSITE:

O&M PERSONNEL: Brandon
TIME OFFSITE:

SVE SYSTEM - MONTHLY O&M

SVE ALARMS: | KO TANK HIGH LEVEL

GENERATOR

Hours **(take photo)**
Hertz
Voltage
Battery Voltage
Oil Pressure
Oil Temp

SVE SYSTEM

	READING	TIME
Blower Hours **(take photo)**	15664	1254
Pre K/O Vacuum (IWC)	-32	
Post K/O Vacuum (IWC)	-26	
Pitot Tube 3" Flow (cfm)	60	
Leg A Rotameter (scfm)	28	
Leg B Rotameter (scfm)	23	
Inlet PID	396.3	
Exhaust Post GAC PID	595.8	
Liquid in K/O Sight Tube (Y/N)		
K/O Liquird Drained (gallons)		

HOUSEKEEPING Check

Generator Lubrication	
Inline Filter Clean	
Clean Wye Strainer	

SVE SYSTEM - QUARTERLY SAMPLING

SAMPLE ID:	**SAMPLE TIME:**
Analytes:	TVPH (8015), VOCs (8260), Fixed Gas (CO/CO2/O2)
OPERATING WELLS	

ZONES

Change in Well Operation:

LEG A DEEP

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-2RD		1383	
SVE-3		1003	
SVE-5		1215	
SVE-11D		1795	
SVE-13D		1968	

LEG A SHALLOW

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-1		465.6	
SVE-2RS		1411	
SVE-4		671.9	
SVE-11S		922.1	
SVE-13S		1414	
SVE-14S		2129	

LEG B-1

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-7D			
SVE-10		231.2	
SVE-12S		2263	
SVE-15			

LEG B-2

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-6			
SVE-7S			
SVE-8			
SVE-9			

COMMENTS/OTHER MAINTENANCE:

28-6 #31 SVE SYSTEM
BIWEEKLY O&M FORM

DATE: 12-7
TIME ONSITE:

O&M PERSONNEL: B Sinclair
TIME OFFSITE:

SVE SYSTEM - MONTHLY O&M

SVE ALARMS:	KO TANK HIGH LEVEL

GENERATOR

Hours **(take photo)**	
Hertz	
Voltage	
Battery Voltage	
Oil Pressure	
Oil Temp	

SVE SYSTEM	READING	TIME
Blower Hours **(take photo)**	16023	1130
Pre K/O Vacuum (IWC)	-35	
Post K/O Vacuum (IWC)	-29	
Pitot Tube 3" Flow (cfm)	60	
Leg A Rotameter (scfm)	30	
Leg B Rotameter (scfm)	23	
Inlet PID	373.4	
Exhaust Post GAC PID	175.8	
Liquid in K/O Sight Tube (Y/N)		
K/O Liquird Drained (gallons)		

HOUSEKEEPING	Check
Generator Lubrication	
Inline Filter Clean	
Clean Wye Strainer	

SVE SYSTEM - QUARTERLY SAMPLING

SAMPLE ID:	**SAMPLE TIME:**
Analytes:	TVPH (8015), VOCs (8260), Fixed Gas (CO/CO2/O2)
OPERATING WELLS	

ZONES

Change in Well Operation:

LEG A DEEP

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-2RD		1700	
SVE-3		1187	
SVE-5		1196	
SVE-11D		1694	
SVE-13D		1888	

LEG A SHALLOW

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-1		728.7	
SVE-2RS		1493	
SVE-4		764.4	
SVE-11S		715.6	
SVE-13S		1405	
SVE-14S		1751	

LEG B-1

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-7D			
SVE-10		187.6	
SVE-12S		1029	
SVE-15			

LEG B-2

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-6			
SVE-7S			
SVE-8			
SVE-9			

COMMENTS/OTHER MAINTENANCE:

System off on arrival.

28-6 #31 SVE SYSTEM
BIWEEKLY O&M FORM

DATE: 12-19
TIME ONSITE: _____

O&M PERSONNEL: B Sinclair
TIME OFFSITE: _____

SVE SYSTEM - MONTHLY O&M

SVE ALARMS: | KO TANK HIGH LEVEL

GENERATOR	
Hours **(take photo)**	
Hertz	
Voltage	
Battery Voltage	
Oil Pressure	
Oil Temp	

SVE SYSTEM	READING	TIME
Blower Hours **(take photo)**	16310	1208
Pre K/O Vacuum (IWC)	-33	
Post K/O Vacuum (IWC)	-27	
Pitot Tube 3" Flow (cfm)	55	
Leg A Rotameter (scfm)	28	
Leg B Rotameter (scfm)	22	
Inlet PID	314.8	
Exhaust Post GAC PID	595.6	
Liquid in K/O Sight Tube (Y/N)		
K/O Liquird Drained (gallons)		

HOUSEKEEPING	Check
Generator Lubrication	
Inline Filter Clean	
Clean Wye Strainer	

SVE SYSTEM - QUARTERLY SAMPLING

SAMPLE ID:	**SAMPLE TIME:**
Analytes:	TVPH (8015), VOCs (8260), Fixed Gas (CO/CO2/O2)
OPERATING WELLS	

ZONES

Change in Well Operation:

LEG A DEEP

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-2RD		1104	
SVE-3		395.4	
SVE-5		786.1	
SVE-11D		1443	
SVE-13D		1876	

LEG A SHALLOW

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-1		106.9	
SVE-2RS		1093	
SVE-4		402.5	
SVE-11S		121.4	
SVE-13S		1807	
SVE-14S		1568	

LEG B-1

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-7D			
SVE-10		131.1	
SVE-12S		1348	
SVE-15			

LEG B-2

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-6			
SVE-7S			
SVE-8			
SVE-9			

COMMENTS/OTHER MAINTENANCE:

ENSOLUM

APPENDIX B

Project Photographs

PROJECT PHOTOGRAPHS
San Juan 28-6 #31
Rio Arriba County, New Mexico
Hilcorp Energy Company

Photograph 1 Runtime meter taken on September 28, 2023 at 12:39 PM Hours = 14,343		
Photograph 2 Runtime meter taken on December 19, 2023 at 12:08 PM Hours = 16,310		

Ensolum, LLC | Environmental & Hydrogeologic Consultants
Durango, Colorado | info@ensolum.com

ENSOLUM

APPENDIX C

Laboratory Analytical Reports

eurofins | Environment Testing

Eurofins Environment Testing South Central, LLC
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

December 08, 2023

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

RE: SJ 28 6 Unit 31 OrderNo.: 2311C00

Dear Samantha Grabert:

Eurofins Environment Testing South Central, LLC received 1 sample(s) on 11/24/2023 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 do not hesitate to contact Eurofins Albuquerque for any additional information or clarifications.

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

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2311C00**
Date Reported: **12/8/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: SVE-1
Project: SJ 28 6 Unit 31
Collection Date: 11/22/2023 1:00:00 PM
Lab ID: 2311C00-001 **Matrix:** AIR **Received Date:** 11/24/2023 3:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	2800	250		µg/L	50	12/1/2023 5:07:12 PM
Surr: BFB	104	15-412		%Rec	50	12/1/2023 5:07:12 PM
EPA METHOD 8260B: VOLATILES						Analyst: **CCM**
Benzene	14	5.0		µg/L	50	12/4/2023 3:40:00 PM
Toluene	56	5.0		µg/L	50	12/4/2023 3:40:00 PM
Ethylbenzene	ND	5.0		µg/L	50	12/4/2023 3:40:00 PM
Methyl tert-butyl ether (MTBE)	ND	5.0		µg/L	50	12/4/2023 3:40:00 PM
1,2,4-Trimethylbenzene	ND	5.0		µg/L	50	12/4/2023 3:40:00 PM
1,3,5-Trimethylbenzene	ND	5.0		µg/L	50	12/4/2023 3:40:00 PM
1,2-Dichloroethane (EDC)	ND	5.0		µg/L	50	12/4/2023 3:40:00 PM
1,2-Dibromoethane (EDB)	ND	5.0		µg/L	50	12/4/2023 3:40:00 PM
Naphthalene	ND	10		µg/L	50	12/4/2023 3:40:00 PM
1-Methylnaphthalene	ND	20		µg/L	50	12/4/2023 3:40:00 PM
2-Methylnaphthalene	ND	20		µg/L	50	12/4/2023 3:40:00 PM
Acetone	ND	50		µg/L	50	12/4/2023 3:40:00 PM
Bromobenzene	ND	5.0		µg/L	50	12/4/2023 3:40:00 PM
Bromodichloromethane	ND	5.0		µg/L	50	12/4/2023 3:40:00 PM
Bromoform	ND	5.0		µg/L	50	12/4/2023 3:40:00 PM
Bromomethane	ND	10		µg/L	50	12/4/2023 3:40:00 PM
2-Butanone	ND	50		µg/L	50	12/4/2023 3:40:00 PM
Carbon disulfide	ND	200		µg/L	50	12/4/2023 3:40:00 PM
Carbon tetrachloride	ND	5.0		µg/L	50	12/4/2023 3:40:00 PM
Chlorobenzene	ND	5.0		µg/L	50	12/4/2023 3:40:00 PM
Chloroethane	ND	10		µg/L	50	12/4/2023 3:40:00 PM
Chloroform	ND	5.0		µg/L	50	12/4/2023 3:40:00 PM
Chloromethane	ND	5.0		µg/L	50	12/4/2023 3:40:00 PM
2-Chlorotoluene	ND	5.0		µg/L	50	12/4/2023 3:40:00 PM
4-Chlorotoluene	ND	5.0		µg/L	50	12/4/2023 3:40:00 PM
cis-1,2-DCE	ND	5.0		µg/L	50	12/4/2023 3:40:00 PM
cis-1,3-Dichloropropene	ND	5.0		µg/L	50	12/4/2023 3:40:00 PM
1,2-Dibromo-3-chloropropane	ND	10		µg/L	50	12/4/2023 3:40:00 PM
Dibromochloromethane	ND	5.0		µg/L	50	12/4/2023 3:40:00 PM
Dibromomethane	ND	10		µg/L	50	12/4/2023 3:40:00 PM
1,2-Dichlorobenzene	ND	5.0		µg/L	50	12/4/2023 3:40:00 PM
1,3-Dichlorobenzene	ND	5.0		µg/L	50	12/4/2023 3:40:00 PM
1,4-Dichlorobenzene	ND	5.0		µg/L	50	12/4/2023 3:40:00 PM
Dichlorodifluoromethane	ND	5.0		µg/L	50	12/4/2023 3:40:00 PM
1,1-Dichloroethane	ND	5.0		µg/L	50	12/4/2023 3:40:00 PM
1,1-Dichloroethene	ND	5.0		µg/L	50	12/4/2023 3:40:00 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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2311C00**
Date Reported: **12/8/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: SVE-1
Project: SJ 28 6 Unit 31
Collection Date: 11/22/2023 1:00:00 PM
Lab ID: 2311C00-001 **Matrix:** AIR **Received Date:** 11/24/2023 3:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: **CCM**
1,2-Dichloropropane	ND	5.0		µg/L	50	12/4/2023 3:40:00 PM
1,3-Dichloropropane	ND	5.0		µg/L	50	12/4/2023 3:40:00 PM
2,2-Dichloropropane	ND	5.0		µg/L	50	12/4/2023 3:40:00 PM
1,1-Dichloropropene	ND	5.0		µg/L	50	12/4/2023 3:40:00 PM
Hexachlorobutadiene	ND	5.0		µg/L	50	12/4/2023 3:40:00 PM
2-Hexanone	ND	50		µg/L	50	12/4/2023 3:40:00 PM
Isopropylbenzene	ND	5.0		µg/L	50	12/4/2023 3:40:00 PM
4-Isopropyltoluene	ND	5.0		µg/L	50	12/4/2023 3:40:00 PM
4-Methyl-2-pentanone	ND	50		µg/L	50	12/4/2023 3:40:00 PM
Methylene chloride	ND	15		µg/L	50	12/4/2023 3:40:00 PM
n-Butylbenzene	ND	15		µg/L	50	12/4/2023 3:40:00 PM
n-Propylbenzene	ND	5.0		µg/L	50	12/4/2023 3:40:00 PM
sec-Butylbenzene	ND	5.0		µg/L	50	12/4/2023 3:40:00 PM
Styrene	ND	5.0		µg/L	50	12/4/2023 3:40:00 PM
tert-Butylbenzene	ND	5.0		µg/L	50	12/4/2023 3:40:00 PM
1,1,1,2-Tetrachloroethane	ND	5.0		µg/L	50	12/4/2023 3:40:00 PM
1,1,2,2-Tetrachloroethane	ND	5.0		µg/L	50	12/4/2023 3:40:00 PM
Tetrachloroethene (PCE)	ND	5.0		µg/L	50	12/4/2023 3:40:00 PM
trans-1,2-DCE	ND	5.0		µg/L	50	12/4/2023 3:40:00 PM
trans-1,3-Dichloropropene	ND	5.0		µg/L	50	12/4/2023 3:40:00 PM
1,2,3-Trichlorobenzene	ND	5.0		µg/L	50	12/4/2023 3:40:00 PM
1,2,4-Trichlorobenzene	ND	5.0		µg/L	50	12/4/2023 3:40:00 PM
1,1,1-Trichloroethane	ND	5.0		µg/L	50	12/4/2023 3:40:00 PM
1,1,2-Trichloroethane	ND	5.0		µg/L	50	12/4/2023 3:40:00 PM
Trichloroethene (TCE)	ND	5.0		µg/L	50	12/4/2023 3:40:00 PM
Trichlorofluoromethane	ND	5.0		µg/L	50	12/4/2023 3:40:00 PM
1,2,3-Trichloropropane	ND	10		µg/L	50	12/4/2023 3:40:00 PM
Vinyl chloride	ND	5.0		µg/L	50	12/4/2023 3:40:00 PM
Xylenes, Total	20	7.5		µg/L	50	12/4/2023 3:40:00 PM
Surr: Dibromofluoromethane	94.2	70-130		%Rec	50	12/4/2023 3:40:00 PM
Surr: 1,2-Dichloroethane-d4	88.1	70-130		%Rec	50	12/4/2023 3:40:00 PM
Surr: Toluene-d8	105	70-130		%Rec	50	12/4/2023 3:40:00 PM
Surr: 4-Bromofluorobenzene	105	70-130		%Rec	50	12/4/2023 3:40:00 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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

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ANALYTICAL SUMMARY REPORT

December 06, 2023

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

Work Order: B23111818 Quote ID: B15626

Project Name: Not Indicated

Energy Laboratories Inc Billings MT received the following 1 sample for Hall Environmental on 11/28/2023 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B23111818-001	2311C00-001B, SVE-1	11/22/23 13:00	11/28/23	Air	Air Correction Calculations Appearance and Comments Calculated Properties GPM @ std cond,/1000 cu. ft., moist. Free Natural Gas Analysis Specific Gravity @ 60/60

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

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

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

Report Approved By:

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LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Hall Environmental
Project: Not Indicated
Lab ID: B23111818-001
Client Sample ID: 2311C00-001B, SVE-1

Report Date: 12/06/23
Collection Date: 11/22/23 13:00
DateReceived: 11/28/23
Matrix: Air

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
GAS CHROMATOGRAPHY ANALYSIS REPORT							
Oxygen	21.45	Mol %		0.01		GPA 2261-95	12/04/23 06:44 / jrj
Nitrogen	78.30	Mol %		0.01		GPA 2261-95	12/04/23 06:44 / jrj
Carbon Dioxide	0.19	Mol %		0.01		GPA 2261-95	12/04/23 06:44 / jrj
Hydrogen Sulfide	<0.01	Mol %		0.01		GPA 2261-95	12/04/23 06:44 / jrj
Methane	<0.01	Mol %		0.01		GPA 2261-95	12/04/23 06:44 / jrj
Ethane	<0.01	Mol %		0.01		GPA 2261-95	12/04/23 06:44 / jrj
Propane	<0.01	Mol %		0.01		GPA 2261-95	12/04/23 06:44 / jrj
Isobutane	<0.01	Mol %		0.01		GPA 2261-95	12/04/23 06:44 / jrj
n-Butane	<0.01	Mol %		0.01		GPA 2261-95	12/04/23 06:44 / jrj
Isopentane	<0.01	Mol %		0.01		GPA 2261-95	12/04/23 06:44 / jrj
n-Pentane	<0.01	Mol %		0.01		GPA 2261-95	12/04/23 06:44 / jrj
Hexanes plus	0.06	Mol %		0.01		GPA 2261-95	12/04/23 06:44 / jrj
Propane	< 0.001	gpm		0.001		GPA 2261-95	12/04/23 06:44 / jrj
Isobutane	< 0.001	gpm		0.001		GPA 2261-95	12/04/23 06:44 / jrj
n-Butane	< 0.001	gpm		0.001		GPA 2261-95	12/04/23 06:44 / jrj
Isopentane	< 0.001	gpm		0.001		GPA 2261-95	12/04/23 06:44 / jrj
n-Pentane	< 0.001	gpm		0.001		GPA 2261-95	12/04/23 06:44 / jrj
Hexanes plus	0.025	gpm		0.001		GPA 2261-95	12/04/23 06:44 / jrj
GPM Total	0.025	gpm		0.001		GPA 2261-95	12/04/23 06:44 / jrj
GPM Pentanes plus	0.025	gpm		0.001		GPA 2261-95	12/04/23 06:44 / jrj
CALCULATED PROPERTIES							
Gross BTU per cu ft @ Std Cond. (HHV)	3			1		GPA 2261-95	12/04/23 06:44 / jrj
Net BTU per cu ft @ std cond. (LHV)	3			1		GPA 2261-95	12/04/23 06:44 / jrj
Pseudo-critical Pressure, psia	545			1		GPA 2261-95	12/04/23 06:44 / jrj
Pseudo-critical Temperature, deg R	239			1		GPA 2261-95	12/04/23 06:44 / jrj
Specific Gravity @ 60/60F	0.999			0.001		D3588-81	12/04/23 06:44 / jrj
Air, %	98.02			0.01		GPA 2261-95	12/04/23 06:44 / jrj
- The analysis was not corrected for air.							
COMMENTS							
-						-	12/04/23 06:44 / 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)

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QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Hall Environmental **Work Order:** B23111818 **Report Date:** 12/06/23

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: **GPA 2261-95**										Batch: R413227
Lab ID: **LCS120423**	11	Laboratory Control Sample				Run: GCNGA-B_231204A				12/04/23 03:28
Oxygen		0.63	Mol %	0.01	126	70	130			
Nitrogen		7.07	Mol %	0.01	118	70	130			
Carbon Dioxide		0.97	Mol %	0.01	98	70	130			
Methane		74.3	Mol %	0.01	99	70	130			
Ethane		5.90	Mol %	0.01	98	70	130			
Propane		4.85	Mol %	0.01	98	70	130			
Isobutane		1.82	Mol %	0.01	91	70	130			
n-Butane		1.90	Mol %	0.01	95	70	130			
Isopentane		0.94	Mol %	0.01	94	70	130			
n-Pentane		0.94	Mol %	0.01	94	70	130			
Hexanes plus		0.72	Mol %	0.01	90	70	130			
Lab ID: **B23111683-001ADUP**	12	Sample Duplicate				Run: GCNGA-B_231204A				12/04/23 11:37
Oxygen		18.2	Mol %	0.01				0.3	20	
Nitrogen		78.8	Mol %	0.01				0	20	
Carbon Dioxide		2.86	Mol %	0.01				1.0	20	
Hydrogen Sulfide		<0.01	Mol %	0.01					20	
Methane		<0.01	Mol %	0.01					20	
Ethane		<0.01	Mol %	0.01					20	
Propane		<0.01	Mol %	0.01					20	
Isobutane		<0.01	Mol %	0.01					20	
n-Butane		<0.01	Mol %	0.01					20	
Isopentane		<0.01	Mol %	0.01					20	
n-Pentane		<0.01	Mol %	0.01					20	
Hexanes plus		0.15	Mol %	0.01				6.5	20	

Qualifiers:

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

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Work Order Receipt Checklist

Hall Environmental

B23111818

Login completed by: Addison A. Gilbert
Date Received: 11/28/2023
Reviewed by: ysmith
Received by: aag
Reviewed Date: 11/30/2023
Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☐	No ☑	Not Applicable ☐
Container/Temp Blank temperature:	10.4°C Blue 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 | Environment Testing

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

Eurofins Environment Testing South Central, LLC
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975
FAX: 505-345-4107
Website: www.hallenvironmental.com

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

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS
1	2311C00-001B	SVE-1	TEDLAR	Air	11/22/2023 1:00:00 PM	1	Natural Gas Analysis, 02 + CO2

ELI: B23111818

SPECIAL INSTRUCTIONS / COMMENTS:

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

Relinquished By:	Date: 11/27/2023	Time: 9:27 AM	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By: Gilbert A.	Date: 28 Nov 23	Time: 0940

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

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

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

eurofins Environment Testing

Eurofins Environment Testing South Central, LLC
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: 2311C00 RcptNo: 1

Received By: **Andy Freeman** 11/24/2023 3:00:00 PM

Completed By: **Desiree Dominguez** 11/27/2023 9:14:36 AM

Reviewed By: JM 11/27/23

Chain of Custody

1. Is Chain of Custody complete?	Yes ☐	No ☑	Not Present ☐
2. How was the sample delivered?	Courier		

Log In

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

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

Adjusted? _____

Checked by: SCM 11/27/23

Special Handling (if applicable)

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

Person Notified: _____ Date: _____

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

Regarding: _____

Client Instructions: _____

16. Additional remarks:

Client contact information not provided on COC. -DAD 11/27/23

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	NA	Good	Not Present	NA		

Chain-of-Custody Record

Client: Hilcorp

Mailing Address:

Phone #:

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

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

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:
☑ Standard ☐ Rush

Project Name: SJ 28 6 Unit 31

Project #:

Project Manager: Samantha Grabert

Sampler: Brandon Sinclair

On Ice: ☐ Yes ☑ No

# of Coolers: 1

Cooler Temp(including CF): N/A (°C)

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

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2311C00	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)	8015 TVPH	Fixed gas O_2 & CO_2				
11-22	1300	air	SVE-1	2 Tedlar		-001								✓			✓	✓				

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
11-22	1624				11/22/23	1626
11/22/23	1715				11/24/23	1500

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS

Action 302808

CONDITIONS

Operator:	OGRID:
HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	372171
	Action Number: 302808
	Action Type: [UF-GWA] Ground Water Abatement (GROUND WATER ABATEMENT)

CONDITIONS

Created By	Condition	Condition Date
michael.buchanan	Accepted for the record: 4Q2023 SVE System Update, San Juan 28-6 #31: Content Satisfactory 1. Continue to conduct biweekly O&M as scheduled 2. Continue to operate system 3. Continue to send report updates as scheduled either annually or biannually, or with next groundwater monitoring event, if applicable.	4/2/2024