

October 7, 2025

New Mexico State Land Office 310 Old Santa Fe Trail Santa Fe, New Mexico, 87501

Re: Proposed Site Assessment Plan
South Eunice Seven Rivers Queen Unit #426

Lea County, New Mexico

To Whom It May Concern,

Ensolum, LLC (Ensolum), on behalf of Hilcorp Energy Company (Hilcorp), has prepared the following *Proposed Site Assessment Plan* (Assessment Plan) for the South Eunice Seven Rivers Queen Unit #426 well pad (Site) in association with the Apache-Hilcorp South Eunice Seven Rivers Queen Unit Transfer. A *Proposed Site Reclamation Plan* was submitted to the New Mexico State Land Office (NMSLO) for this Site on September 2, 2025. The NMSLO denied the *Proposed Site Reclamation Plan* on September 23, 2025 for the following reasons:

- Site assessment/delineation Based on aerial imagery and the open NMOCD incident records, ECO suspects the open incident is the disturbance located southeast of the well pad. OCD records indicate that soil was blended and put back into the excavation. The open incident location will need to confirmed, assessed, remediated, and reclaimed with OCD and ECO.
- Site assessment/delineation For well pad areas of concern: due to sandy soil all assessment samples must extend to a minimum of 2 ft bgs. 1 ft bgs is not sufficient for sandy soils and for a location that has had extensive earthwork already.
- Remediation Method Detailed The workplan does not clearly address closure plans for the open NMOCD incident.
- Schedule of Implementation Please prepare as detailed of a schedule as possible. This
  workplan states that activities will be scheduled within 90 days of plugging the well but the well
  is plugged. See ECO's Reclamation Plan Guidance document for example schedule information.

At the recommendation of the NMSLO, this *Assessment Plan* was prepared to document the Site history and conditions and propose assessment activities. Following the completion of the Site assessment activities described below, a *Remediation and Reclamation Plan* will be submitted to NMSLO and New Mexico Oil Conservation Division (NMOCD) reporting assessment results and proposing remediation, if required, and reclamation activities.

#### SITE INFORMATION

Operator: Hilcorp Energy Company

Ensolum, LLC | Environmental, Engineering & Hydrogeologic Consultants 3122 National Parks Hwy | Carlsbad, New Mexico 88220 | ensolum.com

Well Name: South Eunice Seven Rivers Queen Unit #426

API Number: 30-025-09042

GPS Coordinates: 32.3682556, -103.2295074

Location: Unit A, Section 26, Township 22S, Range 36E, Lea County, New Mexico

Landowner: New Mexico State Land Office (NMSLO)

NMSLO Lease Number: A0-2614-0000

#### SITE HISTORY

• The South Eunice Seven Rivers Queen Unit #426 well is an injection well that was operated between November 1963 and August 2020.

- The well was plugged and abandoned on October 20, 2020, in accordance with the procedures provided in the approved Form C-103, *Sundry Notices and Reports on Wells*.
- A review of the NMOCD well records and available historical satellite imagery was completed.
  - A drilling pit was not registered at the Site with the NMOCD. A review of historical satellite imagery indicates a drilling pit was potentially located on the northwest side of the well pad.
  - Three reportable releases were associated with the well in the NMOCD well records.
    - Incident Number nGRL0930941403 was a 50-barrel produced water release that occurred on October 23, 2009. The release occurred approximately 515 feet southeast of the Site in the pasture area. The impacted soil was delineated and excavated. Soil samples collected between March 20, and April 2, 2010 reported constituents of concern (COC) concentrations below the appropriate Closure Criteria, and a Closure Request was submitted to the NMOCD on October 22, 2019. NMOCD approved closure of the release on July 8, 2021. Aerial photographs show the area remediated as well as a two-track road constructed to access this release remain sparsely vegetated.
    - Incident Number NKJ1603935987 refers to a produced water release of unknown quantity that occurred on April 1, 2013, and is associated with the well. Review of the closure report shows that this incident occurred south of the wellhead and pad in Unit I, Section 26, Township 22S, Range 36E immediately east of the well pad for API #30-025-09039. This injection well (South Eunice Seven Rivers Queen Unit #420) is owned by Marathon Oil Company and was plugged on March 4, 1997. The incident resulted in produced water affecting the east portion of the pad and flowing east into the adjacent pasture. Impacted soil was excavated to 4.5 feet below ground surface (bgs) and a 20-millimeter impermeable liner was installed at 4 feet bgs. The release area was backfilled. Remediation and sampling activities were summarized in a Closure Report dated June 27, 2013, and closure of the incident was approved by NMOCD on February 8, 2016. Review of the report and aerial photographs from the Site indicate that this incident did not affect the Site.



- Incident Number nLWJ1011834641 was a 50-barrel produced water release from the injection flow line that occurred on March 17, 2010. The incident number is still open with a status of pending submission of Site Characterization / Remediation Plan or Remediation Closure Report. The approved Form C-141 for this release did not provide details regarding the exact location of the release, and no additional information is available for Incident Number nLWJ1011834641. Please note that soil samples collected in response to the assessment and remediation of Incident Number nGRL0930941403 were collected after the spill date of Incident Number nLWJ1011834641. If the release occurred in the sparsely vegetated area southeast of the pad, impacts were addressed during remediation of the October 23, 2009 release.
- A violation (cGR2023350840) was noted during a field inspection conducted on July 7, 2020. The well failed mechanical integrity testing and would not hold pressure so was shut in and later plugged and abandoned. The violation was resolved on November 23, 2020.
- A copy of the NMOCD Site summary is included in Appendix A.
- Possible surface staining was identified just east of the wellhead during a review of historical satellite imagery. A sparsely vegetated area was observed on the aerial imagery north of the well pad.

#### SITE CONDITIONS

- A Site visit was conducted on July 14, 2025, to evaluate current Site conditions. Photographs
  from the Site visit are included in Appendix B, and a Site location map showing access to the
  Site is attached as Figure 1.
- The well pad is adjacent to an active oil and gas road that will remain in operation. A Site Map is presented on Figure 2.
- The plugged and abandoned well bore was marked with a steel well marker.
- No surface production equipment, trash or debris remained at the Site.
- The pad appears to be reclaimed; however, revegetation of the pad is below 70% of predisturbance levels.
- Possible salt crusting was noted north of the well head.
- The possible former drilling pit area northwest of the pad was previously reclaimed but remained mostly bare. Evidence of frequent cattle disturbance is present in this area.
- No noxious weeds were identified at the Site.
- An area of subsidence was identified west of the wellhead during the Site visit.
- A berm was noted at the western edge of the access road to prevent access to the reclaimed pad.
- The surrounding topography was relatively flat sloping slightly to the south.
- Sandy loam topsoil was noted in the adjacent, undisturbed off-pad area.



- The surrounding land consists of native rangeland and is predominantly used for livestock and wildlife grazing, and oil and gas operations.
- The Natural Resources Conservation Service (NRCS) Web Soil Survey classifies the soil type at the well pad as Berino-Cacique loamy fine sands association. The soil type identified at Incident Number nGRL0930941403 is Pyote soils and Dune land. The NRCS summaries are included as Appendix C.

#### Summary of Berino:

- o Typical Soil Profile
  - 0 to 6 inches: Loamy fine sand6 to 60 inches: Sandy clay loam
- Properties
  - Slope: 0 to 3 percent slopes
  - Depth to restrictive feature: More than 80 inches
  - Drainage Class: Well drained
  - Runoff class: Low

#### Summary of Cacique:

- Typical Soil Profile
  - 0 to 12 inches: Loamy fine sand
  - 12 to 28 inches: Sandy clay loam
  - 28 to 38 inches: Cemented material
- Properties
  - Slope: 0 to 3 percent slopes
  - Depth to restrictive feature: 20 to 40 inches to petrocalcic
  - Drainage Class: Well drained
  - Runoff class: High

#### Summary of Pyote:

- Typical Soil Profile
  - 0 to 30 inches: Fine sand
  - 30 to 60 inches: Fine sandy loam
- Properties
  - Slope: 0 to 3 percent slopes
  - Depth to restrictive feature: More than 80 inches
  - Drainage Class: Well drained
  - Runoff class: Negligible

#### Summary of Dune Land:

- Typical Soil Profile
  - 0 to 6 inches: Fine sand6 to 60 inches: Fine sand
- Settina
  - Landform: Dunes
  - Parent Material: Sandy eolian deposits derived from sedimentary rock
- Cultural and Biological Review:



- The intent of the Site assessment, potential remediation, and reclamation is to restore habitat and vegetation cover/composition to pre-disturbance conditions. Both the well pad and the area disturbed during the remediation of Incident Number nGRL0930941403 will be reclaimed (Figure 2).
- Assessment, remediation (if required), and reclamation activities are anticipated to remain in previously disturbed areas of the well pad and remediation areas. The Cultural Properties Protection (CPP) Rule will be followed since surface disturbing activities include areas off-pad.
- The Site is located within the historical range of the Lesser Prairie Chicken (LPC) and within an NMSLO Candidate Conservation Agreement with Assurances (CCAA) area.
  - Measures to comply with the CCAA include restoration of habitat by assessment, possible remediation, and reclamation of the well pad and revegetation with native species.
  - Construction activities will be avoided during breeding, nesting, and early broodrearing seasons.
- A review of the U.S. Fish and Wildlife Services Information for Planning and Consultation (IPaC) resources indicated there are no critical wildlife habitats at the Site.
  - Endangered and non-essential experimental population bird species (Lesser Prairie-chicken and Northern Aplomado Falcon, respectively) are potentially present in the area near the Site.
  - Proposed threatened insect species (Monarch Butterfly) are possibly present in the area near the Site.
- If surface disturbing activities extend outside of the well pad extent, a biological survey will be completed.
- o The Site is not located within the range of the Dunes Sagebrush Lizard.
- The Site is not located within the CCAA boundary for the Texas Hornshell mussel.
- Predominant vegetation species in the adjacent undisturbed areas include honey mesquite and brush.
- The Site is located in a low karst occurrence potential area.
- The Site is not located near surface water, wetlands, or a continually flowing watercourse.
- Assessment, possible remediation, and reclamation activities are not expected to negatively impact sensitive receptors or sensitive soils.

#### PROPOSED ASSESSMENT SOIL SAMPLING

- Potential impacts to soil were identified on the well pad during a review of historical satellite imagery and salt crusting was observed in the revegetated area north of the well pad during the Site visit. The areas of concern and proposed sampling locations are presented on Figure 3.
- In order to evaluate for the presence or absence of impacted soil, Hilcorp proposes to collect discrete assessment soil samples from a depth of 2-feet bgs, or right above bedrock if encountered, in the areas of concern. The soil samples will be field screened for volatile organic compounds (VOCs) utilizing a calibrated photoionization detector (PID) and chloride using Hach<sup>®</sup> chloride QuanTab<sup>®</sup> test strips.
- Since the release location of Incident Number nLWJ1011834641 is unknown, Hilcorp proposes to collect discrete samples for every 3,000 square feet of the well pad. Soil samples will be



collected at a depth of 2-feet bgs, or right above bedrock refusal if shallower than 2 feet bgs. The soil will be field screened using the above described procedures. The proposed sampling locations are presented on Figure 3.

- The soil samples will be placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler name, method of analysis, and immediately placed on ice. The soil samples will be transported under strict chain-of-custody procedures to Cardinal Laboratories (Cardinal) in Hobbs, New Mexico, for analysis of Total Petroleum Hydrocarbons (TPH) following United States Environmental Protection Agency (EPA) Method 8015M/D and chloride following Standard Method 4500.
- If impacted soil is identified in any of the assessment samples, it will be excavated and removed from the Site prior to proceeding with reclamation activities.
  - Excavation will proceed vertically and laterally until final confirmation soil samples indicate a TPH concentration of less than 100 milligrams per kilogram (mg/kg) and a chloride concentration of less than 600 mg/kg, in the top four feet.
  - The Site was characterized to assess the applicability of Table I, Closure Criteria for Soils Impacted by a Release, of Title 19, Chapter 15, Part 29 (19.15.29) of the New Mexico Administrative Code (NMAC) to determine the Site Closure Criteria at depths greater than 4 feet bgs. The results of the Site characterization are provided in Appendix D, and Site receptors are identified on Figure 1.
- Excavation and soil sampling activities (if warranted) will be completed in accordance with 19.15.29 NMAC.
- If excavation of impacted soil is conducted at the Site, 5-point composite soil samples will be collected every 200 square feet from the floor and sidewalls of the excavation. The 5-point composite samples will be collected by placing five equivalent aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thoroughly mixing.
  - The excavation soil samples will be handled and analyzed following the same procedures as described above.
  - The excavation will be backfilled with clean, locally procured topsoil.
- Hilcorp proposes the following to address the area of concern in the drilling pit.
  - The historical drilling pit area remained mostly bare.
  - In order to evaluate for the presence or absence of impacted soil, discrete assessment soil samples will be collected from the former pit area. The drilling pit area of concern and proposed assessment soil sample locations are depicted on Figure 3.
  - The soil samples will be analyzed following the same procedures described above.
  - If impacted soil is identified in any of the assessment samples, vertical delineation activities will be conducted.
    - Vertical delineation of the pit will proceed at 1-foot intervals until soil samples indicate a TPH concentration of less than 100 mg/kg and a chloride concentration of less than 600 mg/kg in the top four feet.
    - If warranted, vertical delineation below four feet will proceed until soil samples indicate a chloride concentration less than the Site Closure Criteria (20,000 mg/kg) and a TPH concentration less than 2,500 mg/kg.
- Laboratory analytical results for the soil samples and photographic documentation will be provided to the NMSLO in the follow-up *Site Remediation and Reclamation Plan*.



#### **SCHEDULE OF IMPLEMENTATION**

The proposed implementation schedule is outlined below. The schedule will be amended as necessary pending approval of this *Assessment Plan* by the NMSLO and NMOCD.

- October 7, 2025 Assessment Plan submitted to the NMSLO and NMOCD for review and approval.
- October 28, 2025 Approved assessment sampling begins.
- November 4, 2025 Submission of Site Remediation and Reclamation Plan to NMSLO and NMOCD for review and approval.
- November 18, 2025 Approved remediation, if required, executed.
- December 2, 2025 Approved reclamation activities begin.
- December 16, 2025 Reclamation Activities Report submitted to NMSLO and NMOCD for review and approval.
- May 16, 2026 First semi-annual inspection of vegetation occurs.

Upon completion of revegetation, a *Closure Report* documenting the vegetation assessment results will be submitted to the NMSLO for final inspection and release.

If you have any questions or comments, please contact Ms. Brooke Herb at (970) 403-6824 or <a href="mailto:bherb@ensolum.com">bherb@ensolum.com</a>.

Sincerely,

**Ensolum, LLC** 

Katherine Kahn, P.G.

Senior Managing Geologist

Brooke Herb

Senior Managing Geologist

cc: Billy Ginn, Hilcorp Energy Company

**NMOCD** 

#### Appendices:

Figure 1 Site Location Map

Figure 2 Site Map

Figure 3 Proposed Soil Sampling Locations

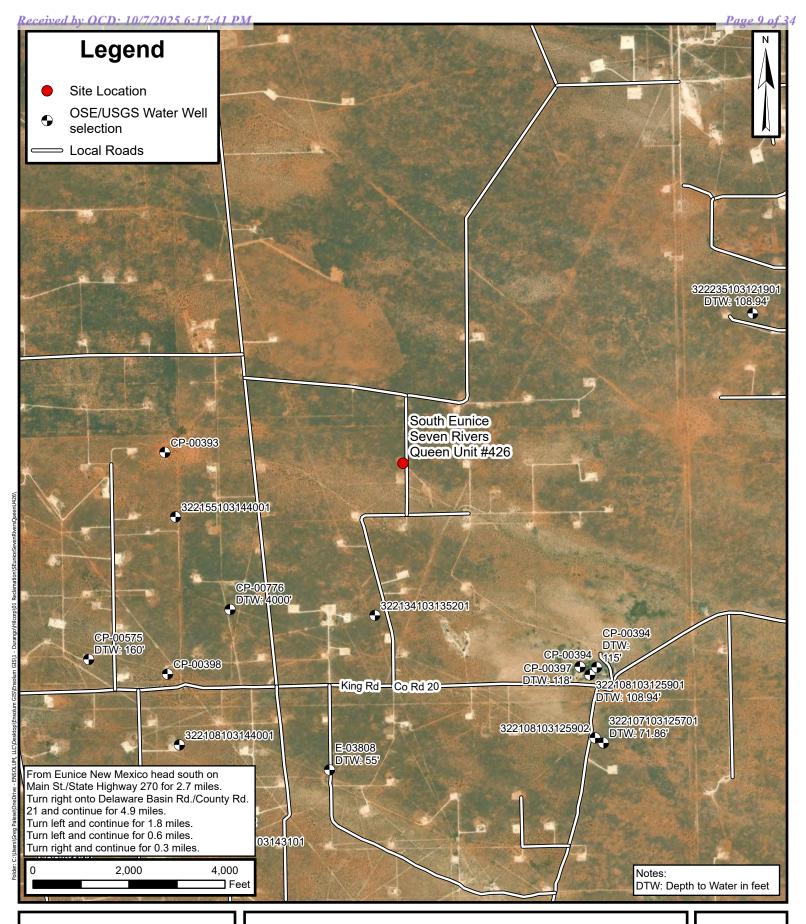
Appendix A NMOCD Site Summary Appendix B Photographic Log

Appendix C NRCS Summary
Appendix D Site Characterization





**FIGURES** 





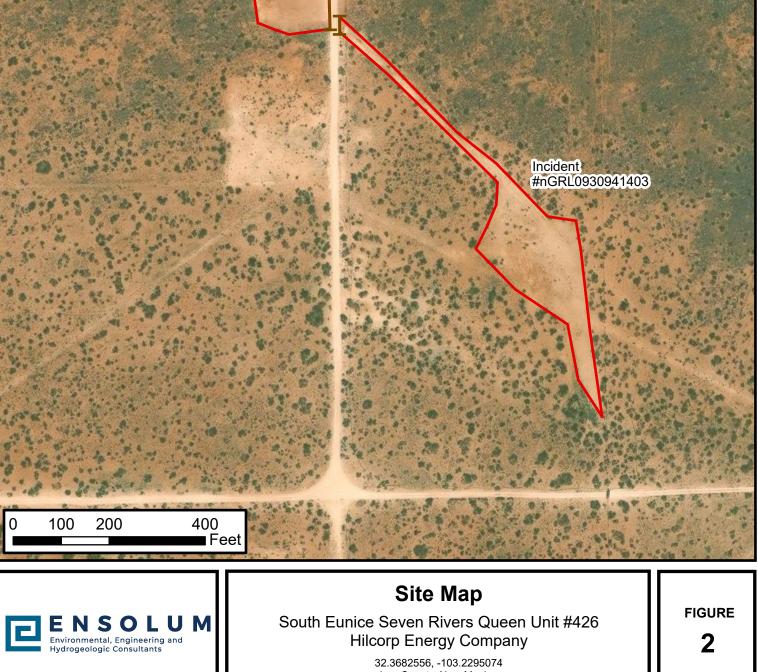
### **Site Location Map**

South Eunice Seven Rivers Queen Unit #426 Hilcorp Energy Company

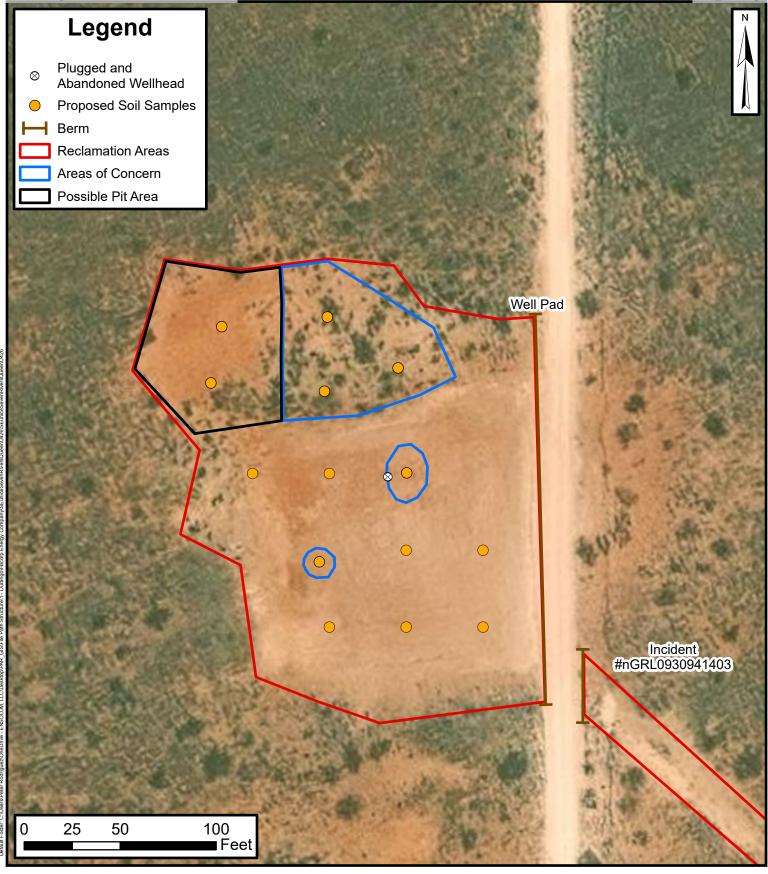
> 32.3682556, -103.2295074 Lea County, New Mexico

FIGURE

1



Lea County, New Mexico





### **Proposed Soil Sampling Locations**

South Eunice Seven Rivers Queen Unit #426 Hilcorp Energy Company

> 32.3682556, -103.2295074 Lea County, New Mexico

FIGURE 3



## **APPENDIX A**

Searches

**Operator Data** 

**Hearing Fee Application** 

### **OCD Permitting**

Home Searches Wells Well Details

#### 30-025-09042 SOUTH EUNICE SEVEN RIVERS QUEEN UNIT #426 [306622]

General Well Information				
Operator:	[873] APACHE CORPORATION			
Status:	Plugged, Not Released		Direction:	Vertical
Well Type:	Injection		Multi-Lateral:	No
Work Type:	New		Mineral Owner:	State
			Surface Owner:	State
Surface Location:	A-26-22S-36E 660 FNL 660 FEL			
Lat/Long:	32.3682556,-103.2295074 NAD83			
GL Elevation:				
KB Elevation:			Sing/Mult Compl:	Single
DF Elevation:			Potash Waiver:	False
Proposed Formation and/or Note	es			
Depths				
Proposed:	3839		True Vertical Depth:	3839
Measured Vertical Depth:	3839		Plugback Measured:	0
Formation Tops				
	Formation	Тор	Producing Meth	od Obtained
Event Dates				
Initial APD Approval:	01/01/1900			
Most Recent APD Approval: APD Cancellation: APD Extension Approval:	06/11/2009		Current APD Expiration:	01/01/1902
Spud:	11/04/1963		Gas Capture Plan Received:	
Approved Temporary			TA Expiration:	
Abandonment:				
Shut In:				
Plug and Abandoned Intent			PNR Expiration:	10/20/2021
Received:	08/28/2020		Last MIT/BHT:	11/02/2020
Well Plugged:	10/20/2020			<del></del>
Site Release:				
Last Inspection:	11/02/2020			

History
---------

Effective Date	Property	Well Number	Operator	C-101 Work Type	Well Type	Well Status	Apd Cancelled	Plug Date
06/11/2009	[306622] SOUTH EUNICE SEVEN RIVERS QUEEN UNIT	#426	[873] APACHE CORPORATION	New	Injection	Plugged, Not Released		
01/01/1900	[6387] SOUTH EUNICE SEVEN RIVERS QUEEN UNIT	#426	[14021] MARATHON OIL CO	New	Injection	Active		

Quic

• Gene

• <u>Histor</u>

• Comr

Opera

Pits

• Casin

• <u>Well (</u>

FinanComp

• Repo

• Natur

• Order

• Produ

• Trans

PointsAction

Asso

Well F

• Well L

• <u>Well /</u>

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11011

• New I

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• New S

• New

• New \

Searches **Operator Data Hearing Fee Application** 

Pits

No Pits Found

Casing

No Casing Found

**Well Completions** 

[24130] EUNICE; SEVEN RIVERS-QUEEN, SOUTH

Zone Permanently Plugged Last Produced: 09/01/2020 Status:

A-26-22S-36E 660 FNL 660 FEL **Bottomhole Location:** 

Lat/Long: Acreage:

DHC: Consolidation Code:

**Production Method:** 

**Well Test Data** 

Production Test: Test Length: 0 hours Flowing Tubing Pressure: Flowing Casing Pressure: 0 psi 0 psi

Choke Size: 0.000 inches Testing Method:

Gas Volume: 0.0 MCF Oil Volume: 0.0 bbls Gas-Oil Ratio: 0 Kcf / bbl Oil Gravity: 0.0 Corr. API Water Volume: 0.0 bbls

Disposition of Gas:

Perforations

**Top Measured Depth Bottom Measured Depth** Date (Where Completion Enters

(End of Lateral) Formation)

**Top Vertical Depth Bottom Vertical Depth** 

Notes

**Event Dates** 

Initial Effective/Approval: 01/01/1900 10/20/2020 Most Recent Approval:

TA Expiration: Confidential Until: Confidential Requested On: Test Allowable Approval: Test Allowable End:

DHC: TD Reached:

**Deviation Report Received:** Rig Released: No

**Directional Survey Run:** No Logs Received: No

**Directional Survey Received:** No Closure Pit Plat Received: First Gas Production: First Oil Production:

First Injection: Ready to Produce: Completion Report Received: C-104 Approval: New Well C-104 Approval:

Plug Back:

**Authorization Revoked Start:** Revoked Until:

**Well Completion History** 

			Searcnes	Operator Data	Hearing Fee Application
06/11/2009	[306622] SOUTH EUNICE SEVEN RIVERS QUEEN UNIT	#426	[873] APACHE CORPORATION	Active	
01/01/1900	[6387] SOUTH EUNICE SEVEN RIVERS QUEEN UNIT	#426	[14021] MARATHON OIL CO	Active	

#### Financial Assurance

Please login to review the financial assurance associated with this well.

#### Compliance

Note that Financial Assurance and Inactive Well Compliance are documented in separate reports (Inactive Well Report, Financial Assurance Report).

Also note that some compliance issues are addressed at the operator level so not listed under each well.

#### cGR2023350840

Violation Source:Field InspectionDate of Violation:07/07/2020

**Compliance Required:** 10/05/2020 **Resolved:** 11/23/2020

#### Notes

Failed MIT, tried multiple times and would not hold pressure, chart is in well file. Well was shut in.

#### Actions/Events

Event Date Category Type

#### Reported Releases

The reported release volumes are sourced from C-141 submissions.								
Earliest Reported Release in OCD Record	ls: 10	/23/2009 <b>La</b>	st:		02/08/2	016	Show All	Reported Releases
		Release	/olumes			Additio	nal Details	
	BBLS	LBS	MCF	UNK	Туре	Product	Severity	Status
2016 (1)	0	0	0	0				
2010 (1)	50	0	0	0				
2009 (1)	50	0	0	0				
Grand Total:	100	0	0	0				

#### Upstream Natural Gas Venting & Flaring

The upstream natural gas venting & flaring volumes are sourced from upstream natural gas waste reports (C-115B) submissions.								
Earliest Natural Gas Waste Report in OCE	Records: 10/2	2021 <b>Last</b> :		04/2025	Sho	ow All Upstream Venting & Flaring		
Venting & Flaring Volumes					Beneficial Use			
	Vented (MCF)	Flared (MCF)	Total (MCF)			Used (MCF)		
2021	0	0	0			0		
2022	0	0	0			0		
2023	0	0	0			0		

				Searches	Operator Data	Hearing Fee Application
2025	0	0	0			0
Grand Total:	0	0	0			0

#### Orders

Please login to review the orders associated with this well.

arliest Production in OCD Records: 12/1992 Last			ast		9/2020		Show All Pro	duction	Export to Exc	
		Produ	uction		In			njection		
Time Frame	Oil (BBLS)	Gas (MCF)	Water (BBLS)	Days P/I	Water (BBLS)	Co2 (MCF)	Gas (MCF)	Other	Pressure	
1992 Cumulative	57,519	86,034	1,922	99	1,961,309	0	0	0	N/A	
1993	0	0	0	0	49,548	0	0	0	N/A	
1994	0	0	0	365	43,325	0	0	0	N/A	
1995	0	0	0	365	91,195	0	0	0	N/A	
1996	0	0	0	366	39,680	0	0	0	N/A	
1997	0	0	0	273	42,108	0	0	0	N//	
1998	0	0	0	212	17,637	0	0	0	N/A	
1999	0	0	0	0	0	0	0	0	N/s	
2000	0	0	0	0	0	0	0	0	N/s	
2001	0	0	0	334	7,035	0	0	0	N/A	
2002	0	0	0	365	1,089	0	0	0	N/s	
2003	0	0	0	365	16,599	0	0	0	N/s	
2004	0	0	0	366	15,517	0	0	0	N/A	
2005	0	0	0	365	13,020	0	0	0	N/A	
2006	0	0	0	365	19,500	0	0	0	N/A	
2007	0	0	0	365	44,278	0	0	0	N/A	
2008	0	0	0	366	35,834	0	0	0	N/A	
2009	0	0	0	151	17,415	0	0	0	N/A	
2010	0	0	0	120	4,624	0	0	0	N/	
2011	0	0	0	334	5,852	0	0	0	N/A	
2012	0	0	0	366	11,213	0	0	0	N/A	
2013	0	0	0	365	771	0	0	0	N/A	

						Searches	Operator Da	ata	Hearing Fee	Application
2015	0	0	0	365	284	0	0	0	N/A	
2016	0	0	0	366	633	0	0	0	N/A	
2017	0	0	0	365	724	0	0	0	N/A	
2018	0	0	0	365	730	0	0	0	N/A	
2019	0	0	0	365	461	0	0	0	N/A	
2020	0	0	0	274	416	0	0	0	N/A	
Grand Total:	57,519	86,034	1,922	8,372	2,441,346	0	0	0	N/A	

Transporters		
Transporter	Product	Most Recent for Property
[36785] DCP OPERATING COMPANY, LP	Gas	12/2024
[248749] DCP MIDSTREAM, LP	Gas	4/2025
[33479] HOLLYFRONTIER REFINING & MARKETING LLC	Oil	3/2025
	Transporter  [36785] DCP OPERATING COMPANY, LP  [248749] DCP MIDSTREAM, LP	Transporter Product  [36785] DCP OPERATING COMPANY, LP Gas  [248749] DCP MIDSTREAM, LP Gas

Points of Disposition			
ID	Туре	Description	Pool(s)

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EMNRD Home OCD Main Page OCD Rules Help



**APPENDIX B** 

# **ENSOLUM**

Photographic Log
Hilcorp Energy
South Eunice Seven Rivers Queen Unit #426
API# 30-025-09042





Photograph 1 Date: 07/14/2025

Description: Pad overview and well marker

View: South

Photograph 2 Date: 07/14/2025

Description: Cattle around pad area

View: East





Photograph 3 Date: 07/14/2025 Photograph 4 Date: 07/14/2025

Description: Pit area Description: Further extension of pit area

View: North View: Southwest



#### Photographic Log

Hilcorp Energy
South Eunice Seven Rivers Queen Unit #426
API# 30-025-09042





Photograph 5 Date: 07/14/2025

Description: Berm and access road

View: South

Photograph 6 Date: 07/14/2025

Description: Well mark and surrounding area

View: Southwest





Photograph 7

Date: 07/14/2025

Photograph 8

Date: 07/14/2025

Description: Salt crusting

Description: Significant salt crust

View: South

View: South

# **ENSOLUM**

Photographic Log Hilcorp Energy

South Eunice Seven Rivers Queen Unit #426 API# 30-025-09042



Photograph 9 Date: 08/14/2025

Description: Incident Number nGRL0930941403

View: Southeast

Photograph 10 Date: 08/14/2025 Description: Incident Number nGRL0930941403

View: Southeast





Photograph 11 Date: 08/14/2025

Description: Incident Number nGRL0930941403

View: East

Photograph 12 Date: 08/14/2025

Description: Incident Number nGRL0930941403

View: North



## **APPENDIX C**

#### Lea County, New Mexico

#### BE—Berino-Cacique loamy fine sands association

#### **Map Unit Setting**

National map unit symbol: dmpd Elevation: 3,000 to 3,900 feet

Mean annual precipitation: 10 to 13 inches
Mean annual air temperature: 60 to 62 degrees F

Frost-free period: 190 to 205 days

Farmland classification: Not prime farmland

#### **Map Unit Composition**

Berino and similar soils: 50 percent Cacique and similar soils: 40 percent Minor components: 10 percent

Estimates are based on observations, descriptions, and transects of

the mapunit.

#### **Description of Berino**

#### Setting

Landform: Plains

Landform position (three-dimensional): Rise

Down-slope shape: Linear Across-slope shape: Linear

Parent material: Sandy eolian deposits derived from sedimentary rock over calcareous sandy alluvium derived from sedimentary

rock

#### Typical profile

A - 0 to 6 inches: loamy fine sand Btk - 6 to 60 inches: sandy clay loam

#### **Properties and qualities**

Slope: 0 to 3 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None Frequency of ponding: None

Calcium carbonate, maximum content: 40 percent

Gypsum, maximum content: 1 percent

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0

mmhos/cm)

Sodium adsorption ratio, maximum: 2.0

Available water supply, 0 to 60 inches: Moderate (about 8.7

inches)

#### Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7c

Hydrologic Soil Group: B

Ecological site: R070BD003NM - Loamy Sand

Hydric soil rating: No

#### **Description of Cacique**

#### Setting

Landform: Plains

Landform position (three-dimensional): Rise

Down-slope shape: Linear Across-slope shape: Linear

Parent material: Calcareous eolian deposits derived from

sedimentary rock

#### **Typical profile**

A - 0 to 12 inches: loamy fine sand

Bt - 12 to 28 inches: sandy clay loam

Bkm - 28 to 38 inches: cemented material

#### **Properties and qualities**

Slope: 0 to 3 percent

Depth to restrictive feature: 20 to 40 inches to petrocalcic

Drainage class: Well drained

Runoff class: High

Capacity of the most limiting layer to transmit water (Ksat): Very low

to moderately low (0.00 to 0.06 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None Frequency of ponding: None

Calcium carbonate, maximum content: 5 percent

Gypsum, maximum content: 1 percent

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0

mmhos/cm)

Sodium adsorption ratio, maximum: 2.0

Available water supply, 0 to 60 inches: Low (about 3.6 inches)

#### Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7c

Hydrologic Soil Group: C

Ecological site: R070BD004NM - Sandy

Hydric soil rating: No

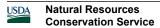
#### **Minor Components**

#### Maljamar

Percent of map unit: 6 percent

Ecological site: R077CY028TX - Limy Upland 16-21" PZ

Hydric soil rating: No



#### **Palomas**

Percent of map unit: 4 percent Ecological site: R070BD003NM - Loamy Sand Hydric soil rating: No

#### **Data Source Information**

Soil Survey Area: Lea County, New Mexico Survey Area Data: Version 21, Sep 3, 2024

#### Lea County, New Mexico

#### PY—Pyote soils and Dune land

#### **Map Unit Setting**

National map unit symbol: dmqr Elevation: 3,000 to 4,400 feet

Mean annual precipitation: 10 to 15 inches
Mean annual air temperature: 60 to 64 degrees F

Frost-free period: 190 to 220 days

Farmland classification: Not prime farmland

#### **Map Unit Composition**

Pyote and similar soils: 46 percent

Dune land: 44 percent

Minor components: 10 percent

Estimates are based on observations, descriptions, and transects of

the mapunit.

#### **Description of Pyote**

#### Setting

Landform: Depressions

Landform position (two-dimensional): Footslope Landform position (three-dimensional): Base slope

Down-slope shape: Concave Across-slope shape: Concave

Parent material: Sandy eolian deposits derived from sedimentary

rock

#### Typical profile

A - 0 to 30 inches: fine sand

Bt - 30 to 60 inches: fine sandy loam

#### **Properties and qualities**

Slope: 0 to 3 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): High

(2.00 to 6.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None Frequency of ponding: None

Calcium carbonate, maximum content: 5 percent

Gypsum, maximum content: 1 percent

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0

mmhos/cm)

Sodium adsorption ratio, maximum: 2.0

Available water supply, 0 to 60 inches: Low (about 5.1 inches)

#### Interpretive groups

Land capability classification (irrigated): 6e Land capability classification (nonirrigated): 7s

Hydrologic Soil Group: A

Ecological site: R070BD003NM - Loamy Sand

Hydric soil rating: No

#### **Description of Dune Land**

#### Setting

Landform: Dunes

Landform position (two-dimensional): Shoulder, backslope

Landform position (three-dimensional): Side slope

Down-slope shape: Convex, linear Across-slope shape: Convex

Parent material: Sandy eolian deposits derived from sedimentary

rock

#### Typical profile

A - 0 to 6 inches: fine sand C - 6 to 60 inches: fine sand

#### Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8

Hydrologic Soil Group: A Hydric soil rating: No

#### **Minor Components**

#### **Kermit**

Percent of map unit: 5 percent

Ecological site: R070BC022NM - Sandhills

Hydric soil rating: No

#### Maljamar, fine sand

Percent of map unit: 3 percent

Ecological site: R070BD003NM - Loamy Sand

Hydric soil rating: No

#### Wink

Percent of map unit: 2 percent

Ecological site: R070BD003NM - Loamy Sand

Hydric soil rating: No

#### **Data Source Information**

Soil Survey Area: Lea County, New Mexico Survey Area Data: Version 21, Sep 3, 2024

Hydric soil rating: No

#### **Data Source Information**

Soil Survey Area: Lea County, New Mexico Survey Area Data: Version 21, Sep 3, 2024



APPENDIX D

#### SITE CHARACTERIZATION AND CLOSURE CRITERIA

#### South Eunice Seven Rivers Queen Unit #426 (Site)

The Site was characterized to assess applicability of Table I, Closure Criteria for Soils Impacted by a Release, of Title 19, Chapter 15, Part 29 (19.15.29) of the New Mexico Administrative Code (NMAC). Results from the characterization are are summarized below. Site receptors are identified on Figure 1.

- The closest continuously flowing or significant watercourse is greater than 300 feet from the Site.
- The Site is greater than 200 feet from a lakebed, sinkhole, or playa lake and greater than 300 feet from an occupied residence, school, hospital, institution, church, or wetland.
- The Site is greater than 1,000 feet to a freshwater well or spring and is not within a 100year floodplain or overlying a subsurface mine.
- The Site is within a low potential karst designation area.
- Depth to groundwater at the Site is estimated to be greater than 100 feet below ground surface (bgs) based on the nearest available groundwater well data (see Figure 1).

Based on the results of the Site Characterization, the following NMOCD Table I Closure Criteria (Closure Criteria) apply:

- Benzene: 10 milligrams per kilogram (mg/kg)
- Benzene, toluene, ethylbenzene, and total xylenes (BTEX): 50 mg/kg
- TPH-GRO plus TPH-DRO: 1,000 mg/kg
- TPH: 2,500 mg/kg
- Chloride: 20,000 mg/kg

A reclamation requirement of 600 mg/kg chloride and 100 mg/kg TPH applies to the top 4 feet of the Site, per 19.15.29.13.D (1) NMAC for the top 4 feet of areas that will be reclaimed.

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Phone: (505) 629-6116
Online Phone Directory
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# State of New Mexico Energy, Minerals and Natural Resources Oil Conservation Division 1220 S. St Francis Dr. Santa Fe, NM 87505

QUESTIONS

Action 513045

#### **QUESTIONS**

Op	erator:	OGRID:
	HILCORP ENERGY COMPANY	372171
	1111 Travis Street	Action Number:
	Houston, TX 77002	513045
		Action Type:
		[C-141] Initial C-141 (C-141-v-Initial)

#### QUESTIONS

Prerequisites	
Incident ID (n#) nLWJ1011834641	
Incident Name	NLWJ1011834641 SOUTH EUNICE SEVEN RIVERS QUEEN UNIT #426 @ 30-025-09042
Incident Type	Produced Water Release
Incident Status	Initial C-141 Approved
Incident Well	[30-025-09042] SOUTH EUNICE SEVEN RIVERS QUEEN UNIT #426

Location of Release Source	
Please answer all the questions in this group.	
Site Name	South Eunice Seven Rivers Queen Unit #426
Date Release Discovered	03/17/2010
Surface Owner	State

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

Nature and Volume of Release	
Material(s) released, please answer all that apply below. Any calculations or specific justifications fo	or the volumes provided should be attached to the follow-up C-141 submission.
Crude Oil Released (bbls) Details	Not answered.
Produced Water Released (bbls) Details	Cause: Equipment Failure   Flow Line - Injection   Produced Water   Released: 50 BBL   Recovered: 0 BBL   Lost: 50 BBL.
Is the concentration of chloride in the produced water >10,000 mg/l	Yes
Condensate Released (bbls) Details	Not answered.
Natural Gas Vented (Mcf) Details	Not answered.
Natural Gas Flared (Mcf) Details	Not answered.
Other Released Details	Not answered.
Are there additional details for the questions above (i.e. any answer containing Other, Specify, Unknown, and/or Fire, or any negative lost amounts)	Not answered.

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# 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 513045

QUESTI	ONS (continued)	
Operator: HILCORP ENERGY COMPANY 1111 Travis Street	OGRID: 372171 Action Number:	
Houston, TX 77002	513045 Action Type: [C-141] Initial C-141 (C-141-v-Initial)	
QUESTIONS		
Nature and Volume of Release (continued)		
Is this a gas only submission (i.e. only significant Mcf values reported)	No, according to supplied volumes this does not appear to be a "gas only" report.	
Was this a major release as defined by Subsection A of 19.15.29.7 NMAC	Yes	
Reasons why this would be considered a submission for a notification of a major release	From paragraph A. "Major release" determine using: (1) an unauthorized release of a volume, excluding gases, of 25 barrels or more.	
With the implementation of the 19.15.27 NMAC (05/25/2021), venting and/or flaring of natural gas (i.e.	e. gas only) are to be submitted on the C-129 form.	
Initial Response	of at , hazard that would result in injury	
The responsible party must undertake the following actions immediately unless they could create a s  The source of the release has been stopped	True	
The impacted area has been secured to protect human health and the environment	True	
Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices	True	
All free liquids and recoverable materials have been removed and managed appropriately	True	
If all the actions described above have not been undertaken, explain why	Not answered.	
	ation immediately after discovery of a release. If remediation has begun, please prepare and attach a narrative ed or if the release occurred within a lined containment area (see Subparagraph (a) of Paragraph (5) of valuation in the follow-up C-141 submission.	
to report and/or file certain release notifications and perform corrective actions for releathe OCD does not relieve the operator of liability should their operations have failed to a	knowledge and understand that pursuant to OCD rules and regulations all operators are required asses which may endanger public health or the environment. The acceptance of a C-141 report by adequately investigate and remediate contamination that pose a threat to groundwater, surface to does not relieve the operator of responsibility for compliance with any other federal, state, or	
I hereby agree and sign off to the above statement	Name: Stuart Hyde Title: Senior Geologist Email: shyde@ensolum.com Date: 10/07/2025	

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storage site

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

QUESTIONS, Page 3

Action 513045

**QUESTIONS** (continued)

Operator:	OGRID:
HILCORP ENERGY COMPANY	372171
1111 Travis Street	Action Number:
Houston, TX 77002	513045
	Action Type:
	[C-141] Initial C-141 (C-141-v-Initial)

#### QUESTIONS Site Characterization Please answer all the questions in this group (only required when seeking remediation plan approval and beyond). This information must be provided to the appropriate district office no later than 90 days after the What is the shallowest depth to groundwater beneath the area affected by the Between 100 and 500 (ft.) release in feet below ground surface (ft bgs) What method was used to determine the depth to ground water NM OSE iWaters Database Search Did this release impact groundwater or surface water What is the minimum distance, between the closest lateral extents of the release and the following surface areas: A continuously flowing watercourse or any other significant watercourse Between 1 and 5 (mi.) Any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark) Greater than 5 (mi.) An occupied permanent residence, school, hospital, institution, or church Greater than 5 (mi.) A spring or a private domestic fresh water well used by less than five households Greater than 5 (mi.) for domestic or stock watering purposes Any other fresh water well or spring Between 1 and 5 (mi.) Incorporated municipal boundaries or a defined municipal fresh water well field Greater than 5 (mi.) Between ½ and 1 (mi.) A subsurface mine Between 1 and 5 (mi.) An (non-karst) unstable area Greater than 5 (mi.) Categorize the risk of this well / site being in a karst geology A 100-year floodplain Greater than 5 (mi.)

Remediation Plan	
Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.	
Requesting a remediation plan approval with this submission	No
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 it another remediation plan submission is required.	

No

Did the release impact areas not on an exploration, development, production, or

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

CONDITIONS

Action 513045

#### **CONDITIONS**

Operator:	OGRID:
HILCORP ENERGY COMPANY	372171
1111 Travis Street	Action Number:
Houston, TX 77002	513045
	Action Type:
	[C-141] Initial C-141 (C-141-v-Initial)

#### CONDITIONS

Created By	Condition	Condition Date
michael.buchanan	Proposed Site Assessment Plan (App ID:513045) for SOUTH EUNICE SEVEN RIVERS QUEEN UNIT #426 is approved to include the following conditions. 1. Depth to Groundwater must be determined by advancing a soil boring or determine depth to groundwater from a closer source. The OCD notes that OSE wells in Fig 1. are approximately 0.90 miles away from the incident(s) or farther and cannot be used; The depth to groundwater has not been adequately determined. When nearby wells are used to determine depth to groundwater, the wells should be no farther than ½ mile away from the site, and data should be no more than 25 years old with well construction information provided in the submission. The responsible party may choose to remediate to the most stringent levels listed in Table 1 of 19.15.29 NMAC in lieu of drilling to determine the depth to groundwater. Lastly, please submit all pertinent docs and future reports for all three incidents: NKJ1603935987, nGRL0930941403, nLWJ1011834641.	10/15/2025