NV

October 31, 2021

Ms. Emily Hernandez
Bureau Chief, Environmental
New Mexico Oil Conservation Division
New Mexico Energy, Minerals, and Natural Resources Department
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

Subject: **Quarter 3 2021 - Quarterly SVE System Update**
San Juan 28-6 Unit #31
Hilcorp Energy Company
API #: 30-039-07290
NMOCD Incident Number: NVF1816655680
Rio Arriba County, New Mexico

To Whom it May Concern:

WSP USA Inc. (WSP), on behalf of Hilcorp Energy Company (Hilcorp), presents the following third quarter 2021 summary report discussing the soil vapor extraction (SVE) system at the San Juan 28-6 Unit #31 natural gas production well (Site, shown on Figure 1). The layout of the SVE system and piping is shown on Figure 2. This report is being submitted as part of the proposed timeline of remediation events in the *Updated Remediation Work Plan* dated October 7, 2021 and submitted to the New Mexico Oil Conservation Division (NMOCD). The report documents air sampling and system operations to monitor SVE remediation progress.

As described in the *Updated Remediation Work Plan*, a pilot test was conducted at the Site by WSP on September 20, 2021. During the pilot test, WSP collected an air sample from the pilot test manifold, on the influent side attached to the wellhead, via high vacuum air sampler. The air sample was collected in a 1-Liter Tedlar bag and submitted to Hall Environmental Analysis Laboratory (Hall) for analysis of volatile organic compounds (VOCs) by United States Environmental Protection Agency (EPA) Method 8260, fixed gas analysis of oxygen and carbon dioxide, and total volatile petroleum hydrocarbons (TVPH) by EPA Method 8015. Prior to collection, the air from the influent side was field screened with a photoionization detector (PID) for organic vapor monitoring (OVM). The pilot test air sample results indicate a TVPH concentration 250,000 µg/L. Table 1 presents a summary of analytical data collected during the pilot test, with the full analytical laboratory report included in Enclosure A.

A rental SVE system (constructed by Process Technology Support, LLC) was installed at the Site and started on September 28, 2021 and is being operated until a replacement Ametek Rotron blower is received (purchased in September 2021). The rental system consists of a 2.4 horsepower regenerative blower capable of producing 71 inches of water column (IWC) and has similar capabilities as the original Ametek Rotron blower. Upon startup, an air sample was collected on September 28, 2021 from the inlet side of the SVE blower and submitted to Hall for analysis of benzene, toluene, ethylbenzene, and xylenes (BTEX) by EPA Method 8021B and TVPH by EPA Method 8015. Analytical results are also included in Table 1, with the analytical laboratory report included in Enclosure A.

During the first three months (October, November, and December 2021) of operation, air samples will be collected monthly and submitted for laboratory analysis, then reduced to quarterly for the first year of operation to monitor the effective reduction and remediation of soil impacts. The attached Table 2 will be updated during subsequent quarters based on runtime, airflow, and contaminant concentrations measured during each quarter. Additionally, during the operation of the SVE system, regular operation and maintenance (O&M) visits will be conducted semi-monthly (twice per month) by WSP and/or Hilcorp personnel. During O&M visits, personnel will ensure that the generator and SVE system are operating within normal working temperature, pressure, and vacuum range. Any deviations from regular operations will be noted and included in the subsequent quarterly report

WSP USA
848 EAST 2ND AVENUE
DURANGO CO 81301

Tel.: 970-385-1096
wsp.com

WSP appreciates the opportunity to provide this report to the NMOCD. If you have any questions or comments regarding this work plan, do not hesitate to contact me at (970) 385-1096 or via email at stuart.hyde@wsp.com or Billy Ginn at (346) 237-2073 or at William.ginn@hilcorp.com.

Kind regards,

Stuart Hyde, L.G.
Environmental Geologist

Ashley Ager, M.S., P.G.
Senior Geologist

Enclosures:

Figure 1 – Site Location Map
Figure 2 – SVE System Layout

Table 1 – Soil Vapor Extraction System Analytical Results
Table 2 – Soil Vapor Extraction System Recovery & Emissions Summary

Enclosure A – Analytical Laboratory Reports

FIGURES

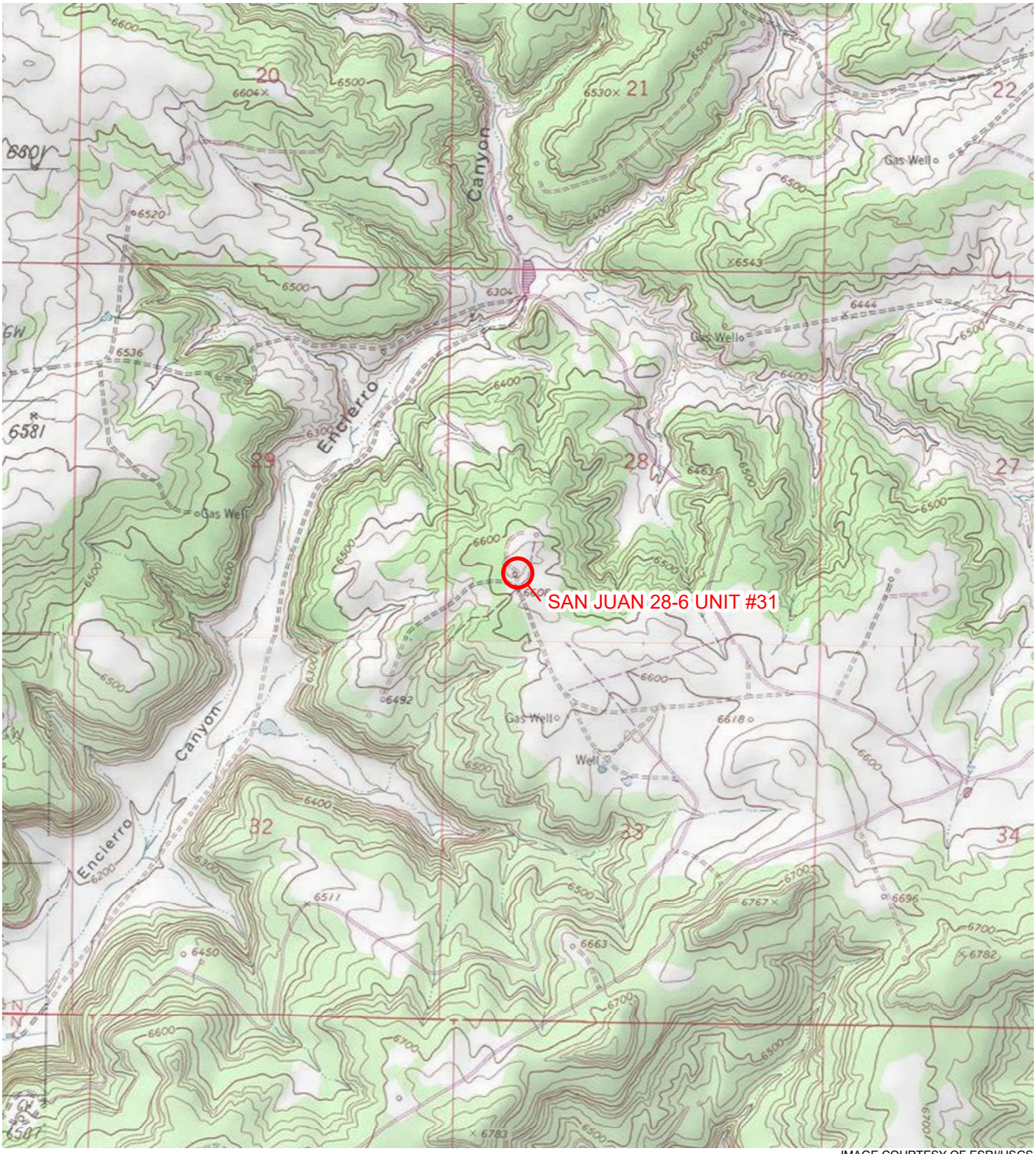


IMAGE COURTESY OF ESRI/USGS

LEGEND

SITE LOCATION

0 2,000 4,000

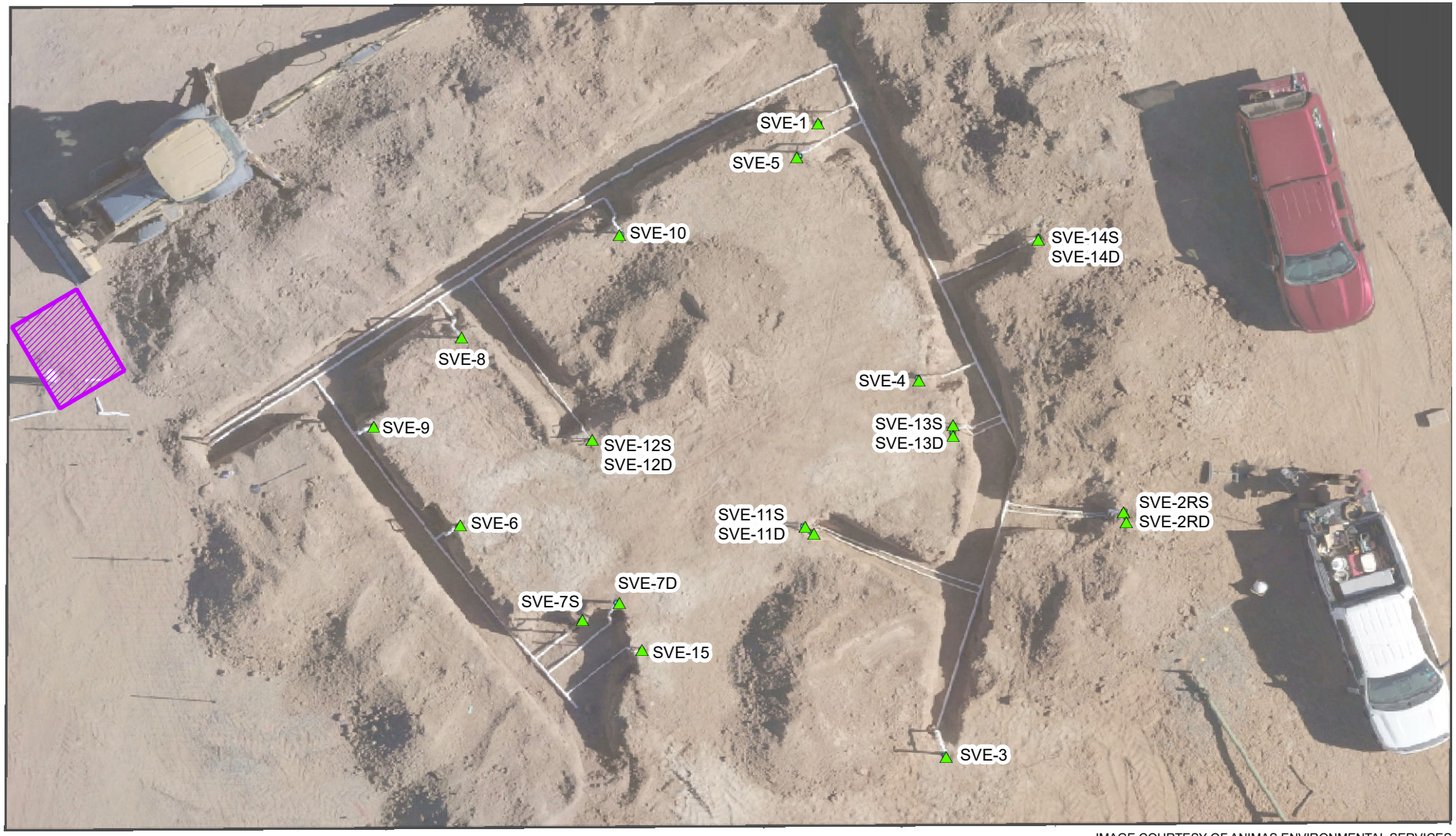
Feet

N

NEW MEXICO

FIGURE 1
SITE LOCATION MAP
SAN JUAN 28-6 UNIT #31
SWSW SEC 28-T28N-R6W
RIO ARRIBA COUNTY, NEW MEXICO
HILCORP ENERGY COMPANY

C:\Users\USJG689584\OneDrive - WSP O365\Documents\TE017821011_SAN JUAN 28-6 UNIT_#31\MXD\017821011_FIG01_SJ 28-6_31_SL_2021.mxd



LEGEND

SVE WELL

GENERATOR AND SVE BLOWER LOCATION

SVE: SOIL VAPOR EXTRACTION

IMAGE COURTESY OF ANIMAS ENVIRONMENTAL SERVICES

0 10 20

Feet

N

FIGURE 2
SVE SYSTEM LAYOUT
SAN JUAN 28-6 UNIT #31
SWSW SEC 28-T28N-R6W
RIO ARRIBA COUNTY, NEW MEXICO
HILCORP ENERGY COMPANY

wsp

C:\Users\USTJ689650\OneDrive - WSP O365\HILCORP\TE017821011_SAN JUAN 28-6 UNIT_#31\MXD\017821011_FIG04_SJ 28-6_31_SVE_SYSTEM_2021_LS.mxd

TABLES

TABLE 1
SOIL VAPOR EXTRACTION SYSTEM ANALYTICAL RESULTS

SAN JUAN 28-6 UNIT #31
RIO ARRIBA COUNTY, NEW MEXICO
HILCORP ENERGY COMPANY

Date	Event	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	TVPH (µg/L)	PID (ppm)
9/20/2021	Pilot Test	720	1,600	15	320	250,000	1,287
9/28/2021	System Startup	240	720	27	350	53,000	736

Notes:
µg/L - micrograms per Liter
PID - photoionization detector
ppm - parts per million
TVPH - total volatile petroleum hydrocarbons

TABLE 2
SOIL VAPOR EXTRACTION SYSTEM RECOVERY & EMISSIONS SUMMARY

SAN JUAN 28-6 UNIT #31
RIO ARRIBA COUNTY, NEW MEXICO
HILCORP ENERGY COMPANY

Sample Information and Lab Analysis

Date	Total Flow (cf)	Delta Flow (cf)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	TVPH (µg/L)	PID (ppm)
9/28/2021	17,280	17,280	240	720	27	350	53,000	736
		Average	240	720	27	350	53,000	736

Vapor Extraction Calculations

Date	Flow Rate (cfm)	Benzene (lb/hr)	Toluene (lb/hr)	Ethylbenzene (lb/hr)	Xylenes (lb/hr)	TVPH (lb/hr)
9/28/2021	60	0.1	0.2	0.0	0.1	11.9
Average	60					

Pounds Extracted Over Operating Time

Date	Total Operational Hours	Delta Hours	Benzene (lbs)	Toluene (lbs)	Ethylbenzene (lbs)	Xylenes (lbs)	TVPH (lbs)	TVPH (tons)
9/28/2021	5	5	0.3	0.8	0.0	0.4	57.1	0.0
		Total Extracted to Date	0	1	0	0	57	0

NOTES:

(1) - data extrapolated from PID measurements
(2) - blower not operational for sampling in May and June 2020
cf - cubic feet
cfm - cubic feet per minute
µg/l - micrograms per liter
lbs - pounds
lb/hr - pounds per hour
PID - photo-ionization detector
ppm - part per million
TVPH - total volatile petroleum hydrocarbons

ENCLOSURE A – ANALYTICAL LABORATORY REPORTS

Analytical Report
Lab Order **2109E87**
Date Reported:

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Project: San Juan 28 6 31
Lab ID: 2109E87-001 **Matrix:** AIR

Client Sample ID: Influent Pilot Test
Collection Date: 9/20/2021 4:20:00 PM
Received Date: 9/25/2021 8:48:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	250000	500	E	µg/L	100	9/27/2021 11:48:59 AM
Surr: BFB	288	37.3-213	S	%Rec	100	9/27/2021 11:48:59 AM
EPA METHOD 8260B: VOLATILES						Analyst: **CCM**
Benzene	720	10		µg/L	100	9/28/2021 2:47:00 PM
Toluene	1600	10	E	µg/L	100	9/28/2021 2:47:00 PM
Ethylbenzene	15	10		µg/L	100	9/28/2021 2:47:00 PM
Methyl tert-butyl ether (MTBE)	ND	10		µg/L	100	9/28/2021 2:47:00 PM
1,2,4-Trimethylbenzene	ND	10		µg/L	100	9/28/2021 2:47:00 PM
1,3,5-Trimethylbenzene	ND	10		µg/L	100	9/28/2021 2:47:00 PM
1,2-Dichloroethane (EDC)	19	10		µg/L	100	9/28/2021 2:47:00 PM
1,2-Dibromoethane (EDB)	ND	10		µg/L	100	9/28/2021 2:47:00 PM
Naphthalene	ND	20		µg/L	100	9/28/2021 2:47:00 PM
1-Methylnaphthalene	ND	40		µg/L	100	9/28/2021 2:47:00 PM
2-Methylnaphthalene	ND	40		µg/L	100	9/28/2021 2:47:00 PM
Acetone	1500	100		µg/L	100	9/28/2021 2:47:00 PM
Bromobenzene	ND	10		µg/L	100	9/28/2021 2:47:00 PM
Bromodichloromethane	ND	10		µg/L	100	9/28/2021 2:47:00 PM
Bromoform	ND	10		µg/L	100	9/28/2021 2:47:00 PM
Bromomethane	ND	20		µg/L	100	9/28/2021 2:47:00 PM
2-Butanone	ND	100		µg/L	100	9/28/2021 2:47:00 PM
Carbon disulfide	ND	100		µg/L	100	9/28/2021 2:47:00 PM
Carbon tetrachloride	ND	10		µg/L	100	9/28/2021 2:47:00 PM
Chlorobenzene	ND	10		µg/L	100	9/28/2021 2:47:00 PM
Chloroethane	ND	20		µg/L	100	9/28/2021 2:47:00 PM
Chloroform	ND	10		µg/L	100	9/28/2021 2:47:00 PM
Chloromethane	22	10		µg/L	100	9/28/2021 2:47:00 PM
2-Chlorotoluene	ND	10		µg/L	100	9/28/2021 2:47:00 PM
4-Chlorotoluene	ND	10		µg/L	100	9/28/2021 2:47:00 PM
cis-1,2-DCE	ND	10		µg/L	100	9/28/2021 2:47:00 PM
cis-1,3-Dichloropropene	ND	10		µg/L	100	9/28/2021 2:47:00 PM
1,2-Dibromo-3-chloropropane	ND	20		µg/L	100	9/28/2021 2:47:00 PM
Dibromochloromethane	ND	10		µg/L	100	9/28/2021 2:47:00 PM
Dibromomethane	ND	20		µg/L	100	9/28/2021 2:47:00 PM
1,2-Dichlorobenzene	ND	10		µg/L	100	9/28/2021 2:47:00 PM
1,3-Dichlorobenzene	ND	10		µg/L	100	9/28/2021 2:47:00 PM
1,4-Dichlorobenzene	ND	10		µg/L	100	9/28/2021 2:47:00 PM
Dichlorodifluoromethane	ND	10		µg/L	100	9/28/2021 2:47:00 PM
1,1-Dichloroethane	ND	10		µg/L	100	9/28/2021 2:47:00 PM
1,1-Dichloroethene	ND	10		µg/L	100	9/28/2021 2:47:00 PM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2109E87**
Date Reported:

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Project: San Juan 28 6 31
Lab ID: 2109E87-001 **Matrix:** AIR

Client Sample ID: Influent Pilot Test
Collection Date: 9/20/2021 4:20:00 PM
Received Date: 9/25/2021 8:48:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: **CCM**
1,2-Dichloropropane	110	10		µg/L	100	9/28/2021 2:47:00 PM
1,3-Dichloropropane	ND	10		µg/L	100	9/28/2021 2:47:00 PM
2,2-Dichloropropane	ND	10		µg/L	100	9/28/2021 2:47:00 PM
1,1-Dichloropropene	ND	10		µg/L	100	9/28/2021 2:47:00 PM
Hexachlorobutadiene	ND	10		µg/L	100	9/28/2021 2:47:00 PM
2-Hexanone	ND	100		µg/L	100	9/28/2021 2:47:00 PM
Isopropylbenzene	ND	10		µg/L	100	9/28/2021 2:47:00 PM
4-Isopropyltoluene	ND	10		µg/L	100	9/28/2021 2:47:00 PM
4-Methyl-2-pentanone	ND	100		µg/L	100	9/28/2021 2:47:00 PM
Methylene chloride	ND	30		µg/L	100	9/28/2021 2:47:00 PM
n-Butylbenzene	ND	30		µg/L	100	9/28/2021 2:47:00 PM
n-Propylbenzene	ND	10		µg/L	100	9/28/2021 2:47:00 PM
sec-Butylbenzene	ND	10		µg/L	100	9/28/2021 2:47:00 PM
Styrene	ND	10		µg/L	100	9/28/2021 2:47:00 PM
tert-Butylbenzene	ND	10		µg/L	100	9/28/2021 2:47:00 PM
1,1,1,2-Tetrachloroethane	ND	10		µg/L	100	9/28/2021 2:47:00 PM
1,1,2,2-Tetrachloroethane	ND	10		µg/L	100	9/28/2021 2:47:00 PM
Tetrachloroethene (PCE)	ND	10		µg/L	100	9/28/2021 2:47:00 PM
trans-1,2-DCE	ND	10		µg/L	100	9/28/2021 2:47:00 PM
trans-1,3-Dichloropropene	ND	10		µg/L	100	9/28/2021 2:47:00 PM
1,2,3-Trichlorobenzene	ND	10		µg/L	100	9/28/2021 2:47:00 PM
1,2,4-Trichlorobenzene	ND	10		µg/L	100	9/28/2021 2:47:00 PM
1,1,1-Trichloroethane	ND	10		µg/L	100	9/28/2021 2:47:00 PM
1,1,2-Trichloroethane	16	10		µg/L	100	9/28/2021 2:47:00 PM
Trichloroethene (TCE)	ND	10		µg/L	100	9/28/2021 2:47:00 PM
Trichlorofluoromethane	ND	10		µg/L	100	9/28/2021 2:47:00 PM
1,2,3-Trichloropropane	ND	20		µg/L	100	9/28/2021 2:47:00 PM
Vinyl chloride	ND	10		µg/L	100	9/28/2021 2:47:00 PM
Xylenes, Total	320	15		µg/L	100	9/28/2021 2:47:00 PM
Surr: Dibromofluoromethane	89.8	70-130		%Rec	100	9/28/2021 2:47:00 PM
Surr: 1,2-Dichloroethane-d4	77.9	70-130		%Rec	100	9/28/2021 2:47:00 PM
Surr: Toluene-d8	115	70-130		%Rec	100	9/28/2021 2:47:00 PM
Surr: 4-Bromofluorobenzene	104	70-130		%Rec	100	9/28/2021 2:47:00 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	Value above quantitation range
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 range due to dilution or matrix		

ENERGY LABORATORIES Trust our People. Trust our Data. www.energylab.com
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Gillette, WY 866.686.7175 • Helena, MT 877.472.0711

LABORATORY ANALYTICAL REPORT

Prepared by Gillette, WY Branch

Client: Hall Environmental
Project: Not Indicated
Lab ID: G21090430-001
Client Sample ID: 2109E87-001B; Influent Pilot Test

Report Date: 09/28/21
Collection Date: 09/20/21 16:20
DateReceived: 09/28/21
Matrix: Gas

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
NATURAL GAS CHROMATOGRAPHIC ANALYSIS REPORT							
Oxygen	17.870	Mol %		0.001		GPA 2261	09/28/21 14:22 / blb
Nitrogen	78.259	Mol %		0.001		GPA 2261	09/28/21 14:22 / blb
Carbon Dioxide	2.054	Mol %		0.001		GPA 2261	09/28/21 14:22 / blb
Hydrogen Sulfide	< 0.001	Mol %		0.001		GPA 2261	09/28/21 14:22 / blb
Methane	< 0.001	Mol %		0.001		GPA 2261	09/28/21 14:22 / blb
Ethane	< 0.001	Mol %		0.001		GPA 2261	09/28/21 14:22 / blb
Propane	< 0.001	Mol %		0.001		GPA 2261	09/28/21 14:22 / blb
Isobutane	0.004	Mol %		0.001		GPA 2261	09/28/21 14:22 / blb
n-Butane	0.022	Mol %		0.001		GPA 2261	09/28/21 14:22 / blb
Isopentane	0.107	Mol %		0.001		GPA 2261	09/28/21 14:22 / blb
n-Pentane	0.133	Mol %		0.001		GPA 2261	09/28/21 14:22 / blb
Hexanes plus	1.551	Mol %		0.001		GPA 2261	09/28/21 14:22 / blb
GPM @ STD COND/1000 CU.FT., MOISTURE FREE GAS							
GPM Ethane	< 0.0003	gal/MCF		0.0003		GPA 2261	09/28/21 14:22 / blb
GPM Propane	< 0.0003	gal/MCF		0.0003		GPA 2261	09/28/21 14:22 / blb
GPM Isobutane	0.0010	gal/MCF		0.0003		GPA 2261	09/28/21 14:22 / blb
GPM n-Butane	0.0070	gal/MCF		0.0003		GPA 2261	09/28/21 14:22 / blb
GPM Isopentane	0.0390	gal/MCF		0.0004		GPA 2261	09/28/21 14:22 / blb
GPM n-Pentane	0.0480	gal/MCF		0.0004		GPA 2261	09/28/21 14:22 / blb
GPM Hexanes plus	0.6750	gal/MCF		0.0004		GPA 2261	09/28/21 14:22 / blb
GPM Pentanes plus	0.7620	gal/MCF		0.0004		GPA 2261	09/28/21 14:22 / blb
GPM Total	0.7700	gal/MCF		0.0004		GPA 2261	09/28/21 14:22 / blb
CALCULATED PROPERTIES							
Calculation Pressure Base	14.730	psia				GPA 2261	09/28/21 14:22 / blb
Calculation Temperature Base	60	°F				GPA 2261	09/28/21 14:22 / blb
Compressibility Factor, Z	0.99900	unitless		0.00001		GPA 2261	09/28/21 14:22 / blb
Molecular Weight	30.16	unitless		0.01		GPA 2261	09/28/21 14:22 / blb
Pseudo-critical Pressure, psia	547	psia		1		GPA 2261	09/28/21 14:22 / blb
Pseudo-critical Temperature, deg R	256	deg R		1		GPA 2261	09/28/21 14:22 / blb
Specific Gravity (air=1.000)	1.045	unitless		0.0001		GPA 2261	09/28/21 14:22 / blb
Gross BTU per cu ft @ std cond, dry	90.28	BTU/cu ft		0.01		GPA 2261	09/28/21 14:22 / blb
Gross BTU per cu ft @ std cond, wet	88.71	BTU/cu ft		0.01		GPA 2261	09/28/21 14:22 / blb

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

October 05, 2021

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

RE: San Juan 28 6 31 OrderNo.: 2109H13

Dear Danny Burns:

Hall Environmental Analysis Laboratory received 1 sample(s) on 9/30/2021 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 **2109H13**
Date Reported: **10/5/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: Influent A+B
Project: San Juan 28 6 31
Collection Date: 9/28/2021 4:00:00 PM
Lab ID: 2109H13-001 **Matrix:** AIR
Received Date: 9/30/2021 7:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	53000	500		µg/L	100	10/1/2021 10:03:13 AM
Surr: BFB	183	37.3-213		%Rec	100	10/1/2021 10:03:13 AM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	240	10		µg/L	100	10/1/2021 10:03:13 AM
Toluene	720	10		µg/L	100	10/1/2021 10:03:13 AM
Ethylbenzene	27	10		µg/L	100	10/1/2021 10:03:13 AM
Xylenes, Total	350	20		µg/L	100	10/1/2021 10:03:13 AM
Surr: 4-Bromofluorobenzene	95.6	70-130		%Rec	100	10/1/2021 10:03:13 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	Value above quantitation range
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 range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109H13**
05-Oct-21

Client: HILCORP ENERGY
Project: San Juan 28 6 31

Sample ID: **2109H13-001ADUP** SampType: **DUP** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **Influent A+B** Batch ID: **G81717** RunNo: **81717**
Prep Date: Analysis Date: **10/1/2021** SeqNo: **2889360** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	48000	500						9.64	20	
Surr: BFB	380000		200000		189	37.3	213	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109H13**
05-Oct-21

Client: HILCORP ENERGY
Project: San Juan 28 6 31

Sample ID: **2109H13-001ADUP** SampType: **DUP** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **Influent A+B** Batch ID: **B81717** RunNo: **81717**
Prep Date: Analysis Date: **10/1/2021** SeqNo: **2889363** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	210	10						12.5	20	
Toluene	650	10						11.0	20	
Ethylbenzene	27	10						1.42	20	
Xylenes, Total	340	20						1.75	20	
Surr: 4-Bromofluorobenzene	200		200.0		98.4	70	130	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: HILCORP ENERGY Work Order Number: 2109H13 RcptNo: 1

Received By: Cheyenne Cason 9/30/2021 7:10:00 AM

Completed By: Sean Livingston 9/30/2021 8:04:40 AM

Reviewed By: TNL 9/30/21

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: JR 9/30/21

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				

Chain-of-Custody Record

Client: Hilcorp

Lindsay Dumas | Billy Ginn

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 EOD 9-30-21

Project Name: San Juan 28-6 #31

Project #:

Project Manager: WSP- Danny Burns

Sampler: DB

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. 2109 H13	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)
9-28	1600	Air	Influent A+B	1-Tedlar		001	X	X								

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
9-29-21	1700				9/29/21	1700
9/29/21	1826			cmc courier	9/30/21	0710

Remarks:

cc: stuart.hyde@wsp.com

devin.hencmann@wsp.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 57595

CONDITIONS

Operator:	OGRID:
HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	372171
	Action Number: 57595
	Action Type: [UF-GWA] Ground Water Abatement (GROUND WATER ABATEMENT)

CONDITIONS

Created By	Condition	Condition Date
nvelez	Accepted for the record. See App ID 125935 for most updated status.	9/23/2022