



June 13, 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: Site Summary Report and Closure Request**

Middle Mesa SWD 1  
San Juan County, New Mexico  
Hilcorp Energy Company  
NMOCD Incident No: nAPP2410358636

To Whom it May Concern:

Ensolum, LLC (Ensolum), on behalf of Hilcorp Energy Company (Hilcorp), has prepared this *Site Summary Report and Closure Request* associated with a produced water release at the Middle Mesa SWD 1 saltwater disposal well (Site). The Site is located on surface managed by the Bureau of Land Management (BLM) in Unit L, Section 25, Township 32 North, Range 7 West, San Juan County, New Mexico (Figure 1).

**SITE BACKGROUND**

On April 12, 2024, a release of produced water from a pump building located at latitude 36.948460 North and longitude 107.523612 West occurred due to the failure of a filter pot gasket during pumping activities. This failure resulted in surface runoff out from the pump building onto the ground surface and subsequently filling the cribbing of the adjacent below-grade tank (BGT). Hilcorp immediately implemented corrective action and dispatched a vacuum truck to remove the retained fluids from the BGT cribbing and the standing fluid from the ground surface outside of the pump building. In total, approximately 83 barrels (bbls) of produced water was released, of which 75 bbls were recovered from the BGT cribbing and ground surface.

In accordance with Title 19, Chapter 15, Part 29 of the New Mexico Administrative Code (NMAC) Hilcorp notified the New Mexico Oil Conservation Division (NMOCD) and the BLM on April 12, 2024. The Site has been assigned NMOCD Incident Number nAPP2410358636.

**SITE CHARACTERIZATION AND CLOSURE CRITERIA**

An assessment of potential nearby receptors was conducted through desktop reviews of topographic maps, Federal Emergency Management Administration (FEMA) Geographic Information System (GIS) maps, United States Geological Survey (USGS) GIS maps, New Mexico Office of the State Engineer (NMOSE) database, and aerial photographs, as well as site-specific observations.

## GEOLOGY AND HYDROGEOLOGY

The Site is located in Tertiary (Eocene) age San Jose Formation and is underlain by the Nacimiento Geologic Formation. In the report titled "Hydrogeology and Water Resources of San Juan Basin, New Mexico" (Stone, et. al., 1983), the San Jose Formation is composed of interbedded sandstones and mudstones and varies in thickness from less than 200 feet to about 2,700 feet. The hydrologic properties of the San Jose Formation are largely untested. Where sufficient yield is present, the primary use of water from this Formation is for domestic and/or livestock supply.

The closest significant watercourse is an unnamed dry wash located 1,168 feet east of the Site and is defined by a bed and bank and is identified by a dashed blue line on a USGS 7.5-minute quadrangle map. The Site is greater than 200 feet from any lakebed, sinkhole, or playa lake, and greater than 300 feet from any wetland (Figure 1). The nearest fresh-water well is NMOSE permitted well SJ-03649 (Appendix A), located approximately 8,658 feet southwest of the Site. The recorded depth to water on the NMOSE database is 300 feet below ground surface (bgs). The well is approximately 19 feet lower in elevation than the Site, therefore depth to groundwater at the Site is estimated to be greater than 100 feet bgs. No wellhead protection areas, springs, or domestic/stock wells are located within a 1-mile radius from the Site. The Site is not within a 100-year floodplain, overlying a subsurface mine, or located within an area underlain by unstable geology (area designated as low potential karst by the BLM). Schools, hospitals, institutions, churches, and/or other occupied permanent residence or structures are not located within 300 feet of the Site.

## SITE CLOSURE CRITERIA

Based on the information presented above and in accordance with the *Table I, Closure Criteria for Soils Impacted by a Release* (19.15.29.12 NMAC), the following Closure Criteria for constituents of concern (COCs) should be applied to the Site:

- Benzene: 10 milligrams per kilogram (mg/kg)
- Benzene, toluene, ethylbenzene, and xylenes (BTEX): 50 mg/kg
- Total petroleum hydrocarbons (TPH) as a combination of gasoline range organics (GRO), diesel range organics (DRO), and motor oil range organics (MRO): 2,500 mg/kg
- GRO+DRO: 1,000 mg/kg
- Chloride: 20,000 mg/kg

## SOIL SAMPLING ACTIVITIES

To assess potential soil impacts resulting from the release and remaining at the Site, Hilcorp retained Ensolum to collect soil samples from the Site on April 25, 2024. In the area where produced water spread across the pad surface (measuring approximately 360 square feet), two 5-point composite samples (CS01 and CS02) were collected from the release footprint. Additionally, a hand auger was used to sample soil at the base of the BGT and within the BGT cribbing in order to assess COC concentrations where the produced water had settled around the BGT. Hand auger sample HA01 was collected from a depth of 0 to 1-foot below the base of the BGT, which is set at a depth of approximately 4 feet bgs. (Figure 2). Notification to NMOCD was provided prior to conducting remediation and sampling work, with correspondence attached in Appendix B. Soil samples were also field screened for the presence of organic vapors using a calibrated photoionization detector (PID) and chloride using Hach® QuanTab® test strips, with results noted in Table 1.

Analytical results indicated detections of total petroleum hydrocarbons as diesel range organics (TPH-DRO) and motor oil range organics (TPH-MRO) in CS01 and HA01, and chloride detected in CS01 and CS02. However, all results were below the NMOCD Closure Criteria. Concentrations of total BTEX and TPH-GRO were not detected above the laboratory reporting limits in any of the analyzed samples. Soil

sample analytical results are summarized in Table 1, with complete laboratory analytical reports attached as Appendix C. Photographs taken during field activities are attached as Appendix D.

## CLOSURE REQUEST

Corrective actions and soil sampling activities were conducted at the Site to address the release of produced water discovered on April 12, 2024. Laboratory analytical results for the soil samples, collected from the release footprint, indicated all concentrations were compliant with the Site Closure Criteria and no further remediation is required. The corrective action initiated by Hilcorp has mitigated impacts at this Site and these remedial actions have been protective of human health, the environment, and groundwater. As such, Hilcorp respectfully request closure for Incident Number nAPP2410358636.

## REFERENCES

Stone, W., Lyford, F., Frenzel, P., Mizell, N., & Padgett, E. (1983). Hydrogeology and Water Resources of San Juan Basin, New Mexico. New Mexico Bureau of Mines & Mineral Resources.

We appreciate the opportunity to provide this report to the NMOCD. If you have any questions or comments regarding this document, please contact the undersigned.

Sincerely,  
**Ensolum, LLC**



Sidney Mahanay  
Project Geologist  
(979) 877-8887  
smahanay@ensolum.com



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

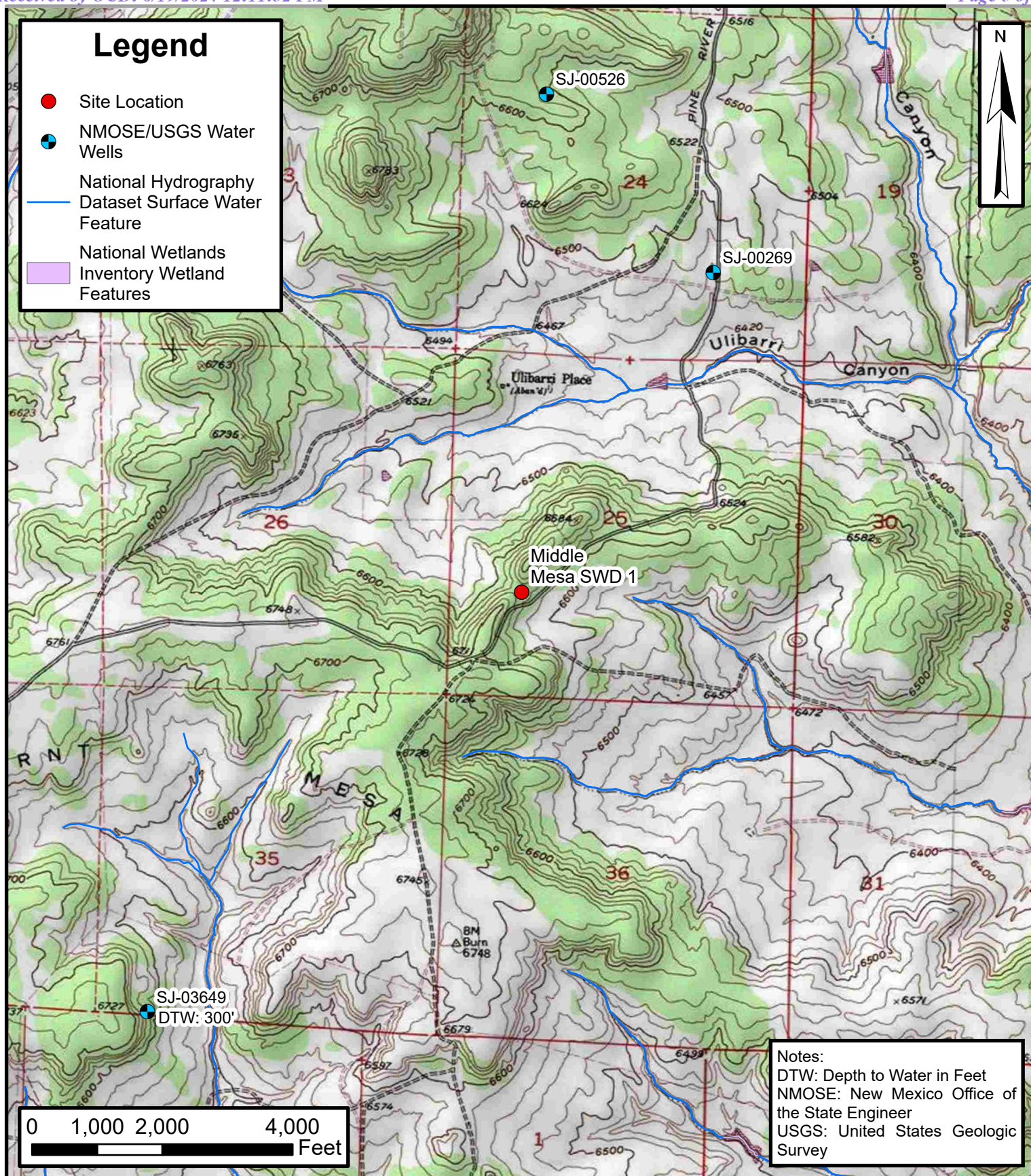
### Attachments:

- Figure 1: Site Receptor Map
- Figure 2: Soil Delineation Analytical Results
- Table 1: Soil Sample Analytical Results
- Appendix A: NMOSE Point of Diversion Summary
- Appendix B: Agency Correspondence
- Appendix C: Laboratory Analytical Reports
- Appendix D: Photographic Log



FIGURES





## Site Receptor Map

Middle Mesa SWD 1  
 Hilcorp Energy Company  
 36.948460, -107.523612  
 San Juan County, New Mexico

FIGURE  
 1



# Legend

- Release Footprint
- Composite Soil Sample Areas in Compliance with NMOCD Closure Criteria
- BGT Excluded from Release Footprint
- Hand Auger Sample Location in Compliance with NMOCD Closure Criteria



CS02  
B: <0.024  
BTEX: <0.097  
TPH: <48  
Cl: 140

CS01  
B: <0.024  
BTEX: <0.095  
TPH: 238  
Cl: 540

HA01  
B: <0.024  
BTEX: <0.095  
TPH: 400  
Cl: <60

## Notes:

B: Benzene in milligrams per kilogram (mg/kg)  
BTEX: Total Benzene, Toluene, Ethylbenzene, and Xylenes (mg/kg)  
TPH: Total Petroleum Hydrocarbons (mg/kg)  
Cl: Chloride (mg/kg)  
< : Indicates Result is below Laboratory Reporting Limit  
NMOCD: New Mexico Oil Conservation Division

0 5 10 20  
Feet

## Soil Sample Analytical Results

Middle Mesa SWD 1  
Hilcorp Energy Company  
36.948460, -107.523612  
San Juan County, New Mexico

FIGURE  
**2**





TABLES



TABLE 1 SOIL SAMPLE ANALYTICAL RESULTS Middle Mesa SWD 1 Hilcorp Energy Company San Juan County, New Mexico															
Sample Identification	Date	Depth (feet bgs)	PID (ppm)	CI Field Screening (ppm)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH MRO (mg/kg)	GRO+DRO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
NMOCD Closure Criteria for Soils Impacted by a Release			NE	NE	10	NE	NE	NE	50	NE	NE	NE	1,000	2,500	20,000
CS01	4/25/2024	0 - 0.25	5.6	200	< 0.024	< 0.047	< 0.047	< 0.095	< 0.095	< 4.7	88	150	88	238	540
CS02	4/25/2024	0 - 0.25	6.2	< 120	< 0.024	< 0.049	< 0.049	< 0.097	< 0.097	< 4.9	< 9.7	< 48	< 48	< 48	140
HA01	4/25/2024	4 - 5	1.4	< 120	< 0.024	< 0.048	< 0.048	< 0.095	< 0.095	< 4.8	110	290	110	400	< 60

Notes:

bgs: Below ground surface  
BTEX: Benzene, Toluene, Ethylbenzene, and Xylenes  
CI: Chloride  
mg/kg: Milligrams per kilogram  
NE: Not Established  
NMOCD: New Mexico Oil Conservation Division  
PID: Photoionization detector

ppm: Parts per million  
GRO: Gasoline Range Organics  
DRO: Diesel Range Organics  
MRO: Motor Oil/Lube Oil Range Organics  
TPH: Total Petroleum Hydrocarbon  
< : Indicates result less than the stated laboratory reporting limit (RL)

Concentrations in **bold** and shaded exceed the New Mexico Oil Conservation Division Table I Closure Criteria for Soils Impacted by a Release



## APPENDIX A

### NMOSE Point of Diversion Summary

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# New Mexico Office of the State Engineer

## Point of Diversion Summary

Well Tag	POD Number	(quarters are 1=NW 2=NE 3=SW 4=SE)				(quarters are smallest to largest)		(NAD83 UTM in meters)	
		Q64	Q16	Q4	Sec	Tws	Rng	X	Y
		SJ	03649	4	1	02	31N 07W	273538	4090167*

<b>Driller License:</b>	1479	<b>Driller Company:</b>	THREE 3-D DRILLING			
<b>Driller Name:</b>						
<b>Drill Start Date:</b>	08/01/2005	<b>Drill Finish Date:</b>	08/08/2005	<b>Plug Date:</b>		
<b>Log File Date:</b>	08/10/2005	<b>PCW Rcv Date:</b>		<b>Source:</b>	Shallow	
<b>Pump Type:</b>		<b>Pipe Discharge Size:</b>		<b>Estimated Yield:</b>	2 GPM	
<b>Casing Size:</b>		<b>Depth Well:</b>	600 feet	<b>Depth Water:</b>	300 feet	

Water Bearing Stratifications:	Top	Bottom	Description
	32	600	Sandstone/Gravel/Conglomerate
Casing Perforations:	Top	Bottom	
	320	340	
	490	570	

\*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

Revised June 1972

**STATE ENGINEER OFFICE  
WELL RECORD**

## Section 1. GENERAL INFORMATION

(A) Owner of well Sean Washburn Owner's Well No. 1  
 Street or Post Office Address 316 Route 1191  
 City and State La Plata, NM 87418

Well was drilled under Permit No. SJ-3649 and is located in the:

a. 1/4 SE 1/4 NW 1/4 of Section 2 Township 31N Range 7W N.M.P.M.  
 b. Tract No. \_\_\_\_\_ of Map No. \_\_\_\_\_ of the \_\_\_\_\_  
 c. Lot No. \_\_\_\_\_ of Block No. \_\_\_\_\_ of the \_\_\_\_\_  
 Subdivision, recorded in San Juan County.  
 d. X= \_\_\_\_\_ feet, Y= \_\_\_\_\_ feet, N.M. Coordinate System \_\_\_\_\_ Zone in  
 the \_\_\_\_\_ Grant.

(B) Drilling Contractor 3D Drilling License No. WD-1479  
 Address PO Box 1297 Flora Vista, NM 87415  
 Drilling Began 8-1-05 Completed 8-8-05 Type tools Top Drive Size of hole 7.44 in.  
 Elevation of land surface or \_\_\_\_\_ at well is \_\_\_\_\_ ft. Total depth of well 600 ft.  
 Completed well is ☒ shallow ☐ artesian. Depth to water upon completion of well 300 ft.

## Section 2. PRINCIPAL WATER-BEARING STRATA

Depth in Feet		Thickness in Feet	Description of Water-Bearing Formation	Estimated Yield (gallons per minute)
From	To			
32	600	568	Sandstone and shell	2

## Section 3. RECORD OF CASING

Diameter (inches)	Pounds per foot	Threads per in.	Depth in Feet		Length (feet)	Type of Shoe	Perforations	
			Top	Bottom			From	To
6 5/8	12.92	weld	0	600	600	drilldex 6	320	340
						and	490	570

## Section 4. RECORD OF MUDDING AND CEMENTING

Depth in Feet		Hole Diameter	Sacks of Mud	Cubic Feet of Cement	Method of Placement
From	To				

## Section 5. PLUGGING RECORD

Plugging Contractor \_\_\_\_\_  
 Address \_\_\_\_\_  
 Plugging Method \_\_\_\_\_  
 Date Well Plugged \_\_\_\_\_  
 Plugging approved by: \_\_\_\_\_  
 State Engineer Representative \_\_\_\_\_

No.	Depth in Feet		Cubic Feet of Cement
	Top	Bottom	
1			
2			
3			
4			

## FOR USE OF STATE ENGINEER ONLY

Date Received 8-10-2005 Quad \_\_\_\_\_ FWL \_\_\_\_\_ FSL \_\_\_\_\_  
 File No. SJ-3649 Use DOMESTIC Location No. 31N. 7W. 2. 141

[illegible]

Bill Hile

Released to Imaging: 7/30/2024 10:29:51 AM





## APPENDIX B

### Agency Correspondence

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**From:** [OCDOnline@state.nm.us](mailto:OCDOnline@state.nm.us)  
**To:** [Stuart Hyde](#)  
**Subject:** The Oil Conservation Division (OCD) has accepted the application, Application ID: 335367  
**Date:** Friday, April 19, 2024 1:13:14 PM

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[ \*\*EXTERNAL EMAIL\*\* ]

To whom it may concern (c/o Stuart Hyde for HILCORP ENERGY COMPANY),

The OCD has received the submitted *Notification for (Final) Sampling of a Release* (C-141N), for incident ID (n#) nAPP2410358636.

The sampling event is expected to take place:

**When:** 04/25/2024 @ 09:00

**Where:** L-25-32N-07W 1555 FSL 1210 FWL (36.9484215,-107.523124)

**Additional Information:** Contact PM Stuart Hyde, 970-903-1607

**Additional Instructions:** Middle Mesa SWD Location: 36.948342, -107.522608

An OCD representative may be available onsite at the date and time reported. In the absence or presence of an OCD representative, sampling pursuant to 19.15.29.12.D NMAC is required. Sampling must be performed following an approved sampling plan or pursuant to 19.15.29.12.D.(1).(c) NMAC. Should there be a change in the scheduled date and time of the sampling event, then another notification should be resubmitted through OCD permitting as soon as possible.

- **Failure to notify the OCD of sampling events including any changes in date/time per the requirements of 19.15.29.12.D.(1).(a) NMAC, may result in the remediation closure samples not being accepted.**

If you have any questions regarding this application, or don't know why you have received this email, please contact us.

**New Mexico Energy, Minerals and Natural Resources Department**  
1220 South St. Francis Drive  
Santa Fe, NM 87505



## APPENDIX C

### Laboratory Analytical Reports

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Environment Testing

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# ANALYTICAL REPORT

## PREPARED FOR

Attn: Kate Kaufman  
Hilcorp Energy  
PO BOX 4700  
Farmington, New Mexico 87499

Generated 5/9/2024 5:08:46 PM

## JOB DESCRIPTION

Middle Mesa

## JOB NUMBER

885-3738-1

Eurofins Albuquerque  
4901 Hawkins NE  
Albuquerque NM 87109

# Eurofins Albuquerque

## Job Notes

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing South Central, LLC Project Manager.

## Authorization



Generated  
5/9/2024 5:08:46 PM

Authorized for release by  
Andy Freeman, Business Unit Manager  
[andy.freeman@et.eurofinsus.com](mailto:andy.freeman@et.eurofinsus.com)  
(505)345-3975

Client: Hilcorp Energy  
Project/Site: Middle Mesa

Laboratory Job ID: 885-3738-1

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Definitions/Glossary

Client: Hilcorp Energy  
Project/Site: Middle Mesa

Job ID: 885-3738-1

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
▫	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

## Case Narrative

Client: Hilcorp Energy  
Project: Middle Mesa

Job ID: 885-3738-1

**Job ID: 885-3738-1**

**Eurofins Albuquerque**

### Job Narrative 885-3738-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

#### Receipt

The samples were received on 5/2/2024 7:20 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 5.6°C.

#### Gasoline Range Organics

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

#### GC VOA

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

#### Diesel Range Organics

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

#### HPLC/IC

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

Eurofins Albuquerque



Client Sample Results

Client: Hilcorp Energy  
Project/Site: Middle Mesa

Job ID: 885-3738-1

Client Sample ID: CS01  
Date Collected: 04/25/24 10:00  
Date Received: 05/02/24 07:20

Lab Sample ID: 885-3738-1  
Matrix: Solid

Method: SW846 8015D - Gasoline Range Organics (GRO) (GC)									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Gasoline Range Organics [C6 - C10]	ND		4.7	mg/Kg		05/02/24 16:15	05/03/24 13:30		1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
4-Bromofluorobenzene (Surr)	97		15 - 244			05/02/24 16:15	05/03/24 13:30		1
Method: SW846 8021B - Volatile Organic Compounds (GC)									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Benzene	ND		0.024	mg/Kg		05/02/24 16:15	05/03/24 13:30		1
Ethylbenzene	ND		0.047	mg/Kg		05/02/24 16:15	05/03/24 13:30		1
Toluene	ND		0.047	mg/Kg		05/02/24 16:15	05/03/24 13:30		1
Xylenes, Total	ND		0.095	mg/Kg		05/02/24 16:15	05/03/24 13:30		1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
4-Bromofluorobenzene (Surr)	92		39 - 146			05/02/24 16:15	05/03/24 13:30		1
Method: SW846 8015D - Diesel Range Organics (DRO) (GC)									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Diesel Range Organics [C10-C28]	88		8.7	mg/Kg		05/03/24 13:07	05/06/24 16:06		1
Motor Oil Range Organics [C28-C40]	150		43	mg/Kg		05/03/24 13:07	05/06/24 16:06		1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
Di-n-octyl phthalate (Surr)	94		62 - 134			05/03/24 13:07	05/06/24 16:06		1
Method: EPA 300.0 - Anions, Ion Chromatography									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Chloride	540		60	mg/Kg		05/06/24 11:54	05/06/24 15:54		20

Client Sample Results

Client: Hilcorp Energy  
Project/Site: Middle Mesa

Job ID: 885-3738-1

Client Sample ID: CS02  
Date Collected: 04/25/24 10:15  
Date Received: 05/02/24 07:20

Lab Sample ID: 885-3738-2  
Matrix: Solid

Method: SW846 8015D - Gasoline Range Organics (GRO) (GC)									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Gasoline Range Organics [C6 - C10]	ND		4.9	mg/Kg		05/02/24 16:15	05/03/24 13:53		1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
4-Bromofluorobenzene (Surr)	97		15 - 244			05/02/24 16:15	05/03/24 13:53		1
Method: SW846 8021B - Volatile Organic Compounds (GC)									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Benzene	ND		0.024	mg/Kg		05/02/24 16:15	05/03/24 13:53		1
Ethylbenzene	ND		0.049	mg/Kg		05/02/24 16:15	05/03/24 13:53		1
Toluene	ND		0.049	mg/Kg		05/02/24 16:15	05/03/24 13:53		1
Xylenes, Total	ND		0.097	mg/Kg		05/02/24 16:15	05/03/24 13:53		1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
4-Bromofluorobenzene (Surr)	92		39 - 146			05/02/24 16:15	05/03/24 13:53		1
Method: SW846 8015D - Diesel Range Organics (DRO) (GC)									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Diesel Range Organics [C10-C28]	ND		9.7	mg/Kg		05/03/24 13:07	05/06/24 16:18		1
Motor Oil Range Organics [C28-C40]	ND		48	mg/Kg		05/03/24 13:07	05/06/24 16:18		1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
Di-n-octyl phthalate (Surr)	96		62 - 134			05/03/24 13:07	05/06/24 16:18		1
Method: EPA 300.0 - Anions, Ion Chromatography									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Chloride	140		60	mg/Kg		05/06/24 11:54	05/06/24 16:06		20

Client Sample Results

Client: Hilcorp Energy  
Project/Site: Middle Mesa

Job ID: 885-3738-1

Client Sample ID: HA01

Lab Sample ID: 885-3738-3

Date Collected: 04/25/24 10:45

Matrix: Solid

Date Received: 05/02/24 07:20

Method: SW846 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		4.8	mg/Kg		05/02/24 16:15	05/03/24 14:16	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		15 - 244			05/02/24 16:15	05/03/24 14:16	1

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.024	mg/Kg		05/02/24 16:15	05/03/24 14:16	1
Ethylbenzene	ND		0.048	mg/Kg		05/02/24 16:15	05/03/24 14:16	1
Toluene	ND		0.048	mg/Kg		05/02/24 16:15	05/03/24 14:16	1
Xylenes, Total	ND		0.095	mg/Kg		05/02/24 16:15	05/03/24 14:16	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		39 - 146			05/02/24 16:15	05/03/24 14:16	1

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	110		8.6	mg/Kg		05/03/24 13:07	05/06/24 16:31	1
Motor Oil Range Organics [C28-C40]	290		43	mg/Kg		05/03/24 13:07	05/06/24 16:31	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	105		62 - 134			05/03/24 13:07	05/06/24 16:31	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		60	mg/Kg		05/06/24 11:54	05/06/24 16:19	20

QC Sample Results

Client: Hilcorp Energy  
Project/Site: Middle Mesa

Job ID: 885-3738-1

Method: 8015D - Gasoline Range Organics (GRO) (GC)

Lab Sample ID: MB 885-4292/1-A						Client Sample ID: Method Blank			
Matrix: Solid						Prep Type: Total/NA			
Analysis Batch: 4416						Prep Batch: 4292			
Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Gasoline Range Organics [C6 - C10]	ND		5.0	mg/Kg		05/02/24 16:15	05/03/24 11:09	1	
Surrogate	MB %Recovery	MB Qualifier	Limits			Prepared	Analyzed	Dil Fac	
4-Bromofluorobenzene (Surr)	103		15 - 244			05/02/24 16:15	05/03/24 11:09	1	

Lab Sample ID: LCS 885-4292/3-A						Client Sample ID: Lab Control Sample			
Matrix: Solid						Prep Type: Total/NA			
Analysis Batch: 4416						Prep Batch: 4292			
Analyte		Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits	
Gasoline Range Organics [C6 - C10]		25.0	25.9		mg/Kg		104	70 - 130	
Surrogate	LCS %Recovery	LCS Qualifier	Limits						
4-Bromofluorobenzene (Surr)	204		15 - 244						

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 885-4292/1-A						Client Sample ID: Method Blank			
Matrix: Solid						Prep Type: Total/NA			
Analysis Batch: 4418						Prep Batch: 4292			
Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Benzene	ND		0.025	mg/Kg		05/02/24 16:15	05/03/24 11:09	1	
Ethylbenzene	ND		0.050	mg/Kg		05/02/24 16:15	05/03/24 11:09	1	
Toluene	ND		0.050	mg/Kg		05/02/24 16:15	05/03/24 11:09	1	
Xylenes, Total	ND		0.10	mg/Kg		05/02/24 16:15	05/03/24 11:09	1	
Surrogate	MB %Recovery	MB Qualifier	Limits			Prepared	Analyzed	Dil Fac	
4-Bromofluorobenzene (Surr)	98		39 - 146			05/02/24 16:15	05/03/24 11:09	1	

Lab Sample ID: LCS 885-4292/4-A						Client Sample ID: Lab Control Sample			
Matrix: Solid						Prep Type: Total/NA			
Analysis Batch: 4418						Prep Batch: 4292			
Analyte		Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits	
Benzene		1.00	0.966		mg/Kg		97	70 - 130	
Ethylbenzene		1.00	0.922		mg/Kg		92	70 - 130	
m&p-Xylene		2.00	1.88		mg/Kg		94	70 - 130	
o-Xylene		1.00	0.918		mg/Kg		92	70 - 130	
Toluene		1.00	0.919		mg/Kg		92	70 - 130	
Surrogate	LCS %Recovery	LCS Qualifier	Limits						
4-Bromofluorobenzene (Surr)	100		39 - 146						

Eurofins Albuquerque

QC Sample Results

Client: Hilcorp Energy  
Project/Site: Middle Mesa

Job ID: 885-3738-1

Method: 8015D - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 885-4349/1-A						Client Sample ID: Method Blank			
Matrix: Solid						Prep Type: Total/NA			
Analysis Batch: 4444						Prep Batch: 4349			
Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Diesel Range Organics [C10-C28]	ND		10	mg/Kg		05/03/24 13:07	05/06/24 15:11	1	
Motor Oil Range Organics [C28-C40]	ND		50	mg/Kg		05/03/24 13:07	05/06/24 15:11	1	
Surrogate	MB %Recovery	MB Qualifier	Limits			Prepared	Analyzed	Dil Fac	
Di-n-octyl phthalate (Surr)	95		62 - 134			05/03/24 13:07	05/06/24 15:11	1	

Lab Sample ID: LCS 885-4349/2-A						Client Sample ID: Lab Control Sample			
Matrix: Solid						Prep Type: Total/NA			
Analysis Batch: 4444						Prep Batch: 4349			
Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Diesel Range Organics [C10-C28]			50.0	39.2		mg/Kg		78	60 - 135
Surrogate	LCS %Recovery	LCS Qualifier	Limits						
Di-n-octyl phthalate (Surr)	112		62 - 134						

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 885-4415/1-A						Client Sample ID: Method Blank			
Matrix: Solid						Prep Type: Total/NA			
Analysis Batch: 4445						Prep Batch: 4415			
Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Chloride	ND		1.5	mg/Kg		05/06/24 11:54	05/06/24 12:17	1	
Lab Sample ID: LCS 885-4415/2-A						Client Sample ID: Lab Control Sample			
Matrix: Solid						Prep Type: Total/NA			
Analysis Batch: 4445						Prep Batch: 4415			
Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec Limits	
Chloride			15.0	13.8		mg/Kg		92 90 - 110	

Lab Sample ID: MB 885-4445/21						Client Sample ID: Method Blank			
Matrix: Solid						Prep Type: Total/NA			
Analysis Batch: 4445									
Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Chloride	ND		0.50	mg/Kg			05/06/24 09:10	1	
Lab Sample ID: MRL 885-4445/20						Client Sample ID: Lab Control Sample			
Matrix: Solid						Prep Type: Total/NA			
Analysis Batch: 4445									
Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec Limits	
Chloride			0.500	0.513		mg/L		103 50 - 150	

## QC Association Summary

Client: Hilcorp Energy  
Project/Site: Middle Mesa

Job ID: 885-3738-1

## GC VOA

## Prep Batch: 4292

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-3738-1	CS01	Total/NA	Solid	5030C	
885-3738-2	CS02	Total/NA	Solid	5030C	
885-3738-3	HA01	Total/NA	Solid	5030C	
MB 885-4292/1-A	Method Blank	Total/NA	Solid	5030C	
LCS 885-4292/3-A	Lab Control Sample	Total/NA	Solid	5030C	
LCS 885-4292/4-A	Lab Control Sample	Total/NA	Solid	5030C	

## Analysis Batch: 4416

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-3738-1	CS01	Total/NA	Solid	8015D	4292
885-3738-2	CS02	Total/NA	Solid	8015D	4292
885-3738-3	HA01	Total/NA	Solid	8015D	4292
MB 885-4292/1-A	Method Blank	Total/NA	Solid	8015D	4292
LCS 885-4292/3-A	Lab Control Sample	Total/NA	Solid	8015D	4292

## Analysis Batch: 4418

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-3738-1	CS01	Total/NA	Solid	8021B	4292
885-3738-2	CS02	Total/NA	Solid	8021B	4292
885-3738-3	HA01	Total/NA	Solid	8021B	4292
MB 885-4292/1-A	Method Blank	Total/NA	Solid	8021B	4292
LCS 885-4292/4-A	Lab Control Sample	Total/NA	Solid	8021B	4292

## GC Semi VOA

## Prep Batch: 4349

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-3738-1	CS01	Total/NA	Solid	SHAKE	
885-3738-2	CS02	Total/NA	Solid	SHAKE	
885-3738-3	HA01	Total/NA	Solid	SHAKE	
MB 885-4349/1-A	Method Blank	Total/NA	Solid	SHAKE	
LCS 885-4349/2-A	Lab Control Sample	Total/NA	Solid	SHAKE	

## Analysis Batch: 4444

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-3738-1	CS01	Total/NA	Solid	8015D	4349
885-3738-2	CS02	Total/NA	Solid	8015D	4349
885-3738-3	HA01	Total/NA	Solid	8015D	4349
MB 885-4349/1-A	Method Blank	Total/NA	Solid	8015D	4349
LCS 885-4349/2-A	Lab Control Sample	Total/NA	Solid	8015D	4349

## HPLC/IC

## Prep Batch: 4415

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-3738-1	CS01	Total/NA	Solid	300_Prep	
885-3738-2	CS02	Total/NA	Solid	300_Prep	
885-3738-3	HA01	Total/NA	Solid	300_Prep	
MB 885-4415/1-A	Method Blank	Total/NA	Solid	300_Prep	
LCS 885-4415/2-A	Lab Control Sample	Total/NA	Solid	300_Prep	

Eurofins Albuquerque

QC Association Summary

Client: Hilcorp Energy  
Project/Site: Middle Mesa

Job ID: 885-3738-1

HPLC/IC

Analysis Batch: 4445

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-3738-1	CS01	Total/NA	Solid	300.0	4415
885-3738-2	CS02	Total/NA	Solid	300.0	4415
885-3738-3	HA01	Total/NA	Solid	300.0	4415
MB 885-4415/1-A	Method Blank	Total/NA	Solid	300.0	4415
MB 885-4445/21	Method Blank	Total/NA	Solid	300.0	
LCS 885-4415/2-A	Lab Control Sample	Total/NA	Solid	300.0	4415
MRL 885-4445/20	Lab Control Sample	Total/NA	Solid	300.0	

Lab Chronicle

Client: Hilcorp Energy  
Project/Site: Middle Mesa

Job ID: 885-3738-1

**Client Sample ID: CS01**  
**Date Collected: 04/25/24 10:00**  
**Date Received: 05/02/24 07:20**

**Lab Sample ID: 885-3738-1**  
**Matrix: Solid**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			4292	JP	EET ALB	05/02/24 16:15
Total/NA	Analysis	8015D		1	4416	JP	EET ALB	05/03/24 13:30
Total/NA	Prep	5030C			4292	JP	EET ALB	05/02/24 16:15
Total/NA	Analysis	8021B		1	4418	JP	EET ALB	05/03/24 13:30
Total/NA	Prep	SHAKE			4349	DH	EET ALB	05/03/24 13:07
Total/NA	Analysis	8015D		1	4444	JU	EET ALB	05/06/24 16:06
Total/NA	Prep	300_Prep			4415	SS	EET ALB	05/06/24 11:54
Total/NA	Analysis	300.0		20	4445	RC	EET ALB	05/06/24 15:54

**Client Sample ID: CS02**  
**Date Collected: 04/25/24 10:15**  
**Date Received: 05/02/24 07:20**

**Lab Sample ID: 885-3738-2**  
**Matrix: Solid**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			4292	JP	EET ALB	05/02/24 16:15
Total/NA	Analysis	8015D		1	4416	JP	EET ALB	05/03/24 13:53
Total/NA	Prep	5030C			4292	JP	EET ALB	05/02/24 16:15
Total/NA	Analysis	8021B		1	4418	JP	EET ALB	05/03/24 13:53
Total/NA	Prep	SHAKE			4349	DH	EET ALB	05/03/24 13:07
Total/NA	Analysis	8015D		1	4444	JU	EET ALB	05/06/24 16:18
Total/NA	Prep	300_Prep			4415	SS	EET ALB	05/06/24 11:54
Total/NA	Analysis	300.0		20	4445	RC	EET ALB	05/06/24 16:06

**Client Sample ID: HA01**  
**Date Collected: 04/25/24 10:45**  
**Date Received: 05/02/24 07:20**

**Lab Sample ID: 885-3738-3**  
**Matrix: Solid**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			4292	JP	EET ALB	05/02/24 16:15
Total/NA	Analysis	8015D		1	4416	JP	EET ALB	05/03/24 14:16
Total/NA	Prep	5030C			4292	JP	EET ALB	05/02/24 16:15
Total/NA	Analysis	8021B		1	4418	JP	EET ALB	05/03/24 14:16
Total/NA	Prep	SHAKE			4349	DH	EET ALB	05/03/24 13:07
Total/NA	Analysis	8015D		1	4444	JU	EET ALB	05/06/24 16:31
Total/NA	Prep	300_Prep			4415	SS	EET ALB	05/06/24 11:54
Total/NA	Analysis	300.0		20	4445	RC	EET ALB	05/06/24 16:19

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



Accreditation/Certification Summary

Client: Hilcorp Energy  
Project/Site: Middle Mesa

Job ID: 885-3738-1

Laboratory: Eurofins Albuquerque

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

Authority	Program	Identification Number	Expiration Date
New Mexico	State	NM9425, NM0901	02-26-25
The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.			
Analysis Method	Prep Method	Matrix	Analyte
300.0	300_Prep	Solid	Chloride
8015D	5030C	Solid	Gasoline Range Organics [C6 - C10]
8015D	SHAKE	Solid	Diesel Range Organics [C10-C28]
8015D	SHAKE	Solid	Motor Oil Range Organics [C28-C40]
8021B	5030C	Solid	Benzene
8021B	5030C	Solid	Ethylbenzene
8021B	5030C	Solid	Toluene
8021B	5030C	Solid	Xylenes, Total
Oregon	NELAP	NM100001	02-26-25
The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.			
Analysis Method	Prep Method	Matrix	Analyte
300.0	300_Prep	Solid	Chloride
8015D	5030C	Solid	Gasoline Range Organics [C6 - C10]
8015D	SHAKE	Solid	Diesel Range Organics [C10-C28]
8015D	SHAKE	Solid	Motor Oil Range Organics [C28-C40]
8021B	5030C	Solid	Benzene
8021B	5030C	Solid	Ethylbenzene
8021B	5030C	Solid	Toluene
8021B	5030C	Solid	Xylenes, Total

Chain-of-Custody Record		Turn-Around Time.	
Client: <i>Hilcorp</i>		<input checked="" type="checkbox"/> Standard	<input type="checkbox"/> Rush
		Project Name: <i>Middle Mesa</i>	
Mailing Address:		Project #:	
Phone #:			
email or Fax#: <i>kkoufman@h.hilcorp.com</i>		Project Manager: <i>Stuart Hyde - Ensolem</i>	
QA/QC Package.			
<input checked="" type="checkbox"/> Standard	<input type="checkbox"/> Level 4 (Full Validation)		
Accreditation		Sampler: <i>E. Carroll</i>	
<input type="checkbox"/> NELAP	<input type="checkbox"/> Other _____	On Ice: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
<input checked="" type="checkbox"/> EDD (Type) <i>xc1</i>		Sample Temperature: <i>5.6 ± 0.2 5.6 °C</i>	

## HALL ENVIRONMENTAL ANALYSIS LABORATORY



[www.hallenvironmental.com](http://www.hallenvironmental.com)

4901 Hawkins NE - Albuquerque, NM 87109

385-3738 COC

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

## Analysis Request

email or Fax#: <i>k.koufman@h.korp.com</i>	Project Manager:  <i>Stewart Hyde - Ensoium</i>
QA/QC Package. <input checked="" type="checkbox"/> Standard <input type="checkbox"/> Level 4 (Full Validation)	
Accreditation <input type="checkbox"/> NELAP <input type="checkbox"/> Other _____	Sampler: <i>E. Carroll</i>
<input checked="" type="checkbox"/> EDD (Type) <i>xcl</i>	On Ice: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>marty</i>
	Sample Temperature: <i>5.6 ± 0.56 °C</i>

Sampler: E. Carroll

On Ice: ☒ Yes ☐ No marry



Sample Temperature:  $5.6 \pm 0.5^\circ\text{C}$

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.
4-23	1000	soil	CS01	1407	Coal	
4-23	1015	Soil	CS02			
4-23	1045	soil	HA01			

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4-23	1000	soil	CSO1	1402	COO1
4-25	1015	Soil	CSO2	↓	↓
4-25	1045	soil	HAO1		

[illegible]

Date	Time	Relinquished by	Received by	Date	Time
5-1	1506		Christy Wares	5/1/24	1500
Date	Time	Relinquished by	Received by	Date	Time
5/1/24	1745	Christy Wares		5/2/24	2:20

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: 7/30/2024 10:29:51 AM

## Login Sample Receipt Checklist

Client: Hilcorp Energy

Job Number: 885-3738-1

Login Number: 3738

List Source: Eurofins Albuquerque

List Number: 1

Creator: Casarrubias, Tracy

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	False	Sample splitting required for subcontract purposes.
Residual Chlorine Checked.	N/A	



## APPENDIX D

### Photographic Log

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<div></div>		<div><p><b>Photographic Log</b></p><p>Hilcorp Energy Company Middle Mesa SWD 1 San Juan County, New Mexico</p></div>	
			
Photograph: 1	Date: 4/12/2024	Photograph: 2	Date: 4/25/2024
Description: Ground surface before Hydrovac		Description: Ground surface after Hydrovac	
View: Northeast		View: Northeast	
			
Photograph: 3	Date: 4/12/2024	Photograph: 4	Date: 4/25/2024
Description: BGT cribbing before Hydrovac		Description: BGT cribbing after Hydrovac	
View: Northeast		View: Northeast	

**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**

QUESTIONS  
  
Action 355919

QUESTIONS

Operator: HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	OGRID: 372171
	Action Number: 355919
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Prerequisites	
Incident ID (n#)	nAPP2410358636
Incident Name	NAPP2410358636 MIDDLE MESA SWD 1 @ 30-045-27004
Incident Type	Produced Water Release
Incident Status	Remediation Closure Report Received
Incident Well	[30-045-27004] MIDDLE MESA SWD #001

Location of Release Source	
Please answer all the questions in this group.	
Site Name	Middle Mesa SWD 1
Date Release Discovered	04/12/2024
Surface Owner	Federal

Incident Details	
Please answer all the questions in this group.	
Incident Type	Produced Water Release
Did this release result in a fire or is the result of a fire	No
Did this release result in any injuries	No
Has this release reached or does it have a reasonable probability of reaching a watercourse	No
Has this release endangered or does it have a reasonable probability of endangering public health	No
Has this release substantially damaged or will it substantially damage property or the environment	No
Is this release of a volume that is or may with reasonable probability be detrimental to fresh water	No

Nature and Volume of Release	
Material(s) released, please answer all that apply below. Any calculations or specific justifications for the volumes provided should be attached to the follow-up C-141 submission.	
Crude Oil Released (bbls) Details	Not answered.
Produced Water Released (bbls) Details	Cause: Equipment Failure   Gasket   Produced Water   Released: 83 BBL   Recovered: 75 BBL   Lost: 8 BBL.
Is the concentration of chloride in the produced water >10,000 mg/l	No
Condensate Released (bbls) Details	Not answered.
Natural Gas Vented (Mcf) Details	Not answered.
Natural Gas Flared (Mcf) Details	Not answered.
Other Released Details	Not answered.
Are there additional details for the questions above (i.e. any answer containing Other, Specify, Unknown, and/or Fire, or any negative lost amounts)	Not answered.

**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**

QUESTIONS, Page 2

Action 355919

**QUESTIONS (continued)**

Operator: HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	OGRID:	372171
	Action Number:	355919
	Action Type:	[C-141] Remediation Closure Request C-141 (C-141-v-Closure)

**QUESTIONS**

<b>Nature and Volume of Release (continued)</b>	
Is this a gas only submission (i.e. only significant Mcf values reported)	No, according to supplied volumes this does not appear to be a "gas only" report.
Was this a major release as defined by Subsection A of 19.15.29.7 NMAC	Yes
Reasons why this would be considered a submission for a notification of a major release	From paragraph A. "Major release" determine using: (1) an unauthorized release of a volume, excluding gases, of 25 barrels or more.
With the implementation of the 19.15.27 NMAC (05/25/2021), venting and/or flaring of natural gas (i.e. gas only) are to be submitted on the C-129 form.	

**Initial Response**

The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury.

The source of the release has been stopped	True
The impacted area has been secured to protect human health and the environment	True
Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices	True
All free liquids and recoverable materials have been removed and managed appropriately	True
If all the actions described above have not been undertaken, explain why	Not answered.

Per Paragraph (4) of Subsection B of 19.15.29.8 NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please prepare and attach a narrative of actions to date in the follow-up C-141 submission. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see Subparagraph (a) of Paragraph (5) of Subsection A of 19.15.29.11 NMAC), please prepare and attach all information needed for closure evaluation in the follow-up C-141 submission.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

I hereby agree and sign off to the above statement	Name: Stuart Hyde Title: Senior Geologist Email: shyde@ensolum.com Date: 06/19/2024
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Action 355919

**QUESTIONS (continued)**

Operator: HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	OGRID:	372171
	Action Number:	355919
	Action Type:	[C-141] Remediation Closure Request C-141 (C-141-v-Closure)

**QUESTIONS****Site Characterization**

Please answer all the questions in this group (only required when seeking remediation plan approval and beyond). This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

What is the shallowest depth to groundwater beneath the area affected by the release in feet below ground surface (ft bgs)	Between 100 and 500 (ft.)
What method was used to determine the depth to ground water	NM OSE iWaters Database Search
Did this release impact groundwater or surface water	No
<b>What is the minimum distance, between the closest lateral extents of the release and the following surface areas:</b>	
A continuously flowing watercourse or any other significant watercourse	Between 1000 (ft.) and ½ (mi.)
Any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)	Between 1 and 5 (mi.)
An occupied permanent residence, school, hospital, institution, or church	Between ½ and 1 (mi.)
A spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes	Between 1 and 5 (mi.)
Any other fresh water well or spring	Between 1 and 5 (mi.)
Incorporated municipal boundaries or a defined municipal fresh water well field	Greater than 5 (mi.)
A wetland	Between 1000 (ft.) and ½ (mi.)
A subsurface mine	Greater than 5 (mi.)
An (non-karst) unstable area	Greater than 5 (mi.)
Categorize the risk of this well / site being in a karst geology	None
A 100-year floodplain	Between 1 and 5 (mi.)
Did the release impact areas not on an exploration, development, production, or storage site	No

**Remediation Plan**

Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

Requesting a remediation plan approval with this submission	Yes
Attach a comprehensive report demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined, pursuant to 19.15.29.11 NMAC and 19.15.29.13 NMAC.	
Have the lateral and vertical extents of contamination been fully delineated	Yes
Was this release entirely contained within a lined containment area	No

**Soil Contamination Sampling:** (Provide the highest observable value for each, in milligrams per kilograms.)

Chloride	(EPA 300.0 or SM4500 Cl B)	540
TPH (GRO+DRO+MRO)	(EPA SW-846 Method 8015M)	400
GRO+DRO	(EPA SW-846 Method 8015M)	110
BTEX	(EPA SW-846 Method 8021B or 8260B)	0
Benzene	(EPA SW-846 Method 8021B or 8260B)	0

Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.

On what estimated date will the remediation commence	04/12/2024
On what date will (or did) the final sampling or liner inspection occur	04/25/2024
On what date will (or was) the remediation complete(d)	04/25/2024
What is the estimated surface area (in square feet) that will be reclaimed	0
What is the estimated volume (in cubic yards) that will be reclaimed	0
What is the estimated surface area (in square feet) that will be remediated	0
What is the estimated volume (in cubic yards) that will be remediated	0

These estimated dates and measurements are recognized to be the best guess or calculation at the time of submission and may (be) change(d) over time as more remediation efforts are completed.

The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.



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Action 355919

**QUESTIONS (continued)**

Operator: HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	OGRID:	372171
	Action Number:	355919
	Action Type:	[C-141] Remediation Closure Request C-141 (C-141-v-Closure)

**QUESTIONS****Remediation Plan (continued)**

Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

**This remediation will (or is expected to) utilize the following processes to remediate / reduce contaminants:**

(Select all answers below that apply.)

(Ex Situ) Excavation and <b>off-site</b> disposal (i.e. dig and haul, hydrovac, etc.)	No
(Ex Situ) Excavation and <b>on-site</b> remediation (i.e. On-Site Land Farms)	Not answered.
(In Situ) Soil Vapor Extraction	Not answered.
(In Situ) Chemical processing (i.e. Soil Shredding, Potassium Permanganate, etc.)	Not answered.
(In Situ) Biological processing (i.e. Microbes / Fertilizer, etc.)	Not answered.
(In Situ) Physical processing (i.e. Soil Washing, Gypsum, Disking, etc.)	Not answered.
Ground Water Abatement pursuant to 19.15.30 NMAC	Not answered.
OTHER (Non-listed remedial process)	Yes
Other Non-listed Remedial Process. Please specify	Fluids were recovered but not soil was removed.

Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

I hereby agree and sign off to the above statement	Name: Stuart Hyde Title: Senior Geologist Email: shyde@ensolum.com Date: 06/19/2024
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The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.

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QUESTIONS, Page 5  
  
Action 355919

QUESTIONS (continued)

Operator:  HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	OGRID:  372171
	Action Number:  355919
	Action Type:  [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Deferral Requests Only	
Only answer the questions in this group if seeking a deferral upon approval this submission. Each of the following items must be confirmed as part of any request for deferral of remediation.	
Requesting a deferral of the remediation closure due date with the approval of this submission	No

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Action 355919

**QUESTIONS (continued)**

Operator: HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	OGRID:	372171
	Action Number:	355919
	Action Type:	[C-141] Remediation Closure Request C-141 (C-141-v-Closure)

**QUESTIONS**

Sampling Event Information	
Last sampling notification (C-141N) recorded	335367
Sampling date pursuant to Subparagraph (a) of Paragraph (1) of Subsection D of 19.15.29.12 NMAC	04/25/2024
What was the (estimated) number of samples that were to be gathered	20
What was the sampling surface area in square feet	4000

**Remediation Closure Request**

*Only answer the questions in this group if seeking remediation closure for this release because all remediation steps have been completed.*

Requesting a remediation closure approval with this submission	Yes
Have the lateral and vertical extents of contamination been fully delineated	Yes
Was this release entirely contained within a lined containment area	No
All areas reasonably needed for production or subsequent drilling operations have been stabilized, returned to the sites existing grade, and have a soil cover that prevents ponding of water, minimizing dust and erosion	Yes
What was the total surface area (in square feet) remediated	0
What was the total volume (cubic yards) remediated	0
All areas not reasonably needed for production or subsequent drilling operations have been reclaimed to contain a minimum of four feet of non-waste contain earthen material with concentrations less than 600 mg/kg chlorides, 100 mg/kg TPH, 50 mg/kg BTEX, and 10 mg/kg Benzene	Yes
What was the total surface area (in square feet) reclaimed	0
What was the total volume (in cubic yards) reclaimed	0
Summarize any additional remediation activities not included by answers (above)	NA

*The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (in .pdf format) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.*

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

I hereby agree and sign off to the above statement	Name: Stuart Hyde Title: Senior Geologist Email: shyde@ensolum.com Date: 06/19/2024
--	--

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Action 355919

**QUESTIONS (continued)**

Operator:  HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	OGRID:  372171
	Action Number:  355919
	Action Type:  [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

**QUESTIONS**

<b>Reclamation Report</b>	
Only answer the questions in this group if all reclamation steps have been completed.	
Requesting a reclamation approval with this submission	No

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CONDITIONS  
  
Action 355919

CONDITIONS

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	Action Type:  [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

CONDITIONS

Created By	Condition	Condition Date
amaxwell	Remediation closure approved.	7/30/2024
amaxwell	A reclamation report will not be accepted until reclamation of the release area, including areas reasonably needed for production or drilling activities, is complete and meet the requirements of 19.15.29.13 NMAC. Areas not reasonably needed for production or drilling activities will still need to be reclaimed and revegetated as early as practicable.	7/30/2024
amaxwell	The reclamation report will need to include: Executive Summary of the reclamation activities; Scaled Site Map including sampling locations; Analytical results including, but not limited to, results showing that any remaining impacts meet the reclamation standards and results to prove the backfill is non-waste containing; At least one (1) representative 5-point composite sample will need to be collected from the backfill material that will be used for the reclamation of the top four feet of the excavation. OCD reserves the right to request additional sampling if needed; pictures of the backfilled areas showing that the area is back, as nearly as practical, to the original condition or the final land use and maintain those areas to control dust and minimize erosion to the extent practical; pictures of the top layer, which is either the background thickness of topsoil or one foot of suitable material to establish vegetation at the site, whichever is greater; and a revegetation plan.	7/30/2024