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ENSOLUM

January 23, 2023

New Mexico Oil Conservation Division – District III
New Mexico Energy, Mineral, and Natural Resources Department
1000 Rio Brazos Road
Aztec, New Mexico 87410

**Subject: 2022 Fourth Quarter – Solar SVE System Update
Trunk L Tank Battery
Harvest Four Corners, LLC
Incident Number NVF1900731813
Remediation Permit Number 3RP-13665
Rio Arriba County, New Mexico**

To Whom It May Concern:

Ensolum, LLC (Ensolum), on behalf of Harvest Four Corners, LLC (Harvest), presents the following *2022 Fourth Quarter – Solar SVE System Update* report summarizing the soil vapor extraction (SVE) system performance at the Trunk L Tank Battery (Site), located in Unit A of Section 28, Township 28 North, Range 05 West, in Rio Arriba County, New Mexico (Figure 1).

BACKGROUND

The solar SVE system was installed on September 18, 2019, to remediate subsurface impacts following a release on December 14, 2018. Excessive liquids were released onto the Site during a pigging event. Additionally, the volume of fluid in the slug catcher was elevated due to a stuck float valve, causing a release of approximately 22 barrels (bbls) into the lined secondary containment. Harvest reported the release to the New Mexico Oil Conservation Division (NMOCD) on a release Notification and Corrective Action Form C-141 on December 28, 2018, and the event was assigned Incident Number NVF1900731813. A solar SVE system was installed to remediate impacts resulting from the release. Reports summarizing remediation system operation for the previous quarters of system operation have been submitted to the NMOCD.

SOLAR SVE SYSTEM OPERATION AND MONITORING

The solar SVE system consists of three shallow wells (SVE01, SVE03, and SVE05) with depths ranging from 15 feet below ground surface (bgs) to 20 feet bgs with ten feet of screened interval, and three deep wells (SVE02, 04 and 06) with depths ranging from 35 feet bgs to 40 feet bgs with ten feet of screened interval. The solar SVE system is comprised of a 2.75 horsepower, three-phase blower capable of extracting 105 cubic feet per minute (cfm) at 50 inches of water column (IWC) vacuum, with a maximum vacuum capability of 84 IWC. Each SVE well has a dedicated leg with an adjustable valve and vacuum gauge to control the individual flow rates and vacuum prior to manifolding together before the water knockout tank and blower. Harvest utilized a solar-powered SVE system due to the remote location and the lack of electrical grid power at the site. The direct-drive blower motor is connected to the solar panels via a motor controller that automatically starts the system as sunlight is available and throttles the blower up as sun power increases throughout the day to maximize efficiency. Seasonally, there are approximately 10 hours in the winter and 12 hours in the summer of available solar power in Farmington, New Mexico. The complete solar SVE system is constructed as one unit designed for utilization at off-

Harvest Four Corners
Trunk L Tank Battery

grid locations and operates autonomously. The layout of the solar SVE system is depicted on Figure 2.

Between startup of the solar SVE system on September 18, 2019, and the site visit on December 5, 2022, there have been 1,091 days of operation, with an estimated 13,546 total hours of nominal daylight available for solar SVE system operations. A photographic log of the hours meter reading is included as Appendix A. Since installation, the system had an actual runtime of 14,108 hours, for an overall uptime of 104.2 percent (%) of the available runtime hours. Below is a table showing SVE system runtime in comparison with nominal available daylight hours per month, according to the National Oceanic and Atmospheric Administration’s National Weather Service.

Time Period	Start up on September 18, 2019 to September 13, 2022	September 14, 2022, to September 30, 2022	October 1, 2022, to October 31, 2022	November 1, 2022, to November 30, 2022	December 1, 2022, to December 5, 2022
Days	1,091	17	31	30	5
Avg. Nominal Daylight Hours	11.6	12	11	10	9
Available Runtime Hours	12,656	204	341	300	45

Total Available Daylight Runtime Hours	13,546
Actual Runtime Hours	14,108
Cumulative % Runtime	104.2%
Quarterly Available Daylight Runtime Hours	890
Quarterly Runtime Hours	907
Quarterly % Runtime	101.9%

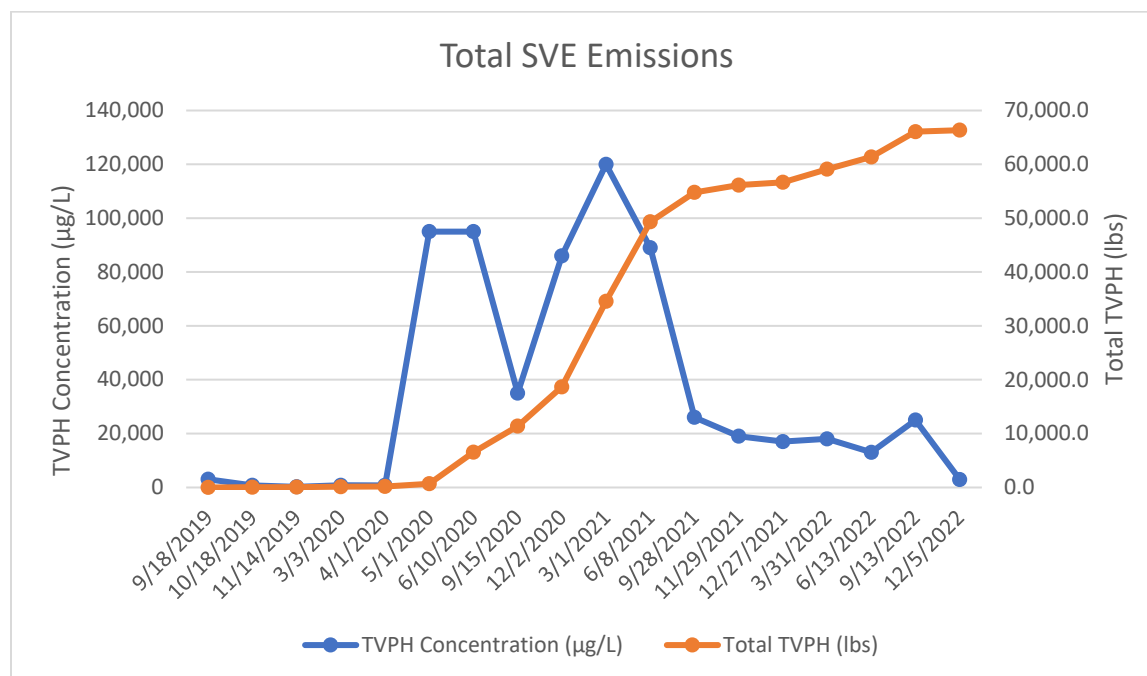
AIR EMISSIONS MONITORING

An initial air sample was collected on September 18, 2019, from the influent side of the blower on the SVE system. Subsequent air samples were collected quarterly with the most recent sample collected December 5, 2022 (Table 1). Samples were collected in 1-Liter Tedlar® bags via a high vacuum air sampler and submitted to Hall Environmental Analysis Laboratory in Albuquerque, New Mexico, for analyses of benzene, toluene, ethylbenzene, and total xylenes (BTEX) or full suite volatile organic compounds (VOCs) using United States Environmental Protection Agency (EPA) Method 8021 or EPA Method 8260 and total volatile petroleum hydrocarbons (TVPH) using EPA Method 8015. The laboratory analytical report from the December vapor sampling event is included as Appendix A.

Estimated air emissions were calculated using air sample data collected to-date (Table 2). The impacted mass source removal via the solar SVE system to-date is estimated to be 66,356 pounds (lbs) of TVPH. An increase in TVPH mass removal was observed in May 2020 as a result of system optimization, through focusing system operation on the four SVE wells that were recovering vapor with the highest photoionization detector (PID) measurements (SVE03, SVE04, SVE05, and SVE06). After the reconfiguration in May 2020, there was a peak TVPH inlet concentration in March 2021 of 120,000 micrograms per liter (µg/L). Since March 2021, mass removal has continued to steadily decline, as seen in the graph below.

In November 2022 system operation was adjusted to focus on the three wells with PID field measurements over 1,000 parts per million (ppm) (SVE04, SVE05, and SVE06). Operation on these three wells continued through December in order to maximize mass removal of the system.

Harvest Four Corners
Trunk L Tank Battery



The December 2022 TVPH emissions rate remained at approximately 0.34 pounds per hour (lbs/hr) or approximately 3.57 pounds per average nominal day light hours per day that the system is expected to be operational, indicating that the SVE system is still effectively remediating the Site. The decrease in mass removal rate will continue to be monitored to evaluate system effectiveness.

PLAN FOR NEXT QUARTER OF OPERATION

During the upcoming first quarter 2023 operations, Ensolum will continue to visit the Site monthly to ensure a minimum of 90% runtime efficiency continues and that any maintenance issues are addressed in a timely manner. An air sample will be collected in the first quarter and analyzed for BTEX by EPA Method 8021 and TVPH by EPA Method 8015. An updated quarterly report with sample results, runtime, and mass source removal will be submitted by April 30, 2023.

Quarterly air sampling and reporting will continue until the mass removal rate declines to an asymptotic level and indicates that hydrocarbon impacts have been reduced at the Site to the maximum extent practicable. At that time, Ensolum will conduct additional soil sampling to investigate potential residual impacts and request closure if concentrations of BTEX and TPH are below the applicable standards as detailed in the approved *Remediation Work Plan* dated May 28, 2019.

If the final delineation samples indicate hydrocarbon impact has been reduced to below NMAC 19.15.29.12 Table 1 Closure Criteria, Ensolum will present the confirmation laboratory analysis data in a report and request closure of the release. Should the results indicate that analytes in the soil exceed the Table 1 Closure Criteria, Ensolum will either make operational adjustments and restart the SVE system based on the results of the investigation or develop an alternative remedial approach to reach Site closure.

Ensolum appreciates the opportunity to provide this report to the NMOCD. If you have any questions or comments regarding this update, do not hesitate to contact Danny Burns at (303) 601-1420 or via email at dburns@ensolum.com or Jennifer Deal at (505) 324-5128 or at ideal@harvestmidstream.com.

Harvest Four Corners
Trunk L Tank Battery

Sincerely,

ENSOLUM, LLC



Eric Carroll
Project Geologist



Brooke Herb
Senior Geologist

APPENDICES

Figure 1 – Site Location Map

Figure 2 – SVE System Layout

Table 1 – Air Sample Analytical Results

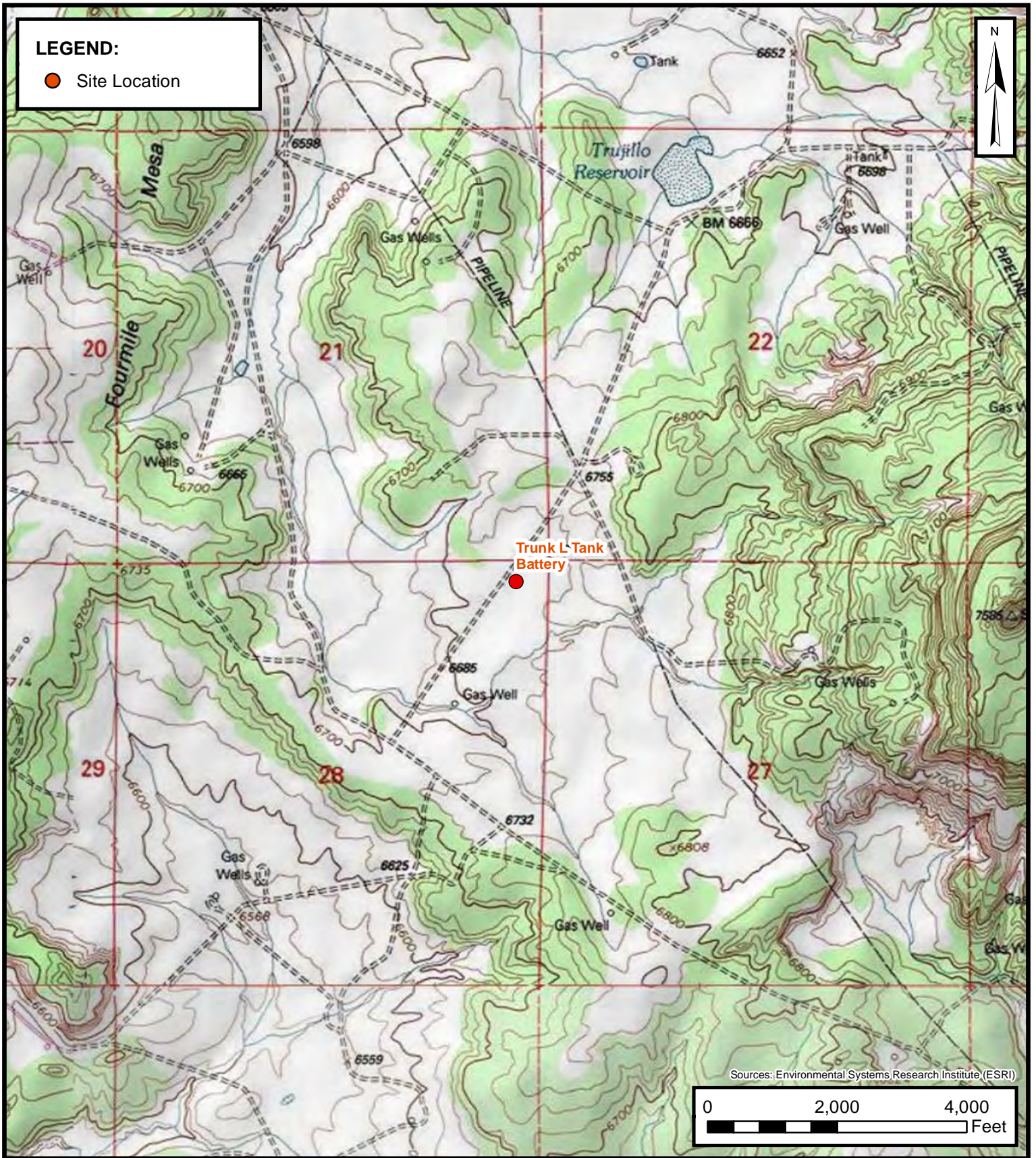
Table 2 – Soil Vapor System Recovery & Emissions Summary

Appendix A – Photographic Log

Appendix B – Laboratory Analytical Report



Figures



SITE LOCATION MAP
 TRUNK L TANK BATTERY
 NENE SEC 28 T28N R5W
 RIO ARRIBA COUNTY, NEW MEXICO
 HARVEST FOUR CORNERS, LLC

FIGURE
1



SVE SYSTEM LAYOUT

TRUNK L TANK BATTERY
NENE SEC 28 T28N R5W
RIO ARRIBA COUNTY, NEW MEXICO
HARVEST FOUR CORNERS, LLC

FIGURE
2



Tables



TABLE 1 SOIL VAPOR EXTRACTION SYSTEM EMISSIONS ANALYTICAL RESULTS Trunk L Tank Battery Harvest Four Corners, LLC Rio Arriba County, New Mexico						
Date	PID (ppm)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	TVPH/GRO (µg/L)
9/18/2019	946	1,000	1,500	50	550	NA
10/18/2019	931	250	410	6.5	74	NA
11/14/2019	578	1.8	4.3	0.19	1.7	250
3/3/2020	868	3.9	22	1.3	13	760
5/1/2020	913	610	1,500	58	570	95,000
6/10/2020	1,527	640	1,600	56	530	95,000
9/15/2020	1,077	180	840	24	230	35,000
12/2/2020	1,320	380	1,100	23	270	86,000
3/1/2021	1,469	440	2,100	110	1,100	120,000
6/8/2021	1,380	300	1,200	42	380	89,000
9/28/2021	916	150	230	<10	49	26,000
11/29/2021	573	78	280	9.1	84	19,000
12/27/2021	NA	120	240	<5.0	47	17,000
3/31/2022	406	76	210	5.5	47	18,000
6/13/2022	736	65	190	<5.0	51	13,000
9/13/2022	1,640	62	170	<5.0	33	25,000
12/5/2022	4,561	15	54	<5.0	13	2,900

Notes:

NA: Not analyzed

µg/L: microgram per liter

PID: photoionization detector

ppm: parts per million

GRO: gasoline range organics

TVPH: total volatile petroleum hydrocarbons

Italics denote that the laboratory method detection limit was reported



TABLE 2
SOIL VAPOR EXTRACTION MASS REMOVAL AND EMISSIONS
 Trunk L Tank Battery
 Harvest Four Corners, LLC
 Rio Arriba County, New Mexico

Flow and Laboratory Analysis

Date	PID (ppm)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	TVPH (µg/L)
9/18/2019*	1,435	1,000	1,500	50	550	3,013
10/18/2019*	931	250	410	6.5	74	744
11/14/2019	578	1.8	4.3	0.19	1.7	250
3/3/2020	868	3.9	22	1.3	13	760
4/1/2020**	838	3.7	21	1.2	12	733
5/1/2020	913	610	1,500	58	570	95,000
6/10/2020	1,527	640	1,600	56	530	95,000
9/15/2020	1,077	180	840	24	230	35,000
12/2/2020	1,320	380	1,100	23	270	86,000
3/1/2021	1,469	440	2,100	110	1,100	120,000
6/8/2021	1,380	300	1,200	42	380	89,000
9/28/2021	916	150	230	10	49	26,000
11/29/2021	573	78	280	9.1	84	19,000
12/27/2021	--	120	240	5.0	47	17,000
3/31/2022	406	76	210	5.5	47	18,000
6/13/2022	736	65	190	5.0	51	13,000
9/13/2022	1,640	62	170	5.0	33	25,000
12/5/2022	4,561	15	54	5.0	13	2,900
Average	1,245	243	648	23	225	35,911

Vapor Extraction Summary

Date	Flow Rate (cfm)	Total System Flow (cf)	Delta Flow (cf)	Benzene (lb/hr)	Toluene (lb/hr)	Ethylbenzene (lb/hr)	Total Xylenes (lb/hr)	TVPH (lb/hr)
9/18/2019	33.7	3,033	3,033	0.1262	0.1892	0.0063	0.0694	0.3801
10/18/2019	37.8	723,303	720,270	0.0353	0.0579	0.0009	0.0105	0.1051
11/14/2019	38.0	1,334,343	611,040	0.0003	0.0006	0.0000	0.0002	0.0356
3/3/2020	21.3	2,898,866	1,564,523	0.0003	0.0018	0.0001	0.0010	0.0605
4/1/2020	21.3	3,795,613	896,747	0.0003	0.0017	0.0001	0.0010	0.0583
5/1/2020	39.2	3,882,637	87,024	0.0895	0.2201	0.0085	0.0836	13.9404
6/10/2020	29.3	4,869,885	987,248	0.0703	0.1757	0.0061	0.0582	10.4304
9/15/2020	27.8	7,089,263	2,219,378	0.0187	0.0873	0.0025	0.0239	3.6384
12/2/2020	26.6	8,447,393	1,358,130	0.0379	0.1097	0.0023	0.0269	8.5730
3/1/2021	40.0	10,571,393	2,124,000	0.0659	0.3144	0.0165	0.1647	17.9683
6/8/2021	34.2	13,226,681	2,655,288	0.0384	0.1536	0.0054	0.0486	11.3941
9/28/2021	37.0	16,596,641	3,369,960	0.0208	0.0319	0.0014	0.0068	3.6011
11/29/2021	28.7	17,746,416	1,149,775	0.0084	0.0301	0.0010	0.0090	2.0434
12/27/2021	30.4	18,233,905	487,489	0.0137	0.0273	0.0006	0.0054	1.9365
3/31/2022	36.0	20,402,545	2,168,640	0.0102	0.0283	0.0007	0.0063	2.4257
6/13/2022	46.0	23,209,465	2,806,920	0.0112	0.0327	0.0009	0.0088	2.2385
9/13/2022	40.0	26,214,265	3,004,800	0.0093	0.0255	0.0007	0.0049	3.7434
12/5/2022	31.0	27,901,285	1,687,020	0.0017	0.0063	0.0006	0.0015	0.3365
Average				0.03	0.08	0.003	0.03	4.61



TABLE 2
SOIL VAPOR EXTRACTION MASS REMOVAL AND EMISSIONS
 Trunk L Tank Battery
 Harvest Four Corners, LLC
 Rio Arriba County, New Mexico

Flow and Laboratory Analysis

Date	Total SVE System Hours	Delta Hours	Benzene (pounds)	Toluene (pounds)	Ethylbenzene (pounds)	Total Xylenes (pounds)	TVPH (pounds)	TVPH (tons)
9/18/2019	1.5	1.5	0.2	0.3	0.0	0.1	0.6	0.000
10/18/2019	319.5	318	11.2	18.4	0.3	3.3	33.4	0.017
11/14/2019	587.5	268	0.1	0.2	0.0	0.1	9.5	0.005
3/3/2020	1,814	1,226.5	0.4	2.1	0.1	1.3	74.2	0.037
4/1/2020	2,517	703	0.2	1.2	0.1	0.7	41.0	0.021
5/1/2020	2,554	37	3.3	8.1	0.3	3.1	515.8	0.258
6/10/2020	3,115	561	39.4	98.6	3.4	32.6	5,851	2.926
9/15/2020	4,447	1,332	24.9	116.3	3.3	31.8	4,846	2.423
12/2/2020	5,297	850	32.2	93.2	1.9	22.9	7,287	3.644
3/1/2021	6,182	885	58.3	278.3	14.6	145.8	15,902	7.951
6/8/2021	7,476	1,294	49.7	198.8	7.0	63.0	14,744	7.372
9/28/2021	8,994	1,518	31.5	48.4	2.1	10.3	5,467	2.733
11/29/2021	9,661	667	5.6	20.1	0.7	6.0	1,363	0.681
12/27/2021	9,928	267	3.6	7.3	0.2	1.4	517.0	0.259
3/31/2022	10,932	1,004	10.3	28.4	0.7	6.4	2,435	1.218
6/13/2022	11,949	1,017	11.4	33.3	0.9	8.9	2,277	1.138
9/13/2022	13,201	1,252	11.6	31.9	0.9	6.2	4,687	2.343
12/5/2022	14,108	907	1.6	5.7	0.5	1.4	305	0.153
Total Mass Recovery to Date			295.6	990.5	37.1	345.2	66,355.8	33.2

Notes:

* - TVPH data extrapolated from PID values

** - Analytical data extrapolated from PID values

BTEX - benzene, toluene, ethylbenzene, total xylenes

cf - cubic feet

cfm - cubic feet per minute

lbs - pounds

lb/hr - pounds per hour

Italics denote that the laboratory method detection limit was used for calculations for a non-detected result

µg/L - microgram per liter

PID - photoionization detector

ppm - parts per million

TVPH - total volatile petroleum hydrocarbons

VOC - volatile organic compounds

VOC Mass Removed (lbs) = Influent VOCs (mg/m³) * Air Flow Rates (cfm) * (1 m³/35.3147 ft³) * (1 lb/453,592 mg) * Time Period (min)



APPENDIX A
Photographic Log

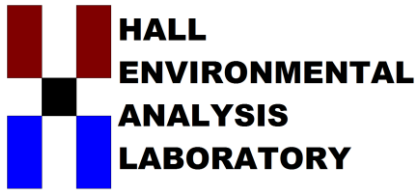
Photo #1
SVE Hours Reading 12-5-2022





APPENDIX B

Laboratory Analytical Report



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

December 20, 2022

Danny Burns

Harvest

1755 Arroyo Dr.

Bloomfield, NM 87413

TEL: (505) 632-4475

FAX

RE: Trunk L

OrderNo.: 2212355

Dear Danny Burns:

Hall Environmental Analysis Laboratory received 1 sample(s) on 12/6/2022 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Analytical Report

Lab Order **2212355**

Date Reported: **12/20/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Harvest

Client Sample ID: 12-5-22 Influent

Project: Trunk L

Collection Date: 12/5/2022 1:00:00 PM

Lab ID: 2212355-001

Matrix: AIR

Received Date: 12/6/2022 2:05:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: GASOLINE RANGE							Analyst: CCM
Gasoline Range Organics (GRO)	2900	250		µg/L	50	12/14/2022 4:40:00 PM	R93255
Surr: BFB	90.8	70-130		%Rec	50	12/14/2022 4:40:00 PM	R93255
EPA METHOD 8260B: VOLATILES							Analyst: CCM
Benzene	15	5.0		µg/L	50	12/14/2022 4:40:00 PM	R93255
Toluene	54	5.0		µg/L	50	12/14/2022 4:40:00 PM	R93255
Ethylbenzene	ND	5.0		µg/L	50	12/14/2022 4:40:00 PM	R93255
Methyl tert-butyl ether (MTBE)	ND	5.0		µg/L	50	12/14/2022 4:40:00 PM	R93255
1,2,4-Trimethylbenzene	ND	5.0		µg/L	50	12/14/2022 4:40:00 PM	R93255
1,3,5-Trimethylbenzene	ND	5.0		µg/L	50	12/14/2022 4:40:00 PM	R93255
1,2-Dichloroethane (EDC)	ND	5.0		µg/L	50	12/14/2022 4:40:00 PM	R93255
1,2-Dibromoethane (EDB)	ND	5.0		µg/L	50	12/14/2022 4:40:00 PM	R93255
Naphthalene	ND	10		µg/L	50	12/14/2022 4:40:00 PM	R93255
1-Methylnaphthalene	ND	20		µg/L	50	12/14/2022 4:40:00 PM	R93255
2-Methylnaphthalene	ND	20		µg/L	50	12/14/2022 4:40:00 PM	R93255
Acetone	ND	50		µg/L	50	12/14/2022 4:40:00 PM	R93255
Bromobenzene	ND	5.0		µg/L	50	12/14/2022 4:40:00 PM	R93255
Bromodichloromethane	ND	5.0		µg/L	50	12/14/2022 4:40:00 PM	R93255
Bromoform	ND	5.0		µg/L	50	12/14/2022 4:40:00 PM	R93255
Bromomethane	ND	10		µg/L	50	12/14/2022 4:40:00 PM	R93255
2-Butanone	ND	50		µg/L	50	12/14/2022 4:40:00 PM	R93255
Carbon disulfide	ND	50		µg/L	50	12/14/2022 4:40:00 PM	R93255
Carbon tetrachloride	ND	5.0		µg/L	50	12/14/2022 4:40:00 PM	R93255
Chlorobenzene	ND	5.0		µg/L	50	12/14/2022 4:40:00 PM	R93255
Chloroethane	ND	10		µg/L	50	12/14/2022 4:40:00 PM	R93255
Chloroform	ND	5.0		µg/L	50	12/14/2022 4:40:00 PM	R93255
Chloromethane	ND	5.0		µg/L	50	12/14/2022 4:40:00 PM	R93255
2-Chlorotoluene	ND	5.0		µg/L	50	12/14/2022 4:40:00 PM	R93255
4-Chlorotoluene	ND	5.0		µg/L	50	12/14/2022 4:40:00 PM	R93255
cis-1,2-DCE	ND	5.0		µg/L	50	12/14/2022 4:40:00 PM	R93255
cis-1,3-Dichloropropene	ND	5.0		µg/L	50	12/14/2022 4:40:00 PM	R93255
1,2-Dibromo-3-chloropropane	ND	10		µg/L	50	12/14/2022 4:40:00 PM	R93255
Dibromochloromethane	ND	5.0		µg/L	50	12/14/2022 4:40:00 PM	R93255
Dibromomethane	ND	10		µg/L	50	12/14/2022 4:40:00 PM	R93255
1,2-Dichlorobenzene	ND	5.0		µg/L	50	12/14/2022 4:40:00 PM	R93255
1,3-Dichlorobenzene	ND	5.0		µg/L	50	12/14/2022 4:40:00 PM	R93255
1,4-Dichlorobenzene	ND	5.0		µg/L	50	12/14/2022 4:40:00 PM	R93255
Dichlorodifluoromethane	ND	5.0		µg/L	50	12/14/2022 4:40:00 PM	R93255
1,1-Dichloroethane	ND	5.0		µg/L	50	12/14/2022 4:40:00 PM	R93255
1,1-Dichloroethene	ND	5.0		µg/L	50	12/14/2022 4:40:00 PM	R93255

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report

Lab Order 2212355

Date Reported: 12/20/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Harvest

Client Sample ID: 12-5-22 Influent

Project: Trunk L

Collection Date: 12/5/2022 1:00:00 PM

Lab ID: 2212355-001

Matrix: AIR

Received Date: 12/6/2022 2:05:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: CCM
1,2-Dichloropropane	ND	5.0		µg/L	50	12/14/2022 4:40:00 PM	R93255
1,3-Dichloropropane	ND	5.0		µg/L	50	12/14/2022 4:40:00 PM	R93255
2,2-Dichloropropane	ND	5.0		µg/L	50	12/14/2022 4:40:00 PM	R93255
1,1-Dichloropropene	ND	5.0		µg/L	50	12/14/2022 4:40:00 PM	R93255
Hexachlorobutadiene	ND	5.0		µg/L	50	12/14/2022 4:40:00 PM	R93255
2-Hexanone	ND	50		µg/L	50	12/14/2022 4:40:00 PM	R93255
Isopropylbenzene	ND	5.0		µg/L	50	12/14/2022 4:40:00 PM	R93255
4-Isopropyltoluene	ND	5.0		µg/L	50	12/14/2022 4:40:00 PM	R93255
4-Methyl-2-pentanone	ND	50		µg/L	50	12/14/2022 4:40:00 PM	R93255
Methylene chloride	ND	15		µg/L	50	12/14/2022 4:40:00 PM	R93255
n-Butylbenzene	ND	15		µg/L	50	12/14/2022 4:40:00 PM	R93255
n-Propylbenzene	ND	5.0		µg/L	50	12/14/2022 4:40:00 PM	R93255
sec-Butylbenzene	ND	5.0		µg/L	50	12/14/2022 4:40:00 PM	R93255
Styrene	ND	5.0		µg/L	50	12/14/2022 4:40:00 PM	R93255
tert-Butylbenzene	ND	5.0		µg/L	50	12/14/2022 4:40:00 PM	R93255
1,1,1,2-Tetrachloroethane	ND	5.0		µg/L	50	12/14/2022 4:40:00 PM	R93255
1,1,2,2-Tetrachloroethane	ND	5.0		µg/L	50	12/14/2022 4:40:00 PM	R93255
Tetrachloroethene (PCE)	ND	5.0		µg/L	50	12/14/2022 4:40:00 PM	R93255
trans-1,2-DCE	ND	5.0		µg/L	50	12/14/2022 4:40:00 PM	R93255
trans-1,3-Dichloropropene	ND	5.0		µg/L	50	12/14/2022 4:40:00 PM	R93255
1,2,3-Trichlorobenzene	ND	5.0		µg/L	50	12/14/2022 4:40:00 PM	R93255
1,2,4-Trichlorobenzene	ND	5.0		µg/L	50	12/14/2022 4:40:00 PM	R93255
1,1,1-Trichloroethane	ND	5.0		µg/L	50	12/14/2022 4:40:00 PM	R93255
1,1,2-Trichloroethane	ND	5.0		µg/L	50	12/14/2022 4:40:00 PM	R93255
Trichloroethene (TCE)	ND	5.0		µg/L	50	12/14/2022 4:40:00 PM	R93255
Trichlorofluoromethane	ND	5.0		µg/L	50	12/14/2022 4:40:00 PM	R93255
1,2,3-Trichloropropane	ND	10		µg/L	50	12/14/2022 4:40:00 PM	R93255
Vinyl chloride	ND	5.0		µg/L	50	12/14/2022 4:40:00 PM	R93255
Xylenes, Total	13	7.5		µg/L	50	12/14/2022 4:40:00 PM	R93255
Surr: Dibromofluoromethane	81.3	70-130		%Rec	50	12/14/2022 4:40:00 PM	R93255
Surr: 1,2-Dichloroethane-d4	70.1	70-130		%Rec	50	12/14/2022 4:40:00 PM	R93255
Surr: Toluene-d8	100	70-130		%Rec	50	12/14/2022 4:40:00 PM	R93255
Surr: 4-Bromofluorobenzene	104	70-130		%Rec	50	12/14/2022 4:40:00 PM	R93255

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:			
*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quantitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 2 of 2



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ANALYTICAL SUMMARY REPORT

December 14, 2022

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

Work Order: B22120688 Quote ID: B15626

Project Name: Not Indicated

Energy Laboratories Inc Billings MT received the following 1 sample for Hall Environmental on 12/8/2022 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B22120688-001	2212355-001B, 12-5-22 Influent	12/05/22 13:00	12/08/22	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: B22120688-001
Client Sample ID: 2212355-001B, 12-5-22 Influent

Report Date: 12/14/22
Collection Date: 12/05/22 13:00
Date Received: 12/08/22
Matrix: Air

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
GAS CHROMATOGRAPHY ANALYSIS REPORT							
Oxygen	16.38	Mol %		0.01		GPA 2261-95	12/09/22 10:31 / jrj
Nitrogen	79.33	Mol %		0.01		GPA 2261-95	12/09/22 10:31 / jrj
Carbon Dioxide	4.29	Mol %		0.01		GPA 2261-95	12/09/22 10:31 / jrj
Hydrogen Sulfide	<0.01	Mol %		0.01		GPA 2261-95	12/09/22 10:31 / jrj
Methane	<0.01	Mol %		0.01		GPA 2261-95	12/09/22 10:31 / jrj
Ethane	<0.01	Mol %		0.01		GPA 2261-95	12/09/22 10:31 / jrj
Propane	<0.01	Mol %		0.01		GPA 2261-95	12/09/22 10:31 / jrj
Isobutane	<0.01	Mol %		0.01		GPA 2261-95	12/09/22 10:31 / jrj
n-Butane	<0.01	Mol %		0.01		GPA 2261-95	12/09/22 10:31 / jrj
Isopentane	<0.01	Mol %		0.01		GPA 2261-95	12/09/22 10:31 / jrj
n-Pentane	<0.01	Mol %		0.01		GPA 2261-95	12/09/22 10:31 / jrj
Hexanes plus	<0.01	Mol %		0.01		GPA 2261-95	12/09/22 10:31 / jrj
Propane	< 0.001	gpm		0.001		GPA 2261-95	12/09/22 10:31 / jrj
Isobutane	< 0.001	gpm		0.001		GPA 2261-95	12/09/22 10:31 / jrj
n-Butane	< 0.001	gpm		0.001		GPA 2261-95	12/09/22 10:31 / jrj
Isopentane	< 0.001	gpm		0.001		GPA 2261-95	12/09/22 10:31 / jrj
n-Pentane	< 0.001	gpm		0.001		GPA 2261-95	12/09/22 10:31 / jrj
Hexanes plus	< 0.001	gpm		0.001		GPA 2261-95	12/09/22 10:31 / jrj
GPM Total	< 0.001	gpm		0.001		GPA 2261-95	12/09/22 10:31 / jrj
GPM Pentanes plus	< 0.001	gpm		0.001		GPA 2261-95	12/09/22 10:31 / jrj

CALCULATED PROPERTIES

Gross BTU per cu ft @ Std Cond. (HHV)	ND			1		GPA 2261-95	12/09/22 10:31 / jrj
Net BTU per cu ft @ std cond. (LHV)	ND			1		GPA 2261-95	12/09/22 10:31 / jrj
Pseudo-critical Pressure, psia	556			1		GPA 2261-95	12/09/22 10:31 / jrj
Pseudo-critical Temperature, deg R	250			1		GPA 2261-95	12/09/22 10:31 / jrj
Specific Gravity @ 60/60F	1.01			0.001		D3588-81	12/09/22 10:31 / jrj
Air, %	74.84			0.01		GPA 2261-95	12/09/22 10:31 / jrj
- The analysis was not corrected for air.							

COMMENTS

-							12/09/22 10:31 / 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: B22120688

Report Date: 12/14/22

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual	
Method: GPA 2261-95											
Batch: R392519											
Lab ID: B22120688-001ADUP	12 Sample Duplicate			Run: GCNGA-B_221209A				12/09/22 11:02			
Oxygen		16.3	Mol %	0.01				0.6	20		
Nitrogen		79.3	Mol %	0.01				0	20		
Carbon Dioxide		4.37	Mol %	0.01				1.8	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: LCS120922											
11 Laboratory Control Sample											
Run: GCNGA-B_221209A											
12/09/22 12:27											
Oxygen		0.60	Mol %	0.01	120	70	130				
Nitrogen		6.09	Mol %	0.01	101	70	130				
Carbon Dioxide		1.00	Mol %	0.01	101	70	130				
Methane		74.4	Mol %	0.01	100	70	130				
Ethane		6.05	Mol %	0.01	101	70	130				
Propane		5.01	Mol %	0.01	101	70	130				
Isobutane		2.00	Mol %	0.01	100	70	130				
n-Butane		2.00	Mol %	0.01	100	70	130				
Isopentane		1.02	Mol %	0.01	102	70	130				
n-Pentane		1.02	Mol %	0.01	102	70	130				
Hexanes plus		0.82	Mol %	0.01	103	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

B22120688

Login completed by: Leslie S. Cadreau

Date Received: 12/8/2022

Reviewed by: tedwards

Received by: lel

Reviewed Date: 12/14/2022

Carrier name: UPS

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

Contact and Corrective Action Comments:

None



CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

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

Form with fields for SUB CONTRACTOR (Energy Labs -Billings), COMPANY (Energy Laboratories), ADDRESS (1120 South 27th Street, Billings, MT 59107), PHONE (406) 869-6253, FAX (406) 252-6069, and a table for ANALYTICAL COMMENTS (Natural Gases CO, O2, CO2).

SPECIAL INSTRUCTIONS / COMMENTS:

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

Form for Relinquished By (I-O), Received By (Hydrogen Lab), and TAT (Standard) with fields for Date, Time, and Report Transmittal Desired (Hardcopy, Fax, Email, Online).



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: Harvest Work Order Number: 2212355 RcptNo: 1

Received By: Juan Rojas 12/6/2022 2:05:00 PM *Juan Rojas*

Completed By: Isaiah Ortiz 12/7/2022 12:12:32 PM *I-Ortiz*

Reviewed By: *JR 12/7/22*

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? Yes No
(Note discrepancies on chain of custody)

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? Yes No
(If no, notify customer for authorization.)

of preserved bottles checked for pH: _____
(<2 or >12 unless noted)
Adjusted? _____
Checked by: <i>JR 12-7-22</i>

Special Handling (if applicable)

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

Person Notified: _____	Date: _____
By Whom: _____	Via: <input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding: _____	
Client Instructions: _____	

16. Additional remarks:

17. Cooler Information

Chain-of-Custody Record

Client: Harvest Four Corners
 Mailing Address: Jennifer Deal
 Phone #: _____
 email or Fax#: JDeal@harvestfourcorners.com
 QA/QC Package:
 Standard Level 4 (Full Validation)
 Accreditation: Az Compliance
 NELAC Other
 EDD (Type) _____

Turn-Around Time:
 Standard Rush
 Project Name:
TRUNK L
 Project #:

Project Manager:
Danny Burns - Ensolium
 Sampler: E. Carroll
 On Ice: Yes No
 # of Coolers: 1
 Cooler Temp (including CF): NA (°C)
 Container Type and #: _____
 Preservative Type: _____
 HEAL No: 2212355

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)
	X						X		X CO ₂ CO ₂

Analysis Request

Date: D-6 Time: 1405 Relinquished by: Sarah
 Date: 1/4/23 Time: 1710 Relinquished by: Christi Wade
 Received by: _____ Via: _____ Date: 12/6/22 Time: 1405
 Received by: _____ Via: _____ Date: 12/27/22 Time: 7:10
 Remarks: CC: ecarroll@ensolium.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.
 Released to Imaging: 5/10/2023 2:48:11 PM

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 180659

CONDITIONS

Operator: Harvest Four Corners, LLC 1755 Arroyo Dr Bloomfield, NM 87413	OGRID: 373888
	Action Number: 180659
	Action Type: [UF-GWA] Ground Water Abatement (GROUND WATER ABATEMENT)

CONDITIONS

Created By	Condition	Condition Date
nvelez	Accepted for the record. Please see App ID 211874 for most updated status.	5/10/2023