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January 6, 2025

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 2024 – SVE System Update
San Juan 32-9 #41A
San Juan County, New Mexico
Hilcorp Energy Company
NMOCD Incident No: NAPP2108949980

To Whom it May Concern:

Ensolum, LLC (Ensolum), on behalf of Hilcorp Energy Company (Hilcorp), presents this *Fourth Quarter 2024 – SVE System Update* report summarizing the soil vapor extraction (SVE) system performance at the San Juan 32-9 #41A natural gas production well (Site) on land managed by the Bureau of Land Management (BLM) in Unit P, Section 31, Township 32 North, Range 9 West in San Juan County, New Mexico (Figure 1). The SVE system was put into full time operation on October 9, 2023, to remediate subsurface soil impacts resulting from approximately 15 barrels (bbls) of natural gas condensate released from an aboveground storage tank. This report summarizes Site activities performed in October, November, and December of 2024.

SVE SYSTEM SPECIFICATIONS

The SVE system at the Site consists of a 3-phase, 5 horsepower Howden Roots 32 URAI rotary lobe blower capable of producing 112 cubic feet per minute (cfm) flow at 82 inches of water column (IWC) vacuum. The system is powered by a permanent power drop and is intended to run 24 hours per day. Three SVE wells are currently in operation and are shown on Figure 2. SVE wells SVE01, SVE02, and SVE03 are screened to 16 feet below ground surface (bgs) to address residual soil impacts in the unsaturated zone.

FOURTH QUARTER 2024 ACTIVITIES

The SVE system began operation on October 9, 2023. Based on the New Mexico Oil Conservation Division (NMOCD) Conditions of Approval (COAs), dated March 29, 2023, field data measurements were collected from the system biweekly throughout fourth quarter 2024. Field measurements included the following parameters: total system flow, estimated flow rates from each SVE well, photoionization detector (PID) measurements of volatile organic compounds (VOCs) from each SVE well, vacuum measurements from each SVE well, and oxygen/carbon dioxide measurements via hand-held analyzers from each SVE well. Field notes taken during operations and maintenance (O&M) visits are presented as Appendix A.

On October 15, 2024, the valve for SVE02 was closed to focus extraction on SVE01 and SVE03. Due to a spike in vacuum, SVE02 was brought back online on October 30, 2024. On November 26, 2024, wells SVE02 and SVE03 were taken offline to focus extraction on SVE01,

and the blower motor speed was decreased to prevent the vacuum from increasing past the maximum rating. Between September 24 and December 18, 2024, the SVE system operated for 3,947.6 hours for a runtime efficiency of 94 percent (%). Appendix B presents photographs of the runtime meter for calculating the fourth quarter 2024 runtime efficiency. Table 1 presents the SVE system operational hours and calculated percent runtime.

Based on the March 2023 COAs, vapor samples are required to be collected quarterly following the first year of operation from a sample port located between the SVE piping manifold and the SVE blower using a high vacuum air sampler. A vapor sample was collected on November 26, 2024. Prior to collection, the vapor sample was field screened with a PID for organic vapor monitoring (OVM). The vapor sample was collected directly into two 1-Liter Tedlar® bags and submitted to Eurofins Environment Testing in Albuquerque, New Mexico for analysis of total volatile petroleum hydrocarbons (TVPH – also known as total petroleum hydrocarbons – gasoline range organics (TPH-GRO)) following United States Environmental Protection Agency (EPA) Method 8015D, VOCs following EPA Method 8260B, and fixed gas analysis of oxygen and carbon dioxide following Gas Processors Association (GPA) Method 2261. Tables 2 and 3 present a summary of field measurements and analytical data, respectively, collected between system startup and November 26, 2024. The full laboratory analytical report is attached as Appendix C. Graphs 1 and 2 present oxygen and carbon dioxide levels over time, respectively. Vapor samples will continue to be collected quarterly for the remainder of system operation.

Vapor sample data and measured influent flow rates are used to estimate total mass recovered and total emissions generated by the SVE system (Table 4). Based on these estimates, 4,275 pounds (2.14 tons) of TVPH have been removed by the system to date. No phase-separated hydrocarbons were recovered from the system during the O&M and sampling period described above.

DISCUSSION AND RECOMMENDATIONS

A decrease in overall system PID readings and associated mass removal rates has been observed since system startup, as is anticipated. As discussed in the *Third Quarter 2024 – SVE System Update,* adjustments were made in the fourth quarter of 2024 to attempt to focus vacuum extraction on extraction well SVE01, the location with the highest PID readings; however, following adjustments, a decrease in overall mass removal rates continued. Mass removal will continue to be monitored in the first quarter of 2025 and if an overall decrease continues to be observed, confirmation soil sampling will be conducted in accordance with the scope provided in the *Soil Vapor Extraction Pilot Test Report and Remediation Work Plan,* dated January 4, 2023, to determine whether BTEX and TPH concentrations in soil are below the NMOCD Table I Closure Criteria.

Monthly O&M visits, at a minimum, and quarterly sampling events will continue to be performed by Ensolum and/or Hilcorp personnel to ensure 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

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Attachments:

Figure 1	Site Location Map
Figure 2	SVE System Radius of Influence and Radius of Effect
Table 1	Soil Vapor Extraction System Runtime Calculations
Table 2	Soil Vapor Extraction System Field Measurements
Table 3	Soil Vapor Extraction System Air Analytical Results
Table 4	Soil Vapor Extraction System Mass Removal and Emissions
Graph 1	Oxygen vs Time
Graph 2	Carbon Dioxide vs Time
Appendix A	Field Notes
Appendix B	Project Photographs
Appendix C	Laboratory Analytical Reports

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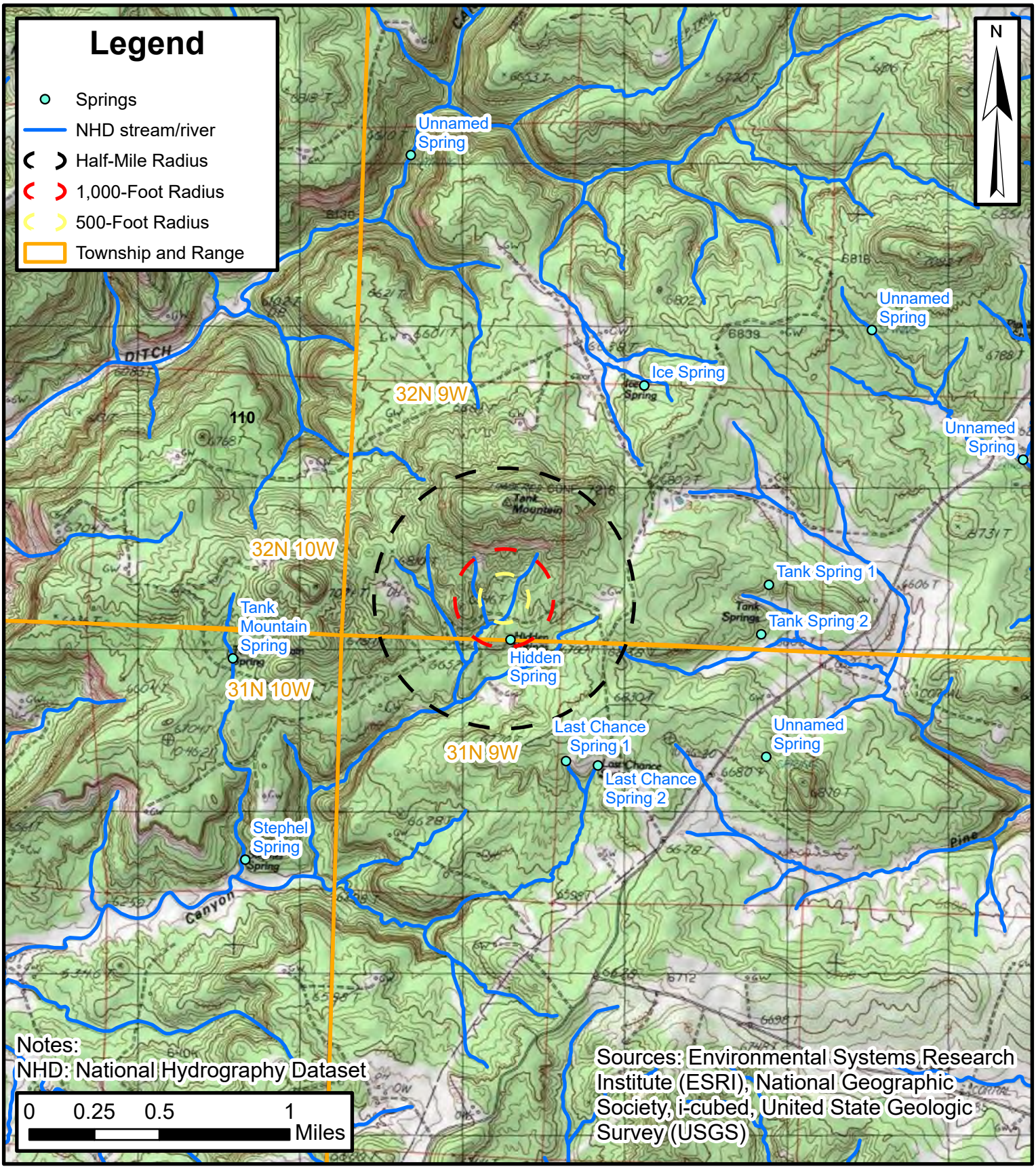
Figures



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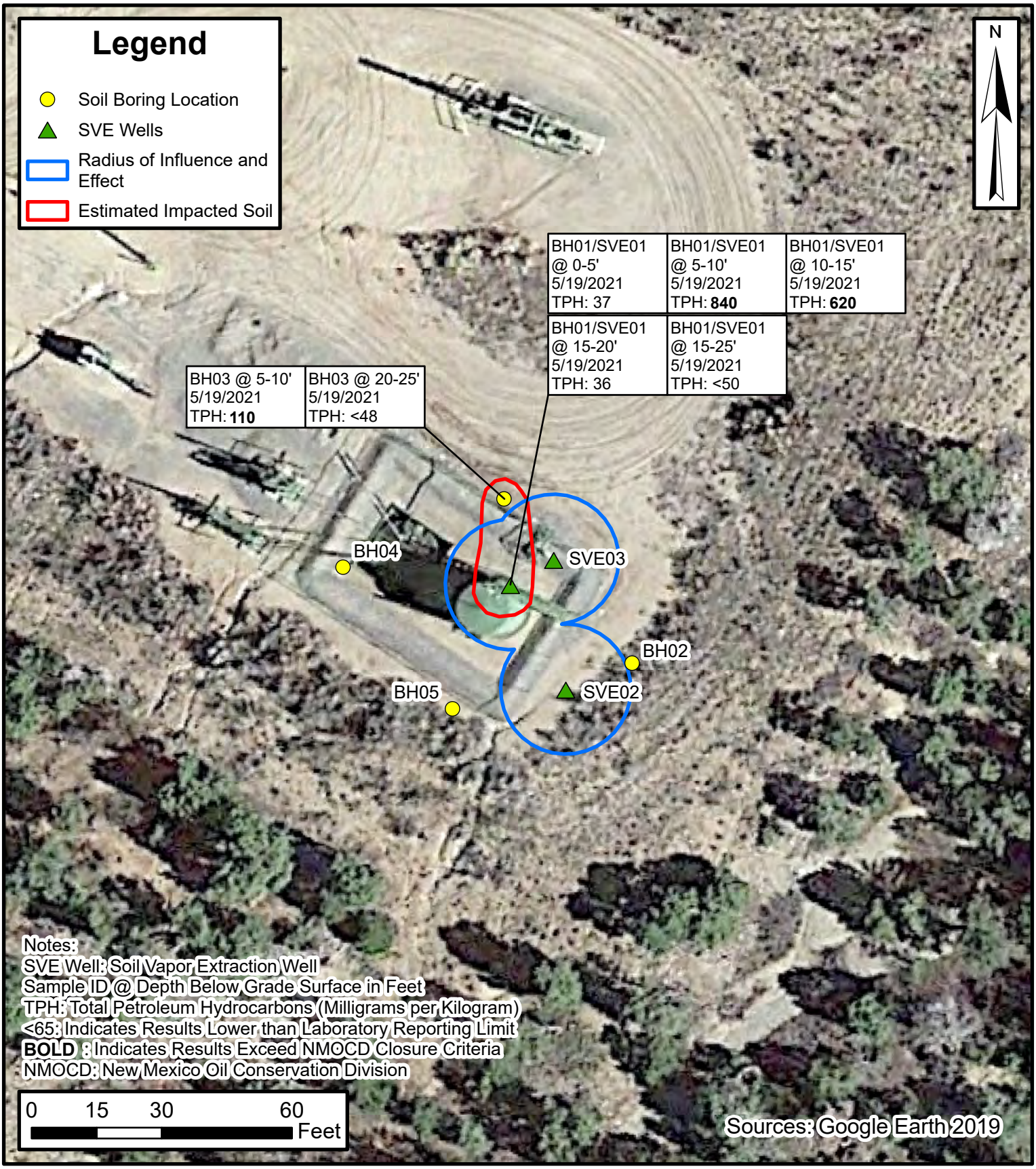
Site Location Map

San Juan 32-9 #41A
Hilcorp Energy Company
SEC 31-T32N-R9W
San Juan County, New Mexico

FIGURE
1



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SVE System Radius of Influence and Radius of Effect

San Juan 32-9 #41A
Hilcorp Energy Company
SEC 31-T32N-R9W
San Juan County, New Mexico

FIGURE
2

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Tables & Graphs

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TABLE 1
SOIL VAPOR EXTRACTION SYSTEM RUNTIME CALCULATIONS
San Juan 32-9 #41A
Hilcorp Energy Company
San Juan County, New Mexico

Date	Total Operational Hours	Delta Hours	Days	Quarterly Percent Runtime	Percent Runtime
10/9/2023	1.3	Startup			
12/28/2023	1,916.1	1,914.8	80	100%	100%
3/19/2024	3,857.0	1,940.9	82	99%	99%
6/26/2024	6,035.0	2,178.0	99	92%	96%
9/24/2024	8,176.2	4,319.2	189	95%	97%
12/18/2024	9,982.6	3,947.6	175	94%	95%

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TABLE 2
SOIL VAPOR EXTRACTION SYSTEM FIELD MEASUREMENTS
San Juan 32-9 #41A
Hilcorp Energy Company
San Juan County, New Mexico

SVE Well ID	Date	PID (ppm)	Differential Pressure (IWC)	Flow Rate (acfm)	Flow Rate (scfm)[1][2]	Vacuum (IWC)	Vacuum (psi)	Oxygen (%)	Carbon Dioxide (%)
Influent, All Wells	10/9/2023	1,783	3.4	161	99	88.0	3.2	20.9	0.00
	10/10/2023	1,646	3.4	161	99	90.0	3.2	20.9	0.00
	10/13/2023	667	4.1	177	118	62.0	2.2	20.1	0.62
	10/19/2023	2,143	4.9	194	133	52.0	1.9	20.5	0.40
	10/26/2023	195	5.2	199	137	52.0	1.9	--	--
	10/31/2023	440	5.2	199	138	49.0	1.8	--	--
	11/8/2023	422	5.2	199	136	52.0	1.9	19.8	0.00
	11/16/2023	541	5.2	199	137	51.7	1.9	--	--
	11/28/2023	91	5.3	201	137	54.4	2.0	--	--
	12/7/2023	231	6.0	214	147	50.0	1.8	--	--
	12/13/2023	317	5.6	207	141	54.4	2.0	--	--
	12/28/2023	232	5.7	209	140	59.8	2.2	--	--
	1/19/2024	173	5.0	195	129	62.0	2.2	20.9	0.16
	2/7/2024	112	3.4	161	86	131.9	4.8	--	--
	2/20/2024	282	3.9	172	93	127.8	4.6	--	--
	3/5/2024	180	4.0	174	95	125.1	4.5	--	--
	3/19/2024	--	--	--	--	--	--	--	--
	4/4/2024	172	2.8	146	86	102.0	3.7	--	--
	4/16/2024	179	2.8	146	84	108.8	3.9	--	--
	5/8/2024	175	2.8	147	84	111.5	4.0	--	--
	5/22/2024	98	2.7	143	82	111.5	4.0	--	--
	6/13/2024	110	2.7	143	81	111.5	4.0	--	--
	6/26/2024	44	2.6	140	77	122.4	4.4	--	--
	7/11/2024	39	2.5	139	83	96.6	3.5	--	--
	7/30/2024	25	4.5	186	121	70.7	2.6	--	--
	8/13/2024	18	4.2	178	117	66.6	2.4	--	--
	8/22/2024	Power Outage							
	9/9/2024	14	4.1	176	118	59.8	2.2	--	--
	9/24/2024	19	4.4	183	124	54.4	2.0	--	--
	10/15/2024	45	2.6	141	81	110	4.0	--	--
	10/30/2024	20	3.8	170	107	81.6	2.9	--	--
	11/12/2024	System Off - Could Not Restart							
	11/26/2024	15	--	--	--	122.4	4.4	--	--
	12/5/2024	121	--	--	--	104.7	3.8	--	--
	12/18/2024	5	--	--	--	89.8	3.2	--	--
SVE01	10/9/2023	1,816	--	--	34	72.1	2.6	20.9	0.00
	10/10/2023	1,734	--	--	38	73.4	2.6	20.9	0.00
	10/13/2023	395	--	--	>50	39.0	1.4	20.9	0.22
	10/19/2023	435	--	--	>50	26.0	0.9	20.7	0.28
	10/26/2023	116	--	--	>50	26.0	0.9	20.2	0.00
	10/31/2023	368	--	--	>50	1.8	0.1	20.5	0.18
	11/8/2023	437	--	--	>50	22.0	0.8	20.0	0.08
	11/16/2023	514	--	--	>50	21.7	0.8	19.2	0.18
	11/28/2023	55	--	--	>50	22.7	0.8	19.8	0.02
	12/7/2023	240	--	--	>50	22.7	0.8	19.1	0.06
	12/13/2023	137	--	--	>50	22.7	0.8	19.2	0.00
	12/28/2023	275	--	--	>50	33.3	1.2	19.1	0.02
	1/19/2024	274	--	--	>50	28.0	1.0	20.9	0.12
	2/7/2024	372	0.1	26	15	116.3	4.2	20.9	0.09
	2/20/2024	343	0.5	61	35	110.9	4.0	20.9	0.13
	3/5/2024	276	0.5	59	34	104.3	3.8	20.9	0.12
	3/19/2024	--	--	--	--	--	--	--	--
	4/4/2024	239	0.2	40	25	77.6	2.8	20.9	0.16
	4/16/2024	189	0.3	46	28	92.0	3.3	20.8	0.12
	5/8/2024	211	0.4	53	32	93.1	3.4	20.9	0.12
	5/22/2024	147	0.3	45	27	96.2	3.5	20.0	0.18
	6/13/2024	181	0.3	47	28	96.3	3.5	20.8	0.15
	6/26/2024	64	0.3	45	26	100.6	3.6	20.9	0.13
	7/11/2024	89	0.2	34	21	88.1	3.2	20.7	0.21
	7/30/2024	122	0.2	36	22	93.6	3.4	20.8	0.16
	8/13/2024	79	0.0	12	8	53.7	1.9	20.2	0.37
	8/22/2024	Power Outage							
	9/9/2024	60	0.0	9	6	46.2	1.7	20.9	0.32
	9/24/2024	49	0.0	0	0	41.0	1.5	19.4	0.48
	10/15/2024	36	0.1	33	20	92.2	3.3	20.1	0.35
	10/30/2024	57	0.0	9	6	43.7	1.6	20.8	0.40
	11/12/2024	System Off - Could Not Restart							
	11/26/2024	4	--	--	--	--	--	20.9	0.17
	12/5/2024	61	0.2	36	22	85.6	3.1	20.9	0.34
	12/18/2024	2	--	--	--	--	--	20.9	0.34

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TABLE 2
SOIL VAPOR EXTRACTION SYSTEM FIELD MEASUREMENTS
San Juan 32-9 #41A
Hilcorp Energy Company
San Juan County, New Mexico

SVE Well ID	Date	PID (ppm)	Differential Pressure (IWC)	Flow Rate (acfm)	Flow Rate (scfm)[1][2]	Vacuum (IWC)	Vacuum (psi)	Oxygen (%)	Carbon Dioxide (%)
SVE02	10/9/2023	307	--	--	2	80.7	2.9	20.9	0.00
	10/10/2023	291	--	--	2	83.8	3.0	20.9	0.00
	10/13/2023	84	--	--	<2	48.0	1.7	20.9	0.16
	10/19/2023	28	--	--	<2	46.0	1.7	20.9	0.28
	10/26/2023	46	--	--	--	48.0	1.7	20.7	0.00
	10/31/2023	8	--	--	3	3.2	0.1	20.9	0.04
	11/8/2023	49	--	--	5	44.0	1.6	19.6	0.54
	11/16/2023	95	--	--	2	36.5	1.3	19.1	0.46
	11/28/2023	108	--	--	3	37.5	1.4	19.6	0.04
	12/7/2023	66	--	--	5	39.0	1.4	19.1	0.10
	12/13/2023	50	--	--	2	39.0	1.4	19.1	0.16
	12/28/2023	30	--	--	5	44.8	1.6	19.1	0.00
	1/19/2024	37	--	--	4	50.0	1.8	20.9	0.44
	2/7/2024	56	0.0	9	7	20.1	0.7	20.9	0.07
SVE02	2/20/2024	105	0.0	0	0	46.6	1.7	20.9	0.07
	3/5/2024	96	0.0	0	0	36.1	1.3	20.9	0.04
	3/19/2024	--	--	--	--	--	--	--	--
	4/4/2024	103	0.0	0	0	41.6	1.5	20.9	0.17
	4/16/2024	89	0.0	0	0	31.2	1.1	20.7	0.14
	5/8/2024	86	0.0	0	0	33.2	1.2	20.7	0.13
	5/22/2024	79	0.0	0	0	44.5	1.6	19.5	0.11
	6/13/2024	82	0.0	0	0	41.6	1.5	20.7	0.12
	6/26/2024	32	0.0	0	0	0.0	0.0	20.6	0.11
	7/11/2024	6	--	--	--	90.2	--	20.9	0.09
	7/30/2024	10	0.0	0	0	81.1	2.9	20.9	0.11
	8/13/2024	5	2.4	135	91	55.6	2.0	20.9	0.04
	8/22/2024	Power Outage							
	9/9/2024	5	0.5	64	45	47.2	1.7	20.9	0.03
	9/24/2024	11	0.6	66	46	43.2	1.6	20.7	0.06
	10/15/2024	Well Taken Offline							
	10/30/2024	10	0.6	65	46	46.1	1.7	20.9	0.04
	11/12/2024	System Off - Could Not Restart							
	11/26/2024	Well Taken Offline							
SVE03	10/9/2023	524	--	--	26	76.3	2.8	20.1	0.00
	10/10/2023	411	--	--	24	77.2	2.8	19.2	0.00
	10/13/2023	448	--	--	18	43.0	1.6	20.3	0.64
	10/19/2023	180	--	--	14	38.0	1.4	20.7	0.34
	10/26/2023	77	--	--	14	52.0	1.9	20.3	0.00
	10/31/2023	63	--	--	14	35.4	1.3	20.9	0.04
	11/8/2023	312	--	--	14	36.0	1.3	19.1	0.72
	11/16/2023	315	--	--	14	29.4	1.1	19.1	0.26
	11/28/2023	48	--	--	14	33.2	1.2	19.6	0.06
	12/7/2023	134	--	--	30	32.0	1.2	19.0	0.24
	12/13/2023	112	--	--	14	36.2	1.3	19.1	0.14
	12/28/2023	71	--	--	15	38.1	1.4	19.1	0.08
	1/19/2024	85	--	--	16	28.0	1.0	20.9	0.20
	2/7/2024	33	0.6	69	50	28.0	1.0	20.9	0.05
	2/20/2024	64	0.6	69	39	111.4	4.0	20.9	0.06
	3/5/2024	50	0.9	85	48	111.5	4.0	20.9	0.06
	3/19/2024	--	--	--	--	--	--	--	--
	4/4/2024	47	0.5	64	41	76.2	2.8	20.9	0.10
	4/16/2024	46	0.8	76	49	76.1	2.7	20.8	0.08
	5/8/2024	49	0.8	77	49	78.6	2.8	20.8	0.08
	5/22/2024	24	1.6	110	65	97.3	3.5	20.3	0.10
	6/13/2024	33	1.3	99	60	92.6	3.3	20.8	0.09
	6/26/2024	15	0.4	54	33	92.5	3.3	20.7	0.08
	7/11/2024	10	0.8	80	50	84.6	3.1	20.9	0.16
	7/30/2024	29	1.4	103	64	86.3	3.1	20.8	0.11
	8/13/2024	7	0.0	15	10	57.3	2.1	20.9	0.14
	8/22/2024	Power Outage							
	9/9/2024	4	1.3	101	70	49.6	1.8	20.8	0.18
	9/24/2024	8	0.9	81	56	46.5	1.7	20.2	0.24
	10/15/2024	16	3.7	168	101	97.3	3.5	20.8	0.18
	10/30/2024	5	0.9	82	57	47.2	1.7	20.9	0.20
	11/12/2024	System Off - Could Not Restart							
	11/26/2024	Well Taken Offline							

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TABLE 2
SOIL VAPOR EXTRACTION SYSTEM FIELD MEASUREMENTS
San Juan 32-9 #41A
Hilcorp Energy Company
San Juan County, New Mexico

SVE Well ID	Date	PID (ppm)	Differential Pressure (IWC)	Flow Rate (acfm)	Flow Rate (scfm)[1][2]	Vacuum (IWC)	Vacuum (psi)	Oxygen (%)	Carbon Dioxide (%)

Notes:

(1): individual well flow rates in scfm estimated based on rotometer field measurements
(2): total system flow rates in scfm calculated based on pitot tube differential pressure measurements
IWC: inches of water column
PID: photoionization detector
ppm: parts per million
acfm: actual cubic feet per minute
scfm: standard cubic feet per minute
%: percent
--: not measured

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TABLE 3
SOIL VAPOR EXTRACTION SYSTEM EMISSIONS ANALYTICAL RESULTS
San Juan 32-9 #41A
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 (%)
10/9/2023	1,574	46	130	13	130	17,000	19.92%	1.81%
10/10/2023	1,483	17	73	7.6	76	13,000	20.56%	1.03%
10/19/2023	397	<5.0	39	<5.0	110	5,400	21.40%	0.42%
10/31/2023	440	<1.0	14	2.0	73	2,100	21.49%	0.35%
11/8/2023	422	<0.50	12	2.0	92	3,400	21.56%	0.28%
11/16/2023	541	<5.0	9.6	<5.0	64	2,600	21.43%	0.23%
11/28/2023	91	<0.10	0.91	0.14	6.6	350	21.67%	0.06%
12/13/2023	317	<0.50	3.3	0.60	27	1,400	21.72%	0.18%
12/28/2023	232	<0.50	2.7	0.59	23	1,400	21.56%	0.19%
1/19/2024	173	<0.50	1.3	<0.50	8.1	560	21.78%	0.17%
3/5/2024	180	0.49	9.9	<2.0	21	980	21.78%	0.21%
5/8/2024	175	<1.0	2.1	<1.0	8.4	560	21.58%	0.24%
7/30/2024	25	<1.0	1.0	<1.0	2.0	670	21.28%	0.27%
9/9/2024	19	<0.10	1.2	0.11	2.1	96 H	21.80%	0.24%
11/26/2024	15	<0.10	0.14	<0.10	0.15	7.9	21.07%	0.22%

Notes:

GRO: gasoline range hydrocarbons

µg/L: microgram per liter

PID: photoionization detector

ppm: parts per million

TVPH: total volatile petroleum hydrocarbons

%: percent

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

H: Sample was analyzed outside of the required hold time

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TABLE 4
SOIL VAPOR EXTRACTION SYSTEM MASS REMOVAL AND EMISSIONS
San Juan 32-9 #41A
Hilcorp Energy Company
San Juan County, New Mexico

Laboratory Analysis

Date	PID (ppm)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	TVPH (µg/L)
10/9/2023	1,574	46	130	13	130	17,000
10/10/2023	1,483	17	73	7.6	76	13,000
10/19/2023	397	*5.0*	39	*5.0*	110	5,400
10/31/2023	440	*1.0*	14	2.0	73	2,100
11/8/2023	422	*0.50*	12	2.0	92	3,400
11/16/2023	541	*5.0*	10	*5.0*	64	2,600
11/28/2023	91	*0.10*	0.91	0.14	6.6	350
12/13/2023	317	*0.50*	3.3	0.60	27	1,400
12/28/2023	232	*0.50*	2.7	0.59	23	1,400
1/19/2024	173	*0.50*	1.3	*0.50*	8.1	560
3/5/2024	180	*0.50*	9.9	*2.0*	21	980
5/8/2024	175	*1.0*	2.1	*1.0*	8.4	560
7/30/2024	25	*1.0*	1.0	*1.0*	2.0	670
9/9/2024[1]	19	*0.1*	1.2	0.11	2.1	96
11/26/2024	15	*0.1*	0.14	*0.1*	0.15	7.9
Average	406	5	20	3	43	3,302

Vapor Extraction Summary

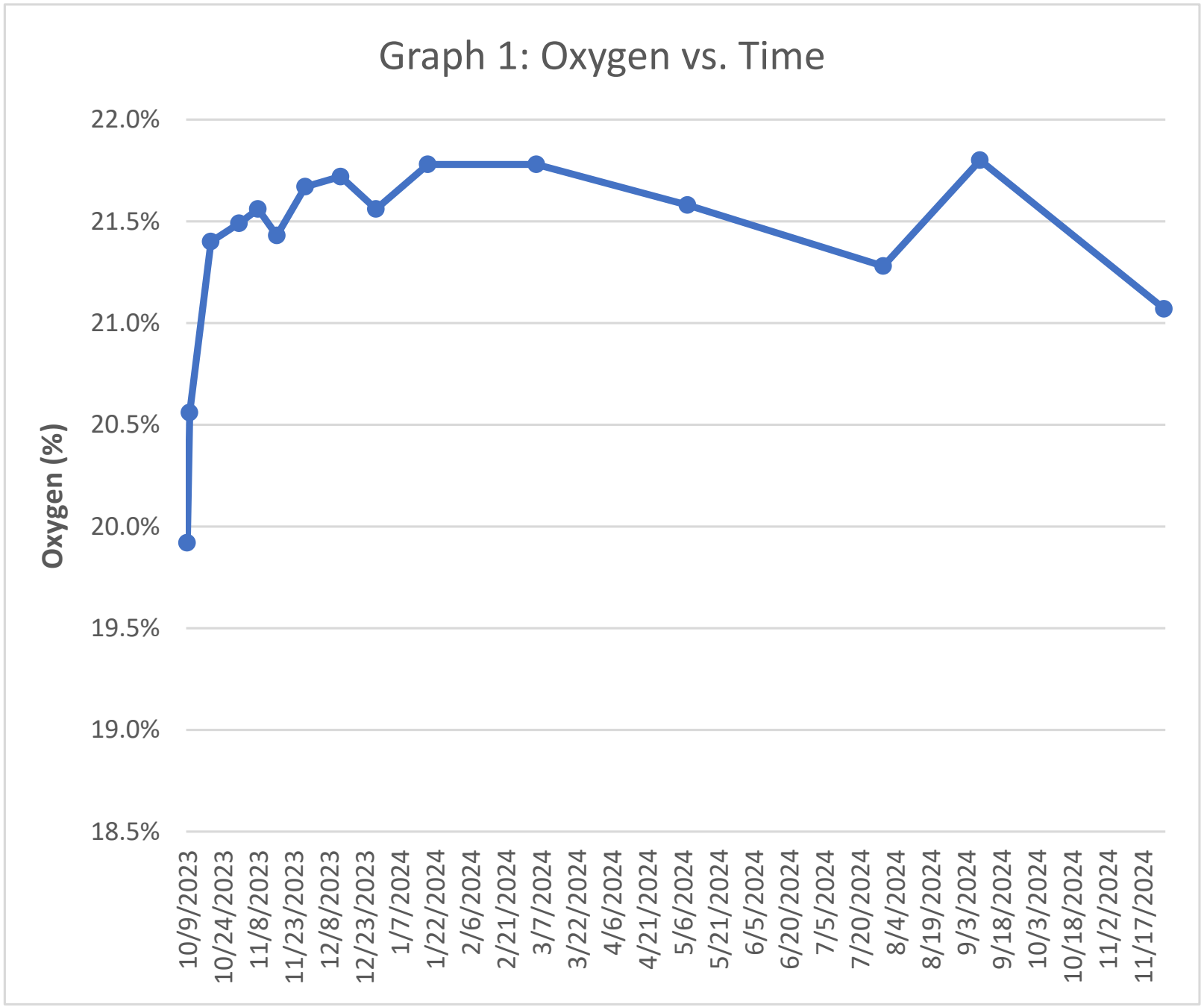
Date	Flow Rate (scfm)	Total System Flow (cf)	Delta Flow (cf)	Benzene (lb/hr)	Toluene (lb/hr)	Ethylbenzene (lb/hr)	Total Xylenes (lb/hr)	TVPH (lb/hr)
10/9/2023	System Startup							
10/10/2023	99	152,658	152,658	0.0117	0.038	0.0038	0.038	5.6
10/19/2023	133	1,872,348	1,719,690	0.0048	0.024	0.0027	0.040	4.0
10/31/2023	138	4,228,836	2,356,488	0.00152	0.0134	0.00177	0.046	1.9
11/8/2023	136	--	--	--	--	--	--	--
11/16/2023	137	7,402,578	3,173,742	0.00154	0.0061	0.00180	0.035	1.21
11/28/2023	137	9,767,472	2,364,894	0.00131	0.0027	0.00132	0.018	0.76
12/13/2023	141	12,791,076	3,023,604	0.00016	0.0011	0.00019	0.009	0.45
12/28/2023	140	15,806,676	3,015,600	0.00026	0.0016	0.00031	0.013	0.74
1/19/2024	129	19,893,396	4,086,720	0.00025	0.0010	0.00027	0.008	0.49
3/5/2024	95	26,037,996	6,144,600	0.00021	0.0023	0.00052	0.006	0.32
5/8/2024	84	32,781,516	6,743,520	0.00025	0.0020	0.00050	0.005	0.26
7/30/2024	117	46,729,554	13,948,038	0.00038	0.0006	0.00038	0.002	0.23
9/9/2024	124	53,941,890	7,212,336	0.00025	0.0005	0.00025	0.001	0.17
11/26/2024[2]	107	65,635,278	11,693,388	0.00004	0.0003	0.00005	0.000	0.02
			Average	0.0017	0.007	0.0011	0.017	1.2

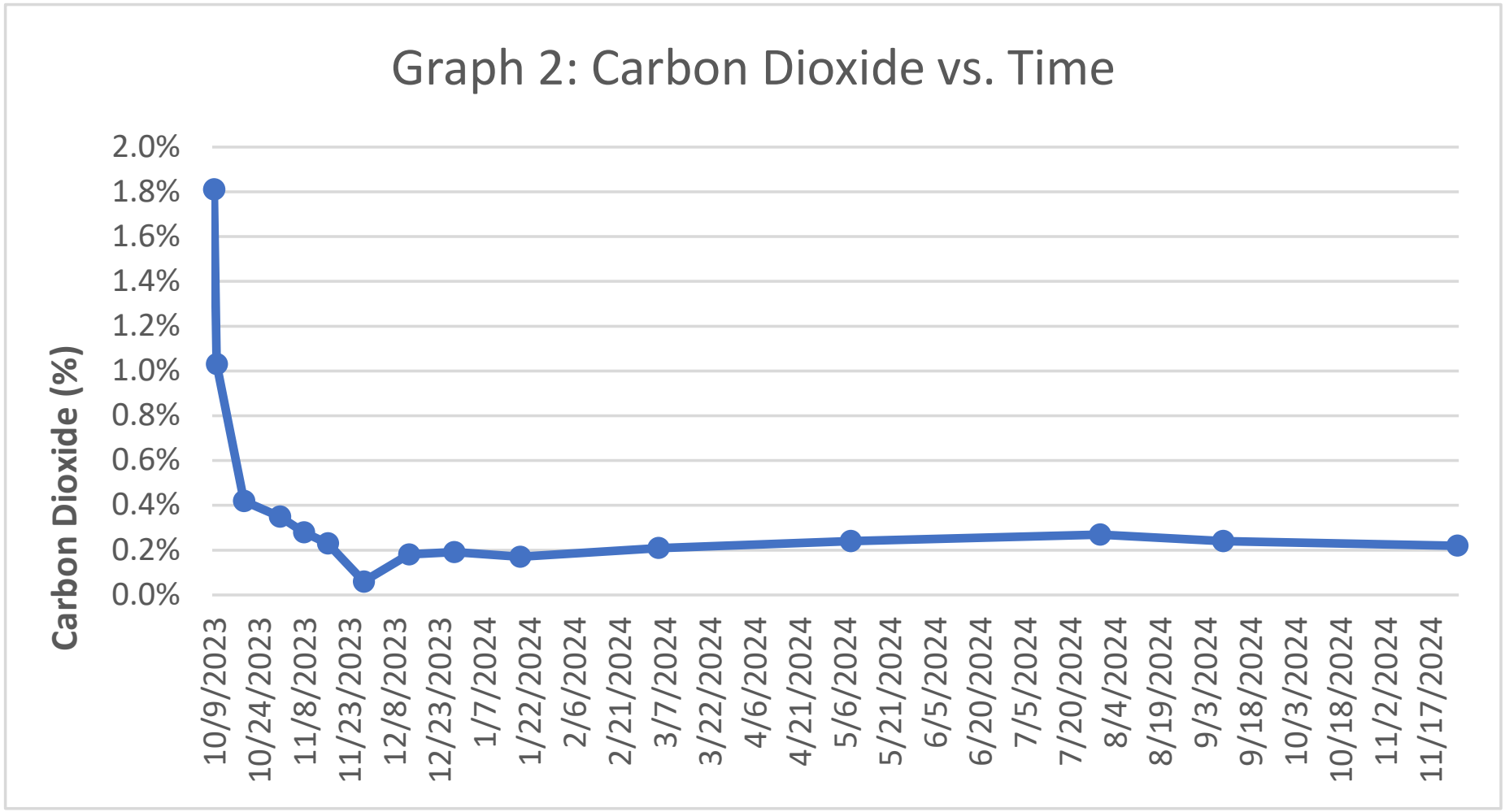
Mass Recovery

Date	Total Operational Hours	Delta Hours	Benzene (pounds)	Toluene (pounds)	Ethylbenzene (pounds)	Total Xylenes (pounds)	TVPH (pounds)	TVPH (tons)
10/9/2023	System Startup							
10/10/2023	26	26	0.30	0.97	0.098	0.98	143	0.071
10/19/2023	241	216	1.03	5.2	0.59	8.7	860	0.43
10/31/2023	526	285	0.43	3.8	0.50	13.2	541	0.27
11/8/2023	--	--	--	--	--	--	--	--
11/16/2023	912	386	0.60	2.3	0.69	13.6	467	0.23
11/28/2023	1,200	288	0.38	0.77	0.38	5.2	217	0.109
12/13/2023	1,557	357	0.06	0.39	0.07	3.1	163	0.081
12/28/2023	1,916	359	0.09	0.57	0.11	4.7	264	0.132
1/19/2024	2,444	528	0.13	0.53	0.14	4.1	260	0.130
3/5/2024	3,522	1,078	0.23	2.53	0.56	6.6	348	0.174
5/8/2024	4,860	1,338	0.34	2.69	0.67	6.6	345	0.172
7/30/2024	6,847	1,987	0.75	1.16	0.75	3.9	459	0.230
9/9/2024	7,816	969	0.24	0.48	0.24	0.9	167	0.084
11/26/2024	9,638	1,821	0.08	0.53	0.08	0.9	41	0.020
		Total Mass Recovery to Date	4.6	22.0	4.9	72	4,275	2.14

Notes:

cf: cubic feet
scfm: cubic feet per minute
µg/L: micrograms per liter
lb/hr: pounds per hour
PID: photoionization detector
ppm: parts per million
TVPH: total volatile petroleum hydrocarbons
--: not measured
gray: laboratory reporting limit used for calculating emissions
(1) TVPH analyzed outside of required hold time
(2) Flow rate for 11/26/24 mass removal and emissions calculations is estimated based on flow rate collected on 10/30/24





ENSOLUM

APPENDIX A

Field Notes

ENSOLUM

SAN JUAN 32-9 #41A SVE SYSTEM
O&M FORM

DATE: 10-15
TIME ONSITE: _____

O&M PERSONNEL: B Sinclair
TIME OFFSITE: _____

SVE SYSTEM - MONTHLY O&M

SVE ALARMS:		KO TANK HIGH LEVEL	

		Check/Date
WEEKLY MAINTENANCE:	Blower Bearing Grease	✓
QUARTERLY MAINTENANCE:	Blower Oil Change	

SVE SYSTEM	READING	TIME
Blower Hours **(take photo)**	8681.3	1249
~~Total Flow (scfm)~~		
Inlet Vacuum (IHG)	110	
Differential Pressure (IWC)	2.59	
Inlet PID	44.8	
Exhaust PID	21.4	
exh ~~Inlet~~ Temperature	19.5	
K/O Tank Liquid Level		
K/O Liquid Drained (gallons)		

SVE SYSTEM - QUARTERLY SAMPLING

SAMPLE ID:	**SAMPLE TIME:**
Analytes:	Sample Bi-Weekly (every other week) for TVPH (8015), BTEX (8260), Fixed Gas (CO2 AND O2)
OPERATING WELLS	

Change in Well Operation:

WELLHEAD MEASUREMENTS

WELL ID	VACUUM (IHG)	PID HEADSPACE (PPM)	~~FLOW (CFM)~~ diff pres	OXYGEN	CARBON DIOXIDE
SVE01	92.2	36.3	-0.14	20.1	3540
~~SVE02~~					
SVE03	97.3	16.3	3.71	20.8	1800

COMMENTS/OTHER MAINTENANCE:

closed SVE02 valve

ENSOLUM

SAN JUAN 32-9 #41A SVE SYSTEM
O&M FORM

DATE: 10-30 O&M PERSONNEL: B Sinclair
TIME ONSITE: _____ TIME OFFSITE: _____

SVE SYSTEM - MONTHLY O&M

SVE ALARMS:		KO TANK HIGH LEVEL	

		Check/Date
WEEKLY MAINTENANCE:	Blower Bearing Grease	✓
QUARTERLY MAINTENANCE:	Blower Oil Change	

SVE SYSTEM	READING	TIME
Blower Hours **(take photo)**	9041.3	1246
Total Flow (scfm)		
Inlet Vacuum (IHG)	6.0*	
Differential Pressure (IWC)	3.78	
Inlet PID	19.8	
Exhaust PID	9.8	
exh ~~Inlet~~ Temperature	127.5	
K/O Tank Liquid Level		
K/O Liquid Drained (gallons)	41	

SVE SYSTEM - QUARTERLY SAMPLING

SAMPLE ID:	**SAMPLE TIME:**
Analytes:	Sample Bi-Weekly (every other week) for TVPH (8015), BTEX (8260), Fixed Gas (CO2 AND O2)
OPERATING WELLS	

Change in Well Operation:

WELLHEAD MEASUREMENTS

WELL ID	VACUUM (IHG)	PID HEADSPACE (PPM)	~~FLOW~~ diff pres (CFM)	OXYGEN	CARBON DIOXIDE
SVE01	43.7	57.4	-0.01	20.8	3980
SVE02	46.1	9.9	0.56	20.9	360
SVE03	47.2	5.4	0.88	20.9	1960

COMMENTS/OTHER MAINTENANCE:

*Had to reopen SVE02 valve due to high vacuum.

ENSOLUM

SAN JUAN 32-9 #41A SVE SYSTEM
O&M FORM

DATE: 11-12 O&M PERSONNEL: B Sinclair
TIME ONSITE: _____ TIME OFFSITE: _____

SVE SYSTEM - MONTHLY O&M

SVE ALARMS:		KO TANK HIGH LEVEL	

		Check/Date
WEEKLY MAINTENANCE:	Blower Bearing Grease	✓
QUARTERLY MAINTENANCE:	Blower Oil Change	✓

SVE SYSTEM	READING	TIME
Blower Hours **(take photo)**	9363.5	1226
Total Flow (scfm)		
Inlet Vacuum (IHG)		
Differential Pressure (IWC)		
Inlet PID		
Exhaust PID		
Inlet Temperature		
K/O Tank Liquid Level		
K/O Liquid Drained (gallons)	33.5	

SVE SYSTEM - QUARTERLY SAMPLING

SAMPLE ID:	**SAMPLE TIME:**
Analytes:	Sample Bi-Weekly (every other week) for TVPH (8015), BTEX (8260), Fixed Gas (CO2 AND O2)
OPERATING WELLS	

Change in Well Operation:

WELLHEAD MEASUREMENTS

WELL ID	VACUUM (IHG)	PID HEADSPACE (PPM)	FLOW (CFM)	OXYGEN	CARBON DIOXIDE
SVE01					
SVE02					
SVE03					

COMMENTS/OTHER MAINTENANCE:

- Could not restart system after oil change. I&E tech en route to troubleshoot.
- Water passing through to motor likely cause of stall.
- System back online 11/14

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SAN JUAN 32-9 #41A SVE SYSTEM
O&M FORM

DATE: 11/26/24
TIME ONSITE: 1100
O&M PERSONNEL: Aaron L
TIME OFFSITE: 1210

SVE SYSTEM - MONTHLY O&M

SVE ALARMS: KO TANK HIGH LEVEL

Check/Date

WEEKLY MAINTENANCE: Blower Bearing Grease
QUARTERLY MAINTENANCE: Blower Oil Change

SVE SYSTEM	READING	TIME
Blower Hours (take photo)	9637.7	1123
Total Flow (scfm)		
Inlet Vacuum (IHG)	9 in Hg	
Differential Pressure (IWC)	120 wc	
Inlet PID	15.4	
Exhaust PID	27.7	
~~Inlet~~ Exhaust Temperature	145°F	
K/O Tank Liquid Level		
K/O Liquid Drained (gallons)		

SVE SYSTEM - QUARTERLY SAMPLING

SAMPLE ID: #41A SVE01 SAMPLE TIME: 1145
Analytes: Sample Bi-Weekly (every other week) for TVPH (8015), BTEX (8260), Fixed Gas (CO2 AND O2)
OPERATING WELLS

Change in Well Operation:

WELLHEAD MEASUREMENTS

WELL ID	VACUUM (IHG)	PID HEADSPACE (PPM)	FLOW (CFM)	OXYGEN	CARBON DIOXIDE
SVE01		3.6	NA	20.9	1660 PPM
SVE02	Closed				
SVE03	Closed				

COMMENTS/OTHER MAINTENANCE:

Lowered From 50 hz to 40 hz
40 hz to 35 hz

SVE01 metal float is broken/stuck
Closed SVE02 & SVE03

SAN JUAN 32-9 #41A SVE SYSTEM
O&M FORM

DATE: 12-5
TIME ONSITE:

O&M PERSONNEL: B Sinclair
TIME OFFSITE:

SVE SYSTEM - MONTHLY O&M

SVE ALARMS:		KO TANK HIGH LEVEL	

		Check/Date
WEEKLY MAINTENANCE:	Blower Bearing Grease	✓
QUARTERLY MAINTENANCE:	Blower Oil Change	

SVE SYSTEM	READING	TIME
Blower Hours **(take photo)**	9717.0	1054
~~Total Flow (scfm)~~		
Inlet Vacuum (IHG)	7.7	
Differential Pressure (IWC)	0.7	
Inlet PID	120.7	
Exhaust PID	21.6	
exh ~~Inlet~~ Temperature	140	
K/O Tank Liquid Level		
K/O Liquid Drained (gallons)		

SVE SYSTEM - QUARTERLY SAMPLING

SAMPLE ID:	SAMPLE TIME:
Analytes:	Sample Bi-Weekly (every other week) for TVPH (8015), BTEX (8260), Fixed Gas (CO2 AND O2)
OPERATING WELLS	

Change in Well Operation:

WELLHEAD MEASUREMENTS

WELL ID	VACUUM (IHG)	PID HEADSPACE (PPM)	FLOW (CFM)	OXYGEN	CARBON DIOXIDE
SVE01	25.6	61.1	-0.17	16.8	2820
~~SVE02~~					
~~SVE03~~					

COMMENTS/OTHER MAINTENANCE:

- System off on arrival
- Calcite on motor & exhaust
- sight glass broken

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SAN JUAN 32-9 #41A SVE SYSTEM
O&M FORM

DATE: 12/18/24
TIME ONSITE: 900
O&M PERSONNEL: Horan
TIME OFFSITE: 1040

SVE SYSTEM - MONTHLY O&M

SVE ALARMS:		KO TANK HIGH LEVEL	

		Check/Date
WEEKLY MAINTENANCE:	Blower Bearing Grease	
QUARTERLY MAINTENANCE:	Blower Oil Change	

SVE SYSTEM	READING	TIME
Blower Hours **(take photo)**	9982.6	0905
Total Flow (scfm)		
Inlet Vacuum (IHG)	6.6	
Differential Pressure (IWC)		
Inlet PID	5.1	
Exhaust PID	16.4	
~~Inlet~~ Exhaust Temperature	112 °F	
K/O Tank Liquid Level	0	
K/O Liquid Drained (gallons)		

SVE SYSTEM - QUARTERLY SAMPLING

SAMPLE ID:	**SAMPLE TIME:**
Analytes:	Sample Bi-Weekly (every other week) for TVPH (8015), BTEX (8260), Fixed Gas (CO2 AND O2)
OPERATING WELLS	

Change in Well Operation:

WELLHEAD MEASUREMENTS

WELL ID	VACUUM (IHG)	PID HEADSPACE (PPM)	FLOW (CFM)	OXYGEN	CARBON DIOXIDE
SVE01	0	2.3	25	20.9 %	3360 PPM
SVE02	Closed				
SVE03	Closed				

COMMENTS/OTHER MAINTENANCE:

Wrapped SVE01 & 02 @ manifold
Stacked more sand on well lines
Sealed cracks on SVE02 & 03 lines

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APPENDIX B

Project Photographs

PROJECT PHOTOGRAPHS
San Juan 32-9 #41A
San Juan County, New Mexico
Hilcorp Energy Company

Photograph 1 Runtime meter taken on September 24, 2024 at 11:41 AM Hours = 8,176.2	
Photograph 2 Runtime meter taken on December 18, 2024 at 9:05 AM Hours = 9,982.6	

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

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APPENDIX C

Laboratory Analytical Reports

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

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

Generated 12/6/2024 11:04:05 AM

JOB DESCRIPTION

Hilcorp 0&M SV2

JOB NUMBER

885-16011-1

Eurofins Albuquerque
4901 Hawkins NE
Albuquerque NM 87109

See page two for job notes and contact information.

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

Generated
12/6/2024 11:04:05 AM

Authorized for release by
Michelle Garcia, Project Manager
michelle.garcia@et.eurofinsus.com
(505)345-3975

Client: Hilcorp Energy
Project/Site: Hilcorp 0&M SV2

Laboratory Job ID: 885-16011-1

Table of Contents

Definitions/Glossary

Client: Hilcorp Energy
Project/Site: Hilcorp 0&M SV2

Job ID: 885-16011-1

Glossary

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
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
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)
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

Case Narrative

Client: Hilcorp Energy
Project: Hilcorp 0&M SV2

Job ID: 885-16011-1

Job ID: 885-16011-1 Eurofins Albuquerque

Job Narrative
885-16011-1

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 and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided 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 samples were received on 11/27/2024 7:00 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 11.7°C.

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.

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

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

Client Sample Results

Client: Hilcorp Energy
Project/Site: Hilcorp 0&M SV2

Job ID: 885-16011-1

Client Sample ID: Scott 4M SVE01
Date Collected: 11/26/24 10:20
Date Received: 11/27/24 07:00
Sample Container: Tedlar Bag 1L

Lab Sample ID: 885-16011-1
Matrix: Air

Method: SW846 8015M/D - Nonhalogenated Organics using GC/MS -Modified (Gasoline Range Organics)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	9.9		5.0		ug/L			12/04/24 15:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*92*		*52 - 172*		*12/04/24 15:56*	*1*

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.10		ug/L			12/04/24 15:56	1
1,1,1-Trichloroethane	ND		0.10		ug/L			12/04/24 15:56	1
1,1,2,2-Tetrachloroethane	ND		0.20		ug/L			12/04/24 15:56	1
1,1,2-Trichloroethane	ND		0.10		ug/L			12/04/24 15:56	1
1,1-Dichloroethane	ND		0.10		ug/L			12/04/24 15:56	1
1,1-Dichloroethene	ND		0.10		ug/L			12/04/24 15:56	1
1,1-Dichloropropene	ND		0.10		ug/L			12/04/24 15:56	1
1,2,3-Trichlorobenzene	ND		0.10		ug/L			12/04/24 15:56	1
1,2,3-Trichloropropane	ND		0.20		ug/L			12/04/24 15:56	1
1,2,4-Trichlorobenzene	ND		0.10		ug/L			12/04/24 15:56	1
1,2,4-Trimethylbenzene	ND		0.10		ug/L			12/04/24 15:56	1
1,2-Dibromo-3-Chloropropane	ND		0.20		ug/L			12/04/24 15:56	1
1,2-Dibromoethane (EDB)	ND		0.10		ug/L			12/04/24 15:56	1
1,2-Dichlorobenzene	ND		0.10		ug/L			12/04/24 15:56	1
1,2-Dichloroethane (EDC)	ND		0.10		ug/L			12/04/24 15:56	1
1,2-Dichloropropane	ND		0.10		ug/L			12/04/24 15:56	1
1,3,5-Trimethylbenzene	ND		0.10		ug/L			12/04/24 15:56	1
1,3-Dichlorobenzene	ND		0.10		ug/L			12/04/24 15:56	1
1,3-Dichloropropane	ND		0.10		ug/L			12/04/24 15:56	1
1,4-Dichlorobenzene	ND		0.10		ug/L			12/04/24 15:56	1
1-Methylnaphthalene	ND		0.40		ug/L			12/04/24 15:56	1
2,2-Dichloropropane	ND		0.20		ug/L			12/04/24 15:56	1
2-Butanone	ND		1.0		ug/L			12/04/24 15:56	1
2-Chlorotoluene	ND		0.10		ug/L			12/04/24 15:56	1
2-Hexanone	ND		1.0		ug/L			12/04/24 15:56	1
2-Methylnaphthalene	ND		0.40		ug/L			12/04/24 15:56	1
4-Chlorotoluene	ND		0.10		ug/L			12/04/24 15:56	1
4-Isopropyltoluene	ND		0.10		ug/L			12/04/24 15:56	1
4-Methyl-2-pentanone	ND		1.0		ug/L			12/04/24 15:56	1
Acetone	ND		1.0		ug/L			12/04/24 15:56	1
Benzene	ND		0.10		ug/L			12/04/24 15:56	1
Bromobenzene	ND		0.10		ug/L			12/04/24 15:56	1
Bromodichloromethane	ND		0.10		ug/L			12/04/24 15:56	1
Dibromochloromethane	ND		0.10		ug/L			12/04/24 15:56	1
Bromoform	ND		0.10		ug/L			12/04/24 15:56	1
Bromomethane	ND		0.30		ug/L			12/04/24 15:56	1
Carbon disulfide	ND		1.0		ug/L			12/04/24 15:56	1
Carbon tetrachloride	ND		0.10		ug/L			12/04/24 15:56	1
Chlorobenzene	ND		0.10		ug/L			12/04/24 15:56	1
Chloroethane	ND		0.20		ug/L			12/04/24 15:56	1
Chloroform	ND		0.10		ug/L			12/04/24 15:56	1

Client Sample Results

Client: Hilcorp Energy
Project/Site: Hilcorp 0&M SV2

Job ID: 885-16011-1

Client Sample ID: Scott 4M SVE01
Date Collected: 11/26/24 10:20
Date Received: 11/27/24 07:00
Sample Container: Tedlar Bag 1L

Lab Sample ID: 885-16011-1
Matrix: Air

Method: SW846 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	ND		0.30		ug/L			12/04/24 15:56	1
cis-1,2-Dichloroethene	ND		0.10		ug/L			12/04/24 15:56	1
cis-1,3-Dichloropropene	ND		0.10		ug/L			12/04/24 15:56	1
Dibromomethane	ND		0.10		ug/L			12/04/24 15:56	1
Dichlorodifluoromethane	ND		0.10		ug/L			12/04/24 15:56	1
Ethylbenzene	ND		0.10		ug/L			12/04/24 15:56	1
Hexachlorobutadiene	ND		0.10		ug/L			12/04/24 15:56	1
Isopropylbenzene	ND		0.10		ug/L			12/04/24 15:56	1
Methyl-tert-butyl Ether (MTBE)	ND		0.10		ug/L			12/04/24 15:56	1
Methylene Chloride	ND		0.30		ug/L			12/04/24 15:56	1
n-Butylbenzene	ND		0.30		ug/L			12/04/24 15:56	1
N-Propylbenzene	ND		0.10		ug/L			12/04/24 15:56	1
Naphthalene	ND		0.20		ug/L			12/04/24 15:56	1
sec-Butylbenzene	ND		0.10		ug/L			12/04/24 15:56	1
Styrene	ND		0.10		ug/L			12/04/24 15:56	1
tert-Butylbenzene	ND		0.10		ug/L			12/04/24 15:56	1
Tetrachloroethene (PCE)	ND		0.10		ug/L			12/04/24 15:56	1
Toluene	**0.11**		0.10		ug/L			12/04/24 15:56	1
trans-1,2-Dichloroethene	ND		0.10		ug/L			12/04/24 15:56	1
trans-1,3-Dichloropropene	ND		0.10		ug/L			12/04/24 15:56	1
Trichloroethene (TCE)	ND		0.10		ug/L			12/04/24 15:56	1
Trichlorofluoromethane	ND		0.10		ug/L			12/04/24 15:56	1
Vinyl chloride	ND		0.10		ug/L			12/04/24 15:56	1
Xylenes, Total	**0.38**		0.15		ug/L			12/04/24 15:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*70 - 130*		*12/04/24 15:56*	*1*
Toluene-d8 (Surr)	*108*		*70 - 130*		*12/04/24 15:56*	*1*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*		*12/04/24 15:56*	*1*
Dibromofluoromethane (Surr)	*107*		*70 - 130*		*12/04/24 15:56*	*1*

Client Sample Results

Client: Hilcorp Energy
Project/Site: Hilcorp 0&M SV2

Job ID: 885-16011-1

Client Sample ID: #41 A SVE01

Lab Sample ID: 885-16011-2

Date Collected: 11/26/24 11:45
Matrix: Air
Date Received: 11/27/24 07:00
Sample Container: Tedlar Bag 1L

Method: SW846 8015M/D - Nonhalogenated Organics using GC/MS -Modified (Gasoline Range Organics)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	7.9		5.0		ug/L			12/04/24 16:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*52 - 172*		*12/04/24 16:52*	*1*

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.10		ug/L			12/04/24 16:52	1
1,1,1-Trichloroethane	ND		0.10		ug/L			12/04/24 16:52	1
1,1,2,2-Tetrachloroethane	ND		0.20		ug/L			12/04/24 16:52	1
1,1,2-Trichloroethane	ND		0.10		ug/L			12/04/24 16:52	1
1,1-Dichloroethane	ND		0.10		ug/L			12/04/24 16:52	1
1,1-Dichloroethene	ND		0.10		ug/L			12/04/24 16:52	1
1,1-Dichloropropene	ND		0.10		ug/L			12/04/24 16:52	1
1,2,3-Trichlorobenzene	ND		0.10		ug/L			12/04/24 16:52	1
1,2,3-Trichloropropane	ND		0.20		ug/L			12/04/24 16:52	1
1,2,4-Trichlorobenzene	ND		0.10		ug/L			12/04/24 16:52	1
1,2,4-Trimethylbenzene	ND		0.10		ug/L			12/04/24 16:52	1
1,2-Dibromo-3-Chloropropane	ND		0.20		ug/L			12/04/24 16:52	1
1,2-Dibromoethane (EDB)	ND		0.10		ug/L			12/04/24 16:52	1
1,2-Dichlorobenzene	ND		0.10		ug/L			12/04/24 16:52	1
1,2-Dichloroethane (EDC)	ND		0.10		ug/L			12/04/24 16:52	1
1,2-Dichloropropane	ND		0.10		ug/L			12/04/24 16:52	1
1,3,5-Trimethylbenzene	ND		0.10		ug/L			12/04/24 16:52	1
1,3-Dichlorobenzene	ND		0.10		ug/L			12/04/24 16:52	1
1,3-Dichloropropane	ND		0.10		ug/L			12/04/24 16:52	1
1,4-Dichlorobenzene	ND		0.10		ug/L			12/04/24 16:52	1
1-Methylnaphthalene	ND		0.40		ug/L			12/04/24 16:52	1
2,2-Dichloropropane	ND		0.20		ug/L			12/04/24 16:52	1
2-Butanone	ND		1.0		ug/L			12/04/24 16:52	1
2-Chlorotoluene	ND		0.10		ug/L			12/04/24 16:52	1
2-Hexanone	ND		1.0		ug/L			12/04/24 16:52	1
2-Methylnaphthalene	ND		0.40		ug/L			12/04/24 16:52	1
4-Chlorotoluene	ND		0.10		ug/L			12/04/24 16:52	1
4-Isopropyltoluene	ND		0.10		ug/L			12/04/24 16:52	1
4-Methyl-2-pentanone	ND		1.0		ug/L			12/04/24 16:52	1
Acetone	ND		1.0		ug/L			12/04/24 16:52	1
Benzene	ND		0.10		ug/L			12/04/24 16:52	1
Bromobenzene	ND		0.10		ug/L			12/04/24 16:52	1
Bromodichloromethane	ND		0.10		ug/L			12/04/24 16:52	1
Dibromochloromethane	ND		0.10		ug/L			12/04/24 16:52	1
Bromoform	ND		0.10		ug/L			12/04/24 16:52	1
Bromomethane	ND		0.30		ug/L			12/04/24 16:52	1
Carbon disulfide	ND		1.0		ug/L			12/04/24 16:52	1
Carbon tetrachloride	ND		0.10		ug/L			12/04/24 16:52	1
Chlorobenzene	ND		0.10		ug/L			12/04/24 16:52	1
Chloroethane	ND		0.20		ug/L			12/04/24 16:52	1
Chloroform	ND		0.10		ug/L			12/04/24 16:52	1

Client Sample Results

Client: Hilcorp Energy
Project/Site: Hilcorp 0&M SV2

Job ID: 885-16011-1

Client Sample ID: #41 A SVE01

Lab Sample ID: 885-16011-2

Date Collected: 11/26/24 11:45
Matrix: Air
Date Received: 11/27/24 07:00
Sample Container: Tedlar Bag 1L

Method: SW846 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	ND		0.30		ug/L			12/04/24 16:52	1
cis-1,2-Dichloroethene	ND		0.10		ug/L			12/04/24 16:52	1
cis-1,3-Dichloropropene	ND		0.10		ug/L			12/04/24 16:52	1
Dibromomethane	ND		0.10		ug/L			12/04/24 16:52	1
Dichlorodifluoromethane	ND		0.10		ug/L			12/04/24 16:52	1
Ethylbenzene	ND		0.10		ug/L			12/04/24 16:52	1
Hexachlorobutadiene	ND		0.10		ug/L			12/04/24 16:52	1
Isopropylbenzene	ND		0.10		ug/L			12/04/24 16:52	1
Methyl-tert-butyl Ether (MTBE)	ND		0.10		ug/L			12/04/24 16:52	1
Methylene Chloride	ND		0.30		ug/L			12/04/24 16:52	1
n-Butylbenzene	ND		0.30		ug/L			12/04/24 16:52	1
N-Propylbenzene	ND		0.10		ug/L			12/04/24 16:52	1
Naphthalene	ND		0.20		ug/L			12/04/24 16:52	1
sec-Butylbenzene	ND		0.10		ug/L			12/04/24 16:52	1
Styrene	ND		0.10		ug/L			12/04/24 16:52	1
tert-Butylbenzene	ND		0.10		ug/L			12/04/24 16:52	1
Tetrachloroethene (PCE)	ND		0.10		ug/L			12/04/24 16:52	1
Toluene	**0.14**		0.10		ug/L			12/04/24 16:52	1
trans-1,2-Dichloroethene	ND		0.10		ug/L			12/04/24 16:52	1
trans-1,3-Dichloropropene	ND		0.10		ug/L			12/04/24 16:52	1
Trichloroethene (TCE)	ND		0.10		ug/L			12/04/24 16:52	1
Trichlorofluoromethane	ND		0.10		ug/L			12/04/24 16:52	1
Vinyl chloride	ND		0.10		ug/L			12/04/24 16:52	1
Xylenes, Total	**0.15**		0.15		ug/L			12/04/24 16:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*70 - 130*		*12/04/24 16:52*	*1*
Toluene-d8 (Surr)	*111*		*70 - 130*		*12/04/24 16:52*	*1*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*		*12/04/24 16:52*	*1*
Dibromofluoromethane (Surr)	*108*		*70 - 130*		*12/04/24 16:52*	*1*

Client Sample Results

Client: Hilcorp Energy
Project/Site: Hilcorp 0&M SV2

Job ID: 885-16011-1

Client Sample ID: 2C SVE01
Date Collected: 11/26/24 13:05
Date Received: 11/27/24 07:00
Sample Container: Tedlar Bag 1L

Lab Sample ID: 885-16011-3
Matrix: Air

Method: SW846 8015M/D - Nonhalogenated Organics using GC/MS -Modified (Gasoline Range Organics)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	7.4		5.0		ug/L			12/04/24 15:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*90*		*52 - 172*		*12/04/24 15:27*	*1*

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.10		ug/L			12/04/24 15:27	1
1,1,1-Trichloroethane	ND		0.10		ug/L			12/04/24 15:27	1
1,1,2,2-Tetrachloroethane	ND		0.20		ug/L			12/04/24 15:27	1
1,1,2-Trichloroethane	ND		0.10		ug/L			12/04/24 15:27	1
1,1-Dichloroethane	ND		0.10		ug/L			12/04/24 15:27	1
1,1-Dichloroethene	ND		0.10		ug/L			12/04/24 15:27	1
1,1-Dichloropropene	ND		0.10		ug/L			12/04/24 15:27	1
1,2,3-Trichlorobenzene	ND		0.10		ug/L			12/04/24 15:27	1
1,2,3-Trichloropropane	ND		0.20		ug/L			12/04/24 15:27	1
1,2,4-Trichlorobenzene	ND		0.10		ug/L			12/04/24 15:27	1
1,2,4-Trimethylbenzene	ND		0.10		ug/L			12/04/24 15:27	1
1,2-Dibromo-3-Chloropropane	ND		0.20		ug/L			12/04/24 15:27	1
1,2-Dibromoethane (EDB)	ND		0.10		ug/L			12/04/24 15:27	1
1,2-Dichlorobenzene	ND		0.10		ug/L			12/04/24 15:27	1
1,2-Dichloroethane (EDC)	ND		0.10		ug/L			12/04/24 15:27	1
1,2-Dichloropropane	ND		0.10		ug/L			12/04/24 15:27	1
1,3,5-Trimethylbenzene	ND		0.10		ug/L			12/04/24 15:27	1
1,3-Dichlorobenzene	ND		0.10		ug/L			12/04/24 15:27	1
1,3-Dichloropropane	ND		0.10		ug/L			12/04/24 15:27	1
1,4-Dichlorobenzene	ND		0.10		ug/L			12/04/24 15:27	1
1-Methylnaphthalene	ND		0.40		ug/L			12/04/24 15:27	1
2,2-Dichloropropane	ND		0.20		ug/L			12/04/24 15:27	1
2-Butanone	ND		1.0		ug/L			12/04/24 15:27	1
2-Chlorotoluene	ND		0.10		ug/L			12/04/24 15:27	1
2-Hexanone	ND		1.0		ug/L			12/04/24 15:27	1
2-Methylnaphthalene	ND		0.40		ug/L			12/04/24 15:27	1
4-Chlorotoluene	ND		0.10		ug/L			12/04/24 15:27	1
4-Isopropyltoluene	ND		0.10		ug/L			12/04/24 15:27	1
4-Methyl-2-pentanone	ND		1.0		ug/L			12/04/24 15:27	1
Acetone	ND		1.0		ug/L			12/04/24 15:27	1
Benzene	ND		0.10		ug/L			12/04/24 15:27	1
Bromobenzene	ND		0.10		ug/L			12/04/24 15:27	1
Bromodichloromethane	ND		0.10		ug/L			12/04/24 15:27	1
Dibromochloromethane	ND		0.10		ug/L			12/04/24 15:27	1
Bromoform	ND		0.10		ug/L			12/04/24 15:27	1
Bromomethane	ND		0.30		ug/L			12/04/24 15:27	1
Carbon disulfide	ND		1.0		ug/L			12/04/24 15:27	1
Carbon tetrachloride	ND		0.10		ug/L			12/04/24 15:27	1
Chlorobenzene	ND		0.10		ug/L			12/04/24 15:27	1
Chloroethane	ND		0.20		ug/L			12/04/24 15:27	1
Chloroform	ND		0.10		ug/L			12/04/24 15:27	1

Client Sample Results

Client: Hilcorp Energy
Project/Site: Hilcorp 0&M SV2

Job ID: 885-16011-1

Client Sample ID: 2C SVE01

Date Collected: 11/26/24 13:05
Date Received: 11/27/24 07:00
Sample Container: Tedlar Bag 1L

Lab Sample ID: 885-16011-3

Matrix: Air

Method: SW846 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	ND		0.30		ug/L			12/04/24 15:27	1
cis-1,2-Dichloroethene	ND		0.10		ug/L			12/04/24 15:27	1
cis-1,3-Dichloropropene	ND		0.10		ug/L			12/04/24 15:27	1
Dibromomethane	ND		0.10		ug/L			12/04/24 15:27	1
Dichlorodifluoromethane	ND		0.10		ug/L			12/04/24 15:27	1
Ethylbenzene	ND		0.10		ug/L			12/04/24 15:27	1
Hexachlorobutadiene	ND		0.10		ug/L			12/04/24 15:27	1
Isopropylbenzene	ND		0.10		ug/L			12/04/24 15:27	1
Methyl-tert-butyl Ether (MTBE)	ND		0.10		ug/L			12/04/24 15:27	1
Methylene Chloride	ND		0.30		ug/L			12/04/24 15:27	1
n-Butylbenzene	ND		0.30		ug/L			12/04/24 15:27	1
N-Propylbenzene	ND		0.10		ug/L			12/04/24 15:27	1
Naphthalene	ND		0.20		ug/L			12/04/24 15:27	1
sec-Butylbenzene	ND		0.10		ug/L			12/04/24 15:27	1
Styrene	ND		0.10		ug/L			12/04/24 15:27	1
tert-Butylbenzene	ND		0.10		ug/L			12/04/24 15:27	1
Tetrachloroethene (PCE)	ND		0.10		ug/L			12/04/24 15:27	1
Toluene	**0.12**		0.10		ug/L			12/04/24 15:27	1
trans-1,2-Dichloroethene	ND		0.10		ug/L			12/04/24 15:27	1
trans-1,3-Dichloropropene	ND		0.10		ug/L			12/04/24 15:27	1
Trichloroethene (TCE)	ND		0.10		ug/L			12/04/24 15:27	1
Trichlorofluoromethane	ND		0.10		ug/L			12/04/24 15:27	1
Vinyl chloride	ND		0.10		ug/L			12/04/24 15:27	1
Xylenes, Total	**0.18**		0.15		ug/L			12/04/24 15:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*70 - 130*		*12/04/24 15:27*	*1*
Toluene-d8 (Surr)	*109*		*70 - 130*		*12/04/24 15:27*	*1*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*		*12/04/24 15:27*	*1*
Dibromofluoromethane (Surr)	*109*		*70 - 130*		*12/04/24 15:27*	*1*

QC Sample Results

Client: Hilcorp Energy
Project/Site: Hilcorp 0&M SV2

Job ID: 885-16011-1

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

Lab Sample ID: MB 885-16996/5
Matrix: Air
Analysis Batch: 16996

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		5.0		ug/L			12/04/24 14:03	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*92*		*52 - 172*		*12/04/24 14:03*	*1*

Lab Sample ID: LCS 885-16996/4
Matrix: Air
Analysis Batch: 16996

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics [C6 - C10]			500	495		ug/L		99	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*92*		*52 - 172*

Lab Sample ID: 885-16011-1 DU
Matrix: Air
Analysis Batch: 16996

Client Sample ID: Scott 4M SVE01
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Gasoline Range Organics [C6 - C10]	9.9			10.7		ug/L				7	20

Surrogate	*DU %Recovery*	*DU Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*90*		*52 - 172*

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

Lab Sample ID: MB 885-16998/4
Matrix: Air
Analysis Batch: 16998

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.10		ug/L			12/04/24 14:03	1
1,1,1-Trichloroethane	ND		0.10		ug/L			12/04/24 14:03	1
1,1,2,2-Tetrachloroethane	ND		0.20		ug/L			12/04/24 14:03	1
1,1,2-Trichloroethane	ND		0.10		ug/L			12/04/24 14:03	1
1,1-Dichloroethane	ND		0.10		ug/L			12/04/24 14:03	1
1,1-Dichloroethene	ND		0.10		ug/L			12/04/24 14:03	1
1,1-Dichloropropene	ND		0.10		ug/L			12/04/24 14:03	1
1,2,3-Trichlorobenzene	ND		0.10		ug/L			12/04/24 14:03	1
1,2,3-Trichloropropane	ND		0.20		ug/L			12/04/24 14:03	1
1,2,4-Trichlorobenzene	ND		0.10		ug/L			12/04/24 14:03	1
1,2,4-Trimethylbenzene	ND		0.10		ug/L			12/04/24 14:03	1
1,2-Dibromo-3-Chloropropane	ND		0.20		ug/L			12/04/24 14:03	1
1,2-Dibromoethane (EDB)	ND		0.10		ug/L			12/04/24 14:03	1
1,2-Dichlorobenzene	ND		0.10		ug/L			12/04/24 14:03	1

QC Sample Results

Client: Hilcorp Energy
Project/Site: Hilcorp 0&M SV2

Job ID: 885-16011-1

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

Lab Sample ID: MB 885-16998/4
Matrix: Air
Analysis Batch: 16998

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane (EDC)	ND		0.10		ug/L			12/04/24 14:03	1
1,2-Dichloropropane	ND		0.10		ug/L			12/04/24 14:03	1
1,3,5-Trimethylbenzene	ND		0.10		ug/L			12/04/24 14:03	1
1,3-Dichlorobenzene	ND		0.10		ug/L			12/04/24 14:03	1
1,3-Dichloropropane	ND		0.10		ug/L			12/04/24 14:03	1
1,4-Dichlorobenzene	ND		0.10		ug/L			12/04/24 14:03	1
1-Methylnaphthalene	ND		0.40		ug/L			12/04/24 14:03	1
2,2-Dichloropropane	ND		0.20		ug/L			12/04/24 14:03	1
2-Butanone	ND		1.0		ug/L			12/04/24 14:03	1
2-Chlorotoluene	ND		0.10		ug/L			12/04/24 14:03	1
2-Hexanone	ND		1.0		ug/L			12/04/24 14:03	1
2-Methylnaphthalene	ND		0.40		ug/L			12/04/24 14:03	1
4-Chlorotoluene	ND		0.10		ug/L			12/04/24 14:03	1
4-Isopropyltoluene	ND		0.10		ug/L			12/04/24 14:03	1
4-Methyl-2-pentanone	ND		1.0		ug/L			12/04/24 14:03	1
Acetone	ND		1.0		ug/L			12/04/24 14:03	1
Benzene	ND		0.10		ug/L			12/04/24 14:03	1
Bromobenzene	ND		0.10		ug/L			12/04/24 14:03	1
Bromodichloromethane	ND		0.10		ug/L			12/04/24 14:03	1
Dibromochloromethane	ND		0.10		ug/L			12/04/24 14:03	1
Bromoform	ND		0.10		ug/L			12/04/24 14:03	1
Bromomethane	ND		0.30		ug/L			12/04/24 14:03	1
Carbon disulfide	ND		1.0		ug/L			12/04/24 14:03	1
Carbon tetrachloride	ND		0.10		ug/L			12/04/24 14:03	1
Chlorobenzene	ND		0.10		ug/L			12/04/24 14:03	1
Chloroethane	ND		0.20		ug/L			12/04/24 14:03	1
Chloroform	ND		0.10		ug/L			12/04/24 14:03	1
Chloromethane	ND		0.30		ug/L			12/04/24 14:03	1
cis-1,2-Dichloroethene	ND		0.10		ug/L			12/04/24 14:03	1
cis-1,3-Dichloropropene	ND		0.10		ug/L			12/04/24 14:03	1
Dibromomethane	ND		0.10		ug/L			12/04/24 14:03	1
Dichlorodifluoromethane	ND		0.10		ug/L			12/04/24 14:03	1
Ethylbenzene	ND		0.10		ug/L			12/04/24 14:03	1
Hexachlorobutadiene	ND		0.10		ug/L			12/04/24 14:03	1
Isopropylbenzene	ND		0.10		ug/L			12/04/24 14:03	1
Methyl-tert-butyl Ether (MTBE)	ND		0.10		ug/L			12/04/24 14:03	1
Methylene Chloride	ND		0.30		ug/L			12/04/24 14:03	1
n-Butylbenzene	ND		0.30		ug/L			12/04/24 14:03	1
N-Propylbenzene	ND		0.10		ug/L			12/04/24 14:03	1
Naphthalene	ND		0.20		ug/L			12/04/24 14:03	1
sec-Butylbenzene	ND		0.10		ug/L			12/04/24 14:03	1
Styrene	ND		0.10		ug/L			12/04/24 14:03	1
tert-Butylbenzene	ND		0.10		ug/L			12/04/24 14:03	1
Tetrachloroethene (PCE)	ND		0.10		ug/L			12/04/24 14:03	1
Toluene	ND		0.10		ug/L			12/04/24 14:03	1
trans-1,2-Dichloroethene	ND		0.10		ug/L			12/04/24 14:03	1
trans-1,3-Dichloropropene	ND		0.10		ug/L			12/04/24 14:03	1
Trichloroethene (TCE)	ND		0.10		ug/L			12/04/24 14:03	1
Trichlorofluoromethane	ND		0.10		ug/L			12/04/24 14:03	1

QC Sample Results

Client: Hilcorp Energy
Project/Site: Hilcorp 0&M SV2

Job ID: 885-16011-1

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

Lab Sample ID: MB 885-16998/4
Matrix: Air
Analysis Batch: 16998

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	ND		0.10		ug/L			12/04/24 14:03	1
Xylenes, Total	ND		0.15		ug/L			12/04/24 14:03	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*70 - 130*		*12/04/24 14:03*	*1*
Toluene-d8 (Surr)	*110*		*70 - 130*		*12/04/24 14:03*	*1*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*		*12/04/24 14:03*	*1*
Dibromofluoromethane (Surr)	*105*		*70 - 130*		*12/04/24 14:03*	*1*

Lab Sample ID: LCS 885-16998/3
Matrix: Air
Analysis Batch: 16998

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
1,1-Dichloroethene			20.1	20.2		ug/L		100	70 - 130		
Benzene			20.1	21.6		ug/L		108	70 - 130		
Chlorobenzene			20.1	21.0		ug/L		105	70 - 130		
Toluene			20.2	20.7		ug/L		103	70 - 130		
Trichloroethene (TCE)			20.2	19.4		ug/L		96	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*104*		*70 - 130*
Toluene-d8 (Surr)	*108*		*70 - 130*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*
Dibromofluoromethane (Surr)	*109*		*70 - 130*

Lab Sample ID: 885-16011-1 DU
Matrix: Air
Analysis Batch: 16998

Client Sample ID: Scott 4M SVE01
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	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-Trichloropropane	ND			ND		ug/L				NC	20
1,2,4-Trichlorobenzene	ND			ND		ug/L				NC	20
1,2,4-Trimethylbenzene	ND			ND		ug/L				NC	20
1,2-Dibromo-3-Chloropropane	ND			ND		ug/L				NC	20
1,2-Dibromoethane (EDB)	ND			ND		ug/L				NC	20
1,2-Dichlorobenzene	ND			ND		ug/L				NC	20
1,2-Dichloroethane (EDC)	ND			ND		ug/L				NC	20
1,2-Dichloropropane	ND			ND		ug/L				NC	20
1,3,5-Trimethylbenzene	ND			ND		ug/L				NC	20

QC Sample Results

Client: Hilcorp Energy
Project/Site: Hilcorp 0&M SV2

Job ID: 885-16011-1

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

Lab Sample ID: 885-16011-1 DU
Matrix: Air
Analysis Batch: 16998

Client Sample ID: Scott 4M SVE01
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
1,3-Dichlorobenzene	ND			ND		ug/L				NC	20
1,3-Dichloropropane	ND			ND		ug/L				NC	20
1,4-Dichlorobenzene	ND			ND		ug/L				NC	20
1-Methylnaphthalene	ND			ND		ug/L				NC	20
2,2-Dichloropropane	ND			ND		ug/L				NC	20
2-Butanone	ND			ND		ug/L				NC	20
2-Chlorotoluene	ND			ND		ug/L				NC	20
2-Hexanone	ND			ND		ug/L				NC	20
2-Methylnaphthalene	ND			ND		ug/L				NC	20
4-Chlorotoluene	ND			ND		ug/L				NC	20
4-Isopropyltoluene	ND			ND		ug/L				NC	20
4-Methyl-2-pentanone	ND			ND		ug/L				NC	20
Acetone	ND			ND		ug/L				NC	20
Benzene	ND			ND		ug/L				NC	20
Bromobenzene	ND			ND		ug/L				NC	20
Bromodichloromethane	ND			ND		ug/L				NC	20
Dibromochloromethane	ND			ND		ug/L				NC	20
Bromoform	ND			ND		ug/L				NC	20
Bromomethane	ND			ND		ug/L				NC	20
Carbon disulfide	ND			ND		ug/L				NC	20
Carbon tetrachloride	ND			ND		ug/L				NC	20
Chlorobenzene	ND			ND		ug/L				NC	20
Chloroethane	ND			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
Dichlorodifluoromethane	ND			ND		ug/L				NC	20
Ethylbenzene	ND			ND		ug/L				NC	20
Hexachlorobutadiene	ND			ND		ug/L				NC	20
Isopropylbenzene	ND			ND		ug/L				NC	20
Methyl-tert-butyl Ether (MTBE)	ND			ND		ug/L				NC	20
Methylene Chloride	ND			ND		ug/L				NC	20
n-Butylbenzene	ND			ND		ug/L				NC	20
N-Propylbenzene	ND			ND		ug/L				NC	20
Naphthalene	ND			ND		ug/L				NC	20
sec-Butylbenzene	ND			ND		ug/L				NC	20
Styrene	ND			ND		ug/L				NC	20
tert-Butylbenzene	ND			ND		ug/L				NC	20
Tetrachloroethene (PCE)	ND			ND		ug/L				NC	20
Toluene	0.11			0.105		ug/L				0.2	20
trans-1,2-Dichloroethene	ND			ND		ug/L				NC	20
trans-1,3-Dichloropropene	ND			ND		ug/L				NC	20
Trichloroethene (TCE)	ND			ND		ug/L				NC	20
Trichlorofluoromethane	ND			ND		ug/L				NC	20
Vinyl chloride	ND			ND		ug/L				NC	20
Xylenes, Total	0.38			0.380		ug/L				0	20

QC Sample Results

Client: Hilcorp Energy
Project/Site: Hilcorp 0&M SV2

Job ID: 885-16011-1

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

Lab Sample ID: 885-16011-1 DU
Matrix: Air
Analysis Batch: 16998

Client Sample ID: Scott 4M SVE01
Prep Type: Total/NA

Surrogate	DU %Recovery	DU Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	97		70 - 130
Toluene-d8 (Surr)	110		70 - 130
4-Bromofluorobenzene (Surr)	102		70 - 130
Dibromofluoromethane (Surr)	108		70 - 130

QC Association Summary

Client: Hilcorp Energy
Project/Site: Hilcorp 0&M SV2

Job ID: 885-16011-1

GC/MS VOA

Analysis Batch: 16996

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-16011-1	Scott 4M SVE01	Total/NA	Air	8015M/D	
885-16011-2	#41 A SVE01	Total/NA	Air	8015M/D	
885-16011-3	2C SVE01	Total/NA	Air	8015M/D	
MB 885-16996/5	Method Blank	Total/NA	Air	8015M/D	
LCS 885-16996/4	Lab Control Sample	Total/NA	Air	8015M/D	
885-16011-1 DU	Scott 4M SVE01	Total/NA	Air	8015M/D	

Analysis Batch: 16998

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-16011-1	Scott 4M SVE01	Total/NA	Air	8260B	
885-16011-2	#41 A SVE01	Total/NA	Air	8260B	
885-16011-3	2C SVE01	Total/NA	Air	8260B	
MB 885-16998/4	Method Blank	Total/NA	Air	8260B	
LCS 885-16998/3	Lab Control Sample	Total/NA	Air	8260B	
885-16011-1 DU	Scott 4M SVE01	Total/NA	Air	8260B	

Lab Chronicle

Client: Hilcorp Energy
Project/Site: Hilcorp 0&M SV2

Job ID: 885-16011-1

Client Sample ID: Scott 4M SVE01

Lab Sample ID: 885-16011-1

Date Collected: 11/26/24 10:20

Matrix: Air

Date Received: 11/27/24 07:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015M/D		1	16996	RA	EET ALB	12/04/24 15:56
Total/NA	Analysis	8260B		1	16998	RA	EET ALB	12/04/24 15:56

Client Sample ID: #41 A SVE01

Lab Sample ID: 885-16011-2

Date Collected: 11/26/24 11:45

Matrix: Air

Date Received: 11/27/24 07:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015M/D		1	16996	RA	EET ALB	12/04/24 16:52
Total/NA	Analysis	8260B		1	16998	RA	EET ALB	12/04/24 16:52

Client Sample ID: 2C SVE01

Lab Sample ID: 885-16011-3

Date Collected: 11/26/24 13:05

Matrix: Air

Date Received: 11/27/24 07:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015M/D		1	16996	RA	EET ALB	12/04/24 15:27
Total/NA	Analysis	8260B		1	16998	RA	EET ALB	12/04/24 15:27

Laboratory References:

= , 1120 South 27th Street, Billings, MT 59101, TEL (406)252-6325

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

Accreditation/Certification Summary

Client: Hilcorp Energy
Project/Site: Hilcorp 0&M SV2

Job ID: 885-16011-1

Laboratory: Eurofins Albuquerque

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

Authority	Program	Identification Number	Expiration Date
New Mexico	State	NM9425, NM0901	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
8015M/D		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
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

Accreditation/Certification Summary

Client: Hilcorp Energy
Project/Site: Hilcorp 0&M SV2

Job ID: 885-16011-1

Laboratory: Eurofins Albuquerque (Continued)

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

Authority	Program	Identification Number	Expiration Date

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
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

Oregon	NELAP	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
8015M/D		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

Accreditation/Certification Summary

Client: Hilcorp Energy
Project/Site: Hilcorp 0&M SV2

Job ID: 885-16011-1

Laboratory: Eurofins Albuquerque (Continued)

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

Authority	Program	Identification Number	Expiration Date

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
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

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ANALYTICAL SUMMARY REPORT

December 05, 2024

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

Work Order: B24120141 Quote ID: B15626

Project Name: 88501698, Hilcorp 0&M SV2

Energy Laboratories Inc Billings MT received the following 3 samples for Hall Environmental on 12/3/2024 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B24120141-001	Scott 4M SVE01 (885-16011-1)	11/26/24 10:20	12/03/24	Air	Air Correction Calculations Appearance and Comments Calculated Properties GPM @ std cond,/1000 cu. ft., moist. Free Natural Gas Analysis Specific Gravity @ 60/60
B24120141-002	#41 A SVE01 (885-16011-2)	11/26/24 11:45	12/03/24	Air	Same As Above
B24120141-003	2C SVE01 (885-16011-3)	11/26/24 13:05	12/03/24	Air	Same As Above

The analyses presented in this report were performed by Energy Laboratories, Inc., 1120 So. 27th Street, 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.

Energy Laboratories, Inc. verifies the reported results for the analysis has been technically reviewed and approved for release.

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

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LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Hall Environmental
Project: 88501698, Hilcorp 0&M SV2
Lab ID: B24120141-001
Client Sample ID: Scott 4M SVE01 (885-16011-1)

Report Date: 12/05/24
Collection Date: 11/26/24 10:20
DateReceived: 12/03/24
Matrix: Air

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
GAS CHROMATOGRAPHY ANALYSIS REPORT							
Oxygen	21.45	Mol %		0.01		GPA 2261-13	12/04/24 09:56 / jrj
Nitrogen	78.50	Mol %		0.01		GPA 2261-13	12/04/24 09:56 / jrj
Carbon Dioxide	0.05	Mol %		0.01		GPA 2261-13	12/04/24 09:56 / jrj
Hydrogen Sulfide	<0.01	Mol %		0.01		GPA 2261-13	12/04/24 09:56 / jrj
Methane	<0.01	Mol %		0.01		GPA 2261-13	12/04/24 09:56 / jrj
Ethane	<0.01	Mol %		0.01		GPA 2261-13	12/04/24 09:56 / jrj
Propane	<0.01	Mol %		0.01		GPA 2261-13	12/04/24 09:56 / jrj
Isobutane	<0.01	Mol %		0.01		GPA 2261-13	12/04/24 09:56 / jrj
n-Butane	<0.01	Mol %		0.01		GPA 2261-13	12/04/24 09:56 / jrj
Isopentane	<0.01	Mol %		0.01		GPA 2261-13	12/04/24 09:56 / jrj
n-Pentane	<0.01	Mol %		0.01		GPA 2261-13	12/04/24 09:56 / jrj
Hexanes plus	<0.01	Mol %		0.01		GPA 2261-13	12/04/24 09:56 / jrj
Propane	< 0.001	gpm		0.001		GPA 2261-13	12/04/24 09:56 / jrj
Isobutane	< 0.001	gpm		0.001		GPA 2261-13	12/04/24 09:56 / jrj
n-Butane	< 0.001	gpm		0.001		GPA 2261-13	12/04/24 09:56 / jrj
Isopentane	< 0.001	gpm		0.001		GPA 2261-13	12/04/24 09:56 / jrj
n-Pentane	< 0.001	gpm		0.001		GPA 2261-13	12/04/24 09:56 / jrj
Hexanes plus	< 0.001	gpm		0.001		GPA 2261-13	12/04/24 09:56 / jrj
GPM Total	< 0.001	gpm		0.001		GPA 2261-13	12/04/24 09:56 / jrj
GPM Pentanes plus	< 0.001	gpm		0.001		GPA 2261-13	12/04/24 09:56 / jrj
CALCULATED PROPERTIES							
Gross BTU per cu ft @ Std Cond. (HHV)	ND			1		GPA 2261-13	12/04/24 09:56 / jrj
Net BTU per cu ft @ std cond. (LHV)	ND			1		GPA 2261-13	12/04/24 09:56 / jrj
Pseudo-critical Pressure, psia	544			1		GPA 2261-13	12/04/24 09:56 / jrj
Pseudo-critical Temperature, deg R	239			1		GPA 2261-13	12/04/24 09:56 / jrj
Specific Gravity @ 60/60F	0.997			0.001		D3588-81	12/04/24 09:56 / jrj
Air, %	98.02			0.01		GPA 2261-13	12/04/24 09:56 / jrj
- The analysis was not corrected for air.							
COMMENTS							
-						-	12/04/24 09:56 / 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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LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Hall Environmental
Project: 88501698, Hilcorp 0&M SV2
Lab ID: B24120141-002
Client Sample ID: #41 A SVE01 (885-16011-2)

Report Date: 12/05/24
Collection Date: 11/26/24 11:45
DateReceived: 12/03/24
Matrix: Air

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
GAS CHROMATOGRAPHY ANALYSIS REPORT							
Oxygen	21.07	Mol %		0.01		GPA 2261-13	12/04/24 10:45 / jrj
Nitrogen	78.70	Mol %		0.01		GPA 2261-13	12/04/24 10:45 / jrj
Carbon Dioxide	0.22	Mol %		0.01		GPA 2261-13	12/04/24 10:45 / jrj
Hydrogen Sulfide	<0.01	Mol %		0.01		GPA 2261-13	12/04/24 10:45 / jrj
Methane	<0.01	Mol %		0.01		GPA 2261-13	12/04/24 10:45 / jrj
Ethane	<0.01	Mol %		0.01		GPA 2261-13	12/04/24 10:45 / jrj
Propane	<0.01	Mol %		0.01		GPA 2261-13	12/04/24 10:45 / jrj
Isobutane	<0.01	Mol %		0.01		GPA 2261-13	12/04/24 10:45 / jrj
n-Butane	<0.01	Mol %		0.01		GPA 2261-13	12/04/24 10:45 / jrj
Isopentane	<0.01	Mol %		0.01		GPA 2261-13	12/04/24 10:45 / jrj
n-Pentane	<0.01	Mol %		0.01		GPA 2261-13	12/04/24 10:45 / jrj
Hexanes plus	0.01	Mol %		0.01		GPA 2261-13	12/04/24 10:45 / jrj
Propane	< 0.001	gpm		0.001		GPA 2261-13	12/04/24 10:45 / jrj
Isobutane	< 0.001	gpm		0.001		GPA 2261-13	12/04/24 10:45 / jrj
n-Butane	< 0.001	gpm		0.001		GPA 2261-13	12/04/24 10:45 / jrj
Isopentane	< 0.001	gpm		0.001		GPA 2261-13	12/04/24 10:45 / jrj
n-Pentane	< 0.001	gpm		0.001		GPA 2261-13	12/04/24 10:45 / jrj
Hexanes plus	0.004	gpm		0.001		GPA 2261-13	12/04/24 10:45 / jrj
GPM Total	0.004	gpm		0.001		GPA 2261-13	12/04/24 10:45 / jrj
GPM Pentanes plus	0.004	gpm		0.001		GPA 2261-13	12/04/24 10:45 / jrj
CALCULATED PROPERTIES							
Gross BTU per cu ft @ Std Cond. (HHV)	ND			1		GPA 2261-13	12/04/24 10:45 / jrj
Net BTU per cu ft @ std cond. (LHV)	ND			1		GPA 2261-13	12/04/24 10:45 / jrj
Pseudo-critical Pressure, psia	544			1		GPA 2261-13	12/04/24 10:45 / jrj
Pseudo-critical Temperature, deg R	239			1		GPA 2261-13	12/04/24 10:45 / jrj
Specific Gravity @ 60/60F	0.998			0.001		D3588-81	12/04/24 10:45 / jrj
Air, %	96.26			0.01		GPA 2261-13	12/04/24 10:45 / jrj
- The analysis was not corrected for air.							
COMMENTS							
-						-	12/04/24 10:45 / 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:
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LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Hall Environmental
Project: 88501698, Hilcorp 0&M SV2
Lab ID: B24120141-003
Client Sample ID: 2C SVE01 (885-16011-3)

Report Date: 12/05/24
Collection Date: 11/26/24 13:05
DateReceived: 12/03/24
Matrix: Air

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
GAS CHROMATOGRAPHY ANALYSIS REPORT							
Oxygen	21.29	Mol %		0.01		GPA 2261-13	12/04/24 11:34 / jrj
Nitrogen	78.46	Mol %		0.01		GPA 2261-13	12/04/24 11:34 / jrj
Carbon Dioxide	0.24	Mol %		0.01		GPA 2261-13	12/04/24 11:34 / jrj
Hydrogen Sulfide	<0.01	Mol %		0.01		GPA 2261-13	12/04/24 11:34 / jrj
Methane	<0.01	Mol %		0.01		GPA 2261-13	12/04/24 11:34 / jrj
Ethane	<0.01	Mol %		0.01		GPA 2261-13	12/04/24 11:34 / jrj
Propane	<0.01	Mol %		0.01		GPA 2261-13	12/04/24 11:34 / jrj
Isobutane	<0.01	Mol %		0.01		GPA 2261-13	12/04/24 11:34 / jrj
n-Butane	<0.01	Mol %		0.01		GPA 2261-13	12/04/24 11:34 / jrj
Isopentane	<0.01	Mol %		0.01		GPA 2261-13	12/04/24 11:34 / jrj
n-Pentane	<0.01	Mol %		0.01		GPA 2261-13	12/04/24 11:34 / jrj
Hexanes plus	0.01	Mol %		0.01		GPA 2261-13	12/04/24 11:34 / jrj
Propane	< 0.001	gpm		0.001		GPA 2261-13	12/04/24 11:34 / jrj
Isobutane	< 0.001	gpm		0.001		GPA 2261-13	12/04/24 11:34 / jrj
n-Butane	< 0.001	gpm		0.001		GPA 2261-13	12/04/24 11:34 / jrj
Isopentane	< 0.001	gpm		0.001		GPA 2261-13	12/04/24 11:34 / jrj
n-Pentane	< 0.001	gpm		0.001		GPA 2261-13	12/04/24 11:34 / jrj
Hexanes plus	0.004	gpm		0.001		GPA 2261-13	12/04/24 11:34 / jrj
GPM Total	0.004	gpm		0.001		GPA 2261-13	12/04/24 11:34 / jrj
GPM Pentanes plus	0.004	gpm		0.001		GPA 2261-13	12/04/24 11:34 / jrj
CALCULATED PROPERTIES							
Gross BTU per cu ft @ Std Cond. (HHV)	ND			1		GPA 2261-13	12/04/24 11:34 / jrj
Net BTU per cu ft @ std cond. (LHV)	ND			1		GPA 2261-13	12/04/24 11:34 / jrj
Pseudo-critical Pressure, psia	545			1		GPA 2261-13	12/04/24 11:34 / jrj
Pseudo-critical Temperature, deg R	239			1		GPA 2261-13	12/04/24 11:34 / jrj
Specific Gravity @ 60/60F	0.998			0.001		D3588-81	12/04/24 11:34 / jrj
Air, %	97.28			0.01		GPA 2261-13	12/04/24 11:34 / jrj
- The analysis was not corrected for air.							
COMMENTS							
-						-	12/04/24 11:34 / 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

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QA/QC Summary Report

Prepared by Billings, MT Branch

Work Order: B24120141 **Report Date:** 12/05/24

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: **GPA 2261-13**										Batch: R433466
Lab ID: **B24120141-003ADUP**	12	Sample Duplicate				Run: GCNGA-B_241204A				12/04/24 12:23
Oxygen		21.5	Mol %	0.01				1.0	20	
Nitrogen		78.3	Mol %	0.01				0.3	20	
Carbon Dioxide		0.23	Mol %	0.01				4.3	20	
Hydrogen Sulfide		<0.01	Mol %	0.01					20	
Methane		<0.01	Mol %	0.01					20	
Ethane		<0.01	Mol %	0.01					20	
Propane		<0.01	Mol %	0.01					20	
Isobutane		<0.01	Mol %	0.01					20	
n-Butane		<0.01	Mol %	0.01					20	
Isopentane		<0.01	Mol %	0.01					20	
n-Pentane		<0.01	Mol %	0.01					20	
Hexanes plus		0.01	Mol %	0.01				0.0	20	
Lab ID: **LCS120424**	11	Laboratory Control Sample				Run: GCNGA-B_241204A				12/04/24 02:04
Oxygen		0.62	Mol %	0.01	124	70	130			
Nitrogen		6.28	Mol %	0.01	105	70	130			
Carbon Dioxide		0.98	Mol %	0.01	99	70	130			
Methane		74.5	Mol %	0.01	100	70	130			
Ethane		6.03	Mol %	0.01	100	70	130			
Propane		5.05	Mol %	0.01	102	70	130			
Isobutane		1.62	Mol %	0.01	81	70	130			
n-Butane		1.99	Mol %	0.01	99	70	130			
Isopentane		1.08	Mol %	0.01	108	70	130			
n-Pentane		1.01	Mol %	0.01	101	70	130			
Hexanes plus		0.80	Mol %	0.01	100	70	130			

Qualifiers:

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

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Work Order Receipt Checklist

Hall Environmental

B24120141

Login completed by: Crystal M. Jones
Date Received: 12/3/2024

Reviewed by: lleprowse
Received by: KLP

Reviewed Date: 12/4/2024
Carrier name: FedEx NDA

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:	12.1°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.

Trip Blanks and/or Blind Duplicate samples are assigned the earliest collection time for the associated requested analysis in order to evaluate the holding time unless specifically indicated.

Contact and Corrective Action Comments:

None

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Laboratory Certifications and Accreditations

Current certificates are available at www.energylab.com website:

	Agency	Number
Billings, MT	Alaska	17-023
	California	3087
	Colorado	MT00005
	Department of Defense (DoD)/ISO17025	ADE-2588
	Florida (Primary NELAP)	E87668
	Idaho	MT00005
	Louisiana	05079
	Montana	CERT0044
	Nebraska	NE-OS-13-04
	Nevada	NV-C24-00250
	North Dakota	R-007
	National Radon Proficiency	109383-RMP
	Oregon	4184
	South Dakota	ARSD 74:04:07
	Texas	TX-C24-00302
	US EPA Region VIII	Reciprocal
	USDA Soil Permit	P330-20-00170
	Washington	C1039
Casper, WY	Alaska	20-006
	California	3021
	Colorado	WY00002
	Florida (Primary NELAP)	E87641
	Idaho	WY00002
	Louisiana	05083
	Montana	CERT0002
	Nebraska	NE-OS-08-04
	Nevada	NV-C24-00245
	North Dakota	R-125
	Oregon	WY200001
	South Dakota	WY00002
	Texas	T104704181-23-21
	US EPA Region VIII	WY00002
	USNRC License	49-26846-01
	Washington	C1012
Gillette, WY	US EPA Region VIII	WY00006
Helena, MT	Colorado	MT00945
	Montana	CERT0079
	Nevada	NV-C24-00119
	US EPA Region VIII	Reciprocal
	USDA Soil Permit	P330-20-00090

Eurofins Albuquerque
4901 Hawkins NE
Albuquerque, NM 87109
Phone: 505-345-3975 Fax: 505-345-4107

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler: N/A	Lab PM: Garcia, Michelle	Carrier Tracking No(s): N/A	COC No: 885-2969.1
Client Contact: Shipping/Receiving	Phone: N/A	E-Mail: michelle.garcia@et.eurofinsus.com	State of Origin: New Mexico	Page: Page 1 of 1
Company: Energy Laboratories, Inc.		Accreditations Required (See note): NELAP - Oregon; State - New Mexico		Job #: 885-16011-1
Address: 1120 South 27th Street,	Due Date Requested: 12/6/2024			Preservation Codes: -
City: Billings	TAT Requested (days): N/A			
State, Zip: MT, 59101				
Phone: 406-252-6325(Tel)	PO #: N/A			
Email: N/A	WO #: N/A			
Project Name: Hilcorp 0&M SV2	Project #: 88501698			
Site: N/A	SSOW#: N/A			Other: N/A

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=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Fixed Gases)/ Fixed Gases	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
Scott 4M SVE01 (885-16011-1)	11/26/24	10:20 Mountain	G	Air			X	1	See Attached Instructions
#41 A SVE01 (885-16011-2)	11/26/24	11:45 Mountain	G	Air			X	1	See Attached Instructions
2C SVE01 (885-16011-3)	11/26/24	13:05 Mountain	G	Air			X	1	See Attached Instructions
									B24120141

Analysis Requested

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing South Central, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing South Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing South Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing South Central, LLC.

Possible Hazard Identification: Unconfirmed	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		12/2/24 1325				
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 12-03-24 1100	Company ELI

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 10/10/2024

ICOC No:
885-2969

Containers

Count	Container Type	Preservative
3	Tedlar Bag 1L	None

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
1, 2, 3	SUBCONTRACT	SUB (Fixed Gases)/ Fixed Gases	Fixed Gases

Chain-of-Custody Record

Client: Hilcorp

Attn: Mitch Killough

Mailing Address:

Phone #:

email or Fax#: Mkilbu-rgh@hilcorp.com

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance

☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:

☑ Standard ☐ Rush

Project Name: Hilcorp Otm SVE

Project #:

Project Manager: Stuart Hyde

Sampler: Aaron Lamerman

On Ice: ☐ Yes ☑ No mojo

# of Coolers: 1

Cooler Temp(including CF): 11.7+0=11.7 (°C)

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

885-16011 COC

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No.	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA) Full List	8270 (Semi-VOA)	Total Coliform (Present/Absent)	Fixed Gas CO_2 H_2					
11/26/24	1020	Air	Scott 4M SVE01	2, Teldar	—			X						X			X					
11/26/24	1145	Air	#41A SVE01	2. Teldar	—			X						X			X					
11/26/24	1305	Air	2C SVE01	2. Teldar	—			X						X			X					

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
11/26/24	1350				11/24/24	1350
11/24/24	1711			courier	11/27/24	7200

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.

Login Sample Receipt Checklist

Client: Hilcorp Energy Job Number: 885-16011-1

Login Number: 16011 **List Source: Eurofins Albuquerque**
List Number: 1
Creator: Casarrubias, Tracy

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
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.	False	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
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.	N/A	
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	
Residual Chlorine Checked.	N/A	

Sante Fe Main Office
Phone: (505) 476-3441

General Information
Phone: (505) 629-6116

Online Phone Directory
https://www.emnrd.nm.gov/ocd/contact-us

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

CONDITIONS

Operator: HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	OGRID: 372171
	Action Number: 417578
	Action Type: [REPORT] Alternative Remediation Report (C-141AR)

CONDITIONS

Created By	Condition	Condition Date
nvelez	SVE reviewed - 1. Continue O&M & sampling as stated in report. 2. Submit next quarterly report by April 15, 2025.	1/16/2025