



February 28, 2025

**New Mexico Oil Conservation Division**

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

**Re: Remediation Report and Closure Request**

Sammons #2  
San Juan County, New Mexico  
Hilcorp Energy Company  
NMOCD Incident No: nAPP2336429577

To Whom it May Concern:

Ensolum, LLC (Ensolum), on behalf of Hilcorp Energy Company (Hilcorp), presents this *Remediation Report and Closure Request* for the release at the Sammons #2 natural gas production well (Site). The Site is located on private land in Unit G, Section 32, Township 30 North, Range 12 West, San Juan County, New Mexico (Figure 1).

**SITE BACKGROUND**

On December 29, 2023, during an Audio, Visual, or Olfactory (AVO) inspection, a Hilcorp lease operator identified an active condensate leak caused by a cracked hammer union on the oil fill line. The fill line was connected to the bottom of the tank without an isolation valve to stop the leak. Upon discovery, a water truck was immediately dispatched to the site to extract pooled condensate from the containment. Meanwhile, a new 2-inch valve was installed to resolve the issue. Following the valve installation, the recovered condensate was returned to the tank without a hauling ticket to document the volume. The initial estimated release volume was 31 barrels (bbls), but due to an accounting error, the actual volume was later revised to 6 bbls. Since no hauling ticket was generated, the exact volume of recovered condensate remains unknown and is assumed to be 0 bbls. Although the condensate was contained within the secondary lined berm, holes were observed in the liner. As a result, Hilcorp requested Ensolum to conduct pothole delineation in the area surrounding the containment. Hilcorp reported the release to the New Mexico Oil Conservation Division (NMOCD) on a *Release Notification Form C-141* on December 30, 2023. The NMOCD has assigned the Site Incident Number nAPP2336429577.

**SITE CHARACTERIZATION AND CLOSURE CRITERIA**

As presented in the March 27, 2024, *Remediation Work Plan* 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) have been 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): 100 mg/kg
- Chloride: 600 mg/kg

## DELINEATION AND SOIL SAMPLING ACTIVITIES

On January 26, 2024, Ensolum personnel conducted initial delineation potholing activities using a backhoe. Pothole PH01 was advanced on the north side of the secondary containment berm, while sampling locations PH02 through PH05 were advanced in all cardinal directions surrounding the berm (Figure 2). During the delineation, Ensolum personnel logged soil lithology and field-screened for volatile organic compounds (VOCs) using a calibrated photoionization detector (PID). Due to the proximity of the Site to the Animas River, shallow groundwater was encountered at depths between 3 feet and 5.5 feet below ground surface (bgs). Consequently, soil samples were collected at a maximum depth of approximately 5 feet bgs during delineation activities. Samples were submitted to Eurofins Environment Testing (Eurofins) in Albuquerque, New Mexico for analysis of TPH following United States Environmental Protection Agency (EPA) Method 8015M/D, BTEX following EPA Method 8021B, and chloride following EPA Method 300.0. Analytical results indicated concentrations of TPH in soil exceeded the applicable NMOCD Closure Criteria at depths of 4 feet to 5 feet bgs in sampling locations PH01 and PH04.

Based on the initial laboratory analytical results, Ensolum conducted additional hand auger delineation activities on February 21, 2024, to assess soil conditions to the north and east of PH04. Three hand auger delineation boreholes (HA01 through HA03) were advanced at the Site (Figure 2). BTEX and TPH concentrations were either not detected above laboratory reporting limits or were not detected above the applicable Closure Criteria in any of hand auger boreholes. At borehole HA01, chloride was detected in soil at a concentration exceeding the NMOCD Closure Criteria at a depth of 2 feet bgs. Chloride was not detected above Closure Criteria in any other samples collected during Site delineation efforts.

Additional details regarding the previous sampling/delineation efforts and presentation of the Site Characterization information, including sensitive receptor review, geology/hydrogeology, and Closure Criteria, are summarized in the March 2024 *Remediation Work Plan* prepared by Ensolum.

## REMEDICATION AND CONFIRMATION SOIL SAMPLING ACTIVITIES

Based on the delineation soil sampling results described above, TPH-impacted soil was present at depths of approximately 4 feet to 5 feet bgs and limited to areas within the immediate vicinity of the secondary containment berm. An anomalous chloride detection of 650 mg/kg was also observed at HA01, which is located 20 feet from the north corner of the secondary containment berm and along a fence at the edge of the well pad.

To remediate the Site, Hilcorp excavated impacted soil on July 8, 2024, to meet applicable NMOCD Closure Criteria. Two separate excavations were conducted: the "North Excavation" near hand auger boring HA01 to remove chloride-impacted soil identified during delineation, and the "South Excavation" near potholes PH01 and PH04 to remove TPH-impacted soil.

The North Excavation measured approximately 130 square feet in aerial extent and was advanced to a depth of 3.5 feet bgs. Following removal of the impacted soil, 5-point composite soil samples were collected at least every 200 square feet from the floor and sidewalls of the excavation. The 5-point composite samples were collected by placing five equivalent aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thoroughly mixing. Based on the size of the excavation, one floor sample (FS01) and one sidewall sample (SW01) were collected from the final extents of the North Excavation (Figure 3). Samples were submitted

to Eurofins for analysis of TPH, BTEX, and chloride following the methods described above. Analytical results from the North Excavation indicate COCs were not detected above the NMOCD Table I Closure Criteria in any of the confirmation samples.

During the July 2024 mobilization, the South Excavation was extended to depths ranging from 3 to 3.5 feet bgs, where shallow groundwater was encountered. Further advancement was restricted due to groundwater infiltration, which caused sidewall instability. As a result, soil impacts identified at 5 feet bgs during delineation could not be removed. Initial delineation efforts were conducted in the winter months when groundwater levels were deeper at 5.5 feet bgs. Based on NMOCD guidance, Ensolum returned during the winter, when groundwater levels were lower, to resume remedial activities.

On January 14, 2025, Hilcorp and Ensolum returned to the Site to resume excavation activities and remove impacted soil at the South Excavation. The excavation was extended to a depth of 6.5 feet bgs and measured 715 square feet in areal extent. Once field screening indicated impacted soil had been removed, 5-point composite soil samples were collected in the same manner described above. In total, four floor samples (FS02 through FS05) and four sidewall samples (SW02 through SW05) were collected from the South Excavation (Figure 3). Samples were also submitted to Eurofins for analysis of TPH, BTEX, and chloride.

Analytical results from the excavation indicated all COCs were compliant with NMOCD Table I Closure Criteria, except for sidewall sample SW04 (791 mg/kg). To address this exceedance, Hilcorp removed additional soil in the vicinity of SW04 on February 5, 2025. Based on field screening, additional soil was excavated along the southwestern sidewall where SW04 was collected. The final excavation measured 765 square feet. Once field screening was completed, two additional five-point composite samples (SW06 and SW07) were collected from the southwest sidewall using the same methods described above. These samples were submitted to Eurofins for analysis of TPH, BTEX, and chloride following the previously outlined methods. Analytical results confirmed all submitted samples complied with the NMOCD Table I Closure Criteria.

Soil excavated from the Site was transported for treatment/disposal at the Envirotech Landfarm located in San Juan County, New Mexico. In total, approximately 185 cubic yards of soil was removed from the Site. Analytical results are summarized in Table 1, with complete laboratory analytical reports attached as Appendix A. Photographs taken during excavation activities are presented in Appendix B. Sampling notifications provided to the NMOCD prior to excavation and sampling activities are provided in Appendix C.

## CONCLUSIONS AND CLOSURE REQUEST

Based on the analytical results described above, petroleum hydrocarbon and chloride contaminants were not detected above the NMOCD Table I Closure Criteria in any of the excavation confirmation samples collected from depths up to 6.5 feet bgs. The limited volume of chloride impacted soil was also removed from the North Excavation. As such, Hilcorp has remediated impacts related to the December 2023 release at the Site through excavation and off-Site treatment/disposal. Excavation confirmation soil samples indicate that COCs are compliant with the applicable NMOCD Table I Closure Criteria. As such, Hilcorp respectfully requests closure for Incident Number nAPP2336429577.

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

Sincerely,  
**Ensolum, LLC**



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Senior Geologist  
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**Attachments:**

Figure 1: Site Receptor Map  
Figure 2: Delineation Soil Sample Results  
Figure 3: Excavation Soil Sample Locations  
  
Table 1: Soil Sample Analytical Results  
  
Appendix A: Laboratory Analytical Reports  
Appendix B: Photographic Log  
Appendix C: Agency Notifications

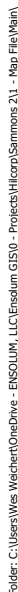




FIGURES

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## Site Receptor Map

HILCORP ENERGY COMPANY

SAMMONS #2

Incident Number: NAPP2336429577

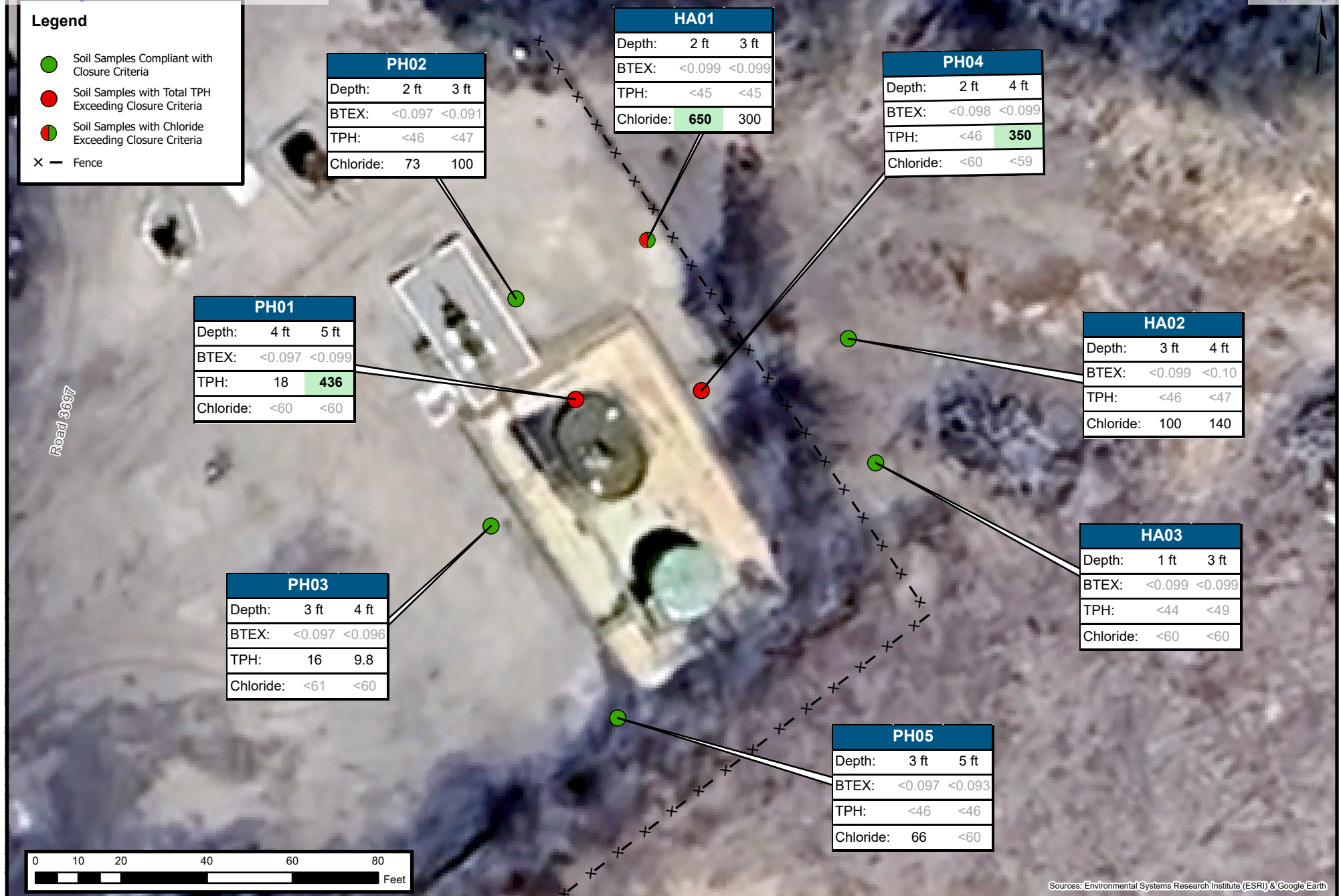
Unit G, Sec 32, T30N, R12W

San Juan County, New Mexico,

## FIGURE

1









## Delineation Soil Sample Results

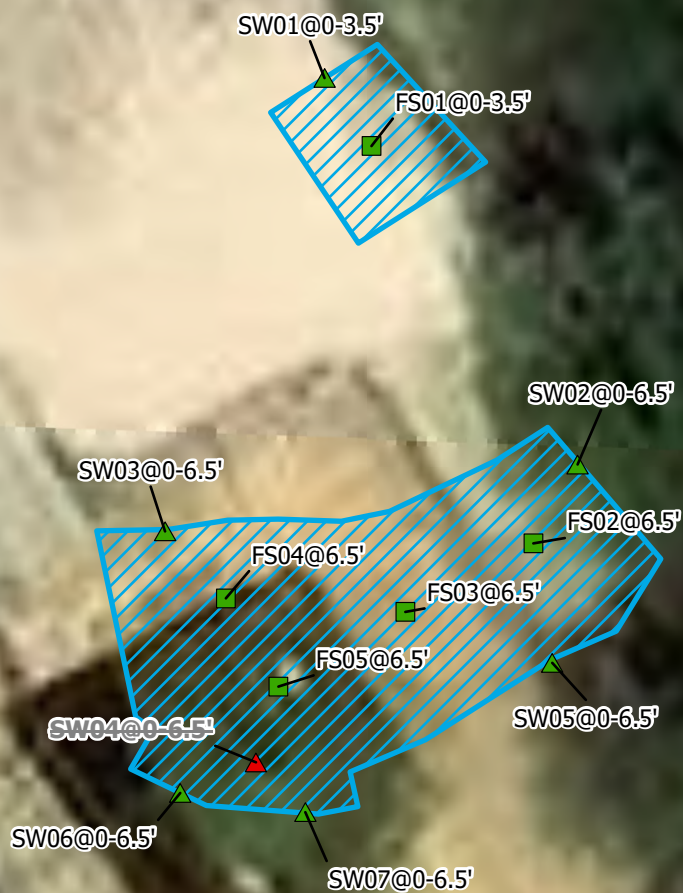
HILCORP ENERGY COMPANY  
SAMMONS #2

Incident Number: NAPP2336429577  
Unit G, Sec 32, T30N, R12W  
San Juan County, New Mexico,

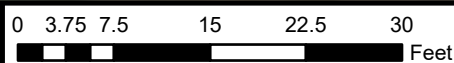
**FIGURE**  
**2**

**Legend**

-  Sidewall Soil Sample  
Compliant with Closure  
Criteria
-  Sidewall Soil Sample  
Exceeding Closure  
Criteria (removed  
during excavation)
-  Floor Soil Sample  
Compliant with Closure  
Criteria
-  Excavation Extent

**Notes:**

Sample ID @ Depth Below Ground Surface.  
Total Petroleum Hydrocarbon (TPH) Concentration in mg/kg.  
Samples in **bold** indicate sample exceeded applicable  
closure criteria.  
Samples in **gray** removed during excavation activities.



Sources: Environmental Systems Research Institute (ESRI)



## Excavation Extent

### HILCORP ENERGY COMPANY SAMMONS #2

Incident Number: NAPP2336429577  
Unit G, Sec 32, T30N, R12W  
San Juan County, New Mexico,

**FIGURE**  
**3**



TABLES



**TABLE 1**  
**SOIL SAMPLE ANALYTICAL RESULTS**  
 Sammons #2  
 Hilcorp Energy Company  
 San Juan County, New Mexico

Sample Identification	Date	Depth (feet bgs)	PID (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)	Total TPH (mg/kg)	Chloride (mg/kg)
<b>NMOCDClosure Criteria for Soils Impacted by a Release</b>				<b>10</b>	<b>NE</b>	<b>NE</b>	<b>NE</b>	<b>50</b>	<b>NE</b>	<b>NE</b>	<b>NE</b>	<b>100</b>	<b>600</b>
<b>Delineation Soil Samples</b>													
PH01@4	1/26/2024	4	0.3	<0.024	<0.049	<0.049	<0.097	<0.097	<4.9	18	<46	18	<60
PH01@5	1/26/2024	5	19.1	<0.025	<0.050	<0.050	<0.099	<0.099	16	310	110	<b>436</b>	<60
PH02@2	1/26/2024	2	0.5	<0.024	<0.048	<0.048	<0.097	<0.097	<4.8	<9.1	<46	<46	73
PH02@3	1/26/2024	3	0.5	<0.023	<0.046	<0.046	<0.091	<0.091	<4.6	<9.4	<47	<47	100
PH03@3	1/26/2024	3	0.3	<0.024	<0.048	<0.048	<0.097	<0.097	<4.8	16	<47	16	<61
PH03@4	1/26/2024	4	0.5	<0.024	<0.048	<0.048	<0.096	<0.096	<4.8	9.8	<49	9.8	<60
PH04@2	1/26/2024	2	0.1	<0.025	<0.049	<0.049	<0.098	<0.098	<4.9	<9.3	<46	<46	<60
PH04@4	1/26/2024	4	0.2	<0.025	<0.050	<0.050	<0.099	<0.099	<5.0	130	220	<b>350</b>	<59
PH05@3	1/26/2024	3	0.4	<0.024	<0.048	<0.048	<0.097	<0.097	<4.8	<9.2	<46	<46	66
PH05@5	1/26/2024	5	0.1	<0.023	<0.046	<0.046	<0.093	<0.093	<4.6	<9.2	<46	<46	<60
HA01@2	2/21/2024	2	1.6	<0.025	<0.050	<0.050	<0.099	<0.099	<5.0	<9.1	<45	<45	<b>650</b>
HA01@3	2/21/2024	3	1.3	<0.025	<0.049	<0.049	<0.099	<0.099	<4.9	<8.9	<45	<45	300
HA02@3	2/21/2024	3	1.2	<0.025	<0.050	<0.050	<0.099	<0.099	<5.0	<9.3	<46	<46	100
HA02@4	2/21/2024	4	1.2	<0.025	<0.050	<0.050	<0.10	<0.10	<5.0	<9.4	<47	<47	140
HA03@1	2/21/2024	1	1.0	<0.025	<0.049	<0.049	<0.099	<0.099	<4.9	<8.9	<44	<44	<60
HA03@3	2/21/2024	3	0.3	<0.025	<0.050	<0.050	<0.099	<0.099	<5.0	<9.7	<49	<49	<60
<b>Excavation Sidewall Confirmation Soil Samples</b>													
SW01	7/8/2024	0 - 3.5	1.4	<0.025	<0.050	<0.050	<0.099	<0.099	<5.0	19	<44	19	180
SW02	1/14/2025	0 - 6.5	262.4	<0.024	<0.047	<0.047	<0.094	<0.094	<4.7	20	<50	20	<60
SW03	1/14/2025	0 - 6.5	3,018	<0.024	<0.047	<0.047	<0.095	<0.095	<4.7	30	<49	30	<60
SW04	1/14/2025	0 - 6.5	392.4	<0.024	<0.048	<0.048	0.14	0.14	21	520	250	<b>791</b>	<60
SW05	1/14/2025	0 - 6.5	331.9	<0.024	<0.047	<0.047	<0.095	<0.095	<4.7	14	68	82	<60
SW06	2/5/2025	0 - 6.5	0.4	<0.018	<0.037	<0.037	<0.074	<0.074	<3.7	<9.8	<49	<49	<60
SW07	2/5/2025	0 - 6.5	0.5	<0.019	<0.037	<0.037	<0.074	<0.074	<3.7	<10	<50	<50	120
<b>Excavation Floor Confirmation Soil Samples</b>													
FS01	7/8/2024	3.5	1.9	<0.024	<0.048	<0.048	<0.095	<0.095	<4.8	<8.4	<42	<42	70
FS02	1/14/2025	6.5	215.1	<0.023	<0.046	<0.046	<0.091	<0.091	<4.6	18	<48	18	<60
FS03	1/14/2025	6.5	625.1	<0.023	<0.046	<0.046	<0.093	<0.093	<4.6	26	<48	26	<60
FS04	1/14/2025	6.5	638.8	<0.025	<0.050	<0.050	<0.10	<0.10	<5.0	46	<48	46	<60
FS05	1/14/2025	6.5	1,497	<0.023	<0.047	<0.047	<0.094	<0.094	<4.7	34	<48	34	<59

**Notes:**

bgs: Below ground surface

BTEX: Benzene, Toluene, Ethylbenzene, and Xylenes

DRO: Diesel Range Organics

GRO: Gasoline Range Organics

mg/kg: Milligrams per kilogram

MRO: Motor Oil/Lube Oil Range Organics

NE: Not Established

NMOCDC: New Mexico Oil Conservation Division

PID: Photoionization Detector

ppm: Parts Per Million

&lt;: 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~~Sample concentration:~~ removed during excavation





## APPENDIX A

### Laboratory Analytical Reports

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Environment Testing

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# ANALYTICAL REPORT

## PREPARED FOR

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

Generated 7/31/2024 12:21:09 PM

## JOB DESCRIPTION

Sammons

## JOB NUMBER

885-7613-1

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



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7/31/2024 12:21:09 PM

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

Client: Hilcorp Energy  
Project/Site: Sammons

Laboratory Job ID: 885-7613-1

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Definitions/Glossary

Client: Hilcorp Energy  
Project/Site: Sammons

Job ID: 885-7613-1

Qualifiers

GC VOA

Qualifier	Qualifier Description
S1+	Surrogate recovery exceeds control limits, high biased.

HPLC/IC

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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: Sammons

Job ID: 885-7613-1

**Job ID: 885-7613-1**

**Eurofins Albuquerque**

### Job Narrative 885-7613-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

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

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

#### Receipt

The samples were received on 7/10/2024 7:10 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 1.2°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: Sammons

Job ID: 885-7613-1

Client Sample ID: SW01

Lab Sample ID: 885-7613-1

Date Collected: 07/08/24 10:10

Matrix: Solid

Date Received: 07/10/24 07:10

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		5.0	mg/Kg		07/10/24 16:53	07/11/24 14:51	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	97		35 - 166			07/10/24 16:53	07/11/24 14:51	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.025	mg/Kg		07/10/24 16:53	07/11/24 14:51	1
Ethylbenzene	ND		0.050	mg/Kg		07/10/24 16:53	07/11/24 14:51	1
Toluene	ND		0.050	mg/Kg		07/10/24 16:53	07/11/24 14:51	1
Xylenes, Total	ND		0.099	mg/Kg		07/10/24 16:53	07/11/24 14:51	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	88		48 - 145			07/10/24 16:53	07/11/24 14:51	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	19		8.7	mg/Kg		07/11/24 16:20	07/12/24 17:41	1
Motor Oil Range Organics [C28-C40]	ND		44	mg/Kg		07/11/24 16:20	07/12/24 17:41	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	86		62 - 134			07/11/24 16:20	07/12/24 17:41	1

## Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	180		60	mg/Kg		07/12/24 09:09	07/12/24 14:31	20

Eurofins Albuquerque

## Client Sample Results

Client: Hilcorp Energy  
Project/Site: Sammons

Job ID: 885-7613-1

Client Sample ID: SW02

Lab Sample ID: 885-7613-2

Date Collected: 07/08/24 11:08

Matrix: Solid

Date Received: 07/10/24 07:10

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		5.0	mg/Kg		07/10/24 16:53	07/11/24 15:15	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	100		35 - 166			07/10/24 16:53	07/11/24 15:15	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.025	mg/Kg		07/10/24 16:53	07/11/24 15:15	1
Ethylbenzene	ND		0.050	mg/Kg		07/10/24 16:53	07/11/24 15:15	1
Toluene	ND		0.050	mg/Kg		07/10/24 16:53	07/11/24 15:15	1
Xylenes, Total	ND		0.10	mg/Kg		07/10/24 16:53	07/11/24 15:15	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91		48 - 145			07/10/24 16:53	07/11/24 15:15	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	21		9.9	mg/Kg		07/11/24 16:20	07/12/24 17:53	1
Motor Oil Range Organics [C28-C40]	ND		50	mg/Kg		07/11/24 16:20	07/12/24 17:53	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	86		62 - 134			07/11/24 16:20	07/12/24 17:53	1

## Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		60	mg/Kg		07/12/24 09:09	07/12/24 15:10	20

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## Client Sample Results

Client: Hilcorp Energy  
Project/Site: Sammons

Job ID: 885-7613-1

Client Sample ID: SW03

Lab Sample ID: 885-7613-3

Date Collected: 07/08/24 11:10

Matrix: Solid

Date Received: 07/10/24 07:10

## Method: SW846 8015M/D - 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		07/10/24 16:53	07/11/24 15:38	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		35 - 166			07/10/24 16:53	07/11/24 15:38	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.023	mg/Kg		07/10/24 16:53	07/11/24 15:38	1
Ethylbenzene	ND		0.047	mg/Kg		07/10/24 16:53	07/11/24 15:38	1
Toluene	ND		0.047	mg/Kg		07/10/24 16:53	07/11/24 15:38	1
Xylenes, Total	ND		0.093	mg/Kg		07/10/24 16:53	07/11/24 15:38	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	93		48 - 145			07/10/24 16:53	07/11/24 15:38	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	12		8.6	mg/Kg		07/11/24 16:20	07/12/24 18:04	1
Motor Oil Range Organics [C28-C40]	ND		43	mg/Kg		07/11/24 16:20	07/12/24 18:04	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	86		62 - 134			07/11/24 16:20	07/12/24 18:04	1

## Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	73		60	mg/Kg		07/12/24 09:09	07/12/24 15:23	20

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## Client Sample Results

Client: Hilcorp Energy  
Project/Site: Sammons

Job ID: 885-7613-1

Client Sample ID: SW04

Lab Sample ID: 885-7613-4

Date Collected: 07/08/24 11:12

Matrix: Solid

Date Received: 07/10/24 07:10

## Method: SW846 8015M/D - 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		07/10/24 16:53	07/11/24 16:02	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	97		35 - 166			07/10/24 16:53	07/11/24 16:02	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.024	mg/Kg		07/10/24 16:53	07/11/24 16:02	1
Ethylbenzene	ND		0.048	mg/Kg		07/10/24 16:53	07/11/24 16:02	1
Toluene	ND		0.048	mg/Kg		07/10/24 16:53	07/11/24 16:02	1
Xylenes, Total	ND		0.096	mg/Kg		07/10/24 16:53	07/11/24 16:02	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	90		48 - 145			07/10/24 16:53	07/11/24 16:02	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		8.4	mg/Kg		07/11/24 16:20	07/12/24 18:16	1
Motor Oil Range Organics [C28-C40]	ND		42	mg/Kg		07/11/24 16:20	07/12/24 18:16	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	87		62 - 134			07/11/24 16:20	07/12/24 18:16	1

## Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	110		60	mg/Kg		07/12/24 09:09	07/12/24 15:35	20

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Client Sample Results

Client: Hilcorp Energy  
Project/Site: Sammons

Job ID: 885-7613-1

Client Sample ID: FS01  
Date Collected: 07/08/24 13:00  
Date Received: 07/10/24 07:10

Lab Sample ID: 885-7613-5  
Matrix: Solid

Method: SW846 8015M/D - 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		07/10/24 16:53	07/11/24 16:25		1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
4-Bromofluorobenzene (Surr)	100		35 - 166			07/10/24 16:53	07/11/24 16:25		1
Method: SW846 8021B - Volatile Organic Compounds (GC)									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Benzene	ND		0.024	mg/Kg		07/10/24 16:53	07/11/24 16:25		1
Ethylbenzene	ND		0.048	mg/Kg		07/10/24 16:53	07/11/24 16:25		1
Toluene	ND		0.048	mg/Kg		07/10/24 16:53	07/11/24 16:25		1
Xylenes, Total	ND		0.095	mg/Kg		07/10/24 16:53	07/11/24 16:25		1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
4-Bromofluorobenzene (Surr)	93		48 - 145			07/10/24 16:53	07/11/24 16:25		1
Method: SW846 8015M/D - Diesel Range Organics (DRO) (GC)									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Diesel Range Organics [C10-C28]	ND		8.4	mg/Kg		07/11/24 16:20	07/12/24 18:27		1
Motor Oil Range Organics [C28-C40]	ND		42	mg/Kg		07/11/24 16:20	07/12/24 18:27		1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
Di-n-octyl phthalate (Surr)	85		62 - 134			07/11/24 16:20	07/12/24 18:27		1
Method: EPA 300.0 - Anions, Ion Chromatography									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Chloride	70		60	mg/Kg		07/12/24 09:12	07/12/24 16:14		20

## Client Sample Results

Client: Hilcorp Energy  
Project/Site: Sammons

Job ID: 885-7613-1

Client Sample ID: FS02

Lab Sample ID: 885-7613-6

Date Collected: 07/08/24 11:00

Matrix: Solid

Date Received: 07/10/24 07:10

## Method: SW846 8015M/D - 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		07/10/24 16:53	07/11/24 16:49	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		35 - 166			07/10/24 16:53	07/11/24 16:49	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.025	mg/Kg		07/10/24 16:53	07/11/24 16:49	1
Ethylbenzene	ND		0.049	mg/Kg		07/10/24 16:53	07/11/24 16:49	1
Toluene	ND		0.049	mg/Kg		07/10/24 16:53	07/11/24 16:49	1
Xylenes, Total	ND		0.098	mg/Kg		07/10/24 16:53	07/11/24 16:49	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		48 - 145			07/10/24 16:53	07/11/24 16:49	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	30		9.4	mg/Kg		07/11/24 16:20	07/12/24 18:49	1
Motor Oil Range Organics [C28-C40]	ND		47	mg/Kg		07/11/24 16:20	07/12/24 18:49	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	87		62 - 134			07/11/24 16:20	07/12/24 18:49	1

## Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	60		60	mg/Kg		07/12/24 09:12	07/12/24 16:27	20

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Client Sample Results

Client: Hilcorp Energy  
Project/Site: Sammons

Job ID: 885-7613-1

Client Sample ID: FS03  
Date Collected: 07/08/24 11:02  
Date Received: 07/10/24 07:10

Lab Sample ID: 885-7613-7  
Matrix: Solid

Method: SW846 8015M/D - 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		07/10/24 16:53	07/11/24 17:36	1	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
4-Bromofluorobenzene (Surr)	97		35 - 166			07/10/24 16:53	07/11/24 17:36	1	
Method: SW846 8021B - Volatile Organic Compounds (GC)									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Benzene	ND		0.024	mg/Kg		07/10/24 16:53	07/11/24 17:36	1	
Ethylbenzene	ND		0.047	mg/Kg		07/10/24 16:53	07/11/24 17:36	1	
Toluene	ND		0.047	mg/Kg		07/10/24 16:53	07/11/24 17:36	1	
Xylenes, Total	ND		0.094	mg/Kg		07/10/24 16:53	07/11/24 17:36	1	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
4-Bromofluorobenzene (Surr)	90		48 - 145			07/10/24 16:53	07/11/24 17:36	1	
Method: SW846 8015M/D - Diesel Range Organics (DRO) (GC)									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Diesel Range Organics [C10-C28]	ND		8.4	mg/Kg		07/11/24 16:20	07/12/24 19:01	1	
Motor Oil Range Organics [C28-C40]	ND		42	mg/Kg		07/11/24 16:20	07/12/24 19:01	1	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
Di-n-octyl phthalate (Surr)	87		62 - 134			07/11/24 16:20	07/12/24 19:01	1	
Method: EPA 300.0 - Anions, Ion Chromatography									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Chloride	150		60	mg/Kg		07/12/24 09:12	07/12/24 16:40	20	

Client Sample Results

Client: Hilcorp Energy  
Project/Site: Sammons

Job ID: 885-7613-1

Client Sample ID: FS04  
Date Collected: 07/08/24 11:04  
Date Received: 07/10/24 07:10

Lab Sample ID: 885-7613-8  
Matrix: Solid

Method: SW846 8015M/D - 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		07/10/24 16:53	07/11/24 18:00	1	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
4-Bromofluorobenzene (Surr)	97		35 - 166			07/10/24 16:53	07/11/24 18:00	1	
Method: SW846 8021B - Volatile Organic Compounds (GC)									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Benzene	ND		0.024	mg/Kg		07/10/24 16:53	07/11/24 18:00	1	
Ethylbenzene	ND		0.048	mg/Kg		07/10/24 16:53	07/11/24 18:00	1	
Toluene	ND		0.048	mg/Kg		07/10/24 16:53	07/11/24 18:00	1	
Xylenes, Total	ND		0.096	mg/Kg		07/10/24 16:53	07/11/24 18:00	1	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
4-Bromofluorobenzene (Surr)	89		48 - 145			07/10/24 16:53	07/11/24 18:00	1	
Method: SW846 8015M/D - Diesel Range Organics (DRO) (GC)									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Diesel Range Organics [C10-C28]	11		10	mg/Kg		07/11/24 16:20	07/12/24 19:12	1	
Motor Oil Range Organics [C28-C40]	ND		50	mg/Kg		07/11/24 16:20	07/12/24 19:12	1	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
Di-n-octyl phthalate (Surr)	89		62 - 134			07/11/24 16:20	07/12/24 19:12	1	
Method: EPA 300.0 - Anions, Ion Chromatography									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Chloride	ND		60	mg/Kg		07/12/24 09:12	07/12/24 16:53	20	

## Client Sample Results

Client: Hilcorp Energy  
Project/Site: Sammons

Job ID: 885-7613-1

Client Sample ID: FS05

Lab Sample ID: 885-7613-9

Date Collected: 07/08/24 11:06

Matrix: Solid

Date Received: 07/10/24 07:10

## Method: SW846 8015M/D - 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		07/10/24 16:53	07/11/24 18:24	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	98		35 - 166			07/10/24 16:53	07/11/24 18:24	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.025	mg/Kg		07/10/24 16:53	07/11/24 18:24	1
Ethylbenzene	ND		0.049	mg/Kg		07/10/24 16:53	07/11/24 18:24	1
Toluene	ND		0.049	mg/Kg		07/10/24 16:53	07/11/24 18:24	1
Xylenes, Total	ND		0.098	mg/Kg		07/10/24 16:53	07/11/24 18:24	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	90		48 - 145			07/10/24 16:53	07/11/24 18:24	1

## Method: SW846 8015M/D - 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		07/11/24 16:20	07/12/24 19:23	1
Motor Oil Range Organics [C28-C40]	ND		48	mg/Kg		07/11/24 16:20	07/12/24 19:23	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	90		62 - 134			07/11/24 16:20	07/12/24 19:23	1

## Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		60	mg/Kg		07/12/24 09:12	07/12/24 17:05	20

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## QC Sample Results

Client: Hilcorp Energy  
Project/Site: Sammons

Job ID: 885-7613-1

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

Lab Sample ID: MB 885-8196/1-A

Matrix: Solid

Analysis Batch: 8355

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 8196

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		5.0	mg/Kg		07/10/24 16:53	07/11/24 11:20	1
Surrogate	MB %Recovery	MB Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	89		35 - 166			07/10/24 16:53	07/11/24 11:20	1

Lab Sample ID: LCS 885-8196/2-A

Matrix: Solid

Analysis Batch: 8355

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 8196

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics [C6 - C10]	25.0	23.9		mg/Kg		96	70 - 130
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
4-Bromofluorobenzene (Surr)	200	S1+	35 - 166				

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

Lab Sample ID: MB 885-8196/1-A

Matrix: Solid

Analysis Batch: 8356

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 8196

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.025	mg/Kg		07/10/24 16:53	07/11/24 11:20	1
Ethylbenzene	ND		0.050	mg/Kg		07/10/24 16:53	07/11/24 11:20	1
Toluene	ND		0.050	mg/Kg		07/10/24 16:53	07/11/24 11:20	1
Xylenes, Total	ND		0.10	mg/Kg		07/10/24 16:53	07/11/24 11:20	1
Surrogate	MB %Recovery	MB Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	85		48 - 145			07/10/24 16:53	07/11/24 11:20	1

Lab Sample ID: LCS 885-8196/3-A

Matrix: Solid

Analysis Batch: 8356

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 8196

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	1.00	0.933		mg/Kg		93	70 - 130
Ethylbenzene	1.00	0.903		mg/Kg		90	70 - 130
m&p-Xylene	2.00	1.82		mg/Kg		91	70 - 130
o-Xylene	1.00	0.889		mg/Kg		89	70 - 130
Toluene	1.00	0.887		mg/Kg		89	70 - 130
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
4-Bromofluorobenzene (Surr)	92		48 - 145				

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## QC Sample Results

Client: Hilcorp Energy  
Project/Site: Sammons

Job ID: 885-7613-1

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

Lab Sample ID: MB 885-8278/1-A

Matrix: Solid

Analysis Batch: 8331

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 8278

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		10	mg/Kg		07/11/24 16:20	07/12/24 16:21	1
Motor Oil Range Organics [C28-C40]	ND		50	mg/Kg		07/11/24 16:20	07/12/24 16:21	1
Surrogate	MB %Recovery	MB Qualifier	Limits			Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	112		62 - 134			07/11/24 16:20	07/12/24 16:21	1

Lab Sample ID: LCS 885-8278/2-A

Matrix: Solid

Analysis Batch: 8331

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 8278

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits	
Diesel Range Organics [C10-C28]	50.0	59.5		mg/Kg		119	60 - 135	
Surrogate	LCS %Recovery	LCS Qualifier	Limits					
Di-n-octyl phthalate (Surr)	103		62 - 134					

## Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 885-8311/1-A

Matrix: Solid

Analysis Batch: 8323

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 8311

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0	mg/Kg		07/12/24 09:09	07/12/24 11:05	1

Lab Sample ID: LCS 885-8311/2-A

Matrix: Solid

Analysis Batch: 8323

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 8311

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits	
Chloride	30.0	28.1		mg/Kg		94	90 - 110	

Lab Sample ID: 885-7613-1 MS

Matrix: Solid

Analysis Batch: 8323

Client Sample ID: SW01

Prep Type: Total/NA

Prep Batch: 8311

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits	
Chloride	180		30.1	196	4	mg/Kg		48	50 - 150	

Lab Sample ID: 885-7613-1 MSD

Matrix: Solid

Analysis Batch: 8323

Client Sample ID: SW01

Prep Type: Total/NA

Prep Batch: 8311

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD Limit
Chloride	180		30.0	203	4	mg/Kg		72	50 - 150	4 20

Eurofins Albuquerque

## QC Association Summary

Client: Hilcorp Energy  
Project/Site: Sammons

Job ID: 885-7613-1

## GC VOA

## Prep Batch: 8196

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-7613-1	SW01	Total/NA	Solid	5030C	
885-7613-2	SW02	Total/NA	Solid	5030C	
885-7613-3	SW03	Total/NA	Solid	5030C	
885-7613-4	SW04	Total/NA	Solid	5030C	
885-7613-5	FS01	Total/NA	Solid	5030C	
885-7613-6	FS02	Total/NA	Solid	5030C	
885-7613-7	FS03	Total/NA	Solid	5030C	
885-7613-8	FS04	Total/NA	Solid	5030C	
885-7613-9	FS05	Total/NA	Solid	5030C	
MB 885-8196/1-A	Method Blank	Total/NA	Solid	5030C	
LCS 885-8196/2-A	Lab Control Sample	Total/NA	Solid	5030C	
LCS 885-8196/3-A	Lab Control Sample	Total/NA	Solid	5030C	

## Analysis Batch: 8355

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-7613-1	SW01	Total/NA	Solid	8015M/D	8196
885-7613-2	SW02	Total/NA	Solid	8015M/D	8196
885-7613-3	SW03	Total/NA	Solid	8015M/D	8196
885-7613-4	SW04	Total/NA	Solid	8015M/D	8196
885-7613-5	FS01	Total/NA	Solid	8015M/D	8196
885-7613-6	FS02	Total/NA	Solid	8015M/D	8196
885-7613-7	FS03	Total/NA	Solid	8015M/D	8196
885-7613-8	FS04	Total/NA	Solid	8015M/D	8196
885-7613-9	FS05	Total/NA	Solid	8015M/D	8196
MB 885-8196/1-A	Method Blank	Total/NA	Solid	8015M/D	8196
LCS 885-8196/2-A	Lab Control Sample	Total/NA	Solid	8015M/D	8196

## Analysis Batch: 8356

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-7613-1	SW01	Total/NA	Solid	8021B	8196
885-7613-2	SW02	Total/NA	Solid	8021B	8196
885-7613-3	SW03	Total/NA	Solid	8021B	8196
885-7613-4	SW04	Total/NA	Solid	8021B	8196
885-7613-5	FS01	Total/NA	Solid	8021B	8196
885-7613-6	FS02	Total/NA	Solid	8021B	8196
885-7613-7	FS03	Total/NA	Solid	8021B	8196
885-7613-8	FS04	Total/NA	Solid	8021B	8196
885-7613-9	FS05	Total/NA	Solid	8021B	8196
MB 885-8196/1-A	Method Blank	Total/NA	Solid	8021B	8196
LCS 885-8196/3-A	Lab Control Sample	Total/NA	Solid	8021B	8196

## GC Semi VOA

## Prep Batch: 8278

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-7613-1	SW01	Total/NA	Solid	SHAKE	
885-7613-2	SW02	Total/NA	Solid	SHAKE	
885-7613-3	SW03	Total/NA	Solid	SHAKE	
885-7613-4	SW04	Total/NA	Solid	SHAKE	
885-7613-5	FS01	Total/NA	Solid	SHAKE	
885-7613-6	FS02	Total/NA	Solid	SHAKE	

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## QC Association Summary

Client: Hilcorp Energy  
Project/Site: Sammons

Job ID: 885-7613-1

## GC Semi VOA (Continued)

## Prep Batch: 8278 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-7613-7	FS03	Total/NA	Solid	SHAKE	
885-7613-8	FS04	Total/NA	Solid	SHAKE	
885-7613-9	FS05	Total/NA	Solid	SHAKE	
MB 885-8278/1-A	Method Blank	Total/NA	Solid	SHAKE	
LCS 885-8278/2-A	Lab Control Sample	Total/NA	Solid	SHAKE	

## Analysis Batch: 8331

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-7613-1	SW01	Total/NA	Solid	8015M/D	8278
885-7613-2	SW02	Total/NA	Solid	8015M/D	8278
885-7613-3	SW03	Total/NA	Solid	8015M/D	8278
885-7613-4	SW04	Total/NA	Solid	8015M/D	8278
885-7613-5	FS01	Total/NA	Solid	8015M/D	8278
885-7613-6	FS02	Total/NA	Solid	8015M/D	8278
885-7613-7	FS03	Total/NA	Solid	8015M/D	8278
885-7613-8	FS04	Total/NA	Solid	8015M/D	8278
885-7613-9	FS05	Total/NA	Solid	8015M/D	8278
MB 885-8278/1-A	Method Blank	Total/NA	Solid	8015M/D	8278
LCS 885-8278/2-A	Lab Control Sample	Total/NA	Solid	8015M/D	8278

## HPLC/IC

## Prep Batch: 8311

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-7613-1	SW01	Total/NA	Solid	300_Prep	
885-7613-2	SW02	Total/NA	Solid	300_Prep	
885-7613-3	SW03	Total/NA	Solid	300_Prep	
885-7613-4	SW04	Total/NA	Solid	300_Prep	
885-7613-5	FS01	Total/NA	Solid	300_Prep	
885-7613-6	FS02	Total/NA	Solid	300_Prep	
885-7613-7	FS03	Total/NA	Solid	300_Prep	
885-7613-8	FS04	Total/NA	Solid	300_Prep	
885-7613-9	FS05	Total/NA	Solid	300_Prep	
MB 885-8311/1-A	Method Blank	Total/NA	Solid	300_Prep	
LCS 885-8311/2-A	Lab Control Sample	Total/NA	Solid	300_Prep	
885-7613-1 MS	SW01	Total/NA	Solid	300_Prep	
885-7613-1 MSD	SW01	Total/NA	Solid	300_Prep	

## Analysis Batch: 8323

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-7613-1	SW01	Total/NA	Solid	300.0	8311
885-7613-2	SW02	Total/NA	Solid	300.0	8311
885-7613-3	SW03	Total/NA	Solid	300.0	8311
885-7613-4	SW04	Total/NA	Solid	300.0	8311
885-7613-5	FS01	Total/NA	Solid	300.0	8311
885-7613-6	FS02	Total/NA	Solid	300.0	8311
885-7613-7	FS03	Total/NA	Solid	300.0	8311
885-7613-8	FS04	Total/NA	Solid	300.0	8311
885-7613-9	FS05	Total/NA	Solid	300.0	8311
MB 885-8311/1-A	Method Blank	Total/NA	Solid	300.0	8311
LCS 885-8311/2-A	Lab Control Sample	Total/NA	Solid	300.0	8311

Eurofins Albuquerque

QC Association Summary

Client: Hilcorp Energy  
Project/Site: Sammons

Job ID: 885-7613-1

HPLC/IC (Continued)

Analysis Batch: 8323 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-7613-1 MS	SW01	Total/NA	Solid	300.0	8311
885-7613-1 MSD	SW01	Total/NA	Solid	300.0	8311

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11

Lab Chronicle

Client: Hilcorp Energy  
Project/Site: Sammons

Job ID: 885-7613-1

**Client Sample ID: SW01**  
**Date Collected: 07/08/24 10:10**  
**Date Received: 07/10/24 07:10**

**Lab Sample ID: 885-7613-1**  
**Matrix: Solid**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			8196	JP	EET ALB	07/10/24 16:53
Total/NA	Analysis	8015M/D		1	8355	JP	EET ALB	07/11/24 14:51
Total/NA	Prep	5030C			8196	JP	EET ALB	07/10/24 16:53
Total/NA	Analysis	8021B		1	8356	JP	EET ALB	07/11/24 14:51
Total/NA	Prep	SHAKE			8278	DH	EET ALB	07/11/24 16:20
Total/NA	Analysis	8015M/D		1	8331	KR	EET ALB	07/12/24 17:41
Total/NA	Prep	300_Prep			8311	EH	EET ALB	07/12/24 09:09
Total/NA	Analysis	300.0		20	8323	RC	EET ALB	07/12/24 14:31

**Client Sample ID: SW02**  
**Date Collected: 07/08/24 11:08**  
**Date Received: 07/10/24 07:10**

**Lab Sample ID: 885-7613-2**  
**Matrix: Solid**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			8196	JP	EET ALB	07/10/24 16:53
Total/NA	Analysis	8015M/D		1	8355	JP	EET ALB	07/11/24 15:15
Total/NA	Prep	5030C			8196	JP	EET ALB	07/10/24 16:53
Total/NA	Analysis	8021B		1	8356	JP	EET ALB	07/11/24 15:15
Total/NA	Prep	SHAKE			8278	DH	EET ALB	07/11/24 16:20
Total/NA	Analysis	8015M/D		1	8331	KR	EET ALB	07/12/24 17:53
Total/NA	Prep	300_Prep			8311	EH	EET ALB	07/12/24 09:09
Total/NA	Analysis	300.0		20	8323	RC	EET ALB	07/12/24 15:10

**Client Sample ID: SW03**  
**Date Collected: 07/08/24 11:10**  
**Date Received: 07/10/24 07:10**

**Lab Sample ID: 885-7613-3**  
**Matrix: Solid**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			8196	JP	EET ALB	07/10/24 16:53
Total/NA	Analysis	8015M/D		1	8355	JP	EET ALB	07/11/24 15:38
Total/NA	Prep	5030C			8196	JP	EET ALB	07/10/24 16:53
Total/NA	Analysis	8021B		1	8356	JP	EET ALB	07/11/24 15:38
Total/NA	Prep	SHAKE			8278	DH	EET ALB	07/11/24 16:20
Total/NA	Analysis	8015M/D		1	8331	KR	EET ALB	07/12/24 18:04
Total/NA	Prep	300_Prep			8311	EH	EET ALB	07/12/24 09:09
Total/NA	Analysis	300.0		20	8323	RC	EET ALB	07/12/24 15:23

**Client Sample ID: SW04**  
**Date Collected: 07/08/24 11:12**  
**Date Received: 07/10/24 07:10**

**Lab Sample ID: 885-7613-4**  
**Matrix: Solid**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			8196	JP	EET ALB	07/10/24 16:53
Total/NA	Analysis	8015M/D		1	8355	JP	EET ALB	07/11/24 16:02

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Lab Chronicle

Client: Hilcorp Energy  
Project/Site: Sammons

Job ID: 885-7613-1

Client Sample ID: SW04  
Date Collected: 07/08/24 11:12  
Date Received: 07/10/24 07:10

Lab Sample ID: 885-7613-4  
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			8196	JP	EET ALB	07/10/24 16:53
Total/NA	Analysis	8021B		1	8356	JP	EET ALB	07/11/24 16:02
Total/NA	Prep	SHAKE			8278	DH	EET ALB	07/11/24 16:20
Total/NA	Analysis	8015M/D		1	8331	KR	EET ALB	07/12/24 18:16
Total/NA	Prep	300_Prep			8311	EH	EET ALB	07/12/24 09:09
Total/NA	Analysis	300.0		20	8323	RC	EET ALB	07/12/24 15:35

Client Sample ID: FS01  
Date Collected: 07/08/24 13:00  
Date Received: 07/10/24 07:10

Lab Sample ID: 885-7613-5  
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			8196	JP	EET ALB	07/10/24 16:53
Total/NA	Analysis	8015M/D		1	8355	JP	EET ALB	07/11/24 16:25
Total/NA	Prep	5030C			8196	JP	EET ALB	07/10/24 16:53
Total/NA	Analysis	8021B		1	8356	JP	EET ALB	07/11/24 16:25
Total/NA	Prep	SHAKE			8278	DH	EET ALB	07/11/24 16:20
Total/NA	Analysis	8015M/D		1	8331	KR	EET ALB	07/12/24 18:27
Total/NA	Prep	300_Prep			8311	EH	EET ALB	07/12/24 09:12
Total/NA	Analysis	300.0		20	8323	RC	EET ALB	07/12/24 16:14

Client Sample ID: FS02  
Date Collected: 07/08/24 11:00  
Date Received: 07/10/24 07:10

Lab Sample ID: 885-7613-6  
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			8196	JP	EET ALB	07/10/24 16:53
Total/NA	Analysis	8015M/D		1	8355	JP	EET ALB	07/11/24 16:49
Total/NA	Prep	5030C			8196	JP	EET ALB	07/10/24 16:53
Total/NA	Analysis	8021B		1	8356	JP	EET ALB	07/11/24 16:49
Total/NA	Prep	SHAKE			8278	DH	EET ALB	07/11/24 16:20
Total/NA	Analysis	8015M/D		1	8331	KR	EET ALB	07/12/24 18:49
Total/NA	Prep	300_Prep			8311	EH	EET ALB	07/12/24 09:12
Total/NA	Analysis	300.0		20	8323	RC	EET ALB	07/12/24 16:27

Client Sample ID: FS03  
Date Collected: 07/08/24 11:02  
Date Received: 07/10/24 07:10

Lab Sample ID: 885-7613-7  
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			8196	JP	EET ALB	07/10/24 16:53
Total/NA	Analysis	8015M/D		1	8355	JP	EET ALB	07/11/24 17:36
Total/NA	Prep	5030C			8196	JP	EET ALB	07/10/24 16:53
Total/NA	Analysis	8021B		1	8356	JP	EET ALB	07/11/24 17:36

Lab Chronicle

Client: Hilcorp Energy  
Project/Site: Sammons

Job ID: 885-7613-1

**Client Sample ID: FS03**  
**Date Collected: 07/08/24 11:02**  
**Date Received: 07/10/24 07:10**

**Lab Sample ID: 885-7613-7**  
**Matrix: Solid**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	SHAKE			8278	DH	EET ALB	07/11/24 16:20
Total/NA	Analysis	8015M/D		1	8331	KR	EET ALB	07/12/24 19:01
Total/NA	Prep	300_Prep			8311	EH	EET ALB	07/12/24 09:12
Total/NA	Analysis	300.0		20	8323	RC	EET ALB	07/12/24 16:40

**Client Sample ID: FS04**  
**Date Collected: 07/08/24 11:04**  
**Date Received: 07/10/24 07:10**

**Lab Sample ID: 885-7613-8**  
**Matrix: Solid**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			8196	JP	EET ALB	07/10/24 16:53
Total/NA	Analysis	8015M/D		1	8355	JP	EET ALB	07/11/24 18:00
Total/NA	Prep	5030C			8196	JP	EET ALB	07/10/24 16:53
Total/NA	Analysis	8021B		1	8356	JP	EET ALB	07/11/24 18:00
Total/NA	Prep	SHAKE			8278	DH	EET ALB	07/11/24 16:20
Total/NA	Analysis	8015M/D		1	8331	KR	EET ALB	07/12/24 19:12
Total/NA	Prep	300_Prep			8311	EH	EET ALB	07/12/24 09:12
Total/NA	Analysis	300.0		20	8323	RC	EET ALB	07/12/24 16:53

**Client Sample ID: FS05**  
**Date Collected: 07/08/24 11:06**  
**Date Received: 07/10/24 07:10**

**Lab Sample ID: 885-7613-9**  
**Matrix: Solid**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			8196	JP	EET ALB	07/10/24 16:53
Total/NA	Analysis	8015M/D		1	8355	JP	EET ALB	07/11/24 18:24
Total/NA	Prep	5030C			8196	JP	EET ALB	07/10/24 16:53
Total/NA	Analysis	8021B		1	8356	JP	EET ALB	07/11/24 18:24
Total/NA	Prep	SHAKE			8278	DH	EET ALB	07/11/24 16:20
Total/NA	Analysis	8015M/D		1	8331	KR	EET ALB	07/12/24 19:23
Total/NA	Prep	300_Prep			8311	EH	EET ALB	07/12/24 09:12
Total/NA	Analysis	300.0		20	8323	RC	EET ALB	07/12/24 17:05

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

Accreditation/Certification Summary

Client: Hilcorp Energy  
Project/Site: Sammons

Job ID: 885-7613-1

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
8015M/D	5030C	Solid	Gasoline Range Organics [C6 - C10]
8015M/D	SHAKE	Solid	Diesel Range Organics [C10-C28]
8015M/D	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

## HALL ENVIRONMENTAL ANALYSIS LABORATORY



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

4901 Hawkins NE - Albuquerque, NM 87109

885-7613 COC

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

## Analysis Request

☐ EDD (Type)Cooler Temp (including CF):  $1.1 \pm 0.1 = 1.2$  ( $^{\circ}\text{C}$ )

Container Type and #	Preservative Type	HEAL No.
-------------------------	----------------------	----------

[illegible]

Date: 7/9	Time: 1338	Relinquished by: Erin Carroll
--------------	---------------	----------------------------------

Received by:	Via:	Date	Time
Christ Walt		7/9/24	1338

Remarks: CC: ecorroll@ensolium.com

Date:	Time:	Relinquished by:
7/9/24	1745	Christ Walters

Received by: Via: Date Time

10/10/24 7:10

\_\_\_\_\_

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

## Login Sample Receipt Checklist

Client: Hilcorp Energy

Job Number: 885-7613-1

Login Number: 7613

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.	False	IDs on containers do not match the COC. Logged in per COC.
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").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	





Environment Testing

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# ANALYTICAL REPORT

## PREPARED FOR

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

Generated 1/23/2025 10:49:18 AM

## JOB DESCRIPTION

Sammons #2

## JOB NUMBER

885-18376-1

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  
1/23/2025 10:49:18 AM

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

Client: Hilcorp Energy  
Project/Site: Sammons #2

Laboratory Job ID: 885-18376-1

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Definitions/Glossary

Client: Hilcorp Energy  
Project/Site: Sammons #2

Job ID: 885-18376-1

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.

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: Sammons #2

Job ID: 885-18376-1

**Job ID: 885-18376-1**

**Eurofins Albuquerque**

### Job Narrative 885-18376-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

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

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

#### Receipt

The samples were received on 1/15/2025 7:10 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 0.9°C.

#### Receipt Exceptions

The Field Sampler was not listed on the Chain of Custody.

#### Gasoline Range Organics

Method 8015D\_GRO: Surrogate recovery for the following samples is outside the upper control limit: (LCS 885-19357/2-A), (885-18360-A-1-B MS) and (885-18360-A-1-C MSD). There is evidence of matrix interference, therefore the results were reported.

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

Method 8015D\_DRO: The matrix spike and matrix spike duplicate (MS/MSD) recoveries for preparation batch 885-19522 and analytical batch 885-19521 were outside control limits for DRO. See QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits. The surrogate recoveries were also within acceptance limits, indicating that these samples were spiked correctly. During preparation, the sample was notably rocky and difficult to dig, further suggesting possible sample non-homogeneity. A later re-analysis of samples provided the same results; therefore, the data has been reported.

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.

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## Client Sample Results

Client: Hilcorp Energy  
Project/Site: Sammons #2

Job ID: 885-18376-1

Client Sample ID: FS04

Lab Sample ID: 885-18376-1

Date Collected: 01/14/25 12:30

Matrix: Solid

Date Received: 01/15/25 07:10

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	ND		5.0	mg/Kg		01/15/25 10:56	01/20/25 13:59	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	109		35 - 166			01/15/25 10:56	01/20/25 13:59	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.025	mg/Kg		01/15/25 10:56	01/18/25 00:58	1
Ethylbenzene	ND		0.050	mg/Kg		01/15/25 10:56	01/18/25 00:58	1
Toluene	ND		0.050	mg/Kg		01/15/25 10:56	01/18/25 00:58	1
Xylenes, Total	ND		0.10	mg/Kg		01/15/25 10:56	01/18/25 00:58	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	105		48 - 145			01/15/25 10:56	01/18/25 00:58	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	46	F1	9.7	mg/Kg		01/18/25 08:43	01/18/25 11:00	1
Motor Oil Range Organics [C28-C40]	ND		48	mg/Kg		01/18/25 08:43	01/18/25 11:00	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	97		62 - 134			01/18/25 08:43	01/18/25 11:00	1

## Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		60	mg/Kg		01/15/25 12:08	01/15/25 17:08	20

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## Client Sample Results

Client: Hilcorp Energy  
Project/Site: Sammons #2

Job ID: 885-18376-1

Client Sample ID: FS05

Lab Sample ID: 885-18376-2

Date Collected: 01/14/25 12:13

Matrix: Solid

Date Received: 01/15/25 07:10

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	ND		4.7	mg/Kg		01/15/25 10:56	01/20/25 14:23	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	105		35 - 166			01/15/25 10:56	01/20/25 14:23	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.023	mg/Kg		01/15/25 10:56	01/18/25 01:22	1
Ethylbenzene	ND		0.047	mg/Kg		01/15/25 10:56	01/18/25 01:22	1
Toluene	ND		0.047	mg/Kg		01/15/25 10:56	01/18/25 01:22	1
Xylenes, Total	ND		0.094	mg/Kg		01/15/25 10:56	01/18/25 01:22	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	106		48 - 145			01/15/25 10:56	01/18/25 01:22	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	34		9.6	mg/Kg		01/18/25 08:43	01/18/25 11:31	1
Motor Oil Range Organics [C28-C40]	ND		48	mg/Kg		01/18/25 08:43	01/18/25 11:31	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	97		62 - 134			01/18/25 08:43	01/18/25 11:31	1

## Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		59	mg/Kg		01/15/25 12:08	01/15/25 17:18	20

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## Client Sample Results

Client: Hilcorp Energy  
Project/Site: Sammons #2

Job ID: 885-18376-1

Client Sample ID: FS03

Lab Sample ID: 885-18376-3

Date Collected: 01/14/25 12:40

Matrix: Solid

Date Received: 01/15/25 07:10

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	ND		4.6	mg/Kg		01/15/25 10:56	01/20/25 14:47	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	107		35 - 166			01/15/25 10:56	01/20/25 14:47	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.023	mg/Kg		01/15/25 10:56	01/20/25 14:47	1
Ethylbenzene	ND		0.046	mg/Kg		01/15/25 10:56	01/20/25 14:47	1
Toluene	ND		0.046	mg/Kg		01/15/25 10:56	01/20/25 14:47	1
Xylenes, Total	ND		0.093	mg/Kg		01/15/25 10:56	01/20/25 14:47	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	110		48 - 145			01/15/25 10:56	01/20/25 14:47	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	26		9.6	mg/Kg		01/18/25 08:43	01/18/25 11:52	1
Motor Oil Range Organics [C28-C40]	ND		48	mg/Kg		01/18/25 08:43	01/18/25 11:52	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	94		62 - 134			01/18/25 08:43	01/18/25 11:52	1

## Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		60	mg/Kg		01/15/25 12:08	01/15/25 17:27	20

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## Client Sample Results

Client: Hilcorp Energy  
Project/Site: Sammons #2

Job ID: 885-18376-1

Client Sample ID: FS02

Lab Sample ID: 885-18376-4

Date Collected: 01/14/25 12:45

Matrix: Solid

Date Received: 01/15/25 07:10

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	ND		4.6	mg/Kg		01/15/25 10:56	01/20/25 15:11	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		35 - 166			01/15/25 10:56	01/20/25 15:11	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.023	mg/Kg		01/15/25 10:56	01/20/25 15:11	1
Ethylbenzene	ND		0.046	mg/Kg		01/15/25 10:56	01/20/25 15:11	1
Toluene	ND		0.046	mg/Kg		01/15/25 10:56	01/20/25 15:11	1
Xylenes, Total	ND		0.091	mg/Kg		01/15/25 10:56	01/20/25 15:11	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	109		48 - 145			01/15/25 10:56	01/20/25 15:11	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	18		9.6	mg/Kg		01/18/25 08:43	01/18/25 12:02	1
Motor Oil Range Organics [C28-C40]	ND		48	mg/Kg		01/18/25 08:43	01/18/25 12:02	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	97		62 - 134			01/18/25 08:43	01/18/25 12:02	1

## Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		60	mg/Kg		01/15/25 12:08	01/15/25 17:37	20

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## Client Sample Results

Client: Hilcorp Energy  
Project/Site: Sammons #2

Job ID: 885-18376-1

Client Sample ID: SW02

Lab Sample ID: 885-18376-5

Date Collected: 01/14/25 12:50

Matrix: Solid

Date Received: 01/15/25 07:10

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	ND		4.7	mg/Kg		01/15/25 10:56	01/20/25 15:34	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		35 - 166			01/15/25 10:56	01/20/25 15:34	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.024	mg/Kg		01/15/25 10:56	01/20/25 15:34	1
Ethylbenzene	ND		0.047	mg/Kg		01/15/25 10:56	01/20/25 15:34	1
Toluene	ND		0.047	mg/Kg		01/15/25 10:56	01/20/25 15:34	1
Xylenes, Total	ND		0.094	mg/Kg		01/15/25 10:56	01/20/25 15:34	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	108		48 - 145			01/15/25 10:56	01/20/25 15:34	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	20		9.9	mg/Kg		01/18/25 08:43	01/18/25 12:13	1
Motor Oil Range Organics [C28-C40]	ND		50	mg/Kg		01/18/25 08:43	01/18/25 12:13	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	105		62 - 134			01/18/25 08:43	01/18/25 12:13	1

## Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		60	mg/Kg		01/15/25 12:08	01/15/25 18:07	20

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## Client Sample Results

Client: Hilcorp Energy  
Project/Site: Sammons #2

Job ID: 885-18376-1

Client Sample ID: SW03

Lab Sample ID: 885-18376-6

Date Collected: 01/14/25 12:55

Matrix: Solid

Date Received: 01/15/25 07:10

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	ND		4.7	mg/Kg		01/15/25 10:56	01/20/25 15:58	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		35 - 166			01/15/25 10:56	01/20/25 15:58	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.024	mg/Kg		01/15/25 10:56	01/20/25 15:58	1
Ethylbenzene	ND		0.047	mg/Kg		01/15/25 10:56	01/20/25 15:58	1
Toluene	ND		0.047	mg/Kg		01/15/25 10:56	01/20/25 15:58	1
Xylenes, Total	ND		0.095	mg/Kg		01/15/25 10:56	01/20/25 15:58	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	109		48 - 145			01/15/25 10:56	01/20/25 15:58	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	30		9.9	mg/Kg		01/18/25 08:43	01/18/25 12:23	1
Motor Oil Range Organics [C28-C40]	ND		49	mg/Kg		01/18/25 08:43	01/18/25 12:23	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	92		62 - 134			01/18/25 08:43	01/18/25 12:23	1

## Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		60	mg/Kg		01/15/25 12:08	01/15/25 18:17	20

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## Client Sample Results

Client: Hilcorp Energy  
Project/Site: Sammons #2

Job ID: 885-18376-1

Client Sample ID: SW04

Lab Sample ID: 885-18376-7

Date Collected: 01/14/25 13:00

Matrix: Solid

Date Received: 01/15/25 07:10

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	21		4.8	mg/Kg		01/15/25 10:56	01/20/25 16:22	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	131		35 - 166			01/15/25 10:56	01/20/25 16:22	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.024	mg/Kg		01/15/25 10:56	01/20/25 16:22	1
Ethylbenzene	ND		0.048	mg/Kg		01/15/25 10:56	01/20/25 16:22	1
Toluene	ND		0.048	mg/Kg		01/15/25 10:56	01/20/25 16:22	1
Xylenes, Total	0.14		0.096	mg/Kg		01/15/25 10:56	01/20/25 16:22	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	108		48 - 145			01/15/25 10:56	01/20/25 16:22	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	520		9.4	mg/Kg		01/18/25 08:43	01/18/25 12:34	1
Motor Oil Range Organics [C28-C40]	250		47	mg/Kg		01/18/25 08:43	01/18/25 12:34	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	100		62 - 134			01/18/25 08:43	01/18/25 12:34	1

## Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		60	mg/Kg		01/15/25 12:08	01/15/25 18:26	20

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## Client Sample Results

Client: Hilcorp Energy  
Project/Site: Sammons #2

Job ID: 885-18376-1

Client Sample ID: SW05

Lab Sample ID: 885-18376-8

Date Collected: 01/14/25 13:05

Matrix: Solid

Date Received: 01/15/25 07:10

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	ND		4.7	mg/Kg		01/15/25 10:56	01/20/25 16:45	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	104		35 - 166			01/15/25 10:56	01/20/25 16:45	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.024	mg/Kg		01/15/25 10:56	01/20/25 16:45	1
Ethylbenzene	ND		0.047	mg/Kg		01/15/25 10:56	01/20/25 16:45	1
Toluene	ND		0.047	mg/Kg		01/15/25 10:56	01/20/25 16:45	1
Xylenes, Total	ND		0.095	mg/Kg		01/15/25 10:56	01/20/25 16:45	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	111		48 - 145			01/15/25 10:56	01/20/25 16:45	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	14		9.9	mg/Kg		01/18/25 08:43	01/18/25 12:44	1
Motor Oil Range Organics [C28-C40]	68		50	mg/Kg		01/18/25 08:43	01/18/25 12:44	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	95		62 - 134			01/18/25 08:43	01/18/25 12:44	1

## Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		60	mg/Kg		01/15/25 12:08	01/15/25 18:36	20

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## QC Sample Results

Client: Hilcorp Energy  
Project/Site: Sammons #2

Job ID: 885-18376-1

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

Lab Sample ID: MB 885-19357/1-A

Matrix: Solid

Analysis Batch: 19535

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 19357

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	ND		5.0	mg/Kg		01/15/25 10:56	01/20/25 12:01	1
Surrogate	MB %Recovery	MB Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		35 - 166			01/15/25 10:56	01/20/25 12:01	1

Lab Sample ID: LCS 885-19357/2-A

Matrix: Solid

Analysis Batch: 19535

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 19357

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	25.0	24.2		mg/Kg		97	70 - 130
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
4-Bromofluorobenzene (Surr)	203		35 - 166				

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

Lab Sample ID: MB 885-19357/1-A

Matrix: Solid

Analysis Batch: 19508

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 19357

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.025	mg/Kg		01/15/25 10:56	01/17/25 21:24	1
Ethylbenzene	ND		0.050	mg/Kg		01/15/25 10:56	01/17/25 21:24	1
Toluene	ND		0.050	mg/Kg		01/15/25 10:56	01/17/25 21:24	1
Xylenes, Total	ND		0.10	mg/Kg		01/15/25 10:56	01/17/25 21:24	1
Surrogate	MB %Recovery	MB Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		48 - 145			01/15/25 10:56	01/17/25 21:24	1

Lab Sample ID: LCS 885-19357/3-A

Matrix: Solid

Analysis Batch: 19508

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 19357

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	1.00	1.01		mg/Kg		101	70 - 130
Ethylbenzene	1.00	1.04		mg/Kg		104	70 - 130
Toluene	1.00	1.03		mg/Kg		103	70 - 130
Xylenes, Total	3.00	3.09		mg/Kg		103	70 - 130
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
4-Bromofluorobenzene (Surr)	112		48 - 145				

Eurofins Albuquerque

## QC Sample Results

Client: Hilcorp Energy  
Project/Site: Sammons #2

Job ID: 885-18376-1

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

Lab Sample ID: MB 885-19522/1-A

Matrix: Solid

Analysis Batch: 19521

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 19522

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		10	mg/Kg		01/18/25 08:43	01/18/25 10:39	1
Motor Oil Range Organics [C28-C40]	ND		50	mg/Kg		01/18/25 08:43	01/18/25 10:39	1
Surrogate	MB %Recovery	MB Qualifier	Limits			Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	89		62 - 134			01/18/25 08:43	01/18/25 10:39	1

Lab Sample ID: LCS 885-19522/2-A

Matrix: Solid

Analysis Batch: 19521

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 19522

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Diesel Range Organics [C10-C28]	50.0	44.7		mg/Kg		89	60 - 135
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
Di-n-octyl phthalate (Surr)	85		62 - 134				

Lab Sample ID: 885-18376-1 MS

Matrix: Solid

Analysis Batch: 19521

Client Sample ID: FS04

Prep Type: Total/NA

Prep Batch: 19522

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Diesel Range Organics [C10-C28]	46	F1	49.0	49.2	F1	mg/Kg		7	44 - 136
Surrogate	MS %Recovery	MS Qualifier	Limits						
Di-n-octyl phthalate (Surr)	95		62 - 134						

Lab Sample ID: 885-18376-1 MSD

Matrix: Solid

Analysis Batch: 19521

Client Sample ID: FS04

Prep Type: Total/NA

Prep Batch: 19522

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Diesel Range Organics [C10-C28]	46	F1	46.9	44.7	F1	mg/Kg		-2	44 - 136	10	32
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
Di-n-octyl phthalate (Surr)	90		62 - 134								

## Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 885-19363/1-A

Matrix: Solid

Analysis Batch: 19342

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 19363

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0	mg/Kg		01/15/25 12:08	01/15/25 15:00	1

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QC Sample Results

Client: Hilcorp Energy  
Project/Site: Sammons #2

Job ID: 885-18376-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 885-19363/2-A				Client Sample ID: Lab Control Sample			
Matrix: Solid				Prep Type: Total/NA			
Analysis Batch: 19342				Prep Batch: 19363			
Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	30.0	28.1		mg/Kg		94	90 - 110

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## QC Association Summary

Client: Hilcorp Energy  
Project/Site: Sammons #2

Job ID: 885-18376-1

## GC VOA

## Prep Batch: 19357

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-18376-1	FS04	Total/NA	Solid	5030C	
885-18376-2	FS05	Total/NA	Solid	5030C	
885-18376-3	FS03	Total/NA	Solid	5030C	
885-18376-4	FS02	Total/NA	Solid	5030C	
885-18376-5	SW02	Total/NA	Solid	5030C	
885-18376-6	SW03	Total/NA	Solid	5030C	
885-18376-7	SW04	Total/NA	Solid	5030C	
885-18376-8	SW05	Total/NA	Solid	5030C	
MB 885-19357/1-A	Method Blank	Total/NA	Solid	5030C	
LCS 885-19357/2-A	Lab Control Sample	Total/NA	Solid	5030C	
LCS 885-19357/3-A	Lab Control Sample	Total/NA	Solid	5030C	

## Analysis Batch: 19508

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-18376-1	FS04	Total/NA	Solid	8021B	19357
885-18376-2	FS05	Total/NA	Solid	8021B	19357
MB 885-19357/1-A	Method Blank	Total/NA	Solid	8021B	19357
LCS 885-19357/3-A	Lab Control Sample	Total/NA	Solid	8021B	19357

## Analysis Batch: 19535

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-18376-1	FS04	Total/NA	Solid	8015M/D	19357
885-18376-2	FS05	Total/NA	Solid	8015M/D	19357
885-18376-3	FS03	Total/NA	Solid	8015M/D	19357
885-18376-4	FS02	Total/NA	Solid	8015M/D	19357
885-18376-5	SW02	Total/NA	Solid	8015M/D	19357
885-18376-6	SW03	Total/NA	Solid	8015M/D	19357
885-18376-7	SW04	Total/NA	Solid	8015M/D	19357
885-18376-8	SW05	Total/NA	Solid	8015M/D	19357
MB 885-19357/1-A	Method Blank	Total/NA	Solid	8015M/D	19357
LCS 885-19357/2-A	Lab Control Sample	Total/NA	Solid	8015M/D	19357

## Analysis Batch: 19536

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-18376-3	FS03	Total/NA	Solid	8021B	19357
885-18376-4	FS02	Total/NA	Solid	8021B	19357
885-18376-5	SW02	Total/NA	Solid	8021B	19357
885-18376-6	SW03	Total/NA	Solid	8021B	19357
885-18376-7	SW04	Total/NA	Solid	8021B	19357
885-18376-8	SW05	Total/NA	Solid	8021B	19357

## GC Semi VOA

## Analysis Batch: 19521

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-18376-1	FS04	Total/NA	Solid	8015M/D	19522
885-18376-2	FS05	Total/NA	Solid	8015M/D	19522
885-18376-3	FS03	Total/NA	Solid	8015M/D	19522
885-18376-4	FS02	Total/NA	Solid	8015M/D	19522
885-18376-5	SW02	Total/NA	Solid	8015M/D	19522
885-18376-6	SW03	Total/NA	Solid	8015M/D	19522

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## QC Association Summary

Client: Hilcorp Energy  
Project/Site: Sammons #2

Job ID: 885-18376-1

## GC Semi VOA (Continued)

## Analysis Batch: 19521 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-18376-7	SW04	Total/NA	Solid	8015M/D	19522
885-18376-8	SW05	Total/NA	Solid	8015M/D	19522
MB 885-19522/1-A	Method Blank	Total/NA	Solid	8015M/D	19522
LCS 885-19522/2-A	Lab Control Sample	Total/NA	Solid	8015M/D	19522
885-18376-1 MS	FS04	Total/NA	Solid	8015M/D	19522
885-18376-1 MSD	FS04	Total/NA	Solid	8015M/D	19522

## Prep Batch: 19522

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-18376-1	FS04	Total/NA	Solid	SHAKE	
885-18376-2	FS05	Total/NA	Solid	SHAKE	
885-18376-3	FS03	Total/NA	Solid	SHAKE	
885-18376-4	FS02	Total/NA	Solid	SHAKE	
885-18376-5	SW02	Total/NA	Solid	SHAKE	
885-18376-6	SW03	Total/NA	Solid	SHAKE	
885-18376-7	SW04	Total/NA	Solid	SHAKE	
885-18376-8	SW05	Total/NA	Solid	SHAKE	
MB 885-19522/1-A	Method Blank	Total/NA	Solid	SHAKE	
LCS 885-19522/2-A	Lab Control Sample	Total/NA	Solid	SHAKE	
885-18376-1 MS	FS04	Total/NA	Solid	SHAKE	
885-18376-1 MSD	FS04	Total/NA	Solid	SHAKE	

## HPLC/IC

## Analysis Batch: 19342

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-18376-1	FS04	Total/NA	Solid	300.0	19363
885-18376-2	FS05	Total/NA	Solid	300.0	19363
885-18376-3	FS03	Total/NA	Solid	300.0	19363
885-18376-4	FS02	Total/NA	Solid	300.0	19363
885-18376-5	SW02	Total/NA	Solid	300.0	19363
885-18376-6	SW03	Total/NA	Solid	300.0	19363
885-18376-7	SW04	Total/NA	Solid	300.0	19363
885-18376-8	SW05	Total/NA	Solid	300.0	19363
MB 885-19363/1-A	Method Blank	Total/NA	Solid	300.0	19363
LCS 885-19363/2-A	Lab Control Sample	Total/NA	Solid	300.0	19363

## Prep Batch: 19363

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-18376-1	FS04	Total/NA	Solid	300_Prep	
885-18376-2	FS05	Total/NA	Solid	300_Prep	
885-18376-3	FS03	Total/NA	Solid	300_Prep	
885-18376-4	FS02	Total/NA	Solid	300_Prep	
885-18376-5	SW02	Total/NA	Solid	300_Prep	
885-18376-6	SW03	Total/NA	Solid	300_Prep	
885-18376-7	SW04	Total/NA	Solid	300_Prep	
885-18376-8	SW05	Total/NA	Solid	300_Prep	
MB 885-19363/1-A	Method Blank	Total/NA	Solid	300_Prep	
LCS 885-19363/2-A	Lab Control Sample	Total/NA	Solid	300_Prep	

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## Lab Chronicle

Client: Hilcorp Energy  
Project/Site: Sammons #2

Job ID: 885-18376-1

Client Sample ID: FS04

Lab Sample ID: 885-18376-1

Date Collected: 01/14/25 12:30

Matrix: Solid

Date Received: 01/15/25 07:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			19357	JP	EET ALB	01/15/25 10:56
Total/NA	Analysis	8015M/D		1	19535	JP	EET ALB	01/20/25 13:59
Total/NA	Prep	5030C			19357	JP	EET ALB	01/15/25 10:56
Total/NA	Analysis	8021B		1	19508	JP	EET ALB	01/18/25 00:58
Total/NA	Prep	SHAKE			19522	MI	EET ALB	01/18/25 08:43
Total/NA	Analysis	8015M/D		1	19521	MI	EET ALB	01/18/25 11:00
Total/NA	Prep	300_Prep			19363	JT	EET ALB	01/15/25 12:08
Total/NA	Analysis	300.0		20	19342	JT	EET ALB	01/15/25 17:08

Client Sample ID: FS05

Lab Sample ID: 885-18376-2

Date Collected: 01/14/25 12:13

Matrix: Solid

Date Received: 01/15/25 07:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			19357	JP	EET ALB	01/15/25 10:56
Total/NA	Analysis	8015M/D		1	19535	JP	EET ALB	01/20/25 14:23
Total/NA	Prep	5030C			19357	JP	EET ALB	01/15/25 10:56
Total/NA	Analysis	8021B		1	19508	JP	EET ALB	01/18/25 01:22
Total/NA	Prep	SHAKE			19522	MI	EET ALB	01/18/25 08:43
Total/NA	Analysis	8015M/D		1	19521	MI	EET ALB	01/18/25 11:31
Total/NA	Prep	300_Prep			19363	JT	EET ALB	01/15/25 12:08
Total/NA	Analysis	300.0		20	19342	JT	EET ALB	01/15/25 17:18

Client Sample ID: FS03

Lab Sample ID: 885-18376-3

Date Collected: 01/14/25 12:40

Matrix: Solid

Date Received: 01/15/25 07:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			19357	JP	EET ALB	01/15/25 10:56
Total/NA	Analysis	8015M/D		1	19535	JP	EET ALB	01/20/25 14:47
Total/NA	Prep	5030C			19357	JP	EET ALB	01/15/25 10:56
Total/NA	Analysis	8021B		1	19536	JP	EET ALB	01/20/25 14:47
Total/NA	Prep	SHAKE			19522	MI	EET ALB	01/18/25 08:43
Total/NA	Analysis	8015M/D		1	19521	MI	EET ALB	01/18/25 11:52
Total/NA	Prep	300_Prep			19363	JT	EET ALB	01/15/25 12:08
Total/NA	Analysis	300.0		20	19342	JT	EET ALB	01/15/25 17:27

Client Sample ID: FS02

Lab Sample ID: 885-18376-4

Date Collected: 01/14/25 12:45

Matrix: Solid

Date Received: 01/15/25 07:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			19357	JP	EET ALB	01/15/25 10:56
Total/NA	Analysis	8015M/D		1	19535	JP	EET ALB	01/20/25 15:11

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## Lab Chronicle

Client: Hilcorp Energy  
Project/Site: Sammons #2

Job ID: 885-18376-1

Client Sample ID: FS02

Lab Sample ID: 885-18376-4

Date Collected: 01/14/25 12:45

Matrix: Solid

Date Received: 01/15/25 07:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			19357	JP	EET ALB	01/15/25 10:56
Total/NA	Analysis	8021B		1	19536	JP	EET ALB	01/20/25 15:11
Total/NA	Prep	SHAKE			19522	MI	EET ALB	01/18/25 08:43
Total/NA	Analysis	8015M/D		1	19521	MI	EET ALB	01/18/25 12:02
Total/NA	Prep	300_Prep			19363	JT	EET ALB	01/15/25 12:08
Total/NA	Analysis	300.0		20	19342	JT	EET ALB	01/15/25 17:37

Client Sample ID: SW02

Lab Sample ID: 885-18376-5

Date Collected: 01/14/25 12:50

Matrix: Solid

Date Received: 01/15/25 07:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			19357	JP	EET ALB	01/15/25 10:56
Total/NA	Analysis	8015M/D		1	19535	JP	EET ALB	01/20/25 15:34
Total/NA	Prep	5030C			19357	JP	EET ALB	01/15/25 10:56
Total/NA	Analysis	8021B		1	19536	JP	EET ALB	01/20/25 15:34
Total/NA	Prep	SHAKE			19522	MI	EET ALB	01/18/25 08:43
Total/NA	Analysis	8015M/D		1	19521	MI	EET ALB	01/18/25 12:13
Total/NA	Prep	300_Prep			19363	JT	EET ALB	01/15/25 12:08
Total/NA	Analysis	300.0		20	19342	JT	EET ALB	01/15/25 18:07

Client Sample ID: SW03

Lab Sample ID: 885-18376-6

Date Collected: 01/14/25 12:55

Matrix: Solid

Date Received: 01/15/25 07:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			19357	JP	EET ALB	01/15/25 10:56
Total/NA	Analysis	8015M/D		1	19535	JP	EET ALB	01/20/25 15:58
Total/NA	Prep	5030C			19357	JP	EET ALB	01/15/25 10:56
Total/NA	Analysis	8021B		1	19536	JP	EET ALB	01/20/25 15:58
Total/NA	Prep	SHAKE			19522	MI	EET ALB	01/18/25 08:43
Total/NA	Analysis	8015M/D		1	19521	MI	EET ALB	01/18/25 12:23
Total/NA	Prep	300_Prep			19363	JT	EET ALB	01/15/25 12:08
Total/NA	Analysis	300.0		20	19342	JT	EET ALB	01/15/25 18:17

Client Sample ID: SW04

Lab Sample ID: 885-18376-7

Date Collected: 01/14/25 13:00

Matrix: Solid

Date Received: 01/15/25 07:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			19357	JP	EET ALB	01/15/25 10:56
Total/NA	Analysis	8015M/D		1	19535	JP	EET ALB	01/20/25 16:22
Total/NA	Prep	5030C			19357	JP	EET ALB	01/15/25 10:56
Total/NA	Analysis	8021B		1	19536	JP	EET ALB	01/20/25 16:22

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Lab Chronicle

Client: Hilcorp Energy  
Project/Site: Sammons #2

Job ID: 885-18376-1

Client Sample ID: SW04  
Date Collected: 01/14/25 13:00  
Date Received: 01/15/25 07:10

Lab Sample ID: 885-18376-7  
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	SHAKE			19522	MI	EET ALB	01/18/25 08:43
Total/NA	Analysis	8015M/D		1	19521	MI	EET ALB	01/18/25 12:34
Total/NA	Prep	300_Prep			19363	JT	EET ALB	01/15/25 12:08
Total/NA	Analysis	300.0		20	19342	JT	EET ALB	01/15/25 18:26

Client Sample ID: SW05  
Date Collected: 01/14/25 13:05  
Date Received: 01/15/25 07:10

Lab Sample ID: 885-18376-8  
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			19357	JP	EET ALB	01/15/25 10:56
Total/NA	Analysis	8015M/D		1	19535	JP	EET ALB	01/20/25 16:45
Total/NA	Prep	5030C			19357	JP	EET ALB	01/15/25 10:56
Total/NA	Analysis	8021B		1	19536	JP	EET ALB	01/20/25 16:45
Total/NA	Prep	SHAKE			19522	MI	EET ALB	01/18/25 08:43
Total/NA	Analysis	8015M/D		1	19521	MI	EET ALB	01/18/25 12:44
Total/NA	Prep	300_Prep			19363	JT	EET ALB	01/15/25 12:08
Total/NA	Analysis	300.0		20	19342	JT	EET ALB	01/15/25 18:36

Laboratory References:

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

Accreditation/Certification Summary

Client: Hilcorp Energy  
Project/Site: Sammons #2

Job ID: 885-18376-1

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
8015M/D	5030C	Solid	Gasoline Range Organics (GRO)-C6-C10
8015M/D	SHAKE	Solid	Diesel Range Organics [C10-C28]
8015M/D	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	02-25-25



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[illegible]

Remarks: \*cc panelerson@ensolum.com  
npottolida@ensolum.com  
WWelchert@ensolum.com

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1/23/2025

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If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.



## Login Sample Receipt Checklist

Client: Hilcorp Energy

Job Number: 885-18376-1

Login Number: 18376

List Source: Eurofins Albuquerque

List Number: 1

Creator: McQuiston, Steven

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?	False	Refer to Job Narrative for details.
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").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



Environment Testing

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# ANALYTICAL REPORT

## PREPARED FOR

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

Generated 2/7/2025 2:54:00 PM

## JOB DESCRIPTION

Sammons #2

## JOB NUMBER

885-19447-1

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  
2/7/2025 2:54:00 PM

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

Client: Hilcorp Energy  
Project/Site: Sammons #2

Laboratory Job ID: 885-19447-1

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## Definitions/Glossary

Client: Hilcorp Energy  
Project/Site: Sammons #2

Job ID: 885-19447-1

## 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: Sammons #2

Job ID: 885-19447-1

**Job ID: 885-19447-1**

**Eurofins Albuquerque**

### Job Narrative 885-19447-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

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

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

#### Receipt

The samples were received on 2/6/2025 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 0.6°C.

#### Receipt Exceptions

The Field Sampler was not listed on the Chain of Custody.

#### 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.

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## Client Sample Results

Client: Hilcorp Energy  
Project/Site: Sammons #2

Job ID: 885-19447-1

Client Sample ID: SW06

Lab Sample ID: 885-19447-1

Date Collected: 02/05/25 09:25

Matrix: Solid

Date Received: 02/06/25 07:20

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		3.7	mg/Kg		02/06/25 11:24	02/06/25 13:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91		35 - 166	02/06/25 11:24	02/06/25 13:42	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.018	mg/Kg		02/06/25 11:24	02/06/25 13:42	1
Ethylbenzene	ND		0.037	mg/Kg		02/06/25 11:24	02/06/25 13:42	1
Toluene	ND		0.037	mg/Kg		02/06/25 11:24	02/06/25 13:42	1
Xylenes, Total	ND		0.074	mg/Kg		02/06/25 11:24	02/06/25 13:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	93		48 - 145	02/06/25 11:24	02/06/25 13:42	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.8	mg/Kg		02/06/25 09:07	02/06/25 10:39	1
Motor Oil Range Organics [C28-C40]	ND		49	mg/Kg		02/06/25 09:07	02/06/25 10:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	103		62 - 134	02/06/25 09:07	02/06/25 10:39	1

## Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		60	mg/Kg		02/06/25 11:22	02/06/25 14:57	20

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## Client Sample Results

Client: Hilcorp Energy  
Project/Site: Sammons #2

Job ID: 885-19447-1

Client Sample ID: SW07

Lab Sample ID: 885-19447-2

Date Collected: 02/05/25 09:30

Matrix: Solid

Date Received: 02/06/25 07:20

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		3.7	mg/Kg		02/06/25 11:24	02/06/25 14:04	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91		35 - 166	02/06/25 11:24	02/06/25 14:04	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.019	mg/Kg		02/06/25 11:24	02/06/25 14:04	1
Ethylbenzene	ND		0.037	mg/Kg		02/06/25 11:24	02/06/25 14:04	1
Toluene	ND		0.037	mg/Kg		02/06/25 11:24	02/06/25 14:04	1
Xylenes, Total	ND		0.074	mg/Kg		02/06/25 11:24	02/06/25 14:04	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	89		48 - 145	02/06/25 11:24	02/06/25 14:04	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		10	mg/Kg		02/06/25 09:07	02/06/25 11:11	1
Motor Oil Range Organics [C28-C40]	ND		50	mg/Kg		02/06/25 09:07	02/06/25 11:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	112		62 - 134	02/06/25 09:07	02/06/25 11:11	1

## Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	120		60	mg/Kg		02/06/25 11:22	02/06/25 15:48	20

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## QC Sample Results

Client: Hilcorp Energy  
Project/Site: Sammons #2

Job ID: 885-19447-1

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

Lab Sample ID: MB 885-20403/1-A

Matrix: Solid

Analysis Batch: 20399

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 20403

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		5.0	mg/Kg		02/06/25 11:24	02/06/25 13:21	1
Surrogate	MB %Recovery	MB Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	99		35 - 166			02/06/25 11:24	02/06/25 13:21	1

Lab Sample ID: LCS 885-20403/2-A

Matrix: Solid

Analysis Batch: 20399

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 20403

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics [C6 - C10]	25.0	18.3		mg/Kg		73	70 - 130
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
4-Bromofluorobenzene (Surr)	184		35 - 166				

Lab Sample ID: 885-19447-1 MS

Matrix: Solid

Analysis Batch: 20399

Client Sample ID: SW06

Prep Type: Total/NA

Prep Batch: 20403

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics [C6 - C10]	ND		18.4	15.3		mg/Kg		83	70 - 130
Surrogate	MS %Recovery	MS Qualifier	Limits						
4-Bromofluorobenzene (Surr)	194		35 - 166						

Lab Sample ID: 885-19447-1 MSD

Matrix: Solid

Analysis Batch: 20399

Client Sample ID: SW06

Prep Type: Total/NA

Prep Batch: 20403

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics [C6 - C10]	ND		18.4	15.6		mg/Kg		84	70 - 130	1	20
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
4-Bromofluorobenzene (Surr)	193		35 - 166								

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

Lab Sample ID: MB 885-20403/1-A

Matrix: Solid

Analysis Batch: 20400

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 20403

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.025	mg/Kg		02/06/25 11:24	02/06/25 13:21	1
Ethylbenzene	ND		0.050	mg/Kg		02/06/25 11:24	02/06/25 13:21	1
Toluene	ND		0.050	mg/Kg		02/06/25 11:24	02/06/25 13:21	1

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## QC Sample Results

Client: Hilcorp Energy  
Project/Site: Sammons #2

Job ID: 885-19447-1

## Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: MB 885-20403/1-A

Matrix: Solid

Analysis Batch: 20400

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 20403

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	ND		0.10	mg/Kg		02/06/25 11:24	02/06/25 13:21	1
Surrogate	%Recovery	MB Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		48 - 145			02/06/25 11:24	02/06/25 13:21	1

Lab Sample ID: LCS 885-20403/3-A

Matrix: Solid

Analysis Batch: 20400

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 20403

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	1.00	0.922		mg/Kg		92	70 - 130
Ethylbenzene	1.00	0.906		mg/Kg		91	70 - 130
m&p-Xylene	2.00	1.82		mg/Kg		91	70 - 130
o-Xylene	1.00	0.898		mg/Kg		90	70 - 130
Toluene	1.00	0.920		mg/Kg		92	70 - 130
Xylenes, Total	3.00	2.72		mg/Kg		91	70 - 130
Surrogate	%Recovery	LCS Qualifier	Limits				
4-Bromofluorobenzene (Surr)	98		48 - 145				

Lab Sample ID: 885-19447-2 MS

Matrix: Solid

Analysis Batch: 20400

Client Sample ID: SW07

Prep Type: Total/NA

Prep Batch: 20403

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	ND		0.745	0.705		mg/Kg		95	70 - 130
Ethylbenzene	ND		0.745	0.693		mg/Kg		93	70 - 130
m&p-Xylene	ND		1.49	1.38		mg/Kg		92	70 - 130
o-Xylene	ND		0.745	0.674		mg/Kg		91	70 - 130
Toluene	ND		0.745	0.696		mg/Kg		93	70 - 130
Xylenes, Total	ND		2.23	2.05		mg/Kg		92	70 - 130
Surrogate	%Recovery	MS Qualifier	Limits						
4-Bromofluorobenzene (Surr)	91		48 - 145						

Lab Sample ID: 885-19447-2 MSD

Matrix: Solid

Analysis Batch: 20400

Client Sample ID: SW07

Prep Type: Total/NA

Prep Batch: 20403

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Benzene	ND		0.745	0.715		mg/Kg		96	70 - 130	1	20
Ethylbenzene	ND		0.745	0.699		mg/Kg		94	70 - 130	1	20
m&p-Xylene	ND		1.49	1.39		mg/Kg		93	70 - 130	1	20
o-Xylene	ND		0.745	0.687		mg/Kg		92	70 - 130	2	20
Toluene	ND		0.745	0.707		mg/Kg		95	70 - 130	2	20
Xylenes, Total	ND		2.23	2.07		mg/Kg		93	70 - 130	1	20

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## QC Sample Results

Client: Hilcorp Energy  
Project/Site: Sammons #2

Job ID: 885-19447-1

## Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: 885-19447-2 MSD

Matrix: Solid

Analysis Batch: 20400

Client Sample ID: SW07

Prep Type: Total/NA

Prep Batch: 20403

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	91		48 - 145

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

Lab Sample ID: MB 885-20385/1-A

Matrix: Solid

Analysis Batch: 20379

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 20385

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		10	mg/Kg		02/06/25 09:07	02/06/25 10:18	1
Motor Oil Range Organics [C28-C40]	ND		50	mg/Kg		02/06/25 09:07	02/06/25 10:18	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	102		62 - 134	02/06/25 09:07	02/06/25 10:18	1

Lab Sample ID: LCS 885-20385/2-A

Matrix: Solid

Analysis Batch: 20379

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 20385

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Diesel Range Organics [C10-C28]	50.0	49.9		mg/Kg		100	60 - 135

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Di-n-octyl phthalate (Surr)	92		62 - 134

Lab Sample ID: 885-19447-1 MS

Matrix: Solid

Analysis Batch: 20379

Client Sample ID: SW06

Prep Type: Total/NA

Prep Batch: 20385

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Diesel Range Organics [C10-C28]	ND		47.2	44.4		mg/Kg		94	44 - 136

Surrogate	MS %Recovery	MS Qualifier	Limits
Di-n-octyl phthalate (Surr)	100		62 - 134

Lab Sample ID: 885-19447-1 MSD

Matrix: Solid

Analysis Batch: 20379

Client Sample ID: SW06

Prep Type: Total/NA

Prep Batch: 20385

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Diesel Range Organics [C10-C28]	ND		49.6	51.4		mg/Kg		104	44 - 136	15	32

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Di-n-octyl phthalate (Surr)	106		62 - 134

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## QC Sample Results

Client: Hilcorp Energy  
Project/Site: Sammons #2

Job ID: 885-19447-1

## Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 885-20402/1-A

Matrix: Solid

Analysis Batch: 20416

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 20402

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0	mg/Kg		02/06/25 11:22	02/06/25 14:18	1

Lab Sample ID: LCS 885-20402/2-A

Matrix: Solid

Analysis Batch: 20416

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 20402

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	30.0	28.5		mg/Kg		95	90 - 110

Lab Sample ID: MRL 885-20402/3-A

Matrix: Solid

Analysis Batch: 20416

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 20402

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	3.00	3.27		mg/L		109	50 - 150

Lab Sample ID: MRL 885-20402/4-A

Matrix: Solid

Analysis Batch: 20416

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 20402

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	3.00	3.28		mg/L		109	50 - 150

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## QC Association Summary

Client: Hilcorp Energy  
Project/Site: Sammons #2

Job ID: 885-19447-1

## GC VOA

## Analysis Batch: 20399

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-19447-1	SW06	Total/NA	Solid	8015M/D	20403
885-19447-2	SW07	Total/NA	Solid	8015M/D	20403
MB 885-20403/1-A	Method Blank	Total/NA	Solid	8015M/D	20403
LCS 885-20403/2-A	Lab Control Sample	Total/NA	Solid	8015M/D	20403
885-19447-1 MS	SW06	Total/NA	Solid	8015M/D	20403
885-19447-1 MSD	SW06	Total/NA	Solid	8015M/D	20403

## Analysis Batch: 20400

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-19447-1	SW06	Total/NA	Solid	8021B	20403
885-19447-2	SW07	Total/NA	Solid	8021B	20403
MB 885-20403/1-A	Method Blank	Total/NA	Solid	8021B	20403
LCS 885-20403/3-A	Lab Control Sample	Total/NA	Solid	8021B	20403
885-19447-2 MS	SW07	Total/NA	Solid	8021B	20403
885-19447-2 MSD	SW07	Total/NA	Solid	8021B	20403

## Prep Batch: 20403

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-19447-1	SW06	Total/NA	Solid	5035	
885-19447-2	SW07	Total/NA	Solid	5035	
MB 885-20403/1-A	Method Blank	Total/NA	Solid	5035	
LCS 885-20403/2-A	Lab Control Sample	Total/NA	Solid	5035	
LCS 885-20403/3-A	Lab Control Sample	Total/NA	Solid	5035	
885-19447-1 MS	SW06	Total/NA	Solid	5035	
885-19447-1 MSD	SW06	Total/NA	Solid	5035	
885-19447-2 MS	SW07	Total/NA	Solid	5035	
885-19447-2 MSD	SW07	Total/NA	Solid	5035	

## GC Semi VOA

## Analysis Batch: 20379

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-19447-1	SW06	Total/NA	Solid	8015M/D	20385
885-19447-2	SW07	Total/NA	Solid	8015M/D	20385
MB 885-20385/1-A	Method Blank	Total/NA	Solid	8015M/D	20385
LCS 885-20385/2-A	Lab Control Sample	Total/NA	Solid	8015M/D	20385
885-19447-1 MS	SW06	Total/NA	Solid	8015M/D	20385
885-19447-1 MSD	SW06	Total/NA	Solid	8015M/D	20385

## Prep Batch: 20385

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-19447-1	SW06	Total/NA	Solid	SHAKE	
885-19447-2	SW07	Total/NA	Solid	SHAKE	
MB 885-20385/1-A	Method Blank	Total/NA	Solid	SHAKE	
LCS 885-20385/2-A	Lab Control Sample	Total/NA	Solid	SHAKE	
885-19447-1 MS	SW06	Total/NA	Solid	SHAKE	
885-19447-1 MSD	SW06	Total/NA	Solid	SHAKE	

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## QC Association Summary

Client: Hilcorp Energy  
Project/Site: Sammons #2

Job ID: 885-19447-1

## HPLC/IC

## Prep Batch: 20402

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-19447-1	SW06	Total/NA	Solid	300_Prep	
885-19447-2	SW07	Total/NA	Solid	300_Prep	
MB 885-20402/1-A	Method Blank	Total/NA	Solid	300_Prep	
LCS 885-20402/2-A	Lab Control Sample	Total/NA	Solid	300_Prep	
MRL 885-20402/3-A	Lab Control Sample	Total/NA	Solid	300_Prep	
MRL 885-20402/4-A	Lab Control Sample	Total/NA	Solid	300_Prep	

## Analysis Batch: 20416

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-19447-1	SW06	Total/NA	Solid	300.0	20402
885-19447-2	SW07	Total/NA	Solid	300.0	20402
MB 885-20402/1-A	Method Blank	Total/NA	Solid	300.0	20402
LCS 885-20402/2-A	Lab Control Sample	Total/NA	Solid	300.0	20402
MRL 885-20402/3-A	Lab Control Sample	Total/NA	Solid	300.0	20402
MRL 885-20402/4-A	Lab Control Sample	Total/NA	Solid	300.0	20402

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## Lab Chronicle

Client: Hilcorp Energy  
Project/Site: Sammons #2

Job ID: 885-19447-1

Client Sample ID: SW06

Lab Sample ID: 885-19447-1

Date Collected: 02/05/25 09:25

Matrix: Solid

Date Received: 02/06/25 07:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			20403	AT	EET ALB	02/06/25 11:24
Total/NA	Analysis	8015M/D		1	20399	AT	EET ALB	02/06/25 13:42
Total/NA	Prep	5035			20403	AT	EET ALB	02/06/25 11:24
Total/NA	Analysis	8021B		1	20400	AT	EET ALB	02/06/25 13:42
Total/NA	Prep	SHAKE			20385	MI	EET ALB	02/06/25 09:07
Total/NA	Analysis	8015M/D		1	20379	MI	EET ALB	02/06/25 10:39
Total/NA	Prep	300_Prep			20402	DL	EET ALB	02/06/25 11:22
Total/NA	Analysis	300.0		20	20416	ES	EET ALB	02/06/25 14:57

Client Sample ID: SW07

Lab Sample ID: 885-19447-2

Date Collected: 02/05/25 09:30

Matrix: Solid

Date Received: 02/06/25 07:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			20403	AT	EET ALB	02/06/25 11:24
Total/NA	Analysis	8015M/D		1	20399	AT	EET ALB	02/06/25 14:04
Total/NA	Prep	5035			20403	AT	EET ALB	02/06/25 11:24
Total/NA	Analysis	8021B		1	20400	AT	EET ALB	02/06/25 14:04
Total/NA	Prep	SHAKE			20385	MI	EET ALB	02/06/25 09:07
Total/NA	Analysis	8015M/D		1	20379	MI	EET ALB	02/06/25 11:11
Total/NA	Prep	300_Prep			20402	DL	EET ALB	02/06/25 11:22
Total/NA	Analysis	300.0		20	20416	ES	EET ALB	02/06/25 15:48

## Laboratory References:

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

Eurofins Albuquerque

Accreditation/Certification Summary

Client: Hilcorp Energy  
Project/Site: Sammons #2

Job ID: 885-19447-1

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
8015M/D	5035	Solid	Gasoline Range Organics [C6 - C10]
8015M/D	SHAKE	Solid	Diesel Range Organics [C10-C28]
8015M/D	SHAKE	Solid	Motor Oil Range Organics [C28-C40]
8021B	5035	Solid	Benzene
8021B	5035	Solid	Ethylbenzene
8021B	5035	Solid	Toluene
8021B	5035	Solid	Xylenes, Total
Oregon	NELAP	NM100001	02-25-25



## Login Sample Receipt Checklist

Client: Hilcorp Energy

Job Number: 885-19447-1

Login Number: 19447

List Number: 1

Creator: Casarrubias, Tracy

List Source: Eurofins Albuquerque

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?	False	Refer to Job Narrative for details.
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").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



## APPENDIX B

### Photographic Log

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**Photographic Log**  
Hilcorp Energy Company  
Sammons #2  
San Juan County, New Mexico



Photograph: 1  
Description: South excavation  
View: South

Date: 7/8/2024



Photograph: 2  
Description: South excavation  
View: Southeast

Date: 7/8/2024



Photograph: 3  
Description: Shallow groundwater present at 3.5 ft.  
View: South

Date: 7/8/2024



Photograph: 4  
Description: South excavation  
View: West-Southwest

Date: 7/8/2024



## APPENDIX C

### Agency Notifications

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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: 356039  
**Date:** Wednesday, June 19, 2024 2:50:59 PM

---

[ \*\*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#) nAPP2336429577.

The sampling event is expected to take place:

**When:** 06/26/2024 @ 08:30

**Where:** G-32-30N-12W 1940 FNL 1785 FEL (36.7714386,-108.1183929)

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

**Additional Instructions:** Sammons 2 (API 30-045-09025) 36.77139, -108.11789

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

**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: 356603  
**Date:** Friday, June 21, 2024 10:19:11 AM

---

[ \*\*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#) nAPP2336429577.

The sampling event is expected to take place:

**When:** 06/27/2024 @ 09:00

**Where:** G-32-30N-12W 1940 FNL 1785 FEL (36.7714386,-108.1183929)

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

**Additional Instructions:** Sammons 2 (API 30-045-09025) 36.77139, -108.11789

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

**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: 356612  
**Date:** Friday, June 21, 2024 10:25:09 AM

---

[ \*\*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#) nAPP2336429577.

The sampling event is expected to take place:

**When:** 06/28/2024 @ 09:00

**Where:** G-32-30N-12W 1940 FNL 1785 FEL (36.7714386,-108.1183929)

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

**Additional Instructions:** Sammons 2 (API 30-045-09025) 36.77139, -108.11789

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

**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: 357409  
**Date:** Tuesday, June 25, 2024 1:41:30 PM

---

[ \*\*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#) nAPP2336429577.

The sampling event is expected to take place:

**When:** 07/01/2024 @ 09:00

**Where:** G-32-30N-12W 1940 FNL 1785 FEL (36.7714386,-108.1183929)

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

**Additional Instructions:** Sammons 2 (API 30-045-09025) 36.77139, -108.11789

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

**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: 360578  
**Date:** Tuesday, July 2, 2024 1:33:44 PM

---

[ \*\*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#) nAPP2336429577.

The sampling event is expected to take place:

**When:** 07/08/2024 @ 09:00

**Where:** G-32-30N-12W 1940 FNL 1785 FEL (36.7714386,-108.1183929)

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

**Additional Instructions:** Sammons 2 (API 30-045-09025) 36.77139, -108.11789

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

**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: 417756  
**Date:** Tuesday, January 7, 2025 8:57:25 AM

---

[ \*\*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#) nAPP2336429577.

The sampling event is expected to take place:

**When:** 01/14/2025 @ 08:30

**Where:** G-32-30N-12W 1940 FNL 1785 FEL (36.7714386,-108.1183929)

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

**Additional Instructions:** Sammons #2

San Juan County, New Mexico

Sammons 2 (API 3004509025) 36.77139, 108.11789

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

**From:** [Mitch Killough](#)  
**To:** [Stuart Hyde](#)  
**Subject:** FW: [EXTERNAL] The Oil Conservation Division (OCD) has rejected the application, Application ID: 378550  
**Date:** Thursday, October 24, 2024 9:35:08 AM

---

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

We kind of saw this coming. Let's discuss on our next site rundown chat.

Mitch Killough  
Hilcorp Energy Company  
713-757-5247 (Office)  
281-851-2338 (Mobile)

---

**From:** OCDOnline@state.nm.us <OCDOnline@state.nm.us>  
**Sent:** Thursday, October 24, 2024 10:30 AM  
**To:** Mitch Killough <mkillough@hilcorp.com>  
**Subject:** [EXTERNAL] The Oil Conservation Division (OCD) has rejected the application, Application ID: 378550

**CAUTION:** External sender. DO NOT open links or attachments from UNKNOWN senders.

To whom it may concern (c/o Mitch Killough for HILCORP ENERGY COMPANY),

The OCD has rejected the submitted *Application for administrative approval of a release notification and corrective action* (C-141), for incident ID (n#) nAPP2336429577, for the following reasons:

- **Hilcorp had recorded Total Petroleum Hydrocarbons (TPH) exceeding the allowable concentrations at five (5) feet (ft.) below grade (b.g.) at PH01 during the January 26, 2024 sampling event. Groundwater seasonal fluctuation was encountered at 3.5 ft. b.g. during the final sampling in July 2024, which hindered Hilcorp from collecting soil samples below this level. Per 19.15.29.12B (1) NMAC, Hilcorp must remove all impacted material exceeding the allowable concentrations for TPH at PH01 and/or collect a groundwater sample (e.g. temporary well) to determine if impacts exceeds the allowable concentrations for total naphthalene in groundwater per 20.6.2.3103 NMAC. Hilcorp has 120-days (February 28, 2025) to submit its appropriate or final remediation closure report.**

The rejected C-141 can be found in the OCD Online: Permitting - Action Status, under the Application ID: 378550.  
Please review and make the required correction(s) prior to resubmitting.

If you have any questions why this application was rejected or believe it was rejected in error, please contact me prior to submitting an additional C-141.

Thank you,  
Nelson Velez  
Environmental Specialist - Advanced  
505-469-6146  
[Nelson.Velez@emnrd.nm.gov](mailto:Nelson.Velez@emnrd.nm.gov)

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

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**From:** [Velez, Nelson, EMNRD](#)  
**To:** [Stuart Hyde](#)  
**Cc:** [Mitch Killough](#); [Wes Weichert](#)  
**Subject:** Re: [EXTERNAL] nAPP2336429577 - Sammons #2 Reporting Extension Request  
**Date:** Wednesday, July 31, 2024 9:45:49 AM  
**Attachments:** [image001.png](#)  
[image002.png](#)  
[image003.png](#)  
[Outlook-zewlskit.png](#)

---

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

Good morning Stuart,

Thank you for your inquiry. Your time extension request is approved. Remediation Due date has been updated to October 29, 2024.

Please keep a copy of this communication for inclusion within the appropriate report submittal.

The OCD requires a copy of all correspondence relative to remedial activities be included in all proposals and/or final closure reports. Correspondence required to be included in reports may include, but not limited to, notifications for liner inspections, sample events, spill/release/fire, and request for time extensions or variances.

Regards,

**Nelson Velez** • Environmental Specialist - Adv  
Environmental Bureau | EMNRD - Oil Conservation Division  
1000 Rio Brazos Road | Aztec, NM 87410  
(505) 469-6146 | [nelson.velez@emnrd.nm.gov](mailto:nelson.velez@emnrd.nm.gov)  
<http://www.emnrd.nm.gov/oed>



---

**From:** Stuart Hyde <[shyde@ensolum.com](mailto:shyde@ensolum.com)>  
**Sent:** Wednesday, July 31, 2024 9:15 AM  
**To:** Velez, Nelson, EMNRD <[Nelson.Velez@emnrd.nm.gov](mailto:Nelson.Velez@emnrd.nm.gov)>  
**Cc:** Mitch Killough <[mkillough@hilcorp.com](mailto:mkillough@hilcorp.com)>; Wes Weichert <[wwweichert@ensolum.com](mailto:wwweichert@ensolum.com)>  
**Subject:** [EXTERNAL] nAPP2336429577 - Sammons #2 Reporting Extension Request

CAUTION: This email originated outside of our organization. Exercise caution prior to

clicking on links or opening attachments.

Nelson,

On behalf of Hilcorp Energy Company, we are requesting a 90-day extension to the remediation and reporting deadline of July 31, 2024 for the Sammons #2 site located in San Juan County. At this time, Hilcorp has completed the remedial excavation at the site (performed on July 8<sup>th</sup>), however, we are still waiting on laboratory results. If approved, the new reporting deadline would be Tuesday, October 29, 2024.

Please reach out with any questions or comments regarding this site. Thanks.



**Stuart Hyde, PG**

(Licensed in WA/TX)

Senior Managing Geologist

970-903-1607

[Ensolum, LLC](#)

in f X

*"If you want to go fast, go alone. If you want to go far, go together." – African Proverb*

**Wes Weichert**

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**From:** Stuart Hyde  
**Sent:** Friday, January 31, 2025 11:12 AM  
**To:** Wes Weichert  
**Subject:** FW: The Oil Conservation Division (OCD) has accepted the application, Application ID: 427097

**Stuart Hyde, PG**

(Licensed in WA/TX)

Senior Managing Geologist

970-903-1607

Ensolum, LLC



*"If you want to go fast, go alone. If you want to go far, go together." – African Proverb*

---

**From:** OCDOnline@state.nm.us <OCDOnline@state.nm.us>  
**Sent:** Friday, January 31, 2025 9:59 AM  
**To:** Stuart Hyde <shyde@ensolum.com>  
**Subject:** The Oil Conservation Division (OCD) has accepted the application, Application ID: 427097

[ \*\*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#) nAPP2336429577.

The sampling event is expected to take place:

**When:** 02/05/2025 @ 09:00

**Where:** G-32-30N-12W 1940 FNL 1785 FEL (36.7714386,-108.1183929)

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

**Additional Instructions:** Sammons #2 (36.77139, -108.11789) Excavation and confirmation sampling

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

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

General Information  
Phone: (505) 629-6116

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

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

QUESTIONS

Action 437597

**QUESTIONS**

Operator: HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	OGRID: 372171
	Action Number: 437597
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

**QUESTIONS**

Prerequisites	
Incident ID (n#)	nAPP2336429577
Incident Name	NAPP2336429577 SAMMONS NO. 2 @ 30-045-09025
Incident Type	Oil Release
Incident Status	Remediation Closure Report Received
Incident Well	[30-045-09025] SAMMONS #002

**Location of Release Source**

Please answer all the questions in this group.

Site Name	SAMMONS NO. 2
Date Release Discovered	12/29/2023
Surface Owner	Private

**Incident Details**

Please answer all the questions in this group.

Incident Type	Oil 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	Not answered.
Is the concentration of chloride in the produced water >10,000 mg/l	No
Condensate Released (bbls) Details	Cause: Equipment Failure   Production Tank   Condensate   Released: 6 BBL   Recovered: 0 BBL   Lost: 6 BBL.
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)	On 12/29/2023 at approximately 12:30 pm (MT), a Hilcorp operator discovered a 6-bbl condensate release at the Sammons 2 (API No. 30-045-09025) in San Juan County, NM (36.77139, -108.11789) while performing AVO surveys. Surface ownership at the site is fee surface/fee mineral (Parcel Owner: Andrea Corporation). Upon discovery, the operator observed fluids within secondary containment. Although none of the fluids migrated horizontally outside of secondary containment, approximately 6 bbls of fluid are assumed to have soaked into the underlying soils beneath the liner. It is believed that the spilled fluids were recovered with a water hauler truck on the day of the release, but a waste ticket was not generated by the hauler since it was placed back into the condensate tank after being recovered. At this time, the primary cause is determined to be a cracked hammer union on the oil fill line.

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

General Information  
Phone: (505) 629-6116

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

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

QUESTIONS, Page 2

Action 437597

**QUESTIONS (continued)**

Operator: HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	OGRID: 372171
	Action Number: 437597
	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	No
Reasons why this would be considered a submission for a notification of a major release	Unavailable.
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	False
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	Although none of the fluids migrated horizontally outside of secondary containment, approximately 6 bbls of fluid are assumed to have soaked into the underlying soils beneath the liner. It is believed that the spilled fluids were recovered with a water hauler truck on the day of the release, but a waste ticket was not generated by the hauler since it was placed back into the condensate tank after being recovered.

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: 02/28/2025
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QUESTIONS, Page 3

Action 437597

**QUESTIONS (continued)**

Operator: HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	OGRID:
	372171
	Action Number:
	437597
Action Type:	
[C-141] Remediation Closure Request C-141 (C-141-v-Closure)	

**QUESTIONS**

<b>Site Characterization</b>	
<i>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.</i>	
What is the shallowest depth to groundwater beneath the area affected by the release in feet below ground surface (ft bgs)	Less than or equal 25 (ft.)
What method was used to determine the depth to ground water	Direct Measurement
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 100 and 200 (ft.)
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 1 and 100 (ft.)
A spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes	Between 300 and 500 (ft.)
Any other fresh water well or spring	Between 300 and 500 (ft.)
Incorporated municipal boundaries or a defined municipal fresh water well field	Between 300 and 500 (ft.)
A wetland	Between 1 and 100 (ft.)
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	Low
A 100-year floodplain	Between 1 and 100 (ft.)
Did the release impact areas not on an exploration, development, production, or storage site	No

<b>Remediation Plan</b>	
<i>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.</i>	
Requesting a remediation plan approval with this submission	Yes
<i>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.</i>	
Have the lateral and vertical extents of contamination been fully delineated	Yes
Was this release entirely contained within a lined containment area	No
<b>Soil Contamination Sampling:</b> (Provide the highest observable value for each, in milligrams per kilograms.)	
Chloride (EPA 300.0 or SM4500 Cl B)	650
TPH (GRO+DRO+MRO) (EPA SW-846 Method 8015M)	436
GRO+DRO (EPA SW-846 Method 8015M)	326
BTEX (EPA SW-846 Method 8021B or 8260B)	0
Benzene (EPA SW-846 Method 8021B or 8260B)	0
<i>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>	
On what estimated date will the remediation commence	05/01/2024
On what date will (or did) the final sampling or liner inspection occur	05/01/2024
On what date will (or was) the remediation complete(d)	06/01/2024
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	850
What is the estimated volume (in cubic yards) that will be remediated	175
<i>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.</i>	
<i>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.</i>	



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QUESTIONS, Page 4

Action 437597

**QUESTIONS (continued)**

Operator: HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	OGRID: 372171
	Action Number: 437597
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

**QUESTIONS**

<b>Remediation Plan (continued)</b>	
<i>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.</i>	
<b>This remediation will (or is expected to) utilize the following processes to remediate / reduce contaminants:</b>	
<i>(Select all answers below that apply.)</i>	
(Ex Situ) Excavation and <b>off-site</b> disposal (i.e. dig and haul, hydrovac, etc.)	Yes
Which OCD approved facility will be used for <b>off-site</b> disposal	ENVIROTECH [fSC00000000048]
<b>OR</b> which OCD approved well (API) will be used for <b>off-site</b> disposal	Not answered.
<b>OR</b> is the <b>off-site</b> disposal site, to be used, out-of-state	No
<b>OR</b> is the <b>off-site</b> disposal site, to be used, an NMED facility	No
(Ex Situ) Excavation and <b>on-site</b> remediation (i.e. On-Site Land Farms)	No
(In Situ) Soil Vapor Extraction	No
(In Situ) Chemical processing (i.e. Soil Shredding, Potassium Permanganate, etc.)	No
(In Situ) Biological processing (i.e. Microbes / Fertilizer, etc.)	No
(In Situ) Physical processing (i.e. Soil Washing, Gypsum, Disking, etc.)	No
Ground Water Abatement pursuant to 19.15.30 NMAC	No
OTHER (Non-listed remedial process)	No
<i>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>	
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: 02/28/2025
<i>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.</i>	

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QUESTIONS, Page 5

Action 437597

QUESTIONS (continued)

Operator: HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	OGRID: 372171
	Action Number: 437597
	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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QUESTIONS, Page 6

Action 437597

**QUESTIONS (continued)**

Operator: HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	OGRID:
	372171
	Action Number:
	437597
Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)	

**QUESTIONS**

Sampling Event Information	
Last sampling notification (C-141N) recorded	427097
Sampling date pursuant to Subparagraph (a) of Paragraph (1) of Subsection D of 19.15.29.12 NMAC	02/05/2025
What was the (estimated) number of samples that were to be gathered	2
What was the sampling surface area in square feet	400

Remediation Closure Request	
<i>Only answer the questions in this group if seeking remediation closure for this release because all remediation steps have been completed.</i>	
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	765
What was the total volume (cubic yards) remediated	185
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)	Based on the analytical results described above, petroleum hydrocarbon and chloride contaminants were not detected above the NMOCD Table I Closure Criteria in any of the excavation confirmation samples collected from depths up to 6.5 feet bgs. The limited volume of chloride impacted soil was also removed from the North Excavation.
<i>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>	
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: 02/28/2025

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QUESTIONS, Page 7

Action 437597

QUESTIONS (continued)

Operator: HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	OGRID: 372171
	Action Number: 437597
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Reclamation Report	
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 437597

CONDITIONS

Operator: HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	OGRID: 372171
	Action Number: 437597
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

CONDITIONS

Created By	Condition	Condition Date
nvez	None	4/16/2025