

Form 3160-5  
(June 2019)UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENTFORM APPROVED  
OMB No. 1004-0137  
Expires: October 31, 2021**SUNDRY NOTICES AND REPORTS ON WELLS**  
**Do not use this form for proposals to drill or to re-enter an**  
**abandoned well. Use Form 3160-3 (APD) for such proposals.**

5. Lease Serial No.

6. If Indian, Allottee or Tribe Name

**SUBMIT IN TRIPLICATE - Other instructions on page 2**

1. Type of Well

☐ Oil Well ☐ Gas Well ☐ Other

2. Name of Operator

7. If Unit of CA/Agreement, Name and/or No.

8. Well Name and No.

3a. Address

3b. Phone No. (include area code)

9. API Well No.

158H

10. Field and Pool or Exploratory Area WC-025-G-08 S253235G; LWR BS

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

11. Country or Parish, State

## 12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION				
<input type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resume)	<input type="checkbox"/> Water Shut-Off	
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Alter Casing	<input type="checkbox"/> Hydraulic Fracturing	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity	
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recomplete	<input type="checkbox"/> Other	
	<input type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon		
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input type="checkbox"/> Water Disposal		

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleat horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be perfonned or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleat in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has detennined that the site is ready for final inspection.)

14. I hereby certify that the foregoing is true and correct. Name (Printed/Typed)

Title

Signature

Date

**THE SPACE FOR FEDERAL OR STATE OFFICE USE**

Approved by

Title

Date

Conditions of approval, if any, are attached. Approval of this notice 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.

Office

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.

(Instructions on page 2)

## GENERAL INSTRUCTIONS

This form is designed for submitting proposals to perform certain well operations and reports of such operations when completed as indicated on Federal and Indian lands pursuant to applicable Federal law 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, are either shown below, will be issued by or may be obtained from the local Federal office.

## SPECIFIC INSTRUCTIONS

*Item 4* - Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult the local Federal office for specific instructions.

*Item 13*: Proposals to abandon a well and subsequent reports of abandonment should include such special information as is required by the local Federal office. In addition, such proposals and reports should include reasons for the abandonment; data on any former or present productive zones or other zones with present significant fluid contents not sealed off by cement or otherwise; depths (top and bottom) and method of placement of cement plugs; mud or other material placed below, between and above plugs; amount, size, method of parting of any casing, liner or tubing pulled and the depth to the top of any tubing left in the hole; method of closing top of well and date well site conditioned for final inspection looking for approval of the abandonment. 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 the 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., 351 et seq., 25 U.S.C. 396; 43 CFR 3160.

PRINCIPAL PURPOSE: The information is used to: (1) Evaluate, when appropriate, approve applications, and report completion of subsequent well operations, on a Federal or Indian lease; and (2) document for administrative use, information for the management, disposal and use of National Resource lands and resources, such as: (a) evaluating the equipment and procedures to be used during a proposed subsequent well operation and reviewing the completed well operations for compliance with the approved plan; (b) requesting and granting approval to perform those actions covered by 43 CFR 3162.3-2, 3162.3-3, and 3162.3-4; (c) reporting the beginning or resumption of production, as required by 43 CFR 3162.4-1(c) and (d) analyzing future applications to drill or modify operations in light of data obtained and methods used.

ROUTINE USES: Information from the record and/or the record will be transferred to appropriate Federal, State, local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecutions in connection with congressional inquiries or to consumer reporting agencies to facilitate collection of debts owed the Government.

EFFECT OF NOT PROVIDING THE INFORMATION: Filing of this notice and report and disclosure of the information is mandatory for those subsequent well operations specified in 43 CFR 3162.3-2, 3162.3-3, 3162.3-4.

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

The BLM collects this information to evaluate proposed and/or completed subsequent well operations on Federal or Indian oil and gas leases.

Response to this request is mandatory.

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 Collection Clearance Officer (WO-630), 1849 C St., N.W., Mail Stop 401 LS, Washington, D.C. 20240

**Additional Information****Additional Remarks**

From: 22392'MD/12300'TVD - WC-025 G-09 S243336I; Upper Wolfcamp, Pool Code 98092

To: 21240'MD/10980'TVD - Pool: WC-025 G-08 S253235G; Lower Bone Spring, Pool Code 97903

Cimarex is also requesting approval for offline cementing and skid rig. Please attached drilling plan changes, Bops, directional survey and C-102.

**Location of Well**

0. SHL: NWNE / 330 FNL / 2305 FWL / TWSP: 25S / RANGE: 33E / SECTION: 32 / LAT: 32.09341 / LONG: -103.595413 ( TVD: 0 feet, MD: 0 feet )

PPP: NENE / 2633 FSL / 2307 FWL / TWSP: 26S / RANGE: 33E / SECTION: 5 / LAT: 32.072531 / LONG: -103.595411 ( TVD: 12300 feet, MD: 19858 feet )

PPP: NENE / 5278 FSL / 2309 FWL / TWSP: 26S / RANGE: 33E / SECTION: 5 / LAT: 32.0798 / LONG: -103.595411 ( TVD: 12300 feet, MD: 17214 feet )

PPP: NENE / 3955 FSL / 2308 FWL / TWSP: 26S / RANGE: 33E / SECTION: 5 / LAT: 32.0798 / LONG: -103.595411 ( TVD: 12300 feet, MD: 18536 feet )

BHL: SWSE / 100 FSL / 2305 FWL / TWSP: 26S / RANGE: 33E / SECTION: 5 / LAT: 32.065569 / LONG: -103.59511 ( TVD: 12300 feet, MD: 22392 feet )

CONFIDENTIAL

District I  
1625 N. French Dr., Hobbs, NM 88240  
Phone: (575) 393-6161 Fax: (575) 393-0720  
District II  
811 S. First St., Artesia, NM 88210  
Phone: (575) 748-1283 Fax: (575) 748-9720  
District III  
1000 Rio Hrazos Road, Aztec, NM 87410  
Phone: (505) 334-6178 Fax: (505) 334-6170  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505  
Phone: (505) 476-3460 Fax: (505) 476-3462

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

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

☒ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

<sup>1</sup> API Number <b>30-025-50208</b>	<sup>2</sup> Pool Code <b>97903</b>	<sup>3</sup> Pool Name <b>WC-025; G-08 S253235G; Lower Bone Spring</b>
<sup>4</sup> Property Code <b>330240</b>	<sup>5</sup> Property Name <b>RED HILLS 32-5 FED COM</b>	<sup>6</sup> Well Number <b>158H</b>
<sup>7</sup> OGRID No. <b>215099</b>	<sup>8</sup> Operator Name <b>CIMAREX ENERGY CO.</b>	<sup>9</sup> Elevation <b>3409.1'</b>

<sup>10</sup> Surface Location

UL or lot no. C	Section 32	Township 25S	Range 33E	Lot Idn	Feet from the 330	North/South line NORTH	Feet from the 2305	East/West line WEST	County LEA
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<sup>11</sup> Bottom Hole Location If Different From Surface

UL or lot no. O	Section 5	Township 26S	Range 33E	Lot Idn	Feet from the 100	North/South line SOUTH	Feet from the 2017	East/West line EAST	County LEA
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<sup>12</sup> Dedicated Acres <b>1280</b>	<sup>13</sup> Joint or Infill	<sup>14</sup> Consolidation Code	<sup>15</sup> Order No. <b>NSP-2145</b>
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No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

<p><b>NAD 83 (SURFACE HOLE LOCATION)</b> LATITUDE = 32°05'36.27" (32.093410°) LONGITUDE = 103°35'43.49" (103.595413°)</p> <p><b>NAD 27 (SURFACE HOLE LOCATION)</b> LATITUDE = 32°05'35.83" (32.093285°) LONGITUDE = 103°35'41.79" (103.594942°)</p> <p><b>STATE PLANE NAD 83 (N.M. EAST)</b> N: 398501.09' E: 769854.49' <b>STATE PLANE NAD 27 (N.M. EAST)</b> N: 398443.46' E: 728668.05'</p> <p><b>NAD 83 (LPP #1)</b> LATITUDE = 32°05'38.54" (32.094039°) LONGITUDE = 103°35'32.24" (103.592290°)</p> <p><b>NAD 27 (LPP #1)</b> LATITUDE = 32°05'38.09" (32.093914°) LONGITUDE = 103°35'30.55" (103.591819°)</p> <p><b>STATE PLANE NAD 83 (N.M. EAST)</b> N: 398736.72' E: 770820.12' <b>STATE PLANE NAD 27 (N.M. EAST)</b> N: 398679.08' E: 729633.68'</p> <p><b>NAD 83 (LPP #2)</b> LATITUDE = 32°04'21.12" (32.072534°) LONGITUDE = 103°35'32.23" (103.592286°)</p> <p><b>NAD 27 (LPP #2)</b> LATITUDE = 32°04'20.67" (32.072409°) LONGITUDE = 103°35'30.54" (103.591817°)</p> <p><b>STATE PLANE NAD 83 (N.M. EAST)</b> N: 390913.59' E: 770875.04' <b>STATE PLANE NAD 27 (N.M. EAST)</b> N: 390856.15' E: 729688.24'</p> <p><b>NAD 83 (BHL/LTP)</b> LATITUDE = 32°03'56.04" (32.065567°) LONGITUDE = 103°35'32.23" (103.592286°)</p> <p><b>NAD 27 (BHL/LTP)</b> LATITUDE = 32°03'55.59" (32.065442°) LONGITUDE = 103°35'30.54" (103.591816°)</p> <p><b>STATE PLANE NAD 83 (N.M. EAST)</b> N: 388378.91' E: 770892.83' <b>STATE PLANE NAD 27 (N.M. EAST)</b> N: 388321.53' E: 729705.91'</p>	<p><b>NOTE:</b> • Distances referenced on plat to section lines are perpendicular. • Basis of Bearing is a Transverse Mercator Projection with a Central Meridian of W103°53'00"</p> <p><b>SCALE</b> 2000' 1000' 0 1000' 2000'</p> <p><b>DRAWN BY:</b> J.A. 08-09-19 <b>REV:</b> 3 D.M.C. 06-27-22 (FTP, BHL CHANGES &amp; ADDED LEASE CROSSINGS)</p>	<p><b>"OPERATOR CERTIFICATION"</b> I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral of working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.</p> <p><i>Rusty Klein</i> 9/12/22 Signature Date</p> <p><b>Rusty Klein</b> Printed Name rusty.klein@coterra.com E-mail Address</p> <p><b>"SURVEYOR CERTIFICATION"</b> I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.</p> <p>May 01, 2018 Date of Survey Signature and Seal of Professional Surveyor:</p> <p><b>PAUL BUCHELE</b> NEW MEXICO 23782 06-27-22 PROFESSIONAL SURVEYOR</p> <p>Certificate Number:</p>
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## PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

<b>OPERATOR'S NAME:</b>	<b>Cimarex</b>
<b>LEASE NO.:</b>	<b>NMNM106040A</b>
<b>LOCATION:</b>	Section 32, T.25 S., R.33 E., NMPM
<b>COUNTY:</b>	Lea County, New Mexico

<b>WELL NAME &amp; NO.:</b>	Red Hills 32-5 Fed Com 158H
<b>SURFACE HOLE FOOTAGE:</b>	330'/N & 2305'/W
<b>BOTTOM HOLE FOOTAGE:</b>	100'/S & 2017'/E

COA

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

### A. HYDROGEN SULFIDE

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

### B. CASING

1. The **13-3/8** inch surface casing shall be set at approximately **1000** feet (a minimum of **25 feet (Lea County)** into the Rustler Anhydrite and above the salt) and cemented to the surface.
  - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
  - b. Wait on cement (WOC) time for a primary cement job will be a minimum of **8**

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

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

**Operator is approve to use offline cementing on Intermediate casing.**

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.

**Wait on cement (WOC) time for a primary cement job is to include the tail cement slurry due to cave/karst.**

**Operator shall use a max minimum of 12.5 ppg MW in this location.**

3. The minimum required fill of cement behind the **7** inch production casing is:
  - Cement should tie-back at least **200 feet** into previous casing string. Operator shall provide method of verification.
4. The minimum required fill of cement behind the **4-1/2** inch production liner is:
  - Cement should tie-back **100 feet** into the previous casing. Operator shall provide method of verification. **Excess calculate to be 11%. Additional cement maybe required.**

## **C. PRESSURE CONTROL**

1. **Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).**
2. Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **5000 (5M) psi**. **Operator shall add an extra ram before drilling out the Intermeditate shoe.**
  - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
  - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
  - c. Manufacturer representative shall install the test plug for the initial BOP test.
  - d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
  - e. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.

**D. SPECIAL REQUIREMENT (S)****Communitization Agreement**

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

**GENERAL REQUIREMENTS**

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

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

☒ Eddy County

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

☒ Lea County

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

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
  - a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
  - b. When the operator proposes to set surface casing with Spudder Rig
    - Notify the BLM when moving in and removing the Spudder Rig.

- Notify the BLM when moving in the 2<sup>nd</sup> Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
  - BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.
2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.
  3. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

#### A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.
2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.



5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.
6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.
7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.
8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

**B. PRESSURE CONTROL**

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.
2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.
3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.
4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:
  - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
  - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.

- c. Manufacturer representative shall install the test plug for the initial BOP test.
  - d. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.
  - e. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
- 5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
  - a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), 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 plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time, except the casing pressure test can be initiated immediately after bumping the plug (only applies to single stage cement jobs).
  - c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).
  - d. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.
  - e. The results of the test shall be reported to the appropriate BLM office.

- f. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.
- g. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.
- h. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

#### C. DRILLING MUD

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

#### D. WASTE MATERIAL AND FLUIDS

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

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

**ZS112922**

**1. Geological Formations**

TVD of target 10,980

Pilot Hole TD N/A

MD at TD 21,240

Deepest expected fresh water

Formation	Depth (TVD) from KB	Water/Mineral Bearing/Target Zone	Hazards
Rustler	875	Useable Water	
Top Salt	1235	N/A	
Base Salt	4900	N/A	
Bell Canyon	4930	N/A	
Cherry Canyon	5960	Hydrocarbons	
Brushy Canyon	7480	Hydrocarbons	
Bone Spring	9045	Hydrocarbons	
1st Bone Spring	10040	Hydrocarbons	
2nd Bone Spring	10580	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	935	935	13-3/8"	48.00	H-40	ST&C	1.83	4.27	7.17
12 1/4	0	4980	4980	9-5/8"	40.00	HCK-55	LT&C	1.43	1.48	2.82
8 3/4	0	10547	10547	7"	29.00	L-80	LT&C	1.42	1.65	1.84
8 3/4	10547	11297	10975	7"	29.00	P-110	BT&C	1.66	2.18	74.85
6	9547	21240	10980	4-1/2"	11.60	P-110	BT&C	1.48	2.08	22.08
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., Red Hills 32-5 Federal Com 158H

	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 ft <sup>3</sup> /sack	H <sub>2</sub> O gal/sk	500# Comp. Strength (hours)	Slurry Description
Surface	385	13.50	1.72	9.15	15.5	Lead: Class C + Bentonite
	195	14.80	1.34	6.32	9.5	Tail: Class C + LCM
Intermediate	950	12.90	1.88	9.65	12	Lead: 35:65 (Poz:C) + Salt + Bentonite
	291	14.80	1.34	6.32	9.5	Tail: Class C + LCM
Production	354	10.30	3.64	22.18		Lead: Tuned Light + LCM
	125	14.80	1.36	6.57	9.5	Tail: Class C + Retarder
Completion System	738	14.20	1.30	5.86	14:30	Tail: 50:50 (Poz:H) + Salt + Bentonite + Fluid Loss + Dispersant + SMS

Casing String	TOC	% Excess
Surface	0	42
Intermediate	0	49
Production	4780	25
Completion System	11097	10

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

**4. Pressure Control Equipment**

A variance is requested for the use of a diverter on the surface casing. See attached for schematic.					
BOP installed and tested before drilling which hole?	Size	Min Required WP	Type		Tested To
12 1/4	13 5/8	2M	Annular	X	2M
			Blind Ram		
			Pipe Ram		
			Double Ram	X	
			Other		
6	13 5/8	5M	Annular	X	5M
			Blind Ram		
			Pipe Ram	X	
			Double Ram	X	
			Other		

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

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

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

**5. Mud Program**

Depth	Type	Weight (ppg)	Viscosity	Water Loss
0' to 935'	Fresh Water	7.83 - 8.33	28	N/C
935' to 4980'	Brine Water	9.80 - 10.30	30-32	N/C
4980' to 11640'	Cut Brine or OBM	8.50 - 9.00	27-70	N/C
11640' to 21240'	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
---	-----------------------------

**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	5138 psi
Abnormal Temperature	No

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

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

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

A multi-bowl wellhead system will be utilized.

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

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

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

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

A solid steel body pack-off will be utilized after running and cementing the intermediate casing. After installation the pack-off and lower flange will be pressure tested to 5000 psi.

A solid steel body pack-off will be utilized after running and cementing the production casing. After installation the pack-off and lower flange will be pressure tested to 5000 psi.

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

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

#### 10. Other Variances

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

Cimarex requests permission to skid the rig to the next well on the pad to begin operations instead of waiting 8 hours for surface cement to harden on this 158H well. Surface cement will be pumped and we will ensure floats hold, do a green cement test and then skid to the next well on pad. We will not perform any operations on this 158H well until at least 8 hours and when both tail and lead slurry reach 500 psi. The mandrel hanger is made up on the last joint of 13 3/8" casing and then lowered down with and landing joint. It is then lowered down until the mandrel contacts the landing ring which is pre-welded to the conductor pipe. At this point the 13 3/8" casing is entirely supported by the conductor pipe via the landing ring/mandrel and is independent from the rig. This allows us to walk the rig away from the 158H well and begin work on the next well while the cement is hardening. There is no way for the casing to be moved or knocked off center since it is hanging from the landing ring.

CIMAREX ENERGY COMPANY  
 RED HILLS 32 5 FEDERAL COM #158H  
 30-025-50208  
 Section 32-T25S-R33E  
 Lea Co., NM

THE CASING PROGRAM WILL BE CHANGED AS FOLLOWS:

FROM:

HOLE SIZE	CASING DEPTH FROM	CASING DEPTH TO	SETTING DEPTH TVD	CASING SIZE	WEIGHT (LB/FT)	GRADE	CONN	SF COLLAPSE	SF BURST	SF TENSION
14-3/4"	0	984'	984'	10-3/4"	40.5#	J-55	BT&C	3.51	6.95	15.78
9-7/8"	0	12426'	12251'	7-5/8"	29.7#	L-80	BT&C	2.50	1.20	1.82
6-3/4"	0	11700'	11700'	5-1/2"	20#	L-80	LT&C	1.16	1.21	1.88
6-3/4"	11700'	22392'	12300'	5"	18#	P-110	BT&C	1.68	1.70	53.70
BLM Minimum Safety								1.25	1 1.6 dry 1.8 wet	

TVD was used on all calculations

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

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

TO:

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	935'	935'	13-3/8"	48#	H-40	ST&C	1.83	4.27	7.17
12-1/4"	0	4980'	4980'	9-5/8"	40#	HCK-55	LT&C	1.43	1.48	2.82
8-3/4"	0	10547'	10547'	7"	29#	L-80	LT&C	1.42	1.65	1.84
8-3/4"	10547'	11297'	10975'	7"	29#	P-110	BT&C	1.66	2.18	74.85
6"	9547'	21240'	10980'	4-1/2"	11.6#	P-110	BT&C	1.48	2.08	22.08
BLM Minimum Safety								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 & Gas Order #2 III.B.1.h.

Cimarex is also requesting approval for off line cementing and request approval to skid the rig to the next well on the pad to begin operations instead of waiting 8 hours for the surface casing cement to harden before skidding the rig.

An updated drilling plan is attached.





Cimarex Red Hills 32-5 Fed Com 158H Rev3 kFc 01Sep22 Proposal  
Geodetic Report  
(Def Plan)

30-025-50208

Report Date: September 02, 2022 - 04:11 PM  
Client: Cimarex Energy  
Field: NM Lea County (NAD 83)  
Structure / Slot: Cimarex Red Hills 32-5 Fed Com 158H / 158H  
Well: Red Hills 32-5 Fed Com 158H  
Borehole: Red Hills 32-5 Fed Com 158H  
UWI / API#: Unknown / Unknown  
Survey Name: Cimarex Red Hills 32-5 Fed Com 158H Rev3 kFc 01Sep22  
Survey Date: September 01, 2022  
Tort / AHD / DDI / ERD Ratio: 136.169' / 11438.900 ft / 6.477' / 1.038  
Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet  
Location Lat / Long: N 32° 5' 36.274711", W 103° 35' 43.48760"  
Location Grid ME YK: W 398501.090 NUS, E 769854.490 NUS  
CRS Grid Convergence Angle: 0.3921°  
Grid Scale Factor: 0.9999689  
Version / Patch: 2.10.832.2

Survey / DLS Computation: Minimum Curvature / Lubinski  
Vertical Section Azimuth: 179.600° (Grid North)  
Vertical Section Origin: 0.000 ft, 0.000 ft  
TVD Reference Datum: RKB = 22ft  
Seabed / Ground Elevation: 3431.100 ft above MSL  
Magnetic Declination: 6.305°  
Total Gravity Field Strength: 988.4290mgn (9.80665 Based)  
Gravity Model: GARM  
Total Magnetic Field Strength: 47434.550 nT  
Magnetic Dip Angle: 59.650°  
Declination Date: September 01, 2022  
Magnetic Declination Model: HDGM 2022  
North Reference: Grid North  
Grid Convergence Used: 0.3921°  
Total Corr Mag North-Grid North: 5.9132°  
Local Coord Referenced To: Well Head

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S °)	Longitude (E/W °)
SHL [330' FNL, 2305' FWL]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	398501.09	769854.49	N 32.093410	W 103.595413
Rustler	100.00	0.00	77.31	100.00	0.00	0.00	0.00	0.00	398501.09	769854.49	N 32.093410	W 103.595413
	200.00	0.00	77.31	200.00	0.00	0.00	0.00	0.00	398501.09	769854.49	N 32.093410	W 103.595413
	300.00	0.00	77.31	300.00	0.00	0.00	0.00	0.00	398501.09	769854.49	N 32.093410	W 103.595413
	400.00	0.00	77.31	400.00	0.00	0.00	0.00	0.00	398501.09	769854.49	N 32.093410	W 103.595413
	500.00	0.00	77.31	500.00	0.00	0.00	0.00	0.00	398501.09	769854.49	N 32.093410	W 103.595413
	600.00	0.00	77.31	600.00	0.00	0.00	0.00	0.00	398501.09	769854.49	N 32.093410	W 103.595413
	700.00	0.00	77.31	700.00	0.00	0.00	0.00	0.00	398501.09	769854.49	N 32.093410	W 103.595413
	800.00	0.00	77.31	800.00	0.00	0.00	0.00	0.00	398501.09	769854.49	N 32.093410	W 103.595413
	875.00	0.00	77.31	875.00	0.00	0.00	0.00	0.00	398501.09	769854.49	N 32.093410	W 103.595413
	900.00	0.00	77.31	900.00	0.00	0.00	0.00	0.00	398501.09	769854.49	N 32.093410	W 103.595413
Top of Salt	1000.00	0.00	77.31	1000.00	0.00	0.00	0.00	0.00	398501.09	769854.49	N 32.093410	W 103.595413
	1100.00	0.00	77.31	1100.00	0.00	0.00	0.00	0.00	398501.09	769854.49	N 32.093410	W 103.595413
	1200.00	0.00	77.31	1200.00	0.00	0.00	0.00	0.00	398501.09	769854.49	N 32.093410	W 103.595413
	1235.00	0.00	77.31	1235.00	0.00	0.00	0.00	0.00	398501.09	769854.49	N 32.093410	W 103.595413
	1300.00	0.00	77.31	1300.00	0.00	0.00	0.00	0.00	398501.09	769854.49	N 32.093410	W 103.595413
	1400.00	0.00	77.31	1400.00	0.00	0.00	0.00	0.00	398501.09	769854.49	N 32.093410	W 103.595413
	1500.00	0.00	77.31	1500.00	0.00	0.00	0.00	0.00	398501.09	769854.49	N 32.093410	W 103.595413
	1600.00	0.00	77.31	1600.00	0.00	0.00	0.00	0.00	398501.09	769854.49	N 32.093410	W 103.595413
	1700.00	0.00	77.31	1700.00	0.00	0.00	0.00	0.00	398501.09	769854.49	N 32.093410	W 103.595413
	1800.00	0.00	77.31	1800.00	0.00	0.00	0.00	0.00	398501.09	769854.49	N 32.093410	W 103.595413
Hodge, Build 2 1/100ft	1900.00	0.00	77.31	1900.00	0.00	0.00	0.00	0.00	398501.09	769854.49	N 32.093410	W 103.595413
	2000.00	0.00	77.31	2000.00	0.00	0.00	0.00	0.00	398501.09	769854.49	N 32.093410	W 103.595413
	2100.00	0.00	77.31	2100.00	0.00	0.00	0.00	0.00	398501.09	769854.49	N 32.093410	W 103.595413
	2200.00	0.00	77.31	2200.00	0.00	0.00	0.00	0.00	398501.09	769854.49	N 32.093410	W 103.595413
	2300.00	0.00	77.31	2300.00	0.00	0.00	0.00	0.00	398501.09	769854.49	N 32.093410	W 103.595413
	2400.00	0.00	77.31	2400.00	0.00	0.00	0.00	0.00	398501.09	769854.49	N 32.093410	W 103.595413
	2500.00	0.00	77.31	2500.00	0.00	0.00	0.00	0.00	398501.09	769854.49	N 32.093410	W 103.595413
	2600.00	2.00	77.31	2599.98	-0.37	0.38	1.70	2.00	398501.47	769856.19	N 32.093411	W 103.595408
	2700.00	4.00	77.31	2699.84	-1.49	1.53	6.81	2.00	398502.62	769861.30	N 32.093414	W 103.595391
	2800.00	6.00	77.31	2799.45	-3.34	3.45	15.31	2.00	398504.54	769869.80	N 32.093419	W 103.595364
Hold	2900.00	8.00	77.31	2898.70	-5.93	6.12	27.20	2.00	398507.21	769881.69	N 32.093426	W 103.595325
	3000.00	10.00	77.31	2997.47	-9.26	9.56	42.46	2.00	398510.65	769895.49	N 32.093435	W 103.595276
	3100.00	12.00	77.31	3095.62	-13.33	13.75	61.07	2.00	398514.84	769915.56	N 32.093446	W 103.595216
	3200.00	14.00	77.31	3193.06	-18.11	18.69	83.02	2.00	398519.78	769937.51	N 32.093459	W 103.595145
	3300.00	14.00	77.31	3193.07	-18.11	18.69	83.02	2.00	398519.78	769937.51	N 32.093459	W 103.595145
	3400.00	14.00	77.31	3290.08	-23.28	24.01	106.62	0.00	398525.10	769961.11	N 32.093474	W 103.595068
	3500.00	14.00	77.31	3387.11	-28.41	29.32	130.22	0.00	398530.41	769984.71	N 32.093488	W 103.594992
	3600.00	14.00	77.31	3484.14	-33.56	34.64	153.82	0.00	398535.73	770008.31	N 32.093502	W 103.594916
	3700.00	14.00	77.31	3581.17	-38.71	39.95	177.43	0.00	398541.04	770031.91	N 32.093516	W 103.594839
	3800.00	14.00	77.31	3678.20	-43.86	45.27	201.03	0.00	398546.36	770055.51	N 32.093530	W 103.594763
Base of Salt Bell Canyon	3900.00	14.00	77.31	3775.23	-49.01	50.58	224.63	0.00	398551.67	770079.11	N 32.093544	W 103.594687
	4000.00	14.00	77.31	3872.26	-54.16	55.90	248.23	0.00	398556.98	770102.71	N 32.093558	W 103.594610
	4100.00	14.00	77.31	3969.29	-59.31	61.21	271.83	0.00	398562.30	770126.31	N 32.093572	W 103.594534
	4200.00	14.00	77.31	4066.32	-64.46	66.53	295.43	0.00	398567.61	770149.91	N 32.093587	W 103.594458
	4300.00	14.00	77.31	4163.35	-69.61	71.84	319.04	0.00	398572.93	770173.52	N 32.093601	W 103.594382
	4400.00	14.00	77.31	4260.38	-74.76	77.15	342.64	0.00	398578.24	770197.12	N 32.093615	W 103.594306
	4500.00	14.00	77.31	4357.41	-79.91	82.47	366.24	0.00	398583.56	770220.72	N 32.093629	W 103.594229
	4600.00	14.00	77.31	4454.44	-85.06	87.78	389.84	0.00	398588.87	770244.32	N 32.093644	W 103.594153
	4700.00	14.00	77.31	4551.47	-90.21	93.10	413.44	0.00	398594.19	770267.92	N 32.093658	W 103.594076
	4800.00	14.00	77.31	4648.50	-95.36	98.41	437.05	0.00	398599.50	770291.52	N 32.093672	W 103.594000
Cherry Canyon	4900.00	14.00	77.31	4745.53	-100.51	103.73	460.65	0.00	398604.81	770315.12	N 32.093686	W 103.593924
	4959.12	14.00	77.31	4842.56	-105.66	109.04	484.25	0.00	398610.13	770338.72	N 32.093700	W 103.593847
	5000.00	14.00	77.31	4939.59	-110.81	114.36	507.85	0.00	398615.44	770362.32	N 32.093714	W 103.593771
	5100.00	14.00	77.31	5036.61	-115.96	119.67	531.45	0.00	398620.76	770385.92	N 32.093729	W 103.593695
	5200.00	14.00	77.31	5133.64	-121.11	124.99	555.05	0.00	398626.07	770409.53	N 32.093743	W 103.593618
	5300.00	14.00	77.31	5230.67	-126.26	130.30	578.66	0.00	398631.39	770433.13	N 32.093757	W 103.593542
	5400.00	14.00	77.31	5327.70	-131.41	135.62	602.26	0.00	398636.70	770456.73	N 32.093771	W 103.593466
	5500.00	14.00	77.31	5424.73	-136.56	140.93	625.86	0.00	398642.02	770480.33	N 32.093785	W 103.593389
	5600.00	14.00	77.31	5521.76	-141.71	146.24	649.46	0.00	398647.33	770503.93	N 32.093799	W 103.593313
	5700.00	14.00	77.31	5618.79	-146.86	151.56	673.06	0.00	398652.64	770527.53	N 32.093814	W 103.593237
Drop 2 1/100ft	5800.00	14.00	77.31	5715.82	-152.01	156.87	696.66	0.00	398657.96	770551.13	N 32.093828	W 103.593160
	5900.00	14.00	77.31	5812.85	-157.16	162.19	720.27	0.00	398663.27	770574.73	N 32.093842	W 103.593083
	6000.00	14.00	77.31	5909.88	-162.31	167.50	743.87	0.00	398668.59	770598.33	N 32.093856	W 103.593006
	6051.66	14.00	77.31	5990.00	-164.97	170.25	756.06	0.00	398673.91	770621.93	N 32.093863	W 103.592968
	6100.00	14.00	77.31	6006.91	-167.46	172.82	767.47	0.00	398679.23	770645.54	N 32.093877	W 103.592931
	6200.00	14.00	77.31	6103.94	-172.61	178.13	791.07	0.00	398684.55	770669.14	N 32.093891	W 103.592855
	6300.00	14.00	77.31	6200.97	-177.76	183.45	814.67	0.00	398689.86	770692.74	N 32.093905	W 103.592778
	6400.00	14.00	77.31	6298.00	-182.91	188.76	838.28	0.00	398695.17	770716.34	N 32.093919	W 103.592702
	6500.00	14.00	77.31	6395.03	-188.05	194.08	861.88	0.00	398699.66	770739.94	N 32.093933	W 103.592626
	6600.00	14.00	77.31	6492.06	-193.20	199.39	885.48	0.00	398704.15	770763.54	N 32.093947	W 103.592550
Brushy Canyon Hold	6700.00	14.00	77.31	6589.09	-198.35	204.71	909.08	0.00	398708.79	770787.14	N 32.093961	W 103.592473
	6800.00	14.00	77.31	6686.11	-203.50	210.02	932.68	0.00	398713.10	770810.74	N 32.093975	W 103.592397
	6900.00	14.00	77.31	6783.14	-208.65	215.34	956.28	0.00	398717.42	770834.34	N 32.093989	W 103.592321
	6938.95	14.00	77.31	6820.94	-210.66	217.41	965.48	0.00	398718.49	770839.94	N 32.093989	W 103.592321
	7000.00	10.78	77.31	6890.33	-212.67	220.21	979.17	2.00	398721.59	770857.73	N 32.093993	W 103.592246
	7100.00	10.78	77.31	6978.22	-218.01	225.00	999.18	2.00	398726.08	770883.64	N 32.094009	W 103.592182
	7200.00	8.78	77.31	7076.76	-221.63	228.73	1015.75	2.00	398729.81			



Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (ft/100ft)	Northing (ft)	Easting (ft)	Latitude (N)	Longitude (W)
1st BS Sand	9900.00	0.00	77.31	9775.04	-228.77	236.10	1048.50	0.00	398737.18	770902.96	N 32.094039	W 103.592023
	10000.00	0.00	77.31	9875.04	-228.77	236.10	1048.50	0.00	398737.18	770902.96	N 32.094039	W 103.592023
	10100.00	0.00	77.31	9975.04	-228.77	236.10	1048.50	0.00	398737.18	770902.96	N 32.094039	W 103.592023
	10164.96	0.00	77.31	10040.00	-228.77	236.10	1048.50	0.00	398737.18	770902.96	N 32.094039	W 103.592023
	10200.00	0.00	77.31	10075.04	-228.77	236.10	1048.50	0.00	398737.18	770902.96	N 32.094039	W 103.592023
	10300.00	0.00	77.31	10175.04	-228.77	236.10	1048.50	0.00	398737.18	770902.96	N 32.094039	W 103.592023
	10400.00	0.00	77.31	10275.04	-228.77	236.10	1048.50	0.00	398737.18	770902.96	N 32.094039	W 103.592023
	10500.00	0.00	77.31	10375.04	-228.77	236.10	1048.50	0.00	398737.18	770902.96	N 32.094039	W 103.592023
	10547.47	0.00	77.31	10422.51	-228.77	236.10	1048.50	0.00	398737.18	770902.96	N 32.094039	W 103.592023
	10600.00	5.25	187.60	10474.97	-226.39	233.71	1048.18	10.00	398734.80	770902.64	N 32.094032	W 103.592024
2nd BS Sand	10700.00	15.25	187.60	10573.25	-208.79	216.09	1045.83	10.00	398717.18	770900.29	N 32.093984	W 103.592032
	10707.01	15.95	187.60	10580.00	-209.92	214.22	1045.58	10.00	398715.31	770900.04	N 32.093979	W 103.592032
	10800.00	25.25	187.60	10666.94	-174.55	181.82	1041.26	10.00	398682.91	770895.71	N 32.093890	W 103.592047
	10900.00	35.25	187.60	10753.22	-124.72	131.95	1034.60	10.00	398633.03	770889.06	N 32.093753	W 103.592070
	11000.00	45.25	187.60	10829.44	-60.82	67.98	1026.07	10.00	398569.07	770880.52	N 32.093577	W 103.592099
	11100.00	55.25	187.60	10893.30	15.23	-8.14	1015.91	10.00	398492.96	770870.37	N 32.093368	W 103.592133
	11200.00	65.25	187.60	10942.85	101.10	-94.09	1004.44	10.00	398407.01	770858.90	N 32.093132	W 103.592172
	11297.47	75.00	187.60	10975.94	191.76	-184.83	992.34	10.00	398316.26	770846.79	N 32.092883	W 103.592213
	11300.00	75.11	187.54	10976.60	194.18	-187.26	992.01	5.00	398313.84	770846.47	N 32.092876	W 103.592214
	11400.00	79.53	188.14	10998.54	291.04	-284.19	981.26	5.00	398216.60	770835.72	N 32.092610	W 103.592251
3rd BS Carb	11438.69	184.24	188.08	11005.00	329.03	-322.21	978.14	5.00	398178.89	770832.60	N 32.092506	W 103.592262
	11500.00	83.97	182.82	11012.88	389.68	-382.89	974.40	5.00	398118.21	770828.86	N 32.092339	W 103.592278
	11600.00	88.42	180.53	11019.52	489.37	-482.60	971.49	5.00	398018.51	770825.95	N 32.092065	W 103.592287
	11631.23	89.81	179.82	11020.00	520.59	-513.82	971.40	5.00	397987.28	770825.85	N 32.091979	W 103.592288
	11639.74	90.19	179.53	11020.00	529.10	-522.33	971.44	5.00	397978.78	770825.89	N 32.091956	W 103.592288
	11640.85	90.24	179.60	11020.00	530.21	-523.44	971.44	5.00	397977.67	770825.90	N 32.091953	W 103.592288
	11700.00	90.24	179.60	11019.75	569.36	-582.59	971.86	0.00	397918.52	770826.31	N 32.091790	W 103.592288
	11800.00	90.24	179.60	11019.33	609.36	-602.59	972.56	0.00	397818.53	770827.01	N 32.091515	W 103.592288
	11900.00	90.24	179.60	11018.92	789.36	-782.58	973.25	0.00	397718.53	770827.71	N 32.091240	W 103.592288
	12000.00	90.24	179.60	11018.50	869.36	-882.58	973.95	0.00	397618.54	770828.41	N 32.090965	W 103.592288
2nd BS Sand tarceit	12100.00	90.24	179.60	11018.08	989.36	-982.58	974.65	0.00	397518.55	770829.11	N 32.090691	W 103.592288
	12200.00	90.24	179.60	11017.67	1069.36	-1082.57	975.35	0.00	397418.55	770829.81	N 32.090416	W 103.592288
	12300.00	90.24	179.60	11017.25	1189.35	-1182.57	976.05	0.00	397318.56	770830.50	N 32.090141	W 103.592288
	12400.00	90.24	179.60	11016.83	1289.35	-1282.57	976.74	0.00	397218.57	770831.20	N 32.089866	W 103.592288
	12500.00	90.24	179.60	11016.42	1389.35	-1382.56	977.44	0.00	397118.57	770831.90	N 32.089591	W 103.592288
	12600.00	90.24	179.60	11016.00	1489.35	-1482.56	978.14	0.00	397018.58	770832.60	N 32.089316	W 103.592288
	12700.00	90.24	179.60	11015.58	1589.35	-1582.56	978.84	0.00	396918.59	770833.30	N 32.089041	W 103.592288
	12800.00	90.24	179.60	11015.17	1689.35	-1682.55	979.54	0.00	396818.59	770834.00	N 32.088766	W 103.592288
	12900.00	90.24	179.60	11014.75	1789.35	-1782.55	980.23	0.00	396718.60	770834.69	N 32.088492	W 103.592288
	13000.00	90.24	179.60	11014.33	1889.35	-1882.55	980.93	0.00	396618.61	770835.39	N 32.088217	W 103.592288
3rd BS Carb	13100.00	90.24	179.60	11013.92	1989.35	-1982.54	981.63	0.00	396518.61	770836.09	N 32.087942	W 103.592288
	13200.00	90.24	179.60	11013.50	2089.35	-2082.54	982.33	0.00	396418.62	770836.79	N 32.087667	W 103.592288
	13300.00	90.24	179.60	11013.08	2189.35	-2182.54	983.03	0.00	396318.63	770837.48	N 32.087392	W 103.592288
	13400.00	90.24	179.60	11012.67	2289.35	-2282.53	983.73	0.00	396218.63	770838.18	N 32.087117	W 103.592288
	13500.00	90.24	179.60	11012.25	2389.34	-2382.53	984.42	0.00	396118.64	770838.88	N 32.086842	W 103.592288
	13600.00	90.24	179.60	11011.83	2489.34	-2482.53	985.12	0.00	396018.65	770839.58	N 32.086567	W 103.592288
	13700.00	90.24	179.60	11011.42	2589.34	-2582.52	985.82	0.00	395918.65	770840.28	N 32.086292	W 103.592287
	13800.00	90.24	179.60	11011.00	2689.34	-2682.52	986.52	0.00	395818.66	770840.97	N 32.086018	W 103.592287
	13900.00	90.24	179.60	11010.58	2789.34	-2782.52	987.22	0.00	395718.67	770841.67	N 32.085743	W 103.592287
	14000.00	90.24	179.60	11010.17	2889.34	-2882.51	987.91	0.00	395618.67	770842.37	N 32.085468	W 103.592287
Turn 2°100ft	14100.00	90.24	179.60	11009.75	2989.34	-2982.51	988.61	0.00	395518.68	770843.07	N 32.085193	W 103.592287
	14200.00	90.24	179.60	11009.33	3089.34	-3082.51	989.31	0.00	395418.69	770843.77	N 32.084918	W 103.592287
	14300.00	90.24	179.60	11008.92	3189.34	-3182.50	990.01	0.00	395318.69	770844.47	N 32.084643	W 103.592287
	14400.00	90.24	179.60	11008.50	3289.34	-3282.50	990.71	0.00	395218.70	770845.16	N 32.084369	W 103.592287
	14500.00	90.24	179.60	11008.08	3389.34	-3382.50	991.40	0.00	395118.71	770845.86	N 32.084094	W 103.592287
	14600.00	90.24	179.60	11007.67	3489.33	-3482.49	992.10	0.00	395018.72	770846.56	N 32.083819	W 103.592287
	14700.00	90.24	179.60	11007.25	3589.33	-3582.49	992.80	0.00	394918.72	770847.26	N 32.083544	W 103.592287
	14800.00	90.24	179.60	11006.83	3689.33	-3682.49	993.50	0.00	394818.73	770847.96	N 32.083269	W 103.592287
	14900.00	90.24	179.60	11006.42	3789.33	-3782.48	994.20	0.00	394718.73	770848.65	N 32.082994	W 103.592287
	15000.00	90.24	179.60	11006.00	3889.33	-3882.48	994.90	0.00	394618.74	770849.35	N 32.082719	W 103.592287
3rd BS Carb Turn 2°100ft	15100.00	90.24	179.60	11005.58	3989.33	-3982.48	995.60	0.00	394518.74	770850.05	N 32.082444	W 103.592287
	15200.00	90.24	179.60	11005.17	4089.33	-4082.47	996.29	0.00	394418.75	770850.75	N 32.082170	W 103.592287
	15240.35	90.24	179.60	11005.00	4129.68	-4122.82	996.57	0.00	394378.40	770851.03	N 32.082059	W 103.592287
	15290.85	90.24	179.60	11004.79	4180.17	-4173.32	996.93	0.00	394327.91	770851.38	N 32.081920	W 103.592287
	15300.00	90.24	179.60	11004.75	4189.32	-4182.47	997.00	0.00	394318.76	770851.46	N 32.081895	W 103.592287
	15400.00	90.24	179.60	11004.33	4289.30	-4282.43	997.70	2.00	394218.81	770852.22	N 32.081620	W 103.592287
	15490.84	90.24	175.60	11003.96	4380.01	-4373.10	1005.30	2.00	394128.14	770852.76	N 32.081371	W 103.592264
	15500.00	90.24	175.78	11003.92	4389.14	-4382.23	1005.99	2.00	394119.01	770850.44	N 32.081345	W 103.592262
	15600.00	90.24	177.78	11003.50	4489.02	-4482.06	1011.60	2.00	394019.17	770856.05	N 32.081071	W

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S °)	Longitude (E/W °)
Cimarex Red Hills 32-5 Fed Com 158H - FBHL [100 FSL, 2017 FEL]	21240.89	90.24	179.60	10980.00	10129.52	-10122.52	1038.45	0.00	388378.91	770892.91	N 32.065567	W 103.592285

Survey Type: Def Plan

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

Description	Part	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Expected Max Inclination (deg)	Survey Tool Type	Borehole / Survey
	1	0.000	22.000	1/100.000	17.500	13.375		A001Mb_MWD-Depth Only	Red Hills 32-5 Fed Com 158H / Cimarex Red Hills 32-5 Fed Com
	1	22.000	21240.891	1/100.000	17.500	13.375		A001Mb_MWD	Red Hills 32-5 Fed Com 158H / Cimarex Red Hills 32-5 Fed Com



**Borehole:**

Red Hills 32-5 Fed Com 158H

**Well:**

Red Hills 32-5 Fed Com 158H

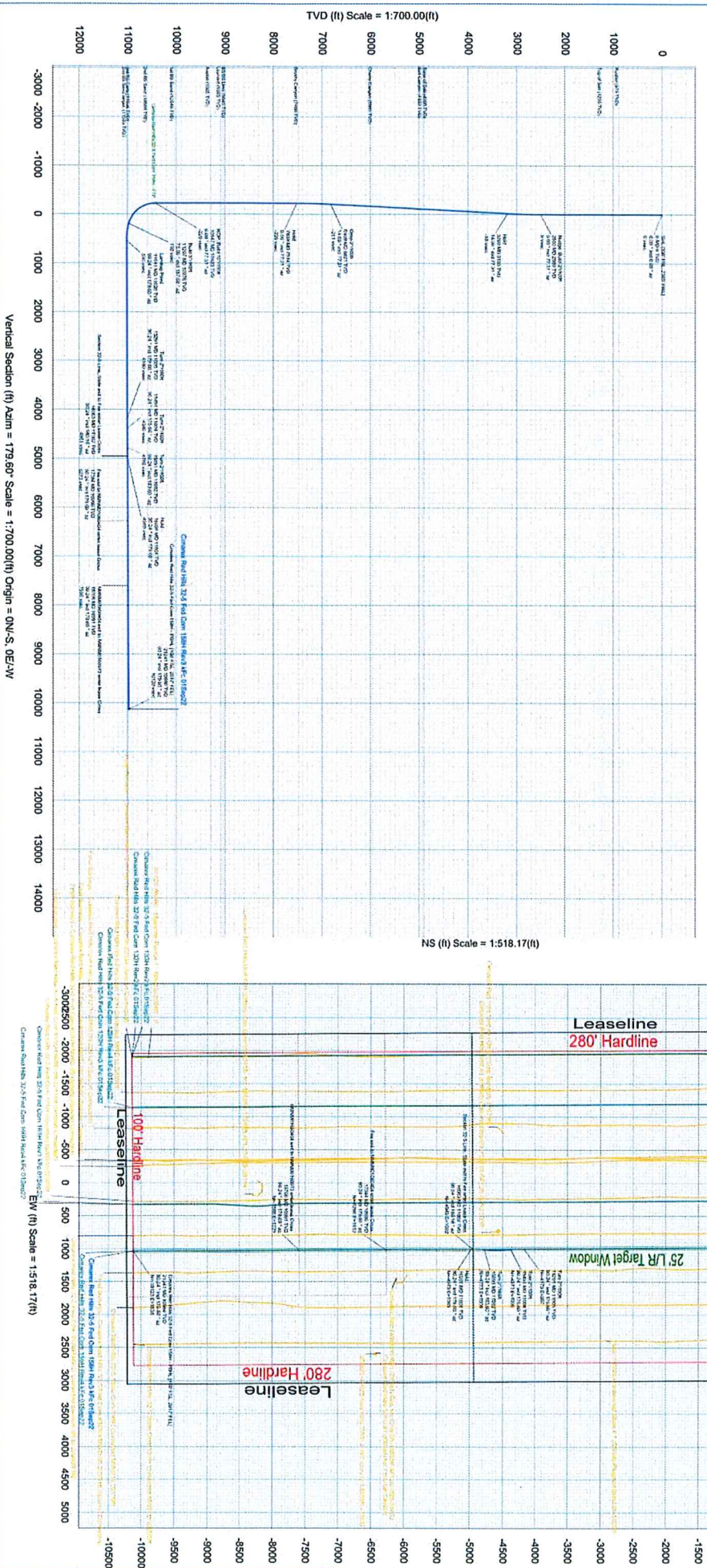
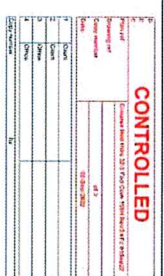
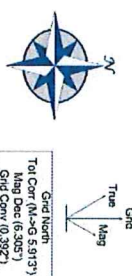
Field:

**NM Lea County (NAD 83)**

**Structure:**

imarex Red Hills 32-5 Fed Com 158H

Gravity & Magnetic Parameters		Surface Location		MAGNETIC DATA	
Model:	MOG 3222	Date:	01-Sep-92	Lat:	N 32.5 30.27
MagDec:	6.30°	Drift:	989.43kmph (3.06m/s Drift)	Long:	W 103.3 43.40
		Survey Pk:		Easting:	78850.44MUS
				Scale Fact:	0.9999819
				Grid Cont:	0.0071
				Shor:	1281
				Site:	Chinese Red Hts. 2-5 Red Cam 1281 Rvs 5 of 12622
					RNB 3207 (341.1m above MSL)

[illegible]



Drilling 12 1/4" hole  
below 13 3/8"  
Casing

Fill Line

Flowline

2000# (2M)  
BOP

SRR & A

Annular Preventer

Pipe Rams

Blind Rams

Drilling Spool

Kill Line

1 Kill Line Valve  
(Minimum)

2" Minimum Choke Line

Choke Line

1 Choke Line Valve  
(Minimum)

13-5/8" 3000 psi x 13 3/8 SOW Slip-on Casing Head

2000# BOP  
RED HILLS 32 5 FEDERAL COM  
#158H  
30-025-50208  
SECTION 32-T25S-R33E  
Cimarex Energy Co.



Drilling 6" hole  
below 7" Casing

Fill Line

Flowline

5000# (5M)  
BOP

Annular Preventer

SRR & A

Pipe Rams

Blind Rams

2" Minimum Kill Line

Kill Line

Drilling  
Spool

3" minimum choke line

Choke Line

2 Valves Minimum  
(HCR Required)

2 Valves and a check valve

Wellhead  
Assembly

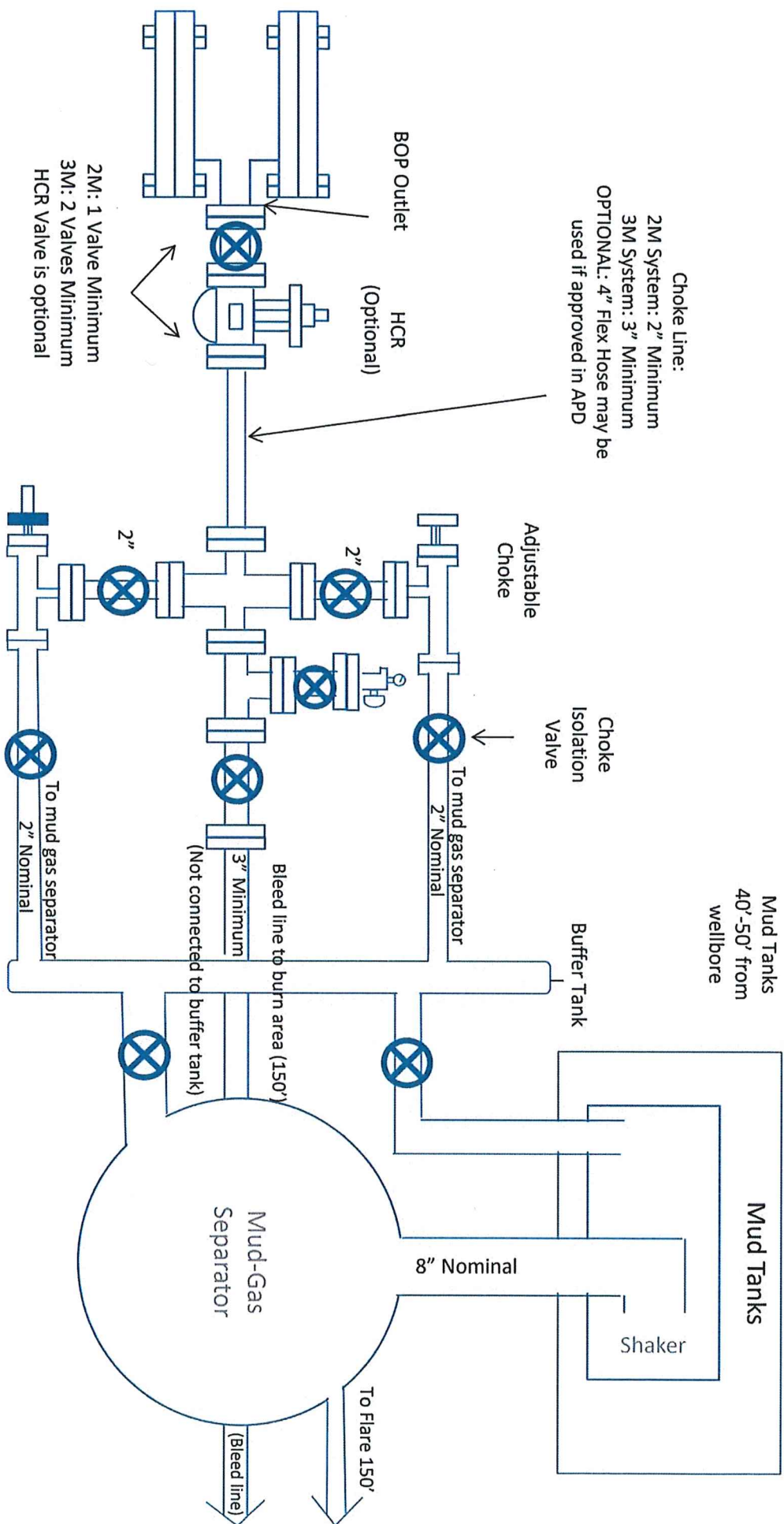
11" 5000 psi x 7-1/16" 10,000 psi  
Wellhead Assembly

Wellhead  
Assembly

13-5/8" 3000 psi x 11" 5000 psi  
Wellhead Assembly

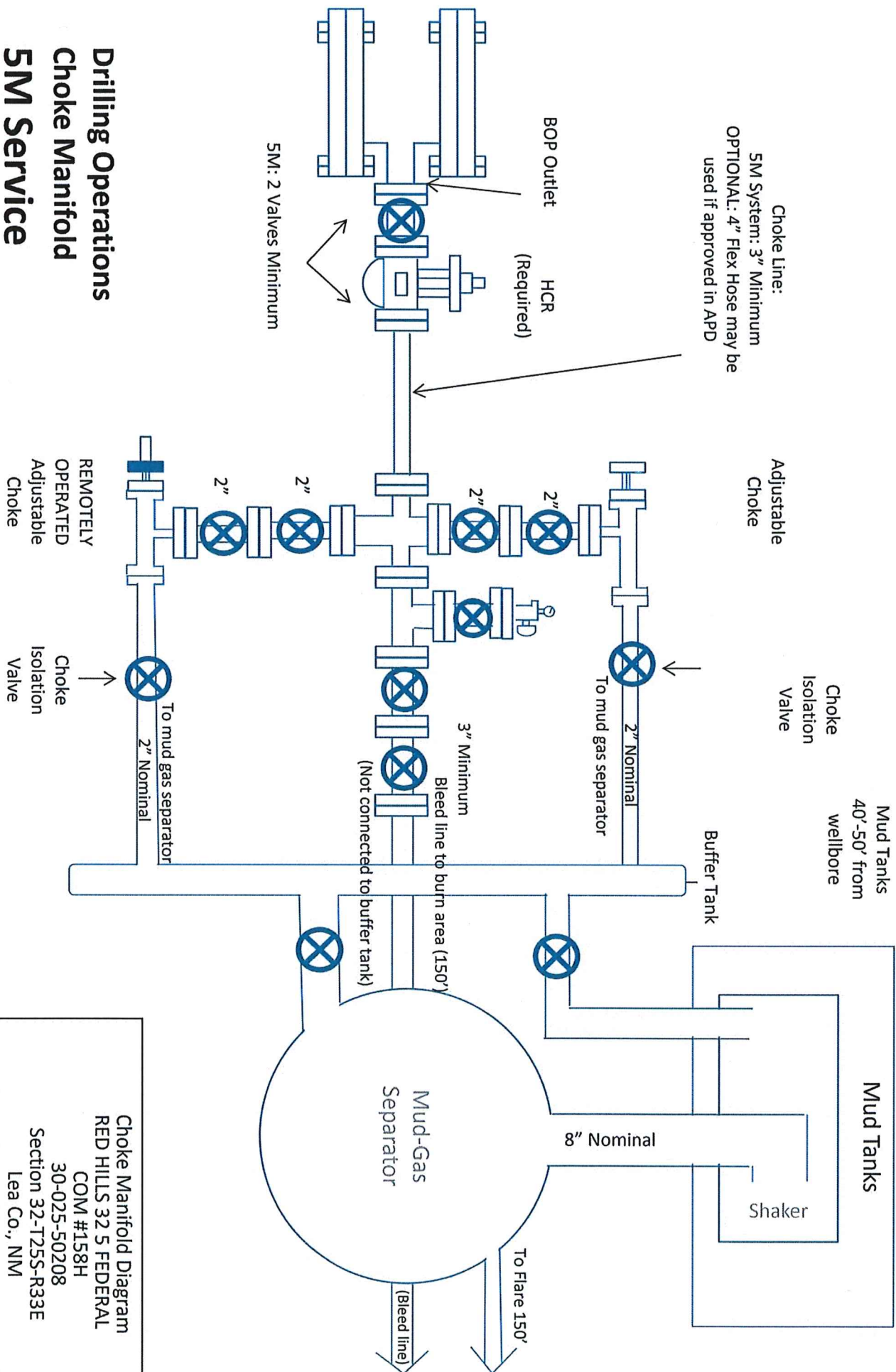
13-5/8" 3000# psi x 13-3/8" SOW Casing Head

5000# BOP  
RED HILLS 32 5 FEDERAL COM  
#158H  
30-025-50208  
SECTION 32-T25S-R33E  
Cimarex Energy Co.



**Drilling Operations**  
**Choke Manifold**  
**2M/3M Service**

Choke Manifold Diagram  
 RED HILLS 32 5 FEDERAL  
 COM #158H  
 30-025-50208  
 Lea Co., NM



# Drilling Operations Choke Manifold 5M Service

Choke Manifold Diagram  
RED HILLS 32.5 FEDERAL  
COM #158H  
30-025-50208  
Section 32-T255-R33E  
Lea Co., NM

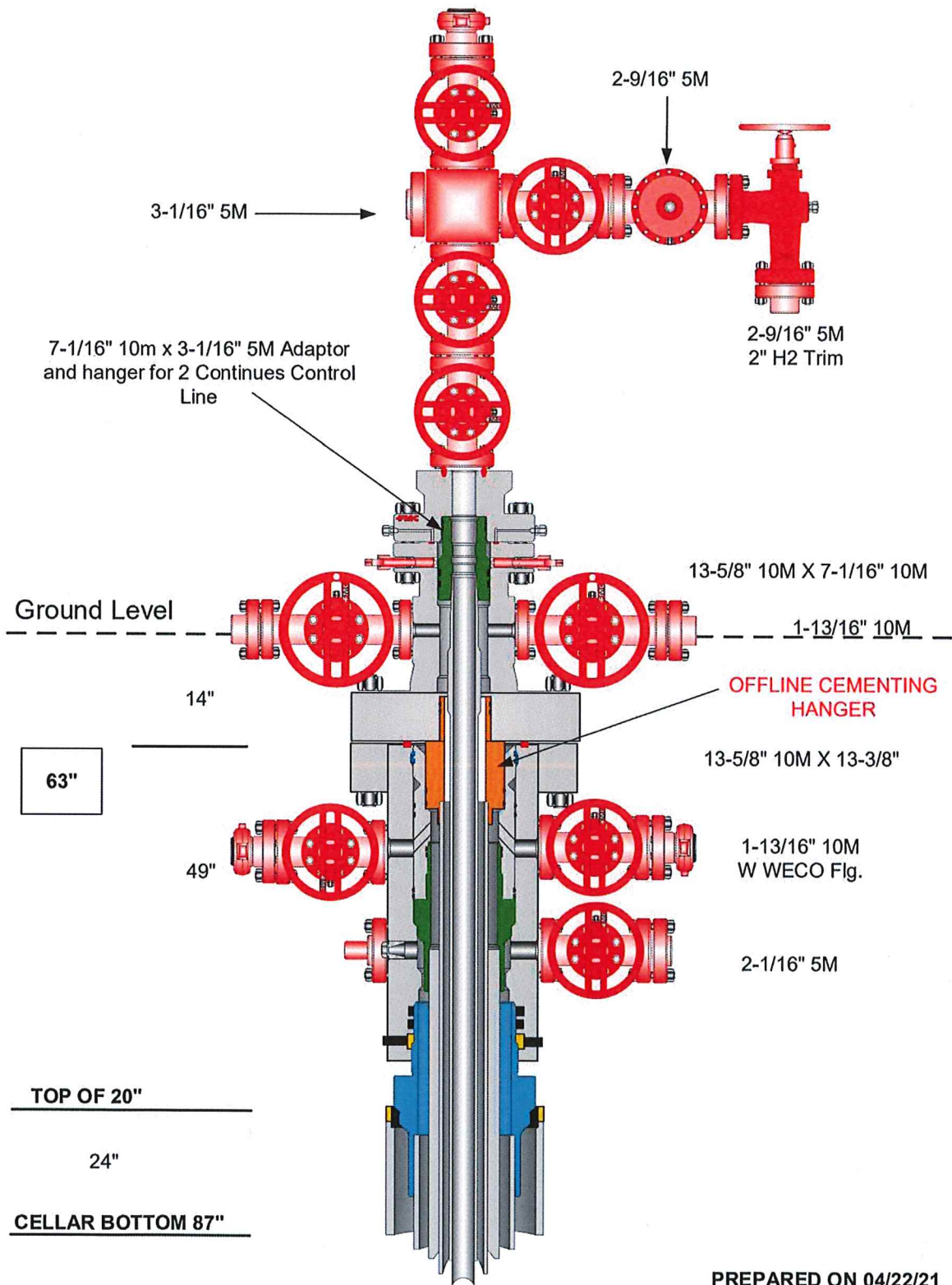




CACTUS FOR SERVICE  
WEARBUSHING  
IN CASING HEAD &  
CASING SPOOL

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	935	935	13-3/8"	48.00	H-40	ST&C	1.83	4.27	7.17
12 1/4	0	4980	4980	9-5/8"	40.00	HCK-55	LT&C	1.43	1.48	2.62
8 3/4	0	10547	10547	7"	29.00	L-80	LT&C	1.42	1.65	1.84
8 3/4	10547	11297	10975	7"	29.00	P-110	BT&C	1.66	2.18	74.85
6	9547	21240	10980	4-1/2"	11.60	P-110	BT&C	1.48	2.08	22.08
BLM Minimum Safety Factor								1.125	1	1.6 Dry 1.8 Wet

RED HILLS 32 5  
FEDERAL COM #158H  
30-025-50208  
Section 32-T25S-R33E  
Lea Co., NM



PREPARED ON 04/22/21

**District I**  
1625 N. French Dr., Hobbs, NM 88240  
Phone:(575) 393-6161 Fax:(575) 393-0720  
**District II**  
811 S. First St., Artesia, NM 88210  
Phone:(575) 748-1283 Fax:(575) 748-9720  
**District III**  
1000 Rio Brazos Rd., Aztec, NM 87410  
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**District IV**  
1220 S. St Francis Dr., Santa Fe, NM 87505  
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**State of New Mexico**  
**Energy, Minerals and Natural Resources**  
**Oil Conservation Division**  
**1220 S. St Francis Dr.**  
**Santa Fe, NM 87505**

CONDITIONS  
  
Action 186694

CONDITIONS

Operator: CIMAREX ENERGY CO. 600 N. Marienfeld Street Midland, TX 79701	OGRID: 215099
	Action Number: 186694
	Action Type: [C-103] NOI Change of Plans (C-103A)

CONDITIONS

Created By	Condition	Condition Date
pkautz	None	2/15/2023