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January 12, 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 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 2023 –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 2023.

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.

SYSTEM STARTUP AND FOURTH QUARTER 2023 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 daily for the first week of operation and then weekly thereafter for the remainder of October, November, and December 2023. 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 in Appendix A.

Since startup, all Site SVE wells were operated in order to induce flow in impacted soil zones. Between October 9 and December 28, 2023, the SVE system operated for 1,914.8 hours for a

runtime efficiency of 100 percent (%). Appendix B presents photographs of the runtime meter for calculating the fourth quarter 2023 runtime efficiency. Table 1 presents the SVE system operational hours and calculated percent runtime.

Based on the March 2023 COAs, initial air samples were collected on October 9 and 10, 2023 from a sample port located between the SVE piping manifold and the SVE blower using a high vacuum air sampler. After startup, samples were collected weekly for the first month of operation and then bi-weekly (once every two weeks) through the end of the fourth quarter of 2023. Prior to collection, the emission sample was field screened with a PID for organic vapor monitoring (OVM). The emission sample was collected directly into two 1-Liter Tedlar® bags and submitted to Hall Environmental Analysis Laboratory (now 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 October and December 2023. Note: analytical data from the last sampling event on December 28, 2023, has not been received from the laboratory; this data will be included in the following quarterly report. Full laboratory analytical reports are attached as Appendix C. Graphs 1 and 2 present oxygen and carbon dioxide levels over time, respectively.

Air 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, 2,388 pounds (1.19 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

Accurate flow measurements at SVE01 and SVE02 could not be obtained during the fourth quarter of 2023 due to the rotameters being undersized and oversized, respectively. Ensolum has purchased pitot tubes to replace the individual well rotameters and will install the new flow measurement devices in first quarter of 2023 in order to obtain more accurate data on the individual well legs.

Despite an increase in total system flow rate throughout the quarter, a decrease in mass removal rate was observed during the first quarter of system operation, as is expected following initial startup. Mass removal remains above 10 pounds per day of petroleum hydrocarbons.

Monthly O&M visits and bi-monthly (every other month) 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

Stuart Hyde, LG
Senior Geologist
(970) 903-1607
shyde@ensolum.com

Daniel R. Moir, PG
Senior Managing Geologist
(303) 887-2946
dmoir@ensolum.com

Attachments:

Figure 1	Site Location 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
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Graph 1	Oxygen vs Time
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Appendix A	Field Notes
Appendix B	Project Photographs
Appendix C	Laboratory Analytical Reports

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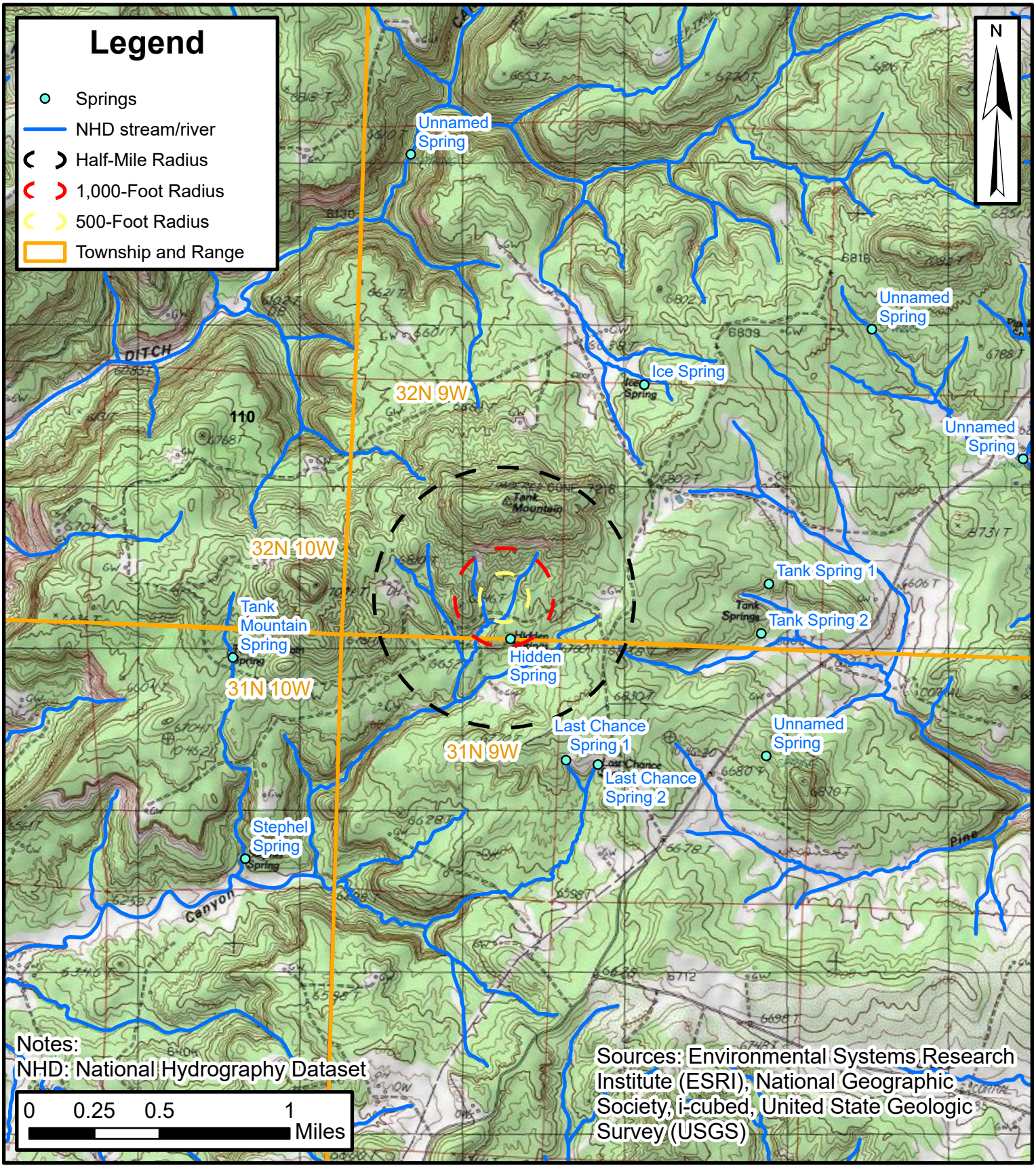
FIGURES



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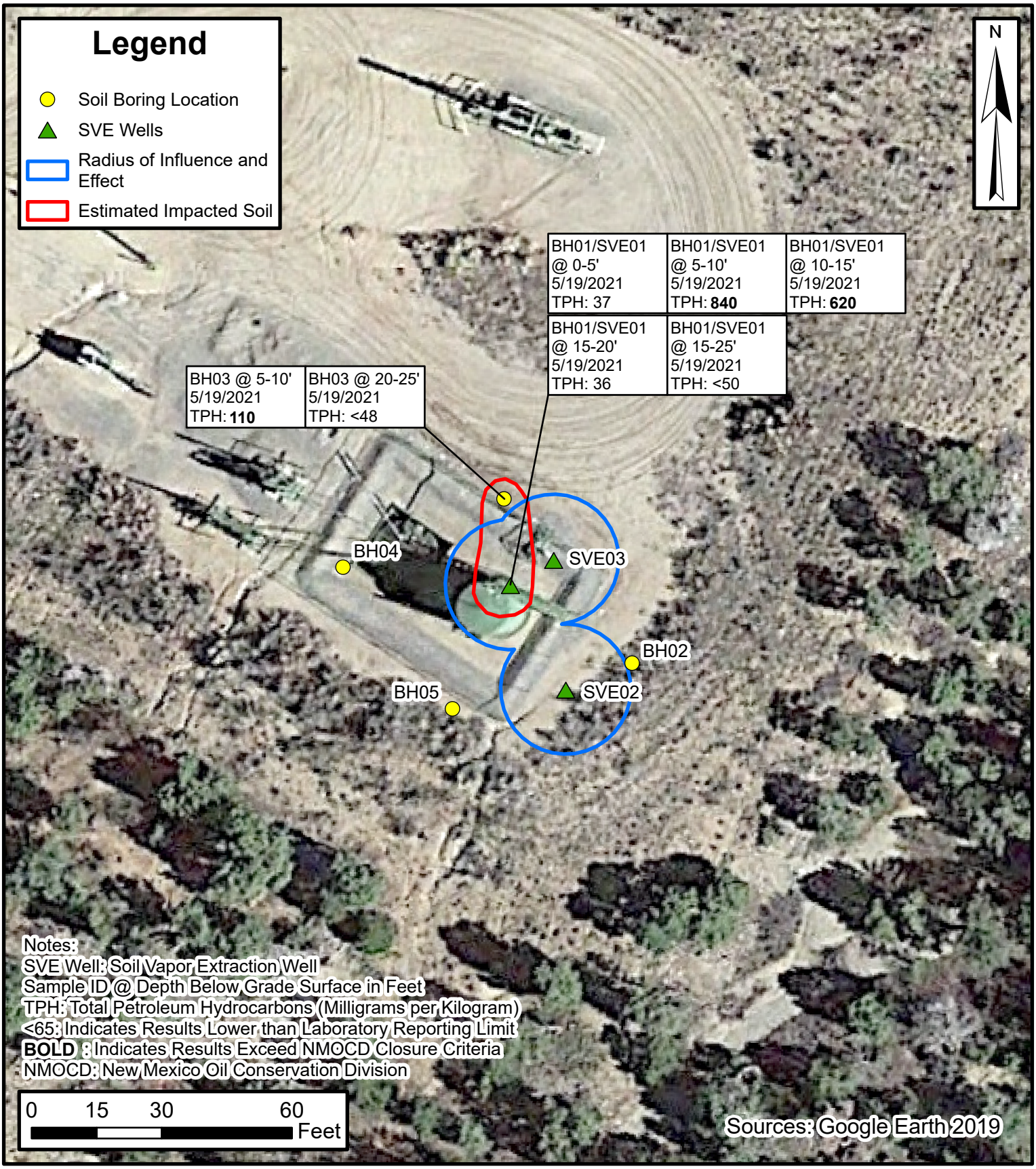
Site Location Map

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 AND 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	Percent Runtime
10/9/2023	1.3	Startup		
12/28/2023	1,916.1	1,914.8	80	100%

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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)	Oxygen (%)	Carbon Dioxide (%)
Influent, All Wells	10/9/2023	1,783	3.4	161	99	88.0	20.9	0.00
	10/10/2023	1,646	3.4	161	99	90.0	20.9	0.00
	10/13/2023	667	4.1	177	118	62.0	20.1	0.62
	10/19/2023	2,143	4.9	194	133	52.0	20.5	0.40
	10/26/2023	195	5.2	199	137	52.0	--	--
	10/31/2023	440	5.2	199	138	49.0	--	--
	11/8/2023	422	5.2	199	136	52.0	19.8	0.00
	11/16/2023	541	5.2	199	137	51.7	--	--
	11/28/2023	91	5.3	201	137	54.4	--	--
	12/7/2023	231	6.0	214	147	50.0	--	--
	12/13/2023	317	5.6	207	141	54.4	--	--
SVE01	10/9/2023	1,816	--	--	34	72.1	20.9	0.00
	10/10/2023	1,734	--	--	38	73.4	20.9	0.00
	10/13/2023	395	--	--	>50	39.0	20.9	0.22
	10/19/2023	435	--	--	>50	26.0	20.7	0.28
	10/26/2023	116	--	--	>50	26.0	20.2	0.00
	10/31/2023	368	--	--	>50	1.8	20.5	0.18
	11/8/2023	437	--	--	>50	22.0	20.0	0.08
	11/16/2023	514	--	--	>50	21.7	19.2	0.18
	11/28/2023	55	--	--	>50	22.7	19.8	0.02
	12/7/2023	240	--	--	>50	22.7	19.1	0.06
	12/13/2023	137	--	--	>50	22.7	19.2	0.00
SVE02	10/9/2023	307	--	--	2	80.7	20.9	0.00
	10/10/2023	291	--	--	2	83.8	20.9	0.00
	10/13/2023	84	--	--	<2	48.0	20.9	0.16
	10/19/2023	28	--	--	<2	46.0	20.9	0.28
	10/26/2023	46	--	--	--	48.0	20.7	0.00
	10/31/2023	8	--	--	3	3.2	20.9	0.04
	11/8/2023	49	--	--	5	44.0	19.6	0.54
	11/16/2023	95	--	--	2	36.5	19.1	0.46
	11/28/2023	108	--	--	3	37.5	19.6	0.04
	12/7/2023	66	--	--	5	39.0	19.1	0.10
	12/13/2023	50	--	--	2	39.0	19.1	0.16
SVE03	10/9/2023	524	--	--	26	76.3	20.1	0.00
	10/10/2023	411	--	--	24	77.2	19.2	0.00
	10/13/2023	448	--	--	18	43.0	20.3	0.64
	10/19/2023	180	--	--	14	38.0	20.7	0.34
	10/26/2023	77	--	--	14	52.0	20.3	0.00
	10/31/2023	63	--	--	14	35.4	20.9	0.04
	11/8/2023	312	--	--	14	36.0	19.1	0.72
	11/16/2023	315	--	--	14	29.4	19.1	0.26
	11/28/2023	48	--	--	14	33.2	19.6	0.06
	12/7/2023	134	--	--	30	32.0	19.0	0.24
	12/13/2023	112	--	--	14	36.2	19.1	0.14

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	<0.5	3.3	0.60	27.0	1,400	21.72%	0.18%

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)

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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	27.0	1,400
Average	658	9	35	4.4	72	5,656

Vapor Extraction Summary

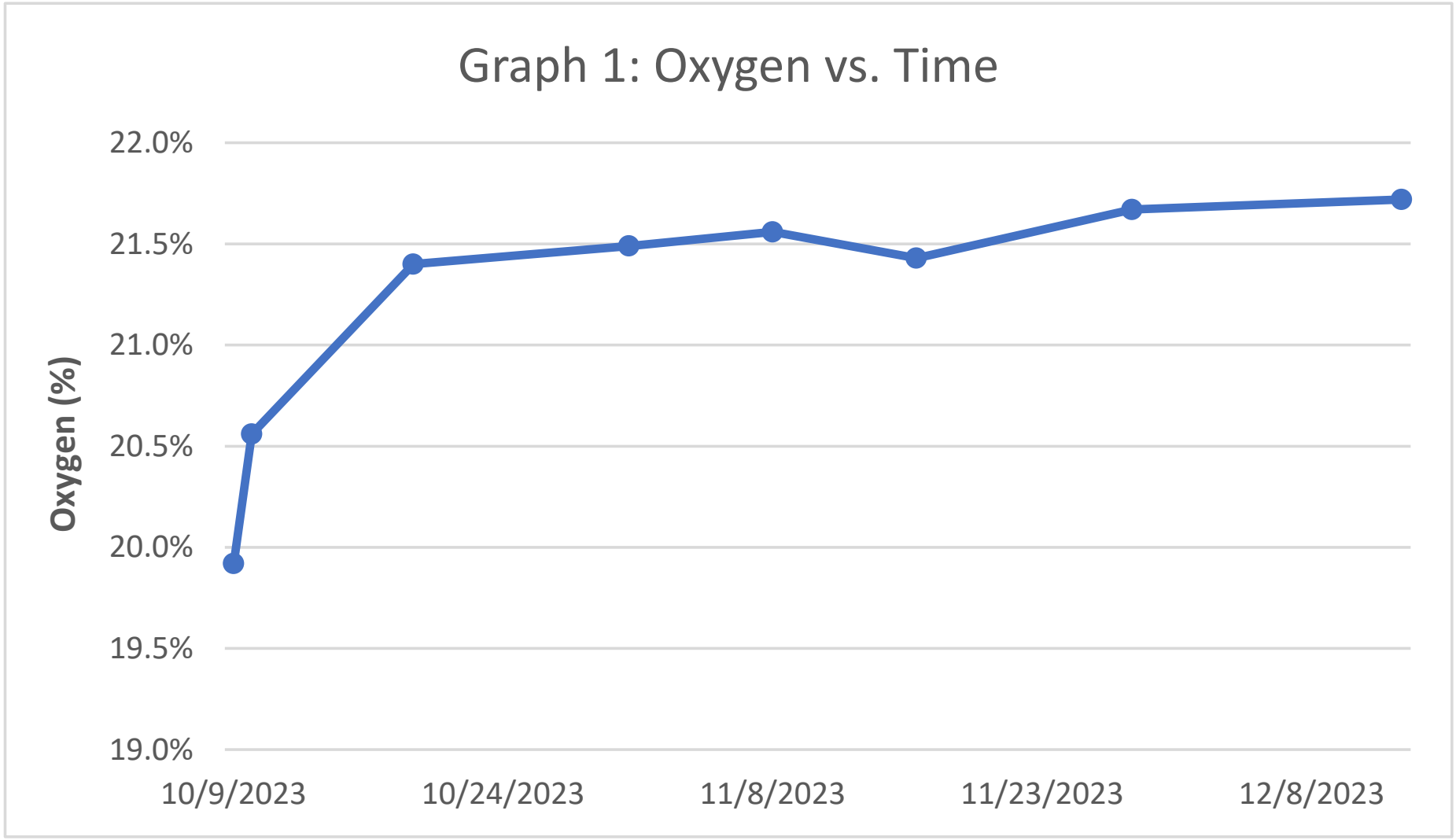
Date	Flow Rate (scfm)	Total System Flow (cf)	Delta Flow (cf)	Benzene (lb/hr)	Toluene (lb/hr)	Ethylbenzene (lb/hr)	Total Xylenes (lb/hr)	TVPH (lb/hr)
10/9/2023	System Startup							
10/10/2023	99	152,658	152,658	0.0117	0.038	0.0038	0.038	5.6
10/19/2023	133	1,872,348	1,719,690	0.0048	0.024	0.0027	0.040	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	0.0181	0.76
12/13/2023	141	12,791,076	3,023,604	0.00015	0.0011	0.00019	0.0086	0.45
			Average	0.0035	0.014	0.0019	0.031	2.3

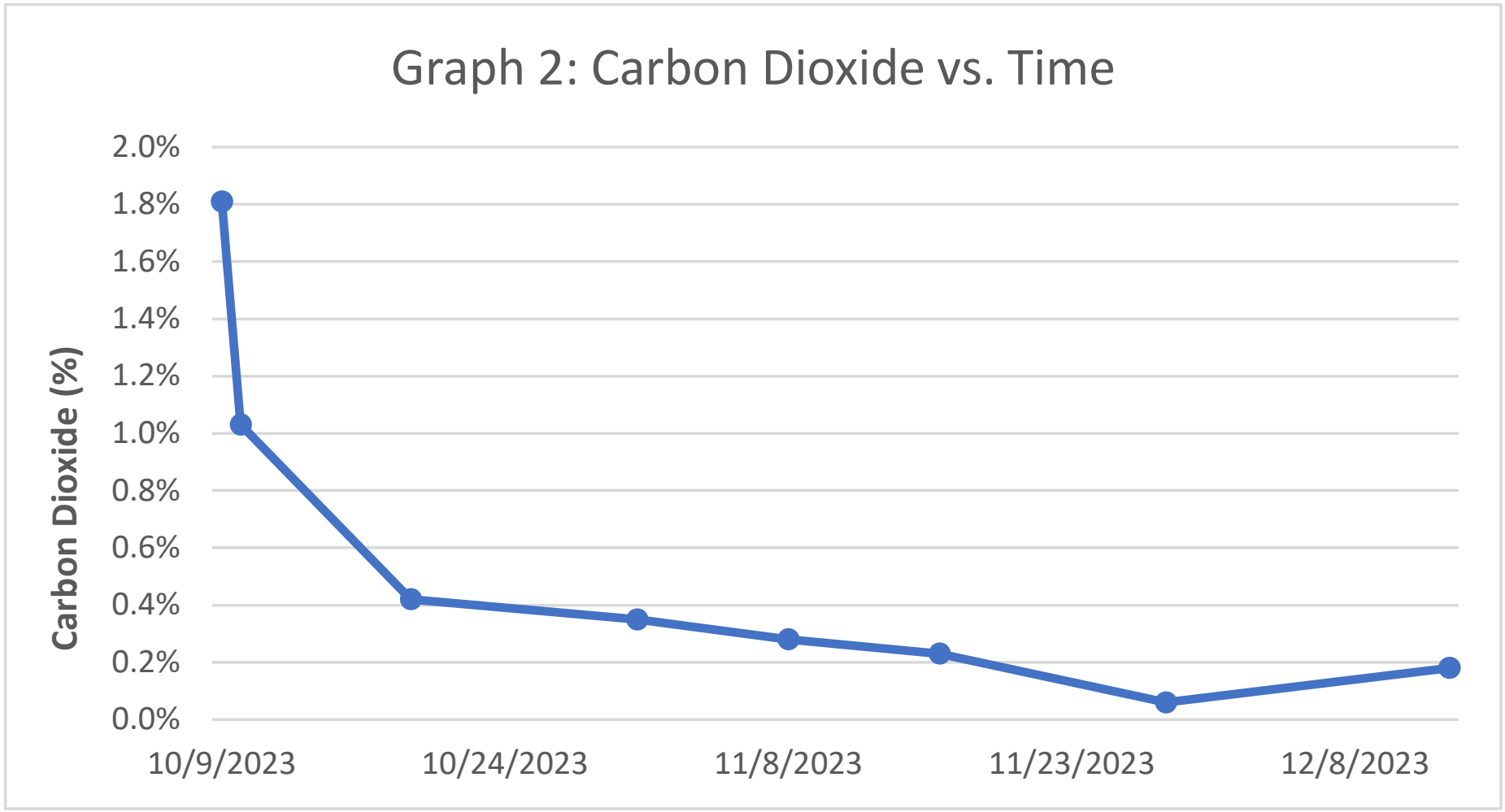
Mass Recovery

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	0.05	0.39	0.07	3.1	160	0.080
		Total Mass Recovery to Date	2.8	13.5	2.3	45	2,388	1.19

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





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APPENDIX A

Field Notes

Location SJ 32-9 #41A Date 10-5-23

Project / Client HEC

DB Truck/tools, ~~[redacted]~~ Generator, Welder

1430- Onsite to install SVE manifold & remediation well piping.

Two of the 1½" unions are cracked. Need replacements.

1630- ~~Offsite~~

10-6-23

1415- Onsite to continue SVE manifold install

Need to replace exhaust so temp gauge can be installed.

1620- Offsite

Hrs mtr @ 0.1

Location SJ 32-9 #41A Date 10-5-23

Project / Client HEC

DB Truck/tools, ~~[redacted]~~ Generator, Welder

1430- Onsite to install SVE manifold & remediation well piping.

Two of the 1½" unions are cracked. Need replacements.

1630- ~~Offsite~~

10-6-23

1415- Onsite to continue SVE manifold install

Need to replace exhaust so temp gauge can be installed.

1620- Offsite

Hrs mtr @ 0.1

4

Location SS 32-9 41A Date 10-9-23

Project / Client HEC Sunny, 70s

DB Truck/tools, HIVAS, PID, 6-gas

1000- Onsite for SVE system start up
Review HASP, sign JSA.

Hours meter is located on electrical panel on northwest corner of pad.

-Start up system at 12:30. Hrs meter @ 0.1
Total flow - 62 scfm
Vac - 88 in H_2O
Exhaust PID - 2,461 ppm
Temp - 150 °F
Diff. Pressure - 3.4 in H_2O
KO Tank - empty

	Influent	SVE01	02	03
Flow (scfm)	62	34	2	26
Vac (in H_2O)	88	72.1	80.7	76.3
PID (ppm)	1,783	1,816	307	524
CH_4 (ppm)	315	755	140	165
Oxy (vol %)	20.9	20.9	20.9	20.1
H_2S (ppm)	0.0	0.0	0.0	0.0
CO (ppm)	0	0	0	10
CO_2 (vol %)	0	0	0	1.40

1530 - Influent 10-9-23 collected
PID - 1,574 ppm

1600 - Offsite

Location SJ 32-9 #41A Date 10-10-23 5

Project / Client HEC Partly cloudy, 70s

DB Truck/Tools, HVAS, PID, 6-gas

0945 - Onsite for week 1 SVE O+M
Review HASP, JSA. System running upon arrival.

SVE parameters @ 11:00
Total Flow - 64 scfm
Vac - 90 in H_2O
Exhaust PID - 2,387 ppm
Temp - 155°F
Diff. Press - 3.4 in H_2O
KO Tank - empty, some liquids in rotameters.

	Influent	SVE01	02	03
Flow (scfm)	64	38	2	24
Vac (in. H_2O)	90	73.4	83.8	77.2
PID (ppm)	1,646	1,734	291	411
CH_4 (ppm)	300	750	140	1,800
Oxy (vol%)	20.9	20.9	20.9	19.2
H_2S (ppm)	0.0	0.0	0.0	0.0
CO (ppm)	0	0	0	15
CO_2 (vol%)	0	0	0	1.38

1520 - Influent 10-10-23
PID - 1,483 ppm
1540 - Offsite Hours - 25.7 @ 15:45

Rite in the Rain

6

Location SJ 32-9 #41A Date 10-11-23

Project / Client HEC Cloudy, 70's

DB Truck/tools, HVAS, PID, 6-gas

1145- Onsite for week 1 SVE O&M startup
Review HASP, sign JSA.
System running upon arrival.

SVE Parameters @ 12:30

Total Flow - 70 scfm
Vac - 76 inH2O
Exhast PID - 2,271
Temp - 145 °F
Diff. Pressure - 4.0 inH2O
KO Tank - 2" visible, liquid in rotameters

	Influent	SVE 01	02	03
Flow scfm	70	44	<2	24
Vac in.H2O	76	67	64	60
PID ppm	1,371	671	153	753
CH4 ppm	5,700	4,050	510	2,450
Oxy vol%	19.2	19.8	20.2	18.5
H2S ppm	0.0	0.0	0.0	0.0
CO ppm	15	0	0	18
CO2 vol%	1.00	0.36	0.62	1.62
CH4 %LEL	8	4	5	0

-greased blower bearings
1505 - H2S - 49.0
10 - Offsite

Location SJ 32-9 41A Date 10-12-23

Project / Client HEC Breezy, partcloudy 50's

DB Truck, HVAS, PID, 6-gas

1030 - Onsite for Week 1 O+M
Review HASP+JSA
System running upon arrival.

SVE Parameters @ 11:00
Total Flow SCFM - 70
Vac inH2O - 68
Exhaust PID ppm - 2,359
Temp °F - 125
Diff. Pressure inH2O - 4.0
KO Tank - 2.5 in, liq. in rotameters O2 + O3

		Infl.	SVE01	O2	O3
Flow	SCFM	70	50	2	18
Vac	inH2O	68	46	66	54
PID	ppm	1,178	842	52	256
CH_4	ppm	4,050	3,050	0	550
Oxy	vol%	19.5	20.2	20.3	20.5
H_2S	ppm	0.0	0.0	0.0	0.0
CO	ppm	8	0	0	0
CO_2	vol%	0.74	0.30	0.64	0.18
CH_4	%LEL	4	1	4	4

1200 - Offsite

11:50 - HCS
69.7

Rite in the Rain

Location SJ 32-9 #41A Date 10-13-23 9

Project / Client HEC

EC, TRUCK, HVAS, PID, 6-Gas Sunny 70's

11:20 EC on site for week 1 O&M
System on & running
JSA Cal PID 100 ppm
SVE Parameters
Flow 70 SCFM
Vac 62 INC
Exh PID
Temp 160° F
Diff pres 4.1 INC
KO Tank 2 5/8" in sight glass

	Inf	SVE 01	SVE 02	SVE 03
~~Flow scfm~~				
Vac Inc	62	39	48	43
PID ppm	667	395	83.6	448
CH_4 ppm	3500	980	195	1010
O_2 %Vol	20.1	20.9	20.9	20.3
H_2S ppm	0	0	0	0
CO ppm	8	0	0	0
CO_2 %vol	0.62	0.22	0.16	0.64
CH_4 %LEL	4	2	3	1
Flow SCFM	70	50	2	18

12:30 Off-site Hours 94.4 @ 12:26

10

Location SJ 32-9 #41A Date 10-19-23

Project / Client HEC Sunny, 80s

DB Truck, HVAS, PID, 6-Gas

1415 - Onsite for weekly O&M. HABP, JSS,
System running upon arrival

SVE Parameters @ 14:30

Total Flow scfm - 66

Vac in. H_2O - 52

Exhaust PID ppm - 2,143

Temp °F - 140

Diff. Press. in H_2O - 4.94

KO Tank - ~1" in tube, some liquids in rotameter SVE02

		Influent	SVE01	02	03
Flow	scfm	66	>50	x2	14
Vac	in H_2O	52	26	46	38
PID	ppm	*397	435	28	180
CH_4	ppm	2,300	2,150	290	640
Oxy	vol%	20.5	20.7	20.9	20.7
H_2S	ppm	0.0	0.0	0.0	0.0
CO	ppm	0	0	0	0
CO_2	vol%	0.40	0.28	0.28	0.34
CH4	%LEL	-3	-4	-8 (0?)	-7

1500 - Influent 10-19-23 collected
* PID - 397

1515 - offsite Hrs @ 241.2
released beast 5, need oil

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

DATE: 10/26/2023
TIME ONSITE: 1100
O&M PERSONNEL: S Hyde
TIME OFFSITE: 1200

SVE SYSTEM - MONTHLY O&M

SVE ALARMS:	none	KO TANK HIGH LEVEL	none

		Check/Date
WEEKLY MAINTENANCE:	Blower Bearing Grease	10/26/2023
QUARTERLY MAINTENANCE:	Blower Oil Change	—

SVE SYSTEM	READING	TIME
Blower Hours (take photo)	405.0	1106
Total Flow (scfm)		
Inlet Vacuum (IHG)	52 IWC / 3.8 Hg	
Differential Pressure (IWC)	5.2	
Inlet PID	432.1	
Exhaust PID	515.5	
Exhaust ~~Inlet~~ Temperature	127°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: No change

WELLHEAD MEASUREMENTS

WELL ID	VACUUM (IHG)	PID HEADSPACE (PPM)	FLOW (CFM)	CH_4	O_2	H_2S	CO	CO
				~~OXYGEN~~			~~CARBON MONOXIDE~~	
SVE01	36 IWC / 1.9 Hg	115.5	>50	280	20.2%	0 ppm	0 ppm	0.0
SVE02	48 IWC / 3.7 Hg	46	—	145 ppm	20.7%	0 ppm	0 ppm	0.0
SVE03	38 IWC / 2.8 Hg	77.1	14	175 ppm	20.3%	0 ppm	0 ppm	0.0
Inlet	52 IWC / 3.8 Hg	432.1	—	195 ppm	19.8%	0 ppm	0 ppm	0.3

COMMENTS/OTHER MAINTENANCE:

SVE02 crack coupler upstream of rotameter on manifold causing bypass of air flow

Inlet Thermal Anemometer = 74000 fpm @ 61°F

Location SJ 32-9 #41A Date 10/26/2023

Project / Client Hilcorp, Sunny 57°F, light wind

GMC 1500, PID, 4-gas, 6-gas, HVAS

1100 - Onsite, completed JSA and calibrated PID @ Sunray site
- System on upon arrival
- O+M parameters collected/recorded on O+M form

1200 Offsite

1200

12

Location SJ 32-9 #41 A Date 10-31-23

Project / Client Hilcorp 45°, sunny

truck, PID, 6-gas, 4-gas, HVAS, sample kit

1130 - onsite for OHM and samples
JSA signed, PID calibrated, HVAS cleared
- System running upon arrival, parameters
collected on OHM form

- 2 x tedlar bag gas samples
"San Juan 32-9 #41 A Influent" at 1300

1300 leaving site

To DO - Replace SVE 01 rotameter
to 0-100 SCFM

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41A

~~SUNDAY B~~ 1B SVE SYSTEM
O&M FORM

DATE: 10-31-23
TIME ONSITE: 1130

O&M PERSONNEL: Zach M + S
TIME OFFSITE: 1300

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**)	525.8	1150
Total Flow (scfm)	~76.5	
Inlet Vacuum (IHG)	3.6	
Differential Pressure (IWC)	5.2	
Inlet PID	440	
Exhaust PID	725	
~~Inlet~~ Exhaust Temperature	46 C	
K/O Tank Liquid Level	—	N
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	1.8	~~38.2~~ 368	>50	20.95	0.~~06~~18
SVE02	~~3.2~~ 2.6	8.1	2.5	20.9	0.04
SVE03		~~46~~ 62.8	14	20.9	0.0~~8~~4

COMMENTS/OTHER MAINTENANCE:

Flow on SVE01 ~~dd~~ scale, would be ~ 60 scfm if there was an adequate scale
-blower unit greased
-2x tedlar bag samples taken "San Juan 32-9 #41A Influent" at 1300

Soil Gas ~~Groundwater~~ Related Activities

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JOB SAFETY AND ENVIRONMENTAL ANALYSIS (JSEA) – TASK HAZARD ASSESSMENT FORM

This table of Hazards and Controls can assist the work group to manage hazards for the proposed work. The table does not include all possible hazards. **It is expected that the required PPE for the activity and work conditions will be used.** Determine the Hazards that are present for the task and identify the Controls to be implemented.

Client/Facility: San Juan 32-9 #41A Required PPE: Sunny / B1B Level D 4-gas	Emergency Contact Info H&S Manager - Janay Melancon (318)-258-0688 PM: Stuart Hyde	Date: 10-31-23	Muster Point: entrance to site

General

Potential Risks	Risk Mitigation	Potential Risks	Risk Mitigation
☑ Vehicle Breakdown/Accident	maintain vehicle, obey traffic laws, drive carefully on dirt roads	☑ Wildlife	avoid tall grass, deer, snakes, cows
☑ Slips, Trips, and Falls	watch footing, avoid loose soil, use stairs/handrails	☑ Unpredictable weather	watch forecast
☑ Endangerment of workers onsite	make contact with any workers that show up	☑ Allergic reaction to vegetation	avoid vegetation
☐ ~~Line of Fire, strike zones~~ slips trips falls		☑ Working in rural locations	maintain contact w/ PM
☑ Cold/hot stress on workers and/or equipment	take breaks as needed	☑ Hazardous atmosphere	4-gas, avoid confined spaces

☑ **Groundwater sampling / gauging / product recovery**

Potential Risks	Risk Mitigation	Potential Risks	Risk Mitigation
☐ Chemical contact with skin and eyes and/or inhalation of vapors		☑ Hand Injury	careful hand placement, turn off equipment before touching
☐ Gas build up in well casing		☑ Noise	hearing protection
		☐	
		☐	

☐ **Domestic Water Well Sampling**

Potential Risks	Risk Mitigation	Potential Risks	Risk Mitigation
☐ Hand Injury		☐ Chemical contact with skin and eyes and/or inhalation of vapors	
☐ Pets / Livestock		☐	
☐		☐	
☐			

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JOB SAFETY AND ENVIRONMENTAL ANALYSIS (JSEA) – TASK HAZARD ASSESSMENT FORM

This table of Hazards and Controls can assist the work group to manage hazards for the proposed work. The table does not include all possible hazards. It is expected that the required PPE for the activity and work conditions will be used. Determine the Hazards that are present for the task and identify the Controls to be implemented.

Client/Facility: 41A Required PPE:	Emergency Contact Info H&S Manager - Janay Melancon (318)-268-0668 PM -	Date: 10 31 -23	Muster Point:

TASK (Description of task not described above)	POTENTIAL HAZARDS (What could go wrong?)	HAZARDS CONTROLS (How can harm be prevented?)

Signatures:

Everyone onsite has Stop-Work Authority

Lessons Learned and Improvements: In section below describe difficulties encountered while performing this task; or any activities, steps, or safeguards (including PPE) that could be improved if this task is performed again in the future.

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Chain-of-Custody Record

Client: Hilcorp attn Mitch Killough
mkillough@hilcorp.com

Mailing Address:

Phone #:

email or Fax#:

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

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

Turn-Around Time: 5-day
☑ Standard ☐ Rush

Project Name: San Juan 32-9 #41A

Project #:

Project Manager: Stuart Hyde
shyde@ensolum.com

Sampler:

On Ice: ☐ Yes ☐ No

# of Coolers:

Cooler Temp(including CF): (°C)

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No.	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)	Fixed gases O_2, CO_2					
10/31/23	1300	Air	San Juan 32-9 #41A Inlet port	2x tedlar	—			✓						✓			✓					

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
10/31/23	1606	[signature]	[signature]		10/31/23	1606
Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time

Remarks: cc: zmyers@ensolum.com

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.

Location SJ 32-9 #41A Date 11-8-23

Project / Client HEC

DB - Truck, PID, 4-gas, HVAS, sample.

1015 - Onsite for O+M
System running upon arrival. Load up extra HDPE piping to use at Standard #1.
SVE Parameters @ 11:00
Total Flow SCFM - 69
Vac in. H_2O - 52
Exhaust PID ppm - 526
Temp °F - 120
Diff. Press. in H_2O - 5.17
KO Tank - Zero visible in tube, some liq in SVE 02+03 rotameters.

	Influent	01	02	03
Flow SCFM	69	>50	5	14
Vac IWC	52	22	44	36
PID ppm	422	437	49	312
CH_4 ppm	0	0	0	0
Oxy vol%	19.8	20.0	19.6	19.1
H_2S ppm	0.0	0.0	0.0	0.0
CO ppm	0	0	0	0
CO_2 vol%	0.24	0.08	0.54	0.72
CH_4 %LEL	-11	-10	-11	-11

PID - 422

12:10 - Influent 11-8-23 collected -greased bearings.

12:30 - Offsite

Location SJ 32-9 UN 41A Date 11-16-23

Project / Client

ZM, truck + tools, 4-gas, 6-gas, HVAS, sample kit, PID

1145 on site for O+M and sampling
- PID calibrated, JSA signed

System running upon arrival

Parameters on O+M form

SVE01 valve partly closed, 02 fully closed upon arrival, verified w/ Danny Burns they should be open and recorded parameters/sampled

2x tedlar bag samples
"San Juan 32-9 #41A Influent" at 1245

- Notified operator and turned off system to grant blower motor
- All valves open, system on when leaving, 911.9 hours

1300 leaving site for Suny

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41A

SVE SYSTEM O&M FORM

DATE: 11-16-23 O&M PERSONNEL: Zach Myers

TIME ONSITE: 11:45 TIME OFFSITE: _____

SVE SYSTEM - MONTHLY O&M

SVE ALARMS:	none	KO TANK HIGH LEVEL	sight tube empty

		Check/Date
WEEKLY MAINTENANCE:	Blower Bearing Grease	11-16
QUARTERLY MAINTENANCE:	Blower Oil Change	—

SVE SYSTEM	READING	TIME
Blower Hours (take photo)	911.9	1300
Total Flow (scfm)	>66	1200
Inlet Vacuum (IHG)	3.8	↓
Differential Pressure (IWC)	5.2	
Inlet PID	541 ppm	
Exhaust PID	956 ppm	
exhaust Inlet Temperature	125	
K/O Tank Liquid Level	no liquid in tube	
K/O Liquid Drained (gallons)	—	

19.2 vol% O_2 0.20 vol% CO_2

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 IWC vol %

WELL ID	VACUUM (IHG)	PID HEADSPACE (PPM)	FLOW (CFM)	OXYGEN	CARBON DIOXIDE
SVE01	21.7	514	>50	19.2	0.18
SVE02	36.5	94.6	2	19.1	0.46
SVE03	29.4	315	14	19.1	0.26

COMMENTS/OTHER MAINTENANCE:

lots of fluid in O2 rotameter, flushed out
O1 partly closed. O2 fully closed upon arrival. verified they should be open and re-opened and re measured
-greased blower motor

Location SJ 32-9 #41A Date 11-22-23

Project / Client Hilcorp clear 45°

ZM, Truck + tools, 4-gas, 6-gas, HVAS, PID

1130 on site for O+M
- PID calibrated, JSA signed
System running upon arrival
Parameters collected on O+M form

Greased motor after de-activating
Drained 4.5 gallons brown water from KO tank
Flushed water from vac lines

All valves open, system on when leaving

1230 leaving site for Sunray

#41 A

ENSOLUM

SVE SYSTEM O&M FORM

DATE: 11-22 O&M PERSONNEL: Zach Mc

TIME ONSITE: 1130 TIME OFFSITE: 1230

SVE SYSTEM - MONTHLY O&M

SVE ALARMS:	n/a	KO TANK HIGH LEVEL	n/a

		Check/Date
WEEKLY MAINTENANCE:	Blower Bearing Grease	11-22-23
QUARTERLY MAINTENANCE:	Blower Oil Change	—

SVE SYSTEM	READING	TIME
Blower Hours (take photo)	1,054.6	11:45
Total Flow (scfm)	>65	11:45
Inlet Vacuum (IHG)	3.6	11:45
Differential Pressure (IWC)	5.5	11:45
ppm Inlet PID	225.4	12:05
Exhaust PID	637	11:45
exhaust ~~Inlet~~ Temperature	112°F	11:45
K/O Tank Liquid Level	1" in sight tube	11:45
K/O Liquid Drained (gallons)	4.5	12:15

19.6 vol % O_2, 0.12 CO_2

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: no change

WELLHEAD MEASUREMENTS

WELL ID	VACUUM ~~(IHG)~~ inWC	PID HEADSPACE (PPM)	FLOW (CFM)	OXYGEN vol %	CARBON DIOXIDE vol %
SVE01	21.4	328.	>50	19.6	0.12
SVE02	36.6	92.7	3	19.5	0.18
SVE03	30.7	154	12	19.6	0.10

COMMENTS/OTHER MAINTENANCE:

grease motor, dram lines and KO tank

#41A

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SVE SYSTEM
O&M FORM

DATE: 11-28-23 O&M PERSONNEL: Zach Wyss

TIME ONSITE: 1200 TIME OFFSITE: 1315

SVE SYSTEM - MONTHLY O&M

SVE ALARMS:	—	KO TANK HIGH LEVEL	—

		Check/Date
WEEKLY MAINTENANCE:	Blower Bearing Grease	11-28
QUARTERLY MAINTENANCE:	Blower Oil Change	—

SVE SYSTEM	READING	TIME
Blower Hours (**take** photo)	1,199.6	1300
Total Flow (scfm)	>67	1210
Inlet Vacuum (IHG)	4.0	1210
Differential Pressure (IWC)	5.3	1210
Inlet PID	91.2	1230
Exhaust PID	386	1210
Ex ~~Inlet~~ Temperature	105 F	1210
K/O Tank Liquid Level	1" In sight tbe	1300
K/O Liquid Drained (gallons)	4.5	1305

19.8 Vol% O_2, 0.02 CO_2

SVE SYSTEM - QUARTERLY SAMPLING

SAMPLE ID:	San Juan 32-9 #41A Influent **SAMPLE TIME:** 1245
Analytes:	Sample Bi-Weekly (every other week) for TVPH (8015), BTEX (8260), Fixed Gas (CO2 AND O2)
OPERATING WELLS	1, 2, 3

Change in Well Operation: —

WELLHEAD MEASUREMENTS IWC Vol%

WELL ID	VACUUM (~~IHG~~)	PID HEADSPACE (PPM)	FLOW (CFM)	OXYGEN	CARBON DIOXIDE
SVE01	22.7	55.0	>50	19.8	0.02
SVE02	37.5	108	3	19.6	0.04
SVE03	33.2	47.8	14	19.6	0.06

COMMENTS/OTHER MAINTENANCE:

Location SJ 32-9 #41A Date 11-28-23

Project / Client

ZM, truck, 4gas, 6gc, HAS PID, sample kit

1200 onsite for SVE system O+M and sampling
- Al Thompson onsite for SVE

Exhaust stack on ground, appears to have been unscrewed, not broken
- adding a support could be helpful

System running upon arrival, all valves open

Parameters on O+M form

Flushed fluids from vacuum lines
- drained 4.5 gallons from KO tank
- re-attached exhaust
- greased blower motor
- 2x tedlar bag samples "SanJuan 32-9 #41A Influent" PID 9.2

Restart system
- system running upon departure, all valves open

1315 leaving site

Chain-of-Custody Record

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Client: Hilcorp attn. Mitch Killough
mkillough@hilcorp.com

Mailing Address:

Phone #:

email or Fax#:

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

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

Turn-Around Time:
☑ Standard ☐ **Rush**

Project Name: San Juan 32-9 #41A

Project #:

Project Manager: Stuart Hyde
shyde@ensolum.com

Sampler: Zach Myers

On Ice: ☐ Yes ☐ No

# of Coolers:

Cooler Temp (including CF): (°C)

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No.	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)	Fixed gas CO_2, O_2					
[illegible]	1245	gas	San Juan 32-9 #41A Influent	2x tedlar	–			X						X			X					

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
[illegible]	1510	Zach Myers	[illegible]		[illegible]	1510
Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time

Remarks: cc [illegible]

...contracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

ENSOLUM

SS 32-9 #411A

SVE SYSTEM
O&M FORM

DATE: 12/7/23 O&M PERSONNEL: Reece Hanson
TIME ONSITE: 13:00 TIME OFFSITE: 14:00

SVE SYSTEM - MONTHLY O&M

SVE ALARMS:	–	KO TANK HIGH LEVEL	–

		Check/Date
WEEKLY MAINTENANCE:	Blower Bearing Grease	✓ 12/7/23
QUARTERLY MAINTENANCE:	Blower Oil Change	

SVE SYSTEM	READING	TIME
Blower Hours (take photo)	1415.0	13:05
Total Flow (scfm)	85	13:10
Inlet Vacuum ~~(IHG)~~ IWC	50	13:11
Differential Pressure (IWC)	6	13:15
Inlet PID	231	13:25
Exhaust PID	383	13:37
Inlet Temperature	NA	NA
K/O Tank Liquid Level	Empty Site tube	
K/O Liquid Drained (gallons)	~2	

O2 CO2
19.1 0.10

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	01, 02, 03

Change in Well Operation: leave all wells open

WELLHEAD MEASUREMENTS

WELL ID	VACUUM ~~(IHG)~~ IWC	PID HEADSPACE (PPM)	FLOW (CFM) SCFM	OXYGEN	CARBON DIOXIDE
SVE01	22.7	240	>50	19.1	0.06
SVE02	39.0	66	5	19.1	0.16
SVE03	32	134	30	19.0	0.24

COMMENTS/OTHER MAINTENANCE:

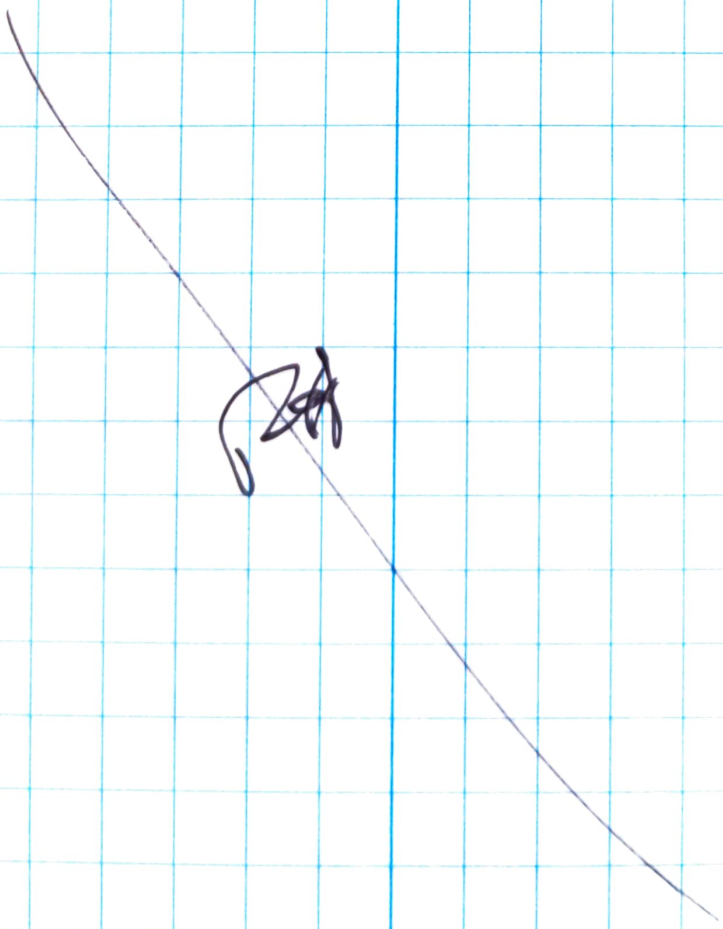
Location SJ 32-7 #41A Date 12/7/23

Project / Client H:lcorp

2H, Truck/tools, PID, HVAS, 4-gas, Eagle

1300 - RH on Site For O+M
- system running
- Calibrated PID @ Sunray
drain 2 gal from H/O tank
- attempted to get fluid out of lines + rota-meters into H/O tank first

1400 - RH off Site



Rite in the Rain

41A

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SVE SYSTEM
O&M FORM

DATE: 12-13-23 O&M PERSONNEL: Zach Myo

TIME ONSITE: 1045 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)		1130
Total Flow (scfm)	>66	1058
Inlet Vacuum (IHG)	4.0	1055
Differential Pressure (IWC)	5.6	1058
Inlet PID	317	1125
Exhaust PID	374	1055
Inlet Temperature	100°F	1055
K/O Tank Liquid Level	0"	1055
K/O Liquid Drained (gallons)	—	—

19.1 Vol % O_2, 0.12 CO_2

SVE SYSTEM - QUARTERLY SAMPLING

SAMPLE ID: San Juan 32-9 41A Inlet **SAMPLE TIME:** 1120

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

OPERATING WELLS 1, 2, 3

Change in Well Operation:

WELLHEAD MEASUREMENTS IWC Vol %

WELL ID	VACUUM (~~IHG~~)	PID HEADSPACE (PPM)	FLOW (CFM)	OXYGEN	CARBON DIOXIDE
SVE01	22.7	137	>50	19.2	0.00
SVE02	39.0	50.2	2	19.1	0.16
SVE03	36.2	112	14	19.1	0.14

COMMENTS/OTHER MAINTENANCE:

exhaust stack on ground upon arrival, reinstall and secure w/ tape

18

Location SJ 32-9 41A

Date 12-13-23

Project / Client Hilcorp

cloudy, raining, 40°

ZM, truck, 4-30, 6-85, HVAS, PID

1045 onsite for O+M and sampling
- JSA signed, PID calibrated

System running: hours at
-exhaust stack on ground
Parameters recorded on O+M form

Operator notified and system shut down to grease blower motor

2x tedlar bag samples "SanJuan 32-9 #41A inPlant"
taken at 1120 PID 317 ppm

1140 leaving site

ENSOLUM

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

DATE: 12-20-23 O&M PERSONNEL: DBurns
TIME ONSITE: 1300 TIME OFFSITE: 1430

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)	1726.9	1310
Total Flow (scfm)		
Inlet Vacuum (IHG)	60	
Differential Pressure (IWC)	58	
Inlet PID		
Exhaust PID		
~~Exhaust~~ Inlet Temperature	100	
K/O Tank Liquid Level	2 1/4	
K/O Liquid Drained (gallons)	6 gal	

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:

B. Hall onsite to put temp heat trace on KO Tank

Location SJ 32-9 41A Date 12-28

Project / Client Hilcorp

ZM, truck, 4-gas, 6-gas, HVAS, PID

1140 onsite for O+M and sampling
- ISA signed, PID calibrated
System running = 1916.1 hours at 1230
- exhaust stack on ground
Parameters recorded on O+M form
- lower schedule 80 fitting on exhaust broken, needs replacement
System shut down to grease blower motor

2x tedlar bags grab sample "San Juan 32-9 #41A Influent" at [redacted] zm 1215
1240 leaving site

ZM

#41A

ENSOLUM

SVE SYSTEM O&M FORM

DATE: 12-28 O&M PERSONNEL: Zach Myers

TIME ONSITE: 1140 TIME OFFSITE: 1240

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)	1916.1	1230
Total Flow (scfm)	>70	
Inlet Vacuum (IHG)	4.4	
Differential Pressure (IWC)	5.7	
Inlet PID	232	1220
Exhaust PID	390	
EX ~~Inlet~~ Temperature	105	
K/O Tank Liquid Level	no fluid in sight tube 0"	
K/O Liquid Drained (gallons)	—	

19.0 Vol % O_2, 0.14 CO_2

SVE SYSTEM - QUARTERLY SAMPLING

SAMPLE ID:	San Juan 32-9 #41A Influent **SAMPLE TIME:** 1215
Analytes:	Sample Bi-Weekly (every other week) for TVPH (8015), BTEX (8260), Fixed Gas (CO2 AND O2)
OPERATING WELLS	1, 2, 3

Change in Well Operation: —

WELLHEAD MEASUREMENTS

WELL ID	VACUUM (~~IHG~~ IWC)	PID HEADSPACE (PPM)	FLOW (CFM)	OXYGEN	CARBON DIOXIDE
SVE01	33.3	275	>50	19.1	0.02
SVE02	44.8	29.9	5	19.1	0.00
SVE03	38.1	70.8	15	19.1	0.08

COMMENTS/OTHER MAINTENANCE:

KO drum 48" high x 22" diameter

small amount of ice in 02 rotameter

lower Schedule 80 fitting on exhaust steel bonton, needs replacement

ENSOLUM

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 October 9, 2023 at 3:21 PM Hours = 1.3	
Photograph 2 Runtime meter taken on December 28, 2023 at 12:26 PM Hours = 1,916.1	

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

ENSOLUM

APPENDIX C

Laboratory Analytical Reports

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

November 02, 2023

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

RE: San Juan 32 9 41 A OrderNo.: 2310677

Dear Stuart Hyde:

Hall Environmental Analysis Laboratory received 2 sample(s) on 10/13/2023 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

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

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2310677**
Date Reported: **11/2/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: Influent 10-9-23
Project: San Juan 32 9 41 A
Collection Date: 10/9/2023 3:30:00 PM
Lab ID: 2310677-001 **Matrix:** AIR
Received Date: 10/13/2023 6:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	17000	250		µg/L	50	10/20/2023 11:56:54 AM
Surr: BFB	208	15-412		%Rec	50	10/20/2023 11:56:54 AM
EPA METHOD 8260B: VOLATILES						Analyst: **JR**
Benzene	46	5.0		µg/L	50	10/19/2023 11:40:37 AM
Toluene	130	5.0		µg/L	50	10/19/2023 11:40:37 AM
Ethylbenzene	13	5.0		µg/L	50	10/19/2023 11:40:37 AM
Methyl tert-butyl ether (MTBE)	ND	5.0		µg/L	50	10/19/2023 11:40:37 AM
1,2,4-Trimethylbenzene	ND	5.0		µg/L	50	10/19/2023 11:40:37 AM
1,3,5-Trimethylbenzene	ND	5.0		µg/L	50	10/19/2023 11:40:37 AM
1,2-Dichloroethane (EDC)	ND	2.0		µg/L	50	10/19/2023 11:40:37 AM
1,2-Dibromoethane (EDB)	ND	5.0		µg/L	50	10/19/2023 11:40:37 AM
Naphthalene	ND	10		µg/L	50	10/19/2023 11:40:37 AM
1-Methylnaphthalene	ND	20		µg/L	50	10/19/2023 11:40:37 AM
2-Methylnaphthalene	ND	20		µg/L	50	10/19/2023 11:40:37 AM
Acetone	ND	50		µg/L	50	10/19/2023 11:40:37 AM
Bromobenzene	ND	5.0		µg/L	50	10/19/2023 11:40:37 AM
Bromodichloromethane	ND	5.0		µg/L	50	10/19/2023 11:40:37 AM
Bromoform	ND	5.0		µg/L	50	10/19/2023 11:40:37 AM
Bromomethane	ND	10		µg/L	50	10/19/2023 11:40:37 AM
2-Butanone	ND	50		µg/L	50	10/19/2023 11:40:37 AM
Carbon disulfide	ND	50		µg/L	50	10/19/2023 11:40:37 AM
Carbon tetrachloride	ND	5.0		µg/L	50	10/19/2023 11:40:37 AM
Chlorobenzene	ND	5.0		µg/L	50	10/19/2023 11:40:37 AM
Chloroethane	ND	10		µg/L	50	10/19/2023 11:40:37 AM
Chloroform	ND	5.0		µg/L	50	10/19/2023 11:40:37 AM
Chloromethane	ND	5.0		µg/L	50	10/19/2023 11:40:37 AM
2-Chlorotoluene	ND	5.0		µg/L	50	10/19/2023 11:40:37 AM
4-Chlorotoluene	ND	5.0		µg/L	50	10/19/2023 11:40:37 AM
cis-1,2-DCE	ND	5.0		µg/L	50	10/19/2023 11:40:37 AM
cis-1,3-Dichloropropene	ND	5.0		µg/L	50	10/19/2023 11:40:37 AM
1,2-Dibromo-3-chloropropane	ND	10		µg/L	50	10/19/2023 11:40:37 AM
Dibromochloromethane	ND	5.0		µg/L	50	10/19/2023 11:40:37 AM
Dibromomethane	ND	10		µg/L	50	10/19/2023 11:40:37 AM
1,2-Dichlorobenzene	ND	5.0		µg/L	50	10/19/2023 11:40:37 AM
1,3-Dichlorobenzene	ND	5.0		µg/L	50	10/19/2023 11:40:37 AM
1,4-Dichlorobenzene	ND	5.0		µg/L	50	10/19/2023 11:40:37 AM
Dichlorodifluoromethane	ND	5.0		µg/L	50	10/19/2023 11:40:37 AM
1,1-Dichloroethane	ND	5.0		µg/L	50	10/19/2023 11:40:37 AM
1,1-Dichloroethene	ND	5.0		µg/L	50	10/19/2023 11:40:37 AM

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 **2310677**
Date Reported: **11/2/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: Influent 10-9-23
Project: San Juan 32 9 41 A
Collection Date: 10/9/2023 3:30:00 PM
Lab ID: 2310677-001 **Matrix:** AIR **Received Date:** 10/13/2023 6:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: **JR**
1,2-Dichloropropane	ND	5.0		µg/L	50	10/19/2023 11:40:37 AM
1,3-Dichloropropane	ND	5.0		µg/L	50	10/19/2023 11:40:37 AM
2,2-Dichloropropane	ND	5.0		µg/L	50	10/19/2023 11:40:37 AM
1,1-Dichloropropene	ND	5.0		µg/L	50	10/19/2023 11:40:37 AM
Hexachlorobutadiene	ND	5.0		µg/L	50	10/19/2023 11:40:37 AM
2-Hexanone	ND	50		µg/L	50	10/19/2023 11:40:37 AM
Isopropylbenzene	ND	5.0		µg/L	50	10/19/2023 11:40:37 AM
4-Isopropyltoluene	ND	5.0		µg/L	50	10/19/2023 11:40:37 AM
4-Methyl-2-pentanone	ND	50		µg/L	50	10/19/2023 11:40:37 AM
Methylene chloride	ND	15		µg/L	50	10/19/2023 11:40:37 AM
n-Butylbenzene	ND	15		µg/L	50	10/19/2023 11:40:37 AM
n-Propylbenzene	ND	5.0		µg/L	50	10/19/2023 11:40:37 AM
sec-Butylbenzene	ND	5.0		µg/L	50	10/19/2023 11:40:37 AM
Styrene	ND	5.0		µg/L	50	10/19/2023 11:40:37 AM
tert-Butylbenzene	ND	5.0		µg/L	50	10/19/2023 11:40:37 AM
1,1,1,2-Tetrachloroethane	ND	5.0		µg/L	50	10/19/2023 11:40:37 AM
1,1,2,2-Tetrachloroethane	ND	5.0		µg/L	50	10/19/2023 11:40:37 AM
Tetrachloroethene (PCE)	ND	5.0		µg/L	50	10/19/2023 11:40:37 AM
trans-1,2-DCE	ND	5.0		µg/L	50	10/19/2023 11:40:37 AM
trans-1,3-Dichloropropene	ND	5.0		µg/L	50	10/19/2023 11:40:37 AM
1,2,3-Trichlorobenzene	ND	5.0		µg/L	50	10/19/2023 11:40:37 AM
1,2,4-Trichlorobenzene	ND	5.0		µg/L	50	10/19/2023 11:40:37 AM
1,1,1-Trichloroethane	ND	5.0		µg/L	50	10/19/2023 11:40:37 AM
1,1,2-Trichloroethane	ND	5.0		µg/L	50	10/19/2023 11:40:37 AM
Trichloroethene (TCE)	ND	5.0		µg/L	50	10/19/2023 11:40:37 AM
Trichlorofluoromethane	ND	5.0		µg/L	50	10/19/2023 11:40:37 AM
1,2,3-Trichloropropane	ND	10		µg/L	50	10/19/2023 11:40:37 AM
Vinyl chloride	ND	5.0		µg/L	50	10/19/2023 11:40:37 AM
Xylenes, Total	130	7.5		µg/L	50	10/19/2023 11:40:37 AM
Surr: Dibromofluoromethane	93.3	70-130		%Rec	50	10/19/2023 11:40:37 AM
Surr: 1,2-Dichloroethane-d4	110	70-130		%Rec	50	10/19/2023 11:40:37 AM
Surr: Toluene-d8	94.4	70-130		%Rec	50	10/19/2023 11:40:37 AM
Surr: 4-Bromofluorobenzene	99.5	70-130		%Rec	50	10/19/2023 11:40:37 AM

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 **2310677**
Date Reported: **11/2/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: Influent 10-10-23
Project: San Juan 32 9 41 A
Collection Date: 10/10/2023 3:20:00 PM
Lab ID: 2310677-002 **Matrix:** AIR
Received Date: 10/13/2023 6:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	13000	250		µg/L	50	10/20/2023 12:20:19 PM
Surr: BFB	207	15-412		%Rec	50	10/20/2023 12:20:19 PM
EPA METHOD 8260B: VOLATILES						Analyst: **JR**
Benzene	17	5.0		µg/L	50	10/19/2023 12:08:42 PM
Toluene	73	5.0		µg/L	50	10/19/2023 12:08:42 PM
Ethylbenzene	7.6	5.0		µg/L	50	10/19/2023 12:08:42 PM
Methyl tert-butyl ether (MTBE)	ND	5.0		µg/L	50	10/19/2023 12:08:42 PM
1,2,4-Trimethylbenzene	ND	5.0		µg/L	50	10/19/2023 12:08:42 PM
1,3,5-Trimethylbenzene	ND	5.0		µg/L	50	10/19/2023 12:08:42 PM
1,2-Dichloroethane (EDC)	ND	2.0		µg/L	50	10/19/2023 12:08:42 PM
1,2-Dibromoethane (EDB)	ND	5.0		µg/L	50	10/19/2023 12:08:42 PM
Naphthalene	ND	10		µg/L	50	10/19/2023 12:08:42 PM
1-Methylnaphthalene	ND	20		µg/L	50	10/19/2023 12:08:42 PM
2-Methylnaphthalene	ND	20		µg/L	50	10/19/2023 12:08:42 PM
Acetone	ND	50		µg/L	50	10/19/2023 12:08:42 PM
Bromobenzene	ND	5.0		µg/L	50	10/19/2023 12:08:42 PM
Bromodichloromethane	ND	5.0		µg/L	50	10/19/2023 12:08:42 PM
Bromoform	ND	5.0		µg/L	50	10/19/2023 12:08:42 PM
Bromomethane	ND	10		µg/L	50	10/19/2023 12:08:42 PM
2-Butanone	ND	50		µg/L	50	10/19/2023 12:08:42 PM
Carbon disulfide	ND	50		µg/L	50	10/19/2023 12:08:42 PM
Carbon tetrachloride	ND	5.0		µg/L	50	10/19/2023 12:08:42 PM
Chlorobenzene	ND	5.0		µg/L	50	10/19/2023 12:08:42 PM
Chloroethane	ND	10		µg/L	50	10/19/2023 12:08:42 PM
Chloroform	ND	5.0		µg/L	50	10/19/2023 12:08:42 PM
Chloromethane	ND	5.0		µg/L	50	10/19/2023 12:08:42 PM
2-Chlorotoluene	ND	5.0		µg/L	50	10/19/2023 12:08:42 PM
4-Chlorotoluene	ND	5.0		µg/L	50	10/19/2023 12:08:42 PM
cis-1,2-DCE	ND	5.0		µg/L	50	10/19/2023 12:08:42 PM
cis-1,3-Dichloropropene	ND	5.0		µg/L	50	10/19/2023 12:08:42 PM
1,2-Dibromo-3-chloropropane	ND	10		µg/L	50	10/19/2023 12:08:42 PM
Dibromochloromethane	ND	5.0		µg/L	50	10/19/2023 12:08:42 PM
Dibromomethane	ND	10		µg/L	50	10/19/2023 12:08:42 PM
1,2-Dichlorobenzene	ND	5.0		µg/L	50	10/19/2023 12:08:42 PM
1,3-Dichlorobenzene	ND	5.0		µg/L	50	10/19/2023 12:08:42 PM
1,4-Dichlorobenzene	ND	5.0		µg/L	50	10/19/2023 12:08:42 PM
Dichlorodifluoromethane	ND	5.0		µg/L	50	10/19/2023 12:08:42 PM
1,1-Dichloroethane	ND	5.0		µg/L	50	10/19/2023 12:08:42 PM
1,1-Dichloroethene	ND	5.0		µg/L	50	10/19/2023 12:08:42 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 **2310677**
Date Reported: **11/2/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: Influent 10-10-23
Project: San Juan 32 9 41 A
Collection Date: 10/10/2023 3:20:00 PM
Lab ID: 2310677-002 **Matrix:** AIR **Received Date:** 10/13/2023 6:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: **JR**
1,2-Dichloropropane	ND	5.0		µg/L	50	10/19/2023 12:08:42 PM
1,3-Dichloropropane	ND	5.0		µg/L	50	10/19/2023 12:08:42 PM
2,2-Dichloropropane	ND	5.0		µg/L	50	10/19/2023 12:08:42 PM
1,1-Dichloropropene	ND	5.0		µg/L	50	10/19/2023 12:08:42 PM
Hexachlorobutadiene	ND	5.0		µg/L	50	10/19/2023 12:08:42 PM
2-Hexanone	ND	50		µg/L	50	10/19/2023 12:08:42 PM
Isopropylbenzene	ND	5.0		µg/L	50	10/19/2023 12:08:42 PM
4-Isopropyltoluene	ND	5.0		µg/L	50	10/19/2023 12:08:42 PM
4-Methyl-2-pentanone	ND	50		µg/L	50	10/19/2023 12:08:42 PM
Methylene chloride	ND	15		µg/L	50	10/19/2023 12:08:42 PM
n-Butylbenzene	ND	15		µg/L	50	10/19/2023 12:08:42 PM
n-Propylbenzene	ND	5.0		µg/L	50	10/19/2023 12:08:42 PM
sec-Butylbenzene	ND	5.0		µg/L	50	10/19/2023 12:08:42 PM
Styrene	ND	5.0		µg/L	50	10/19/2023 12:08:42 PM
tert-Butylbenzene	ND	5.0		µg/L	50	10/19/2023 12:08:42 PM
1,1,1,2-Tetrachloroethane	ND	5.0		µg/L	50	10/19/2023 12:08:42 PM
1,1,2,2-Tetrachloroethane	ND	5.0		µg/L	50	10/19/2023 12:08:42 PM
Tetrachloroethene (PCE)	ND	5.0		µg/L	50	10/19/2023 12:08:42 PM
trans-1,2-DCE	ND	5.0		µg/L	50	10/19/2023 12:08:42 PM
trans-1,3-Dichloropropene	ND	5.0		µg/L	50	10/19/2023 12:08:42 PM
1,2,3-Trichlorobenzene	ND	5.0		µg/L	50	10/19/2023 12:08:42 PM
1,2,4-Trichlorobenzene	ND	5.0		µg/L	50	10/19/2023 12:08:42 PM
1,1,1-Trichloroethane	ND	5.0		µg/L	50	10/19/2023 12:08:42 PM
1,1,2-Trichloroethane	ND	5.0		µg/L	50	10/19/2023 12:08:42 PM
Trichloroethene (TCE)	ND	5.0		µg/L	50	10/19/2023 12:08:42 PM
Trichlorofluoromethane	ND	5.0		µg/L	50	10/19/2023 12:08:42 PM
1,2,3-Trichloropropane	ND	10		µg/L	50	10/19/2023 12:08:42 PM
Vinyl chloride	ND	5.0		µg/L	50	10/19/2023 12:08:42 PM
Xylenes, Total	76	7.5		µg/L	50	10/19/2023 12:08:42 PM
Surr: Dibromofluoromethane	92.3	70-130		%Rec	50	10/19/2023 12:08:42 PM
Surr: 1,2-Dichloroethane-d4	99.1	70-130		%Rec	50	10/19/2023 12:08:42 PM
Surr: Toluene-d8	93.4	70-130		%Rec	50	10/19/2023 12:08:42 PM
Surr: 4-Bromofluorobenzene	103	70-130		%Rec	50	10/19/2023 12:08:42 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.		

ENERGY LABORATORIES
Trust our People. Trust our Data.
www.energylab.com
Billings, MT 406.252.6325 • Casper, WY 307.235.0515
Gillette, WY 307.686.7175 • Helena, MT 406.442.0711

ANALYTICAL SUMMARY REPORT

November 01, 2023

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

Work Order: B23101313 Quote ID: B15626

Project Name: Not Indicated

Energy Laboratories Inc Billings MT received the following 2 samples for Hall Environmental on 10/17/2023 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B23101313-001	2310677-001B, Influent 10-9-23	10/09/23 15:30	10/17/23	Air	Air Correction Calculations Appearance and Comments Calculated Properties GPM @ std cond,/1000 cu. ft., moist. Free Natural Gas Analysis Specific Gravity @ 60/60
B23101313-002	2310677-002B, Influent 10-10-23	10/10/23 15:20	10/17/23	Air	Same As Above

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:

ENERGY LABORATORIES
Trust our People. Trust our Data.
www.energylab.com
Billings, MT 406.252.6325 • Casper, WY 307.235.0515
Gillette, WY 307.686.7175 • Helena, MT 406.442.0711

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Hall Environmental
Project: Not Indicated
Lab ID: B23101313-001
Client Sample ID: 2310677-001B, Influent 10-9-23

Report Date: 11/01/23
Collection Date: 10/09/23 15:30
DateReceived: 10/17/23
Matrix: Air

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
GAS CHROMATOGRAPHY ANALYSIS REPORT							
Oxygen	19.92	Mol %		0.01		GPA 2261-95	10/19/23 10:27 / jrj
Nitrogen	77.40	Mol %		0.01		GPA 2261-95	10/19/23 10:27 / jrj
Carbon Dioxide	1.81	Mol %		0.01		GPA 2261-95	10/19/23 10:27 / jrj
Hydrogen Sulfide	<0.01	Mol %		0.01		GPA 2261-95	10/19/23 10:27 / jrj
Methane	0.29	Mol %		0.01		GPA 2261-95	10/19/23 10:27 / jrj
Ethane	<0.01	Mol %		0.01		GPA 2261-95	10/19/23 10:27 / jrj
Propane	<0.01	Mol %		0.01		GPA 2261-95	10/19/23 10:27 / jrj
Isobutane	<0.01	Mol %		0.01		GPA 2261-95	10/19/23 10:27 / jrj
n-Butane	<0.01	Mol %		0.01		GPA 2261-95	10/19/23 10:27 / jrj
Isopentane	<0.01	Mol %		0.01		GPA 2261-95	10/19/23 10:27 / jrj
n-Pentane	<0.01	Mol %		0.01		GPA 2261-95	10/19/23 10:27 / jrj
Hexanes plus	0.58	Mol %		0.01		GPA 2261-95	10/19/23 10:27 / jrj
Propane	< 0.001	gpm		0.001		GPA 2261-95	10/19/23 10:27 / jrj
Isobutane	< 0.001	gpm		0.001		GPA 2261-95	10/19/23 10:27 / jrj
n-Butane	< 0.001	gpm		0.001		GPA 2261-95	10/19/23 10:27 / jrj
Isopentane	< 0.001	gpm		0.001		GPA 2261-95	10/19/23 10:27 / jrj
n-Pentane	< 0.001	gpm		0.001		GPA 2261-95	10/19/23 10:27 / jrj
Hexanes plus	0.244	gpm		0.001		GPA 2261-95	10/19/23 10:27 / jrj
GPM Total	0.244	gpm		0.001		GPA 2261-95	10/19/23 10:27 / jrj
GPM Pentanes plus	0.244	gpm		0.001		GPA 2261-95	10/19/23 10:27 / jrj
CALCULATED PROPERTIES							
Gross BTU per cu ft @ Std Cond. (HHV)	31			1		GPA 2261-95	10/19/23 10:27 / jrj
Net BTU per cu ft @ std cond. (LHV)	28			1		GPA 2261-95	10/19/23 10:27 / jrj
Pseudo-critical Pressure, psia	551			1		GPA 2261-95	10/19/23 10:27 / jrj
Pseudo-critical Temperature, deg R	248			1		GPA 2261-95	10/19/23 10:27 / jrj
Specific Gravity @ 60/60F	1.02			0.001		D3588-81	10/19/23 10:27 / jrj
Air, %	91.01			0.01		GPA 2261-95	10/19/23 10:27 / jrj
- The analysis was not corrected for air.							
COMMENTS							
-						-	10/19/23 10:27 / 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: Not Indicated
Lab ID: B23101313-002
Client Sample ID: 2310677-002B, Influent 10-10-23

Report Date: 11/01/23
Collection Date: 10/10/23 15:20
DateReceived: 10/17/23
Matrix: Air

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
GAS CHROMATOGRAPHY ANALYSIS REPORT							
Oxygen	20.56	Mol %		0.01		GPA 2261-95	10/19/23 11:28 / jrj
Nitrogen	77.89	Mol %		0.01		GPA 2261-95	10/19/23 11:28 / jrj
Carbon Dioxide	1.03	Mol %		0.01		GPA 2261-95	10/19/23 11:28 / jrj
Hydrogen Sulfide	<0.01	Mol %		0.01		GPA 2261-95	10/19/23 11:28 / jrj
Methane	<0.01	Mol %		0.01		GPA 2261-95	10/19/23 11:28 / jrj
Ethane	<0.01	Mol %		0.01		GPA 2261-95	10/19/23 11:28 / jrj
Propane	<0.01	Mol %		0.01		GPA 2261-95	10/19/23 11:28 / jrj
Isobutane	<0.01	Mol %		0.01		GPA 2261-95	10/19/23 11:28 / jrj
n-Butane	<0.01	Mol %		0.01		GPA 2261-95	10/19/23 11:28 / jrj
Isopentane	<0.01	Mol %		0.01		GPA 2261-95	10/19/23 11:28 / jrj
n-Pentane	<0.01	Mol %		0.01		GPA 2261-95	10/19/23 11:28 / jrj
Hexanes plus	0.52	Mol %		0.01		GPA 2261-95	10/19/23 11:28 / jrj
Propane	< 0.001	gpm		0.001		GPA 2261-95	10/19/23 11:28 / jrj
Isobutane	< 0.001	gpm		0.001		GPA 2261-95	10/19/23 11:28 / jrj
n-Butane	< 0.001	gpm		0.001		GPA 2261-95	10/19/23 11:28 / jrj
Isopentane	< 0.001	gpm		0.001		GPA 2261-95	10/19/23 11:28 / jrj
n-Pentane	< 0.001	gpm		0.001		GPA 2261-95	10/19/23 11:28 / jrj
Hexanes plus	0.219	gpm		0.001		GPA 2261-95	10/19/23 11:28 / jrj
GPM Total	0.219	gpm		0.001		GPA 2261-95	10/19/23 11:28 / jrj
GPM Pentanes plus	0.219	gpm		0.001		GPA 2261-95	10/19/23 11:28 / jrj
CALCULATED PROPERTIES							
Gross BTU per cu ft @ Std Cond. (HHV)	25			1		GPA 2261-95	10/19/23 11:28 / jrj
Net BTU per cu ft @ std cond. (LHV)	23			1		GPA 2261-95	10/19/23 11:28 / jrj
Pseudo-critical Pressure, psia	547			1		GPA 2261-95	10/19/23 11:28 / jrj
Pseudo-critical Temperature, deg R	245			1		GPA 2261-95	10/19/23 11:28 / jrj
Specific Gravity @ 60/60F	1.01			0.001		D3588-81	10/19/23 11:28 / jrj
Air, %	93.95			0.01		GPA 2261-95	10/19/23 11:28 / jrj
- The analysis was not corrected for air.							

COMMENTS

-						-	10/19/23 11:28 / 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:** B23101313 **Report Date:** 11/01/23

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: GPA 2261-95										Batch: R410813
Lab ID: B23101079-004ADUP	12	Sample Duplicate				Run: GCNGA-B_231019A				10/19/23 14:38
Oxygen		0.83	Mol %	0.01				1.2	20	
Nitrogen		14.4	Mol %	0.01				0.4	20	
Carbon Dioxide		0.03	Mol %	0.01				0.0	20	
Hydrogen Sulfide		<0.01	Mol %	0.01					20	
Methane		83.6	Mol %	0.01				0.1	20	
Ethane		0.75	Mol %	0.01				0.0	20	
Propane		0.21	Mol %	0.01				0.0	20	
Isobutane		0.09	Mol %	0.01				12	20	
n-Butane		0.03	Mol %	0.01				0.0	20	
Isopentane		<0.01	Mol %	0.01					20	
n-Pentane		<0.01	Mol %	0.01					20	
Hexanes plus		<0.01	Mol %	0.01					20	
Lab ID: LCS101923	11	Laboratory Control Sample				Run: GCNGA-B_231019A				10/19/23 15:12
Oxygen		0.60	Mol %	0.01	120	70	130			
Nitrogen		6.00	Mol %	0.01	100	70	130			
Carbon Dioxide		0.99	Mol %	0.01	100	70	130			
Methane		74.1	Mol %	0.01	99	70	130			
Ethane		5.98	Mol %	0.01	100	70	130			
Propane		5.56	Mol %	0.01	113	70	130			
Isobutane		1.98	Mol %	0.01	99	70	130			
n-Butane		1.99	Mol %	0.01	99	70	130			
Isopentane		1.03	Mol %	0.01	103	70	130			
n-Pentane		1.02	Mol %	0.01	102	70	130			
Hexanes plus		0.76	Mol %	0.01	95	70	130			

Qualifiers:

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

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Work Order Receipt Checklist

Hall Environmental

B23101313

Login completed by: Yvonna E. Smith
Date Received: 10/17/2023
Reviewed by: gmccartney
Received by: dnh
Reviewed Date: 10/21/2023
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:	15.2°C No Ice		
Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4").	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	Not Applicable ☑

Standard Reporting Procedures:

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

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

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

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

Contact and Corrective Action Comments:

None

HALL ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

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

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

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS
1	2310677-001B	Influent 10-9-23	TEDLAR	Air	10/9/2023 3:30:00 PM	1	Natural Gas Analysis- CO2+O2
2	2310677-002B	Influent 10-10-23	TEDLAR	Air	10/10/2023 3:20:00 PM	1	Natural Gas Analysis- CO2+O2

B23101313

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: 10/13/2023	Time: 8:26 AM	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date: 10/17/23	Time: 09:15

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

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

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: HILCORP ENERGY Work Order Number: 2310677 RcptNo: 1

Received By: **Tracy Casarrubias** 10/13/2023 6:30:00 AM

Completed By: **Tracy Casarrubias** 10/13/2023 8:24:28 AM

Reviewed By: SCM 10/13/23

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: JA 10.13.23

Special Handling (if applicable)

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

Person Notified: _____ Date: _____

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

Regarding: _____

Client Instructions: Mailing address,phone number and Email/Fax are missing on COC- TMC 10/13/23

16. Additional remarks:

17. **Cooler Information**

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

Chain-of-Custody Record

Client: Hilcorp Energy
Mitch Killough

Mailing Address:

Phone #:

email or Fax#:

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

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name:
San Juan 32-9 #141A

Project #:

Project Manager:
Stuart Hyde

Sampler: Danny Burns
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

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2310677
10-9-23	15:30	Air	Influent 10-9-23	2 Tedlar	—	001
10-10-23	15:20	Air	Influent 10-10-23	2 Tedlar	—	002

Analysis Request

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
	X						X			X
	X						X			X

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
10-12-23	15:10			courier	10/13/23	6:30
Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time

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.

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

November 03, 2023

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

RE: San Juan 32 9 41A OrderNo.: 2310A09

Dear Stuart Hyde:

Eurofins Environment Testing South Central, LLC received 1 sample(s) on 10/20/2023 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 **2310A09**
Date Reported: **11/3/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: Influent 10-19-23
Project: San Juan 32 9 41A
Collection Date: 10/19/2023 3:00:00 PM
Lab ID: 2310A09-001 **Matrix:** AIR
Received Date: 10/20/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	5400	250		µg/L	50	10/31/2023 11:14:57 AM
Surr: BFB	195	15-412		%Rec	50	10/31/2023 11:14:57 AM
EPA METHOD 8260B: VOLATILES						Analyst: **CCM**
Benzene	ND	5.0		µg/L	50	10/30/2023 3:05:00 PM
Toluene	39	5.0		µg/L	50	10/30/2023 3:05:00 PM
Ethylbenzene	ND	5.0		µg/L	50	10/30/2023 3:05:00 PM
Methyl tert-butyl ether (MTBE)	ND	5.0		µg/L	50	10/30/2023 3:05:00 PM
1,2,4-Trimethylbenzene	5.8	5.0		µg/L	50	10/30/2023 3:05:00 PM
1,3,5-Trimethylbenzene	6.4	5.0		µg/L	50	10/30/2023 3:05:00 PM
1,2-Dichloroethane (EDC)	ND	5.0		µg/L	50	10/30/2023 3:05:00 PM
1,2-Dibromoethane (EDB)	ND	5.0		µg/L	50	10/30/2023 3:05:00 PM
Naphthalene	ND	10		µg/L	50	10/30/2023 3:05:00 PM
1-Methylnaphthalene	ND	20		µg/L	50	10/30/2023 3:05:00 PM
2-Methylnaphthalene	ND	20		µg/L	50	10/30/2023 3:05:00 PM
Acetone	ND	50		µg/L	50	10/30/2023 3:05:00 PM
Bromobenzene	ND	5.0		µg/L	50	10/30/2023 3:05:00 PM
Bromodichloromethane	ND	5.0		µg/L	50	10/30/2023 3:05:00 PM
Bromoform	ND	5.0		µg/L	50	10/30/2023 3:05:00 PM
Bromomethane	ND	10		µg/L	50	10/30/2023 3:05:00 PM
2-Butanone	ND	50		µg/L	50	10/30/2023 3:05:00 PM
Carbon disulfide	ND	50		µg/L	50	10/30/2023 3:05:00 PM
Carbon tetrachloride	ND	5.0		µg/L	50	10/30/2023 3:05:00 PM
Chlorobenzene	ND	5.0		µg/L	50	10/30/2023 3:05:00 PM
Chloroethane	ND	10		µg/L	50	10/30/2023 3:05:00 PM
Chloroform	ND	5.0		µg/L	50	10/30/2023 3:05:00 PM
Chloromethane	ND	5.0		µg/L	50	10/30/2023 3:05:00 PM
2-Chlorotoluene	ND	5.0		µg/L	50	10/30/2023 3:05:00 PM
4-Chlorotoluene	ND	5.0		µg/L	50	10/30/2023 3:05:00 PM
cis-1,2-DCE	ND	5.0		µg/L	50	10/30/2023 3:05:00 PM
cis-1,3-Dichloropropene	ND	5.0		µg/L	50	10/30/2023 3:05:00 PM
1,2-Dibromo-3-chloropropane	ND	10		µg/L	50	10/30/2023 3:05:00 PM
Dibromochloromethane	ND	5.0		µg/L	50	10/30/2023 3:05:00 PM
Dibromomethane	ND	10		µg/L	50	10/30/2023 3:05:00 PM
1,2-Dichlorobenzene	ND	5.0		µg/L	50	10/30/2023 3:05:00 PM
1,3-Dichlorobenzene	ND	5.0		µg/L	50	10/30/2023 3:05:00 PM
1,4-Dichlorobenzene	ND	5.0		µg/L	50	10/30/2023 3:05:00 PM
Dichlorodifluoromethane	ND	5.0		µg/L	50	10/30/2023 3:05:00 PM
1,1-Dichloroethane	ND	5.0		µg/L	50	10/30/2023 3:05:00 PM
1,1-Dichloroethene	ND	5.0		µg/L	50	10/30/2023 3:05:00 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 **2310A09**
Date Reported: **11/3/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: Influent 10-19-23
Project: San Juan 32 9 41A
Collection Date: 10/19/2023 3:00:00 PM
Lab ID: 2310A09-001 **Matrix:** AIR
Received Date: 10/20/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: **CCM**
1,2-Dichloropropane	ND	5.0		µg/L	50	10/30/2023 3:05:00 PM
1,3-Dichloropropane	ND	5.0		µg/L	50	10/30/2023 3:05:00 PM
2,2-Dichloropropane	ND	5.0		µg/L	50	10/30/2023 3:05:00 PM
1,1-Dichloropropene	ND	5.0		µg/L	50	10/30/2023 3:05:00 PM
Hexachlorobutadiene	ND	5.0		µg/L	50	10/30/2023 3:05:00 PM
2-Hexanone	ND	50		µg/L	50	10/30/2023 3:05:00 PM
Isopropylbenzene	ND	5.0		µg/L	50	10/30/2023 3:05:00 PM
4-Isopropyltoluene	ND	5.0		µg/L	50	10/30/2023 3:05:00 PM
4-Methyl-2-pentanone	ND	50		µg/L	50	10/30/2023 3:05:00 PM
Methylene chloride	ND	15		µg/L	50	10/30/2023 3:05:00 PM
n-Butylbenzene	ND	15		µg/L	50	10/30/2023 3:05:00 PM
n-Propylbenzene	ND	5.0		µg/L	50	10/30/2023 3:05:00 PM
sec-Butylbenzene	ND	5.0		µg/L	50	10/30/2023 3:05:00 PM
Styrene	ND	5.0		µg/L	50	10/30/2023 3:05:00 PM
tert-Butylbenzene	ND	5.0		µg/L	50	10/30/2023 3:05:00 PM
1,1,1,2-Tetrachloroethane	ND	5.0		µg/L	50	10/30/2023 3:05:00 PM
1,1,2,2-Tetrachloroethane	ND	5.0		µg/L	50	10/30/2023 3:05:00 PM
Tetrachloroethene (PCE)	ND	5.0		µg/L	50	10/30/2023 3:05:00 PM
trans-1,2-DCE	ND	5.0		µg/L	50	10/30/2023 3:05:00 PM
trans-1,3-Dichloropropene	ND	5.0		µg/L	50	10/30/2023 3:05:00 PM
1,2,3-Trichlorobenzene	ND	5.0		µg/L	50	10/30/2023 3:05:00 PM
1,2,4-Trichlorobenzene	ND	5.0		µg/L	50	10/30/2023 3:05:00 PM
1,1,1-Trichloroethane	ND	5.0		µg/L	50	10/30/2023 3:05:00 PM
1,1,2-Trichloroethane	ND	5.0		µg/L	50	10/30/2023 3:05:00 PM
Trichloroethene (TCE)	ND	5.0		µg/L	50	10/30/2023 3:05:00 PM
Trichlorofluoromethane	ND	5.0		µg/L	50	10/30/2023 3:05:00 PM
1,2,3-Trichloropropane	ND	10		µg/L	50	10/30/2023 3:05:00 PM
Vinyl chloride	ND	5.0		µg/L	50	10/30/2023 3:05:00 PM
Xylenes, Total	110	7.5		µg/L	50	10/30/2023 3:05:00 PM
Surr: Dibromofluoromethane	89.3	70-130		%Rec	50	10/30/2023 3:05:00 PM
Surr: 1,2-Dichloroethane-d4	93.9	70-130		%Rec	50	10/30/2023 3:05:00 PM
Surr: Toluene-d8	116	70-130		%Rec	50	10/30/2023 3:05:00 PM
Surr: 4-Bromofluorobenzene	106	70-130		%Rec	50	10/30/2023 3:05:00 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

November 02, 2023

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

Work Order: B23101904 Quote ID: B15626

Project Name: Tedlar Gas Analysis

Energy Laboratories Inc Billings MT received the following 1 sample for Hall Environmental on 10/25/2023 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B23101904-001	2310A09-001B, Influent 10-19-23	10/19/23 15:00	10/25/23	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: Tedlar Gas Analysis
Lab ID: B23101904-001
Client Sample ID: 2310A09-001B, Influent 10-19-23

Report Date: 11/02/23
Collection Date: 10/19/23 15:00
DateReceived: 10/25/23
Matrix: Air

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
GAS CHROMATOGRAPHY ANALYSIS REPORT							
Oxygen	21.40	Mol %		0.01		GPA 2261-95	10/26/23 13:12 / jrj
Nitrogen	77.95	Mol %		0.01		GPA 2261-95	10/26/23 13:12 / jrj
Carbon Dioxide	0.42	Mol %		0.01		GPA 2261-95	10/26/23 13:12 / jrj
Hydrogen Sulfide	<0.01	Mol %		0.01		GPA 2261-95	10/26/23 13:12 / jrj
Methane	<0.01	Mol %		0.01		GPA 2261-95	10/26/23 13:12 / jrj
Ethane	<0.01	Mol %		0.01		GPA 2261-95	10/26/23 13:12 / jrj
Propane	<0.01	Mol %		0.01		GPA 2261-95	10/26/23 13:12 / jrj
Isobutane	<0.01	Mol %		0.01		GPA 2261-95	10/26/23 13:12 / jrj
n-Butane	<0.01	Mol %		0.01		GPA 2261-95	10/26/23 13:12 / jrj
Isopentane	<0.01	Mol %		0.01		GPA 2261-95	10/26/23 13:12 / jrj
n-Pentane	<0.01	Mol %		0.01		GPA 2261-95	10/26/23 13:12 / jrj
Hexanes plus	0.23	Mol %		0.01		GPA 2261-95	10/26/23 13:12 / jrj
Propane	< 0.001	gpm		0.001		GPA 2261-95	10/26/23 13:12 / jrj
Isobutane	< 0.001	gpm		0.001		GPA 2261-95	10/26/23 13:12 / jrj
n-Butane	< 0.001	gpm		0.001		GPA 2261-95	10/26/23 13:12 / jrj
Isopentane	< 0.001	gpm		0.001		GPA 2261-95	10/26/23 13:12 / jrj
n-Pentane	< 0.001	gpm		0.001		GPA 2261-95	10/26/23 13:12 / jrj
Hexanes plus	0.097	gpm		0.001		GPA 2261-95	10/26/23 13:12 / jrj
GPM Total	0.097	gpm		0.001		GPA 2261-95	10/26/23 13:12 / jrj
GPM Pentanes plus	0.097	gpm		0.001		GPA 2261-95	10/26/23 13:12 / jrj
CALCULATED PROPERTIES							
Gross BTU per cu ft @ Std Cond. (HHV)	11			1		GPA 2261-95	10/26/23 13:12 / jrj
Net BTU per cu ft @ std cond. (LHV)	10			1		GPA 2261-95	10/26/23 13:12 / jrj
Pseudo-critical Pressure, psia	546			1		GPA 2261-95	10/26/23 13:12 / jrj
Pseudo-critical Temperature, deg R	241			1		GPA 2261-95	10/26/23 13:12 / jrj
Specific Gravity @ 60/60F	1.00			0.001		D3588-81	10/26/23 13:12 / jrj
Air, %	97.77			0.01		GPA 2261-95	10/26/23 13:12 / jrj
- The analysis was not corrected for air.							

COMMENTS

-						-	10/26/23 13:12 / jrj

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

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

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QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Hall Environmental **Work Order:** B23101904 **Report Date:** 11/02/23

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: **GPA 2261-95**										Batch: R411208
Lab ID: **B23101903-001ADUP**	12	Sample Duplicate				Run: GCNGA-B_231026A				10/26/23 12:42
Oxygen		18.1	Mol %	0.01				0.2	20	
Nitrogen		79.3	Mol %	0.01				0.1	20	
Carbon Dioxide		0.88	Mol %	0.01				1.1	20	
Hydrogen Sulfide		<0.01	Mol %	0.01					20	
Methane		0.02	Mol %	0.01					20	
Ethane		<0.01	Mol %	0.01					20	
Propane		<0.01	Mol %	0.01					20	
Isobutane		0.03	Mol %	0.01				0.0	20	
n-Butane		0.08	Mol %	0.01				0.0	20	
Isopentane		0.11	Mol %	0.01				0.0	20	
n-Pentane		0.10	Mol %	0.01				9.5	20	
Hexanes plus		1.44	Mol %	0.01				5.7	20	
Lab ID: **LCS102623**	11	Laboratory Control Sample				Run: GCNGA-B_231026A				10/26/23 14:30
Oxygen		0.59	Mol %	0.01	118	70	130			
Nitrogen		5.79	Mol %	0.01	96	70	130			
Carbon Dioxide		1.01	Mol %	0.01	102	70	130			
Methane		74.8	Mol %	0.01	100	70	130			
Ethane		6.05	Mol %	0.01	101	70	130			
Propane		4.88	Mol %	0.01	99	70	130			
Isobutane		2.01	Mol %	0.01	100	70	130			
n-Butane		2.01	Mol %	0.01	100	70	130			
Isopentane		1.01	Mol %	0.01	101	70	130			
n-Pentane		1.01	Mol %	0.01	101	70	130			
Hexanes plus		0.83	Mol %	0.01	104	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

B23101904

Login completed by: Danielle N. Harris
Date Received: 10/25/2023
Reviewed by: lleprowse
Received by: dnh
Reviewed Date: 10/27/2023
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:	8.8°C No Ice		
Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4").	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	Not Applicable ☑

Standard Reporting Procedures:

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

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

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

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

Contact and Corrective Action Comments:

None

HALL ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

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

B23101904

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	2310A09-001B	Influent 10-19-23	TEDLAR	Air	10/19/2023 3:00:00 PM	1	Natural Gas Analysis

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: CMC	Date: 10/20/2023	Time: 7:58 AM	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date: 10/20/23	Time: 12:15

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

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

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: HILCORP ENERGY Work Order Number: 2310A09 RcptNo: 1

Received By: Cheyenne Cason 10/20/2023 7:30:00 AM CM

Completed By: Cheyenne Cason 10/20/2023 7:57:23 AM CM

Reviewed By: TMC 10/20/23

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 ☑ per COC MNA 10/20/23	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 10/20/23

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:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	NA	Good	Yes	NA		

Chain-of-Custody Record

Client: Hilcorp Energy

Attn: Mitch Killough

Mailing Address:

Phone #:

email or Fax#:

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance

☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:

☒ Standard ☐ Rush

Project Name: San Juan 32-9 #41A

Project #:

Project Manager: Stuart Hyde

Sampler: Danny Burns

On Ice: ☒ Yes ☐ No

# of Coolers: 1

Cooler Temp(including CF): NA (°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. 231049	BTEX / MTBE / TMB's (8021)	TRH: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	8270 (Semi-VOA)	Total Coliform (Present/Absent)	Fixed Gas
10-19	15:00	Air	Influent 10-19-23	2 Tedlar	—	001		X						X			X

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
10-19-23	15:48				10/19/23	1548
10/19/23	1749					

Received by: Via: Date Time

Comm 10/20/23 0730

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.

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

November 15, 2023

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

RE: San Juan 32 9 41 A OrderNo.: 2311002

Dear Mitch Killough:

Eurofins Environment Testing South Central, LLC received 1 sample(s) on 11/1/2023 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 **2311002**
Date Reported: **11/15/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: San Juan 32-9#41A Influent
Project: San Juan 32 9 41 A
Collection Date: 10/31/2023 1:00:00 PM
Lab ID: 2311002-001 **Matrix:** AIR
Received Date: 11/1/2023 6:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	2100	250		µg/L	50	11/8/2023 3:39:00 PM
Surr: BFB	141	15-412		%Rec	50	11/8/2023 3:39:00 PM
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**
Benzene	ND	1.0		µg/L	10	11/8/2023 3:35:09 PM
Toluene	14	1.0		µg/L	10	11/8/2023 3:35:09 PM
Ethylbenzene	2.0	1.0		µg/L	10	11/8/2023 3:35:09 PM
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	10	11/8/2023 3:35:09 PM
1,2,4-Trimethylbenzene	4.6	1.0		µg/L	10	11/8/2023 3:35:09 PM
1,3,5-Trimethylbenzene	5.1	1.0		µg/L	10	11/8/2023 3:35:09 PM
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	10	11/8/2023 3:35:09 PM
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	10	11/8/2023 3:35:09 PM
Naphthalene	ND	2.0		µg/L	10	11/8/2023 3:35:09 PM
1-Methylnaphthalene	ND	4.0		µg/L	10	11/8/2023 3:35:09 PM
2-Methylnaphthalene	ND	4.0		µg/L	10	11/8/2023 3:35:09 PM
Acetone	ND	10		µg/L	10	11/8/2023 3:35:09 PM
Bromobenzene	ND	1.0		µg/L	10	11/8/2023 3:35:09 PM
Bromodichloromethane	ND	1.0		µg/L	10	11/8/2023 3:35:09 PM
Bromoform	ND	1.0		µg/L	10	11/8/2023 3:35:09 PM
Bromomethane	ND	2.0		µg/L	10	11/8/2023 3:35:09 PM
2-Butanone	ND	10		µg/L	10	11/8/2023 3:35:09 PM
Carbon disulfide	ND	10		µg/L	10	11/8/2023 3:35:09 PM
Carbon tetrachloride	ND	1.0		µg/L	10	11/8/2023 3:35:09 PM
Chlorobenzene	ND	1.0		µg/L	10	11/8/2023 3:35:09 PM
Chloroethane	ND	2.0		µg/L	10	11/8/2023 3:35:09 PM
Chloroform	ND	1.0		µg/L	10	11/8/2023 3:35:09 PM
Chloromethane	ND	1.0		µg/L	10	11/8/2023 3:35:09 PM
2-Chlorotoluene	ND	1.0		µg/L	10	11/8/2023 3:35:09 PM
4-Chlorotoluene	ND	1.0		µg/L	10	11/8/2023 3:35:09 PM
cis-1,2-DCE	ND	1.0		µg/L	10	11/8/2023 3:35:09 PM
cis-1,3-Dichloropropene	ND	1.0		µg/L	10	11/8/2023 3:35:09 PM
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	10	11/8/2023 3:35:09 PM
Dibromochloromethane	ND	1.0		µg/L	10	11/8/2023 3:35:09 PM
Dibromomethane	ND	2.0		µg/L	10	11/8/2023 3:35:09 PM
1,2-Dichlorobenzene	ND	1.0		µg/L	10	11/8/2023 3:35:09 PM
1,3-Dichlorobenzene	ND	1.0		µg/L	10	11/8/2023 3:35:09 PM
1,4-Dichlorobenzene	ND	1.0		µg/L	10	11/8/2023 3:35:09 PM
Dichlorodifluoromethane	ND	1.0		µg/L	10	11/8/2023 3:35:09 PM
1,1-Dichloroethane	ND	1.0		µg/L	10	11/8/2023 3:35:09 PM
1,1-Dichloroethene	ND	1.0		µg/L	10	11/8/2023 3:35:09 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 **2311002**
Date Reported: **11/15/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: San Juan 32-9#41A Influent
Project: San Juan 32 9 41 A
Collection Date: 10/31/2023 1:00:00 PM
Lab ID: 2311002-001 **Matrix:** AIR
Received Date: 11/1/2023 6:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**
1,2-Dichloropropane	ND	1.0		µg/L	10	11/8/2023 3:35:09 PM
1,3-Dichloropropane	ND	1.0		µg/L	10	11/8/2023 3:35:09 PM
2,2-Dichloropropane	ND	1.0		µg/L	10	11/8/2023 3:35:09 PM
1,1-Dichloropropene	ND	1.0		µg/L	10	11/8/2023 3:35:09 PM
Hexachlorobutadiene	ND	1.0		µg/L	10	11/8/2023 3:35:09 PM
2-Hexanone	ND	10		µg/L	10	11/8/2023 3:35:09 PM
Isopropylbenzene	ND	1.0		µg/L	10	11/8/2023 3:35:09 PM
4-Isopropyltoluene	ND	1.0		µg/L	10	11/8/2023 3:35:09 PM
4-Methyl-2-pentanone	ND	10		µg/L	10	11/8/2023 3:35:09 PM
Methylene chloride	ND	3.0		µg/L	10	11/8/2023 3:35:09 PM
n-Butylbenzene	ND	3.0		µg/L	10	11/8/2023 3:35:09 PM
n-Propylbenzene	ND	1.0		µg/L	10	11/8/2023 3:35:09 PM
sec-Butylbenzene	ND	1.0		µg/L	10	11/8/2023 3:35:09 PM
Styrene	ND	1.0		µg/L	10	11/8/2023 3:35:09 PM
tert-Butylbenzene	ND	1.0		µg/L	10	11/8/2023 3:35:09 PM
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	10	11/8/2023 3:35:09 PM
1,1,2,2-Tetrachloroethane	ND	1.0		µg/L	10	11/8/2023 3:35:09 PM
Tetrachloroethene (PCE)	ND	1.0		µg/L	10	11/8/2023 3:35:09 PM
trans-1,2-DCE	ND	1.0		µg/L	10	11/8/2023 3:35:09 PM
trans-1,3-Dichloropropene	ND	1.0		µg/L	10	11/8/2023 3:35:09 PM
1,2,3-Trichlorobenzene	ND	1.0		µg/L	10	11/8/2023 3:35:09 PM
1,2,4-Trichlorobenzene	ND	1.0		µg/L	10	11/8/2023 3:35:09 PM
1,1,1-Trichloroethane	ND	1.0		µg/L	10	11/8/2023 3:35:09 PM
1,1,2-Trichloroethane	ND	1.0		µg/L	10	11/8/2023 3:35:09 PM
Trichloroethene (TCE)	ND	1.0		µg/L	10	11/8/2023 3:35:09 PM
Trichlorofluoromethane	ND	1.0		µg/L	10	11/8/2023 3:35:09 PM
1,2,3-Trichloropropane	ND	2.0		µg/L	10	11/8/2023 3:35:09 PM
Vinyl chloride	ND	1.0		µg/L	10	11/8/2023 3:35:09 PM
Xylenes, Total	73	1.5		µg/L	10	11/8/2023 3:35:09 PM
Surr: Dibromofluoromethane	77.2	70-130		%Rec	10	11/8/2023 3:35:09 PM
Surr: 1,2-Dichloroethane-d4	92.6	70-130		%Rec	10	11/8/2023 3:35:09 PM
Surr: Toluene-d8	116	70-130		%Rec	10	11/8/2023 3:35:09 PM
Surr: 4-Bromofluorobenzene	106	70-130		%Rec	10	11/8/2023 3:35:09 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

November 06, 2023

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

Work Order: B23110154 Quote ID: B15626

Project Name: Not Indicated

Energy Laboratories Inc Billings MT received the following 1 sample for Hall Environmental on 11/2/2023 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B23110154-001	2311002-001B, San Juan 32-9 #41A Influent	10/31/23 13:00	11/02/23	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: B23110154-001
Client Sample ID: 2311002-001B, San Juan 32-9 #41A Influent

Report Date: 11/06/23
Collection Date: 10/31/23 13:00
DateReceived: 11/02/23
Matrix: Air

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
GAS CHROMATOGRAPHY ANALYSIS REPORT							
Oxygen	21.49	Mol %		0.01		GPA 2261-95	11/03/23 09:46 / jrj
Nitrogen	78.09	Mol %		0.01		GPA 2261-95	11/03/23 09:46 / jrj
Carbon Dioxide	0.35	Mol %		0.01		GPA 2261-95	11/03/23 09:46 / jrj
Hydrogen Sulfide	<0.01	Mol %		0.01		GPA 2261-95	11/03/23 09:46 / jrj
Methane	<0.01	Mol %		0.01		GPA 2261-95	11/03/23 09:46 / jrj
Ethane	<0.01	Mol %		0.01		GPA 2261-95	11/03/23 09:46 / jrj
Propane	<0.01	Mol %		0.01		GPA 2261-95	11/03/23 09:46 / jrj
Isobutane	<0.01	Mol %		0.01		GPA 2261-95	11/03/23 09:46 / jrj
n-Butane	<0.01	Mol %		0.01		GPA 2261-95	11/03/23 09:46 / jrj
Isopentane	<0.01	Mol %		0.01		GPA 2261-95	11/03/23 09:46 / jrj
n-Pentane	<0.01	Mol %		0.01		GPA 2261-95	11/03/23 09:46 / jrj
Hexanes plus	0.07	Mol %		0.01		GPA 2261-95	11/03/23 09:46 / jrj
Propane	< 0.001	gpm		0.001		GPA 2261-95	11/03/23 09:46 / jrj
Isobutane	< 0.001	gpm		0.001		GPA 2261-95	11/03/23 09:46 / jrj
n-Butane	< 0.001	gpm		0.001		GPA 2261-95	11/03/23 09:46 / jrj
Isopentane	< 0.001	gpm		0.001		GPA 2261-95	11/03/23 09:46 / jrj
n-Pentane	< 0.001	gpm		0.001		GPA 2261-95	11/03/23 09:46 / jrj
Hexanes plus	0.029	gpm		0.001		GPA 2261-95	11/03/23 09:46 / jrj
GPM Total	0.029	gpm		0.001		GPA 2261-95	11/03/23 09:46 / jrj
GPM Pentanes plus	0.029	gpm		0.001		GPA 2261-95	11/03/23 09:46 / jrj
CALCULATED PROPERTIES							
Gross BTU per cu ft @ Std Cond. (HHV)	3			1		GPA 2261-95	11/03/23 09:46 / jrj
Net BTU per cu ft @ std cond. (LHV)	3			1		GPA 2261-95	11/03/23 09:46 / jrj
Pseudo-critical Pressure, psia	546			1		GPA 2261-95	11/03/23 09:46 / jrj
Pseudo-critical Temperature, deg R	240			1		GPA 2261-95	11/03/23 09:46 / jrj
Specific Gravity @ 60/60F	1.00			0.001		D3588-81	11/03/23 09:46 / jrj
Air, %	98.21			0.01		GPA 2261-95	11/03/23 09:46 / jrj
- The analysis was not corrected for air.							
COMMENTS							
-						-	11/03/23 09:46 / 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)

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Hall Environmental **Work Order:** B23110154 **Report Date:** 11/06/23

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: GPA 2261-95										Batch: R411666
Lab ID: B23110154-001ADUP	12	Sample Duplicate				Run: GCNGA-B_231103A				11/03/23 10:27
Oxygen		21.5	Mol %	0.01				0.0	20	
Nitrogen		78.1	Mol %	0.01				0	20	
Carbon Dioxide		0.35	Mol %	0.01				0.0	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		0.08	Mol %	0.01				13	20	
Lab ID: LCS110323	11	Laboratory Control Sample				Run: GCNGA-B_231103A				11/03/23 12:38
Oxygen		0.61	Mol %	0.01	122	70	130			
Nitrogen		6.07	Mol %	0.01	101	70	130			
Carbon Dioxide		0.99	Mol %	0.01	100	70	130			
Methane		74.4	Mol %	0.01	99	70	130			
Ethane		6.01	Mol %	0.01	100	70	130			
Propane		5.12	Mol %	0.01	104	70	130			
Isobutane		1.99	Mol %	0.01	99	70	130			
n-Butane		1.99	Mol %	0.01	99	70	130			
Isopentane		1.04	Mol %	0.01	104	70	130			
n-Pentane		1.02	Mol %	0.01	102	70	130			
Hexanes plus		0.79	Mol %	0.01	99	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

B23110154

Login completed by: Danielle N. Harris
Date Received: 11/2/2023
Reviewed by: gmccartney
Received by: lel
Reviewed Date: 11/3/2023
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:	11.0°C No Ice		
Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4").	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	Not Applicable ☑

Standard Reporting Procedures:

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

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

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

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

Contact and Corrective Action Comments:

None

HALL ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

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

B2311015 4

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	2311002-001B	San Juan 32-9#41A Influent	TEDLAR	Air	10/31/2023 1:00:00 PM	1	**5 DAY TAT** Natural Gas Analysis. CO2+02

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:	Time:	Received By:	Date:	Time:
	11/1/2023	7:12 AM			
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By: Lydia Lefranc	11/2/23	09:05

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 ____ ℃ Attempt to Cool ? ____
Comments: ____

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: HILCORP ENERGY Work Order Number: 2311002 RcptNo: 1

Received By: Tracy Casarrubias 11/1/2023 6:15:00 AM

Completed By: Tracy Casarrubias 11/1/2023 7:06:09 AM

Reviewed By: 11-1-23

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 ☐	# of preserved bottles checked for pH: (<2 or >12 unless noted)
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted?
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 ☐	Checked by: SCM 11/01/23

Special Handling (if applicable)

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

Person Notified: Date:

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

Regarding:

Client Instructions: Mailing address,phone number, and Email/Fax are missing on COC- TMC 11/1/23

16. Additional remarks:

17. Cooler Information

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

Chain-of-Custody Record

Client: Hilcorp attn Mitch Killough
mkillough@hilcorp.com
Mailing Address:

Phone #:
email or Fax#:
QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)
Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other
☐ EDD (Type)

Turn-Around Time: 5-dy
☑ Standard ☐ Rush
Project Name: San Juan 32-9 #41A
Project #:
Project Manager: Stuart Hyde
shyde@ensolum.com
Sampler:
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. 2311002	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 CO2, O2
10/31/23	1300	Air	San Juan 32-9 #41A Influent	2x tedlar	—	001		✓						✓			✓

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
10/31/23	1606				10/31/23	1606
10/31/23	1726			Via: courier	11/1/23	7:15 6:15

Remarks:
cc: Zmyers@ensolum.com

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.

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

November 21, 2023

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

RE: San Juan 32 9 41 A OrderNo.: 2311498

Dear Stuart Hyde:

Eurofins Environment Testing South Central, LLC received 1 sample(s) on 11/9/2023 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 **2311498**
Date Reported: **11/21/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: Influent 11-18-23
Project: San Juan 32 9 41 A
Collection Date: 11/8/2023 12:10:00 PM
Lab ID: 2311498-001 **Matrix:** AIR
Received Date: 11/9/2023 7:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: **CCM**
Benzene	ND	0.50		µg/L	10	11/15/2023 4:35:00 PM
Toluene	12	1.0		µg/L	10	11/15/2023 4:35:00 PM
Ethylbenzene	2.0	1.0		µg/L	10	11/15/2023 4:35:00 PM
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	10	11/15/2023 4:35:00 PM
1,2,4-Trimethylbenzene	9.1	1.0		µg/L	10	11/15/2023 4:35:00 PM
1,3,5-Trimethylbenzene	9.6	1.0		µg/L	10	11/15/2023 4:35:00 PM
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	10	11/15/2023 4:35:00 PM
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	10	11/15/2023 4:35:00 PM
Naphthalene	ND	2.0		µg/L	10	11/15/2023 4:35:00 PM
1-Methylnaphthalene	ND	4.0		µg/L	10	11/15/2023 4:35:00 PM
2-Methylnaphthalene	ND	4.0		µg/L	10	11/15/2023 4:35:00 PM
Acetone	ND	10		µg/L	10	11/15/2023 4:35:00 PM
Bromobenzene	ND	1.0		µg/L	10	11/15/2023 4:35:00 PM
Bromodichloromethane	ND	1.0		µg/L	10	11/15/2023 4:35:00 PM
Bromoform	ND	1.0		µg/L	10	11/15/2023 4:35:00 PM
Bromomethane	ND	2.0		µg/L	10	11/15/2023 4:35:00 PM
2-Butanone	ND	10		µg/L	10	11/15/2023 4:35:00 PM
Carbon disulfide	ND	10		µg/L	10	11/15/2023 4:35:00 PM
Carbon tetrachloride	ND	1.0		µg/L	10	11/15/2023 4:35:00 PM
Chlorobenzene	ND	1.0		µg/L	10	11/15/2023 4:35:00 PM
Chloroethane	ND	2.0		µg/L	10	11/15/2023 4:35:00 PM
Chloroform	ND	1.0		µg/L	10	11/15/2023 4:35:00 PM
Chloromethane	ND	1.0		µg/L	10	11/15/2023 4:35:00 PM
2-Chlorotoluene	ND	1.0		µg/L	10	11/15/2023 4:35:00 PM
4-Chlorotoluene	ND	1.0		µg/L	10	11/15/2023 4:35:00 PM
cis-1,2-DCE	ND	1.0		µg/L	10	11/15/2023 4:35:00 PM
cis-1,3-Dichloropropene	ND	1.0		µg/L	10	11/15/2023 4:35:00 PM
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	10	11/15/2023 4:35:00 PM
Dibromochloromethane	ND	1.0		µg/L	10	11/15/2023 4:35:00 PM
Dibromomethane	ND	2.0		µg/L	10	11/15/2023 4:35:00 PM
1,2-Dichlorobenzene	ND	1.0		µg/L	10	11/15/2023 4:35:00 PM
1,3-Dichlorobenzene	ND	1.0		µg/L	10	11/15/2023 4:35:00 PM
1,4-Dichlorobenzene	ND	1.0		µg/L	10	11/15/2023 4:35:00 PM
Dichlorodifluoromethane	ND	1.0		µg/L	10	11/15/2023 4:35:00 PM
1,1-Dichloroethane	ND	1.0		µg/L	10	11/15/2023 4:35:00 PM
1,1-Dichloroethene	ND	1.0		µg/L	10	11/15/2023 4:35:00 PM
1,2-Dichloropropane	ND	1.0		µg/L	10	11/15/2023 4:35:00 PM
1,3-Dichloropropane	ND	1.0		µg/L	10	11/15/2023 4:35:00 PM
2,2-Dichloropropane	ND	1.0		µg/L	10	11/15/2023 4:35:00 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 **2311498**
Date Reported: **11/21/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: Influent 11-18-23
Project: San Juan 32 9 41 A
Collection Date: 11/8/2023 12:10:00 PM
Lab ID: 2311498-001 **Matrix:** AIR
Received Date: 11/9/2023 7:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: **CCM**
1,1-Dichloropropene	ND	1.0		µg/L	10	11/15/2023 4:35:00 PM
Hexachlorobutadiene	ND	1.0		µg/L	10	11/15/2023 4:35:00 PM
2-Hexanone	ND	10		µg/L	10	11/15/2023 4:35:00 PM
Isopropylbenzene	ND	1.0		µg/L	10	11/15/2023 4:35:00 PM
4-Isopropyltoluene	ND	1.0		µg/L	10	11/15/2023 4:35:00 PM
4-Methyl-2-pentanone	ND	10		µg/L	10	11/15/2023 4:35:00 PM
Methylene chloride	ND	3.0		µg/L	10	11/15/2023 4:35:00 PM
n-Butylbenzene	ND	3.0		µg/L	10	11/15/2023 4:35:00 PM
n-Propylbenzene	ND	1.0		µg/L	10	11/15/2023 4:35:00 PM
sec-Butylbenzene	ND	1.0		µg/L	10	11/15/2023 4:35:00 PM
Styrene	ND	1.0		µg/L	10	11/15/2023 4:35:00 PM
tert-Butylbenzene	ND	1.0		µg/L	10	11/15/2023 4:35:00 PM
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	10	11/15/2023 4:35:00 PM
1,1,2,2-Tetrachloroethane	ND	1.0		µg/L	10	11/15/2023 4:35:00 PM
Tetrachloroethene (PCE)	ND	1.0		µg/L	10	11/15/2023 4:35:00 PM
trans-1,2-DCE	ND	1.0		µg/L	10	11/15/2023 4:35:00 PM
trans-1,3-Dichloropropene	ND	1.0		µg/L	10	11/15/2023 4:35:00 PM
1,2,3-Trichlorobenzene	ND	1.0		µg/L	10	11/15/2023 4:35:00 PM
1,2,4-Trichlorobenzene	ND	1.0		µg/L	10	11/15/2023 4:35:00 PM
1,1,1-Trichloroethane	ND	1.0		µg/L	10	11/15/2023 4:35:00 PM
1,1,2-Trichloroethane	ND	1.0		µg/L	10	11/15/2023 4:35:00 PM
Trichloroethene (TCE)	ND	1.0		µg/L	10	11/15/2023 4:35:00 PM
Trichlorofluoromethane	ND	1.0		µg/L	10	11/15/2023 4:35:00 PM
1,2,3-Trichloropropane	ND	2.0		µg/L	10	11/15/2023 4:35:00 PM
Vinyl chloride	ND	1.0		µg/L	10	11/15/2023 4:35:00 PM
Xylenes, Total	92	1.5		µg/L	10	11/15/2023 4:35:00 PM
Surr: Dibromofluoromethane	90.7	70-130		%Rec	10	11/15/2023 4:35:00 PM
Surr: 1,2-Dichloroethane-d4	87.9	70-130		%Rec	10	11/15/2023 4:35:00 PM
Surr: Toluene-d8	126	70-130		%Rec	10	11/15/2023 4:35:00 PM
Surr: 4-Bromofluorobenzene	124	70-130		%Rec	10	11/15/2023 4:35:00 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **CCM**
Gasoline Range Organics (GRO)	3400	50		µg/L	10	11/15/2023 4:35:00 PM
Surr: BFB	113	70-130		%Rec	10	11/15/2023 4:35:00 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

November 17, 2023

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

Work Order: B23110913 Quote ID: B15626

Project Name: Not Indicated

Energy Laboratories Inc Billings MT received the following 1 sample for Hall Environmental on 11/13/2023 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B23110913-001	2311498-001B, Influent 11-18-23	11/08/23 12:10	11/13/23	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: B23110913-001
Client Sample ID: 2311498-001B, Influent 11-18-23

Report Date: 11/17/23
Collection Date: 11/08/23 12:10
DateReceived: 11/13/23
Matrix: Air

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
GAS CHROMATOGRAPHY ANALYSIS REPORT							
Oxygen	21.56	Mol %		0.01		GPA 2261-95	11/14/23 13:32 / jrj
Nitrogen	78.09	Mol %		0.01		GPA 2261-95	11/14/23 13:32 / jrj
Carbon Dioxide	0.28	Mol %		0.01		GPA 2261-95	11/14/23 13:32 / jrj
Hydrogen Sulfide	<0.01	Mol %		0.01		GPA 2261-95	11/14/23 13:32 / jrj
Methane	<0.01	Mol %		0.01		GPA 2261-95	11/14/23 13:32 / jrj
Ethane	<0.01	Mol %		0.01		GPA 2261-95	11/14/23 13:32 / jrj
Propane	<0.01	Mol %		0.01		GPA 2261-95	11/14/23 13:32 / jrj
Isobutane	<0.01	Mol %		0.01		GPA 2261-95	11/14/23 13:32 / jrj
n-Butane	<0.01	Mol %		0.01		GPA 2261-95	11/14/23 13:32 / jrj
Isopentane	<0.01	Mol %		0.01		GPA 2261-95	11/14/23 13:32 / jrj
n-Pentane	<0.01	Mol %		0.01		GPA 2261-95	11/14/23 13:32 / jrj
Hexanes plus	0.07	Mol %		0.01		GPA 2261-95	11/14/23 13:32 / jrj
Propane	< 0.001	gpm		0.001		GPA 2261-95	11/14/23 13:32 / jrj
Isobutane	< 0.001	gpm		0.001		GPA 2261-95	11/14/23 13:32 / jrj
n-Butane	< 0.001	gpm		0.001		GPA 2261-95	11/14/23 13:32 / jrj
Isopentane	< 0.001	gpm		0.001		GPA 2261-95	11/14/23 13:32 / jrj
n-Pentane	< 0.001	gpm		0.001		GPA 2261-95	11/14/23 13:32 / jrj
Hexanes plus	0.029	gpm		0.001		GPA 2261-95	11/14/23 13:32 / jrj
GPM Total	0.029	gpm		0.001		GPA 2261-95	11/14/23 13:32 / jrj
GPM Pentanes plus	0.029	gpm		0.001		GPA 2261-95	11/14/23 13:32 / jrj
CALCULATED PROPERTIES							
Gross BTU per cu ft @ Std Cond. (HHV)	3			1		GPA 2261-95	11/14/23 13:32 / jrj
Net BTU per cu ft @ std cond. (LHV)	3			1		GPA 2261-95	11/14/23 13:32 / jrj
Pseudo-critical Pressure, psia	546			1		GPA 2261-95	11/14/23 13:32 / jrj
Pseudo-critical Temperature, deg R	240			1		GPA 2261-95	11/14/23 13:32 / jrj
Specific Gravity @ 60/60F	1.00			0.001		D3588-81	11/14/23 13:32 / jrj
Air, %	98.50			0.01		GPA 2261-95	11/14/23 13:32 / jrj
- The analysis was not corrected for air.							
COMMENTS							
-						-	11/14/23 13:32 / 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)

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Hall Environmental **Work Order:** B23110913 **Report Date:** 11/17/23

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: GPA 2261-95									Batch: R412334	
Lab ID: B23110913-001ADUP	12	Sample Duplicate				Run: GCNGA-B_231114A			11/14/23 13:58	
Oxygen		21.6	Mol %	0.01				0	20	
Nitrogen		78.1	Mol %	0.01				0	20	
Carbon Dioxide		0.28	Mol %	0.01				0.0	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		0.09	Mol %	0.01				25	20	R
Lab ID: LCS111423	11	Laboratory Control Sample				Run: GCNGA-B_231114A			11/14/23 15:05	
Oxygen		0.63	Mol %	0.01	126	70	130			
Nitrogen		6.28	Mol %	0.01	105	70	130			
Carbon Dioxide		1.03	Mol %	0.01	104	70	130			
Methane		74.3	Mol %	0.01	99	70	130			
Ethane		6.06	Mol %	0.01	101	70	130			
Propane		4.91	Mol %	0.01	99	70	130			
Isobutane		1.99	Mol %	0.01	99	70	130			
n-Butane		2.05	Mol %	0.01	102	70	130			
Isopentane		1.01	Mol %	0.01	101	70	130			
n-Pentane		0.98	Mol %	0.01	98	70	130			
Hexanes plus		0.72	Mol %	0.01	90	70	130			

Qualifiers:

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

R - Relative Percent Difference (RPD) exceeds advisory limit

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Work Order Receipt Checklist

Hall Environmental

B23110913

Login completed by: Danielle N. Harris
Date Received: 11/13/2023

Reviewed by: lcadreau
Received by: cmj

Reviewed Date: 11/16/2023
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:	13.4°C No Ice		
Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4").	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	Not Applicable ☑

Standard Reporting Procedures:

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

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

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

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

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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

B23116913

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	2311498-001B	Influent 11-18-23	TEDLAR	Air	11/8/2023 12:10:00 PM	1	Natural Gas Analysis

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: 11/9/2023	Time: 11:26 AM	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By: Crystal Jones	Date: 11/13/23	Time: 0905

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 ____ ℃ Attempt to Cool ? ____
Comments: ____

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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: 2311498 RcptNo: 1

Received By: Juan Rojas 11/9/2023 7:10:00 AM

Completed By: Tracy Casarrubias 11/9/2023 11:21:19 AM

Reviewed By: SCM 11/9/23

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: JA 11-9-23

Special Handling (if applicable)

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

Person Notified: _____ Date: _____

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

Regarding: _____

Client Instructions: Mailing address phone number and Email/Fax are missing on COC- TMC 11/9/23

16. Additional remarks:

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	NA	Good	Yes			

Chain-of-Custody Record

Client: Hilcorp Energy Co

Attn: Mitch Killough

Mailing Address:

Phone #:

email or Fax#:

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance

☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:

☒ Standard ☐ Rush

Project Name: San Juan 32-9 #141A

Project #:

Project Manager: Stuart Hyde

Sampler: D. Burns

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. 2311498	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)	Full List 8260	Fixed Gas
11-8-23	1210	Air	Influent 11-18-23	2 Tedlar	—	001		X									X	X

Date: 11-8-23 Time: 15:08 Relinquished by: [signature]

Received by: [signature] Via: Date: 11/8/23 Time: 1505

Date: 11/8/23 Time: 1800 Relinquished by: [signature]

Received by: [signature] Via: courier Date: 11/9/23 Time: 7:10

Remarks: cc: shyde dburns dhencmann @ensolum.com

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.

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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 04, 2023

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

RE: San Juan 32 9 Un 41 A OrderNo.: 2311962

Dear Mitch Killough:

Eurofins Environment Testing South Central, LLC received 1 sample(s) on 11/17/2023 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 **2311962**
Date Reported: **12/4/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: San Juan 32-9 #41A influent
Project: San Juan 32 9 Un 41 A
Collection Date: 11/16/2023 12:45:00 PM
Lab ID: 2311962-001 **Matrix:** AIR
Received Date: 11/17/2023 6:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: **CCM**
Benzene	ND	5.0		µg/L	50	11/21/2023 1:45:00 PM
Toluene	9.6	5.0		µg/L	50	11/21/2023 1:45:00 PM
Ethylbenzene	ND	5.0		µg/L	50	11/21/2023 1:45:00 PM
Methyl tert-butyl ether (MTBE)	ND	5.0		µg/L	50	11/21/2023 1:45:00 PM
1,2,4-Trimethylbenzene	6.7	5.0		µg/L	50	11/21/2023 1:45:00 PM
1,3,5-Trimethylbenzene	7.2	5.0		µg/L	50	11/21/2023 1:45:00 PM
1,2-Dichloroethane (EDC)	ND	5.0		µg/L	50	11/21/2023 1:45:00 PM
1,2-Dibromoethane (EDB)	ND	5.0		µg/L	50	11/21/2023 1:45:00 PM
Naphthalene	ND	10		µg/L	50	11/21/2023 1:45:00 PM
1-Methylnaphthalene	ND	20		µg/L	50	11/21/2023 1:45:00 PM
2-Methylnaphthalene	ND	20		µg/L	50	11/21/2023 1:45:00 PM
Acetone	ND	50		µg/L	50	11/21/2023 1:45:00 PM
Bromobenzene	ND	5.0		µg/L	50	11/21/2023 1:45:00 PM
Bromodichloromethane	ND	5.0		µg/L	50	11/21/2023 1:45:00 PM
Bromoform	ND	5.0		µg/L	50	11/21/2023 1:45:00 PM
Bromomethane	ND	10		µg/L	50	11/21/2023 1:45:00 PM
2-Butanone	ND	50		µg/L	50	11/21/2023 1:45:00 PM
Carbon disulfide	ND	50		µg/L	50	11/21/2023 1:45:00 PM
Carbon tetrachloride	ND	5.0		µg/L	50	11/21/2023 1:45:00 PM
Chlorobenzene	ND	5.0		µg/L	50	11/21/2023 1:45:00 PM
Chloroethane	ND	10		µg/L	50	11/21/2023 1:45:00 PM
Chloroform	ND	5.0		µg/L	50	11/21/2023 1:45:00 PM
Chloromethane	ND	5.0		µg/L	50	11/21/2023 1:45:00 PM
2-Chlorotoluene	ND	5.0		µg/L	50	11/21/2023 1:45:00 PM
4-Chlorotoluene	ND	5.0		µg/L	50	11/21/2023 1:45:00 PM
cis-1,2-DCE	ND	5.0		µg/L	50	11/21/2023 1:45:00 PM
cis-1,3-Dichloropropene	ND	5.0		µg/L	50	11/21/2023 1:45:00 PM
1,2-Dibromo-3-chloropropane	ND	10		µg/L	50	11/21/2023 1:45:00 PM
Dibromochloromethane	ND	5.0		µg/L	50	11/21/2023 1:45:00 PM
Dibromomethane	ND	10		µg/L	50	11/21/2023 1:45:00 PM
1,2-Dichlorobenzene	ND	5.0		µg/L	50	11/21/2023 1:45:00 PM
1,3-Dichlorobenzene	ND	5.0		µg/L	50	11/21/2023 1:45:00 PM
1,4-Dichlorobenzene	ND	5.0		µg/L	50	11/21/2023 1:45:00 PM
Dichlorodifluoromethane	ND	5.0		µg/L	50	11/21/2023 1:45:00 PM
1,1-Dichloroethane	ND	5.0		µg/L	50	11/21/2023 1:45:00 PM
1,1-Dichloroethene	ND	5.0		µg/L	50	11/21/2023 1:45:00 PM
1,2-Dichloropropane	ND	5.0		µg/L	50	11/21/2023 1:45:00 PM
1,3-Dichloropropane	ND	5.0		µg/L	50	11/21/2023 1:45:00 PM
2,2-Dichloropropane	ND	5.0		µg/L	50	11/21/2023 1:45:00 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 **2311962**
Date Reported: **12/4/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: San Juan 32-9 #41A influent
Project: San Juan 32 9 Un 41 A
Collection Date: 11/16/2023 12:45:00 PM
Lab ID: 2311962-001 **Matrix:** AIR
Received Date: 11/17/2023 6:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: **CCM**
1,1-Dichloropropene	ND	5.0		µg/L	50	11/21/2023 1:45:00 PM
Hexachlorobutadiene	ND	5.0		µg/L	50	11/21/2023 1:45:00 PM
2-Hexanone	ND	50		µg/L	50	11/21/2023 1:45:00 PM
Isopropylbenzene	ND	5.0		µg/L	50	11/21/2023 1:45:00 PM
4-Isopropyltoluene	ND	5.0		µg/L	50	11/21/2023 1:45:00 PM
4-Methyl-2-pentanone	ND	50		µg/L	50	11/21/2023 1:45:00 PM
Methylene chloride	ND	15		µg/L	50	11/21/2023 1:45:00 PM
n-Butylbenzene	ND	15		µg/L	50	11/21/2023 1:45:00 PM
n-Propylbenzene	ND	5.0		µg/L	50	11/21/2023 1:45:00 PM
sec-Butylbenzene	ND	5.0		µg/L	50	11/21/2023 1:45:00 PM
Styrene	ND	5.0		µg/L	50	11/21/2023 1:45:00 PM
tert-Butylbenzene	ND	5.0		µg/L	50	11/21/2023 1:45:00 PM
1,1,1,2-Tetrachloroethane	ND	5.0		µg/L	50	11/21/2023 1:45:00 PM
1,1,2,2-Tetrachloroethane	ND	5.0		µg/L	50	11/21/2023 1:45:00 PM
Tetrachloroethene (PCE)	ND	5.0		µg/L	50	11/21/2023 1:45:00 PM
trans-1,2-DCE	ND	5.0		µg/L	50	11/21/2023 1:45:00 PM
trans-1,3-Dichloropropene	ND	5.0		µg/L	50	11/21/2023 1:45:00 PM
1,2,3-Trichlorobenzene	ND	5.0		µg/L	50	11/21/2023 1:45:00 PM
1,2,4-Trichlorobenzene	ND	5.0		µg/L	50	11/21/2023 1:45:00 PM
1,1,1-Trichloroethane	ND	5.0		µg/L	50	11/21/2023 1:45:00 PM
1,1,2-Trichloroethane	ND	5.0		µg/L	50	11/21/2023 1:45:00 PM
Trichloroethene (TCE)	ND	5.0		µg/L	50	11/21/2023 1:45:00 PM
Trichlorofluoromethane	ND	5.0		µg/L	50	11/21/2023 1:45:00 PM
1,2,3-Trichloropropane	ND	10		µg/L	50	11/21/2023 1:45:00 PM
Vinyl chloride	ND	5.0		µg/L	50	11/21/2023 1:45:00 PM
Xylenes, Total	64	7.5		µg/L	50	11/21/2023 1:45:00 PM
Surr: Dibromofluoromethane	98.0	70-130		%Rec	50	11/21/2023 1:45:00 PM
Surr: 1,2-Dichloroethane-d4	101	70-130		%Rec	50	11/21/2023 1:45:00 PM
Surr: Toluene-d8	109	70-130		%Rec	50	11/21/2023 1:45:00 PM
Surr: 4-Bromofluorobenzene	108	70-130		%Rec	50	11/21/2023 1:45:00 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **CCM**
Gasoline Range Organics (GRO)	2600	250		µg/L	50	11/21/2023 1:45:00 PM
Surr: BFB	100	70-130		%Rec	50	11/21/2023 1:45:00 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 04, 2023

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

Work Order: B23111612 Quote ID: B15626

Project Name: Not Indicated

Energy Laboratories Inc Billings MT received the following 1 sample for Hall Environmental on 11/21/2023 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B23111612-001	2311962-001B, San Juan 32-9 #41A influent	11/16/23 12:45	11/21/23	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: B23111612-001
Client Sample ID: 2311962-001B, San Juan 32-9 #41A influent

Report Date: 12/04/23
Collection Date: 11/16/23 12:45
DateReceived: 11/21/23
Matrix: Air

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
GAS CHROMATOGRAPHY ANALYSIS REPORT							
Oxygen	21.43	Mol %		0.01		GPA 2261-95	12/01/23 10:05 / jrj
Nitrogen	78.16	Mol %		0.01		GPA 2261-95	12/01/23 10:05 / jrj
Carbon Dioxide	0.23	Mol %		0.01		GPA 2261-95	12/01/23 10:05 / jrj
Hydrogen Sulfide	<0.01	Mol %		0.01		GPA 2261-95	12/01/23 10:05 / jrj
Methane	<0.01	Mol %		0.01		GPA 2261-95	12/01/23 10:05 / jrj
Ethane	<0.01	Mol %		0.01		GPA 2261-95	12/01/23 10:05 / jrj
Propane	<0.01	Mol %		0.01		GPA 2261-95	12/01/23 10:05 / jrj
Isobutane	<0.01	Mol %		0.01		GPA 2261-95	12/01/23 10:05 / jrj
n-Butane	<0.01	Mol %		0.01		GPA 2261-95	12/01/23 10:05 / jrj
Isopentane	<0.01	Mol %		0.01		GPA 2261-95	12/01/23 10:05 / jrj
n-Pentane	<0.01	Mol %		0.01		GPA 2261-95	12/01/23 10:05 / jrj
Hexanes plus	0.18	Mol %		0.01		GPA 2261-95	12/01/23 10:05 / jrj
Propane	< 0.001	gpm		0.001		GPA 2261-95	12/01/23 10:05 / jrj
Isobutane	< 0.001	gpm		0.001		GPA 2261-95	12/01/23 10:05 / jrj
n-Butane	< 0.001	gpm		0.001		GPA 2261-95	12/01/23 10:05 / jrj
Isopentane	< 0.001	gpm		0.001		GPA 2261-95	12/01/23 10:05 / jrj
n-Pentane	< 0.001	gpm		0.001		GPA 2261-95	12/01/23 10:05 / jrj
Hexanes plus	0.076	gpm		0.001		GPA 2261-95	12/01/23 10:05 / jrj
GPM Total	0.076	gpm		0.001		GPA 2261-95	12/01/23 10:05 / jrj
GPM Pentanes plus	0.076	gpm		0.001		GPA 2261-95	12/01/23 10:05 / jrj
CALCULATED PROPERTIES							
Gross BTU per cu ft @ Std Cond. (HHV)	9			1		GPA 2261-95	12/01/23 10:05 / jrj
Net BTU per cu ft @ std cond. (LHV)	8			1		GPA 2261-95	12/01/23 10:05 / jrj
Pseudo-critical Pressure, psia	545			1		GPA 2261-95	12/01/23 10:05 / jrj
Pseudo-critical Temperature, deg R	240			1		GPA 2261-95	12/01/23 10:05 / jrj
Specific Gravity @ 60/60F	1.00			0.001		D3588-81	12/01/23 10:05 / jrj
Air, %	97.91			0.01		GPA 2261-95	12/01/23 10:05 / jrj
- The analysis was not corrected for air.							
COMMENTS							
-						-	12/01/23 10:05 / 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:** B23111612 **Report Date:** 12/04/23

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: **GPA 2261-95**										Batch: R413045
Lab ID: **B23111612-001ADUP**	12	Sample Duplicate				Run: GC7890_231201A				12/01/23 10:57
Oxygen		21.5	Mol %	0.01				0.2	20	
Nitrogen		78.2	Mol %	0.01				0	20	
Carbon Dioxide		0.20	Mol %	0.01				14	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		0.17	Mol %	0.01				5.7	20	
Lab ID: **LCS120123**	11	Laboratory Control Sample				Run: GC7890_231201A				12/01/23 04:00
Oxygen		0.52	Mol %	0.01	104	70	130			
Nitrogen		7.02	Mol %	0.01	117	70	130			
Carbon Dioxide		1.01	Mol %	0.01	102	70	130			
Methane		73.7	Mol %	0.01	99	70	130			
Ethane		5.99	Mol %	0.01	100	70	130			
Propane		5.02	Mol %	0.01	102	70	130			
Isobutane		1.85	Mol %	0.01	92	70	130			
n-Butane		2.02	Mol %	0.01	101	70	130			
Isopentane		1.03	Mol %	0.01	103	70	130			
n-Pentane		1.04	Mol %	0.01	104	70	130			
Hexanes plus		0.83	Mol %	0.01	104	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

B23111612

Login completed by: Danielle N. Harris
Date Received: 11/21/2023
Reviewed by: lleprowse
Received by: lel
Reviewed Date: 11/27/2023
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:	16.2°C No Ice		
Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4").	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	Not Applicable ☑

Standard Reporting Procedures:

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

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

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

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

Contact and Corrective Action Comments:

None

eurofins | 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

B23111612

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	2311962-001B	San Juan 32-9 #41A influent	TEDLAR	Air	11/16/2023 12:45:00 PM	1	Natural Gas Analysis- CO2+02

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: 11/17/2023	Time: 11:34 AM	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By: Lyndi LeLone	Date: 11/21/23	Time: 09:25

TAT: (Standard) RUSH Next BD 2nd BD 3rd BD

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

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

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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: 2311962 RcptNo: 1

Received By: Tracy Casarrubias 11/17/2023 6:15:00 AM

Completed By: Tracy Casarrubias 11/17/2023 11:30:31 AM

Reviewed By: CMC 11/17/23

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 11/17/23 ☑
5. Sample(s) in proper container(s)? Yes ☑ No ☐ Not required
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 11/17/23

Special Handling (if applicable)

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

Person Notified: Date:

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

Regarding:

Client Instructions: Mailing address, phone number, and Email/Fax are missing on COC- TMC 11/17/23

16. Additional remarks:

17. Cooler Information

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

Chain-of-Custody Record

Client: Hilcorp attn: Mitch Killough
mkillough@hilcorp.com

Mailing Address:

Phone #:

email or Fax#:

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

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:
☑ Standard ☐ Rush

Project Name: SanJuan 32-9 UN #41A

Project #:

Project Manager: Stuart Hyde
shyde@ensolum.com

Sampler: Zach Myers

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

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2311962
11/16/23	1245	air	SanJuan 32-9 #41A Influent	2x tedlar	—	001

Analysis Request

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)	Fixed gas CO_2, O_2
	✓						✓ full list			✓

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
11/16/23	1520	Zach	[illegible]		11/16/23	1520
11/16/23	1800	Christian Waeler		courier	11/17/23	6:15

Remarks: cc:
zmyers@ensolum.com
dburns

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.

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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	2311962-001B	San Juan 32-9 #41A influent	TEDLAR	Air	11/16/2023 12:45:00 PM	1	Natural Gas Analysis- CO2+02

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: 11/17/2023	Time: 11:34 AM	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

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:

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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 15, 2023

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

RE: San Juan 32 9 41 A OrderNo.: 2311D06

Dear Mitch Killough:

Eurofins Environment Testing South Central, LLC received 1 sample(s) on 11/29/2023 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 **2311D06**
Date Reported: **12/15/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: San Juan 32-9 #41A Influent
Project: San Juan 32 9 41 A
Collection Date: 11/28/2023 12:45:00 PM
Lab ID: 2311D06-001 **Matrix:** AIR
Received Date: 11/29/2023 6:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	350	5.0		µg/L	1	12/7/2023 3:28:44 PM
Surr: BFB	1000	15-412	S	%Rec	1	12/7/2023 3:28:44 PM
EPA METHOD 8260B: VOLATILES						Analyst: **CCM**
Benzene	ND	0.10		µg/L	1	12/7/2023 2:38:00 PM
Toluene	0.91	0.10		µg/L	1	12/7/2023 2:38:00 PM
Ethylbenzene	0.14	0.10		µg/L	1	12/7/2023 2:38:00 PM
Methyl tert-butyl ether (MTBE)	ND	0.10		µg/L	1	12/7/2023 2:38:00 PM
1,2,4-Trimethylbenzene	0.64	0.10		µg/L	1	12/7/2023 2:38:00 PM
1,3,5-Trimethylbenzene	0.85	0.10		µg/L	1	12/7/2023 2:38:00 PM
1,2-Dichloroethane (EDC)	ND	0.10		µg/L	1	12/7/2023 2:38:00 PM
1,2-Dibromoethane (EDB)	ND	0.10		µg/L	1	12/7/2023 2:38:00 PM
Naphthalene	ND	0.20		µg/L	1	12/7/2023 2:38:00 PM
1-Methylnaphthalene	ND	0.40		µg/L	1	12/7/2023 2:38:00 PM
2-Methylnaphthalene	ND	0.40		µg/L	1	12/7/2023 2:38:00 PM
Acetone	ND	1.0		µg/L	1	12/7/2023 2:38:00 PM
Bromobenzene	ND	0.10		µg/L	1	12/7/2023 2:38:00 PM
Bromodichloromethane	ND	0.10		µg/L	1	12/7/2023 2:38:00 PM
Bromoform	ND	0.10		µg/L	1	12/7/2023 2:38:00 PM
Bromomethane	ND	0.20		µg/L	1	12/7/2023 2:38:00 PM
2-Butanone	ND	1.0		µg/L	1	12/7/2023 2:38:00 PM
Carbon disulfide	ND	1.0		µg/L	1	12/7/2023 2:38:00 PM
Carbon tetrachloride	ND	0.10		µg/L	1	12/7/2023 2:38:00 PM
Chlorobenzene	ND	0.10		µg/L	1	12/7/2023 2:38:00 PM
Chloroethane	ND	0.20		µg/L	1	12/7/2023 2:38:00 PM
Chloroform	ND	0.10		µg/L	1	12/7/2023 2:38:00 PM
Chloromethane	ND	0.10		µg/L	1	12/7/2023 2:38:00 PM
2-Chlorotoluene	ND	0.10		µg/L	1	12/7/2023 2:38:00 PM
4-Chlorotoluene	ND	0.10		µg/L	1	12/7/2023 2:38:00 PM
cis-1,2-DCE	ND	0.10		µg/L	1	12/7/2023 2:38:00 PM
cis-1,3-Dichloropropene	ND	0.10		µg/L	1	12/7/2023 2:38:00 PM
1,2-Dibromo-3-chloropropane	ND	0.20		µg/L	1	12/7/2023 2:38:00 PM
Dibromochloromethane	ND	0.10		µg/L	1	12/7/2023 2:38:00 PM
Dibromomethane	ND	0.20		µg/L	1	12/7/2023 2:38:00 PM
1,2-Dichlorobenzene	ND	0.10		µg/L	1	12/7/2023 2:38:00 PM
1,3-Dichlorobenzene	ND	0.10		µg/L	1	12/7/2023 2:38:00 PM
1,4-Dichlorobenzene	ND	0.10		µg/L	1	12/7/2023 2:38:00 PM
Dichlorodifluoromethane	ND	0.10		µg/L	1	12/7/2023 2:38:00 PM
1,1-Dichloroethane	ND	0.10		µg/L	1	12/7/2023 2:38:00 PM
1,1-Dichloroethene	ND	0.10		µg/L	1	12/7/2023 2:38:00 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 **2311D06**
Date Reported: **12/15/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: San Juan 32-9 #41A Influent
Project: San Juan 32 9 41 A
Collection Date: 11/28/2023 12:45:00 PM
Lab ID: 2311D06-001 **Matrix:** AIR
Received Date: 11/29/2023 6:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: **CCM**
1,2-Dichloropropane	ND	0.10		µg/L	1	12/7/2023 2:38:00 PM
1,3-Dichloropropane	ND	0.10		µg/L	1	12/7/2023 2:38:00 PM
2,2-Dichloropropane	ND	0.10		µg/L	1	12/7/2023 2:38:00 PM
1,1-Dichloropropene	ND	0.10		µg/L	1	12/7/2023 2:38:00 PM
Hexachlorobutadiene	ND	0.10		µg/L	1	12/7/2023 2:38:00 PM
2-Hexanone	ND	1.0		µg/L	1	12/7/2023 2:38:00 PM
Isopropylbenzene	ND	0.10		µg/L	1	12/7/2023 2:38:00 PM
4-Isopropyltoluene	ND	0.10		µg/L	1	12/7/2023 2:38:00 PM
4-Methyl-2-pentanone	ND	1.0		µg/L	1	12/7/2023 2:38:00 PM
Methylene chloride	ND	0.30		µg/L	1	12/7/2023 2:38:00 PM
n-Butylbenzene	ND	0.30		µg/L	1	12/7/2023 2:38:00 PM
n-Propylbenzene	ND	0.10		µg/L	1	12/7/2023 2:38:00 PM
sec-Butylbenzene	ND	0.10		µg/L	1	12/7/2023 2:38:00 PM
Styrene	ND	0.10		µg/L	1	12/7/2023 2:38:00 PM
tert-Butylbenzene	ND	0.10		µg/L	1	12/7/2023 2:38:00 PM
1,1,1,2-Tetrachloroethane	ND	0.10		µg/L	1	12/7/2023 2:38:00 PM
1,1,2,2-Tetrachloroethane	ND	0.10		µg/L	1	12/7/2023 2:38:00 PM
Tetrachloroethene (PCE)	ND	0.10		µg/L	1	12/7/2023 2:38:00 PM
trans-1,2-DCE	ND	0.10		µg/L	1	12/7/2023 2:38:00 PM
trans-1,3-Dichloropropene	ND	0.10		µg/L	1	12/7/2023 2:38:00 PM
1,2,3-Trichlorobenzene	ND	0.10		µg/L	1	12/7/2023 2:38:00 PM
1,2,4-Trichlorobenzene	ND	0.10		µg/L	1	12/7/2023 2:38:00 PM
1,1,1-Trichloroethane	ND	0.10		µg/L	1	12/7/2023 2:38:00 PM
1,1,2-Trichloroethane	ND	0.10		µg/L	1	12/7/2023 2:38:00 PM
Trichloroethene (TCE)	ND	0.10		µg/L	1	12/7/2023 2:38:00 PM
Trichlorofluoromethane	ND	0.10		µg/L	1	12/7/2023 2:38:00 PM
1,2,3-Trichloropropane	ND	0.20		µg/L	1	12/7/2023 2:38:00 PM
Vinyl chloride	ND	0.10		µg/L	1	12/7/2023 2:38:00 PM
Xylenes, Total	6.6	0.15		µg/L	1	12/7/2023 2:38:00 PM
Surr: Dibromofluoromethane	93.4	70-130		%Rec	1	12/7/2023 2:38:00 PM
Surr: 1,2-Dichloroethane-d4	87.1	70-130		%Rec	1	12/7/2023 2:38:00 PM
Surr: Toluene-d8	121	70-130		%Rec	1	12/7/2023 2:38:00 PM
Surr: 4-Bromofluorobenzene	125	70-130		%Rec	1	12/7/2023 2:38:00 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 08, 2023

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

Work Order: B23112064 Quote ID: B15626

Project Name: Not Indicated

Energy Laboratories Inc Billings MT received the following 1 sample for Hall Environmental on 11/30/2023 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B23112064-001	2311D06-001B, San Juan 32-9 #41A Influent	11/28/23 12:45	11/30/23	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: B23112064-001
Client Sample ID: 2311D06-001B, San Juan 32-9 #41A Influent

Report Date: 12/08/23
Collection Date: 11/28/23 12:45
DateReceived: 11/30/23
Matrix: Air

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
GAS CHROMATOGRAPHY ANALYSIS REPORT							
Oxygen	21.67	Mol %		0.01		GPA 2261-95	12/06/23 01:35 / jrj
Nitrogen	78.27	Mol %		0.01		GPA 2261-95	12/06/23 01:35 / jrj
Carbon Dioxide	0.06	Mol %		0.01		GPA 2261-95	12/06/23 01:35 / jrj
Hydrogen Sulfide	<0.01	Mol %		0.01		GPA 2261-95	12/06/23 01:35 / jrj
Methane	<0.01	Mol %		0.01		GPA 2261-95	12/06/23 01:35 / jrj
Ethane	<0.01	Mol %		0.01		GPA 2261-95	12/06/23 01:35 / jrj
Propane	<0.01	Mol %		0.01		GPA 2261-95	12/06/23 01:35 / jrj
Isobutane	<0.01	Mol %		0.01		GPA 2261-95	12/06/23 01:35 / jrj
n-Butane	<0.01	Mol %		0.01		GPA 2261-95	12/06/23 01:35 / jrj
Isopentane	<0.01	Mol %		0.01		GPA 2261-95	12/06/23 01:35 / jrj
n-Pentane	<0.01	Mol %		0.01		GPA 2261-95	12/06/23 01:35 / jrj
Hexanes plus	<0.01	Mol %		0.01		GPA 2261-95	12/06/23 01:35 / jrj
Propane	< 0.001	gpm		0.001		GPA 2261-95	12/06/23 01:35 / jrj
Isobutane	< 0.001	gpm		0.001		GPA 2261-95	12/06/23 01:35 / jrj
n-Butane	< 0.001	gpm		0.001		GPA 2261-95	12/06/23 01:35 / jrj
Isopentane	< 0.001	gpm		0.001		GPA 2261-95	12/06/23 01:35 / jrj
n-Pentane	< 0.001	gpm		0.001		GPA 2261-95	12/06/23 01:35 / jrj
Hexanes plus	< 0.001	gpm		0.001		GPA 2261-95	12/06/23 01:35 / jrj
GPM Total	< 0.001	gpm		0.001		GPA 2261-95	12/06/23 01:35 / jrj
GPM Pentanes plus	< 0.001	gpm		0.001		GPA 2261-95	12/06/23 01:35 / jrj
CALCULATED PROPERTIES							
Gross BTU per cu ft @ Std Cond. (HHV)	ND			1		GPA 2261-95	12/06/23 01:35 / jrj
Net BTU per cu ft @ std cond. (LHV)	ND			1		GPA 2261-95	12/06/23 01:35 / jrj
Pseudo-critical Pressure, psia	545			1		GPA 2261-95	12/06/23 01:35 / jrj
Pseudo-critical Temperature, deg R	239			1		GPA 2261-95	12/06/23 01:35 / jrj
Specific Gravity @ 60/60F	0.998			0.001		D3588-81	12/06/23 01:35 / jrj
Air, %	99.01			0.01		GPA 2261-95	12/06/23 01:35 / jrj
- The analysis was not corrected for air.							
COMMENTS							
-						-	12/06/23 01:35 / 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:** B23112064 **Report Date:** 12/08/23

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: **GPA 2261-95**										Batch: R413302
Lab ID: **B23120241-001ADUP**	12	Sample Duplicate				Run: GCNGA-B_231206A				12/06/23 04:07
Oxygen		21.4	Mol %	0.01				0	20	
Nitrogen		78.0	Mol %	0.01				0.0	20	
Carbon Dioxide		0.42	Mol %	0.01				0.0	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		0.11	Mol %	0.01				9.5	20	
Lab ID: **LCS120623**	11	Laboratory Control Sample				Run: GCNGA-B_231206A				12/06/23 03:15
Oxygen		0.52	Mol %	0.01	104	70	130			
Nitrogen		6.39	Mol %	0.01	106	70	130			
Carbon Dioxide		0.99	Mol %	0.01	100	70	130			
Methane		74.6	Mol %	0.01	100	70	130			
Ethane		6.03	Mol %	0.01	100	70	130			
Propane		5.07	Mol %	0.01	103	70	130			
Isobutane		1.76	Mol %	0.01	88	70	130			
n-Butane		1.97	Mol %	0.01	98	70	130			
Isopentane		0.98	Mol %	0.01	98	70	130			
n-Pentane		0.96	Mol %	0.01	96	70	130			
Hexanes plus		0.74	Mol %	0.01	93	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

B23112064

Login completed by: Yvonna E. Smith
Date Received: 11/30/2023
Reviewed by: lcadreau
Received by: dnh
Reviewed Date: 12/5/2023
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:	11.6°C No Ice		
Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4").	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	Not Applicable ☑

Standard Reporting Procedures:

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

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

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

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

Contact and Corrective Action Comments:

None

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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	2311D06-001B	San Juan 32-9 #41A Influent	TEDLAR	Air	11/28/2023 12:45:00 PM	1	Natural gas analysis. CO2+O2

B23112064

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: 11/29/2023	Time: 7:17 AM	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time: 0920

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: 2311D06 RcptNo: 1

Received By: **Tracy Casarrubias** 11/29/2023 6:30:00 AM

Completed By: **Tracy Casarrubias** 11/29/2023 7:13:10 AM

Reviewed By: TMC 11/29/23

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 ☐	# of preserved bottles checked for pH: (<2 or >12 unless noted)
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted?
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 ☐	Checked by: SCM 11/29/23

Special Handling (if applicable)

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

Person Notified: Date:

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

Regarding:

Client Instructions: Mailing address,phone number and Email/Fax are missing on COC- TMC 11/29/23

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	NA	Good	Yes			

Chain-of-Custody Record

Client: Hilcorp attn: Mitch Killough

mkillough@hilcorp.com

Mailing Address:

Phone #:

email or Fax#:

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance

☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:

☑ Standard ☐ Rush

Project Name: San Juan 32-9 #41A

Project #:

Project Manager: Stuart Hyde

shyde@ensolum.com

Sampler: Zach Myers

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. 2311D06	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, O_2
11/28/23	1245	gas	San Juan 32-9#41A Influent	2x tedlar	—	001		X						X			X

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
11/28/23	1510	Zach Myers				
11/28/23	1740			courier	11/29/23	6:30

Remarks:

cc: zmyers@ensolum.com

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.

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

January 03, 2024

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

RE: San Juan 32 9 41 A OrderNo.: 2312984

Dear Stuart Hyde:

Eurofins Environment Testing South Central, LLC received 1 sample(s) on 12/16/2023 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 **2312984**
Date Reported: **1/3/2024**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: San Juan 32-9 41A Influent
Project: San Juan 32 9 41 A
Collection Date: 12/13/2023 11:20:00 AM
Lab ID: 2312984-001 **Matrix:** AIR
Received Date: 12/16/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: **CCM**
Benzene	ND	0.50		µg/L	5	12/23/2023 8:27:00 PM
Toluene	3.3	0.50		µg/L	5	12/23/2023 8:27:00 PM
Ethylbenzene	0.60	0.50		µg/L	5	12/23/2023 8:27:00 PM
Methyl tert-butyl ether (MTBE)	ND	0.50		µg/L	5	12/23/2023 8:27:00 PM
1,2,4-Trimethylbenzene	4.8	0.50		µg/L	5	12/23/2023 8:27:00 PM
1,3,5-Trimethylbenzene	6.1	0.50		µg/L	5	12/23/2023 8:27:00 PM
1,2-Dichloroethane (EDC)	ND	0.50		µg/L	5	12/23/2023 8:27:00 PM
1,2-Dibromoethane (EDB)	ND	0.50		µg/L	5	12/23/2023 8:27:00 PM
Naphthalene	ND	1.0		µg/L	5	12/23/2023 8:27:00 PM
1-Methylnaphthalene	ND	2.0		µg/L	5	12/23/2023 8:27:00 PM
2-Methylnaphthalene	ND	2.0		µg/L	5	12/23/2023 8:27:00 PM
Acetone	ND	5.0		µg/L	5	12/23/2023 8:27:00 PM
Bromobenzene	ND	0.50		µg/L	5	12/23/2023 8:27:00 PM
Bromodichloromethane	ND	0.50		µg/L	5	12/23/2023 8:27:00 PM
Bromoform	ND	0.50		µg/L	5	12/23/2023 8:27:00 PM
Bromomethane	ND	1.0		µg/L	5	12/23/2023 8:27:00 PM
2-Butanone	ND	5.0		µg/L	5	12/23/2023 8:27:00 PM
Carbon disulfide	ND	55		µg/L	5	12/23/2023 8:27:00 PM
Carbon tetrachloride	ND	0.50		µg/L	5	12/23/2023 8:27:00 PM
Chlorobenzene	ND	0.50		µg/L	5	12/23/2023 8:27:00 PM
Chloroethane	ND	1.0		µg/L	5	12/23/2023 8:27:00 PM
Chloroform	ND	0.50		µg/L	5	12/23/2023 8:27:00 PM
Chloromethane	ND	0.50		µg/L	5	12/23/2023 8:27:00 PM
2-Chlorotoluene	ND	0.50		µg/L	5	12/23/2023 8:27:00 PM
4-Chlorotoluene	ND	0.50		µg/L	5	12/23/2023 8:27:00 PM
cis-1,2-DCE	ND	0.50		µg/L	5	12/23/2023 8:27:00 PM
cis-1,3-Dichloropropene	ND	0.50		µg/L	5	12/23/2023 8:27:00 PM
1,2-Dibromo-3-chloropropane	ND	1.0		µg/L	5	12/23/2023 8:27:00 PM
Dibromochloromethane	ND	0.50		µg/L	5	12/23/2023 8:27:00 PM
Dibromomethane	ND	1.0		µg/L	5	12/23/2023 8:27:00 PM
1,2-Dichlorobenzene	ND	0.50		µg/L	5	12/23/2023 8:27:00 PM
1,3-Dichlorobenzene	ND	0.50		µg/L	5	12/23/2023 8:27:00 PM
1,4-Dichlorobenzene	ND	0.50		µg/L	5	12/23/2023 8:27:00 PM
Dichlorodifluoromethane	ND	0.50		µg/L	5	12/23/2023 8:27:00 PM
1,1-Dichloroethane	ND	0.50		µg/L	5	12/23/2023 8:27:00 PM
1,1-Dichloroethene	ND	0.50		µg/L	5	12/23/2023 8:27:00 PM
1,2-Dichloropropane	ND	0.50		µg/L	5	12/23/2023 8:27:00 PM
1,3-Dichloropropane	ND	0.50		µg/L	5	12/23/2023 8:27:00 PM
2,2-Dichloropropane	ND	0.50		µg/L	5	12/23/2023 8:27:00 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 **2312984**
Date Reported: **1/3/2024**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: San Juan 32-9 41A Influent
Project: San Juan 32 9 41 A
Collection Date: 12/13/2023 11:20:00 AM
Lab ID: 2312984-001 **Matrix:** AIR
Received Date: 12/16/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: **CCM**
1,1-Dichloropropene	ND	0.50		µg/L	5	12/23/2023 8:27:00 PM
Hexachlorobutadiene	ND	0.50		µg/L	5	12/23/2023 8:27:00 PM
2-Hexanone	ND	5.0		µg/L	5	12/23/2023 8:27:00 PM
Isopropylbenzene	ND	0.50		µg/L	5	12/23/2023 8:27:00 PM
4-Isopropyltoluene	ND	0.50		µg/L	5	12/23/2023 8:27:00 PM
4-Methyl-2-pentanone	ND	5.0		µg/L	5	12/23/2023 8:27:00 PM
Methylene chloride	ND	1.5		µg/L	5	12/23/2023 8:27:00 PM
n-Butylbenzene	ND	1.5		µg/L	5	12/23/2023 8:27:00 PM
n-Propylbenzene	ND	0.50		µg/L	5	12/23/2023 8:27:00 PM
sec-Butylbenzene	ND	0.50		µg/L	5	12/23/2023 8:27:00 PM
Styrene	ND	0.50		µg/L	5	12/23/2023 8:27:00 PM
tert-Butylbenzene	ND	0.50		µg/L	5	12/23/2023 8:27:00 PM
1,1,1,2-Tetrachloroethane	ND	0.50		µg/L	5	12/23/2023 8:27:00 PM
1,1,2,2-Tetrachloroethane	ND	0.50		µg/L	5	12/23/2023 8:27:00 PM
Tetrachloroethene (PCE)	ND	0.50		µg/L	5	12/23/2023 8:27:00 PM
trans-1,2-DCE	ND	0.50		µg/L	5	12/23/2023 8:27:00 PM
trans-1,3-Dichloropropene	ND	0.50		µg/L	5	12/23/2023 8:27:00 PM
1,2,3-Trichlorobenzene	ND	0.50		µg/L	5	12/23/2023 8:27:00 PM
1,2,4-Trichlorobenzene	ND	0.50		µg/L	5	12/23/2023 8:27:00 PM
1,1,1-Trichloroethane	ND	0.50		µg/L	5	12/23/2023 8:27:00 PM
1,1,2-Trichloroethane	ND	0.50		µg/L	5	12/23/2023 8:27:00 PM
Trichloroethene (TCE)	ND	0.50		µg/L	5	12/23/2023 8:27:00 PM
Trichlorofluoromethane	ND	0.50		µg/L	5	12/23/2023 8:27:00 PM
1,2,3-Trichloropropane	ND	1.0		µg/L	5	12/23/2023 8:27:00 PM
Vinyl chloride	ND	0.50		µg/L	5	12/23/2023 8:27:00 PM
Xylenes, Total	27	0.75		µg/L	5	12/23/2023 8:27:00 PM
Surr: Dibromofluoromethane	95.7	70-130		%Rec	5	12/23/2023 8:27:00 PM
Surr: 1,2-Dichloroethane-d4	83.8	70-130		%Rec	5	12/23/2023 8:27:00 PM
Surr: Toluene-d8	122	70-130		%Rec	5	12/23/2023 8:27:00 PM
Surr: 4-Bromofluorobenzene	134	70-130	S	%Rec	5	12/23/2023 8:27:00 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **CCM**
Gasoline Range Organics (GRO)	1400	10		µg/L	2	12/21/2023 4:09:00 PM
Surr: BFB	159	70-130	S	%Rec	2	12/21/2023 4:09:00 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

January 02, 2024

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

Work Order: B23121312 Quote ID: B15626

Project Name: Not Indicated

Energy Laboratories Inc Billings MT received the following 1 sample for Hall Environmental on 12/19/2023 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B23121312-001	2312984-001B San Juan 32 9 41A Influent	12/13/23 11:20	12/19/23	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: B23121312-001
Client Sample ID: 2312984-001B San Juan 32 9 41A Influent

Report Date: 01/02/24
Collection Date: 12/13/23 11:20
DateReceived: 12/19/23
Matrix: Air

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
GAS CHROMATOGRAPHY ANALYSIS REPORT							
Oxygen	21.72	Mol %		0.01		GPA 2261-95	12/21/23 10:55 / jrj
Nitrogen	78.10	Mol %		0.01		GPA 2261-95	12/21/23 10:55 / jrj
Carbon Dioxide	0.18	Mol %		0.01		GPA 2261-95	12/21/23 10:55 / jrj
Hydrogen Sulfide	<0.01	Mol %		0.01		GPA 2261-95	12/21/23 10:55 / jrj
Methane	<0.01	Mol %		0.01		GPA 2261-95	12/21/23 10:55 / jrj
Ethane	<0.01	Mol %		0.01		GPA 2261-95	12/21/23 10:55 / jrj
Propane	<0.01	Mol %		0.01		GPA 2261-95	12/21/23 10:55 / jrj
Isobutane	<0.01	Mol %		0.01		GPA 2261-95	12/21/23 10:55 / jrj
n-Butane	<0.01	Mol %		0.01		GPA 2261-95	12/21/23 10:55 / jrj
Isopentane	<0.01	Mol %		0.01		GPA 2261-95	12/21/23 10:55 / jrj
n-Pentane	<0.01	Mol %		0.01		GPA 2261-95	12/21/23 10:55 / jrj
Hexanes plus	<0.01	Mol %		0.01		GPA 2261-95	12/21/23 10:55 / jrj
Propane	< 0.001	gpm		0.001		GPA 2261-95	12/21/23 10:55 / jrj
Isobutane	< 0.001	gpm		0.001		GPA 2261-95	12/21/23 10:55 / jrj
n-Butane	< 0.001	gpm		0.001		GPA 2261-95	12/21/23 10:55 / jrj
Isopentane	< 0.001	gpm		0.001		GPA 2261-95	12/21/23 10:55 / jrj
n-Pentane	< 0.001	gpm		0.001		GPA 2261-95	12/21/23 10:55 / jrj
Hexanes plus	< 0.001	gpm		0.001		GPA 2261-95	12/21/23 10:55 / jrj
GPM Total	< 0.001	gpm		0.001		GPA 2261-95	12/21/23 10:55 / jrj
GPM Pentanes plus	< 0.001	gpm		0.001		GPA 2261-95	12/21/23 10:55 / jrj
CALCULATED PROPERTIES							
Gross BTU per cu ft @ Std Cond. (HHV)	ND			1		GPA 2261-95	12/21/23 10:55 / jrj
Net BTU per cu ft @ std cond. (LHV)	ND			1		GPA 2261-95	12/21/23 10:55 / jrj
Pseudo-critical Pressure, psia	545			1		GPA 2261-95	12/21/23 10:55 / jrj
Pseudo-critical Temperature, deg R	239			1		GPA 2261-95	12/21/23 10:55 / jrj
Specific Gravity @ 60/60F	0.998			0.001		D3588-81	12/21/23 10:55 / jrj
Air, %	99.22			0.01		GPA 2261-95	12/21/23 10:55 / jrj
- The analysis was not corrected for air.							
COMMENTS							
-						-	12/21/23 10:55 / 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:** B23121312 **Report Date:** 01/02/24

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: **GPA 2261-95**										Batch: R414191
Lab ID: **B23121312-001ADUP**	12	Sample Duplicate				Run: GCNGA-B_231221A				12/21/23 11:45
Oxygen		21.7	Mol %	0.01				0.1	20	
Nitrogen		78.1	Mol %	0.01				0	20	
Carbon Dioxide		0.18	Mol %	0.01				0.0	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		<0.01	Mol %	0.01					20	
Lab ID: **LCS122123**	11	Laboratory Control Sample				Run: GCNGA-B_231221A				12/21/23 02:36
Oxygen		0.64	Mol %	0.01	128	70	130			
Nitrogen		6.23	Mol %	0.01	104	70	130			
Carbon Dioxide		0.98	Mol %	0.01	99	70	130			
Methane		74.1	Mol %	0.01	99	70	130			
Ethane		5.99	Mol %	0.01	100	70	130			
Propane		5.01	Mol %	0.01	101	70	130			
Isobutane		1.89	Mol %	0.01	94	70	130			
n-Butane		2.04	Mol %	0.01	102	70	130			
Isopentane		1.06	Mol %	0.01	106	70	130			
n-Pentane		1.08	Mol %	0.01	108	70	130			
Hexanes plus		0.96	Mol %	0.01	120	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

B23121312

Login completed by: Crystal M. Jones
Date Received: 12/19/2023
Reviewed by: gmccartney
Received by: cmj
Reviewed Date: 12/21/2023
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:	14.4°C No Ice		
Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4").	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	Not Applicable ☑

Standard Reporting Procedures:

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

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

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

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

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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	2312984-001B	San Juan 32 9 41A Influent	TEDLAR	Air	12/13/2023 11:20:00 AM	1	Natural Gas Analysis. CO2+O2

B23121312

SPECIAL INSTRUCTIONS / COMMENTS:

Include the LAB ID and CLIENT SAMPLE ID on final reports. Email results to Hall.Lab@et.eurofinsus.com. For Questions email Hall.samplecontrol@et.eurofinsus.com. Please return all coolers and blue ice. Thank you.

Relinquished By:	Date: 12/16/2023	Time: 8:36 AM	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By: Crystal Jones	Date: 12/19/23	Time: 0910

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: ____

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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: 2312984 RcptNo: 1

Received By: Tracy Casarrubias 12/16/2023 7:35:00 AM

Completed By: Tracy Casarrubias 12/16/2023 8:33:20 AM

Reviewed By: TMC 12/18/23

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 ☑ MT 12/16/23
   Not required
5. Sample(s) in proper container(s)? Yes ☑ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
8. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes ☐ No ☐ NA ☑
10. Were any sample containers received broken? Yes ☐ No ☑
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
13. Is it clear what analyses were requested? Yes ☑ No ☐
14. Were all holding times able to be met? (If no, notify customer for authorization.) Yes ☑ No ☐

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)
Adjusted? _____
Checked by: TMC 12/18/23

Special Handling (if applicable)

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

Person Notified: _____ Date: _____
By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding: _____
Client Instructions: Mailing address,phone number and Email/Fax are missing on COC- TMC 12/16/23

16. Additional remarks:

17. Cooler Information

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

Chain-of-Custody Record

Client: Hilcorp attn: Mitch Killough

mkillough@hilcorp.com

Mailing Address:

Phone #:

email or Fax#:

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance

☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:

☑ Standard ☐ Rush

Project Name: San Juan 32-9 #41A

Project #:

Project Manager: Stuart Hyde

shyde@ensolum.com

Sampler: Zach Myers

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. 2312984	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 + O_2
12/13/23	1120	gas	San Juan 32-9 #41A Influent	2x Tedlar	-	001		X						X			X

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
12/15/23	1425				12/15/23	1425
12/15/23	1742			Courier	12/16/23	7:35

Remarks: cc: zmyers@ensolum.com

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 303130

CONDITIONS

Operator:	OGRID:
HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	372171
	Action Number: 303130
	Action Type: [UF-GWA] Ground Water Abatement (GROUND WATER ABATEMENT)

CONDITIONS

Created By	Condition	Condition Date
michael.buchanan	Review of the Fourth Quarter 2023--SVE System Update for San Juan 32-9 #41A: Content Satisfactory 1. Continue to conduct O&M as Hilcorp has scheduled. 2. Continue to operate system and install pitot tubes as planned. Please include notes for installation in next report submission. 3. Submit next quarterly SVE report as scheduled.	4/5/2024