



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

## Sundry Print Report

05/15/2023

|                                                  |                                                                 |                                            |
|--------------------------------------------------|-----------------------------------------------------------------|--------------------------------------------|
| <b>Well Name:</b> RIVERBEND 11-14<br>FEDERAL COM | <b>Well Location:</b> T25S / R28E / SEC 11 /<br>NENW /          | <b>County or Parish/State:</b>             |
| <b>Well Number:</b> 16H                          | <b>Type of Well:</b> OIL WELL                                   | <b>Allottee or Tribe Name:</b>             |
| <b>Lease Number:</b> NMNM16104                   | <b>Unit or CA Name:</b>                                         | <b>Unit or CA Number:</b>                  |
| <b>US Well Number:</b> 3001549511                | <b>Well Status:</b> Approved Application for<br>Permit to Drill | <b>Operator:</b> CIMAREX ENERGY<br>COMPANY |

### Notice of Intent

**Sundry ID:** 2697262

**Type of Submission:** Notice of Intent

**Type of Action:** APD Change

**Date Sundry Submitted:** 10/11/2022

**Time Sundry Submitted:** 10:46

**Date proposed operation will begin:** 01/01/2023

**Procedure Description:** Cimarex Energy Company respectfully requests approval to make changes to the approved APD as follows: 1. The BHL will change as follows: FROM: 330' FSL & 2310' FWL (Unit N, SESW) Section 14-T25S-R28E Lat 32.123736; Long 104.059024 TO: 330' FSL & 1650' FWL (Unit N, SESW) Section 14-T25S-R28E Lat 32.123707; Long 104.061156 2. The proposed TD will change as follows: FROM: 19698' MD; 9975' TVD - Wolfcamp TO: 19430' MD; 9830' TVD - Wolfcamp The pool will remain the same - Purple Sage Wolfcamp (Gas) - 98220 3. The casing and cement program will change and changes are in the updated drilling plan, as well as a separate sheet showing the changes. 4. Cimarex Energy Company respectfully requests approval for off-line cementing and 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 C-102, drilling plan and directional survey are attached.

### NOI Attachments

#### Procedure Description

Addition\_to\_sundry\_notice\_20230109061307.docx

Sundry\_attachments\_20221011104558.pdf

|                                                  |                                                                 |                                            |
|--------------------------------------------------|-----------------------------------------------------------------|--------------------------------------------|
| <b>Well Name:</b> RIVERBEND 11-14<br>FEDERAL COM | <b>Well Location:</b> T25S / R28E / SEC 11 /<br>NENW /          | <b>County or Parish/State:</b>             |
| <b>Well Number:</b> 16H                          | <b>Type of Well:</b> OIL WELL                                   | <b>Allottee or Tribe Name:</b>             |
| <b>Lease Number:</b> NMNM16104                   | <b>Unit or CA Name:</b>                                         | <b>Unit or CA Number:</b>                  |
| <b>US Well Number:</b> 3001549511                | <b>Well Status:</b> Approved Application for<br>Permit to Drill | <b>Operator:</b> CIMAREX ENERGY<br>COMPANY |

### Conditions of Approval

#### Specialist Review

RIVERBEND\_11\_14\_FED\_COM\_16H\_COA\_20230512123819.pdf

#### Additional

RIVERBEND\_11\_14\_FED\_COM\_16H\_COA\_20230511141144.pdf

### Operator

*I certify that the foregoing is true and correct. 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. Electronic submission of Sundry Notices through this system satisfies regulations requiring a*

**Operator Electronic Signature:** RUSTY KLEIN

**Signed on:** JAN 09, 2023 06:13 AM

**Name:** CIMAREX ENERGY COMPANY

**Title:** Regulatory Analyst IV

**Street Address:** 600 N MRIENFIELD SUITE 600

**City:** MIDLAND

**State:** TX

**Phone:** (432) 620-1933

**Email address:** RUSTY.KLEIN@COTERRA.COM

### Field

**Representative Name:**

**Street Address:**

**City:**

**State:**

**Zip:**

**Phone:**

**Email address:**

### BLM Point of Contact

**BLM POC Name:** CHRISTOPHER WALLS

**BLM POC Title:** Petroleum Engineer

**BLM POC Phone:** 5752342234

**BLM POC Email Address:** cwalls@blm.gov

**Disposition:** Approved

**Disposition Date:** 05/15/2023

**Signature:** Chris Walls

CIMAREX ENERGY COMPANY  
RIVERBEND 11-14 FEDERAL COM #16H  
30-015-49511  
Section 11-T25S-R28E  
Eddy County, New Mexico

ADDITION TO SUNDRY NOTICE SUBMITTED 10-11-2022:

FTP will change as follows:

FROM: 390' FNL & 2310' FWL (Unit C, NENW)  
Section 11-T25S-R28E  
Lat 32.150907; Long 104.059098

TO: 330' FNL & 1650' FWL (Unit C, NENW)  
Section 11-T25S-R28E  
Lat 32.151041; Long 104.061231

LTP will change as follows:

FROM: 330' FSL & 2310' FWL (Unit N, SESW)  
Section 14-T25S-R28E  
Lat 32.123736; Long 104.059024

TO: 330' FSL & 1650' FWL (Unit N, SESW)  
Section 14-T25S-R30E  
Lat 32.123707; Long 104.061156



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

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

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

☒ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

|                                                |                                                                  |                                                              |
|------------------------------------------------|------------------------------------------------------------------|--------------------------------------------------------------|
| <sup>1</sup> API Number<br><b>30-015-49511</b> | <sup>2</sup> Pool Code<br><b>98220</b>                           | <sup>3</sup> Pool Name<br><b>Purple Sage; Wolfcamp (Gas)</b> |
| <sup>4</sup> Property Code<br><b>321641</b>    | <sup>5</sup> Property Name<br><b>RIVERBEND 11-14 FEDERAL COM</b> | <sup>6</sup> Well Number<br><b>16H</b>                       |
| <sup>7</sup> GRID No.<br><b>215099</b>         | <sup>8</sup> Operator Name<br><b>CIMAREX ENERGY CO.</b>          | <sup>9</sup> Elevation<br><b>2967.0'</b>                     |

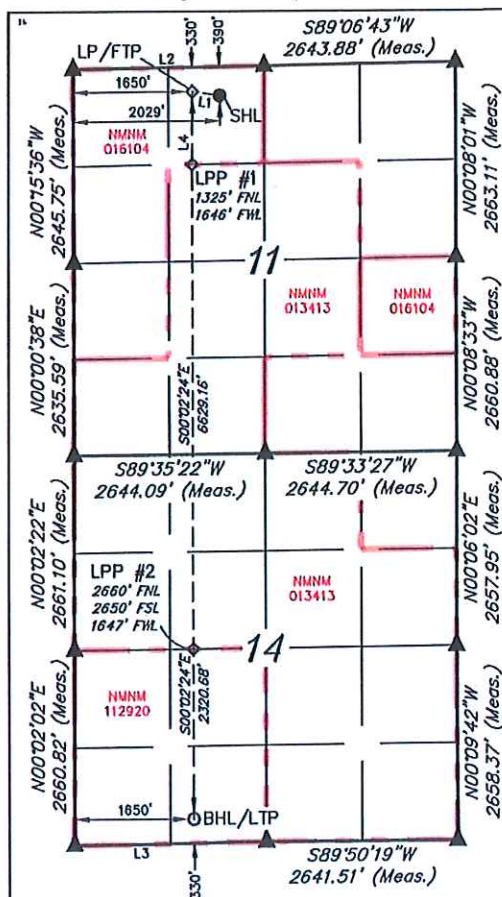
"Surface Location

| UL or lot no. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---------------|---------|----------|-------|---------|---------------|------------------|---------------|----------------|--------|
| C             | 11      | 25S      | 28E   |         | 390           | NORTH            | 2029          | WEST           | EDDY   |

"Bottom Hole Location If Different From Surface

| UL or lot no.                               | Section                       | Township                                                        | Range                   | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---------------------------------------------|-------------------------------|-----------------------------------------------------------------|-------------------------|---------|---------------|------------------|---------------|----------------|--------|
| N                                           | 14                            | 25S                                                             | 28E                     |         | 330           | SOUTH            | 1650          | WEST           | EDDY   |
| <sup>12</sup> Dedicated Acres<br><b>640</b> | <sup>13</sup> Joint or Infill | <sup>14</sup> Consolidation Code<br><b>Will be communitized</b> | <sup>15</sup> Order No. |         |               |                  |               |                |        |

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



LINE TABLE

| LINE | DIRECTION   | LENGTH   |
|------|-------------|----------|
| L1   | N81°53'23"W | 383.34'  |
| L2   | S89°06'37"W | 2644.09' |
| L3   | S89°11'21"W | 2653.66' |
| L4   | S00°02'24"E | 995.61'  |

|                                         |
|-----------------------------------------|
| <b>NAD 83 (SURFACE HOLE LOCATION)</b>   |
| LATITUDE = 32°09'03.22" (32.150894°)    |
| LONGITUDE = 104°03'36.02" (104.060005°) |
| <b>NAD 27 (SURFACE HOLE LOCATION)</b>   |
| LATITUDE = 32°09'02.78" (32.150771°)    |
| LONGITUDE = 104°03'34.25" (104.059515°) |
| <b>STATE PLANE NAD 83 (N.M. EAST)</b>   |
| N: 418737.86° E: 625937.21°             |
| <b>STATE PLANE NAD 27 (N.M. EAST)</b>   |
| N: 418679.68° E: 584743.11°             |

|                                         |
|-----------------------------------------|
| <b>NAD 83 (LP/FTP)</b>                  |
| LATITUDE = 32°09'03.75" (32.151041°)    |
| LONGITUDE = 104°03'40.43" (104.061231°) |
| <b>NAD 27 (LP/FTP)</b>                  |
| LATITUDE = 32°09'03.30" (32.150918°)    |
| LONGITUDE = 104°03'38.67" (104.060741°) |
| <b>STATE PLANE NAD 83 (N.M. EAST)</b>   |
| N: 418790.35° E: 625547.56°             |
| <b>STATE PLANE NAD 27 (N.M. EAST)</b>   |
| N: 418732.17° E: 584363.47°             |

|                                         |
|-----------------------------------------|
| <b>NAD 83 (LPP #1)</b>                  |
| LATITUDE = 32°08'53.90" (32.148304°)    |
| LONGITUDE = 104°03'40.40" (104.061223°) |
| <b>NAD 27 (LPP #1)</b>                  |
| LATITUDE = 32°08'53.45" (32.148182°)    |
| LONGITUDE = 104°03'38.64" (104.060734°) |
| <b>STATE PLANE NAD 83 (N.M. EAST)</b>   |
| N: 417794.97° E: 625552.41°             |
| <b>STATE PLANE NAD 27 (N.M. EAST)</b>   |
| N: 417736.81° E: 584368.30°             |

|                                         |
|-----------------------------------------|
| <b>NAD 83 (LPP #2)</b>                  |
| LATITUDE = 32°07'48.31" (32.130085°)    |
| LONGITUDE = 104°03'40.22" (104.061173°) |
| <b>NAD 27 (LPP #2)</b>                  |
| LATITUDE = 32°07'47.86" (32.129962°)    |
| LONGITUDE = 104°03'38.46" (104.060684°) |
| <b>STATE PLANE NAD 83 (N.M. EAST)</b>   |
| N: 411167.33° E: 625584.72°             |
| <b>STATE PLANE NAD 27 (N.M. EAST)</b>   |
| N: 411109.30° E: 584400.46°             |

|                                         |
|-----------------------------------------|
| <b>NAD 83 (BHL/LTP)</b>                 |
| LATITUDE = 32°07'25.35" (32.123707°)    |
| LONGITUDE = 104°03'40.16" (104.061156°) |
| <b>NAD 27 (BHL/LTP)</b>                 |
| LATITUDE = 32°07'24.90" (32.123584°)    |
| LONGITUDE = 104°03'38.40" (104.060667°) |
| <b>STATE PLANE NAD 83 (N.M. EAST)</b>   |
| N: 408847.18° E: 625596.03°             |
| <b>STATE PLANE NAD 27 (N.M. EAST)</b>   |
| N: 408789.20° E: 584411.72°             |

- = SURFACE HOLE LOCATION
- ◆ = LANDING POINT/FIRST TAKE POINT
- = BOTTOM HOLE LOCATION/LAST TAKE POINT
- ▲ = SECTION CORNER LOCATED



SCALE  
DRAWN BY: C.D. 07-29-20  
REV: 2 09-27-22 D.M.C.  
(LP & BHL MOVE)

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)

"OPERATOR CERTIFICATION

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

Signature: *Rusty Klein* Date: *10-6-22*

Printed Name: **Rusty Klein**  
E-mail Address: **rusty.klein@coterra.com**

"SURVEYOR CERTIFICATION

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

MARCH 03, 2017

Date of Survey  
Signature and Seal of Professional Surveyor:



Certificate Number:

## Cimarex Energy Co., Riverbend 11-14 Federal Com 16H

**1. Geological Formations**

TVD of target 9,830

Pilot Hole TD N/A

MD at TD 19,430

Deepest expected fresh water

| Formation       | Depth (TVD) from KB | Water/Mineral Bearing/Target Zone | Hazards |
|-----------------|---------------------|-----------------------------------|---------|
| Top of Salt     | 1068                | N/A                               |         |
| Base of Salt    | 2402                | N/A                               |         |
| Cherry Canyon   | 3624                | N/A                               |         |
| Brushy Canyon   | 5198                | Hydrocarbons                      |         |
| Bone Spring     | 6361                | Hydrocarbons                      |         |
| 1st Bone Spring | 7331                | Hydrocarbons                      |         |
| 2nd Bone Spring | 7585                | Hydrocarbons                      |         |
| 3rd Bone Spring | 8414                | Hydrocarbons                      |         |
| Wolfcamp        | 9400                | Hydrocarbons                      |         |
| Wolfcamp        | 9514                | 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                 | 450             | 450               | 13-3/8"     | 48.00          | H-40/J-55 Hybrid | ST&C  | 3.80        | 8.88     | 14.91              |
| 12 1/4                    | 0                 | 2580            | 2580              | 9-5/8"      | 36.00          | J-55             | LT&C  | 1.46        | 2.55     | 4.88               |
| 8 3/4                     | 0                 | 9157            | 9157              | 7"          | 26.00          | L-80             | LT&C  | 1.26        | 1.69     | 2.02               |
| 8 3/4                     | 9157              | 10194           | 9730              | 7"          | 26.00          | N-80             | BT&C  | 1.19        | 1.59     | 40.54              |
| 6                         | 8157              | 19430           | 9830              | 4-1/2"      | 11.60          | P-110            | BT&C  | 1.29        | 1.82     | 18.91              |
| BLM Minimum Safety Factor |                   |                 |                   |             |                |                  |       | 1.125       | 1        | 1.6 Dry<br>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., Riverbend 11-14 Federal Com 16H

|                                                                                                                                                  | 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      |

Cimarex Energy Co., Riverbend 11-14 Federal Com 16H

3. Cementing Program

| Casing            | # Skts | Wt. lb/gal | Yld ft <sup>3</sup> /sack | H <sub>2</sub> O gal/sk | 500# Comp. Strength (hours) | Slurry Description                                                     |
|-------------------|--------|------------|---------------------------|-------------------------|-----------------------------|------------------------------------------------------------------------|
| Surface           | 91     | 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      | 494    | 12.90      | 1.88                      | 9.65                    | 12                          | Lead: 35:65 (Poz:C) + Salt + Bentonite                                 |
|                   | 151    | 14.80      | 1.34                      | 6.32                    | 9.5                         | Tail: Class C + LCM                                                    |
|                   |        |            |                           |                         |                             |                                                                        |
| Production        | 417    | 10.30      | 3.64                      | 22.18                   |                             | Lead: Tuned Light + LCM                                                |
|                   | 173    | 14.80      | 1.36                      | 6.57                    | 9.5                         | Tail: Class C + Retarder                                               |
|                   |        |            |                           |                         |                             |                                                                        |
| Completion System | 687    | 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    | 33       |
| Intermediate      | 0    | 49       |
| Production        | 2380 | 25       |
| Completion System | 9994 | 10       |

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

## Cimarex Energy Co., Riverbend 11-14 Federal Com 16H

## 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      |   |           |
| 8 3/4                                                                                                | 13 5/8 | 5M              | Annular    | X | 5M        |
|                                                                                                      |        |                 | Blind Ram  |   |           |
|                                                                                                      |        |                 | Pipe Ram   | X |           |
|                                                                                                      |        |                 | Double Ram | X |           |
|                                                                                                      |        |                 | Other      |   |           |
| 6                                                                                                    |        | 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.<br>On Exploratory wells or on that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i. |  |  |  |  |
| X | A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. See attached for specs and hydrostatic test chart.                                                                                                                                                               |  |  |  |  |
| Y | Are anchors required by manufacturer?                                                                                                                                                                                                                                                                         |  |  |  |  |



## Cimarex Energy Co., Riverbend 11-14 Federal Com 16H

**5. Mud Program**

| Depth            | Type             | Weight (ppg)  | Viscosity | Water Loss |
|------------------|------------------|---------------|-----------|------------|
| 0' to 450'       | Fresh Water      | 7.83 - 8.33   | 28        | N/C        |
| 450' to 2580'    | Brine Water      | 9.80 - 10.30  | 30-32     | N/C        |
| 2580' to 10194'  | Cut Brine or OBM | 8.50 - 9.00   | 27-70     | N/C        |
| 10194' to 19430' | OBM              | 11.00 - 11.50 | 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 | 5878 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 " 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 50% of working pressure. The pressure test will be repeated at least every 30 days, as per Onshore Order No. 2.

The multi-bowl wellhead will be installed by 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 atleast 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 16H 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 16H 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 a 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 16H 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  
 RIVERBEND 11 14 FEDERAL COM #16H  
 30-015-49511  
 Section 11-T25S-R28E  
 Eddy 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         |
|---------------------------|-------------------|-----------------|-------------------|-------------|----------------|------------------|------|-------------|----------|--------------------|
| 17-1/2"                   | 0                 | 450'            | 450'              | 13-3/8"     | 48#            | H-40/J-55 hybrid | ST&C | 3.80        | 8.88     | 14.91              |
| 12-1/4"                   | 0                 | 2450'           | 2450'             | 9-5/8"      | 36#            | J-55             | LT&C | 1.54        | 2.68     | 5.14               |
| 8-3/4"                    | 0                 | 8478'           | 8478'             | 7"          | 26#            | L-80             | LT&C | 1.36        | 1.83     | 1.98               |
| 8-3/4"                    | 8478'             | 10103'          | 9926'             | 7"          | 26#            | L-80             | BT&C | 1.16        | 1.56     | 16.04              |
| 6"                        | 8478'             | 19699'          | 9975'             | 4-1/2"      | 11.6#          | P-110            | BT&C | 1.27        | 1.80     | 21.13              |
| BLM Minimum Safety Factor |                   |                 |                   |             |                |                  |      | 1.125       | 1        | 1.6 dry<br>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

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                 | 450'            | 450'              | 13-3/8"     | 48#            | H-40/J-55 hybrid | ST&C | 3.80        | 8.88     | 14.91              |
| 12-1/4"                   | 0                 | 2580'           | 2580'             | 9-5/8"      | 36#            | J-55             | LT&C | 1.46        | 2.55     | 4.88               |
| 8-3/4"                    | 0                 | 9157'           | 9157'             | 7"          | 26#            | L-80             | LT&C | 1.26        | 1.69     | 2.02               |
| 8-3/4"                    | 9157'             | 10194'          | 9730'             | 7"          | 26#            | N-80             | BT&C | 1.19        | 1.59     | 40.54              |
| 6"                        | 8157'             | 19430'          | 9830'             | 4-1/2"      | 11.6#          | P-110            | BT&C | 1.29        | 1.82     | 18.91              |
| BLM Minimum Safety Factor |                   |                 |                   |             |                |                  |      | 1.125       | 1        | 1.6 dry<br>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 ENERGY COMPANY  
 RIVERBEND 11 14 FEDERAL COM #16H  
 30-015-49511  
 Section 11-T25S-R28E  
 Eddy Co., NM

THE CEMENTING PROGRAM WILL BE CHANGED AS FOLLOWS:

FROM:

| CASING  | #SACKS | WEIGHT<br>LB/GAL | YIELD<br>FT3/SACK | H2O<br>GAL/SACK | 500# COMP<br>STRENGTH<br>(HOURS) | SLURRY DESCRIPTION        |
|---------|--------|------------------|-------------------|-----------------|----------------------------------|---------------------------|
| SURFACE | 91     | 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 | 468 | 12.90 | 1.88 | 9.65 | 12  | Lead: 35:65 Poz C, Salt & bentonite |
|              | 141 | 14.80 | 1.36 | 6.57 | 9.5 | Tail: Class C + retarder            |

|            |     |       |      |       |       |                                                                  |
|------------|-----|-------|------|-------|-------|------------------------------------------------------------------|
| Production | 445 | 10.30 | 3.64 | 22.18 |       | Lead: Tuned Light + LCM                                          |
|            | 109 | 14.20 | 1.30 | 5.86  | 14.30 | Tail: 50:50 Poz H, Salt, Bentonite, fluid loss, dispersant & SMS |

|                   |     |       |      |      |       |                                                                  |
|-------------------|-----|-------|------|------|-------|------------------------------------------------------------------|
| Completion System | 714 | 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    | 33       |
| INTERMEDIATE      | 0    | 49       |
| PRODUCTION        | 2250 | 25       |
| Completion System | 9903 | 10       |

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

TO:

| CASING  | #SACKS | WEIGHT<br>LB/GAL | YIELD<br>FT3/SACK | H2O<br>GAL/SACK | 500# COMP<br>STRENGTH<br>(HOURS) | SLURRY DESCRIPTION        |
|---------|--------|------------------|-------------------|-----------------|----------------------------------|---------------------------|
| SURFACE | 91     | 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      | 494 | 12.90 | 1.88 | 9.65  | 12    | Lead: 35:65 Poz C, Salt & bentonite                              |
|                   | 151 | 14.80 | 1.34 | 6.32  | 9.5   | Tail: Class C + LCM                                              |
| Production        | 417 | 10.30 | 3.64 | 22.18 |       | Lead: Tuned Light + LCM                                          |
|                   | 173 | 14.80 | 1.36 | 6.57  | 9.50  | Tail: Class C + retarder                                         |
|                   |     |       |      |       |       |                                                                  |
| Completion System | 687 | 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    | 33       |
| INTERMEDIATE  | 0    | 49       |
| PRODUCTION    | 2380 | 25       |
| COMPLETION    | 9994 | 10       |

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

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 Riverbend 11-14 Federal Com 16H Rev2 kFc 03Oct22 Proposal  
Geodetic Report  
(Def Plan)



30.015-49511

Report Date: October 03, 2022 - 01:26 PM  
Client: Cimarex Energy  
Field: NM Eddy County (NAD 83)  
Structure / Slot: Cimarex Riverbend 11-14 Federal Com 16H / 16H  
Well: Riverbend 11-14 Federal Com 16H  
Borehole: Riverbend 11-14 Federal Com 16H  
UWI / API#: Unknown / Unknown  
Survey Name: Cimarex Riverbend 11-14 Federal Com 16H Rev2 kFc 03Oct22  
Survey Date: October 03, 2022  
Tort / AHD / DDI / ERD Ratio: 101.381 \* / 10328.139 ft / 6.316 / 1.051  
Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet  
Location Lat / Long: N 32° 0' 3.21726", W 104° 3' 36.01680"  
Location Grid N/E Y/X: N 418737.860 IUS, E 625927.210 IUS  
CRS Grid Convergence Angle: 0.1455 \*  
Grid Scale Factor: 0.99991729  
Version / Patch: 2.10.833.1

Survey / DLS Computation: Minimum Curvature / Lubinski  
Vertical Section Azimuth: 179.720 \* (Grid North)  
Vertical Section Origin: 0.000 ft, 0.000 ft  
TVD Reference Datum: RKB = 22ft  
TVD Reference Elevation: 2989.000 ft above MSL  
Seabed / Ground Elevation: 2967.000 ft above MSL  
Magnetic Declination: 6.871 \*  
Total Gravity Field Strength: 998.4572mgm (9.80665 Based)  
Gravity Model: GARM  
Total Magnetic Field Strength: 47525.858 nT  
Magnetic Dip Angle: 59.753 \*  
Declination Date: October 03, 2022  
Magnetic Declination Model: HDGM 2022  
North Reference: Grid North  
Grid Convergence Used: 0.1455 \*  
Total Corr Mag North->Grid North: 6.5259 \*  
Local Coord Referenced To: Well Head

| Comments                     | MD<br>(ft) | Incl<br>(°) | Azim Grid<br>(°) | TVD<br>(ft) | VSEC<br>(ft) | NS<br>(ft) | EW<br>(ft) | DLS<br>(°/100ft) | Northing<br>(ftUS) | Easting<br>(ftUS) | Latitude<br>(N/S °) | Longitude<br>(E/W °) |
|------------------------------|------------|-------------|------------------|-------------|--------------|------------|------------|------------------|--------------------|-------------------|---------------------|----------------------|
| SHL [390° FNL,<br>2029° FWL] | 0.00       | 0.00        | 0.00             | 0.00        | 0.00         | 0.00       | 0.00       | N/A              | 418737.86          | 625927.21         | N 32.150894         | W 104.060005         |
|                              | 100.00     | 0.00        | 277.86           | 100.00      | 0.00         | 0.00       | 0.00       | 0.00             | 418737.86          | 625927.21         | N 32.150894         | W 104.060005         |
|                              | 200.00     | 0.00        | 277.86           | 200.00      | 0.00         | 0.00       | 0.00       | 0.00             | 418737.86          | 625927.21         | N 32.150894         | W 104.060005         |
|                              | 300.00     | 0.00        | 277.86           | 300.00      | 0.00         | 0.00       | 0.00       | 0.00             | 418737.86          | 625927.21         | N 32.150894         | W 104.060005         |
|                              | 400.00     | 0.00        | 277.86           | 400.00      | 0.00         | 0.00       | 0.00       | 0.00             | 418737.86          | 625927.21         | N 32.150894         | W 104.060005         |
|                              | 500.00     | 0.00        | 277.86           | 500.00      | 0.00         | 0.00       | 0.00       | 0.00             | 418737.86          | 625927.21         | N 32.150894         | W 104.060005         |
|                              | 600.00     | 0.00        | 277.86           | 600.00      | 0.00         | 0.00       | 0.00       | 0.00             | 418737.86          | 625927.21         | N 32.150894         | W 104.060005         |
|                              | 700.00     | 0.00        | 277.86           | 700.00      | 0.00         | 0.00       | 0.00       | 0.00             | 418737.86          | 625927.21         | N 32.150894         | W 104.060005         |
|                              | 800.00     | 0.00        | 277.86           | 800.00      | 0.00         | 0.00       | 0.00       | 0.00             | 418737.86          | 625927.21         | N 32.150894         | W 104.060005         |
|                              | 900.00     | 0.00        | 277.86           | 900.00      | 0.00         | 0.00       | 0.00       | 0.00             | 418737.86          | 625927.21         | N 32.150894         | W 104.060005         |
|                              | 1000.00    | 0.00        | 277.86           | 1000.00     | 0.00         | 0.00       | 0.00       | 0.00             | 418737.86          | 625927.21         | N 32.150894         | W 104.060005         |
| Salado                       | 1068.00    | 0.00        | 277.86           | 1068.00     | 0.00         | 0.00       | 0.00       | 0.00             | 418737.86          | 625927.21         | N 32.150894         | W 104.060005         |
|                              | 1100.00    | 0.00        | 277.86           | 1100.00     | 0.00         | 0.00       | 0.00       | 0.00             | 418737.86          | 625927.21         | N 32.150894         | W 104.060005         |
|                              | 1200.00    | 0.00        | 277.86           | 1200.00     | 0.00         | 0.00       | 0.00       | 0.00             | 418737.86          | 625927.21         | N 32.150894         | W 104.060005         |
|                              | 1300.00    | 0.00        | 277.86           | 1300.00     | 0.00         | 0.00       | 0.00       | 0.00             | 418737.86          | 625927.21         | N 32.150894         | W 104.060005         |
|                              | 1400.00    | 0.00        | 277.86           | 1400.00     | 0.00         | 0.00       | 0.00       | 0.00             | 418737.86          | 625927.21         | N 32.150894         | W 104.060005         |
|                              | 1500.00    | 0.00        | 277.86           | 1500.00     | 0.00         | 0.00       | 0.00       | 0.00             | 418737.86          | 625927.21         | N 32.150894         | W 104.060005         |
|                              | 1600.00    | 0.00        | 277.86           | 1600.00     | 0.00         | 0.00       | 0.00       | 0.00             | 418737.86          | 625927.21         | N 32.150894         | W 104.060005         |
| Nudge, Build<br>2"/100ft     | 1650.00    | 0.00        | 277.86           | 1650.00     | 0.00         | 0.00       | 0.00       | 0.00             | 418737.86          | 625927.21         | N 32.150894         | W 104.060005         |
|                              | 1700.00    | 1.00        | 277.86           | 1700.00     | -0.06        | 0.06       | -0.43      | 2.00             | 418737.92          | 625926.78         | N 32.150894         | W 104.060006         |
|                              | 1800.00    | 3.00        | 277.86           | 1799.93     | -0.56        | 0.54       | -3.89      | 2.00             | 418738.40          | 625923.32         | N 32.150895         | W 104.060017         |
|                              | 1900.00    | 5.00        | 277.86           | 1899.68     | -1.54        | 1.49       | -10.80     | 2.00             | 418739.35          | 625916.41         | N 32.150898         | W 104.060040         |
| Hold                         | 1950.02    | 6.00        | 277.86           | 1949.47     | -2.22        | 2.15       | -15.55     | 2.00             | 418740.01          | 625911.66         | N 32.150900         | W 104.060055         |
|                              | 2000.00    | 6.00        | 277.86           | 1999.18     | -2.96        | 2.86       | -20.72     | 0.00             | 418740.72          | 625906.49         | N 32.150902         | W 104.060072         |
|                              | 2100.00    | 6.00        | 277.86           | 2098.63     | -4.44        | 4.29       | -31.08     | 0.00             | 418742.15          | 625896.13         | N 32.150906         | W 104.060105         |
|                              | 2200.00    | 6.00        | 277.86           | 2198.08     | -5.92        | 5.72       | -41.43     | 0.00             | 418743.58          | 625885.78         | N 32.150910         | W 104.060138         |
|                              | 2300.00    | 6.00        | 277.86           | 2297.53     | -7.40        | 7.15       | -51.79     | 0.00             | 418745.01          | 625875.42         | N 32.150914         | W 104.060172         |
|                              | 2400.00    | 6.00        | 277.86           | 2396.99     | -8.88        | 8.58       | -62.15     | 0.00             | 418746.44          | 625865.07         | N 32.150918         | W 104.060205         |
| Castillo                     | 2405.04    | 6.00        | 277.86           | 2402.00     | -8.95        | 8.65       | -62.67     | 0.00             | 418746.51          | 625864.55         | N 32.150918         | W 104.060207         |
|                              | 2500.00    | 6.00        | 277.86           | 2496.44     | -10.36       | 10.01      | -72.50     | 0.00             | 418747.86          | 625854.71         | N 32.150922         | W 104.060239         |
|                              | 2600.00    | 6.00        | 277.86           | 2595.89     | -11.84       | 11.43      | -82.86     | 0.00             | 418749.29          | 625844.36         | N 32.150926         | W 104.060272         |
| Bell Canyon                  | 2604.13    | 6.00        | 277.86           | 2600.00     | -11.90       | 11.49      | -83.28     | 0.00             | 418749.35          | 625843.93         | N 32.150926         | W 104.060274         |
|                              | 2700.00    | 6.00        | 277.86           | 2695.34     | -13.32       | 12.86      | -93.21     | 0.00             | 418750.72          | 625834.01         | N 32.150930         | W 104.060306         |
|                              | 2800.00    | 6.00        | 277.86           | 2794.79     | -14.80       | 14.29      | -103.57    | 0.00             | 418752.15          | 625823.65         | N 32.150934         | W 104.060339         |
|                              | 2900.00    | 6.00        | 277.86           | 2894.25     | -16.28       | 15.72      | -113.92    | 0.00             | 418753.58          | 625813.30         | N 32.150938         | W 104.060373         |
|                              | 3000.00    | 6.00        | 277.86           | 2993.70     | -17.76       | 17.15      | -124.28    | 0.00             | 418755.01          | 625802.94         | N 32.150942         | W 104.060406         |
|                              | 3100.00    | 6.00        | 277.86           | 3093.15     | -19.24       | 18.58      | -134.63    | 0.00             | 418756.44          | 625792.59         | N 32.150946         | W 104.060440         |
|                              | 3200.00    | 6.00        | 277.86           | 3192.60     | -20.72       | 20.01      | -144.99    | 0.00             | 418757.87          | 625782.23         | N 32.150950         | W 104.060473         |
|                              | 3300.00    | 6.00        | 277.86           | 3292.06     | -22.20       | 21.44      | -155.35    | 0.00             | 418759.30          | 625771.88         | N 32.150954         | W 104.060506         |
|                              | 3400.00    | 6.00        | 277.86           | 3391.51     | -23.68       | 22.87      | -165.70    | 0.00             | 418760.72          | 625761.52         | N 32.150958         | W 104.060540         |
|                              | 3500.00    | 6.00        | 277.86           | 3490.96     | -25.16       | 24.30      | -176.06    | 0.00             | 418762.15          | 625751.17         | N 32.150962         | W 104.060573         |
|                              | 3600.00    | 6.00        | 277.86           | 3590.41     | -26.64       | 25.72      | -186.41    | 0.00             | 418763.58          | 625740.81         | N 32.150966         | W 104.060607         |
| Cherry Canyon                | 3633.77    | 6.00        | 277.86           | 3624.00     | -27.13       | 26.21      | -189.91    | 0.00             | 418764.05          | 625737.32         | N 32.150967         | W 104.060618         |
|                              | 3700.00    | 6.00        | 277.86           | 3689.86     | -28.11       | 27.15      | -198.77    | 0.00             | 418765.01          | 625730.46         | N 32.150970         | W 104.060640         |
|                              | 3800.00    | 6.00        | 277.86           | 3789.32     | -29.59       | 28.58      | -207.12    | 0.00             | 418766.44          | 625720.11         | N 32.150974         | W 104.060674         |
|                              | 3900.00    | 6.00        | 277.86           | 3888.77     | -31.07       | 30.01      | -217.48    | 0.00             | 418767.87          | 625709.75         | N 32.150978         | W 104.060707         |
|                              | 4000.00    | 6.00        | 277.86           | 3988.22     | -32.55       | 31.44      | -227.83    | 0.00             | 418769.30          | 625699.40         | N 32.150982         | W 104.060741         |
|                              | 4100.00    | 6.00        | 277.86           | 4087.67     | -34.03       | 32.87      | -238.19    | 0.00             | 418770.73          | 625689.04         | N 32.150986         | W 104.060774         |
|                              | 4200.00    | 6.00        | 277.86           | 4087.67     | -35.51       | 34.30      | -248.54    | 0.00             | 418772.16          | 625678.69         | N 32.150990         | W 104.060807         |
|                              | 4300.00    | 6.00        | 277.86           | 4187.12     | -36.99       | 35.73      | -258.90    | 0.00             | 418773.58          | 625668.33         | N 32.150994         | W 104.060841         |
|                              | 4400.00    | 6.00        | 277.86           | 4286.58     | -38.47       | 37.16      | -269.26    | 0.00             | 418775.01          | 625657.98         | N 32.150998         | W 104.060874         |
|                              | 4500.00    | 6.00        | 277.86           | 4386.03     | -39.95       | 38.59      | -279.61    | 0.00             | 418776.44          | 625647.62         | N 32.151002         | W 104.060908         |
|                              | 4600.00    | 6.00        | 277.86           | 4485.48     | -41.43       | 40.01      | -289.97    | 0.00             | 418777.87          | 625637.27         | N 32.151006         | W 104.060941         |
|                              | 4700.00    | 6.00        | 277.86           | 4584.93     | -42.91       | 41.44      | -300.32    | 0.00             | 418779.30          | 625626.91         | N 32.151010         | W 104.060975         |
|                              | 4800.00    | 6.00        | 277.86           | 4684.38     | -44.39       | 42.87      | -310.68    | 0.00             | 418780.73          | 625616.55         | N 32.151014         | W 104.061008         |
|                              | 4900.00    | 6.00        | 277.86           | 4783.84     | -45.87       | 44.30      | -321.03    | 0.00             | 418782.16          | 625606.20         | N 32.151018         | W 104.061042         |
|                              | 5000.00    | 6.00        | 277.86           | 4883.29     | -47.35       | 45.73      | -331.39    | 0.00             | 418783.59          | 625595.85         | N 32.151022         | W 104.061075         |
|                              | 5100.00    | 6.00        | 277.86           | 4982.74     | -48.83       | 47.16      | -341.74    | 0.00             | 418785.02          | 625585.50         | N 32.151026         | W 104.061108         |
|                              | 5200.00    | 6.00        | 277.86           | 5082.19     | -50.31       | 48.59      | -352.10    | 0.00             | 418786.44          | 625575.14         | N 32.151030         | W 104.061142         |
| Brushy Canyon                | 5216.44    | 6.00        | 277.86           | 5181.65     | -50.55       | 48.82      | -353.80    | 0.00             | 418786.68          | 625573.44         | N 32.151030         | W 104.061147         |
|                              | 5300.00    | 6.00        | 277.86           | 5198.00     | -50.55       | 48.82      | -353.80    | 0.00             | 418786.68          | 625573.44         | N 32.151030         | W 104.061147         |
|                              | 5323.15    | 6.00        | 277.86           | 5281.10     | -51.79       | 50.02      | -362.45    | 0.00             | 418787.87          | 625564.79         | N 32.151034         | W 104.061175         |
| Drop 2"/100ft                | 5400.00    | 4.46        | 277.86           | 5304.12     | -52.13       | 50.35      | -364.85    | 0.00             | 418788.20          | 625562.39         | N 32.151038         | W 104.061183         |
|                              | 5500.00    | 2.46        | 277.86           | 5380.65     | -53.12       | 51.31      | -371.79    | 2.00             | 418789.16          | 625555.45         | N 32.151037         | W 104.061205         |
|                              | 5600.00    | 0.46        | 277.86           | 5460.46     | -53.98       | 52.13      | -377.78    | 2.00             | 418789.99          | 625549.46         | N 32.151040         | W 104.061225         |
|                              | 5623.17    | 0.00        | 277.86           | 5580.42     | -54.34       | 52.48      | -380.31    | 2.00             | 418790.34          | 625546.84         | N 32.151041         | W 104.061233         |
| Hold                         | 5700.00    | 0.00        | 277.86           | 5603.59     | -54.35       | 52.49      | -380.40    | 0.00             | 418790.35          | 625546.84         | N 32.151041         | W 104.061233         |
|                              | 5800.00    | 0.00        | 277.86           | 5680.42     | -54.35       | 52.49      | -380.40    | 0.00             | 418790.35          | 625546.84         | N 32.151041         | W 104.061233         |
|                              | 5900.00    | 0.00        | 277.86           | 5780.42     | -54.35       | 52.49      | -380.40    | 0.00             | 418790.35          | 625546.84         | N 32.151041         | W 104.061233         |
|                              | 6000.00    | 0.00        | 277.86           | 5880.42     | -54.35       | 52.49      | -380.40    | 0.00             | 418790.35          | 625546.84         | N 32.151041         | W 104.061233         |
|                              | 6100.00    | 0.00        | 277.86           | 5980.42     | -54.35       | 52.49      | -380.40    | 0.00             | 418790.35          | 625546.84         | N 32.151041         | W 104.061233         |
|                              | 6200.00    | 0.00        | 277.86           | 6080.42     | -54.35       | 52.49      | -380.40    | 0.00             | 418790.35          | 625546.84         | N 32.151041         | W 104.061233         |
|                              | 6300.00    | 0.00        | 277.86           | 6180.42     | -54.35       | 52.49      | -380.40    | 0.00             | 418790.35          | 625546.84         | N 32.151041         | W 104.061233         |
|                              | 6300.00    | 0.00        | 277.86           | 6280.42     | -54.35       |            |            |                  |                    |                   |                     |                      |



| Comments                                                    | MD<br>(ft) | Incl<br>(°) | Azlm Grid<br>(°) | TVD<br>(ft) | VSEC<br>(ft) | NS<br>(ft) | EW<br>(ft) | DLS<br>(°/100ft) | Northing<br>(ftUS) | Easting<br>(ftUS) | Latitude<br>(N/S °) | Longitude<br>(E/W °) |
|-------------------------------------------------------------|------------|-------------|------------------|-------------|--------------|------------|------------|------------------|--------------------|-------------------|---------------------|----------------------|
|                                                             | 6500.00    | 0.00        | 277.86           | 6480.42     | -54.35       | 52.49      | -380.40    | 0.00             | 418790.35          | 625546.84         | N 32.151041         | W 104.061233         |
|                                                             | 6600.00    | 0.00        | 277.86           | 6500.42     | -54.35       | 52.49      | -380.40    | 0.00             | 418790.35          | 625546.84         | N 32.151041         | W 104.061233         |
|                                                             | 6700.00    | 0.00        | 277.86           | 6600.42     | -54.35       | 52.49      | -380.40    | 0.00             | 418790.35          | 625546.84         | N 32.151041         | W 104.061233         |
|                                                             | 6800.00    | 0.00        | 277.86           | 6700.42     | -54.35       | 52.49      | -380.40    | 0.00             | 418790.35          | 625546.84         | N 32.151041         | W 104.061233         |
|                                                             | 6900.00    | 0.00        | 277.86           | 6800.42     | -54.35       | 52.49      | -380.40    | 0.00             | 418790.35          | 625546.84         | N 32.151041         | W 104.061233         |
|                                                             | 7000.00    | 0.00        | 277.86           | 6900.42     | -54.35       | 52.49      | -380.40    | 0.00             | 418790.35          | 625546.84         | N 32.151041         | W 104.061233         |
|                                                             | 7100.00    | 0.00        | 277.86           | 7080.42     | -54.35       | 52.49      | -380.40    | 0.00             | 418790.35          | 625546.84         | N 32.151041         | W 104.061233         |
|                                                             | 7200.00    | 0.00        | 277.86           | 7180.42     | -54.35       | 52.49      | -380.40    | 0.00             | 418790.35          | 625546.84         | N 32.151041         | W 104.061233         |
|                                                             | 7300.00    | 0.00        | 277.86           | 7280.42     | -54.35       | 52.49      | -380.40    | 0.00             | 418790.35          | 625546.84         | N 32.151041         | W 104.061233         |
| 1st BS SS                                                   | 7350.58    | 0.00        | 277.86           | 7331.00     | -54.35       | 52.49      | -380.40    | 0.00             | 418790.35          | 625546.84         | N 32.151041         | W 104.061233         |
|                                                             | 7400.00    | 0.00        | 277.86           | 7380.42     | -54.35       | 52.49      | -380.40    | 0.00             | 418790.35          | 625546.84         | N 32.151041         | W 104.061233         |
|                                                             | 7500.00    | 0.00        | 277.86           | 7480.42     | -54.35       | 52.49      | -380.40    | 0.00             | 418790.35          | 625546.84         | N 32.151041         | W 104.061233         |
|                                                             | 7600.00    | 0.00        | 277.86           | 7580.42     | -54.35       | 52.49      | -380.40    | 0.00             | 418790.35          | 625546.84         | N 32.151041         | W 104.061233         |
| 2nd BS Carb                                                 | 7604.58    | 0.00        | 277.86           | 7585.00     | -54.35       | 52.49      | -380.40    | 0.00             | 418790.35          | 625546.84         | N 32.151041         | W 104.061233         |
|                                                             | 7700.00    | 0.00        | 277.86           | 7680.42     | -54.35       | 52.49      | -380.40    | 0.00             | 418790.35          | 625546.84         | N 32.151041         | W 104.061233         |
|                                                             | 7800.00    | 0.00        | 277.86           | 7780.42     | -54.35       | 52.49      | -380.40    | 0.00             | 418790.35          | 625546.84         | N 32.151041         | W 104.061233         |
|                                                             | 7900.00    | 0.00        | 277.86           | 7880.42     | -54.35       | 52.49      | -380.40    | 0.00             | 418790.35          | 625546.84         | N 32.151041         | W 104.061233         |
|                                                             | 8000.00    | 0.00        | 277.86           | 7980.42     | -54.35       | 52.49      | -380.40    | 0.00             | 418790.35          | 625546.84         | N 32.151041         | W 104.061233         |
| 2nd BS SS                                                   | 8084.58    | 0.00        | 277.86           | 8065.00     | -54.35       | 52.49      | -380.40    | 0.00             | 418790.35          | 625546.84         | N 32.151041         | W 104.061233         |
|                                                             | 8100.00    | 0.00        | 277.86           | 8080.42     | -54.35       | 52.49      | -380.40    | 0.00             | 418790.35          | 625546.84         | N 32.151041         | W 104.061233         |
|                                                             | 8200.00    | 0.00        | 277.86           | 8180.42     | -54.35       | 52.49      | -380.40    | 0.00             | 418790.35          | 625546.84         | N 32.151041         | W 104.061233         |
|                                                             | 8300.00    | 0.00        | 277.86           | 8280.42     | -54.35       | 52.49      | -380.40    | 0.00             | 418790.35          | 625546.84         | N 32.151041         | W 104.061233         |
|                                                             | 8400.00    | 0.00        | 277.86           | 8380.42     | -54.35       | 52.49      | -380.40    | 0.00             | 418790.35          | 625546.84         | N 32.151041         | W 104.061233         |
| 3rd BS Carb                                                 | 8433.58    | 0.00        | 277.86           | 8414.00     | -54.35       | 52.49      | -380.40    | 0.00             | 418790.35          | 625546.84         | N 32.151041         | W 104.061233         |
|                                                             | 8500.00    | 0.00        | 277.86           | 8480.42     | -54.35       | 52.49      | -380.40    | 0.00             | 418790.35          | 625546.84         | N 32.151041         | W 104.061233         |
|                                                             | 8600.00    | 0.00        | 277.86           | 8580.42     | -54.35       | 52.49      | -380.40    | 0.00             | 418790.35          | 625546.84         | N 32.151041         | W 104.061233         |
|                                                             | 8700.00    | 0.00        | 277.86           | 8680.42     | -54.35       | 52.49      | -380.40    | 0.00             | 418790.35          | 625546.84         | N 32.151041         | W 104.061233         |
| Harkey                                                      | 8739.58    | 0.00        | 277.86           | 8720.00     | -54.35       | 52.49      | -380.40    | 0.00             | 418790.35          | 625546.84         | N 32.151041         | W 104.061233         |
|                                                             | 8800.00    | 0.00        | 277.86           | 8780.42     | -54.35       | 52.49      | -380.40    | 0.00             | 418790.35          | 625546.84         | N 32.151041         | W 104.061233         |
|                                                             | 8900.00    | 0.00        | 277.86           | 8880.42     | -54.35       | 52.49      | -380.40    | 0.00             | 418790.35          | 625546.84         | N 32.151041         | W 104.061233         |
|                                                             | 9000.00    | 0.00        | 277.86           | 8980.42     | -54.35       | 52.49      | -380.40    | 0.00             | 418790.35          | 625546.84         | N 32.151041         | W 104.061233         |
|                                                             | 9100.00    | 0.00        | 277.86           | 9080.42     | -54.35       | 52.49      | -380.40    | 0.00             | 418790.35          | 625546.84         | N 32.151041         | W 104.061233         |
| KOP, Build<br>10°/100ft                                     | 9157.17    | 0.00        | 277.86           | 9137.59     | -54.35       | 52.49      | -380.40    | 0.00             | 418790.35          | 625546.84         | N 32.151041         | W 104.061233         |
| 3rd BS SS                                                   | 9161.58    | 0.44        | 179.72           | 9142.00     | -54.34       | 52.48      | -380.40    | 10.00            | 418790.33          | 625546.84         | N 32.151041         | W 104.061233         |
|                                                             | 9200.00    | 4.28        | 179.72           | 9180.38     | -52.75       | 50.89      | -380.39    | 10.00            | 418788.75          | 625546.85         | N 32.151036         | W 104.061233         |
|                                                             | 9300.00    | 14.28       | 179.72           | 9278.95     | -36.64       | 34.78      | -380.31    | 10.00            | 418772.64          | 625546.93         | N 32.150992         | W 104.061233         |
|                                                             | 9400.00    | 24.28       | 179.72           | 9373.22     | -3.66        | 1.80       | -380.15    | 10.00            | 418739.66          | 625547.09         | N 32.150901         | W 104.061233         |
|                                                             | 9500.00    | 34.28       | 179.72           | 9460.33     | 45.19        | -47.05     | -379.91    | 10.00            | 418690.82          | 625547.33         | N 32.150767         | W 104.061233         |
| Wolfcamp                                                    | 9567.85    | 41.07       | 179.72           | 9514.00     | 86.64        | -88.49     | -379.70    | 10.00            | 418649.37          | 625547.54         | N 32.150653         | W 104.061232         |
|                                                             | 9600.00    | 44.28       | 179.72           | 9537.63     | 108.43       | -110.28    | -379.60    | 10.00            | 418627.59          | 625547.65         | N 32.150593         | W 104.061232         |
|                                                             | 9700.00    | 54.28       | 179.72           | 9602.78     | 184.12       | -185.88    | -379.22    | 10.00            | 418551.90          | 625548.02         | N 32.150385         | W 104.061231         |
| Wolfcamp Y<br>Sand                                          | 9723.31    | 58.61       | 179.72           | 9616.00     | 203.32       | -205.18    | -379.13    | 10.00            | 418532.70          | 625548.11         | N 32.150332         | W 104.061231         |
|                                                             | 9800.00    | 64.28       | 179.72           | 9653.80     | 269.89       | -271.84    | -378.80    | 10.00            | 418466.04          | 625548.44         | N 32.150149         | W 104.061231         |
|                                                             | 9900.00    | 74.28       | 179.72           | 9689.13     | 363.40       | -365.25    | -378.34    | 10.00            | 418372.64          | 625548.91         | N 32.149892         | W 104.061230         |
|                                                             | 9907.17    | 75.00       | 179.72           | 9691.02     | 370.31       | -372.17    | -378.30    | 10.00            | 418365.73          | 625548.94         | N 32.149873         | W 104.061230         |
| Build 5°/100ft                                              | 10000.00   | 79.64       | 179.72           | 9711.40     | 460.86       | -462.71    | -377.86    | 5.00             | 418275.19          | 625549.39         | N 32.149824         | W 104.061229         |
|                                                             | 10100.00   | 84.64       | 179.72           | 9725.06     | 559.89       | -561.74    | -377.37    | 5.00             | 418176.17          | 625549.88         | N 32.149352         | W 104.061228         |
|                                                             | 10194.76   | 89.38       | 179.72           | 9730.00     | 654.49       | -656.34    | -376.90    | 5.00             | 418081.58          | 625550.34         | N 32.149092         | W 104.061228         |
| Landing Point                                               | 10200.00   | 89.38       | 179.72           | 9730.06     | 659.73       | -661.58    | -376.87    | 0.00             | 418076.34          | 625550.37         | N 32.149078         | W 104.061228         |
|                                                             | 10300.00   | 89.38       | 179.72           | 9731.14     | 759.72       | -761.57    | -376.38    | 0.00             | 417976.35          | 625550.86         | N 32.148803         | W 104.061227         |
|                                                             | 10400.00   | 89.38       | 179.72           | 9732.23     | 859.72       | -861.57    | -375.88    | 0.00             | 417876.37          | 625551.36         | N 32.148528         | W 104.061226         |
| NMNM016104<br>exit to<br>NMNM013413<br>enter Lease<br>Cross | 10481.47   | 89.38       | 179.72           | 9733.11     | 941.18       | -943.03    | -375.48    | 0.00             | 417794.91          | 625551.76         | N 32.148304         | W 104.061226         |
|                                                             | 10500.00   | 89.38       | 179.72           | 9733.31     | 959.71       | -981.58    | -375.39    | 0.00             | 417776.38          | 625551.85         | N 32.148253         | W 104.061225         |
|                                                             | 10600.00   | 89.38       | 179.72           | 9734.39     | 1059.71      | -1081.55   | -374.89    | 0.00             | 417676.40          | 625552.35         | N 32.147978         | W 104.061225         |
|                                                             | 10700.00   | 89.38       | 179.72           | 9735.47     | 1159.70      | -1161.54   | -374.40    | 0.00             | 417576.41          | 625552.84         | N 32.147704         | W 104.061224         |
|                                                             | 10800.00   | 89.38       | 179.72           | 9736.56     | 1259.69      | -1261.54   | -373.90    | 0.00             | 417476.43          | 625553.34         | N 32.147429         | W 104.061223         |
|                                                             | 10900.00   | 89.38       | 179.72           | 9737.64     | 1359.69      | -1361.53   | -373.41    | 0.00             | 417376.45          | 625553.83         | N 32.147154         | W 104.061222         |
|                                                             | 11000.00   | 89.38       | 179.72           | 9738.72     | 1459.68      | -1461.52   | -372.91    | 0.00             | 417276.46          | 625554.33         | N 32.146879         | W 104.061221         |
|                                                             | 11100.00   | 89.38       | 179.72           | 9739.80     | 1559.68      | -1561.52   | -372.42    | 0.00             | 417176.48          | 625554.82         | N 32.146604         | W 104.061221         |
|                                                             | 11200.00   | 89.38       | 179.72           | 9740.89     | 1659.67      | -1661.51   | -371.92    | 0.00             | 417076.49          | 625555.32         | N 32.146329         | W 104.061220         |
|                                                             | 11300.00   | 89.38       | 179.72           | 9741.97     | 1759.67      | -1761.50   | -371.43    | 0.00             | 416976.51          | 625555.81         | N 32.146054         | W 104.061219         |
|                                                             | 11400.00   | 89.38       | 179.72           | 9743.05     | 1859.66      | -1861.49   | -370.94    | 0.00             | 416876.52          | 625556.30         | N 32.145780         | W 104.061218         |
|                                                             | 11500.00   | 89.38       | 179.72           | 9744.14     | 1959.65      | -1961.49   | -370.44    | 0.00             | 416776.54          | 625556.80         | N 32.145505         | W 104.061217         |
|                                                             | 11600.00   | 89.38       | 179.72           | 9745.22     | 2059.65      | -2061.48   | -369.95    | 0.00             | 416676.55          | 625557.30         | N 32.145230         | W 104.061217         |
|                                                             | 11700.00   | 89.38       | 179.72           | 9746.30     | 2159.64      | -2161.47   | -369.45    | 0.00             | 416576.57          | 625557.79         | N 32.144955         | W 104.061216         |
|                                                             | 11800.00   | 89.38       | 179.72           | 9747.38     | 2259.64      | -2261.47   | -368.96    | 0.00             | 416476.59          | 625558.28         | N 32.144680         | W 104.061215         |
|                                                             | 11900.00   | 89.38       | 179.72           | 9748.47     | 2359.63      | -2361.46   | -368.46    | 0.00             | 416376.60          | 625558.78         | N 32.144405         | W 104.061214         |
|                                                             | 12000.00   | 89.38       | 179.72           | 9749.55     | 2459.62      | -2461.45   | -367.97    | 0.00             | 416276.62          | 625559.27         | N 32.144131         | W 104.061214         |
|                                                             | 12100.00   | 89.38       | 179.72           | 9750.63     | 2559.62      | -2561.45   | -367.47    | 0.00             | 416176.63          | 625559.77         | N 32.143856         | W 104.061213         |
|                                                             | 12200.00   | 89.38       | 179.72           | 9751.71     | 2659.61      | -2661.44   | -366.98    | 0.00             | 416076.65          | 625560.26         | N 32.143581         | W 104.061212         |
|                                                             | 12300.00   | 89.38       | 179.72           | 9752.80     | 2759.61      | -2761.43   | -366.48    | 0.00             | 415976.66          | 625560.76         | N 32.143306         | W 104.061211         |
|                                                             | 12400.00   | 89.38       | 179.72           | 9753.88     | 2859.60      | -2861.42   | -365.99    | 0.00             | 415876.68          | 625561.25         | N 32.143031         | W 104.061211         |
|                                                             | 12500.00   | 89.38       | 179.72           | 9754.96     | 2959.60      | -2961.42   | -365.49    | 0.00             | 415776.69          | 625561.75         | N 32.142756         | W 104.061210         |
|                                                             | 12600.00   | 89.38       | 179.72           | 9756.05     | 3059.59      | -3061.41   | -365.00    | 0.00             | 415676.71          | 625562.24         | N 32.142481         | W 104.061209         |
|                                                             | 12700.00   | 89.38       | 179.72           | 9757.13     | 3159.58      | -3161.40   | -364.50    | 0.00             | 415576.73          | 625562.74         | N 32.142207         | W 104.061208         |
|                                                             | 12800.00   | 89.38       | 179.72           | 9758.21     | 3259.58      | -3261.40   | -364.01    | 0.00             | 415476.74          | 625563.23         | N 32.141932         | W 104.061207         |
|                                                             | 12900.00   | 89.38       | 179.72           | 9759.29     | 3359.57      | -3361.39   | -363.51    | 0.00             | 415376.76          | 625563.73         | N 32.141657         | W 104.061207         |
|                                                             | 13000.00   | 89.38       | 179.72           | 9760.38     | 3459.57      | -3461.38   | -363.02    | 0.00             | 415276.77          | 625564.22         | N 32.141382         | W 104.061206         |
|                                                             | 13         |             |                  |             |              |            |            |                  |                    |                   |                     |                      |



| Comments | MD<br>(ft) | Incl<br>(°) | Azim Grid<br>(°) | TVD<br>(ft) | VSEC<br>(ft) | NS<br>(ft) | EW<br>(ft) | DLS<br>(°/100ft) | Northing<br>(ftUS) | Easting<br>(ftUS) | Latitude<br>(N/S °) | Longitude<br>(E/W °) |
|----------|------------|-------------|------------------|-------------|--------------|------------|------------|------------------|--------------------|-------------------|---------------------|----------------------|
|          | 15400.00   | 89.38       | 179.72           | 9786.36     | 5859.43      | -5861.21   | -351.15    | 0.00             | 412877.15          | 625576.09         | N 32.134786         | W 104.061187         |
|          | 15500.00   | 89.38       | 179.72           | 9787.44     | 5959.42      | -5961.20   | -350.65    | 0.00             | 412777.16          | 625576.59         | N 32.134511         | W 104.061186         |
|          | 15600.00   | 89.38       | 179.72           | 9788.53     | 6059.41      | -6061.20   | -350.16    | 0.00             | 412677.18          | 625577.08         | N 32.134236         | W 104.061185         |
|          | 15700.00   | 89.38       | 179.72           | 9789.61     | 6159.41      | -6161.19   | -349.66    | 0.00             | 412577.19          | 625577.58         | N 32.133961         | W 104.061185         |
|          | 15800.00   | 89.38       | 179.72           | 9790.69     | 6259.40      | -6261.18   | -349.17    | 0.00             | 412477.21          | 625578.07         | N 32.133686         | W 104.061184         |
|          | 15900.00   | 89.38       | 179.72           | 9791.77     | 6359.40      | -6361.18   | -348.67    | 0.00             | 412377.22          | 625578.57         | N 32.133411         | W 104.061183         |
|          | 16000.00   | 89.38       | 179.72           | 9792.86     | 6459.39      | -6461.17   | -348.18    | 0.00             | 412277.24          | 625579.06         | N 32.133136         | W 104.061182         |
|          | 16100.00   | 89.38       | 179.72           | 9793.94     | 6559.38      | -6561.16   | -347.68    | 0.00             | 412177.25          | 625579.55         | N 32.132862         | W 104.061182         |
|          | 16200.00   | 89.38       | 179.72           | 9795.02     | 6659.38      | -6661.15   | -347.19    | 0.00             | 412077.27          | 625580.05         | N 32.132587         | W 104.061181         |
|          | 16300.00   | 89.38       | 179.72           | 9796.11     | 6759.37      | -6761.15   | -346.70    | 0.00             | 411977.29          | 625580.54         | N 32.132312         | W 104.061180         |
|          | 16400.00   | 89.38       | 179.72           | 9797.19     | 6859.37      | -6861.14   | -346.20    | 0.00             | 411877.30          | 625581.04         | N 32.132037         | W 104.061179         |
|          | 16500.00   | 89.38       | 179.72           | 9798.27     | 6959.36      | -6961.13   | -345.71    | 0.00             | 411777.32          | 625581.53         | N 32.131762         | W 104.061178         |
|          | 16600.00   | 89.38       | 179.72           | 9799.35     | 7059.35      | -7061.13   | -345.21    | 0.00             | 411677.33          | 625582.03         | N 32.131487         | W 104.061178         |
|          | 16700.00   | 89.38       | 179.72           | 9800.44     | 7159.35      | -7161.12   | -344.72    | 0.00             | 411577.35          | 625582.52         | N 32.131212         | W 104.061177         |
|          | 16800.00   | 89.38       | 179.72           | 9801.52     | 7259.34      | -7261.11   | -344.22    | 0.00             | 411477.36          | 625583.02         | N 32.130938         | W 104.061176         |
|          | 16900.00   | 89.38       | 179.72           | 9802.60     | 7359.34      | -7361.10   | -343.73    | 0.00             | 411377.38          | 625583.51         | N 32.130663         | W 104.061175         |
|          | 17000.00   | 89.38       | 179.72           | 9803.68     | 7459.33      | -7461.10   | -343.23    | 0.00             | 411277.39          | 625584.01         | N 32.130388         | W 104.061175         |
|          | 17100.00   | 89.38       | 179.72           | 9804.77     | 7559.33      | -7561.09   | -342.74    | 0.00             | 411177.41          | 625584.50         | N 32.130113         | W 104.061174         |

NMNM013413  
exit to  
NMNM112920  
enter Lease  
Cross

|          |       |        |         |         |          |         |      |           |           |             |              |
|----------|-------|--------|---------|---------|----------|---------|------|-----------|-----------|-------------|--------------|
| 17110.00 | 89.38 | 179.72 | 9804.88 | 7569.40 | -7571.17 | -342.69 | 0.00 | 411167.33 | 625584.55 | N 32.130085 | W 104.061174 |
| 17200.00 | 89.38 | 179.72 | 9805.85 | 7659.32 | -7661.08 | -342.24 | 0.00 | 411077.43 | 625585.00 | N 32.129838 | W 104.061173 |
| 17300.00 | 89.38 | 179.72 | 9806.93 | 7759.31 | -7761.08 | -341.75 | 0.00 | 410977.44 | 625585.49 | N 32.129563 | W 104.061172 |
| 17400.00 | 89.38 | 179.72 | 9808.01 | 7859.31 | -7861.07 | -341.25 | 0.00 | 410877.46 | 625585.99 | N 32.129288 | W 104.061171 |
| 17500.00 | 89.38 | 179.72 | 9809.10 | 7959.30 | -7961.06 | -340.76 | 0.00 | 410777.47 | 625586.48 | N 32.129014 | W 104.061171 |
| 17600.00 | 89.38 | 179.72 | 9810.18 | 8059.30 | -8061.05 | -340.26 | 0.00 | 410677.49 | 625586.97 | N 32.128739 | W 104.061170 |
| 17700.00 | 89.38 | 179.72 | 9811.26 | 8159.29 | -8161.05 | -339.77 | 0.00 | 410577.50 | 625587.47 | N 32.128464 | W 104.061169 |
| 17800.00 | 89.38 | 179.72 | 9812.35 | 8259.28 | -8261.04 | -339.27 | 0.00 | 410477.52 | 625587.96 | N 32.128189 | W 104.061168 |
| 17900.00 | 89.38 | 179.72 | 9813.43 | 8359.28 | -8361.03 | -338.78 | 0.00 | 410377.53 | 625588.46 | N 32.127914 | W 104.061167 |
| 18000.00 | 89.38 | 179.72 | 9814.51 | 8459.27 | -8461.03 | -338.29 | 0.00 | 410277.55 | 625588.95 | N 32.127639 | W 104.061167 |
| 18100.00 | 89.38 | 179.72 | 9815.59 | 8559.27 | -8561.02 | -337.79 | 0.00 | 410177.57 | 625589.45 | N 32.127365 | W 104.061166 |
| 18200.00 | 89.38 | 179.72 | 9816.68 | 8659.26 | -8661.01 | -337.30 | 0.00 | 410077.58 | 625589.94 | N 32.127090 | W 104.061165 |
| 18300.00 | 89.38 | 179.72 | 9817.76 | 8759.26 | -8761.01 | -336.80 | 0.00 | 409977.60 | 625590.44 | N 32.126815 | W 104.061164 |
| 18400.00 | 89.38 | 179.72 | 9818.84 | 8859.25 | -8861.00 | -336.31 | 0.00 | 409877.61 | 625590.93 | N 32.126540 | W 104.061164 |
| 18500.00 | 89.38 | 179.72 | 9819.92 | 8959.24 | -8960.99 | -335.81 | 0.00 | 409777.63 | 625591.43 | N 32.126265 | W 104.061163 |
| 18600.00 | 89.38 | 179.72 | 9821.01 | 9059.24 | -9060.98 | -335.32 | 0.00 | 409677.64 | 625591.92 | N 32.125990 | W 104.061162 |
| 18700.00 | 89.38 | 179.72 | 9822.09 | 9159.23 | -9160.98 | -334.82 | 0.00 | 409577.66 | 625592.42 | N 32.125715 | W 104.061161 |
| 18800.00 | 89.38 | 179.72 | 9823.17 | 9259.23 | -9260.97 | -334.33 | 0.00 | 409477.67 | 625592.91 | N 32.125441 | W 104.061160 |
| 18900.00 | 89.38 | 179.72 | 9824.26 | 9359.22 | -9360.96 | -333.83 | 0.00 | 409377.69 | 625593.41 | N 32.125166 | W 104.061160 |
| 19000.00 | 89.38 | 179.72 | 9825.34 | 9459.21 | -9460.96 | -333.34 | 0.00 | 409277.71 | 625593.90 | N 32.124891 | W 104.061159 |
| 19100.00 | 89.38 | 179.72 | 9826.42 | 9559.21 | -9560.95 | -332.84 | 0.00 | 409177.72 | 625594.39 | N 32.124616 | W 104.061158 |
| 19200.00 | 89.38 | 179.72 | 9827.50 | 9659.20 | -9660.94 | -332.35 | 0.00 | 409077.74 | 625594.89 | N 32.124341 | W 104.061157 |
| 19300.00 | 89.38 | 179.72 | 9828.59 | 9759.20 | -9760.93 | -331.85 | 0.00 | 408977.75 | 625595.38 | N 32.124066 | W 104.061157 |
| 19400.00 | 89.38 | 179.72 | 9829.67 | 9859.19 | -9860.93 | -331.36 | 0.00 | 408877.77 | 625595.88 | N 32.123791 | W 104.061156 |

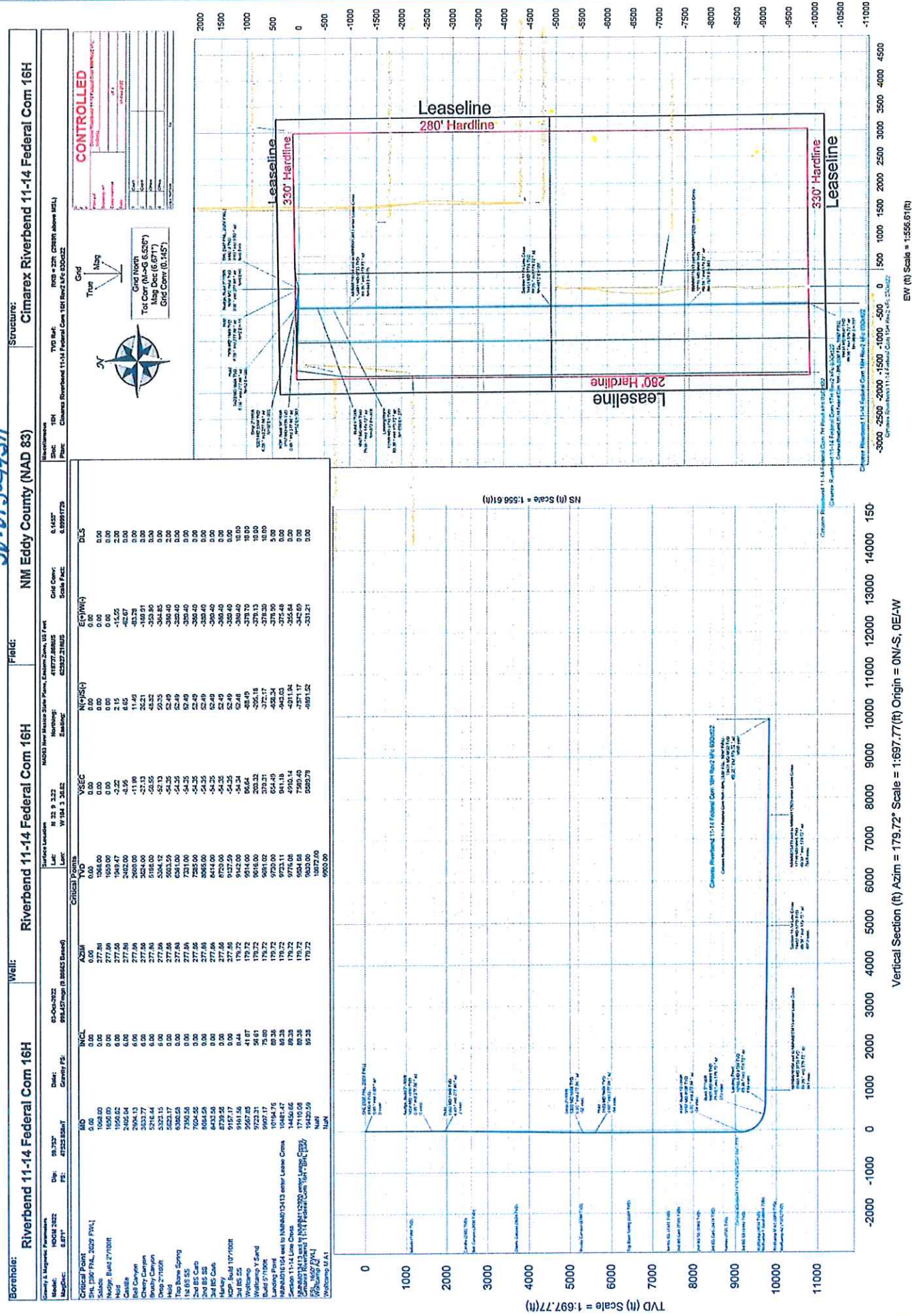
Cimarex  
Riverbend 11-14  
Federal Com  
16H - BHL [330'  
FSL, 1650' FWL]

Survey Type: Def Plan

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

| Description | Part | MD From<br>(ft) | MD To<br>(ft) | EOU Freq<br>(ft) | Hole Size<br>(in) | Casing Diameter<br>(in) | Expected Max<br>Inclination<br>(deg) | Survey Tool Type      | Borehole / Survey                                            |
|-------------|------|-----------------|---------------|------------------|-------------------|-------------------------|--------------------------------------|-----------------------|--------------------------------------------------------------|
|             | 1    | 0.000           | 22.000        | 1/100.000        | 17.500            | 13.375                  |                                      | A001Mb_MWD-Depth Only | Riverbend 11-14 Federal Com<br>16H / Cimarex Riverbend 11-14 |
|             | 1    | 22.000          | 9200.000      | 1/100.000        | 17.500            | 13.375                  |                                      | A001Mb_MWD            | Riverbend 11-14 Federal Com<br>16H / Cimarex Riverbend 11-14 |
|             | 1    | 9200.000        | 19430.592     | 1/100.000        | 17.500            | 13.375                  |                                      | A008Mb_MWD+IFR1+MS    | Riverbend 11-14 Federal Com<br>16H / Cimarex Riverbend 11-14 |





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

Fill Line

Flowline

2000# (2M)  
BOP

SRR & A

Annular Preventer

Pipe Rams

Blind Rams

2" Minimum Kill Line

Kill Line

1 Kill Line Valve  
(Minimum)

Drilling Spool

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  
Riverbend 11 14 Federal Com #16H  
30-015-49511  
Section 11-T25S-R28E  
Eddy Co., NM  
Cimarex Energy Company



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

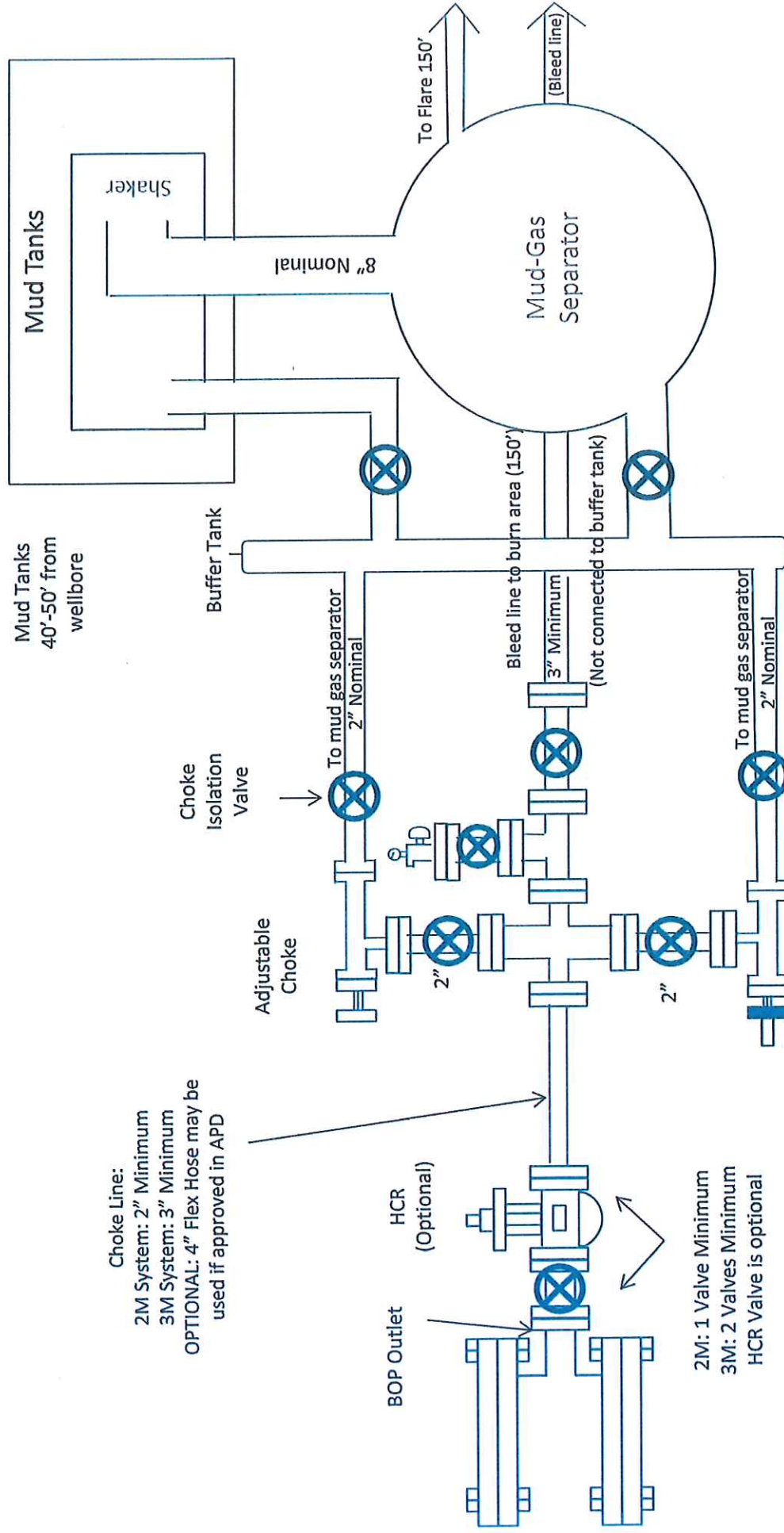
Wellhead  
Assembly

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  
Riverbend 11 14 Federal Com #16H  
30-015-49511  
Section 11-T25S-R28E  
Eddy Co., NM  
Cimarex Energy Company

# CIMAREX ENERGY COMPANY

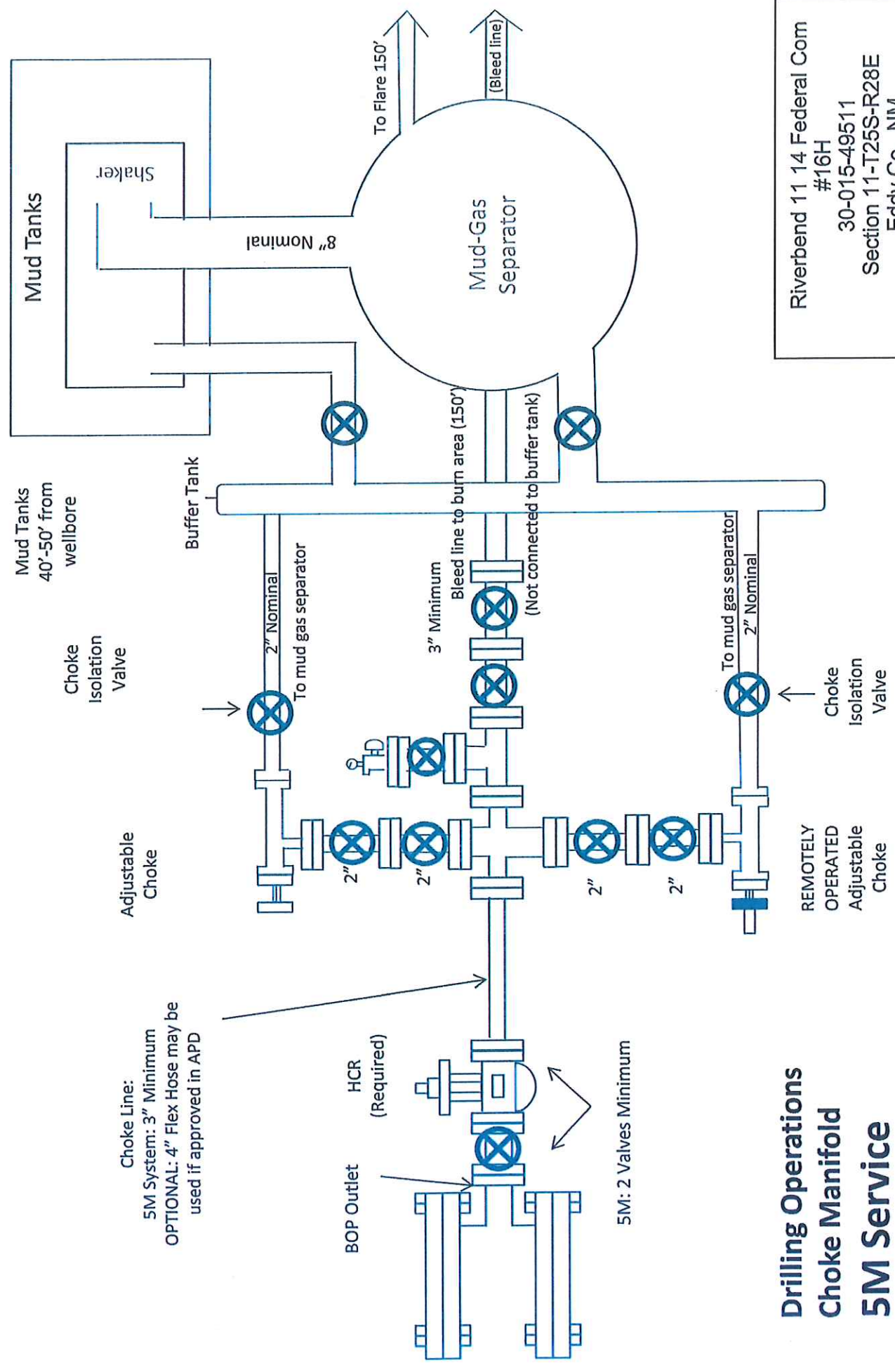


Riverbend 11 14 Federal  
 Com #16H  
 30-015-49511  
 Eddy Co., NM

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



CIMAREX ENERGY COMPANY



# Drilling Operations Choke Manifold 5M Service

Riverbend 11 14 Federal Com  
#16H  
30-015-49511  
Section 11-T25S-R28E  
Eddy Co., NM



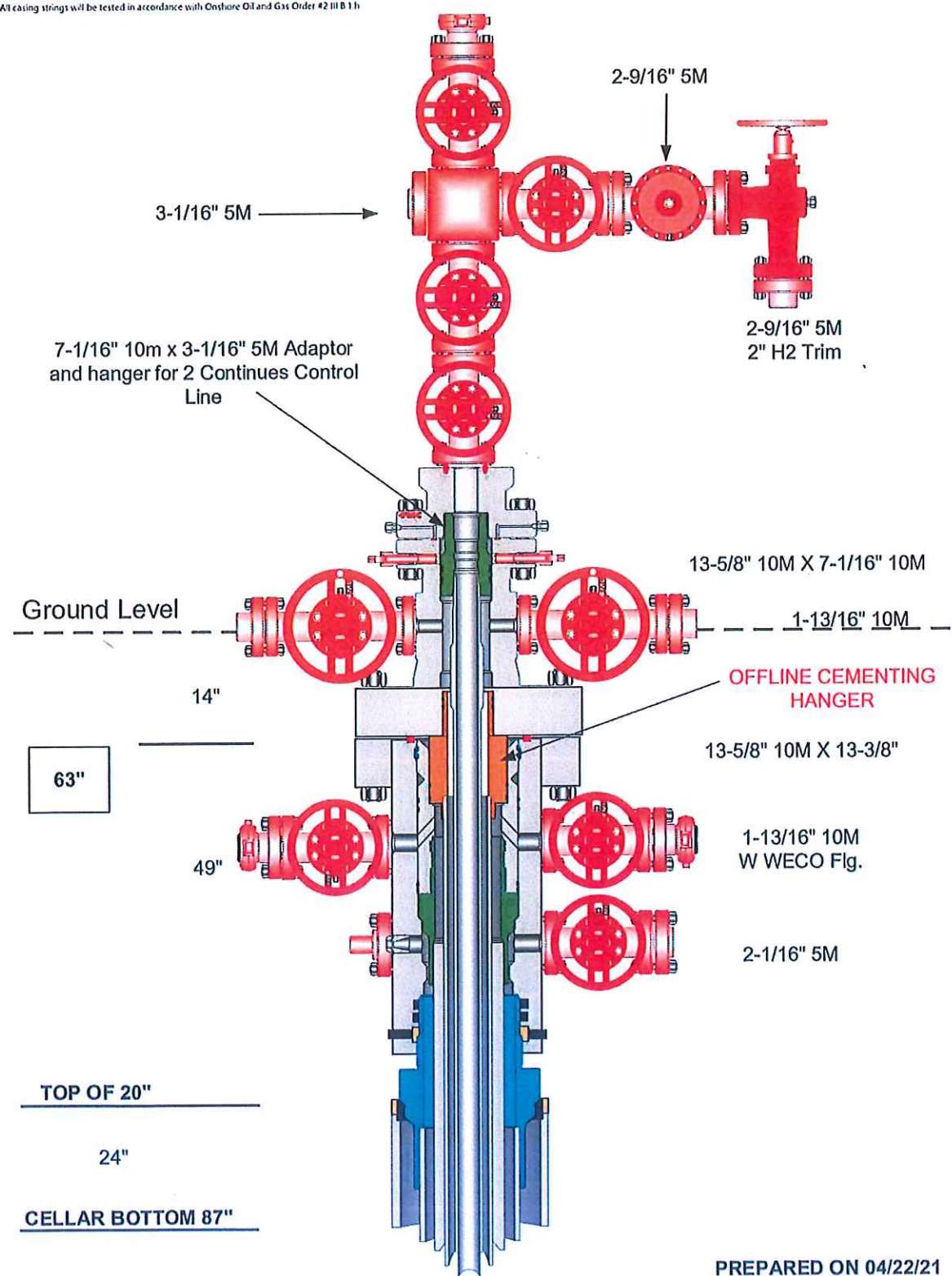
CACTUS FOR SERVICE  
WEARBUSHING  
IN CASING HEAD &  
CASING SPOOL

Eddy Co., NM

Riverbend 11 14 Federal Com #16H - 30-015-49511

| 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                 | 450             | 450               | 13-3/8"     | 48.00          | H-40/J-55 Hybrid | ST&C  | 3.60        | 8.85     | 14.91              |
| 12 1/4                    | 0                 | 2580            | 2580              | 9-5/8"      | 36.00          | J-55             | LT&C  | 1.46        | 2.55     | 4.88               |
| 8 3/4                     | 0                 | 9157            | 9157              | 7"          | 26.00          | L-80             | LT&C  | 1.26        | 1.69     | 2.02               |
| 8 3/4                     | 9157              | 10194           | 9730              | 7"          | 26.00          | N-80             | BT&C  | 1.19        | 1.59     | 40.54              |
| 6                         | 8157              | 12430           | 9810              | 4-1/2"      | 11.60          | P-110            | BT&C  | 1.29        | 1.82     | 18.91              |
| BIA Minimum Safety Factor |                   |                 |                   |             |                |                  |       | 1.125       | 1        | 1.6 Dry<br>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 11



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  
Phone:(505) 334-6178 Fax:(505) 334-6170  
**District IV**  
1220 S. St Francis Dr., Santa Fe, NM 87505  
Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS  
  
Action 222866

CONDITIONS

|                                                                             |                                                      |
|-----------------------------------------------------------------------------|------------------------------------------------------|
| Operator:<br>CIMAREX ENERGY CO.<br>6001 Deauville Blvd<br>Midland, TX 79706 | OGRID:<br>215099                                     |
|                                                                             | Action Number:<br>222866                             |
|                                                                             | Action Type:<br>[C-103] NOI Change of Plans (C-103A) |

CONDITIONS

| Created By  | Condition                   | Condition Date |
|-------------|-----------------------------|----------------|
| ward.rikala | Original COA's still apply. | 10/20/2023     |