

Form 3160-3  
(June 2015)FORM APPROVED  
OMB No. 1004-0137  
Expires: January 31, 2018

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT  
**APPLICATION FOR PERMIT TO DRILL OR REENTER**

1a. Type of work: <input type="checkbox"/> DRILL <input type="checkbox"/> REENTER 1b. Type of Well: <input type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other 1c. Type of Completion: <input type="checkbox"/> Hydraulic Fracturing <input type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		5. Lease Serial No.  6. If Indian, Allottee or Tribe Name  7. If Unit or CA Agreement, Name and No.  8. Lease Name and Well No.  <div style="text-align: center; font-weight: bold; font-size: 1.2em;">[333789]</div>
2. Name of Operator <div style="text-align: center; font-weight: bold; font-size: 1.2em;">[215099]</div>		9. API Well No. <div style="text-align: center; font-weight: bold; font-size: 1.2em;">30-025-51103</div>
3a. Address	3b. Phone No. (include area code)	10. Field and Pool, or Exploratory <div style="text-align: center; font-weight: bold; font-size: 1.2em;">[98177]</div>
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface At proposed prod. zone		11. Sec., T. R. M. or Blk. and Survey or Area
14. Distance in miles and direction from nearest town or post office*		12. County or Parish 13. State
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	16. No of acres in lease	17. Spacing Unit dedicated to this well
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth	20. BLM/BIA Bond No. in file
21. Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will start*	23. Estimated duration
24. Attachments		

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, and the Hydraulic Fracturing rule per 43 CFR 3162.3-3 (as applicable)

- |                                                                                                                                                                                                                           |                                                                                                                                                                                                                       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Well plat certified by a registered surveyor.<br>2. A Drilling Plan.<br>3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office). | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).<br>5. Operator certification.<br>6. Such other site specific information and/or plans as may be requested by the BLM. |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

25. Signature	Name (Printed/Typed)	Date
Title		
Approved by (Signature)	Name (Printed/Typed)	Date
Title		
Office		

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.  
 Conditions of approval, if any, are attached.

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

NGMP Rec 02/14/2023

SL

(Continued on page 2)



Approval Date: 02/08/2023

KZ

02/16/2023

\*(Instructions on page 2)

**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 Road, Aztec, NM 87410  
Phone: (505) 334-6178 Fax: (505) 334-6170

**District IV**  
1220 S. St. Francis Dr., Santa Fe, NM 87505  
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico  
Energy, Minerals & Natural Resources Department  
OIL CONSERVATION DIVISION  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Form C-102  
Revised August 1, 2011  
Submit one copy to appropriate  
District Office

☐ AMENDED REPORT

## WELL LOCATION AND ACREAGE DEDICATION PLAT

<sup>1</sup> API Number <b>30-025-51103</b>	<sup>2</sup> Pool Code 98177	<sup>3</sup> Pool Name WC-025 G-09 S223332A: UPR Wolfcamp
<sup>4</sup> Property Code <b>333789</b>	<sup>5</sup> Property Name CORIANDER 1-12 FEDERAL COM	<sup>6</sup> Well Number 13H
<sup>7</sup> OGRID No. 215099	<sup>8</sup> Operator Name CIMAREX ENERGY CO.	<sup>9</sup> Elevation 3750.3'

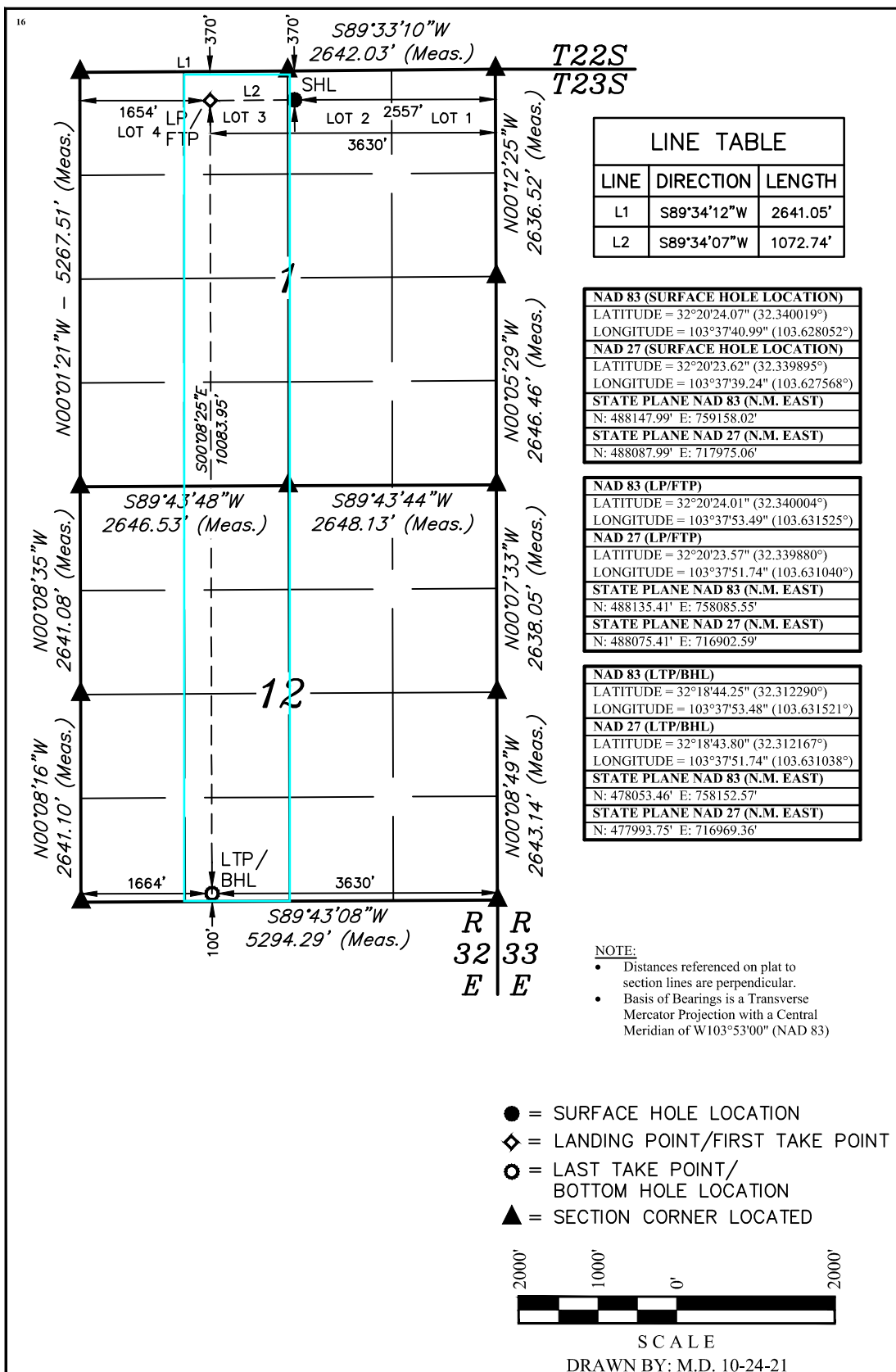
## <sup>10</sup>Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
2	1	23S	32E		370	NORTH	2557	EAST	LEA

## "Bottom Hole Location If Different From Surface

UL or lot no. N	Section 12	Township 23S	Range 32E	Lot Idn	Feet from the 100	North/South line SOUTH	Feet from the 1664	East/West line WEST	County LEA
<sup>12</sup> Dedicated Acres 319.75		<sup>13</sup> Joint or Infill		<sup>14</sup> Consolidation Code		<sup>15</sup> Order No.			

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.



## 17 OPERATOR CERTIFICATION

*I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.*

Amithy Crawford 4/27/22  
Signature Date

Amithy Crawford  
Printed Name

amithy.crawford@coterra.com  
E-mail Address

## 18 SURVEYOR CERTIFICATION

*I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.*

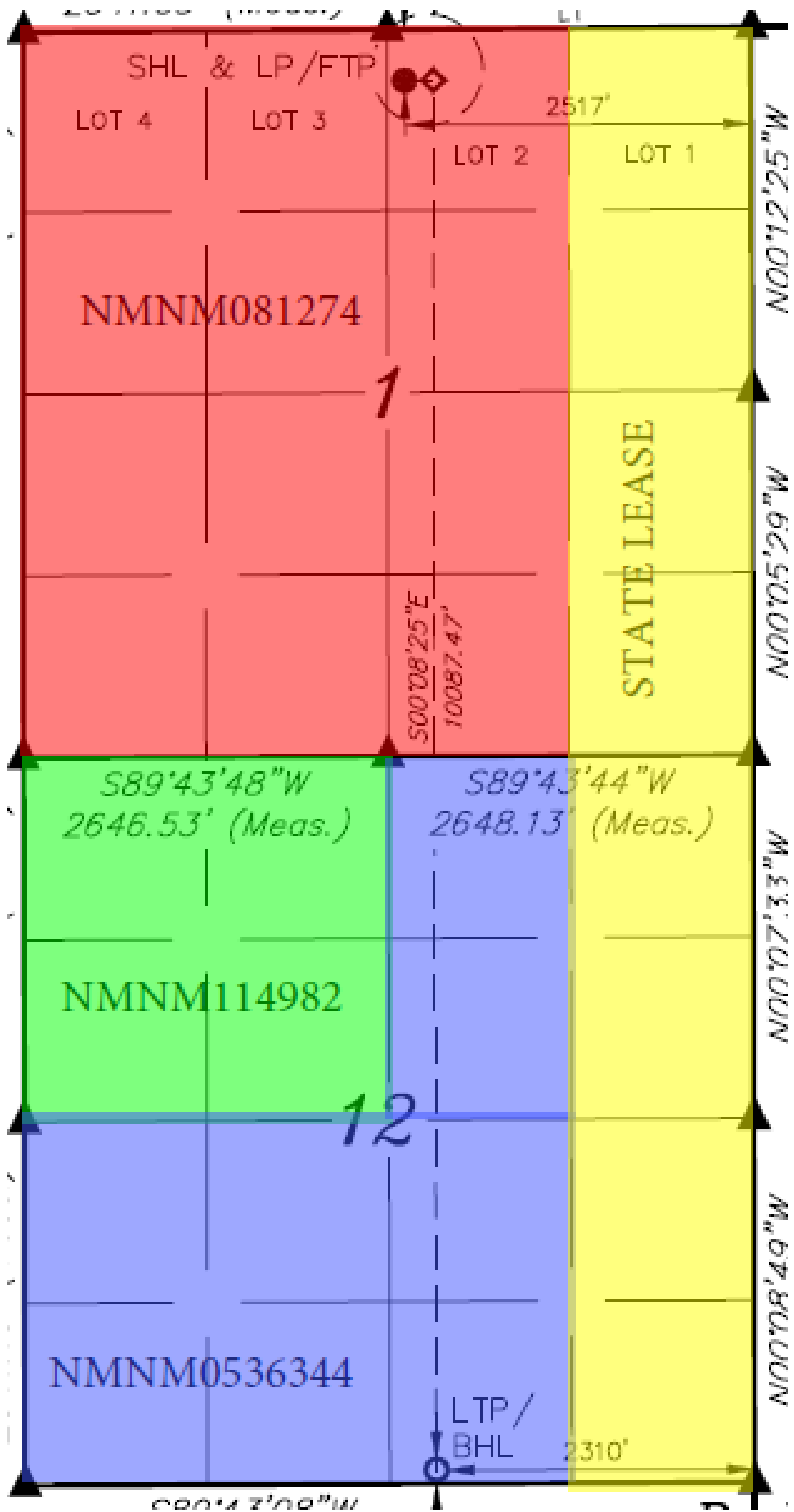
August 3, 2021

Date of Survey \_\_\_\_\_  
Signature and Seal of Professional Surveyor: \_\_\_\_\_



Certificate Number:

CORIANDER LEASE MAP



Intent ☐ As Drilled ☐

API # <b>30-025-51103</b>		
Operator Name:	Property Name:	Well Number

Kick Off Point (KOP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
Latitude					Longitude				NAD

First Take Point (FTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
Latitude					Longitude				NAD

Last Take Point (LTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
Latitude					Longitude				NAD

Is this well the defining well for the Horizontal Spacing Unit? ☐Is this well an infill well? ☐

If infill is yes please provide API if available, Operator Name and well number for Defining well for Horizontal Spacing Unit.

API #		
Operator Name:	Property Name:	Well Number

Estimated Formation Tops

Formation:	Top:	Formation:	Top:

State of New Mexico  
Energy, Minerals and Natural Resources Department

Submit Electronically  
Via E-permitting

Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

## NATURAL GAS MANAGEMENT PLAN

This Natural Gas Management Plan must be submitted with each Application for Permit to Drill (APD) for a new or recompleted well.

### Section 1 – Plan Description

Effective May 25, 2021

**I. Operator:** Cimarex Energy Company **OGRID:** 215099 **Date:** 2/14/2023

**II. Type:** ☒ Original ☐ Amendment due to ☐ 19.15.27.9.D(6)(a) NMAC ☐ 19.15.27.9.D(6)(b) NMAC ☐ Other.

If Other, please describe: \_\_\_\_\_

**III. Well(s):** Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API	ULSTR	Footages	Anticipated Oil BBL/D	Anticipated Gas MCF/D	Anticipated Produced Water BBL/D
Coriander 1-12 Federal Com 13H		2, Sec 1 T23S, R32E	370 FNL/2557	FEL 2300	4600	4600
	30-025-51103					

**IV. Central Delivery Point Name:** Coriander CTB [See 19.15.27.9(D)(1) NMAC]

**V. Anticipated Schedule:** Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API	Spud Date	TD Reached Date	Completion Commencement Date	Initial Flow Back Date	First Production Date
Coriander 1-12 Federal Com 13H		7/25/23	10/4/23	1/1/2024	3/1/2024	3/1/2024
	30-025-51103					

**VI. Separation Equipment:** ☒ Attach a complete description of how Operator will size separation equipment to optimize gas capture.

**VII. Operational Practices:** ☒ Attach a complete description of the actions Operator will take to comply with the requirements of Subsection A through F of 19.15.27.8 NMAC.

**VIII. Best Management Practices:** ☒ Attach a complete description of Operator's best management practices to minimize venting during active and planned maintenance.

**Section 2 – Enhanced Plan****EFFECTIVE APRIL 1, 2022**

Beginning April 1, 2022, an operator that is not in compliance with its statewide natural gas capture requirement for the applicable reporting area must complete this section.

☒ Operator certifies that it is not required to complete this section because Operator is in compliance with its statewide natural gas capture requirement for the applicable reporting area.

**IX. Anticipated Natural Gas Production:**

Well	API	Anticipated Average Natural Gas Rate MCF/D	Anticipated Volume of Natural Gas for the First Year MCF

**X. Natural Gas Gathering System (NGGS):**

Operator	System	ULSTR of Tie-in	Anticipated Gathering Start Date	Available Maximum Daily Capacity of System Segment Tie-in

**XI. Map.** ☐ Attach an accurate and legible map depicting the location of the well(s), the anticipated pipeline route(s) connecting the production operations to the existing or planned interconnect of the natural gas gathering system(s), and the maximum daily capacity of the segment or portion of the natural gas gathering system(s) to which the well(s) will be connected.

**XII. Line Capacity.** The natural gas gathering system ☐ will ☐ will not have capacity to gather 100% of the anticipated natural gas production volume from the well prior to the date of first production.

**XIII. Line Pressure.** Operator ☐ does ☐ does not anticipate that its existing well(s) connected to the same segment, or portion, of the natural gas gathering system(s) described above will continue to meet anticipated increases in line pressure caused by the new well(s).

☐ Attach Operator's plan to manage production in response to the increased line pressure.

**XIV. Confidentiality:** ☐ Operator asserts confidentiality pursuant to Section 71-2-8 NMSA 1978 for the information provided in Section 2 as provided in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and attaches a full description of the specific information for which confidentiality is asserted and the basis for such assertion.

### **Section 3 - Certifications**

**Effective May 25, 2021**

Operator certifies that, after reasonable inquiry and based on the available information at the time of submittal:

☒ Operator will be able to connect the well(s) to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system; or

☐ Operator will not be able to connect to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system.

***If Operator checks this box, Operator will select one of the following:***

**Well Shut-In.** ☐ Operator will shut-in and not produce the well until it submits the certification required by Paragraph (4) of Subsection D of 19.15.27.9 NMAC; or

**Venting and Flaring Plan.** ☐ Operator has attached a venting and flaring plan that evaluates and selects one or more of the potential alternative beneficial uses for the natural gas until a natural gas gathering system is available, including:

- (a) power generation on lease;
- (b) power generation for grid;
- (c) compression on lease;
- (d) liquids removal on lease;
- (e) reinjection for underground storage;
- (f) reinjection for temporary storage;
- (g) reinjection for enhanced oil recovery;
- (h) fuel cell production; and
- (i) other alternative beneficial uses approved by the division.

### **Section 4 - Notices**

1. If, at any time after Operator submits this Natural Gas Management Plan and before the well is spud:

(a) Operator becomes aware that the natural gas gathering system it planned to connect the well(s) to has become unavailable or will not have capacity to transport one hundred percent of the production from the well(s), no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised venting and flaring plan containing the information specified in Paragraph (5) of Subsection D of 19.15.27.9 NMAC; or

(b) Operator becomes aware that it has, cumulatively for the year, become out of compliance with its baseline natural gas capture rate or natural gas capture requirement, no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised Natural Gas Management Plan for each well it plans to spud during the next 90 days containing the information specified in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and shall file an update for each Natural Gas Management Plan until Operator is back in compliance with its baseline natural gas capture rate or natural gas capture requirement.

2. OCD may deny or conditionally approve an APD if Operator does not make a certification, fails to submit an adequate venting and flaring plan which includes alternative beneficial uses for the anticipated volume of natural gas produced, or if OCD determines that Operator will not have adequate natural gas takeaway capacity at the time a well will be spud.

I certify that, after reasonable inquiry, the statements in and attached to this Natural Gas Management Plan are true and correct to the best of my knowledge and acknowledge that a false statement may be subject to civil and criminal penalties under the Oil and Gas Act.

Signature:	
Printed Name:	Sarah Jordan
Title:	Regulatory Analyst
E-mail Address:	sarah.jordan@coterra.com
Date:	2/14/23
Phone:	432/620-1909
<b>OIL CONSERVATION DIVISION</b> <b>(Only applicable when submitted as a standalone form)</b>	
Approved By:	
Title:	
Approval Date:	
Conditions of Approval:	



***From State of New Mexico, Natural Gas Management Plan***

**VI. Separation Equipment:** Attach a complete description of how Operator will size separation equipment to optimize gas capture.

**XEC Standard Response**

Standard facility gas process flow begins at the inlet separator. These vessels are designed based off of forecasted rates and residence times in accordance with, and often greater than, API 12J. The separated gas is then routed to an additional separation vessel (ie sales scrubber) in order to extract liquids that may have carried over or developed due to the decrease in pressure. The sales scrubber is sized based on API 521. From the sales scrubber, the gas leaves the facility and enters the gas midstream gathering network.

## **Cimarex**

### **VII. Operational Practices**

Cimarex values the sustainable development of New Mexico's natural resources. Venting and flaring of natural gas is a source of waste in the industry, and Cimarex will ensure that its values are aligned with those of NMOCD. As such, Cimarex plans to take pointed steps to ensure compliance with Subsection A through F of 19.15.27.8 NMAC.

Specifically, below are the steps Cimarex will plan to follow under routine well commissioning and operations.

1. Capture or combust natural gas during drilling operations where technically feasible, using the best industry practices and control technologies.
  - a. All flares during these operations will be a minimum of 100ft away from the nearest surface-hole location.
2. All gas present during post-completion drill-out and flow back will be routed through separation equipment, and, if technically feasible, flare unsellable vapors rather than vent. Lastly, formal sales separator commissioning to process well-stream fluids and send gas to a gas flow line/collection system or use the gas for on-site fuel or beneficial usage, gas as soon as is safe and technically feasible.
3. Cimarex will ensure the flare or combustion equipment is properly sized to handle expected flow rates, ensure this equipment is equipped with an automatic or continuous ignition source, and ensure this equipment is designed for proper combustion efficiency.
4. If Cimarex must flare because gas is not meeting pipeline specifications, Cimarex will limit flaring to <60 days, analyze gas composition at least twice per week, and route gas into a gathering pipeline as soon as pipeline specifications are met.
5. Under routine production operations, Cimarex will not flare/vent unless:
  - a. Venting or flaring occurs due to an emergency or equipment malfunction.
  - b. Venting or flaring occurs as a result of unloading practices, and an operator is onsite (or within 30 minutes of drive time and posts contact information at the wellsite) until the end of unloading practice.
  - c. The venting or flaring occurs during automated plungerlift operations, in which case the Cimarex operator will work to optimize the plungerlift system to minimize venting/flaring.
  - d. The venting or flaring occurs during downhole well maintenance, in which case Cimarex will work to minimize venting or flaring operations to the extent that it does not pose a risk to safe operations.
  - e. The well is an exploratory well, the division has approved the well as an exploratory well, venting or flaring is limited to 12 months, as approved by the division, and venting/flaring does not cause Cimarex to breach its State-wide 98% gas capture requirement.
  - f. Venting or flaring occurs because the stock tanks or other low-pressure vessels are being gauged, sampled, or liquids are being loaded out.
  - g. The venting or flaring occurs because pressurized vessels are being maintained and are being blown-down or depressurized.
  - h. Venting or flaring occurs as a result of normal dehydration unit operations.

- i. Venting or flaring occurs as a result of bradenhead testing.
  - j. Venting or flaring occurs as a result of normal compressor operations, including general compressor operations, compressor engines and turbines.
  - k. Venting or flaring occurs as a result of a packer leakage test.
  - l. Venting or flaring occurs as a result of a production test lasting less than 24 hours unless otherwise approved by the division.
  - m. Venting or flaring occurs as a result of new equipment commissioning and is necessary to purge impurities from the pipeline or production equipment.
6. Cimarex will maintain its equipment in accordance with its Operations and Maintenance Program, to ensure venting or flaring events are minimized and that equipment is properly functioning.
7. Cimarex will install automatic tank gauging equipment on all production facilities constructed after May 25, 2021, to ensure minimal emissions from tank gauging practices.
8. By November 25, 2022, all Cimarex facilities equipped with flares or combustors will be equipped with continuous pilots or automatic igniters, and technology to ensure proper function, i.e. thermocouple, fire-eye, etc...
9. Cimarex will perform AVO (audio, visual, olfactory) facility inspections in accordance with NMOCD requirements. Specifically, Cimarex will:
  - a. Perform weekly inspections during the first year of production, and so long as production is greater than 60 MCFD.
  - b. If production is less than 60 MCFD, Cimarex will perform weekly AVO inspections when an operator is present on location, and inspections at least once per calendar month with at least 20 calendar days between inspections.
10. Cimarex will measure or estimate the volume of vented, flared or beneficially used natural gas, regardless of the reason or authorization for such venting or flaring.
11. On all facilities constructed after May 25, 2021, Cimarex will install metering where feasible and in accordance with available technology and best engineering practices, in an effort to measure how much gas could have been vented or flared.
  - a. In areas where metering is not technically feasible, such as low-pressure/low volume venting or flaring applications, engineering estimates will be used such that the methodology could be independently verified.
12. Cimarex will fulfill the division's requirements for reporting and filing of venting or flaring that exceeds 50 MCF in volume or last eight hours or more cumulatively within any 24-hour period.

## **VIII. Best Management Practices to minimize venting during active and planned maintenance**

Cimarex strives to ensure minimal venting occurs during active and planned maintenance activities. Below is a description of common maintenance practices, and the steps Cimarex takes to limit venting exposure.

- **Workovers:**
  - Always strive to kill well when performing downhole maintenance.
  - If vapors or trapped pressure is present and must be relieved then:
    - Initial blowdown to production facility:
      - Route vapors to LP flare if possible/applicable
    - Blowdown to portable gas buster tank:
      - Vent to existing or portable flare if applicable.
- **Stock tank servicing:**
  - Minimize time spent with thief hatches open.
  - When cleaning or servicing via manway, suck tank bottoms to ensure minimal volatiles exposed to atmosphere.
    - Connect vacuum truck to low pressure flare while cleaning bottoms to limit venting.
  - Isolate the vent lines and overflows on the tank being serviced from other tanks.
- **Pressure vessel/compressor servicing and associated blowdowns:**
  - Route to flare where possible.
  - Blow vessel down to minimum available pressure via pipeline, prior to venting vessel.
  - Preemptively changing anodes to reduce failures and extended corrosion related servicing.
  - When cleaning or servicing via manway, suck vessel bottoms to ensure minimal volatiles exposed to atmosphere.
- **Flare/combustor maintenance:**
  - Minimize downtime by coordinating with vendor and Cimarex staff travel logistics.
  - Utilizing preventative and predictive maintenance programs to replace high wear components before failure.
  - Because the flare/combustor is the primary equipment used to limit venting practices, ensure flare/combustor is properly maintained and fully operational at all times via routine maintenance, temperature telemetry, onsite visual inspections.

*The Cimarex expectation is to limit all venting exposure. Equipment that may not be listed on this document is still expected to be maintained and associated venting during such maintenance minimized.*

## PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

<b>OPERATOR'S NAME:</b>	<b>Cimarex</b>
<b>LEASE NO.:</b>	<b>NMNM081274</b>
<b>LOCATION:</b>	Section 1, T.23 S., R.32 E., NMPM
<b>COUNTY:</b>	Lea County, New Mexico

<b>WELL NAME &amp; NO.:</b>	Coriander 1-12 Fed Com 13H
<b>SURFACE HOLE FOOTAGE:</b>	370'/N & 2557'/E
<b>BOTTOM HOLE FOOTAGE:</b>	100'/S & 1664'/W

COA

H2S	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Potash	<input checked="" type="radio"/> None	<input type="radio"/> Secretary	<input type="radio"/> R-111-P
Cave/Karst Potential	<input checked="" type="radio"/> Low	<input type="radio"/> Medium	<input type="radio"/> High
Cave/Karst Potential	<input type="radio"/> Critical		
Variance	<input type="radio"/> None	<input checked="" type="radio"/> Flex Hose	<input type="radio"/> Other
Wellhead	<input type="radio"/> Conventional	<input checked="" type="radio"/> Multibowl	<input type="radio"/> Both
Other	<input type="checkbox"/> 4 String Area	<input type="checkbox"/> Capitan Reef	<input type="checkbox"/> WIPP
Other	<input checked="" type="checkbox"/> Fluid Filled	<input type="checkbox"/> Cement Squeeze	<input type="checkbox"/> Pilot Hole
Special Requirements	<input type="checkbox"/> Water Disposal	<input checked="" type="checkbox"/> COM	<input type="checkbox"/> Unit

### A. HYDROGEN SULFIDE

A Hydrogen Sulfide (H2S) Drilling Plan shall be activated 500 feet prior to drilling into the **Delware and Bone Springs** formations. As a result, the Hydrogen Sulfide area must meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.

### B. CASING

1. The **10-3/4** inch surface casing shall be set at approximately **1400** feet (a minimum of **25 feet (Lea County)** into the Rustler Anhydrite and above the salt) and cemented to the surface.
  - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
  - b. Wait on cement (WOC) time for a primary cement job will be a minimum of **8**

**hours** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)

- c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
- d. If cement falls back, remedial cementing will be done prior to drilling out that string.

**Intermediate casing must be kept 1/3<sup>rd</sup> fluid filled to meet BLM minimum collapse requirement.**

2. The minimum required fill of cement behind the **7-5/8** inch intermediate casing is:
    - Operator has proposed a DV tool, the depth may be adjusted as long as the cement is changed proportionally. The DV tool may be cancelled if cement circulates to surface on the first stage.
      - a. First stage to DV tool: Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.
      - b. Second stage above DV tool:
        - Cement to surface. If cement does not circulate, contact the appropriate BLM office.
- Wait on cement (WOC) time for a primary cement job is to include the tail cement slurry due to cave/karst.**
3. The minimum required fill of cement behind the **5-1/2 x 5** inch production casing is:
    - Cement should tie-back at least **200 feet** into previous casing string. Operator shall provide method of verification.

### **C. PRESSURE CONTROL**

1. **Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).**
2. Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **10,000 (10M) psi. Variance is approved to use a 5000 (5M) Annular which shall be tested to 5000 (5M) psi.**
  - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.

- b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
- c. Manufacturer representative shall install the test plug for the initial BOP test.
- d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
- e. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.

#### **D. SPECIAL REQUIREMENT (S)**

##### **Communitization Agreement**

- The operator will submit a Communitization Agreement to the Santa Fe Office, 301 Dinosaur Trail Santa Fe, New Mexico 87508, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.
- If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.
- In addition, the well sign shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

## **GENERAL REQUIREMENTS**

The BLM is to be notified in advance for a representative to witness:

- a. Spudding well (minimum of 24 hours)
- b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
- c. BOPE tests (minimum of 4 hours)

☒ Eddy County

Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220,  
(575) 361-2822

☒ Lea County

Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (575)  
689-5981

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
  - a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
  - b. When the operator proposes to set surface casing with Spudder Rig
    - Notify the BLM when moving in and removing the Spudder Rig.
    - Notify the BLM when moving in the 2<sup>nd</sup> Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
    - BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.
2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.
3. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

#### A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.
2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.



3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.
5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.
6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.
7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.
8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

**B. PRESSURE CONTROL**

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.
2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.

3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.
4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:
  - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
  - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
  - c. Manufacturer representative shall install the test plug for the initial BOP test.
  - d. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.
  - e. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
  - a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead cement), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).
  - b. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the cement plug. The BOPE test can be initiated after bumping the cement plug with the casing valve open. (only applies to single stage cement jobs, prior to the cement setting up.)
  - c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer and can be initiated immediately with the casing valve open. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any

test against the casing must meet the WOC time for water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).

- d. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.
- e. The results of the test shall be reported to the appropriate BLM office.
- f. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.
- g. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.
- h. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

#### C. DRILLING MUD

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the Wolfcamp formation, and shall be used until production casing is run and cemented.

#### D. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

**ZS12823**



U.S. Department of the Interior  
BUREAU OF LAND MANAGEMENT

# Operator Certification Data Report

02/10/2023

## Operator

I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently exist; that I have full knowledge of state and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

**NAME:** AMITHY CRAWFORD

**Signed on:** 01/27/2022

**Title:** Regulatory Analyst

**Street Address:** 600 N MARIENFELD STE 600

**City:** MIDLAND

**State:** TX

**Zip:** 79701

**Phone:** (432)620-1909

**Email address:** AMITHY.CRAWFORD@COTERRA.COM

## Field

**Representative Name:**

**Street Address:**

**City:**

**State:**

**Zip:**

**Phone:**

**Email address:**



U.S. Department of the Interior  
BUREAU OF LAND MANAGEMENT

## Application Data

02/10/2023

APD ID: 10400082949

Submission Date: 01/27/2022

Operator Name: CIMAREX ENERGY COMPANY

Well Name: CORIANDER 1-12 FEDERAL COM

Well Number: 13H

Well Type: OIL WELL

Well Work Type: Drill

Highlighted data  
reflects the most  
recent changes  
[Show Final Text](#)

### Section 1 - General

APD ID: 10400082949

Tie to previous NOS? Y

Submission Date: 01/27/2022

BLM Office: Carlsbad

User: AMITHY CRAWFORD

Title: Regulatory Analyst

Federal/Indian APD: FED

Is the first lease penetrated for production Federal or Indian? FED

Lease number: NMNM081274

Lease Acres:

Surface access agreement in place?

Allotted?

Reservation:

Agreement in place? NO

Federal or Indian agreement:

Agreement number:

Agreement name:

Keep application confidential? Y

Permitting Agent? NO

APD Operator: CIMAREX ENERGY COMPANY

Operator letter of

### Operator Info

Operator Organization Name: CIMAREX ENERGY COMPANY

Operator Address: 1700 LINCOLN STREET SUITE 1800

Zip: 80203

Operator PO Box:

Operator City: DENVER

State: CO

Operator Phone: (303)295-3995

Operator Internet Address: hknaults@cimarex.com

### Section 2 - Well Information

Well in Master Development Plan? NO

Master Development Plan name:

Well in Master SUPO? NO

Master SUPO name:

Well in Master Drilling Plan? NO

Master Drilling Plan name:

Well Name: CORIANDER 1-12 FEDERAL COM

Well Number: 13H

Well API Number:

Field/Pool or Exploratory? Field and Pool

Field Name: WC-025 G-09  
S223332A; UPR WOLFCAMPPool Name: WC-025 G-09  
S223332A; UPR WOLFCAMP

**Operator Name:** CIMAREX ENERGY COMPANY**Well Name:** CORIANDER 1-12 FEDERAL COM**Well Number:** 13H**Is the proposed well in an area containing other mineral resources?** USEABLE WATER,NATURAL GAS,OIL**Is the proposed well in a Helium production area?** N**Use Existing Well Pad?** N**New surface disturbance?****Type of Well Pad:** MULTIPLE WELL**Multiple Well Pad Name:****Number:** W2E2

Coriander 1-12 Federal

**Well Class:** HORIZONTAL**Number of Legs:** 1**Well Work Type:** Drill**Well Type:** OIL WELL**Describe Well Type:****Well sub-Type:** INFILL**Describe sub-type:****Distance to town:** 27 Miles**Distance to nearest well:** 20 FT**Distance to lease line:** 370 FT**Reservoir well spacing assigned acres Measurement:** 319.75 Acres**Well plat:** Coriander\_Lease\_Map\_20211209073929.pdf

Coriander\_1\_12\_Federal\_Com\_13H\_C102\_20220127084717.pdf

**Well work start Date:** 04/30/2021**Duration:** 30 DAYS**Section 3 - Well Location Table****Survey Type:** RECTANGULAR**Describe Survey Type:****Datum:** NAD83**Vertical Datum:** NAVD88**Survey number:****Reference Datum:** GROUND LEVEL

Wellbore	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD	Will this well produce from this
SHL Leg #1	370	FNL	2557	FEL	23S	32E	1	Lot 2	32.340019	- 103.628052	LEA	NEW MEXI CO	NEW MEXI CO	F	NMNM 081274	3750	0	0	Y
KOP Leg #1	370	FNL	2557	FEL	23S	32E	1	Aliquot NWNE	32.340019	- 103.628052	LEA	NEW MEXI CO	NEW MEXI CO	F	NMNM 081274	- 8182	12018	11932	Y

**Operator Name:** CIMAREX ENERGY COMPANY**Well Name:** CORIANDER 1-12 FEDERAL COM**Well Number:** 13H

Wellbore	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD	Will this well produce from this
PPP Leg #1-1	370	FNL	165 4	FW L	23S	32E	1	Lot 3	32.34000 4	- 103.6315 25	LEA	NEW MEXI CO	NEW MEXI CO	F	NMNM 081274	- 877 5	130 68	125 25	Y
PPP Leg #1-2	0	FNL	165 4	FW L	23S	32E	12	Aliquot NWNE	32.32653 1	- 103.6315 22	LEA	NEW MEXI CO	NEW MEXI CO	F	NMNM 011498 2	- 877 5	169 68	125 25	Y
EXIT Leg #1	100	FSL	166 4	FW L	23S	32E	12	Aliquot SESW	32.31229	- 103.6315 21	LEA	NEW MEXI CO	NEW MEXI CO	F	NMNM 053634 4	- 877 5	221 49	125 25	Y
BHL Leg #1	100	FSL	166 4	FW L	23S	32E	12	Aliquot SESW	32.31229	- 103.6315 21	LEA	NEW MEXI CO	NEW MEXI CO	F	NMNM 053634 4	- 877 5	221 49	125 25	Y





U.S. Department of the Interior  
BUREAU OF LAND MANAGEMENT

# Drilling Plan Data Report

02/10/2023

APD ID: 10400082949

Submission Date: 01/27/2022

Highlighted data  
reflects the most  
recent changes

Operator Name: CIMAREX ENERGY COMPANY

Well Name: CORIANDER 1-12 FEDERAL COM

Well Number: 13H

Well Type: OIL WELL

Well Work Type: Drill

[Show Final Text](#)

## Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical	Measured Depth	Lithologies	Mineral Resources	Producing Formatio
8070849	RUSTLER	0	1256	1256	ANHYDRITE, SANDSTONE	USEABLE WATER	N
8070850	TOP SALT	-3686	3686	3686	ANHYDRITE	NONE	N
8070851	BASE OF SALT	-4680	4680	4680	ANHYDRITE	NONE	N
8070852	LAMAR	-4963	4963	4963	SANDSTONE	NONE	N
8070853	BELL CANYON	-5017	5017	5017	SANDSTONE	NONE	N
8070854	CHERRY CANYON	-5870	5870	5870	SANDSTONE	NONE	N
8070855	BRUSHY CANYON	-7216	7216	7216	SANDSTONE	NATURAL GAS, OIL	N
8070856	BONE SPRING	-8827	8827	8827	LIMESTONE	NATURAL GAS, OIL	N
8070857	UPPER AVALON SHALE	-9361	9361	9361	SHALE	NATURAL GAS, OIL	N
8070858	BONE SPRING 2ND	-10340	10340	10340	SANDSTONE	NATURAL GAS, OIL	N
8070859	BONE SPRING 3RD	-11040	11040	11040	SANDSTONE	NATURAL GAS, OIL	N
8070860	WOLFCAMP	-12170	12170	12170	SHALE	NATURAL GAS, OIL	Y

## Section 2 - Blowout Prevention

Pressure Rating (PSI): 10M

Rating Depth: 22149

**Equipment:** A BOP consisting of three rams, including one blind ram and two pipe rams and one annular preventer. An accumulator that meets the requirements in Onshore Order #2 for the pressure rating of the BOP stack. A rotating head may be installed as needed. A Kelly clock will be installed and maintained in operable condition and a drill string safety valve in the open position will be available on the rig floor.

**Requesting Variance?** YES

**Variance request:** Co-flex line between the BOP and choke manifold. Certification for proposed co-flex hose is attached. The hose is not required by the manufacturer to be anchored. In the event the specific hose is not

Page 1 of 8



**Operator Name:** CIMAREX ENERGY COMPANY**Well Name:** CORIANDER 1-12 FEDERAL COM**Well Number:** 13H

available, one of equal or higher rating will be used. Variance to include Hammer Union connections on lines downstream of the buffer tank only.

**Testing Procedure:** A multi-bowl wellhead system will be utilized. After running the 10-3/4" surface casing, a 13 5/8 BOP/BOPE system with a minimum working pressure of 10000 psi will be installed on the wellhead system and will be pressure tested to 250 psi low followed by a 10000 psi test. Annular will be tested to 50% of working pressure. The pressure test will be repeated at least every 30 days, as per Onshore Order No. 2. The multi-bowl wellhead will be installed by vendors representative. A copy of the installation instructions has been sent to the BLM field office. The wellhead will be installed by a third-party welder, monitored by the wellhead vendor representative. All BOP equipment will be tested utilizing a conventional test plug. Not a cup or J-packer type. A solid steel body pack-off will be utilized after running and cementing the intermediate casing. After installation the pack-off and lower flange will be pressure tested to 10000 psi. The surface casing string will be tested as per Onshore Order No. 2 to at least 0.22 psi/ft or 1500 psi, whichever is greater. The casing string utilizing steel body pack-off will be tested to 70% of casing burst. If well conditions dictate conventional slips will be set and BOPE will be tested to appropriate pressures based on permitted pressure requirements.

**Choke Diagram Attachment:**

Coriander\_1\_12\_Fed\_Com\_13H\_Choke\_10M\_20221110132203.pdf

**BOP Diagram Attachment:**

Coriander\_1\_12\_Fed\_Com\_13H\_BOP\_10M\_20221110132219.pdf

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**Pressure Rating (PSI):** 2M**Rating Depth:** 1306

**Equipment:** A BOP consisting of three rams, including one blind ram and two pipe rams and one annular preventer. An accumulator that meets the requirements in Onshore Order #2 for the pressure rating of the BOP stack. A rotating head may be installed as needed. A Kelly clock will be installed and maintained in operable condition and a drill string safety valve in the open position will be available on the rig floor.

**Requesting Variance?** YES

**Variance request:** Co-flex line between the BOP and choke manifold. Certification for proposed co-flex hose is attached. The hose is not required by the manufacturer to be anchored. In the event the specific hose is not available, one of equal or higher rating will be used. Variance to include Hammer Union connections on lines downstream of the buffer tank only.

**Testing Procedure:** A multi-bowl wellhead system will be utilized. After running the 16" surface casing, a 16" BOP/BOPE system with a minimum working pressure of 2000 psi will be installed on the wellhead system and will be pressure tested to 250 psi low followed by a 2000 psi test. Annular will be tested to 100% of working pressure. The pressure test will be repeated at least every 30 days, as per Onshore Order No. 2. The multi-bowl wellhead will be installed by vendors representative. A copy of the installation instructions has been sent to the BLM field office. The wellhead will be installed by a third-party welder, monitored by the wellhead vendor representative. All BOP equipment will be tested utilizing a conventional test plug. Not a cup or J-packer type. A solid steel body pack-off will be utilized after running and cementing the intermediate casing. After installation the pack-off and lower flange will be pressure tested to 2000 psi. The surface casing string will be tested as per Onshore Order No. 2 to at least 0.22 psi/ft or 1500 psi, whichever is greater. The casing strings utilizing steel body pack-off will be tested to 70% of casing burst. If well conditions dictate conventional slips will be set and BOPE will be tested to appropriate pressures based on permitted pressure requirements.

**Choke Diagram Attachment:**

Coriander\_1\_12\_Federal\_Com\_13H\_Choke\_2M\_20220127085559.pdf

**BOP Diagram Attachment:**

Coriander\_1\_12\_Federal\_Com\_13H\_BOP\_2M\_20220127085605.pdf

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**Operator Name:** CIMAREX ENERGY COMPANY**Well Name:** CORIANDER 1-12 FEDERAL COM**Well Number:** 13H**Pressure Rating (PSI):** 5M**Rating Depth:** 12768

**Equipment:** A BOP consisting of three rams, including one blind ram and two pipe rams and one annular preventer. An accumulator that meets the requirements in Onshore Order #2 for the pressure rating of the BOP stack. A rotating head may be installed as needed. A Kelly clock will be installed and maintained in operable condition and a drill string safety valve in the open position will be available on the rig floor.

**Requesting Variance?** YES

**Variance request:** Co-flex line between the BOP and choke manifold. Certification for proposed co-flex hose is attached. The hose is not required by the manufacturer to be anchored. In the event the specific hose is not available, one of equal or higher rating will be used. Variance to include Hammer Union connections on lines downstream of the buffer tank only.

**Testing Procedure:** A multi-bowl wellhead system will be utilized. After running the 16" surface casing, a 16 BOP/BOPE system with a minimum working pressure of 5000 psi will be installed on the wellhead system and will be pressure tested to 250 psi low followed by a 5000 psi test. Annular will be tested to 100% of working pressure. The pressure test will be repeated at least every 30 days, as per Onshore Order No. 2. The multi-bowl wellhead will be installed by vendors representative. A copy of the installation instructions has been sent to the BLM field office. The wellhead will be installed by a third-party welder, monitored by the wellhead vendor representative. All BOP equipment will be tested utilizing a conventional test plug. Not a cup or J-packer type. A solid steel body pack-off will be utilized after running and cementing the intermediate casing. After installation the pack-off and lower flange will be pressure tested to 5000 psi. Slips will be utilized after running and cementing the production casing. After installation of the slips and wellhead on the production casing, a 13 5/8 BOP/BOPE system with a minimum working pressure of 5000 psi will be installed on the wellhead system and will be pressure tested to 250 psi low followed by a 5000 psi test. Annular will be tested to 100% of working pressure. The pressure test will be repeated at least every 30 days, as per Onshore Order No. 2. The surface casing string will be tested as per Onshore Order No. 2 to at least 0.22 psi/ft or 1500 psi, whichever is greater. The casing string utilizing steel body pack-off will be tested to 70% of casing burst. If well conditions dictate conventional slips will be set and BOPE will be tested to appropriate pressures based on permitted pressure requirements.

**Choke Diagram Attachment:**

Coriander\_1\_12\_Federal\_Com\_13H\_Choke\_5M\_20220127085623.pdf

**BOP Diagram Attachment:**

Coriander\_1\_12\_Federal\_Com\_13H\_BOP\_5M\_10.75\_20220127085633.pdf

### Section 3 - Casing

Casing ID	String Type	Hole Size	Csg Size	Condition	Standard	Tapered String	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Calculated casing length MD	Grade	Weight	Joint Type	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
1	SURFACE	14.75	10.75	NEW	API	N	0	1306	0	1306	3750	2444	1306	J-55	40.5	BUTT	2.8	5.55	BUOY	11.89	BUOY	11.89
2	PRODUCTION	6.75	5.5	NEW	API	Y	0	12018	0	12018	3750	-8268	12018	L-80	23	LT&C	1.49	1.32	BUOY	2.17	BUOY	2.17
3	INTERMEDIATE	9.875	7.625	NEW	API	N	0	12768	0	12486	3750	-8736	12768	L-80	29.7	LT&C	2.45	1.18	BUOY	1.53	BUOY	1.53

**Operator Name:** CIMAREX ENERGY COMPANY**Well Name:** CORIANDER 1-12 FEDERAL COM**Well Number:** 13H

Casing ID	String Type	Hole Size	Csg Size	Condition	Standard	Tapered String	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Calculated casing length MD	Grade	Weight	Joint Type	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
4	PRODUCTION	6.75	5.0	NEW	API	Y	12018	22149	12018	12525	-8268	-8775	10131	P-110	18	BUTT	1.72	1.74	BUOY	63.55	BUOY	63.55

**Casing Attachments****Casing ID:** 1      **String**      SURFACE**Inspection Document:****Spec Document:****Tapered String Spec:****Casing Design Assumptions and Worksheet(s):**

Coriander\_1\_12\_Federal\_Com\_13H\_Casing\_Assumptions\_20221110151911.pdf

**Casing ID:** 2      **String**      PRODUCTION**Inspection Document:****Spec Document:****Tapered String Spec:**

Coriander\_1\_12\_Federal\_Tapered\_Specs\_20220127085835.pdf

**Casing Design Assumptions and Worksheet(s):**

Coriander\_1\_12\_Federal\_Com\_13H\_Casing\_Assumptions\_20221110152501.pdf

Operator Name: CIMAREX ENERGY COMPANY

Well Name: CORIANDER 1-12 FEDERAL COM

Well Number: 13H

Casing Attachments

Casing ID: 3StringINTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Coriander\_1\_12\_Federal\_Com\_13H\_Casing\_Assumptions\_20221110152300.pdf

Casing ID: 4StringPRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Coriander\_1\_12\_Federal\_Tapered\_Specs\_20220127085916.pdf

Casing Design Assumptions and Worksheet(s):

Coriander\_1\_12\_Federal\_Com\_13H\_Casing\_Assumptions\_20221110152601.pdf

Section 4 - Cement

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
PRODUCTION	Lead		0	0	0	0	0	0	0		0

SURFACE	Lead		0	1306	507	1.72	13.5	872	47	Class C	Bentonite
SURFACE	Tail		0	1306	136	1.34	14.8	182	47	Class C	LCM
INTERMEDIATE	Lead	5100	0	5100	813	1.88	12.9	1528	37	35:65 (Poz:C)	Salt, Bentonite

**Operator Name:** CIMAREX ENERGY COMPANY**Well Name:** CORIANDER 1-12 FEDERAL COM**Well Number:** 13H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
INTERMEDIATE	Lead	5100	5100	1276 8	591	3.64	10.3	2151	47	Tuned Light	LCM
INTERMEDIATE	Tail		5100	1276 8	198	1.36	14.8	269	47	Class C	Retarder
PRODUCTION	Lead		0	2214 9	1349	1.3	14.2	1754	25	50:50 (Poz:H)	Salt, Bentonite, Fluid Loss, Dispersant, SMS

### Section 5 - Circulating Medium

**Mud System Type:** Closed**Will an air or gas system be Used?** NO**Description of the equipment for the circulating system in accordance with Onshore Order #2:****Diagram of the equipment for the circulating system in accordance with Onshore Order #2:**

**Describe what will be on location to control well or mitigate other conditions:** Sufficient mud materials will be kept on location at all times in order to combat lost circulation or unexpected kicks. In order to run DSTs, open hole logs, and casing, the viscosity and water loss may have to be adjusted in order to meet these needs.

**Describe the mud monitoring system utilized:** PVT/Pason/Visual Monitoring

### Circulating Medium Table

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
0	1306	OTHER : Fresh Water spud mud	7.8	8.3							
1306	1276 8	OTHER : Brine Diesel Emulsion	8.5	9							
1276 8	2214 9	OIL-BASED MUD	11.5	12							

**Operator Name:** CIMAREX ENERGY COMPANY**Well Name:** CORIANDER 1-12 FEDERAL COM**Well Number:** 13H

## Section 6 - Test, Logging, Coring

**List of production tests including testing procedures, equipment and safety measures:**

No DST Planned

**List of open and cased hole logs run in the well:**

COMPENSATED NEUTRON LOG,DIRECTIONAL SURVEY,GAMMA RAY LOG,

**Coring operation description for the well:**

N/A

## Section 7 - Pressure

**Anticipated Bottom Hole Pressure:** 7815**Anticipated Surface Pressure:** 5059**Anticipated Bottom Hole Temperature(F):** 192**Anticipated abnormal pressures, temperatures, or potential geologic hazards?** YES**Describe:**

Lost circulation may be encountered in the Delaware mountain group. Abnormal pressure as well as hole stability issues may be encountered in the Wolfcamp.

**Contingency Plans geohazards description:**

Lost circulation material will be available, as well as additional drilling fluid along with the fluid volume in the drilling rig pit system. Drilling fluid can be mixed on location or mixed in vendor mud plant and trucked to location if needed. Sufficient barite will be available to maintain appropriate mud weight for the Wolfcamp interval.

**Contingency Plans geohazards****Hydrogen Sulfide drilling operations plan required?** YES**Hydrogen sulfide drilling operations**

Coriander\_1\_12\_Federal\_Com\_13H\_H2S\_Plan\_20220127090722.pdf

## Section 8 - Other Information

**Proposed horizontal/directional/multi-lateral plan submission:**

Coriander\_1\_12\_Federal\_Com\_13H\_Directional\_\_\_AC\_Report\_20220127090741.pdf

**Other proposed operations facets description:****Other proposed operations facets attachment:**

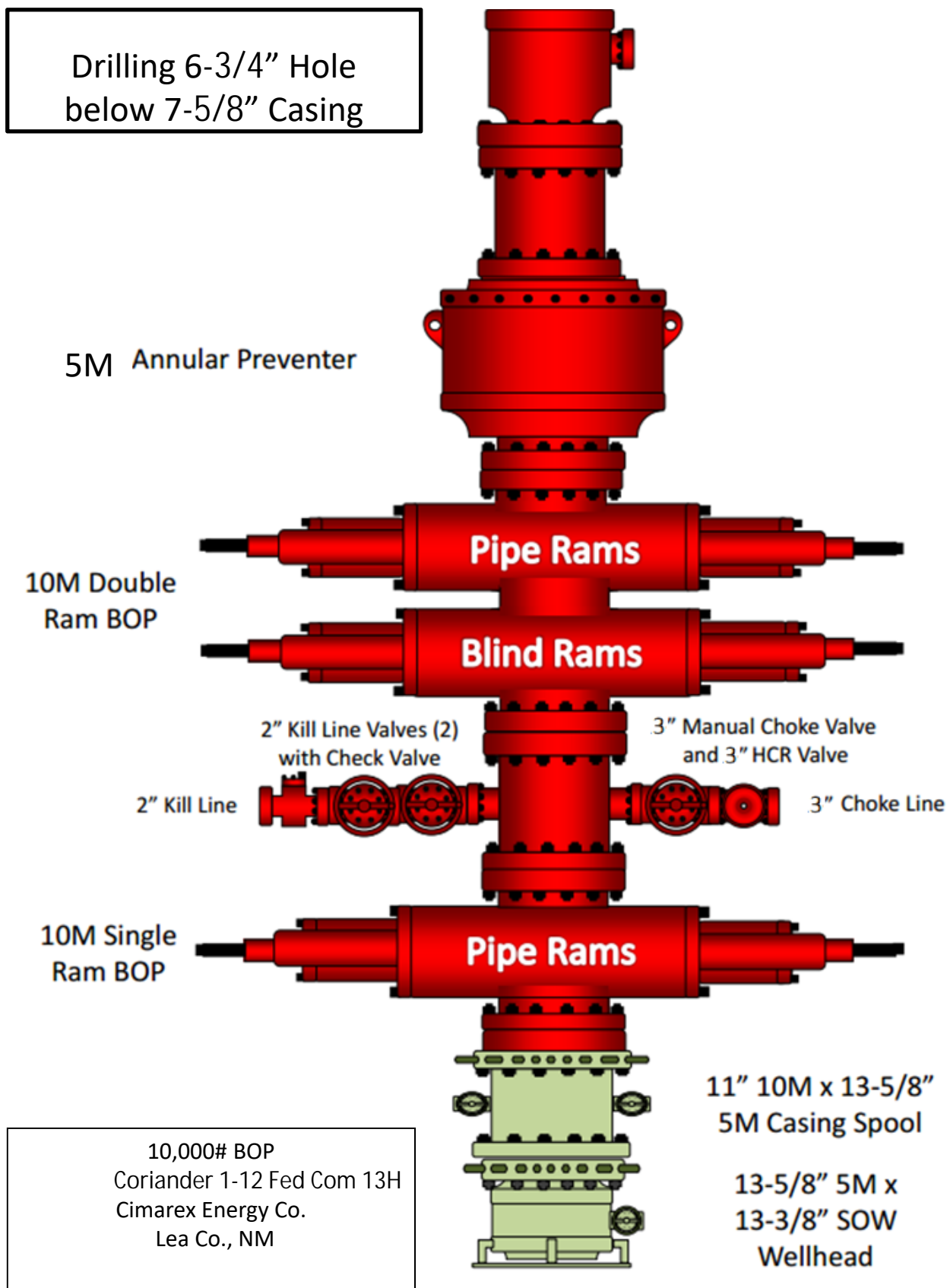
Coriander\_1\_12\_Fed\_com\_13H\_Drilling\_Plan\_11.10.22\_20221110154310.pdf

**Other Variance attachment:**

Offline\_Cement\_Procedure\_20220126145421.pdf

Coriander\_1\_12\_Federal\_Com\_13H\_Flex\_Hose\_20220127090804.pdf

Coriander\_1\_12\_Fed\_Com\_13H\_Multibowl\_10.75\_20221110154321.pdf





**Coriander 1-12 Federal Com 13H**

Cimarex Energy Co.

Sec. 1, 23S, 32E

Lea Co., NM

- 1 All Company and Contract personnel admitted on location must be trained by a qualified H<sub>2</sub>S safety instructor to the following:
  - A. Characteristics of H<sub>2</sub>S
  - B. Physical effects and hazards
  - C. Principal and operation of H<sub>2</sub>S detectors, warning system and briefing areas.
  - D. Evacuation procedure, routes and first aid.
  - E. Proper use of safety equipment & life support systems
  - F. Essential personnel meeting Medical Evaluation criteria will receive additional training on the proper use of 30 minute pressure demand air packs.

H<sub>2</sub>S Detection and Alarm Systems:

  - A. H<sub>2</sub>S sensors/detectors to be located on the drilling rig floor, in the base of the sub structure/cellar area, on the mud pits in the shale shaker area. Additional H<sub>2</sub>S detectors may be placed as deemed necessary.
  - B. An audio alarm system will be installed on the derrick floor and in the top doghouse.
- 3 Windsock and/or wind streamers:
  - A. Windsock at mudpit area should be high enough to be visible.
  - B. Windsock on the rig floor and / or top doghouse should be high enough to be visible.
- 4 Condition Flags and Signs
  - A. Warning sign on access road to location.
  - B. Flags to be displayed on sign at entrance to location. Green flag indicates normal safe condition. Yellow flag indicates potential pressure and danger. Red flag indicates danger (H<sub>2</sub>S present in dangerous concentration). Only H<sub>2</sub>S trained and certified personnel admitted to location.
- 5 Well control equipment:
  - A. See exhibit "E-1"
- 6 Communication:
  - A. While working under masks chalkboards will be used for communication.
  - B. Hand signals will be used where chalk board is inappropriate.
  - C. Two way radio will be used to communicate off location in case of emergency help is required. In most cases cellular telephones will be available at most drilling foreman's trailer or living quarters.
- 7 Drillstem Testing:

No DSTs or cores are planned at this time.
- 8 Drilling contractor supervisor will be required to be familiar with the effects H<sub>2</sub>S has on tubular goods and other mechanical equipment.
- 9 If H<sub>2</sub>S is encountered, mud system will be altered if necessary to maintain control of formation. A mud gas separator will be brought into service along with H<sub>2</sub>S scavengers if necessary.



H<sub>2</sub>S Contingency Plan  
**Coriander 1-12 Federal Com 13H**  
Cimarex Energy Co. Sec. 1, 23S, 32E Lea  
Co., NM

**Emergency Procedures**

In the event of a release of gas containing H<sub>2</sub>S, the first responder(s) must:

- « Isolate the area and prevent entry by other persons into the 100 ppm ROE.
- « Evacuate any public places encompassed by the 100 ppm ROE.
- « Be equipped with H<sub>2</sub>S monitors and air packs in order to control the release.
- « Use the "buddy system" to ensure no injuries occur during the 432-620-1975
- « Take precautions to avoid personal injury during this operation.
- « Contact operator and/or local officials to aid in operation. See list of phone numbers attached.
- « Have received training in the:
  - Detection of H<sub>2</sub>S, and
  - Measures for protection against the gas,
  - Equipment used for protection and emergency response.

**Ignition of Gas Source**

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (SO<sub>2</sub>). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally, the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever there is an ignition of the gas.

**Characteristics of H<sub>2</sub>S and SO<sub>2</sub>**

Please see attached International Chemical Safety Cards.

**Contacting Authorities**

Cimarex Energy Co. of Colorado's personnel must liaise with local and state agencies to ensure a proper response to a major release. Additionally, the OCD must be notified of the release as soon as possible but no later than 4 hours. Agencies will ask for information such as type and volume of release, wind direction, location of release, etc. Be prepared with all information available including directions to site. The following call list of essential and potential responders has been prepared for use during a release. Cimarex Energy Co. of Colorado's response must be in coordination with the State of New Mexico's "Hazardous Materials Emergency Response Plan" (HMER).

H<sub>2</sub>S Contingency Plan Emergency Contacts**Coriander 1-12 Federal Com 13H**

Cimarex Energy Co.

Sec. 1, 23S, 32E

Lea Co., NM

**Company Office**

Cimarex Energy Co. of Colorado	800-969-4789
Co. Office and After-Hours Menu	

**Key Personnel**

Name	Title	Office	Mobile
Larry Seigrist	Drilling Manager	432-620-1934	580-243-8485
Charlie Pritchard	Drilling Superintendent	432-620-1975	432-238-7084
Roy Shirley	Construction Superintendent		432-634-2136

**Artesia**

Ambulance	911
State Police	575-746-2703
City Police	575-746-2703
Sheriff's Office	575-746-9888
<b>Fire Department</b>	<b>575-746-2701</b>
Local Emergency Planning Committee	575-746-2122
New Mexico Oil Conservation Division	575-748-1283

**Carlsbad**

Ambulance	911
State Police	575-885-3137
City Police	575-885-2111
Sheriff's Office	575-887-7551
<b>Fire Department</b>	<b>575-887-3798</b>
Local Emergency Planning Committee	575-887-6544
US Bureau of Land Management	575-887-6544

**Santa Fe**

New Mexico Emergency Response Commission (Santa Fe)	505-476-9600
New Mexico Emergency Response Commission (Santa Fe) 24 Hrs	505-827-9126
New Mexico State Emergency Operations Center	505-476-9635

**National**

National Emergency Response Center (Washington, D.C.)	800-424-8802
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**Medical**

Flight for Life - 4000 24th St.; Lubbock, TX	806-743-9911
Aerocare - R3, Box 49F; Lubbock, TX	806-747-8923
Med Flight Air Amb - 2301 Yale Blvd S.E., #D3; Albuquerque, NM	505-842-4433
SB Air Med Service - 2505 Clark Carr Loop S.E.; Albuquerque, NM	505-842-4949

**Other**

Boots & Coots IWC	800-256-9688	or	281-931-8884
Cudd Pressure Control	432-699-0139	or	432-563-3356
Halliburton	575-746-2757		
B.J. Services	575-746-3569		



## Cimarex Coriander 1-12 Federal Com 13H Rev0 IC 07Dec21 Proposal

### Geodetic Report

(Def Plan)



**Report Date:** December 08, 2021 - 08:57 AM  
**Client:** Cimarex  
**Field:** NM Lea County (NAD 83)  
**Structure / Slot:** Cimarex Coriander 1-12 Federal Com Pad / New Slot  
**Well:** Coriander 1-12 Federal Com 13H  
**Borehole:** Coriander 1-12 Federal Com 13H  
**UWI / API#:** Unknown / Unknown  
**Survey Name:** Cimarex Coriander 1-12 Federal Com 13H Rev0 IC 07Dec21  
**Survey Date:** December 07, 2021  
**Tort / AHD / DDI / ERD Ratio:** 108.068 ° / 10912.327 ft / 6.319 / 0.871  
**Coordinate Reference System:** NAD83 New Mexico State Plane, Eastern Zone, US Feet  
**Location Lat / Long:** N 32° 20' 24.06738", W 103° 37' 40.98696"  
**Location Grid N/E Y/X:** N 488147.990 ftUS, E 759158.020 ftUS  
**CRS Grid Convergence Angle:** 0.3773 °  
**Grid Scale Factor:** 0.99996343  
**Version / Patch:** 2.10.826.8

**Survey / DLS Computation:** Minimum Curvature / Lubinski  
**Vertical Section Azimuth:** 179.620 ° (Grid North)  
**Vertical Section Origin:** 0.000 ft, 0.000 ft  
**TVD Reference Datum:** RKB  
**TVD Reference Elevation:** 3773.300 ft above MSL  
**Seabed / Ground Elevation:** 3750.300 ft above MSL  
**Magnetic Declination:** 6.412 °  
**Total Gravity Field Strength:** 998.4397mgn (9.80665 Based)  
**Gravity Model:** GARM  
**Total Magnetic Field Strength:** 47731.056 nT  
**Magnetic Dip Angle:** 59.986 °  
**Declination Date:** December 07, 2021  
**Magnetic Declination Model:** HDGM 2021  
**North Reference:** Grid North  
**Grid Convergence Used:** 0.3773 °  
**Total Corr Mag North->Grid North:** 6.0351 °  
**Local Coord Referenced To:** Well Head

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
SHL [370' FNL, 2557' FEL]	0.00	0.00	269.33	0.00	0.00	0.00	0.00	N/A	488147.99	759158.02	N 32 20 24.07	W 103 37 40.99
	100.00	0.00	254.71	100.00	0.00	0.00	0.00	0.00	488147.99	759158.02	N 32 20 24.07	W 103 37 40.99
	200.00	0.00	254.71	200.00	0.00	0.00	0.00	0.00	488147.99	759158.02	N 32 20 24.07	W 103 37 40.99
	300.00	0.00	254.71	300.00	0.00	0.00	0.00	0.00	488147.99	759158.02	N 32 20 24.07	W 103 37 40.99
	400.00	0.00	254.71	400.00	0.00	0.00	0.00	0.00	488147.99	759158.02	N 32 20 24.07	W 103 37 40.99
	500.00	0.00	254.71	500.00	0.00	0.00	0.00	0.00	488147.99	759158.02	N 32 20 24.07	W 103 37 40.99
	600.00	0.00	254.71	600.00	0.00	0.00	0.00	0.00	488147.99	759158.02	N 32 20 24.07	W 103 37 40.99
	700.00	0.00	254.71	700.00	0.00	0.00	0.00	0.00	488147.99	759158.02	N 32 20 24.07	W 103 37 40.99
	800.00	0.00	254.71	800.00	0.00	0.00	0.00	0.00	488147.99	759158.02	N 32 20 24.07	W 103 37 40.99
	900.00	0.00	254.71	900.00	0.00	0.00	0.00	0.00	488147.99	759158.02	N 32 20 24.07	W 103 37 40.99
	1000.00	0.00	254.71	1000.00	0.00	0.00	0.00	0.00	488147.99	759158.02	N 32 20 24.07	W 103 37 40.99
	1100.00	0.00	254.71	1100.00	0.00	0.00	0.00	0.00	488147.99	759158.02	N 32 20 24.07	W 103 37 40.99
	1200.00	0.00	254.71	1200.00	0.00	0.00	0.00	0.00	488147.99	759158.02	N 32 20 24.07	W 103 37 40.99
	1300.00	0.00	254.71	1300.00	0.00	0.00	0.00	0.00	488147.99	759158.02	N 32 20 24.07	W 103 37 40.99
	1400.00	0.00	254.71	1400.00	0.00	0.00	0.00	0.00	488147.99	759158.02	N 32 20 24.07	W 103 37 40.99
Nudge 2° DLS	1500.00	0.00	254.71	1500.00	0.00	0.00	0.00	0.00	488147.99	759158.02	N 32 20 24.07	W 103 37 40.99
	1600.00	2.00	254.71	1599.98	0.45	-0.46	-1.68	2.00	488147.53	759156.34	N 32 20 24.06	W 103 37 41.01
	1700.00	4.00	254.71	1699.84	1.80	-1.84	-6.73	2.00	488146.15	759151.29	N 32 20 24.05	W 103 37 41.07
	1800.00	6.00	254.71	1799.45	4.04	-4.14	-15.14	2.00	488143.85	759142.88	N 32 20 24.03	W 103 37 41.16
	1900.00	8.00	254.71	1898.70	7.17	-7.35	-26.89	2.00	488140.64	759131.13	N 32 20 24.00	W 103 37 41.30
Hold	1951.71	9.03	254.71	1949.84	9.14	-9.37	-34.28	2.00	488138.62	759123.74	N 32 20 23.98	W 103 37 41.39
	2000.00	9.03	254.71	1997.53	11.09	-11.37	-41.60	0.00	488136.62	759116.43	N 32 20 23.96	W 103 37 41.47
	2100.00	9.03	254.71	2096.29	15.13	-15.51	-56.74	0.00	488132.48	759101.28	N 32 20 23.92	W 103 37 41.65
	2200.00	9.03	254.71	2195.05	19.17	-19.65	-71.89	0.00	488128.34	759086.13	N 32 20 23.88	W 103 37 41.83
	2300.00	9.03	254.71	2293.81	23.21	-23.79	-87.04	0.00	488124.20	759070.99	N 32 20 23.84	W 103 37 42.00
	2400.00	9.03	254.71	2392.57	27.25	-27.93	-102.18	0.00	488120.06	759055.84	N 32 20 23.80	W 103 37 42.18
	2500.00	9.03	254.71	2491.33	31.29	-32.07	-117.33	0.00	488115.92	759040.69	N 32 20 23.76	W 103 37 42.36
	2600.00	9.03	254.71	2590.09	35.33	-36.21	-132.48	0.00	488111.78	759025.55	N 32 20 23.72	W 103 37 42.53
	2700.00	9.03	254.71	2688.85	39.37	-40.35	-147.62	0.00	488107.64	759010.40	N 32 20 23.68	W 103 37 42.71
	2800.00	9.03	254.71	2787.61	43.41	-44.49	-162.77	0.00	488103.51	758995.26	N 32 20 23.64	W 103 37 42.89
	2900.00	9.03	254.71	2886.37	47.45	-48.63	-177.92	0.00	488099.37	758980.11	N 32 20 23.60	W 103 37 43.06
	3000.00	9.03	254.71	2985.13	51.48	-52.77	-193.06	0.00	488095.23	758964.96	N 32 20 23.56	W 103 37 43.24
	3100.00	9.03	254.71	3083.89	55.52	-56.91	-208.21	0.00	488091.09	758949.82	N 32 20 23.52	W 103 37 43.42
	3200.00	9.03	254.71	3182.65	59.56	-61.05	-223.36	0.00	488086.95	758934.67	N 32 20 23.48	W 103 37 43.59
	3300.00	9.03	254.71	3281.40	63.60	-65.19	-238.50	0.00	488082.81	758919.52	N 32 20 23.44	W 103 37 43.77
	3400.00	9.03	254.71	3380.16	67.64	-69.33	-253.65	0.00	488078.67	758904.38	N 32 20 23.40	W 103 37 43.95
	3500.00	9.03	254.71	3478.92	71.68	-73.46	-268.80	0.00	488074.53	758889.23	N 32 20 23.36	W 103 37 44.13
	3600.00	9.03	254.71	3577.68	75.72	-77.60	-283.94	0.00	488070.39	758874.09	N 32 20 23.32	W 103 37 44.30
	3700.00	9.03	254.71	3676.44	79.76	-81.74	-299.09	0.00	488066.25	758858.94	N 32 20 23.28	W 103 37 44.48
	3800.00	9.03	254.71	3775.20	83.80	-85.88	-314.24	0.00	488062.11	758843.79	N 32 20 23.24	W 103 37 44.66
	3900.00	9.03	254.71	3873.96	87.84	-90.02	-329.39	0.00	488057.97	758828.65	N 32 20 23.20	W 103 37 44.83
	4000.00	9.03	254.71	3972.72	91.88	-94.16	-344.53	0.00	488053.83	758813.50	N 32 20 23.16	W 103 37 45.01
	4100.00	9.03	254.71	4071.48	95.92	-98.30	-359.68	0.00	488049.69	758798.35	N 32 20 23.12	W 103 37 45.19
	4200.00	9.03	254.71	4170.24	99.96	-102.44	-374.83	0.00	488045.55	758783.21	N 32 20 23.08	W 103 37 45.36
	4300.00	9.03	254.71	4269.00	103.99	-106.58	-389.97	0.00	488041.41	758768.06	N 32 20 23.04	W 103 37 45.54
	4400.00	9.03	254.71	4367.76	108.03	-110.72	-405.12	0.00	488037.27	758752.92	N 32 20 23.00	W 103 37 45.72
	4500.00	9.03	254.71	4466.52	112.07	-114.86	-420.27	0.00	488033.13	758737.77	N 32 20 22.96	W 103 37 45.89
	4600.00	9.03	254.71	4565.28	116.11	-119.00	-435.41	0.00	488028.99	758722.62	N 32 20 22.92	W 103 37 46.07
	4700.00	9.03	254.71	4664.04	120.15	-123.14	-450.56	0.00	488024.85	758707.48	N 32 20 22.88	W 103 37 46.25
	4800.00	9.03	254.71	4762.80	124.19	-127.28	-465.71	0.00	488020.71	758692.33	N 32 20 22.84	W 103 37 46.42
	4900.00	9.03	254.71	4861.56	128.23	-131.42	-480.85	0.00	488016.57	758677.18	N 32 20 22.80	W 103 37 46.60
	5000.00	9.03	254.71	4960.32	132.27	-135.56	-496.00	0.00	488012.43	758662.04	N 32 20 22.76	W 103 37 46.78
	5100.00	9.03	254.71	5059.08	136.31	-139.70	-511.15	0.00	488008.29	758646.89	N 32 20 22.72	W 103 37 46.96
	5200.00	9.03	254.71	5157.84	140.35	-143.84	-526.29	0.00	488004.15	758631.75	N 32 20 22.68	W 103 37 47.13
	5300.00	9.03	254.71	5256.59	144.39	-147.98	-541.44	0.00	488000.01	758616.60	N 32 20 22.64	W 103 37 47.31
	5400.00	9.03	254.71	5355.35	148.43	-152.12	-556.59	0.00	487995.88	758601.45	N 32 20 22.60	W 103 37 47.49
	5500.00	9.03	254.71	5454.11	152.46	-156.26	-571.73	0.00	487991.74	758586.31	N 32 20 22.56	W 103 37 47.66
	5600.00	9.03	254.71	5552.87	156.50	-160.40	-586.88	0.00	487987.60	758571.16	N 32 20 22.52	W 103 37 47.84
	5700.00	9.03	254.71	5651.63	160.54	-164.54	-602.03	0.00	487983.46	758556.01	N 32 20 22.48	W 103 37 48.02
	5800.00	9.03	254.71	5750.39	164.58	-168.68	-617.18	0.00	487979.32	758540.87	N 32 20 22.44	W 103 37 48.19
	5900.00	9.03	254.71	5849.15	168.62	-172.82	-632.32	0.00	487975.18	758525.72	N 32 20 22.40	W 103 37 48.37
	6000.00	9.03	254.71	5947.91	172.66	-176.96	-647.47	0.00	487971.04	758510.58	N 32 20 22.36	W 103 37 48.55
	6100.00	9.03	254.71	6046.67	176.70	-181.10	-662.62	0.00	487966.90	758495.43	N 32 20 22.32	W 103 37 48.72
	6200.00	9.03	254.71	6145.43	180.74	-185.24	-677.76	0.00	487962.76	758480.28	N 32 20 22.28	W 103 37 48.90
	6300.00	9.03	254.71	6244.19	184.78	-189.38	-692.91	0.00	487958.62	758465.14	N 32 20 22.24	W 103 37 49.08
	6400.00	9.03	254.71	6342.95	188.82	-193.52	-708.06	0.00	487954.48	758449.99	N 32 20 22.20	W 103 37 49.25
	6500.00	9.03	254.71	6441.71	192.86	-197.66	-723.20	0.00	487950.34	758434.84	N 32 20 22.16	W 103 37 49.43
	6600.00	9.03	254.71	6540.47	196.90	-201.80	-738.35	0.00	487946.20	758419.70	N 32 20 22.12	W 103 37 49.61
	6700.00	9.03	254.71	6639.23	200.94	-205.94	-753.50	0.00	487942.06	758404.55	N 32 20 22.08	W 103 37 49.78
	6800.00	9.03	254.71	6737.99	204.97	-210.08	-768.64	0.00	487937.92	758389.41	N 32 20 22.04	W 103 37 49.96
	6900.00	9.03	254.71	6836.75	209.01	-214.22	-783.79	0.00	487933.78	758374.26	N 32 20 22.00	W 103 37 50.14
	7000.00	9.03	254.71	6935.51	213.05	-218.36	-798.94	0.00	487929.64	758359.11	N 32 20 21.96	W 103 37 50.32
	7100.00	9.03	254.71	7034.27	217.09	-222.50	-814.08	0.00	487925.50	75		

	MD	Incl	Azim Grid	TVD	VSEC	NS	EW	DLS	Northing	Easting	Latitude	Longitude
Comments	(ft)	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(°/100ft)	(ftUS)	(ftUS)	(N/S ° ' ")	(E/W ° ' ")
Drop 2" DLS	7600.00	9.03	254.71	7528.06	237.29	-243.20	-889.82	0.00	487904.80	758268.24	N 32 20 21.72	W 103 37 51.38
	7700.00	9.03	254.71	7626.82	241.33	-247.34	-904.97	0.00	487900.66	758253.09	N 32 20 21.68	W 103 37 51.55
	7800.00	9.03	254.71	7725.58	245.37	-251.47	-920.11	0.00	487896.52	758237.94	N 32 20 21.64	W 103 37 51.73
	7900.00	9.03	254.71	7824.34	249.41	-255.61	-935.26	0.00	487892.39	758222.80	N 32 20 21.60	W 103 37 51.91
	8000.00	9.03	254.71	7923.10	253.45	-259.75	-950.41	0.00	487888.25	758207.65	N 32 20 21.56	W 103 37 52.08
	8100.00	9.03	254.71	8021.86	257.48	-263.89	-965.55	0.00	487884.11	758192.50	N 32 20 21.52	W 103 37 52.26
	8200.00	9.03	254.71	8120.62	261.52	-268.03	-980.70	0.00	487879.97	758177.36	N 32 20 21.48	W 103 37 52.44
	8300.00	9.03	254.71	8219.38	265.56	-272.17	-995.85	0.00	487875.83	758162.21	N 32 20 21.44	W 103 37 52.61
	8400.00	9.03	254.71	8318.14	269.60	-276.31	-1010.99	0.00	487871.69	758147.07	N 32 20 21.40	W 103 37 52.79
	8500.00	9.03	254.71	8416.90	273.64	-280.45	-1026.14	0.00	487867.55	758131.92	N 32 20 21.36	W 103 37 52.97
	8566.61	9.03	254.71	8482.68	276.33	-283.21	-1036.23	0.00	487864.79	758121.83	N 32 20 21.33	W 103 37 53.09
	8600.00	8.37	254.71	8515.69	277.63	-284.54	-1041.10	2.00	487863.46	758116.96	N 32 20 21.32	W 103 37 53.14
	8700.00	6.37	254.71	8614.86	280.93	-287.92	-1053.47	2.00	487860.08	758104.59	N 32 20 21.29	W 103 37 53.29
	8800.00	4.37	254.71	8714.41	283.33	-290.39	-1062.49	2.00	487857.61	758095.57	N 32 20 21.26	W 103 37 53.39
	8900.00	2.37	254.71	8814.24	284.85	-291.94	-1068.15	2.00	487856.07	758089.91	N 32 20 21.25	W 103 37 53.46
Hold	9000.00	0.37	254.71	8914.20	285.46	-292.56	-1070.45	2.00	487855.44	758087.61	N 32 20 21.24	W 103 37 53.49
	9018.32	0.00	254.71	8932.52	285.47	-292.58	-1070.51	2.00	487855.42	758087.55	N 32 20 21.24	W 103 37 53.49
	9100.00	0.00	254.71	9014.20	285.47	-292.58	-1070.51	0.00	487855.42	758087.55	N 32 20 21.24	W 103 37 53.49
	9200.00	0.00	254.71	9114.20	285.47	-292.58	-1070.51	0.00	487855.42	758087.55	N 32 20 21.24	W 103 37 53.49
	9300.00	0.00	254.71	9214.20	285.47	-292.58	-1070.51	0.00	487855.42	758087.55	N 32 20 21.24	W 103 37 53.49
	9400.00	0.00	254.71	9314.20	285.47	-292.58	-1070.51	0.00	487855.42	758087.55	N 32 20 21.24	W 103 37 53.49
	9500.00	0.00	254.71	9414.20	285.47	-292.58	-1070.51	0.00	487855.42	758087.55	N 32 20 21.24	W 103 37 53.49
	9600.00	0.00	254.71	9514.20	285.47	-292.58	-1070.51	0.00	487855.42	758087.55	N 32 20 21.24	W 103 37 53.49
	9700.00	0.00	254.71	9614.20	285.47	-292.58	-1070.51	0.00	487855.42	758087.55	N 32 20 21.24	W 103 37 53.49
	9800.00	0.00	254.71	9714.20	285.47	-292.58	-1070.51	0.00	487855.42	758087.55	N 32 20 21.24	W 103 37 53.49
	9900.00	0.00	254.71	9814.20	285.47	-292.58	-1070.51	0.00	487855.42	758087.55	N 32 20 21.24	W 103 37 53.49
	10000.00	0.00	254.71	9914.20	285.47	-292.58	-1070.51	0.00	487855.42	758087.55	N 32 20 21.24	W 103 37 53.49
	10100.00	0.00	254.71	10014.20	285.47	-292.58	-1070.51	0.00	487855.42	758087.55	N 32 20 21.24	W 103 37 53.49
	10200.00	0.00	254.71	10114.20	285.47	-292.58	-1070.51	0.00	487855.42	758087.55	N 32 20 21.24	W 103 37 53.49
	10300.00	0.00	254.71	10214.20	285.47	-292.58	-1070.51	0.00	487855.42	758087.55	N 32 20 21.24	W 103 37 53.49
KOP, Build 10" DLS	10400.00	0.00	254.71	10314.20	285.47	-292.58	-1070.51	0.00	487855.42	758087.55	N 32 20 21.24	W 103 37 53.49
	10500.00	0.00	254.71	10414.20	285.47	-292.58	-1070.51	0.00	487855.42	758087.55	N 32 20 21.24	W 103 37 53.49
	10600.00	0.00	254.71	10514.20	285.47	-292.58	-1070.51	0.00	487855.42	758087.55	N 32 20 21.24	W 103 37 53.49
	10700.00	0.00	254.71	10614.20	285.47	-292.58	-1070.51	0.00	487855.42	758087.55	N 32 20 21.24	W 103 37 53.49
	10800.00	0.00	254.71	10714.20	285.47	-292.58	-1070.51	0.00	487855.42	758087.55	N 32 20 21.24	W 103 37 53.49
	10900.00	0.00	254.71	10814.20	285.47	-292.58	-1070.51	0.00	487855.42	758087.55	N 32 20 21.24	W 103 37 53.49
	11000.00	0.00	254.71	10914.20	285.47	-292.58	-1070.51	0.00	487855.42	758087.55	N 32 20 21.24	W 103 37 53.49
	11100.00	0.00	254.71	11014.20	285.47	-292.58	-1070.51	0.00	487855.42	758087.55	N 32 20 21.24	W 103 37 53.49
	11200.00	0.00	254.71	11114.20	285.47	-292.58	-1070.51	0.00	487855.42	758087.55	N 32 20 21.24	W 103 37 53.49
	11300.00	0.00	254.71	11214.20	285.47	-292.58	-1070.51	0.00	487855.42	758087.55	N 32 20 21.24	W 103 37 53.49
	11400.00	0.00	254.71	11314.20	285.47	-292.58	-1070.51	0.00	487855.42	758087.55	N 32 20 21.24	W 103 37 53.49
	11500.00	0.00	254.71	11414.20	285.47	-292.58	-1070.51	0.00	487855.42	758087.55	N 32 20 21.24	W 103 37 53.49
	11600.00	0.00	254.71	11514.20	285.47	-292.58	-1070.51	0.00	487855.42	758087.55	N 32 20 21.24	W 103 37 53.49
	11700.00	0.00	254.71	11614.20	285.47	-292.58	-1070.51	0.00	487855.42	758087.55	N 32 20 21.24	W 103 37 53.49
	11800.00	0.00	254.71	11714.20	285.47	-292.58	-1070.51	0.00	487855.42	758087.55	N 32 20 21.24	W 103 37 53.49
Build 5" DLS	11900.00	0.00	254.71	11814.20	285.47	-292.58	-1070.51	0.00	487855.42	758087.55	N 32 20 21.24	W 103 37 53.49
	12000.00	0.00	254.71	11914.20	285.47	-292.58	-1070.51	0.00	487855.42	758087.55	N 32 20 21.24	W 103 37 53.49
	12018.32	0.00	254.71	11932.52	285.47	-292.58	-1070.51	0.00	487855.42	758087.55	N 32 20 21.24	W 103 37 53.49
	12100.00	8.17	179.62	12013.93	291.29	-298.39	-1070.47	10.00	487849.61	758087.59	N 32 20 21.18	W 103 37 53.49
	12200.00	18.17	179.62	12111.17	314.04	-321.14	-1070.32	10.00	487826.86	758087.74	N 32 20 20.96	W 103 37 53.49
	12300.00	28.17	179.62	12202.99	353.33	-360.44	-1070.06	10.00	487787.57	758088.00	N 32 20 20.57	W 103 37 53.49
	12400.00	38.17	179.62	12286.59	407.97	-415.08	-1069.70	10.00	487732.93	758088.36	N 32 20 20.03	W 103 37 53.49
	12500.00	48.17	179.62	12359.43	476.30	-483.40	-1069.24	10.00	487664.61	758088.82	N 32 20 19.35	W 103 37 53.49
	12600.00	58.17	179.62	12419.31	556.24	-563.34	-1068.71	10.00	487584.67	758089.35	N 32 20 18.56	W 103 37 53.49
	12700.00	68.17	179.62	12464.39	645.36	-652.46	-1068.12	10.00	487495.56	758089.94	N 32 20 17.68	W 103 37 53.49
	12768.32	75.00	179.62	12485.95	710.14	-717.24	-1067.69	10.00	487430.78	758090.37	N 32 20 17.04	W 103 37 53.49
	12800.00	76.58	179.62	12493.73	740.85	-747.95	-1067.49	5.00	487400.07	758090.57	N 32 20 16.74	W 103 37 53.49
	12900.00	81.58	179.62	12512.66	839.01	-846.10	-1066.84	5.00	487301.92	758091.22	N 32 20 15.76	W 103 37 53.49
	13000.00	86.58	179.62	12522.96	938.45	-945.54	-1066.18	5.00	487202.49	758091.88	N 32 20 14.78	W 103 37 53.49
	Landionq Point	13068.32	90.00	179.62	12525.00	1006.72	-1013.81	-1065.73	5.00	487134.21	758092.33	N 32 20 14.11
13100.00		90.00	179.62	12525.00	1038.41	-1045.50	-1065.52	0.00	487102.53	758092.54	N 32 20 13.79	W 103 37 53.49
13200.00		90.00	179.62	12525.00	1138.41	-1145.49	-1064.85	0.00	487002.54	758093.21	N 32 20 12.80	W 103 37 53.49
13300.00		90.00	179.62	12525.00	1238.41	-1245.49	-1064.19	0.00	486902.55	758093.87	N 32 20 11.81	W 103 37 53.49
13400.00		90.00	179.62	12525.00	1338.41	-1345.49	-1063.53	0.00	486802.55			

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	17400.00	90.00	179.62	12525.00	5338.41	-5345.40	-1036.99	0.00	482802.79	758121.07	N 32 19 31.24	W 103 37 53.48
	17500.00	90.00	179.62	12525.00	5438.41	-5445.40	-1036.33	0.00	482702.80	758121.73	N 32 19 30.25	W 103 37 53.48
	17600.00	90.00	179.62	12525.00	5538.41	-5545.40	-1035.67	0.00	482602.81	758122.39	N 32 19 29.26	W 103 37 53.48
	17700.00	90.00	179.62	12525.00	5638.41	-5645.39	-1035.00	0.00	482502.81	758123.06	N 32 19 28.27	W 103 37 53.48
	17800.00	90.00	179.62	12525.00	5738.41	-5745.39	-1034.34	0.00	482402.82	758123.72	N 32 19 27.29	W 103 37 53.48
	17900.00	90.00	179.62	12525.00	5838.41	-5845.39	-1033.68	0.00	482302.83	758124.38	N 32 19 26.30	W 103 37 53.48
	18000.00	90.00	179.62	12525.00	5938.41	-5945.39	-1033.01	0.00	482202.83	758125.05	N 32 19 25.31	W 103 37 53.48
	18100.00	90.00	179.62	12525.00	6038.41	-6045.39	-1032.35	0.00	482102.84	758125.71	N 32 19 24.32	W 103 37 53.48
	18200.00	90.00	179.62	12525.00	6138.41	-6145.38	-1031.69	0.00	482002.84	758126.37	N 32 19 23.33	W 103 37 53.48
	18300.00	90.00	179.62	12525.00	6238.41	-6245.38	-1031.02	0.00	481902.85	758127.04	N 32 19 22.34	W 103 37 53.48
	18400.00	90.00	179.62	12525.00	6338.41	-6345.38	-1030.36	0.00	481802.86	758127.70	N 32 19 21.35	W 103 37 53.48
	18500.00	90.00	179.62	12525.00	6438.41	-6445.38	-1029.70	0.00	481702.86	758128.36	N 32 19 20.36	W 103 37 53.48
	18600.00	90.00	179.62	12525.00	6538.41	-6545.37	-1029.03	0.00	481602.87	758129.03	N 32 19 19.37	W 103 37 53.48
	18700.00	90.00	179.62	12525.00	6638.41	-6645.37	-1028.37	0.00	481502.87	758129.69	N 32 19 18.38	W 103 37 53.48
	18800.00	90.00	179.62	12525.00	6738.41	-6745.37	-1027.71	0.00	481402.88	758130.35	N 32 19 17.39	W 103 37 53.48
	18900.00	90.00	179.62	12525.00	6838.41	-6845.37	-1027.04	0.00	481302.89	758131.02	N 32 19 16.40	W 103 37 53.48
	19000.00	90.00	179.62	12525.00	6938.41	-6945.37	-1026.38	0.00	481202.89	758131.68	N 32 19 15.41	W 103 37 53.48
	19100.00	90.00	179.62	12525.00	7038.41	-7045.36	-1025.72	0.00	481102.90	758132.34	N 32 19 14.42	W 103 37 53.48
	19200.00	90.00	179.62	12525.00	7138.41	-7145.36	-1025.05	0.00	481002.90	758133.01	N 32 19 13.43	W 103 37 53.48
	19300.00	90.00	179.62	12525.00	7238.41	-7245.36	-1024.39	0.00	480902.91	758133.67	N 32 19 12.44	W 103 37 53.48
	19400.00	90.00	179.62	12525.00	7338.41	-7345.36	-1023.73	0.00	480802.92	758134.33	N 32 19 11.45	W 103 37 53.48
	19500.00	90.00	179.62	12525.00	7438.41	-7445.36	-1023.06	0.00	480702.92	758135.00	N 32 19 10.46	W 103 37 53.48
	19600.00	90.00	179.62	12525.00	7538.41	-7545.35	-1022.40	0.00	480602.93	758135.66	N 32 19 9.47	W 103 37 53.48
NMNM0536344 Leaseline Crossing	19608.23	90.00	179.62	12525.00	7546.63	-7553.58	-1022.35	0.00	480594.70	758135.71	N 32 19 9.39	W 103 37 53.48
	19700.00	90.00	179.62	12525.00	7638.41	-7645.35	-1021.74	0.00	480502.93	758136.32	N 32 19 8.48	W 103 37 53.48
	19800.00	90.00	179.62	12525.00	7738.41	-7745.35	-1021.07	0.00	480402.94	758136.99	N 32 19 7.50	W 103 37 53.48
	19900.00	90.00	179.62	12525.00	7838.41	-7845.35	-1020.41	0.00	480302.95	758137.65	N 32 19 6.51	W 103 37 53.48
	20000.00	90.00	179.62	12525.00	7938.41	-7945.34	-1019.75	0.00	480202.95	758138.31	N 32 19 5.52	W 103 37 53.48
	20100.00	90.00	179.62	12525.00	8038.41	-8045.34	-1019.08	0.00	480102.96	758138.98	N 32 19 4.53	W 103 37 53.48
	20200.00	90.00	179.62	12525.00	8138.41	-8145.34	-1018.42	0.00	480002.96	758139.64	N 32 19 3.54	W 103 37 53.48
	20300.00	90.00	179.62	12525.00	8238.41	-8245.34	-1017.76	0.00	479902.97	758140.30	N 32 19 2.55	W 103 37 53.48
	20400.00	90.00	179.62	12525.00	8338.41	-8345.34	-1017.09	0.00	479802.98	758140.96	N 32 19 1.56	W 103 37 53.48
	20500.00	90.00	179.62	12525.00	8438.41	-8445.33	-1016.43	0.00	479702.98	758141.63	N 32 19 0.57	W 103 37 53.48
	20600.00	90.00	179.62	12525.00	8538.41	-8545.33	-1015.77	0.00	479602.99	758142.29	N 32 18 59.58	W 103 37 53.48
	20700.00	90.00	179.62	12525.00	8638.41	-8645.33	-1015.10	0.00	479502.99	758142.95	N 32 18 58.59	W 103 37 53.48
	20800.00	90.00	179.62	12525.00	8738.41	-8745.33	-1014.44	0.00	479403.00	758143.62	N 32 18 57.60	W 103 37 53.48
	20900.00	90.00	179.62	12525.00	8838.41	-8845.32	-1013.78	0.00	479303.01	758144.28	N 32 18 56.61	W 103 37 53.48
	21000.00	90.00	179.62	12525.00	8938.41	-8945.32	-1013.11	0.00	479203.01	758144.94	N 32 18 55.62	W 103 37 53.48
	21100.00	90.00	179.62	12525.00	9038.41	-9045.32	-1012.45	0.00	479103.02	758145.61	N 32 18 54.63	W 103 37 53.48
	21200.00	90.00	179.62	12525.00	9138.41	-9145.32	-1011.79	0.00	479003.03	758146.27	N 32 18 53.64	W 103 37 53.48
	21300.00	90.00	179.62	12525.00	9238.41	-9245.32	-1011.12	0.00	478903.03	758146.93	N 32 18 52.65	W 103 37 53.48
	21400.00	90.00	179.62	12525.00	9338.41	-9345.31	-1010.46	0.00	478803.04	758147.60	N 32 18 51.66	W 103 37 53.48
	21500.00	90.00	179.62	12525.00	9438.41	-9445.31	-1009.80	0.00	478703.04	758148.26	N 32 18 50.67	W 103 37 53.48
	21600.00	90.00	179.62	12525.00	9538.41	-9545.31	-1009.13	0.00	478603.05	758148.92	N 32 18 49.68	W 103 37 53.48
	21700.00	90.00	179.62	12525.00	9638.41	-9645.31	-1008.47	0.00	478503.06	758149.59	N 32 18 48.69	W 103 37 53.48
	21800.00	90.00	179.62	12525.00	9738.41	-9745.30	-1007.81	0.00	478403.06	758150.25	N 32 18 47.71	W 103 37 53.48
	21900.00	90.00	179.62	12525.00	9838.41	-9845.30	-1007.14	0.00	478303.07	758150.91	N 32 18 46.72	W 103 37 53.48
	22000.00	90.00	179.62	12525.00	9938.41	-9945.30	-1006.48	0.00	478203.07	758151.58	N 32 18 45.73	W 103 37 53.48
	22100.00	90.00	179.62	12525.00	10038.41	-10045.30	-1005.82	0.00	478103.08	758152.24	N 32 18 44.74	W 103 37 53.48
Coriander 1-12 Federal Com 13H - PBHL [100' FSL, 1664' FWL]	22149.62	90.00	179.62	12525.00	10088.03	-10094.92	-1005.49	0.00	478053.46	758152.57	N 32 18 44.25	W 103 37 53.48

Survey Type: Def Plan

Survey Error Model: ISCWSA Rev 3 \*\*\* 3-D 95.000% Confidence 2.7955 sigma  
Survey Program:

Description	Part	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Expected Max Inclination (deg)	Survey Tool Type	Borehole / Survey
	1	0.000	23.000	1/100.000	30.000	30.000		A001Mb_MWD-Depth Only	Coriander 1-12 Federal Com 13H / Cimarex Coriander 1-12 Federal
	1	23.000	22149.623	1/100.000	30.000	30.000		A001Mb_MWD	Coriander 1-12 Federal Com 13H / Cimarex Coriander 1-12 Federal



Cimarex Coriander 1-12 Federal Com 13H Rev0 IC 07Dec21 Proposal  
Geodetic Report  
(Def Plan)



**Report Date:** December 08, 2021 - 08:56 AM  
**Client:** Cimarex  
**Field:** NM Lea County (NAD 83)  
**Structure / Slot:** Cimarex Coriander 1-12 Federal Com Pad / New Slot  
**Well:** Coriander 1-12 Federal Com 13H  
**Borehole:** Coriander 1-12 Federal Com 13H  
**UWI / API#:** Unknown / Unknown  
**Survey Name:** Cimarex Coriander 1-12 Federal Com 13H Rev0 IC 07Dec21  
**Survey Date:** December 07, 2021  
**Tort / AHD / DDI / ERD Ratio:** 108.068 ° / 10912.327 ft / 6.319 / 0.871  
**Coordinate Reference System:** NAD83 New Mexico State Plane, Eastern Zone, US Feet  
**Location Lat / Long:** N 32° 20' 24.06738", W 103° 37' 40.98696"  
**Location Grid N/E Y/X:** N 488147.990 ftUS, E 759158.020 ftUS  
**CRS Grid Convergence Angle:** 0.3773 °  
**Grid Scale Factor:** 0.99996343  
**Version / Patch:** 2.10.826.8

**Survey / DLS Computation:** Minimum Curvature / Lubinski  
**Vertical Section Azimuth:** 179.620 ° (Grid North)  
**Vertical Section Origin:** 0.000 ft, 0.000 ft  
**TVD Reference Datum:** RKB  
**TVD Reference Elevation:** 3773.300 ft above MSL  
**Seabed / Ground Elevation:** 3750.300 ft above MSL  
**Magnetic Declination:** 6.412 °  
**Total Gravity Field Strength:** 998.4397mgn (9.80665 Based)  
**Gravity Model:** GARM  
**Total Magnetic Field Strength:** 47731.056 nT  
**Magnetic Dip Angle:** 59.986 °  
**Declination Date:** December 07, 2021  
**Magnetic Declination Model:** HDGM 2021  
**North Reference:** Grid North  
**Grid Convergence Used:** 0.3773 °  
**Total Corr Mag North->Grid North:** 6.0351 °  
**Local Coord Referenced To:** Well Head

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
SHL [370' FNL, 2557' FEL]	0.00	0.00	269.33	0.00	0.00	0.00	0.00	N/A	488147.99	759158.02	N 32 20 24.07	W 103 37 40.99
Nudge 2" DLS	1500.00	0.00	254.71	1500.00	0.00	0.00	0.00	0.00	488147.99	759158.02	N 32 20 24.07	W 103 37 40.99
Hold	1951.71	9.03	254.71	1949.84	9.14	-9.37	-34.28	2.00	488138.62	759123.74	N 32 20 23.98	W 103 37 41.39
Drop 2" DLS	8566.61	9.03	254.71	8482.68	276.33	-283.21	-1036.23	0.00	487864.79	758121.83	N 32 20 21.33	W 103 37 53.09
Hold	9018.32	0.00	254.71	8932.52	285.47	-292.58	-1070.51	2.00	487855.42	758087.55	N 32 20 21.24	W 103 37 53.49
KOP, Build 10" DLS	12018.32	0.00	254.71	11932.52	285.47	-292.58	-1070.51	0.00	487855.42	758087.55	N 32 20 21.24	W 103 37 53.49
Build 5" DLS	12768.32	75.00	179.62	12485.95	710.14	-717.24	-1067.69	10.00	487430.78	758090.37	N 32 20 17.04	W 103 37 53.49
Landiong Point Coriander 1-12 Federal Com 13H - PBHL [100' FSL, 1664' FWL]	13068.32	90.00	179.62	12525.00	1006.72	-1013.81	-1065.73	5.00	487134.21	758092.33	N 32 20 14.11	W 103 37 53.49
	22149.62	90.00	179.62	12525.00	10088.03	-10094.92	-1005.49	0.00	478053.46	758152.57	N 32 18 44.25	W 103 37 53.48

**Survey Type:** Def Plan

**Survey Error Model:** ISCWSA Rev 3 \*\*\* 3-D 95.000% Confidence 2.7955 sigma  
**Survey Program:**

Description	Part	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Expected Max Inclination (deg)	Survey Tool Type	Borehole / Survey
	1	0.000	23.000	1/100.000	30.000	30.000		A001Mb_MWD-Depth Only	Coriander 1-12 Federal Com 13H / Cimarex Coriander 1-12 Federal
	1	23.000	22149.623	1/100.000	30.000	30.000		A001Mb_MWD	Coriander 1-12 Federal Com 13H / Cimarex Coriander 1-12 Federal



## Cimarex Coriander 1-12 Federal Com 13H Rev0 IC 07Dec21 Anti-Collision Summary Report

**Analysis Date-24hr Time:** December 08, 2021 - 12:09

**Client:** Cimarex

**Field:** NM Lea County (NAD 83)

**Structure:** Cimarex Coriander 1-12 Federal Com Pad

**Slot:** New Slot

**Well:** Coriander 1-12 Federal Com 13H

**Borehole:** Coriander 1-12 Federal Com 13H

**Scan MD Range:** 0.00ft ~ 22149.62ft

**Analysis Method:** 3D Least Distance

**Reference Trajectory:** Cimarex Coriander 1-12 Federal Com 13H Rev0 IC 07Dec21 (Def Plan)

**Depth Interval:** Every 10.00 Measured Depth (ft)

**Rule Set:** NAL Procedure: D&M AntiCollision Standard S002

**Min Pts:** All local minima indicated.

**Version / Patch:** 2.10.826.8

**Database \ Project:** localhost\drilling-project1

**Trajectory Error Model:** ISCWSA0 3-D 95.000% Confidence 2.7955 sigma

### Offset Trajectories Summary

#### Offset Selection Criteria

Wellhead distance scan:

Selection filters: Not performed!

Definitive Surveys - Definitive Plans - Definitive surveys exclude definitive plans

- All Non-Def Surveys when no Def-Survey is set in a borehole - All Non-Def Plans when no Def-Plan is set in a borehole

Offset Trajectory	Separation			Allow Dev. (ft)	Sep. Fact.	Controlling Rule	Reference Trajectory		Risk Level			Alert	Status
	Ct-Ct (ft)	MAS (ft)	EOU (ft)				MD (ft)	TVD (ft)	Alert	Minor	Major		

30-025-32530 Lime Rock Thyme APY Federal #003 INC Only Surveys to 9150ft MD - Plugged (Def Survey)

Fail Major

426.48	32.81	423.98	393.68	N/A	MAS = 10.00 (m)	0.00	0.00					Surface	
426.03	32.81	423.47	393.22	6392.48	MAS = 10.00 (m)	10.00	10.00					MinPt-O-SF	
425.81	32.81	423.27	393.01	10618.39	MAS = 10.00 (m)	20.00	20.00					MINPT-O-EOU	
425.79	32.81	423.28	392.99	30538.36	MAS = 10.00 (m)	23.00	23.00					WRP	
368.11	112.84	292.04	255.26	4.97	OSF1.50	2060.00	2056.79		OSF<5.00			Enter Alert	
179.13	179.32	58.75	-0.19	1.50	OSF1.50	3410.00	3390.04			OSF<1.50		Enter Minor	
133.62	200.14	-0.64	-66.52	1.00	OSF1.50	3780.00	3755.45				OSF<1.00	Enter Major	
100.63	230.47	-53.82	-129.81	0.65	OSF1.50	4330.00	4298.63					MinPt-CtCt	
99.93	236.70	-58.65	-136.71	0.62	OSF1.50	4440.00	4407.26					MinPt-CtCt	
100.11	237.14	-58.82	-137.04	0.62	OSF1.50	4450.00	4417.14					MinPts	
100.39	237.54	-58.80	-137.14	0.62	OSF1.50	4460.00	4427.01					MinPt-O-ADP	
122.08	255.76	-49.27	-133.70	0.71	OSF1.50	4810.00	4772.67					MINPT-O-EOU	
126.56	261.40	-48.54	-134.84	0.72	OSF1.50	4900.00	4861.56					MinPt-O-ADP	
197.69	296.02	-0.49	-98.33	1.00	OSF1.50	5540.00	5493.62				OSF>1.00	Exit Major	
341.67	342.64	112.40	-0.98	1.50	OSF1.50	6500.00	6441.71					Exit Minor	
699.46	486.96	374.03	212.56	2.16	OSF1.50	9260.00	9174.20					MinPts	
1078.77	325.98	860.62	752.79	4.99	OSF1.50	10080.00	9994.20		OSF>5.00			Exit Alert	
4626.33	355.11	4388.75	4271.21	19.67	OSF1.50	15200.00	12525.00					MinPt-O-SF	
10634.86	481.58	10312.97	10153.28	33.29	OSF1.50	22149.62	12525.00					TD	

Cimarex Coriander 1-12 Federal Com 12H Rev0 IC 07Dec21 (Def Plan)

Fail Minor

20.00	16.50	17.50	3.50	N/A	MAS = 5.03 (m)	0.00	0.00	CtCt<=15m<15.00				Enter Alert	
20.00	16.50	17.50	3.50	24698.46	MAS = 5.03 (m)	23.00	23.00					WRP	
20.00	20.07	5.79	-0.06	1.49	OSF1.50	1230.00	1230.00		OSF<1.50			Enter Minor	
20.00	24.13	3.09	-4.12	1.21	OSF1.50	1500.00	1500.00					MinPt-CtCt	
20.15	24.57	2.94	-4.42	1.20	OSF1.50	1530.00	1530.00					MINPT-O-EOU	
20.27	24.72	2.96	-4.44	1.20	OSF1.50	1540.00	1540.00					MinPts	
26.81	27.07	7.94	-0.25	1.48	OSF1.50	1700.00	1699.84			OSF>1.50		Exit Minor	
148.91	46.49	117.09	102.42	4.99	OSF1.50	3030.00	3014.75		OSF>5.00			Exit Alert	
658.76	181.73	536.77	477.03	5.49	OSF1.50	12100.00	12013.93					MinPt-CtCt	
658.88	181.98	536.73	476.90	5.49	OSF1.50	12120.00	12033.67					MinPts	
659.90	182.49	537.41	477.41	5.48	OSF1.50	12170.00	12082.44					MinPt-O-SF	
722.05	218.72	575.40	503.33	4.99	OSF1.50	14230.00	12525.00		OSF<5.00			Enter Alert	
722.93	668.78	276.24	54.14	1.62	OSF1.50	22149.62	12525.00					MinPts	

Cimarex Coriander 1-12 Federal Com 11H Rev0 IC 07Dec21 (Def Plan)

Warning Alert

39.99	32.50	37.49	7.50	N/A	MAS = 9.90 (m)	0.00	0.00	CtCt<=15m<15.00				Enter Alert	
39.99	32.50	37.49	7.50	26455.35	MAS = 9.90 (m)	23.00	23.00					WRP	
39.99	32.50	23.08	7.50	2.60	MAS = 9.90 (m)	1500.00	1500.00					MinPts	
40.15	32.50	22.93	7.65	2.56	MAS = 9.90 (m)	1530.00	1530.00					MINPT-O-EOU	
40.82	32.50	23.21	8.33	2.54	MAS = 9.90 (m)	1570.00	1569.99					MinPt-O-SF	
103.43	33.14	80.51	70.29	4.94	OSF1.50	2120.00	2116.04		OSF>5.00			Exit Alert	
752.90	75.79	701.54	677.11	15.39	OSF1.50	4980.00	4940.56					MinPt-O-SF	
1319.69	199.04	1186.16	1120.64	10.05	OSF1.50	13020.00	12523.98					MinPt-CtCt	
1319.75	397.76	1053.74	921.99	5.00	OSF1.50	17140.00	12525.00		OSF<5.00			Enter Alert	
1319.83	722.41	837.39	597.42	2.74	OSF1.50	22149.62	12525.00					MinPts	

30-025-42170 COG Resolver Federal Com #24 OH Gyro Surveys 0ft to 12300ft MD - A (Def Survey)

Warning Alert

5117.74	32.81	5115.21	5084.93	210662.96	MAS = 10.00 (m)	0.00	0.00					Surface	
5117.69	32.81	5115.05	5084.88	37981.18	MAS = 10.00 (m)	23.00	23.00					WRP	
5114.22	32.81	5103.82	5081.42	646.90	MAS = 10.00 (m)	850.00	850.00					MinPts	
4868.32	139.24	4774.66	4729.08	53.38	OSF1.50	8700.00	8614.86					MinPt-CtCt	
4869.13	141.30	4774.10	4727.83	52.59	OSF1.50	8840.00	8754.32					MINPT-O-EOU	
4870.65	143.26	4774.31	4727.39	51.88	OSF1.50	8970.00	8884.20					MinPt-O-ADP	
4866.00	167.58	4753.45	4698.43	44.19	OSF1.50	10710.00	10624.20					MinPt-CtCt	
4866.74	169.80	4752.70	4696.93	43.61	OSF1.50	10890.00	10804.20					MINPT-O-EOU	
4868.05	171.48	4752.89	4696.56	43.19	OSF1.50	11020.00	10934.20					MinPt-O-ADP	
4881.01	179.68	4750.39	4701.33	41.30	OSF1.50	11600.00	11514.20					MINPT-O-EOU	
4881.39	180.14	4760.49	4701.25	41.20	OSF1.50	11640.00	11554.20					MinPt-O-ADP	
790.15	241.77	628.13	548.38	4.94	OSF1.50	16620.00	12525.00		OSF<5.00			Enter Alert	
514.68	279.75	327.35	234.93	2.77	OSF1.50	17200.00	12525.00					MinPt-O-SF	
514.39	279.52	327.21	234.87	2.77	OSF1.50	17210.00	12525.00					MinPts	
514.30	279.24	327.31	235.06	2.77	OSF1.50	17220.00	12525.00					MinPt-CtCt	
745.83	227.82	593.12	518.01	4.95	OSF1.50	17760.00	12525.00		OSF>5.00			Exit Alert	
4956.52	198.51	4823.35	4758.01	37.91	OSF1.50	22149.62	12525.00					TD	

Cimarex Thyme APY Federal #9H MWD Final (Def Survey)

Pass



Offset Trajectory	Separation			Allow Dev. (ft)	Sep. Fact.	Controlling Rule	Reference Trajectory		Risk Level			Alert	Status
	Cl-Cl (ft)	MAS (ft)	EOU (ft)				MD (ft)	TVD (ft)	Alert	Minor	Major		
	536.79	32.81	534.29	503.98	N/A	MAS = 10.00 (m)	0.00	0.00				MinPts	
	536.79	32.81	534.26	503.98	19596.05	MAS = 10.00 (m)	23.00	23.00				WRP	
	540.16	32.81	523.18	507.35	37.14	MAS = 10.00 (m)	1530.00	1530.00				MINPT-O-EQU	
	1647.93	138.43	1554.81	1509.50	18.16	OSF1.50	9230.00	9144.20				MinPt-CiCi	
	1648.09	138.86	1554.68	1509.23	18.10	OSF1.50	9270.00	9184.20				MINPT-O-EQU	
	1646.90	140.78	1552.21	1506.12	17.84	OSF1.50	9390.00	9304.20				MinPt-CiCi	
	1647.01	141.07	1552.13	1505.94	17.80	OSF1.50	9420.00	9334.20				MINPT-O-EQU	
	1647.09	141.17	1552.15	1505.92	17.79	OSF1.50	9430.00	9344.20				MinPt-O-ADP	
	1647.43	143.78	1550.75	1503.65	17.46	OSF1.50	9570.00	9484.20				MinPt-CiCi	
	1647.44	143.84	1550.72	1503.61	17.46	OSF1.50	9580.00	9494.20				MinPts	
	1648.99	144.13	1552.07	1504.89	17.44	OSF1.50	9650.00	9564.20				MinPt-O-SF	
	1701.62	145.29	1603.93	1556.33	17.85	OSF1.50	10030.00	9944.20				MinPt-O-SF	
	3357.46	123.81	3274.08	3233.65	41.48	OSF1.50	13200.00	12525.00				MinPt-CiCi	
	3358.29	126.40	3273.19	3231.89	40.63	OSF1.50	13390.00	12525.00				MINPT-O-EQU	
	3358.95	127.23	3273.30	3231.72	40.36	OSF1.50	13450.00	12525.00				MinPt-O-ADP	
	3375.57	148.11	3275.99	3227.45	34.75	OSF1.50	14360.00	12525.00				MinPt-CiCi	
	3376.22	151.54	3274.37	3224.69	33.96	OSF1.50	14520.00	12525.00				MINPT-O-EQU	
	3377.00	152.48	3274.51	3224.82	33.75	OSF1.50	14570.00	12525.00				MinPt-O-ADP	
	3379.70	154.99	3275.54	3224.71	33.22	OSF1.50	14680.00	12525.00				MinPt-O-ADP	
	3387.96	194.97	3237.15	3173.00	26.23	OSF1.50	15890.00	12525.00				MinPt-CiCi	
	3370.77	203.70	3234.13	3167.06	25.11	OSF1.50	16180.00	12525.00				MINPT-O-EQU	
	3381.94	223.63	3232.02	3158.31	22.92	OSF1.50	16660.00	12525.00				MINPT-O-EQU	
	3382.16	223.90	3232.06	3158.26	22.90	OSF1.50	16680.00	12525.00				MinPt-O-ADP	
	3422.67	229.64	3268.74	3193.02	22.89	OSF1.50	17160.00	12525.00				MinPt-O-SF	
	6470.79	229.43	6317.00	6241.36	42.75	OSF1.50	22149.62	12525.00				TD	
Cimarex Thyme APY Federal 1 (Offset 025-33370) (Def Survey)													
	895.98	32.81	893.48	863.17	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	Pass
	895.80	32.81	893.27	862.98	35875.79	MAS = 10.00 (m)	10.00	10.00				MinPt-O-SF	
	895.72	32.81	893.19	862.92	29708.49	MAS = 10.00 (m)	23.00	23.00				MinPts	
	914.01	85.96	855.86	828.03	16.38	OSF1.50	1580.00	1579.99				MINPT-O-EQU	
	917.14	89.70	856.51	827.45	15.73	OSF1.50	1640.00	1639.94				MinPt-O-ADP	
	2148.14	632.14	1725.88	1516.00	5.11	OSF1.50	10430.00	10344.20				MinPts	
	10558.00	630.77	10136.66	9927.23	25.20	OSF1.50	22149.62	12525.00				TD	
30-025-33529 Cimarex Thyme APY Federal #2 INC Only Surveys to 9154R MD - Plugged (Def Survey)													
	1581.04	32.81	1578.54	1548.23	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	1580.76	32.81	1578.23	1547.95	51378.85	MAS = 10.00 (m)	20.00	20.00				MinPt-O-SF	
	1580.74	32.81	1578.21	1547.93	59087.75	MAS = 10.00 (m)	23.00	23.00				WRP	
	1580.11	32.81	1559.82	1547.30	88.68	MAS = 10.00 (m)	560.00	560.00				MinPts	
	1596.05	93.91	1532.62	1502.15	26.15	OSF1.50	1700.00	1699.84				MINPT-O-EQU	
	1602.96	102.23	1533.97	1500.72	24.07	OSF1.50	1860.00	1859.05				MinPt-O-ADP	
	1818.58	256.73	1646.59	1561.84	10.72	OSF1.50	4790.00	4752.92				MinPts	
	2221.98	486.77	1896.61	1735.18	6.87	OSF1.50	9270.00	9184.20				MinPts	
	3888.33	275.15	3704.06	3613.18	21.38	OSF1.50	13350.00	12525.00				MinPt-CiCi	
	3888.34	275.11	3704.06	3613.17	21.38	OSF1.50	13360.00	12525.00				MinPts	
	4618.08	360.86	4376.68	4257.22	19.32	OSF1.50	15840.00	12525.00				MinPt-O-SF	
	9621.80	480.31	9300.76	9141.49	30.20	OSF1.50	22149.62	12525.00				TD	
Final Survey - Cimarex Coriander AOC 1-12 State 3H MWD Off-19431ft (Surcon Corrected) (Def Survey)													
	1827.18	32.81	1824.68	1794.37	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	Pass
	1827.17	32.81	1824.65	1794.36	108297.12	MAS = 10.00 (m)	23.00	23.00				WRP	
	1815.84	32.81	1798.48	1783.03	121.99	MAS = 10.00 (m)	1550.00	1550.00				MinPts	
	1816.00	32.81	1798.34	1783.19	119.63	MAS = 10.00 (m)	1580.00	1579.99				MINPT-O-EQU	
	2633.88	143.72	2542.23	2495.15	28.00	OSF1.50	9520.00	9434.20				MinPt-CiCi	
	2638.93	143.86	2542.17	2495.04	27.97	OSF1.50	9540.00	9454.20				MINPT-O-EQU	
	2639.08	144.07	2542.20	2495.01	27.94	OSF1.50	9560.00	9474.20				MinPt-O-ADP	
	2645.04	145.33	2547.33	2499.72	27.78	OSF1.50	9740.00	9654.20				MinPt-O-SF	
	3975.44	133.32	3885.73	3842.13	45.56	OSF1.50	12880.00	12509.56				MinPt-O-ADP	
	3965.28	141.71	3869.97	3823.56	42.70	OSF1.50	13610.00	12525.00				MinPt-CiCi	
	3939.10	196.18	3807.49	3742.93	30.49	OSF1.50	15650.00	12525.00				MinPt-CiCi	
	3946.77	219.67	3799.49	3727.10	27.24	OSF1.50	16390.00	12525.00				MINPT-O-EQU	
	3949.91	225.20	3798.95	3724.71	26.59	OSF1.50	16540.00	12525.00				MINPT-O-EQU	
	3952.00	227.71	3799.36	3724.28	26.31	OSF1.50	16630.00	12525.00				MinPt-O-ADP	
	3962.95	244.78	3798.92	3718.16	24.52	OSF1.50	17040.00	12525.00				MinPt-CiCi	
	3961.76	307.77	3775.76	3674.01	19.55	OSF1.50	18710.00	12525.00				MinPt-CiCi	
	3976.36	360.38	3735.27	3615.98	16.66	OSF1.50	20020.00	12525.00				MinPt-CiCi	
	3964.40	389.44	3703.94	3574.96	15.36	OSF1.50	20720.00	12525.00				MinPt-CiCi	
	3963.22	398.91	3696.44	3564.31	14.99	OSF1.50	20940.00	12525.00				MinPt-CiCi	
	3969.27	436.61	3667.36	3522.66	13.67	OSF1.50	21840.00	12525.00				MinPt-CiCi	
	3959.96	449.30	3659.59	3510.66	13.29	OSF1.50	22140.00	12525.00				MinPt-CiCi	
	3959.96	449.51	3659.46	3510.46	13.28	OSF1.50	22149.62	12525.00				MinPts	
Final Survey Cimarex Coriander AOC 1-12 State 2H Surcon Corrected Off - 19642ft (Def Survey)													
	1847.18	32.81	1844.68	1814.37	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	Pass
	1847.16	32.81	1844.64	1814.35	103875.04	MAS = 10.00 (m)	23.00	23.00				WRP	
	1844.50	32.81	1839.43	1811.69	717.36	MAS = 10.00 (m)	350.00	350.00				MinPts	
	1851.38	32.81	1834.72	1818.57	130.57	MAS = 10.00 (m)	1520.00	1520.00				MINPT-O-EQU	
	2931.83	139.62	2837.94	2792.23	32.04	OSF1.50	9320.00	9234.20				MinPt-CiCi	
	2931.93	139.90	2837.83	2792.03	31.98	OSF1.50	9350.00	9264.20				MINPT-O-EQU	
	2932.07	140.07	2837.86	2792.00	31.94	OSF1.50	9370.00	9284.20				MinPt-O-ADP	
	2963.58	144.89	2866.16	2818.69	31.19	OSF1.50	9940.00	9854.20				MinPt-O-SF	
	2974.17	147.01	2875.38	2827.10	30.85	OSF1.50	10030.00	9944.20				MinPt-O-ADP	
	2982.34	148.02	2882.83	2834.33	30.72	OSF1.50	10110.00	10024.20				MinPt-O-SF	
	4021.72	139.59	3927.82	3882.13	43.98	OSF1.50	12640.00	12439.20				MinPt-O-SF	
	4059.57	156.60	3954.34	3902.97	39.49	OSF1.50	13870.00	12525.00				MinPt-CiCi	
	4061.18	162.80	3951.82	3898.38	37.98	OSF1.50	14160.00	12525.00				MINPT-O-EQU	
	4038.76	194.43	3908.30	3844.32	31.54	OSF1.50	15230.00	12525.00				MinPt-CiCi	
	4039.80	197.64	3907.21	3842.16	31.03	OSF1.50	15360.00	12525.00				MINPT-O-EQU	
	4026.17	218.74	3879.51	3807.43	27.91	OSF1.50	15940.00	12525.00				MinPt-CiCi	
	4026.97	221.23	3878.65	3805.74	27.60	OSF1.50	16040.00	12525.00				MINPT-O-EQU	
	4026.90	235.05	3869.37	3791.86	25.96	OSF1.50	16380.00	12525.00				MinPt-CiCi	
	4026.21	254.40	3855.77	3771.80	23.96	OSF1.50	16900.00	12525.00				MinPt-CiCi	



Offset Trajectory	Separation			Allow Dev. (ft)	Sep. Fact.	Controlling Rule	Reference Trajectory		Risk Level			Alert	Status
	Cl-Cl (ft)	MAS (ft)	EOU (ft)				MD (ft)	TVD (ft)	Alert	Minor	Major		
4032.33	270.19		3851.30	3762.13	22.58	OSF1.50	17350.00	12525.00				MINPT-O-EQU	
4036.46	278.37		3850.05	3758.09	21.93	OSF1.50	17560.00	12525.00				MINPT-O-EQU	
4039.15	281.62		3850.58	3757.54	21.69	OSF1.50	17660.00	12525.00				MinPt-O-ADP	
4043.05	286.68		3851.09	3756.36	21.33	OSF1.50	17770.00	12525.00				MINPT-O-EQU	
4045.85	290.00		3851.68	3755.85	21.10	OSF1.50	17870.00	12525.00				MinPt-O-ADP	
4039.45	318.93		3825.99	3720.52	19.14	OSF1.50	18510.00	12525.00				MinPt-CiCl	
4036.13	341.11		3807.89	3695.03	17.87	OSF1.50	19050.00	12525.00				MinPt-CiCl	
4030.91	368.33		3784.53	3662.58	16.52	OSF1.50	19710.00	12525.00				MinPt-CiCl	
4034.47	376.99		3782.31	3657.48	16.15	OSF1.50	19960.00	12525.00				MINPT-O-EQU	
4040.50	384.93		3783.05	3655.57	15.84	OSF1.50	20160.00	12525.00				MINPT-O-EQU	
4041.13	385.58		3783.24	3655.55	15.81	OSF1.50	20180.00	12525.00				MinPt-O-ADP	
4057.51	420.87		3776.20	3636.74	14.54	OSF1.50	20960.00	12525.00				MinPt-CiCl	
4060.81	438.08		3767.92	3622.72	13.98	OSF1.50	21410.00	12525.00				MINPT-O-EQU	
4063.57	441.43		3768.44	3622.13	13.88	OSF1.50	21510.00	12525.00				MinPt-O-ADP	
4073.40	471.68		3758.11	3601.72	13.01	OSF1.50	22140.00	12525.00				MinPt-CiCl	
4073.41	471.92		3757.96	3601.49	13.01	OSF1.50	22149.62	12525.00				MinPts	

Cimarex Coriander AOC 1-12  
State 1H final survey (Def Survey)

Pass

1966.56	32.81	1964.06	1933.75	N/A	MAS = 10.00 (m)	0.00	0.00	Surface
1966.54	32.81	1964.03	1933.73	163384.09	MAS = 10.00 (m)	23.00	23.00	WRP
1953.26	32.81	1936.17	1920.45	133.71	MAS = 10.00 (m)	1530.00	1530.00	MinPts
1953.47	32.81	1935.97	1920.66	130.13	MAS = 10.00 (m)	1570.00	1569.99	MINPT-O-EQU
3059.63	134.82	2968.91	2924.80	34.65	OSF1.50	8930.00	8844.22	MinPt-O-ADP
3060.36	135.99	2968.86	2924.37	34.36	OSF1.50	9050.00	8964.20	MINPT-O-EQU
3060.50	136.17	2968.89	2924.33	34.32	OSF1.50	9070.00	8984.20	MinPt-O-ADP
3073.68	137.74	2981.02	2935.94	34.09	OSF1.50	9360.00	9274.20	MinPt-O-SF
3504.77	144.78	3407.42	3359.99	36.99	OSF1.50	10900.00	10814.20	MinPts
3754.93	143.48	3658.45	3611.46	38.59	OSF1.50	11470.00	11384.20	MinPt-O-SF
4352.17	181.71	4260.20	4200.46	36.66	OSF1.50	14400.00	12525.00	MinPt-CiCl
4364.19	187.41	4258.42	4196.78	35.54	OSF1.50	14610.00	12525.00	MINPT-O-EQU
4387.01	191.81	4258.30	4195.20	34.74	OSF1.50	14740.00	12525.00	MINPT-O-EQU
4391.68	227.67	4238.47	4163.41	29.23	OSF1.50	15580.00	12525.00	MinPt-CiCl
4393.20	234.32	4236.16	4158.89	28.41	OSF1.50	15790.00	12525.00	MINPT-O-EQU
4395.50	237.10	4236.60	4158.40	28.09	OSF1.50	15880.00	12525.00	MinPt-O-ADP
4376.68	280.26	4189.21	4096.62	23.62	OSF1.50	16780.00	12525.00	MinPt-CiCl
4374.77	333.86	4151.36	4040.91	19.79	OSF1.50	17930.00	12525.00	MinPt-CiCl
4377.00	361.11	4135.42	4015.89	18.30	OSF1.50	18480.00	12525.00	MinPt-CiCl
4378.72	377.24	4126.39	4001.48	17.52	OSF1.50	18810.00	12525.00	MinPt-CiCl
4378.27	392.31	4115.89	3985.95	16.84	OSF1.50	19120.00	12525.00	MinPt-CiCl
4379.65	396.28	4114.64	3983.38	16.67	OSF1.50	19250.00	12525.00	MINPT-O-EQU
4379.91	417.29	4100.89	3962.63	15.83	OSF1.50	19610.00	12525.00	MinPt-CiCl
4393.51	470.70	4078.87	3922.80	14.07	OSF1.50	20670.00	12525.00	MinPt-CiCl
4399.38	508.32	4059.67	3891.07	13.04	OSF1.50	21460.00	12525.00	MINPT-O-EQU
4401.60	510.96	4060.12	3890.64	12.98	OSF1.50	21540.00	12525.00	MinPt-O-ADP
4402.15	522.46	4053.02	3879.70	12.69	OSF1.50	21680.00	12525.00	MinPt-CiCl
4402.66	524.03	4052.47	3878.63	12.66	OSF1.50	21750.00	12525.00	MINPT-O-EQU
4403.21	524.67	4052.60	3878.54	12.64	OSF1.50	21780.00	12525.00	MinPt-O-ADP
4426.76	530.84	4072.04	3895.93	12.56	OSF1.50	22149.62	12525.00	MinPt-O-SF

Cimarex Coriander AOC State 1  
(Offset 025-33531) (Def Survey)

Pass

2215.48	32.81	2212.98	2182.67	N/A	MAS = 10.00 (m)	0.00	0.00	Surface
2215.37	32.81	2212.86	2182.56	126683.04	MAS = 10.00 (m)	10.00	10.00	MinPt-O-SF
2215.30	32.81	2212.78	2182.49	171388.14	MAS = 10.00 (m)	23.00	23.00	WRP
2203.48	87.10	2144.56	2116.36	39.02	OSF1.50	1540.00	1540.00	MinPt-CiCl
2206.22	95.25	2141.89	2110.98	35.64	OSF1.50	1670.00	1669.90	MINPT-O-EQU
2209.41	99.00	2142.58	2110.42	34.31	OSF1.50	1730.00	1729.75	MinPt-O-ADP
3170.06	576.64	2784.81	2593.43	8.28	OSF1.50	9220.00	9134.20	MinPt-O-SF
3170.03	576.64	2784.79	2593.41	8.28	OSF1.50	9230.00	9144.20	MinPts
4768.34	414.35	4491.28	4353.99	17.39	OSF1.50	13280.00	12525.00	MinPt-O-SF
4783.25	415.64	4505.33	4367.61	17.38	OSF1.50	13340.00	12525.00	MinPt-O-SF
11042.20	570.99	10660.71	10471.21	29.13	OSF1.50	22149.62	12525.00	TD

30-025-33574 EOG Coriander  
AOC State #002 INC Only  
Surveys to 9170R MD - Plugged  
(Def Survey)

Pass

2568.86	32.81	2566.36	2536.05	N/A	MAS = 10.00 (m)	0.00	0.00	Surface
2568.61	32.81	2566.07	2535.80	74870.87	MAS = 10.00 (m)	20.00	20.00	MinPt-O-SF
2568.58	32.81	2566.05	2535.77	75223.65	MAS = 10.00 (m)	23.00	23.00	WRP
2568.51	32.81	2565.85	2535.70	15807.29	MAS = 10.00 (m)	50.00	50.00	MinPts
2578.58	84.06	2521.71	2494.52	47.38	OSF1.50	1610.00	1609.97	MINPT-O-EQU
2582.79	88.85	2522.72	2493.93	44.82	OSF1.50	1700.00	1699.84	MinPt-O-ADP
3453.81	490.99	3125.65	2962.82	10.60	OSF1.50	9300.00	9214.20	MinPts
3453.89	491.02	3125.71	2962.87	10.60	OSF1.50	9320.00	9234.20	MinPt-O-SF
4671.01	363.36	4427.93	4307.65	19.41	OSF1.50	13390.00	12525.00	MinPt-CiCl
4671.01	363.38	4427.92	4307.63	19.40	OSF1.50	13400.00	12525.00	MINPT-O-EQU
4671.04	363.41	4427.93	4307.63	19.40	OSF1.50	13410.00	12525.00	MinPt-O-ADP
4834.97	378.59	4581.74	4456.37	19.27	OSF1.50	14640.00	12525.00	MinPt-O-SF
9925.82	495.96	9594.34	9429.86	30.16	OSF1.50	22149.62	12525.00	TD

30-025-42170 COG Resolver  
Federal Com #2H ST01 MWD  
Surveys 9000ft to 14096ft MD -  
A (Def Survey)

Pass

5117.74	32.81	5115.21	5084.93	210662.96	MAS = 10.00 (m)	0.00	0.00	Surface
5117.69	32.81	5115.05	5084.88	37981.18	MAS = 10.00 (m)	23.00	23.00	WRP
5114.22	32.81	5103.89	5081.42	646.90	MAS = 10.00 (m)	850.00	850.00	MinPts
4868.32	139.24	4774.66	4729.08	53.38	OSF1.50	8700.00	8614.86	MinPt-CiCl
4869.13	141.30	4774.10	4727.83	52.59	OSF1.50	8840.00	8754.32	MINPT-O-EQU
4870.65	143.26	4774.31	4727.39	51.88	OSF1.50	8970.00	8884.20	MinPt-O-ADP
4938.77	151.03	4837.25	4787.74	49.85	OSF1.50	9970.00	9884.20	MinPt-O-SF
2855.64	172.76	2739.64	2682.88	25.14	OSF1.50	18030.00	12525.00	MinPt-CiCl
2856.27	174.64	2739.01	2681.63	24.87	OSF1.50	18120.00	12525.00	MINPT-O-EQU
2853.60	182.74	2730.94	2670.86	23.73	OSF1.50	18440.00	12525.00	MinPt-CiCl
2855.03	187.16	2729.42	2667.87	23.17	OSF1.50	18630.00	12525.00	MINPT-O-EQU
2855.75	188.03	2729.56	2667.72	23.07	OSF1.50	18670.00	12525.00	MinPt-O-ADP
2839.48	210.58	2698.26	2628.90	20.45	OSF1.50	19500.00	12525.00	MinPt-CiCl
2840.64	214.26	2696.97	2626.38	20.10	OSF1.50	19650.00	12525.00	MINPT-O-EQU
2837.95	226.49	2686.12	2611.46	18.99	OSF1.50	20070.00	12525.00	MinPt-CiCl
2838.98	229.71	2684.95	2609.25	18.72	OSF1.50	20200.00	12525.00	MINPT-O-EQU

Offset Trajectory	Separation			Allow Dev. (ft)	Sep. Fact.	Controlling Rule	Reference Trajectory		Risk Level			Alert	Status
	Ct-Ct (ft)	MAS (ft)	EOU (ft)				MD (ft)	TVD (ft)	Alert	Minor	Major		
2840.45	231.48	2685.30	2609.30	18.59		OSF1.50	20270.00	12525.00				MinPt-O-ADP	
2843.76	245.71	2679.13	2598.06	17.52		OSF1.50	20700.00	12525.00				MinPt-CtCt	
2824.89	281.89	2636.13	2543.00	15.15		OSF1.50	21810.00	12525.00				MinPt-CtCt	
2825.14	282.61	2635.90	2542.53	15.12		OSF1.50	21850.00	12525.00				MINPT-O-EQU	
2825.29	282.78	2635.93	2542.51	15.11		OSF1.50	21860.00	12525.00				MinPt-O-ADP	
2843.84	286.81	2651.80	2557.03	14.99		OSF1.50	22140.00	12525.00				MinPt-O-SF	
2844.97	286.92	2652.85	2558.04	14.99		OSF1.50	22149.62	12525.00				TD	

30-025-36192 Cimarex Thyme  
APY Federal #011 INC Only  
Surveys to 9150ft MD - SWD  
(Def Survey)

Pass

3715.94	32.81	3713.44	3683.13	N/A		MAS = 10.00 (m)	0.00	0.00				Surface	
3715.88	32.81	3713.38	3683.08	488845.30		MAS = 10.00 (m)	10.00	10.00				MinPt-O-SF	
3715.86	32.81	3713.35	3683.05	812836.46		MAS = 10.00 (m)	20.00	20.00				MINPT-O-EQU	
3715.86	32.81	3713.36	3683.05	N/A		MAS = 10.00 (m)	23.00	23.00				WRP	
3706.83	65.00	3662.66	3641.82	88.90		OSF1.50	1130.00	1130.00				MinPt-CtCt	
3072.21	466.93	2760.09	2605.28	9.91		OSF1.50	8910.00	8824.23				MinPt-CtCt	
3080.11	487.79	2754.08	2592.32	9.51		OSF1.50	9300.00	9214.20				MinPts	
3417.32	175.94	3299.19	3241.38	29.53		OSF1.50	15350.00	12525.00				MinPt-CtCt	
3417.50	176.55	3298.30	3240.97	29.44		OSF1.50	15390.00	12525.00				MINPT-O-EQU	
3418.15	177.29	3299.12	3240.80	29.31		OSF1.50	15430.00	12525.00				MinPt-O-ADP	
4491.86	367.46	4246.05	4124.39	18.43		OSF1.50	18270.00	12525.00				MinPt-O-SF	
7605.82	470.92	7291.04	7134.90	24.35		OSF1.50	22149.62	12525.00				TD	

30-025-33538 Burlington  
Resources Pronghorn 12  
Federal #001 INC Only Surveys  
to 9200ft MD - Plugged (Def  
Survey)

Pass

5601.14	32.81	5598.64	5568.33	N/A		MAS = 10.00 (m)	0.00	0.00				Surface	
5601.11	32.81	5598.61	5568.30	N/A		MAS = 10.00 (m)	10.00	10.00				MinPt-O-SF	
5601.10	32.81	5598.58	5568.29	277649.32		MAS = 10.00 (m)	23.00	23.00				WRP	
5600.45	32.81	5592.55	5567.64	1037.43		MAS = 10.00 (m)	220.00	220.00				MinPts	
5311.41	491.75	4982.74	4819.66	16.28		OSF1.50	9300.00	9214.20				MinPt-CtCt	
5311.48	492.16	4982.64	4819.33	16.26		OSF1.50	9330.00	9244.20				MinPts	
5311.61	492.17	4982.66	4819.44	16.26		OSF1.50	9350.00	9264.20				MinPt-O-SF	
4437.34	349.01	4203.84	4088.33	19.20		OSF1.50	14730.00	12525.00				MinPt-O-SF	
3368.09	201.89	3232.67	3166.20	25.32		OSF1.50	17620.00	12525.00				MinPt-CtCt	
3368.34	202.58	3232.46	3165.77	25.23		OSF1.50	17660.00	12525.00				MINPT-O-EQU	
3368.84	203.19	3232.55	3165.65	25.16		OSF1.50	17690.00	12525.00				MinPt-O-ADP	
4323.64	369.45	4076.51	3954.19	17.69		OSF1.50	20330.00	12525.00				MinPt-O-SF	
5645.45	437.93	5352.67	5207.52	19.44		OSF1.50	22149.62	12525.00				TD	

Cimarex April APZ State 1H  
Gyro (Offset 025-33354) (Def  
Survey)

Pass

5697.80	32.81	5695.30	5664.99	N/A		MAS = 10.00 (m)	0.00	0.00				Surface	
5697.66	32.81	5695.15	5664.86	335560.69		MAS = 10.00 (m)	23.00	23.00				WRP	
5697.62	32.81	5695.03	5664.82	58642.38		MAS = 10.00 (m)	50.00	50.00				MinPts	
5698.42	32.81	5689.26	5665.61	855.79		MAS = 10.00 (m)	750.00	750.00				MinPts	
5698.41	32.81	5688.07	5665.60	726.42		MAS = 10.00 (m)	870.00	870.00				MinPts	
5697.17	32.81	5680.95	5664.35	416.29		MAS = 10.00 (m)	1460.00	1460.00				MinPts	
5697.81	32.81	5680.16	5665.00	375.95		MAS = 10.00 (m)	1620.00	1619.96				MINPT-O-EQU	
5980.13	144.14	5683.20	5835.99	63.31		OSF1.50	9080.00	8994.20				MINPT-O-EQU	
5980.60	144.88	5683.18	5835.72	62.98		OSF1.50	9140.00	9054.20				MINPT-O-EQU	
5980.96	145.33	5683.24	5835.63	62.78		OSF1.50	9180.00	9094.20				MinPt-O-ADP	
5994.70	154.18	5891.09	5840.53	59.26		OSF1.50	9850.00	9764.20				MinPt-O-ADP	
5996.26	155.78	5891.57	5840.47	58.65		OSF1.50	9950.00	9864.20				MINPT-O-EQU	
5996.58	157.77	5890.87	5839.11	57.91		OSF1.50	10060.00	9974.20				MinPt-CtCt	
5998.04	164.26	5887.74	5833.84	55.62		OSF1.50	10550.00	10464.20				MINPT-O-EQU	
5997.24	170.61	5882.67	5826.63	53.49		OSF1.50	10990.00	10904.20				MinPt-CtCt	
5997.28	170.74	5882.62	5826.54	53.45		OSF1.50	11010.00	10924.20				MINPT-O-EQU	
5997.38	170.87	5882.63	5826.51	53.41		OSF1.50	11030.00	10944.20				MinPt-O-ADP	
6063.19	175.41	5945.42	5887.78	62.58		OSF1.50	11880.00	11794.20				MinPt-O-SF	
3687.31	283.52	3497.46	3403.79	19.67		OSF1.50	17350.00	12525.00				MinPt-CtCt	
3687.84	285.15	3496.91	3402.70	19.56		OSF1.50	17410.00	12525.00				MINPT-O-EQU	
3688.48	285.95	3497.01	3402.63	19.51		OSF1.50	17440.00	12525.00				MinPt-O-ADP	
3773.64	301.40	3571.88	3472.24	18.92		OSF1.50	18150.00	12525.00				MinPt-O-SF	
6054.53	300.20	5853.56	5754.32	30.49		OSF1.50	22149.62	12525.00				TD	

**1. Geological Formations**

TVD of target 12,525

Pilot Hole TD N/A

MD at TD 22,149

Deepest expected fresh water

Formation	Depth (TVD) from KB	Water/Mineral Bearing/Target Zone	Hazards
Rustler	1256	Useable Water	
Top Salt	3686	N/A	
Base Salt	4680	N/A	
Lamar	4963	N/A	
Bell Canyon	5017	N/A	
Cherry Canyon	5870	N/A	
Brushy Canyon	7216	Hydrocarbons	
Bone Spring	8827	Hydrocarbons	
Avalon	9361	Hydrocarbons	
2nd Bone Spring	10340	Hydrocarbons	
3rd Bone Spring	11040	Hydrocarbons	
Wolcamp	12170	Hydrocarbons	

**2. Casing Program**

Hole Size	Casing Depth From	Casing Depth To	Setting Depth TVD	Casing Size	Weight (lb/ft)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
14 3/4	0	1306	1306	10-3/4"	40.50	J-55	BT&C	2.80	5.55	11.89
9 7/8	0	12768	12486	7-5/8"	29.70	L-80	LT&C	2.45	1.18	1.53
6 3/4	0	12018	12018	5-1/2"	23.00	L-80	LT&C	1.49	1.32	2.17
6 3/4	12018	22149	12525	5"	18.00	P-110	BT&C	1.72	1.74	63.55
BLM Minimum Safety Factor								1.125	1	1.6 Dry 1.8 Wet

TVD was used on all calculations.

All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h

Request Variance for 5-1/2" x 7-5/8" annular clearance. The portion that does not meet clearance will not be cemented

## Cimarex Energy Co., Coriander 1-12 Federal Com 13H

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Does casing meet API specifications? If no, attach casing specification sheet.	Y
Is premium or uncommon casing planned? If yes attach casing specification sheet.	Y
Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria).	Y
Will the intermediate pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing?	Y
Is well located within Capitan Reef?	N
If yes, does production casing cement tie back a minimum of 50' above the Reef?	N
Is well within the designated 4 string boundary.	N
Is well located in SOPA but not in R-111-P?	N
If yes, are the first 2 strings cemented to surface and 3rd string cement tied back 500' into previous casing?	N
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	N
Is 2nd string set 100' to 600' below the base of salt?	N
Is well located in high Cave/Karst?	N
If yes, are there two strings cemented to surface?	N
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	N
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	N
Is AC Report included?	Y

**3. Cementing Program**

Casing	# Sk	Wt. lb/gal	Yld ft <sup>3</sup> /sack	H <sub>2</sub> O gal/sk	500# Comp. Strength (hours)	Slurry Description
Surface	507	13.50	1.72	9.15	15.5	Lead: Class C + Bentonite
	136	14.80	1.34	6.32	9.5	Tail: Class C + LCM
Intermediate Stage 1	591	10.30	3.64	22.18		Lead: Tuned Light + LCM
	198	14.80	1.36	6.57	9.5	Tail: Class C + Retarder
Intermediate Stage 2	813	12.90	1.88	9.65	12	Lead: 35:65 (Poz:C) + Salt + Bentonite
Production						
	1349	14.20	1.30	5.86	14:30	Tail: 50:50 (Poz:H) + Salt + Bentonite + Fluid Loss + Dispersant + SMS

DV tool with possible annular casing packer as needed is proposed at a depth of +/- 5,100'.

Casing String	TOC	% Excess
Surface	0	45
Intermediate Stage 1	5100	47
Intermediate Stage 2	0	37
Production	12568	25

Cimarex request the ability to perform casing integrity tests after plug bump of cement job.

**4. Pressure Control Equipment**

A variance is requested for the use of a diverter on the surface casing. See attached for schematic.					
BOP installed and tested before drilling which hole?	Size	Min Required WP	Type		Tested To
14 3/4	13 5/8	2M	Annular		2M
			Blind Ram		
			Pipe Ram		
			Double Ram		
			Other		
9 7/8	13 5/8	5M	Annular	X	5M
			Blind Ram		
			Pipe Ram	X	
			Double Ram	X	
			Other		
6 3/4	13 5/8	10M	Annular	X	50% of working pressure
			Blind Ram		10M
			Pipe Ram	X	
			Double Ram	X	
			Other		

BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested.

Pipe rams will be operationally checked each 24 hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold. See attached schematics.

X	Formation integrity test will be performed per Onshore Order #2. On Exploratory wells or on that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i.				
X	A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. See attached for specs and hydrostatic test chart.				
	Y	Are anchors required by manufacturer?			

**5. Mud Program**

Depth	Type	Weight (ppg)	Viscosity	Water Loss
0' to 1306'	FW Spud Mud	7.80 - 8.30	30-32	N/C
1306' to 12768'	Brine Diesel Emulsion	8.50 - 9.00	30-35	N/C
12768' to 22149'	OBM	11.50 - 12.00	50-70	N/C

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times.

The Brine Emulsion is completely saturated brine fluid that ties diesel into itself to lower the weight of the fluid. The drilling fluid is completely salt saturated.

What will be used to monitor the loss or gain of fluid?	PVT/Pason/Visual Monitoring
---------------------------------------------------------	-----------------------------

**6. Logging and Testing Procedures**

Logging, Coring and Testing	
	Will run GR/CNL from TD to surface (horizontal well – vertical portion of hole). Stated logs run will be in the Completion Report and submitted to the BLM.
	No logs are planned based on well control or offset log information.
	Drill stem test?
	Coring?

Additional Logs Planned	Interval
-------------------------	----------

**7. Drilling Conditions**

Condition	
BH Pressure at deepest TVD	7815 psi
Abnormal Temperature	No

Hydrogen Sulfide (H<sub>2</sub>S) monitors will be installed prior to drilling out the surface shoe. If H<sub>2</sub>S is detected in concentrations greater than 100 ppm, the operator will comply with the provisions of Onshore Oil and Gas Order #6. If Hydrogen Sulfide is encountered, measured values and formations will be provided to the BLM.

X	H <sub>2</sub> S is present
X	H <sub>2</sub> S plan is attached

**8. Other Facets of Operation****9. Wellhead**

A multi-bowl wellhead system will be utilized.

After running the 10-3/4" surface casing, a 13 5/8" BOP/BOPE system with a minimum working pressure of 10000 psi will be installed on the wellhead system and will be pressure tested to 250 psi low followed by a 10000 psi test. Annular will be tested to working pressure, or a maximum test pressure of 5000 psi. The pressure test will be repeated at least every 30 days, as per Onshore Order No. 2.

The multi-bowl wellhead will be installed by vendor's representative. A copy of the installation instructions has been sent to the BLM field office.

The wellhead will be installed by a third-party welder while being monitored by the wellhead vendor representative.

All BOP equipment will be tested utilizing a conventional test plug. Not a cup or J-packer type.

A solid steel body pack-off will be utilized after running and cementing the intermediate casing. After installation the pack-off and lower flange will be pressure tested to 10000 psi.

All casing strings will be tested as per Onshore Order No.2 to at least 0.22 psi/ft or 1,500 whichever is greater and not to exceed 70% of casing burst.

If well conditions dictate conventional slips will be set and BOPE will be tested to appropriate pressures based on permitted pressure requirements.

#### 10. Other Variances

Cimarex requests to perform offline cementing. OLC procedure as follows: 1. Land casing on solid body mandrel hanger. Engage packoff and lock ring 2. Install BPV. 3. Skid rig. 4. Check for pressure and remove BPV. 5. Circulate down casing, taking returns through casing valves. 6. Pump lead and tail cement. 7. Displace cement and bump the plug. 8. Ensure floats are holding pressure. 9. RD cement crew. 10. Install BPV and TA cap.

Cimarex requests permission to skid the rig to the next well on the pad to begin operations instead of waiting 8 hours for surface cement to harden on this 13H well. Surface cement will be pumped and we will ensure floats hold, do a green cement test and then skid to the next well on pad. We will not perform any operations on this 13H well until at least 8 hours and when both tail and lead slurry reach 500 psi. The mandrel hanger is made up on the last joint of 10 3/4" casing and then lowered down with and landing joint. It is then lowered down until the mandrel contacts the landing ring which is pre-welded to the conductor pipe. At this point the 10 3/4" casing is entirely supported by the conductor pipe via the landing ring/mandrel and is independent from the rig. This allows us to walk the rig away from the 13H well and begin work on the next well while the cement is hardening. There is no way for the casing to be moved or knocked off center since it is hanging from the landing ring.





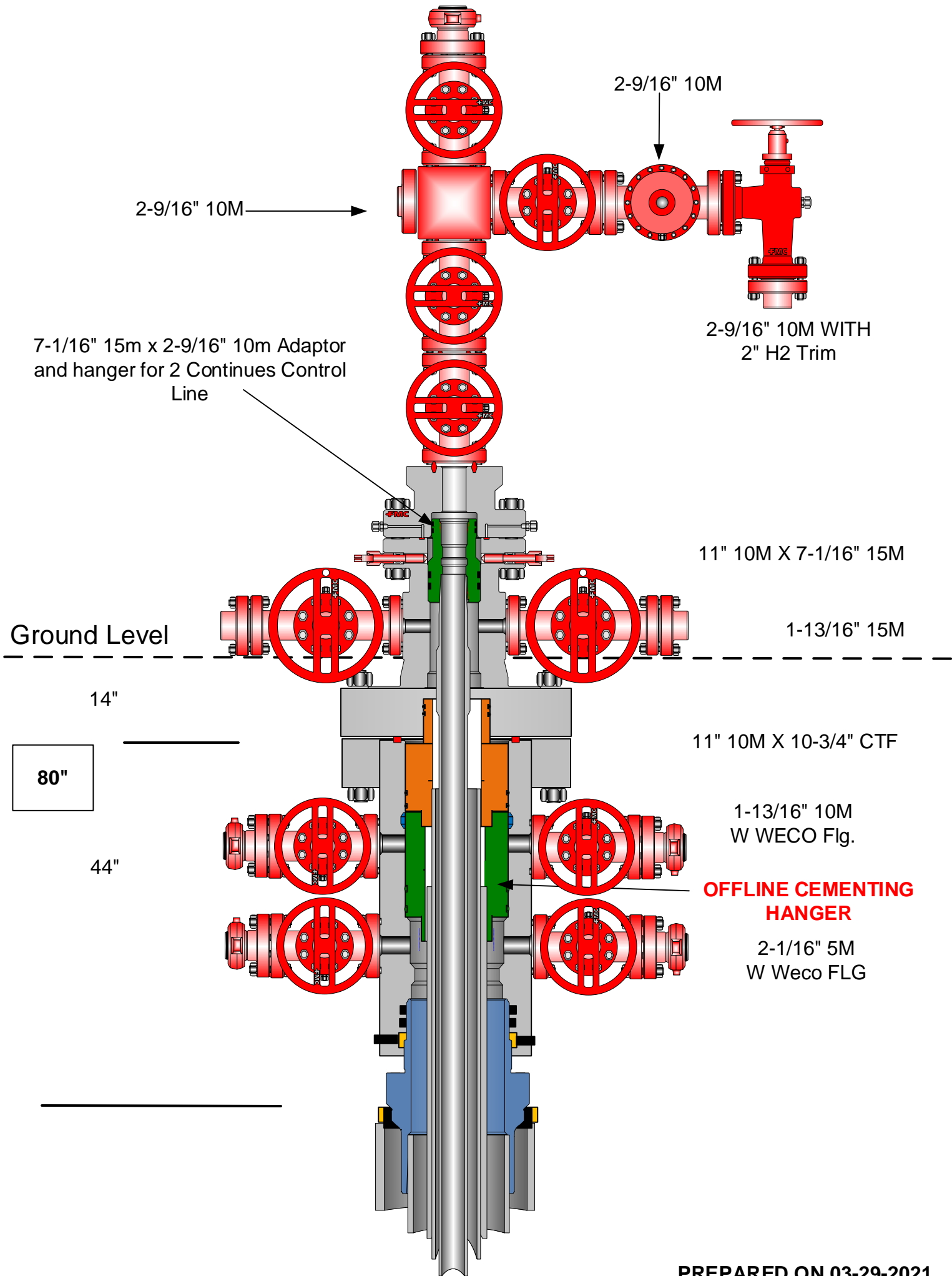
CACTUS FOR SERVICE  
WEARBUSHING  
IN CASING HEAD &  
CASING SPOOL

LEA CO.,NM

Coriander 1-12 Fed Com 13H

2. Casing Program

Hole Size	Casing Depth From	Casing Depth To	Setting Depth TVD	Casing Size	Weight (lb/ft)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
14 3/4	0	1306	1306	10-3/4"	40.50	J-55	BT&C	2.80	5.55	11.89
9 7/8	0	12768	12486	7-5/8"	29.70	L-80	LT&C	2.45	1.18	1.53
6 3/4	0	12018	12018	5-1/2"	23.00	L-80	LT&C	1.49	1.32	2.17
6 3/4	12018	22149	12525	5"	18.00	P-110	BT&C	1.72	1.74	63.55
BLM Minimum Safety Factor								1.125	1	1.6 Dry 1.8 Wet





U.S. Department of the Interior  
BUREAU OF LAND MANAGEMENT

# SUPO Data Report

02/10/2023

APD ID: 10400082949

Submission Date: 01/27/2022

Operator Name: CIMAREX ENERGY COMPANY

Well Name: CORIANDER 1-12 FEDERAL COM

Well Number: 13H

Well Type: OIL WELL

Well Work Type: Drill

Highlighted data  
reflects the most  
recent changes  
[Show Final Text](#)

## Section 1 - Existing Roads

Will existing roads be used? YES

Existing Road Map:

Coriander\_1\_12\_Federal\_Com\_W2E2\_Existing\_Access\_Road\_20211209095749.pdf

Existing Road Purpose: ACCESS,FLUID TRANSPORT

Row(s) Exist? YES

### ROW ID(s)

ID: NM137119

Do the existing roads need to be improved? NO

Existing Road Improvement Description:

Existing Road Improvement Attachment:

## Section 2 - New or Reconstructed Access Roads

Will new roads be needed? YES

New Road Map:

Coriander\_1\_12\_Federal\_Com\_Access\_Road\_ROW\_20211209095807.pdf

New road type: COLLECTOR

Length: 2778

Feet

Width (ft.): 30

Max slope (%): 2

Max grade (%): 6

Army Corp of Engineers (ACOE) permit required? N

ACOE Permit Number(s):

New road travel width: 18

**New road access erosion control:** Water will be diverted where necessary to avoid ponding, prevent erosion, maintain good drainage, and to be consistent with local drainage patterns.

**New road access plan or profile prepared?** N

New road access plan

**Operator Name:** CIMAREX ENERGY COMPANY**Well Name:** CORIANDER 1-12 FEDERAL COM**Well Number:** 13H**Access road engineering design?** N**Access road engineering design****Turnout?** N**Access surfacing type:** OTHER**Access topsoil source:** ONSITE**Access surfacing type description:** Caliche**Access onsite topsoil source depth:** 6**Offsite topsoil source description:****Onsite topsoil removal process:** Push off and stockpile alongside the location**Access other construction information:** The operator will prevent and abate fugitive dust as needed created by vehicular traffic, equipment operations or other events.**Access miscellaneous information:** N/a**Number of access turnouts:****Access turnout map:**

### Drainage Control

**New road drainage crossing:** CULVERT,LOW WATER

**Drainage Control comments:** To control and prevent potentially contaminated precipitation from leaving the pad site, a perimeter berm and settlement pond will be installed. Contaminated water will be removed from pond, stored in waste tanks, and disposed of at a state approved facility. Standing water or puddles will not be allowed. Drainage ditches would be established and maintained on the pad and along access roads to divert water away from operations. Natural drainage areas disturbed during construction would be re-contoured to near original condition prior to construction. Erosion Control Best Management Practices would be used where necessary and consist of seeding, fiber rolls, water bars, silt fences, and temporary diversion dikes. Areas disturbed during construction that are no longer needed for operations would be obliterated, re-contoured to near original condition prior to construction. Erosion Control Best Management Practices would be used where necessary and consist of seeding, fiber rolls, water bars, silt fences, and temporary diversion dikes. Areas disturbed during construction that are no longer needed for operations would be obliterated, re-contoured, and reclaimed to near original condition to re-establish natural drainage.

**Road Drainage Control Structures (DCS) description:** N/A**Road Drainage Control Structures (DCS) attachment:**

### Access Additional Attachments

### Section 3 - Location of Existing Wells

**Existing Wells Map?** YES**Attach Well map:**

Coriander\_1\_12\_Federal\_W2E2\_One\_Mile\_Radius\_20211209100158.pdf

**Operator Name:** CIMAREX ENERGY COMPANY**Well Name:** CORIANDER 1-12 FEDERAL COM**Well Number:** 13H

## Section 4 - Location of Existing and/or Proposed Production Facilities

**Submit or defer a Proposed Production Facilities plan?** SUBMIT

**Production Facilities description:** Production from this well pad will be routed to the existing Thyme APY Fed 9 Battery located in the NWNE of Section 1 23S 32E. 2778' of new on-lease access road will be built. 3303' of new on-lease powerline will be built. 3100' of new on-lease bulklines will be built. Bulklines will be built within a 75' ROW corridor. Bulklines will have 8 12" steel lines for oil gas and water production & 2 2" fiber optic cables.

**Production Facilities map:**

Coriander\_1\_12\_Federal\_Com\_Bulkline\_ROW\_20211209150137.pdf

Coriander\_1\_12\_Federal\_Com\_Power\_ROW\_20211209150143.pdf

Coriander\_1\_12\_Federal\_Com\_W2E2\_\_SUPO\_20220127090842.pdf

## Section 5 - Location and Types of Water Supply

### Water Source Table

**Water source type:** MUNICIPAL

<b>Water source use type:</b>	SURFACE CASING
	INTERMEDIATE/PRODUCTION CASING

<b>Source latitude:</b>	<b>Source longitude:</b>
-------------------------	--------------------------

**Source datum:**

<b>Water source permit type:</b>	WATER RIGHT
----------------------------------	-------------

**Permit Number:**

<b>Water source transport method:</b>	TRUCKING
---------------------------------------	----------

**Source land ownership:** FEDERAL**Source transportation land ownership:** FEDERAL**Water source volume (barrels):** 5000**Source volume (acre-feet):** 0.64446548**Source volume (gal):** 210000**Water source and transportation**

Coriander\_1\_12\_Federal\_Com\_W2E2\_Drilling\_Water\_Route\_20211209150238.pdf

**Water source comments:****New water well?** N

### New Water Well Info

**Operator Name:** CIMAREX ENERGY COMPANY**Well Name:** CORIANDER 1-12 FEDERAL COM**Well Number:** 13H**Well latitude:****Well Longitude:****Well datum:****Well target aquifer:****Est. depth to top of aquifer(ft):****Est thickness of aquifer:****Aquifer comments:****Aquifer documentation:****Well depth (ft):****Well casing type:****Well casing outside diameter (in.):****Well casing inside diameter (in.):****New water well casing?****Used casing source:****Drilling method:****Drill material:****Grout material:****Grout depth:****Casing length (ft.):****Casing top depth (ft.):****Well Production type:****Completion Method:****Water well additional information:****State appropriation permit:****Additional information attachment:**

## Section 6 - Construction Materials

**Using any construction materials:** YES**Construction Materials description:** Caliche will be obtained from the actual well site if available. If not available onsite caliche will be obtained for a pit located in SWSE Sec 6 23S 31E or SENE Sec 3 22S 32E**Construction Materials source location**

## Section 7 - Methods for Handling

**Waste type:** DRILLING**Waste content description:** Drilling Fluids, drill cuttings, water and other waste produced from the well during drilling operations.**Amount of waste:** 15000 barrels**Waste disposal frequency :** Weekly**Safe containment description:** N/A**Safe containmant attachment:****Waste disposal type:** HAUL TO COMMERCIAL FACILITY**Disposal location ownership:** COMMERCIAL**Disposal type description:****Disposal location description:** Haul to R360 Environmental Solutions, 4507 Carlsbad Hwy, Hobbs, NM 88240

**Operator Name:** CIMAREX ENERGY COMPANY**Well Name:** CORIANDER 1-12 FEDERAL COM**Well Number:** 13H**Waste type:** SEWAGE**Waste content description:** Human Waste**Amount of waste:** 300 gallons**Waste disposal frequency :** Weekly**Safe containment description:** Waste will be properly contained and disposed of properly at a state approved disposal facility.**Safe containmant attachment:****Waste disposal type:** HAUL TO COMMERCIAL FACILITY**Disposal location ownership:** PRIVATE**Disposal type description:****Disposal location description:** A licensed 3rd party contractor will be used to haul and dispose human waste to City of Toyah TX waste water facility.**Waste type:** GARBAGE**Waste content description:** Garbage and trash produced during drilling and completion operations**Amount of waste:** 32500 pounds**Waste disposal frequency :** Weekly**Safe containment description:** N/A**Safe containmant attachment:****Waste disposal type:** HAUL TO COMMERCIAL FACILITY**Disposal location ownership:** COMMERCIAL**Disposal type description:****Disposal location description:** A licensed 3rd party hauls trash to Lea County Landfill

### Reserve Pit

**Reserve Pit being used?** NO**Temporary disposal of produced water into reserve pit?** NO**Reserve pit length (ft.)**      **Reserve pit width (ft.)****Reserve pit depth (ft.)**      **Reserve pit volume (cu. yd.)****Is at least 50% of the reserve pit in cut?****Reserve pit liner****Reserve pit liner specifications and installation description**

### Cuttings Area

**Cuttings Area being used?** NO**Are you storing cuttings on location?** N

**Operator Name:** CIMAREX ENERGY COMPANY**Well Name:** CORIANDER 1-12 FEDERAL COM**Well Number:** 13H**Description of cuttings location****Cuttings area length (ft.)****Cuttings area width (ft.)****Cuttings area depth (ft.)****Cuttings area volume (cu. yd.)****Is at least 50% of the cuttings area in cut?****WCuttings area liner****Cuttings area liner specifications and installation description****Section 8 - Ancillary****Are you requesting any Ancillary Facilities?:** N**Ancillary Facilities****Comments:****Section 9 - Well Site****Well Site Layout Diagram:**

Coriander\_1\_12\_Federal\_W2E2\_Well\_List\_20211209151705.docx

Coriander\_1\_12\_Federal\_Com\_13H\_Wellsite\_Layout\_\_20220127090930.pdf

**Comments:** This well pad will have wells 11H 12H 13H 14H 15H 16H 17H 18H 19H 20H 21H 22H 23H**Section 10 - Plans for Surface****Type of disturbance:** New Surface Disturbance**Multiple Well Pad Name:** Coriander 1-12 Federal**Multiple Well Pad Number:** W2E2**Recontouring**

Coriander\_1\_12\_Federal\_Com\_W2E2\_Interim\_Reclaim\_20211209151743.pdf

**Drainage/Erosion control construction:** To control and prevent potentially contaminated precipitation from leaving the pad site, a perimeter berm and settlement pond will be installed. Contaminated water will be removed from pond, stored in waste tanks, and disposed of at a state approved facility. Standing water or puddles will not be allowed. Drainage ditches would be established and maintained on the pad and along access roads to divert water away from operations. Natural drainage areas disturbed during construction would be re-contoured to near original condition prior to construction. Erosion Control Best Management Practices would be used where necessary and consist of seeding, fiber rolls, water bars, silt fences, and temporary diversion dikes. Areas disturbed during construction that are no longer needed for operations would be obliterated, re-contoured to near original condition prior to construction. Erosion Control Best Management Practices would be used where necessary and consist of seeding, fiber rolls, water bars, silt fences, and temporary diversion dikes. Areas disturbed during construction that are no longer needed for operations would be obliterated, re-contoured, and reclaimed to near original condition to re-establish natural drainage.

**Drainage/Erosion control reclamation:** All disturbed and re-contoured areas would be reseeded according to specifications. Approved seed mixtures would be certified weed free and consist of grasses, forbs, or shrubs similar to the surrounding area. Compacted soil areas may need to be obliterated and reclaimed to near natural conditions by re-contouring all slopes to facilitate and re-establish natural drainage.

**Operator Name:** CIMAREX ENERGY COMPANY**Well Name:** CORIANDER 1-12 FEDERAL COM**Well Number:** 13H

<b>Well pad proposed disturbance (acres):</b> 6.76	<b>Well pad interim reclamation (acres):</b> 2.584	<b>Well pad long term disturbance (acres):</b> 4.176
<b>Road proposed disturbance (acres):</b> 1.914	<b>Road interim reclamation (acres):</b> 0	<b>Road long term disturbance (acres):</b> 1.914
<b>Powerline proposed disturbance (acres):</b> 2.275	<b>Powerline interim reclamation (acres):</b> 0	<b>Powerline long term disturbance (acres):</b> 2.275
<b>Pipeline proposed disturbance (acres):</b> 5.336	<b>Pipeline interim reclamation (acres):</b> 0	<b>Pipeline long term disturbance (acres):</b> 5.336
<b>Other proposed disturbance (acres):</b> 0	<b>Other interim reclamation (acres):</b> 0	<b>Other long term disturbance (acres):</b> 0
<b>Total proposed disturbance:</b> 16.285	<b>Total interim reclamation:</b> 2.584	<b>Total long term disturbance:</b> 13.701

**Disturbance Comments:**

**Reconstruction method:** After well plugging, all disturbed areas would be returned to the original contour or a contour that blends with the surrounding landform including roads unless the surface owner requests that they be left intact. In consultation with the surface owners it will be determined if any gravel or similar materials used to reinforce an area are to be removed, buried, or left in place during final reclamation. Salvaged topsoil, if any, would be re-spread evenly over the surfaces to be re-vegetated. As necessary, the soil surface would be prepared to provide a seedbed for re-establishment of desirable vegetation. Site preparation may include gouging, scarifying, dozer track-walking, mulching, or fertilizing. Reclamation, Re-vegetation, and Drainage: All disturbed and re-contoured areas would be reseeded using techniques outlined under Phase I and II of this plan or as specified by the land owner. Approved seed mixtures would be certified weed free and consist of grasses, forbs, or shrubs similar to the surrounding area. Compacted soil areas may need to be obliterated and reclaimed to near natural conditions by re-contouring all slopes to facilitate and re-establish natural drainage.

**Topsoil redistribution:** The original stock piled topsoil, if any, will be spread evenly over the areas being reclaimed and the original landform will be restored for all disturbed areas including well pad, production facilities, roads, pipelines, and power line corridors as close as possible to the original topography. The location will then be seeded

**Soil treatment:** The soil surface would be prepared to provide a seedbed for reestablishment of desirable vegetation. Establish control of erosion and invasion of non-native plants to reestablish plant community.

**Existing Vegetation at the well pad:** N/A

**Existing Vegetation at the well pad**

**Existing Vegetation Community at the road:** N/A

**Existing Vegetation Community at the road**

**Existing Vegetation Community at the pipeline:** N/A

**Existing Vegetation Community at the pipeline**

**Existing Vegetation Community at other disturbances:** N/A

**Existing Vegetation Community at other disturbances**

**Non native seed used?** N

**Non native seed description:**

**Seedling transplant description:**

**Will seedlings be transplanted for this project?** N



**Operator Name:** CIMAREX ENERGY COMPANY**Well Name:** CORIANDER 1-12 FEDERAL COM**Well Number:** 13H**Seedling transplant description****Will seed be harvested for use in site reclamation?** N**Seed harvest description:****Seed harvest description attachment:****Seed****Seed Table****Seed Summary****Total pounds/Acre:****Seed Type****Pounds/Acre****Seed reclamation****Operator Contact/Responsible Official****First Name:** amithy**Last Name:** Crawford**Phone:** (432)620-1909**Email:** amithy.crawford@coterra.com**Seedbed prep:****Seed BMP:****Seed method:****Existing invasive species?** N**Existing invasive species treatment description:****Existing invasive species treatment****Weed treatment plan description:** N/A**Weed treatment plan****Monitoring plan description:** N/A**Monitoring plan****Success standards:** N/A**Pit closure description:** N/A**Pit closure attachment:****Section 11 - Surface**

**Operator Name:** CIMAREX ENERGY COMPANY**Well Name:** CORIANDER 1-12 FEDERAL COM**Well Number:** 13H**Disturbance type:** PIPELINE**Describe:****Surface Owner:** BUREAU OF LAND MANAGEMENT**Other surface owner description:****BIA Local Office:****BOR Local Office:****COE Local Office:****DOD Local Office:****NPS Local Office:****State Local Office:****Military Local Office:****USFWS Local Office:****Other Local Office:****USFS Region:****USFS Forest/Grassland:****USFS Ranger District:****Disturbance type:** WELL PAD**Describe:****Surface Owner:** BUREAU OF LAND MANAGEMENT**Other surface owner description:****BIA Local Office:****BOR Local Office:****COE Local Office:****DOD Local Office:****NPS Local Office:****State Local Office:****Military Local Office:****USFWS Local Office:****Other Local Office:****USFS Region:****USFS Forest/Grassland:****USFS Ranger District:**

**Operator Name:** CIMAREX ENERGY COMPANY**Well Name:** CORIANDER 1-12 FEDERAL COM**Well Number:** 13H**Disturbance type:** TRANSMISSION LINE**Describe:****Surface Owner:** BUREAU OF LAND MANAGEMENT**Other surface owner description:****BIA Local Office:****BOR Local Office:****COE Local Office:****DOD Local Office:****NPS Local Office:****State Local Office:****Military Local Office:****USFWS Local Office:****Other Local Office:****USFS Region:****USFS Forest/Grassland:****USFS Ranger District:****Disturbance type:** NEW ACCESS ROAD**Describe:****Surface Owner:** BUREAU OF LAND MANAGEMENT**Other surface owner description:****BIA Local Office:****BOR Local Office:****COE Local Office:****DOD Local Office:****NPS Local Office:****State Local Office:****Military Local Office:****USFWS Local Office:****Other Local Office:****USFS Region:****USFS Forest/Grassland:****USFS Ranger District:**

**Operator Name:** CIMAREX ENERGY COMPANY**Well Name:** CORIANDER 1-12 FEDERAL COM**Well Number:** 13H**Section 12 - Other****Right of Way needed?** Y**Use APD as ROW?** Y**ROW Type(s):** 281001 ROW - ROADS,288100 ROW – O&G Pipeline,289001 ROW- O&G Well Pad,FLPMA (Powerline)**ROW****SUPO Additional Information:****Use a previously conducted onsite?** Y

**Previous Onsite information:** Onsite Date: 7/22/2021. BLM Personnel on site: McKenna Ryder. Cimarex Energy personnel on site: Barry Hunt. Pertinent information from onsite: Location moved 12 east to leave less of gap between existing pad to the east and proposed pad. V-Door West. Top soil west. Interim reclamation: North, west and east (minus 125 north of SE corner). Access road off of SW corner to new rerouted lease road. Pad size is 500 (E/W) x 543 west side & 541 east side (N/S). 190 south, 180 east, 351 north and 320 west. Production lines will run from the SE corner, south, to follow existing utility lines, east to the battery

**Other SUPO**

POWER LINE "A" RIGHT-OF-WAY DESCRIPTION

A 30' WIDE RIGHT-OF-WAY 15' ON EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE.

COMMENCING AT THE NORTHWEST CORNER OF SECTION 1, T23S, R32E, N.M.P.M.; THENCE N89°34'12"E 2641.05' ALONG THE NORTH LINE OF THE NW 1/4 OF SAID SECTION 1 TO THE NORTH 1/4 CORNER OF SAID SECTION 1; THENCE S45°16'29"E 1101.60' TO A POINT IN THE LOT 2 OF SAID SECTION 1 AND THE POINT OF BEGINNING; THENCE S89°23'23"W 730.34'; THENCE CONTINUING S89°23'23"W 51.23' TO A POINT ON THE WEST LINE OF THE LOT 3 OF SAID SECTION 1; THENCE CONTINUING S89°23'23"W 901.74'; THENCE CONTINUING S89°23'23"W 939.99'; THENCE N00°36'35"W 229.32' TO A POINT IN THE LOT 4 OF SAID SECTION 1 AND THE POINT OF TERMINATION, WHICH BEARS S55°13'52"E 971.49' FROM THE NORTH 1/4 CORNER OF SAID SECTION 1. THE SIDE LINES OF SAID DESCRIBED RIGHT-OF-WAY BEING SHORTENED OR ELONGATED TO MEET THE GRANTOR'S PROPERTY LINES. CONTAINS 1.965 ACRES MORE OR LESS.

POWER LINE "B" RIGHT-OF-WAY DESCRIPTION

A 30' WIDE RIGHT-OF-WAY 15' ON EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE.

COMMENCING AT THE NORTHWEST CORNER OF SECTION 1, T23S, R32E, N.M.P.M.; THENCE N89°34'12"E 2641.05' ALONG THE NORTH LINE OF THE NW 1/4 OF SAID SECTION 1 TO THE NORTH 1/4 CORNER OF SAID SECTION 1; THENCE S03°49'38"E 784.74' TO A POINT IN THE LOT 2 OF SAID SECTION 1 AND THE POINT OF BEGINNING; THENCE N00°36'45"W 223.37' TO A POINT IN THE LOT 2 OF SAID SECTION 1 AND THE POINT OF TERMINATION, WHICH BEARS S05°06'18"E 561.85' FROM THE NORTH 1/4 CORNER OF SAID SECTION 1. THE SIDE LINES OF SAID DESCRIBED RIGHT-OF-WAY BEING SHORTENED OR ELONGATED TO MEET THE GRANTOR'S PROPERTY LINES. CONTAINS 0.154 ACRES MORE OR LESS.

POWER LINE "C" RIGHT-OF-WAY DESCRIPTION

A 30' WIDE RIGHT-OF-WAY 15' ON EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE.

COMMENCING AT THE NORTHWEST CORNER OF SECTION 1, T23S, R32E, N.M.P.M.; THENCE N89°34'12"E 2641.05' ALONG THE NORTH LINE OF THE NW 1/4 OF SAID SECTION 1 TO THE NORTH 1/4 CORNER OF SAID SECTION 1; THENCE S48°37'45"W 1200.03' TO A POINT IN THE LOT 3 OF SAID SECTION 1 AND THE POINT OF BEGINNING; THENCE N00°36'35"W 226.37' TO A POINT IN THE LOT 3 OF SAID SECTION 1 AND THE POINT OF TERMINATION, WHICH BEARS S57°53'03"W 1066.11' FROM THE NORTH 1/4 CORNER OF SAID SECTION 1. THE SIDE LINES OF SAID DESCRIBED RIGHT-OF-WAY BEING SHORTENED OR ELONGATED TO MEET THE GRANTOR'S PROPERTY LINES. CONTAINS 0.156 ACRES MORE OR LESS.

ACREAGE / LENGTH TABLE - "A"

LOCATION	FEET	RODS	ACRES
SEC. 1 (NE 1/4)	781.60	47.37	0.538
SEC. 1 (NW 1/4)	2071.05	125.52	1.426
TOTAL	2852.65	172.89	1.965

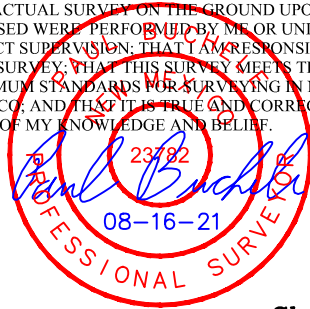
ACREAGE / LENGTH TABLE - "B"

LOCATION	FEET	RODS	ACRES
SEC. 1 (NE 1/4)	223.37	13.54	0.154

ACREAGE / LENGTH TABLE - "C"

LOCATION	FEET	RODS	ACRES
SEC. 1 (NW 1/4)	226.37	13.72	0.156

CERTIFICATE  
THIS IS TO CERTIFY THAT THIS EASEMENT PLAT AND THE ACTUAL SURVEY ON THE GROUND UPON WHICH IT IS BASED WERE PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION; THAT I AM RESPONSIBLE FOR THIS SURVEY; THAT THIS SURVEY MEETS THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO; AND THAT IT IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.



NOTES:  
• Basis of Bearings is a Transverse Mercator Projection with a Central Meridian of 103°53'00" (NAD 83)

CIMAREX ENERGY CO.

CORIANDE R 1-12 FEDERAL COM  
POWER LINE NETWORK  
ON BLM LANDS IN  
SECTION 1, T23S, R32E, N.M.P.M.  
LEA COUNTY, NEW MEXICO

SURVEYED BY	R.C., M.D.	07-27-21	SCALE
DRAWN BY	A.T.	08-10-21	N/A
FILE	C-7380-A3		
POWER LINE R-O-W			EXHIBIT I



UELS, LLC  
Corporate Office \* 85 South 200 East  
Vernal, UT 84078 \* (435) 789-1017

## **Cimarex Coriander 1-12 Federal Com 13H Surface Use Plan**

Upon approval of the Application for Permit to Drill (APD) the following surface use plan of operations will be followed and carried out. The surface use plan outlines the proposed surface disturbance. If any other disturbance is needed after the APD is approved, a BLM sundry notice or right of way application will be submitted for approval prior to any additional surface disturbance.

### **Existing Roads**

- Directions to location - Exhibit A.
- Public access route - Exhibit B.
- Existing access road for the proposed project. Please see Exhibit B and C.
- Cimarex Energy will:
  - Improve and/or maintain existing road(s) condition the same as or better than before the operations began.
  - Provide plans for improvement and /or maintenance of existing roads if requested.
  - Repair or replace damaged or deteriorated structures as needed. Including cattle guards and culverts.
  - Prevent and abate fugitive dust as needed, whether created by vehicular traffic, equipment operations, or other events.
  - Obtain written BLM approval prior to the application of surfactants, binding agents, or other dust suppression chemicals on the roadways.
- The maximum width of the driving surface will be 18'. The road will be crowned and ditched with a 2% slope from the tip of the crown to the edge of the driving surface. The ditches will be 1' deep with 3:1 slopes. The driving surface will be made of 6" rolled and compacted caliche.

### **New or Reconstructed Access Roads**

Cimarex Energy plans to construct a new on-lease access road

- Length: 2,778'.
- Width: 30'.
- Road Plat - Exhibit D.
- Cimarex Energy will complete improvements to the driving surface as needed.
- The maximum width of the driving surface for all roads above will be 18'.
- The road will be crowned and ditched with a 2% slope from the tip of the crown to the edge of the driving surface.
- The ditches will be 1' deep with 3:1 slopes.
- The driving surface will be made of 6" rolled and compacted caliche.
- Cimarex Energy will prevent and abate fugitive dust as needed, whether created by vehicular traffic, equipment operations, or other events.

### **Well Radius Map**

Please see Exhibit E for wells within one mile or proposed well SHL and BHL.

### **Proposed or Existing Production Facility**

An existing battery will be utilized for the project if the well is productive.

- Thyme #9 Battery
  - Battery Pad diagram - Exhibit F
  - Battery will not require an expansion in order to accommodate additional production equipment for the project.

### **Gas Pipeline Specifications**

- No new gas pipelines are required for this project.

### **Salt Water Disposal Specifications**

- No new SWD pipelines are required for this project.

### **Power Lines**

- Cimarex plans to construct an on-lease power line to service the Coriander 1-12 Federal wells.
- Overhead power line from an existing power source located in the N2 of Section 1, 23S 32E.
- Length: 3,303'.
- Poles: 12
- Specifications: 480 volt, 4 wire, 3 phase.
- Please see Exhibit I for proposed route.

## Cimarex Coriander 1-12 Federal Com 13H Surface Use Plan

### Well Site Location

- Proposed well pad/location layout - Exhibit J.
- Proposed Rig layout - Exhibit K
  - The rig layout, including V-door and flare line may change depending on rig availability. The pad dimensions and orientation will remain the same. No additional disturbance is anticipated if a rig layout change is necessary to accommodate the drilling rig. If additional disturbance is required a sundry notice will be submitted to the BLM for approval.
  - Mud pits in the closed circulation system will be steel pits and the cuttings will be stored in the steel containment pits.
  - Cuttings will be stored in steel pits until they are hauled to a state-approved disposal facility.
- Archeological boundary - Exhibit L
- Multi well pad: Coriander 1-12 Federal Com 11H-23H
- Pad Size: 543 x 500
- Construction Material
  - If possible, native caliche will be obtained from the excavation of drill site. The primary way of obtaining caliche will be by "turning over" the location. This means caliche will be obtained from the actual well site. A caliche permit will be obtained from BLM prior to pushing up any caliche. 2,400 cu yds is the max amount of caliche needed for pad and roads. Amount will vary for each pad. The procedure below has been approved by BLM personnel:
    - The top 6 inches of topsoil is pushed off and stockpiled along the side of the location.
    - An approximate 120' x 120' area is used within the proposed well site to remove caliche.
    - Subsoil is removed and piled alongside the 120' x 120' area within the pad site.
    - When caliche is found, material will be stockpiled within the pad site to build the location and road.
    - Then subsoil is pushed back in the hole and caliche is spread accordingly across entire location and road.
    - Once well is drilled, the stockpiled top soil will be used for interim reclamation and spread along areas where caliche is picked up and the location size is reduced. Neither caliche nor subsoil will be stockpiled outside of the well pad. Topsoil will be stockpiled along the edge of the pad as depicted in Exhibit J - Layout Diagram.
    - In the event that no caliche is found onsite, caliche will be hauled in from BLM-approved caliche pit in SWSE Sec 6 23S 31E or SENE Sec 3 22S 32E.
  - Mud pits in the closed circulation system will be steel pits and the cuttings will be stored in steel containment pits.
- Cuttings will be stored in steel pits until they are hauled to a state-approved disposal facility.
- If the well is a producer, those areas of the location not essential to production facilities will be reclaimed and seeded per BLM requirements. Exhibit P: Interim Reclamation Diagram.
- There are no known dwellings within 1.5 miles of this location.

### Bulklines

All proposed pipelines will be constructed in a 75' ROW corridor.

- Bulklines
  - Cimarex Energy plans to construct on-lease bulklines to service the well.
  - 8 12" HP steel lines for oil, gas, and water production & 2 2" Fiber optic cables
  - Length: 3,100'.
  - MAOP: 1,500 psi; Anticipated working pressure: 200-300 psi.
  - Please see Exhibit M for proposed on-lease route.

### Water Resources

No temporary fresh water pipelines are proposed for this project.

### Methods of Handling Waste

- Drilling fluids, produced oil, and water from the well during drilling and completion operations will be stored safely and disposed of properly in a NMOCD approved disposal facility.
- Garbage and trash produced during drilling and completion operations will be collected in a trash container and disposed of properly at a state approved disposal facility. All trash on and around well site will be collected for disposal.
- Human waste and grey water will be contained and disposed of properly at a state approved disposal site.
- After drilling and completion operations, trash, chemicals, salts, frac sand and other waste will be removed and disposed of properly at a state approved disposal site.
- The well will be drilled utilizing a closed loop system. Drill cuttings will be properly disposed of into steel tanks and taken to an NMOCD approved disposal facility.



## **Cimarex Coriander 1-12 Federal Com 13H Surface Use Plan**

### **Waste Minimization Plan**

See Gas Capture Plan.

### **Ancillary Facilities**

No camps or airstrips to be constructed.

### **Interim and Final Reclamation**

- Rehabilitation of the location will start in a timely manner after all proposed drilling wells have been drilled from the pad or if drilling operations have ceased as outlined below:
  - No approved or pending drill permits for wells located on the drill pad
  - No drilling activity for 5 years from the drill pad
- Surfacing materials will be removed and returned to a mineral pit or recycled to repair or build roads and well pads.
- Drainage systems, if any, will be reshaped to the original configuration with provisions made to alleviate erosion. These may need to be modified in certain circumstances to prevent inundation of the location's pad and surface facilities. After the area has been shaped and contoured, topsoil from the spoil pile will be placed over the disturbed area to the extent possible. Revegetation procedures will comply with BLM standards.
- Exhibit P illustrates the proposed Surface Reclamation plans after cessation of drilling operations as outlined above.
  - The areas of the location not essential to production facilities and operations will be reclaimed and seeded per BLM requirements.
- Operator will amend the surface reclamation plan if well is a dry hole and/or a single well pad.

### **Surface Ownership**

- The wellsite is on surface owned by BLM.
- A copy of Surface Use Agreement has been given to the surface owner.
- The land is used mainly for farming, cattle ranching, recreational use, and oil and gas production.

### **Cultural Resource Survey - Archeology**

- Cultural Resources Survey will be conducted for the entire project as proposed in the APD and submitted to the BLM for review and approval.

### **On Site Notes and Information**

Onsite Date: 7/22/2021

BLM Personnel on site: McKenna Ryder

Cimarex Energy personnel on site: Barry Hunt

Pertinent information from onsite:

Location moved 12' east to leave less of gap between existing pad to the east and proposed pad. V-Door West. Top soil west. Interim reclamation: North, west and east (minus 125' north of SE corner). Access road off of SW corner to new rerouted lease road. Pad size is 500' (E/W) x 543' west side & 541' east side (N/S). 190' south, 180' east, 351' north and 320' west. Production lines will run from the SE corner, south, to follow existing utility lines, east to the battery



U.S. Department of the Interior  
BUREAU OF LAND MANAGEMENT

## PWD Data Report

02/10/2023

**APD ID:** 10400082949

**Submission Date:** 01/27/2022

**Operator Name:** CIMAREX ENERGY COMPANY

**Well Name:** CORIANDER 1-12 FEDERAL COM

**Well Number:** 13H

**Well Type:** OIL WELL

**Well Work Type:** Drill

### Section 1 - General

Would you like to address long-term produced water disposal? NO

### Section 2 - Lined

Would you like to utilize Lined Pit PWD options? N

**Produced Water Disposal (PWD) Location:**

**PWD surface owner:**

**PWD disturbance (acres):**

**Lined pit PWD on or off channel:**

**Lined pit PWD discharge volume (bbl/day):**

**Lined pit**

**Pit liner description:**

**Pit liner manufacturers**

**Precipitated solids disposal:**

**Describe precipitated solids disposal:**

**Precipitated solids disposal**

**Lined pit precipitated solids disposal schedule:**

**Lined pit precipitated solids disposal schedule**

**Lined pit reclamation description:**

**Lined pit reclamation**

**Leak detection system description:**

**Leak detection system**

**Operator Name:** CIMAREX ENERGY COMPANY

**Well Name:** CORIANDER 1-12 FEDERAL COM

**Well Number:** 13H

**Lined pit Monitor description:**

**Lined pit Monitor**

**Lined pit: do you have a reclamation bond for the pit?**

**Is the reclamation bond a rider under the BLM bond?**

**Lined pit bond number:**

**Lined pit bond amount:**

**Additional bond information**

### Section 3 - Unlined

**Would you like to utilize Unlined Pit PWD options?** N

**Produced Water Disposal (PWD) Location:**

**PWD disturbance (acres):**

**PWD surface owner:**

**Unlined pit PWD on or off channel:**

**Unlined pit PWD discharge volume (bbl/day):**

**Unlined pit**

**Precipitated solids disposal:**

**Describe precipitated solids disposal:**

**Precipitated solids disposal**

**Unlined pit precipitated solids disposal schedule:**

**Unlined pit precipitated solids disposal schedule**

**Unlined pit reclamation description:**

**Unlined pit reclamation**

**Unlined pit Monitor description:**

**Unlined pit Monitor**

**Do you propose to put the produced water to beneficial use?**

**Beneficial use user**

**Estimated depth of the shallowest aquifer (feet):**

**Does the produced water have an annual average Total Dissolved Solids (TDS) concentration equal to or less than that of the existing water to be protected?**

**TDS lab results:**

**Geologic and hydrologic**

**State**

**Unlined Produced Water Pit Estimated**

**Unlined pit: do you have a reclamation bond for the pit?**

**Operator Name:** CIMAREX ENERGY COMPANY**Well Name:** CORIANDER 1-12 FEDERAL COM**Well Number:** 13H**Is the reclamation bond a rider under the BLM bond?****Unlined pit bond number:****Unlined pit bond amount:****Additional bond information****Section 4 -****Would you like to utilize Injection PWD options?** N**Produced Water Disposal (PWD) Location:****PWD surface owner:****PWD disturbance (acres):****Injection PWD discharge volume (bbl/day):****Injection well mineral owner:****Injection well type:****Injection well number:****Injection well name:****Assigned injection well API number?****Injection well API number:****Injection well new surface disturbance (acres):****Minerals protection information:****Mineral protection****Underground Injection Control (UIC) Permit?****UIC Permit****Section 5 - Surface****Would you like to utilize Surface Discharge PWD options?** N**Produced Water Disposal (PWD) Location:****PWD surface owner:****PWD disturbance (acres):****Surface discharge PWD discharge volume (bbl/day):****Surface Discharge NPDES Permit?****Surface Discharge NPDES Permit attachment:****Surface Discharge site facilities information:****Surface discharge site facilities map:****Section 6 -****Would you like to utilize Other PWD options?** N**Produced Water Disposal (PWD) Location:****PWD surface owner:****PWD disturbance (acres):****Other PWD discharge volume (bbl/day):**

**Operator Name:** CIMAREX ENERGY COMPANY

**Well Name:** CORIANDER 1-12 FEDERAL COM

**Well Number:** 13H

**Other PWD type description:**

**Other PWD type**

**Have other regulatory requirements been met?**

**Other regulatory requirements**



U.S. Department of the Interior  
BUREAU OF LAND MANAGEMENT

## Bond Info Data

02/10/2023

**APD ID:** 10400082949

**Submission Date:** 01/27/2022

Highlighted data  
reflects the most  
recent changes  
[Show Final Text](#)

**Operator Name:** CIMAREX ENERGY COMPANY

**Well Name:** CORIANDER 1-12 FEDERAL COM

**Well Number:** 13H

**Well Type:** OIL WELL

**Well Work Type:** Drill

### Bond

**Federal/Indian APD:** FED

**BLM Bond number:** NMB001188

**BIA Bond number:**

**Do you have a reclamation bond?** NO

**Is the reclamation bond a rider under the BLM bond?**

**Is the reclamation bond BLM or Forest Service?**

**BLM reclamation bond number:**

**Forest Service reclamation bond number:**

**Forest Service reclamation bond**

**Reclamation bond number:**

**Reclamation bond amount:**

**Reclamation bond rider amount:**

**Additional reclamation bond information**

**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 186255

CONDITIONS

Operator: CIMAREX ENERGY CO. 600 N. Marienfeld Street Midland, TX 79701	OGRID: 215099
	Action Number: 186255
	Action Type: [C-101] BLM - Federal/Indian Land Lease (Form 3160-3)

CONDITIONS

Created By	Condition	Condition Date
pkautz	Will require a File As Drilled C-102 and a Directional Survey with the C-104	2/16/2023
pkautz	Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string	2/16/2023
pkautz	Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system	2/16/2023
pkautz	Cement is required to circulate on both surface and intermediate1 strings of casing	2/16/2023