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## Remediation and Closure Report

Cascade 28 Federal 85,86H ROW  
Incident# nAPP2205617791  
Lea County, New Mexico

### Prepared For:

Cimarex Energy Co.  
600 Marienfeld St.  
Midland, TX 79701

### Prepared By:

H&R Enterprises, LLC  
5120 W. Kansas St.  
Hobbs, New Mexico 88242

**August 01, 2022**

Mrs. Shelly Tucker  
**Bureau of Land Management**  
602 E. Green St.  
Carlsbad, NM 88240

Mrs. Jennifer Nobui  
**New Mexico Oil Conservation Division**  
1220 S. St. Francis Drive  
Santa Fe, NM 87505

Subject: **Remediation and Closure Report**  
Cascade 28 Federal 85,86H ROW  
Lea County, NM

Dear Mrs. Nobui and Mrs. Tucker,

Cimarex Energy Co. has contracted H&R Enterprises (H&R) to perform site assessment and remediation services at the above-referenced location. The results of our site assessment and reclamation activities are contained herein.

### **Site Information**

The Cascade 28 Federal 85,86H ROW is located approximately 31.3 miles West of Jal, New Mexico. More specifically the latitude and longitude for the release are 32.104540 North and -103.570411 West. Site plans are presented in [Appendix I](#).

According to the soil survey provided by the United States Department of Agriculture Natural Resources Conservation Service, the soil in this area is made up of Pyote and Maljamar fine sands, 0 to 3 percent slopes. The referenced soil data is attached in [Appendix II](#). Drainage courses in this area are typically dry. The project site is not located in a high Karst potential area (Karst Map, [Appendix I](#)).

### Groundwater and Site Characterization

The New Mexico Office of the State Engineer web site indicates that the nearest reported depth to groundwater is 280-feet below ground surface (BGS). See [Appendix II](#) for the referenced groundwater data.

If a release occurs within the following areas, the responsible party must treat the release as if it occurred less than 50 feet to the groundwater in Table I, New Mexico Oil Conservation Division (NMOCD) Rule 19.15.29, NMAC.

<b>Approximate Depth to Groundwater</b>	<b>280 Feet/BGS</b>
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<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Within 300 feet of any continuously flowing watercourse or any other significant watercourse
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Within 200 feet of any lakebed, sinkhole, or a playa lake
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Within 300 feet from an occupied permanent residence, school, hospital, institution, or church
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Within 500 feet of a spring or a private, domestic fresh water well used by less than five households for domestic or stock watering purposes
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Within 1000 feet of any freshwater well or spring
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Within incorporated municipal boundaries or within a defined municipal freshwater well field covered under a municipal ordinance adopted pursuant to Section 3-2703 NMSA 1978
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Within 300 feet of a wetland
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Within the area overlying a subsurface mine
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Within an unstable area
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Within a 100-year floodplain

Although depth to groundwater data is current, it is outside of the recommended distance of 0.5 miles. On June 14, 2022, an exploratory water bore was completed to 55-feet BGS on the Cascade 28 Federal #85H well pad. The latitude and longitude for this location are 32.108115 North and -103.572759 West. The latitude and longitude of the water bore are 32.1081149 North and -103.5727772 West, which is within the recommended distance of 0.5-miles of the spill area. Initial gauging indicated no presence of groundwater. Gauging was performed on June 17, 2022, 72-hours after boring was completed and no groundwater was detected.

Due to the absence of groundwater at less than or equal to 50-feet BGS, the closure criteria for this release are as follows:

Minimum depth below any point within the horizontal boundary of the release to ground water less than 10,000 mg/l TDS	Constituent	Method*	Limit**
51 feet-100 feet	Chloride **	EPA 300.0 or SM4500 CIB	10,000 mg/kg
	TPH (GRO+DRO+MRO)	EPA SW-846 Method 8015M	2,500 mg/kg
	GRO+MRO	EPA SW-846 Method 8015M	1,000 mg/kg
	BTEX	EPA SW-846 Method 8021B or 8260B	50 mg/kg
	Benzene	EPA SW-846 Method 8021B or 8260B	10 mg/kg

## Incident Description

On February 23, 2022, a Victaulic connection failed on a transfer booster station located in the right of way (ROW) east of the facility causing the release of 38 barrels (bbls) of produced water, 0 bbls were recovered.

## Site Assessment and Remediation Activities

On July 06, 2022, H&R mobilized personnel to begin site assessment, sampling, and field testing of the release area. Grab samples were obtained by way of hand auger. Field chloride titrations were performed, and the results are presented in the following data table. Initial site assessment sampling locations are illustrated on Site Assessment Map, [Appendix I](#). After excavation was complete, composite confirmation samples were collected from the bottoms and sidewalls of the excavation and sent to Cardinal Laboratory to confirm NMOCD closure criteria had been met. Before, during, and after photographs of the location are attached in [Appendix IV](#). Complete laboratory reports can be found in [Appendix VI](#).

Table 1: Initial Field Chloride Titration Results

Sample ID	Date	Depth	Field Titrations (Cl)
S-1	7/6/2022	0-1'	1028
		2'	35
		3'	35
		4'	21
S-2	7/6/2022	0-1'	560
		2'	70
		3'	21
		4'	21
S-3	7/6/2022	0-1'	1204
		2'	205
		3'	35
		4'	35
S-4	7/6/2022	0-1'	1354
		2'	779
		3'	35
		4'	21

Based on the results of our site assessment and upon client authorization, excavation activities of the release area began. Composite confirmation samples were collected to confirm that NMOCD closure criteria had been met, the results of which can be found in the following data table. Confirmation sample locations and excavation dimensions can be found on Confirmation Sample Map in [Appendix I](#). Complete laboratory reports are attached in [Appendix VI](#).

Table 2: Confirmation Soil Sample Analysis

Sample ID	Sample Date	Depth (BGS)	BTEX mg/kg	Benzene mg/kg	GRO mg/kg	DRO mg/kg	MRO mg/kg	Total TPH mg/kg	Cl mg/kg
NMOCD Table 1 Closure Criteria 19.15.29 NMAC			50 mg/kg	10 mg/kg	1000 mg/kg		2500 mg/kg	2500 mg/kg	mg/kg
S-1	7/14/2022	2'	ND	ND	ND	ND	ND	0	1680
	7/19/2022	3'	ND	ND	ND	ND	ND	0	176
S-2	7/14/2022	2'	ND	ND	ND	ND	ND	0	384
S-3	7/14/2022	2'	ND	ND	ND	ND	ND	0	2040
	7/19/2022	3'	ND	ND	ND	ND	ND	0	48
S-4	7/14/2022	2'	ND	ND	ND	ND	ND	0	48
S-5	7/14/2022	2'	ND	ND	ND	ND	ND	0	592
S-6	7/14/2022	2'	ND	ND	ND	ND	ND	0	480
S-7	7/14/2022	2'	ND	ND	ND	ND	ND	0	192
S-8	7/14/2022	3'	ND	ND	ND	ND	ND	0	64
S-9	7/14/2022	3'	ND	ND	ND	ND	ND	0	96
SW-1	7/14/2022	2'	ND	ND	ND	ND	ND	0	2320
	7/19/2022	2-3'	ND	ND	ND	ND	ND	0	128
SW-2	7/14/2022	2'	ND	ND	ND	ND	ND	0	368
SW-3	7/14/2022	2'	ND	ND	ND	ND	ND	0	48
SW-4	7/14/2022	2-3'	ND	ND	ND	ND	ND	0	64
SW-5	7/14/2022	2-3'	ND	ND	ND	ND	ND	0	48
SW-6	7/14/2022	3'	ND	ND	ND	ND	ND	0	48
SW-7	7/14/2022	3'	ND	ND	ND	ND	ND	0	32
SW-8	7/14/2022	3'	ND	ND	ND	ND	ND	0	32
BG-1	7/14/2022	0-1'	ND	ND	ND	ND	ND	0	48
BG-2	7/14/2022	0-1'	ND	ND	ND	ND	ND	0	160
BG-3	7/14/2022	0-1'	ND	ND	ND	ND	ND	0	80
BG-4	7/14/2022	0-1'	ND	ND	ND	ND	ND	0	16

ND = Analyte Not Detected SW = Sidewall BG = Background

## Remedial Actions

- The impacted areas in the vicinity of confirmation sample points S-2 and S-4 through S-7 were excavated to a depth of 2-feet BGS.
- The impacted areas near sample points S-1, S-3, S-8, and S-9 were excavated to 3-feet BGS.
- Composite confirmation samples were obtained from the bottoms and sidewalls of the excavated areas to verify that all contaminants above closure criteria had been removed. The results are shown on Table 2 and the corresponding lab reports may be found in [Appendix VI](#).
- All the excavated material (208yds) was hauled to Lea Land, a NMOCD approved solid waste disposal facility.
- The excavated area was backfilled with new topsoil at depth and brought to grade, machine compacted and contoured to match the surrounding area.
- The Final C-141 formally documenting the remedial actions is attached in [Appendix III](#).

## Closure

Based on the site assessment, remedial actions and confirmation sampling results completed for this project, on behalf of Cimarex Energy we request that no further actions be required, and that closure of this incident be granted.

Should you have any questions or if further information is required, please do not hesitate to contact our office at 575-909-0326.

Respectfully submitted,

H&R Enterprises, LLC



Michael Collier  
Environmental Project Manager

### Attachments:

Appendix I Site Maps

Appendix II Soil Survey, FEMA Flood Zone, Groundwater Data, Water Bore Location Map

Appendix III Initial and Final C-141, NMOCD Correspondence

Appendix IV Photographic Documentation

Appendix V Laboratory Data

# APPENDIX I

## SITE MAPS

## KARST MAP

## TOPOGRAPHIC MAP

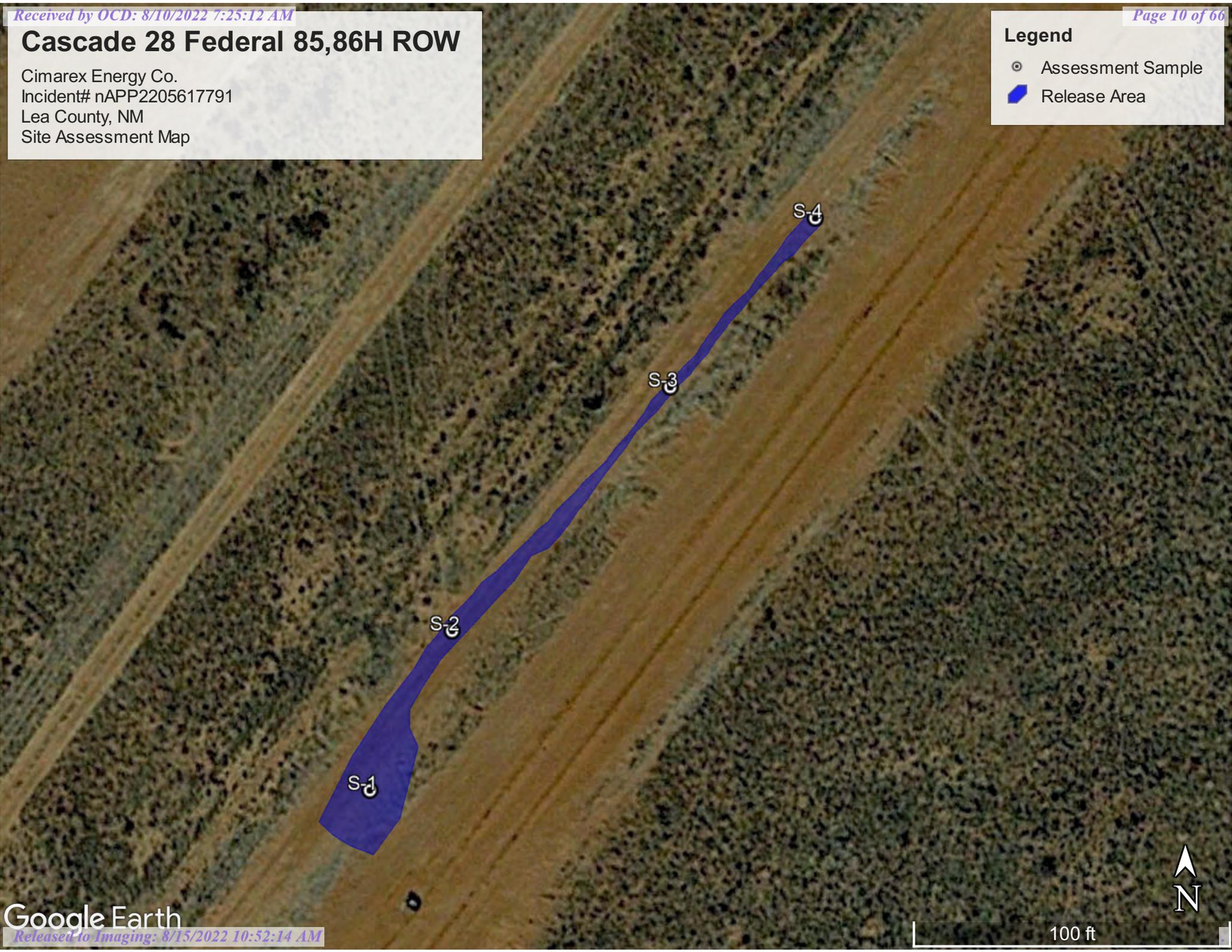
## LOCATOR MAP

# Cascade 28 Federal 85,86H ROW

Cimarex Energy Co.  
Incident# nAPP2205617791  
Lea County, NM  
Site Assessment Map

**Legend**

- ⊙ Assessment Sample
- Release Area



# Cascade 28 Federal 85,86H ROW

Cimarex Energy Co.  
Incident# nAPP2205617791  
Lea County, NM  
Confirmation Sample Map

## Legend

-  2-3ft. Excavation
-  Composite Confirmation Sample/Background sample

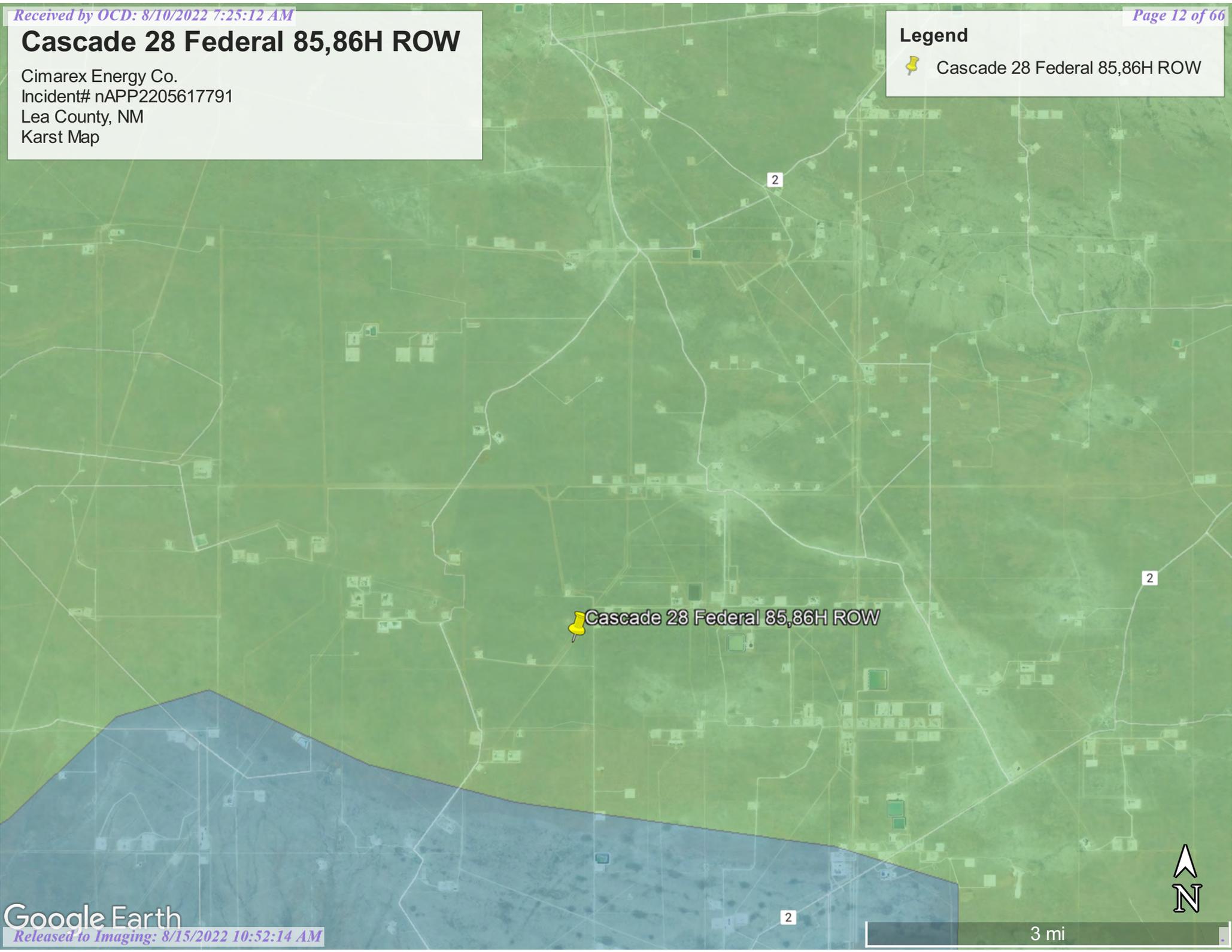


# Cascade 28 Federal 85,86H ROW

Cimarex Energy Co.  
Incident# nAPP2205617791  
Lea County, NM  
Karst Map

## Legend

 Cascade 28 Federal 85,86H ROW



 Cascade 28 Federal 85,86H ROW



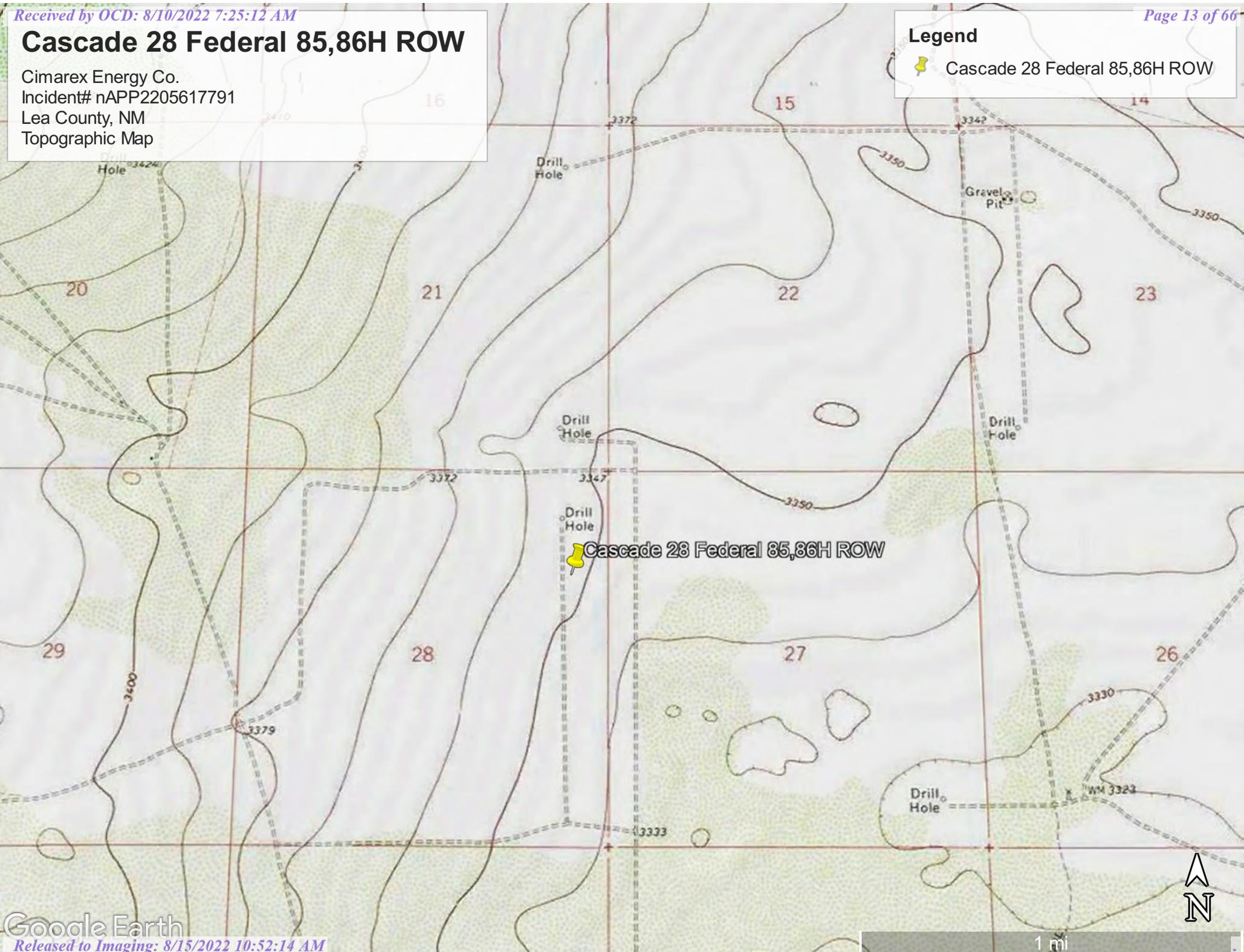
3 mi

# Cascade 28 Federal 85,86H ROW

Cimarex Energy Co.  
Incident# nAPP2205617791  
Lea County, NM  
Topographic Map

## Legend

 Cascade 28 Federal 85,86H ROW

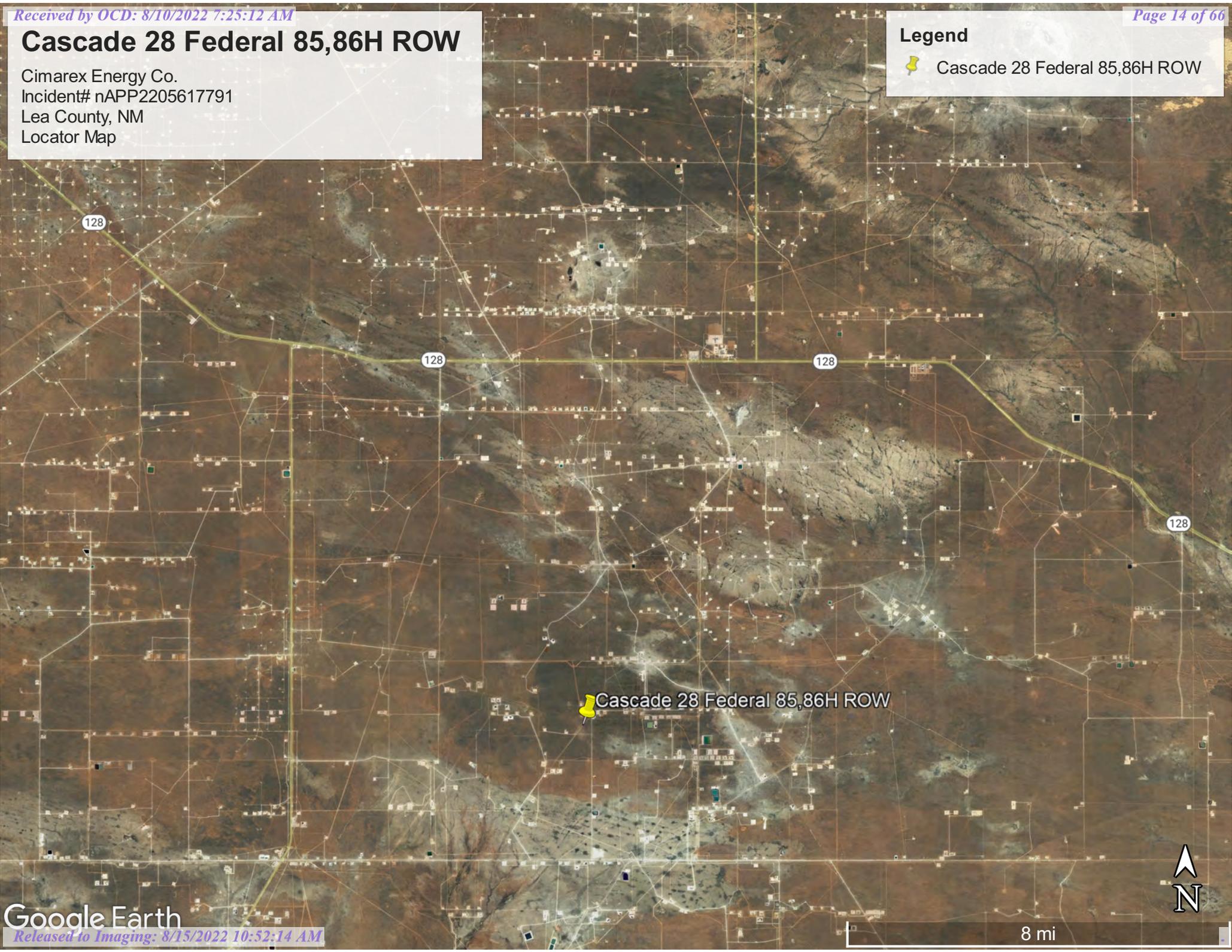


# Cascade 28 Federal 85,86H ROW

Cimarex Energy Co.  
Incident# nAPP2205617791  
Lea County, NM  
Locator Map

## Legend

 Cascade 28 Federal 85,86H ROW



# APPENDIX II

## GROUNDWATER DATA

## SOIL SURVEY

## FEMA FLOOD ZONE

## WATER BORE MAP



# New Mexico Office of the State Engineer

## Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced,  
O=orphaned,  
C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest) (NAD83 UTM in meters)

(In feet)

POD Number	Code	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	DepthWell	DepthWater	Water Column
<a href="#">C_02313</a>		CUB	LE	2	3	3	26	25S	33E	636971	3552098*	2245	150	110	40
<a href="#">C_04537</a> POD1		C	LE	4	4	4	31	25S	33E	631847	3550243	4050	500	280	220
<a href="#">C_04627</a> POD1		CUB	LE	3	3	4	08	25S	33E	632665	3556725	4400			
<a href="#">C_02285</a> POD1		CUB	LE	1	4	4	03	26S	33E	636613	3548855	4421	220	220	0
<a href="#">C_02290</a>		CUB	LE	4	4	4	03	26S	33E	636538	3548770	4471	200	160	40
<a href="#">C_02287</a>		C	LE	3	4	4	03	26S	33E	636427	3548708	4490	220		
<a href="#">C_02286</a>		CUB	LE	3	4	4	03	26S	33E	636470	3548714	4498	220	175	45
<a href="#">C_02288</a>		CUB	LE	4	4	4	03	26S	33E	636646	3548758	4523	220	180	40
<a href="#">C_02289</a>		CUB	LE	4	4	4	03	26S	33E	636612	3548675*	4587	200	160	40

Average Depth to Water: **183 feet**  
 Minimum Depth: **110 feet**  
 Maximum Depth: **280 feet**

**Record Count:** 9

**Basin/County Search:**

**County:** Lea

**UTMNAD83 Radius Search (in meters):**

**Easting (X):** 634882.64

**Northing (Y):** 3552924.3

**Radius:** 5000

\*UTM location was derived from PLSS - see Help

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

7/26/22 10:33 AM

WATER COLUMN/ AVERAGE DEPTH TO WATER



# New Mexico Office of the State Engineer

## Point of Diversion Summary

(quarters are 1=NW 2=NE 3=SW 4=SE)  
 (quarters are smallest to largest) (NAD83 UTM in meters)

<b>Well Tag</b>	<b>POD Number</b>	<b>Q64</b>	<b>Q16</b>	<b>Q4</b>	<b>Sec</b>	<b>Tws</b>	<b>Rng</b>	<b>X</b>	<b>Y</b>
20E6C	C 04537 POD1	4	4	4	31	25S	33E	631847	3550243

<b>Driller License:</b> 1706	<b>Driller Company:</b> ELITE DRILLERS CORPORATION	
<b>Driller Name:</b> WALLACE, BRYCE J.LEE.NER		
<b>Drill Start Date:</b> 06/11/2021	<b>Drill Finish Date:</b> 06/12/2021	<b>Plug Date:</b>
<b>Log File Date:</b> 06/21/2021	<b>PCW Rev Date:</b>	<b>Source:</b> Shallow
<b>Pump Type:</b>	<b>Pipe Discharge Size:</b>	<b>Estimated Yield:</b> 5 GPM
<b>Casing Size:</b> 4.00	<b>Depth Well:</b> 500 feet	<b>Depth Water:</b> 280 feet

<b>Water Bearing Stratifications:</b>	<b>Top</b>	<b>Bottom</b>	<b>Description</b>
	220	340	Sandstone/Gravel/Conglomerate

<b>Casing Perforations:</b>	<b>Top</b>	<b>Bottom</b>
	300	500

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

7/26/22 10:34 AM

POINT OF DIVERSION SUMMARY

Map Unit Description: Pyote and Maljamar fine sands---Lea County, New Mexico

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## Lea County, New Mexico

### PU—Pyote and Maljamar fine sands

#### Map Unit Setting

*National map unit symbol:* dmqq  
*Elevation:* 3,000 to 3,900 feet  
*Mean annual precipitation:* 10 to 12 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

*Pyote and similar soils:* 46 percent  
*Maljamar and similar soils:* 44 percent  
*Minor components:* 10 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Pyote

##### 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

##### 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

Map Unit Description: Pyote and Maljamar fine sands---Lea County, New Mexico

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*Land capability classification (nonirrigated): 7s*  
*Hydrologic Soil Group: A*  
*Ecological site: R042XC003NM - Loamy Sand*  
*Hydric soil rating: No*

### **Description of Maljamar**

#### **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*

#### **Typical profile**

*A - 0 to 24 inches: fine sand*  
*Bt - 24 to 50 inches: sandy clay loam*  
*Bkm - 50 to 60 inches: cemented material*

#### **Properties and qualities**

*Slope: 0 to 3 percent*  
*Depth to restrictive feature: 40 to 60 inches to petrocalcic*  
*Drainage class: Well drained*  
*Runoff class: Very low*  
*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 5.6 inches)*

#### **Interpretive groups**

*Land capability classification (irrigated): 6e*  
*Land capability classification (nonirrigated): 7e*  
*Hydrologic Soil Group: B*  
*Ecological site: R042XC003NM - Loamy Sand*  
*Hydric soil rating: No*

### **Minor Components**

#### **Kermit**

*Percent of map unit: 10 percent*  
*Ecological site: R042XC022NM - Sandhills*

Map Unit Description: Pyote and Maljamar fine sands---Lea County, New Mexico

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*Hydric soil rating:* No

## Data Source Information

Soil Survey Area: Lea County, New Mexico  
Survey Area Data: Version 18, Sep 10, 2021



# Cascade 28 Federal 85,86H ROW

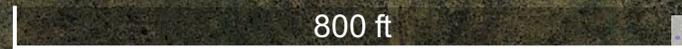
Cimarex Energy Co.  
Incident# nAPP2213134490  
Lea County, NM  
Water Bore Distance Map

## Legend

-  Distance from Water Bore to Release Area. 0.28 miles
-  Release Area

 Exploratory Water Bore

 Cascade 28 Federal 85,86H ROW

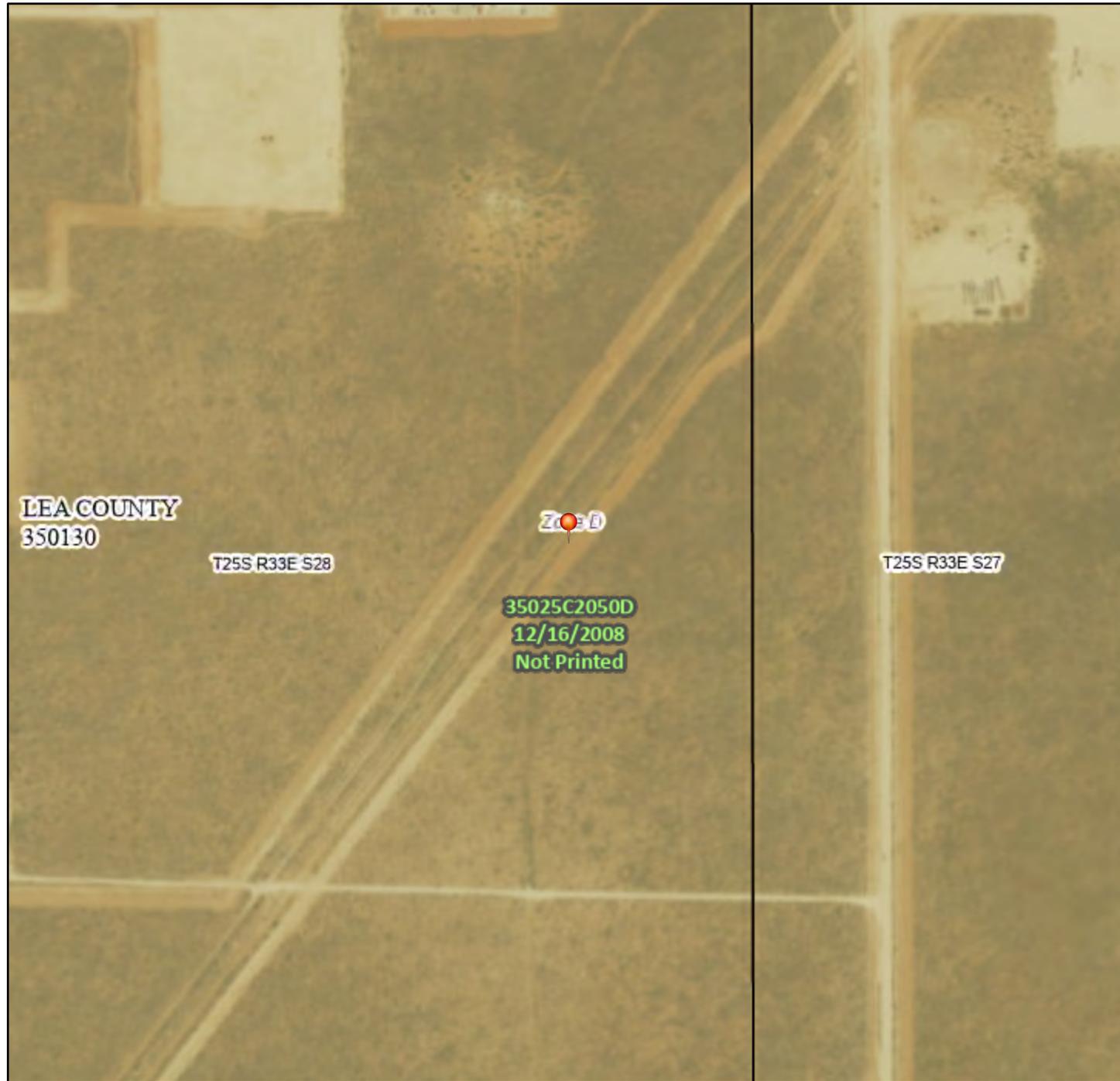


800 ft

# National Flood Hazard Layer FIRMette



103°34'32"W 32°6'32"N



## Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A, V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
		Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levee. See Notes. Zone X
		Area with Flood Risk due to Levee Zone D

OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard Zone X
		Effective LOMRs
		Area of Undetermined Flood Hazard Zone D

GENERAL STRUCTURES		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall

OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance Water Surface Elevation
		17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
		Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature

MAP PANELS		Digital Data Available
		No Digital Data Available
		Unmapped



The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 8/1/2022 at 3:09 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

# APPENDIX III

**INITIAL C-141**

**FINAL C-141**

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
811 S. First St., Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

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

Form C-141  
Revised August 24, 2018  
Submit to appropriate OCD District office

Incident ID	nAPP2205617791
District RP	
Facility ID	
Application ID	

## Release Notification

### Responsible Party

Responsible Party: Cimarex Energy Co.	OGRID: 215099
Contact Name: Laci Luig	Contact Telephone: (432) 571-7800
Contact email: laci.luig@coterra.com	Incident # (assigned by OCD) nAPP2205617791
Contact mailing address: 600 N Marienfeld Street, Ste. 600 Midland, TX 79701	

### Location of Release Source

Latitude 32.104540 \_\_\_\_\_ Longitude -103.570411 \_\_\_\_\_  
(NAD 83 in decimal degrees to 5 decimal places)

Site Name: Cascade 28 Federal 85,86H ROW	Site Type: ROW
Date Release Discovered: 2/23/2022	API# (if applicable)

Unit Letter	Section	Township	Range	County
H	28	25S	33E	Lea

Surface Owner:  State  Federal  Tribal  Private (Name: \_\_\_\_\_)

### Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

<input type="checkbox"/> Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls) 38	Volume Recovered (bbls) 0
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release: Equipment Failure  
A Victaulic connection failed on a transfer booster station located in the ROW east of the Facility. This pump is manned 24/7. The impacted area will be remediated.

State of New Mexico  
Oil Conservation Division

Incident ID	nAPP2205617791
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC?  <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release? Release greater than 25 barrels water
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If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?  
 By: Gloria Garza  
 To: OCD Enviro, BLM, Jim Griswold  
 By: Email

### Initial Response

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

<input checked="" type="checkbox"/> The source of the release has been stopped. <input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.
--

If all the actions described above have not been undertaken, explain why:

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

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.

Printed Name: Laci Luig \_\_\_\_\_ Title: ESH Specialist \_\_\_\_\_  
 Signature:  \_\_\_\_\_ Date: 2/25/2022 \_\_\_\_\_  
 email: laci.luig@coterra.com \_\_\_\_\_ Telephone: (432) 208-3035 \_\_\_\_\_

**OCD Only**  
 Received by: Jocelyn Harimon \_\_\_\_\_ Date: 08/10/2022 \_\_\_\_\_

Incident ID	nAPP2205617791
District RP	
Facility ID	
Application ID	

## Site Assessment/Characterization

*This information must be provided to the appropriate district office no later than 90 days after the release discovery date.*

What is the shallowest depth to groundwater beneath the area affected by the release?	_280_ (ft bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Did the release impact areas <b>not</b> on an exploration, development, production, or storage site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

**Characterization Report Checklist:** *Each of the following items must be included in the report.*

- Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
- Field data
- Data table of soil contaminant concentration data
- Depth to water determination
- Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release
- Boring or excavation logs
- Photographs including date and GIS information
- Topographic/Aerial maps
- Laboratory data including chain of custody

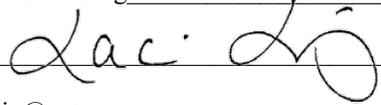
If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

State of New Mexico  
Oil Conservation Division

Page 4

Incident ID	nAPP2205617791
District RP	
Facility ID	
Application ID	

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.

Printed Name: Laci Luig \_\_\_\_\_ Title: ESH Specialist \_\_\_\_\_  
 Signature:  \_\_\_\_\_ Date: 8/10/2022 \_\_\_\_\_  
 email: laci.luig@coterra.com \_\_\_\_\_ Telephone: (432) 208-3035 \_\_\_\_\_

**OCD Only**

Received by: Jocelyn Harimon \_\_\_\_\_ Date: 08/10/2022 \_\_\_\_\_

Incident ID	nAPP2205617791
District RP	
Facility ID	
Application ID	

## Closure

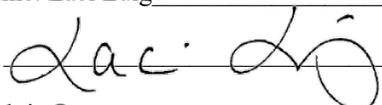
The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled 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.

**Closure Report Attachment Checklist:** *Each of the following items must be included in the closure report.*

- A scaled site and sampling diagram as described in 19.15.29.11 NMAC
- Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)
- Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)
- Description of remediation activities

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.

Printed Name: Laci Luig Title: ESH Specialist

Signature:  Date: 8/10/2022

email: laci.luig@coterra.com Telephone: (432) 208-3035

**OCD Only**

Received by: Jocelyn Harimon Date: 08/10/2022

Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.

Closure Approved by:  Date: 08/15/2022

Printed Name: Jennifer Nobui Title: Environmental Specialist A

**From:** [Laci Luig](#)  
**To:** [NMOCD Spill Notifications](#); [BLM NM CFO Spill](#); [Shelly Tucker - NM BLM](#)  
**Cc:** [Jim Hawley](#); [Michael Collier](#)  
**Subject:** nAPP2205617791 Cascade 28 Federal ROW confirmation sampling  
**Date:** Tuesday, July 12, 2022 9:09:01 AM  
**Attachments:** [image003.jpg](#)

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This email serves as notification for confirmation sampling on the Cimarex – Cascade 28 Federal 85H & 86H ROW. Excavation is scheduled to begin Wednesday, July 13<sup>th</sup> and sampling is scheduled to begin as early as Thursday, July 14<sup>th</sup> and will be collected by H&R Enterprises.

Thank you,



**Laci Luig** | Environmental Safety & Health Specialist  
T: 432.571.7810 | M: 432.208.3035 | [laci.luig@coterra.com](mailto:laci.luig@coterra.com) | [www.coterra.com](http://www.coterra.com)  
Coterra Energy Inc. | 600 N. Marienfeld Street, Suite 600 | Midland, TX 79701

Coterra Energy Inc. is the result of the merger of Cimarex Energy Co. and Cabot Oil & Gas Corporation on October 1, 2021.

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# APPENDIX IV

# PHOTOGRAPHIC DOCUMENTATION

PHOTOGRAPHIC DOCUMENTATION



# APPENDIX V

## LABORATORY DATA



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

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July 15, 2022

MICHAEL COLLIER  
H & R ENTERPRISES  
1010 GAMBLIN ROAD  
HOBBS, NM 88240

RE: CASCADE 28 FED 85H & 86H ROW (CASCADE)

Enclosed are the results of analyses for samples received by the laboratory on 07/14/22 14:33.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-22-15. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene".

Celey D. Keene  
Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

H & R ENTERPRISES  
 MICHAEL COLLIER  
 1010 GAMBLIN ROAD  
 HOBBS NM, 88240  
 Fax To: NONE

Received:	07/14/2022	Sampling Date:	07/14/2022
Reported:	07/15/2022	Sampling Type:	Soil
Project Name:	CASCADE 28 FED 85H & 86H ROW (CAS)	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	CIMAREX - LEA COUNTY, NM		

**Sample ID: S - 1 2' (H223061-01)**

BTEX 8021B		mg/kg		Analyzed By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/15/2022	ND	2.13	107	2.00	3.41	
Toluene*	<0.050	0.050	07/15/2022	ND	2.16	108	2.00	4.26	
Ethylbenzene*	<0.050	0.050	07/15/2022	ND	2.18	109	2.00	3.39	
Total Xylenes*	<0.150	0.150	07/15/2022	ND	6.64	111	6.00	3.50	
Total BTEX	<0.300	0.300	07/15/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.9 % 69.9-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1680	16.0	07/15/2022	ND	432	108	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/15/2022	ND	192	96.0	200	11.4	
DRO >C10-C28*	<10.0	10.0	07/15/2022	ND	219	109	200	2.11	
EXT DRO >C28-C36	<10.0	10.0	07/15/2022	ND					

Surrogate: 1-Chlorooctane 92.8 % 43-149

Surrogate: 1-Chlorooctadecane 93.6 % 42.5-161

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

H & R ENTERPRISES  
 MICHAEL COLLIER  
 1010 GAMBLIN ROAD  
 HOBBS NM, 88240  
 Fax To: NONE

Received:	07/14/2022	Sampling Date:	07/14/2022
Reported:	07/15/2022	Sampling Type:	Soil
Project Name:	CASCADE 28 FED 85H & 86H ROW (CAS)	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	CIMAREX - LEA COUNTY, NM		

**Sample ID: S - 2 2' (H223061-02)**

BTEX 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/15/2022	ND	2.13	107	2.00	3.41		
Toluene*	<0.050	0.050	07/15/2022	ND	2.16	108	2.00	4.26		
Ethylbenzene*	<0.050	0.050	07/15/2022	ND	2.18	109	2.00	3.39		
Total Xylenes*	<0.150	0.150	07/15/2022	ND	6.64	111	6.00	3.50		
Total BTEX	<0.300	0.300	07/15/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	384	16.0	07/15/2022	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	07/15/2022	ND	192	96.0	200	11.4		
DRO >C10-C28*	<10.0	10.0	07/15/2022	ND	219	109	200	2.11		
EXT DRO >C28-C36	<10.0	10.0	07/15/2022	ND						

Surrogate: 1-Chlorooctane 88.6 % 43-149

Surrogate: 1-Chlorooctadecane 89.6 % 42.5-161

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

H & R ENTERPRISES  
 MICHAEL COLLIER  
 1010 GAMBLIN ROAD  
 HOBBS NM, 88240  
 Fax To: NONE

Received:	07/14/2022	Sampling Date:	07/14/2022
Reported:	07/15/2022	Sampling Type:	Soil
Project Name:	CASCADE 28 FED 85H & 86H ROW (CAS)	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	CIMAREX - LEA COUNTY, NM		

**Sample ID: S - 3 2' (H223061-03)**

BTEX 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/15/2022	ND	2.13	107	2.00	3.41		
Toluene*	<0.050	0.050	07/15/2022	ND	2.16	108	2.00	4.26		
Ethylbenzene*	<0.050	0.050	07/15/2022	ND	2.18	109	2.00	3.39		
Total Xylenes*	<0.150	0.150	07/15/2022	ND	6.64	111	6.00	3.50		
Total BTEX	<0.300	0.300	07/15/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 99.8 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	2040	16.0	07/15/2022	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	07/15/2022	ND	192	96.0	200	11.4		
DRO >C10-C28*	<10.0	10.0	07/15/2022	ND	219	109	200	2.11		
EXT DRO >C28-C36	<10.0	10.0	07/15/2022	ND						

Surrogate: 1-Chlorooctane 85.2 % 43-149

Surrogate: 1-Chlorooctadecane 86.7 % 42.5-161

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

H & R ENTERPRISES  
 MICHAEL COLLIER  
 1010 GAMBLIN ROAD  
 HOBBS NM, 88240  
 Fax To: NONE

Received:	07/14/2022	Sampling Date:	07/14/2022
Reported:	07/15/2022	Sampling Type:	Soil
Project Name:	CASCADE 28 FED 85H & 86H ROW (CAS)	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	CIMAREX - LEA COUNTY, NM		

**Sample ID: S - 4 2' (H223061-04)**

BTEX 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/15/2022	ND	2.13	107	2.00	3.41		
Toluene*	<0.050	0.050	07/15/2022	ND	2.16	108	2.00	4.26		
Ethylbenzene*	<0.050	0.050	07/15/2022	ND	2.18	109	2.00	3.39		
Total Xylenes*	<0.150	0.150	07/15/2022	ND	6.64	111	6.00	3.50		
Total BTEX	<0.300	0.300	07/15/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 99.6 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	48.0	16.0	07/15/2022	ND	432	108	400	0.00	QM-07	

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	07/15/2022	ND	192	96.0	200	11.4		
DRO >C10-C28*	<10.0	10.0	07/15/2022	ND	219	109	200	2.11		
EXT DRO >C28-C36	<10.0	10.0	07/15/2022	ND						

Surrogate: 1-Chlorooctane 93.4 % 43-149

Surrogate: 1-Chlorooctadecane 93.9 % 42.5-161

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

H & R ENTERPRISES  
 MICHAEL COLLIER  
 1010 GAMBLIN ROAD  
 HOBBS NM, 88240  
 Fax To: NONE

Received:	07/14/2022	Sampling Date:	07/14/2022
Reported:	07/15/2022	Sampling Type:	Soil
Project Name:	CASCADE 28 FED 85H & 86H ROW (CAS)	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	CIMAREX - LEA COUNTY, NM		

**Sample ID: S - 5 2' (H223061-05)**

BTEX 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/15/2022	ND	2.13	107	2.00	3.41		
Toluene*	<0.050	0.050	07/15/2022	ND	2.16	108	2.00	4.26		
Ethylbenzene*	<0.050	0.050	07/15/2022	ND	2.18	109	2.00	3.39		
Total Xylenes*	<0.150	0.150	07/15/2022	ND	6.64	111	6.00	3.50		
Total BTEX	<0.300	0.300	07/15/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 99.2 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	592	16.0	07/15/2022	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	07/15/2022	ND	192	96.0	200	11.4		
DRO >C10-C28*	<10.0	10.0	07/15/2022	ND	219	109	200	2.11		
EXT DRO >C28-C36	<10.0	10.0	07/15/2022	ND						

Surrogate: 1-Chlorooctane 83.6 % 43-149

Surrogate: 1-Chlorooctadecane 84.2 % 42.5-161

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

H & R ENTERPRISES  
 MICHAEL COLLIER  
 1010 GAMBLIN ROAD  
 HOBBS NM, 88240  
 Fax To: NONE

Received:	07/14/2022	Sampling Date:	07/14/2022
Reported:	07/15/2022	Sampling Type:	Soil
Project Name:	CASCADE 28 FED 85H & 86H ROW (CAS)	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	CIMAREX - LEA COUNTY, NM		

**Sample ID: S - 6 2' (H223061-06)**

BTEX 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/15/2022	ND	2.13	107	2.00	3.41		
Toluene*	<0.050	0.050	07/15/2022	ND	2.16	108	2.00	4.26		
Ethylbenzene*	<0.050	0.050	07/15/2022	ND	2.18	109	2.00	3.39		
Total Xylenes*	<0.150	0.150	07/15/2022	ND	6.64	111	6.00	3.50		
Total BTEX	<0.300	0.300	07/15/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 99.6 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	480	16.0	07/15/2022	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	07/15/2022	ND	192	96.0	200	11.4		
DRO >C10-C28*	<10.0	10.0	07/15/2022	ND	219	109	200	2.11		
EXT DRO >C28-C36	<10.0	10.0	07/15/2022	ND						

Surrogate: 1-Chlorooctane 83.4 % 43-149

Surrogate: 1-Chlorooctadecane 82.9 % 42.5-161

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

H & R ENTERPRISES  
 MICHAEL COLLIER  
 1010 GAMBLIN ROAD  
 HOBBS NM, 88240  
 Fax To: NONE

Received:	07/14/2022	Sampling Date:	07/14/2022
Reported:	07/15/2022	Sampling Type:	Soil
Project Name:	CASCADE 28 FED 85H & 86H ROW (CAS)	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	CIMAREX - LEA COUNTY, NM		

**Sample ID: S - 7 2' (H223061-07)**

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/14/2022	ND	2.15	107	2.00	6.40		
Toluene*	<0.050	0.050	07/14/2022	ND	2.21	110	2.00	6.02		
Ethylbenzene*	<0.050	0.050	07/14/2022	ND	2.25	112	2.00	6.20		
Total Xylenes*	<0.150	0.150	07/14/2022	ND	6.89	115	6.00	6.22		
Total BTEX	<0.300	0.300	07/14/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 117 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	192	16.0	07/15/2022	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	07/15/2022	ND	192	96.0	200	11.4		
DRO >C10-C28*	<10.0	10.0	07/15/2022	ND	219	109	200	2.11		
EXT DRO >C28-C36	<10.0	10.0	07/15/2022	ND						

Surrogate: 1-Chlorooctane 76.2 % 43-149

Surrogate: 1-Chlorooctadecane 76.3 % 42.5-161

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

H & R ENTERPRISES  
 MICHAEL COLLIER  
 1010 GAMBLIN ROAD  
 HOBBS NM, 88240  
 Fax To: NONE

Received:	07/14/2022	Sampling Date:	07/14/2022
Reported:	07/15/2022	Sampling Type:	Soil
Project Name:	CASCADE 28 FED 85H & 86H ROW (CAS)	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	CIMAREX - LEA COUNTY, NM		

**Sample ID: S - 8 3' (H223061-08)**

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/14/2022	ND	2.15	107	2.00	6.40		
Toluene*	<0.050	0.050	07/14/2022	ND	2.21	110	2.00	6.02		
Ethylbenzene*	<0.050	0.050	07/14/2022	ND	2.25	112	2.00	6.20		
Total Xylenes*	<0.150	0.150	07/14/2022	ND	6.89	115	6.00	6.22		
Total BTEX	<0.300	0.300	07/14/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 118 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	64.0	16.0	07/15/2022	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	07/15/2022	ND	192	96.0	200	11.4		
DRO >C10-C28*	<10.0	10.0	07/15/2022	ND	219	109	200	2.11		
EXT DRO >C28-C36	<10.0	10.0	07/15/2022	ND						

Surrogate: 1-Chlorooctane 86.2 % 43-149

Surrogate: 1-Chlorooctadecane 86.7 % 42.5-161

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

H & R ENTERPRISES  
 MICHAEL COLLIER  
 1010 GAMBLIN ROAD  
 HOBBS NM, 88240  
 Fax To: NONE

Received:	07/14/2022	Sampling Date:	07/14/2022
Reported:	07/15/2022	Sampling Type:	Soil
Project Name:	CASCADE 28 FED 85H & 86H ROW (CAS)	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	CIMAREX - LEA COUNTY, NM		

**Sample ID: S - 9 3' (H223061-09)**

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/14/2022	ND	2.15	107	2.00	6.40		
Toluene*	<0.050	0.050	07/14/2022	ND	2.21	110	2.00	6.02		
Ethylbenzene*	<0.050	0.050	07/14/2022	ND	2.25	112	2.00	6.20		
Total Xylenes*	<0.150	0.150	07/14/2022	ND	6.89	115	6.00	6.22		
Total BTEX	<0.300	0.300	07/14/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 117 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	96.0	16.0	07/15/2022	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	07/15/2022	ND	192	96.0	200	11.4		
DRO >C10-C28*	<10.0	10.0	07/15/2022	ND	219	109	200	2.11		
EXT DRO >C28-C36	<10.0	10.0	07/15/2022	ND						

Surrogate: 1-Chlorooctane 81.9 % 43-149

Surrogate: 1-Chlorooctadecane 86.2 % 42.5-161

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

H & R ENTERPRISES  
 MICHAEL COLLIER  
 1010 GAMBLIN ROAD  
 HOBBS NM, 88240  
 Fax To: NONE

Received:	07/14/2022	Sampling Date:	07/14/2022
Reported:	07/15/2022	Sampling Type:	Soil
Project Name:	CASCADE 28 FED 85H & 86H ROW (CAS)	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	CIMAREX - LEA COUNTY, NM		

**Sample ID: SW - 1 2' (H223061-10)**

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/14/2022	ND	2.15	107	2.00	6.40	
Toluene*	<0.050	0.050	07/14/2022	ND	2.21	110	2.00	6.02	
Ethylbenzene*	<0.050	0.050	07/14/2022	ND	2.25	112	2.00	6.20	
Total Xylenes*	<0.150	0.150	07/14/2022	ND	6.89	115	6.00	6.22	
Total BTEX	<0.300	0.300	07/14/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 117 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2320	16.0	07/15/2022	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/15/2022	ND	192	96.0	200	11.4	
DRO >C10-C28*	<10.0	10.0	07/15/2022	ND	219	109	200	2.11	
EXT DRO >C28-C36	<10.0	10.0	07/15/2022	ND					

Surrogate: 1-Chlorooctane 82.1 % 43-149

Surrogate: 1-Chlorooctadecane 82.6 % 42.5-161

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

H & R ENTERPRISES  
 MICHAEL COLLIER  
 1010 GAMBLIN ROAD  
 HOBBS NM, 88240  
 Fax To: NONE

Received:	07/14/2022	Sampling Date:	07/14/2022
Reported:	07/15/2022	Sampling Type:	Soil
Project Name:	CASCADE 28 FED 85H & 86H ROW (CAS)	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	CIMAREX - LEA COUNTY, NM		

**Sample ID: SW - 2 2' (H223061-11)**

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/14/2022	ND	2.15	107	2.00	6.40	
Toluene*	<0.050	0.050	07/14/2022	ND	2.21	110	2.00	6.02	
Ethylbenzene*	<0.050	0.050	07/14/2022	ND	2.25	112	2.00	6.20	
Total Xylenes*	<0.150	0.150	07/14/2022	ND	6.89	115	6.00	6.22	
Total BTEX	<0.300	0.300	07/14/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 118 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	368	16.0	07/15/2022	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/15/2022	ND	192	96.0	200	11.4	
DRO >C10-C28*	<10.0	10.0	07/15/2022	ND	219	109	200	2.11	
EXT DRO >C28-C36	<10.0	10.0	07/15/2022	ND					

Surrogate: 1-Chlorooctane 93.7 % 43-149

Surrogate: 1-Chlorooctadecane 94.2 % 42.5-161

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

H & R ENTERPRISES  
 MICHAEL COLLIER  
 1010 GAMBLIN ROAD  
 HOBBS NM, 88240  
 Fax To: NONE

Received:	07/14/2022	Sampling Date:	07/14/2022
Reported:	07/15/2022	Sampling Type:	Soil
Project Name:	CASCADE 28 FED 85H & 86H ROW (CAS)	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	CIMAREX - LEA COUNTY, NM		

**Sample ID: SW - 3 2' (H223061-12)**

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/14/2022	ND	2.15	107	2.00	6.40	
Toluene*	<0.050	0.050	07/14/2022	ND	2.21	110	2.00	6.02	
Ethylbenzene*	<0.050	0.050	07/14/2022	ND	2.25	112	2.00	6.20	
Total Xylenes*	<0.150	0.150	07/14/2022	ND	6.89	115	6.00	6.22	
Total BTEX	<0.300	0.300	07/14/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 117 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	07/15/2022	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/15/2022	ND	192	96.0	200	11.4	
DRO >C10-C28*	<10.0	10.0	07/15/2022	ND	219	109	200	2.11	
EXT DRO >C28-C36	<10.0	10.0	07/15/2022	ND					

Surrogate: 1-Chlorooctane 88.7 % 43-149

Surrogate: 1-Chlorooctadecane 88.9 % 42.5-161

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

H & R ENTERPRISES  
 MICHAEL COLLIER  
 1010 GAMBLIN ROAD  
 HOBBS NM, 88240  
 Fax To: NONE

Received:	07/14/2022	Sampling Date:	07/14/2022
Reported:	07/15/2022	Sampling Type:	Soil
Project Name:	CASCADE 28 FED 85H & 86H ROW (CAS)	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	CIMAREX - LEA COUNTY, NM		

**Sample ID: SW - 4 2-3' (H223061-13)**

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/14/2022	ND	2.15	107	2.00	6.40	
Toluene*	<0.050	0.050	07/14/2022	ND	2.21	110	2.00	6.02	
Ethylbenzene*	<0.050	0.050	07/14/2022	ND	2.25	112	2.00	6.20	
Total Xylenes*	<0.150	0.150	07/14/2022	ND	6.89	115	6.00	6.22	
Total BTEX	<0.300	0.300	07/14/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 116 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	07/15/2022	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/15/2022	ND	192	96.0	200	11.4	
DRO >C10-C28*	<10.0	10.0	07/15/2022	ND	219	109	200	2.11	
EXT DRO >C28-C36	<10.0	10.0	07/15/2022	ND					

Surrogate: 1-Chlorooctane 81.8 % 43-149

Surrogate: 1-Chlorooctadecane 83.0 % 42.5-161

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

H & R ENTERPRISES  
 MICHAEL COLLIER  
 1010 GAMBLIN ROAD  
 HOBBS NM, 88240  
 Fax To: NONE

Received:	07/14/2022	Sampling Date:	07/14/2022
Reported:	07/15/2022	Sampling Type:	Soil
Project Name:	CASCADE 28 FED 85H & 86H ROW (CAS)	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	CIMAREX - LEA COUNTY, NM		

**Sample ID: SW - 5 2-3' (H223061-14)**

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/14/2022	ND	2.15	107	2.00	6.40		
Toluene*	<0.050	0.050	07/14/2022	ND	2.21	110	2.00	6.02		
Ethylbenzene*	<0.050	0.050	07/14/2022	ND	2.25	112	2.00	6.20		
Total Xylenes*	<0.150	0.150	07/14/2022	ND	6.89	115	6.00	6.22		
Total BTEX	<0.300	0.300	07/14/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 119 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	48.0	16.0	07/15/2022	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	07/15/2022	ND	192	96.0	200	11.4		
DRO >C10-C28*	<10.0	10.0	07/15/2022	ND	219	109	200	2.11		
EXT DRO >C28-C36	<10.0	10.0	07/15/2022	ND						

Surrogate: 1-Chlorooctane 85.4 % 43-149

Surrogate: 1-Chlorooctadecane 86.7 % 42.5-161

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

H & R ENTERPRISES  
 MICHAEL COLLIER  
 1010 GAMBLIN ROAD  
 HOBBS NM, 88240  
 Fax To: NONE

Received:	07/14/2022	Sampling Date:	07/14/2022
Reported:	07/15/2022	Sampling Type:	Soil
Project Name:	CASCADE 28 FED 85H & 86H ROW (CAS)	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	CIMAREX - LEA COUNTY, NM		

**Sample ID: SW - 6 3' (H223061-15)**

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/15/2022	ND	2.15	107	2.00	6.40	
Toluene*	<0.050	0.050	07/15/2022	ND	2.21	110	2.00	6.02	
Ethylbenzene*	<0.050	0.050	07/15/2022	ND	2.25	112	2.00	6.20	
Total Xylenes*	<0.150	0.150	07/15/2022	ND	6.89	115	6.00	6.22	
Total BTEX	<0.300	0.300	07/15/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 116 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	07/15/2022	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/15/2022	ND	192	96.0	200	11.4	
DRO >C10-C28*	<10.0	10.0	07/15/2022	ND	219	109	200	2.11	
EXT DRO >C28-C36	<10.0	10.0	07/15/2022	ND					

Surrogate: 1-Chlorooctane 83.6 % 43-149

Surrogate: 1-Chlorooctadecane 85.0 % 42.5-161

Cardinal Laboratories

\* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

H & R ENTERPRISES  
 MICHAEL COLLIER  
 1010 GAMBLIN ROAD  
 HOBBS NM, 88240  
 Fax To: NONE

Received:	07/14/2022	Sampling Date:	07/14/2022
Reported:	07/15/2022	Sampling Type:	Soil
Project Name:	CASCADE 28 FED 85H & 86H ROW (CAS)	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	CIMAREX - LEA COUNTY, NM		

**Sample ID: SW - 7 3' (H223061-16)**

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/15/2022	ND	2.15	107	2.00	6.40		
Toluene*	<0.050	0.050	07/15/2022	ND	2.21	110	2.00	6.02		
Ethylbenzene*	<0.050	0.050	07/15/2022	ND	2.25	112	2.00	6.20		
Total Xylenes*	<0.150	0.150	07/15/2022	ND	6.89	115	6.00	6.22		
Total BTEX	<0.300	0.300	07/15/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 118 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	07/15/2022	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	07/15/2022	ND	192	96.0	200	11.4		
DRO >C10-C28*	<10.0	10.0	07/15/2022	ND	219	109	200	2.11		
EXT DRO >C28-C36	<10.0	10.0	07/15/2022	ND						

Surrogate: 1-Chlorooctane 87.8 % 43-149

Surrogate: 1-Chlorooctadecane 90.9 % 42.5-161

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

H & R ENTERPRISES  
 MICHAEL COLLIER  
 1010 GAMBLIN ROAD  
 HOBBS NM, 88240  
 Fax To: NONE

Received:	07/14/2022	Sampling Date:	07/14/2022
Reported:	07/15/2022	Sampling Type:	Soil
Project Name:	CASCADE 28 FED 85H & 86H ROW (CAS)	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	CIMAREX - LEA COUNTY, NM		

**Sample ID: SW - 8 3' (H223061-17)**

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/15/2022	ND	2.15	107	2.00	6.40	
Toluene*	<0.050	0.050	07/15/2022	ND	2.21	110	2.00	6.02	
Ethylbenzene*	<0.050	0.050	07/15/2022	ND	2.25	112	2.00	6.20	
Total Xylenes*	<0.150	0.150	07/15/2022	ND	6.89	115	6.00	6.22	
Total BTEX	<0.300	0.300	07/15/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 117 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	07/15/2022	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/15/2022	ND	192	96.0	200	11.4	
DRO >C10-C28*	<10.0	10.0	07/15/2022	ND	219	109	200	2.11	
EXT DRO >C28-C36	<10.0	10.0	07/15/2022	ND					

Surrogate: 1-Chlorooctane 76.2 % 43-149

Surrogate: 1-Chlorooctadecane 76.2 % 42.5-161

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

H & R ENTERPRISES  
 MICHAEL COLLIER  
 1010 GAMBLIN ROAD  
 HOBBS NM, 88240  
 Fax To: NONE

Received:	07/14/2022	Sampling Date:	07/14/2022
Reported:	07/15/2022	Sampling Type:	Soil
Project Name:	CASCADE 28 FED 85H & 86H ROW (CAS)	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	CIMAREX - LEA COUNTY, NM		

**Sample ID: BG - 1 0-1' (H223061-18)**

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/15/2022	ND	2.15	107	2.00	6.40	
Toluene*	<0.050	0.050	07/15/2022	ND	2.21	110	2.00	6.02	
Ethylbenzene*	<0.050	0.050	07/15/2022	ND	2.25	112	2.00	6.20	
Total Xylenes*	<0.150	0.150	07/15/2022	ND	6.89	115	6.00	6.22	
Total BTEX	<0.300	0.300	07/15/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 117 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	07/15/2022	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/15/2022	ND	184	91.9	200	20.0	
DRO >C10-C28*	<10.0	10.0	07/15/2022	ND	182	90.9	200	18.4	
EXT DRO >C28-C36	<10.0	10.0	07/15/2022	ND					

Surrogate: 1-Chlorooctane 79.6 % 43-149

Surrogate: 1-Chlorooctadecane 89.6 % 42.5-161

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

H & R ENTERPRISES  
 MICHAEL COLLIER  
 1010 GAMBLIN ROAD  
 HOBBS NM, 88240  
 Fax To: NONE

Received:	07/14/2022	Sampling Date:	07/14/2022
Reported:	07/15/2022	Sampling Type:	Soil
Project Name:	CASCADE 28 FED 85H & 86H ROW (CAS)	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	CIMAREX - LEA COUNTY, NM		

**Sample ID: BG - 2 0-1' (H223061-19)**

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/15/2022	ND	2.15	107	2.00	6.40		
Toluene*	<0.050	0.050	07/15/2022	ND	2.21	110	2.00	6.02		
Ethylbenzene*	<0.050	0.050	07/15/2022	ND	2.25	112	2.00	6.20		
Total Xylenes*	<0.150	0.150	07/15/2022	ND	6.89	115	6.00	6.22		
Total BTEX	<0.300	0.300	07/15/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 118 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	160	16.0	07/15/2022	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	07/15/2022	ND	184	91.9	200	20.0		
DRO >C10-C28*	<10.0	10.0	07/15/2022	ND	182	90.9	200	18.4		
EXT DRO >C28-C36	<10.0	10.0	07/15/2022	ND						

Surrogate: 1-Chlorooctane 90.6 % 43-149

Surrogate: 1-Chlorooctadecane 95.7 % 42.5-161

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

H & R ENTERPRISES  
 MICHAEL COLLIER  
 1010 GAMBLIN ROAD  
 HOBBS NM, 88240  
 Fax To: NONE

Received:	07/14/2022	Sampling Date:	07/14/2022
Reported:	07/15/2022	Sampling Type:	Soil
Project Name:	CASCADE 28 FED 85H & 86H ROW (CAS)	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	CIMAREX - LEA COUNTY, NM		

**Sample ID: BG - 3 0-1' (H223061-20)**

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/15/2022	ND	2.15	107	2.00	6.40	
Toluene*	<0.050	0.050	07/15/2022	ND	2.21	110	2.00	6.02	
Ethylbenzene*	<0.050	0.050	07/15/2022	ND	2.25	112	2.00	6.20	
Total Xylenes*	<0.150	0.150	07/15/2022	ND	6.89	115	6.00	6.22	
Total BTEX	<0.300	0.300	07/15/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 117 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	07/15/2022	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/15/2022	ND	184	91.9	200	20.0	
DRO >C10-C28*	<10.0	10.0	07/15/2022	ND	182	90.9	200	18.4	
EXT DRO >C28-C36	<10.0	10.0	07/15/2022	ND					

Surrogate: 1-Chlorooctane 82.9 % 43-149

Surrogate: 1-Chlorooctadecane 90.3 % 42.5-161

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

H & R ENTERPRISES  
 MICHAEL COLLIER  
 1010 GAMBLIN ROAD  
 HOBBS NM, 88240  
 Fax To: NONE

Received:	07/14/2022	Sampling Date:	07/14/2022
Reported:	07/15/2022	Sampling Type:	Soil
Project Name:	CASCADE 28 FED 85H & 86H ROW (CAS)	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	CIMAREX - LEA COUNTY, NM		

**Sample ID: BG - 4 0-1' (H223061-21)**

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/15/2022	ND	2.15	107	2.00	6.40	
Toluene*	<0.050	0.050	07/15/2022	ND	2.21	110	2.00	6.02	
Ethylbenzene*	<0.050	0.050	07/15/2022	ND	2.25	112	2.00	6.20	
Total Xylenes*	<0.150	0.150	07/15/2022	ND	6.89	115	6.00	6.22	
Total BTEX	<0.300	0.300	07/15/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 118 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	07/15/2022	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/15/2022	ND	184	91.9	200	20.0	
DRO >C10-C28*	<10.0	10.0	07/15/2022	ND	182	90.9	200	18.4	
EXT DRO >C28-C36	<10.0	10.0	07/15/2022	ND					

Surrogate: 1-Chlorooctane 78.8 % 43-149

Surrogate: 1-Chlorooctadecane 89.5 % 42.5-161

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Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

- QR-04 The RPD for the BS/BSD was outside of historical limits.
- QR-03 The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
- QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- \*\* Samples not received at proper temperature of 6°C or below.
- \*\*\* Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C  
Samples reported on an as received basis (wet) unless otherwise noted on report

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*Celey D. Keene*

Celey D. Keene, Lab Director/Quality Manager





101 East Marland, Hobbs, NM 88240  
 (575) 393-2326 FAX (575) 393-2476

**CHAIN-OF-CUSTODY AND ANALYSIS REQUEST**

**BILL TO**

**ANALYSIS REQUEST**

Company Name: HAR ENTERPRISES  
 Project Manager: MICHAEL COULIER  
 Address: \_\_\_\_\_  
 City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_  
 P.O. #: \_\_\_\_\_  
 Company: CIMAREX  
 Attn: LACI WILK  
 Address: \_\_\_\_\_  
 City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_  
 Project #: \_\_\_\_\_ Project Owner: CIMAREX  
 Project Name: CASCADE ABTED 85H & 86H PADS (CASCADE)  
 Project Location: LEA COUNTY, NM  
 Sampler Name: R. BELL  
 Phone #: \_\_\_\_\_ Fax #: \_\_\_\_\_

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						DATE	TIME	CHLORIDES	TPH	BTEX
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :					
<u>H923061</u>	<u>SW-2 2'</u>	<u>C</u>	<u>1</u>			<u>X</u>				<u>7-14-22</u>				
	<u>SW-3 2'</u>													
	<u>SW-4 2-3'</u>													
	<u>SW-5 2-3'</u>													
	<u>SW-6 3'</u>													
	<u>SW-7 3'</u>													
	<u>SW-8 3'</u>													
	<u>SW-1 0-1'</u>													
	<u>SW-2 0-1'</u>													
	<u>SW-3 0-1'</u>													

PLEASE NOTE: Liability and Damages: Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By: R. Bell Date: 7-14-22 Received By: Michael Coulier  
 Time: 1433  
 Relinquished By: \_\_\_\_\_ Date: \_\_\_\_\_ Received By: \_\_\_\_\_  
 Time: \_\_\_\_\_

Delivered By: (Circle One) Observed Temp. °C 1.7 Sample Condition:  Cool  Intact  
 Corrected Temp. °C 1.1  Yes  No  Yes  No  
 Checked By: (Initials) TD  
 Turnaround Time: 24 HR RUSH Standard  Bacteria (only)  Sample Condition   
 Thermometer ID #113 Rush  Cool Intact  Observed Temp. °C  
 Correction Factor -0.8°C 7/14/22  Yes  No  Yes  No  Corrected Temp. °C

† Cardinal cannot accept verbal changes. Please email changes to coley.keene@cardinallabsnm.com





PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

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July 20, 2022

MICHAEL COLLIER  
H & R ENTERPRISES  
1010 GAMBLIN ROAD  
HOBBS, NM 88240

RE: CASCADE 28 FED 85H & 86H ROW (CASCADE)

Enclosed are the results of analyses for samples received by the laboratory on 07/19/22 13:27.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-22-15. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive style with a large, flowing "C" at the beginning.

Celey D. Keene  
Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

H & R ENTERPRISES  
 MICHAEL COLLIER  
 1010 GAMBLIN ROAD  
 HOBBS NM, 88240  
 Fax To: NONE

Received:	07/19/2022	Sampling Date:	07/19/2022
Reported:	07/20/2022	Sampling Type:	Solid
Project Name:	CASCADE 28 FED 85H & 86H ROW (CAS)	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	CIMAREX - LEA COUNTY, NM		

**Sample ID: S - 1 3' (H223129-01)**

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/19/2022	ND	2.12	106	2.00	0.438		
Toluene*	<0.050	0.050	07/19/2022	ND	2.20	110	2.00	0.781		
Ethylbenzene*	<0.050	0.050	07/19/2022	ND	2.26	113	2.00	0.161		
Total Xylenes*	<0.150	0.150	07/19/2022	ND	6.95	116	6.00	0.153		
Total BTEX	<0.300	0.300	07/19/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 118 % 69.9-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	176	16.0	07/20/2022	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	07/19/2022	ND	195	97.6	200	17.8	QM-07	
DRO >C10-C28*	<10.0	10.0	07/19/2022	ND	174	86.9	200	25.3		
EXT DRO >C28-C36	<10.0	10.0	07/19/2022	ND						

Surrogate: 1-Chlorooctane 91.2 % 43-149

Surrogate: 1-Chlorooctadecane 93.2 % 42.5-161

Cardinal Laboratories

\* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

H & R ENTERPRISES  
 MICHAEL COLLIER  
 1010 GAMBLIN ROAD  
 HOBBS NM, 88240  
 Fax To: NONE

Received:	07/19/2022	Sampling Date:	07/19/2022
Reported:	07/20/2022	Sampling Type:	Solid
Project Name:	CASCADE 28 FED 85H & 86H ROW (CAS)	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	CIMAREX - LEA COUNTY, NM		

**Sample ID: S - 3 3' (H223129-02)**

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/19/2022	ND	2.12	106	2.00	0.438		
Toluene*	<0.050	0.050	07/19/2022	ND	2.20	110	2.00	0.781		
Ethylbenzene*	<0.050	0.050	07/19/2022	ND	2.26	113	2.00	0.161		
Total Xylenes*	<0.150	0.150	07/19/2022	ND	6.95	116	6.00	0.153		
Total BTEX	<0.300	0.300	07/19/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 118 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	48.0	16.0	07/20/2022	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	07/19/2022	ND	195	97.6	200	17.8		
DRO >C10-C28*	<10.0	10.0	07/19/2022	ND	174	86.9	200	25.3		
EXT DRO >C28-C36	<10.0	10.0	07/19/2022	ND						

Surrogate: 1-Chlorooctane 118 % 43-149

Surrogate: 1-Chlorooctadecane 130 % 42.5-161

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\* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

H & R ENTERPRISES  
 MICHAEL COLLIER  
 1010 GAMBLIN ROAD  
 HOBBS NM, 88240  
 Fax To: NONE

Received:	07/19/2022	Sampling Date:	07/19/2022
Reported:	07/20/2022	Sampling Type:	Solid
Project Name:	CASCADE 28 FED 85H & 86H ROW (CAS)	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	CIMAREX - LEA COUNTY, NM		

**Sample ID: SW - 1 2-3' (H223129-03)**

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/19/2022	ND	2.12	106	2.00	0.438		
Toluene*	<0.050	0.050	07/19/2022	ND	2.20	110	2.00	0.781		
Ethylbenzene*	<0.050	0.050	07/19/2022	ND	2.26	113	2.00	0.161		
Total Xylenes*	<0.150	0.150	07/19/2022	ND	6.95	116	6.00	0.153		
Total BTEX	<0.300	0.300	07/19/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 119 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	128	16.0	07/20/2022	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	07/19/2022	ND	195	97.6	200	17.8		
DRO >C10-C28*	<10.0	10.0	07/19/2022	ND	174	86.9	200	25.3		
EXT DRO >C28-C36	<10.0	10.0	07/19/2022	ND						

Surrogate: 1-Chlorooctane 90.7 % 43-149

Surrogate: 1-Chlorooctadecane 93.8 % 42.5-161

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Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

- S-04 The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
QR-03 The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference.
QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD.
ND Analyte NOT DETECTED at or above the reporting limit
RPD Relative Percent Difference
\*\* Samples not received at proper temperature of 6°C or below.
\*\*\* Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C
Samples reported on an as received basis (wet) unless otherwise noted on report

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Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager



101 East Marland, Hobbs, NM 88240  
 (575) 393-2326 FAX (575) 393-2476

**CHAIN-OF-CUSTODY AND ANALYSIS REQUEST**

Company Name: <b>H&amp;R ENTERPRISES</b>		P.O. #:	
Project Manager: <b>M. COLLIER</b>		Company: <b>CLMAREX</b>	
Address:		Attn: <b>LACI LUIE</b>	
City:	State:	Zip:	Address:
Phone #:	Fax #:	City:	State:
Project #:	Project Owner: <b>CLMAREX</b>	Phone #:	Zip:
Project Name: <b>CASCADES 28 FED 85H486 H ROWS (CASCADES)</b>	Project Location: <b>LEA COUNTY, NM</b>	Fax #:	
Sampler Name: <b>M. COLLIER</b>			

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						PRESERV.		DATE	TIME	TPH	BTEX	CHLORIDES
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL					
<b>H223129</b>																
	1-5-1 3'	C	1			X				X	7-19-22		X	X	X	
	2-5-3 3'															
	3-5-1 2-3'															

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Relinquished By: **M. COLLIER** Date: **7-19-22** Received By: **Jessica Kelly** Date: **7-19-22**

Relinquished By: **M. COLLIER** Date: **7-19-22** Received By: **Jessica Kelly** Date: **7-19-22**

Delivered By: (Circle One) **UPS** Observed Temp. °C: **28** Sample Condition:  Intact  Cool  Yes  No

Sampler - UPS - Bus - Other: **UPS** Corrected Temp. °C: **28** CHECKED BY: **JK** (Initials)

Turnaround Time: **24 HR** Standard  Rush  Bacteria (only)  Sample Condition: **PG 1 of 1**

Thermometer ID #113 **7/19/22** Corrected Temp. °C: **28** Bacteria Intact  Yes  No

† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com

**District I**  
 1625 N. French Dr., Hobbs, NM 88240  
 Phone:(575) 393-6161 Fax:(575) 393-0720

**District II**  
 811 S. First St., Artesia, NM 88210  
 Phone:(575) 748-1283 Fax:(575) 748-9720

**District III**  
 1000 Rio Brazos Rd., Aztec, NM 87410  
 Phone:(505) 334-6178 Fax:(505) 334-6170

**District IV**  
 1220 S. St Francis Dr., Santa Fe, NM 87505  
 Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS

Action 132594

**CONDITIONS**

Operator: CIMAREX ENERGY CO. 600 N. Marienfeld Street Midland, TX 79701	OGRID: 215099
	Action Number: 132594
	Action Type: [C-141] Release Corrective Action (C-141)

**CONDITIONS**

Created By	Condition	Condition Date
jnobui	Closure Report Approved.	8/15/2022