



U.S. Department of the Interior  
Bureau of Land Management

# Application for Permit to Drill

## APD Package Report

Date Printed:

APD ID:	Well Status:
APD Received Date:	Well Name:
Operator:	Well Number:

### APD Package Report Contents

- Form 3160-3
- Operator Certification Report
- Application Report
- Application Attachments
  - Well Plat: 1 file(s)
- Drilling Plan Report
- Drilling Plan Attachments
  - Blowout Prevention Choke Diagram Attachment: 4 file(s)
  - Blowout Prevention BOP Diagram Attachment: 1 file(s)
  - Casing Design Assumptions and Worksheet(s): 1 file(s)
  - Hydrogen sulfide drilling operations plan: 1 file(s)
  - Proposed horizontal/directional/multi-lateral plan submission: 6 file(s)
  - Other Facets: 3 file(s)
  - Other Variances: 1 file(s)
- SUPO Report
- SUPO Attachments
  - Existing Road Map: 1 file(s)
  - Attach Well map: 1 file(s)
  - Production Facilities map: 6 file(s)
  - Water source and transportation map: 1 file(s)
  - Well Site Layout Diagram: 2 file(s)
  - Recontouring attachment: 1 file(s)
- PWD Report
- PWD Attachments
  - None
- Bond Report
- Bond Attachments

-- None

Form 3160-3  
(October 2024)

FORM APPROVED  
OMB No. 1004-0137  
Expires: October 31, 2027

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.
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2. Name of Operator	9. API Well No. <b>30-025-55533</b>
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3a. Address	3b. Phone No. (include area code)	10. Field and Pool, or Exploratory
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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
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14. Distance in miles and direction from nearest town or post office*	12. County or Parish	13. State
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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
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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
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21. Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will start*	23. Estimated duration
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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
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Title		
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Approved by (Signature)	Name (Printed/Typed)	Date
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Title	Office	
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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.



(Continued on page 2)

\*(Instructions on page 2)

## INSTRUCTIONS

**GENERAL:** This form is designed for submitting proposals to perform certain well operations, as indicated on Federal and Indian lands and leases for action by appropriate Federal agencies, pursuant to applicable Federal laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from local Federal offices.

**ITEM I:** If the proposal is to redrill to the same reservoir at a different subsurface location or to a new reservoir, use this form with appropriate notations. Consult applicable Federal regulations concerning subsequent work proposals or reports on the well.

**ITEM 4:** Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local Federal offices for specific instructions.

**ITEM 14:** Needed only when location of well cannot readily be found by road from the land or lease description. A plat, or plats, separate or on the reverse side, showing the roads to, and the surveyed location of, the well, and any other required information, should be furnished when required by Federal agency offices.

**ITEMS 15 AND 18:** If well is to be, or has been directionally drilled, give distances for subsurface location of hole in any present or objective productive zone.

**ITEM 22:** Consult applicable Federal regulations, or appropriate officials, concerning approval of the proposal before operations are started.

**ITEM 24:** If the proposal will involve hydraulic fracturing operations, you must comply with 43 CFR 3162.3-3, including providing information about the protection of usable water. Operators should provide the best available information about all formations containing water and their depths. This information could include data and interpretation of resistivity logs run on nearby wells. Information may also be obtained from state or tribal regulatory agencies and from local BLM offices.

## NOTICES

The Privacy Act of 1974 and regulation in 43 CFR 2.48( d) provide that you be furnished the following information in connection with information required by this application.

**AUTHORITY:** 30 U.S.C. 181 et seq., 25 U.S.C. 396; 43 CFR 3160

**PRINCIPAL PURPOSES:** The information will be used to: (1) process and evaluate your application for a permit to drill a new oil, gas, or service well or to reenter a plugged and abandoned well; and (2) document, for administrative use, information for the management, disposal and use of National Resource Lands and resources including (a) analyzing your proposal to discover and extract the Federal or Indian resources encountered; (b) reviewing procedures and equipment and the projected impact on the land involved; and (c) evaluating the effects of the proposed operation on the surface and subsurface water and other environmental impacts.

**ROUTINE USE:** Information from the record and/or the record will be transferred to appropriate Federal, State, and local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecution, in connection with congressional inquiries and for regulatory responsibilities.

**EFFECT OF NOT PROVIDING INFORMATION:** Filing of this application and disclosure of the information is mandatory only if you elect to initiate a drilling or reentry operation on an oil and gas lease.

The Paperwork Reduction Act of 1995 requires us to inform you that:

The BLM connects this information to a new evaluation of the technical, safety, and environmental factors involved with drilling for oil and/or gas on Federal and Indian oil and gas leases. This information will be used to analyze and approve applications. Response to this request is mandatory only if the operator elects to initiate drilling or reentry operations on an oil and gas lease. The BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

**BURDEN HOURS STATEMENT:** Public reporting burden for this form is estimated to average 8 hours per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to U.S. Department of the Interior, Bureau of Land Management (1004-0137), Bureau Information Connection Clearance Officer (WO-630), 1849 C Street, N.W., Mail Stop 401 LS, Washington, D.C. 20240.

### Additional Operator Remarks

#### Location of Well

0. SHL: SWSW / 270 FSL / 430 FWL / TWSP: 25S / RANGE: 33E / SECTION: 29 / LAT: 32.095062 / LONG: -103.601467 ( TVD: 0 feet, MD: 0 feet )

PPP: SWSW / 100 FSL / 990 FWL / TWSP: 25S / RANGE: 33E / SECTION: 29 / LAT: 32.094594 / LONG: -103.599659 ( TVD: 0 feet, MD: 0 feet )

BHL: SESW / 100 FSL / 2310 FWL / TWSP: 25S / RANGE: 33E / SECTION: 29 / LAT: 32.094591 / LONG: -103.595397 ( TVD: 0 feet, MD: 0 feet )

#### BLM Point of Contact

Name: JANET D ESTES

Title: ADJUDICATOR

Phone: (575) 234-6233

Email: JESTES@BLM.GOV

CONFIDENTIAL

## Cascade 29 FEDERAL 221H

### **APD - Geology COAs (Not in Potash or WIPP)**

- For at least one well per pad (deepest well within initial development preferred) the record of the drilling rate (ROP) along with the Gamma Ray (GR) and Neutron (CNL) well logs run from TVD to surface in the vertical section of the hole shall be submitted to the BLM office as well as all other logs run on the full borehole 30 days from completion. Any other logs run on the wellbore, excluding cement remediation, should also be sent. Only digital copies of the logs in .TIF or .LAS formats are necessary; paper logs are no longer required. Logs shall be emailed to [blm-cfo-geology@doimspp.onmicrosoft.com](mailto:blm-cfo-geology@doimspp.onmicrosoft.com). Well completion report should have .pdf copies of any CBLs or Temp Logs run on the wellbore.
- Exceptions: In areas where there is extensive log coverage (in particular the salt zone adjacent to a pad), Operators are encouraged to contact BLM Geologists to discuss if additional GR and N logs are necessary on a pad. Operator may request a waiver of the GR and N log requirement due to good well control or other reasons to be approved by BLM Geologist prior to well completion. A waiver approved by BLM must be attached to completion well report to satisfy COAs.
- The top of the Rustler, top and bottom of the Salt, and the top of the Capitan Reef (if present) are to be recorded on the Completion Report.

Be aware that:

- H2S has been reported within one mile of the proposed project. Measurements up to 9000 ppm were recorded.

Questions? Contact Thomas Evans, BLM Geologist at 575-234-5965 or [tvevans@blm.gov](mailto:tvevans@blm.gov)

**PECOS DISTRICT  
SURFACE USE  
CONDITIONS OF APPROVAL**

OPERATOR'S NAME:	CIMAREX ENERGY COMPANY
LEASE NO.:	NMNM43562
COUNTY:	Lea County, New Mexico

Wells:

- CASCADE 29 FEDERAL 201H**
- CASCADE 29 FEDERAL 211H**
- CASCADE 29 FEDERAL 221H**
- CASCADE 29 FEDERAL 301H**

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## 1. GENERAL PROVISIONS

The failure of the operator to comply with these requirements may result in the assessment of liquidated damages or penalties pursuant to 43 CFR 3163.1 or 3163.2. A copy of these conditions of approval shall be present on the location during construction, drilling and reclamation activity. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

### 1.1. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

Any cultural resource (historic or prehistoric site or object) discovered by the operator, or any person working on the operator's behalf, on the public or federal land shall be immediately reported to the Authorized Officer. The operator shall suspend all operations in the immediate area (within 100ft) of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer, in conjunction with a BLM Cultural Resource Specialist, to determine appropriate actions to prevent the loss of significant scientific values. The operator shall be responsible for the cost of evaluation and any decision as to the proper mitigation measures will be made by the Authorized Officer after consulting with the operator.

Traditional Cultural Properties (TCPs) are protected by NHPA as codified in 36 CFR 800 for possessing traditional, religious, and cultural significance tied to a certain group of individuals. Though there are currently no designated TCPs within the project area or within a mile of the project area, but it is possible for a TCP to be designated after the approval of this project. **If a TCP is designated in the project area after the project's approval, the BLM Authorized Officer will notify the operator of the following conditions and the duration for which these conditions are required.**

1. Temporary halting of all construction, drilling, and production activities to lower noise.
2. Temporary shut-off of all artificial lights at night.

The operator is hereby obligated to comply with procedures established in the Native American Graves Protection and Repatriation Act (NAGPRA), specifically NAGPRA Subpart B regarding discoveries, to protect human remains, associated funerary objects, sacred objects, and objects of cultural patrimony discovered during project work. If any human skeletal remains, funerary objects, sacred objects, or objects of cultural patrimony are discovered at any time during construction, all construction activities shall halt and a BLM-CFO Authorized Officer will be notified immediately. The BLM will then be required to be notified, in writing, within 24 hours of the discovery. The written notification should include the geographic location by county and state, the contents of the discovery, and the steps taken to protect said discovery. You must also include any potential threats to the discovery and a conformation that all activity within 100ft of the discovery has ceased and work will not resume until written certification is issued. All work on the entire project must halt for a minimum of 3 days and work cannot resume until an Authorized Officer grants permission to do so.

Any paleontological resource discovered by the operator, or any person working on the operator's behalf, on public or Federal land shall be immediately reported to the Authorized Officer. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. The operator will be responsible for the cost of evaluation and any decision as to the proper mitigation measures will be made by the Authorized Officer after consulting with the operator.

### 1.2. RANGELAND RESOURCES

#### 1.2.1. Cattleguards

Where a permanent cattleguard is approved, an appropriately sized cattleguard(s) sufficient to carry out the project shall be installed and maintained at fence crossing(s). Any existing cattleguard(s) on the access road shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattleguard(s) that are in place and are utilized during lease operations. A gate shall be constructed on one side of the cattleguard and fastened securely to H-braces.

### 1.2.2. Fence Requirement

Where entry granted across a fence line, the fence must be braced and tied off on both sides of the passageway prior to cutting. Once the work is completed, the fence will be restored to its prior condition, or better. The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fence(s).

### 1.2.3. Livestock Watering Requirement

Any damage to structures that provide water to livestock throughout the life of the well, caused by operations from the well site, must be immediately corrected by the operator. The operator must notify the BLM office (575-234-5972) and the private surface landowner or the grazing allotment holder if any damage occurs to structures that provide water to livestock.

## 1.3. NOXIOUS WEEDS

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA, New Mexico Department of Agriculture, and BLM requirements and policies.

### 1.3.1 African Rue (*Peganum harmala*)

**Spraying:** The spraying of African Rue must be completed by a licensed or certified applicator. In order to attempt to kill or remove African Rue the proper mix of chemical is needed. The mix consists of 2% Arsenal (Imazapyr) and 2% Roundup (Glyphosate) along with a nonionic surfactant. Any other chemicals or combinations shall be approved by the BLM Noxious Weeds Coordinator prior to treatment. African Rue shall be sprayed in connection to any dirt working activities or disturbances to the site being sprayed. Spraying of African Rue shall be done on immature plants at initial growth through flowering and mature plants between budding and flowering stages. Spraying shall not be conducted after flowering when plant is fruiting. This will ensure optimal intake of chemical and decrease chances of developing herbicide resistance. After spraying, the operator or necessary parties must contact the Carlsbad Field Office to inspect the effectiveness of the application treatment to the plant species. No ground disturbing activities can take place until the inspection by the authorized officer is complete. The operator may contact the Environmental Protection Department or the BLM Noxious Weed Coordinator at (575) 234-5972 or [BLM\\_NM\\_CFO\\_NoxiousWeeds@blm.gov](mailto:BLM_NM_CFO_NoxiousWeeds@blm.gov).

**Management Practices:** In addition to spraying for African Rue, good management practices should be followed. All equipment should be washed off using a power washer in a designated containment area. The containment area shall be bermed to allow for containment of the seed to prevent it from entering any open areas of the nearby landscape. The containment area shall be excavated near or adjacent to the well pad at a depth of three feet and just large enough to get equipment inside it to be washed off. This will allow all seeds to be in a centrally located area that can be treated at a later date if the need arises.

## 1.4. LIGHT POLLUTION

### 1.4.1. Downfacing

All permanent lighting will be pointed straight down at the ground in order to prevent light spill beyond the edge of approved surface disturbance.

### 1.4.2. Shielding

All permanent lighting will use full cutoff luminaires, which are fully shielded (i.e., not emitting direct or indirect light above an imaginary horizontal plane passing through the lowest part of the light source).

### 1.4.3. Lighting Color

Lighting shall be 3,500 Kelvin or less (Warm White) except during drilling, completion, and workover operations. No bluish-white lighting shall be used in permanent outdoor lighting.

## 2. SPECIAL REQUIREMENTS

### 2.3 WILDLIFE

#### 2.3.1 Lesser Prairie Chicken

##### 2.3.1.1 Timing Limitation Stipulation/Condition of Approval for Lesser Prairie-Chicken:

Oil and gas activities including 3-D geophysical exploration, and drilling will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, geophysical exploration other than 3-D operations, and pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Additionally, no new drilling will be allowed within up to 200 meters of leks known at the time of permitting. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 ft. from the source of the noise.

##### 2.3.1.2 Timing Limitation Exceptions:

The Carlsbad Field Office will publish an annual map of where the LPC timing and noise stipulations and conditions of approval (Limitations) will apply for the identified year (between March 1 and June 15) based on the latest survey information. The LPC Timing Area map will identify areas which are Habitat Areas (HA), Isolated Population Area (IPA), and Primary Population Area (PPA). The LPC Timing Area map will also have an area in red crosshatch. The red crosshatch area is the only area where an operator is required to submit a request for exception to the LPC Limitations. If an operator is operating outside the red crosshatch area, the LPC Limitations do not apply for that year and an exception to LPC Limitations is not required.

##### 2.3.1.3 Ground-level Abandoned Well Marker to avoid raptor perching:

Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well. For more installation details, contact the Carlsbad Field Office at [BLM\\_NM\\_CFO\\_Construction\\_Reclamation@blm.gov](mailto:BLM_NM_CFO_Construction_Reclamation@blm.gov).

### 2.4 VISUAL RESOURCE MANAGEMENT

#### 2.5.1 VRM IV

Above-ground structures including meter housing that are not subject to safety requirements are painted a flat non-reflective paint color, Shale Green from the BLM Standard Environmental Color Chart (CC-001: June 2008).

## 3. CONSTRUCTION REQUIREMENTS

### 3.1 CONSTRUCTION NOTIFICATION

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at [BLM\\_NM\\_CFO\\_Construction\\_Reclamation@blm.gov](mailto:BLM_NM_CFO_Construction_Reclamation@blm.gov) at least 3 working days prior to commencing construction of the access road and/or well pad.

When construction operations are being conducted on this well, the operator shall have the approved APD and COAs on the well site and they shall be made available upon request by the Authorized Officer.

### 3.2 TOPSOIL

The operator shall strip the topsoil (the A horizon) from the entire well pad area and stockpile the topsoil along the edge of the well pad as depicted in the APD. No more than the top 6 inches of topsoil shall be removed. All the stockpiled topsoil will be redistributed over the interim reclamation areas. Topsoil shall not be used for berming the pad or facilities. For final reclamation, the topsoil shall be spread over the entire pad area for seeding preparation.

Other subsoil (the B horizon and below) stockpiles must be completely segregated from the topsoil stockpile. Large rocks or subsoil clods (not evident in the surrounding terrain) must be buried within the approved area for interim and final reclamation.

### 3.3 CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No reserve pits will be used for drill cuttings. The operator shall properly dispose of drilling contents at an authorized disposal site.

### 3.4 FEDERAL MINERAL PIT

Payment shall be made to the BLM prior to removal of any federal mineral materials. Call the Carlsbad Field Office at (575) 234-5972.

### 3.5 WELL PAD & SURFACING

Any surfacing material used to surface the well pad will be removed at the time of interim and final reclamation.

### 3.6 EXCLOSURE FENCING (CELLARS & PITS)

The operator will install and maintain enclosure fencing for all open well cellars to prevent access to public, livestock, and large forms of wildlife before and after drilling operations until the well cellar is free of fluids and the operator initiates backfilling. (For examples of enclosure fencing design, refer to BLM's Oil and Gas Gold Book, Exclosure Fence Illustrations, Figure 1, Page 18.)

The operator will also install and maintain mesh netting for all open well cellars to prevent access to smaller wildlife before and after drilling operations until the well cellar is free of fluids and the operator. Use a maximum netting mesh size of 1 ½ inches. The netting must not have holes or gaps.

### 3.7 ON LEASE ACCESS ROAD

#### 3.7.1 Road Width

The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed twenty-five (25) feet.

#### 3.7.2 Surfacing

Surfacing material is not required on the new access road driving surface. If the operator elects to surface the new access road or pad, the surfacing material may be required to be removed at the time of reclamation.

Where possible, no improvements will be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing depth and type of material will be determined at the time of notification.

**3.7.3 Crowning**

Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

**3.7.4 Ditching**

Ditching shall be required on both sides of the road.

**3.7.5 Turnouts**

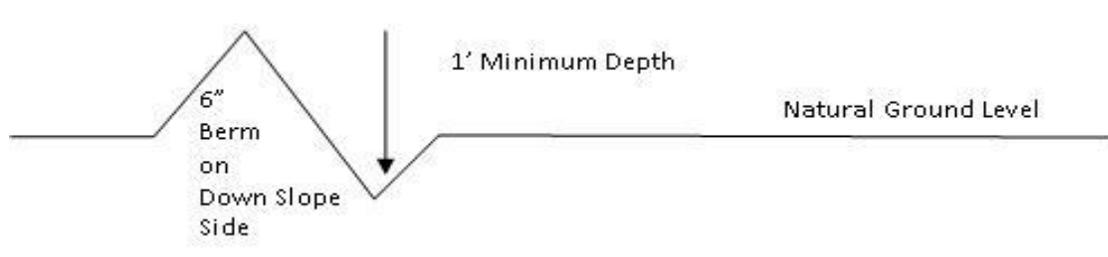
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

**3.7.6 Drainage**

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outsloping and insloping, leadoff ditches, culvert installation, and low water crossings).

A typical lead-off ditch has a minimum depth of 1 foot below and a berm of 6 inches above natural ground level. The berm shall be on the down-slope side of the lead-off ditch.

**Cross Section of a Typical Lead-off Ditch**



All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval are variable for lead-off ditches and shall be determined according to the formula for spacing intervals of lead-off ditches, but may be amended depending upon existing soil types and centerline road slope (in %);

**Formula for Spacing Interval of Lead-off Ditches**

Example - On a 4% road slope that is 400 feet long, the water flow shall drain water into a lead-off ditch. Spacing interval shall be determined by the following formula:

$$400 \text{ foot road with } 4\% \text{ road slope: } \frac{400'}{4} + 100' = 200' \text{ lead-off ditch interval}$$

**3.7.7 Public Access**

Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer.

- Construction Steps**
1. Salvage topsoil
  2. Construct road
  3. Redistribute topsoil
  4. Revegetate slopes

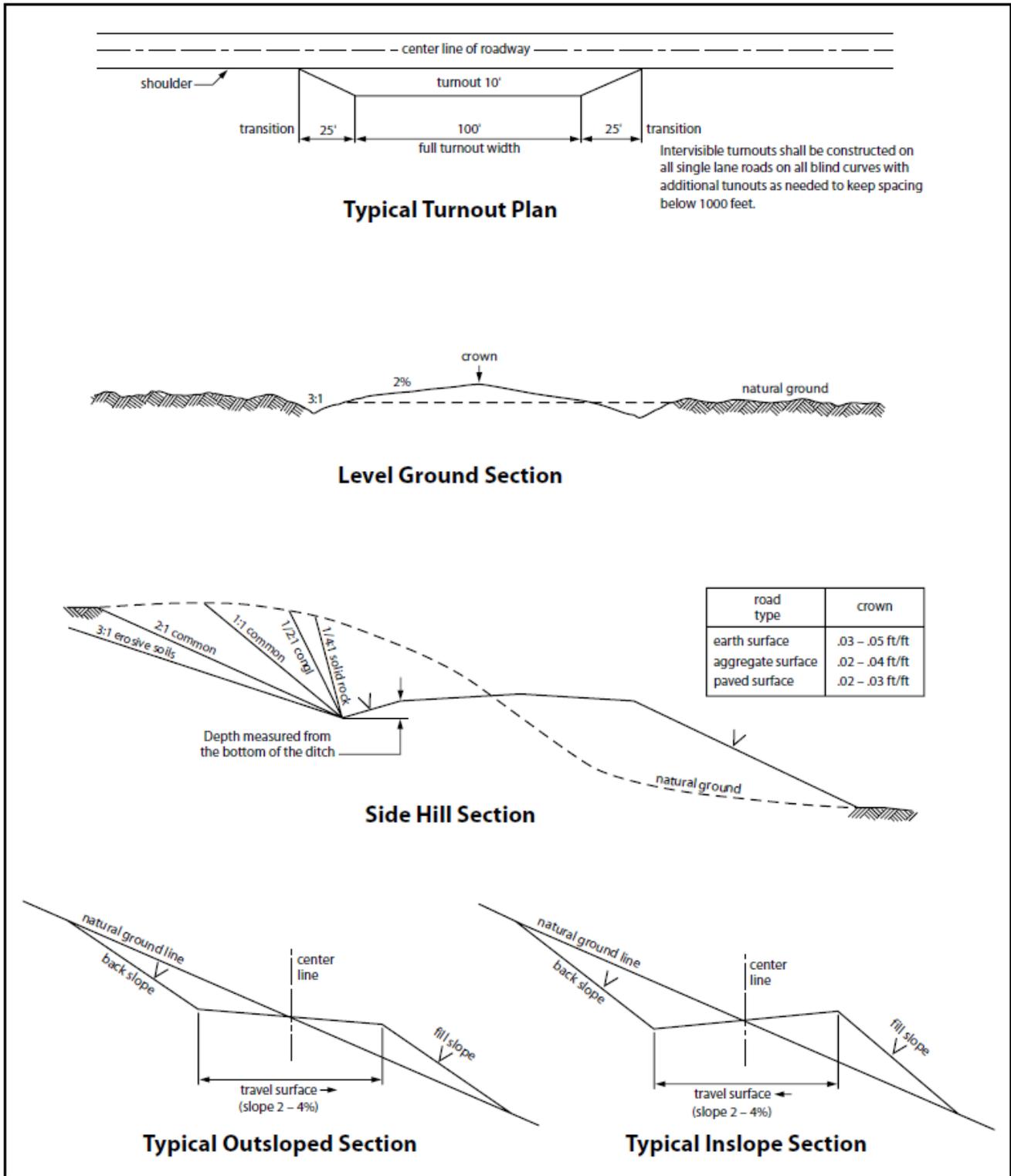


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

## 5. PRODUCTION (POST DRILLING)

### 5.1 WELL STRUCTURES & FACILITIES

#### 5.1.1 Placement of Production Facilities

Production facilities must be placed on the well pad to allow for maximum interim recontouring and revegetation of the well location.

#### 5.1.2 Enclosure Netting (Open-top Tanks)

Immediately following active drilling or completion operations, the operator will take actions necessary to prevent wildlife and livestock access, including avian wildlife, to all open-topped tanks that contain or have the potential to contain salinity sufficient to cause harm to wildlife or livestock, hydrocarbons, or Resource Conservation and Recovery Act of 1976-exempt hazardous substances. At a minimum, the operator will net, screen, or cover open-topped tanks to exclude wildlife and livestock and prevent mortality. If the operator uses netting, the operator will cover and secure the open portion of the tank to prevent wildlife entry. The operator will net, screen, or cover the tanks until the operator removes the tanks from the location or the tanks no longer contain substances that could be harmful to wildlife or livestock. Use a maximum netting mesh size of 1 ½ inches. The netting must not be in contact with fluids and must not have holes or gaps.

#### 5.1.3. Chemical and Fuel Secondary Containment and Enclosure Screening

The operator will prevent all hazardous, poisonous, flammable, and toxic substances from coming into contact with soil and water. At a minimum, the operator will install and maintain an impervious secondary containment system for any tank or barrel containing hazardous, poisonous, flammable, or toxic substances sufficient to contain the contents of the tank or barrel and any drips, leaks, and anticipated precipitation. The operator will dispose of fluids within the containment system that do not meet applicable state or U. S. Environmental Protection Agency livestock water standards in accordance with state law; the operator must not drain the fluids to the soil or ground. The operator will design, construct, and maintain all secondary containment systems to prevent wildlife and livestock exposure to harmful substances. At a minimum, the operator will install effective wildlife and livestock enclosure systems such as fencing, netting, expanded metal mesh, lids, and grate covers. Use a maximum netting mesh size of 1 ½ inches.

#### 5.1.4. Open-Vent Exhaust Stack Enclosures

The operator will construct, modify, equip, and maintain all open-vent exhaust stacks on production equipment to prevent birds and bats from entering, and to discourage perching, roosting, and nesting. (*Recommended enclosure structures on open-vent exhaust stacks are in the shape of a cone.*) Production equipment includes, but may not be limited to, tanks, heater-treaters, separators, dehydrators, flare stacks, in-line units, and compressor mufflers.

#### 5.1.5. Containment Structures

Proposed production facilities such as storage tanks and other vessels will have a secondary containment structure that is constructed to hold the capacity of 1.5 times the largest tank, plus freeboard to account for precipitation, unless more stringent protective requirements are deemed necessary.

## 6. RECLAMATION

Stipulations required by the Authorized Officer on specific actions may differ from the following general guidelines

## 6.1 ROAD AND SITE RECLAMATION

Any roads constructed during the life of the well will have the caliche removed or linear burial. If contaminants are indicated then testing will be required for chlorides and applicable contaminate anomalies for final disposal determination (disposed of in a manner approved by the Authorized Officer within Federal, State and Local statutes, regulations, and ordinances) and seeded to the specifications in sections 6.5 and 6.6.

## 6.2 EROSION CONTROL

Install erosion control berms, windrows, and hummocks. Windrows must be level and constructed perpendicular to down-slope drainage; steeper slopes will require greater windrow density. Topsoil between windrows must be ripped to a depth of at least 12", unless bedrock is encountered. Any large boulders pulled up during ripping must be deep-buried on location. Ripping must be perpendicular to down-slope. The surface must be left rough in order to catch and contain rainfall on-site. Any trenches resulting from erosion cause by run-off shall be addressed immediately.

## 6.3 INTERIM RECLAMATION

During the life of the development, all disturbed areas not needed for active support of production operations must undergo interim reclamation in order to minimize the environmental impacts of development on other resources and uses.

Within six (6) months of well completion, operators must work with BLM surface protection specialists (BLM\_NM\_CFO\_Construction\_Reclamation@blm.gov) to devise the best strategies to reduce the size of the location. Interim reclamation must allow for remedial well operations, as well as safe and efficient removal of oil and gas.

During reclamation, the removal of caliche and any other surface material is required. Removed caliche that is free of contaminants may be used for road repairs, fire walls or for building other roads and locations. In order to operate the well or complete workover operations, it may be necessary to drive, park and operate on restored interim vegetation within the previously disturbed area. Disturbing revegetated areas for production or workover operations will be allowed. If there is significant disturbance and loss of vegetation, the area will need to be revegetated. Communicate with the appropriate BLM office for any exceptions/exemptions if needed.

All disturbed areas after they have been satisfactorily prepared need to be reseeded with the seed mixture provided in section 6.6.

Upon completion of interim reclamation, the operator shall submit a Sundry Notice, Subsequent Report of Reclamation (Form 3160-5).

## 6.4 FINAL ABANDONMENT & RECLAMATION

Prior to surface abandonment, the operator shall submit a Notice of Intent Sundry Notice and reclamation plan.

At final abandonment, well locations, production facilities, and access roads must undergo "final" reclamation so that the character and productivity of the land are restored.

Earthwork for final reclamation must be completed within six (6) months of well plugging. All pads, pits, facility locations and roads must be reclaimed to a satisfactory revegetated, safe, and stable condition, unless an agreement is made with the landowner or BLM to keep the road and/or pad intact.

After all disturbed areas have been satisfactorily prepared, these areas need to be revegetated with the seed mixture provided below. Seeding will be accomplished by drilling on the contour whenever practical or by other approved methods. Seeding may need to be repeated until revegetation is successful, as determined by the BLM. After earthwork and seeding is completed, the operator is required to submit a Sundry Notice, Subsequent Report of Reclamation.

Operators shall contact a BLM surface protection specialist prior to surface abandonment operations for site specific objectives (BLM\_NM\_CFO\_Construction\_Reclamation@blm.gov).

## 6.5 SEEDING TECHNIQUES

Seeds shall be hydro-seeded, mechanically drilled, or broadcast, with the broadcast-seeded area raked, ripped or dragged to aid in covering the seed. The seed mixture shall be evenly and uniformly planted over the disturbed area.

## 6.6 SOIL SPECIFIC SEED MIXTURE

The lessee/permittee shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)\* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed will be done in accordance with State law(s) and within nine (9) months prior to purchase. Commercial seed will be either certified or registered seed. The seed container will be tagged in accordance with State law(s) and available for inspection by the Authorized Officer.

Seed land application will be accomplished by mechanical planting using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area. Smaller/heavier seeds tend to drop the bottom of the drill and are planted first; the operator shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. The seeding will be repeated until a satisfactory BLM or Soil Conservation

District stand is established as determined by the Authorized Officer. Evaluation of growth will not be made before completion of at least one full growing season after seeding or until several months of precipitation have occurred, enabling a full four months of growth, with one or more seed generations being established.

**Seed Mixture 2, for Sandy Site**

Species to be planted in pounds of pure live seed\* per acre:

<u>Species</u>	<u>lb/acre</u>
Sand dropseed (Sporobolus cryptandrus)	1.0
Sand love grass (Eragrostis trichodes)	1.0
Plains bristlegrass (Setaria macrostachya)	2.0

\*Pounds of pure live seed:

Pounds of seed x percent purity x percent germination = pounds pure live seed

## PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

<b>OPERATOR'S NAME:</b>	Cimarex Energy Company
<b>LOCATION:</b>	Section 29, T.25 S., R.33 E., NMPM
<b>COUNTY:</b>	Lea County, New Mexico

<b>WELL NAME &amp; NO.:</b>	Cascade 29 Federal 211H
<b>ATS/API ID:</b>	ATS-25-2308
<b>APD ID:</b>	10400106642
<b>Sundry ID:</b>	N/a

<b>WELL NAME &amp; NO.:</b>	Cascade 29 Federal 221H
<b>ATS/API ID:</b>	ATS-25-2318
<b>APD ID:</b>	10400106643
<b>Sundry ID:</b>	N/a

<b>WELL NAME &amp; NO.:</b>	Cascade 29 Federal 301H
<b>ATS/API ID:</b>	ATS-25-2317
<b>APD ID:</b>	10400106644
<b>Sundry ID:</b>	N/a

COA

H2S	Yes		
Potash	None	None	
Cave/Karst Potential	Low		
Cave/Karst Potential	<input type="checkbox"/> Critical		
Variance	<input checked="" type="checkbox"/> None	<input checked="" type="checkbox"/> Flex Hose	<input checked="" type="checkbox"/> Other
Wellhead	Conventional and Multibowl		
Other	<input type="checkbox"/> 4 String <input type="checkbox"/> 5 String	Capitan Reef None	<input type="checkbox"/> WIPP
Other	Pilot Hole None	<input type="checkbox"/> Open Annulus	
Cementing	Contingency Squeeze None	Echo-Meter None	Primary Cement Squeeze None
Special Requirements	<input type="checkbox"/> Water Disposal/Injection	<input type="checkbox"/> COM	<input type="checkbox"/> Unit
Special Requirements	<input type="checkbox"/> Batch Sundry	Waste Prevention Waste MP	
Special Requirements Variance	<input type="checkbox"/> BOPE Break Testing <input type="checkbox"/> Offline BOPE Testing	<input type="checkbox"/> Offline Cementing	<input type="checkbox"/> Casing Clearance

## A. HYDROGEN SULFIDE

A Hydrogen Sulfide (H<sub>2</sub>S) Drilling Plan shall be activated 500 feet prior to drilling into the **Delaware** formation. As a result, the Hydrogen Sulfide area must meet **43 CFR part 3170 Subpart 3176** 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 **13-3/8** inch surface casing shall be set at approximately **1080 feet** (a minimum of 70 feet into the Rustler Anhydrite and above the salt when present, and below usable fresh water) and cemented to the surface. The surface hole shall be **17 1/2** inch in diameter.
  - 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 fluid filled to meet BLM minimum collapse requirement.**

2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing is:
  - Cement to surface. If cement does not circulate see B.1.a, c-d above.
3. The minimum required fill of cement behind the **5-1/2** 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.

### Option 1:

- a. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **3000 (3M)** psi.
- b. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **9-5/8** inch intermediate casing shoe shall be **5000 (5M)** psi.

### Option 2:

Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the **13-3/8** inch surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **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 43 CFR 3172.6(b)(9) must be followed.

## 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)

**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 **43 CFR part 3170 Subpart 3172** 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.

### 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 of both lead and tail cement, 2) until cement has been in place at least 8 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 **43 CFR part 3170 Subpart 3172 and API STD 53 Sec. 5.3**.
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 43 CFR 3172.6(b)(9) 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 **43 CFR part 3170 Subpart 3172** 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 8 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 **43 CFR part 3170 Subpart 3172**.

#### 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.

Long Vo (LVO) 10/30/2025



# Operator Certification Data Report

11/06/2025

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

## 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:** SHELLY BOWEN

**Signed on:** 09/03/2025

**Title:** Regulatory Analyst

**Street Address:** 6001 DEAUVILLE BLVD STE 300N

**City:** MIDLAND

**State:** TX

**Zip:** 79706

**Phone:** (432)620-1644

**Email address:** DL\_PBUREGULATORY@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

11/06/2025

APD ID: 10400106643

Submission Date: 09/03/2025

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

Operator Name: COTERRA ENERGY OPERATING CO

Well Name: CASCADE 29 FEDERAL

Well Number: 221H

Well Type: OIL WELL

Well Work Type: Drill

## Section 1 - General

APD ID: 10400106643

Tie to previous NOS? Y

Submission Date: 09/03/2025

BLM Office: Carlsbad

User: SHELLY BOWEN

Title: Regulatory Analyst

Federal/Indian APD: FED

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

Lease number: NMNM43562

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: COTERRA ENERGY OPERATING CO

Operator letter of

## Operator Info

Operator Organization Name: COTERRA ENERGY OPERATING CO

Operator Address: 3001 DEAUVILLE BLVD SUITE 300 N

Zip: 79705

Operator PO Box:

Operator City: MIDLAND

State: TX

Operator Phone: (432)620-1642

Operator Internet Address:

## 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: CASCADE 29 FEDERAL

Well Number: 221H

Well API Number:

Field/Pool or Exploratory? Field and Pool

Field Name: WC-025 G-06  
S253329D

Pool Name: UPR Bone Spring

**Operator Name:** COTERRA ENERGY OPERATING CO

**Well Name:** CASCADE 29 FEDERAL

**Well Number:** 221H

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:** W2W2 Pad 1

Cascade 29 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:** 35 Miles

**Distance to nearest well:** 20 FT

**Distance to lease line:** 330 FT

**Reservoir well spacing assigned acres Measurement:** 320 Acres

**Well plat:** CASCADE\_29\_FEDERAL\_W2W2\_PAD\_1\_221H\_C102\_10082025\_20251008101509.pdf

**Well work start Date:** 12/01/2025

**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	270	FSL	430	FW L	25S	33E	29	Aliquot SWS W	32.095062	-103.601467	LEA	NEW MEXI CO	NEW MEXI CO	F	NMNM 43562	3401			Y
KOP Leg #1	100	FSL	990	FW L	25S	33E	29	Aliquot SWS W	32.094594	-103.599659	LEA	NEW MEXI CO	NEW MEXI CO	F	NMNM 43562	3401	0	0	Y
PPP Leg #1-1	100	FSL	990	FW L	25S	33E	29	Aliquot SWS W	32.094594	-103.599659	LEA	NEW MEXI CO	NEW MEXI CO	F	NMNM 43562	3401	0	0	Y

**Operator Name:** COTERRA ENERGY OPERATING CO

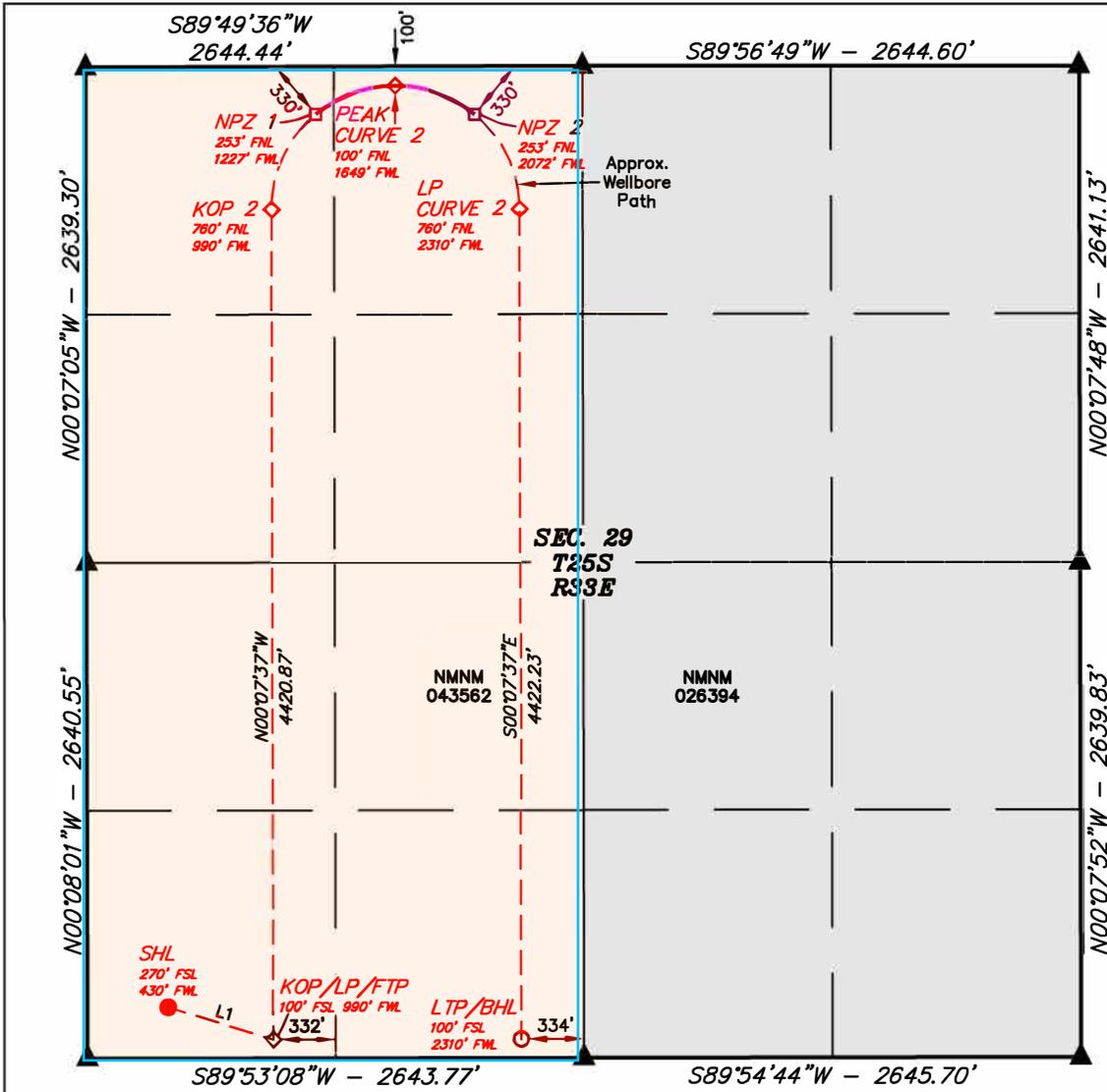
**Well Name:** CASCADE 29 FEDERAL

**Well Number:** 221H

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
EXIT Leg #1	100	FSL	2310	FWL	25S	33E	29	Aliquot SESW	32.094591	-103.595397	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 43562	3401	0	0	Y
BHL Leg #1	100	FSL	2310	FWL	25S	33E	29	Aliquot SESW	32.094591	-103.595397	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 43562	3401	0	0	Y



Property Name CASCADE 29 FEDERAL	Well Number 221H	Drawn By L.T.T. 08-19-25	Revised By REV: 1 L.T.T. 09-23-25 (SHL MOVE & WELLBORE CHANGES)
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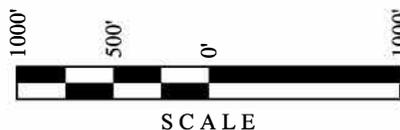
<b>NAD 83 (SURFACE HOLE LOCATION)</b>	LATITUDE = 32°05'42.22" (32.095062°)
	LONGITUDE = -103°36'05.28" (-103.601467°)
<b>NAD 27 (SURFACE HOLE LOCATION)</b>	LATITUDE = 32°05'41.77" (32.094937°)
	LONGITUDE = -103°36'03.58" (-103.600995°)
<b>STATE PLANE NAD 83 (N.M. EAST)</b>	N: 399089.41' E: 767975.78'
<b>STATE PLANE NAD 27 (N.M. EAST)</b>	N: 399031.75' E: 726789.38'
<b>NAD 83 (KOP/LP/FTP)</b>	LATITUDE = 32°05'40.54" (32.094594°)
	LONGITUDE = -103°35'58.77" (-103.599659°)
<b>NAD 27 (KOP/LP/FTP)</b>	LATITUDE = 32°05'40.09" (32.094469°)
	LONGITUDE = -103°35'57.08" (-103.599188°)
<b>STATE PLANE NAD 83 (N.M. EAST)</b>	N: 398922.90' E: 768536.77'
<b>STATE PLANE NAD 27 (N.M. EAST)</b>	N: 398865.25' E: 727350.36'
<b>NAD 83 (KICK OFF POINT 2)</b>	LATITUDE = 32°06'24.28" (32.106744°)
	LONGITUDE = -103°35'58.75" (-103.599653°)
<b>NAD 27 (KICK OFF POINT 2)</b>	LATITUDE = 32°06'23.83" (32.106619°)
	LONGITUDE = -103°35'57.05" (-103.599181°)
<b>STATE PLANE NAD 83 (N.M. EAST)</b>	N: 403342.91' E: 768508.52'
<b>STATE PLANE NAD 27 (N.M. EAST)</b>	N: 403285.15' E: 727322.32'
<b>NAD 83 (NPZ 1)</b>	LATITUDE = 32°06'29.29" (32.108137°)
	LONGITUDE = -103°35'56.00" (-103.598888°)
<b>NAD 27 (NPZ 1)</b>	LATITUDE = 32°06'28.84" (32.108012°)
	LONGITUDE = -103°35'54.30" (-103.598416°)
<b>STATE PLANE NAD 83 (N.M. EAST)</b>	N: 403851.18' E: 768741.88'
<b>STATE PLANE NAD 27 (N.M. EAST)</b>	N: 403793.41' E: 727555.69'
<b>NAD 83 (PEAK CURVE 2)</b>	LATITUDE = 32°06'30.81" (32.108558°)
	LONGITUDE = -103°35'51.08" (-103.597523°)
<b>NAD 27 (PEAK CURVE 2)</b>	LATITUDE = 32°06'30.36" (32.108434°)
	LONGITUDE = -103°35'49.38" (-103.597051°)
<b>STATE PLANE NAD 83 (N.M. EAST)</b>	N: 404007.53' E: 769163.64'
<b>STATE PLANE NAD 27 (N.M. EAST)</b>	N: 403949.76' E: 727977.46'
<b>NAD 83 (NPZ 2)</b>	LATITUDE = 32°06'29.29" (32.108137°)
	LONGITUDE = -103°35'46.16" (-103.596157°)
<b>NAD 27 (NPZ 2)</b>	LATITUDE = 32°06'28.85" (32.108013°)
	LONGITUDE = -103°35'44.47" (-103.595685°)
<b>STATE PLANE NAD 83 (N.M. EAST)</b>	N: 403857.27' E: 769587.61'
<b>STATE PLANE NAD 27 (N.M. EAST)</b>	N: 403799.50' E: 728401.42'
<b>NAD 83 (LANDING POINT CURVE 2)</b>	LATITUDE = 32°06'24.28" (32.106745°)
	LONGITUDE = -103°35'43.41" (-103.595391°)
<b>NAD 27 (LANDING POINT CURVE 2)</b>	LATITUDE = 32°06'23.83" (32.106620°)
	LONGITUDE = -103°35'41.71" (-103.594919°)
<b>STATE PLANE NAD 83 (N.M. EAST)</b>	N: 403352.41' E: 769828.26'
<b>STATE PLANE NAD 27 (N.M. EAST)</b>	N: 403294.66' E: 728642.05'
<b>NAD 83 (LTP/BHL)</b>	LATITUDE = 32°05'40.53" (32.094591°)
	LONGITUDE = -103°35'43.43" (-103.595397°)
<b>NAD 27 (LTP/BHL)</b>	LATITUDE = 32°05'40.08" (32.094467°)
	LONGITUDE = -103°35'41.73" (-103.594926°)
<b>STATE PLANE NAD 83 (N.M. EAST)</b>	N: 398931.04' E: 769856.52'
<b>STATE PLANE NAD 27 (N.M. EAST)</b>	N: 398873.39' E: 728670.10'

**NOTE:**

- Distances referenced on plat to section lines are perpendicular.
- Basis of Bearings is a Transverse Mercator Projection with a Central Meridian of W103°53'00" (NAD 83)
- Colored areas represent Federal oil and gas leases.

LINE TABLE		
LINE	DIRECTION	LENGTH
L1	S73°13'44"E	585.29'

- = SURFACE HOLE LOCATION
- ◇ = KICK OFF POINT/LANDING POINT/FIRST TAKE POINT PEAK CURVE
- = NPZ POINT
- = LAST TAKE POINT/BOTTOM HOLE LOCATION
- ▲ = SECTION CORNER LOCATED
- = NON-PERFORATION ZONE





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

# Drilling Plan Data Report

11/06/2025

APD ID: 10400106643

Submission Date: 09/03/2025

Highlighted data reflects the most recent changes

Operator Name: COTERRA ENERGY OPERATING CO

Well Name: CASCADE 29 FEDERAL

Well Number: 221H

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
16705618	RUSTLER	3398	890	890	ANHYDRITE, SANDSTONE	USEABLE WATER	N
16705619	TOP SALT	2168	1230	1230	ANHYDRITE	NONE	N
16705620	LAMAR	-1497	4895	4895	SANDSTONE	NONE	N
16705621	BELL CANYON	-1592	4990	4990	SANDSTONE	NATURAL GAS, OIL	N
16705622	CHERRY CANYON	-2937	6335	6335	SANDSTONE	NATURAL GAS, OIL	N
16705623	BRUSHY CANYON	-4102	7500	7500	SANDSTONE	NATURAL GAS, OIL	N
16705624	BONE SPRING LIME	-5637	9035	9035	LIMESTONE	NATURAL GAS, OIL	N
16705625	BONE SPRING 1ST	-6612	10010	10010	SANDSTONE	NATURAL GAS, OIL	N
16705626	BONE SPRING 2ND	-6834	10232	10232	SANDSTONE	NATURAL GAS, OIL	N

## Section 2 - Blowout Prevention

Pressure Rating (PSI): 10M

Rating Depth: 21660

**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:** See attached.

**Testing Procedure:** 1. After running the first string of casing, a 10M BOP/BOPE system with 5M annular will be installed. BOPs will be tested according to Onshore Order #2. BOPE will be tested to full rated pressure (10K for all BOPE except the annular, which is tested to 5K). For the low test, the system will be tested to 250 psi. 2. All BOP equipment will be tested utilizing a conventional test plug. 3. A remote kill line is included in the BOPE system 4. All casing strings will be tested per Onshore Order #2, to 0.22 psi/ft or 1,500 psi, whichever is greater, not to exceed 70% of casing burst. 5. If well conditions dictate, conventional slips will be set and BOPE will be tested to appropriate pressures based on permitted pressure requirements.

**Operator Name:** COTERRA ENERGY OPERATING CO

**Well Name:** CASCADE 29 FEDERAL

**Well Number:** 221H

**Choke Diagram Attachment:**

CHOKE\_HOSE\_M15486\_20250903130223.pdf

COTERRA\_10M\_MBU\_3T\_CFL\_13.38\_X\_9.58\_X\_5.5\_HBE1215DQ\_20250903130223.pdf

10M\_BOP\_DIAGRAM\_20250903130223.pdf

COTERRA\_10K\_PROD\_TREE\_20250903130223.pdf

**BOP Diagram Attachment:**

10M\_BOPE\_BLM\_SUBMISSION\_REV.0\_20250903130231.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	17.5	13.375	NEW	API	N	0	1050	0	1050	3401	2351	1050	P-110	20	BUTT	2.16	2.41	BUOY	54.51	BUOY	54.51
2	INTERMEDIATE	12.25	9.625	NEW	API	N	0	4915	0	4915	3398	-1514	4915	J-55	40	BUTT	1.31	1.5	BUOY	3.2	BUOY	3.2
3	PRODUCTION	8.75	5.5	NEW	API	N	0	21660	0	10965	3398	-7564	21660	P-110	20	BUTT	2.16	2.41	BUOY	54.51	BUOY	54.51

**Casing Attachments**

**Casing ID:** 1      **String**      SURFACE

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

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

**Operator Name:** COTERRA ENERGY OPERATING CO

**Well Name:** CASCADE 29 FEDERAL

**Well Number:** 221H

**Casing Attachments**

**Casing ID:** 2      **String**      INTERMEDIATE

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

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

**Casing ID:** 3      **String**      PRODUCTION

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

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

221H\_Casing\_Assumptions\_20251009074936.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
SURFACE	Lead		0	750	509	1.72	13.5	875	45	Class C	Bentonite
SURFACE	Tail		750	1050	136	1.34	14.8	182	45	Class C	LCM
INTERMEDIATE	Lead		0	4615	931	1.88	12.9	1750	50	35:65 (POZ C)	Salt Bentonite
INTERMEDIATE	Tail		4615	4915	287	1.34	14.8	384	50	Class C	LCM
PRODUCTION	Lead		4715	2067 4	583	3.64	10.3	2122	25	Tuned Light	LCM

**Operator Name:** COTERRA ENERGY OPERATING CO

**Well Name:** CASCADE 29 FEDERAL

**Well Number:** 221H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
PRODUCTION	Tail		2066 0	2166 0	3294	1.3	14.2	4282	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 43 CFR 3172:**

**Diagram of the equipment for the circulating system in accordance with 43 CFR 3172:**

**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	1050	OTHER : Fresh Water	7.8	8.3							
1050	4915	OTHER : Brine water	9.8	10.3							
4915	2166 0	OIL-BASED MUD	8.5	9							

**Operator Name:** COTERRA ENERGY OPERATING CO**Well Name:** CASCADE 29 FEDERAL**Well Number:** 221H**Section 6 - Test, Logging, Coring****List of production tests including testing procedures, equipment and safety measures:**

Logs run on 18H

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

DIRECTIONAL SURVEY,

**Coring operation description for the well:**

N/A

**Section 7 - Pressure****Anticipated Bottom Hole Pressure:** 5131**Anticipated Surface Pressure:** 5131**Anticipated Bottom Hole Temperature(F):** 178**Anticipated abnormal pressures, temperatures, or potential geologic hazards?** NO**Describe:****Contingency Plans geohazards description:****Contingency Plans geohazards****Hydrogen Sulfide drilling operations plan required?** YES**Hydrogen sulfide drilling operations**

H2S\_PLAN\_REV.0\_20250903132431.pdf

**Section 8 - Other Information****Proposed horizontal/directional/multi-lateral plan submission:**

WELL\_CONTROL\_PLAN\_REV.0\_20250903132521.pdf

WP\_\_\_Coterra\_Cascade\_29\_Federal\_221U\_Rev1\_kFc\_07Oct25\_20251009075130.pdf

Proposal\_100\_\_\_Coterra\_Cascade\_29\_Federal\_221U\_Rev1\_kFc\_07Oct25\_20251009075130.pdf

3D\_ACSummary\_10\_\_\_Coterra\_Cascade\_29\_Federal\_211U\_Rev1\_kFc\_07Oct25\_20251009075130.pdf

221H\_Drilling\_Plan\_New\_Mexico\_20251009075130.pdf

3D\_ACSummary\_10\_\_\_Coterra\_Cascade\_29\_Federal\_221U\_Rev1\_kFc\_07Oct25\_20251009075138.pdf

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

CASCADE\_29\_FEDERAL\_W2W2\_PAD\_1\_typical\_rig\_layout\_plat\_20250903132538.pdf

CASCADE\_29\_FEDERAL\_W2W2\_PAD\_1\_location\_layout\_plat\_20250903132539.pdf

Cascade\_221H\_NGMP\_20250903132559.pdf

**Other Variance request(s)?:** Y

**Operator Name:** COTERRA ENERGY OPERATING CO

**Well Name:** CASCADE 29 FEDERAL

**Well Number:** 221H

**Other Variance attachment:**

CHOKE\_HOSE\_M15486\_20250903132611.pdf

CONFIDENTIAL



CERTIFICATE OF QUALITY

LTYY/QR-5.7.1-19B

No: LT2024-156-001

Customer Name			
Product Name	Choke And Kill Hose		
Product Specification	3"×10000psi×35ft (10.67m)	Quantity	1PCS
Serial Number	VTC-7660257	FSL	FSL3
customer number	PO890145-001	Standard	API Spec 16C 3 <sup>rd</sup> edition
Temperature Range	-29℃ ~+121℃	Inspection date	2024.09.03

Inspection Items	Inspection results
Appearance Checking	In accordance with API Spec 16C 3 <sup>rd</sup> edition
Size and Lengths	In accordance with API Spec 16C 3 <sup>rd</sup> edition
Dimensions and Tolerances	In accordance with API Spec 16C 3 <sup>rd</sup> edition
End Connections: 4-1/16"×10000psi Integral flange for sour gas service	In accordance with API Spec 6A 21 <sup>st</sup> edition
End Connections: 4-1/16"×10000psi Integral flange for sour gas service	In accordance with API Spec 17D 3 <sup>rd</sup> edition
Hydrostatic Testing	In accordance with API Spec 16C 3 <sup>rd</sup> edition
product Marking	In accordance with API Spec 16C 3 <sup>rd</sup> edition

Inspection conclusion	The inspected items meet standard requirements of API Spec 16C 3 <sup>rd</sup> edition				
Remarks	16C-0403 				
Approver	Jane C	Auditor	Alice D	Inspector	Leo W

LUOHE LETONE HYDRAULICS TECHNOLOGY CO.,LTD					
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HYDROSTATIC TESTING REPORT

LTYT/QR-5.7.1-28

No: 24090301

Product Name	Choke And Kill Hose	Standard	API Spec 16C 3 <sup>rd</sup> edition
Product Specification	3"×10000psi×35ft (10.67m)	Serial Number	VTC-7660257
Inspection Equipment	MTU-BS-1600-3200-E	Test medium	Water
customer number	PO890145-001	Inspection Date	2024.08.30

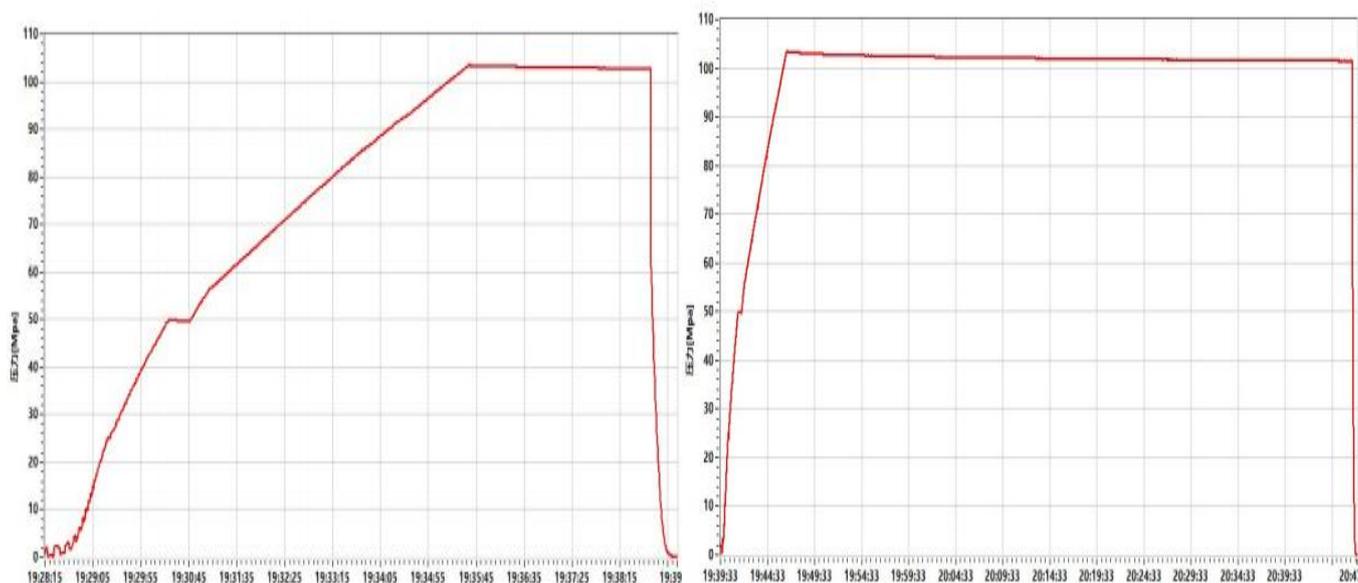
Rate of length change

Standard requirements	At working pressure ,the rate of length change should not more than ±2%
Testing result	10000psi (69.0MPa) ,Rate of length change 0.6%

Hydrostatic testing

Standard requirements	At 1.5 times working pressure, the initial pressure-holding period of not less than three minutes, the second pressure-holding period of not less than one hour, no leakage.
Testing result	15000psi (103.5MPa), 3 min for the first time, 60 min for the second time, no leakage

Graph of pressure testing:



Conclusion	The inspected items meet standard requirements of API Spec 16C 3 <sup>rd</sup> edition		16C-0403	
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Approver	Jane C	Auditor	Alice D	Inspector	Leo W
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LUOHE LETONE HYDRAULICS TECHNOLOGY CO.,LTD	
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CERTIFICATE OF CONFORMANCE

№:LT24090307

Product Name: Choke And Kill Hose

Product Specification: 3"×10000psi×35ft (10.67m)

Serial Number: VTC-7660257

customer number: PO890145-001

End Connections: 4-1/16"×10000psi Integral flange for sour gas service

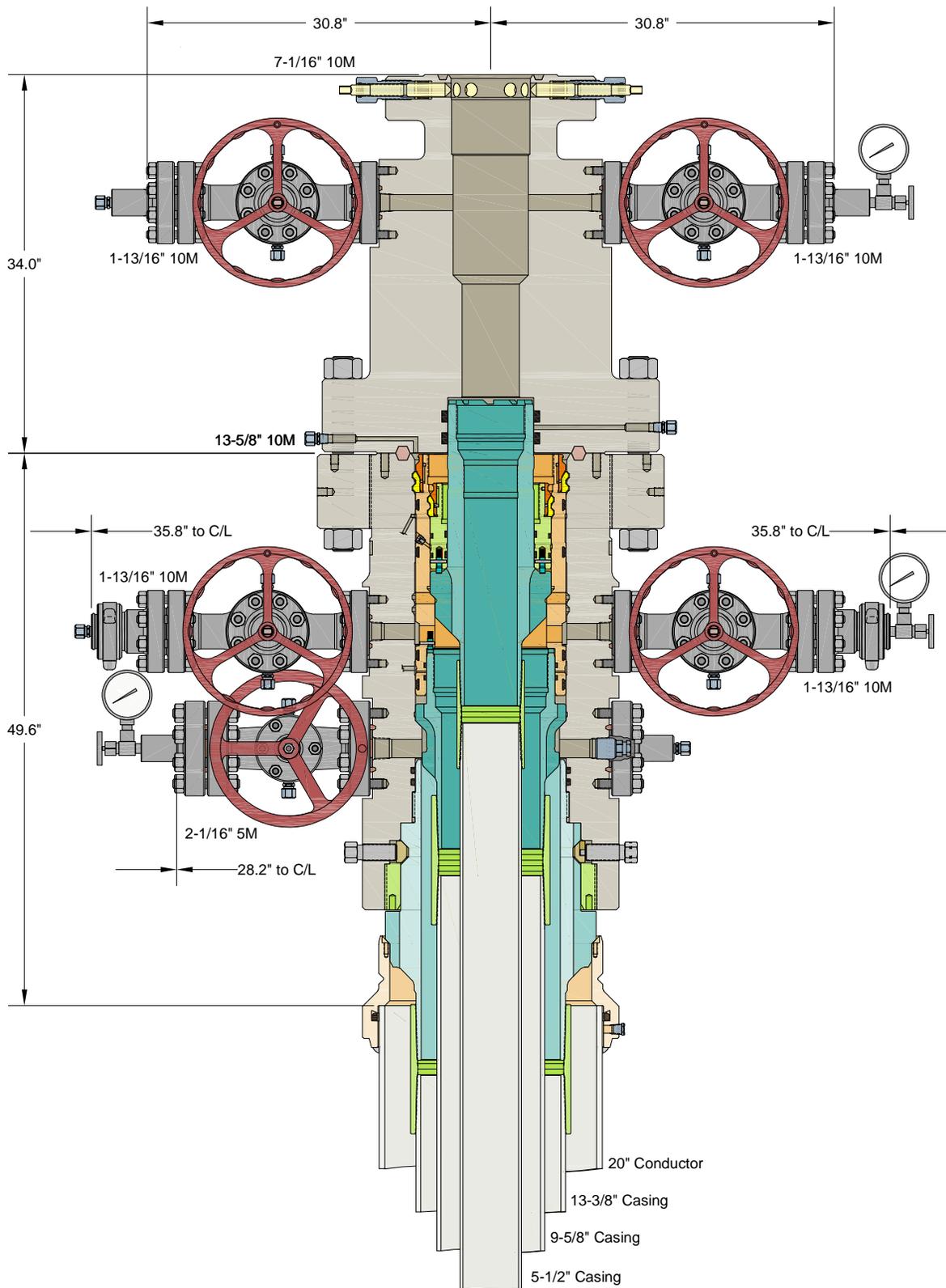
The Choke And Kill Hose assembly was produced by LUOHE LETONE HYDRAULICS TECHNOLOGY CO.,LTD.in Sep,2024, and inspected by LUOHE LETONE HYDRAULICS TECHNOLOGY CO.,LTD. according to API Spec 16C 3<sup>rd</sup> edition on Sep 3, 2024. The overall condition is good. This is to certify that the Choke And Kill Hose complies with all current standards and specifications for API Spec 16C 3<sup>rd</sup> edition .

QC Manager: Jane C

Date:Sep 3, 2024



LUOHE LETONE HYDRAULICS TECHNOLOGY CO.,LTD	
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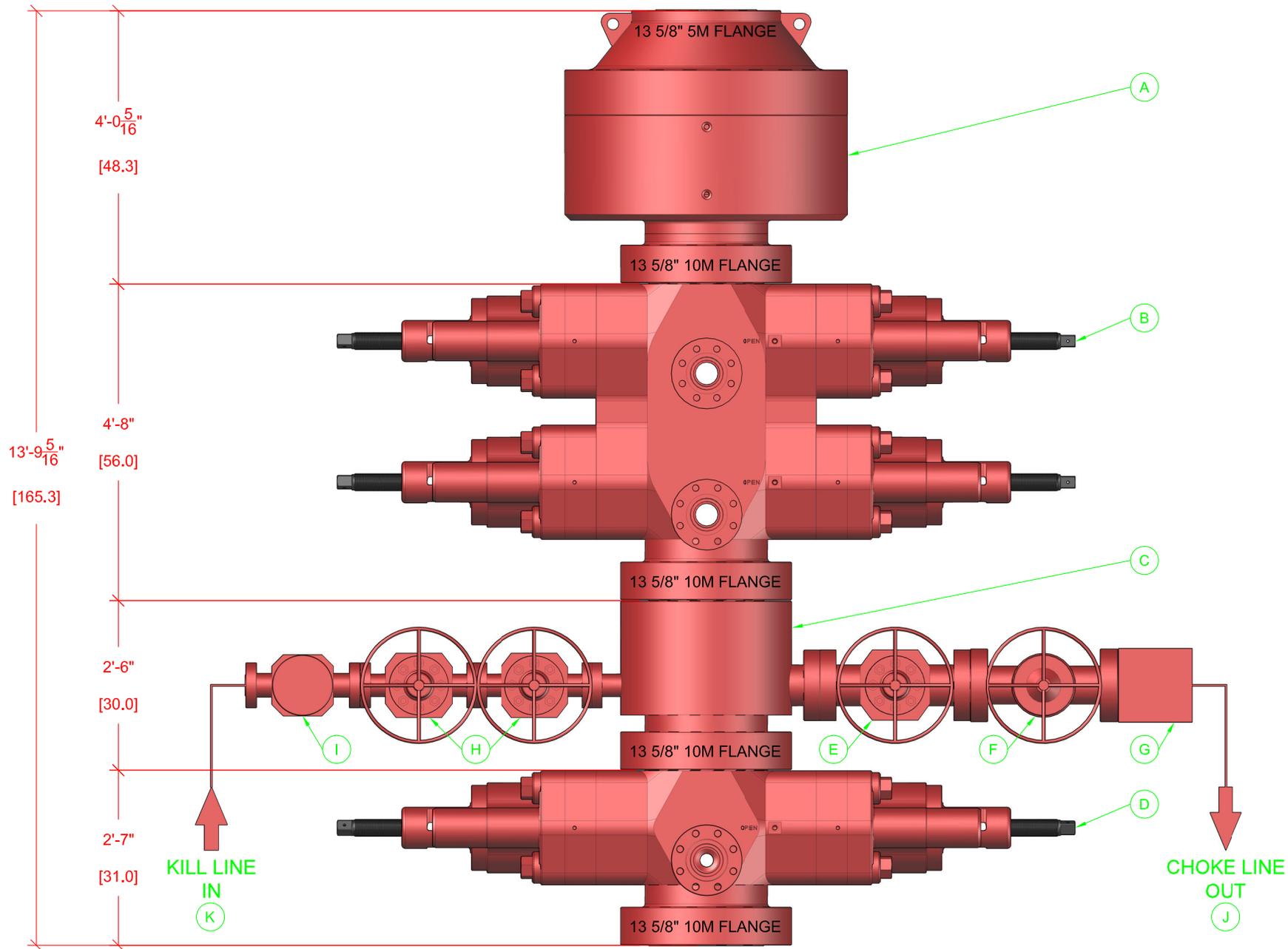
ALL DIMENSIONS APPROXIMATE

# CACTUS WELLHEAD LLC

CIMAREX  
HOBBS, NM

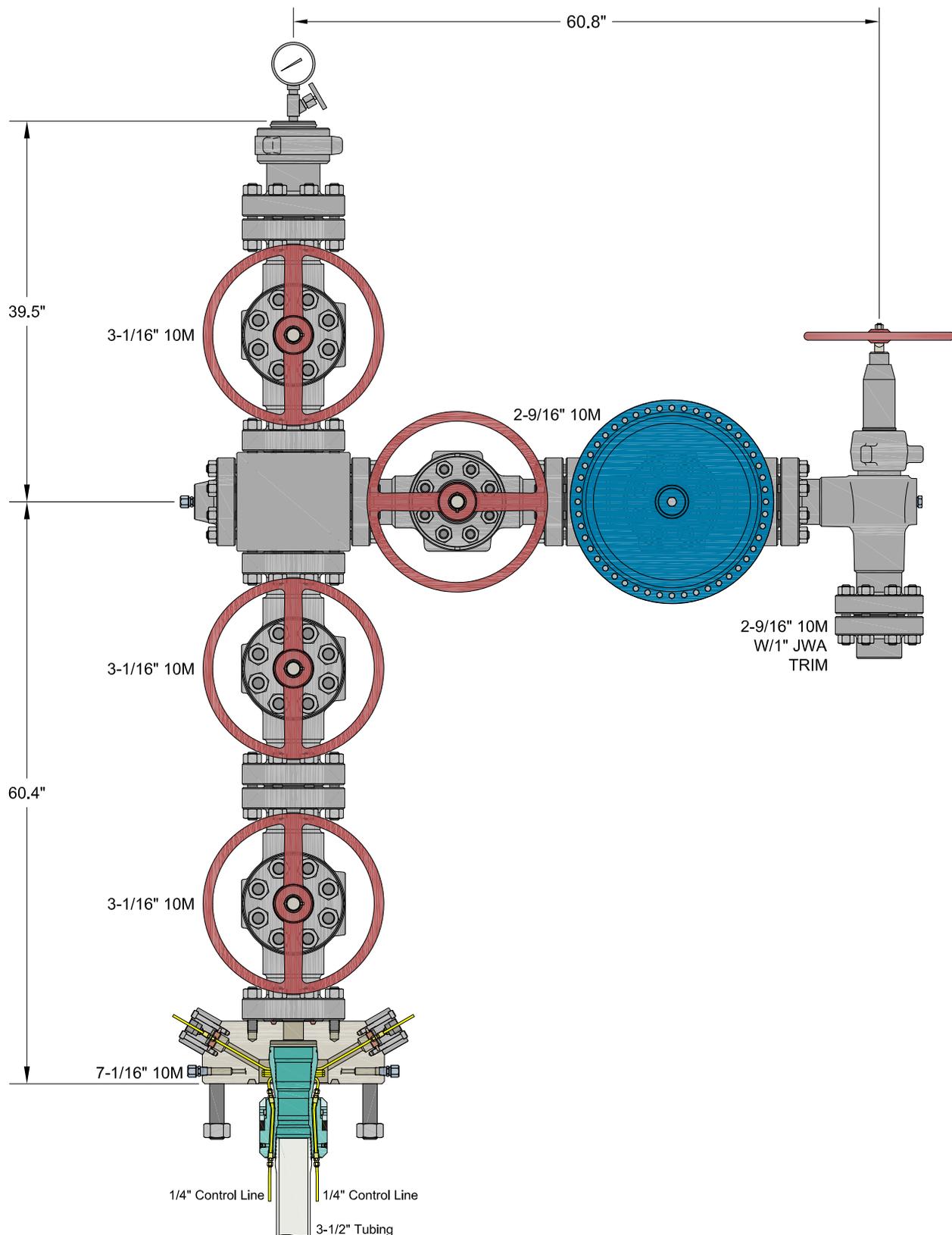
20" x 13-3/8" x 9-5/8" x 5-1/2" MBU-3T-CFL Wellhead Sys.  
With 13-5/8" 10M x 7-1/16" 10M CTH-DBLHPS Tubing Head  
And 9-5/8" & 5-1/2" Fluted Mandrel Casing Hangers

DRAWN	VJK	01MAY24
APPRV		
DRAWING NO.	HBE0001215	



**BOP EQUIPMENT INFORMATION**

DESCRIPTION	MODEL	QTY	ITEM	DESCRIPTION	MODEL	QTY
ANNULAR BOP	13 5/8\" 5M	1	G	STUDDED BLOCK	4 1/2\" 10M	1
DOUBLE RAM BOP	13 5/8\" 10M TYPE-U	1	H	GATE VALE	2 1/2\" 10M FC MANUAL	2
MUD CROSS	13 5/8\" 10M	1	I	CHECK VALVE	2 1/2\" 10M	1
SINGLE RAM BOP	13 5/8\" 10M TYPE-U	1	J	CHOKE HOSE	4 1/2\" 10M	1
GATE VALVE	4 1/2\" 10M FC MANUAL	1	K	KILL HOSE	2 1/2\" 10M	1
HCR VALVE	4 1/2\" 10M HCR	1	L			



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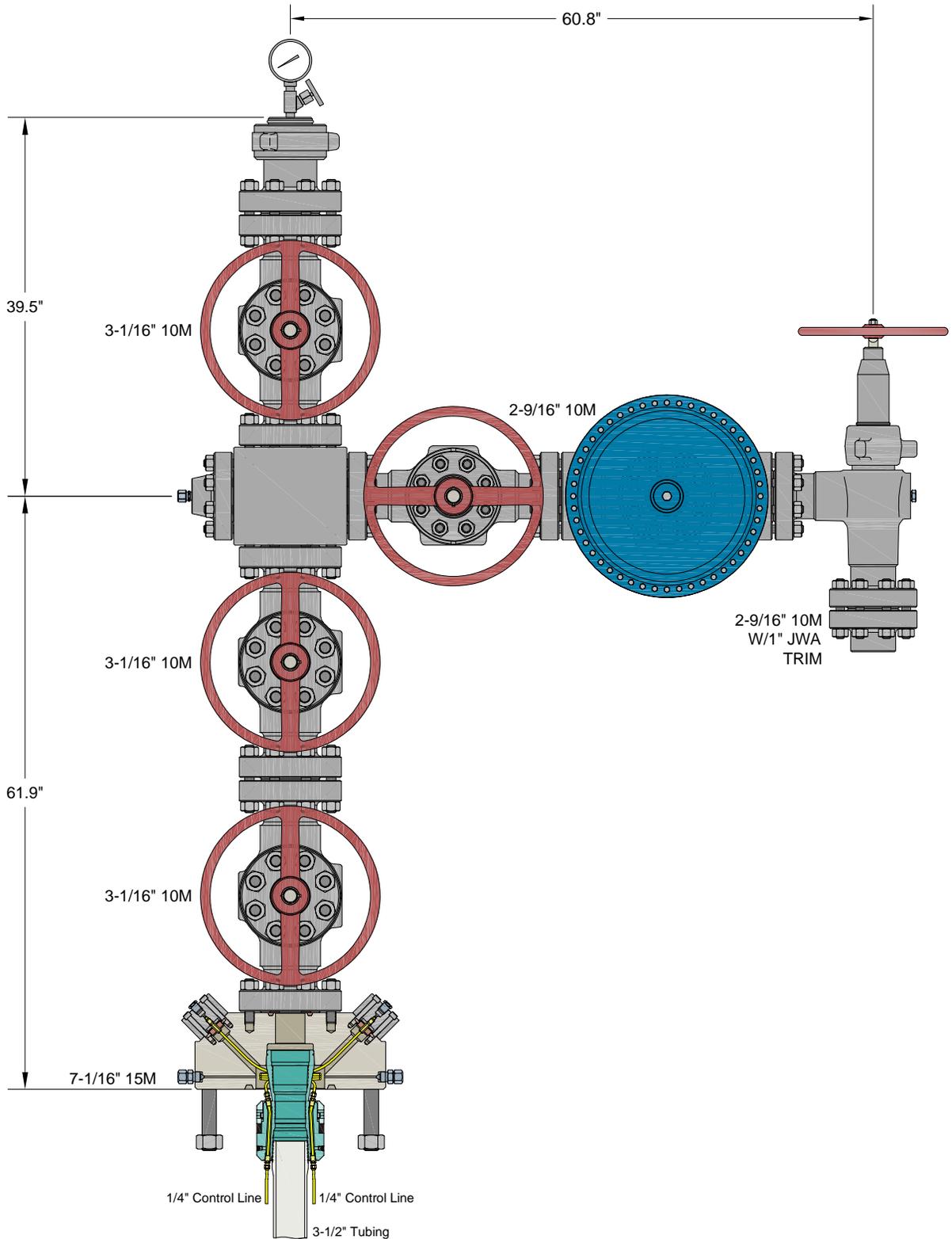
ALL DIMENSIONS APPROXIMATE

# CACTUS WELLHEAD LLC

CIMAREX  
HOBBS, NM

7-1/16" 10M x 3-1/16" x 2-9/16" 10M Production Tree Assembly  
With 7-1/16" 10M x 3-1/16" 10M T40-CCL Tubing Head Adapter  
And 7-1/16" 3-1/2" T40-CCL Tubing Hanger

DRAWN	VJK	05SEP23
APPRV		
DRAWING NO.	HBE0001018	



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ALL DIMENSIONS APPROXIMATE

# CACTUS WELLHEAD LLC

CIMAREX  
HOBBS, NM

7-1/16" 15M x 3-1/16" x 2-9/16" 10M Production Tree Assembly  
With 7-1/16" 15M x 3-1/16" 10M T40-CCL Tubing Head Adapter  
And 7-1/16" 3-1/2" T40-CCL Tubing Hanger

DRAWN	VJK	13DEC23
APPRV		
DRAWING NO.	HBE0001018	



**Cactus**

**Quotation**

**Quote Number : HBE0001018**

Hobbs, NM  
4120 W Carlsbad Hwy  
Hobbs NM 88240  
Phone: 817-682-8336

Date: 09/08/2023  
Valid For 30 Days

**Page 1 of 5**

**Bill To:** 7050

CIMAREX  
ATTN: DAVID SHAW  
202 S CHEYENNE AVENUE SUITE 1000  
TULSA OK 74103  
US

**Ship To:** 1016

2023 PRICING REVIEW  
202 S Cheyenne Ave Ste 1000  
Tulsa OK 74103-3001  
US

	Quantity	Price	Ext Price
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CIMAREX

HOBBS, NM

PRODUCTION TREE ASSEMBLY  
7-1/16" 10M X 3-1/16" 10M X 2-9/16" 10M  
OPTIONAL 15M ADAPTER

QUOTATION SUMMARY:

- PRODUCTION TREE ASSEMBLY - \$49,338.02

CACTUS CONTACT:

RILEY STAFFORD / MIKE SPINKS  
OFFICE: 405.708.7217 (RILEY) / 713.396.5762 (MIKE)  
MOBILE: 405.445.2222 (RILEY) / 832.691.7724 (MIKE)  
EMAIL: riley.stafford@cactuswellhead.com / mike.spinks@cactuswellhead.com

DUE TO VOLATILITY IN THE STEEL MARKET, PRICING FOR ITEMS MADE FROM NICKEL ALLOYS (EX. 410SS, 17-4PHSS, INCONEL, ETC.) WILL BE VALID FOR TWO WEEKS. CW WILL REVIEW AND ADJUST, IF NECESSARY, AT ORDER PLACEMENT.

PREMIUM THREADED CASING HANGERS/RUNNING TOOLS & CUSTOMER SPECIFIC EQUIPMENT ARE NON-CANCELABLE AND MAY REQUIRE A PURCHASE ORDER (PO) PRIOR TO MANUFACTURING.

SUPPLY CHAIN PRICING IS BASED UPON A 135 DAY DELIVERY ARO. EXPEDITED PRICING CAN BE PROVIDED UPON REQUEST. PRICES ARE F.O.B. CACTUS BOSSIER CITY, LA. THE FOLLOWING QUOTATION DOES NOT INCLUDE APPLICABLE MILEAGE AND SERVICE CHARGES THAT MAY BE CHARGED AT TIME OF INVOICING.



**Cactus**

**Quotation**

**Quote Number : HBE0001018**

Hobbs, NM  
 4120 W Carlsbad Hwy  
 Hobbs NM 88240  
 Phone: 817-682-8336

Date: 09/08/2023  
 Valid For 30 Days

**Page 2 of 5**

		Quantity	Price	Ext Price
<b>PRODUCTION TREE ASSEMBLY</b>				
1	124314P2 ADPT,TBGHD,CW,T40-CCL,7-1/16 10M STD X 3-1/16 10M STD,W/TWO #14 DHCV W/1/4 LP INLETS,10000 PSI MAX WP,TEMP PU,MATL EE,PSL2,PR2	1.00	4,830.00	4,830.00
2	120242MV VLV,CW,SB100,3-1/16 10M FE BB/EE-0,5 (API 6A LU BB/EE-0,5 PSL3 PR1) QPQ TRIM, API 6A PR1 SECTION 10.5.2 (BORE VENT HOLE)	1.00	4,343.00	4,343.00
3	120242MV VLV,CW,SB100,3-1/16 10M FE BB/EE-0,5 (API 6A LU BB/EE-0,5 PSL3 PR1) QPQ TRIM, API 6A PR1 SECTION 10.5.2 (BORE VENT HOLE)	1.00	4,343.00	4,343.00
4	128365 CRSS,STD,AOZE,3-1/16 10M X 2-9/16 10M,6A-LU-EE-3	1.00	2,650.00	2,650.00
5	120242MV VLV,CW,SB100,3-1/16 10M FE BB/EE-0,5 (API 6A LU BB/EE-0,5 PSL3 PR1) QPQ TRIM, API 6A PR1 SECTION 10.5.2 (BORE VENT HOLE)	1.00	4,343.00	4,343.00
6	142800 TREETCAP,NEWAY,BHTA,B15A,3-1/16 10M X 3-1/2 EU ILT,W/1/2 NPT & 3.06 MIN BORE,MONOGRAMMED,TEMP PU,MATL EE,PSL2	1.00	1,270.00	1,270.00
7	BX154 RING GASKET,BX154,3-1/16 10/15/20M	5.00	10.44	52.20
8	780077-20E1 STUD,ALL-THD W/2 HVY HEX NUTS,BLK,1-8UNC X 7,API 20E BSL-1 ASTM A193 GR B7 ALL THREAD STUD W/2 API 20E BSL-1 ASTM A194 GR 2H HEAVY HEX NUTS,NO PLATING	16.00	19.83	317.28
9	132879 FLG,BLIND,AOZE,3-1/16 10M X 1/2 NPT,W/HUB,TEMP LU,MATL EE,PSL3	1.00	495.00	495.00
10	100048 FTG,GRS,VENTED CAP,1/2 NPT,4140 -50F W/ELECTROLESS NICKEL COATING NACE,K-MONEL BALL,INCONEL X-750 SPRING	1.00	59.74	59.74
11	115900MV VLV,CW,SB100,2-9/16 10M FE BB/EE-0,5 (API 6A LU BB/EE-0,5 PSL2 PR2) QPQ TRIM, API 6A PR2 ANNEX F (BORE VENT HOLE)	1.00	3,285.00	3,285.00
12	128567 VLV/ACT,OMNI,FS-R,2-9/16 10M FE EE HF C/W MODEL DX-18 DIAPHRAGM PNEUMATIC ACTUATOR, FORGED BODY, REVERSE ACTING SLAB GATE, FLOATING SEATS & DIRECTIONAL FLOW BODY BUSHING (FLOW FROM RIGHT TO LEFT): MAT'L CLASS EE, HARDFACE TRIM, TEMP PU (-20 TO 250 F), PSL-2, PR-2; ACTUATOR: MATERIAL CLASS BB, TEMP P (-20F TO 180F) PR-2 (FC TYPE) W/MANUAL OVERRIDE,ACTUATOR REQUIRES 112 PSI TO OPEN AT FULL 10,000 PSI	1.00	8,292.00	8,292.00
13	130652 CHOKE,ADJ,HOE,H2,2-9/16 10M FE X FE ALLOY BDY,3" NOMINAL,W/ 2" SSTC TRIM,H2S SERVICE,API MONOGRAMMED,PSL-2 PR-2 TEMP-PU MATL-EE-1.5	1.00	7,500.00	7,500.00
14	120734 FLG,COMP,AOZE,2-9/16 10M X 2-7/8 EU,5000 PSI MAX WP,TEMP LU,PSL3,PR1	1.00	399.00	399.00



**Cactus**

**Quotation**

**Quote Number : HBE0001018**

Hobbs, NM  
 4120 W Carlsbad Hwy  
 Hobbs NM 88240  
 Phone: 817-682-8336

Date: 09/08/2023  
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**Page 3 of 5**

		Quantity	Price	Ext Price
15	BX153 RING GASKET,BX153,2-9/16 10/15/20M	5.00	11.54	57.70
16	780067-20E1 STUD,ALL-THD W/2 HVY HEX NUTS,BLK,7/8-9UNC X 6-1/2,API 20E BSL-1 ASTM A193 GR B7 ALL THREAD STUD W/2 API 20E BSL-1 ASTM A194 GR 2H HEAVY HEX NUTS,NO PLATING	24.00	14.70	352.80
17	135166 TBGHGR,CW,T40-CCL,7-1/16 X 3-1/2 EU API MOD BOX BTM X 3-1/2 EU BOX TOP,W/3 HBPV THD,W/ TWO 1/4 CCL & DOVETAIL SEAL,CF 124316P2,10000 PSI MAX WP,17-4PH SS,TEMP PU,MATL FF-0,5,PSL2,PR2	1.00	4,490.00	4,490.00
18	BX156 RING GASKET,BX156,7-1/16 10/15/20M	1.00	62.48	62.48
19	NVS NEEDLE VALVE,MFS,1/2 NPT MXF,10M PSI WP,CARBON STEEL BODY, 304/316SS STEM, TFE PACKING (NON-NACE)	1.00	61.16	61.16
20	PG10M PRESSURE GAUGE,10M,4-1/2 FACE, LIQUID FILLED,1/2 NPT	1.00	58.24	58.24
21	PRO Prorata Freight	0.75	2,768.56	2,076.42
				<b>49,338.02</b>

**OPTIONAL 15M ADAPTER**

22	124999P2 ADPT,TBGHD,CW,T40-CCL,7-1/16 15M STD X 3-1/16 10M STD,W/TWO #14 DHCV W/1/4 NPT INLET,10000 PSI MAX WP,TEMP PU,MAT'L EE,PSL2,PR2	0.00	7,423.00	0.00
				<b>0.00</b>

INFORMATION CONTAINED HEREIN IS THE PROPERTY OF CACTUS WELLHEAD, LLC. REPRODUCTION, DISCLOSURE, OR USE THEREOF IS PERMISSIBLE ONLY AS PROVIDED BY CONTRACT OR AS EXPRESSLY AUTHORIZED BY CACTUS WELLHEAD LLC

For Acceptance of this Quotation  
 Please Contact Ph: 713-626-8800  
 sales@cactuswellhead.com

<b>Matl:</b>	47,261.60
<b>Labor:</b>	0.00
<b>Misc:</b>	2,076.42
<b>Sales Tax:</b>	0.00
<b>Total:</b>	<b>49,338.02</b>



# Cactus

## Quotation

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4120 W Carlsbad Hwy  
Hobbs NM 88240  
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**Date: 09/08/2023**
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**Page 4 of 5**
**CACTUS WELLHEAD, LLC PURCHASE TERMS AND CONDITIONS**

1. **ACCEPTANCE:** Acceptance of Cactus Wellhead, LLC (herein: Company) Purchase Terms and Conditions (herein: CACTUS Purchase Terms) shall be deemed effective upon shipment of the Products and/or rendering of Services which are the subject of an order by Customer (defined as the party purchasing CACTUS Products and or Services referred on the invoice). Any proposal made by Customer for additional or different terms and conditions or any attempt by Customer to vary in any degree any of the terms and conditions of CACTUS Purchase Terms is hereby rejected.
2. **PRICING.** Each Product and Service shall be invoiced at (and Customer shall pay) the respective price shown on the reverse side hereof, or if no price is shown on the reverse side hereof, at the price shown in the current price list of Company. In addition, Customer shall pay any and all additional charges for mileage, transportation, freight, packing and other related charges, as well as any federal, state or local tax, excise, or charge applicable on the sale, transportation, or use of Products and Services, unless otherwise specified.
3. **TERMS OF PAYMENT.** Customer agrees to pay Company any and all payments due on or before thirty (30) days from invoice date at the designated address of Company. Amounts unpaid after such thirty (30) day period shall bear interest at the lesser of (i) one and one-half percent (1½%) per month or (ii) the maximum rate allowed by law. Customer shall also pay any and all of Company's attorney's fees and court costs if any amounts hereunder are collected by an attorney or through legal proceedings. Company reserves the right, among other remedies, either to terminate this agreement or to suspend further deliveries upon failure of Customer to make any payment as provided herein.
4. **LIMITED WARRANTY.** COMPANY MAKES NO WARRANTY, EXPRESSED OR IMPLIED, AS TO THE MERCHANTABILITY, FITNESS FOR PURPOSE, DESCRIPTION, QUALITY, PRODUCTIVENESS, ACCURACY OR ANY OTHER MATTER WITH RESPECT TO PRODUCTS OR SERVICES, ALL SUCH WARRANTIES BEING HEREBY SPECIFICALLY AND EXPRESSLY DISCLAIMED BY COMPANY. COMPANY MAY OFFER TECHNICAL ADVICE OR ASSISTANCE WITH REGARD TO THE PRODUCTS AND SERVICES BASED ON LABORATORY AND/OR FIELD EXPERIENCE AND CUSTOMER UNDERSTANDS AND AGREES THAT SUCH ADVICE REPRESENTS ONLY GOOD FAITH OPINIONS AND DOES NOT CONSTITUTE A WARRANTY OR GUARANTEE. THE SOLE AND EXPRESS WARRANTY PROVIDED BY COMPANY IS TO WARRANT THAT THE PRODUCTS SOLD AS LISTED ON THE REVERSE SIDE HEREOF COMPLY WITH COMPANY'S SOLE SPECIFICATION AT THE DATE AND TIME OF MANUFACTURE. COMPANY MAKES NO WARRANTY THAT SUCH PRODUCTS SHALL MEET SUCH SPECIFICATION AT ANY TIME AFTER SHIPMENT OF PRODUCTS. USE OF SUCH PRODUCTS IS SPECIFICALLY NOT WARRANTED.
5. **REMEDY.** The exclusive remedy for this warranty for Products shall be limited to, in Company's sole discretion and judgment, the replacement of defective part(s), F.O.B. Company's plant (transportation, redesign, dismantling, disposal of material and installation are not included and shall be borne and paid for by Customer), or repair of defective part(s). The exclusive remedy for this warranty for Services shall be limited to the repeat of Services performed F.O.B. Company's plant (transportation, redesign, dismantling, disposal of material and installation are not included and shall be borne and paid for by Customer). Any such repeat of Services or replacement or repair of Products shall not include any materials not sold by Company hereunder, and specifically excludes any obligation by Company related to other property of the Customer or any property of third parties. Provided, however, Company may in its sole discretion, decide to instead give Customer credit memorandum for the amounts already paid by Customer to Company for such Product or Service. IN ANY EVENT AND NOTWITHSTANDING THE LANGUAGE TO THE CONTRARY HEREIN, CUSTOMER ACKNOWLEDGES THAT ANY CLAIM IT MAY HAVE ARISING OUT OF OR IN CONNECTION WITH ANY ORIGINAL PRODUCTS AND SERVICES, ANY REPLACEMENT PRODUCTS OR REPEAT OF SERVICES AND THESE CACTUS PURCHASE TERMS SHALL BE LIMITED TO AND NOT EXCEED THE AMOUNT CUSTOMER HAS ACTUALLY PAID TO COMPANY FOR SUCH PRODUCTS AND/OR SERVICES PURSUANT HERETO. If Customer fails to make any such claim within thirty (30) days after completion of Service or delivery of Products, Customer hereby waives (to the extent permitted by applicable law) any and all claims it may or does have with respect to such Products and Services. Unless Customer is an authorized reseller of Company, Company's liability in connection with Products and Services shall extend only to Customer. CUSTOMER HEREBY INDEMNIFIES AND HOLDS COMPANY (AND ITS AGENTS, REPRESENTATIVES, OFFICERS DIRECTORS AND EMPLOYEES) HARMLESS FOR ANY LOSS, EXPENSE OR DAMAGE (WHETHER OF CUSTOMER OR OF ANY THIRD PARTY) ARISING FROM OR IN CONNECTION WITH PRODUCTS AND SERVICES, INCLUDING WITHOUT LIMITATION ANY FAILURE OF SUCH PRODUCTS AND SERVICES TO CONFORM TO CUSTOMER'S ORDER OR SPECIFICATION OR ANY OTHER STANDARD, OR ANY NEGLIGENCE OR BREACH OF WARRANTY BY COMPANY WITH RESPECT TO ANYTHING DONE OR FAILED TO HAVE BEEN DONE BY COMPANY, IF AND TO THE EXTENT THAT SUCH LOSS, EXPENSE OR DAMAGE EXCEEDS THE AMOUNT CUSTOMER HAS ACTUALLY PAID COMPANY PURSUANT HERETO FOR SUCH PRODUCTS OR SERVICES.
6. **INSPECTION.** The results of any inspection or testing reported by the Company to Customer represents only good faith opinions and are not to be construed as warranties or guarantees of the quality, classification, merchantability, fitness for purpose, condition, or liability of any equipment or material that has been inspected or tested by the Company.
7. **INSURANCE.** Each party agrees to maintain comprehensive general liability insurance in the amount of \$1,000,000 each occurrence, \$2,000,000 general aggregate, and Workers Compensation insurance per statutory requirements providing coverage for the indemnity obligations in this agreement. The Company (and such of its affiliates as it shall designate) including their officers, directors, members, shareholders, partners, joint ventures, employees, agents and representatives shall be named as additional insureds under the policies of Customer on a primary basis to the extent of its indemnification obligations set forth in these CACTUS Purchase Terms, and the policies shall also provide a waiver of subrogation rights in favor of the Company (and such of its affiliates as it shall designate) and their officers, directors, members, shareholders, employees, agents and representatives. The provisions of this Section 7 shall apply and the obligation to maintain insurance of each party in the coverages and amounts set forth herein shall remain in force regardless and independent of the validity or enforceability of the indemnity provisions of Section 8, below; the obligation to obtain insurance is a separate and independent obligation. If the insurance required herein is more or less than allowed by prevailing law, the indemnity obligations in Section 8 below shall be effective only to the maximum extent permitted under applicable law.
8. **INDEMNIFICATION.** The following indemnifications and releases of liability will apply to any Products or Services provided under this contract. COMPANY AND CUSTOMER EXPRESSLY AGREE THAT, TO THE EXTENT REQUIRED BY APPLICABLE LAW TO BE EFFECTIVE, THE INDEMNITIES AND DISCLAIMERS OF WARRANTIES CONTAINED HEREIN ARE "CONSPICUOUS."
  - A. **Customer Indemnity Obligations.** Customer hereby releases Company from any liability for, and shall protect, defend, indemnify, and hold harmless Company, its parents, affiliates, subsidiaries, partners, joint owners, joint ventures, and its contractors and subcontractors of any tier, and the officers, directors, agents, representatives, employees, insurers, and consultants (specifically excluding any member of Customer Group) of all of the foregoing, and its and their respective successors, heirs and assigns ("Company Group") from and against all costs (including the payment of reasonable attorneys' fees), losses, liabilities, demands, causes of action, damages, or claims of every type and character ("Claims"), arising out of or resulting from or related, directly or indirectly, to (i) injury to, illness or death of Customer its parents, affiliates, subsidiaries, partners, joint owners, joint ventures, and its contractors and subcontractors of any tier, and the officers, directors, agents, representatives, employees, customers, insurers, invitees and consultants of all of the foregoing, and its and their respective successors, heirs and assigns ("Customer Group"), or (ii) loss of or damage to any property of any member of Customer Group, REGARDLESS OF THE CAUSE OF SUCH CLAIMS, INCLUDING THE NEGLIGENCE (WHETHER SOLE, JOINT OR CONCURRENT, ACTIVE OR PASSIVE) STRICT LIABILITY, OR ANY OTHER LEGAL FAULT OR RESPONSIBILITY OF ANY MEMBER OF COMPANY GROUP, BUT NOT IN THE CASE OF GROSS NEGLIGENCE OR WILLFUL MISCONDUCT OF ANY MEMBER OF COMPANY GROUP.
  - B. **Company Indemnity Obligations.** Company hereby releases Customer from any liability for, and shall protect, defend, indemnify, and hold harmless Customer from and against all Claims arising out of or resulting from or related, directly or indirectly, to (i) injury to, illness or death of any member of Company Group, or (ii) loss of or damage to any property of any member of Company Group, REGARDLESS OF THE CAUSE OF SUCH CLAIMS, INCLUDING THE NEGLIGENCE (WHETHER SOLE, JOINT OR CONCURRENT, ACTIVE OR PASSIVE) STRICT LIABILITY, OR ANY OTHER LEGAL FAULT OR RESPONSIBILITY OF ANY MEMBER OF CUSTOMER GROUP, BUT NOT IN THE CASE OF GROSS NEGLIGENCE OR WILLFUL MISCONDUCT OF ANY MEMBER OF COMPANY GROUP.
  - C. **Third Party Claims.** Notwithstanding the foregoing, to the extent of its negligence, Company and Customer shall each indemnify, defend and hold harmless from and against all Claims, of every type and character, which are asserted by third parties for bodily injury, death or loss or destruction of property or interests in property in any manner caused by, directly or indirectly resulting from, incident to, connected with or arising out of the work to be performed, Services to be rendered or Products or materials furnished to Customer. When personal injury, death or loss of or damage to property is the result of joint or concurrent negligence of Customer and Company, the indemnitor's duty of indemnification shall be in proportion to its allocable share of such negligence.
  - D. **Pollution.** Company agrees that it shall be totally responsible for, and shall protect, defend and indemnify, Customer for all losses, damages, claims, demands, costs, charges, and other expenses, including attorneys' fees, for any and all waste and/or hazardous substances which are in Company Group's exclusive possession and control and directly associated with Company Group's equipment and facilities, EVEN IF THE LOSSES, DAMAGES, CLAIMS, DEMANDS, COSTS, FEES, AND EXPENSES ARE CAUSED BY OR CONTRIBUTED TO BY THE NEGLIGENCE OF CUSTOMER GROUP. Customer shall assume all responsibility for, including control and removal of, and shall protect, defend and indemnify Company Group from and against all Claims arising directly or indirectly from all other pollution or contamination which may occur during the conduct of operations hereunder, including, but not limited to, that which may result from fire, blowout, cratering, seepage or any other uncontrolled flow of oil, gas, water or other substance, EVEN IF THE LOSSES, DAMAGES, CLAIMS, DEMANDS, COSTS, FEES, AND EXPENSES ARE CAUSED BY OR CONTRIBUTED TO BY THE NEGLIGENCE OF COMPANY GROUP.
  - E. **Wild Well.** Customer shall release Company Group of any liability for, and shall protect, defend and indemnify Company Group for any damages, expenses, losses, fines, penalties, costs, expert fees and attorneys' fees arising out of a fire, blow out, cratering, seepage or wild well, including regaining control thereof, debris removal and property restoration and remediation. THIS INDEMNITY APPLIES EVEN IF THE LOSSES, DAMAGES, CLAIMS, DEMANDS, COSTS, FEES, AND EXPENSES ARE CAUSED NEGLIGENCE (WHETHER SOLE, JOINT OR CONCURRENT, ACTIVE OR PASSIVE, ORDINARY OR GROSS) STRICT LIABILITY, OR ANY OTHER LEGAL FAULT OR RESPONSIBILITY OF ANY MEMBER OF COMPANY GROUP.
  - F. **Underground Damage.** Customer shall release Company Group of any liability for, and shall protect, defend and indemnify Company Group from and against any and all claims, liability and expenses resulting from operations related to the work under this agreement on account of injury to, destruction of, or loss or impairment of any property right in or to oil, gas or other mineral substance or water, if at the time of the act or omission causing such injury, destruction, loss or impairment said substance and not been reduced to physical possession above the surface of the earth, and for any loss or damage to any formation, strata, or reservoir beneath the surface of the earth. THIS INDEMNITY APPLIES EVEN IF THE LOSSES, DAMAGES, CLAIMS, DEMANDS, COSTS, FEES, AND EXPENSES ARE CAUSED NEGLIGENCE (WHETHER SOLE, JOINT OR CONCURRENT, ACTIVE OR PASSIVE, ORDINARY OR GROSS) STRICT LIABILITY, OR ANY OTHER LEGAL FAULT OR RESPONSIBILITY OF ANY MEMBER OF COMPANY GROUP.
  - G. The foregoing indemnities set forth in these CACTUS Purchase Terms are intended to be enforceable against the parties hereto in accordance with the express terms and scope hereof notwithstanding Texas' Express Negligence Rule or any similar directive that would prohibit or otherwise limit indemnities because of the negligence (whether sole, concurrent, active or passive, ordinary or gross) or other fault or strict liability of Company or Customer.
  - H. If a claim is asserted against one of the parties to this agreement which may give rise to a claim for indemnity against the other party hereto, the party against whom the claim is first asserted must notify the potential indemnitor in writing and give the potential indemnitor the right to defend or assist in the defense of the claim.
9. **RISK OF LOSS.**
  - A. Title and risk of loss shall pass to Customer upon delivery as specified in Article 11. Customer's receipt of any material delivered hereunder shall be an unqualified acceptance of, and a waiver by Customer of any and all claims with respect to, such material unless Customer gives Company written notice of claim within thirty (30) days after such receipt. Notwithstanding the foregoing, installation or use of materials or equipment shall unequivocally constitute irrevocable acceptance of said materials. Customer assumes all risk and liability for the results obtained by the use of any material or Products delivered hereunder in work performed by on behalf of Customer or in combination with other or substances. No claim of any kind, whether as to material delivered or for non-delivery of material, and whether or not based on negligence, shall be greater in amount than the purchase price of the


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 Hobbs NM 88240  
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Valid For 30 Days

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material in respect of which such claim is made.

B. For Services, Company shall not be liable for loss or deterioration of any equipment and material of Customer under Company's control or stored on Company's premises after Company has completed its work if such loss or deterioration results from atmospheric condition, Act of God or other occurrence not within the reasonable control of Company.

10. **TERMINATION.** Company reserves the right to terminate the order at issue, or any part hereof, solely for its convenience at any time without cause with notice to Customer. Company shall have the right to cancel any unfilled order without notice to Customer in the event that Customer becomes insolvent, adjudicated bankrupt, petitions for or consents to any relief under any bankruptcy reorganization statute, violates a term of these CACTUS Purchase Terms, or is unable to meet its financial obligations in the normal course of business. In the event of such termination, Company shall immediately stop all work hereunder. Prior to delivery, Customer may terminate this order without cause upon thirty (30) day notice in writing to Company. In the event of such termination, Company at its sole option shall cease work up to thirty (30) days after such notice. Upon the cessation of work, Customer agrees to pay Company a reasonable termination charge consisting of a percentage of the invoice price, such percentage to reflect the value of the Products, Services or work in progress completed upon the cessation of work. Customer shall also pay promptly to Company any costs incurred due to paying and settling claims of Company's vendors or subcontractors arising out of the termination of the order by Customer.

11. **DELIVERY.** Unless different terms are provided on the face of this order, all items are sold FOB Company's manufacturing facility in Bossier City, LA., and Customer shall bear the cost of transportation to any other named destination. Upon notification of Company of delivery, Customer shall become liable and shall bear all risk of loss associated with the Products at issues regardless of whether the Products are at a location controlled by Company and whether or not caused by the negligence of Company. In the case of Customer pick-up, the truck furnished by Customer is the destination and Company's obligations regarding shipments are fulfilled when the Products are loaded on the truck. Items to be shipped to any other destination outside of the United States are sold FOB port of shipment (Customer will deliver and bear the cost of transportation to the named port and will bear the cost of transportation thereafter to the final destination). The means of shipment and carrier to the point at which Company's liability for transportation costs ceases shall be chosen by Company. Excess packing, marking, shipping, and transportation charges resulting from compliance with Customer's request shall be for Customer's account. Unless otherwise agreed in writing, delivery time is not of the essence.

12. **RETURNS/REFUND.** Within ninety (90) days of delivery, Customer has the option to return any non-defective Products (any Products found to be defective will be subject to the warranty and remedies expressed in paragraphs four (4) and five (5) above). Customer shall bear all costs of shipment and/or transportation for such return and risk of loss for the returned Products shall remain with Customer until re-delivered to Company's Yard. Customer shall receive a full refund for any returns, less a twenty percent (20%) restocking fee. Company at all times reserves the right to designate certain Products as non-refundable in Company's Sales Quote or Sales Order. In addition, any made-to-order, special order, and/or Product manufactured to Customer specifications are NOT returnable.

13. **DELAYS.** If a specific shipping date is either not given or is estimated only, and is not promised on the face of this order or in a separate writing signed by Company, Company will not be responsible for delays in filling this order nor liable for any loss or damages resulting from such delays. If a specific shipping date is promised, Company will not be liable for delays resulting from causes beyond Company's control, including without limitation accidents to machinery, fire, flood, act of God or other casualty, vendor delays, labor disputes, labor shortages, lack of transportation facilities, priorities required by, requested by, or granted for the benefit of any governmental agency, or restrictions imposed by law or governmental regulation.

14. **LIMITATION OF DAMAGES.** Notwithstanding any other provision contained herein, Company shall not be liable to Customer Group or any third party for consequential (whether direct or indirect damages), indirect, incidental, special or punitive damages, howsoever arising, including, but not limited to loss of profits (whether direct or indirect damages), revenues, production or business opportunities, WHETHER OR NOT SUCH LOSSES ARE THE RESULT IN WHOLE OR IN PART FROM THE NEGLIGENCE (WHETHER SOLE, JOINT, CONCURRENT OR COMPARATIVE, ACTIVE OR PASSIVE, ORDINARY OR GROSS) OF COMPANY GROUP, OR ANY DEFECT IN THE PREMISES, PRE-EXISTING CONDITIONS, PATENT OR LATENT, BREACH OF STATUTORY DUTY, STRICT LIABILITY OR ANY OTHER THEORY OF LEGAL LIABILITY OF COMPANY GROUP (EXCLUDING ONLY LOSSES CAUSED BY THE WILLFUL MISCONDUCT OF COMPANY GROUP).

15. **SECURITY INTEREST.** Customer grants Company, and Company reserves, a security interest, covering all Customer's obligations under these terms (including any liability for breach of Customer's obligations), and applying to all of Customer's right, title, and interest in the Leased Equipment, together with all accessions thereto and any proceeds that may arise in connection with the sale or disposition thereof. Customer shall cooperate with Company in the filing of Financing Statements to perfect such security interest. Furthermore, Customer authorizes Company to execute and file Financing Statements without Customer's signature in any jurisdiction in which such procedure is authorized. Customer warrants, covenants and agrees that it will not, without prior written consent of Company, sell, contract to sell, lease, encumber, or dispose of the Leased Equipment or any interest in it until all obligations secured by this security interest have been fully satisfied.

16. **PATENT AND INTELLECTUAL PROPERTY.** The sale of any Products hereunder does not convey any intellectual property license by implication, estoppel or otherwise regarding the Products. Company retains the copyright in all documents, catalogs and plans supplied to Customer pursuant to or ancillary to the contract. Unless otherwise agreed in writing, Customer shall obtain no intellectual property interest in any Company Product.

17. **TAXES.** Unless otherwise specifically provided for herein, Customer shall be liable for all federal, state, or local taxes or import duties assessed by any governmental entity of any jurisdiction in connection with the Products or Services furnished hereunder.

18. **DECEPTIVE TRADE PRACTICES.** Customer acknowledges the application of Section 17.45(4) of the Texas Deceptive Trade Practices Act (Texas Business Commission Code §17.41 et. seq.) (the "Act") to any transaction contemplated hereby and represents that it is not a "consumer" for the purposes of the Act.

19. **NO WAIVER.** Failure to enforce any or all of the provisions in these CACTUS Purchase Terms in any particular instance shall not constitute or be deemed to constitute a waiver of or preclude subsequent enforcement of the same provision or any other provision of these CACTUS Purchase Terms. Should any provision of these CACTUS Purchase Terms be declared invalid or unenforceable all other provisions of these CACTUS Purchase Terms shall remain in full force and effect.

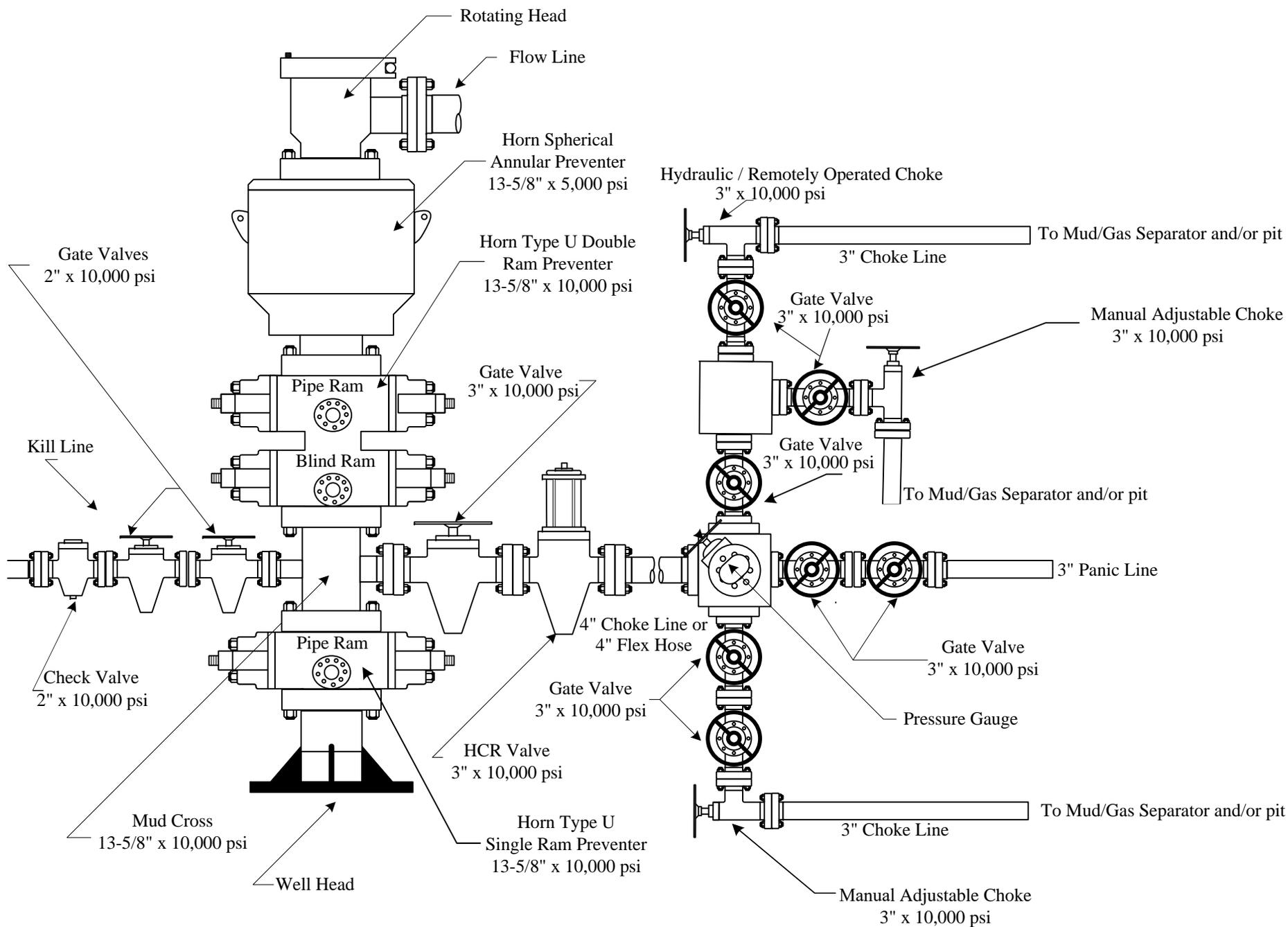
20. **CHOICE OF LAW.** THIS AGREEMENT SHALL BE GOVERNED BY AND CONSTRUED IN ACCORDANCE WITH THE LAWS OF THE STATE OF TEXAS AND SHALL BE PERFORMABLE IN HARRIS COUNTY, TEXAS. WITHOUT REGARD TO CONFLICTS OF LAW PRINCIPALS AND WAIVER OF SAME, EACH PARTY HERETO SUBMITS TO THE JURISDICTION OF THE COURTS OF THE STATE OF TEXAS IN HARRIS COUNTY, TEXAS AND THE FEDERAL COURTS IN AND FOR THE SOUTHERN DISTRICT OF TEXAS SITTING IN HOUSTON, TEXAS IN CONNECTION WITH ANY DISPUTE ARISING UNDER THIS AGREEMENT OR ANY DOCUMENT OR INSTRUMENT ENTERED INTO IN CONNECTION HEREWITH.

21. **AUTHORITY.** Customer warrants and represents that the individual receiving this order at issue on behalf of Customer has the authority to enter into these CACTUS Purchase Terms on behalf of Customer, and that upon receipt these CACTUS Purchase Terms shall be binding upon Customer.

22. **FORCE MAJEURE.** If Company is unable to carry out its obligations hereunder by reason of force majeure, then upon Company's giving of notice and reasonably full particulars of such force majeure in writing to Customer, Company's obligations that are affected by force majeure shall be suspended during the continuance of the force majeure and Company shall not be liable to Customer for any damages incurred by the Customer as a result thereof.

23. **CONFIDENTIALITY.** Customer acknowledges the highly secret and valuable nature of all proprietary inventions, methods, processes, designs, know-how, and trade secrets embodied in the Company's equipment, Products and Services and its components (hereinafter referred to as "Confidential Data"). Accordingly, Customer agrees not to disclose or use any Confidential Data. Customer further agrees to take any and all necessary precautions to prevent disclosure of the Confidential Data associated with the Company's equipment, Products and Services and components thereof to persons other than those employees of Customer for whom such disclosure is necessary for performance of the work hereunder.

24. **COMPLIANCE.** Customer expressly agrees to comply with and abide by, all of the laws of the United States and of the State of Texas, including, but not limited to, OSHA, EPA and all rules and regulations now existing or that may be hereafter promulgated under and in accordance with any such law or laws, and hereby agrees to indemnify and hold Company harmless from any and all claims, demands, or damages incurred by Company arising from Customer's failure to comply with all laws and governmental regulations. The indemnities in this paragraph shall be in addition to any other indemnity obligations between Customer and Company, including any other indemnity obligations contained herein.



**1. Geological Formations**

TVD of target 10,965  
MD at TD 21,660

Pilot Hole TD N/A  
Deepest expected fresh water

Formation	Depth (TVD) from KB	Water/Mineral Bearing/Target Zone	Hazards
Rustler	890	N/A	
Top of Salt	1230	N/A	
Base of Salt/Lamar	4895	N/A	
Top Delaware Sands/Bell Canyon	4990	N/A	
Cherry Canyon	6335	N/A	
Brushy Canyon	7500	N/A	
Basal Brushy Canyon	9010	N/A	
Bone Spring Lime	9035	N/A	
Leonard	9100	N/A	
Avalon Shale	9320	N/A	
1st Bone Spring Sand	10010	Hydrocarbons	
2nd Bone Spring Shale	10232	Hydrocarbons	
2nd Bone Spring Sand	10585	Hydrocarbons	
2nd Bone Spring Sand - Target	10965	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
17 1/2	0	1050	1050	13-3/8"	48.00	J-55	ST&C	1.63	5.24	8.59
12 1/4	0	4915	4915	9-5/8"	40.00	J-55	BT&C	1.31	1.50	3.20
8 3/4	0	10414	10414							
8 3/4	10414	21660	10965	5-1/2"	20.00	P-110	BT&C	2.16	2.41	54.51
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

Coterra: H2S Plan



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# H2S Drilling Operations Plan

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## Training

*All company and contract personnel admitted on location must be trained by a qualified H2S safety instructor to do the following:*

1. Characteristics of H2S
2. Physical effects and hazards
3. Principle and operation of H2S detectors, warning system, and briefing areas
4. Evacuation procedure, routes and first aid
5. Proper use of safety equipment & life support systems
6. Essential personnel meeting Medical Evaluation criteria will receive additional training on the proper use of 30 minute pressure demand air packs.

## H2S Detection and Alarm Systems

1. H2S 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 H2S detectors may be placed as deemed necessary
2. An audio alarm system will be installed on the derrick floor and in the top doghouse

## Windsock and/or wind streamers

1. Windsock at mudpit area should be high enough to be visible
2. Windsock on the rig floor and / or top of doghouse should be high enough to be visible

## Condition Flags & Signs

1. Warning signs on access road to location
2. Flags are to be displayed on sign at the entrance to location. Green flag indicates normal safe condition. Yellow flag indicates potential pressure and danger. Red flag indicates

## Coterra: H2S Plan

danger (H2S present in dangerous concentration). Only H2S trained and certified personnel admitted to location.

## Well Control Equipment

1. See the pressure control section of this submission.

## Communication

1. While working under masks, chalkboards will be used for communication
2. Hand signals will be used where chalk board is inappropriate.
3. Two way radio will be used to communicate off location in case emergency help is required. In most cases, cellular telephones will be available at most drilling foreman's trailer or living quarters.

## Drillstem Testing

1. No DSTs or cores are planned at this time
2. Drilling contractor supervisor will be required to be familiar with the effects that H2S has on tubular goods and other mechanical equipment.
3. If H2S is encountered, mud system will be altered if necessary to maintain control of the well. A mud gas separator will be brought into service along with H2S scavenger if necessary.

Coterra: H2S Plan

# H2S Contingency Plan

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## Emergency Procedures

In the event of an H2S release, the first responder(s) must:

1. Isolate the area and prevent entry by other persons into the 100 PPM ROE.
2. Evacuate any public places encompassed by the 100 PPM ROE.
3. Be equipped with H2S monitors and air packs in order to control the release.
4. Use the buddy system
5. Take precautions to avoid personal injury during this operation
6. Contact operator and/or local officials to aid in operation. See list of emergency contacts attached.
7. Have received training the detection of H2S, measures for protection against the gas, and equipment used for protection and emergency response

## Ignition of the Gas Source

1. 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

## Contacting Authorities

1. Coterra 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.
2. 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. Coterra's response must be in coordination with the State of New Mexico's "Hazardous Materials Emergency Response Plan" (HMER).

Coterra: H2S Plan

# Emergency Contacts

## Coterra Energy

Charlie Pritchard: Drilling Operations Manager: 432 – 238 – 7084

Darrell Kelly: Vice President EHS: 281 – 589 – 5795

## Third Party

PERMIAN REGION CONTACT NUMBERS					
CALL 911					
Air Ambulance Services					
Reeves County Medical - Pecos, TX			432-447-3551		
Aero Care - Midland, TX			800-627-2376		
Tri State Care Flight- Artesia, NM			800-800-0900		
Air Methods - Hobbs, NM			800-242-6199		
Fire / Police / Medical Care					
Sheriff's Office		Fire Departments		Hospital / Medical Care Facilities	
Andrews County	432-523-5545	Andrews	432-523-3111	Permian Regional Med.	432-523-2200
Reagan County	325-884-2929	Big Lake	325-884-3650	Reagan Memorial Hosp.	325-884-2561
Howard County	432-264-2244	Big Springs	432-264-2303	Scenic Mountain Med Ctr	432-263-1211
Terry County	806-637-2212	Brownfield	806-637-6633		
Crane County	432-558-3571	Crane	432-558-2361	Crane Memorial Hosp.	432-558-3555
Val Verde County	830-774-7513	Del Rio	830-774-8648	Val Verde Regional Med.	830-775-8566
		Denver City	806-592-3516	Yoakum County Hospital	806-592-2121
Pecos County	432-336-3521	Ft Stockton	432-336-8525		
Glasscock County	432-354-2361	Garden City			
Winkler County	432-586-3461	Kernit	432-586-2577	Winkler County Memorial	432-586-5864
		McCamey	432-652-8232	McCamey Hospital	432-652-8626
Loving County	432-377-2411	Mentone			
Irion County	325-835-2551	Mertzton			
Ward County	432-943-6703	Monahans	432-943-2211	Ward Memorial Hospital	432-943-2511
Ector County	432-335-3050	Odessa	432-335-4650	Odessa Regional Hosp.	432-582-8340
Crocket County	325-392-2661	Ozona	325-392-2626		
Reeves County	432-445-4901	Pecos	505-757-6511	Reeves County Hospital	432-447-3551
Yoakum County	806-456-2377	Plains	806-456-2288		
Garza County	806-495-3595	Post			
Upton County	432-693-2422	Rankin			
Coke County	915-453-2717	Robert Lee			
		Roscoe	325-766-3931		
Hockley County	806-894-3126	Levelland	806-894-3155	Covenant Health	806-894-4963
Tom Green County	325-655-8111	San Angelo	325-657-4355	San Angelo Comm. Med.	325-949-9511
Gaines County	432-758-9871	Seminole	432-758-3621	Memorial Hospital	432-758-5811
Terrell County	432-345-2525	Sanderson			
Scurry County	325-573-3551	Snyder	325-573-3546	DM Cogdell Memorial	325-573-6374
Sterling County	325-378-4771	Sterling City			
Nolan County	325-235-5471	Sweetwater	325-235-8130	Rolling Plains Memorial	325-235-1701
Culberson County	432-283-2060	Van Horn		Culberson Hospital	432-283-2760
New Mexico					
Lea County	505-396-3611	Knowles	505-392-7469	Lea Reg Med Ctr	575-492-5000
Eddy County	575-887-7551	Carlsbad	575-885-3125	Carlsbad Medical	575-887-4100
		Artesia	575-746-5050	Artesia Hospital	575-748-3333
Roosevelt County	575-356-4408				
Chaves County	575-624-7590				
Ground Ambulance Services					
Reeves County Medical		Pecos, TX		432-447-3551	

Coterra: Well Control Plan



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## Well Control Plan

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### Warning Signs of a Kick

If a kick is ever suspected, perform flow check.

While Drilling:

1. Drilling break or increase in penetration rate
2. Increase of flow
3. Pit gain
4. Flow without pumping
5. Circulating pressure decrease and/or spm increase
6. Increase in gas cutting at the shakers
7. Decrease in cuttings at shakers

While Tripping:

1. Hole not taking the proper fill on trip out of hole
2. Hole returns too much mud on trip in hole
3. Flow without pumping

While Out of the Hole:

1. Flow
2. Pit gain

### Well Control Procedures with Diverter

A TIW valve in the open position must be on the rig floor at all times.

If rotating head is installed:

1. Perform flow check.
2. If well is flowing, divert flow down flow line and through separator, before returning across shakers.
3. Swap to 10 ppg brine and circulate around. Notify superintendent.

## Coterra: Well Control Plan

4. If well becomes uncontrollable, close annular, which will open HCR to divert flow away from rig.

If rotating head is not installed:

1. Perform flow check.
2. If well is flowing uncontrollably, close annular, which will open HCR to divert flow away from rig.
3. Swap to 10 ppg brine and circulate around. Notify superintendent.
4. After 10 ppg is circulated around shut pumps off and perform flow check.

## Well Control Procedures

Coterra follows a hard shut-in procedure. Choke will be in the closed position.

### *General Well Control*

1. If in doubt, secure the well first, then inform your supervisor.
2. Never wait for approval to shut in the well.
3. Verify that the mud pump is off before you close the BOP.
4. Always check and verify the well is properly secured after shut in.
5. Always install TIW valve in the open position.
6. If TIW valve is installed and then closed, apply estimated DP shut-in pressure above valve before opening.
7. The weak link in the mud system and mud lines is the pressure relief valve or pop off valve on the mud pump.
8. Keep the TIW valve wrench in a designated location on the rig floor and in the open position.
9. Use a drill string float above the bit. Don't perforate or disable the float.
10. In the event wellbore pressure encroaches to the maximum rated pressure of the annular, primary pressure control will be switched to the higher rated components (i.e., switch from annular to pipe rams) – upper pipe rams will be closed, and the annular opened in order to not exceed maximum rated pressures.

### *Hard Shut-In*

1. Remote choke is closed.
2. Stop pumping and space out.
3. Check for flow.
4. To shut in, close annular or pipe ram if no annular is present.
5. Open the HCR valve.
6. Check systems, bump float. Record Initial Shut in Drill pipe pressure and Initial shut in casing pressure.

## Coterra: Well Control Plan

### *Flow Check when on Bottom*

1. Alert crew & stop rotating
2. Pick up and space out
3. Shut down pumps
4. Observe well for flow
5. Shut-in if flowing

### *Shutting in while Drilling*

1. After flow has been detected via flow check, kill pumps, shut in well and open HCR
2. Verify well is shut-in and flow has stopped
3. Notify supervisory personnel
4. Record data
5. Begin go forward planning

### *Flow Check while Tripping*

1. Alert crew & pick up / space out
2. Stop pipe movement. Set slips with tool joint accessible at rotary table
3. Install open TIW safety valve and close valve
4. Observe well for flow
5. Shut-in if flowing

### *Shutting in while Tripping*

1. Install open TIW safety valve and close valve
2. Shut-in the well
3. Verify well is shut-in and flow has stopped
4. Install IBOP
5. Notify supervisory personnel
6. Record data; SICP, shut-in time, kick depth, and pit gain
7. Begin go forward planning

### *Shutting in while Out of Hole*

1. Sound alarm
2. Shut-in well: close blind rams.
3. Verify well is shut-in and monitor pressures.
4. Notify supervisory personnel
5. Record data; SICP, shut-in time, kick depth, and pit gain
6. Begin go forward planning

### *Information to Record while Shut-In*

1. Shut in drill pipe pressure every 5 minutes

## Coterra: Well Control Plan

2. Shut in casing pressure every 5 minutes
3. Pit gain
4. Total volume in pit system
5. Mud weight in suction pit
6. Current depth
7. Total depth
8. Time the well is shut in

*H2S with Annular Diverter:*

1. Kill Pumps, close annular, which will open HCR, to divert flow away from rig.
2. Muster and take head count.
3. Call ASSI to check location for H2S. Call Coterra superintendent.
4. After ASSI has checked for H2S the path forward will be decided from Coterra superintendent.

*H2S with BOP's:*

1. Kill pumps
2. Shut in annular with HCR open and chokes closed.
3. Muster and take head count.
4. Call ASSI to check location for H2S. Call Coterra superintendent.
5. After ASSI has checked for H2S. discuss path forward with Coterra superintendent

*Procedure for Closing Blind Rams*

- Open HCR valve (visually check that the HCR valve is open – stem in the valve is open, stem out the valve is closed).
- Verify all circulating pumps are off (mud pumps, trip tank pump, etc.)
- Ensure that the hydraulic choke is in the closed position.
- Close the blind rams and place the “blind rams closed, bleed pressure and remove hole cover before opening” sign on the console.
- Monitor the shut in casing pressure gauge periodically while the blinds are closed to ensure that wellbore pressure isn't building. If pressure build up is observed, monitor the shut in casing pressure more frequently & document. Notify rig management and Coterra representative of the pressure build up.
- Ensure that the inner bushings are locked into the master bushings if applicable.
- Install hole cover.

*Procedure for Opening Blind Rams*

- Make sure choke manifold is aligned correctly.
- Open the hydraulic choke to bleed any trapped pressure that may be under the blind rams. (Even if the casing pressure gauge is reading zero).

## Coterra: Well Control Plan

- Confirm that no flow is discharging into the trip tank or possum bellies of the shale shaker (wherever the separator is discharging into).
- Remove hole cover.
- Confirm that the inner bushing are locked into the master bushings if applicable.
- Clear all personnel from the rig floor.
- Remove sign and open blind rams.
- Return the BOPE to its original operating alignment.

### *BOP Drills*

- Drilling crews should conduct BOP drills weekly from BOP nipple up to TD for reaction time to properly simulate securing the well. Record BOP drills on that day's report.
- Standard precautions such as checking the accumulator for proper working pressure, function testing rams, and recording slow pump rates are performed on a daily basis or on trips..
- All supervisory personnel onsite need to be properly trained and currently hold certification from an approved blowout prevention school. Any deviation from this needs to be discussed prior to spud.
- Drillers should always notify the tool pusher and the drilling foreman before performing a blowout drill.

### *Choke Manifold Freeze Prevention*

- When possible, blow out the choke & kill lines as well as the choke manifold with rig air to remove water based fluids.
- When clear water is being placed into the choke & kill line as well as the choke manifold, make sure that the water has a mixture of 30% methanol added.
- When applicable, choke & kill lines as well as choke manifold needs to be pumped through with the rig pump by the driller to ensure that the lines aren't plugged with settling barite or solids.



<b>Borehole:</b> Cascade 29 Federal 221U	<b>Well:</b> Cascade 29 Federal 221U	<b>Field:</b> NM Lea County (NAD 83)	<b>Structure:</b> Coterra - Cascade 29 Federal Pad Lot M
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<b>Gravity &amp; Magnetic Parameters</b>		<b>Surface Location</b>		<b>NAD83 New Mexico State Plane, Eastern Zone, US Feet</b>		<b>Miscellaneous</b>	
Model: HDGM 2025	Dip: 59.546°	Date: 07-Oct-2025	Lat: N 32 5 42.22	Northing: 399089.41ftUS	Grid Conv: 0.3889°	Slot: Cascade 29 Federal	TVD Ref: RKB (3424.400 ft above MSL)
MagDec: 6.064°	FS: 47055.627nT	Gravity FS: 998.429mgn (9.80665 Based)	Lon: W 103 36 5.28	Easting: 767975.78ftUS	Scale Fact: 0.99996792	Plan: Cascade 29 Federal 221U	Coterra Cascade 29 Federal 221U Rev1 kFc 07Oct25

Critical Point	MD	INCL	AZIM	Critical Points	VSEC	N(+)/S(-)	E(+)/W(-)	DLS
SHL [270°FSL, 430°FWL]	0.00	0.00	0.00	TVD	0.00	0.00	0.00	0.00
Rustler	890.10	0.00	95.00	890.10	0.00	0.00	0.00	0.00
A3 Top	1020.10	0.00	95.00	1020.10	0.00	0.00	0.00	0.00
A3 Base	1030.10	0.00	95.00	1030.10	0.00	0.00	0.00	0.00
Salado	1230.10	0.00	95.00	1230.10	0.00	0.00	0.00	0.00
Nudge, Build 2'/100ft	1400.00	0.00	95.00	1400.00	0.00	0.00	0.00	0.00
Hold	1750.00	7.00	95.00	1749.13	-1.86	-1.86	21.27	2.00
Lamar	4919.60	7.00	95.00	4895.10	-35.53	-35.53	406.08	0.00
Bell Canyon	5015.31	7.00	95.00	4990.10	-36.54	-36.54	417.70	0.00
Build 2'/100ft	5362.00	7.00	95.00	5334.21	-40.23	-40.23	459.79	0.00
Hold	5542.31	7.00	125.00	5513.73	-47.51	-47.51	479.80	2.00
Cherry Canyon	6370.36	7.00	125.00	6335.10	-105.39	-105.39	562.45	0.00
Drop 2'/100ft	7061.84	7.00	125.00	7021.22	-153.74	-153.74	631.49	0.00
Hold	7411.81	0.00	125.00	7370.52	-166.00	-166.00	649.00	0.00
Brushy Canyon	7541.39	0.00	125.00	7500.10	-166.00	-166.00	649.00	0.00
Basal Brushy Canyon	9051.39	0.00	125.00	9010.10	-166.00	-166.00	649.00	0.00
Bone Spring Lime	9076.39	0.00	125.00	9035.10	-166.00	-166.00	649.00	0.00
Leonard	9141.39	0.00	125.00	9100.10	-166.00	-166.00	649.00	0.00
Avalon	9361.39	0.00	125.00	9320.10	-166.00	-166.00	649.00	0.00
1st BS Sand	10051.39	0.00	125.00	10010.10	-166.00	-166.00	649.00	0.00
2nd BS Shale	10273.39	0.00	125.00	10232.10	-166.00	-166.00	649.00	0.00
KOP, Build 10'/100ft	10413.81	0.00	125.00	10372.52	-166.00	-166.00	649.00	0.00
2nd BS Sand	10631.59	21.78	10634.63	10585.10	-125.28	-125.28	645.17	10.00
Build 5'/100ft	11163.81	75.00	354.63	10925.95	256.80	256.80	609.26	10.00
Landing Point	11463.81	90.00	354.63	10965.00	552.08	552.08	581.50	5.00
Turn 2'/100ft	11623.81	90.00	354.63	10965.00	711.38	711.38	566.53	0.00
Hold	11973.82	90.00	359.63	10965.00	961.00	961.00	554.01	2.00
TP1, Turn 8.7'/100ft	15167.53	90.00	10965.00	14934.64	4294.64	4294.64	532.76	0.00
Enter - NPZ	15744.00	90.00	10965.00	14761.79	4761.79	4761.79	766.09	8.70
Hold	16202.01	90.00	89.63	10965.00	4917.45	4917.45	1187.06	8.70
TP2, Turn 8.7'/100ft	16204.01	90.00	89.63	10965.00	4917.47	4917.47	1189.06	0.00
Exit - NPZ	16660.00	90.00	129.30	10965.00	4768.53	4768.53	1610.45	8.70
Hold	17238.49	90.00	179.63	10965.00	4263.16	4263.16	1851.88	8.70
Hold	17238.74	90.00	179.63	10965.00	4262.92	4262.92	1851.85	2.00
Cascade 29 Federal 221U - BHL [100°FSL, 2310°FWL]	21660.12	90.00	179.63	10965.00	-158.36	-158.36	1880.80	0.00

**CONTROLLED**

Plan ref: Coterra Cascade 29 Federal 221U Rev1 kFc 07Oct25

Drawing ref: \_\_\_\_\_

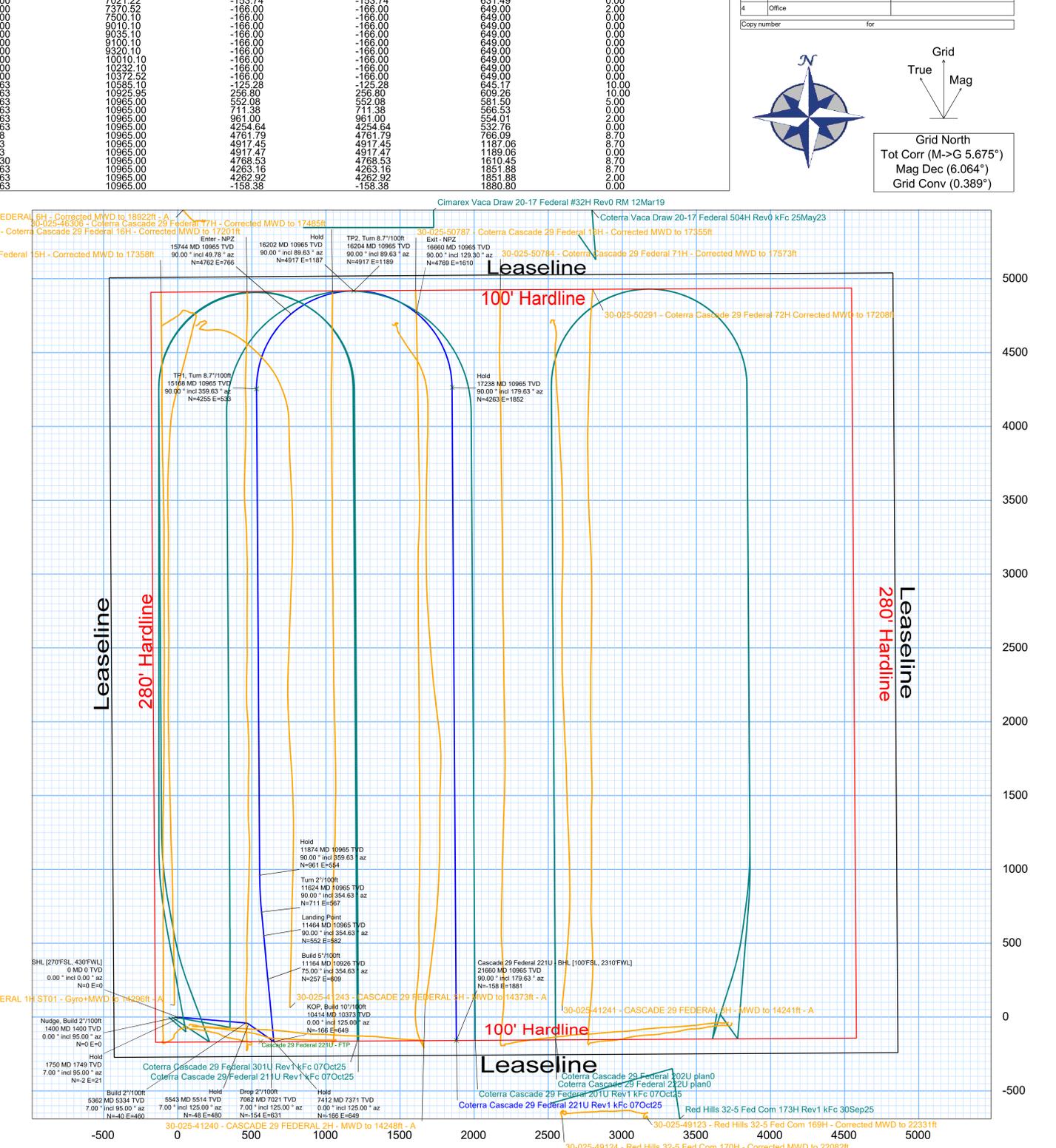
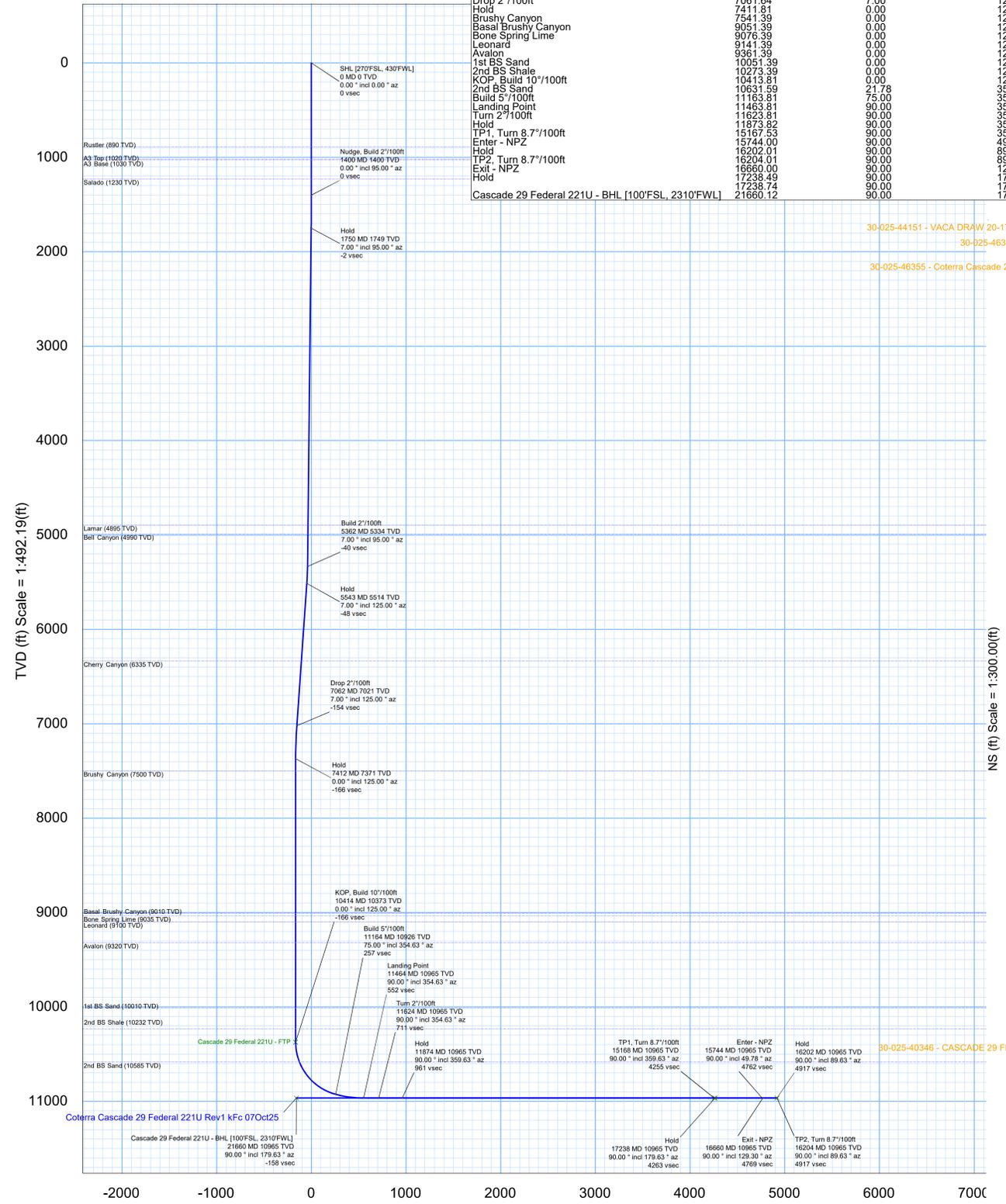
Copy number: \_\_\_\_\_ of 3

Date: 08-Oct-2025

1	Client	
2	Client	
3	Office	
4	Office	

Copy number \_\_\_\_\_ for \_\_\_\_\_

Grid North  
Tot Corr (M->G 5.675°)  
Mag Dec (6.064°)  
Grid Conv (0.389°)



Vertical Section (ft) Azim = 0.00° Scale = 1:492.19(ft) Origin = 0N/-S, 0E/-W

EW (ft) Scale = 1:300.00(ft)



### Coterra Cascade 29 Federal 221U Rev1 kFc 07Oct25 Proposal Geodetic

#### Report Def Plan

**Report Date:** October 08, 2025 - 05:12 PM ( UTC 0 )  
**Client:** COTERRA  
**Field:** NM Lea County (NAD 83)  
**Structure / Slot:** Coterra - Cascade 29 Federal Pad Lot M / Cascade 29 Federal 221U  
**Well:** Cascade 29 Federal 221U  
**Borehole:** Cascade 29 Federal 221U  
**UBHI / API#:** Unknown / Unknown  
**Survey Name:** Coterra Cascade 29 Federal 221U Rev1 kFc 07Oct25  
**Survey Date:** October 08, 2025  
**Tort / AHD / DDI / ERD Ratio:** 292.625' / 11607.223 ft / 6.827' / 1.059  
**Coordinate Reference System:** NAD83 New Mexico State Plane, Eastern Zone, US Feet  
**Location Lat / Long:** 32°5'42.22310"N , 103°36'5.27968"W  
**Location Grid N/E Y/X:** N 399089.410 ftUS , E 767975.780 ftUS  
**CRS Grid Convergence Angle:** 0.389°  
**Grid Scale Factor:** 0.99996792(Applied)  
**Version / Patch:** 2025.1.0.1

**Survey / DLS Computation:** Minimum Curvature / Lubinski  
**Vertical Section Azimuth:** 0.000 °(GRID North)  
**Vertical Section Origin:** 0.000 ft, 0.000 ft  
**TVD Reference Datum:** RKB  
**TVD Reference Elevation:** 3424.400 ft above MSL  
**Seabed / Ground Elevation:** 3401.400 ft above MSL  
**Magnetic Declination:** 6.064°  
**Total Gravity Field Strength:** 998.4292mgn (9.80665 Based)  
**Gravity Model:** GARM  
**Total Magnetic Field Strength:** 47055.627 nT  
**Magnetic Dip Angle:** 59.546°  
**Declination Date:** October 07, 2025  
**Magnetic Declination Model:** HDGM 2025  
**North Reference:** Grid North  
**Grid Convergence Used:** 0.389°  
**Total Corr Mag North->Grid North:** 5.675°  
**Local Coord Referenced To:** Well Head

Comments	MD (ft)	Incl (°)	Azim (°)	TVD (ft)	TVDSS (ft)	VSEC (ft)	NS (ft)	EW (ft)	Northing (ftUS)	Easting (ftUS)	Latitude (°)	Longitude (°)	DLS (°/100ft)	BR (°/100ft)	TR (°/100ft)
SHL [270°FSL, 430°FWL]	0.00	0.00	0.00	0.00	-3,424.40	0.00	0.00	0.00	399,089.41	767,975.78	32.09506197	-103.60146658			
	100.00	0.00	95.00	100.00	-3,324.40	0.00	0.00	0.00	399,089.41	767,975.78	32.09506197	-103.60146658	0.00	0.00	0.00
	200.00	0.00	95.00	200.00	-3,224.40	0.00	0.00	0.00	399,089.41	767,975.78	32.09506197	-103.60146658	0.00	0.00	0.00
	300.00	0.00	95.00	300.00	-3,124.40	0.00	0.00	0.00	399,089.41	767,975.78	32.09506197	-103.60146658	0.00	0.00	0.00
	400.00	0.00	95.00	400.00	-3,024.40	0.00	0.00	0.00	399,089.41	767,975.78	32.09506197	-103.60146658	0.00	0.00	0.00
	500.00	0.00	95.00	500.00	-2,924.40	0.00	0.00	0.00	399,089.41	767,975.78	32.09506197	-103.60146658	0.00	0.00	0.00
	600.00	0.00	95.00	600.00	-2,824.40	0.00	0.00	0.00	399,089.41	767,975.78	32.09506197	-103.60146658	0.00	0.00	0.00
	700.00	0.00	95.00	700.00	-2,724.40	0.00	0.00	0.00	399,089.41	767,975.78	32.09506197	-103.60146658	0.00	0.00	0.00
	800.00	0.00	95.00	800.00	-2,624.40	0.00	0.00	0.00	399,089.41	767,975.78	32.09506197	-103.60146658	0.00	0.00	0.00
Rustler	890.10	0.00	95.00	890.10	-2,534.30	0.00	0.00	0.00	399,089.41	767,975.78	32.09506197	-103.60146658	0.00	0.00	0.00
	900.00	0.00	95.00	900.00	-2,524.40	0.00	0.00	0.00	399,089.41	767,975.78	32.09506197	-103.60146658	0.00	0.00	0.00
	1,000.00	0.00	95.00	1,000.00	-2,424.40	0.00	0.00	0.00	399,089.41	767,975.78	32.09506197	-103.60146658	0.00	0.00	0.00
A3 Top	1,020.10	0.00	95.00	1,020.10	-2,404.30	0.00	0.00	0.00	399,089.41	767,975.78	32.09506197	-103.60146658	0.00	0.00	0.00
A3 Base	1,030.10	0.00	95.00	1,030.10	-2,394.30	0.00	0.00	0.00	399,089.41	767,975.78	32.09506197	-103.60146658	0.00	0.00	0.00
	1,100.00	0.00	95.00	1,100.00	-2,324.40	0.00	0.00	0.00	399,089.41	767,975.78	32.09506197	-103.60146658	0.00	0.00	0.00
	1,200.00	0.00	95.00	1,200.00	-2,224.40	0.00	0.00	0.00	399,089.41	767,975.78	32.09506197	-103.60146658	0.00	0.00	0.00
Salado	1,230.10	0.00	95.00	1,230.10	-2,194.30	0.00	0.00	0.00	399,089.41	767,975.78	32.09506197	-103.60146658	0.00	0.00	0.00
	1,300.00	0.00	95.00	1,300.00	-2,124.40	0.00	0.00	0.00	399,089.41	767,975.78	32.09506197	-103.60146658	0.00	0.00	0.00
Nudge, Build 2°/100ft	1,400.00	0.00	95.00	1,400.00	-2,024.40	0.00	0.00	0.00	399,089.41	767,975.78	32.09506197	-103.60146658	0.00	0.00	0.00
	1,500.00	2.00	95.00	1,499.98	-1,924.42	-0.15	-0.15	1.74	399,089.26	767,977.52	32.09506152	-103.60146097	2.00	2.00	0.00
	1,600.00	4.00	95.00	1,599.84	-1,824.56	-0.61	-0.61	6.95	399,088.80	767,982.73	32.09506017	-103.60144414	2.00	2.00	0.00
	1,700.00	6.00	95.00	1,699.45	-1,724.95	-1.37	-1.37	15.63	399,088.04	767,991.41	32.09505792	-103.60141613	2.00	2.00	0.00
Hold	1,750.00	7.00	95.00	1,749.13	-1,675.27	-1.86	-1.86	21.27	399,087.55	767,997.05	32.09505646	-103.60139793	2.00	2.00	0.00
	1,800.00	7.00	95.00	1,798.76	-1,625.64	-2.39	-2.39	27.34	399,087.02	768,003.12	32.09505489	-103.60137834	0.00	0.00	0.00
	1,900.00	7.00	95.00	1,898.01	-1,526.39	-3.45	-3.45	39.48	399,085.96	768,015.26	32.09505174	-103.60133917	0.00	0.00	0.00
	2,000.00	7.00	95.00	1,997.27	-1,427.13	-4.52	-4.52	51.62	399,084.89	768,027.40	32.09504859	-103.60129999	0.00	0.00	0.00
	2,100.00	7.00	95.00	2,096.52	-1,327.88	-5.58	-5.58	63.76	399,083.83	768,039.54	32.09504545	-103.60126081	0.00	0.00	0.00
	2,200.00	7.00	95.00	2,195.78	-1,228.62	-6.64	-6.64	75.90	399,082.77	768,051.68	32.09504230	-103.60122163	0.00	0.00	0.00
	2,300.00	7.00	95.00	2,295.03	-1,129.37	-7.70	-7.70	88.05	399,081.71	768,063.82	32.09503916	-103.60118246	0.00	0.00	0.00
	2,400.00	7.00	95.00	2,394.28	-1,030.12	-8.77	-8.77	100.19	399,080.65	768,075.96	32.09503601	-103.60114328	0.00	0.00	0.00
	2,500.00	7.00	95.00	2,493.54	-930.86	-9.83	-9.83	112.33	399,079.58	768,088.10	32.09503286	-103.60110410	0.00	0.00	0.00
	2,600.00	7.00	95.00	2,592.79	-831.61	-10.89	-10.89	124.47	399,078.52	768,100.24	32.09502972	-103.60106493	0.00	0.00	0.00
	2,700.00	7.00	95.00	2,692.05	-732.35	-11.95	-11.95	136.61	399,077.46	768,112.38	32.09502657	-103.60102575	0.00	0.00	0.00
	2,800.00	7.00	95.00	2,791.30	-633.10	-13.01	-13.01	148.75	399,076.40	768,124.52	32.09502343	-103.60098657	0.00	0.00	0.00
	2,900.00	7.00	95.00	2,890.56	-533.84	-14.08	-14.08	160.89	399,075.33	768,136.66	32.09502028	-103.60094739	0.00	0.00	0.00
	3,000.00	7.00	95.00	2,989.81	-434.59	-15.14	-15.14	173.03	399,074.27	768,148.80	32.09501713	-103.60090822	0.00	0.00	0.00
	3,100.00	7.00	95.00	3,089.07	-335.33	-16.20	-16.20	185.17	399,073.21	768,160.94	32.09501399	-103.60086904	0.00	0.00	0.00
	3,200.00	7.00	95.00	3,188.32	-236.08	-17.26	-17.26	197.31	399,072.15	768,173.08	32.09501084	-103.60082986	0.00	0.00	0.00
	3,300.00	7.00	95.00	3,287.58	-136.82	-18.32	-18.32	209.45	399,071.09	768,185.22	32.09500770	-103.60079068	0.00	0.00	0.00
	3,400.00	7.00	95.00	3,386.83	-37.57	-19.39	-19.39	221.59	399,070.02	768,197.36	32.09500455	-103.60075151	0.00	0.00	0.00
	3,500.00	7.00	95.00	3,486.09	61.69	-20.45	-20.45	233.73	399,068.96	768,209.50	32.09500140	-103.60071233	0.00	0.00	0.00
	3,600.00	7.00	95.00	3,585.34	160.94	-21.51	-21.51	245.87	399,067.90	768,221.64	32.09499826	-103.60067315	0.00	0.00	0.00
	3,700.00	7.00	95.00	3,684.59	260.19	-22.57	-22.57	258.01	399,066.84	768,233.78	32.09499511	-103.60063398	0.00	0.00	0.00
	3,800.00	7.00	95.00	3,783.85	359.45	-23.64	-23.64	270.15	399,065.78	768,245.92	32.09499196	-103.60059480	0.00	0.00	0.00
	3,900.00	7.00	95.00	3,883.10	458.70	-24.70	-24.70	282.29	399,064.71	768,258.06	32.09498882	-103.60055562	0.00	0.00	0.00
	4,000.00	7.00	95.00	3,982.36	557.96	-25.76	-25.76	294.44	399,063.65	768,270.20	32.09498567	-103.60051644	0.00	0.00	0.00
	4,100.00	7.00	95.00	4,081.61	657.21	-26.82	-26.82	306.58	399,062.59	768,282.34	32.09498253	-103.60047727	0.00	0.00	0.00
	4,200.00	7.00	95.00	4,180.87	756.47	-27.88	-27.88	318.72	399,061.53	768,294.49	32.09497938	-103.60043809	0.00	0.00	0.00
	4,300.00	7.00	95.00	4,280.12	855.72	-28.95	-28.95	330.86	399,060.46	768,306.63	32.09497623	-103.60039891	0.00	0.00	0.00
	4,400.00	7.00	95.00	4,379.38	954.98	-30.01	-30.01	343.00	399,059.40	768,318.77	32.09497309	-103.60035974	0.00	0.00	0.00
	4,500.00	7.00	95.00	4,478.63	1,054.23	-31.07	-31.07	355.14	399,058.34	768,330.91	32.09496994	-103.60032056	0.00	0.00	0.00
	4,600.00	7.00	95.00	4,577.89	1,153.49	-32.13	-32.13	367.28	399,057.28	768,343.05	32.09496679	-103.60028138	0.00	0.00	0.00
	4,700.00	7.00	95.00	4,677.14	1,252.74	-33.19	-33.19	379.42	399,056.22	768,355.19	32.09496365	-103.60024220	0.00	0.00	0.00
	4,800.00	7.00	95.00	4,776.40	1,352.00	-34.26	-34.26	391.56	399,055.15	768,367.33	32.09496050	-103.60020303	0.00	0.00	0.00
	4,900.00	7.00	95.00	4,875.65	1,451.25	-35.32	-35.32	403.70	399,054.09	768,379.47	32.09495735	-103.60016385	0.00	0.00	0.00
Lamar	4,919.60	7.00	95.00	4,895.10	1,470.70	-35.53	-35.53	406.08	399,053.88	768,381.85	32.09495674	-103.60015617	0.00	0.00	0.00
	5,000.00	7.00	95.00	4,974.90	1,550.50	-36.38	-36.38	415.84	399,053.03	768,391.61	32.09495421	-103.60012467	0.00	0.00	0.00
Bell Canyon	5,015.31	7.00	95.00	4,990.10	1,565.70	-36.54	-36.54	417.70	399,052.87	768,393.47	32.09495373	-103.60011867	0.00	0.00	0.00
	5,100.00	7.00	95.00	5,074.16	1,649.76	-37.44	-37.44	427.98	399,051.97	768,403.75	32.09495106	-103.60008549	0.00	0.00	0.00
	5,200.00	7.00	95.00	5,173.41	1,749.01	-38.51	-38.51	440.12	399,050.91	768,415.89	32.09494792	-103.			

Comments	MD (ft)	Incl (°)	Azim (°)	TVD (ft)	TVDSS (ft)	VSEC (ft)	NS (ft)	EW (ft)	Northing (ftUS)	Easting (ftUS)	Latitude (°)	Longitude (°)	DLS (°/100ft)	BR (°/100ft)	TR (°/100ft)
Avalon	9,300.00	0.00	125.00	9,258.71	5,834.31	-166.00	-166.00	649.00	398,923.42	768,624.76	32.09459357	-103.59937468	0.00	0.00	0.00
	9,361.39	0.00	125.00	9,320.10	5,895.70	-166.00	-166.00	649.00	398,923.42	768,624.76	32.09459357	-103.59937468	0.00	0.00	0.00
	9,400.00	0.00	125.00	9,358.71	5,934.31	-166.00	-166.00	649.00	398,923.42	768,624.76	32.09459357	-103.59937468	0.00	0.00	0.00
	9,500.00	0.00	125.00	9,458.71	6,034.31	-166.00	-166.00	649.00	398,923.42	768,624.76	32.09459357	-103.59937468	0.00	0.00	0.00
	9,600.00	0.00	125.00	9,558.71	6,134.31	-166.00	-166.00	649.00	398,923.42	768,624.76	32.09459357	-103.59937468	0.00	0.00	0.00
	9,700.00	0.00	125.00	9,658.71	6,234.31	-166.00	-166.00	649.00	398,923.42	768,624.76	32.09459357	-103.59937468	0.00	0.00	0.00
	9,800.00	0.00	125.00	9,758.71	6,334.31	-166.00	-166.00	649.00	398,923.42	768,624.76	32.09459357	-103.59937468	0.00	0.00	0.00
	9,900.00	0.00	125.00	9,858.71	6,434.31	-166.00	-166.00	649.00	398,923.42	768,624.76	32.09459357	-103.59937468	0.00	0.00	0.00
	10,000.00	0.00	125.00	9,958.71	6,534.31	-166.00	-166.00	649.00	398,923.42	768,624.76	32.09459357	-103.59937468	0.00	0.00	0.00
1st BS Sand	10,051.39	0.00	125.00	10,010.10	6,585.70	-166.00	-166.00	649.00	398,923.42	768,624.76	32.09459357	-103.59937468	0.00	0.00	0.00
	10,100.00	0.00	125.00	10,058.71	6,634.31	-166.00	-166.00	649.00	398,923.42	768,624.76	32.09459357	-103.59937468	0.00	0.00	0.00
	10,200.00	0.00	125.00	10,158.71	6,734.31	-166.00	-166.00	649.00	398,923.42	768,624.76	32.09459357	-103.59937468	0.00	0.00	0.00
2nd BS Shale	10,273.39	0.00	125.00	10,232.10	6,807.70	-166.00	-166.00	649.00	398,923.42	768,624.76	32.09459357	-103.59937468	0.00	0.00	0.00
	10,300.00	0.00	125.00	10,258.71	6,834.31	-166.00	-166.00	649.00	398,923.42	768,624.76	32.09459357	-103.59937468	0.00	0.00	0.00
	10,400.00	0.00	125.00	10,358.71	6,934.31	-166.00	-166.00	649.00	398,923.42	768,624.76	32.09459357	-103.59937468	0.00	0.00	0.00
KOP, Build 10"/100ft	10,413.81	0.00	125.00	10,372.52	6,948.12	-166.00	-166.00	649.00	398,923.42	768,624.76	32.09459357	-103.59937468	0.00	0.00	0.00
	10,500.00	8.62	354.63	10,458.39	7,033.99	-159.56	-159.56	648.39	398,929.86	768,624.15	32.09461129	-103.59937649	10.00	10.00	0.00
	10,600.00	18.62	354.63	10,555.45	7,131.05	-136.14	-136.14	646.19	398,953.27	768,621.95	32.09467569	-103.59938308	10.00	10.00	0.00
2nd BS Sand	10,631.59	21.78	354.63	10,585.10	7,160.70	-125.28	-125.28	645.17	398,964.13	768,620.93	32.09470556	-103.59938614	10.00	10.00	0.00
	10,700.00	28.62	354.63	10,646.96	7,222.56	-96.30	-96.30	642.45	398,993.11	768,618.21	32.09478527	-103.59939430	10.00	10.00	0.00
	10,800.00	38.62	354.63	10,730.13	7,305.73	-41.25	-41.25	637.27	399,048.16	768,613.03	32.09493669	-103.59940980	10.00	10.00	0.00
	10,900.00	48.62	354.63	10,802.43	7,378.03	27.35	27.35	630.83	399,116.76	768,606.58	32.09512536	-103.59942911	10.00	10.00	0.00
	11,000.00	58.62	354.63	10,861.67	7,437.27	107.40	107.40	623.30	399,196.81	768,599.06	32.09534554	-103.59945165	10.00	10.00	0.00
	11,100.00	68.62	354.63	10,906.05	7,481.65	196.48	196.48	614.93	399,285.89	768,590.69	32.09559054	-103.59947673	10.00	10.00	0.00
Build 5"/100ft	11,163.81	75.00	354.63	10,925.95	7,501.55	256.80	256.80	609.26	399,346.20	768,585.02	32.09575645	-103.59949371	10.00	10.00	0.00
	11,200.00	76.81	354.63	10,934.77	7,510.37	291.75	291.75	605.97	399,381.15	768,581.73	32.09585257	-103.59950355	5.00	5.00	0.00
	11,300.00	81.81	354.63	10,953.31	7,528.91	389.55	389.55	596.78	399,478.95	768,572.54	32.09612157	-103.59953109	5.00	5.00	0.00
	11,400.00	86.81	354.63	10,963.22	7,538.82	488.59	488.59	587.47	399,577.99	768,563.23	32.09639396	-103.59955897	5.00	5.00	0.00
Landing Point	11,463.81	90.00	354.63	10,965.00	7,540.60	552.08	552.08	581.50	399,641.48	768,557.26	32.09656859	-103.59957685	5.00	5.00	0.00
	11,500.00	90.00	354.63	10,965.00	7,540.60	588.12	588.12	578.11	399,677.51	768,553.87	32.09666771	-103.59958699	0.00	0.00	0.00
	11,600.00	90.00	354.63	10,965.00	7,540.60	687.68	687.68	568.75	399,777.07	768,544.51	32.09694154	-103.59961502	0.00	0.00	0.00
Turn 2"/100ft	11,623.81	90.00	354.63	10,965.00	7,540.60	711.38	711.38	566.53	399,800.77	768,542.29	32.09700673	-103.59962170	0.00	0.00	0.00
	11,700.00	90.00	356.15	10,965.00	7,540.60	787.33	787.33	560.41	399,876.71	768,536.17	32.09721559	-103.59963979	2.00	0.00	2.00
	11,800.00	90.00	358.15	10,965.00	7,540.60	887.20	887.20	555.44	399,976.58	768,531.20	32.09749019	-103.59965363	2.00	0.00	2.00
Hold	11,873.82	90.00	359.63	10,965.00	7,540.60	961.00	961.00	554.01	400,050.38	768,529.77	32.09769308	-103.59965662	2.00	0.00	2.00
	11,900.00	90.00	359.63	10,965.00	7,540.60	987.18	987.18	553.84	400,076.56	768,529.60	32.09776504	-103.59965659	0.00	0.00	0.00
	12,000.00	90.00	359.63	10,965.00	7,540.60	1,087.18	1,087.18	553.20	400,176.55	768,528.96	32.09803991	-103.59965647	0.00	0.00	0.00
	12,100.00	90.00	359.63	10,965.00	7,540.60	1,187.18	1,187.18	552.55	400,276.55	768,528.31	32.09831478	-103.59965636	0.00	0.00	0.00
	12,200.00	90.00	359.63	10,965.00	7,540.60	1,287.18	1,287.18	551.91	400,376.54	768,527.67	32.09858965	-103.59965625	0.00	0.00	0.00
	12,300.00	90.00	359.63	10,965.00	7,540.60	1,387.18	1,387.18	551.26	400,476.54	768,527.02	32.09886452	-103.59965613	0.00	0.00	0.00
	12,400.00	90.00	359.63	10,965.00	7,540.60	1,487.17	1,487.17	550.62	400,576.53	768,526.38	32.09913940	-103.59965602	0.00	0.00	0.00
	12,500.00	90.00	359.63	10,965.00	7,540.60	1,587.17	1,587.17	549.97	400,676.53	768,525.73	32.09941427	-103.59965591	0.00	0.00	0.00
	12,600.00	90.00	359.63	10,965.00	7,540.60	1,687.17	1,687.17	549.33	400,776.52	768,525.09	32.09968914	-103.59965579	0.00	0.00	0.00
	12,700.00	90.00	359.63	10,965.00	7,540.60	1,787.17	1,787.17	548.68	400,876.52	768,524.44	32.09996401	-103.59965568	0.00	0.00	0.00
	12,800.00	90.00	359.63	10,965.00	7,540.60	1,887.16	1,887.16	548.04	400,976.51	768,523.80	32.10023888	-103.59965557	0.00	0.00	0.00
	12,900.00	90.00	359.63	10,965.00	7,540.60	1,987.16	1,987.16	547.39	401,076.51	768,523.15	32.10051375	-103.59965545	0.00	0.00	0.00
	13,000.00	90.00	359.63	10,965.00	7,540.60	2,087.16	2,087.16	546.75	401,176.50	768,522.51	32.10078862	-103.59965534	0.00	0.00	0.00
	13,100.00	90.00	359.63	10,965.00	7,540.60	2,187.16	2,187.16	546.10	401,276.49	768,521.86	32.10106349	-103.59965522	0.00	0.00	0.00
	13,200.00	90.00	359.63	10,965.00	7,540.60	2,287.16	2,287.16	545.45	401,376.49	768,521.22	32.10133836	-103.59965511	0.00	0.00	0.00
	13,300.00	90.00	359.63	10,965.00	7,540.60	2,387.15	2,387.15	544.81	401,476.48	768,520.57	32.10161323	-103.59965500	0.00	0.00	0.00
	13,400.00	90.00	359.63	10,965.00	7,540.60	2,487.15	2,487.15	544.16	401,576.48	768,519.93	32.10188810	-103.59965488	0.00	0.00	0.00
	13,500.00	90.00	359.63	10,965.00	7,540.60	2,587.15	2,587.15	543.52	401,676.47	768,519.28	32.10216297	-103.59965477	0.00	0.00	0.00
	13,600.00	90.00	359.63	10,965.00	7,540.60	2,687.15	2,687.15	542.87	401,776.47	768,518.64	32.10243784	-103.59965466	0.00	0.00	0.00
	13,700.00	90.00	359.63	10,965.00	7,540.60	2,787.15	2,787.15	542.23	401,876.46	768,517.99	32.10271271	-103.59965454	0.00	0.00	0.00
	13,800.00	90.00	359.63	10,965.00	7,540.60	2,887.14	2,887.14	541.58	401,976.46	768,517.34	32.10298758	-103.59965443	0.00	0.00	0.00
	13,900.00	90.00	359.63	10,965.00	7,540.60	2,987.14	2,987.14	540.94	402,076.45	768,516.70	32.10326245	-103.59965431	0.00	0.00	0.00
	14,000.00	90.00	359.63	10,965.00	7,540.60	3,087.14	3,087.14	540.29	402,176.44	768,516.05	32.10353732	-103.59965420	0.00	0.00	0.00
	14,100.00	90.00	359.63	10,965.00	7,540.60	3,187.14	3,187.14	539.65	402,276.44	768,515.41	32.10381219	-103.59965409	0.00	0.00	0.00
	14,200.00	90.00	359.63	10,965.00	7,540.60	3,287.14	3,287.14	539.00	402,376.43	768,514.76	32.10408706	-103.59965397	0.00	0.00	0.00
	14,300.00	90.00	359.63	10,965.00	7,540.60	3,387.13	3,387.13	538.36	402,476.43	768,514.12	32.10436193	-103.59965386	0.00	0.00	0.00
	14,400.00	90.00	359.63	10,965.00	7,540.60	3,487.13	3,487.13	537.71	402,576.42	768,513.47	32.10463680	-103.59965375	0.00	0.00	0.00
	14,500.00	90.00	359.63	10,965.00	7,540.60	3,587.13	3,587.13	537.07							

Comments	MD (ft)	Incl (°)	Azim (°)	TVD (ft)	TVDSS (ft)	VSEC (ft)	NS (ft)	EW (ft)	Northing (ftUS)	Easting (ftUS)	Latitude (°)	Longitude (°)	DLS (°/100ft)	BR (°/100ft)	TR (°/100ft)
	21,300.00	90.00	179.63	10,965.00	7,540.60	201.74	201.74	1,878.45	399,291.14	769,854.16	32.09558129	-103.59539682	0.00	0.00	0.00
	21,400.00	90.00	179.63	10,965.00	7,540.60	101.74	101.74	1,879.10	399,191.15	769,854.82	32.09530642	-103.59539692	0.00	0.00	0.00
	21,500.00	90.00	179.63	10,965.00	7,540.60	1.74	1.74	1,879.76	399,091.15	769,855.47	32.09503155	-103.59539701	0.00	0.00	0.00
	21,600.00	90.00	179.63	10,965.00	7,540.60	-98.25	-98.25	1,880.41	398,991.16	769,856.13	32.09475668	-103.59539711	0.00	0.00	0.00
Cascade 29 Federal 221U - BHL	21,660.12	90.00	179.63	10,965.00	7,540.60	-158.38	-158.38	1,880.80	398,931.04	769,856.52	32.09459142	-103.59539717	0.00	0.00	0.00

Survey Type: Def Plan

Survey Error Model: ISCWSA Rev 4 \*\*\* 3-D 95 % 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 Code	Vendor / Tool	Borehole / Survey
	1	0.000	10,400.000	1/100.000	8.75	6.75	10.75 - 7.625 - 5	A001Mb_MWD		Cascade 29 Federal 221U / Coterra Cascade 29 F
	1	10,400.000	21,660.123	1/100.000	6.75	5		A008Mb_MWD+IFR1+MS		Cascade 29 Federal 221U / Coterra Cascade 29 F

EOU Geometry:

End MD (ft)	Hole Size (in)	Casing Size (in)	Name
1,000.200	17.500	13.375	
6,000.200	12.250	10.750	
10,000.200	8.750	7.625	
21,660.123	6.750	5.000	



# Coterra Cascade 29 Federal 211U Rev1 kFc 07Oct25 Anti-Collision Summary Report

**Analysis Date-24hr Time:** October 07, 2025 - 10:01 PM ( UTC 0 )  
**Client:** COTERRA  
**Field:** NM Lea County (NAD 83)  
**Structure:** Coterra - Cascade 29 Federal Pad Lot M  
**Slot:** Cascade 29 Federal 211U  
**Well:** Cascade 29 Federal 211U  
**Borehole:** Cascade 29 Federal 211U  
**Scan MD Range:** 0.00ft ~ 21295.20ft

**Analysis Method:** 3D Least Distance  
**Reference Trajectory:** Plan)  
**Depth Interval:** Every 10.00 Measured Depth (ft)  
**Rule Set:** NAL Procedure: D&M AntiCollision Standard S002  
**Min Pts:** Absolute minima indicated.  
**Engine Version:** 2025.1.0.1  
**Database \ Project:** Cascade 29 Federal 211U-COTERRA

**Trajectory Error Model:** ISCWSA Rev 4 \*\*\* 3-D 95 % Confidence 2.7955 sigma

### Offset Trajectories Summary

**Offset Selection Criteria**

Bounding box scan: minimum Ct-Ct separation <= 2000ft  
 Selection filters: 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

**14 out of 69 are selected**

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

Results highlighted in red: Sep-Factor <= 1.5

Result highlighted in boxed, red and bold: all local minima indicated.

Coterra Cascade 29 Federal 301U Rev1 kFc 07Oct25 (DefinitivePlan) - Fail Major

19.99	16.39	16.70	3.60	9.35	CtCt 15.00m	0.00	0.00	CtCt<=15.00m			Enter Alert
19.99	16.39	16.70	3.60	9.35	CtCt 15.00m	23.00	23.00				WRP
19.99	16.39	<b>9.19</b>	3.60	<b>1.97</b>	CtCt 15.00m	990.00	990.00				MinPts
<b>19.99</b>	<b>20.14</b>	<b>6.24</b>	<b>-0.15</b>	<b>1.49</b>	OSF 1.50	<b>1320.00</b>	<b>1320.00</b>		OSF<=1.50		Enter Minor
<b>19.99</b>	<b>29.53</b>	<b>-0.02</b>	<b>-9.54</b>	<b>1.00</b>	OSF 1.00	<b>1950.00</b>	<b>1950.00</b>			OSF<=1.00	Enter Major
<b>19.99</b>	<b>30.28</b>	<b>-0.52</b>	<b>-10.29</b>	<b>0.97</b>	OSF 1.00	<b>2000.00</b>	<b>2000.00</b>				MinPt-CtCt
<b>20.12</b>	<b>30.72</b>	<b>-0.68</b>	<b>-10.60</b>	<b>0.97</b>	OSF 1.00	<b>2030.00</b>	<b>2030.00</b>				MinPts
<b>20.35</b>	<b>31.01</b>	<b>-0.65</b>	<b>-10.65</b>	<b>0.97</b>	OSF 1.00	<b>2050.00</b>	<b>2050.00</b>				MinPt-ADP
<b>21.46</b>	<b>31.73</b>	<b>-0.03</b>	<b>-10.27</b>	<b>1.00</b>	OSF 1.00	<b>2100.00</b>	<b>2100.00</b>			OSF>1.00	Exit Major
<b>34.68</b>	<b>34.83</b>	<b>11.13</b>	<b>-0.16</b>	<b>1.49</b>	OSF 1.50	<b>2320.00</b>	<b>2320.00</b>		OSF>1.50		Exit Minor
<b>87.90</b>	70.57	40.53	17.33	1.87	OSF 5.00	4770.00	4763.89				MinPt-CtCt
88.06	71.02	<b>40.39</b>	17.04	1.87	OSF 5.00	4800.00	4793.80				MinPt-EOU
88.32	71.32	40.45	<b>17.01</b>	1.86	OSF 5.00	4820.00	4813.76				MinPt-ADP
88.50	71.46	40.53	17.03	<b>1.86</b>	OSF 5.00	4830.00	4823.74				MinPt-SF
173.99	149.66	<b>73.89</b>	24.33	1.75	OSF 5.00	10120.00	10113.63				MinPt-EOU
174.05	149.74	73.90	<b>24.31</b>	<b>1.75</b>	OSF 5.00	10130.00	10123.63				MinPts
504.82	154.31	401.62	350.52	4.93	OSF 5.00	10830.00	10654.62		OSF>5.00		Exit Alert
<b>715.00</b>	170.55	600.97	544.45	6.32		14820.00	10705.00				MinPt-CtCt
<b>715.00</b>	211.52	573.66	503.48	5.09		16250.00	10705.00				MinPt-CtCt
715.00	215.33	571.12	499.67	5.00	OSF 5.00	16380.00	10705.00		OSF<=5.00		Enter Alert
<b>715.05</b>	367.63	<b>469.63</b>	<b>347.41</b>	<b>2.92</b>	OSF 5.00	21295.20	10705.00				MinPts

30-025-46306 - Coterra Cascade 29 Federal 17H - Corrected MWD to 17485ft (DefinitiveSurvey) - Fail Minor

152.29	32.81	149.70	119.48	106.84		0.00	0.00				Surface
152.28	32.81	149.69	119.47	106.83		23.00	23.00				WRP
<b>149.36</b>	32.81	144.03	<b>116.55</b>	35.64		478.61	478.61				MinPts
150.61	32.81	<b>140.84</b>	117.80	17.40		940.00	940.00				MinPt-EOU
150.76	32.81	<b>140.63</b>	117.95	16.49		990.00	990.00				MinPt-EOU
152.18	32.81	<b>138.57</b>	119.38	11.97		1350.00	1350.00				MinPt-EOU
169.15	32.81	151.43	136.35	<b>10.05</b>		1780.00	1780.00				MinPt-SF
515.89	62.88	473.65	453.02	<b>12.48</b>		4280.00	4275.76				MinPt-SF
579.71	71.75	531.55	507.96	<b>12.27</b>		4860.00	4853.69				MinPt-SF
1005.23	117.74	<b>926.41</b>	887.49	12.90		7830.00	7823.63				MinPt-EOU
1007.62	121.12	<b>926.55</b>	886.50	12.57		8060.00	8053.63				MinPt-EOU
1009.73	124.21	<b>926.59</b>	885.52	12.28		8270.00	8263.63				MinPt-EOU
1011.87	127.45	<b>926.58</b>	884.42	11.99		8490.00	8483.63				MinPt-EOU
<b>1004.43</b>	150.94	903.48	853.49	10.04		10150.00	10143.61				MinPt-CtCt
1004.45	151.01	<b>903.45</b>	853.44	10.03		10160.00	10153.59				MinPt-EOU
1004.50	151.07	903.46	<b>853.43</b>	10.03		10170.00	10163.56				MinPt-ADP
1006.56	151.62	905.15	854.94	<b>10.01</b>		10250.00	10242.49				MinPt-SF
<b>2220.12</b>	138.24	2127.63	2081.88	24.25		12630.00	10705.00				MinPt-CtCt
<b>2219.24</b>	141.95	2124.28	2077.29	23.60		12870.00	10705.00				MinPt-CtCt
<b>2218.98</b>	146.59	2120.92	2072.39	22.85		13140.00	10705.00				MinPt-CtCt
<b>2219.20</b>	149.88	2118.96	2069.32	22.35		13320.00	10705.00				MinPt-CtCt
2219.69	151.30	<b>2118.50</b>	2068.39	22.14		13410.00	10705.00				MinPt-EOU
<b>2218.01</b>	161.99	2109.69	2056.02	20.65		13920.00	10705.00				MinPt-CtCt
2218.30	162.96	<b>2109.34</b>	2055.34	20.53		13980.00	10705.00				MinPt-EOU
2219.07	164.15	<b>2109.30</b>	2054.91	20.39		14040.00	10705.00				MinPt-EOU
<b>2219.92</b>	167.91	2107.65	2052.01	19.94		14190.00	10705.00				MinPt-CtCt
2220.53	169.71	<b>2107.06</b>	2050.82	19.73		14290.00	10705.00				MinPt-EOU
2221.31	170.62	2107.23	<b>2050.68</b>	19.63		14340.00	10705.00				MinPt-ADP
<b>2225.64</b>	179.68	2105.53	2045.97	18.67		14700.00	10705.00				MinPt-CtCt
<b>1902.69</b>	206.66	1764.59	1696.04	13.87		16440.00	10705.00				MinPt-CtCt
1902.76	207.00	<b>1764.43</b>	1695.76	13.85		16470.00	10705.00				MinPt-EOU
1902.82	207.09	1764.43	<b>1695.73</b>	<b>13.84</b>		16480.00	10705.00				MinPts
<b>1902.97</b>	207.15	1764.54	1695.82	13.84		16560.00	10705.00				MinPt-CtCt
1903.22	207.97	<b>1764.25</b>	1695.26	13.79		16630.00	10705.00				MinPt-EOU
1903.57	208.40	1764.30	<b>1695.16</b>	13.76		16670.00	10705.00				MinPt-ADP
<b>1893.46</b>	213.83	1750.58	1679.63	13.34		17530.00	10705.00				MinPt-CtCt
1893.46	213.96	<b>1750.49</b>	<b>1679.50</b>	<b>13.33</b>		17540.00	10705.00				MinPts
<b>1890.59</b>	215.56	1746.55	1675.02	13.21		17740.00	10705.00				MinPt-CtCt
1890.81	216.20	<b>1746.35</b>	1674.61	13.17		17790.00	10705.00				MinPt-EOU
1891.14	216.59	1746.42	<b>1674.56</b>	13.15		17820.00	10705.00				MinPt-ADP
1891.81	217.09	1746.75	1674.71	<b>13.12</b>		17860.00	10705.00				MinPt-SF
<b>1882.65</b>	232.98	1727.01	1649.67	12.17		19210.00	10705.00				MinPt-CtCt

Offset Trajectory	Separation			Allow Dev. (ft)	Sep. Fact.	Breaking Rule	Reference Trajectory		Risk Level			Alert
	Ct-Ct (ft)	MAS (ft)	EOU (ft)				MD (ft)	TVD (ft)	Alert	Minor	Major	
1882.95	234.13		1726.54	1648.82	12.11		19280.00	10705.00				MinPt-EOU
1883.39	234.64		1726.64	1648.75	12.08		19310.00	10705.00				MinPt-ADP
1885.54	235.97		1727.90	1649.58	12.03		19390.00	10705.00				MinPt-SF
1885.76	235.94		1728.14	1649.82	12.03		19410.00	10705.00				MinPts
540.25	164.24		430.43	376.01	4.95	OSF 5.00	20780.00	10705.00	OSF<=5.00			Enter Alert
184.90	185.77		60.73	-0.87	1.49	OSF 1.50	21210.00	10705.00		OSF<=1.50		Enter Minor
164.44	189.93		37.49	-25.49	1.30	OSF 1.50	21290.00	10705.00				MinPts
164.37	189.81		37.51	-25.43	1.30	OSF 1.50	21295.20	10705.00				MinPt-CtCt

Coterra Cascade 29 Federal 201U Rev1 kFc 07Oct25 (DefinitivePlan) - Warning Alert

39.99	32.39	36.71	7.60	19.35		CtCt 15.00m	0.00	0.00		CtCt<=15.00m		Enter Alert
39.99	32.39	36.71	7.60	19.35		CtCt 15.00m	23.00	23.00				WRP
39.99	32.39	29.19	7.60	4.07		CtCt 15.00m	990.00	990.00				MinPt-EOU
39.99	32.39	23.56	7.60	2.52		OSF 5.00	1590.00	1590.00				MinPts
40.15	32.39	23.32	7.75	2.47		OSF 5.00	1630.00	1630.00				MinPt-EOU
40.82	32.39	23.61	8.43	2.46		OSF 5.00	1670.00	1670.00				MinPt-SF
141.72	43.31	112.52	98.42	4.99		OSF 5.00	2900.00	2900.00	OSF>5.00			Exit Alert
165.19	50.28	131.35	114.92	5.00		OSF 5.00	3380.00	3379.19	OSF<=5.00			Enter Alert
199.04	71.82	150.83	127.22	4.19		OSF 5.00	4820.00	4813.76				MinPt-SF
299.62	145.15	202.53	154.47	3.11		OSF 5.00	9810.00	9803.63				MinPt-EOU
299.69	145.23	202.54	154.46	3.11		OSF 5.00	9820.00	9813.63				MinPt-ADP
300.17	145.56	202.80	154.61	3.10		OSF 5.00	9860.00	9853.63				MinPt-SF
435.61	132.42	347.01	303.19	4.96		OSF 5.00	10550.00	10504.08	OSF>5.00			Exit Alert
575.41	173.32	459.54	402.09	5.00		OSF 5.00	14010.00	10705.00	OSF<=5.00			Enter Alert
572.19	187.59	446.81	384.61	4.59		OSF 5.00	14660.00	10705.00				MinPt-CtCt
572.38	188.01	446.71	384.37	4.58		OSF 5.00	14680.00	10705.00				MinPt-EOU
572.56	188.22	446.75	384.34	4.58		OSF 5.00	14690.00	10705.00				MinPt-ADP
575.60	189.68	448.82	385.92	4.57		OSF 5.00	14760.00	10705.00				MinPt-SF
343.10	195.03	212.75	148.07	2.64		OSF 5.00	16140.00	10705.00				MinPts
343.17	195.07	212.80	148.10	2.64		OSF 5.00	16150.00	10705.00				MinPt-SF
572.26	174.70	455.47	397.56	4.93		OSF 5.00	16670.00	10705.00	OSF>5.00			Exit Alert
858.61	210.78	717.76	647.83	6.13			17040.00	10705.00				MinPts
858.44	243.37	695.86	615.07	5.31			21295.20	10705.00				MinPts

Coterra Cascade 29 Federal 221U Rev1 kFc 07Oct25 (DefinitivePlan) - Warning Alert

59.99	32.81	56.71	27.18	29.35			0.00	0.00				Surface
59.99	32.81	56.71	27.18	29.35			23.00	23.00				WRP
59.99	32.81	49.19	27.18	6.17			990.00	990.00				MinPt-EOU
59.99	32.81	47.13	27.18	4.97		OSF 5.00	1230.00	1230.00	OSF<=5.00			Enter Alert
59.99	32.81	45.54	27.18	4.38		OSF 5.00	1390.00	1390.00				MinPts
60.15	32.81	45.31	27.34	4.27		OSF 5.00	1430.00	1430.00				MinPt-EOU
62.45	32.81	46.75	29.64	4.18		OSF 5.00	1520.00	1520.00				MinPt-SF
86.87	32.81	68.57	54.07	4.96		OSF 5.00	1800.00	1800.00	OSF>5.00			Exit Alert
347.00	71.72	298.86	275.28	7.34			4810.00	4803.78				MinPt-SF
596.65	150.56	495.95	446.09	5.97			10130.00	10123.63				MinPts
597.27	150.85	496.38	446.43	5.97			10170.00	10163.56				MinPt-SF
691.48	145.56	594.11	545.92	7.16			11080.00	10701.55				MinPt-SF
671.68	202.67	536.23	469.00	4.99		OSF 5.00	15130.00	10705.00	OSF<=5.00			Enter Alert
259.92	197.49	127.93	62.42	1.98		OSF 5.00	16180.00	10705.00				MinPt-CtCt
260.30	198.59	127.58	61.71	1.97		OSF 5.00	16200.00	10705.00				MinPts
260.92	199.08	127.88	61.85	1.97		OSF 5.00	16210.00	10705.00				MinPt-SF
594.88	181.12	473.81	413.76	4.95		OSF 5.00	16750.00	10705.00	OSF>5.00			Exit Alert
708.80	216.72	563.99	492.08	4.92		OSF 5.00	16879.37	10705.00	OSF<=5.00			Enter Alert
709.02	219.25	562.53	489.77	4.87		OSF 5.00	19070.00	10705.00	OSF>5.00			Exit Alert
634.43	191.20	506.63	443.23	5.00		OSF 5.00	20870.00	10705.00	OSF<=5.00			Enter Alert
580.22	187.53	454.88	392.70	4.66		OSF 5.00	21210.00	10705.00				MinPts
580.29	187.58	454.91	392.71	4.66		OSF 5.00	21220.00	10705.00				MinPt-SF
585.09	187.86	459.52	397.23	4.69		OSF 5.00	21295.20	10705.00				TD

30-025-46355 - Coterra Cascade 29 Federal 15H - Corrected MWD to 17358ft (DefinitiveSurvey) - Warning Alert

116.60	32.81	114.01	83.80	81.61			0.00	0.00				MinPts
116.62	32.81	114.02	83.81	81.61			23.00	23.00				WRP
121.81	32.81	111.99	89.01	13.95			940.00	940.00				MinPt-EOU
122.25	32.81	112.06	89.44	13.26			990.00	990.00				MinPt-EOU
114.50	35.04	90.81	79.45	5.00		OSF 5.00	2360.00	2360.00	OSF<=5.00			Enter Alert
110.14	43.42	80.87	66.72	3.86		OSF 5.00	2920.00	2920.00				MinPt-CtCt
64.12	59.60	24.06	4.52	1.62		OSF 5.00	4027.08	4023.80				MinPt-CtCt
64.58	60.84	23.69	3.74	1.59		OSF 5.00	4110.00	4106.41				MinPt-EOU
65.33	61.74	23.84	3.59	1.59		OSF 5.00	4170.00	4166.18				MinPt-ADP
65.49	61.89	23.90	3.60	1.59		OSF 5.00	4180.00	4176.14				MinPt-SF
156.60	122.63	74.51	33.97	1.92		OSF 5.00	8260.00	8253.63				MinPt-EOU
159.14	126.67	74.36	32.46	1.89		OSF 5.00	8530.00	8523.63				MinPt-EOU
166.72	142.45	71.43	24.27	1.76		OSF 5.00	9590.00	9583.63				MinPt-EOU
167.35	143.19	71.56	24.16	1.75		OSF 5.00	9640.00	9633.63				MinPt-ADP
168.48	144.23	72.00	24.25	1.75		OSF 5.00	9710.00	9703.63				MinPt-SF
171.39	148.24	72.23	23.14	1.74		OSF 5.00	9980.00	9973.63				MinPt-EOU
172.76	150.00	72.43	22.76	1.73		OSF 5.00	10100.00	10093.63				MinPts
173.01	150.21	72.54	22.79	1.73		OSF 5.00	10118.89	10112.52				MinPt-SF
504.20	154.65	400.78	349.56	4.91		OSF 5.00	10880.00	10668.78	OSF>5.00			Exit Alert
1876.82	119.42	1796.89	1757.41	23.76			12330.00	10705.00				MinPt-EOU
1877.67	120.44	1797.05	1757.24	23.57			12400.00	10705.00				MinPt-ADP
1878.64	121.40	1797.38	1757.24	23.39			12460.00	10705.00				MinPt-ADP
1881.71	128.27	1795.86	1753.43	22.16			12830.00	10705.00				MinPt-EOU
1882.24	128.91	1795.97	1753.33	22.06			12870.00	10705.00				MinPt-ADP
1890.63	135.14	1800.21	1755.49	21.13			13180.00	10705.00				MinPt-EOU
1892.47	137.24	1800.65	1755.23	20.82			13280.00	10705.00				MinPt-ADP
1887.96	153.67	1785.18	1734.29	18.54			13970.00	10705.00				MinPt-CtCt
1888.13	158.83	1781.91	1729.30	17.93			14180.00	10705.00				MinPt-CtCt
1891.56	176.83	1773.35	1714.73	16.13			14880.00	10705.00				MinPt-CtCt
1892.76	179.97	1772.45	1712.79	15.85			15020.00	10705.00				MinPt-EOU
1894.13	181.65	1772.71	1712.49	15.72			15090.00	10705.00				MinPt-ADP
1947.14	195.92	1816.20	1751.22	14.98			15640.00	10705.00				MinPt-SF

Offset Trajectory	Separation			Allow Dev. (ft)	Sep. Fact.	Breaking Rule	Reference Trajectory		Risk Level			Alert
	Ct-Ct (ft)	MAS (ft)	EOU (ft)				MD (ft)	TVD (ft)	Alert	Minor	Major	
2293.97	210.21	2153.50	2083.76	16.44			16880.00	10705.00				MinPt-SF
2291.64	209.40	2151.71	2082.24	16.49			17220.00	10705.00				MinPt-SF
<b>2286.28</b>	210.51	2145.61	2075.77	16.36			17780.00	10705.00				MinPt-CtCt
2286.35	210.72	<b>2145.54</b>	2075.62	16.34			17810.00	10705.00				MinPt-EOU
2286.46	210.87	2145.55	<b>2075.59</b>	16.33			17830.00	10705.00				MinPt-ADP
2289.71	211.88	2148.13	2077.83	<b>16.28</b>			18020.00	10705.00				MinPt-SF
2293.59	213.22	2151.11	2080.36	<b>16.20</b>			18290.00	10705.00				MinPt-SF
2290.11	214.06	2147.08	2076.05	<b>16.12</b>			18520.00	10705.00				MinPt-SF
<b>2283.95</b>	216.96	2138.98	2066.99	15.86			18880.00	10705.00				MinPt-CtCt
2284.11	217.46	<b>2138.81</b>	2066.65	15.82			18930.00	10705.00				MinPt-EOU
<b>2282.91</b>	221.46	2134.94	2061.45	15.53			19360.00	10705.00				MinPt-CtCt
2283.08	222.24	<b>2134.59</b>	<b>2060.84</b>	<b>15.47</b>			19430.00	10705.00				MinPts
<b>1324.14</b>	189.39	<b>1197.56</b>	<b>1134.76</b>	<b>10.53</b>			21295.20	10705.00				MinPts

30-025-46305 - Coterra Cascade 29 Federal 16H - Corrected MWD to 17201ft (DefinitiveSurvey) - Warning Alert

134.15	32.81	131.56	101.34	94.01			0.00	0.00				Surface
134.14	32.81	131.55	101.33	94.00			23.00	23.00				WRP
<b>132.07</b>	32.81	127.25	<b>99.27</b>	35.87			422.67	422.67				MinPts
132.39	32.81	<b>126.94</b>	99.58	30.74			490.00	490.00				MinPt-EOU
175.87	33.91	152.93	141.96	<b>7.97</b>			2300.00	2300.00				MinPt-SF
289.69	62.09	<b>247.97</b>	227.60	7.09			4210.00	4206.02				MinPt-EOU
290.84	63.40	248.24	<b>227.43</b>	6.97			4300.00	4295.68				MinPt-ADP
292.90	66.57	<b>248.20</b>	226.34	6.68			4510.00	4504.88				MinPt-EOU
293.38	67.15	248.29	<b>226.24</b>	6.63			4550.00	4544.73				MinPt-ADP
305.92	73.66	256.49	232.26	<b>6.29</b>			4980.00	4973.63				MinPt-SF
409.95	94.62	346.54	315.33	<b>6.55</b>			6380.00	6373.63				MinPt-SF
441.43	133.18	352.31	308.25	5.00		OSF 5.00	9000.00	8993.63	OSF<=5.00			Enter Alert
<b>427.36</b>	149.49	<b>327.38</b>	277.88	4.31		OSF 5.00	10140.00	10133.62				MinPts
427.41	149.56	327.38	<b>277.85</b>	4.31		OSF 5.00	10150.00	10143.61				MinPt-ADP
427.72	149.70	327.60	278.02	<b>4.30</b>		OSF 5.00	10170.00	10163.56				MinPt-SF
502.58	152.19	400.80	350.40	4.98		OSF 5.00	10540.00	10496.72	OSF>5.00			Exit Alert
1731.57	120.97	<b>1650.59</b>	1610.60	21.63			12080.00	10705.00				MinPt-EOU
<b>1726.07</b>	129.85	1639.18	1596.22	20.08			12650.00	10705.00				MinPt-CtCt
1726.13	130.04	<b>1639.11</b>	1596.09	20.05			12670.00	10705.00				MinPt-EOU
1726.21	130.14	1639.12	<b>1596.07</b>	20.04			12680.00	10705.00				MinPt-ADP
<b>1732.98</b>	139.70	1639.52	1593.28	18.73			13170.00	10705.00				MinPt-CtCt
1734.27	143.54	<b>1638.24</b>	1590.72	18.24			13370.00	10705.00				MinPt-EOU
1734.99	144.40	1638.40	<b>1590.59</b>	18.14			13420.00	10705.00				MinPt-ADP
<b>1730.30</b>	162.54	1621.61	1567.75	16.06			14200.00	10705.00				MinPt-CtCt
1731.38	173.59	<b>1615.33</b>	1557.79	15.04			14650.00	10705.00				MinPt-EOU
1731.62	173.90	1615.36	<b>1557.72</b>	15.01			14670.00	10705.00				MinPt-ADP
<b>1633.52</b>	197.55	1501.49	1435.97	12.46			15780.00	10705.00				MinPt-CtCt
1633.72	198.14	<b>1501.30</b>	1435.58	12.42			15810.00	10705.00				MinPt-EOU
1633.91	198.33	1501.36	<b>1435.57</b>	12.41			15820.00	10705.00				MinPt-ADP
1656.00	203.01	1520.33	1452.99	<b>12.29</b>			16060.00	10705.00				MinPt-SF
<b>1784.68</b>	210.81	1643.81	1573.87	12.75			17050.00	10705.00				MinPt-CtCt
1784.77	211.09	<b>1643.72</b>	1573.69	12.74			17070.00	10705.00				MinPt-EOU
1784.88	211.23	1643.73	<b>1573.65</b>	12.73			17080.00	10705.00				MinPt-ADP
1785.02	211.36	1643.78	1573.66	<b>12.72</b>			17090.00	10705.00				MinPt-SF
1792.34	212.83	1650.13	1579.51	<b>12.68</b>			17480.00	10705.00				MinPt-SF
<b>1784.38</b>	215.15	1640.62	1569.23	12.49			18040.00	10705.00				MinPt-CtCt
1784.48	215.51	<b>1640.47</b>	1568.96	12.47			18070.00	10705.00				MinPt-EOU
1784.67	215.75	1640.50	<b>1568.91</b>	12.46			18090.00	10705.00				MinPt-ADP
1786.66	216.57	1641.95	1570.09	<b>12.42</b>			18210.00	10705.00				MinPt-SF
<b>1785.79</b>	217.57	1640.42	1568.22	12.36			18360.00	10705.00				MinPt-CtCt
<b>1785.54</b>	219.90	1638.61	1565.64	12.23			18620.00	10705.00				MinPt-CtCt
1785.83	221.08	<b>1638.11</b>	1564.75	12.16			18730.00	10705.00				MinPt-EOU
1786.22	221.53	1638.20	<b>1564.69</b>	12.14			18770.00	10705.00				MinPt-ADP
1787.69	222.56	1638.99	1565.13	<b>12.10</b>			18860.00	10705.00				MinPt-SF
<b>1776.59</b>	225.78	1625.74	1550.81	11.85			19170.00	10705.00				MinPt-CtCt
1776.78	226.39	<b>1625.53</b>	1550.39	11.82			19210.00	10705.00				MinPt-EOU
1776.91	226.54	1625.56	<b>1550.37</b>	11.81			19220.00	10705.00				MinPt-ADP
1778.02	227.27	1626.18	1550.75	<b>11.78</b>			19270.00	10705.00				MinPt-SF
<b>1776.69</b>	228.17	1624.25	1548.53	11.72			19360.00	10705.00				MinPt-CtCt
1776.81	228.63	<b>1624.06</b>	1548.18	11.70			19390.00	10705.00				MinPt-EOU
1777.05	228.93	1624.10	<b>1548.11</b>	11.69			19410.00	10705.00				MinPt-ADP
<b>1780.40</b>	232.10	1625.34	1548.30	11.55			19660.00	10705.00				MinPt-CtCt
1780.60	232.82	<b>1625.06</b>	<b>1547.78</b>	<b>11.51</b>			19710.00	10705.00				MinPts
<b>748.49</b>	189.06	<b>622.13</b>	<b>559.44</b>	<b>5.96</b>			21295.20	10705.00				MinPts

30-025-50787 - Coterra Cascade 29 Federal 18H - Corrected MWD to 17355ft (DefinitiveSurvey) - Warning Alert

170.86	32.81	168.26	138.05	119.96			0.00	0.00				Surface
170.85	32.81	168.26	138.04	119.95			23.00	23.00				WRP
<b>169.60</b>	32.81	164.97	<b>136.79</b>	48.76			401.79	401.79				MinPts
169.94	32.81	<b>164.61</b>	137.14	40.55			480.00	480.00				MinPt-EOU
175.62	32.81	<b>165.51</b>	142.81	19.26			990.00	990.00				MinPt-EOU
178.33	32.81	<b>164.03</b>	145.52	13.32			1420.00	1420.00				MinPt-EOU
198.37	32.81	180.95	165.56	<b>12.01</b>			1750.00	1750.00				MinPt-SF
543.55	46.38	512.31	497.18	<b>17.93</b>			3200.00	3199.84				MinPt-SF
624.61	53.58	588.57	571.04	<b>17.79</b>			3670.00	3668.08				MinPt-SF
675.38	57.98	636.41	617.41	<b>17.75</b>			3960.00	3956.98				MinPt-SF
722.88	62.42	680.94	660.46	<b>17.62</b>			4240.00	4235.91				MinPt-SF
1530.07	113.15	1454.30	1416.91	<b>20.45</b>			7520.00	7513.63				MinPt-SF
<b>1599.07</b>	127.12	1513.99	1471.95	19.00			8300.00	8293.63				MinPt-CtCt
<b>1602.99</b>	148.04	1503.97	1454.95	16.34			9770.00	9763.63				MinPt-CtCt
1603.69	150.04	<b>1503.34</b>	1453.65	16.13			9910.00	9903.63				MinPt-EOU
1605.56	153.00	<b>1503.23</b>	1452.55	15.83			10120.00	10113.63				MinPt-EOU
1605.62	153.08	1503.24	<b>1452.54</b>	15.83			10130.00	10123.63				MinPt-ADP
1611.99	154.19	1508.87	1457.80	<b>15.77</b>			10290.00	10281.09				MinPt-SF
<b>2398.87</b>	142.90	2303.28	2255.97	25.35			12100.00	10705.00				MinPt-CtCt
<b>2397.94</b>	145.90	2300.35	2252.04	24.81			12380.00	10705.00				MinPt-CtCt
<b>2394.53</b>	159.61	2287.80	2234.92	22.63			13330.00	10705.00				MinPt-CtCt

Offset Trajectory	Separation			Allow Dev. (ft)	Sep. Fact.	Breaking Rule	Reference Trajectory		Risk Level			Alert
	Ct-Ct (ft)	MAS (ft)	EOU (ft)				MD (ft)	TVD (ft)	Alert	Minor	Major	
2394.99	165.48	2284.34	2229.51	21.83			13660.00	10705.00				MinPt-CtCt
2395.55	167.11	2283.81	2228.43	21.62			13760.00	10705.00				MinPt-EOU
2395.80	167.42	2283.86	2228.38	21.58			13780.00	10705.00				MinPt-ADP
2400.65	173.45	2284.69	2227.20	20.87			14060.00	10705.00				MinPt-CtCt
1696.98	207.18	1558.54	1489.81	12.34			17090.00	10705.00				MinPt-CtCt
1689.99	210.72	1549.18	1479.27	12.08			17660.00	10705.00				MinPt-CtCt
1690.08	211.06	1549.04	1479.02	12.06			17690.00	10705.00				MinPt-EOU
1688.88	213.00	1546.55	1475.88	11.94			17920.00	10705.00				MinPt-CtCt
1689.11	213.62	1546.37	1475.49	11.91			17970.00	10705.00				MinPt-EOU
1689.20	213.73	1546.39	1475.48	11.90			17980.00	10705.00				MinPt-ADP
1686.95	220.98	1539.30	1465.97	11.50			18660.00	10705.00				MinPt-CtCt
1685.21	230.75	1531.05	1454.46	11.00			19370.00	10705.00				MinPt-CtCt
1683.80	235.91	1526.20	1447.90	10.74			19700.00	10705.00				MinPts
582.52	175.88	464.93	406.63	4.99		OSF 5.00	20950.00	10705.00	OSF<=5.00			Enter Alert
439.60	191.02	311.93	248.58	3.46		OSF 5.00	21295.20	10705.00				MinPts

30-025-40346 - CASCADE 29 FEDERAL 1H ST01 - Gyro+MWD to 14296ft - A (DefinitiveSurvey) - Warning Alert

4680.16	32.81	4676.77	4647.35	3307.40			0.00	0.00				MinPts
4680.19	32.81	4676.80	4647.38	3305.25			23.00	23.00				WRP
4743.98	40.24	4716.57	4703.74	184.87			2710.00	2710.00				MinPts
4858.07	66.18	4813.36	4791.88	113.07			4380.00	4375.38				MinPt-ADP
4875.50	73.44	4825.95	4802.06	101.99			4860.00	4853.69				MinPt-ADP
454.94	138.24	362.24	316.70	4.98		OSF 5.00	9430.00	9423.63	OSF<=5.00			Enter Alert
198.18	174.01	81.64	24.18	1.71		OSF 5.00	9839.50	9833.13				MinPt-CtCt
198.18	174.02	81.63	24.16	1.71		OSF 5.00	9840.00	9833.63				MinPts
472.50	143.62	376.24	328.88	4.97		OSF 5.00	10280.00	10271.51	OSF>5.00			Exit Alert
873.98	125.77	789.62	748.21	10.53			11420.00	10705.00				MinPt-ADP
873.68	125.41	789.56	748.27	10.56			11460.00	10705.00				MinPt-EOU
873.47	124.77	789.79	748.71	10.61			11530.00	10705.00				MinPt-CtCt
877.47	120.13	796.87	757.34	11.08			11940.00	10705.00				MinPt-CtCt
880.13	116.44	802.00	763.69	11.47			12410.00	10705.00				MinPts
880.13	116.41	802.01	763.71	11.47			12420.00	10705.00				MinPt-CtCt
887.69	115.35	810.28	772.34	11.68			12890.00	10705.00				MinPt-SF
872.74	116.47	794.58	756.26	11.37			13460.00	10705.00				MinPt-CtCt
872.79	116.65	794.51	756.14	11.35			13480.00	10705.00				MinPt-EOU
872.87	116.74	794.54	756.13	11.35			13490.00	10705.00				MinPt-ADP
876.17	117.75	797.15	758.41	11.29			13610.00	10705.00				MinPt-SF
880.00	119.21	800.01	760.79	11.20			13840.00	10705.00				MinPt-SF
877.45	121.84	795.71	755.61	10.92			14130.00	10705.00				MinPt-CtCt
876.93	124.01	793.75	752.92	10.72			14310.00	10705.00				MinPt-CtCt
877.04	126.49	792.20	750.55	10.51			14490.00	10705.00				MinPt-CtCt
877.23	126.99	792.06	750.24	10.47			14520.00	10705.00				MinPt-EOU
877.51	127.33	792.11	750.18	10.44			14540.00	10705.00				MinPt-ADP
902.50	134.33	812.44	768.17	10.18			14890.00	10705.00				MinPt-SF
1492.27	177.66	1373.32	1314.61	12.70			16879.37	10705.00				MinPt-SF
1495.63	178.18	1376.33	1317.45	12.69			16950.00	10705.00				MinPt-SF
1521.50	180.82	1400.44	1340.68	12.72			17200.00	10705.00				MinPt-ADP
1536.02	193.21	1406.71	1342.81	12.01			17970.00	10705.00				MinPt-CtCt
1535.32	198.22	1402.66	1337.09	11.70			18210.00	10705.00				MinPt-CtCt
1537.02	202.76	1401.34	1334.26	11.45			18420.00	10705.00				MinPt-EOU
1538.99	205.66	1401.37	1333.32	11.30			18540.00	10705.00				MinPt-EOU
1539.91	206.76	1401.56	1333.15	11.24			18590.00	10705.00				MinPt-ADP
1541.35	226.76	1389.67	1314.60	10.26			19290.00	10705.00				MinPt-CtCt
1521.66	259.77	1347.97	1261.89	8.83			20290.00	10705.00				MinPt-CtCt
1515.88	277.21	1330.57	1238.67	8.24			20770.00	10705.00				MinPt-CtCt
1516.28	287.62	1324.03	1228.66	7.94			21060.00	10705.00				MinPts
1517.68	288.15	1325.07	1229.53	7.93			21110.00	10705.00				MinPt-SF
1537.09	288.20	1344.44	1248.88	8.03			21295.20	10705.00				TD

30-025-41243 - CASCADE 29 FEDERAL 5H - MWD to 14373ft - A (DefinitiveSurvey) - Warning Alert

4684.70	32.81	4681.31	4651.89	3310.61			0.00	0.00				MinPts
4684.72	32.81	4681.33	4651.92	3308.46			23.00	23.00				WRP
4686.90	32.81	4680.17	4654.09	986.81			510.00	510.00				MinPt-EOU
4689.82	32.81	4678.31	4657.01	491.80			990.00	990.00				MinPt-EOU
4690.02	32.81	4678.49	4657.22	479.91			1020.00	1020.00				MinPt-EOU
4693.47	32.81	4678.79	4660.66	363.32			1340.00	1340.00				MinPt-EOU
4697.46	32.81	4678.99	4664.65	281.13			1720.00	1720.00				MinPt-EOU
4699.07	32.81	4678.23	4666.26	246.17			1940.00	1940.00				MinPts
4699.31	32.81	4677.95	4666.50	239.65			2010.00	2010.00				MinPt-EOU
4713.51	46.26	4682.09	4667.25	158.84			3000.00	3000.00				MinPt-CtCt
4713.68	46.80	4681.90	4666.88	156.92			3040.00	3040.00				MinPt-EOU
4713.92	47.08	4681.95	4666.84	155.98			3060.00	3060.00				MinPt-ADP
812.25	245.85	647.82	566.41	4.98		OSF 5.00	9490.00	9483.63	OSF<=5.00			Enter Alert
720.65	272.26	538.60	448.38	3.99		OSF 5.00	9864.73	9858.36				MinPt-CtCt
720.66	272.32	538.58	448.35	3.98		OSF 5.00	9870.00	9863.63				MinPts
720.81	272.39	538.68	448.42	3.98		OSF 5.00	9880.00	9873.63				MinPt-SF
825.34	250.51	657.82	574.83	4.96		OSF 5.00	10270.00	10261.88	OSF>5.00			Exit Alert
1214.51	168.55	1101.63	1045.96	10.89			12690.00	10705.00				MinPt-ADP
1214.28	168.26	1101.60	1046.02	10.91			12710.00	10705.00				MinPt-EOU
1214.13	167.69	1101.82	1046.44	10.95			12750.00	10705.00				MinPt-CtCt
1218.87	157.54	1113.33	1061.33	11.70			14470.00	10705.00				MinPt-CtCt
1218.89	157.63	1113.30	1061.26	11.70			14490.00	10705.00				MinPt-EOU
1218.97	157.72	1113.31	1061.25	11.69			14510.00	10705.00				MinPt-ADP
1220.38	158.29	1114.34	1062.09	11.66			14630.00	10705.00				MinPt-SF
1220.82	157.67	1115.19	1063.14	11.71			14740.00	10705.00				MinPt-CtCt
944.32	189.52	817.46	754.80	7.52			17700.00	10705.00				MinPt-CtCt
945.61	193.58	816.04	752.03	7.37			17890.00	10705.00				MinPt-EOU
953.45	202.30	818.07	751.15	7.11			18270.00	10705.00				MinPt-ADP
957.00	205.93	819.20	751.07	7.01			18420.00	10705.00				MinPt-ADP
962.81	212.57	820.59	750.25	6.83			18680.00	10705.00				MinPt-EOU
952.33	242.40	790.22	709.93	5.92			19740.00	10705.00				MinPt-CtCt
964.31	283.25	774.97	681.06	5.13			21070.00	10705.00				MinPts

Offset Trajectory	Separation			Allow Dev. (ft)	Sep. Fact.	Breaking Rule	Reference Trajectory		Risk Level			Alert
	Ct-Ct (ft)	MAS (ft)	EOU (ft)				MD (ft)	TVD (ft)	Alert	Minor	Major	
	964.59	283.39	775.16	681.20	5.13		21090.00	10705.00				MinPt-SF
	991.06	280.22	803.73	710.84	5.33		21295.20	10705.00				TD
30-025-41240 - CASCADE 29 FEDERAL 2H - MWD to 14248ft - A (DefinitiveSurvey) - Pass												
	4926.65	32.81	4923.25	4893.84	3481.66		0.00	0.00				Surface
	4926.64	32.81	4923.24	4893.83	3477.65		23.00	23.00				WRP
	4924.69	32.81	4913.45	4891.89	531.10		990.00	990.00				MinPt-EOU
	4923.06	32.81	4904.63	4890.25	295.22		1750.00	1750.00				MinPts
	4926.16	37.77	4900.39	4888.39	205.10		2520.00	2520.00				MinPt-EOU
	4927.38	39.27	4900.61	4888.11	196.95		2630.00	2630.00				MinPt-ADP
	4970.94	59.10	4930.95	4911.84	130.00		3980.00	3976.90				MinPt-ADP
	1624.28	266.90	1445.81	1357.38	9.18		9870.00	9863.63				MinPt-CtCt
	1624.30	266.95	1445.79	1357.35	9.17		9880.00	9873.63				MinPts
	1624.52	267.03	1445.97	1357.50	9.17		9900.00	9893.63				MinPt-SF
	1994.03	170.03	1880.17	1824.00	17.74		13650.00	10705.00				MinPt-ADP
	1992.59	168.87	1879.50	1823.72	17.85		13800.00	10705.00				MinPt-ADP
	1992.52	168.79	1879.48	1823.73	17.86		13820.00	10705.00				MinPt-EOU
	1992.51	168.72	1879.52	1823.79	17.86		13840.00	10705.00				MinPt-CtCt
	2001.82	167.98	1889.33	1833.85	18.03		14560.00	10705.00				MinPt-SF
	2001.72	168.15	1889.11	1833.58	18.01		14650.00	10705.00				MinPt-CtCt
	2001.78	168.37	1889.03	1833.41	17.98		14680.00	10705.00				MinPts
	2001.65	168.59	1888.74	1833.05	17.96		14730.00	10705.00				MinPt-CtCt
	2001.70	168.76	1888.68	1832.94	17.94		14750.00	10705.00				MinPt-EOU
	2001.76	168.85	1888.69	1832.92	17.93		14760.00	10705.00				MinPt-ADP
	2002.47	169.52	1888.95	1832.95	17.87		14850.00	10705.00				MinPts
	977.05	174.40	860.27	802.64	8.46		17050.00	10705.00				MinPt-CtCt
	972.63	191.95	844.16	780.68	7.65		17920.00	10705.00				MinPt-CtCt
	974.56	197.94	842.10	776.63	7.43		18180.00	10705.00				MinPt-EOU
	976.37	200.06	842.49	776.31	7.37		18270.00	10705.00				MinPt-ADP
	953.03	281.50	764.85	671.53	5.10		21054.69	10705.00				MinPt-CtCt
	953.15	281.93	764.69	671.22	5.09		21070.00	10705.00				MinPt-EOU
	953.36	282.18	764.73	671.19	5.09		21080.00	10705.00				MinPt-ADP
	954.63	282.81	765.59	671.83	5.08		21110.00	10705.00				MinPt-SF
	982.91	282.43	794.11	700.48	5.24		21295.20	10705.00				TD
30-025-50784 - Coterra Cascade 29 Federal 71H - Corrected MWD to 17573ft (DefinitiveSurvey) - Pass												
	3779.27	32.81	3776.68	3746.47	2671.06		0.00	0.00				Surface
	3779.26	32.81	3776.67	3746.45	2670.91		23.00	23.00				WRP
	3773.62	32.81	3766.54	3740.81	639.63		660.00	660.00				MinPts
	3774.36	32.81	3764.44	3741.55	431.64		970.00	970.00				MinPt-EOU
	2150.62	118.04	2071.59	2032.57	27.55		7670.00	7663.63				MinPt-CtCt
	2150.69	118.32	2071.48	2032.37	27.48		7700.00	7693.63				MinPt-EOU
	2150.84	118.50	2071.51	2032.34	27.44		7720.00	7713.63				MinPt-ADP
	2151.61	121.77	2070.10	2029.84	26.71		7940.00	7933.63				MinPt-CtCt
	2151.94	127.25	2066.78	2024.69	25.55		8330.00	8323.63				MinPt-CtCt
	2150.73	136.49	2059.41	2014.24	23.80		8980.00	8973.63				MinPt-CtCt
	2151.20	140.29	2057.35	2010.91	23.15		9250.00	9243.63				MinPt-CtCt
	2148.25	148.92	2048.64	1999.33	21.77		9850.00	9843.63				MinPt-CtCt
	2148.47	149.59	2048.41	1998.88	21.68		9910.00	9903.63				MinPt-EOU
	2148.65	149.80	2048.46	1998.85	21.65		9930.00	9923.63				MinPt-ADP
	2151.88	152.41	2049.95	1999.47	21.31		10120.00	10113.63				MinPt-ADP
	2163.03	154.30	2059.83	2008.72	21.15		10350.00	10337.41				MinPt-SF
	2998.93	178.96	2879.30	2819.97	25.27		12890.00	10705.00				MinPt-CtCt
	2996.85	187.61	2871.44	2809.23	24.08		13380.00	10705.00				MinPt-CtCt
	2994.45	209.94	2854.16	2784.51	21.49		14470.00	10705.00				MinPt-CtCt
	2149.53	224.74	1999.38	1924.79	14.40		16820.00	10705.00				MinPt-SF
	2147.78	224.63	1997.70	1923.15	14.40		16970.00	10705.00				MinPt-CtCt
	2147.78	224.64	1997.69	1923.14	14.40		16980.00	10705.00				MinPts
	2147.78	224.64	1997.69	1923.14	14.40		16990.00	10705.00				MinPt-SF
	2144.67	225.20	1994.20	1919.46	14.34		17680.00	10705.00				MinPt-CtCt
	2144.72	225.35	1994.15	1919.37	14.33		17710.00	10705.00				MinPt-EOU
	2144.79	225.45	1994.16	1919.34	14.33		17730.00	10705.00				MinPt-ADP
	2144.97	225.56	1994.26	1919.41	14.32		17760.00	10705.00				MinPt-SF
	2139.39	228.10	1987.00	1911.29	14.12		18400.00	10705.00				MinPt-CtCt
	2136.29	231.71	1981.49	1904.58	13.88		18930.00	10705.00				MinPt-CtCt
	2136.48	233.01	1980.81	1903.47	13.81		19090.00	10705.00				MinPt-CtCt
	2136.70	233.73	1980.55	1902.97	13.76		19160.00	10705.00				MinPt-EOU
	2138.45	236.24	1980.63	1902.21	13.63		19430.00	10705.00				MinPts
	987.19	190.94	859.56	796.25	7.79		21295.20	10705.00				MinPts
Coterra Cascade 29 Federal 222U plan0 (DefinitivePlan) - Pass												
	3719.16	32.81	3715.87	3686.35	1858.61		0.00	0.00				Surface
	3719.16	32.81	3715.87	3686.35	1858.61		23.00	23.00				WRP
	3719.16	32.81	3709.24	3686.35	430.62		900.00	900.00				MinPt-EOU
	3719.16	32.81	3708.46	3686.35	390.81		990.00	990.00				MinPt-EOU
	3719.16	32.81	3700.64	3686.35	212.07		1800.00	1800.00				MinPts
	3719.43	32.81	3700.37	3686.62	205.73		1870.00	1870.00				MinPt-EOU
	2604.03	192.67	2475.26	2411.36	20.37		10230.00	10222.93				MinPt-SF
	2562.75	187.71	2437.28	2375.04	20.58		10550.00	10504.08				MinPt-ADP
	2562.63	187.59	2437.25	2375.05	20.59		10560.00	10511.32				MinPt-EOU
	2562.58	187.47	2437.27	2375.11	20.60		10570.00	10518.44				MinPt-CtCt
	1355.10	213.68	1212.32	1141.42	9.55		16870.00	10705.00				MinPt-SF
	1355.03	213.63	1212.28	1141.40	9.55		16879.37	10705.00				MinPts
	1354.81	223.69	1205.35	1131.12	9.12		21295.20	10705.00				MinPts
Coterra Cascade 29 Federal 202U plan0 (DefinitivePlan) - Pass												
	3699.16	32.81	3695.87	3666.35	1848.61		0.00	0.00				Surface
	3699.15	32.81	3695.87	3666.35	1848.61		23.00	23.00				WRP
	3699.15	32.81	3689.23	3666.35	428.31		900.00	900.00				MinPt-EOU
	3699.15	32.81	3688.46	3666.35	388.71		990.00	990.00				MinPt-EOU
	2502.27	182.48	2380.28	2319.79	20.67		10170.00	10163.56				MinPt-SF
	2499.37	182.16	2377.61	2317.22	20.69		10260.00	10252.20				MinPts

Offset Trajectory	Separation			Allow Dev. (ft)	Sep. Fact.	Breaking Rule	Reference Trajectory		Risk Level			Alert
	Ct-Ct (ft)	MAS (ft)	EOU (ft)				MD (ft)	TVD (ft)	Alert	Minor	Major	
	1372.77	211.35	1231.54	1161.42	9.78		16860.00	10705.00				MinPt-SF
	<b>1372.45</b>	211.24	<b>1231.29</b>	<b>1161.20</b>	9.78		16879.41	10705.00				MinPts
	1372.76	226.11	<b>1221.69</b>	<b>1146.65</b>	<b>9.14</b>		21295.20	10705.00				MinPts
30-025-50291 - Coterra Cascade 29 Federal 72H Corrected MWD to 17208ft (DefinitiveSurvey) - Pass												
	3799.26	32.81	3796.67	3766.45	2685.19		0.00	0.00				Surface
	<b>3799.26</b>	32.81	<b>3796.67</b>	<b>3766.45</b>	<b>2685.19</b>		10.00	10.00				MinPts
	3799.26	32.81	3796.67	3766.46	2685.19		23.00	23.00				WRP
	<b>2717.10</b>	137.16	2625.34	2579.94	29.92		9140.00	9133.63				MinPt-CtCt
	2717.63	139.68	<b>2624.18</b>	2577.95	29.38		9330.00	9323.63				MinPt-EOU
	<b>2713.70</b>	151.54	2612.34	2562.15	27.03		10140.00	10133.62				MinPt-CtCt
	2713.71	151.61	<b>2612.30</b>	2562.10	27.01		10150.00	10143.61				MinPt-EOU
	2713.76	151.68	2612.31	<b>2562.08</b>	27.00		10160.00	10153.59				MinPt-ADP
	2728.25	153.28	2625.73	2574.97	<b>26.86</b>		10410.00	10391.26				MinPt-SF
	3348.07	167.12	<b>3236.33</b>	<b>3180.95</b>	30.22		12080.00	10705.00				MinPts
	<b>3340.74</b>	174.54	3224.05	3166.20	28.87		12620.00	10705.00				MinPt-CtCt
	3340.99	175.29	<b>3223.80</b>	3165.70	28.74		12690.00	10705.00				MinPt-EOU
	3341.27	175.61	3223.86	<b>3165.65</b>	28.69		12720.00	10705.00				MinPt-ADP
	<b>3342.36</b>	177.47	3223.72	3164.89	28.40		12820.00	10705.00				MinPt-CtCt
	3342.84	178.85	<b>3223.28</b>	3163.99	28.18		12930.00	10705.00				MinPt-EOU
	3343.38	179.50	3223.39	<b>3163.88</b>	28.09		12980.00	10705.00				MinPt-ADP
	3346.64	182.68	3224.53	<b>3163.96</b>	27.62		13180.00	10705.00				MinPt-ADP
	<b>3326.58</b>	207.40	3187.99	3119.18	24.17		14450.00	10705.00				MinPt-CtCt
	3326.81	208.08	<b>3187.76</b>	3118.73	24.09		14500.00	10705.00				MinPt-EOU
	3327.13	208.49	3187.81	<b>3118.65</b>	24.04		14530.00	10705.00				MinPt-ADP
	2282.55	221.59	2134.50	2060.96	<b>15.51</b>		16860.00	10705.00				MinPt-SF
	2272.20	220.60	<b>2124.81</b>	<b>2051.60</b>	<b>15.51</b>		17280.00	10705.00				MinPts
	<b>2272.19</b>	220.56	2124.82	2051.63	15.52		17300.00	10705.00				MinPt-CtCt
	2274.59	219.92	2127.65	2054.67	<b>15.58</b>		17660.00	10705.00				MinPt-SF
	<b>2286.31</b>	218.94	2140.02	2067.36	15.73		18210.00	10705.00				MinPt-CtCt
	2286.33	219.01	<b>2139.99</b>	<b>2067.32</b>	15.72		18230.00	10705.00				MinPts
	2286.35	219.01	2140.01	2067.34	<b>15.72</b>		18240.00	10705.00				MinPt-SF
	2286.40	218.99	<b>2140.08</b>	<b>2067.41</b>	15.72		18310.00	10705.00				MinPts
	<b>2273.42</b>	221.27	2125.58	2052.15	15.47		19110.00	10705.00				MinPt-CtCt
	2273.56	221.72	<b>2125.42</b>	2051.85	15.44		19190.00	10705.00				MinPt-EOU
	2273.67	221.85	2125.44	<b>2051.82</b>	15.43		19210.00	10705.00				MinPt-ADP
	2276.62	224.19	<b>2126.84</b>	<b>2052.44</b>	<b>15.29</b>		19640.00	10705.00				MinPts
	<b>1546.63</b>	190.05	<b>1419.60</b>	<b>1356.57</b>	<b>12.26</b>		21295.20	10705.00				MinPts

**1. Geological Formations**

TVD of target 10,965  
MD at TD 21,660

Pilot Hole TD N/A  
Deepest expected fresh water

Formation	Depth (TVD) from KB	Water/Mineral Bearing/Target Zone	Hazards
Rustler	890	N/A	
Top of Salt	1230	N/A	
Base of Salt/Lamar	4895	N/A	
Top Delaware Sands/Bell Canyon	4990	N/A	
Cherry Canyon	6335	N/A	
Brushy Canyon	7500	N/A	
Basal Brushy Canyon	9010	N/A	
Bone Spring Lime	9035	N/A	
Leonard	9100	N/A	
Avalon Shale	9320	N/A	
1st Bone Spring Sand	10010	Hydrocarbons	
2nd Bone Spring Shale	10232	Hydrocarbons	
2nd Bone Spring Sand	10585	Hydrocarbons	
2nd Bone Spring Sand - Target	10965	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
17 1/2	0	1050	1050	13-3/8"	48.00	J-55	ST&C	1.63	5.24	8.59
12 1/4	0	4915	4915	9-5/8"	40.00	J-55	BT&C	1.31	1.50	3.20
8 3/4	0	10414	10414							
8 3/4	10414	21660	10965	5-1/2"	20.00	P-110	BT&C	2.16	2.41	54.51
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

## Cimarex Energy Co., Cascade 29 Federal Com 221H

	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.	N
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 ft3/sack	H2O gal/sk	500# Comp. Strength (hours)	Slurry Description
Surface	509	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	931	12.90	1.88	9.65	12	Lead: 35:65 (Poz:C) + Salt + Bentonite
	287	14.80	1.34	6.32	9.5	Tail: Class C + LCM
Production	583	10.30	3.64	22.18		Lead: Tuned Light + LCM
	3290	14.20	1.30	5.86	14:30	Tail: 50:50 (Poz:H) + Salt + Bentonite + Fluid Loss + Dispersant + SMS

Casing String	TOC	% Excess
Surface		45
Intermediate		50
Production	4715	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.
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BOP installed and tested before drilling which hole?	Size	Min Required WP	Type		Tested To
<b>12 1/4</b>	<b>13 5/8</b>	<b>10M</b>	Annular	5M	50% of working pressure
			Blind Ram		
			Pipe Ram	X	10M
			Double Ram		
			Other		
<b>8 3/4</b>	<b>13 5/8</b>	<b>10M</b>	Annular	5M	50% of working pressure
			Blind Ram		
			Pipe Ram	X	10M
			Double Ram	X	
			Other		

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.
N	Are anchors required by manufacturer?

**5. Mud Program**

Depth	Type	Weight (ppg)	Viscosity	Water Loss
0' to 1050'	Fresh Water	7.80 - 8.30	28	N/C
1050' to 4915'	Brine Water	9.80 - 10.30	30-32	N/C
4915' to 21674'	OBM	8.50 - 9.00	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.

What will be used to monitor the loss or gain of fluid?	PVT/Pason/Visual Monitoring
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**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.
X	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	5131 psi
Abnormal Temperature	No

Hydrogen Sulfide (H2S) monitors will be installed prior to drilling out the surface shoe. If H2S 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	H2S is present
X	H2S plan is attached

**8. Other Facets of Operation**

**9. Wellhead**

1. The multi-bowl wellhead will be installed by a vendor representative. A copy of the installation instructions has been sent to the BLM field office.
2. A packoff will be installed after running and cementing the production casing. This packoff will be tested to 10K psi.

BOPE Additional Information & Testing

1. After running the first string of casing, a 10M BOP/BOPE system with 5M annular will be installed. BOPs will be tested according to Onshore Order #2. BOPE will be tested to full rated pressure (10K for all BOPE except the annular, which is tested to 5K). For the low test, the system will be tested to 250 psi.
2. All BOP equipment will be tested utilizing a conventional test plug.
3. A remote kill line is included in the BOPE system
4. All casing strings will be tested per Onshore Order #2, to 0.22 psi/ft or 1,500 psi, whichever is greater, not to exceed 70% of casing burst.
5. If well conditions dictate, conventional slips will be set and BOPE will be tested to appropriate pressures based on permitted pressure requirements.

Additional Well Control Notes

1. In the event wellbore pressure encroaches to the maximum rated pressure of the annular, primary pressure control will be switched to the higher rated components (i.e., switch from annular to pipe rams) – upper pipe rams will be closed, and the annular opened in order to not exceed maximum rated pressures.



# Coterra Cascade 29 Federal 221U Rev1 kFc 07Oct25 Anti-Collision Summary Report

**Analysis Date-24hr Time:** October 07, 2025 - 10:16 PM ( UTC 0 )  
**Client:** COTERRA  
**Field:** NM Lea County (NAD 83)  
**Structure:** Coterra - Cascade 29 Federal Pad Lot M  
**Slot:** Cascade 29 Federal 221U  
**Well:** Cascade 29 Federal 221U  
**Borehole:** Cascade 29 Federal 221U  
**Scan MD Range:** 0.00ft ~ 21660.12ft

**Analysis Method:** 3D Least Distance  
**Reference Trajectory:** Plan)  
**Depth Interval:** Every 10.00 Measured Depth (ft)  
**Rule Set:** NAL Procedure: D&M AntiCollision Standard S002  
**Min Pts:** Absolute minima indicated.  
**Engine Version:** 2025.1.0.1  
**Database \ Project:** Cascade 29 Federal 221U-COTERRA

**Trajectory Error Model:** ISCWSA Rev 4 \*\*\* 3-D 95 % Confidence 2.7955 sigma

### Offset Trajectories Summary

**Offset Selection Criteria**

Bounding box scan: minimum Ct-Ct separation <= 2000ft  
 Selection filters: 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

**21 out of 73 are selected**

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

Results highlighted in red: Sep-Factor <= 1.5

Result highlighted in boxed, red and bold: all local minima indicated.

Coterra Cascade 29 Federal 201U Rev1 kFc 07Oct25 (DefinitivePlan) - Fail Minor

20.00	16.40	16.71	3.60	9.36	CtCt 15.00m	0.00	0.00	CtCt<=15.00m	Enter Alert
20.00	16.40	16.71	3.60	9.36	CtCt 15.00m	23.00	23.00		WRP
20.00	16.40	<b>9.20</b>	3.60	<b>1.97</b>	CtCt 15.00m	990.00	990.00		MinPts
<b>20.00</b>	<b>20.14</b>	<b>6.25</b>	<b>-0.14</b>	<b>1.49</b>	OSF 1.50	<b>1320.00</b>	<b>1320.00</b>	OSF<=1.50	Enter Minor
<b>20.00</b>	<b>21.33</b>	<b>5.45</b>	<b>-1.33</b>	<b>1.40</b>	OSF 1.50	<b>1400.00</b>	<b>1400.00</b>		MinPt-CtCt
<b>20.16</b>	<b>21.77</b>	<b>5.32</b>	<b>-1.61</b>	<b>1.38</b>	OSF 1.50	<b>1430.00</b>	<b>1430.00</b>		MinPt-EOU
<b>20.28</b>	<b>21.91</b>	<b>5.34</b>	<b>-1.64</b>	<b>1.38</b>	OSF 1.50	<b>1440.00</b>	<b>1440.00</b>		MinPts
<b>22.94</b>	<b>23.23</b>	<b>7.12</b>	<b>-0.29</b>	<b>1.48</b>	OSF 1.50	<b>1530.00</b>	<b>1529.96</b>	OSF>1.50	Exit Minor
177.39	87.54	118.70	<b>89.85</b>	3.06	OSF 5.00	5820.00	5788.85		MinPt-ADP
180.50	90.20	120.04	90.30	<b>3.02</b>	OSF 5.00	6000.00	5967.51		MinPt-SF
310.21	145.16	<b>213.11</b>	<b>165.05</b>	3.22	OSF 5.00	9820.00	9778.71		MinPts
310.28	145.20	213.15	165.08	<b>3.22</b>	OSF 5.00	9830.00	9788.71		MinPt-SF
440.83	134.13	351.09	306.70	4.96	OSF 5.00	10413.81	10372.52	OSF>5.00	Exit Alert
<b>636.25</b>	99.39	569.66	536.86	9.68		11873.82	10965.00		MinPt-CtCt
605.46	182.63	483.38	422.83	4.99	OSF 5.00	15720.00	10965.00	OSF<=5.00	Enter Alert
<b>603.00</b>	197.32	471.13	405.68	4.60	OSF 5.00	16180.00	10965.00		MinPt-CtCt
<b>603.00</b>	207.64	464.24	395.36	4.37	OSF 5.00	16530.00	10965.00		MinPt-CtCt
606.35	222.20	<b>457.89</b>	384.15	4.10	OSF 5.00	17030.00	10965.00		MinPt-EOU
609.11	225.49	458.46	<b>383.63</b>	4.06	OSF 5.00	17140.00	10965.00		MinPt-ADP
<b>616.22</b>	363.20	<b>373.76</b>	<b>253.02</b>	<b>2.55</b>	OSF 5.00	21660.12	10965.00		MinPts

Coterra Cascade 29 Federal 301U Rev1 kFc 07Oct25 (DefinitivePlan) - Warning Alert

40.00	32.40	36.72	7.60	19.35	CtCt 15.00m	0.00	0.00	CtCt<=15.00m	Enter Alert
40.00	32.40	36.72	7.60	19.35	CtCt 15.00m	23.00	23.00		WRP
40.00	32.40	<b>29.20</b>	7.60	4.07	CtCt 15.00m	990.00	990.00		MinPt-EOU
<b>40.00</b>	32.40	25.46	<b>7.60</b>	2.88	OSF 5.00	1400.00	1400.00		MinPts
40.16	32.40	<b>25.32</b>	7.76	2.83	OSF 5.00	1430.00	1430.00		MinPt-EOU
41.11	32.40	25.79	8.71	<b>2.80</b>	OSF 5.00	1480.00	1479.99		MinPt-SF
102.46	32.40	81.10	70.06	4.98	OSF 5.00	2100.00	2096.52	OSF>5.00	Exit Alert
325.48	91.14	264.40	234.35	<b>5.40</b>		6020.00	5987.36		MinPt-SF
433.01	130.68	345.56	302.33	5.00	OSF 5.00	8790.00	8748.71	OSF<=5.00	Enter Alert
<b>431.36</b>	155.99	327.04	275.37	4.16	OSF 5.00	10620.00	10574.29		MinPt-CtCt
431.40	156.18	<b>326.95</b>	275.22	4.16	OSF 5.00	10640.00	10592.88		MinPt-EOU
431.48	156.28	326.96	<b>275.20</b>	4.16	OSF 5.00	10650.00	10602.08		MinPt-ADP
432.23	156.67	327.45	275.56	<b>4.15</b>	OSF 5.00	10690.00	10638.14		MinPt-SF
527.19	159.97	420.21	367.21	4.96	OSF 5.00	11080.00	10898.43	OSF>5.00	Exit Alert
794.67	208.89	<b>655.08</b>	<b>585.78</b>	<b>5.73</b>		11990.00	10965.00		MinPts
794.47	211.72	<b>652.99</b>	<b>582.75</b>	<b>5.65</b>		15170.00	10965.00		MinPts
622.90	189.31	496.36	433.59	4.95	OSF 5.00	15400.00	10965.00	OSF<=5.00	Enter Alert
<b>455.11</b>	201.75	<b>320.28</b>	<b>253.36</b>	<b>3.39</b>	OSF 5.00	15850.00	10965.00		MinPts
700.59	211.11	559.52	489.48	4.99	OSF 5.00	16640.00	10965.00	OSF>5.00	Exit Alert
<b>808.24</b>	222.32	659.70	585.92	5.47		17238.74	10965.00		MinPt-CtCt
808.27	243.22	645.80	565.05	5.00	OSF 5.00	19660.00	10965.00	OSF<=5.00	Enter Alert
808.30	276.53	<b>623.62</b>	<b>531.77</b>	<b>4.39</b>	OSF 5.00	21660.00	10965.00		MinPts
808.30	276.53	623.62	531.77	4.39	OSF 5.00	21660.12	10965.00		TD

Coterra Cascade 29 Federal 211U Rev1 kFc 07Oct25 (DefinitivePlan) - Warning Alert

59.99	32.81	56.71	27.18	29.35		0.00	0.00		Surface
59.99	32.81	56.71	27.18	29.35		23.00	23.00		WRP
59.99	32.81	<b>49.19</b>	27.18	6.17		990.00	990.00		MinPt-EOU
59.99	32.81	47.13	27.18	4.97	OSF 5.00	1230.00	1230.00	OSF<=5.00	Enter Alert
<b>59.99</b>	32.81	45.45	<b>27.18</b>	4.35	OSF 5.00	1400.00	1400.00		MinPts
60.15	32.81	<b>45.31</b>	27.34	4.27	OSF 5.00	1430.00	1430.00		MinPt-EOU
62.50	32.81	46.78	29.69	<b>4.17</b>	OSF 5.00	1520.00	1519.96		MinPt-SF
88.57	32.81	70.04	55.77	4.99	OSF 5.00	1810.00	1808.68	OSF>5.00	Exit Alert
347.05	71.87	298.80	275.18	<b>7.32</b>		4800.00	4776.40		MinPt-SF
596.62	150.51	<b>495.95</b>	446.11	5.98		10160.00	10118.71		MinPt-EOU
596.67	150.56	495.96	<b>446.10</b>	5.97		10170.00	10128.71		MinPt-ADP
597.03	150.71	496.22	446.31	<b>5.97</b>		10200.00	10158.71		MinPt-SF
619.66	200.71	485.53	418.95	4.65	OSF 5.00	10510.00	10468.26	OSF<=5.00	Enter Alert
595.90	194.00	466.24	401.90	<b>4.62</b>	OSF 5.00	10590.00	10545.95		MinPt-SF
580.31	187.73	<b>454.83</b>	<b>392.58</b>	4.65	OSF 5.00	10720.00	10664.35		MinPts
<b>580.22</b>	187.54	454.86	392.68	4.66	OSF 5.00	10730.00	10672.91		MinPt-CtCt
648.78	195.60	518.05	453.18	4.99	OSF 5.00	11170.00	10927.54	OSF>5.00	Exit Alert
701.58	194.34	<b>571.70</b>	<b>507.25</b>	<b>5.44</b>		11660.00	10965.00		MinPts

Offset Trajectory	Separation			Allow Dev. (ft)	Sep. Fact.	Breaking Rule	Reference Trajectory		Risk Level			Alert
	Ct-Ct (ft)	MAS (ft)	EOU (ft)				MD (ft)	TVD (ft)	Alert	Minor	Major	
709.06	209.88	568.82	499.19	5.08			15160.00	10965.00				MinPts
538.18	163.30	428.99	374.88	4.96	OSF 5.00		15350.00	10965.00	OSF<=5.00			Enter Alert
259.91	197.57	127.86	62.34	1.98	OSF 5.00		15850.00	10965.00				MinPt-CtCt
259.99	198.09	127.60	61.89	1.97	OSF 5.00		15860.00	10965.00				MinPt-EOU
260.35	198.56	127.65	61.79	1.97	OSF 5.00		15870.00	10965.00				MinPts
708.80	216.71	564.00	492.09	4.92	OSF 5.00		17240.00	10965.00				MinPts
708.80	216.70	564.00	492.10	4.92	OSF 5.00		17250.00	10965.00				MinPt-CtCt
709.25	243.66	546.48	465.59	4.38	OSF 5.00		21660.12	10965.00				MinPts

30-025-46305 - Coterra Cascade 29 Federal 16H - Corrected MWD to 17201ft (DefinitiveSurvey) - Warning Alert

84.84	32.81	82.25	52.03	59.15			0.00	0.00				Surface
84.84	32.81	82.24	52.03	59.14			23.00	23.00				WRP
83.70	32.81	79.08	50.89	23.98			400.00	400.00				MinPts
83.92	32.81	78.84	51.11	21.23			450.00	450.00				MinPt-EOU
86.11	32.81	67.92	53.30	4.95	OSF 5.00		1820.00	1818.61	OSF<=5.00			Enter Alert
71.76	38.52	45.75	33.24	2.83	OSF 5.00		2589.16	2582.03				MinPt-CtCt
73.69	43.87	44.11	29.82	2.54	OSF 5.00		2930.00	2920.33				MinPt-CtCt
73.88	44.49	43.89	29.39	2.51	OSF 5.00		2970.00	2960.04				MinPt-EOU
74.12	44.80	43.93	29.32	2.50	OSF 5.00		2990.00	2979.89				MinPt-ADP
78.49	50.19	44.70	28.30	2.36	OSF 5.00		3330.00	3317.35				MinPt-EOU
78.87	50.66	44.76	28.20	2.35	OSF 5.00		3360.00	3347.13				MinPt-ADP
86.19	59.12	46.45	27.07	2.20	OSF 5.00		3890.00	3873.18				MinPt-EOU
86.46	59.44	46.51	27.03	2.19	OSF 5.00		3910.00	3893.03				MinPt-ADP
86.65	59.59	46.60	27.06	2.19	OSF 5.00		3920.00	3902.96				MinPt-SF
106.06	68.02	60.38	38.04	2.35	OSF 5.00		4450.00	4429.00				MinPt-SF
122.12	77.45	70.15	44.66	2.38	OSF 5.00		5050.00	5024.53				MinPt-SF
128.53	81.31	73.99	47.21	2.38	OSF 5.00		5300.00	5272.67				MinPt-SF
117.90	97.98	52.25	19.92	1.81	OSF 5.00		6440.00	6404.22				MinPt-CtCt
118.63	100.08	51.58	18.55	1.78	OSF 5.00		6590.00	6553.10				MinPt-EOU
119.88	101.63	51.81	18.26	1.77	OSF 5.00		6700.00	6662.28				MinPt-ADP
120.18	101.90	51.92	18.28	1.77	OSF 5.00		6720.00	6682.13				MinPt-SF
148.68	115.29	71.49	33.38	1.94	OSF 5.00		7680.00	7638.71				MinPt-CtCt
151.60	122.45	69.64	29.15	1.86	OSF 5.00		8180.00	8138.71				MinPt-EOU
155.68	127.42	70.40	28.26	1.84	OSF 5.00		8540.00	8498.71				MinPt-EOU
159.06	131.71	70.92	27.34	1.81	OSF 5.00		8850.00	8808.71				MinPt-ADP
161.06	133.69	71.61	27.38	1.81	OSF 5.00		8990.00	8948.71				MinPt-ADP
167.20	142.02	72.19	25.18	1.77	OSF 5.00		9580.00	9538.71				MinPt-EOU
168.49	143.54	72.47	24.95	1.76	OSF 5.00		9690.00	9648.71				MinPt-ADP
169.56	144.51	72.89	25.04	1.76	OSF 5.00		9760.00	9718.71				MinPt-SF
174.20	148.38	74.95	25.82	1.76	OSF 5.00		10030.00	9988.71				MinPt-SF
180.55	153.78	77.70	26.77	1.76	OSF 5.00		10400.00	10358.71				MinPt-ADP
180.73	153.95	77.77	26.78	1.76	OSF 5.00		10413.81	10372.52				MinPts
181.46	154.70	78.00	26.76	1.76	OSF 5.00		10490.00	10448.49				MinPt-ADP
181.58	154.81	78.04	26.77	1.76	OSF 5.00		10500.00	10458.39				MinPt-SF
531.63	161.09	423.91	370.54	4.97	OSF 5.00		11220.00	10939.16	OSF>5.00			Exit Alert
1360.59	112.62	1285.18	1247.97	18.27			12080.00	10965.00				MinPt-EOU
1360.63	112.68	1285.18	1247.95	18.26			12090.00	10965.00				MinPt-ADP
1364.57	116.56	1286.53	1248.01	17.70			12360.00	10965.00				MinPt-CtCt
1364.78	117.27	1286.27	1247.51	17.59			12420.00	10965.00				MinPt-EOU
1362.95	121.43	1281.67	1241.52	16.96			12680.00	10965.00				MinPt-CtCt
1363.03	121.64	1281.61	1241.39	16.93			12700.00	10965.00				MinPt-EOU
1363.22	121.86	1281.65	1241.36	16.90			12720.00	10965.00				MinPt-ADP
1361.48	125.52	1277.47	1235.96	16.39			12910.00	10965.00				MinPt-CtCt
1361.69	126.08	1277.31	1235.61	16.32			12950.00	10965.00				MinPt-EOU
1361.93	126.37	1277.35	1235.56	16.28			12970.00	10965.00				MinPt-ADP
1369.47	133.97	1279.83	1235.50	15.44			13340.00	10965.00				MinPt-CtCt
1369.63	137.30	1277.77	1232.34	15.06			13500.00	10965.00				MinPt-CtCt
1370.83	141.98	1275.85	1228.85	14.57			13730.00	10965.00				MinPt-EOU
1371.42	142.69	1275.96	1228.72	14.51			13770.00	10965.00				MinPt-ADP
1370.07	148.70	1270.61	1221.37	13.90			14010.00	10965.00				MinPt-CtCt
1371.99	155.54	1267.96	1216.44	13.31			14310.00	10965.00				MinPt-EOU
1369.92	172.95	1254.29	1196.97	11.94			14980.00	10965.00				MinPt-CtCt
1369.97	173.20	1254.18	1196.77	11.92			15000.00	10965.00				MinPt-EOU
1370.05	173.32	1254.18	1196.73	11.92			15010.00	10965.00				MinPt-ADP
1379.91	185.12	1256.18	1194.80	11.23			15410.00	10965.00				MinPt-EOU
1381.19	186.69	1256.40	1194.50	11.15			15460.00	10965.00				MinPt-ADP
1435.64	201.25	1301.15	1234.39	10.75			15890.00	10965.00				MinPt-SF
1950.79	218.84	1804.56	1731.94	13.42			17400.00	10965.00				MinPt-CtCt
1950.83	218.98	1804.51	1731.84	13.42			17420.00	10965.00				MinPts
1951.56	219.31	1805.02	1732.25	13.40			17470.00	10965.00				MinPt-SF
1952.50	215.94	1808.21	1736.56	13.62			18250.00	10965.00				MinPt-SF
1950.19	216.22	1805.72	1733.97	13.58			18420.00	10965.00				MinPt-CtCt
1950.22	216.27	1805.70	1733.94	13.58			18430.00	10965.00				MinPt-EOU
1950.26	216.33	1805.72	1733.93	13.58			18440.00	10965.00				MinPt-ADP
1951.03	216.61	1806.30	1734.42	13.57			18500.00	10965.00				MinPt-SF
1952.44	216.31	1807.90	1736.12	13.59			18690.00	10965.00				MinPt-CtCt
1952.45	216.38	1807.87	1736.08	13.59			18710.00	10965.00				MinPt-EOU
1952.48	216.41	1807.87	1736.07	13.59			18720.00	10965.00				MinPt-ADP
1952.68	216.53	1808.00	1736.15	13.58			18760.00	10965.00				MinPt-SF
1952.84	216.82	1807.96	1736.02	13.56			18970.00	10965.00				MinPt-CtCt
1952.88	216.93	1807.93	1735.95	13.56			19000.00	10965.00				MinPt-EOU
1952.94	217.01	1807.94	1735.93	13.55			19020.00	10965.00				MinPt-ADP
1956.48	218.06	1810.78	1738.42	13.51			19240.00	10965.00				MinPt-SF
1944.02	218.99	1797.70	1725.03	13.37			19550.00	10965.00				MinPt-CtCt
1944.06	219.18	1797.62	1724.88	13.36			19570.00	10965.00				MinPt-EOU
1944.14	219.27	1797.63	1724.86	13.35			19580.00	10965.00				MinPt-ADP
1944.77	219.64	1798.01	1725.13	13.33			19620.00	10965.00				MinPt-SF
1943.13	220.07	1796.08	1723.05	13.30			19730.00	10965.00				MinPt-CtCt
1943.21	220.26	1796.04	1722.95	13.29			19750.00	10965.00				MinPts
1947.14	221.40	1799.22	1725.75	13.24			19880.00	10965.00				MinPt-SF
1948.39	221.90	1800.13	1726.49	13.22			20010.00	10965.00				MinPt-CtCt
1948.48	222.15	1800.05	1726.33	13.21			20040.00	10965.00				MinPt-EOU

Offset Trajectory	Separation			Allow Dev. (ft)	Sep. Fact.	Breaking Rule	Reference Trajectory		Risk Level			Alert
	Ct-Ct (ft)	MAS (ft)	EOU (ft)				MD (ft)	TVD (ft)	Alert	Minor	Major	
1948.61	222.32	1800.07	1726.29	13.20		20060.00	10965.00					MinPt-ADP
1949.02	222.63	1800.27	1726.39	13.18		20100.00	10965.00					MinPt-SF
<b>1940.13</b>	224.44	1790.17	1715.69	13.02		20320.00	10965.00					MinPt-CtCt
1940.17	224.65	1790.08	1715.52	13.01		20340.00	10965.00					MinPt-EOU
1940.25	224.75	1790.09	1715.50	13.00		20350.00	10965.00					MinPt-ADP
1940.37	224.85	1790.14	1715.52	12.99		20360.00	10965.00					MinPt-SF
<b>1408.12</b>	192.98	1279.13	1215.14	10.99		21660.12	10965.00					MinPts

30-025-46355 - Coterra Cascade 29 Federal 15H - Corrected MWD to 17358ft (DefinitiveSurvey) - Warning Alert

72.10	32.81	69.51	39.30	50.14		0.00	0.00					Surface
<b>72.10</b>	32.81	69.51	39.30	50.14		0.37	0.37					MinPts
72.12	32.81	69.53	39.31	50.15		23.00	23.00					WRP
76.90	32.81	70.69	44.09	15.05		570.00	570.00					MinPt-EOU
78.79	32.81	62.09	45.98	4.95		OSF 5.00	1660.00	1659.64	OSF<=5.00			Enter Alert
<b>73.61</b>	32.81	54.96	40.81	4.11		OSF 5.00	1860.00	1858.31				MinPts
73.78	32.81	54.73	40.97	4.03		OSF 5.00	1900.00	1898.01				MinPt-EOU
76.42	32.81	56.27	43.61	3.94		OSF 5.00	2010.00	2007.19				MinPt-SF
124.26	38.16	98.49	86.10	4.97		OSF 5.00	2580.00	2572.94	OSF>5.00			Exit Alert
694.50	103.67	625.05	590.82	10.13			6930.00	6890.57				MinPt-SF
737.22	133.91	647.61	603.30	8.31			9000.00	8958.71				MinPt-EOU
<b>740.48</b>	141.70	645.69	598.78	7.88			9530.00	9488.71				MinPt-CtCt
741.10	143.82	644.89	597.28	7.77			9680.00	9638.71				MinPt-EOU
743.11	146.12	645.37	596.99	7.67			9840.00	9798.71				MinPt-ADP
744.92	148.01	645.92	596.91	7.59			9970.00	9928.71				MinPt-ADP
<b>749.37</b>	156.64	644.61	592.73	7.21			10700.00	10646.96				MinPt-CtCt
749.39	156.72	644.58	592.67	7.21			10710.00	10655.70				MinPt-EOU
749.44	156.80	644.58	592.65	7.21			10720.00	10664.35				MinPt-ADP
750.65	157.26	645.48	593.39	7.20			10780.00	10714.29				MinPt-SF
<b>1738.78</b>	131.58	1650.73	1607.20	19.96			12620.00	10965.00				MinPt-CtCt
1739.16	132.97	1650.19	1606.19	19.75			12730.00	10965.00				MinPt-EOU
<b>1741.36</b>	139.67	1647.92	1601.69	18.82			13140.00	10965.00				MinPt-CtCt
1741.69	140.66	1647.59	1601.03	18.69			13210.00	10965.00				MinPt-EOU
1742.45	141.57	1647.74	1600.88	18.58			13270.00	10965.00				MinPt-ADP
1749.07	146.42	1651.13	1602.65	18.03			13530.00	10965.00				MinPt-EOU
1750.62	148.26	1651.45	1602.36	17.82			13630.00	10965.00				MinPt-ADP
<b>1745.53</b>	162.58	1636.82	1582.95	16.19			14280.00	10965.00				MinPt-CtCt
<b>1751.93</b>	184.68	1628.48	1567.25	14.30			15180.00	10965.00				MinPt-CtCt
1752.01	185.06	1628.30	1566.94	14.27			15200.00	10965.00				MinPt-EOU
1752.16	185.26	1628.32	1566.90	14.25			15210.00	10965.00				MinPt-ADP
1844.91	200.58	1710.86	1644.33	13.86			15710.00	10965.00				MinPt-SF
2546.57	215.70	2402.44	2330.87	17.78			17540.00	10965.00				MinPt-SF
2546.37	215.67	2402.26	2330.70	17.78			17590.00	10965.00				MinPts
<b>2539.56</b>	213.55	2396.86	2326.01	17.91			18160.00	10965.00				MinPts
2539.57	213.57	2396.86	2326.00	17.91			18170.00	10965.00				MinPt-ADP
2540.82	213.78	2397.97	2327.04	17.90			18290.00	10965.00				MinPt-SF
2544.63	213.37	2402.06	2331.26	17.96			18560.00	10965.00				MinPt-SF
2543.72	213.02	2401.38	2330.71	17.99			18890.00	10965.00				MinPts
<b>2539.55</b>	213.65	2396.78	2325.89	17.90			19200.00	10965.00				MinPt-CtCt
2539.59	213.79	2396.74	2325.81	17.89			19230.00	10965.00				MinPt-EOU
2539.63	213.83	2396.75	2325.80	17.89			19240.00	10965.00				MinPt-ADP
<b>2540.43</b>	215.43	2396.48	2325.00	17.76			19680.00	10965.00				MinPt-CtCt
2540.53	215.73	2396.38	2324.80	17.74			19730.00	10965.00				MinPt-EOU
2540.63	215.85	2396.40	2324.78	17.73			19750.00	10965.00				MinPt-ADP
2544.95	217.71	2399.48	2327.24	17.61			20050.00	10965.00				MinPt-SF
<b>1984.47</b>	193.34	1855.25	1791.14	15.47			21650.00	10965.00				MinPt-CtCt
1984.48	193.37	1855.24	1791.11	15.46			21660.00	10965.00				MinPt-EOU
1984.48	193.37	1855.24	1791.11	15.46			21660.12	10965.00				MinPts

30-025-46306 - Coterra Cascade 29 Federal 17H - Corrected MWD to 17485ft (DefinitiveSurvey) - Warning Alert

99.98	32.81	97.39	67.17	69.85		0.00	0.00					Surface
99.97	32.81	97.38	67.16	69.84		23.00	23.00					WRP
<b>97.04</b>	32.81	90.94	64.23	19.50		560.00	560.00					MinPts
<b>97.05</b>	32.81	89.72	64.24	15.58		690.00	690.00					MinPts
97.18	32.81	87.42	64.38	11.18		940.00	940.00					MinPt-EOU
<b>97.17</b>	32.81	87.15	64.37	10.70		980.00	980.00					MinPts
<b>97.08</b>	32.81	83.75	64.27	7.78		1320.00	1320.00					MinPts
97.26	32.81	83.55	64.46	7.56		1360.00	1360.00					MinPt-EOU
<b>90.47</b>	32.81	72.20	57.66	5.18		1843.65	1842.08					MinPts
90.59	32.81	72.07	57.78	5.11		1870.00	1868.24					MinPt-EOU
92.23	32.81	72.97	59.42	4.99		OSF 5.00	1950.00	1947.64	OSF<=5.00			Enter Alert
102.91	32.81	81.02	70.11	4.87		OSF 5.00	2220.00	2215.63				MinPt-SF
120.75	36.92	95.80	83.82	5.00		OSF 5.00	2530.00	2523.32	OSF>5.00			Exit Alert
186.39	52.23	151.24	134.16	5.43			3530.00	3515.86				MinPt-SF
217.35	62.92	175.08	154.43	5.24			4220.00	4200.72				MinPt-SF
259.05	73.18	209.93	185.87	5.36			4880.00	4855.80				MinPt-SF
266.65	75.54	215.96	191.11	5.35			5030.00	5004.68				MinPt-SF
369.60	99.57	302.89	270.03	5.61			6580.00	6543.18				MinPt-SF
410.57	118.79	331.04	291.77	5.22			7840.00	7798.71				MinPt-EOU
415.37	125.25	331.54	290.12	5.00			8290.00	8248.71				MinPt-EOU
415.47	125.39	331.55	290.08	5.00		OSF 5.00	8300.00	8258.71	OSF<=5.00			Enter Alert
417.64	128.56	331.60	289.08	4.90		OSF 5.00	8520.00	8478.71				MinPt-EOU
<b>407.49</b>	155.19	303.70	252.30	3.95		OSF 5.00	10440.00	10398.71				MinPt-CtCt
407.55	155.33	303.67	252.22	3.95		OSF 5.00	10460.00	10418.66				MinPt-EOU
407.62	155.41	303.69	252.21	3.95		OSF 5.00	10470.00	10428.62				MinPt-ADP
407.98	155.61	303.91	252.37	3.95		OSF 5.00	10500.00	10458.39				MinPt-SF
521.83	158.72	415.69	363.11	4.95		OSF 5.00	11020.00	10871.78	OSF>5.00			Exit Alert
<b>1696.34</b>	128.62	1610.27	1567.72	19.92			12940.00	10965.00				MinPt-CtCt
<b>1696.97</b>	131.57	1608.92	1565.39	19.48			13110.00	10965.00				MinPt-CtCt
<b>1698.21</b>	137.04	1606.53	1561.18	18.71			13400.00	10965.00				MinPt-CtCt
<b>1700.84</b>	146.37	1602.93	1554.47	17.54			13850.00	10965.00				MinPt-CtCt
<b>1700.97</b>	155.86	1596.73	1545.11	16.46			14270.00	10965.00				MinPt-CtCt
1701.50	157.29	1596.31	1544.20	16.32			14350.00	10965.00				MinPt-EOU

Offset Trajectory	Separation			Allow Dev. (ft)	Sep. Fact.	Breaking Rule	Reference Trajectory		Risk Level			Alert
	Ct-Ct (ft)	MAS (ft)	EOU (ft)				MD (ft)	TVD (ft)	Alert	Minor	Major	
1702.49	158.49	1596.50	1544.00	16.20		14410.00	10965.00				MinPt-ADP	
<b>1703.86</b>	161.56	1595.83	1542.31	15.91		14510.00	10965.00				MinPt-CtCt	
1704.25	162.85	<b>1595.36</b>	1541.41	15.78		14580.00	10965.00				MinPt-EOU	
1704.85	163.58	1595.47	<b>1541.27</b>	15.72		14620.00	10965.00				MinPt-ADP	
1705.25	163.98	1595.60	<b>1541.27</b>	15.68		14640.00	10965.00				MinPt-ADP	
<b>1644.72</b>	200.31	1510.86	1444.42	12.37		16050.00	10965.00				MinPt-CtCt	
1645.08	201.49	<b>1510.43</b>	1443.60	12.30		16090.00	10965.00				MinPt-EOU	
1645.60	202.08	1510.56	<b>1443.53</b>	12.27		16110.00	10965.00				MinPt-ADP	
1684.90	211.16	1543.80	1473.74	<b>12.02</b>		16430.00	10965.00				MinPt-SF	
1829.41	220.18	1682.30	1609.24	<b>12.51</b>		17260.00	10965.00				MinPt-SF	
1825.21	219.92	1678.27	1605.29	<b>12.50</b>		17610.00	10965.00				MinPt-SF	
1819.48	220.88	<b>1671.90</b>	<b>1598.60</b>	<b>12.40</b>		17900.00	10965.00				MinPts	
<b>1816.81</b>	221.53	1668.80	1595.28	12.35		18080.00	10965.00				MinPt-CtCt	
1816.88	221.74	<b>1668.73</b>	1595.14	12.34		18100.00	10965.00				MinPt-EOU	
1816.95	221.82	1668.74	<b>1595.12</b>	12.33		18110.00	10965.00				MinPt-ADP	
1818.52	222.63	1669.77	1595.88	<b>12.30</b>		18220.00	10965.00				MinPt-SF	
<b>1817.16</b>	222.82	1668.29	1594.34	12.28		18370.00	10965.00				MinPt-CtCt	
<b>1814.81</b>	224.40	1664.89	1590.41	12.18		18640.00	10965.00				MinPt-CtCt	
1814.85	224.60	<b>1664.78</b>	1590.24	12.17		18660.00	10965.00				MinPt-EOU	
<b>1806.26</b>	232.84	1650.70	1573.42	11.68		19610.00	10965.00				MinPt-CtCt	
1806.46	233.39	<b>1650.54</b>	1573.07	11.65		19650.00	10965.00				MinPt-EOU	
1806.57	233.52	1650.56	<b>1573.05</b>	11.65		19660.00	10965.00				MinPt-ADP	
1808.72	234.71	1651.92	1574.01	<b>11.60</b>		19750.00	10965.00				MinPt-SF	
<b>1807.68</b>	235.60	1650.28	1572.08	11.55		19850.00	10965.00				MinPt-CtCt	
1807.82	236.02	<b>1650.15</b>	1571.80	11.53		19880.00	10965.00				MinPt-EOU	
1808.04	236.29	1650.18	<b>1571.75</b>	11.52		19900.00	10965.00				MinPt-ADP	
1808.22	237.98	<b>1649.24</b>	<b>1570.24</b>	<b>11.44</b>		20050.00	10965.00				MinPts	
<b>826.28</b>	193.68	<b>696.84</b>	<b>632.60</b>	<b>6.42</b>		21660.12	10965.00				MinPts	

30-025-50787 - Coterra Cascade 29 Federal 18H - Corrected MWD to 17355ft (DefinitiveSurvey) - Warning Alert

116.60	32.81	114.01	83.79	81.60		0.00	0.00				Surface
116.59	32.81	114.00	83.79	81.60		23.00	23.00				WRP
<b>115.80</b>	32.81	111.65	<b>82.99</b>	38.64		347.30	347.30				MinPts
116.27	32.81	<b>110.93</b>	83.46	27.64		480.00	480.00				MinPt-EOU
121.23	32.81	<b>111.48</b>	88.42	14.00		940.00	940.00				MinPt-EOU
121.64	32.81	<b>111.53</b>	88.83	13.30		990.00	990.00				MinPt-EOU
<b>123.97</b>	32.81	106.39	<b>91.16</b>	7.41		1770.00	1768.98				MinPts
124.13	32.81	<b>106.18</b>	91.32	7.26		1810.00	1808.68				MinPt-EOU
129.29	32.81	110.00	96.48	<b>7.01</b>		1960.00	1957.56				MinPt-SF
416.02	62.53	374.00	353.49	<b>10.11</b>		4180.00	4161.02				MinPt-SF
<b>1004.82</b>	128.95	918.53	875.87	11.77		8390.00	8348.71				MinPt-CtCt
<b>1008.10</b>	148.88	908.53	859.23	10.21		9820.00	9778.71				MinPt-CtCt
1008.94	151.04	<b>907.92</b>	857.90	10.08		9970.00	9928.71				MinPt-EOU
<b>1009.91</b>	157.38	904.66	852.53	9.68		10450.00	10408.69				MinPt-CtCt
1009.97	157.57	<b>904.60</b>	852.40	9.67		10480.00	10438.57				MinPt-EOU
1010.03	157.63	904.61	<b>852.40</b>	9.66		10490.00	10448.49				MinPt-ADP
1012.41	158.32	906.53	854.09	<b>9.64</b>		10580.00	10536.39				MinPt-SF
<b>1745.95</b>	131.59	1657.90	1614.37	20.04		12220.00	10965.00				MinPt-CtCt
<b>1747.04</b>	136.91	1655.44	1610.13	19.27		12700.00	10965.00				MinPt-CtCt
<b>1748.41</b>	147.26	1649.91	1601.16	17.92		13390.00	10965.00				MinPt-CtCt
<b>1748.31</b>	150.70	1647.51	1597.61	17.51		13590.00	10965.00				MinPt-CtCt
1751.08	160.32	<b>1643.88</b>	1590.77	16.48		14100.00	10965.00				MinPt-EOU
1751.48	160.81	1643.94	<b>1590.67</b>	16.43		14130.00	10965.00				MinPt-ADP
<b>1756.19</b>	166.43	1644.91	1589.76	15.91		14370.00	10965.00				MinPt-CtCt
1756.70	168.05	<b>1644.34</b>	1588.65	15.76		14460.00	10965.00				MinPt-EOU
<b>1384.52</b>	210.43	1243.90	1174.09	9.91		16680.00	10965.00				MinPt-CtCt
1384.80	211.38	<b>1243.56</b>	1173.43	9.87		16720.00	10965.00				MinPt-EOU
1385.18	211.83	1243.63	<b>1173.34</b>	9.85		16740.00	10965.00				MinPt-ADP
<b>1391.28</b>	221.10	1243.56	1170.18	9.47		18020.00	10965.00				MinPt-CtCt
1391.39	221.45	<b>1243.43</b>	1169.94	9.46		18050.00	10965.00				MinPt-EOU
1391.46	221.54	1243.44	<b>1169.92</b>	9.46		18060.00	10965.00				MinPt-ADP
1391.97	222.42	<b>1243.36</b>	1169.55	9.42		18180.00	10965.00				MinPt-EOU
1392.25	222.75	1243.42	<b>1169.50</b>	9.41		18210.00	10965.00				MinPt-ADP
1395.39	224.32	1245.52	1171.08	<b>9.37</b>		18360.00	10965.00				MinPt-SF
<b>1394.85</b>	226.81	1243.31	1168.04	9.26		18690.00	10965.00				MinPt-CtCt
<b>1393.62</b>	230.37	1239.72	1163.26	9.11		19030.00	10965.00				MinPt-CtCt
<b>1391.73</b>	237.41	1233.13	1154.32	8.82		19600.00	10965.00				MinPt-CtCt
1388.40	248.18	<b>1222.62</b>	<b>1140.22</b>	<b>8.42</b>		20330.00	10965.00				MinPts
576.37	174.92	459.43	401.45	4.96	OSF 5.00	21170.00	10965.00		OSF<=5.00		Enter Alert
<b>224.21</b>	195.91	<b>93.28</b>	<b>28.30</b>	<b>1.72</b>	OSF 5.00	21660.12	10965.00				MinPts

30-025-41243 - CASCADE 29 FEDERAL 5H - MWD to 14373ft - A (DefinitiveSurvey) - Warning Alert

<b>4682.42</b>	32.81	<b>4679.02</b>	<b>4649.61</b>	3309.00		0.00	0.00				MinPts
4682.44	32.81	4679.05	4649.63	3306.86		23.00	23.00				WRP
4684.57	32.81	<b>4677.84</b>	4651.76	985.67		510.00	510.00				MinPt-EOU
4687.39	32.81	<b>4675.88</b>	4654.58	491.44		990.00	990.00				MinPt-EOU
4687.59	32.81	<b>4676.06</b>	4654.78	479.58		1020.00	1020.00				MinPt-EOU
4691.07	32.81	<b>4676.30</b>	4658.26	360.38		1350.00	1350.00				MinPt-EOU
4699.24	32.81	<b>4678.45</b>	4666.43	246.82		1940.00	1937.71				MinPt-EOU
4723.15	46.67	<b>4691.45</b>	4676.48	157.70		3000.00	2989.81				MinPt-EOU
4727.30	51.52	4692.36	<b>4675.78</b>	142.45		3320.00	3307.43				MinPt-ADP
4731.31	55.30	4693.86	<b>4676.02</b>	132.52		3560.00	3545.64				MinPt-ADP
<b>4747.72</b>	72.05	4699.10	4675.67	101.28		4580.00	4558.04				MinPt-CtCt
490.51	150.52	389.62	339.98	4.92	OSF 5.00	9480.00	9438.71		OSF<=5.00		Enter Alert
<b>253.80</b>	197.71	121.45	56.08	1.93	OSF 5.00	9899.74	9858.46				MinPt-CtCt
253.80	197.72	<b>121.44</b>	<b>56.08</b>	1.93	OSF 5.00	9900.00	9858.71				MinPts
254.00	197.90	121.53	56.10	<b>1.93</b>	OSF 5.00	9910.00	9868.71				MinPt-SF
516.86	158.35	410.78	358.51	4.93	OSF 5.00	10350.00	10308.71		OSF>5.00		Exit Alert
1127.30	125.96	1042.82	<b>1001.34</b>	13.57		12750.00	10965.00				MinPt-ADP
1126.98	125.58	<b>1042.75</b>	1001.40	13.61		12800.00	10965.00				MinPt-EOU
1124.40	124.28	<b>1041.03</b>	<b>1000.11</b>	13.72		12990.00	10965.00				MinPts
<b>1124.36</b>	124.16	1041.08	1000.20	13.73		13020.00	10965.00				MinPt-CtCt

Offset Trajectory	Separation			Allow Dev. (ft)	Sep. Fact.	Breaking Rule	Reference Trajectory		Risk Level			Alert
	Ct-Ct (ft)	MAS (ft)	EOU (ft)				MD (ft)	TVD (ft)	Alert	Minor	Major	
1129.09	123.90	1045.98	1005.19	13.82			13480.00	10965.00				MinPt-SF
1129.25	124.12	1046.00	1005.13	13.80			13610.00	10965.00				MinPt-CtCt
1129.31	124.28	1045.95	1005.03	13.78			13650.00	10965.00				MinPt-EOU
1129.38	124.36	1045.96	1005.02	13.77			13670.00	10965.00				MinPt-ADP
1123.26	131.00	1035.41	992.25	13.00			14680.00	10965.00				MinPt-CtCt
1123.99	132.62	1035.07	991.37	12.84			14820.00	10965.00				MinPt-EOU
1124.25	132.91	1035.13	991.34	12.82			14840.00	10965.00				MinPt-ADP
1159.56	140.82	1065.17	1018.74	12.47			15280.00	10965.00				MinPt-SF
1546.14	191.80	1417.77	1354.34	12.18			18130.00	10965.00				MinPt-CtCt
1546.71	193.46	1417.22	1353.24	12.08			18230.00	10965.00				MinPt-EOU
1547.41	194.30	1417.37	1353.11	12.03			18280.00	10965.00				MinPt-ADP
1555.19	243.52	1392.34	1311.67	9.63			20140.00	10965.00				MinPt-CtCt
1559.48	255.37	1388.73	1304.11	9.21			20540.00	10965.00				MinPt-EOU
1569.28	272.06	1387.40	1297.23	8.69			21040.00	10965.00				MinPt-EOU
1575.52	286.74	1383.86	1288.79	8.28			21440.00	10965.00				MinPts
1575.61	286.79	1383.91	1288.82	8.28			21450.00	10965.00				MinPt-SF
1592.05	285.42	1401.26	1306.63	8.40			21660.12	10965.00				TD

30-025-50784 - Coterra Cascade 29 Federal 71H - Corrected MWD to 17573ft (DefinitiveSurvey) - Warning Alert

3719.29	32.81	3716.70	3686.48	2628.65			0.00	0.00				Surface
3719.28	32.81	3716.69	3686.47	2628.52			23.00	23.00				WRP
3713.63	32.81	3706.56	3680.82	629.50			660.00	660.00				MinPts
3714.38	32.81	3704.46	3681.57	424.71			970.00	970.00				MinPt-EOU
1556.15	119.29	1476.30	1436.86	19.72			7710.00	7668.71				MinPt-CtCt
1556.22	119.49	1476.23	1436.73	19.69			7730.00	7688.71				MinPt-EOU
1556.37	119.68	1476.26	1436.69	19.66			7750.00	7708.71				MinPt-ADP
1557.20	122.95	1474.91	1434.26	19.14			7980.00	7938.71				MinPt-CtCt
1557.44	128.43	1471.49	1429.01	18.32			8380.00	8338.71				MinPt-CtCt
1556.00	137.20	1464.21	1418.80	17.12			9010.00	8968.71				MinPt-CtCt
1556.53	140.91	1462.26	1415.61	16.67			9280.00	9238.71				MinPt-CtCt
1553.61	149.40	1453.68	1404.21	15.69			9880.00	9838.71				MinPt-CtCt
1553.80	150.11	1453.40	1403.70	15.62			9940.00	9898.71				MinPt-EOU
1553.98	150.33	1453.44	1403.66	15.60			9960.00	9918.71				MinPt-ADP
1557.84	156.81	1452.97	1401.03	14.99			10420.00	10378.71				MinPt-CtCt
1557.85	156.87	1452.95	1400.99	14.98			10430.00	10388.71				MinPt-EOU
1557.89	156.92	1452.95	1400.97	14.98			10440.00	10398.71				MinPt-ADP
1563.54	158.22	1457.74	1405.32	14.91			10640.00	10592.88				MinPt-SF
2323.75	173.68	2207.64	2150.07	20.17			13150.00	10965.00				MinPt-CtCt
2324.64	177.51	2205.97	2147.13	19.75			13370.00	10965.00				MinPt-CtCt
2324.85	183.26	2202.35	2141.59	19.12			13680.00	10965.00				MinPt-CtCt
2328.18	197.74	2196.03	2130.44	17.74			14390.00	10965.00				MinPt-CtCt
2328.67	214.65	2185.24	2114.02	16.34			15140.00	10965.00				MinPt-CtCt
1680.00	219.26	1533.49	1460.73	11.54			17450.00	10965.00				MinPt-SF
1675.29	222.65	1526.53	1452.64	11.33			18070.00	10965.00				MinPt-CtCt
1675.38	223.01	1526.38	1452.37	11.31			18110.00	10965.00				MinPts
1675.41	223.03	1526.39	1452.38	11.31			18120.00	10965.00				MinPt-SF
1663.29	236.54	1505.27	1426.75	10.59			19480.00	10965.00				MinPt-CtCt
1663.58	237.40	1504.98	1426.18	10.55			19540.00	10965.00				MinPt-EOU
1665.66	244.57	1502.29	1421.09	10.25			20060.00	10965.00				MinPts
579.27	175.24	462.11	404.03	4.98		OSF 5.00	21220.00	10965.00	OSF<=5.00			Enter Alert
329.75	194.35	199.85	135.40	2.55		OSF 5.00	21660.12	10965.00				MinPts

Coterra Cascade 29 Federal 222U plan0 (DefinitivePlan) - Warning Alert

3659.16	32.81	3655.88	3626.35	1828.62			0.00	0.00				Surface
3659.16	32.81	3655.88	3626.35	1828.62			23.00	23.00				WRP
3659.16	32.81	3649.24	3626.35	423.70			900.00	900.00				MinPt-EOU
3659.16	32.81	3648.47	3626.35	384.53			990.00	990.00				MinPt-EOU
1949.50	191.44	1821.55	1758.06	15.35			10590.00	10545.95				MinPt-SF
1925.27	188.08	1799.56	1737.19	15.43			10860.00	10774.96				MinPt-ADP
1925.20	188.00	1799.54	1737.20	15.43			10870.00	10782.02				MinPt-EOU
1925.17	187.93	1799.56	1737.25	15.44			10880.00	10788.95				MinPt-CtCt
714.00	215.81	569.79	498.19	4.98		OSF 5.00	17040.00	10965.00	OSF<=5.00			Enter Alert
670.33	215.89	526.08	454.44	4.67		OSF 5.00	17230.00	10965.00				MinPt-SF
670.25	215.86	526.01	454.39	4.67		OSF 5.00	17238.49	10965.00				MinPts
669.54	218.73	523.39	450.81	4.61		OSF 5.00	21660.12	10965.00				MinPts

30-025-40346 - CASCADE 29 FEDERAL 1H ST01 - Gyro+MWD to 14296ft - A (DefinitiveSurvey) - Warning Alert

4680.83	32.81	4677.43	4648.02	3307.87			0.00	0.00				MinPts
4680.85	32.81	4677.46	4648.04	3305.70			23.00	23.00				WRP
4757.57	40.53	4729.96	4717.03	184.00			2710.00	2701.97				MinPt-ADP
4823.80	74.36	4773.64	4749.44	99.63			4770.00	4746.62				MinPt-CtCt
4823.81	76.56	4772.18	4747.25	96.70			4910.00	4885.58				MinPt-CtCt
793.32	239.82	632.90	553.50	4.99		OSF 5.00	9530.00	9488.71	OSF<=5.00			Enter Alert
714.61	259.20	541.27	455.41	4.15		OSF 5.00	9874.51	9833.23				MinPts
793.74	241.26	632.40	552.49	4.96		OSF 5.00	10220.00	10178.71	OSF>5.00			Exit Alert
1282.15	162.41	1173.37	1119.74	11.94			11540.00	10965.00				MinPt-ADP
1274.70	155.31	1170.65	1119.39	12.42			11800.00	10965.00				MinPt-ADP
1274.24	154.76	1170.55	1119.47	12.46			11830.00	10965.00				MinPt-EOU
1274.00	154.12	1170.74	1119.87	12.51			11870.00	10965.00				MinPt-CtCt
1289.61	141.00	1195.10	1148.61	13.85			12730.00	10965.00				MinPt-ADP
1289.56	140.93	1195.09	1148.63	13.86			12740.00	10965.00				MinPt-EOU
1289.52	140.79	1195.15	1148.73	13.87			12760.00	10965.00				MinPt-CtCt
1295.95	136.38	1204.52	1159.57	14.40			13170.00	10965.00				MinPt-ADP
1295.92	136.35	1204.52	1159.58	14.40			13180.00	10965.00				MinPt-EOU
1295.92	136.31	1204.54	1159.61	14.41			13190.00	10965.00				MinPt-CtCt
1290.88	134.04	1201.02	1156.85	14.60			13440.00	10965.00				MinPt-SF
1288.90	133.79	1199.20	1155.12	14.60			13510.00	10965.00				MinPt-SF
1282.09	133.78	1192.39	1148.31	14.52			13820.00	10965.00				MinPt-CtCt
1282.10	133.82	1192.38	1148.28	14.52			13830.00	10965.00				MinPt-EOU
1282.15	133.87	1192.39	1148.28	14.52			13840.00	10965.00				MinPt-ADP
1282.81	134.09	1192.91	1148.72	14.50			13890.00	10965.00				MinPt-SF
1286.89	134.20	1196.92	1152.69	14.53			14200.00	10965.00				MinPt-SF

Offset Trajectory	Separation			Allow Dev. (ft)	Sep. Fact.	Breaking Rule	Reference Trajectory		Risk Level			Alert
	Ct-Ct (ft)	MAS (ft)	EOU (ft)				MD (ft)	TVD (ft)	Alert	Minor	Major	
1285.18	135.64	1194.24	1149.54	14.36			14540.00	10965.00				MinPt-SF
1275.36	138.57	1182.47	1136.80	13.94			14930.00	10965.00				MinPt-SF
<b>1271.33</b>	139.84	1177.59	1131.49	13.77			15090.00	10965.00				MinPt-CtCt
1271.40	140.11	<b>1177.49</b>	1131.29	13.75			15110.00	10965.00				MinPt-EOU
1271.50	140.25	1177.49	<b>1131.26</b>	13.73			15120.00	10965.00				MinPt-ADP
1292.28	144.10	1195.70	1148.18	<b>13.58</b>			15330.00	10965.00				MinPt-SF
2184.04	180.02	2063.52	2004.02	<b>18.34</b>			17300.00	10965.00				MinPt-SF
2220.16	183.13	<b>2097.56</b>	<b>2037.02</b>	18.33			17650.00	10965.00				MinPts
<b>2231.97</b>	193.78	2102.28	2038.19	17.40			18310.00	10965.00				MinPt-CtCt
<b>2231.72</b>	199.19	2098.42	2032.54	16.92			18580.00	10965.00				MinPt-CtCt
2233.22	203.54	<b>2097.02</b>	2029.68	16.57			18790.00	10965.00				MinPt-EOU
2234.82	206.35	<b>2096.74</b>	2028.47	16.36			18910.00	10965.00				MinPt-EOU
2235.64	207.34	2096.90	<b>2028.30</b>	16.28			18960.00	10965.00				MinPt-ADP
<b>2241.09</b>	220.48	2093.60	2020.62	15.34			19420.00	10965.00				MinPt-CtCt
<b>2237.53</b>	227.55	2085.32	2009.98	14.84			19660.00	10965.00				MinPt-CtCt
<b>2217.55</b>	261.27	2042.86	1956.28	12.80			20670.00	10965.00				MinPt-CtCt
<b>2211.63</b>	278.61	2025.38	1933.02	11.96			21140.00	10965.00				MinPt-CtCt
2211.84	288.95	<b>2018.70</b>	1922.89	11.54			21420.00	10965.00				MinPt-EOU
2211.92	289.05	2018.71	<b>1922.87</b>	11.53			21430.00	10965.00				MinPt-ADP
2214.68	289.82	2020.96	1924.87	<b>11.52</b>			21520.00	10965.00				MinPt-SF
2226.23	290.35	2032.15	1935.88	11.55			21660.12	10965.00				TD

Coterra Cascade 29 Federal 202U plan0 (DefinitivePlan) - Warning Alert

3639.16	32.81	3635.88	3606.35	1818.62			0.00	0.00				Surface
3639.16	32.81	3635.87	3606.35	1818.62			23.00	23.00				WRP
3639.16	32.81	<b>3629.24</b>	3606.35	421.38			900.00	900.00				MinPt-EOU
3639.16	32.81	<b>3628.47</b>	3606.35	382.42			990.00	990.00				MinPt-EOU
<b>1901.37</b>	184.72	1777.89	1716.65	15.51			10400.00	10358.71				MinPt-CtCt
1901.39	184.83	<b>1777.84</b>	<b>1716.56</b>	15.51			10413.81	10372.52				MinPts
1913.68	186.47	1789.04	1727.21	<b>15.47</b>			10600.00	10555.45				MinPt-SF
<b>900.50</b>	221.74	752.34	678.76	6.11			17238.49	10965.00				MinPt-CtCt
900.41	270.81	719.54	629.60	5.00		OSF 5.00	20520.00	10965.00	OSF<=5.00			Enter Alert
<b>900.38</b>	295.07	<b>703.34</b>	<b>605.31</b>	<b>4.59</b>		OSF 5.00	21660.12	10965.00				MinPts

30-025-49124 - Red Hills 32-5 Fed Com 170H - Corrected MWD to 22082ft (DefinitiveSurvey) - Pass

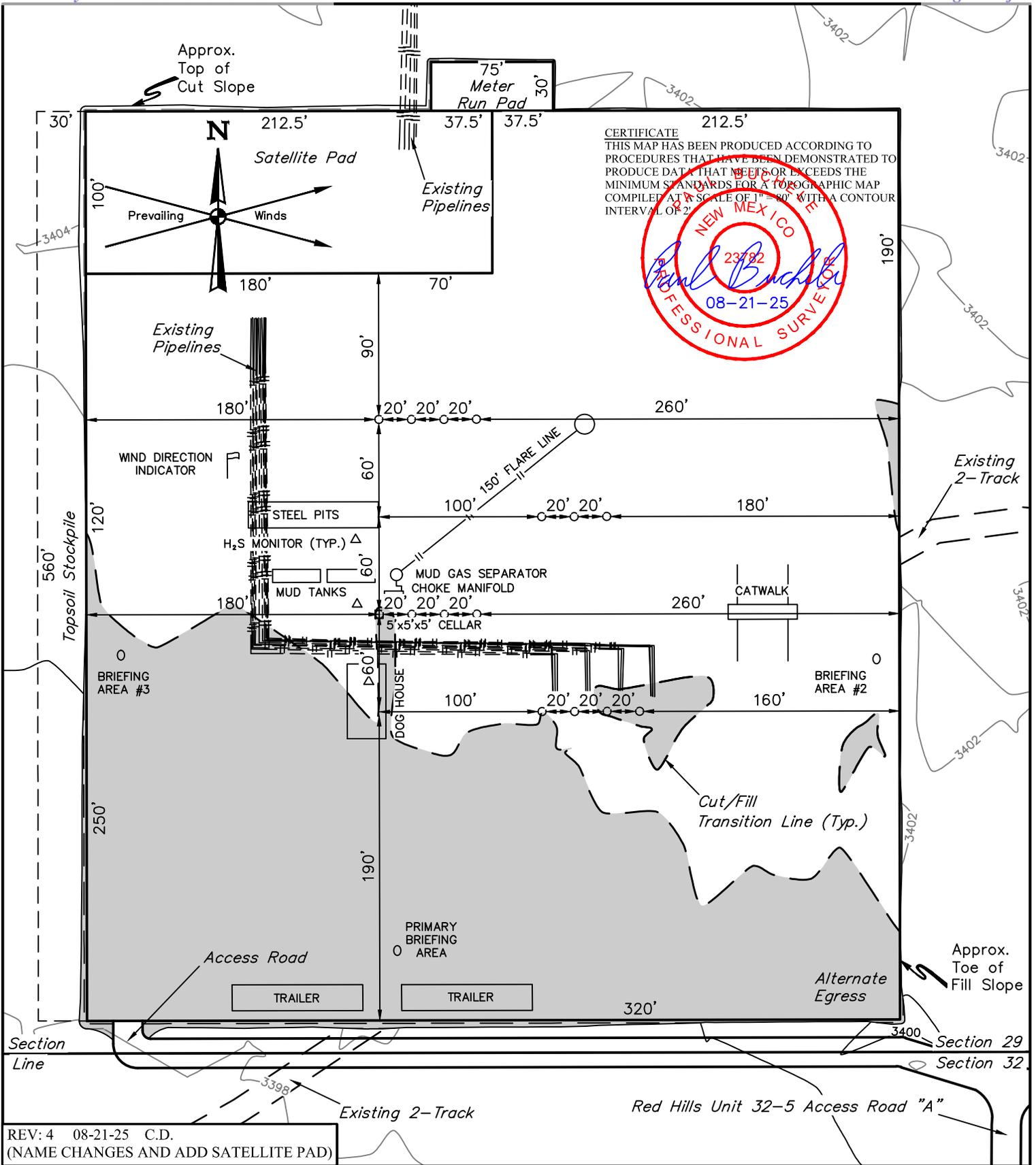
2677.04	32.81	2674.34	2644.23	1891.72			0.00	0.00				Surface
2677.02	32.81	2674.32	2644.21	1890.79			23.00	23.00				WRP
2676.84	32.81	<b>2674.08</b>	2644.03	1824.01			90.00	90.00				MinPt-EOU
<b>2673.45</b>	32.81	2666.26	<b>2640.64</b>	444.29			690.00	690.00				MinPts
2673.69	32.81	<b>2666.01</b>	2640.88	411.15			750.00	750.00				MinPt-EOU
<b>1996.02</b>	123.98	1913.04	1872.04	24.33			8840.00	8798.71				MinPt-CtCt
1996.59	125.33	<b>1912.71</b>	1871.26	24.07			8940.00	8898.71				MinPt-EOU
1999.03	128.46	1913.07	<b>1870.58</b>	23.51			9160.00	9118.71				MinPt-ADP
2001.48	130.90	1913.88	<b>1870.58</b>	23.10			9330.00	9288.71				MinPt-ADP
<b>2010.62</b>	146.92	1912.35	1863.70	20.66			10430.00	10388.71				MinPt-CtCt
2010.62	146.99	<b>1912.30</b>	1863.63	20.65			10440.00	10398.71				MinPt-EOU
2010.68	147.05	1912.32	<b>1863.63</b>	20.64			10450.00	10408.69				MinPt-ADP
2015.52	147.74	1916.70	1867.78	<b>20.59</b>			10560.00	10517.13				MinPt-SF
5741.57	160.61	5634.17	5580.96	<b>53.94</b>			15900.00	10965.00				MinPt-SF
<b>860.36</b>	176.22	<b>742.55</b>	<b>684.14</b>	<b>7.36</b>			21660.12	10965.00				MinPts

30-025-50291 - Coterra Cascade 29 Federal 72H Corrected MWD to 17208ft (DefinitiveSurvey) - Pass

3739.28	32.81	3736.69	3706.47	2642.78			0.00	0.00				Surface
<b>3739.28</b>	32.81	<b>3736.69</b>	<b>3706.47</b>	<b>2642.78</b>			10.00	10.00				MinPts
3739.28	32.81	3736.69	3706.47	2642.78			23.00	23.00				WRP
<b>2122.76</b>	137.98	2030.45	1984.79	23.23			9180.00	9138.71				MinPt-CtCt
2123.26	140.37	<b>2029.35</b>	1982.89	22.84			9360.00	9318.71				MinPt-EOU
<b>2118.38</b>	155.50	2014.39	1962.88	20.56			10420.00	10378.71				MinPt-CtCt
2118.45	155.70	<b>2014.32</b>	1962.74	20.53			10450.00	10408.69				MinPt-EOU
2118.51	155.77	2014.33	<b>1962.74</b>	20.52			10460.00	10418.66				MinPt-ADP
2129.04	157.59	2023.65	1971.45	<b>20.38</b>			10740.00	10681.38				MinPt-SF
<b>2629.20</b>	164.66	2519.10	2464.54	24.09			12240.00	10965.00				MinPt-CtCt
2629.24	164.79	<b>2519.05</b>	2464.45	24.07			12260.00	10965.00				MinPt-EOU
2629.29	164.85	2519.06	<b>2464.44</b>	24.06			12270.00	10965.00				MinPt-ADP
<b>2627.95</b>	173.32	2512.08	2454.63	22.87			12920.00	10965.00				MinPt-CtCt
2628.18	174.13	<b>2511.77</b>	2454.05	22.76			12990.00	10965.00				MinPt-EOU
2628.46	174.47	2511.81	<b>2453.98</b>	22.72			13020.00	10965.00				MinPt-ADP
2631.07	177.41	<b>2512.48</b>	2453.67	22.36			13210.00	10965.00				MinPt-EOU
2631.76	178.21	2512.62	<b>2453.55</b>	22.27			13270.00	10965.00				MinPt-ADP
<b>2641.55</b>	186.62	2516.80	2454.92	21.34			13740.00	10965.00				MinPt-CtCt
<b>2624.19</b>	206.79	2486.00	2417.40	19.12			14770.00	10965.00				MinPt-CtCt
2624.45	207.50	<b>2485.79</b>	2416.95	19.06			14820.00	10965.00				MinPt-EOU
2624.82	207.92	2485.88	<b>2416.90</b>	19.02			14850.00	10965.00				MinPt-ADP
<b>1655.02</b>	219.96	1508.05	1435.06	11.33			17700.00	10965.00				MinPt-CtCt
1655.03	219.99	<b>1508.04</b>	1435.04	11.33			17720.00	10965.00				MinPt-EOU
1655.05	220.01	1508.05	<b>1435.04</b>	11.33			17730.00	10965.00				MinPt-ADP
1655.73	220.23	1508.58	1435.49	<b>11.32</b>			17850.00	10965.00				MinPt-SF
1656.18	220.18	<b>1509.06</b>	1436.00	11.33			17950.00	10965.00				MinPt-EOU
1656.23	220.23	1509.08	<b>1435.99</b>	11.32			17960.00	10965.00				MinPt-ADP
1659.83	221.09	1512.11	1438.74	<b>11.30</b>			18130.00	10965.00				MinPt-SF
<b>1666.25</b>	221.63	1518.17	1444.62	11.32			18570.00	10965.00				MinPt-CtCt
1666.32	221.84	<b>1518.10</b>	<b>1444.48</b>	11.31			18600.00	10965.00				MinPts
1666.45	222.05	1518.08	1444.39	<b>11.30</b>			18680.00	10965.00				MinPt-SF
<b>1654.32</b>	226.93	1502.71	1427.39	10.98			19450.00	10965.00				MinPt-CtCt
1654.56	228.15	<b>1502.13</b>	1426.41	10.92			19590.00	10965.00				MinPt-EOU
1654.72	228.35	1502.16	<b>1426.37</b>	10.91			19610.00	10965.00				MinPt-ADP
<b>1656.37</b>	232.80	1500.84	1423.57	10.71			20080.00	10965.00				MinPt-CtCt
1656.57	233.32	<b>1500.69</b>	1423.25	10.69			20120.00	10965.00				MinPt-EOU
1657.10	234.21	<b>1500.63</b>	<b>1422.88</b>	<b>10.65</b>			20200.00	10965.00				MinPts
1654.32	234.61	<b>1497.58</b>	<b>1419.71</b>	<b>10.62</b>			20270.00	10965.00				MinPts
<b>888.21</b>	193.92	<b>758.60</b>	<b>694.29</b>	<b>6.90</b>			21660.12	10965.00				MinPts

Offset Trajectory	Separation			Allow Dev. (ft)	Sep. Fact.	Breaking Rule	Reference Trajectory		Risk Level			Alert
	Ct-Ct (ft)	MAS (ft)	EOU (ft)				MD (ft)	TVD (ft)	Alert	Minor	Major	
30-025-41240 - CASCADE 29 FEDERAL 2H - MWD to 14248ft - A (DefinitiveSurvey) - Pass												
4908.31	32.81	4904.92	4875.50	3468.70			0.00	0.00				Surface
4908.30	32.81	4904.90	4875.49	3464.64			23.00	23.00				WRP
4906.15	32.81	4894.90	4873.34	529.07			990.00	990.00				MinPt-EOU
4880.71	45.35	4849.88	4835.35	167.89			3030.00	3019.59				MinPt-CtCt
4868.27	59.16	4828.25	4809.11	127.18			3910.00	3893.03				MinPt-CtCt
1050.57	264.56	873.66	786.02	5.98			9906.71	9865.43				MinPt-CtCt
1050.58	264.58	873.65	786.00	5.98			9910.00	9868.71				MinPts
1050.83	264.69	873.83	786.14	5.98			9930.00	9888.71				MinPt-SF
1587.21	156.42	1482.43	1430.80	15.36			14120.00	10965.00				MinPt-ADP
1587.20	156.40	1482.42	1430.80	15.36			14130.00	10965.00				MinPt-EOU
1587.20	156.39	1482.43	1430.81	15.36			14140.00	10965.00				MinPt-CtCt
1596.43	159.10	1489.85	1437.33	15.18			14980.00	10965.00				MinPt-CtCt
1596.55	159.51	1489.70	1437.04	15.14			15020.00	10965.00				MinPt-EOU
1596.63	159.61	1489.71	1437.02	15.14			15030.00	10965.00				MinPt-ADP
1596.99	159.96	1489.84	1437.03	15.11			15070.00	10965.00				MinPt-ADP
1114.24	176.03	996.37	938.21	9.57			17390.00	10965.00				MinPt-CtCt
1114.73	177.46	995.91	937.27	9.49			17460.00	10965.00				MinPt-EOU
1118.45	183.38	995.68	935.07	9.21			17730.00	10965.00				MinPt-EOU
1121.92	197.69	989.62	924.23	8.57			18340.00	10965.00				MinPt-CtCt
1124.06	210.19	983.42	913.86	8.07			18840.00	10965.00				MinPt-CtCt
1117.36	227.42	965.23	889.94	7.41			19490.00	10965.00				MinPt-CtCt
1117.58	231.23	962.92	886.35	7.29			19630.00	10965.00				MinPt-CtCt
1100.09	259.55	926.55	840.54	6.39			20650.00	10965.00				MinPt-CtCt
1102.89	266.88	924.46	836.01	6.23			20910.00	10965.00				MinPt-EOU
1104.26	268.53	924.73	835.72	6.20			20970.00	10965.00				MinPt-ADP
1108.38	273.15	925.77	835.23	6.11			21130.00	10965.00				MinPt-ADP
1121.50	283.25	932.16	838.26	5.96			21490.00	10965.00				MinPt-SF
1144.87	283.49	955.37	861.38	6.08			21660.12	10965.00				TD
Coterra Vaca Draw 20-17 Federal 504H Rev0 kFc 25May23 (DefinitivePlan) - Pass												
5948.50	32.81	5945.91	5915.69	4204.67			0.00	0.00				Surface
5948.50	32.81	5945.91	5915.69	4204.06			23.00	23.00				WRP
5948.50	32.81	5937.88	5915.69	629.62			990.00	990.00				MinPt-EOU
5680.65	84.31	5624.12	5596.34	102.24			5480.00	5451.37				MinPt-CtCt
5680.83	84.78	5623.98	5596.05	101.67			5510.00	5481.16				MinPt-EOU
5680.96	84.94	5624.00	5596.02	101.49			5520.00	5491.09				MinPt-ADP
1191.80	186.75	1066.97	1005.05	9.62			16860.00	10965.00				MinPt-SF
1187.72	185.57	1063.68	1002.15	9.64			16910.00	10965.00				MinPts
1187.61	185.34	1063.72	1002.27	9.65			16919.66	10965.00				MinPt-CtCt
5370.17	168.12	5257.76	5202.04	48.19			21660.12	10965.00				TD
30-025-41241 - CASCADE 29 FEDERAL 3H - MWD to 14241ft - A (DefinitiveSurvey) - Pass												
5330.74	32.81	5327.34	5297.93	3767.35			0.00	0.00				Surface
5330.74	32.81	5327.34	5297.93	3767.35			10.00	10.00				MinPts
5330.74	32.81	5327.35	5297.93	3766.34			23.00	23.00				WRP
5330.89	32.81	5325.57	5298.08	1593.81			370.00	370.00				MinPts
5331.21	32.81	5319.91	5298.40	571.81			990.00	990.00				MinPt-EOU
5330.99	32.81	5317.62	5298.18	459.13			1230.00	1230.00				MinPts
1961.46	269.95	1780.95	1691.51	10.96			9900.00	9858.71				MinPt-CtCt
1961.46	270.00	1780.92	1691.46	10.95			9910.00	9868.71				MinPts
1961.97	270.16	1781.33	1691.81	10.95			9950.00	9908.71				MinPt-SF
2356.21	213.82	2213.15	2142.39	16.64			12030.00	10965.00				MinPt-EOU
2334.08	198.53	2201.21	2135.54	17.76			12610.00	10965.00				MinPt-ADP
2332.26	196.44	2200.79	2135.82	17.94			12710.00	10965.00				MinPt-EOU
2328.75	190.59	2201.18	2138.16	18.46			12930.00	10965.00				MinPt-ADP
2327.16	188.83	2200.77	2138.34	18.63			13020.00	10965.00				MinPt-EOU
2324.58	185.86	2200.16	2138.72	18.90			13170.00	10965.00				MinPt-ADP
2324.29	185.50	2200.11	2138.78	18.94			13200.00	10965.00				MinPt-EOU
2323.98	183.58	2201.08	2140.40	19.14			13330.00	10965.00				MinPt-CtCt
2323.19	178.78	2203.50	2144.42	19.65			13640.00	10965.00				MinPt-CtCt
2330.67	172.28	2215.30	2158.39	20.46			14370.00	10965.00				MinPts
2306.57	173.57	2190.34	2133.00	20.10			15100.00	10965.00				MinPt-CtCt
2306.66	173.87	2190.24	2132.80	20.06			15130.00	10965.00				MinPt-EOU
2306.75	173.96	2190.26	2132.78	20.05			15140.00	10965.00				MinPt-ADP
1304.41	179.11	1184.49	1125.30	11.01			17367.81	10965.00				MinPt-CtCt
1304.50	179.37	1184.41	1125.13	10.99			17390.00	10965.00				MinPt-EOU
1304.59	179.48	1184.42	1125.11	10.98			17400.00	10965.00				MinPt-ADP
1306.50	181.39	1185.06	1125.11	10.88			17520.00	10965.00				MinPt-ADP
1319.11	191.82	1190.72	1127.29	10.39			18080.00	10965.00				MinPt-EOU
1314.66	207.50	1175.81	1107.16	9.56			18770.00	10965.00				MinPt-CtCt
1315.84	212.75	1173.50	1103.09	9.33			18980.00	10965.00				MinPt-CtCt
1311.93	233.64	1155.65	1078.29	8.47			19750.00	10965.00				MinPt-CtCt
1312.50	235.37	1155.07	1077.13	8.41			19820.00	10965.00				MinPt-EOU
1313.14	236.10	1155.23	1077.04	8.39			19850.00	10965.00				MinPt-ADP
1313.66	285.70	1122.68	1027.96	6.93			21430.00	10965.00				MinPt-CtCt
1313.84	286.11	1122.59	1027.73	6.92			21450.00	10965.00				MinPts
1316.21	287.07	1124.32	1029.14	6.91			21510.00	10965.00				MinPt-SF
1333.99	287.73	1141.65	1046.25	6.98			21660.12	10965.00				TD
30-025-49123 - Red Hills 32-5 Fed Com 169H - Corrected MWD to 22331ft (DefinitiveSurvey) - Pass												
2696.42	32.81	2693.83	2663.62	1905.50			0.00	0.00				MinPts
2696.45	32.81	2693.86	2663.64	1905.38			23.00	23.00				WRP
2702.59	32.81	2693.50	2669.78	341.46			860.00	860.00				MinPts
2703.09	32.81	2692.83	2670.28	297.37			990.00	990.00				MinPt-EOU
2703.32	32.81	2692.97	2670.51	288.57			1020.00	1020.00				MinPt-EOU
2720.13	32.81	2703.87	2687.32	177.98			1940.00	1937.71				MinPts
2720.58	32.81	2703.41	2687.77	168.03			2060.00	2056.82				MinPt-EOU
2726.08	33.20	2703.62	2692.88	126.89			2660.00	2652.35				MinPt-CtCt
2726.68	34.87	2703.11	2691.81	120.67			2790.00	2781.38				MinPt-EOU
2727.10	35.37	2703.19	2691.73	118.94			2830.00	2821.08				MinPt-ADP
2724.04	42.95	2695.07	2681.08	97.32			3350.00	3337.20				MinPt-CtCt

Offset Trajectory	Separation			Allow Dev. (ft)	Sep. Fact.	Breaking Rule	Reference Trajectory		Risk Level			Alert
	Ct-Ct (ft)	MAS (ft)	EOU (ft)				MD (ft)	TVD (ft)	Alert	Minor	Major	
2724.50	44.40		2694.57	2680.10	94.10		3460.00	3446.38				MinPt-EOU
2725.16	45.19		2694.70	2679.97	92.44		3520.00	3505.94				MinPt-ADP
2729.14	50.56		2695.10	2678.57	82.54		3870.00	3853.33				MinPt-CtCt
2729.51	52.03		2694.50	2677.48	80.17		3980.00	3962.51				MinPt-EOU
2730.20	52.82		2694.65	2677.37	78.97		4040.00	4022.06				MinPt-ADP
2730.22	62.03		2688.53	2668.19	67.06		4640.00	4617.59				MinPt-CtCt
2730.61	63.37		2688.04	2667.25	65.63		4740.00	4716.84				MinPt-EOU
2732.34	65.36		2688.44	2666.99	63.65		4880.00	4855.80				MinPt-ADP
2546.61	133.79		2457.08	2412.81	28.75		9490.00	9448.71				MinPt-CtCt
2544.72	139.10		2451.66	2405.62	27.63		9860.00	9818.71				MinPt-CtCt
2545.27	140.45		2451.31	2404.82	27.36		9960.00	9918.71				MinPt-EOU
2546.95	142.42		2451.67	2404.53	27.00		10100.00	10058.71				MinPt-ADP
2548.33	144.08		2451.95	2404.26	26.70		10210.00	10168.71				MinPt-EOU
2550.41	146.85		2452.19	2403.57	26.22		10400.00	10358.71				MinPt-EOU
2550.54	147.00		2452.21	2403.54	26.19		10413.81	10372.52				MinPt-ADP
2565.85	148.58		2466.47	2417.27	26.07		10640.00	10592.88				MinPt-SF
5984.05	162.13		5875.63	5821.91	55.69		15900.00	10965.00				MinPt-SF
1377.32	181.10		1256.26	1196.22	11.46		21660.12	10965.00				MinPts
Red Hills 32-5 Fed Com 173H Rev1 kFc 30Sep25 (DefinitivePlan) - Pass												
2585.03	32.81		2582.33	2552.22	1826.67		0.00	0.00				Surface
2585.03	32.81		2582.33	2552.22	1826.33		23.00	23.00				WRP
2585.03	32.81		2574.29	2552.22	273.40		990.00	990.00				MinPt-EOU
2540.14	32.81		2518.43	2507.33	122.49		2300.00	2295.03				MinPts
2540.29	32.81		2518.28	2507.48	120.74		2340.00	2334.73				MinPt-EOU
2695.34	156.09		2590.95	2539.25	26.06		10430.00	10388.71				MinPt-EOU
2695.40	156.16		2590.96	2539.23	26.04		10440.00	10398.71				MinPt-ADP
2714.62	158.56		2608.59	2556.06	25.83		10770.00	10706.21				MinPt-SF
1469.70	193.72		1340.22	1275.98	11.43		21660.12	10965.00				MinPts
Cimarex Vaca Draw 20-17 Federal #32H Rev0 RM 12Mar19 (DefinitivePlan) - Pass												
5413.14	32.81		5409.75	5380.33	3825.61		0.00	0.00				Surface
5413.14	32.81		5409.75	5380.33	3823.92		23.00	23.00				WRP
5413.14	32.81		5403.22	5380.33	681.33		990.00	990.00				MinPt-EOU
5409.26	32.81		5390.14	5376.45	311.53		2160.00	2156.07				MinPts
5409.84	32.81		5389.59	5377.03	292.56		2330.00	2324.81				MinPt-EOU
5617.20	108.20		5544.53	5509.00	79.03		8880.00	8838.71				MinPt-EOU
5617.36	108.38		5544.56	5508.97	78.89		8900.00	8858.71				MinPt-ADP
5812.80	122.18		5730.03	5690.62	73.69		10400.00	10358.71				MinPt-SF
1909.48	153.21		1803.53	1756.27	20.08		16451.88	10965.00				MinPt-CtCt
1909.52	153.31		1803.50	1756.21	20.07		16460.00	10965.00				MinPts
1923.75	155.22		1816.45	1768.53	19.95		16610.00	10965.00				MinPt-SF
5886.38	157.26		5779.81	5729.12	58.00		21660.12	10965.00				TD
30-025-44151 - VACA DRAW 20-17 FEDERAL 6H - Corrected MWD to 18922ft - A (DefinitiveSurvey) - Pass												
5403.38	32.81		5399.98	5370.57	3817.89		0.00	0.00				Surface
5403.32	32.81		5399.92	5370.51	3799.79		23.00	23.00				WRP
5393.77	32.81		5382.37	5360.96	572.53		990.00	990.00				MinPt-EOU
5391.55	32.81		5375.46	5358.74	376.11		1500.00	1499.98				MinPts
5394.28	32.81		5374.03	5361.48	291.56		1940.00	1937.71				MinPt-EOU
5399.31	36.33		5374.50	5362.98	234.21		2400.00	2394.28				MinPt-ADP
5403.26	40.00		5376.01	5363.26	211.87		2630.00	2622.57				MinPt-EOU
5405.52	43.47		5375.95	5362.05	194.32		2850.00	2840.93				MinPt-EOU
5406.79	45.00		5376.20	5361.79	187.50		2960.00	2950.11				MinPt-ADP
5415.34	56.51		5377.07	5358.82	148.31		3690.00	3674.67				MinPt-EOU
5416.24	57.62		5377.25	5358.63	145.41		3770.00	3754.07				MinPt-ADP
5421.46	62.09		5379.48	5359.36	134.74		4060.00	4041.91				MinPt-ADP
5422.71	72.30		5373.93	5350.41	115.27		4670.00	4647.36				MinPt-CtCt
5422.99	73.10		5373.67	5349.89	113.99		4740.00	4716.84				MinPt-EOU
5423.28	73.44		5373.74	5349.84	113.45		4770.00	4746.62				MinPt-ADP
5578.18	130.85		5490.41	5447.33	64.72		8620.00	8578.71				MinPt-CtCt
5578.55	132.40		5489.74	5446.15	63.96		8750.00	8708.71				MinPt-EOU
5578.91	132.83		5489.82	5446.08	63.76		8790.00	8748.71				MinPt-ADP
5698.10	140.00		5604.22	5558.09	61.74		9950.00	9908.71				MinPt-SF
2179.50	145.58		2081.81	2033.62	22.68		15721.24	10965.00				MinPt-CtCt
2179.73	146.11		2081.81	2033.62	22.60		15740.00	10965.00				MinPts
2264.48	156.68		2159.52	2107.80	21.88		16090.00	10965.00				MinPt-SF
6218.98	172.42		6103.53	6046.56	54.57		21660.12	10965.00				TD



**CERTIFICATE**  
 THIS MAP HAS BEEN PRODUCED ACCORDING TO PROCEDURES THAT HAVE BEEN DEMONSTRATED TO PRODUCE DATA THAT MEETS OR EXCEEDS THE MINIMUM STANDARDS FOR A TOPOGRAPHIC MAP COMPILED AT A SCALE OF 1" = 80' WITH A CONTOUR INTERVAL OF 2'



REV: 4 08-21-25 C.D.  
 (NAME CHANGES AND ADD SATELLITE PAD)

- NOTES:**
- Contours shown at 2' intervals.

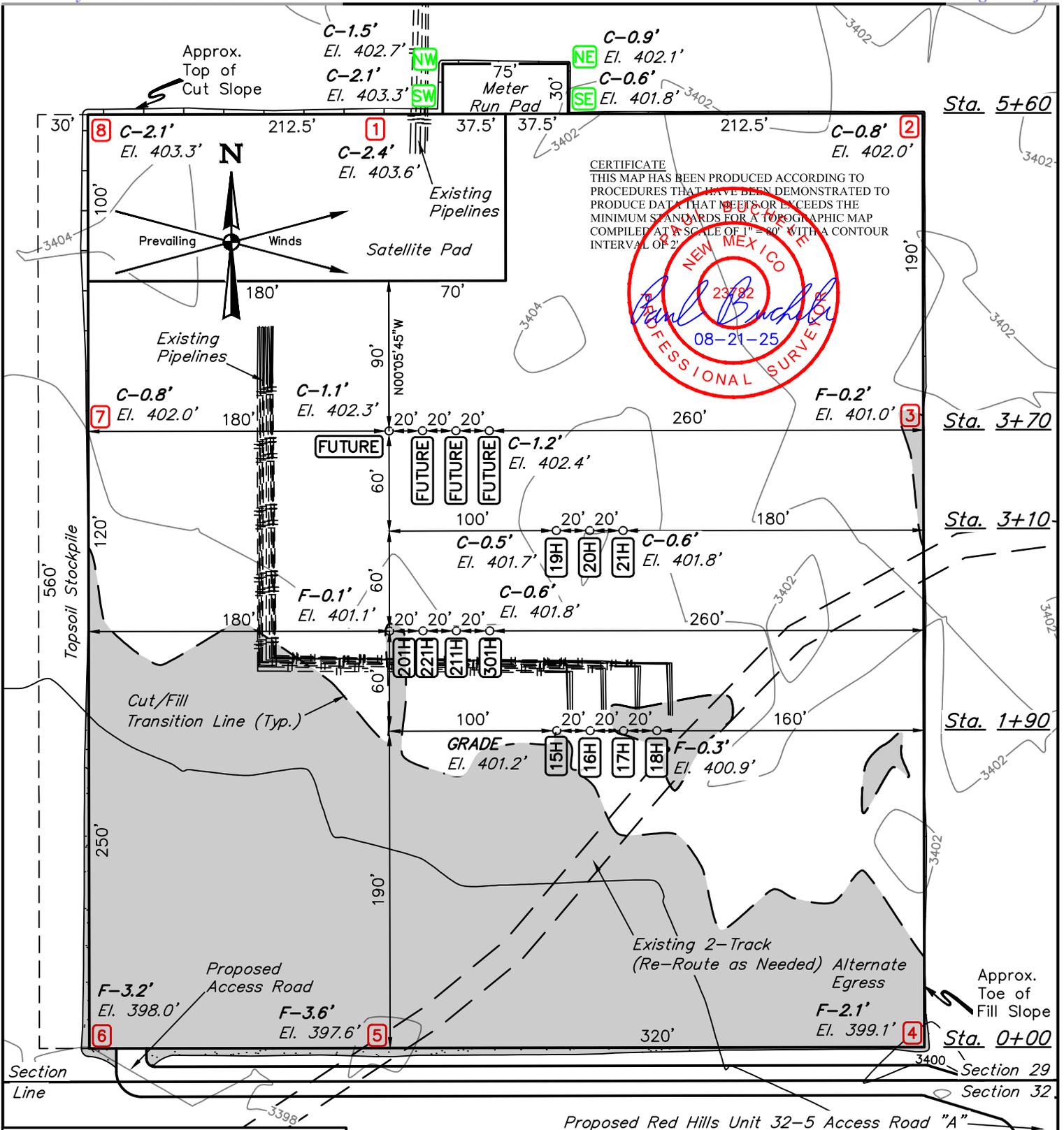
**CIMAREX ENERGY CO.**

**CASCADE 29 FEDERAL W2W2 PAD 1**  
 SW 1/4 SW 1/4, SECTION 29, T25S, R33E, N.M.P.M.  
 LEA COUNTY, NEW MEXICO

SURVEYED BY	C.T., C.H.	07-02-18	SCALE
DRAWN BY	D.J.S.	08-13-18	1" = 80'
<b>TYPICAL RIG LAYOUT</b>			<b>EXHIBIT K</b>



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



CERTIFICATE  
 THIS MAP HAS BEEN PRODUCED ACCORDING TO PROCEDURES THAT HAVE BEEN DEMONSTRATED TO PRODUCE DATA THAT MEETS OR EXCEEDS THE MINIMUM STANDARDS FOR A TOPOGRAPHIC MAP COMPILED AT A SCALE OF 1" = 80' WITH A CONTOUR INTERVAL OF 2'



REV: 4 08-21-25 C.D.  
 (NAME CHANGES AND ADD SATELLITE PAD)

FINISHED GRADE ELEVATION = 3401.2'

NOTE: Earthwork Calculations Require a Fill @ some Location Stakes For Balance. All Fill is to be Compacted to a Minimum of 95% of the Maximum Dry Density Obtained by AASHTO Method t-99.

- NOTES:
- Flare pit is to be located a min. of 100' from the wellhead.
  - Contours shown at 2' intervals.
  - Cut/Fill slopes 1 1/2:1 (Typ. except where noted)
  - Underground utilities shown on this sheet are for visualization purposes only, actual locations to be determined prior to construction.
  - Basis of Bearings is a Transverse Mercator Projection with a Central Meridian of W103°53'00" (NAD 83)

**CIMAREX ENERGY CO.**

**CASCADE 29 FEDERAL W2W2 PAD 1**  
 SW 1/4 SW 1/4, SECTION 29, T25S, R33E, N.M.P.M.  
 LEA COUNTY, NEW MEXICO

SURVEYED BY	C.T., C.H.	07-02-18	SCALE
DRAWN BY	D.J.S.	08-13-18	1" = 80'
<b>LOCATION LAYOUT</b>		<b>EXHIBIT J</b>	

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

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:** Coterra Energy Operating Co **OGRID:** 215099 **Date:** 12/4/2025

**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
Cascade 29 Federal Com	221H	SW\$W Sec 29 T25S, R33E	270 FSL/430 FWL	1849	3257	5236

**IV. Central Delivery Point Nam** Cascade 29 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
Cascade 29 Federal Com	221H	12/25/25	3/22/26	5/8/26	6/17/26	6/17/26

**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:	<i>Shelly Bowen</i>
Printed Name:	<input type="text" value="Shelly Bowen"/>
Title:	<input type="text" value="Sr. Regulatory Analyst"/>
E-mail Address:	<input type="text" value="shelly.bowen@coterra.com"/>
Date:	12/4/25
Phone:	<input type="text" value="432/620-1644"/>

**OIL CONSERVATION DIVISION**  
**(Only applicable when submitted as a standalone form)**

Approved By:
Title:
Approval Date:
Conditions of Approval:

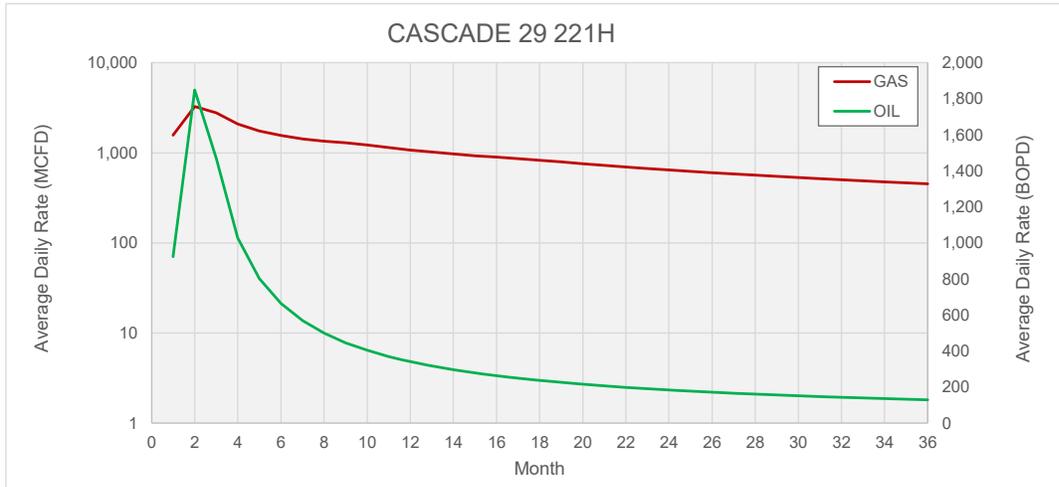
**From State of New Mexico, Natural Gas Management Plan**

**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.

	CASCADE 29 221H	CASCADE 29 221H
Labels	GAS MCFD	OIL BOPD
1	1,571	924
2	3,257	1,849
3	2,776	1,468
4	2,087	1,028
5	1,749	803
6	1,553	664
7	1,429	569
8	1,347	499
9	1,292	446
10	1,224	404
11	1,142	370
12	1,075	342
13	1,019	317
14	971	297
15	931	279
16	895	263
17	865	249
18	830	237
19	791	226
20	756	216
21	725	207
22	696	199
23	669	191
24	645	184
25	622	178
26	601	172
27	582	166
28	564	161
29	547	156
30	531	152
31	516	148
32	502	144
33	489	140
34	477	136
35	465	133
36	454	130



## **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.*



CERTIFICATE OF QUALITY

LTYY/QR-5.7.1-19B

No: LT2024-156-001

Customer Name			
Product Name	Choke And Kill Hose		
Product Specification	3"×10000psi×35ft (10.67m)	Quantity	1PCS
Serial Number	VTC-7660257	FSL	FSL3
customer number	PO890145-001	Standard	API Spec 16C 3 <sup>rd</sup> edition
Temperature Range	-29℃ ~+121℃	Inspection date	2024.09.03

Inspection Items	Inspection results
Appearance Checking	In accordance with API Spec 16C 3 <sup>rd</sup> edition
Size and Lengths	In accordance with API Spec 16C 3 <sup>rd</sup> edition
Dimensions and Tolerances	In accordance with API Spec 16C 3 <sup>rd</sup> edition
End Connections: 4-1/16"×10000psi Integral flange for sour gas service	In accordance with API Spec 6A 21 <sup>st</sup> edition
End Connections: 4-1/16"×10000psi Integral flange for sour gas service	In accordance with API Spec 17D 3 <sup>rd</sup> edition
Hydrostatic Testing	In accordance with API Spec 16C 3 <sup>rd</sup> edition
product Marking	In accordance with API Spec 16C 3 <sup>rd</sup> edition

Inspection conclusion	The inspected items meet standard requirements of API Spec 16C 3 <sup>rd</sup> edition
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Remarks	16C-0403 
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Approver	Jane C	Auditor	Alice D	Inspector	Leo W
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LUOHE LETONE HYDRAULICS TECHNOLOGY CO.,LTD	
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HYDROSTATIC TESTING REPORT

LTTY/QR-5.7.1-28

No: 24090301

Product Name	Choke And Kill Hose	Standard	API Spec 16C 3 <sup>rd</sup> edition
Product Specification	3"×10000psi×35ft (10.67m)	Serial Number	VTC-7660257
Inspection Equipment	MTU-BS-1600-3200-E	Test medium	Water
customer number	PO890145-001	Inspection Date	2024.08.30

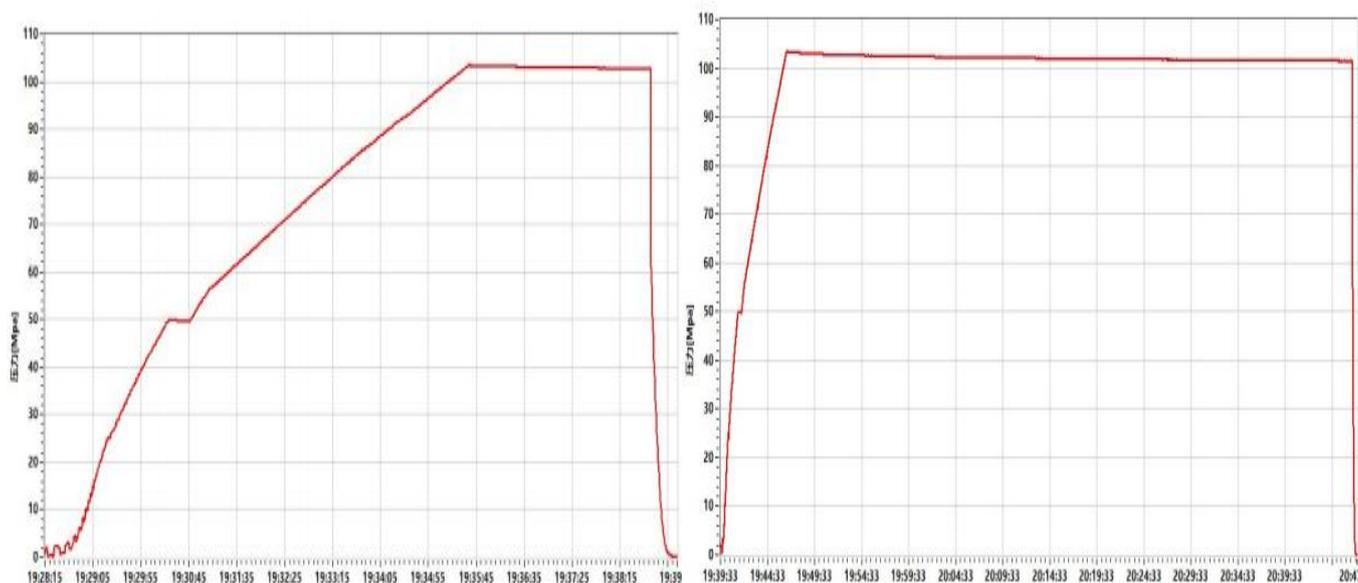
Rate of length change

Standard requirements	At working pressure ,the rate of length change should not more than ±2%
Testing result	10000psi (69.0MPa) ,Rate of length change 0.6%

Hydrostatic testing

Standard requirements	At 1.5 times working pressure, the initial pressure-holding period of not less than three minutes, the second pressure-holding period of not less than one hour, no leakage.
Testing result	15000psi (103.5MPa), 3 min for the first time, 60 min for the second time, no leakage

Graph of pressure testing:



Conclusion	The inspected items meet standard requirements of API Spec 16C 3 <sup>rd</sup> edition		16C-0403	
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Approver	Jane C	Auditor	Alice D	Inspector	Leo W
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LUOHE LETONE HYDRAULICS TECHNOLOGY CO.,LTD	
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CERTIFICATE OF CONFORMANCE

№:LT24090307

Product Name: Choke And Kill Hose

Product Specification: 3"×10000psi×35ft (10.67m)

Serial Number: VTC-7660257

customer number: PO890145-001

End Connections: 4-1/16"×10000psi Integral flange for sour gas service

The Choke And Kill Hose assembly was produced by LUOHE LETONE HYDRAULICS TECHNOLOGY CO.,LTD.in Sep,2024, and inspected by LUOHE LETONE HYDRAULICS TECHNOLOGY CO.,LTD. according to API Spec 16C 3<sup>rd</sup> edition on Sep 3, 2024. The overall condition is good. This is to certify that the Choke And Kill Hose complies with all current standards and specifications for API Spec 16C 3<sup>rd</sup> edition .

QC Manager: Jane C

Date:Sep 3, 2024



LUOHE LETONE HYDRAULICS TECHNOLOGY CO.,LTD	
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U.S. Department of the Interior  
BUREAU OF LAND MANAGEMENT

# SUPO Data Report

11/06/2025

APD ID: 10400106643

Submission Date: 09/03/2025

Highlighted data reflects the most recent changes

Operator Name: COTERRA ENERGY OPERATING CO

[Show Final Text](#)

Well Name: CASCADE 29 FEDERAL

Well Number: 221H

Well Type: OIL WELL

Well Work Type: Drill

## Section 1 - Existing Roads

Will existing roads be used? YES

Existing Road Map:

Cascade\_29\_Federal\_W2W2\_Pad\_1\_Existing\_Access\_20210414145401.pdf

Existing Road Purpose: ACCESS,FLUID TRANSPORT

Row(s) Exist? NO

### ROW ID(s)

ID:

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? NO

## Section 3 - Location of Existing Wells

Existing Wells Map? YES

Existing Well map Attachment:

**Operator Name:** COTERRA ENERGY OPERATING CO

**Well Name:** CASCADE 29 FEDERAL

**Well Number:** 221H

CASCADE\_29\_FEDERAL\_W2W2\_PAD\_1\_1\_mile\_radius\_plat\_20250903132633.pdf

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

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

**Production Facilities description:** If upon completion the well is a producer, a production facility battery will be constructed and production equipment installed at the wellsite. 4 Batteries (450' x 450' with 50' x 200' connection area) have been previously approved in the Cascade 29 Federal 29H APD. Road: New and existing roads will be used. Please see Exhibit D for 5442' new road. Bulklines: 6484' of 8- 12" Bulklines will be constructed along the proposed road buried in the same 60' trench. Please see Attachment B for route.

**Production Facilities map:**

Cascade\_29\_Fed\_East\_Zone\_1\_CTB\_Layout\_20210413130635.pdf

Cascade\_29\_Fed\_East\_Zone\_2\_CTB\_Layout\_20210413130653.pdf

Cascade\_29\_Fed\_West\_Zone\_1\_CTB\_Layout\_20210413130557.pdf

Cascade\_29\_Fed\_West\_Zone\_2\_CTB\_Layout\_20210413130616.pdf

Cascade\_29\_Federal\_18H\_SUPO\_20210414145629.pdf

Cascade\_29\_Federal\_Bulkline\_ROW\_20210413130733.pdf

### Section 5 - Location and Types of Water Supply

#### Water Source Table

**Water source type:** MUNICIPAL

**Water source use type:** SURFACE CASING  
INTERMEDIATE/PRODUCTION CASING

**Source latitude:** **Source longitude:**

**Source datum:**

**City:** Hobbs

**Water source permit type:** WATER RIGHT

**Permit Number:**

**Water source transport method:** 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

**Operator Name:** COTERRA ENERGY OPERATING CO

**Well Name:** CASCADE 29 FEDERAL

**Well Number:** 221H

**Water source and transportation**

Cascade\_29\_Fed\_Drilling\_Water\_Routes\_20210414145704.pdf

**Water source comments:**

**New water well?** N

**New Water Well Info**

**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:** NO

**Construction Materials description:**

**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:**

<b>Operator Name:</b> COTERRA ENERGY OPERATING CO	
<b>Well Name:</b> CASCADE 29 FEDERAL	<b>Well Number:</b> 221H

**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

**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**

**Operator Name:** COTERRA ENERGY OPERATING CO

**Well Name:** CASCADE 29 FEDERAL

**Well Number:** 221H

### Cuttings Area

**Cuttings Area being used?** NO

**Are you storing cuttings on location?** N

**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?**

**Cuttings 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:**

Cascade\_29\_Federal\_18H\_Wellsite\_Layout\_20210414145748.pdf

Cascade\_29\_Federal\_W2W2\_Pad\_1\_Wellsite\_Pad\_Info\_20210420101229.docx

**Comments:** This well pad has wells 15H 16H 17H 18H 19H 20H 21H 22H 23H 24H 25H 26H 27H 28H

### Section 10 - Plans for Surface

**Type of disturbance:** No New Surface Disturbance    **Multiple Well Pad Name:** Cascade 29 Federal

**Multiple Well Pad Number:** W2W2 Pad 1

**Recontouring**

CASCADE\_29\_FEDERAL\_W2W2\_PAD\_1\_reclamation\_plat\_20250903132706.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

**Operator Name:** COTERRA ENERGY OPERATING CO  
**Well Name:** CASCADE 29 FEDERAL **Well Number:** 221H

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.

<b>Well pad proposed disturbance (acres):</b>	<b>Well pad interim reclamation (acres): 0</b>	<b>Well pad long term disturbance (acres): 0</b>
<b>Road proposed disturbance (acres):</b>	<b>Road interim reclamation (acres): 0</b>	<b>Road long term disturbance (acres): 0</b>
<b>Powerline proposed disturbance (acres):</b>	<b>Powerline interim reclamation (acres): 0</b>	<b>Powerline long term disturbance (acres): 0</b>
<b>Pipeline proposed disturbance (acres):</b>	<b>Pipeline interim reclamation (acres): 0</b>	<b>Pipeline long term disturbance (acres): 0</b>
<b>Other proposed disturbance (acres):</b>	<b>Other interim reclamation (acres): 0</b>	<b>Other long term disturbance (acres): 0</b>
<b>Total proposed disturbance: 0</b>	<b>Total interim reclamation: 0</b>	<b>Total long term disturbance: 0</b>

**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**

**Operator Name:** COTERRA ENERGY OPERATING CO

**Well Name:** CASCADE 29 FEDERAL

**Well Number:** 221H

**Non native seed used?** N

**Non native seed description:**

**Seedling transplant description:**

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

**Seedling transplant description attachment:**

**Will seed be harvested for use in site reclamation?** N

**Seed harvest description:**

**Seed harvest description attachment:**

[Seed](#)

[Seed Table](#)

Seed Summary	
Seed Type	Pounds/Acre

**Total pounds/Acre:**

**Seed reclamation**

[Operator Contact/Responsible Official](#)

**First Name:**

**Last Name:**

**Phone:**

**Email:**

**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

**Operator Name:** COTERRA ENERGY OPERATING CO

**Well Name:** CASCADE 29 FEDERAL

**Well Number:** 221H

**Pit closure description:** N/A

**Pit closure attachment:**

**Section 11 - Surface**

**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:**

**Section 12 - Other**

**Right of Way needed?** Y

**Use APD as ROW?** Y

**ROW Type(s):** 281001 ROW - ROADS,288100 ROW – O&G Pipeline,288101 ROW – O&G Facility Sites,289001 ROW-O&G Well Pad

**ROW**

**SUPO Additional Information:**

**Operator Name:** COTERRA ENERGY OPERATING CO

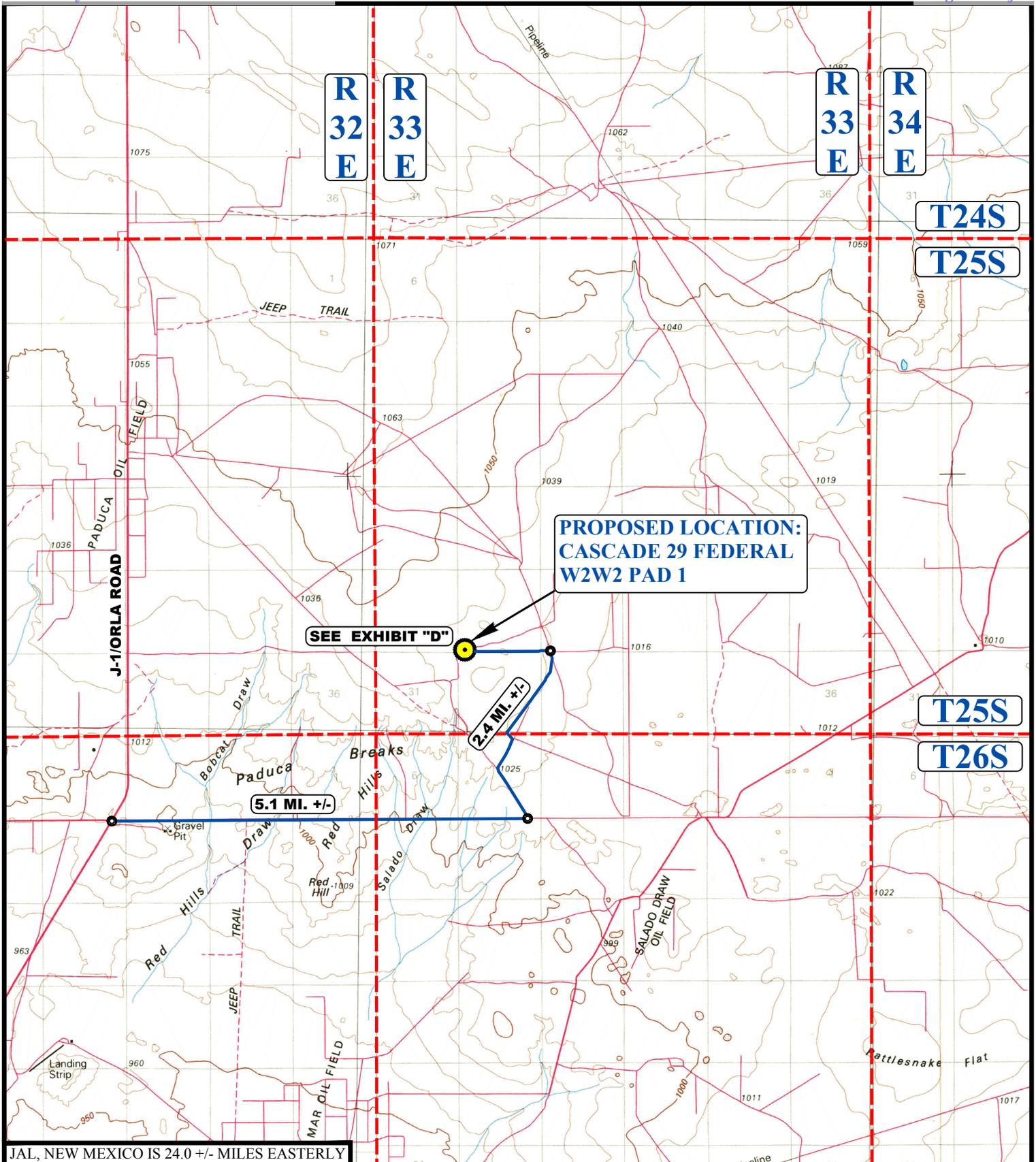
**Well Name:** CASCADE 29 FEDERAL

**Well Number:** 221H

**Use a previously conducted onsite?** Y

**Previous Onsite information:** Onsite Date: 6/28/2018 BLM Personnel on site: Jeff Robertson Cimarex Energy personnel on site: Barry Hunt Pertinent information from onsite: V-Door East. Top soil west. Access road off SE corner south to proposed Red Hills Unit 32 access road. 560' (N/S) x 500' (E/W).

**Other SUPO**



**LEGEND:**

**PROPOSED LOCATION**



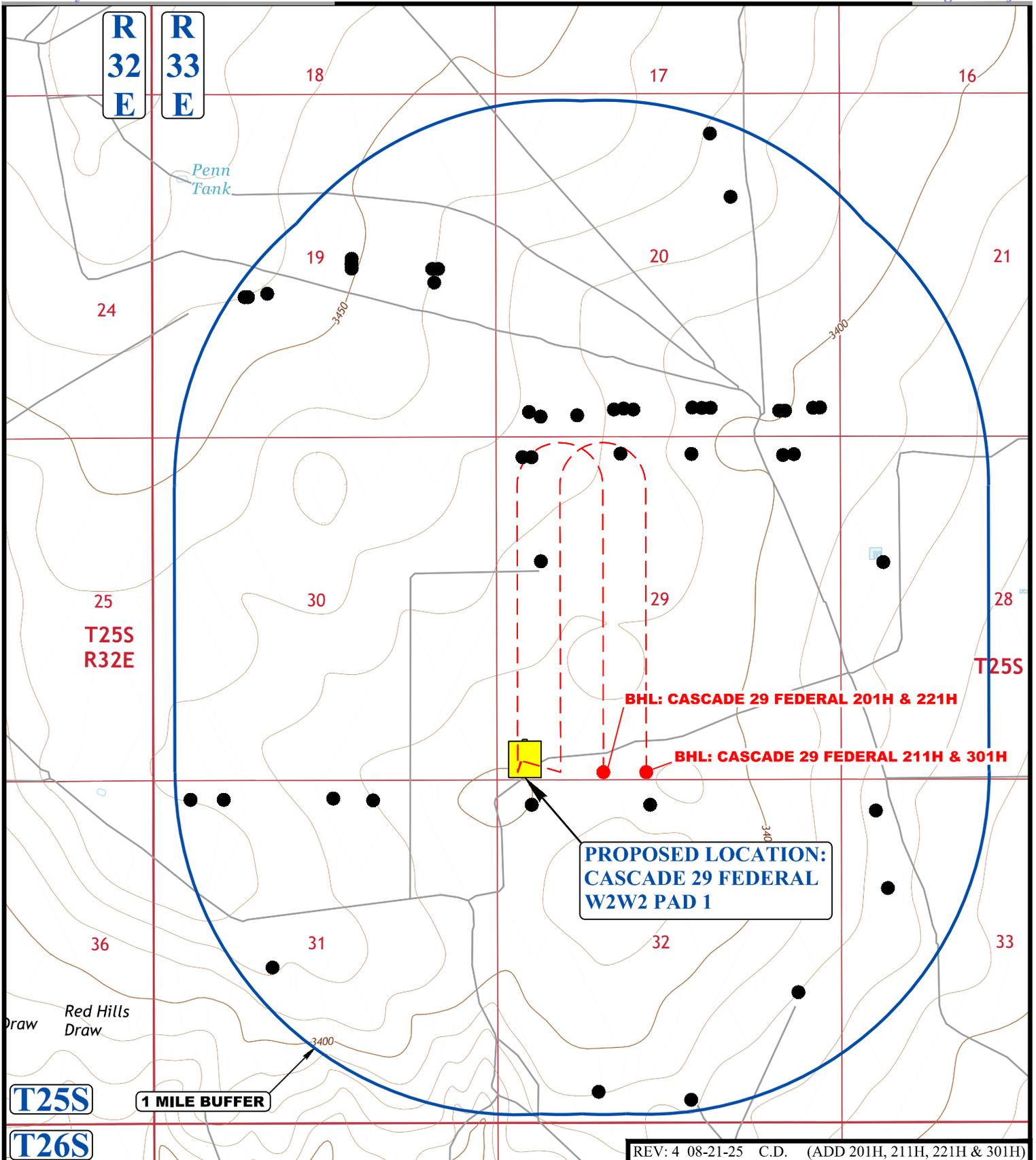
**CIMAREX ENERGY CO.**

**CASCADE 29 FEDERAL W2W2 PAD 1**  
SW 1/4 SW 1/4, SECTION 29, T25S, R33E, N.M.P.M.  
LEA COUNTY, NEW MEXICO



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

<b>SURVEYED BY</b>	C.T., C.H.	07-02-18	<b>SCALE</b>
<b>DRAWN BY</b>	D.J.S.	08-13-18	1 : 100,000
<b>PUBLIC ACCESS ROAD MAP</b>			<b>EXHIBIT B</b>



**PROPOSED LOCATION:  
CASCADE 29 FEDERAL  
W2W2 PAD 1**

**BHL: CASCADE 29 FEDERAL 201H & 221H**

**BHL: CASCADE 29 FEDERAL 211H & 301H**

**1 MILE BUFFER**

REV: 4 08-21-25 C.D. (ADD 201H, 211H, 221H & 301H)

**LEGEND:**  
● EXISTING WELLS



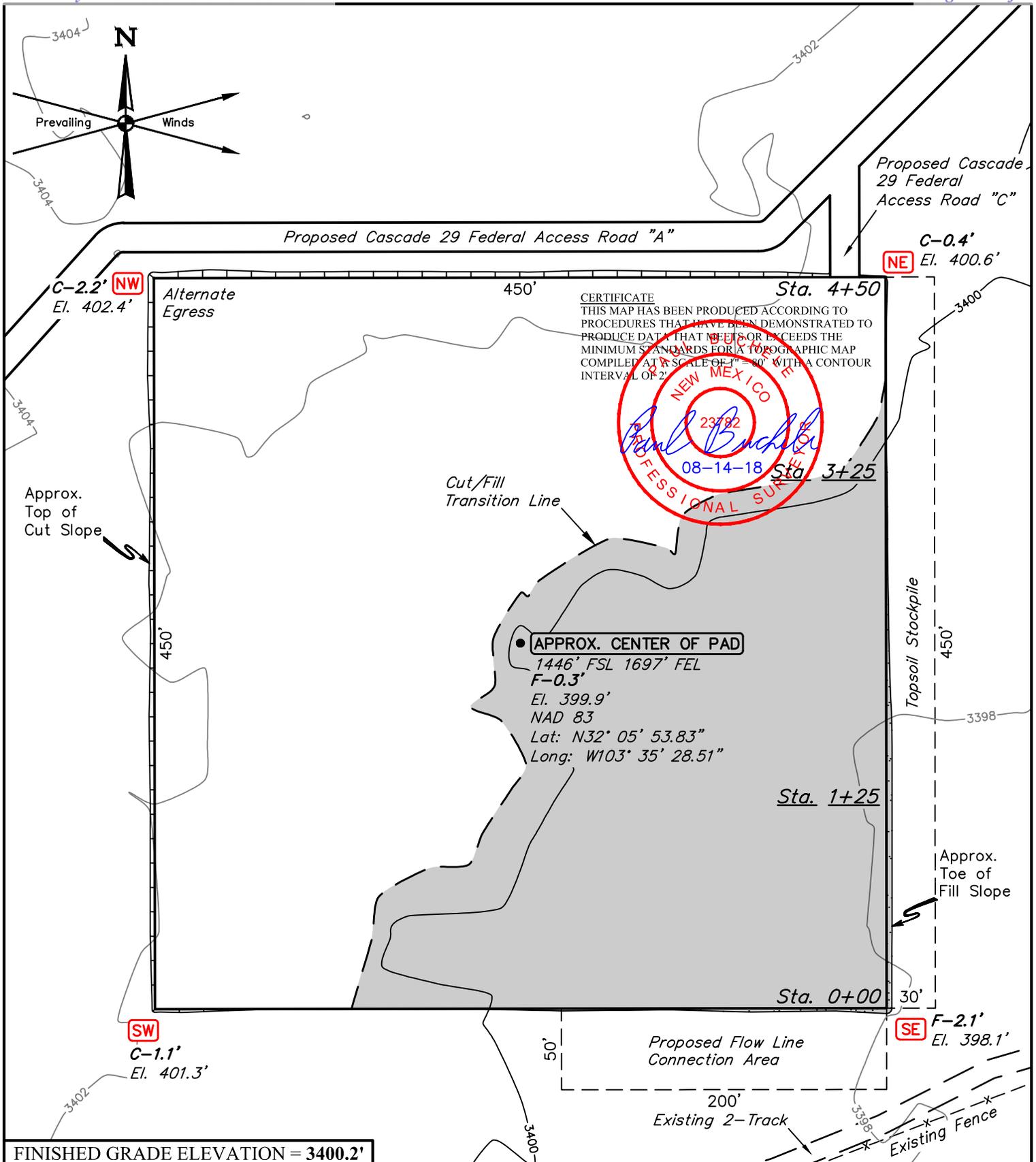
**CIMAREX ENERGY CO.**

**CASCADE 29 FEDERAL W2W2 PAD 1  
SW 1/4 SW 1/4, SECTION 29, T25S, R33E, N.M.P.M.  
LEA COUNTY, NEW MEXICO**



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

SURVEYED BY	C.T., C.H.	07-02-18	SCALE
DRAWN BY	D.J.S.	08-13-18	1 : 24,000
<b>1 MILE RADIUS MAP</b>			<b>EXHIBIT E</b>



FINISHED GRADE ELEVATION = 3400.2'

**NOTES:**

- Contours shown at 2' intervals.
- Cut/Fill slopes 1 1/2:1 (Typ. except where noted)
- Basis of Bearings is a Transverse Mercator Projection with a Central Meridian of W103°53'00"

**CIMAREX ENERGY CO.**

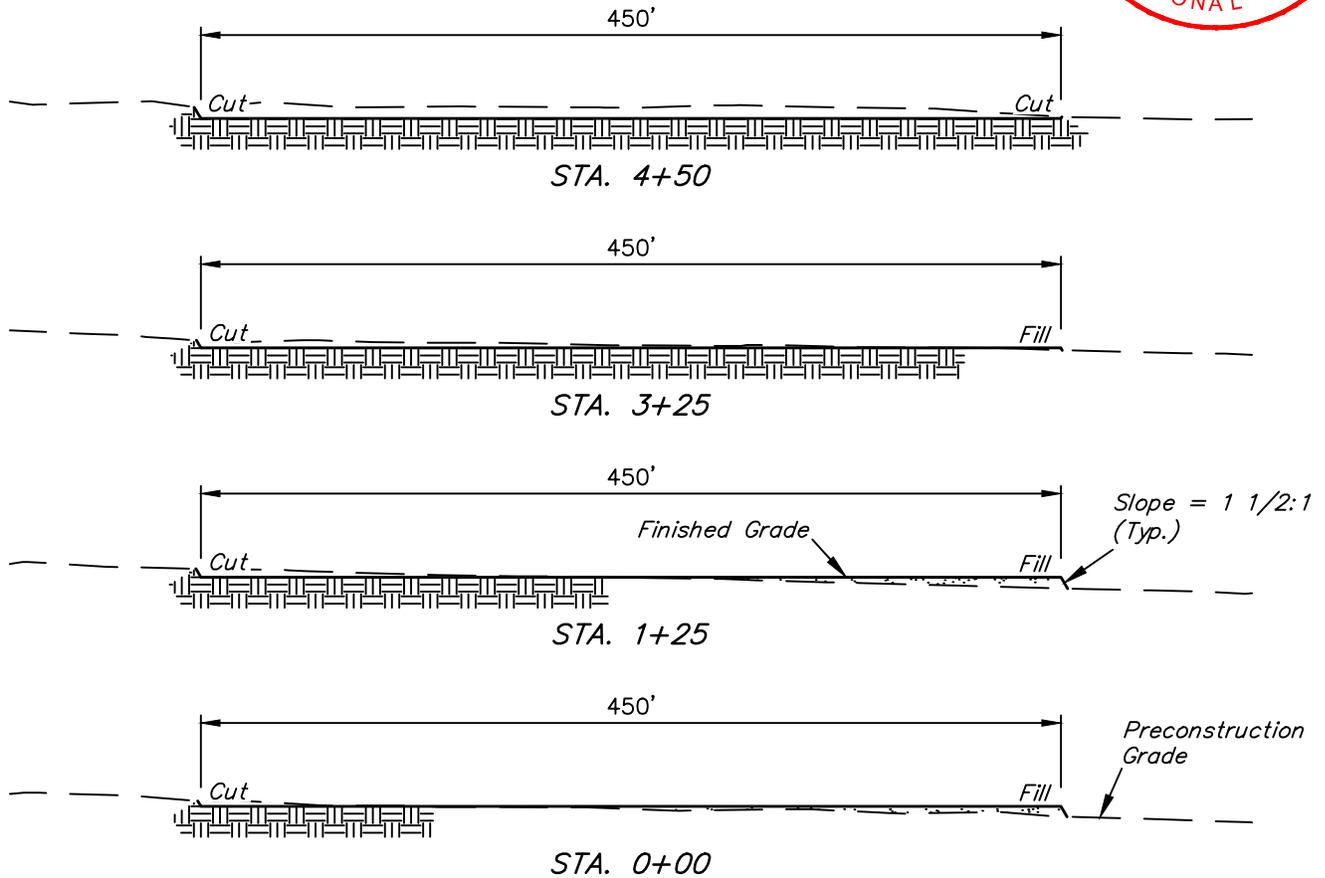
**CASCADE 29 FEDERAL EAST ZONE 1 CTB**  
**1446' FSL 1697' FEL (APPROX. CENTER OF PAD)**  
**NW 1/4 SE 1/4, SECTION 29, T25S, R33E, N.M.P.M.**  
**LEA COUNTY, NEW MEXICO**

<b>SURVEYED BY</b>	R.B., M.H.	07-20-18	<b>SCALE</b>
<b>DRAWN BY</b>	S.F.	08-06-18	1" = 80'
<b>LOCATION LAYOUT</b>		<b>EXHIBIT F</b>	



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

X-Section Scale  
1" = 40'  
1" = 100'



APPROXIMATE EARTHWORK QUANTITIES	
(4") TOPSOIL STRIPPING	2,550 Cu. Yds.
REMAINING LOCATION	3,720 Cu. Yds.
<b>TOTAL CUT</b>	<b>6,270 Cu. Yds.</b>
<b>FILL</b>	<b>3,720 Cu. Yds.</b>
EXCESS MATERIAL	2,550 Cu. Yds.
TOPSOIL	2,550 Cu. Yds.
<b>EXCESS UNBALANCE</b> (After Interim Rehabilitation)	<b>0 Cu. Yds.</b>

APPROXIMATE SURFACE DISTURBANCE AREAS		
	DISTANCE	ACRES
WELL SITE DISTURBANCE	NA	±5.037
FLOW LINE SURFACE USE AREA DISTURBANCE	NA	±0.230
<b>TOTAL SURFACE USE AREA</b>		<b>±5.267</b>

**NOTES:**

- Fill quantity includes 5% for compaction.
- Cut/Fill slopes 1 1/2:1 (Typ. except where noted)

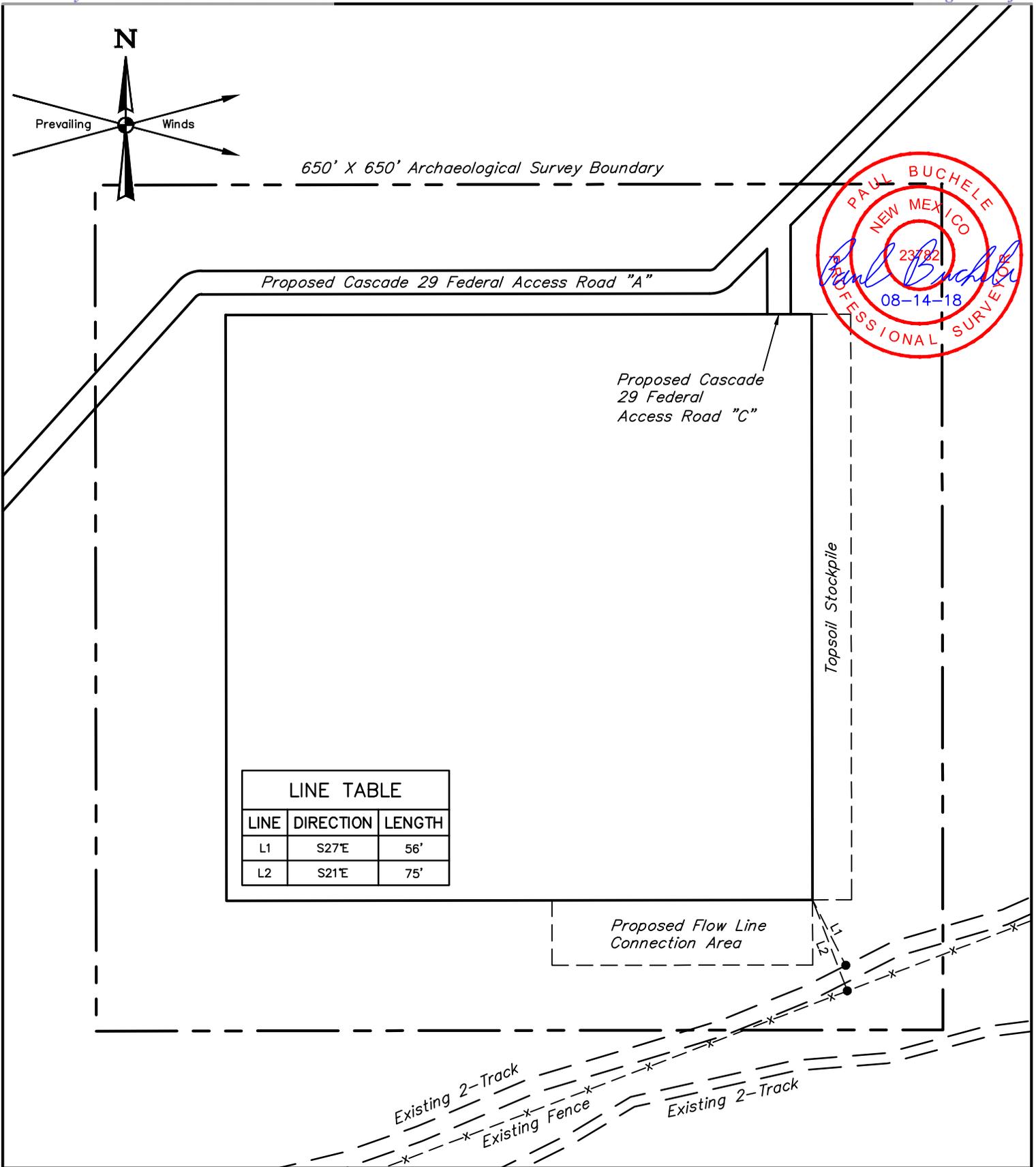
**CIMAREX ENERGY CO.**

**CASCADE 29 FEDERAL EAST ZONE 1 CTB  
1446' FSL 1697' FEL (APPROX. CENTER OF PAD)  
NW 1/4 SE 1/4, SECTION 29, T25S, R33E, N.M.P.M.  
LEA COUNTY, NEW MEXICO**

SURVEYED BY	R.B., M.H.	07-20-18	SCALE
DRAWN BY	S.F.	08-06-18	AS SHOWN
<b>TYPICAL CROSS SECTIONS</b>			<b>EXHIBIT F</b>



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Vernal, UT 84078 \* (435) 789-1017



LINE TABLE		
LINE	DIRECTION	LENGTH
L1	S27°E	56'
L2	S21°E	75'

**NOTES:**

- Basis of Bearings is a Transverse Mercator Projection with a Central Meridian of W103°53'00"

**CIMAREX ENERGY CO.**

**CASCADE 29 FEDERAL EAST ZONE 1 CTB  
 1446' FSL 1697' FEL (APPROX. CENTER OF PAD)  
 NW 1/4 SE 1/4, SECTION 29, T25S, R33E, N.M.P.M.  
 LEA COUNTY, NEW MEXICO**

<b>SURVEYED BY</b>	R.B., M.H.	07-20-18	<b>SCALE</b>
<b>DRAWN BY</b>	S.F.	08-06-18	1" = 100'
<b>ARCHAEOLOGICAL SURVEY BOUNDARY</b>			<b>EXHIBIT F</b>



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BEGINNING AT THE INTERSECTION J-1/ORLA ROAD AND AN EXISTING ROAD TO THE EAST (LOCATED AT NAD 83 LATITUDE N32.0650° AND LONGITUDE W103.6742°) PROCEED IN AN EASTERLY DIRECTION APPROXIMATELY 5.1 MILES TO THE JUNCTION OF THIS ROAD AND AN EXISTING ROAD TO THE NORTHWEST; TURN LEFT AND PROCEED IN A NORTHWESTERLY, THEN NORTHEASTERLY, THEN NORTHWESTERLY DIRECTION APPROXIMATELY 2.8 MILES TO THE BEGINNING OF THE PROPOSED CASCADE 29 FEDERAL ACCESS ROAD "A" TO THE WEST; FOLLOW ROAD FLAGS IN A WESTERLY, THEN SOUTHWESTERLY, THEN WESTERLY DIRECTION APPROXIMATELY 1,606' TO THE BEGINNING OF THE PROPOSED ACCESS ROAD TO THE SOUTH; FOLLOW ROAD FLAGS IN A SOUTHERLY DIRECTION APPROXIMATELY 72' TO THE PROPOSED LOCATION.

TOTAL DISTANCE FROM THE INTERSECTION OF J-1/ORLA ROAD AND AN EXISTING ROAD TO THE EAST (LOCATED AT NAD 83 LATITUDE N32.0650° AND LONGITUDE W103.6742°) TO THE PROPOSED WELL LOCATION IS APPROXIMATELY 8.2 MILES.

**CIMAREX ENERGY CO.**

**CASCADE 29 FEDERAL EAST ZONE 1 CTB  
1446' FSL 1697' FEL (APPROX. CENTER OF PAD)  
NW 1/4 SE 1/4, SECTION 29, T25S, R33E, N.M.P.M.  
LEA COUNTY, NEW MEXICO**

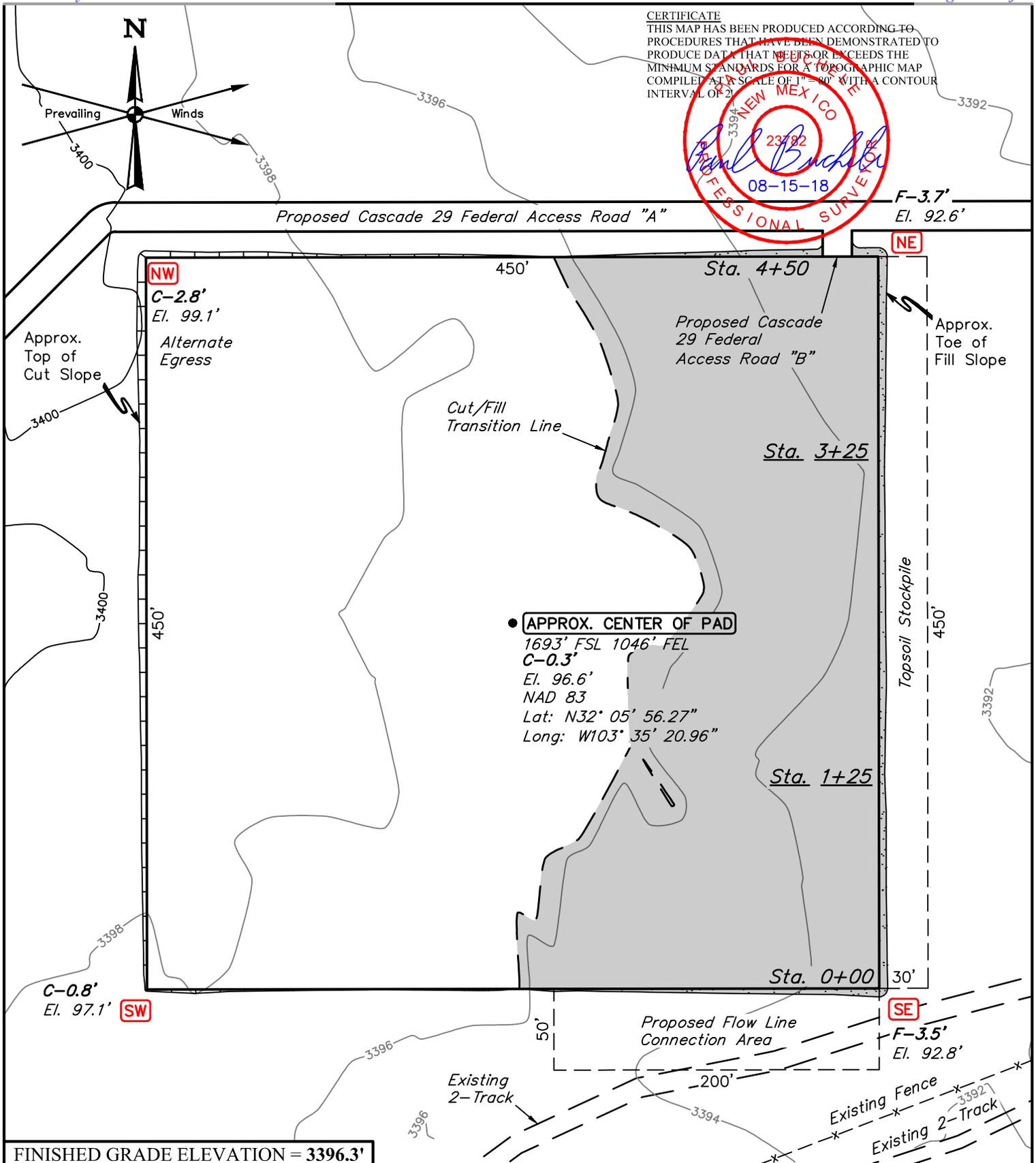
<b>SURVEYED BY</b>	R.B., M.H.	07-20-18	
<b>DRAWN BY</b>	R.J.	08-12-18	
<b>ROAD DESCRIPTION</b>			<b>EXHIBIT F</b>

**UELS, LLC**

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Vernal, UT 84078 \* (435) 789-1017







**NOTES:**

- Contours shown at 2' intervals.
- Cut/Fill slopes 1 1/2:1 (Typ. except where noted)
- Basis of Bearings is a Transverse Mercator Projection with a Central Meridian of W103°53'00"

**CIMAREX ENERGY CO.**

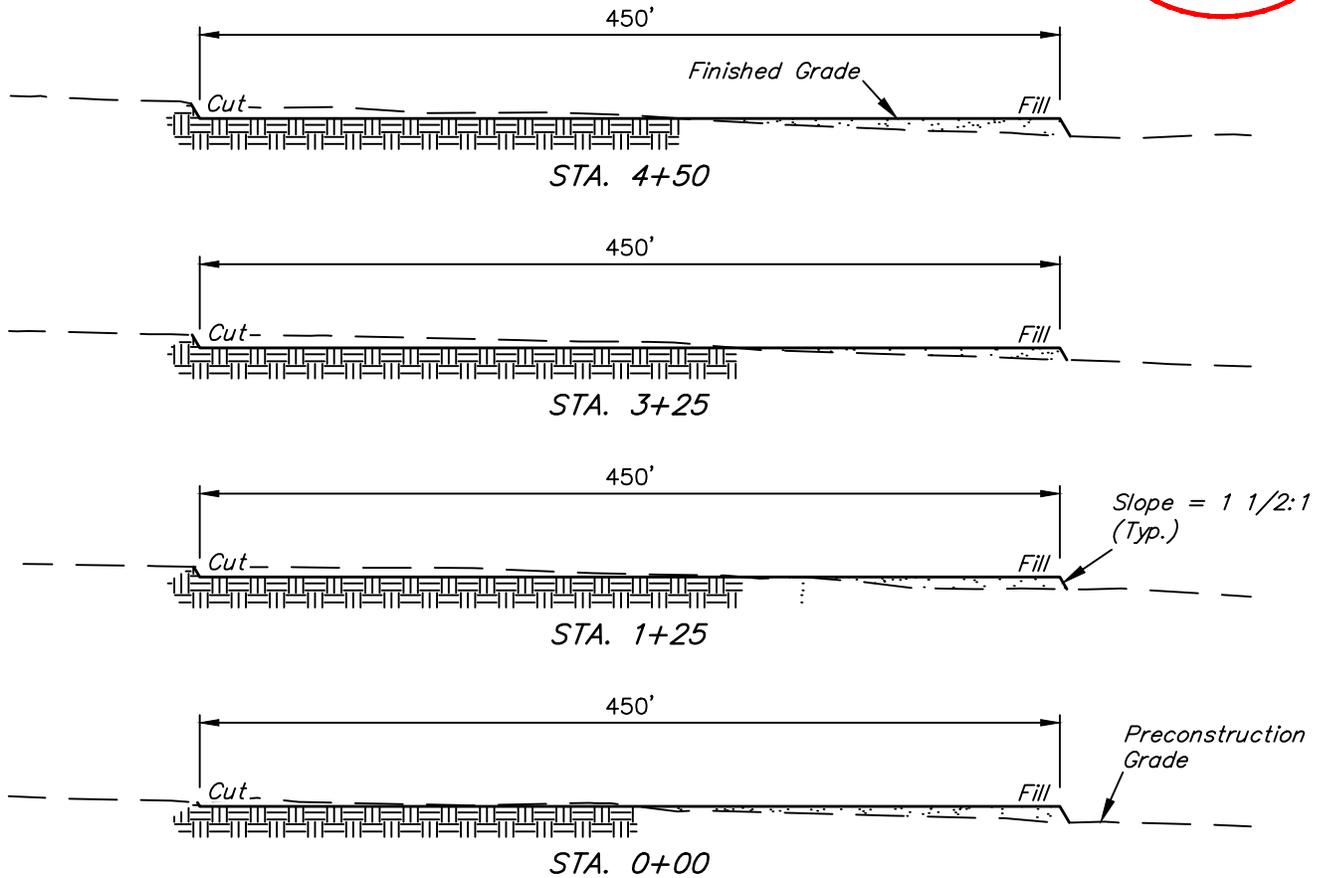
**CASCADE 29 FEDERAL EAST ZONE 2 CTB**  
**1693' FSL 1046' FEL (APPROX. CENTER OF PAD)**  
**NE 1/4 SE 1/4, SECTION 29, T25S, R33E, N.M.P.M.**  
**LEA COUNTY, NEW MEXICO**

<b>SURVEYED BY</b>	R.B., M.H.	07-20-18	<b>SCALE</b>
<b>DRAWN BY</b>	S.F.	08-04-18	1" = 80'
<b>LOCATION LAYOUT</b>		<b>EXHIBIT F</b>	



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

1" = 40'  
 X-Section Scale  
 1" = 100'



APPROXIMATE EARTHWORK QUANTITIES	
(4") TOPSOIL STRIPPING	2,570 Cu. Yds.
REMAINING LOCATION	5,870 Cu. Yds.
<b>TOTAL CUT</b>	<b>8,440 Cu. Yds.</b>
<b>FILL</b>	<b>5,870 Cu. Yds.</b>
EXCESS MATERIAL	2,570 Cu. Yds.
TOPSOIL	2,570 Cu. Yds.
<b>EXCESS UNBALANCE</b> (After Interim Rehabilitation)	<b>0 Cu. Yds.</b>

APPROXIMATE SURFACE DISTURBANCE AREAS		
	DISTANCE	ACRES
WELL SITE DISTURBANCE	NA	±5.047
FLOW LINE SURFACE USE AREA DISTURBANCE	NA	±0.230
<b>TOTAL SURFACE USE AREA</b>		<b>±5.277</b>

**NOTES:**

- Fill quantity includes 5% for compaction.
- Cut/Fill slopes 1 1/2:1 (Typ. except where noted)

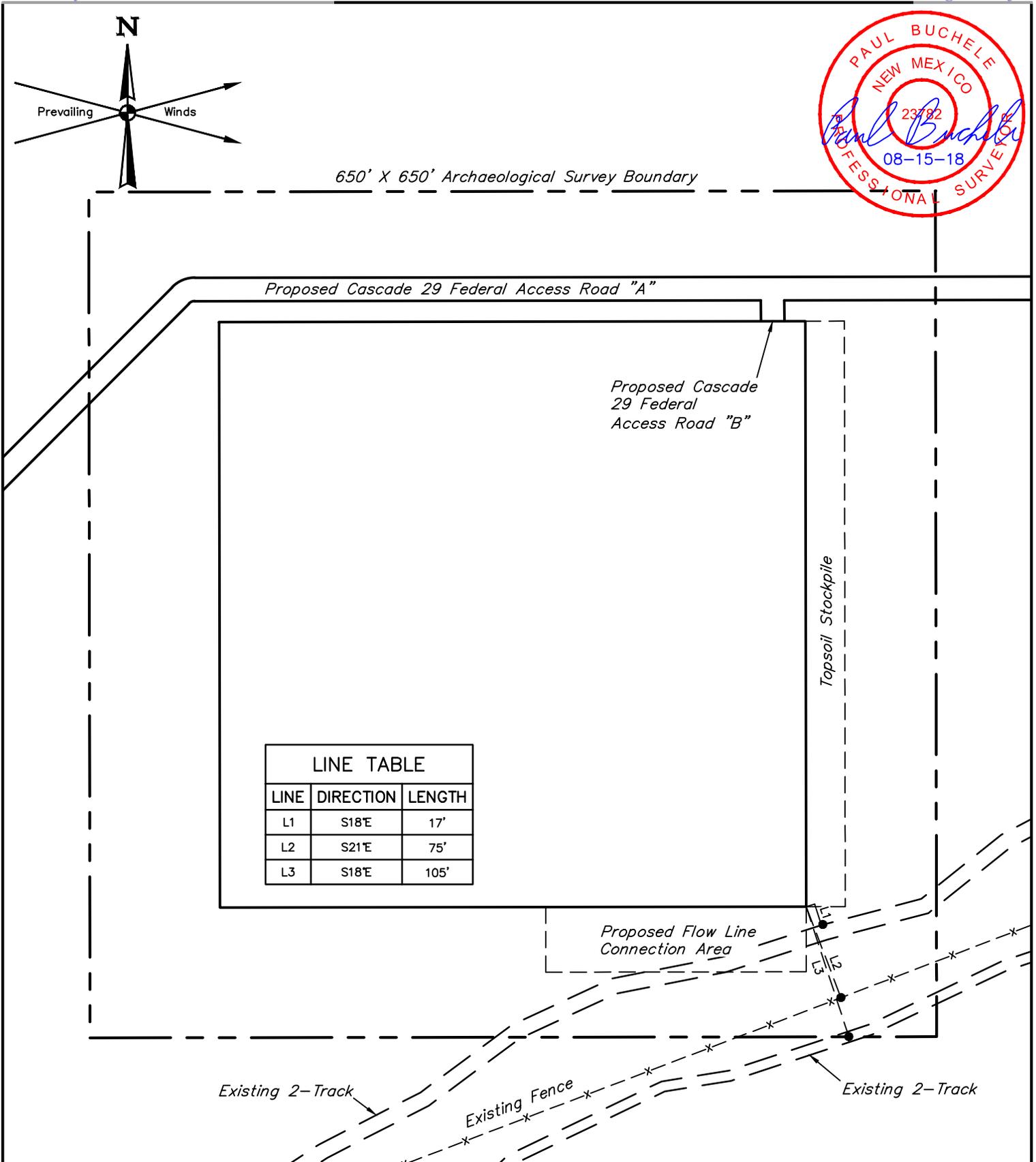
**CIMAREX ENERGY CO.**

**CASCADE 29 FEDERAL EAST ZONE 2 CTB  
 1693' FSL 1046' FEL (APPROX. CENTER OF PAD)  
 NE 1/4 SE 1/4, SECTION 29, T25S, R33E, N.M.P.M.  
 LEA COUNTY, NEW MEXICO**

SURVEYED BY	R.B., M.H.	07-20-18	SCALE
DRAWN BY	S.F.	08-04-18	AS SHOWN
<b>TYPICAL CROSS SECTIONS</b>			<b>EXHIBIT F</b>



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**NOTES:**

- Basis of Bearings is a Transverse Mercator Projection with a Central Meridian of W103°53'00"

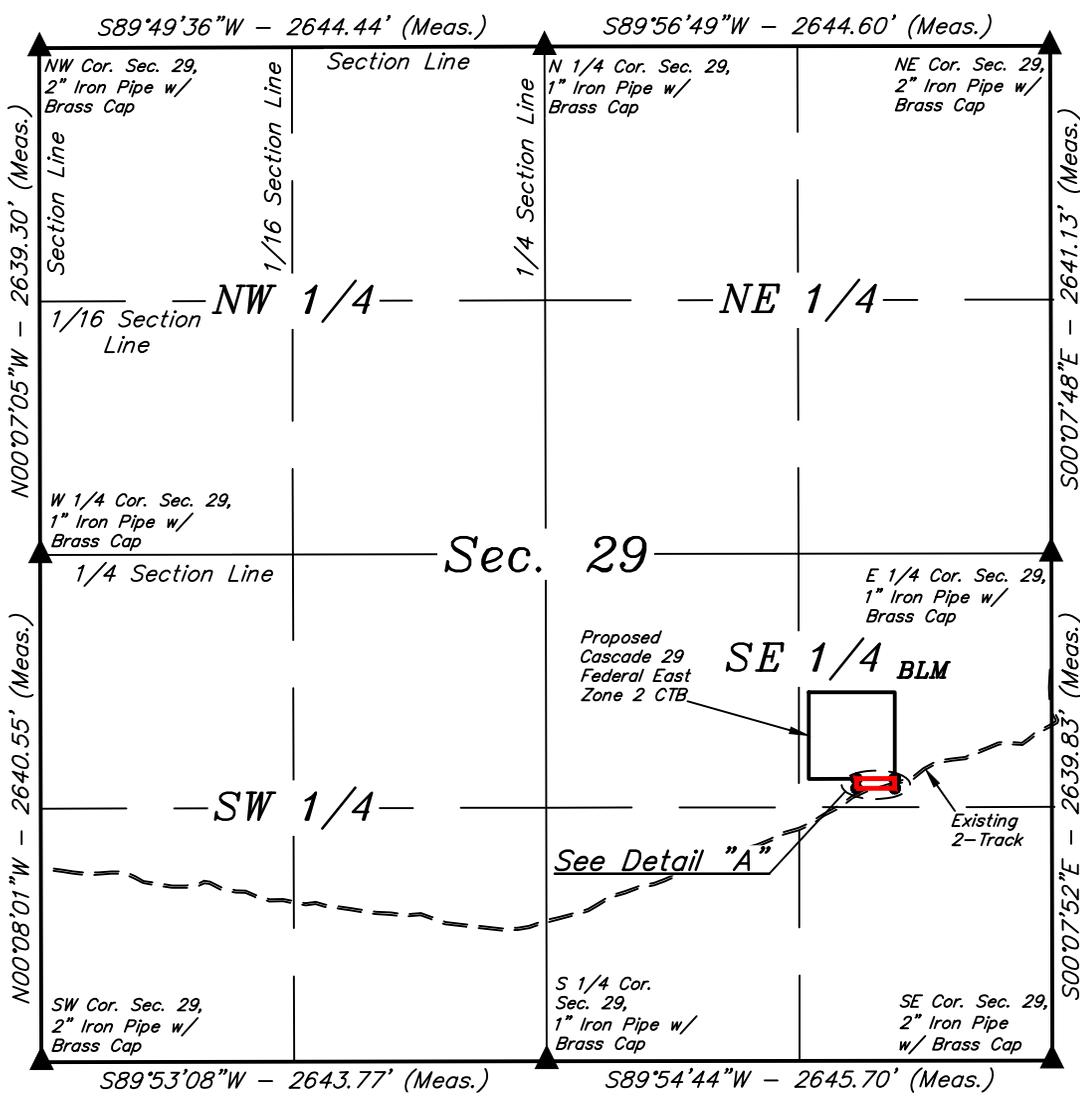
**CIMAREX ENERGY CO.**

**CASCADE 29 FEDERAL EAST ZONE 2 CTB  
1693' FSL 1046' FEL (APPROX. CENTER OF PAD)  
NE 1/4 SE 1/4, SECTION 29, T25S, R33E, N.M.P.M.  
LEA COUNTY, NEW MEXICO**

<b>SURVEYED BY</b>	R.B., M.H.	07-20-18	<b>SCALE</b>
<b>DRAWN BY</b>	S.F.	08-04-18	1" = 100'
<b>ARCHAEOLOGICAL SURVEY BOUNDARY</b>			<b>EXHIBIT F</b>

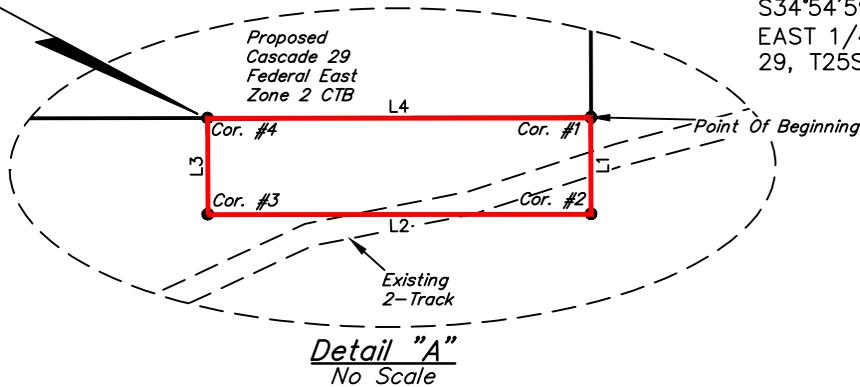


**UELS, LLC**  
Corporate Office \* 85 South 200 East  
Vernal, UT 84078 \* (435) 789-1017



LINE TABLE		
LINE	DIRECTION	LENGTH
L1	S00°04'57"E	50.00'
L2	S89°55'03"W	200.00'
L3	N00°04'57"W	50.00'
L4	N89°55'03"E	200.00'

**SURFACE USE AREA**  
Acres = 0.230

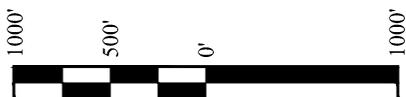
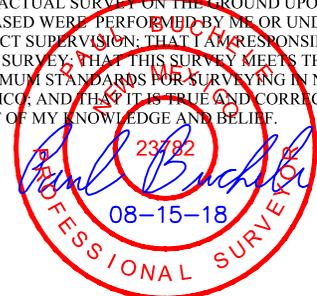


POINT OF BEGINNING BEARS  
S34°54'59"W 1430.80' FROM THE  
EAST 1/4 CORNER OF SECTION  
29, T25S, R33E, N.M.P.M.

**SURFACE USE AREA DESCRIPTION**

BEGINNING AT A POINT IN THE NE 1/4 SE 1/4 OF SECTION 29, T25S, R33E, N.M.P.M., WHICH BEARS S34°54'59"W 1430.80' FROM THE EAST 1/4 CORNER OF SAID SECTION 29, THENCE S00°04'57"E 50.00'; THENCE S89°55'03"W 200.00'; THENCE N00°04'57"W 50.00'; THENCE N89°55'03"E 200.00' TO THE POINT OF BEGINNING. BASIS OF BEARINGS IS A TRANSVERSE MERCATOR PROJECTION WITH A CENTRAL MERIDIAN OF W103°53'00". CONTAINS 0.230 ACRES MORE OR LESS.

**CERTIFICATE**  
THIS IS TO CERTIFY THAT THIS SURFACE USE AREA 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.



▲ = SECTION CORNERS LOCATED.

FILE: 64521-A1

Sheet 1 of 2

**NOTES:**  
• Basis of Bearings is a Transverse Mercator Projection with a Central Meridian of W103°53'00"



**CIMAREX ENERGY CO.**

**CASCADE 29 FEDERAL EAST ZONE 2 CTB  
ON BLM LANDS IN  
SECTION 29, T25S, R33E, N.M.P.M.  
LEA COUNTY, NEW MEXICO**

SURVEYED BY	C.T., T.R.	07-25-18	SCALE
DRAWN BY	J.P.P.	08-15-18	1" = 1000'

**SURFACE USE AREA**

**EXHIBIT F**



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

BEGINNING AT THE INTERSECTION J-1/ORLA ROAD AND AN EXISTING ROAD TO THE EAST (LOCATED AT NAD 83 LATITUDE N32.0650° AND LONGITUDE W103.6742°) PROCEED IN AN EASTERLY DIRECTION APPROXIMATELY 5.1 MILES TO THE JUNCTION OF THIS ROAD AND AN EXISTING ROAD TO THE NORTHWEST; TURN LEFT AND PROCEED IN A NORTHWESTERLY, THEN NORTHEASTERLY, THEN NORTHWESTERLY DIRECTION APPROXIMATELY 2.8 MILES TO THE BEGINNING OF THE PROPOSED CASCADE 29 FEDERAL ACCESS ROAD "A" TO THE WEST; FOLLOW ROAD FLAGS IN A WESTERLY DIRECTION APPROXIMATELY 873' TO THE BEGINNING OF THE PROPOSED ACCESS ROAD TO THE SOUTH; FOLLOW ROAD FLAGS IN A SOUTHERLY DIRECTION APPROXIMATELY 25' TO THE PROPOSED LOCATION.

TOTAL DISTANCE FROM THE INTERSECTION OF J-1/ORLA ROAD AND AN EXISTING ROAD TO THE EAST (LOCATED AT NAD 83 LATITUDE N32.0650° AND LONGITUDE W103.6742°) TO THE PROPOSED WELL LOCATION IS APPROXIMATELY 8.1 MILES.

**CIMAREX ENERGY CO.**

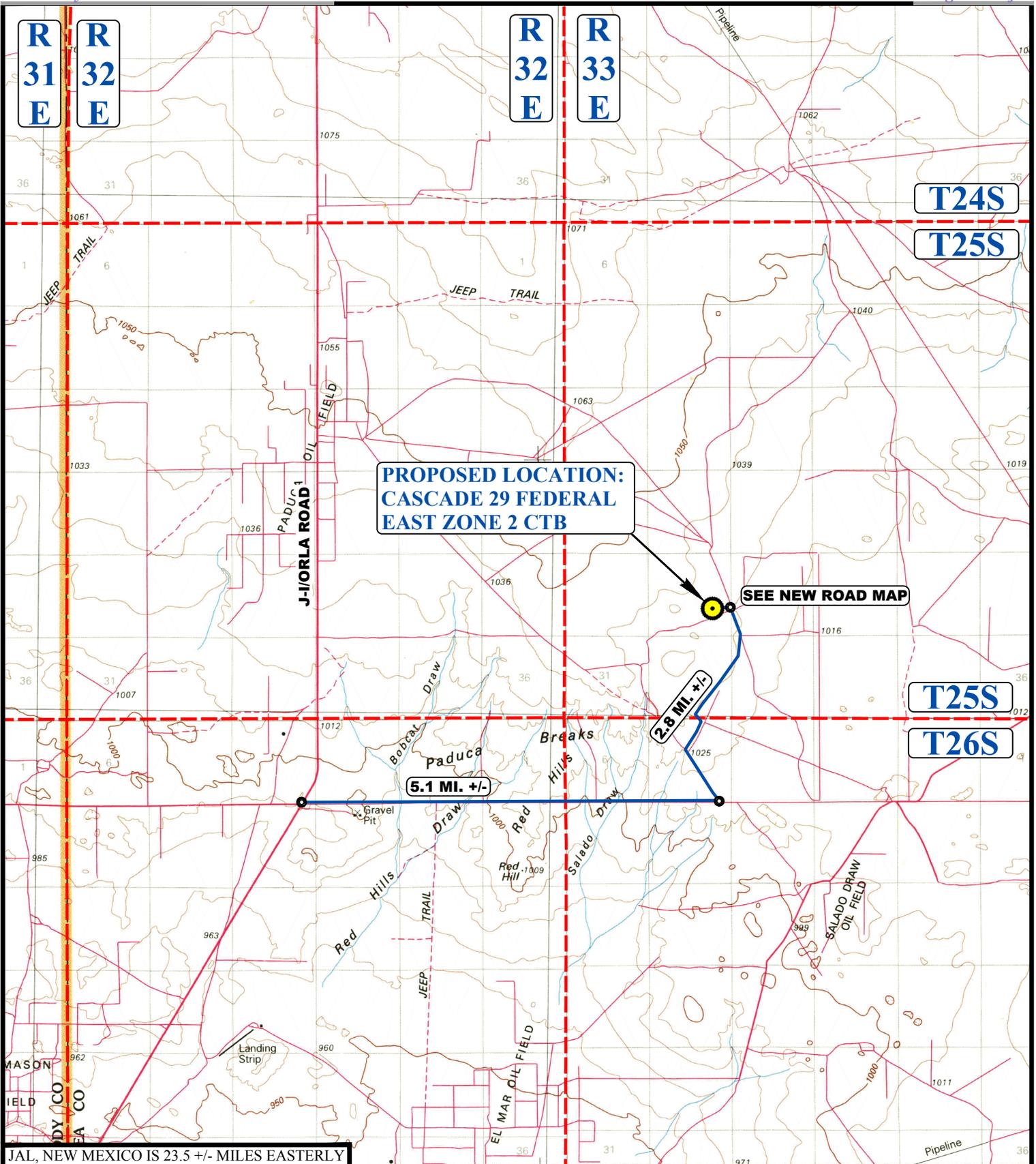
**CASCADE 29 FEDERAL EAST ZONE 2 CTB  
1693' FSL 1046' FEL (APPROX. CENTER OF PAD)  
NE 1/4 SE 1/4, SECTION 29, T25S, R33E, N.M.P.M.  
LEA COUNTY, NEW MEXICO**

<b>SURVEYED BY</b>	R.B., M.H.	07-20-18	
<b>DRAWN BY</b>	R.J.	08-13-18	
<b>ROAD DESCRIPTION</b>			<b>EXHIBIT F</b>

**UELS, LLC**

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





**PROPOSED LOCATION:  
CASCADE 29 FEDERAL  
EAST ZONE 2 CTB**

**SEE NEW ROAD MAP**

**5.1 MI. +/-**

**2.8 MI. +/-**

JAL, NEW MEXICO IS 23.5 +/- MILES EASTERLY

**LEGEND:**

 **PROPOSED LOCATION**



**CIMAREX ENERGY CO.**

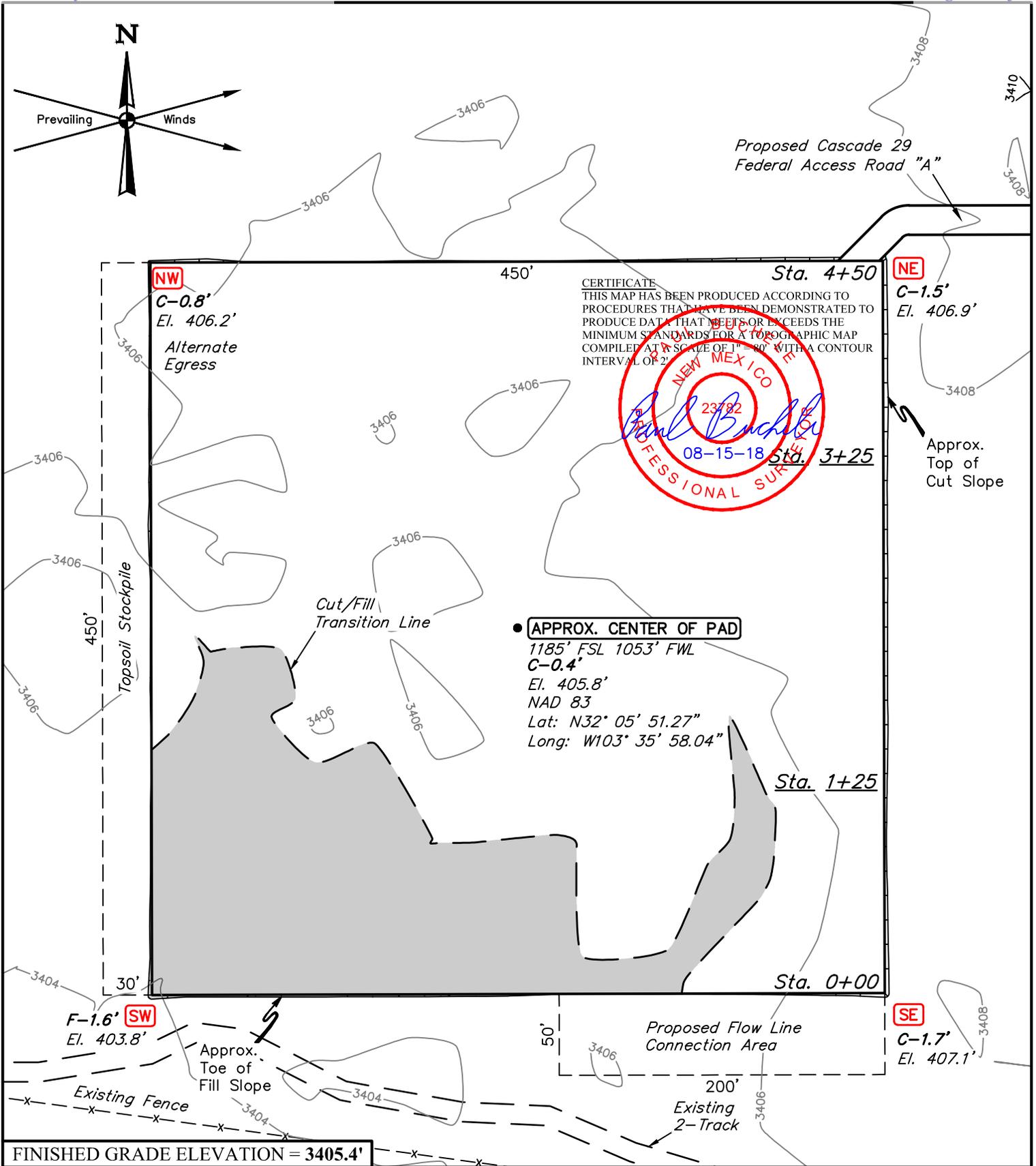
**CASCADE 29 FEDERAL EAST ZONE 2 CTB  
1693' FSL 1046' FEL (APPROX. CENTER OF PAD)  
NE 1/4 SE 1/4, SECTION 29, T25S, R33E, N.M.P.M.  
LEA COUNTY, NEW MEXICO**

<b>SURVEYED BY</b>	R.B., M.H.	07-20-18	<b>SCALE</b>
<b>DRAWN BY</b>	R.J.	08-13-18	1 : 100,000

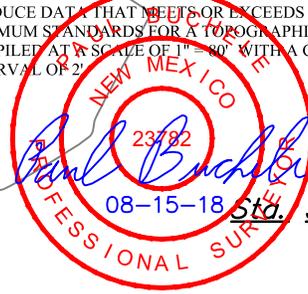
**PUBLIC ACCESS ROAD MAP EXHIBIT F**



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



**CERTIFICATE**  
 THIS MAP HAS BEEN PRODUCED ACCORDING TO PROCEDURES THAT HAVE BEEN DEMONSTRATED TO PRODUCE DATA THAT MEETS OR EXCEEDS THE MINIMUM STANDARDS FOR A TOPOGRAPHIC MAP COMPILED AT A SCALE OF 1" = 80' WITH A CONTOUR INTERVAL OF 2'



● **APPROX. CENTER OF PAD**  
 1185' FSL 1053' FWL  
 C-0.4'  
 El. 405.8'  
 NAD 83  
 Lat: N32° 05' 51.27"  
 Long: W103° 35' 58.04"

**FINISHED GRADE ELEVATION = 3405.4'**

**NOTES:**

- Contours shown at 2' intervals.
- Cut/Fill slopes 1 1/2:1 (Typ. except where noted)
- Basis of Bearings is a Transverse Mercator Projection with a Central Meridian of W103°53'00"

**CIMAREX ENERGY CO.**

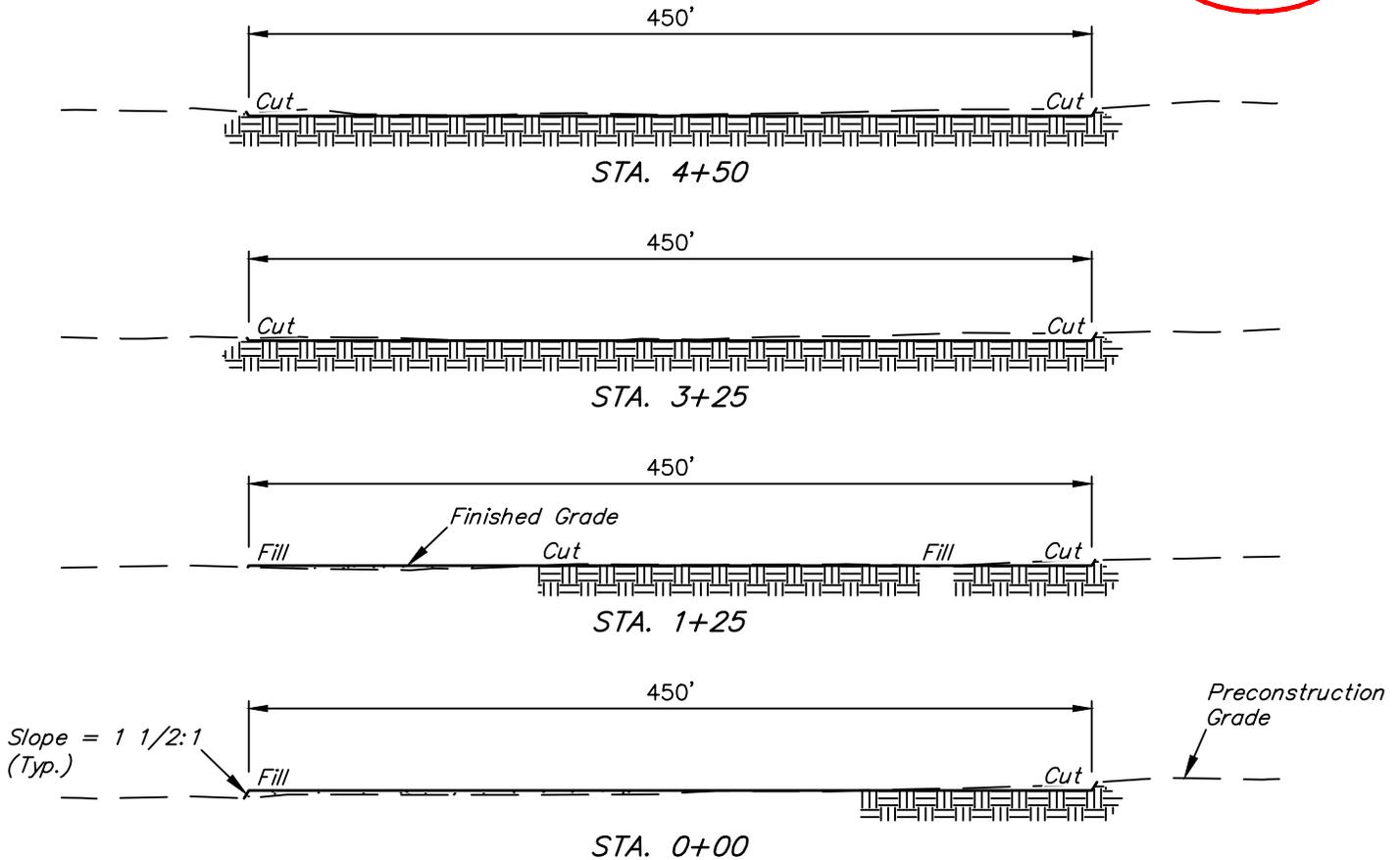
**CASCADE 29 FEDERAL WEST ZONE 1 CTB**  
 1185' FSL 1053' FWL (APPROX. CENTER OF PAD)  
 SW 1/4 SW 1/4, SECTION 29, T25S, R33E, N.M.P.M.  
 LEA COUNTY, NEW MEXICO

<b>SURVEYED BY</b>	R.B., M.H.	07-20-18	<b>SCALE</b>
<b>DRAWN BY</b>	S.F.	08-06-18	1" = 80'
<b>LOCATION LAYOUT</b>		<b>EXHIBIT F</b>	



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X-Section Scale  
1" = 40'  
1" = 100'



APPROXIMATE EARTHWORK QUANTITIES	
(4") TOPSOIL STRIPPING	2,530 Cu. Yds.
REMAINING LOCATION	1,760 Cu. Yds.
<b>TOTAL CUT</b>	<b>4,290 Cu. Yds.</b>
<b>FILL</b>	<b>1,760 Cu. Yds.</b>
EXCESS MATERIAL	2,530 Cu. Yds.
TOPSOIL	2,530 Cu. Yds.
<b>EXCESS UNBALANCE</b> (After Interim Rehabilitation)	<b>0 Cu. Yds.</b>

APPROXIMATE SURFACE DISTURBANCE AREAS		
	DISTANCE	ACRES
WELL SITE DISTURBANCE	NA	±5.005
FLOW LINE SURFACE USE AREA DISTURBANCE	NA	±0.230
<b>TOTAL SURFACE USE AREA</b>		<b>±5.235</b>

**NOTES:**

- Fill quantity includes 5% for compaction.
- Cut/Fill slopes 1 1/2:1 (Typ. except where noted)

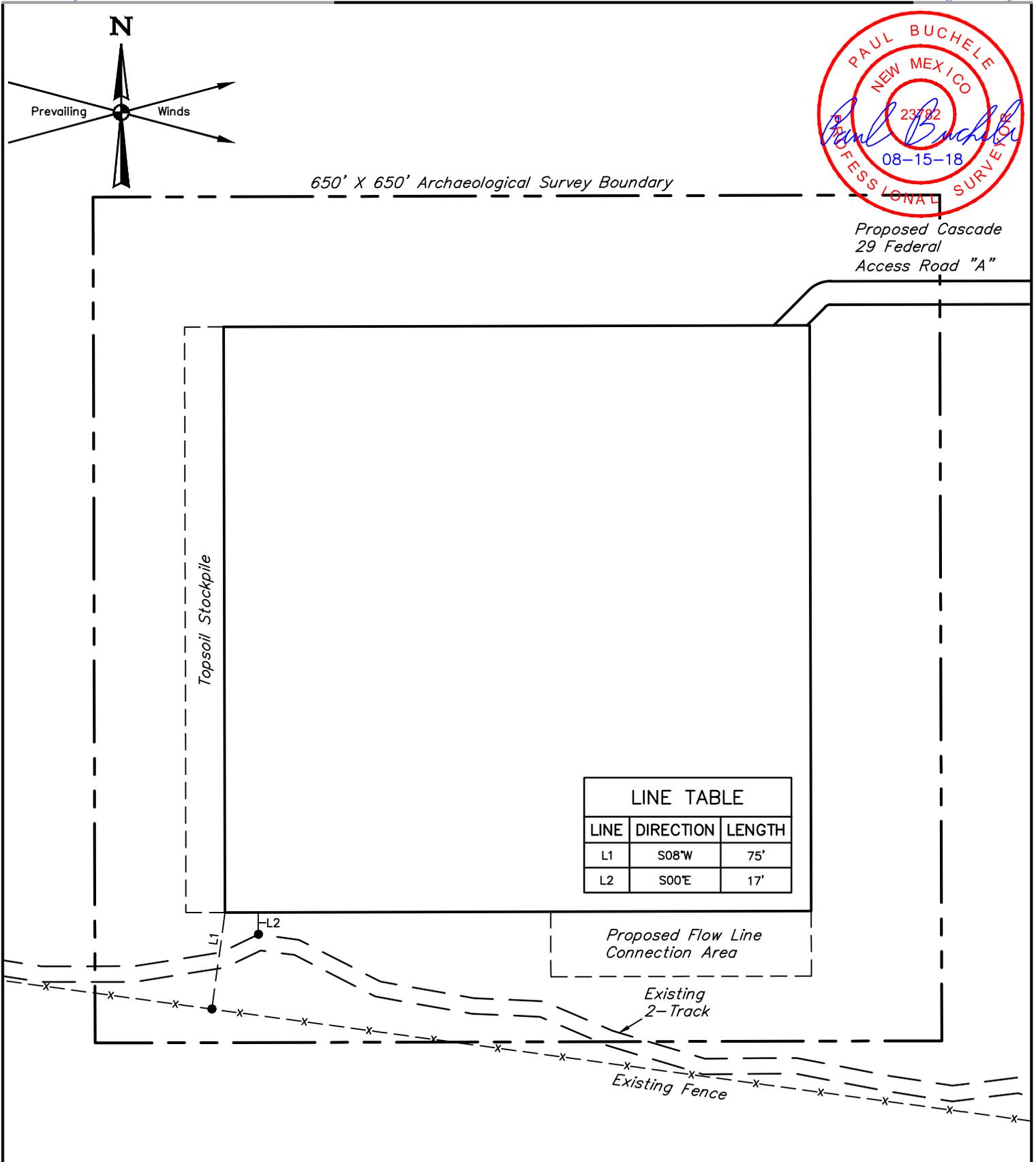
**CIMAREX ENERGY CO.**

**CASCADE 29 FEDERAL WEST ZONE 1 CTB  
1185' FSL 1053' FWL (APPROX. CENTER OF PAD)  
SW 1/4 SW 1/4, SECTION 29, T25S, R33E, N.M.P.M.  
LEA COUNTY, NEW MEXICO**

SURVEYED BY	R.B., M.H.	07-20-18	SCALE
DRAWN BY	S.F.	08-06-18	AS SHOWN
<b>TYPICAL CROSS SECTIONS</b>			<b>EXHIBIT F</b>



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Vernal, UT 84078 \* (435) 789-1017



**NOTES:**

- Basis of Bearings is a Transverse Mercator Projection with a Central Meridian of W103°53'00"

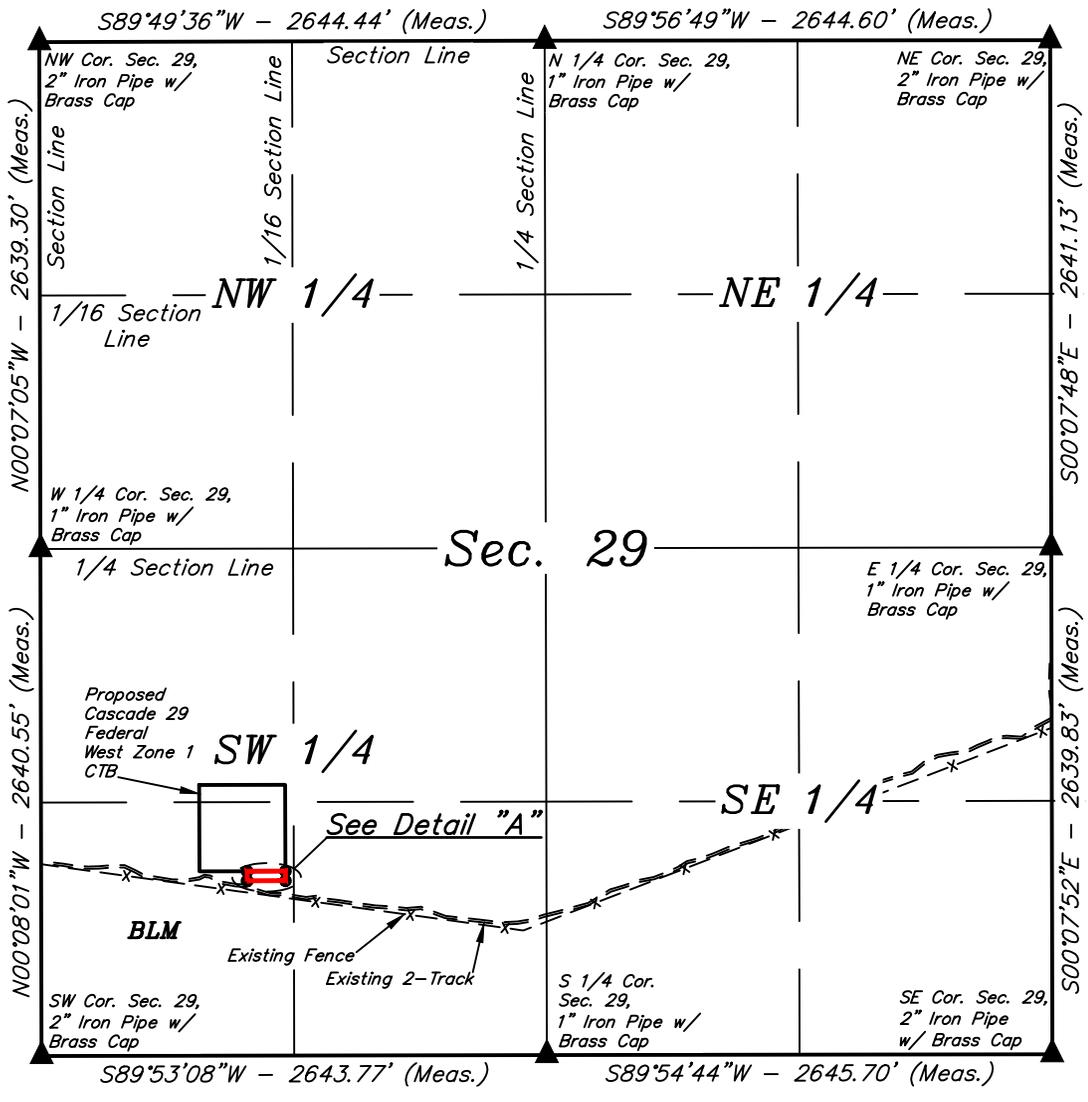
**CIMAREX ENERGY CO.**

**CASCADE 29 FEDERAL WEST ZONE 1 CTB  
1185' FSL 1053' FWL (APPROX. CENTER OF PAD)  
SW 1/4 SW 1/4, SECTION 29, T25S, R33E, N.M.P.M.  
LEA COUNTY, NEW MEXICO**

SURVEYED BY	R.B., M.H.	07-20-18	SCALE
DRAWN BY	S.F.	08-06-18	1" = 100'
<b>ARCHAEOLOGICAL SURVEY BOUNDARY</b>			<b>EXHIBIT F</b>



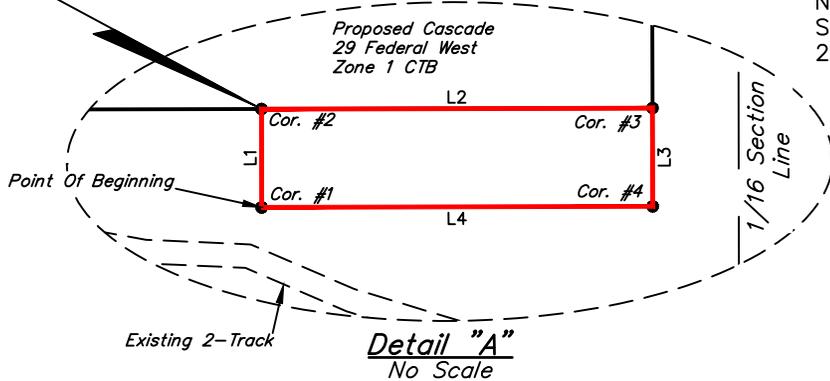
**UELS, LLC**  
Corporate Office \* 85 South 200 East  
Vernal, UT 84078 \* (435) 789-1017



LINE TABLE		
LINE	DIRECTION	LENGTH
L1	N00°08'39"W	50.00'
L2	N89°51'21"E	200.00'
L3	S00°08'39"E	50.00'
L4	S89°51'21"W	200.00'

**SURFACE USE AREA**  
Acres = 0.230

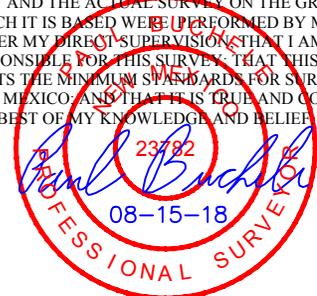
POINT OF BEGINNING BEARS N49°42'42"E 1410.42' FROM THE SOUTHWEST CORNER OF SECTION 29, T25S, R33E, N.M.P.M.



**SURFACE USE AREA DESCRIPTION**

BEGINNING AT A POINT IN THE SW 1/4 SW 1/4 OF SECTION 29, T25S, R33E, N.M.P.M., WHICH BEARS N49°42'42"E 1410.42' FROM THE SOUTHWEST CORNER OF SAID SECTION 29, THENCE N00°08'39"W 50.00'; THENCE N89°51'21"E 200.00'; THENCE S00°08'39"E 50.00'; THENCE S89°51'21"W 200.00' TO THE POINT OF BEGINNING. BASIS OF BEARINGS IS A TRANSVERSE MERCATOR PROJECTION WITH A CENTRAL MERIDIAN OF W103°53'00". CONTAINS 0.230 ACRES MORE OR LESS.

**CERTIFICATE**  
THIS IS TO CERTIFY THAT THIS SURFACE USE AREA 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.



▲ = SECTION CORNERS LOCATED.

FILE: 64518-A1

Sheet 1 of 2

**NOTES:**  
• Basis of Bearings is a Transverse Mercator Projection with a Central Meridian of W103°53'00"



**CIMAREX ENERGY CO.**

**CASCADE 29 FEDERAL WEST ZONE 1 CTB  
ON BLM LANDS IN  
SECTION 29, T25S, R33E, N.M.P.M.  
LEA COUNTY, NEW MEXICO**

SURVEYED BY	C.T., T.R.	07-25-18	SCALE
DRAWN BY	J.P.P.	08-15-18	1" = 1000'

**SURFACE USE AREA**

**EXHIBIT F**



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

BEGINNING AT THE INTERSECTION J-1/ORLA ROAD AND AN EXISTING ROAD TO THE EAST (LOCATED AT NAD 83 LATITUDE N32.0650° AND LONGITUDE W103.6742°) PROCEED IN AN EASTERLY DIRECTION APPROXIMATELY 5.1 MILES TO THE JUNCTION OF THIS ROAD AND AN EXISTING ROAD TO THE NORTHWEST; TURN LEFT AND PROCEED IN A NORTHWESTERLY, THEN NORTHEASTERLY, THEN NORTHWESTERLY DIRECTION APPROXIMATELY 2.8 MILES TO THE BEGINNING OF THE PROPOSED CASCADE 29 FEDERAL ACCESS ROAD "A" TO THE WEST; FOLLOW ROAD FLAGS IN A WESTERLY, THEN SOUTHWESTERLY, THEN WESTERLY, THEN SOUTHWESTERLY, THEN WESTERLY DIRECTION APPROXIMATELY 4,281' TO THE PROPOSED LOCATION.

TOTAL DISTANCE FROM THE INTERSECTION OF J-1/ORLA ROAD AND AN EXISTING ROAD TO THE EAST (LOCATED AT NAD 83 LATITUDE N32.0650° AND LONGITUDE W103.6742°) TO THE PROPOSED WELL LOCATION IS APPROXIMATELY 8.7 MILES.

**CIMAREX ENERGY CO.**

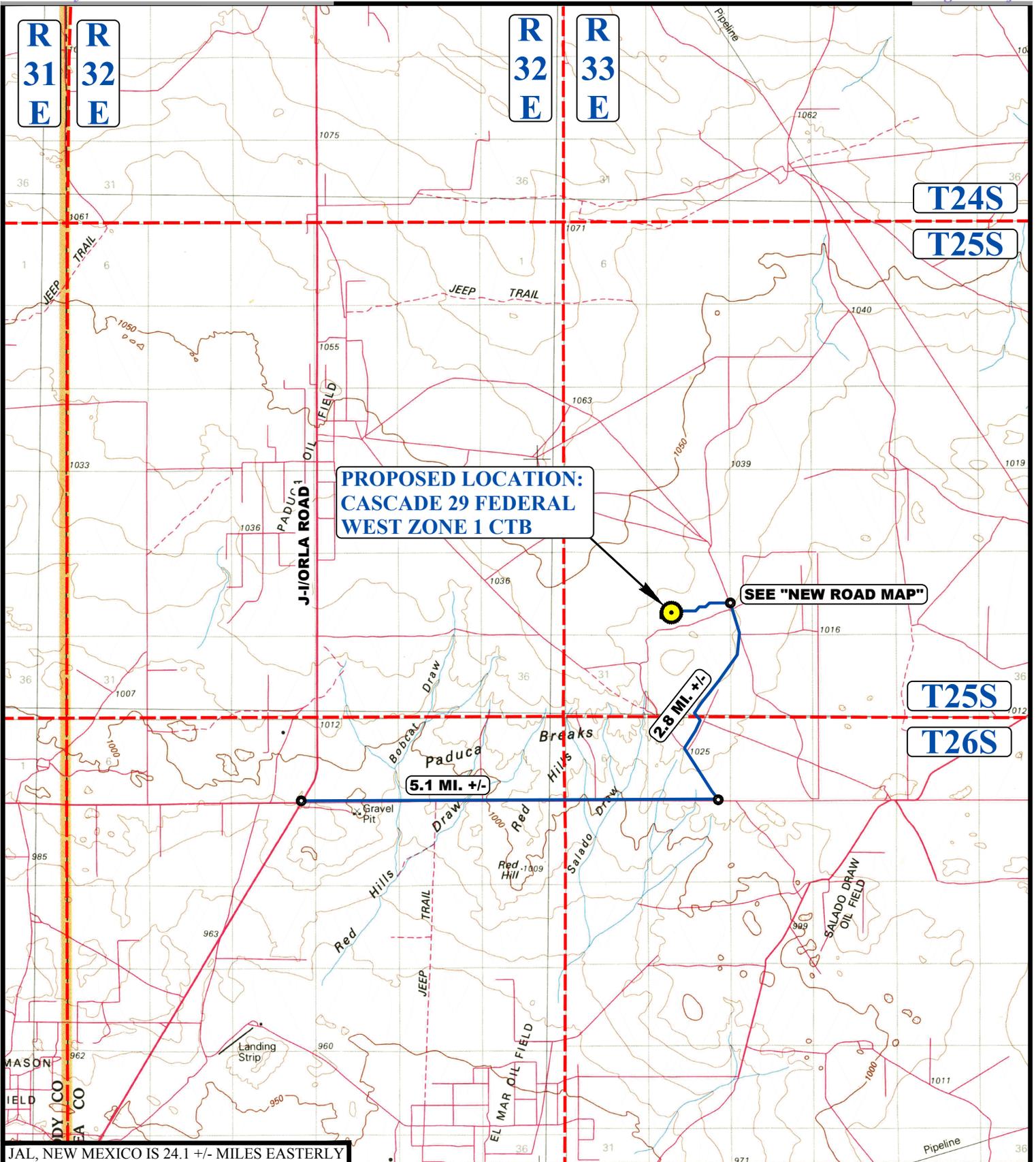
**CASCADE 29 FEDERAL WEST ZONE 1 CTB  
1185' FSL 1053' FWL (APPROX. CENTER OF PAD)  
SW 1/4 SW 1/4, SECTION 29, T25S, R33E, N.M.P.M.  
LEA COUNTY, NEW MEXICO**

<b>SURVEYED BY</b>	R.B., M.H.	07-20-18	
<b>DRAWN BY</b>	R.J.	08-13-18	
<b>ROAD DESCRIPTION</b>			<b>EXHIBIT F</b>

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Vernal, UT 84078 \* (435) 789-1017





JAL, NEW MEXICO IS 24.1 +/- MILES EASTERLY

**LEGEND:**

 PROPOSED LOCATION



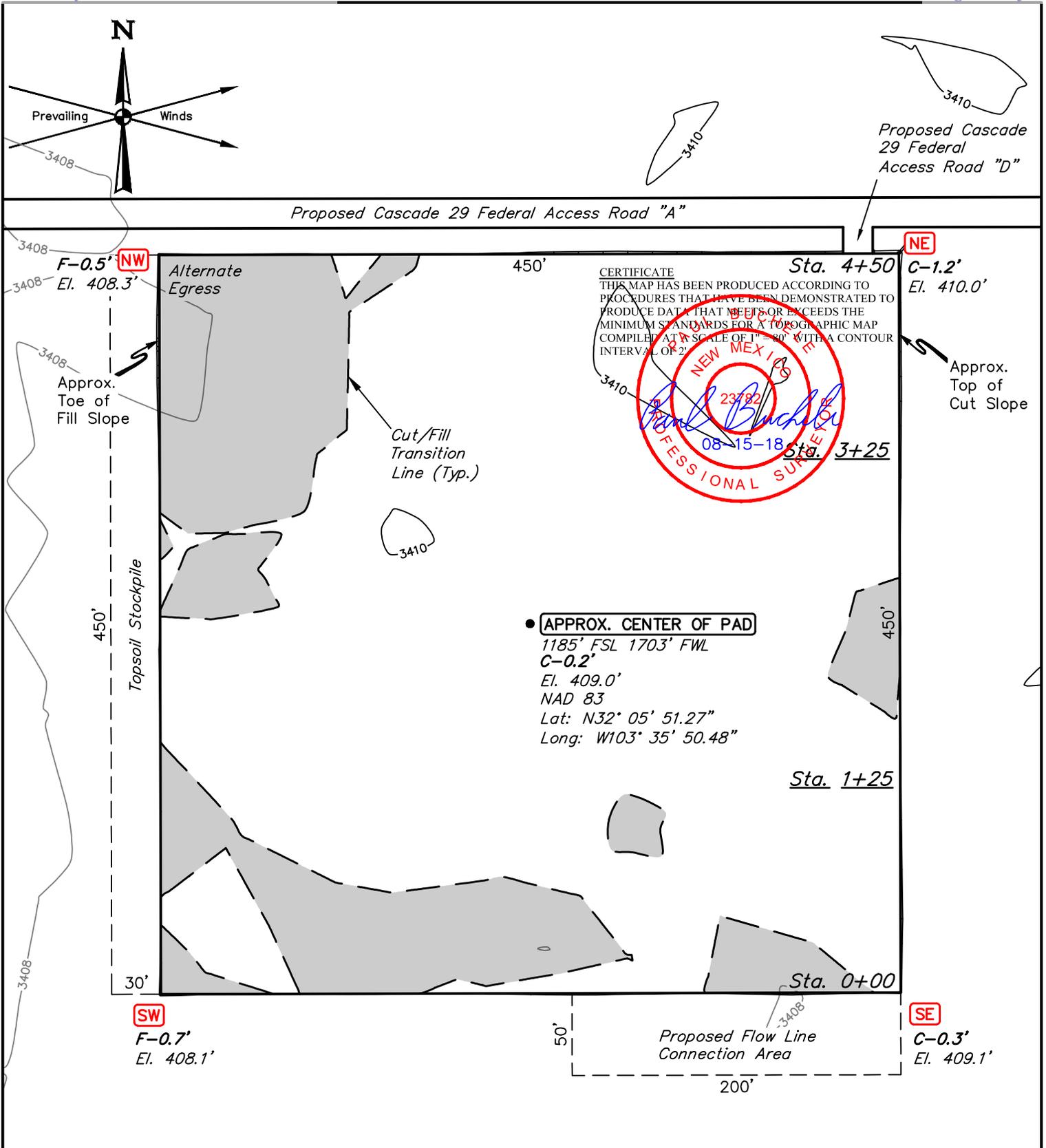
**CIMAREX ENERGY CO.**

**CASCADE 29 FEDERAL WEST ZONE 1 CTB**  
1185' FSL 1053' FWL (APPROX. CENTER OF PAD)  
SW 1/4 SW 1/4, SECTION 29, T25S, R33E, N.M.P.M.  
LEA COUNTY, NEW MEXICO

SURVEYED BY	R.B., M.H.	07-20-18	SCALE
DRAWN BY	R.J.	08-13-18	1 : 100,000
<b>PUBLIC ACCESS ROAD MAP</b>			<b>EXHIBIT F</b>



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Vernal, UT 84078 \* (435) 789-1017



**FINISHED GRADE ELEVATION = 3408.8'**

- NOTES:**
- Contours shown at 2' intervals.
  - Cut/Fill slopes 1 1/2:1 (Typ. except where noted)
  - Underground utilities shown on this sheet are for visualization purposes only, actual locations to be determined prior to construction.
  - Basis of Bearings is a Transverse Mercator Projection with a Central Meridian of W103°53'00"

**CIMAREX ENERGY CO.**

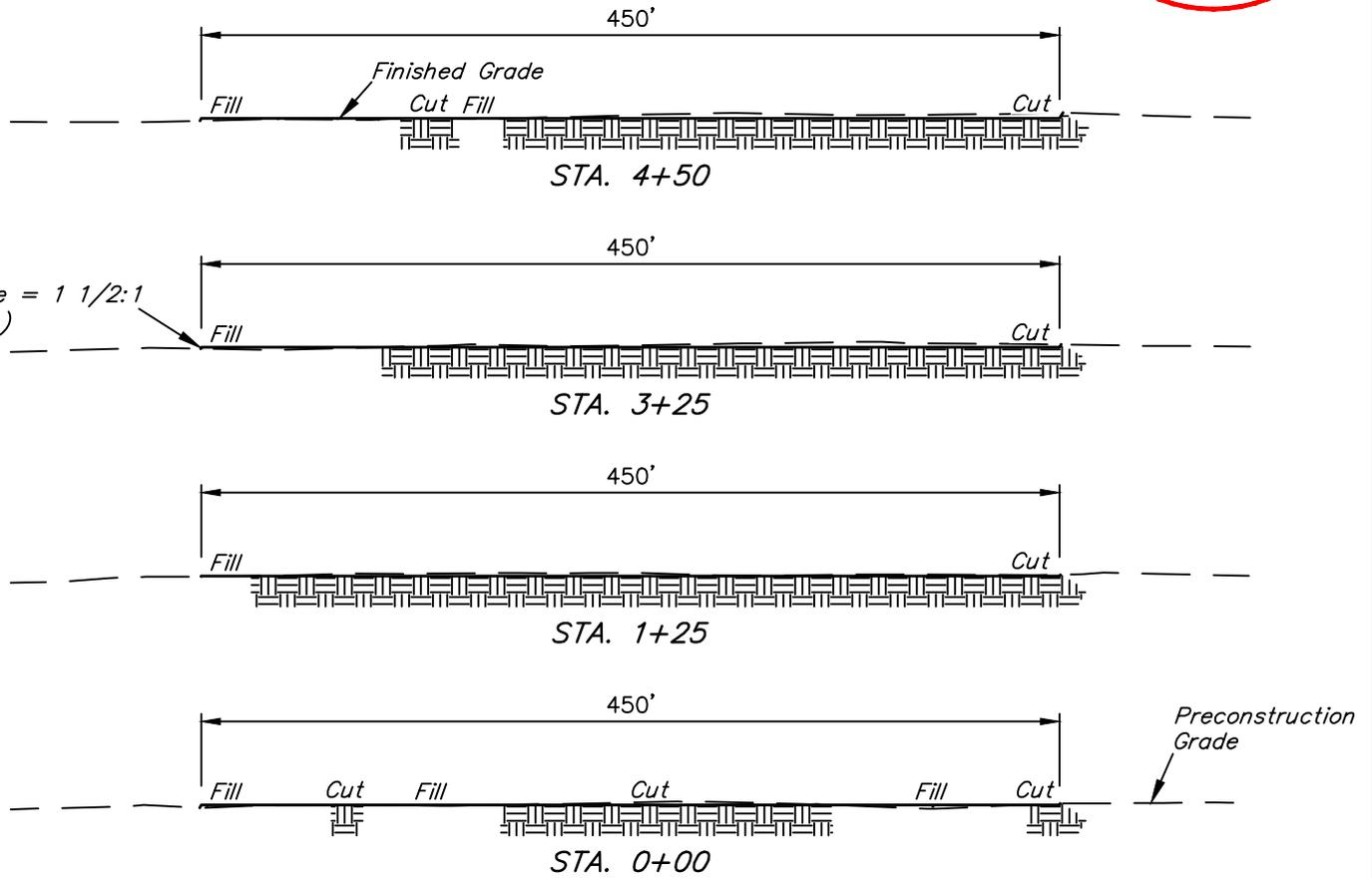
**CASCADE 29 FEDERAL WEST ZONE 2 CTB  
1185' FSL 1703' FWL (APPROX. CENTER OF PAD)  
SE 1/4 SW 1/4, SECTION 29, T25S, R33E, N.M.P.M.  
LEA COUNTY, NEW MEXICO**



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

<b>SURVEYED BY</b>	R.B., M.H.	07-20-18	<b>SCALE</b>
<b>DRAWN BY</b>	S.F.	08-06-18	1" = 80'
<b>LOCATION LAYOUT</b>		<b>EXHIBIT F</b>	

X-Section Scale  
1" = 40'  
1" = 100'



APPROXIMATE EARTHWORK QUANTITIES	
(4") TOPSOIL STRIPPING	2,510 Cu. Yds.
REMAINING LOCATION	1,400 Cu. Yds.
<b>TOTAL CUT</b>	<b>3,910 Cu. Yds.</b>
<b>FILL</b>	<b>1,400 Cu. Yds.</b>
EXCESS MATERIAL	2,510 Cu. Yds.
TOPSOIL	2,510 Cu. Yds.
<b>EXCESS UNBALANCE</b> (After Interim Rehabilitation)	<b>0 Cu. Yds.</b>

APPROXIMATE SURFACE DISTURBANCE AREAS		
	DISTANCE	ACRES
WELL SITE DISTURBANCE	NA	±4.979
PROPOSED FLOW LINE CONNECTION AREA	NA	±0.230
<b>TOTAL SURFACE USE AREA</b>		<b>±5.209</b>

**NOTES:**

- Fill quantity includes 5% for compaction.
- Cut/Fill slopes 1 1/2:1 (Typ. except where noted)

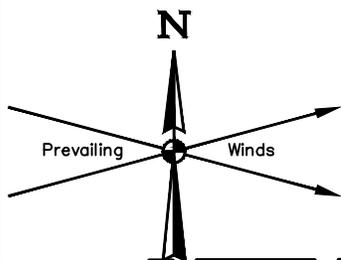
**CIMAREX ENERGY CO.**

**CASCADE 29 FEDERAL WEST ZONE 2 CTB  
1185' FSL 1703' FWL (APPROX. CENTER OF PAD)  
SE 1/4 SW 1/4, SECTION 29, T25S, R33E, N.M.P.M.  
LEA COUNTY, NEW MEXICO**

SURVEYED BY	R.B., M.H.	07-20-18	SCALE
DRAWN BY	S.F.	08-06-18	AS SHOWN
<b>TYPICAL CROSS SECTIONS</b>			<b>EXHIBIT F</b>



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



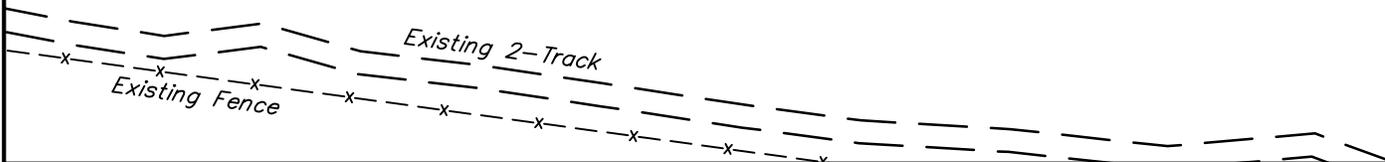
650' X 650' Archaeological Survey Boundary

Proposed Cascade 29 Federal Access Road "A"

Proposed Cascade 29 Federal Access Road "D"

Topsail Stockpile

Proposed Flow Line Connection Area



**NOTES:**

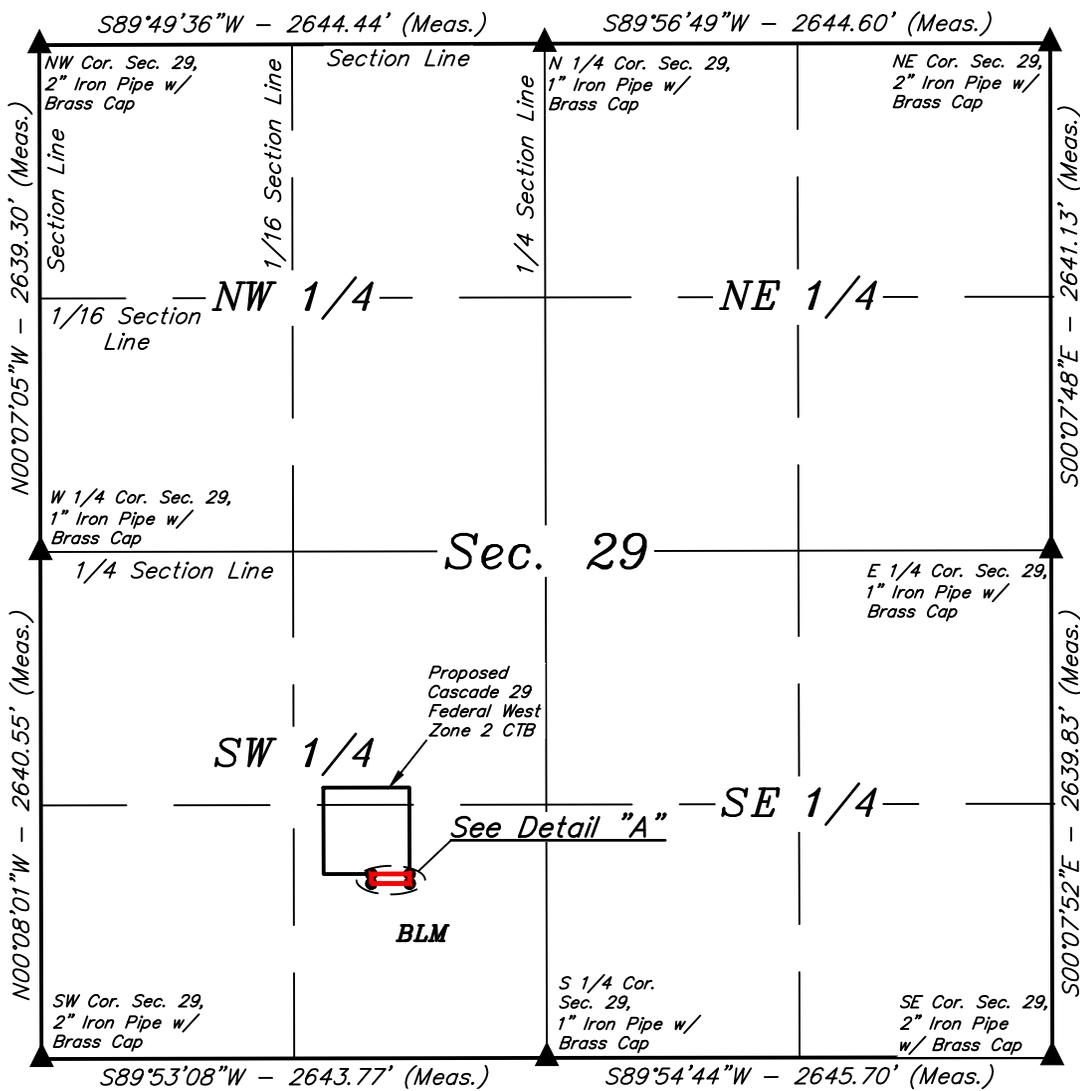
**CIMAREX ENERGY CO.**

CASCADE 29 FEDERAL WEST ZONE 2 CTB  
1185' FSL 1703' FWL (APPROX. CENTER OF PAD)  
SE 1/4 SW 1/4, SECTION 29, T25S, R33E, N.M.P.M.  
LEA COUNTY, NEW MEXICO



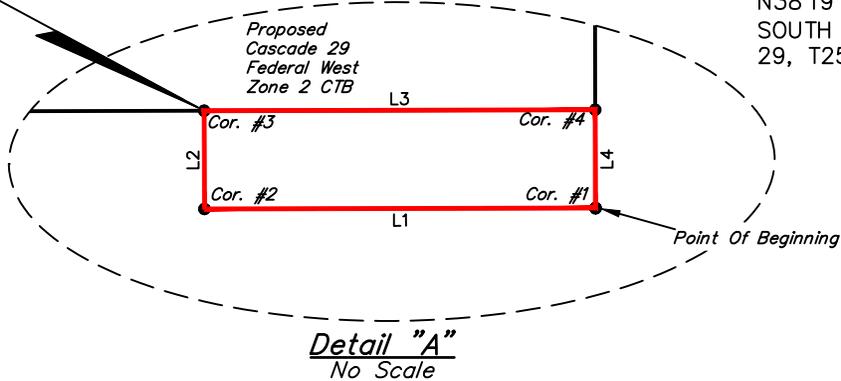
UELS, LLC  
Corporate Office \* 85 South 200 East  
Vernal, UT 84078 \* (435) 789-1017

SURVEYED BY	R.B., M.H.	07-20-18	SCALE
DRAWN BY	S.F.	08-06-18	1" = 100'
ARCHAEOLOGICAL SURVEY BOUNDARY			<b>EXHIBIT F</b>



LINE TABLE		
LINE	DIRECTION	LENGTH
L1	S89°51'59"W	200.00'
L2	N00°08'01"W	50.00'
L3	N89°51'59"E	200.00'
L4	S00°08'01"E	50.00'

**SURFACE USE AREA**  
Acres = 0.230

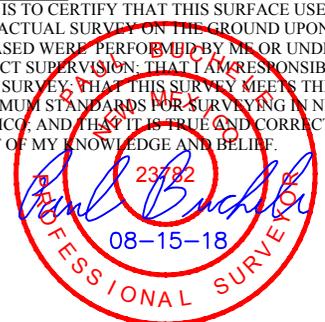


POINT OF BEGINNING BEARS N38°19'17"W 1157.98' FROM THE SOUTH 1/4 CORNER OF SECTION 29, T25S, R33E, N.M.P.M.

**SURFACE USE AREA DESCRIPTION**

BEGINNING AT A POINT IN THE SE 1/4 SW 1/4 OF SECTION 29, T25S, R33E, N.M.P.M., WHICH BEARS N38°19'17"W 1157.98' FROM THE SOUTH 1/4 CORNER OF SAID SECTION 29, THENCE S89°51'59"W 200.00'; THENCE N00°08'01"W 50.00'; THENCE N89°51'59"E 200.00'; THENCE S00°08'01"E 50.00' TO THE POINT OF BEGINNING. BASIS OF BEARINGS IS A TRANSVERSE MERCATOR PROJECTION WITH A CENTRAL MERIDIAN OF W103°53'00". CONTAINS 0.230 ACRES MORE OR LESS.

**CERTIFICATE**  
THIS IS TO CERTIFY THAT THIS SURFACE USE AREA 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.



▲ = SECTION CORNERS LOCATED.

FILE: 64516-A1

Sheet 1 of 2

**NOTES:**  
• Basis of Bearings is a Transverse Mercator Projection with a Central Meridian of W103°53'00"



**CIMAREX ENERGY CO.**

**CASCADE 29 FEDERAL WEST ZONE 2 CTB  
ON BLM LANDS IN  
SECTION 29, T25S, R33E, N.M.P.M.  
LEA COUNTY, NEW MEXICO**

<b>SURVEYED BY</b>	R.B., M.H.	07-20-18	<b>SCALE</b>
<b>DRAWN BY</b>	J.P.P.	08-15-18	1" = 1000'

**SURFACE USE AREA**

**EXHIBIT F**



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

BEGINNING AT THE INTERSECTION J-1/ORLA ROAD AND AN EXISTING ROAD TO THE EAST (LOCATED AT NAD 83 LATITUDE N32.0650° AND LONGITUDE W103.6742°) PROCEED IN AN EASTERLY DIRECTION APPROXIMATELY 5.1 MILES TO THE JUNCTION OF THIS ROAD AND AN EXISTING ROAD TO THE NORTHWEST; TURN LEFT AND PROCEED IN A NORTHWESTERLY, THEN NORTHEASTERLY, THEN NORTHWESTERLY DIRECTION APPROXIMATELY 2.8 MILES TO THE BEGINNING OF THE PROPOSED CASCADE 29 FEDERAL ACCESS ROAD "A" TO THE WEST; FOLLOW ROAD FLAGS IN A WESTERLY, THEN SOUTHWESTERLY, THEN WESTERLY DIRECTION APPROXIMATELY 3,631' TO THE BEGINNING OF THE PROPOSED ACCESS ROAD TO THE SOUTH; FOLLOW ROAD FLAGS IN A SOUTHERLY DIRECTION APPROXIMATELY 25' TO THE PROPOSED LOCATION.

TOTAL DISTANCE FROM THE INTERSECTION OF J-1/ORLA ROAD AND AN EXISTING ROAD TO THE EAST (LOCATED AT NAD 83 LATITUDE N32.0650° AND LONGITUDE W103.6742°) TO THE PROPOSED WELL LOCATION IS APPROXIMATELY 8.6 MILES.

**CIMAREX ENERGY CO.**

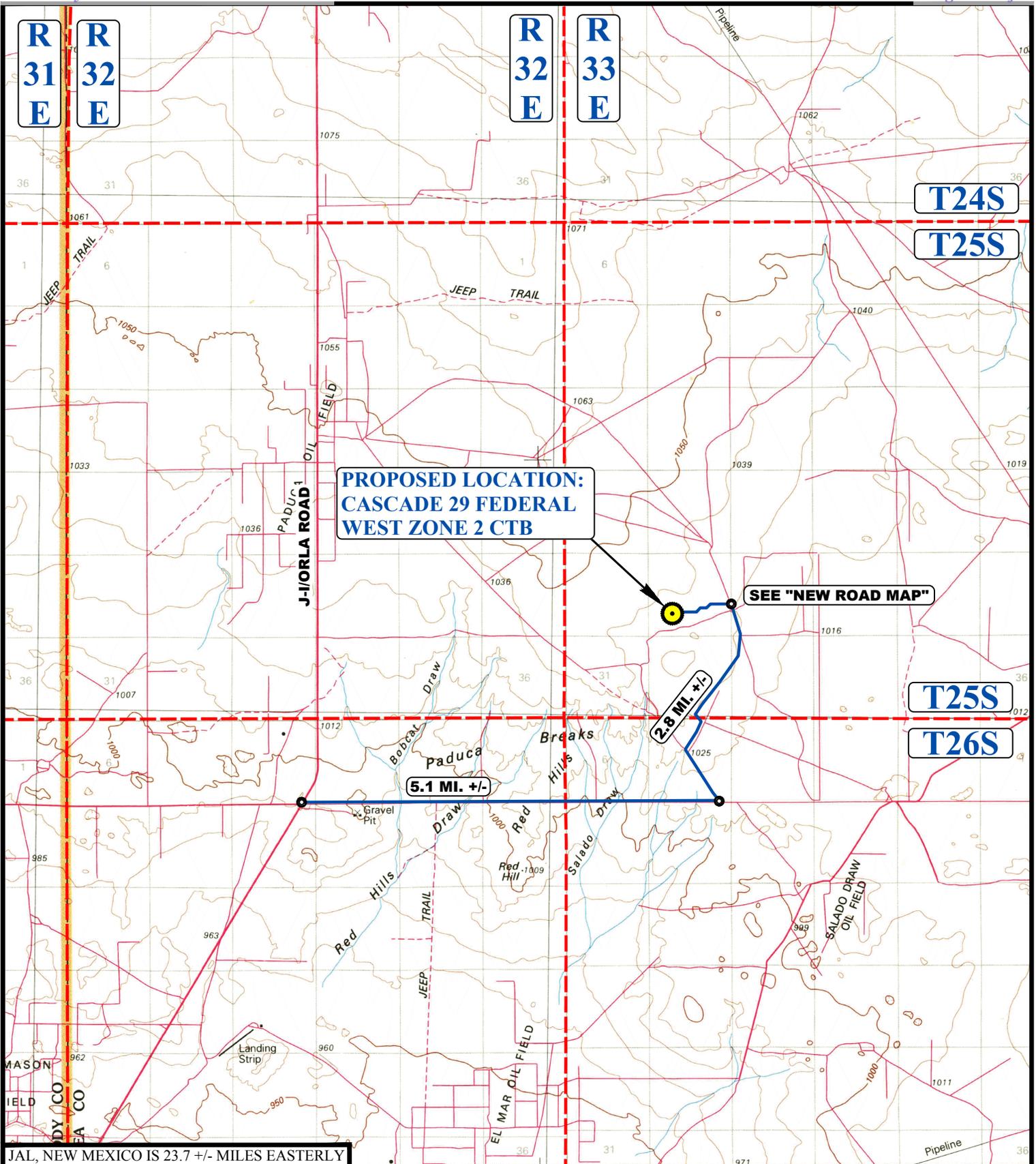
**CASCADE 29 FEDERAL WEST ZONE 2 CTB  
1185' FSL 1703' FWL (APPROX. CENTER OF PAD)  
SE 1/4 SW 1/4, SECTION 29, T25S, R33E, N.M.P.M.  
LEA COUNTY, NEW MEXICO**

<b>SURVEYED BY</b>	R.B., M.H.	07-20-18	
<b>DRAWN BY</b>	R.J.	08-13-18	
<b>ROAD DESCRIPTION</b>			<b>EXHIBIT F</b>

**UELS, LLC**

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





**PROPOSED LOCATION:  
CASCADE 29 FEDERAL  
WEST ZONE 2 CTB**

**SEE "NEW ROAD MAP"**

**5.1 MI. +/-**

**2.8 MI. +/-**

JAL, NEW MEXICO IS 23.7 +/- MILES EASTERLY

**LEGEND:**

 **PROPOSED LOCATION**



**CIMAREX ENERGY CO.**

**CASCADE 29 FEDERAL WEST ZONE 2 CTB  
1185' FSL 1703' FWL (APPROX. CENTER OF PAD)  
SE 1/4 SW 1/4, SECTION 29, T25S, R33E, N.M.P.M.  
LEA COUNTY, NEW MEXICO**

<b>SURVEYED BY</b>	R.B., M.H.	07-20-18	<b>SCALE</b>
<b>DRAWN BY</b>	R.J.	08-13-18	1 : 100,000

**PUBLIC ACCESS ROAD MAP EXHIBIT F**



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

## Cimarex Cascade 29 Federal 18H 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 off-lease access road

- Length: 5442'
- Width: 30'
- Road Plat - Exhibit D.
- A ROW will be submitted to the BLM for approval.
- 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

A new facility will be constructed for this project if the well is productive.

- Cascade 29 Fed East Zone 1 & 2, Cascade 29 Fed West Zone 1 & 2 - Exhibit F
  - Direction to facility
  - Facility pad location layout and cut and fill
  - Facility pad archeological boundary
  - Facility pad flowline corridor
  - Facility pad access road
- Battery Pad location previously approved
  - APD: Cascade 29 Federal 29H.

### 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 Cascade 29 Federal 18H Surface Use Plan

- No new power line is required for this project.

### 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
- Single well pad
- Pad Size: 500 x 560
- 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 NENE Sec 20 25S 33E or NESE Sec 5 26S 33E.
  - 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 Pipelines

All proposed pipelines will be constructed in a 60' ROW corridor.

- Bulklines
  - Cimarex Energy plans to construct off-lease bulklines to service the well.
  - 8- 12" HP steel for oil, gas, and water production.
  - Length: 6,484'.
  - MAOP: 1,500 psi; Anticipated working pressure: 200-300 psi.
  - Please see Exhibit M for proposed off-lease route.
  - A ROW application will be submitted to the BLM for the proposed route.

### Water Resources

No temporary fresh water pipelines are proposed for this project.

## **Cimarex Cascade 29 Federal 18H Surface Use Plan**

### **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.

### **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**

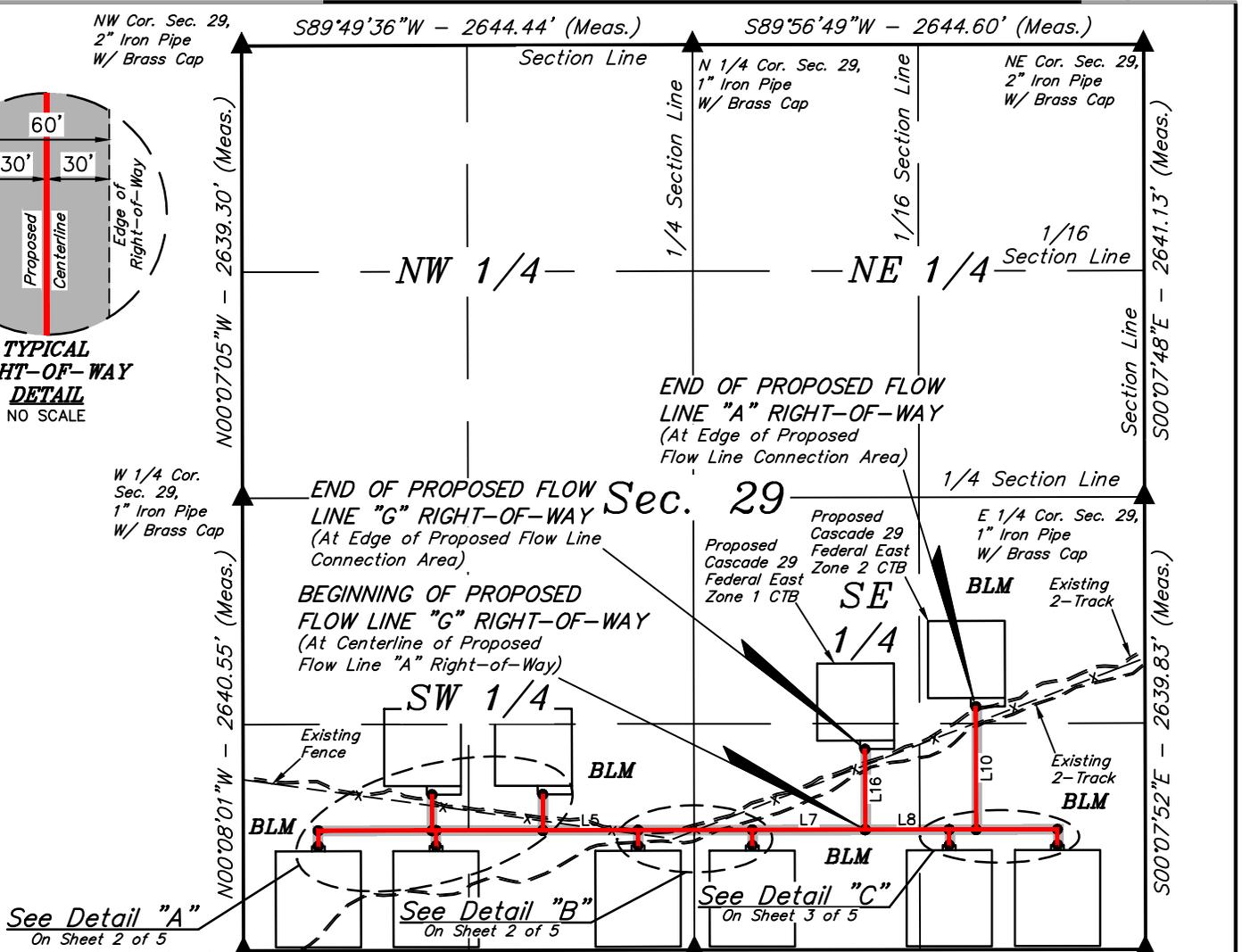
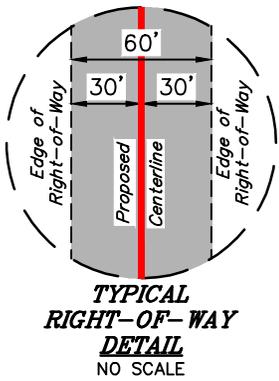
Onsite Date: 6/28/2018

BLM Personnel on site: Jeff Robertson

Cimarex Energy personnel on site: Barry Hunt

Pertinent information from onsite:

V-Door East. Top soil west. Access road off SE corner south to proposed Red Hills Unit 32 access road. 560' (N/S) x 500' (E/W).



BEGINNING OF FLOW LINE "A" BEARS N35°41'07"E 752.09' FROM THE SOUTHWEST CORNER OF SECTION 29, T25S, R33E, N.M.P.M.

END OF FLOW LINE "A" BEARS S38°56'53"W 1573.17' FROM THE EAST 1/4 CORNER OF SECTION 29, T25S, R33E, N.M.P.M.

BEGINNING OF FLOW LINE "B" BEARS N57°35'14"E 1310.07' FROM THE SOUTHWEST CORNER OF SECTION 29, T25S, R33E, N.M.P.M.

END OF FLOW LINE "B" BEARS N50°28'36"E 1433.24' FROM THE SOUTHWEST CORNER OF SECTION 29, T25S, R33E, N.M.P.M.

BEGINNING OF FLOW LINE "C" BEARS N61°31'17"E 1284.11' FROM THE SOUTHWEST CORNER OF SECTION 29, T25S, R33E, N.M.P.M.

END OF FLOW LINE "C" BEARS N58°06'14"E 1329.08' FROM THE SOUTHWEST CORNER OF SECTION 29, T25S, R33E, N.M.P.M.

BEGINNING OF FLOW LINE "D" BEARS N51°48'56"W 1129.48' FROM THE SOUTH 1/4 CORNER OF SECTION 29, T25S, R33E, N.M.P.M.

END OF FLOW LINE "D" BEARS N44°21'58"W 1270.26' FROM THE SOUTH 1/4 CORNER OF SECTION 29, T25S, R33E, N.M.P.M.

BEGINNING OF FLOW LINE "E" BEARS N28°27'04"W 692.97' FROM THE SOUTH 1/4 CORNER OF SECTION 29, T25S, R33E, N.M.P.M.

END OF FLOW LINE "E" BEARS N25°16'03"W 773.35' FROM THE SOUTH 1/4 CORNER OF SECTION 29, T25S, R33E, N.M.P.M.

BEGINNING OF FLOW LINE "F" BEARS N29°05'07"E 698.58' FROM THE SOUTH 1/4 CORNER OF SECTION 29, T25S, R33E, N.M.P.M.

END OF FLOW LINE "F" BEARS N25°50'29"E 778.55' FROM THE SOUTH 1/4 CORNER OF SECTION 29, T25S, R33E, N.M.P.M.

BEGINNING OF FLOW LINE "G" BEARS N54°59'06"E 1223.50' FROM THE SOUTH 1/4 CORNER OF SECTION 29, T25S, R33E, N.M.P.M.

END OF FLOW LINE "G" BEARS N40°29'43"E 1541.62' FROM THE SOUTH 1/4 CORNER OF SECTION 29, T25S, R33E, N.M.P.M.

BEGINNING OF FLOW LINE "H" BEARS N62°09'01"W 1302.03' FROM THE SOUTHEAST CORNER OF SECTION 29, T25S, R33E, N.M.P.M.

END OF FLOW LINE "H" BEARS N58°44'16"W 1346.87' FROM THE SOUTHEAST CORNER OF SECTION 29, T25S, R33E, N.M.P.M.

BEGINNING OF FLOW LINE "I" BEARS N40°16'35"W 798.53' FROM THE SOUTHEAST CORNER OF SECTION 29, T25S, R33E, N.M.P.M.

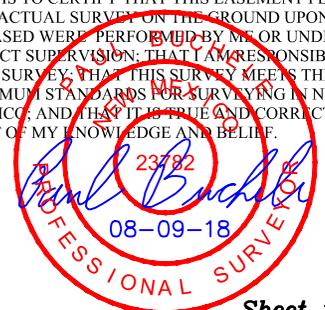
END OF FLOW LINE "I" BEARS N54°51'39"W 1214.95' FROM THE SOUTHEAST CORNER OF SECTION 29, T25S, R33E, N.M.P.M.



▲ = SECTION CORNERS LOCATED.

NOTES:  
• Basis of Bearings is a Transverse Mercator Projection with a Central Meridian of W103°53'00"

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.



FILE: 64476-A1

Sheet 1 of 5



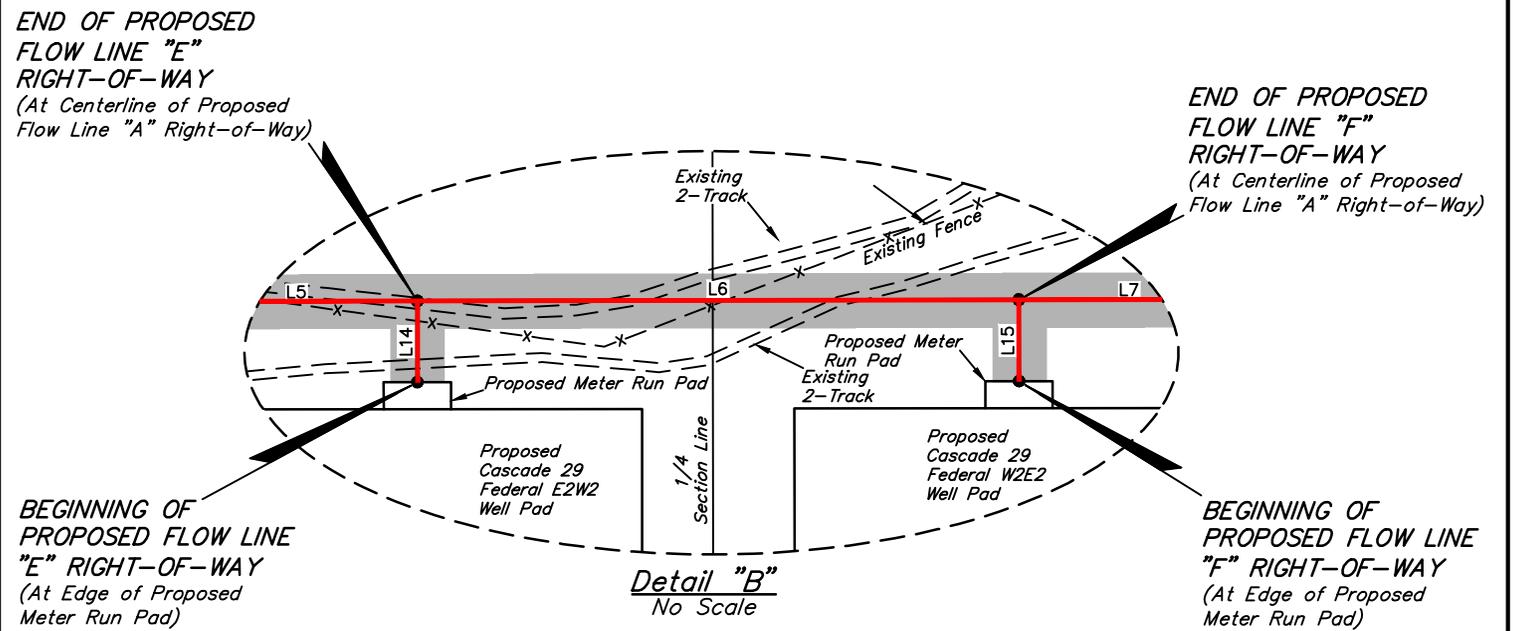
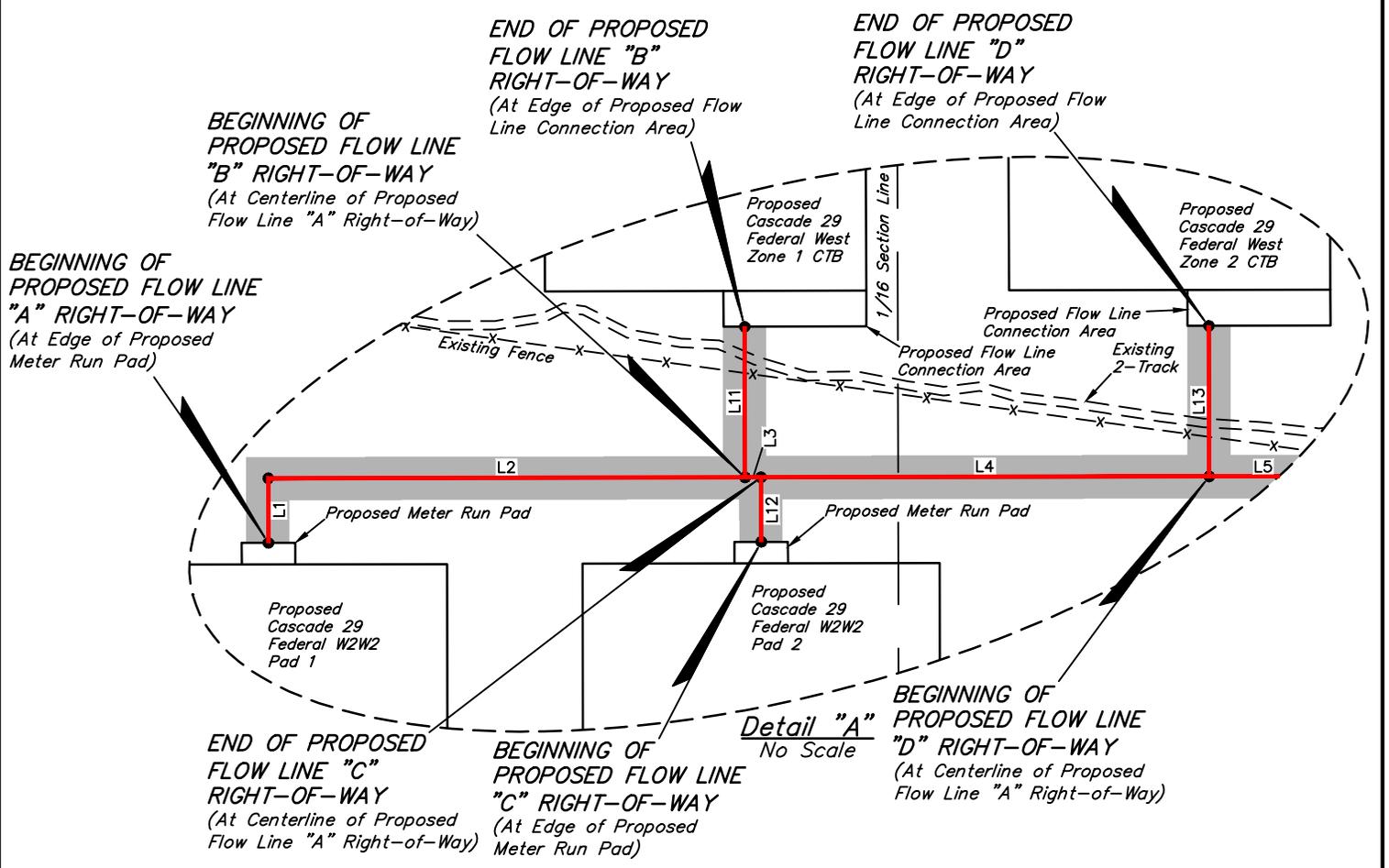
**CIMAREX ENERGY CO.**

**CASCADE 29 FEDERAL FLOW LINE NETWORK  
ON BLM LANDS IN  
SECTION 29, T25S, R33E, N.M.P.M.  
LEA COUNTY, NEW MEXICO**

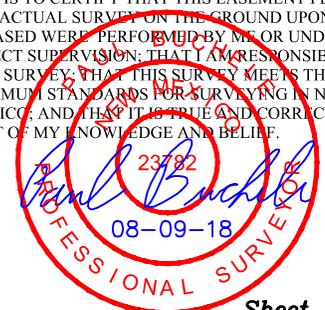
SURVEYED BY	C.T., R.G.	07-25-18	SCALE
DRAWN BY	L.K.	08-09-18	1" = 1000'
Bulcline		R-O-W	EXHIBIT M



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



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FILE: 64476-A2

Sheet 2 of 5

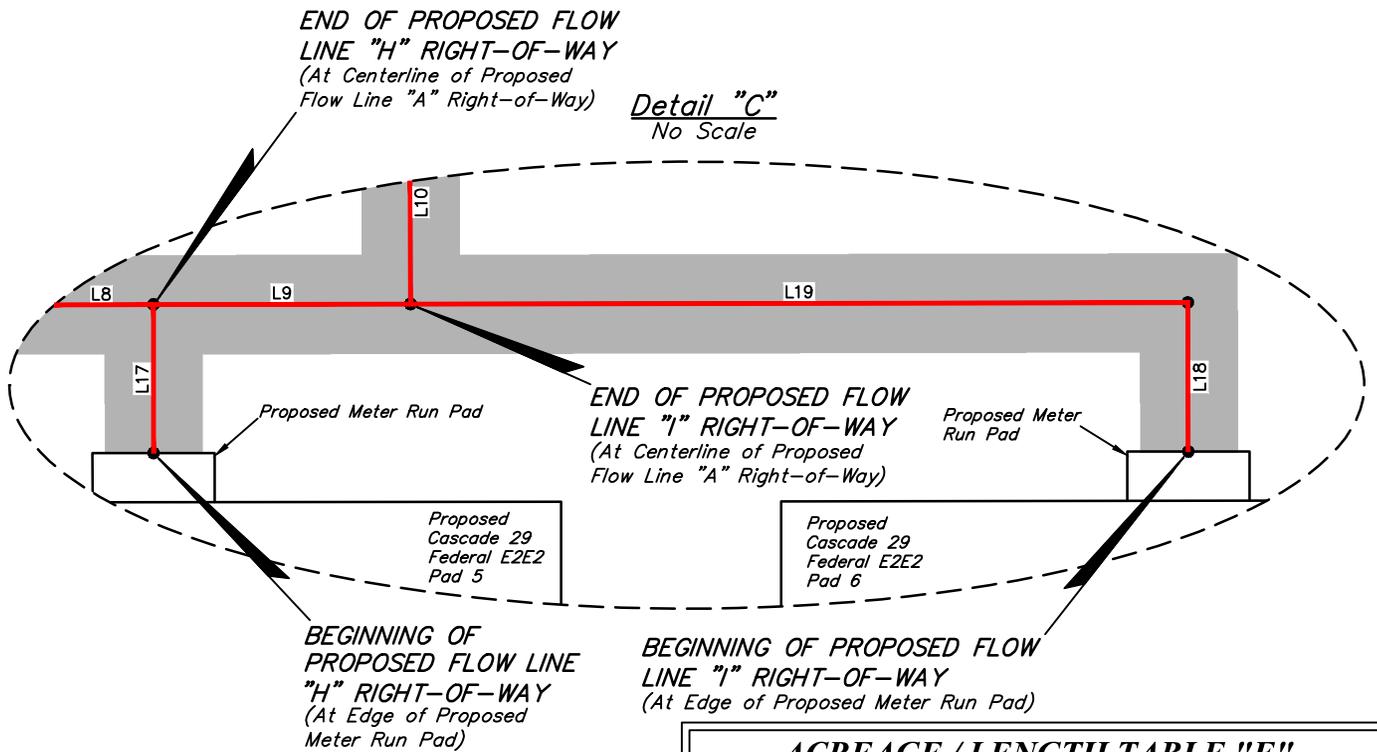
**NOTES:**  
 • Basis of Bearings is a Transverse Mercator Projection with a Central Meridian of W103°53'00"

**CIMAREX ENERGY CO.**  
**CASCADE 29 FEDERAL FLOW LINE NETWORK**  
**ON BLM LANDS IN**  
**SECTION 29, T25S, R33E, N.M.P.M.**  
**LEA COUNTY, NEW MEXICO**

<b>SURVEYED BY</b>	C.T., R.G.	07-25-18	<b>SCALE</b>
<b>DRAWN BY</b>	L.K.	08-09-18	N/A
<b>Bulkline</b>		<b>R-O-W</b>	
<b>EXHIBIT M</b>			



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ACREAGE / LENGTH TABLE "A"				
	OWNERSHIP	FEET	RODS	ACRES
SEC. 29 (SW 1/4)	BLM	2293.75	139.02	3.159
SEC. 29 (SE 1/4)	BLM	2370.68	143.68	3.265
TOTAL		4664.43	282.69	6.425

ACREAGE / LENGTH TABLE "B"				
	OWNERSHIP	FEET	RODS	ACRES
SEC. 29 (SW 1/4)	BLM	209.89	12.72	0.289

ACREAGE / LENGTH TABLE "C"				
	OWNERSHIP	FEET	RODS	ACRES
SEC. 29 (SW 1/4)	BLM	89.96	5.45	0.124

ACREAGE / LENGTH TABLE "D"				
	OWNERSHIP	FEET	RODS	ACRES
SEC. 29 (SW 1/4)	BLM	209.85	12.72	0.289

ACREAGE / LENGTH TABLE "E"				
	OWNERSHIP	FEET	RODS	ACRES
SEC. 29 (SW 1/4)	BLM	90.08	5.46	0.124

ACREAGE / LENGTH TABLE "F"				
	OWNERSHIP	FEET	RODS	ACRES
SEC. 29 (SE 1/4)	BLM	90.21	5.47	0.124

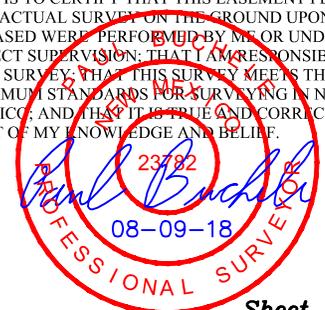
ACREAGE / LENGTH TABLE "G"				
	OWNERSHIP	FEET	RODS	ACRES
SEC. 29 (SE 1/4)	BLM	470.31	28.50	0.648

ACREAGE / LENGTH TABLE "H"				
	OWNERSHIP	FEET	RODS	ACRES
SEC. 29 (SE 1/4)	BLM	90.71	5.50	0.125

ACREAGE / LENGTH TABLE "I"				
	OWNERSHIP	FEET	RODS	ACRES
SEC. 29 (SE 1/4)	BLM	568.04	34.43	0.782

CASCADE 29 FEDERAL FLOW LINE NETWORK			
SECTION CORNER	DESCRIPTION	LATITUDE (NAD 83)	LONGITUDE (NAD 83)
NW COR. SEC. 29, T25S, R33E	2" IRON PIPE W/ BRASS CAP	N 32°06'31.79"	W 103°36'10.25"
N 1/4 COR. SEC. 29, T25S, R33E	1" IRON PIPE W/ BRASS CAP	N 32°06'31.80"	W 103°35'39.51"
NE COR. SEC. 29, T25S, R33E	2" IRON PIPE W/ BRASS CAP	N 32°06'31.76"	W 103°35'08.77"
E 1/4 COR. SEC. 29, T25S, R33E	1" IRON PIPE W/ BRASS CAP	N 32°06'05.62"	W 103°35'08.79"
SE COR. SEC. 29, T25S, R33E	2" IRON PIPE W/ BRASS CAP	N 32°05'39.51"	W 103°35'08.80"
S 1/4 COR. SEC. 29, T25S, R33E	1" IRON PIPE W/ BRASS CAP	N 32°05'39.54"	W 103°35'39.55"
SW COR. SEC. 29, T25S, R33E	2" IRON PIPE W/ BRASS CAP	N 32°05'39.55"	W 103°36'10.28"
W 1/4 COR. SEC. 29, T25S, R33E	1" IRON PIPE W/ BRASS CAP	N 32°06'05.68"	W 103°36'10.27"

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 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.



FILE: 64476-A3

Sheet 3 of 5

NOTES:  
 • Basis of Bearings is a Transverse Mercator Projection with a Central Meridian of W103°53'00"

**CIMAREX ENERGY CO.**  
 CASCADE 29 FEDERAL FLOW LINE NETWORK  
 ON BLM LANDS IN  
 SECTION 29, T25S, R33E, N.M.P.M.  
 LEA COUNTY, NEW MEXICO

SURVEYED BY	C.T., R.G.	07-25-18	SCALE
DRAWN BY	L.K.	08-09-18	N/A
Bulkline R-O-W			EXHIBIT M



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

CASCADE 29 FEDERAL FLOW LINE "A"			
NUMBER	STATION	LATITUDE (NAD 83)	LONGITUDE (NAD 83)
BEGIN	0+00	N 32°05'45.59"	W 103°36'05.16"
1	0+90.00	N 32°05'46.48"	W 103°36'05.16"
2	7+57.40	N 32°05'46.47"	W 103°35'57.40"
3	7+79.83	N 32°05'46.47"	W 103°35'57.14"
4	14+07.40	N 32°05'46.47"	W 103°35'49.85"
5	19+65.10	N 32°05'46.47"	W 103°35'43.37"
6	26+34.55	N 32°05'46.46"	W 103°35'35.58"
7	32+97.25	N 32°05'46.46"	W 103°35'27.88"
8	37+89.59	N 32°05'46.45"	W 103°35'22.16"
9	39+47.36	N 32°05'46.45"	W 103°35'20.33"
END	46+64.42	N 32°05'53.55"	W 103°35'20.32"

CASCADE 29 FEDERAL FLOW LINE "B"			
NUMBER	STATION	LATITUDE (NAD 83)	LONGITUDE (NAD 83)
BEGIN	0+00	N 32°05'46.47"	W 103°35'57.40"
END	2+09.89	N 32°05'48.55"	W 103°35'57.40"

CASCADE 29 FEDERAL FLOW LINE "C"			
NUMBER	STATION	LATITUDE (NAD 83)	LONGITUDE (NAD 83)
BEGIN	0+00	N 32°05'45.58"	W 103°35'57.14"
END	0+89.96	N 32°05'46.47"	W 103°35'57.14"

CASCADE 29 FEDERAL FLOW LINE "D"			
NUMBER	STATION	LATITUDE (NAD 83)	LONGITUDE (NAD 83)
BEGIN	0+00	N 32°05'46.47"	W 103°35'49.85"
END	2+09.85	N 32°05'48.55"	W 103°35'49.85"

CASCADE 29 FEDERAL FLOW LINE "E"			
NUMBER	STATION	LATITUDE (NAD 83)	LONGITUDE (NAD 83)
BEGIN	0+00	N 32°05'45.57"	W 103°35'43.37"
END	0+90.08	N 32°05'46.47"	W 103°35'43.37"

CASCADE 29 FEDERAL FLOW LINE "F"			
NUMBER	STATION	LATITUDE (NAD 83)	LONGITUDE (NAD 83)
BEGIN	0+00	N 32°05'45.57"	W 103°35'35.59"
END	0+90.21	N 32°05'46.46"	W 103°35'35.58"

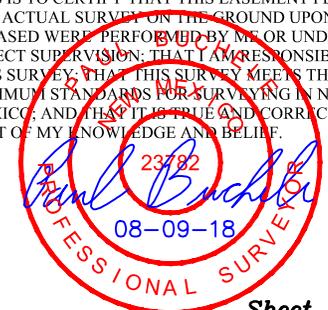
CASCADE 29 FEDERAL FLOW LINE "G"			
NUMBER	STATION	LATITUDE (NAD 83)	LONGITUDE (NAD 83)
BEGIN	0+00	N 32°05'46.46"	W 103°35'27.88"
END	4+70.31	N 32°05'51.11"	W 103°35'27.88"

CASCADE 29 FEDERAL FLOW LINE "H"			
NUMBER	STATION	LATITUDE (NAD 83)	LONGITUDE (NAD 83)
BEGIN	0+00	N 32°05'45.56"	W 103°35'22.16"
END	0+90.71	N 32°05'46.45"	W 103°35'22.16"

CASCADE 29 FEDERAL FLOW LINE "I"			
NUMBER	STATION	LATITUDE (NAD 83)	LONGITUDE (NAD 83)
BEGIN	0+00	N 32°05'45.55"	W 103°35'14.78"
1	0+91.02	N 32°05'46.45"	W 103°35'14.78"
END	5+68.04	N 32°05'46.45"	W 103°35'20.33"

LINE TABLE		
LINE	DIRECTION	LENGTH
L1	N00°05'27"W	90.00'
L2	N89°53'07"E	667.39'
L3	N89°53'07"E	22.43'
L4	N89°53'07"E	627.57'
L5	N89°53'07"E	557.70'
L6	N89°53'07"E	669.46'
L7	N89°53'07"E	662.69'
L8	N89°53'07"E	492.34'
L9	N89°53'07"E	157.78'
L10	N00°06'52"W	717.06'
L11	N00°06'52"W	209.89'
L12	N00°12'23"W	89.96'
L13	N00°06'52"W	209.85'
L14	N00°01'16"E	90.08'
L15	N00°08'57"W	90.21'
L16	N00°06'52"W	470.31'
L17	N00°03'08"W	90.71'
L18	N00°10'46"W	91.02'
L19	S89°53'07"W	477.02'

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FILE: 64476-A4

Sheet 4 of 5

NOTES:  
 • Basis of Bearings is a Transverse Mercator Projection with a Central Meridian of W103°53'00"

**CIMAREX ENERGY CO.**

**CASCADE 29 FEDERAL FLOW LINE NETWORK  
 ON BLM LANDS IN  
 SECTION 29, T25S, R33E, N.M.P.M.  
 LEA COUNTY, NEW MEXICO**

SURVEYED BY	C.T., R.G.	07-25-18	SCALE
DRAWN BY	L.K.	08-09-18	N/A
<b>FLOW LINE R-O-W</b>			<b>EXHIBIT M</b>

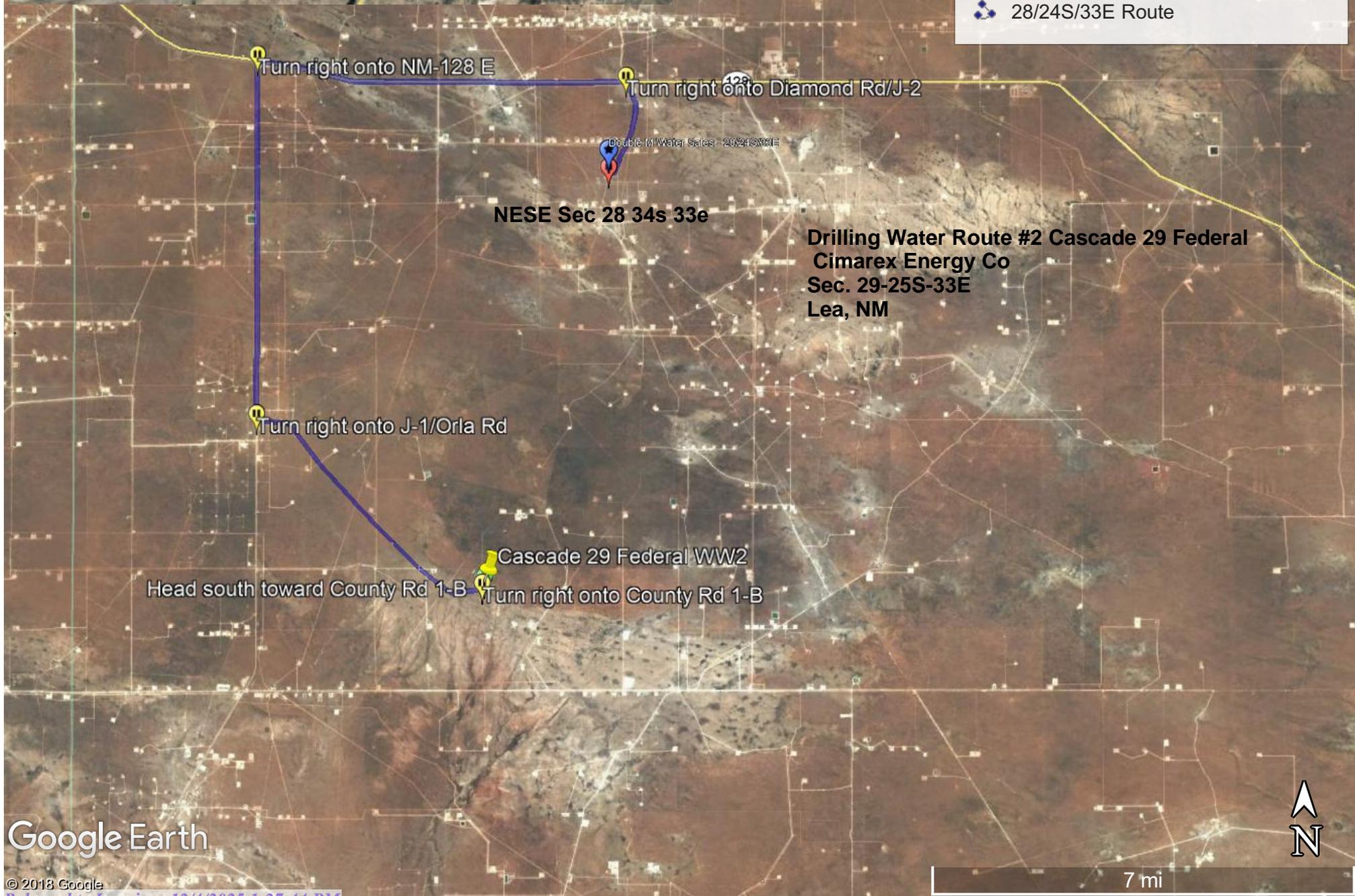


**UELS, LLC**  
 Corporate Office \* 85 South 200 East  
 Vernal, UT 84078 \* (435) 789-1017

# Drilling Water Route & Source Map Fresh Water- Trucked

## Legend

-  Cascade 29 Federal W2W2 Pad 2
-  Double M Water Sales -
-  28/24S/33E Route



Google Earth

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Released to Imaging: 12/4/2025 1:27:44 PM



7 mi

# Drilling Water Route & Source Map Fresh Water- Trucked

## Legend

-  Cascade 29 Federal W2W2 Pad 2
-  Lindsey FW Station 10 Blk 55 T1 T&P RR Co
-  Route

Head south toward County Rd 1-B  
 Slight left  
 Turn right onto County Rd 1-B  
 Cascade 29 Federal WW2

**Drilling Water Route #1 Cascade 29 Federal  
 Cimarex Energy Co  
 Sec. 29-25S-33E  
 Lea, NM**

Continue onto RM 652 W

Lindsey FW Station 10 Blk 55 T1 T&P RR Co

TEXAS

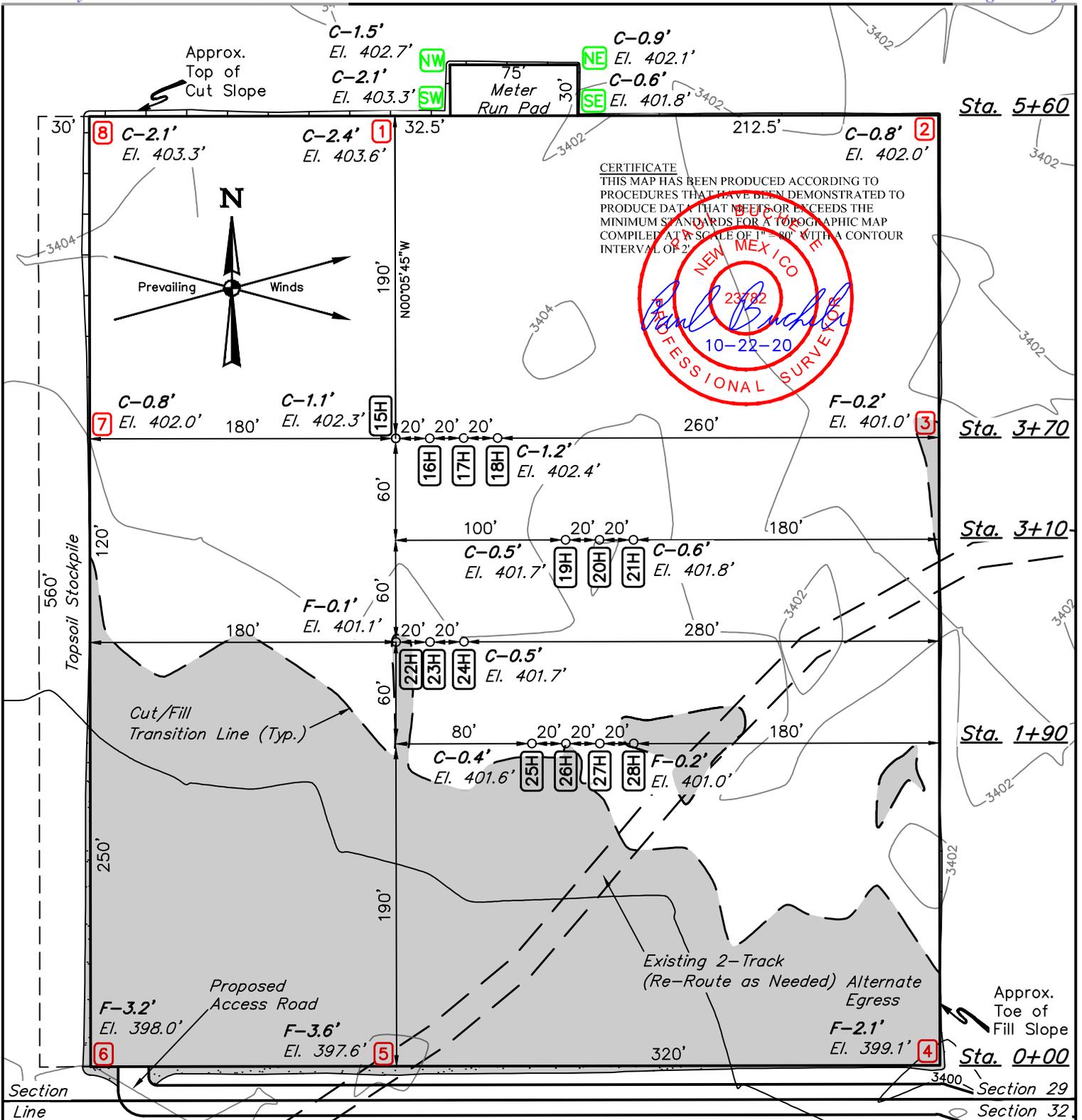
Google Earth

© 2013 Google

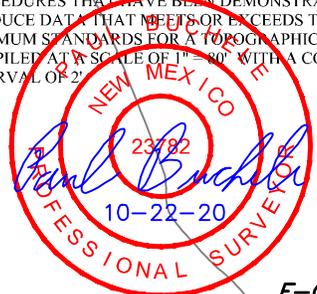
Released to Imaging: 12/4/2025 1:27:44 PM



9 mi



CERTIFICATE  
 THIS MAP HAS BEEN PRODUCED ACCORDING TO PROCEDURES THAT HAVE BEEN DEMONSTRATED TO PRODUCE DATA THAT MEETS OR EXCEEDS THE MINIMUM STANDARDS FOR A TOPOGRAPHIC MAP COMPILED AT A SCALE OF 1" = 80' WITH A CONTOUR INTERVAL OF 2'



REV: 2 10-22-20 C.D.L. (SHL CHANGES)

FINISHED GRADE ELEVATION = 3401.2'

NOTE: Earthwork Calculations Require a Fill @ some Location Stakes For Balance. All Fill is to be Compacted to a Minimum of 95% of the Maximum Dry Density Obtained by AASHTO Method t-99.

NOTES:

- Flare pit is to be located a min. of 100' from the wellhead.
- Contours shown at 2' intervals.
- Cut/Fill slopes 1 1/2:1 (Typ. except where noted)
- Underground utilities shown on this sheet are for visualization purposes only, actual locations to be determined prior to construction.
- Basis of Bearings is a Transverse Mercator Projection with a Central Meridian of W103°53'00"

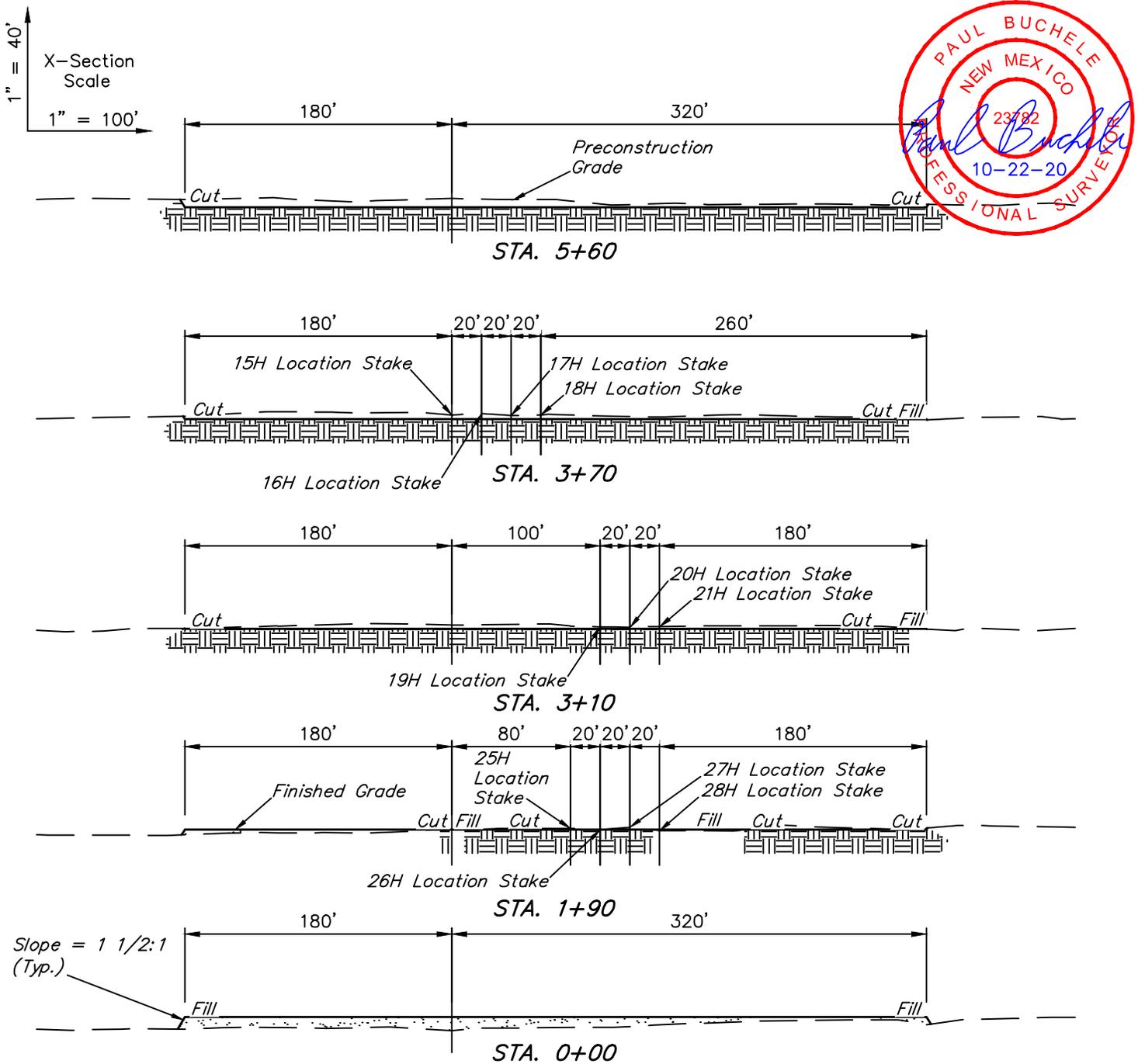
CIMAREX ENERGY CO.

CASCADE 29 FEDERAL W2W2 PAD 1  
 SW 1/4 SW 1/4, SECTION 29, T25S, R33E, N.M.P.M.  
 LEA COUNTY, NEW MEXICO

SURVEYED BY	C.T., C.H.	07-02-18	SCALE
DRAWN BY	D.J.S.	08-13-18	1" = 80'
<b>LOCATION LAYOUT</b>		<b>EXHIBIT J</b>	



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



APPROXIMATE EARTHWORK QUANTITIES	
(4") TOPSOIL STRIPPING	3,540 Cu. Yds.
REMAINING LOCATION	6,070 Cu. Yds.
<b>TOTAL CUT</b>	<b>9,610 Cu. Yds.</b>
<b>FILL</b>	<b>6,070 Cu. Yds.</b>
EXCESS MATERIAL	3,540 Cu. Yds.
TOPSOIL	3,540 Cu. Yds.
<b>EXCESS UNBALANCE</b> (After Interim Rehabilitation)	<b>0 Cu. Yds.</b>

APPROXIMATE SURFACE DISTURBANCE AREAS		
	DISTANCE	ACRES
WELL SITE DISTURBANCE	NA	±6.943
30' WIDE ACCESS ROAD R-O-W DISTURBANCE	±563.42'	±0.398
<b>TOTAL SURFACE USE AREA</b>		<b>±7.341</b>

REV: 2 10-22-20 C.D.L. (SHL CHANGES)

**NOTES:**

- Fill quantity includes 5% for compaction.
- Cut/Fill slopes 1 1/2:1 (Typ. except where noted)

**CIMAREX ENERGY CO.**

**CASCADE 29 FEDERAL W2W2 PAD 1**  
**SW 1/4 SW 1/4, SECTION 29, T25S, R33E, N.M.P.M.**  
**LEA COUNTY, NEW MEXICO**

SURVEYED BY	C.T., C.H.	07-02-18	SCALE
DRAWN BY	D.J.S.	08-13-18	AS SHOWN
<b>TYPICAL CROSS SECTIONS</b>			<b>EXHIBIT J</b>

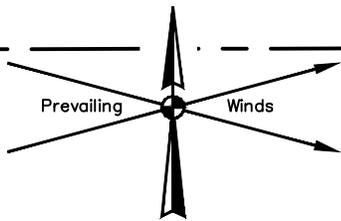


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N



690' X 760' Archaeological Survey Boundary

Meter Run Pad

LINE TABLE		
LINE	DIRECTION	LENGTH
L1	S50°E	28'

15H 16H 17H 18H

19H 20H 21H

22H 23H 24H

25H 26H 27H 28H

Topsoil Stockpile

Proposed Access Road

Existing 2-Track

Section 29  
Section 32

Section Line

Proposed Red Hills Unit 32-5 Access Road "A"

REV: 2 10-22-20 C.D.L. (SHL CHANGES)

**NOTES:**

- Basis of Bearings is a Transverse Mercator Projection with a Central Meridian of W103°53'00"

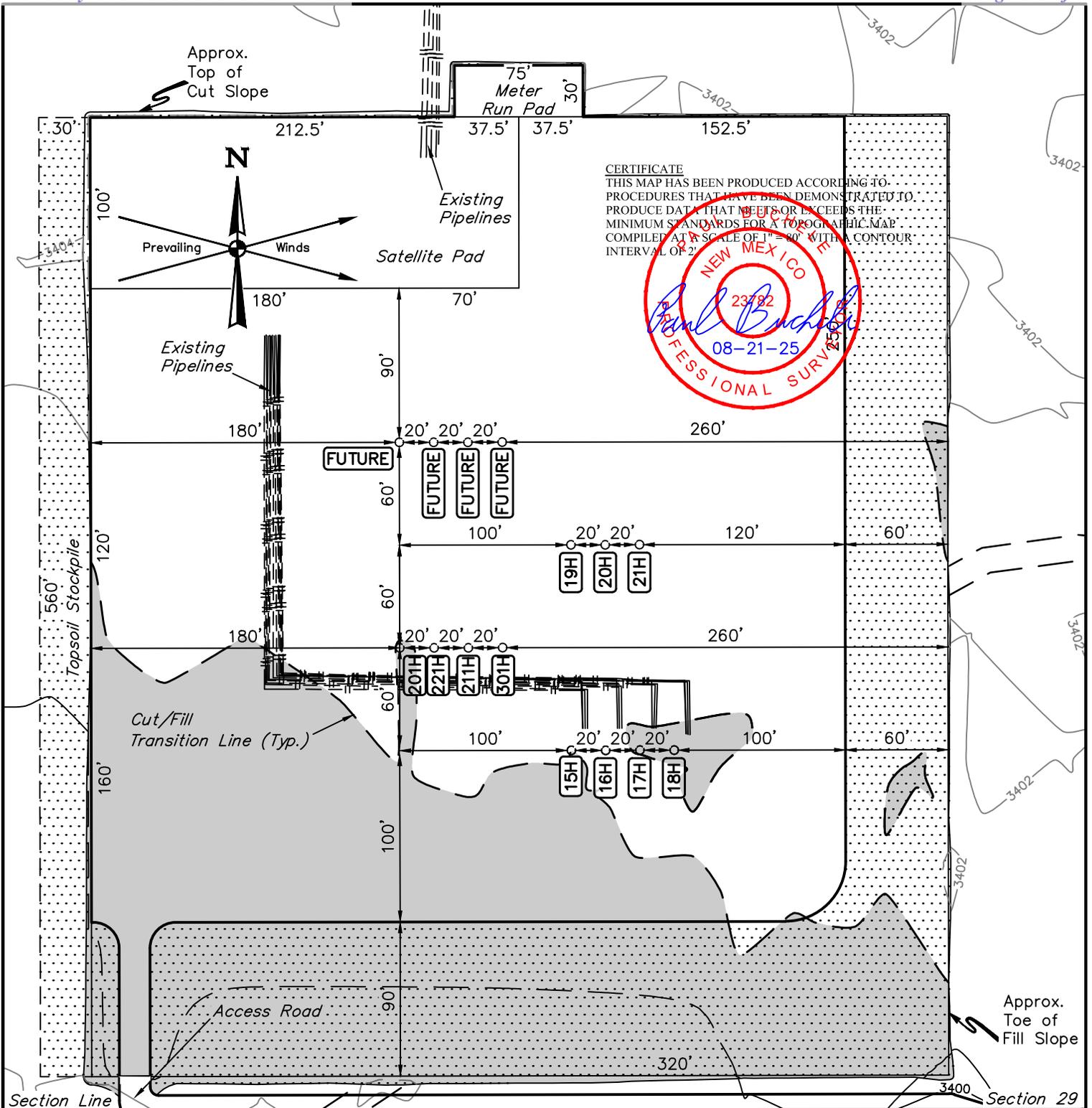
**CIMAREX ENERGY CO.**

**CASCADE 29 FEDERAL W2W2 PAD 1  
SW 1/4 SW 1/4, SECTION 29, T25S, R33E, N.M.P.M.  
LEA COUNTY, NEW MEXICO**

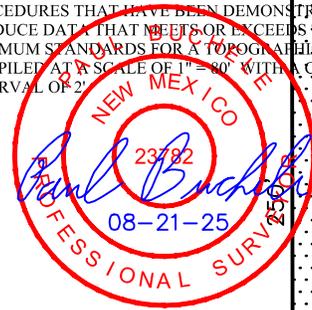


**UELS, LLC**  
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Vernal, UT 84078 \* (435) 789-1017

SURVEYED BY	C.T., C.H.	07-02-18	SCALE
DRAWN BY	D.J.S.	08-13-18	1" = 100'
ARCHAEOLOGICAL SURVEY BOUNDARY			<b>EXHIBIT L</b>



**CERTIFICATE**  
 THIS MAP HAS BEEN PRODUCED ACCORDING TO PROCEDURES THAT HAVE BEEN DEMONSTRATED TO PRODUCE DATA THAT MEETS OR EXCEEDS THE MINIMUM STANDARDS FOR A TOPOGRAPHIC MAP COMPILED AT A SCALE OF 1" = 80' WITH A CONTOUR INTERVAL OF 2'



**LEGEND:**  
 [Dotted Pattern] Reclaimed Area

APPROXIMATE PRODUCTION PAD ACREAGE = ±4.832 ACRES  
 APPROXIMATE RECLAIMED AREA ACREAGE = ±2.111 ACRES  
 TOTAL ACREAGE = ±6.943 ACRES

**NOTES:**  
 • Contours shown at 2' intervals.

Red Hills Unit 32-5 Access Road "A"

**CIMAREX ENERGY CO.**

**CASCADE 29 FEDERAL W2W2 PAD 1**  
 SW 1/4 SW 1/4, SECTION 29, T25S, R33E, N.M.P.M.  
 LEA COUNTY, NEW MEXICO

<b>SURVEYED BY</b>	C.T., C.H.	07-02-18	<b>SCALE</b>
<b>DRAWN BY</b>	C.D.	08-21-25	1" = 80'
<b>RECLAMATION DIAGRAM</b>		<b>EXHIBIT P</b>	



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



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

# PWD Data Report

11/06/2025

**APD ID:** 10400106643

**Submission Date:** 09/03/2025

**Operator Name:** COTERRA ENERGY OPERATING CO

**Well Name:** CASCADE 29 FEDERAL

**Well Number:** 221H

**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):**

**Other PWD Surface Owner Description:**

**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:**

**Decribe 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:** COTERRA ENERGY OPERATING CO

**Well Name:** CASCADE 29 FEDERAL

**Well Number:** 221H

**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:**

**Other PWD Surface Owner Description:**

**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):**

**Precipitated Solids Permit**

**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**

**Operator Name:** COTERRA ENERGY OPERATING CO

**Well Name:** CASCADE 29 FEDERAL

**Well Number:** 221H

**State**

**Unlined Produced Water Pit Estimated**

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

**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):**

**Other PWD Surface Owner Description:**

**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):**

**Other PWD Surface Owner Description :**

**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:**

**Operator Name:** COTERRA ENERGY OPERATING CO

**Well Name:** CASCADE 29 FEDERAL

**Well Number:** 221H

**Section 6 -**

**Would you like to utilize Other PWD options?** N

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

**PWD surface owner:**

**PWD disturbance (acres):**

**PWD Surface Owner Description:**

**Other PWD discharge volume (bbl/day):**

**Other PWD type description:**

**Other PWD type**

**Have other regulatory requirements been met?**

**Other regulatory requirements**



# Bond Info Data

11/06/2025

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

**APD ID:** 10400106643

**Submission Date:** 09/03/2025

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

**Operator Name:** COTERRA ENERGY OPERATING CO

**Well Name:** CASCADE 29 FEDERAL

**Well Number:** 221H

**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 attachment:**

**Reclamation bond amount:**

**Reclamation bond rider amount:**

**Additional reclamation bond information attachment:**

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

General Information  
Phone: (505) 629-6116

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

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

ACKNOWLEDGMENTS

Action 527519

**ACKNOWLEDGMENTS**

Operator: Coterra Energy Operating Co. 6001 Deauville Blvd Midland, TX 79706	OGRID: 215099
	Action Number: 527519
	Action Type: [C-101] BLM - Federal/Indian Land Lease (Form 3160-3)

**ACKNOWLEDGMENTS**

<input checked="" type="checkbox"/>	I hereby certify that no additives containing PFAS chemicals will be added to the completion or recompletion of this well.
-------------------------------------	--

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

General Information  
Phone: (505) 629-6116

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

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

CONDITIONS

Action 527519

**CONDITIONS**

Operator: Coterra Energy Operating Co. 6001 Deauville Blvd Midland, TX 79706	OGRID: 215099
	Action Number: 527519
	Action Type: [C-101] BLM - Federal/Indian Land Lease (Form 3160-3)

**CONDITIONS**

Created By	Condition	Condition Date
sbowen00	Cement is required to circulate on both surface and intermediate1 strings of casing.	11/18/2025
sbowen00	If cement does not circulate on any string, a Cement Bond Log (CBL) is required for that string of casing.	11/18/2025
matthew.gomez	The proposed 10.3 ppg cement must achieve a minimum compressive strength of 500 PSI before performing any additional work on the well. Should the lead cement fail to be circulated to surface a CBL shall be run. If the CBL is unable to indicate sufficient cement coverage due to the lighter cement, a USI log may be required.	12/4/2025
matthew.gomez	Notify the OCD 24 hours prior to casing & cement.	12/4/2025
matthew.gomez	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.	12/4/2025
matthew.gomez	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.	12/4/2025
matthew.gomez	File As Drilled C-102 and a directional Survey with C-104 completion packet.	12/4/2025