Form 3160-3
(June 2015)

FORM APPROVED
OMB No. 1004-0137
Expires: January 31, 2018

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

# APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.

6. If Indian, Allotee or Tribe Name

1a. Type of work: ☐ DRILL ☐ REENTER

1b. Type of Well: ☐ Oil Well ☐ Gas Well ☐ Other

1c. Type of Completion: ☐ Hydraulic Fracturing ☐ Single Zone ☐ Multiple Zone

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

8. Lease Name and Well No.

2. Name of Operator

9. API Well No.
**30-025-52501**

| 3a. Address | 3b. Phone No. *(include area code)* | 10. Field and Pool, or Exploratory |
|---|---|---|
| | | |

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*

At surface

At proposed prod. zone

11. Sec., T. R. M. or Blk. and Survey or Area

| 14. Distance in miles and direction from nearest town or post office* | 12. County or Parish | 13. State |
|---|---|---|
| | | |

| 15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) | 16. No of acres in lease | 17. Spacing Unit dedicated to this well |
|---|---|---|
| | | |

| 18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. | 19. Proposed Depth | 20. BLM/BIA Bond No. in file |
|---|---|---|
| | | |

| 21. Elevations (Show whether DF, KDB, RT, GL, etc.) | 22. Approximate date work will start* | 23. Estimated duration |
|---|---|---|
| | | |

## 24. Attachments

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

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

| 25. Signature | Name *(Printed/Typed)* | Date |
|---|---|---|
| | | |

Title

| Approved by *(Signature)* | Name *(Printed/Typed)* | Date |
|---|---|---|
| | | |

| Title | Office |
|---|---|
| | |

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

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

APPROVED WITH CONDITIONS

(Continued on page 2)

*(Instructions on page 2)

**Approval Date: 09/18/2023**

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

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

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

[X] AMENDED REPORT

# WELL LOCATION AND ACREAGE DEDICATION PLAT

| [1] API Number | [2] Pool Code | [3] Pool Name |
|---|---|---|
| 30-025-52501 | 50461 | QUAIL RIDGE;BONE SPRING, SOUTH |

| [4] Property Code | [5] Property Name | [6] Well Number |
|---|---|---|
| 335232 | LOOSEY GOOSEY 4-9 FED COM | 301H |

| [7] OGRID No. | [8] Operator Name | [9] Elevation |
|---|---|---|
| 215099 | CIMAREX ENERGY CO. | 3659.4' |

## [10] Surface Location

| UL or lot no. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---|---|---|---|---|---|---|---|---|---|
| N | 33 | 19S | 34E | | 1189 | SOUTH | 1464 | WEST | LEA |

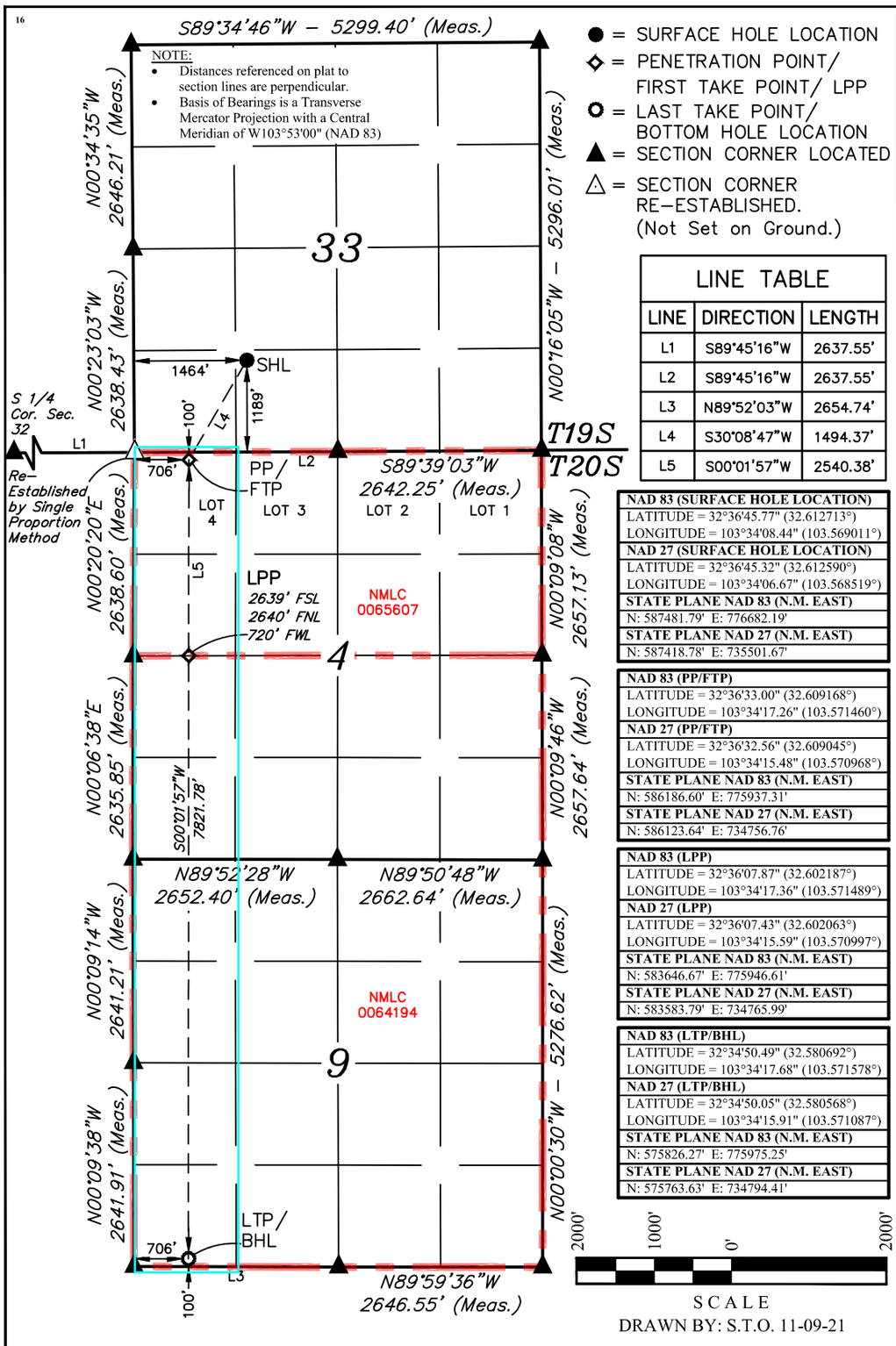
## [11] Bottom Hole Location If Different From Surface

| UL or lot no. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---|---|---|---|---|---|---|---|---|---|
| M | 9 | 20S | 34E | | 100 | SOUTH | 706 | WEST | LEA |

| [12] Dedicated Acres | [13] Joint or Infill | [14] Consolidation Code | [15] Order No. |
|---|---|---|---|
| 320.21 | | | |

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.

[16]




### LINE TABLE

| LINE | DIRECTION | LENGTH |
|---|---|---|
| L1 | S89°45'16"W | 2637.55' |
| L2 | S89°45'16"W | 2637.55' |
| L3 | N89°52'03"W | 2654.74' |
| L4 | S30°08'47"W | 1494.37' |
| L5 | S00°01'57"W | 2540.38' |

| |
|---|
| **NAD 83 (SURFACE HOLE LOCATION)** |
| LATITUDE = 32°36'45.77" (32.612713°) |
| LONGITUDE = 103°34'08.44" (103.569011°) |
| **NAD 27 (SURFACE HOLE LOCATION)** |
| LATITUDE = 32°36'45.32" (32.612590°) |
| LONGITUDE = 103°34'06.67" (103.568519°) |
| **STATE PLANE NAD 83 (N.M. EAST)** |
| N: 587481.79' E: 776682.19' |
| **STATE PLANE NAD 27 (N.M. EAST)** |
| N: 587418.78' E: 735501.67' |

| |
|---|
| **NAD 83 (PP/FTP)** |
| LATITUDE = 32°36'33.00" (32.609168°) |
| LONGITUDE = 103°34'17.26" (103.571460°) |
| **NAD 27 (PP/FTP)** |
| LATITUDE = 32°36'32.56" (32.609045°) |
| LONGITUDE = 103°34'15.48" (103.570968°) |
| **STATE PLANE NAD 83 (N.M. EAST)** |
| N: 586186.60' E: 775937.31' |
| **STATE PLANE NAD 27 (N.M. EAST)** |
| N: 586123.64' E: 734756.76' |

| |
|---|
| **NAD 83 (LPP)** |
| LATITUDE = 32°36'07.87" (32.602187°) |
| LONGITUDE = 103°34'17.36" (103.571489°) |
| **NAD 27 (LPP)** |
| LATITUDE = 32°36'07.43" (32.602063°) |
| LONGITUDE = 103°34'15.59" (103.570997°) |
| **STATE PLANE NAD 83 (N.M. EAST)** |
| N: 583646.67' E: 775946.61' |
| **STATE PLANE NAD 27 (N.M. EAST)** |
| N: 583583.79' E: 734765.99' |

| |
|---|
| **NAD 83 (LTP/BHL)** |
| LATITUDE = 32°34'50.49" (32.580692°) |
| LONGITUDE = 103°34'17.68" (103.571578°) |
| **NAD 27 (LTP/BHL)** |
| LATITUDE = 32°34'50.05" (32.580568°) |
| LONGITUDE = 103°34'15.91" (103.571087°) |
| **STATE PLANE NAD 83 (N.M. EAST)** |
| N: 575826.27' E: 775975.25' |
| **STATE PLANE NAD 27 (N.M. EAST)** |
| N: 575763.63' E: 734794.41' |

## [17] OPERATOR CERTIFICATION

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

Brittany Gordon 7/28/2023
Signature Date

Brittany Gordon
Printed Name

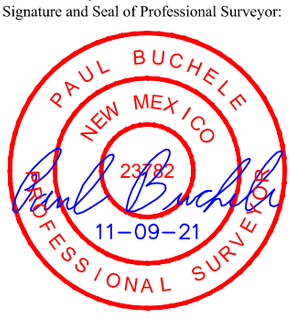
brittany.gordon@coterra.com
E-mail Address

## [18] SURVEYOR CERTIFICATION

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

November 02, 2021
Date of Survey

Signature and Seal of Professional Surveyor:




Certificate Number:

State of New Mexico
Energy, Minerals and Natural Resources Department

Submit Electronically
Via E-permitting

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

# NATURAL GAS MANAGEMENT PLAN

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

## Section 1 – Plan Description
**Effective May 25, 2021**

**I. Operator:** Cimarex Energy Company **OGRID:** 215099 **Date:** 1/29/24

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

If Other, please describe: _____

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

| Well Name | API | ULSTR | Footages | Anticipated Oil BBL/D | Anticipated Gas MCF/D | Anticipated Produced Water BBL/D |
|---|---|---|---|---|---|---|
| Loosey Goosey 4-9 Fed Com 301H | | N, Sec 33 T19S, R34E | 1189 FSL/ 1464 FWL | 1589 | 1455 | 2845 |
| | | | | | | |

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

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

| Well Name | API | Spud Date | TD Reached Date | Completion Commencement Date | Initial Flow Back Date | First Production Date |
|---|---|---|---|---|---|---|
| Loosey Goosey 4-9 Fed Com 301H | | 11/10/2024 | 1/14/2025 | 1/20/2025 | 3/1/2025 | 3/1/2025 |
| | | | | | | |

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

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

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

# Section 2 – Enhanced Plan

**EFFECTIVE APRIL 1, 2022**

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

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

**IX. Anticipated Natural Gas Production:**

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

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

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

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

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

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

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

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

## Section 3 - Certifications

**Effective May 25, 2021**

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

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

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

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

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

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

## Section 4 - Notices

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

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

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

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

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

| | |
|---|---|
| Signature: | Sarah Jordan |
| Printed Name: | Sarah Jordan |
| Title: | Regulatory Analyst |
| E-mail Address: | sarah.jordan@coterra.com |
| Date: | 1/29/24 |
| Phone: | 432/620-1909 |

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

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

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

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

**XEC Standard Response**

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

# Cimarex
# VII. Operational Practices

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

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

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

i. Venting or flaring occurs as a result of bradenhead testing.
j. Venting or flaring occurs as a result of normal compressor operations, including general compressor operations, compressor engines and turbines.
k. Venting or flaring occurs as a result of a packer leakage test.
l. Venting or flaring occurs as a result of a production test lasting less than 24 hours unless otherwise approved by the division.
m. Venting or flaring occurs as a result of new equipment commissioning and is necessary to purge impurities from the pipeline or production equipment.

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

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

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

- **Workovers:**
  - Always strive to kill well when performing downhole maintenance.
  - If vapors or trapped pressure is present and must be relieved then:
    - Initial blowdown to production facility:
      - Route vapors to LP flare if possible/applicable
    - Blowdown to portable gas buster tank:
      - Vent to existing or portable flare if applicable.

- **Stock tank servicing:**
  - Minimize time spent with thief hatches open.
  - When cleaning or servicing via manway, suck tank bottoms to ensure minimal volatiles exposed to atmosphere.
    - Connect vacuum truck to low pressure flare while cleaning bottoms to limit venting.
  - Isolate the vent lines and overflows on the tank being serviced from other tanks.

- **Pressure vessel/compressor servicing and associated blowdowns:**
  - Route to flare where possible.
  - Blow vessel down to minimum available pressure via pipeline, prior to venting vessel.
  - Preemptively changing anodes to reduce failures and extended corrosion related servicing.
  - When cleaning or servicing via manway, suck vessel bottoms to ensure minimal volatiles exposed to atmosphere.

- **Flare/combustor maintenance:**
  - Minimize downtime by coordinating with vendor and Cimarex staff travel logistics.
  - Utilizing preventative and predictive maintenance programs to replace high wear components before failure.
  - Because the flare/combustor is the primary equipment used to limit venting practices, ensure flare/combustor is properly maintained and fully operational at all times via routine maintenance, temperature telemetry, onsite visual inspections.

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

# PECOS DISTRICT
# DRILLING CONDITIONS OF APPROVAL

| | |
|---|---|
| **OPERATOR'S NAME:** | Cimarex |
| **LEASE NO.:** | **NMLC065607** |
| **LOCATION:** | Section 33, T.19 S, R.34 E., NMPM |
| **COUNTY:** | Lea County, New Mexico |
| **WELL NAME & NO.:** | Loosey Goosey 4-9 Fed Com 301H |
| **SURFACE HOLE FOOTAGE:** | 1189'/S & 1464'/W |
| **BOTTOM HOLE FOOTAGE:** | 100'/S & 706'/W |

COA

| | | | | |
|---|---|---|---|---|
| **$H_2S$** | ◉ Yes | ○ No | | |
| **Potash / WIPP** | ◉ None | ○ Secretary | ○ R-111-P | ☐ WIPP |
| **Cave / Karst** | ◉ Low | ○ Medium | ○ High | ○ Critical |
| **Wellhead** | ○ Conventional | ◉ Multibowl | ○ Both | ○ Diverter |
| **Cementing** | ☐ Primary Squeeze | ☐ Cont. Squeeze | ☐ EchoMeter | ☐ DV Tool |
| **Special Req** | ☐ Break Testing | ☐ Water Disposal | ☑ COM | ☐ Unit |
| **Variance** | ☑ Flex Hose | ☐ Casing Clearance | ☐ Pilot Hole | ☑ Capitan Reef |
| **Variance** | ☐ Four-String | ☑ Offline Cementing | ☑ Fluid-Filled | ☐ Open Annulus |
| ☐ **Batch APD / Sundry** | | | | |

**A. HYDROGEN SULFIDE**

A Hydrogen Sulfide (H2S) Drilling Plan shall be activated 500 feet prior to drilling into the **Delaware Group and Morrow** formation. As a result, the Hydrogen Sulfide area must meet all requirements from **43 CFR 3176**, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.

**B. CASING**

**Surface and Intermediate casings must be kept fluid filled to meet BLM minimum collapse requirement.**

1. The **13-3/8** inch surface casing shall be set at approximately **1820** feet (a minimum of 25 feet (Lea County) into the Rustler Anhydrite, above the salt, and below usable fresh water) and cemented to the surface.

    a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.





**Approval Date: 09/18/2023**

b. Wait on cement (WOC) time for a primary cement job will be a minimum of **8 hours** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)
c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
d. If cement falls back, remedial cementing will be done prior to drilling out that string.

2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing shall be set at **5600ft**:
   - Cement to surface. If cement does not circulate see B.1.a, c-d above. **Excess calculates to 12%. Additional cement maybe required.**

**Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst, and Capitan Reef.**

❖ In Capitan Reef Areas if cement does not circulate to surface on the first two casing strings, the cement on the 3rd casing string must come to surface.

❖ **Special Capitan Reef requirements.** If lost circulation (50% or greater) occurs below the Base of the Salt, the operator shall do the following:
**(Use this for 3 string wells in the Capitan Reef, if 4 string well ensure FW based mud used across the Capitan interval)**

- Switch to fresh water mud to protect the Capitan Reef and use fresh water mud until setting the intermediate casing. The appropriate BLM office is to be notified for a PET to witness the switch to fresh water.

- Daily drilling reports from the Base of the Salt to the setting of the intermediate casing are to be submitted to the BLM CFO engineering staff via e-mail by 0800 hours each morning. Any lost circulation encountered is to be recorded on these drilling reports. The daily drilling report should show mud volume per shift/tour. Failure to submit these reports will result in an Incidence of Non-Compliance being issued for failure to comply with the Conditions of Approval. If not already planned, the operator shall run a caliper survey for the intermediate well bore and submit to the appropriate BLM office.

3. The minimum required fill of cement behind the **7** inch production casing is:
   - Cement should tie-back at least **50 feet(4950ft)** on top of Capitan Reef top. If cement does not circulate see B.1.a, c-d above.

**Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst, and Capitan Reef.**

4. The minimum required fill of cement behind the **4-1/2** inch production liner is:
   - Cement should tie-back **100 feet** into the previous casing. Operator shall provide method of verification. **Excess calculates to 9%. Additional cement maybe required.**

## C. PRESSURE CONTROL

1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).

2. Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the casing shoe shall be **5000 (5M)** psi.

a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.

b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.

c. Manufacturer representative shall install the test plug for the initial BOP test.

d. If the cement does not circulate and one-inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.

e. Whenever any seal subject to test pressure is broken, all the tests in 43 CFR 3172 must be followed.

## D. SPECIAL REQUIREMENT (S)

**Communitization Agreement**

- The operator will submit a Communitization Agreement to the Santa Fe Office, 301 Dinosaur Trail Santa Fe, New Mexico 87508, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.
- The operator will submit an as-drilled survey well plat of the well completion, but are not limited to, those specified in 43 CFR 3171 and 3172.
- If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.
- In addition, the well sign shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

**Offline Cementing**
Contact the BLM prior to the commencement of any offline cementing procedure.

# GENERAL REQUIREMENTS

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

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

☒ Eddy County
Email **or** call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, **BLM_NM_CFO_DrillingNotifications@BLM.GOV**
(575) 361-2822

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

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.

   a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
   b. When the operator proposes to set surface casing with Spudder Rig
      - Notify the BLM when moving in and removing the Spudder Rig.
      - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
      - BOP/BOPE test to be conducted per **43 CFR part 3170 Subpart 3172** as soon as 2nd Rig is rigged up on well.

2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.

3. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a

digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.

2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log. The casing intergrity test can be done (prior to the cement setting up) immediately after bumping the plug.

3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.

4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.

5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.

7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in **43 CFR part 3170 Subpart 3172** and **API STD 53 Sec. 5.3**.

2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.

3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.

4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:

    a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
    b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
    c. Manufacturer representative shall install the test plug for the initial BOP test.
    d. Whenever any seal subject to test pressure is broken, all the tests in **43 CFR part 3170 Subpart 3172** must be followed.
    e. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.

5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

    a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after

installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead cement), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

b. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the cement plug. The BOPE test can be initiated after bumping the cement plug with the casing valve open. (only applies to single stage cement jobs, prior to the cement setting up.)

c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer and can be initiated immediately with the casing valve open. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to **43 CFR part 3170 Subpart 3172** with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).

d. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.

e. The results of the test shall be reported to the appropriate BLM office.

f. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.

g. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.

h. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per **43 CFR**

**part 3170 Subpart 3172**.

C. DRILLING MUD

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

D. WASTE MATERIAL AND FLUIDS

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

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

**ZS 9/14/2023**





**Approval Date: 09/18/2023**

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

# Operator Certification Data Report

01/25/2024

## Operator

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

**NAME:** AMITHY CRAWFORD **Signed on:** 03/09/2022

**Title:** Regulatory Analyst

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

**City:** MIDLAND **State:** TX **Zip:** 79701

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

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

## Field

**Representative Name:**

**Street Address:**

**City:** **State:** **Zip:**

**Phone:**

**Email address:**

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

# Application Data
01/25/2024

**APD ID:** 10400083750
**Submission Date:** 03/17/2022
**Operator Name:** CIMAREX ENERGY COMPANY
**Well Name:** LOOSEY GOOSEY 4-9 FED COM
**Well Number:** 301H
**Well Type:** OIL WELL
**Well Work Type:** Drill

Highlighted data reflects the most recent changes
Show Final Text

## Section 1 - General

**APD ID:** 10400083750
**Tie to previous NOS?** N
**Submission Date:** 03/17/2022
**BLM Office:** Carlsbad
**User:** AMITHY CRAWFORD
**Title:** Regulatory Analyst
**Federal/Indian APD:** FED
**Is the first lease penetrated for production Federal or Indian?** FED
**Lease number:** NMNM065607
**Lease Acres:**
**Surface access agreement in place?**
**Allotted?**
**Reservation:**
**Agreement in place?** NO
**Federal or Indian agreement:**
**Agreement number:**
**Agreement name:**
**Keep application confidential?** Y
**Permitting Agent?** NO
**APD Operator:** CIMAREX ENERGY COMPANY
**Operator letter of**

## Operator Info

**Operator Organization Name:** CIMAREX ENERGY COMPANY
**Operator Address:** 6001 DEAUVILLE BLVD STE 300N
**Zip:** 79706
**Operator PO Box:**
**Operator City:** MIDLAND
**State:** TX
**Operator Phone:** (303)295-3995
**Operator Internet Address:** hknauls@cimarex.com

## Section 2 - Well Information

**Well in Master Development Plan?** NO
**Master Development Plan name:**
**Well in Master SUPO?** NO
**Master SUPO name:**
**Well in Master Drilling Plan?** NO
**Master Drilling Plan name:**
**Well Name:** LOOSEY GOOSEY 4-9 FED COM
**Well Number:** 301H
**Well API Number:**
**Field/Pool or Exploratory?** Field and Pool
**Field Name:** QUAIL RIDGE
**Pool Name:** [50460] BONE SPRING

**Operator Name:** CIMAREX ENERGY COMPANY

**Well Name:** LOOSEY GOOSEY 4-9 FED COM **Well Number:** 301H

**Is the proposed well in an area containing other mineral resources?** USEABLE WATER,NATURAL GAS,OIL

**Is the proposed well in a Helium production area?** N **Use Existing Well Pad?** N **New surface disturbance?**

**Type of Well Pad:** MULTIPLE WELL **Multiple Well Pad Name:** Loosey Goosey 4-9 Fed Com **Number:** E2W2

**Well Class:** HORIZONTAL **Number of Legs:** 1

**Well Work Type:** Drill

**Well Type:** OIL WELL

**Describe Well Type:**

**Well sub-Type:** INFILL

**Describe sub-type:**

**Distance to town:** 26 Miles **Distance to nearest well:** 20 FT **Distance to lease line:** 484 FT

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

**Well plat:** Loosey_Goosey_4_9_Fed_Com_301H_C102_20230814_20230814141144.pdf

**Well work start Date:** 10/31/2022 **Duration:** 30 DAYS

## Section 3 - Well Location Table

**Survey Type:** RECTANGULAR

**Describe Survey Type:**

**Datum:** NAD83 **Vertical Datum:** NAVD88

**Survey number:** **Reference Datum:** GROUND LEVEL

| Wellbore | NS-Foot | NS Indicator | EW-Foot | EW Indicator | Twsp | Range | Section | Aliquot/Lot/Tract | Latitude | Longitude | County | State | Meridian | Lease Type | Lease Number | Elevation | MD | TVD | Will this well produce from this |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SHL Leg #1 | 1189 | FSL | 1464 | FWL | 19S | 34E | 33 | Aliquot SESW | 32.612713 | -103.569011 | LEA | NEW MEXICO | NEW MEXICO | F | NMNM 94622 | 3659 | 0 | 0 | N |
| KOP Leg #1 | 1189 | FSL | 1464 | FWL | 19S | 34E | 33 | Aliquot SESW | 32.612713 | -103.569011 | LEA | NEW MEXICO | NEW MEXICO | F | NMNM 94622 | -6578 | 10402 | 10237 | N |
| PPP Leg #1-1 | 100 | FNL | 706 | FWL | 20S | 34E | 4 | Aliquot NWNW | 32.609168 | -103.57146 | LEA | NEW MEXICO | NEW MEXICO | F | NMLC065607 | -7171 | 11452 | 10830 | Y |

**Operator Name:** CIMAREX ENERGY COMPANY

**Well Name:** LOOSEY GOOSEY 4-9 FED COM **Well Number:** 301H

| Wellbore | NS-Foot | NS Indicator | EW-Foot | EW Indicator | Twsp | Range | Section | Aliquot/Lot/Tract | Latitude | Longitude | County | State | Meridian | Lease Type | Lease Number | Elevation | MD | TVD | Will this well produce from this |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PPP Leg #1-2 | 2639 | FNL | 720 | FWL | 20S | 34E | 4 | Aliquot NWSW | 32.602187 | -103.571489 | LEA | NEW MEXICO | NEW MEXICO | F | NMLC064194 | -7171 | 13270 | 10830 | Y |
| EXIT Leg #1 | 100 | FSL | 706 | FWL | 20S | 34E | 9 | Aliquot SWSW | 32.580692 | -103.571578 | LEA | NEW MEXICO | NEW MEXICO | F | NMLC064194 | -7171 | 21091 | 10830 | Y |
| BHL Leg #1 | 100 | FSL | 706 | FWL | 20S | 34E | 9 | Aliquot SWSW | 32.580692 | -103.571578 | LEA | NEW MEXICO | NEW MEXICO | F | NMLC064194 | -7171 | 21091 | 10830 | Y |

Intent ☐ As Drilled ☐

| API # |
|---|

| Operator Name: | Property Name: | Well Number |
|---|---|---|
| | | |

Kick Off Point (KOP)

| UL | Section | Township | Range | Lot | Feet | From N/S | Feet | From E/W | County |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |

| Latitude | Longitude | NAD |
|---|---|---|
| | | |

First Take Point (FTP)

| UL | Section | Township | Range | Lot | Feet | From N/S | Feet | From E/W | County |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |

| Latitude | Longitude | NAD |
|---|---|---|
| | | |

Last Take Point (LTP)

| UL | Section | Township | Range | Lot | Feet | From N/S | Feet | From E/W | County |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |

| Latitude | Longitude | NAD |
|---|---|---|
| | | |

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

Is this well an infill well? ☐

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

| API # |
|---|

| Operator Name: | Property Name: | Well Number |
|---|---|---|
| | | |

Estimated Formation Tops

| Formation: | Top: | Formation: | Top: |
|---|---|---|---|
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BUREAU OF LAND MANAGEMENT

# Drilling Plan Data Report
01/25/2024

**APD ID:** 10400083750
**Submission Date:** 03/17/2022

**Operator Name:** CIMAREX ENERGY COMPANY

**Well Name:** LOOSEY GOOSEY 4-9 FED COM
**Well Number:** 301H

**Well Type:** OIL WELL
**Well Work Type:** Drill

Highlighted data reflects the most recent changes

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## Section 1 - Geologic Formations

| Formation ID | Formation Name | Elevation | True Vertical | Measured Depth | Lithologies | Mineral Resources | Producing Formatio |
|---|---|---|---|---|---|---|---|
| 12144248 | RUSTLER | 0 | 1543 | 1543 | ANHYDRITE, SANDSTONE | USEABLE WATER | N |
| 12144249 | TOP SALT | -1632 | 1632 | 1632 | ANHYDRITE | NONE | N |
| 12144250 | BASE OF SALT | -3225 | 3225 | 3225 | ANHYDRITE | NONE | N |
| 12144251 | LAMAR | -5214 | 5214 | 5214 | SANDSTONE | NONE | N |
| 12144252 | BELL CANYON | -5286 | 5286 | 5286 | SANDSTONE | NONE | N |
| 12144253 | CHERRY CANYON | -5740 | 5740 | 5740 | SANDSTONE | NONE | N |
| 12144254 | BRUSHY CANYON | -6672 | 6672 | 6672 | SANDSTONE | NATURAL GAS, OIL | N |
| 12144255 | BONE SPRING | -8200 | 8200 | 8200 | LIMESTONE | NATURAL GAS, OIL | N |
| 12144256 | BONE SPRING 1ST | -9376 | 9376 | 9376 | SHALE | NATURAL GAS, OIL | N |
| 12144257 | BONE SPRING 2ND | -9928 | 9928 | 9928 | SANDSTONE | NATURAL GAS, OIL | Y |

## Section 2 - Blowout Prevention

**Pressure Rating (PSI):** 2M
**Rating Depth:** 5236

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

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

**Testing Procedure:** A multi-bowl wellhead system will be utilized. After running the 13 3/8" surface casing, a 13 3/8" BOP/BOPE system with a minimum working pressure of 2000 psi will be installed on the wellhead system and will be pressure tested to 250 psi low followed by a 2000 psi test. Annular will be tested to 100%

**Operator Name:** CIMAREX ENERGY COMPANY

**Well Name:** LOOSEY GOOSEY 4-9 FED COM **Well Number:** 301H

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

**Choke Diagram Attachment:**

Loosey_Goosey_4_9_Fed_Com_301H_Choke_2M_3M_20220309151524.pdf

**BOP Diagram Attachment:**

Loosey_Goosey_4_9_Fed_Com_301H_BOP_2M_20220309151529.pdf

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**Pressure Rating (PSI):** 3M **Rating Depth:** 11152

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

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

**Testing Procedure:** A multi-bowl wellhead system will be utilized. After running the 13 3/8" surface casing, a 13 3/8 BOP/BOPE system with a minimum working pressure of 3000 psi will be installed on the wellhead system and will be pressure tested to 250 psi low followed by a 3000 psi test. Annular will be tested to 100% of working pressure. The pressure test will be repeated at least every 30 days, as per Onshore Order No. 2. The multi-bowl wellhead will be installed by vendors representative. A copy of the installation instructions has been sent to the BLM field office. The wellhead will be installed by a third-party welder, monitored by the wellhead vendor representative. .All BOP equipment will be tested utilizing a conventional test plug. Not a cup or J-packer type. A solid steel body pack-off will be utilized after running and cementing the intermediate casing. After installation the pack-off and lower flange will be pressure tested to 3000 psi. Slips will be utilized after running and cementing the production casing. After installation of the slips and wellhead on the production casing, a 13 5/8 BOP/BOPE system with a minimum working pressure of 3000 psi will be installed on the wellhead system and will be pressure tested to 250 psi low followed by a 3000 psi test. Annular will be tested to 100% of working pressure. The pressure test will be repeated at least every 30 days, as per Onshore Order No. 2. The surface casing string will be tested as per Onshore Order No. 2 to at least 0.22 psi/ft or 1500 psi, whichever is greater. The casing string utilizing steel body pack-off will be tested to 70% of casing burst. If well conditions dictate conventional slips will be set and BOPE will be tested to appropriate pressures based on permitted pressure requirements.

**Choke Diagram Attachment:**

Loosey_Goosey_4_9_Fed_Com_301H_Choke_2M_3M_20220309151635.pdf

**BOP Diagram Attachment:**

Loosey_Goosey_4_9_Fed_Com_BOP_3M_20220309151644.pdf

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**Operator Name:** CIMAREX ENERGY COMPANY

**Well Name:** LOOSEY GOOSEY 4-9 FED COM **Well Number:** 301H

**Pressure Rating (PSI):** 5M **Rating Depth:** 21091

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

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

**Testing Procedure:** A multi-bowl wellhead system will be utilized. After running the 13 3/8" surface casing, a 13 3/8 BOP/BOPE system with a minimum working pressure of 5000 psi will be installed on the wellhead system and will be pressure tested to 250 psi low followed by a 5000 psi test. Annular will be tested to 100% of working pressure. The pressure test will be repeated at least every 30 days, as per Onshore Order No. 2. The multi-bowl wellhead will be installed by vendors representative. A copy of the installation instructions has been sent to the BLM field office. The wellhead will be installed by a third-party welder, monitored by the wellhead vendor representative. .All BOP equipment will be tested utilizing a conventional test plug. Not a cup or J-packer type. A solid steel body pack-off will be utilized after running and cementing the intermediate casing. After installation the pack-off and lower flange will be pressure tested to 5000 psi. Slips will be utilized after running and cementing the production casing. After installation of the slips and wellhead on the production casing, a 13 5/8 BOP/BOPE system with a minimum working pressure of 5000 psi will be installed on the wellhead system and will be pressure tested to 250 psi low followed by a 5000 psi test. Annular will be tested to 100% of working pressure. The pressure test will be repeated at least every 30 days, as per Onshore Order No. 2. The surface casing string will be tested as per Onshore Order No. 2 to at least 0.22 psi/ft or 1500 psi, whichever is greater. The casing string utilizing steel body pack-off will be tested to 70% of casing burst. If well conditions dictate conventional slips will be set and BOPE will be tested to appropriate pressures based on permitted pressure requirements.

**Choke Diagram Attachment:**

Loosey_Goosey_4_9_Fed_Com_301H_Choke_5M_20220309151813.pdf

**BOP Diagram Attachment:**

Loosey_Goosey_4_9_Fed_Com_301H_BOP_5M_20220309151822.pdf

## Section 3 - Casing

| Casing ID | String Type | Hole Size | Csg Size | Condition | Standard | Tapered String | Top Set MD | Bottom Set MD | Top Set TVD | Bottom Set TVD | Top Set MSL | Bottom Set MSL | Calculated casing length MD | Grade | Weight | Joint Type | Collapse SF | Burst SF | Joint SF Type | Joint SF | Body SF Type | Body SF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | SURFACE | 17.5 | 13.375 | NEW | API | N | 0 | 1593 | 0 | 1593 | 3659 | 2066 | 1593 | H-40 | 48 | ST&C | 1.12 | 2.51 | BUOY | 4.21 | BUOY | 4.21 |
| 2 | INTERMEDIATE | 12.25 | 9.625 | NEW | API | N | 0 | 5236 | 0 | 5236 | 3750 | -1577 | 5236 | HCK-55 | 40 | LT&C | 1.36 | 1.41 | BUOY | 2.68 | BUOY | 2.68 |
| 3 | PRODUCTION | 8.75 | 7.0 | NEW | API | N | 0 | 10402 | 0 | 10402 | 3750 | -6743 | 10402 | L-80 | 29 | LT&C | 1.44 | 1.68 | BUOY | 1.88 | BUOY | 1.88 |

**Operator Name:** CIMAREX ENERGY COMPANY

**Well Name:** LOOSEY GOOSEY 4-9 FED COM **Well Number:** 301H

| Casing ID | String Type | Hole Size | Csg Size | Condition | Standard | Tapered String | Top Set MD | Bottom Set MD | Top Set TVD | Bottom Set TVD | Top Set MSL | Bottom Set MSL | Calculated casing length MD | Grade | Weight | Joint Type | Collapse SF | Burst SF | Joint SF Type | Joint SF | Body SF Type | Body SF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | PRODUCTION | 8.75 | 7.0 | NEW | API | N | 10402 | 11152 | 10402 | 10791 | -6743 | -7132 | 750 | P-110 | 29 | BUTT | 1.69 | 2.22 | BUOY | 82.35 | BUOY | 82.35 |
| 5 | COMPLETION SYSTEM | 6 | 4.5 | NEW | API | N | 9402 | 21091 | 9402 | 10830 | -5743 | -7171 | 11689 | P-110 | 11.6 | BUTT | 1.5 | 2.11 | BUOY | 22.16 | BUOY | 22.16 |

**Casing Attachments**

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

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

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

Loosey_Goosey_4_9_Fed_Com_301H_Casing_Assumptions_20220309152021.pdf

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

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

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

Loosey_Goosey_4_9_Fed_Com_301H_Casing_Assumptions_20220309152216.pdf

**Operator Name:** CIMAREX ENERGY COMPANY

**Well Name:** LOOSEY GOOSEY 4-9 FED COM **Well Number:** 301H

**Casing Attachments**

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

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

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

Loosey_Goosey_4_9_Fed_Com_301H_Casing_Assumptions_20220309152101.pdf

**Casing ID:** 4 **String** PRODUCTION

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

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

Loosey_Goosey_4_9_Fed_Com_301H_Casing_Assumptions_20220309152138.pdf

**Casing ID:** 5 **String** COMPLETION SYSTEM

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

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

Loosey_Goosey_4_9_Fed_Com_301H_Casing_Assumptions_20220309152254.pdf

## Section 4 - Cement

**Operator Name:** CIMAREX ENERGY COMPANY

**Well Name:** LOOSEY GOOSEY 4-9 FED COM **Well Number:** 301H

| String Type | Lead/Tail | Stage Tool Depth | Top MD | Bottom MD | Quantity(sx) | Yield | Density | Cu Ft | Excess% | Cement type | Additives |
|---|---|---|---|---|---|---|---|---|---|---|---|
| PRODUCTION | Lead | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SURFACE | Lead | | 0 | 1593 | 772 | 1.72 | 13.5 | 1327 | 45 | Class C | Bentonite |
| SURFACE | Tail | | 0 | 1593 | 207 | 1.34 | 14.8 | 277 | 45 | Class C | LCM |
| INTERMEDIATE | Lead | | 0 | 5236 | 980 | 1.88 | 12.9 | 1842 | 53 | 35:65 (Poz:C) | Salt, Bentonite |
| INTERMEDIATE | Tail | | 0 | 5236 | 292 | 1.34 | 14.8 | 391 | 53 | Class C | LCM |
| PRODUCTION | Lead | | 0 | 11152 | 327 | 3.64 | 10.3 | 1070 | 25 | Tuned Light | LCM |
| PRODUCTION | Tail | | 0 | 11152 | 127 | 1.34 | 14.8 | 170 | 25 | Class C | LCM |
| COMPLETION SYSTEM | Lead | | 9402 | 21091 | 723 | 1.3 | 14.2 | 939 | 10 | 50:50 (Poz:H) | Salt + Bentonite + Fluid Loss + Dispersant + SMS |

## Section 5 - Circulating Medium

**Mud System Type:** Closed

**Will an air or gas system be Used?** NO

**Description of the equipment for the circulating system in accordance with Onshore Order #2:**

**Diagram of the equipment for the circulating system in accordance with Onshore Order #2:**

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

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

## Circulating Medium Table

**Operator Name:** CIMAREX ENERGY COMPANY

**Well Name:** LOOSEY GOOSEY 4-9 FED COM **Well Number:** 301H

| Top Depth | Bottom Depth | Mud Type | Min Weight (lbs/gal) | Max Weight (lbs/gal) | Density (lbs/cu ft) | Gel Strength (lbs/100 sqft) | PH | Viscosity (CP) | Salinity (ppm) | Filtration (cc) | Additional Characteristics |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 1593 | OTHER : Fresh Water | 7.83 | 8.33 | | | | | | | |
| 1593 | 5236 | SALT SATURATED | 9.8 | 10.3 | | | | | | | |
| 5236 | 11152 | OTHER : Cut Brine or OBM | 8.5 | 9 | | | | | | | |
| 11152 | 21091 | OIL-BASED MUD | 8.5 | 9 | | | | | | | |

## Section 6 - Test, Logging, Coring

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

No DST Planned

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

COMPENSATED NEUTRON LOG,DIRECTIONAL SURVEY,GAMMA RAY LOG,

**Coring operation description for the well:**

N/A

## Section 7 - Pressure

**Anticipated Bottom Hole Pressure:** 5068 **Anticipated Surface Pressure:** 2685

**Anticipated Bottom Hole Temperature(F):** 177

**Anticipated abnormal pressures, temperatures, or potential geologic hazards?** YES

**Describe:**

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

**Contingency Plans geoharzards description:**

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

**Contingency Plans geohazards**

**Hydrogen Sulfide drilling operations plan required?** YES

**Hydrogen sulfide drilling operations**

Loosey_Goosey_4_9_Fed_Com_301H_H2S_Plan_20220309152901.pdf

**Operator Name:** CIMAREX ENERGY COMPANY

**Well Name:** LOOSEY GOOSEY 4-9 FED COM **Well Number:** 301H

## Section 8 - Other Information

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

Loosey_Goosey_4_9_Fed_Com_301H_Prelim_Driectional___AC_Report_20220309152923.pdf

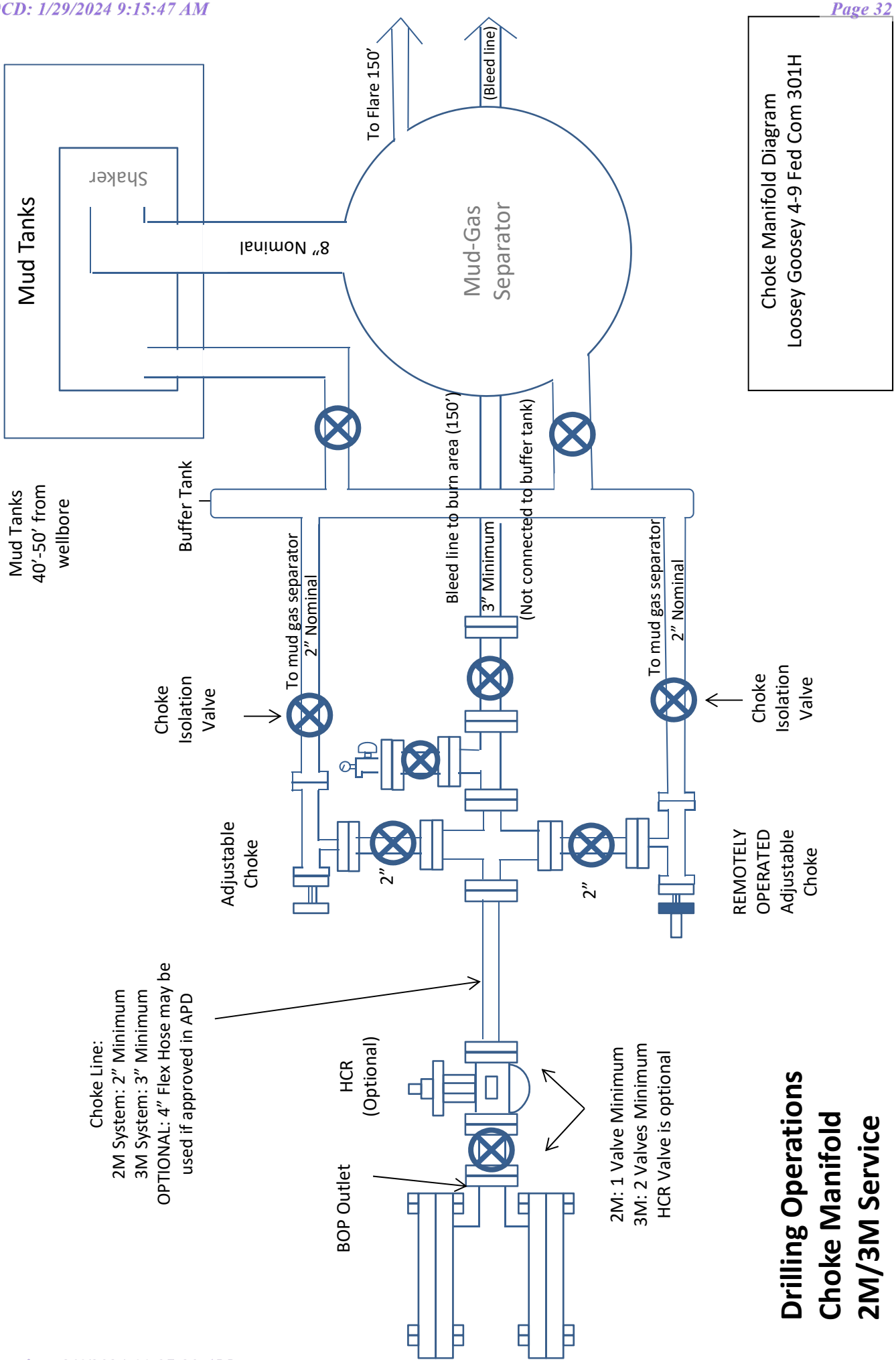
**Other proposed operations facets description:**

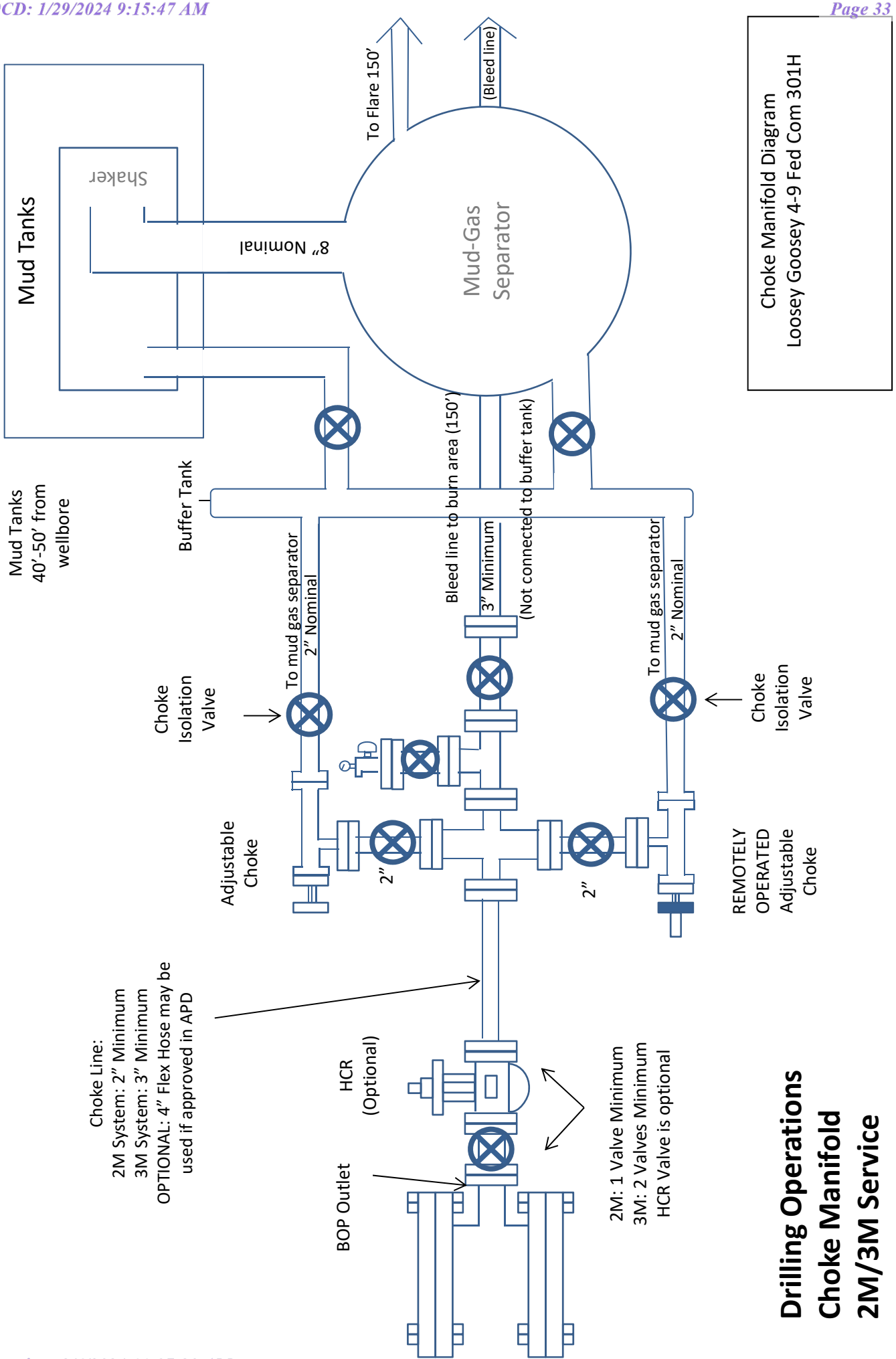
**Other proposed operations facets attachment:**

Loosey_Goosey_4_9_Fed_Com_301H_Drilling_Plan_20220309152942.pdf

**Other Variance attachment:**

Offline_Cement_Procedure_20220126145421.pdf
Loosey_Goosey_4_9_Fed_Com_301H_H2S_Plan_20220309153200.pdf
Loosey_Goosey_4_9_Fed_Com_301H_Flex_Hose_20220309153213.pdf


Choke Manifold Diagram
Loosey Goosey 4-9 Fed Com 301H
Mud Tanks
Shaker
8" Nominal
Mud-Gas Separator
To Flare 150'
(Bleed line)
Mud Tanks 40'-50' from wellbore
Buffer Tank
Bleed line to burn area (150')
3" Minimum
(Not connected to buffer tank)
To mud gas separator
2" Nominal
To mud gas separator
2" Nominal
Choke Isolation Valve
Choke Isolation Valve
Adjustable Choke
2"
2"
REMOTELY OPERATED Adjustable Choke
Choke Line:
2M System: 2" Minimum
3M System: 3" Minimum
OPTIONAL: 4" Flex Hose may be used if approved in APD
HCR (Optional)
BOP Outlet
2M: 1 Valve Minimum
3M: 2 Valves Minimum
HCR Valve is optional
Drilling Operations
Choke Manifold
2M/3M Service


Choke Manifold Diagram
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Mud Tanks 40'-50' from wellbore
Buffer Tank
Bleed line to burn area (150')
(Not connected to buffer tank)
3" Minimum
To mud gas separator 2" Nominal
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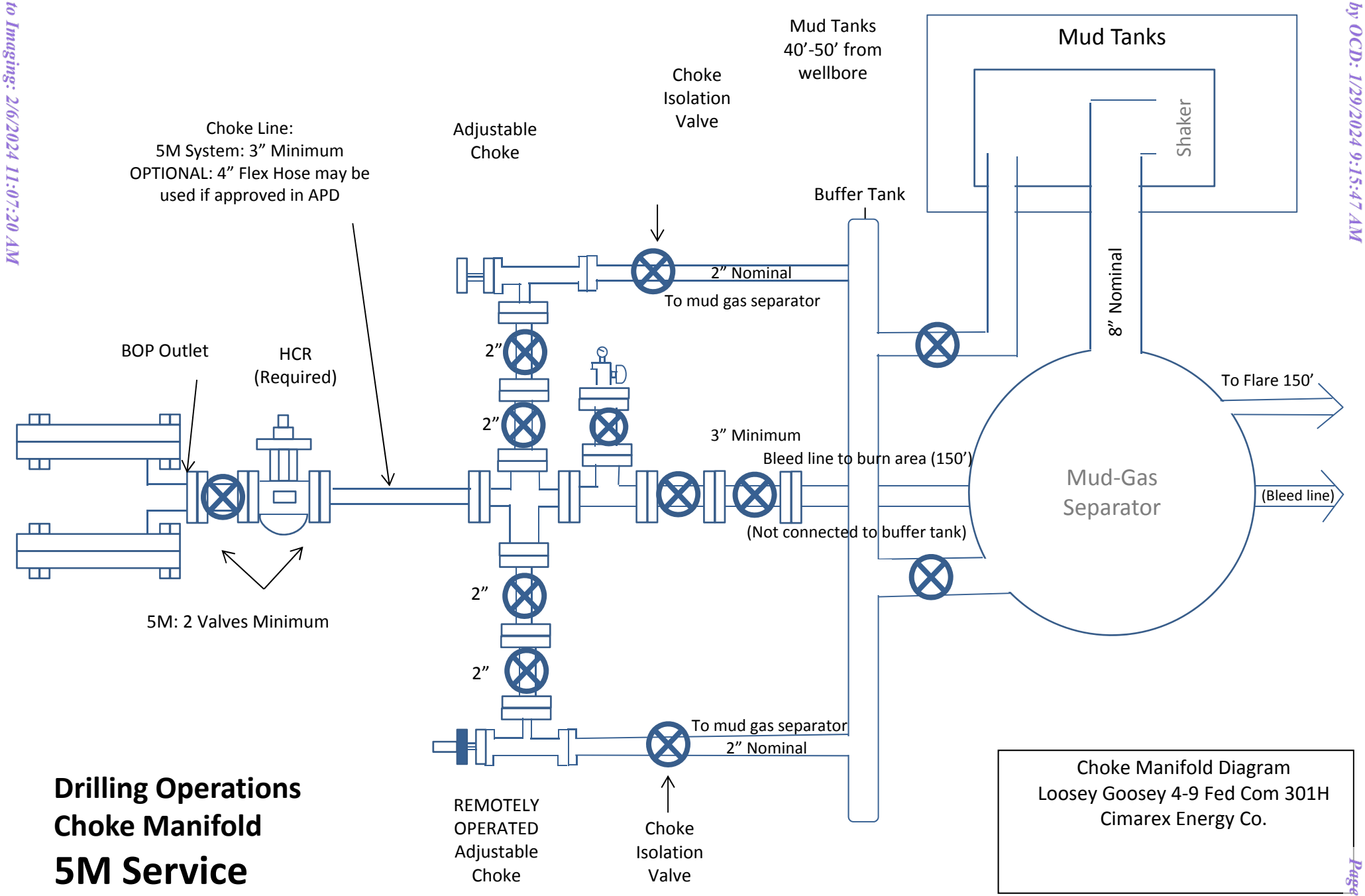
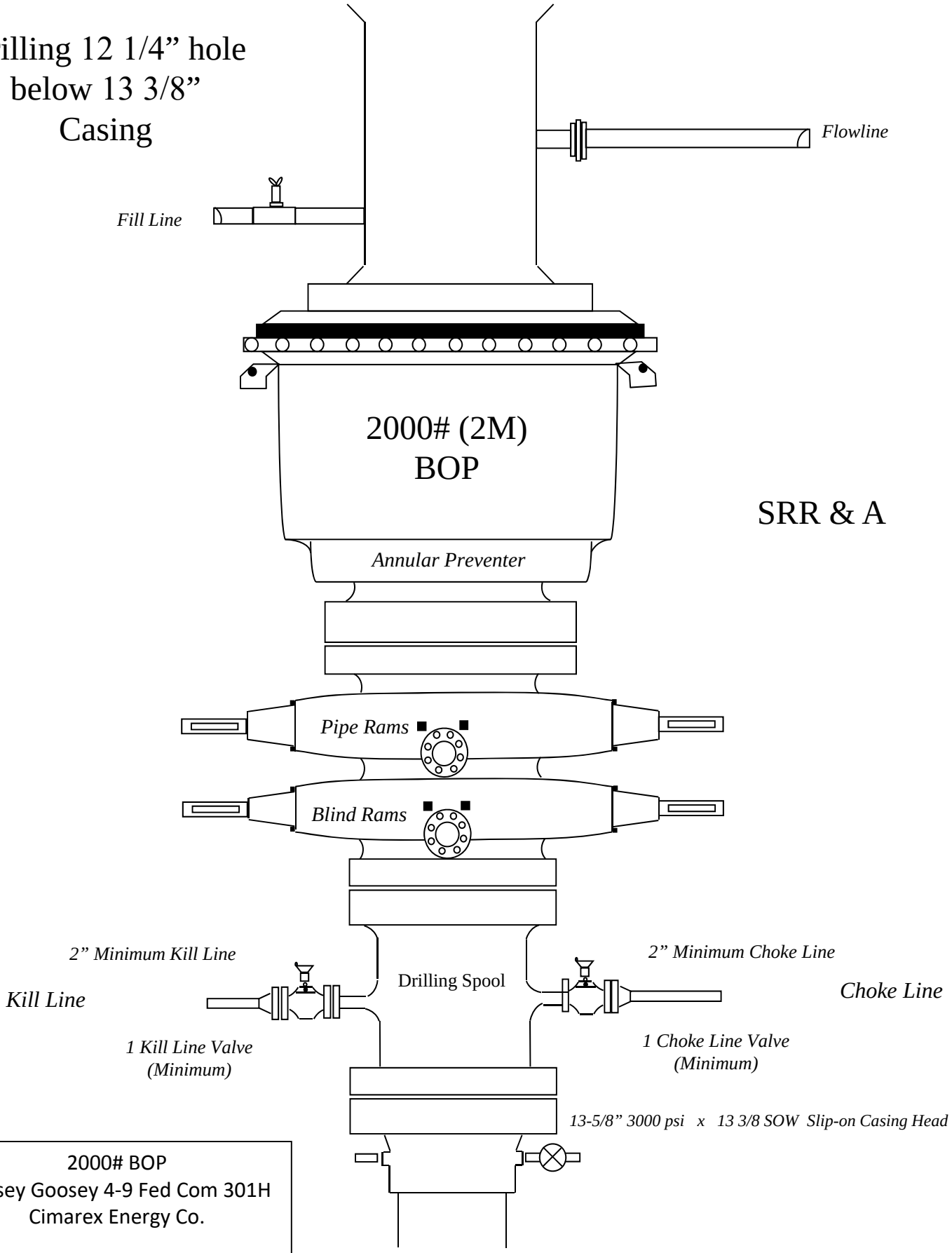
Choke Isolation Valve
Choke Isolation Valve
Adjustable Choke
REMOTELY OPERATED Adjustable Choke
2"
2"
Choke Line:
2M System: 2" Minimum
3M System: 3" Minimum
OPTIONAL: 4" Flex Hose may be used if approved in APD
HCR (Optional)
BOP Outlet
2M: 1 Valve Minimum
3M: 2 Valves Minimum
HCR Valve is optional
Drilling Operations
Choke Manifold
2M/3M Service




**Drilling Operations**
**Choke Manifold**
**5M Service**

Choke Manifold Diagram
Loosey Goosey 4-9 Fed Com 301H
Cimarex Energy Co.

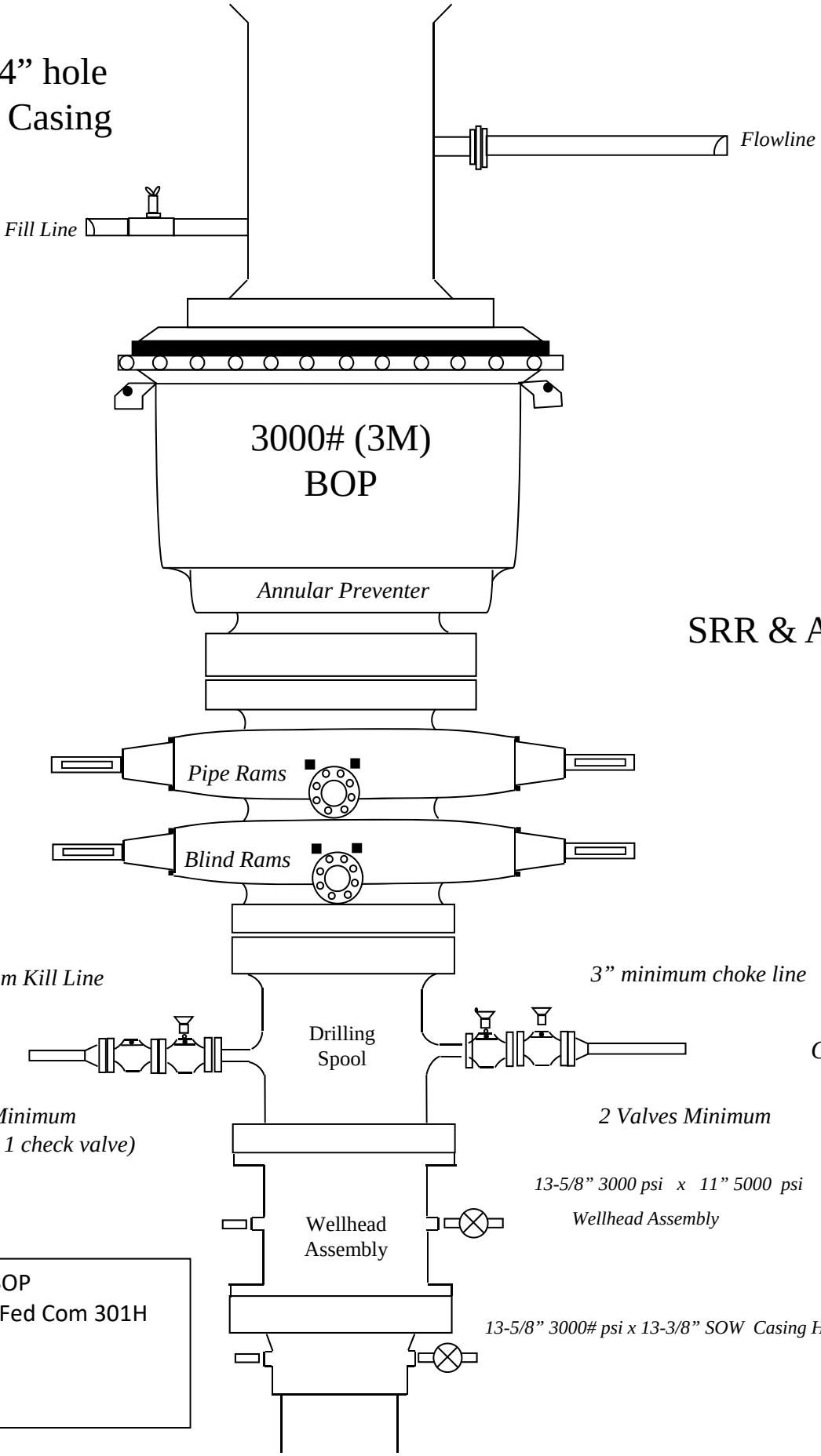
Drilling 12 1/4" hole below 13 3/8" Casing




SRR & A

2000# BOP
Loosey Goosey 4-9 Fed Com 301H
Cimarex Energy Co.

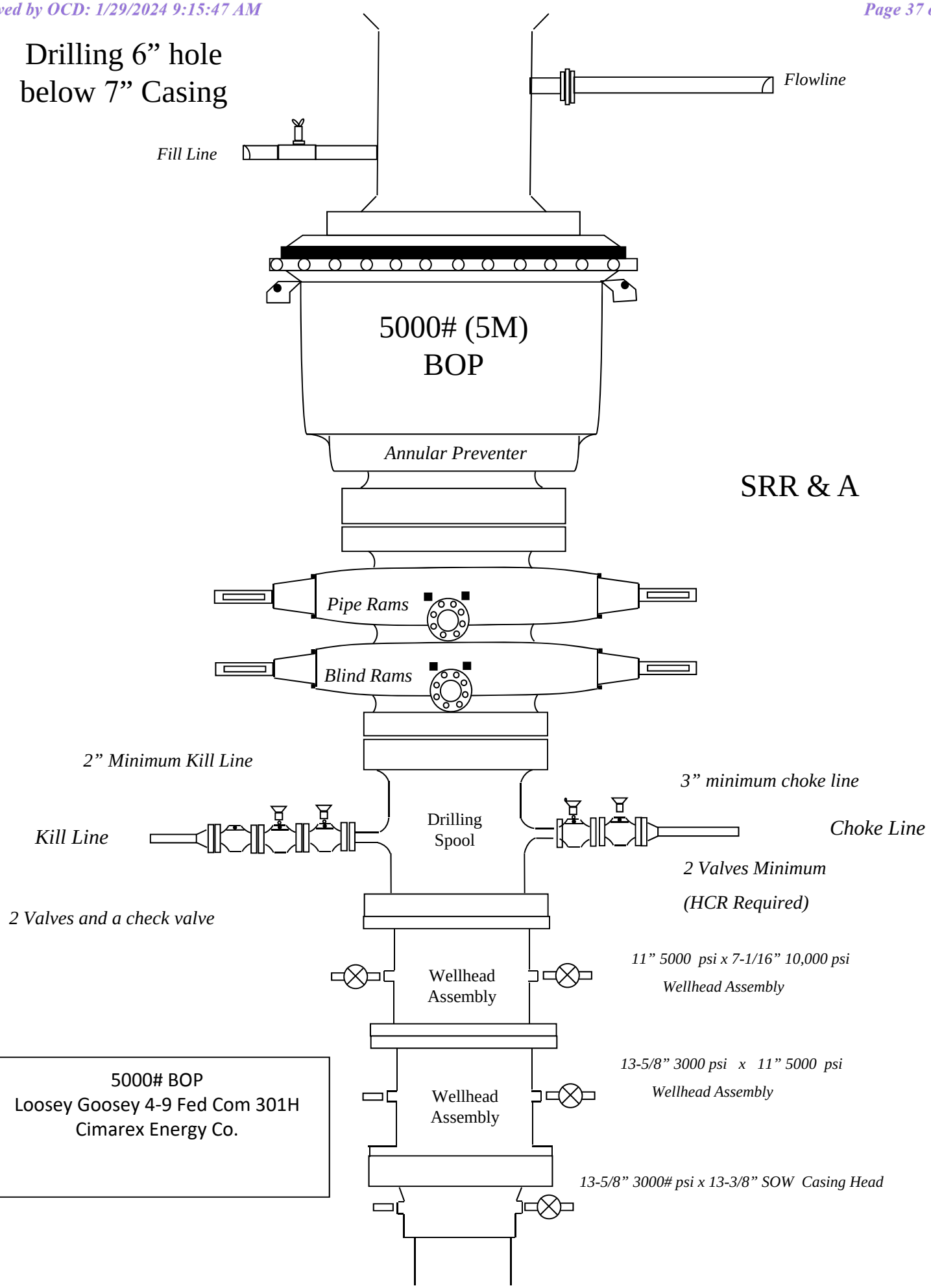
Drilling 8-3/4" hole
below 9 5/8" Casing




SRR & A

3000# BOP
Loosey Goosey 4-9 Fed Com 301H

# Drilling 6” hole below 7” Casing




SRR & A

5000# BOP
Loosey Goosey 4-9 Fed Com 301H
Cimarex Energy Co.

# Loosey Goosey 4-9 Fed Com 301H

Casing Assumptions

| 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 | 1593 | 1593 | 13-3/8" | 48.00 | H-40 | ST&C | 1.12 | 2.51 | 4.21 |
| 12 1/4 | 0 | 5236 | 5236 | 9-5/8" | 40.00 | HCK-55 | LT&C | 1.36 | 1.41 | 2.68 |
| 8 3/4 | 0 | 10402 | 10402 | 7" | 29.00 | L-80 | LT&C | 1.44 | 1.68 | 1.88 |
| 8 3/4 | 10402 | 11152 | 10791 | 7" | 29.00 | P-110 | BT&C | 1.69 | 2.22 | 82.35 |
| 6 | 9402 | 21091 | 10830 | 4-1/2" | 11.60 | P-110 | BT&C | 1.50 | 2.11 | 22.16 |
| | | | | | | BLM Minimum Safety Factor | | 1.125 | 1 | 1.6 Dry<br>1.8 Wet |

# Loosey Goosey 4-9 Fed Com 301H

Casing Assumptions

| 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 | 1593 | 1593 | 13-3/8" | 48.00 | H-40 | ST&C | 1.12 | 2.51 | 4.21 |
| 12 1/4 | 0 | 5236 | 5236 | 9-5/8" | 40.00 | HCK-55 | LT&C | 1.36 | 1.41 | 2.68 |
| 8 3/4 | 0 | 10402 | 10402 | 7" | 29.00 | L-80 | LT&C | 1.44 | 1.68 | 1.88 |
| 8 3/4 | 10402 | 11152 | 10791 | 7" | 29.00 | P-110 | BT&C | 1.69 | 2.22 | 82.35 |
| 6 | 9402 | 21091 | 10830 | 4-1/2" | 11.60 | P-110 | BT&C | 1.50 | 2.11 | 22.16 |
| | | | | | | BLM Minimum Safety Factor | | 1.125 | 1 | 1.6 Dry<br>1.8 Wet |

# Loosey Goosey 4-9 Fed Com 301H

Casing Assumptions

| 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 | 1593 | 1593 | 13-3/8" | 48.00 | H-40 | ST&C | 1.12 | 2.51 | 4.21 |
| 12 1/4 | 0 | 5236 | 5236 | 9-5/8" | 40.00 | HCK-55 | LT&C | 1.36 | 1.41 | 2.68 |
| 8 3/4 | 0 | 10402 | 10402 | 7" | 29.00 | L-80 | LT&C | 1.44 | 1.68 | 1.88 |
| 8 3/4 | 10402 | 11152 | 10791 | 7" | 29.00 | P-110 | BT&C | 1.69 | 2.22 | 82.35 |
| 6 | 9402 | 21091 | 10830 | 4-1/2" | 11.60 | P-110 | BT&C | 1.50 | 2.11 | 22.16 |
| | | | | | | BLM Minimum Safety Factor | | 1.125 | 1 | 1.6 Dry<br>1.8 Wet |

# Loosey Goosey 4-9 Fed Com 301H

Casing Assumptions

| 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 | 1593 | 1593 | 13-3/8" | 48.00 | H-40 | ST&C | 1.12 | 2.51 | 4.21 |
| 12 1/4 | 0 | 5236 | 5236 | 9-5/8" | 40.00 | HCK-55 | LT&C | 1.36 | 1.41 | 2.68 |
| 8 3/4 | 0 | 10402 | 10402 | 7" | 29.00 | L-80 | LT&C | 1.44 | 1.68 | 1.88 |
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| 6 | 9402 | 21091 | 10830 | 4-1/2" | 11.60 | P-110 | BT&C | 1.50 | 2.11 | 22.16 |
| | | | | | | BLM Minimum Safety Factor | | 1.125 | 1 | 1.6 Dry<br>1.8 Wet |

# Loosey Goosey 4-9 Fed Com 301H

Casing Assumptions

| 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 | 1593 | 1593 | 13-3/8" | 48.00 | H-40 | ST&C | 1.12 | 2.51 | 4.21 |
| 12 1/4 | 0 | 5236 | 5236 | 9-5/8" | 40.00 | HCK-55 | LT&C | 1.36 | 1.41 | 2.68 |
| 8 3/4 | 0 | 10402 | 10402 | 7" | 29.00 | L-80 | LT&C | 1.44 | 1.68 | 1.88 |
| 8 3/4 | 10402 | 11152 | 10791 | 7" | 29.00 | P-110 | BT&C | 1.69 | 2.22 | 82.35 |
| 6 | 9402 | 21091 | 10830 | 4-1/2" | 11.60 | P-110 | BT&C | 1.50 | 2.11 | 22.16 |
| | | | | | | BLM Minimum Safety Factor | | 1.125 | 1 | 1.6 Dry<br>1.8 Wet |

Hydrogen Sulfide Drilling Operations Plan
**Loosey Goosey 4-9 Fed Com 301H**
Cimarex Energy Co.
Lea Co., NM

1 All Company and Contract personnel admitted on location must be trained by a qualified H2S safety instructor to the following:

A. Characteristics of $H_2S$
B. Physical effects and hazards
C. Principal and operation of H2S detectors, warning system and briefing areas.
D. Evacuation procedure, routes and first aid.
E. Proper use of safety equipment & life support systems
F. Essential personnel meeting Medical Evaluation criteria will receive additional training on the proper use of 30 minute pressure demand air packs.

$H_2S$ Detection and Alarm Systems:

A. H2S sensors/detectors to be located on the drilling rig floor, in the base of the sub structure/cellar area, on the mud pits in the shale shaker area. Additional H2S detectors may play placed as deemed necessary.

B. An audio alarm system will be installed on the derrick floor and in the top doghouse.

3 Windsock and/or wind streamers:

A. Windsock at mudpit area should be high enough to be visible.

B. Windsock on the rig floor and / or top doghouse should be high enough to be visible.

4 Condition Flags and Signs

A. Warning sign on access road to location.
B. Flags to be displayed on sign at entrance to location. Green flag indicates normal safe condition. Yellow flag indicates potential pressure and danger. Red flag indicates danger ($H_2S$ present in dangerous concentration). Only H2S trained and certified personnel admitted to location.

5 Well control equipment:

A. See exhibit "E-1"

6 Communication:

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

7 Drillstem Testing:
No DSTs r cores are planned at this time.

8 Drilling contractor supervisor will be required to be familiar with the effects $H_2S$ has on tubular goods and other mechanical equipment.

9 If H2S is encountered, mud system will be altered if necessary to maintain control of formation. A mud gas separator will be brought into service along with H2S scavengers if necessary.

$H_2S$ Contingency Plan
**Loosey Goosey 4-9 Fed Com 301H**
Cimarex Energy Co.
Lea Co., NM

**Emergency Procedures**

In the event of a release of gas containing $H_2S$, the first responder(s) must:

« Isolate the area and prevent entry by other persons into the 100 ppm ROE.
« Evacuate any public places encompassed by the 100 ppm ROE.
« Be equipped with $H_2S$ monitors and air packs in order to control the release.
« Use the "buddy system" to ensure no injuries occur during the 432-620-1975
« Take precautions to avoid personal injury during this operation.
« Contact operator and/or local officials to aid in operation. See list of phone numbers attached.
« Have received training in the:
  · Detection of $H_2S$, and
  · Measures for protection against the gas,
  · Equipment used for protection and emergency response.

**Ignition of Gas Source**

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide ($SO_2$). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally, the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever there is an ignition of the gas.

**Characteristics of $H_2S$ and $SO_2$**

Please see attached International Chemical Safety Cards.

**Contacting Authorities**

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

$H_2S$ Contingency Plan Emergency Contacts
**Loosey Goosey 4-9 Fed Com 301H**
Cimarex Energy Co.
Lea Co., NM

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

**Key Personnel**

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

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

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

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

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

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

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

Schlumberger COTERRA

# Coterra Loosey Goosey 4-9 Fed Com 301H Rev0 kFc 04Feb22 Proposal Geodetic Report

**(Def Plan)**

| | | | |
|---|---|---|---|
| **Report Date:** | February 07, 2022 - 08:45 AM | **Survey / DLS Computation:** | Minimum Curvature / Lubinski |
| **Client:** | COTERRA | **Vertical Section Azimuth:** | 179.790 ° (Grid North) |
| **Field:** | NM Lea County (NAD 83) | **Vertical Section Origin:** | 0.000 ft, 0.000 ft |
| **Structure / Slot:** | Coterra Loosey Goosey 4-9 Pad (west) / 301H | **TVD Reference Datum:** | RKB = 22ft |
| **Well:** | Loosey Goosey 4-9 Fed Com 301H | **TVD Reference Elevation:** | 3681.400 ft above MSL |
| **Borehole:** | Loosey Goosey 4-9 Fed Com 301H | **Seabed / Ground Elevation:** | 3659.400 ft above MSL |
| **UWI / API#:** | Unknown / Unknown | **Magnetic Declination:** | 6.365 ° |
| **Survey Name:** | Coterra Loosey Goosey 4-9 Fed Com 301H Rev0 kFc 04Feb22 | **Total Gravity Field Strength:** | 998.5086mgn (9.80665 Based) |
| **Survey Date:** | February 04, 2022 | **Gravity Model:** | GARM |
| **Tort / AHD / DDI / ERD Ratio:** | 118.252 ° / 11860.816 ft / 6.436 / 1.095 | **Total Magnetic Field Strength:** | 47855.738 nT |
| **Coordinate Reference System:** | NAD83 New Mexico State Plane, Eastern Zone, US Feet | **Magnetic Dip Angle:** | 60.461 ° |
| **Location Lat / Long:** | N 32° 36' 45.76645", W 103° 34' 8.43883" | **Declination Date:** | February 04, 2022 |
| **Location Grid N/E Y/X:** | N 587481.790 ftUS, E 776682.190 ftUS | **Magnetic Declination Model:** | HDGM 2022 |
| **CRS Grid Convergence Angle:** | 0.4120 ° | **North Reference:** | Grid North |
| **Grid Scale Factor:** | 0.99997252 | **Grid Convergence Used:** | 0.4120 ° |
| **Version / Patch:** | 2.10.829.1 | **Total Corr Mag North->Grid North:** | 5.9535 ° |
| | | **Local Coord Referenced To:** | Well Head |

| Comments | MD (ft) | Incl (°) | Azim Grid (°) | TVD (ft) | VSEC (ft) | NS (ft) | EW (ft) | DLS (°/100ft) | Northing (ftUS) | Easting (ftUS) | Latitude (N/S °) | Longitude (E/W °) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SHL [1189' FSL, 1464' FWL] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | N/A | 587481.79 | 776682.19 | N 32.612713 | W 103.569011 |
| | 100.00 | 0.00 | 181.00 | 100.00 | 0.00 | 0.00 | 0.00 | 0.00 | 587481.79 | 776682.19 | N 32.612713 | W 103.569011 |
| | 200.00 | 0.00 | 181.00 | 200.00 | 0.00 | 0.00 | 0.00 | 0.00 | 587481.79 | 776682.19 | N 32.612713 | W 103.569011 |
| | 300.00 | 0.00 | 181.00 | 300.00 | 0.00 | 0.00 | 0.00 | 0.00 | 587481.79 | 776682.19 | N 32.612713 | W 103.569011 |
| | 400.00 | 0.00 | 181.00 | 400.00 | 0.00 | 0.00 | 0.00 | 0.00 | 587481.79 | 776682.19 | N 32.612713 | W 103.569011 |
| | 500.00 | 0.00 | 181.00 | 500.00 | 0.00 | 0.00 | 0.00 | 0.00 | 587481.79 | 776682.19 | N 32.612713 | W 103.569011 |
| | 600.00 | 0.00 | 181.00 | 600.00 | 0.00 | 0.00 | 0.00 | 0.00 | 587481.79 | 776682.19 | N 32.612713 | W 103.569011 |
| | 700.00 | 0.00 | 181.00 | 700.00 | 0.00 | 0.00 | 0.00 | 0.00 | 587481.79 | 776682.19 | N 32.612713 | W 103.569011 |
| | 800.00 | 0.00 | 181.00 | 800.00 | 0.00 | 0.00 | 0.00 | 0.00 | 587481.79 | 776682.19 | N 32.612713 | W 103.569011 |
| | 900.00 | 0.00 | 181.00 | 900.00 | 0.00 | 0.00 | 0.00 | 0.00 | 587481.79 | 776682.19 | N 32.612713 | W 103.569011 |
| | 1000.00 | 0.00 | 181.00 | 1000.00 | 0.00 | 0.00 | 0.00 | 0.00 | 587481.79 | 776682.19 | N 32.612713 | W 103.569011 |
| | 1100.00 | 0.00 | 181.00 | 1100.00 | 0.00 | 0.00 | 0.00 | 0.00 | 587481.79 | 776682.19 | N 32.612713 | W 103.569011 |
| | 1200.00 | 0.00 | 181.00 | 1200.00 | 0.00 | 0.00 | 0.00 | 0.00 | 587481.79 | 776682.19 | N 32.612713 | W 103.569011 |
| Nudge, Build 2°/100ft | 1300.00 | 0.00 | 181.00 | 1300.00 | 0.00 | 0.00 | 0.00 | 0.00 | 587481.79 | 776682.19 | N 32.612713 | W 103.569011 |
| | 1400.00 | 2.00 | 181.00 | 1399.98 | 1.74 | -1.74 | -0.03 | 2.00 | 587480.05 | 776682.16 | N 32.612708 | W 103.569011 |
| | 1500.00 | 4.00 | 181.00 | 1499.84 | 6.98 | -6.98 | -0.12 | 2.00 | 587474.81 | 776682.07 | N 32.612694 | W 103.569011 |
| *Rustler* | *1543.29* | *4.87* | *181.00* | *1543.00* | *10.32* | *-10.32* | *-0.18* | *2.00* | *587471.47* | *776682.01* | *N 32.612685* | *W 103.569012* |
| | 1600.00 | 6.00 | 181.00 | 1599.45 | 15.69 | -15.69 | -0.27 | 2.00 | 587466.10 | 776681.92 | N 32.612670 | W 103.569012 |
| *Top Salt* | *1632.75* | *6.65* | *181.00* | *1632.00* | *19.30* | *-19.30* | *-0.34* | *2.00* | *587462.49* | *776681.85* | *N 32.612660* | *W 103.569012* |
| Hold | 1700.00 | 8.00 | 181.00 | 1698.70 | 27.87 | -27.88 | -0.49 | 2.00 | 587453.92 | 776681.70 | N 32.612636 | W 103.569013 |
| Turn & Build 2°/100ft | 1729.00 | 8.00 | 181.00 | 1727.42 | 31.91 | -31.91 | -0.56 | 0.00 | 587449.88 | 776681.63 | N 32.612625 | W 103.569013 |
| | 1800.00 | 8.74 | 189.36 | 1797.67 | 42.17 | -42.17 | -1.52 | 2.00 | 587439.62 | 776680.67 | N 32.612597 | W 103.569017 |
| | 1900.00 | 10.02 | 198.78 | 1896.33 | 57.89 | -57.91 | -5.56 | 2.00 | 587423.89 | 776676.63 | N 32.612554 | W 103.569030 |
| | 2000.00 | 11.51 | 205.94 | 1994.57 | 75.08 | -75.12 | -12.73 | 2.00 | 587406.67 | 776669.47 | N 32.612507 | W 103.569054 |
| Hold | 2091.60 | 13.00 | 211.00 | 2084.09 | 92.10 | -92.18 | -22.03 | 2.00 | 587389.61 | 776660.16 | N 32.612460 | W 103.569084 |
| | 2100.00 | 13.00 | 211.00 | 2092.27 | 93.71 | -93.80 | -23.00 | 0.00 | 587388.00 | 776659.19 | N 32.612456 | W 103.569088 |
| | 2200.00 | 13.00 | 211.00 | 2189.71 | 112.95 | -113.08 | -34.59 | 0.00 | 587368.71 | 776647.60 | N 32.612403 | W 103.569126 |
| | 2300.00 | 13.00 | 211.00 | 2287.14 | 132.19 | -132.36 | -46.18 | 0.00 | 587349.43 | 776636.02 | N 32.612350 | W 103.569164 |
| | 2400.00 | 13.00 | 211.00 | 2384.58 | 151.43 | -151.64 | -57.76 | 0.00 | 587330.15 | 776624.43 | N 32.612297 | W 103.569202 |
| | 2500.00 | 13.00 | 211.00 | 2482.02 | 170.67 | -170.93 | -69.35 | 0.00 | 587310.87 | 776612.84 | N 32.612245 | W 103.569240 |
| | 2600.00 | 13.00 | 211.00 | 2579.45 | 189.91 | -190.21 | -80.93 | 0.00 | 587291.59 | 776601.26 | N 32.612192 | W 103.569278 |
| | 2700.00 | 13.00 | 211.00 | 2676.89 | 209.15 | -209.49 | -92.52 | 0.00 | 587272.31 | 776589.67 | N 32.612139 | W 103.569316 |
| | 2800.00 | 13.00 | 211.00 | 2774.33 | 228.39 | -228.77 | -104.11 | 0.00 | 587253.03 | 776578.09 | N 32.612086 | W 103.569354 |
| | 2900.00 | 13.00 | 211.00 | 2871.77 | 247.63 | -248.05 | -115.69 | 0.00 | 587233.74 | 776566.50 | N 32.612033 | W 103.569392 |
| | 3000.00 | 13.00 | 211.00 | 2969.20 | 266.87 | -267.34 | -127.28 | 0.00 | 587214.46 | 776554.92 | N 32.611981 | W 103.569430 |
| | 3100.00 | 13.00 | 211.00 | 3066.64 | 286.11 | -286.62 | -138.86 | 0.00 | 587195.18 | 776543.33 | N 32.611928 | W 103.569468 |
| | 3200.00 | 13.00 | 211.00 | 3164.08 | 305.35 | -305.90 | -150.45 | 0.00 | 587175.90 | 776531.75 | N 32.611875 | W 103.569506 |
| *Base Salt (Tansil)* | *3262.53* | *13.00* | *211.00* | *3225.00* | *317.38* | *-317.96* | *-157.69* | *0.00* | *587163.84* | *776524.50* | *N 32.611842* | *W 103.569530* |
| | 3300.00 | 13.00 | 211.00 | 3261.51 | 324.59 | -325.18 | -162.03 | 0.00 | 587156.62 | 776520.16 | N 32.611822 | W 103.569545 |
| | 3400.00 | 13.00 | 211.00 | 3358.95 | 343.82 | -344.46 | -173.62 | 0.00 | 587137.34 | 776508.57 | N 32.611770 | W 103.569583 |
| | 3500.00 | 13.00 | 211.00 | 3456.39 | 363.06 | -363.75 | -185.21 | 0.00 | 587118.06 | 776496.99 | N 32.611717 | W 103.569621 |
| | 3600.00 | 13.00 | 211.00 | 3553.82 | 382.30 | -383.03 | -196.79 | 0.00 | 587098.77 | 776485.40 | N 32.611664 | W 103.569659 |
| | 3700.00 | 13.00 | 211.00 | 3651.26 | 401.54 | -402.31 | -208.38 | 0.00 | 587079.49 | 776473.82 | N 32.611611 | W 103.569697 |
| | 3800.00 | 13.00 | 211.00 | 3748.70 | 420.78 | -421.59 | -219.96 | 0.00 | 587060.21 | 776462.23 | N 32.611559 | W 103.569735 |
| | 3900.00 | 13.00 | 211.00 | 3846.14 | 440.02 | -440.87 | -231.55 | 0.00 | 587040.93 | 776450.65 | N 32.611506 | W 103.569773 |
| | 4000.00 | 13.00 | 211.00 | 3943.57 | 459.26 | -460.16 | -243.14 | 0.00 | 587021.65 | 776439.06 | N 32.611453 | W 103.569811 |
| | 4100.00 | 13.00 | 211.00 | 4041.01 | 478.50 | -479.44 | -254.72 | 0.00 | 587002.37 | 776427.48 | N 32.611400 | W 103.569849 |
| | 4200.00 | 13.00 | 211.00 | 4138.45 | 497.74 | -498.72 | -266.31 | 0.00 | 586983.09 | 776415.89 | N 32.611347 | W 103.569887 |
| | 4300.00 | 13.00 | 211.00 | 4235.88 | 516.98 | -518.00 | -277.89 | 0.00 | 586963.80 | 776404.30 | N 32.611295 | W 103.569925 |
| | 4400.00 | 13.00 | 211.00 | 4333.32 | 536.22 | -537.28 | -289.48 | 0.00 | 586944.52 | 776392.72 | N 32.611242 | W 103.569963 |
| | 4500.00 | 13.00 | 211.00 | 4430.76 | 555.46 | -556.57 | -301.07 | 0.00 | 586925.24 | 776381.13 | N 32.611189 | W 103.570001 |
| | 4600.00 | 13.00 | 211.00 | 4528.19 | 574.70 | -575.85 | -312.65 | 0.00 | 586905.96 | 776369.55 | N 32.611136 | W 103.570039 |
| | 4700.00 | 13.00 | 211.00 | 4625.63 | 593.94 | -595.13 | -324.24 | 0.00 | 586886.68 | 776357.96 | N 32.611084 | W 103.570078 |
| | 4800.00 | 13.00 | 211.00 | 4723.07 | 613.18 | -614.41 | -335.82 | 0.00 | 586867.40 | 776346.38 | N 32.611031 | W 103.570116 |
| | 4900.00 | 13.00 | 211.00 | 4820.51 | 632.42 | -633.69 | -347.41 | 0.00 | 586848.12 | 776334.79 | N 32.610978 | W 103.570154 |
| *Capitan* | *4917.95* | *13.00* | *211.00* | *4838.00* | *635.87* | *-637.16* | *-349.49* | *0.00* | *586844.65* | *776332.71* | *N 32.610969* | *W 103.570161* |
| | 5000.00 | 13.00 | 211.00 | 4917.94 | 651.65 | -652.98 | -358.99 | 0.00 | 586828.83 | 776323.21 | N 32.610925 | W 103.570192 |
| | 5100.00 | 13.00 | 211.00 | 5015.38 | 670.89 | -672.26 | -370.58 | 0.00 | 586809.55 | 776311.62 | N 32.610873 | W 103.570230 |
| | 5200.00 | 13.00 | 211.00 | 5112.82 | 690.13 | -691.54 | -382.17 | 0.00 | 586790.27 | 776300.04 | N 32.610820 | W 103.570268 |
| | 5300.00 | 13.00 | 211.00 | 5210.25 | 709.37 | -710.82 | -393.75 | 0.00 | 586770.99 | 776288.45 | N 32.610767 | W 103.570306 |
| *Lamar* | *5303.84* | *13.00* | *211.00* | *5214.00* | *710.11* | *-711.56* | *-394.20* | *0.00* | *586770.25* | *776288.00* | *N 32.610765* | *W 103.570307* |
| *Bell Canyon* | *5377.74* | *13.00* | *211.00* | *5286.00* | *724.33* | *-725.81* | *-402.76* | *0.00* | *586756.00* | *776279.44* | *N 32.610726* | *W 103.570336* |
| | 5400.00 | 13.00 | 211.00 | 5307.69 | 728.61 | -730.10 | -405.34 | 0.00 | 586751.71 | 776276.86 | N 32.610714 | W 103.570344 |
| | 5500.00 | 13.00 | 211.00 | 5405.13 | 747.85 | -749.39 | -416.92 | 0.00 | 586732.43 | 776265.28 | N 32.610662 | W 103.570382 |
| | 5600.00 | 13.00 | 211.00 | 5502.56 | 767.09 | -768.67 | -428.51 | 0.00 | 586713.15 | 776253.69 | N 32.610609 | W 103.570420 |
| | 5700.00 | 13.00 | 211.00 | 5600.00 | 786.33 | -787.95 | -440.10 | 0.00 | 586693.86 | 776242.11 | N 32.610556 | W 103.570458 |
| | 5800.00 | 13.00 | 211.00 | 5697.44 | 805.57 | -807.23 | -451.68 | 0.00 | 586674.58 | 776230.52 | N 32.610503 | W 103.570496 |
| *Cherry Canyon* | *5843.68* | *13.00* | *211.00* | *5740.00* | *813.97* | *-815.65* | *-456.74* | *0.00* | *586666.16* | *776225.46* | *N 32.610480* | *W 103.570513* |
| | 5900.00 | 13.00 | 211.00 | 5794.88 | 824.81 | -826.51 | -463.27 | 0.00 | 586655.30 | 776218.94 | N 32.610450 | W 103.570534 |
| | 6000.00 | 13.00 | 211.00 | 5892.31 | 844.05 | -845.79 | -474.85 | 0.00 | 586636.02 | 776207.35 | N 32.610398 | W 103.570572 |
| | 6100.00 | 13.00 | 211.00 | 5989.75 | 863.29 | -865.08 | -486.44 | 0.00 | 586616.74 | 776195.77 | N 32.610345 | W 103.570611 |
| | 6200.00 | 13.00 | 211.00 | 6087.19 | 882.53 | -884.36 | -498.02 | 0.00 | 586597.46 | 776184.18 | N 32.610292 | W 103.570649 |
| | 6300.00 | 13.00 | 211.00 | 6184.62 | 901.77 | -903.64 | -509.61 | 0.00 | 586578.18 | 776172.59 | N 32.610239 | W 103.570687 |

| Comments | MD (ft) | Incl (°) | Azim Grid (°) | TVD (ft) | VSEC (ft) | NS (ft) | EW (ft) | DLS (°/100ft) | Northing (ftUS) | Easting (ftUS) | Latitude (N/S °) | Longitude (E/W °) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 6400.00 | 13.00 | 211.00 | 6282.06 | 921.01 | -922.92 | -521.20 | 0.00 | 586558.89 | 776161.01 | N 32.610187 | W 103.570725 |
| | 6500.00 | 13.00 | 211.00 | 6379.50 | 940.25 | -942.20 | -532.78 | 0.00 | 586539.61 | 776149.42 | N 32.610134 | W 103.570763 |
| | 6600.00 | 13.00 | 211.00 | 6476.94 | 959.49 | -961.49 | -544.37 | 0.00 | 586520.33 | 776137.84 | N 32.610081 | W 103.570801 |
| | 6700.00 | 13.00 | 211.00 | 6574.37 | 978.72 | -980.77 | -555.95 | 0.00 | 586501.05 | 776126.25 | N 32.610028 | W 103.570839 |
| | 6800.00 | 13.00 | 211.00 | 6671.81 | 997.96 | -1000.05 | -567.54 | 0.00 | 586481.77 | 776114.67 | N 32.609976 | W 103.570877 |
| *Brushy Canyon* | *6800.20* | *13.00* | *211.00* | *6672.00* | *998.00* | *-1000.09* | *-567.56* | *0.00* | *586481.73* | *776114.64* | *N 32.609975* | *W 103.570877* |
| | 6900.00 | 13.00 | 211.00 | 6769.25 | 1017.20 | -1019.33 | -579.13 | 0.00 | 586462.49 | 776103.08 | N 32.609923 | W 103.570915 |
| | 7000.00 | 13.00 | 211.00 | 6866.68 | 1036.44 | -1038.61 | -590.71 | 0.00 | 586443.21 | 776091.50 | N 32.609870 | W 103.570953 |
| | 7100.00 | 13.00 | 211.00 | 6964.12 | 1055.68 | -1057.90 | -602.30 | 0.00 | 586423.92 | 776079.91 | N 32.609817 | W 103.570991 |
| | 7200.00 | 13.00 | 211.00 | 7061.56 | 1074.92 | -1077.18 | -613.88 | 0.00 | 586404.64 | 776068.32 | N 32.609764 | W 103.571029 |
| | 7300.00 | 13.00 | 211.00 | 7158.99 | 1094.16 | -1096.46 | -625.47 | 0.00 | 586385.36 | 776056.74 | N 32.609712 | W 103.571067 |
| | 7400.00 | 13.00 | 211.00 | 7256.43 | 1113.40 | -1115.74 | -637.06 | 0.00 | 586366.08 | 776045.15 | N 32.609659 | W 103.571105 |
| | 7500.00 | 13.00 | 211.00 | 7353.87 | 1132.64 | -1135.02 | -648.64 | 0.00 | 586346.80 | 776033.57 | N 32.609606 | W 103.571144 |
| | 7600.00 | 13.00 | 211.00 | 7451.31 | 1151.88 | -1154.31 | -660.23 | 0.00 | 586327.52 | 776021.98 | N 32.609553 | W 103.571182 |
| | 7700.00 | 13.00 | 211.00 | 7548.74 | 1171.12 | -1173.59 | -671.81 | 0.00 | 586308.24 | 776010.40 | N 32.609501 | W 103.571220 |
| | 7800.00 | 13.00 | 211.00 | 7646.18 | 1190.36 | -1192.87 | -683.40 | 0.00 | 586288.95 | 775998.81 | N 32.609448 | W 103.571258 |
| *Section 33-4 Line NMLC0065607 Lease Crossing* | *7809.75* | *13.00* | *211.00* | *7655.68* | *1192.23* | *-1194.75* | *-684.53* | *0.00* | *586287.08* | *775997.68* | *N 32.609443* | *W 103.571261* |
| | 7900.00 | 13.00 | 211.00 | 7743.62 | 1209.60 | -1212.15 | -694.98 | 0.00 | 586269.67 | 775987.23 | N 32.609395 | W 103.571296 |
| | 8000.00 | 13.00 | 211.00 | 7841.05 | 1228.84 | -1231.43 | -706.57 | 0.00 | 586250.39 | 775975.64 | N 32.609342 | W 103.571334 |
| Drop 2°/100ft | 8004.44 | 13.00 | 211.00 | 7845.38 | 1229.69 | -1232.29 | -707.09 | 0.00 | 586249.53 | 775975.13 | N 32.609340 | W 103.571336 |
| | 8100.00 | 11.09 | 211.00 | 7938.83 | 1246.74 | -1249.38 | -717.35 | 2.00 | 586232.44 | 775964.86 | N 32.609293 | W 103.571369 |
| | 8200.00 | 9.09 | 211.00 | 8037.28 | 1261.73 | -1264.40 | -726.38 | 2.00 | 586217.43 | 775955.83 | N 32.609252 | W 103.571399 |
| | 8300.00 | 7.09 | 211.00 | 8136.28 | 1273.76 | -1276.46 | -733.62 | 2.00 | 586205.37 | 775948.59 | N 32.609219 | W 103.571423 |
| *Bone Spring* | *8364.13* | *5.81* | *211.00* | *8200.00* | *1279.92* | *-1282.63* | *-737.33* | *2.00* | *586199.20* | *775944.88* | *N 32.609202* | *W 103.571435* |
| | 8400.00 | 5.09 | 211.00 | 8235.71 | 1282.83 | -1285.55 | -739.09 | 2.00 | 586196.28 | 775943.13 | N 32.609194 | W 103.571441 |
| | 8500.00 | 3.09 | 211.00 | 8335.45 | 1288.93 | -1291.66 | -742.76 | 2.00 | 586190.17 | 775939.45 | N 32.609178 | W 103.571453 |
| | 8600.00 | 1.09 | 211.00 | 8435.38 | 1292.05 | -1294.78 | -744.64 | 2.00 | 586187.04 | 775937.58 | N 32.609169 | W 103.571459 |
| Hold | 8654.44 | 0.00 | 211.00 | 8489.82 | 1292.49 | -1295.23 | -744.90 | 2.00 | 586186.60 | 775937.31 | N 32.609168 | W 103.571460 |
| | 8700.00 | 0.00 | 211.00 | 8535.38 | 1292.49 | -1295.23 | -744.90 | 0.00 | 586186.60 | 775937.31 | N 32.609168 | W 103.571460 |
| | 8800.00 | 0.00 | 211.00 | 8635.38 | 1292.49 | -1295.23 | -744.90 | 0.00 | 586186.60 | 775937.31 | N 32.609168 | W 103.571460 |
| | 8900.00 | 0.00 | 211.00 | 8735.38 | 1292.49 | -1295.23 | -744.90 | 0.00 | 586186.60 | 775937.31 | N 32.609168 | W 103.571460 |
| | 9000.00 | 0.00 | 211.00 | 8835.38 | 1292.49 | -1295.23 | -744.90 | 0.00 | 586186.60 | 775937.31 | N 32.609168 | W 103.571460 |
| | 9100.00 | 0.00 | 211.00 | 8935.38 | 1292.49 | -1295.23 | -744.90 | 0.00 | 586186.60 | 775937.31 | N 32.609168 | W 103.571460 |
| | 9200.00 | 0.00 | 211.00 | 9035.38 | 1292.49 | -1295.23 | -744.90 | 0.00 | 586186.60 | 775937.31 | N 32.609168 | W 103.571460 |
| | 9300.00 | 0.00 | 211.00 | 9135.38 | 1292.49 | -1295.23 | -744.90 | 0.00 | 586186.60 | 775937.31 | N 32.609168 | W 103.571460 |
| | 9400.00 | 0.00 | 211.00 | 9235.38 | 1292.49 | -1295.23 | -744.90 | 0.00 | 586186.60 | 775937.31 | N 32.609168 | W 103.571460 |
| | 9500.00 | 0.00 | 211.00 | 9335.38 | 1292.49 | -1295.23 | -744.90 | 0.00 | 586186.60 | 775937.31 | N 32.609168 | W 103.571460 |
| *1st BS Sand* | *9540.62* | *0.00* | *211.00* | *9376.00* | *1292.49* | *-1295.23* | *-744.90* | *0.00* | *586186.60* | *775937.31* | *N 32.609168* | *W 103.571460* |
| | 9600.00 | 0.00 | 211.00 | 9435.38 | 1292.49 | -1295.23 | -744.90 | 0.00 | 586186.60 | 775937.31 | N 32.609168 | W 103.571460 |
| | 9700.00 | 0.00 | 211.00 | 9535.38 | 1292.49 | -1295.23 | -744.90 | 0.00 | 586186.60 | 775937.31 | N 32.609168 | W 103.571460 |
| | 9800.00 | 0.00 | 211.00 | 9635.38 | 1292.49 | -1295.23 | -744.90 | 0.00 | 586186.60 | 775937.31 | N 32.609168 | W 103.571460 |
| | 9900.00 | 0.00 | 211.00 | 9735.38 | 1292.49 | -1295.23 | -744.90 | 0.00 | 586186.60 | 775937.31 | N 32.609168 | W 103.571460 |
| | 10000.00 | 0.00 | 211.00 | 9835.38 | 1292.49 | -1295.23 | -744.90 | 0.00 | 586186.60 | 775937.31 | N 32.609168 | W 103.571460 |
| *2nd BS Sand* | *10092.62* | *0.00* | *211.00* | *9928.00* | *1292.49* | *-1295.23* | *-744.90* | *0.00* | *586186.60* | *775937.31* | *N 32.609168* | *W 103.571460* |
| | 10100.00 | 0.00 | 211.00 | 9935.38 | 1292.49 | -1295.23 | -744.90 | 0.00 | 586186.60 | 775937.31 | N 32.609168 | W 103.571460 |
| | 10200.00 | 0.00 | 211.00 | 10035.38 | 1292.49 | -1295.23 | -744.90 | 0.00 | 586186.60 | 775937.31 | N 32.609168 | W 103.571460 |
| | 10300.00 | 0.00 | 211.00 | 10135.38 | 1292.49 | -1295.23 | -744.90 | 0.00 | 586186.60 | 775937.31 | N 32.609168 | W 103.571460 |
| | 10400.00 | 0.00 | 211.00 | 10235.38 | 1292.49 | -1295.23 | -744.90 | 0.00 | 586186.60 | 775937.31 | N 32.609168 | W 103.571460 |
| KOP, Build 10°/100ft | 10402.14 | 0.00 | 211.00 | 10237.52 | 1292.49 | -1295.23 | -744.90 | 0.00 | 586186.60 | 775937.31 | N 32.609168 | W 103.571460 |
| | 10500.00 | 9.79 | 179.79 | 10334.90 | 1300.83 | -1303.56 | -744.87 | 10.00 | 586178.26 | 775937.34 | N 32.609145 | W 103.571460 |
| | 10600.00 | 19.79 | 179.79 | 10431.47 | 1326.31 | -1329.05 | -744.78 | 10.00 | 586152.78 | 775937.43 | N 32.609075 | W 103.571460 |
| | 10700.00 | 29.79 | 179.79 | 10522.14 | 1368.18 | -1370.92 | -744.62 | 10.00 | 586110.91 | 775937.59 | N 32.608960 | W 103.571461 |
| *3rd BS Sand* | *10765.49* | *36.33* | *179.79* | *10577.00* | *1403.89* | *-1406.63* | *-744.49* | *10.00* | *586075.20* | *775937.72* | *N 32.608862* | *W 103.571461* |
| | 10800.00 | 39.79 | 179.79 | 10604.17 | 1425.16 | -1427.90 | -744.42 | 10.00 | 586053.93 | 775937.80 | N 32.608803 | W 103.571461 |
| | 10900.00 | 49.79 | 179.79 | 10675.05 | 1495.52 | -1498.26 | -744.16 | 10.00 | 585983.58 | 775938.05 | N 32.608610 | W 103.571462 |
| | 11000.00 | 59.79 | 179.79 | 10732.64 | 1577.11 | -1579.85 | -743.86 | 10.00 | 585901.99 | 775938.35 | N 32.608385 | W 103.571463 |
| | 11100.00 | 69.79 | 179.79 | 10775.19 | 1667.47 | -1670.21 | -743.53 | 10.00 | 585811.63 | 775938.68 | N 32.608137 | W 103.571464 |
| Build 5°/100ft | 11152.14 | 75.00 | 179.79 | 10790.95 | 1717.15 | -1719.89 | -743.35 | 10.00 | 585761.95 | 775938.87 | N 32.608001 | W 103.571465 |
| | 11200.00 | 77.39 | 179.79 | 10802.37 | 1763.63 | -1766.36 | -743.18 | 5.00 | 585715.48 | 775939.04 | N 32.607873 | W 103.571465 |
| | 11300.00 | 82.39 | 179.79 | 10819.92 | 1862.04 | -1864.78 | -742.81 | 5.00 | 585617.07 | 775939.40 | N 32.607602 | W 103.571466 |
| | 11400.00 | 87.39 | 179.79 | 10828.81 | 1961.61 | -1964.35 | -742.45 | 5.00 | 585517.50 | 775939.76 | N 32.607329 | W 103.571467 |
| Landing Point | 11452.14 | 90.00 | 179.79 | 10830.00 | 2013.74 | -2016.47 | -742.26 | 5.00 | 585465.38 | 775939.95 | N 32.607185 | W 103.571468 |
| | 11500.00 | 90.00 | 179.79 | 10830.00 | 2061.60 | -2064.33 | -742.08 | 0.00 | 585417.52 | 775940.13 | N 32.607054 | W 103.571469 |
| | 11600.00 | 90.00 | 179.79 | 10830.00 | 2161.60 | -2164.33 | -741.72 | 0.00 | 585317.52 | 775940.49 | N 32.606779 | W 103.571470 |
| | 11700.00 | 90.00 | 179.79 | 10830.00 | 2261.60 | -2264.33 | -741.35 | 0.00 | 585217.53 | 775940.86 | N 32.606504 | W 103.571471 |
| | 11800.00 | 90.00 | 179.79 | 10830.00 | 2361.60 | -2364.33 | -740.99 | 0.00 | 585117.53 | 775941.23 | N 32.606229 | W 103.571472 |
| | 11900.00 | 90.00 | 179.79 | 10830.00 | 2461.60 | -2464.33 | -740.62 | 0.00 | 585017.54 | 775941.59 | N 32.605955 | W 103.571473 |
| | 12000.00 | 90.00 | 179.79 | 10830.00 | 2561.60 | -2564.33 | -740.25 | 0.00 | 584917.54 | 775941.96 | N 32.605680 | W 103.571474 |
| | 12100.00 | 90.00 | 179.79 | 10830.00 | 2661.60 | -2664.33 | -739.89 | 0.00 | 584817.54 | 775942.33 | N 32.605405 | W 103.571475 |
| | 12200.00 | 90.00 | 179.79 | 10830.00 | 2761.60 | -2764.33 | -739.52 | 0.00 | 584717.55 | 775942.69 | N 32.605130 | W 103.571477 |
| | 12300.00 | 90.00 | 179.79 | 10830.00 | 2861.60 | -2864.32 | -739.15 | 0.00 | 584617.55 | 775943.06 | N 32.604855 | W 103.571478 |
| | 12400.00 | 90.00 | 179.79 | 10830.00 | 2961.60 | -2964.32 | -738.79 | 0.00 | 584517.55 | 775943.42 | N 32.604580 | W 103.571479 |
| | 12500.00 | 90.00 | 179.79 | 10830.00 | 3061.60 | -3064.32 | -738.42 | 0.00 | 584417.56 | 775943.79 | N 32.604305 | W 103.571480 |
| | 12600.00 | 90.00 | 179.79 | 10830.00 | 3161.60 | -3164.32 | -738.06 | 0.00 | 584317.56 | 775944.16 | N 32.604031 | W 103.571481 |
| | 12700.00 | 90.00 | 179.79 | 10830.00 | 3261.60 | -3264.32 | -737.69 | 0.00 | 584217.56 | 775944.52 | N 32.603756 | W 103.571482 |
| | 12800.00 | 90.00 | 179.79 | 10830.00 | 3361.60 | -3364.32 | -737.32 | 0.00 | 584117.57 | 775944.89 | N 32.603481 | W 103.571483 |
| | 12900.00 | 90.00 | 179.79 | 10830.00 | 3461.60 | -3464.32 | -736.96 | 0.00 | 584017.57 | 775945.25 | N 32.603206 | W 103.571485 |
| | 13000.00 | 90.00 | 179.79 | 10830.00 | 3561.60 | -3564.32 | -736.59 | 0.00 | 583917.58 | 775945.62 | N 32.602931 | W 103.571486 |
| | 13100.00 | 90.00 | 179.79 | 10830.00 | 3661.60 | -3664.32 | -736.22 | 0.00 | 583817.58 | 775945.99 | N 32.602656 | W 103.571487 |
| | 13200.00 | 90.00 | 179.79 | 10830.00 | 3761.60 | -3764.32 | -735.86 | 0.00 | 583717.58 | 775946.35 | N 32.602382 | W 103.571488 |
| *NMLC0065607 to NMLC0064194 Lease Crossing* | *13270.91* | *90.00* | *179.79* | *10830.00* | *3832.51* | *-3835.23* | *-735.60* | *0.00* | *583646.67* | *775946.61* | *N 32.602187* | *W 103.571489* |
| | 13300.00 | 90.00 | 179.79 | 10830.00 | 3861.60 | -3864.32 | -735.49 | 0.00 | 583617.59 | 775946.72 | N 32.602107 | W 103.571489 |
| | 13400.00 | 90.00 | 179.79 | 10830.00 | 3961.60 | -3964.32 | -735.13 | 0.00 | 583517.59 | 775947.09 | N 32.601832 | W 103.571490 |
| | 13500.00 | 90.00 | 179.79 | 10830.00 | 4061.60 | -4064.32 | -734.76 | 0.00 | 583417.59 | 775947.45 | N 32.601557 | W 103.571491 |
| | 13600.00 | 90.00 | 179.79 | 10830.00 | 4161.60 | -4164.32 | -734.39 | 0.00 | 583317.60 | 775947.82 | N 32.601282 | W 103.571493 |
| | 13700.00 | 90.00 | 179.79 | 10830.00 | 4261.60 | -4264.32 | -734.03 | 0.00 | 583217.60 | 775948.18 | N 32.601007 | W 103.571494 |
| | 13800.00 | 90.00 | 179.79 | 10830.00 | 4361.60 | -4364.31 | -733.66 | 0.00 | 583117.60 | 775948.55 | N 32.600732 | W 103.571495 |
| | 13900.00 | 90.00 | 179.79 | 10830.00 | 4461.60 | -4464.31 | -733.30 | 0.00 | 583017.61 | 775948.92 | N 32.600458 | W 103.571496 |
| | 14000.00 | 90.00 | 179.79 | 10830.00 | 4561.60 | -4564.31 | -732.93 | 0.00 | 582917.61 | 775949.28 | N 32.600183 | W 103.571497 |
| | 14100.00 | 90.00 | 179.79 | 10830.00 | 4661.60 | -4664.31 | -732.56 | 0.00 | 582817.61 | 775949.65 | N 32.599908 | W 103.571498 |
| | 14200.00 | 90.00 | 179.79 | 10830.00 | 4761.60 | -4764.31 | -732.20 | 0.00 | 582717.62 | 775950.01 | N 32.599633 | W 103.571499 |
| | 14300.00 | 90.00 | 179.79 | 10830.00 | 4861.60 | -4864.31 | -731.83 | 0.00 | 582617.62 | 775950.38 | N 32.599358 | W 103.571500 |
| | 14400.00 | 90.00 | 179.79 | 10830.00 | 4961.60 | -4964.31 | -731.46 | 0.00 | 582517.63 | 775950.75 | N 32.599083 | W 103.571502 |
| | 14500.00 | 90.00 | 179.79 | 10830.00 | 5061.60 | -5064.31 | -731.10 | 0.00 | 582417.63 | 775951.11 | N 32.598809 | W 103.571503 |
| | 14600.00 | 90.00 | 179.79 | 10830.00 | 5161.60 | -5164.31 | -730.73 | 0.00 | 582317.63 | 775951.48 | N 32.598534 | W 103.571504 |
| | 14700.00 | 90.00 | 179.79 | 10830.00 | 5261.60 | -5264.31 | -730.37 | 0.00 | 582217.64 | 775951.85 | N 32.598259 | W 103.571505 |
| | 14800.00 | 90.00 | 179.79 | 10830.00 | 5361.60 | -5364.31 | -730.00 | 0.00 | 582117.64 | 775952.21 | N 32.597984 | W 103.571506 |
| | 14900.00 | 90.00 | 179.79 | 10830.00 | 5461.60 | -5464.31 | -729.63 | 0.00 | 582017.64 | 775952.58 | N 32.597709 | W 103.571507 |
| | 15000.00 | 90.00 | 179.79 | 10830.00 | 5561.60 | -5564.31 | -729.27 | 0.00 | 581917.65 | 775952.94 | N 32.597434 | W 103.571508 |
| | 15100.00 | 90.00 | 179.79 | 10830.00 | 5661.60 | -5664.31 | -728.90 | 0.00 | 581817.65 | 775953.31 | N 32.597159 | W 103.571510 |
| | 15200.00 | 90.00 | 179.79 | 10830.00 | 5761.60 | -5764.31 | -728.53 | 0.00 | 581717.65 | 775953.68 | N 32.596885 | W 103.571511 |
| | 15300.00 | 90.00 | 179.79 | 10830.00 | 5861.60 | -5864.30 | -728.17 | 0.00 | 581617.66 | 775954.04 | N 32.596610 | W 103.571512 |

| Comments | MD (ft) | Incl (°) | Azim Grid (°) | TVD (ft) | VSEC (ft) | NS (ft) | EW (ft) | DLS (°/100ft) | Northing (ftUS) | Easting (ftUS) | Latitude (N/S °) | Longitude (E/W °) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 15400.00 | 90.00 | 179.79 | 10830.00 | 5961.60 | -5964.30 | -727.80 | 0.00 | 581517.66 | 775954.41 | N 32.596335 | W 103.571513 |
| | 15500.00 | 90.00 | 179.79 | 10830.00 | 6061.60 | -6064.30 | -727.44 | 0.00 | 581417.67 | 775954.78 | N 32.596060 | W 103.571514 |
| | 15600.00 | 90.00 | 179.79 | 10830.00 | 6161.60 | -6164.30 | -727.07 | 0.00 | 581317.67 | 775955.14 | N 32.595785 | W 103.571515 |
| | 15700.00 | 90.00 | 179.79 | 10830.00 | 6261.60 | -6264.30 | -726.70 | 0.00 | 581217.67 | 775955.51 | N 32.595510 | W 103.571516 |
| | 15800.00 | 90.00 | 179.79 | 10830.00 | 6361.60 | -6364.30 | -726.34 | 0.00 | 581117.68 | 775955.87 | N 32.595235 | W 103.571518 |
| | 15900.00 | 90.00 | 179.79 | 10830.00 | 6461.60 | -6464.30 | -725.97 | 0.00 | 581017.68 | 775956.24 | N 32.594961 | W 103.571519 |
| *Section 4-9 Line Crossing* | *15909.18* | *90.00* | *179.79* | *10830.00* | *6470.78* | *-6473.48* | *-725.94* | *0.00* | *581008.50* | *775956.27* | *N 32.594935* | *W 103.571519* |
| | 16000.00 | 90.00 | 179.79 | 10830.00 | 6561.60 | -6564.30 | -725.61 | 0.00 | 580917.68 | 775956.61 | N 32.594686 | W 103.571520 |
| | 16100.00 | 90.00 | 179.79 | 10830.00 | 6661.60 | -6664.30 | -725.24 | 0.00 | 580817.69 | 775956.97 | N 32.594411 | W 103.571521 |
| | 16200.00 | 90.00 | 179.79 | 10830.00 | 6761.60 | -6764.30 | -724.87 | 0.00 | 580717.69 | 775957.34 | N 32.594136 | W 103.571522 |
| | 16300.00 | 90.00 | 179.79 | 10830.00 | 6861.60 | -6864.30 | -724.51 | 0.00 | 580617.69 | 775957.70 | N 32.593861 | W 103.571523 |
| | 16400.00 | 90.00 | 179.79 | 10830.00 | 6961.60 | -6964.30 | -724.14 | 0.00 | 580517.70 | 775958.07 | N 32.593586 | W 103.571524 |
| | 16500.00 | 90.00 | 179.79 | 10830.00 | 7061.60 | -7064.30 | -723.77 | 0.00 | 580417.70 | 775958.44 | N 32.593312 | W 103.571525 |
| | 16600.00 | 90.00 | 179.79 | 10830.00 | 7161.60 | -7164.30 | -723.41 | 0.00 | 580317.71 | 775958.80 | N 32.593037 | W 103.571527 |
| | 16700.00 | 90.00 | 179.79 | 10830.00 | 7261.60 | -7264.30 | -723.04 | 0.00 | 580217.71 | 775959.17 | N 32.592762 | W 103.571528 |
| | 16800.00 | 90.00 | 179.79 | 10830.00 | 7361.60 | -7364.29 | -722.68 | 0.00 | 580117.71 | 775959.54 | N 32.592487 | W 103.571529 |
| | 16900.00 | 90.00 | 179.79 | 10830.00 | 7461.60 | -7464.29 | -722.31 | 0.00 | 580017.72 | 775959.90 | N 32.592212 | W 103.571530 |
| | 17000.00 | 90.00 | 179.79 | 10830.00 | 7561.60 | -7564.29 | -721.94 | 0.00 | 579917.72 | 775960.27 | N 32.591937 | W 103.571531 |
| | 17100.00 | 90.00 | 179.79 | 10830.00 | 7661.60 | -7664.29 | -721.58 | 0.00 | 579817.72 | 775960.63 | N 32.591662 | W 103.571532 |
| | 17200.00 | 90.00 | 179.79 | 10830.00 | 7761.60 | -7764.29 | -721.21 | 0.00 | 579717.73 | 775961.00 | N 32.591388 | W 103.571533 |
| | 17300.00 | 90.00 | 179.79 | 10830.00 | 7861.60 | -7864.29 | -720.85 | 0.00 | 579617.73 | 775961.37 | N 32.591113 | W 103.571535 |
| | 17400.00 | 90.00 | 179.79 | 10830.00 | 7961.60 | -7964.29 | -720.48 | 0.00 | 579517.73 | 775961.73 | N 32.590838 | W 103.571536 |
| | 17500.00 | 90.00 | 179.79 | 10830.00 | 8061.60 | -8064.29 | -720.11 | 0.00 | 579417.74 | 775962.10 | N 32.590563 | W 103.571537 |
| | 17600.00 | 90.00 | 179.79 | 10830.00 | 8161.60 | -8164.29 | -719.75 | 0.00 | 579317.74 | 775962.46 | N 32.590288 | W 103.571538 |
| | 17700.00 | 90.00 | 179.79 | 10830.00 | 8261.60 | -8264.29 | -719.38 | 0.00 | 579217.75 | 775962.83 | N 32.590013 | W 103.571539 |
| | 17800.00 | 90.00 | 179.79 | 10830.00 | 8361.60 | -8364.29 | -719.01 | 0.00 | 579117.75 | 775963.20 | N 32.589739 | W 103.571540 |
| | 17900.00 | 90.00 | 179.79 | 10830.00 | 8461.60 | -8464.29 | -718.65 | 0.00 | 579017.75 | 775963.56 | N 32.589464 | W 103.571541 |
| | 18000.00 | 90.00 | 179.79 | 10830.00 | 8561.60 | -8564.29 | -718.28 | 0.00 | 578917.76 | 775963.93 | N 32.589189 | W 103.571543 |
| | 18100.00 | 90.00 | 179.79 | 10830.00 | 8661.60 | -8664.29 | -717.92 | 0.00 | 578817.76 | 775964.30 | N 32.588914 | W 103.571544 |
| | 18200.00 | 90.00 | 179.79 | 10830.00 | 8761.60 | -8764.29 | -717.55 | 0.00 | 578717.76 | 775964.66 | N 32.588639 | W 103.571545 |
| | 18300.00 | 90.00 | 179.79 | 10830.00 | 8861.60 | -8864.28 | -717.18 | 0.00 | 578617.77 | 775965.03 | N 32.588364 | W 103.571546 |
| | 18400.00 | 90.00 | 179.79 | 10830.00 | 8961.60 | -8964.28 | -716.82 | 0.00 | 578517.77 | 775965.39 | N 32.588089 | W 103.571547 |
| | 18500.00 | 90.00 | 179.79 | 10830.00 | 9061.60 | -9064.28 | -716.45 | 0.00 | 578417.77 | 775965.76 | N 32.587815 | W 103.571548 |
| | 18600.00 | 90.00 | 179.79 | 10830.00 | 9161.60 | -9164.28 | -716.08 | 0.00 | 578317.78 | 775966.13 | N 32.587540 | W 103.571549 |
| | 18700.00 | 90.00 | 179.79 | 10830.00 | 9261.60 | -9264.28 | -715.72 | 0.00 | 578217.78 | 775966.49 | N 32.587265 | W 103.571550 |
| | 18800.00 | 90.00 | 179.79 | 10830.00 | 9361.60 | -9364.28 | -715.35 | 0.00 | 578117.78 | 775966.86 | N 32.586990 | W 103.571552 |
| | 18900.00 | 90.00 | 179.79 | 10830.00 | 9461.60 | -9464.28 | -714.99 | 0.00 | 578017.79 | 775967.22 | N 32.586715 | W 103.571553 |
| | 19000.00 | 90.00 | 179.79 | 10830.00 | 9561.60 | -9564.28 | -714.62 | 0.00 | 577917.79 | 775967.59 | N 32.586440 | W 103.571554 |
| | 19100.00 | 90.00 | 179.79 | 10830.00 | 9661.60 | -9664.28 | -714.25 | 0.00 | 577817.80 | 775967.96 | N 32.586166 | W 103.571555 |
| | 19200.00 | 90.00 | 179.79 | 10830.00 | 9761.60 | -9764.28 | -713.89 | 0.00 | 577717.80 | 775968.32 | N 32.585891 | W 103.571556 |
| | 19300.00 | 90.00 | 179.79 | 10830.00 | 9861.60 | -9864.28 | -713.52 | 0.00 | 577617.80 | 775968.69 | N 32.585616 | W 103.571557 |
| | 19400.00 | 90.00 | 179.79 | 10830.00 | 9961.60 | -9964.28 | -713.16 | 0.00 | 577517.81 | 775969.06 | N 32.585341 | W 103.571558 |
| | 19500.00 | 90.00 | 179.79 | 10830.00 | 10061.60 | -10064.28 | -712.79 | 0.00 | 577417.81 | 775969.42 | N 32.585066 | W 103.571560 |
| | 19600.00 | 90.00 | 179.79 | 10830.00 | 10161.60 | -10164.28 | -712.42 | 0.00 | 577317.81 | 775969.79 | N 32.584791 | W 103.571561 |
| | 19700.00 | 90.00 | 179.79 | 10830.00 | 10261.60 | -10264.28 | -712.06 | 0.00 | 577217.82 | 775970.15 | N 32.584516 | W 103.571562 |
| | 19800.00 | 90.00 | 179.79 | 10830.00 | 10361.60 | -10364.27 | -711.69 | 0.00 | 577117.82 | 775970.52 | N 32.584242 | W 103.571563 |
| | 19900.00 | 90.00 | 179.79 | 10830.00 | 10461.60 | -10464.27 | -711.32 | 0.00 | 577017.82 | 775970.89 | N 32.583967 | W 103.571564 |
| | 20000.00 | 90.00 | 179.79 | 10830.00 | 10561.60 | -10564.27 | -710.96 | 0.00 | 576917.83 | 775971.25 | N 32.583692 | W 103.571565 |
| | 20100.00 | 90.00 | 179.79 | 10830.00 | 10661.60 | -10664.27 | -710.59 | 0.00 | 576817.83 | 775971.62 | N 32.583417 | W 103.571566 |
| | 20200.00 | 90.00 | 179.79 | 10830.00 | 10761.60 | -10764.27 | -710.23 | 0.00 | 576717.84 | 775971.99 | N 32.583142 | W 103.571568 |
| | 20300.00 | 90.00 | 179.79 | 10830.00 | 10861.60 | -10864.27 | -709.86 | 0.00 | 576617.84 | 775972.35 | N 32.582867 | W 103.571569 |
| | 20400.00 | 90.00 | 179.79 | 10830.00 | 10961.60 | -10964.27 | -709.49 | 0.00 | 576517.84 | 775972.72 | N 32.582592 | W 103.571570 |
| | 20500.00 | 90.00 | 179.79 | 10830.00 | 11061.60 | -11064.27 | -709.13 | 0.00 | 576417.85 | 775973.08 | N 32.582318 | W 103.571571 |
| | 20600.00 | 90.00 | 179.79 | 10830.00 | 11161.60 | -11164.27 | -708.76 | 0.00 | 576317.85 | 775973.45 | N 32.582043 | W 103.571572 |
| | 20700.00 | 90.00 | 179.79 | 10830.00 | 11261.60 | -11264.27 | -708.39 | 0.00 | 576217.85 | 775973.82 | N 32.581768 | W 103.571573 |
| | 20800.00 | 90.00 | 179.79 | 10830.00 | 11361.60 | -11364.27 | -708.03 | 0.00 | 576117.86 | 775974.18 | N 32.581493 | W 103.571574 |
| | 20900.00 | 90.00 | 179.79 | 10830.00 | 11461.60 | -11464.27 | -707.66 | 0.00 | 576017.86 | 775974.55 | N 32.581218 | W 103.571575 |
| | 21000.00 | 90.00 | 179.79 | 10830.00 | 11561.60 | -11564.27 | -707.30 | 0.00 | 575917.86 | 775974.91 | N 32.580943 | W 103.571577 |
| Loosey Goosey 4-9 Fed Com 301H - BHL [100' FSL, 706' FWL] | 21091.60 | 90.00 | 179.79 | 10830.00 | 11653.19 | -11655.86 | -706.96 | 0.00 | 575826.27 | 775975.25 | N 32.580692 | W 103.571578 |

**Survey Type:** Def Plan

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

**Survey Program:**

| Description | Part | MD From (ft) | MD To (ft) | EOU Freq (ft) | Hole Size (in) | Casing Diameter (in) | Expected Max Inclination (deg) | Survey Tool Type | Borehole / Survey |
|---|---|---|---|---|---|---|---|---|---|
| | 1 | 0.000 | 22.000 | 1/100.000 | 30.000 | 30.000 | | A001Mb_MWD-Depth Only | Loosey Goosey 4-9 Fed Com 301H / Coterra Loosey Goosey 4-9 |
| | 1 | 22.000 | 21091.598 | 1/100.000 | 30.000 | 30.000 | | A001Mb_MWD | Loosey Goosey 4-9 Fed Com 301H / Coterra Loosey Goosey 4-9 |

Schlumberger

# COTERRA

Rev 0

COTERRA

| Borehole: | Well: | Field: | Structure: |
|---|---|---|---|
| Loosey Goosey 4-9 Fed Com 301H | Loosey Goosey 4-9 Fed Com 301H | NM Lea County (NAD 83) | Coterra Loosey Goosey 4-9 Pad (west) |

**Gravity & Magnetic Parameters**

| | | | | | |
|---|---|---|---|---|---|
| Model: | HDGM 2022 | Dip: | 60.461° | Date: | 04-Feb-2022 |
| MagDec: | 6.365° | FS: | 47855.738nT | Gravity FS: | 998.509mgn (9.80665 Based) |

**Surface Location** — NAD83 New Mexico State Plane, Eastern Zone, US Feet

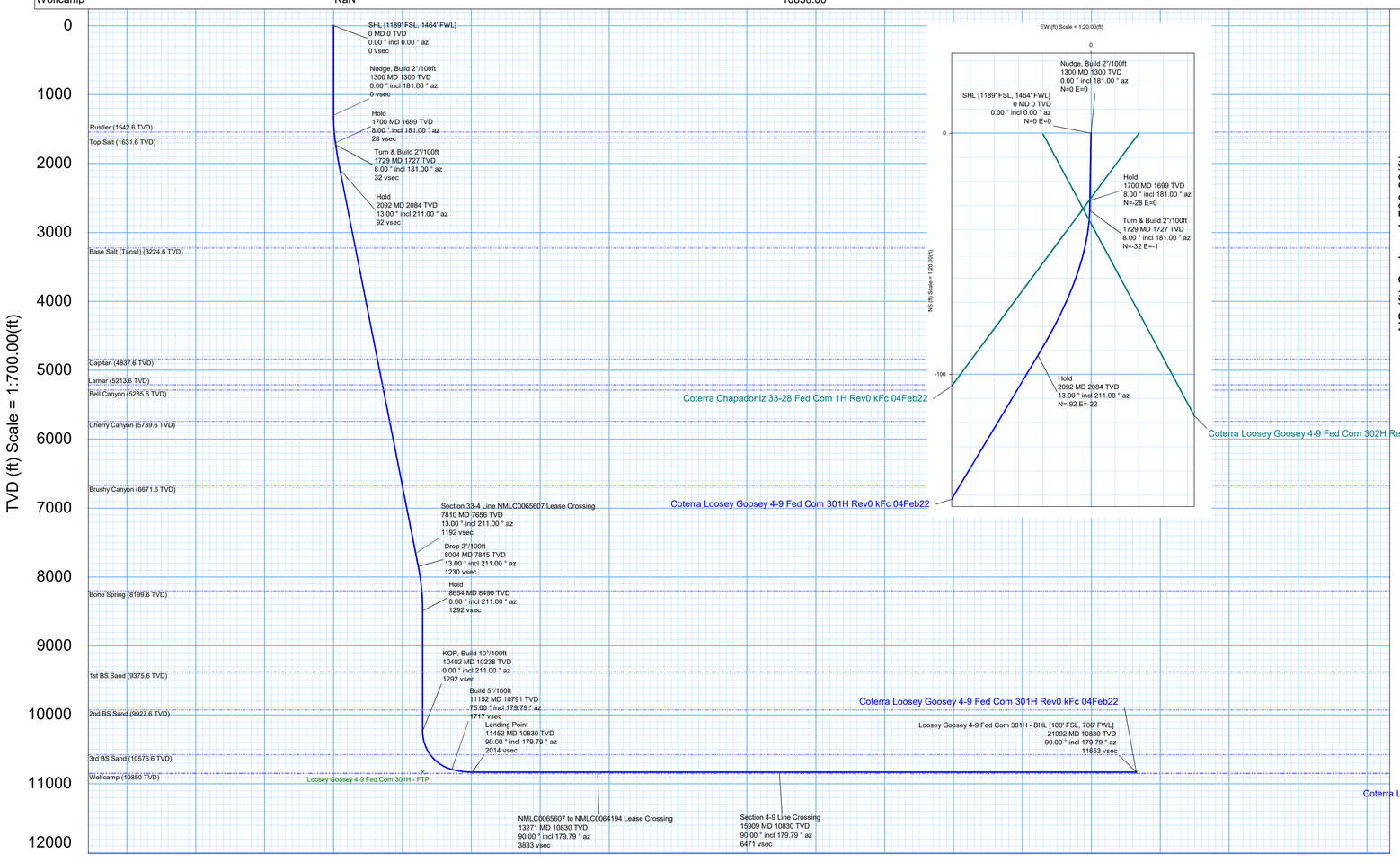
| | | | | | |
|---|---|---|---|---|---|
| Lat: | N 32 36 45.77 | Northing: | 587481.79ftUS | Grid Conv: | 0.412° |
| Lon: | W 103 34 8.44 | Easting: | 776682.19ftUS | Scale Fact: | 0.99997252 |

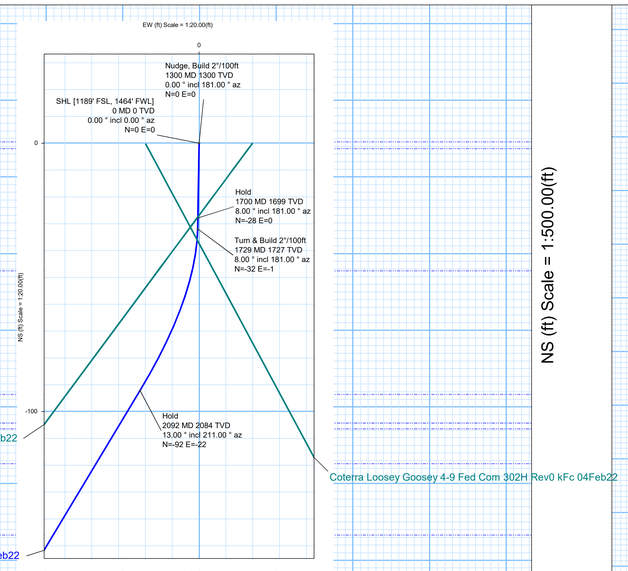
**Miscellaneous**

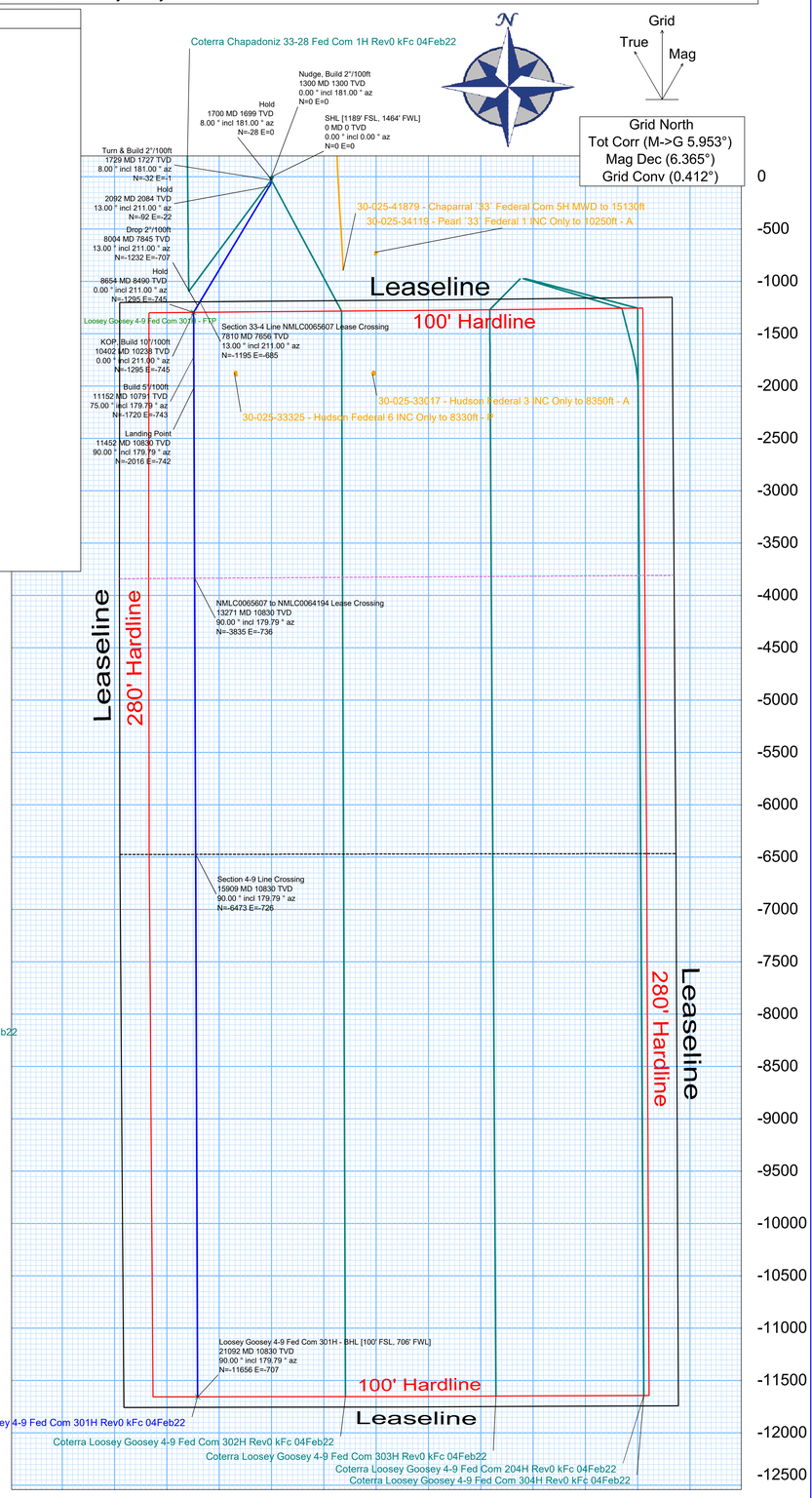
| | | | |
|---|---|---|---|
| Slot: | 301H | TVD Ref: | RKB = 22ft (3681.4ft above MSL) |
| Plan: | Coterra Loosey Goosey 4-9 Fed Com 301H Rev0 kFc 04Feb22 | | |

**Critical Points**

| Critical Point | MD | INCL | AZIM | TVD | VSEC | N(+)/S(-) | E(+)/W(-) | DLS |
|---|---|---|---|---|---|---|---|---|
| SHL [1189' FSL, 1464' FWL] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Nudge, Build 2°/100ft | 1300.00 | 0.00 | 181.00 | 1300.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rustler | 1543.29 | 4.87 | 181.00 | 1543.00 | 10.32 | -10.32 | -0.18 | 2.00 |
| Top Salt | 1632.75 | 6.65 | 181.00 | 1632.00 | 19.30 | -19.30 | -0.34 | 2.00 |
| Hold | 1700.00 | 8.00 | 181.00 | 1698.70 | 27.87 | -27.88 | -0.49 | 2.00 |
| Turn & Build 2°/100ft | 1729.00 | 8.00 | 181.00 | 1727.42 | 31.91 | -31.91 | -0.56 | 0.00 |
| Hold | 2091.60 | 13.00 | 211.00 | 2084.09 | 92.10 | -92.18 | -22.03 | 2.00 |
| Base Salt (Tansil) | 3262.53 | 13.00 | 211.00 | 3225.00 | 317.38 | -317.96 | -157.69 | 0.00 |
| Capitan | 4917.95 | 13.00 | 211.00 | 4838.00 | 635.87 | -637.16 | -349.49 | 0.00 |
| Lamar | 5303.84 | 13.00 | 211.00 | 5214.00 | 710.11 | -711.56 | -394.20 | 0.00 |
| Bell Canyon | 5377.74 | 13.00 | 211.00 | 5286.00 | 724.33 | -725.81 | -402.76 | 0.00 |
| Cherry Canyon | 5843.68 | 13.00 | 211.00 | 5740.00 | 813.97 | -815.65 | -456.74 | 0.00 |
| Brushy Canyon | 6800.20 | 13.00 | 211.00 | 6672.00 | 998.00 | -1000.09 | -567.56 | 0.00 |
| Section 33-4 Line NMLC0065607 Lease Crossing | 7809.75 | 13.00 | 211.00 | 7655.68 | 1192.23 | -1194.75 | -684.53 | 0.00 |
| Drop 2°/100ft | 8004.44 | 13.00 | 211.00 | 7845.38 | 1229.69 | -1232.29 | -707.09 | 0.00 |
| Bone Spring | 8364.13 | 5.81 | 211.00 | 8200.00 | 1279.92 | -1282.63 | -737.33 | 2.00 |
| Hold | 8654.44 | 0.00 | 211.00 | 8489.82 | 1292.49 | -1295.23 | -744.90 | 2.00 |
| 1st BS Sand | 9540.62 | 0.00 | 211.00 | 9376.00 | 1292.49 | -1295.23 | -744.90 | 0.00 |
| 2nd BS Sand | 10092.62 | 0.00 | 211.00 | 9928.00 | 1292.49 | -1295.23 | -744.90 | 0.00 |
| KOP, Build 10°/100ft | 10402.14 | 0.00 | 211.00 | 10237.52 | 1292.49 | -1295.23 | -744.90 | 0.00 |
| 3rd BS Sand | 10765.49 | 36.33 | 179.79 | 10577.00 | 1403.89 | -1406.63 | -744.49 | 10.00 |
| Build 5°/100ft | 11152.14 | 75.00 | 179.79 | 10790.95 | 1717.15 | -1719.89 | -743.35 | 10.00 |
| Landing Point | 11452.14 | 90.00 | 179.79 | 10830.00 | 2013.74 | -2016.47 | -742.26 | 5.00 |
| NMLC0065607 to NMLC0064194 Lease Crossing | 13270.91 | 90.00 | 179.79 | 10830.00 | 3832.51 | -3835.23 | -735.60 | 0.00 |
| Section 4-9 Line Crossing | 15909.18 | 90.00 | 179.79 | 10830.00 | 6470.78 | -6473.48 | -725.94 | 0.00 |
| Loosey Goosey 4-9 Fed Com 301H - BHL [100' FSL, 706' FWL] | 21091.60 | 90.00 | 179.79 | 10830.00 | 11653.19 | -11655.86 | -706.96 | 0.00 |
| Wolfcamp | NaN | | | 10850.00 | | | | |



Schlumberger COTERRA

# Coterra Loosey Goosey 4-9 Fed Com 301H Rev0 kFc 04Feb22 Anti-Collision Summary Report

| | | | |
|---|---|---|---|
| **Analysis Date-24hr Time:** | February 07, 2022 - 08:45 | **Analysis Method:** | 3D Least Distance |
| **Client:** | COTERRA | **Reference Trajectory:** | Coterra Loosey Goosey 4-9 Fed Com 301H Rev0 kFc 04Feb22 (Def Plan) |
| **Field:** | NM Lea County (NAD 83) | **Depth Interval:** | Every 10.00 Measured Depth (ft) |
| **Structure:** | Coterra Loosey Goosey 4-9 Pad (west) | **Rule Set:** | NAL Procedure: D&M AntiCollision Standard S002 |
| **Slot:** | 301H | **Min Pts:** | All local minima indicated. |
| **Well:** | Loosey Goosey 4-9 Fed Com 301H | **Version / Patch:** | 2.10.829.1 |
| **Borehole:** | Loosey Goosey 4-9 Fed Com 301H | **Database \ Project:** | localhost\drilling-project1 |
| **Scan MD Range:** | 0.00ft ~ 21091.60ft | | |

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

**Offset Trajectories Summary**

**Offset Selection Criteria**
Wellhead distance scan: Not performed!
Selection filters: Definitive Surveys - Definitive Plans - Definitive surveys exclude definitive plans
- All Non-Def Surveys when no Def-Survey is set in a borehole - All Non-Def Plans when no Def-Plan is set in a borehole

| Offset Trajectory | Separation | | | Allow | Sep. | Controlling | Reference Trajectory | | Risk Level | | | Alert | Status |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ct-Ct (ft) | MAS (ft) | EOU (ft) | Dev. (ft) | Fact. | Rule | MD (ft) | TVD (ft) | Alert | Minor | Major | | |
| Coterra Chapadoniz 33-28 Fed Com 1H Rev0 kFc 04Feb22 (Def Plan) | | | | | | | | | | | | | Fail Minor |
| | 19.99 | 16.49 | 17.49 | 3.50 | N/A | MAS = 5.03 (m) | 0.00 | 0.00 | CtCt<=15m<15.00 | | | Enter Alert | |
| | 19.99 | 16.49 | 17.49 | 3.50 | 12341.39 | MAS = 5.03 (m) | 22.00 | 22.00 | | | | WRP | |
| | 19.99 | 20.08 | 5.77 | -0.08 | 1.49 | OSF1.50 | 1230.00 | 1230.00 | | OSF<1.50 | | Enter Minor | |
| | 19.99 | 21.13 | 5.07 | -1.14 | 1.41 | OSF1.50 | 1300.00 | 1300.00 | | | | MinPt-CtCt | |
| | 20.36 | 23.17 | 4.09 | -2.80 | 1.30 | OSF1.50 | 1440.00 | 1439.94 | | | | MINPT-O-EOU | |
| | 20.59 | 23.45 | 4.12 | -2.86 | 1.30 | OSF1.50 | 1460.00 | 1459.92 | | | | MinPts | |
| | 25.08 | 25.33 | 7.36 | -0.25 | 1.48 | OSF1.50 | 1590.00 | 1589.50 | | OSF>1.50 | | Exit Minor | |
| | 103.12 | 64.10 | 59.55 | 39.02 | 2.45 | OSF1.50 | 4020.00 | 3963.06 | | | | MINPT-O-EOU | |
| | 163.82 | 141.21 | 68.85 | 22.62 | 1.74 | OSF1.50 | 7760.00 | 7607.20 | | | | MinPt-O-ADP | |
| | 164.26 | 141.62 | 69.02 | 22.64 | 1.74 | OSF1.50 | 7780.00 | 7626.69 | | | | MinPt-O-SF | |
| | 205.03 | 170.99 | 90.20 | 34.03 | 1.80 | OSF1.50 | 10402.14 | 10237.52 | | | | MinPts | |
| | 508.32 | 157.07 | 402.77 | 351.24 | 4.91 | OSF1.50 | 10910.00 | 10681.44 | OSF>5.00 | | | Exit Alert | |
| | 10576.33 | 182.65 | 10453.73 | 10393.68 | 88.04 | OSF1.50 | 21091.60 | 10830.00 | | | | TD | |
| Coterra Loosey Goosey 4-9 Fed Com 302H Rev0 kFc 04Feb22 (Def Plan) | | | | | | | | | | | | | Fail Minor |
| | 20.00 | 16.50 | 17.50 | 3.50 | N/A | MAS = 5.03 (m) | 0.00 | 0.00 | CtCt<=15m<15.00 | | | Enter Alert | |
| | 20.00 | 16.50 | 17.50 | 3.50 | N/A | MAS = 5.03 (m) | 22.00 | 22.00 | | | | WRP | |
| | 20.00 | 20.07 | 5.79 | -0.07 | 1.49 | OSF1.50 | 1230.00 | 1230.00 | | OSF<1.50 | | Enter Minor | |
| | 20.00 | 21.86 | 4.59 | -1.86 | 1.36 | OSF1.50 | 1350.00 | 1350.00 | | | | MinPt-CtCt | |
| | 20.29 | 23.31 | 3.92 | -3.02 | 1.28 | OSF1.50 | 1450.00 | 1449.93 | | | | MINPT-O-EOU | |
| | 20.51 | 23.59 | 3.95 | -3.08 | 1.28 | OSF1.50 | 1470.00 | 1469.90 | | | | MinPts | |
| | 26.62 | 26.65 | 8.02 | -0.03 | 1.50 | OSF1.50 | 1690.00 | 1688.80 | | OSF>1.50 | | Exit Minor | |
| | 124.39 | 39.18 | 97.43 | 85.20 | 4.98 | OSF1.50 | 2490.00 | 2472.27 | OSF>5.00 | | | Exit Alert | |
| | 1413.84 | 426.06 | 1128.97 | 987.79 | 5.00 | OSF1.50 | 15110.00 | 10830.00 | OSF<5.00 | | | Enter Alert | |
| | 1413.82 | 825.91 | 862.38 | 587.91 | 2.57 | OSF1.50 | 21091.60 | 10830.00 | | | | MinPts | |
| 30-025-33325 - Hudson Federal 6 INC Only to 8330ft - P (Def Survey) | | | | | | | | | | | | | Warning Alert |
| | 1926.61 | 32.81 | 1924.11 | 1893.80 | N/A | MAS = 10.00 (m) | 0.00 | 0.00 | | | | Surface | |
| | 1926.52 | 32.81 | 1924.00 | 1893.71 | 134044.62 | MAS = 10.00 (m) | 10.00 | 10.00 | | | | MinPt-O-SF | |
| | 1926.47 | 32.81 | 1923.97 | 1893.66 | 264134.79 | MAS = 10.00 (m) | 20.00 | 20.00 | | | | MINPT-O-EOU | |
| | 1926.47 | 32.81 | 1923.97 | 1893.66 | 583153.21 | MAS = 10.00 (m) | 22.00 | 22.00 | | | | WRP | |
| | 1922.43 | 35.13 | 1898.17 | 1887.30 | 88.26 | OSF1.50 | 650.00 | 650.00 | | | | MinPt-CtCt | |
| | 1044.95 | 316.38 | 833.19 | 728.57 | 4.98 | OSF1.50 | 5890.00 | 5785.13 | OSF<5.00 | | | Enter Alert | |
| | 696.83 | 449.51 | 396.32 | 247.31 | 2.33 | OSF1.50 | 8500.00 | 8335.45 | | | | MinPt-CtCt | |
| | 696.92 | 450.78 | 395.57 | 246.14 | 2.32 | OSF1.50 | 8530.00 | 8365.42 | | | | MinPts | |
| | 1027.03 | 313.31 | 817.32 | 713.72 | 4.94 | OSF1.50 | 9270.00 | 9105.38 | OSF>5.00 | | | Exit Alert | |
| | 3412.44 | 322.99 | 3196.27 | 3089.44 | 15.96 | OSF1.50 | 13620.00 | 10830.00 | | | | MinPt-O-SF | |
| | 10100.03 | 446.34 | 9801.64 | 9653.69 | 34.13 | OSF1.50 | 21091.60 | 10830.00 | | | | TD | |
| 30-025-34119 - Pearl `33` Federal 1 INC Only to 10250ft - A (Def Survey) | | | | | | | | | | | | | Pass |
| | 1233.34 | 32.81 | 1230.84 | 1200.53 | N/A | MAS = 10.00 (m) | 0.00 | 0.00 | | | | Surface | |
| | 1233.22 | 32.81 | 1230.63 | 1200.41 | 14306.45 | MAS = 10.00 (m) | 22.00 | 22.00 | | | | WRP | |
| | 1231.98 | 32.81 | 1217.25 | 1199.17 | 100.56 | MAS = 10.00 (m) | 490.00 | 490.00 | | | | MinPts | |
| | 1198.63 | 124.80 | 1114.60 | 1073.84 | 14.67 | OSF1.50 | 2470.00 | 2452.79 | | | | MinPt-CtCt | |
| | 1205.09 | 143.43 | 1108.64 | 1061.66 | 12.80 | OSF1.50 | 2840.00 | 2813.30 | | | | MINPT-O-EOU | |
| | 1213.03 | 153.04 | 1110.17 | 1059.99 | 12.06 | OSF1.50 | 3030.00 | 2998.43 | | | | MinPt-O-ADP | |
| | 1259.83 | 194.66 | 1129.22 | 1065.17 | 9.81 | OSF1.50 | 3770.00 | 3719.47 | | | | MinPt-O-ADP | |
| | 1824.86 | 539.87 | 1464.11 | 1284.99 | 5.09 | OSF1.50 | 10420.00 | 10255.37 | | | | MinPts | |
| | 11079.04 | 545.33 | 10714.66 | 10533.71 | 30.61 | OSF1.50 | 21091.60 | 10830.00 | | | | TD | |
| 30-025-41879 - Chaparral `33` Federal Com 5H MWD to 15130ft (Def Survey) | | | | | | | | | | | | | Pass |
| | 3782.28 | 32.81 | 3779.77 | 3749.47 | 218264.32 | MAS = 10.00 (m) | 0.00 | 0.00 | | | | Surface | |
| | 3782.28 | 32.81 | 3779.68 | 3749.47 | 37738.48 | MAS = 10.00 (m) | 22.00 | 22.00 | | | | WRP | |
| | 3781.72 | 32.81 | 3776.52 | 3748.91 | 1399.88 | MAS = 10.00 (m) | 330.00 | 330.00 | | | | MinPts | |
| | 3778.94 | 32.81 | 3763.51 | 3746.14 | 292.00 | MAS = 10.00 (m) | 1330.00 | 1330.00 | | | | MinPts | |
| | 3779.05 | 32.81 | 3763.32 | 3746.24 | 285.38 | MAS = 10.00 (m) | 1360.00 | 1360.00 | | | | MINPT-O-EOU | |
| | 1534.93 | 273.95 | 1351.46 | 1260.98 | 8.47 | OSF1.50 | 10710.00 | 10530.78 | | | | MinPts | |
| | 1534.99 | 274.02 | 1351.47 | 1260.97 | 8.47 | OSF1.50 | 10720.00 | 10539.32 | | | | MinPt-O-ADP | |
| | 1535.17 | 274.08 | 1351.62 | 1261.09 | 8.47 | OSF1.50 | 10730.00 | 10547.78 | | | | MinPt-O-SF | |
| | 10850.69 | 186.91 | 10725.25 | 10663.78 | 88.24 | OSF1.50 | 21091.60 | 10830.00 | | | | TD | |
| 30-025-33017 - Hudson Federal 3 INC Only to 8350ft - A (Def Survey) | | | | | | | | | | | | | Pass |
| | 2129.75 | 32.81 | 2127.25 | 2096.94 | N/A | MAS = 10.00 (m) | 0.00 | 0.00 | | | | Surface | |
| | 2129.68 | 32.81 | 2127.09 | 2096.87 | 25355.79 | MAS = 10.00 (m) | 22.00 | 22.00 | | | | WRP | |
| | 2117.90 | 66.84 | 2072.51 | 2051.06 | 49.32 | OSF1.50 | 1120.00 | 1120.00 | | | | MinPt-CtCt | |
| | 1765.81 | 347.17 | 1533.53 | 1418.64 | 7.67 | OSF1.50 | 6560.00 | 6437.96 | | | | MinPt-CtCt | |

| Offset Trajectory | Separation | | | Allow | Sep. | Controlling | Reference Trajectory | | Risk Level | | | Alert | Status |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ct-Ct (ft) | MAS (ft) | EOU (ft) | Dev. (ft) | Fact. | Rule | MD (ft) | TVD (ft) | Alert | Minor | Major | | |
| | 1789.99 | 420.71 | 1508.69 | 1369.28 | 6.41 | OSF1.50 | 7960.00 | 7802.08 | | | | MINPT-O-EOU | |
| | 1808.14 | 449.14 | 1507.88 | 1359.00 | 6.06 | OSF1.50 | 8550.00 | 8385.40 | | | | MINPT-O-EOU | |
| | 1808.38 | 449.42 | 1507.94 | 1358.97 | 6.06 | OSF1.50 | 8560.00 | 8395.39 | | | | MinPts | |
| | 3406.74 | 324.35 | 3189.67 | 3082.39 | 15.87 | OSF1.50 | 12940.00 | 10830.00 | | | | MinPt-O-SF | |
| | 10214.92 | 447.27 | 9915.90 | 9767.64 | 34.44 | OSF1.50 | 21091.60 | 10830.00 | | | | TD | |
| Coterra Loosey Goosey 4-9 Fed Com 303H Rev0 kFc 04Feb22 (Def Plan) | | | | | | | | | | | | | Pass |
| | 2569.94 | 32.81 | 2567.44 | 2537.13 | N/A | MAS = 10.00 (m) | 0.00 | 0.00 | | | | Surface | |
| | 2569.94 | 32.81 | 2567.44 | 2537.13 | N/A | MAS = 10.00 (m) | 22.00 | 22.00 | | | | WRP | |
| | 2544.53 | 37.81 | 2518.49 | 2506.72 | 108.00 | OSF1.50 | 2360.00 | 2345.61 | | | | MinPt-CtCt | |
| | 2556.09 | 71.50 | 2507.59 | 2484.59 | 55.51 | OSF1.50 | 4270.00 | 4206.65 | | | | MINPT-O-EOU | |
| | 2570.92 | 89.29 | 2510.56 | 2481.63 | 44.39 | OSF1.50 | 5250.00 | 5161.54 | | | | MinPt-O-ADP | |
| | 2830.21 | 166.60 | 2718.31 | 2663.61 | 25.85 | OSF1.50 | 10402.14 | 10237.52 | | | | MinPt-CtCt | |
| | 2851.13 | 792.77 | 2321.78 | 2058.36 | 5.41 | OSF1.50 | 21091.60 | 10830.00 | | | | MinPts | |
| Coterra Loosey Goosey 4-9 Fed Com 204H Rev0 kFc 04Feb22 (Def Plan) | | | | | | | | | | | | | Pass |
| | 2588.39 | 32.81 | 2585.89 | 2555.58 | N/A | MAS = 10.00 (m) | 0.00 | 0.00 | | | | Surface | |
| | 2588.39 | 32.81 | 2585.89 | 2555.58 | N/A | MAS = 10.00 (m) | 22.00 | 22.00 | | | | WRP | |
| | 2581.80 | 32.81 | 2563.14 | 2548.99 | 159.61 | MAS = 10.00 (m) | 1750.00 | 1748.21 | | | | MinPts | |
| | 2581.84 | 32.81 | 2563.11 | 2549.03 | 158.89 | MAS = 10.00 (m) | 1760.00 | 1758.11 | | | | MINPT-O-EOU | |
| | 3986.38 | 126.00 | 3901.54 | 3860.37 | 48.39 | OSF1.50 | 7390.00 | 7246.69 | | | | MinPts | |
| | 4093.16 | 161.30 | 3984.79 | 3931.86 | 38.64 | OSF1.50 | 9900.00 | 9735.38 | | | | MINPT-O-EOU | |
| | 4093.23 | 161.39 | 3984.80 | 3931.84 | 38.62 | OSF1.50 | 9910.00 | 9745.38 | | | | MinPt-O-ADP | |
| | 4236.40 | 184.79 | 4112.37 | 4051.61 | 34.84 | OSF1.50 | 11452.14 | 10830.00 | | | | MinPt-O-SF | |
| | 4297.79 | 787.85 | 3771.72 | 3509.93 | 8.20 | OSF1.50 | 21091.60 | 10830.00 | | | | MinPts | |
| Coterra Loosey Goosey 4-9 Fed Com 304H Rev0 kFc 04Feb22 (Def Plan) | | | | | | | | | | | | | Pass |
| | 2606.85 | 32.81 | 2604.35 | 2574.05 | N/A | MAS = 10.00 (m) | 0.00 | 0.00 | | | | Surface | |
| | 2606.85 | 32.81 | 2604.35 | 2574.05 | N/A | MAS = 10.00 (m) | 22.00 | 22.00 | | | | WRP | |
| | 2606.85 | 32.81 | 2591.94 | 2574.05 | 209.74 | MAS = 10.00 (m) | 1300.00 | 1300.00 | | | | MinPts | |
| | 2607.27 | 32.81 | 2591.48 | 2574.46 | 196.00 | MAS = 10.00 (m) | 1420.00 | 1419.96 | | | | MINPT-O-EOU | |
| | 4101.70 | 120.84 | 4020.30 | 3980.86 | 51.96 | OSF1.50 | 7060.00 | 6925.15 | | | | MinPts | |
| | 4264.93 | 792.53 | 3735.74 | 3472.40 | 8.09 | OSF1.50 | 21091.60 | 10830.00 | | | | MinPts | |

## 1. Geological Formations

TVD of target 10,830
MD at TD 21,091

Pilot Hole TD N/A
Deepest expected fresh water

| Formation | Depth (TVD) from KB | Water/Mineral Bearing/Target Zone | Hazards |
|---|---|---|---|
| Rustler | 1543 | Useable Water | |
| Top salt | 1632 | N/A | |
| Base Salt | 3225 | N/A | |
| Capitan | 4838 | N/A | |
| Lamar | 5214 | N/A | |
| Bell Canyon | 5286 | Hydrocarbons | |
| Cherry Canyon | 5740 | Hydrocarbons | |
| Brushy Canyon | 6672 | Hydrocarbons | |
| Bone Spring | 8200 | Hydrocarbons | |
| 1st Bone Spring | 9376 | Hydrocarbons | |
| 2nd Bone Spring | 9928 | Hydrocarbons | |
| 3rd Bone Sping | 10577 | 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 | 1593 | 1593 | 13-3/8" | 48.00 | H-40 | ST&C | 1.12 | 2.51 | 4.21 |
| 12 1/4 | 0 | 5236 | 5236 | 9-5/8" | 40.00 | HCK-55 | LT&C | 1.36 | 1.41 | 2.68 |
| 8 3/4 | 0 | 10402 | 10402 | 7" | 29.00 | L-80 | LT&C | 1.44 | 1.68 | 1.88 |
| 8 3/4 | 10402 | 11152 | 10791 | 7" | 29.00 | P-110 | BT&C | 1.69 | 2.22 | 82.35 |
| 6 | 9402 | 21091 | 10830 | 4-1/2" | 11.60 | P-110 | BT&C | 1.50 | 2.11 | 22.16 |
| | | | | | 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

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

### 3. Cementing Program

| Casing | # Sks | Wt. lb/gal | Yld ft3/sack | H2O gal/sk | 500# Comp. Strength (hours) | Slurry Description |
|---|---|---|---|---|---|---|
| **Surface** | 772 | 13.50 | 1.72 | 9.15 | 15.5 | Lead: Class C + Bentonite |
| | 207 | 14.80 | 1.34 | 6.32 | 9.5 | Tail: Class C + LCM |
| | | | | | | |
| **Intermediate** | 980 | 12.90 | 1.88 | 9.65 | 12 | Lead: 35:65 (Poz:C) + Salt + Bentonite |
| | 292 | 14.80 | 1.34 | 6.32 | 9.5 | Tail: Class C + LCM |
| | | | | | | |
| **Production** | 327 | 10.30 | 3.64 | 22.18 | | Lead: Tuned Light + LCM |
| | | | | | | |
| | 127 | 14.80 | 1.34 | 6.32 | 9.5 | Tail: Class C + LCM |
| | | | | | | |
| **Completion System** | 723 | 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 | 45 |
| Intermediate | 0 | 53 |
| Production | 4980 | 25 |
| Completion System | 11152 | 10 |

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

## 4. Pressure Control Equipment

| | |
|---|---|
| | A variance is requested for the use of a diverter on the surface casing. See attached for schematic. |

| BOP installed and tested before drilling which hole? | Size | Min Required WP | Type | | Tested To |
|---|---|---|---|---|---|
| 12 1/4 | 13 5/8 | 2M | Annular | X | 2M |
| | | | Blind Ram | | |
| | | | Pipe Ram | | |
| | | | Double Ram | X | |
| | | | Other | | |
| 8 3/4 | | 3M | Annular | X | 3M |
| | | | Blind Ram | | |
| | | | Pipe Ram | | |
| | | | Double Ram | X | |
| | | | Other | | |
| 6 | 13 5/8 | 5M | Annular | X | 5M |
| | | | Blind Ram | | |
| | | | Pipe Ram | | |
| | | | 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? |

## 5. Mud Program

| Depth | Type | Weight (ppg) | Viscosity | Water Loss |
|---|---|---|---|---|
| 0' to 1593' | Fresh Water | 7.83 - 8.33 | 28 | N/C |
| 1593' to 5236' | Brine Water | 9.80 - 10.30 | 30-32 | N/C |
| 5236' to 11152' | Cut Brine or OBM | 8.50 - 9.00 | 27-70 | N/C |
| 11152' to 21091' | OBM | 8.50 - 9.00 | 50-70 | N/C |

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

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

## 6. Logging and Testing Procedures

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

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

## 7. Drilling Conditions

| Condition | |
|---|---|
| BH Pressure at deepest TVD | 5068 psi |
| Abnormal Temperature | No |

| | |
|---|---|
| Hydrogen Sulfide (H2S) monitors will be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the operator will comply with the provisions of Onshore Oil and Gas Order #6. If Hydrogen Sulfide is encountered, measured values and formations will be provided to the BLM. | |
| X | H2S is present |
| X | H2S plan is attached |

## 8. Other Facets of Operation

## 9. Wellhead

A multi-bowl wellhead system will be utilized.

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

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

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

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

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

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

All casing strings will be tested as per Onshore Order No.2 to 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 lockring 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 301H well. Surface cement will be pumped, 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 301H well until at least 8 hours and when both tail and lead slurry reach 500psi. The mandrel hanger is made up on the last joint of 13 3/8" casing and then lowered down with and landing joint. It is then lowered down until the mandrel contacts the landing ring which is prewelded 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 301H 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.

# Cementing Operational Workflow

## Conventional Cementing

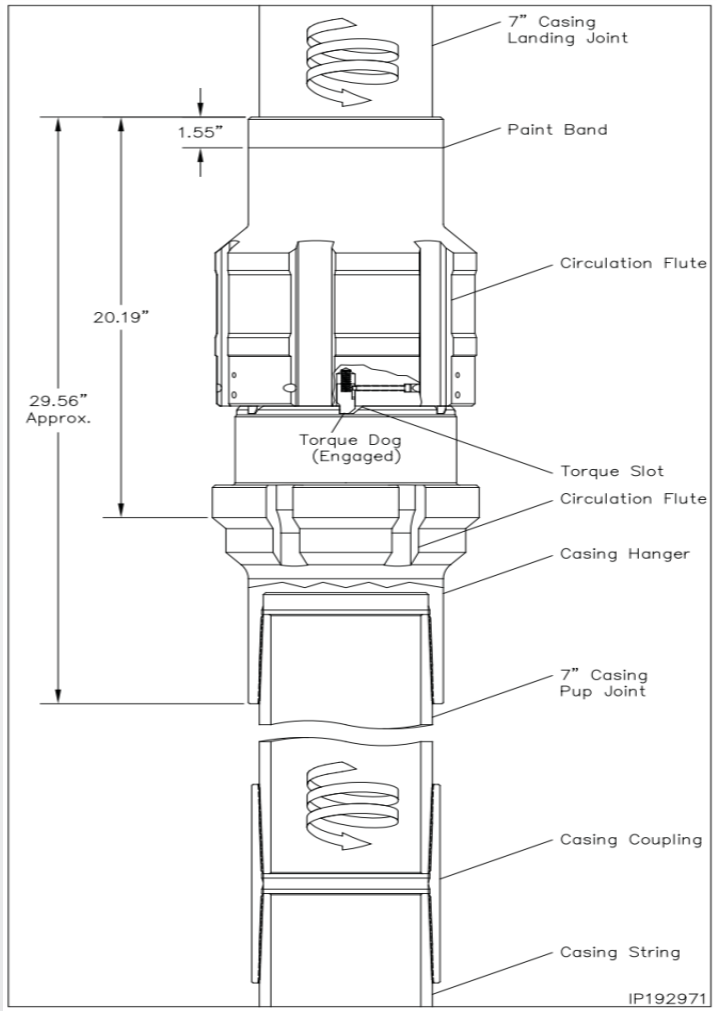
1. Land casing on fluted mandrel hanger
2. Circulate down casing, taking returns through BOP stack
3. Pump lead and tail cement
4. Displace cement and bump the plug
5. Ensure floats are holding pressure
6. RD cement crew
7. Install packoff to isolate pressure
8. Install BPV and skid rig

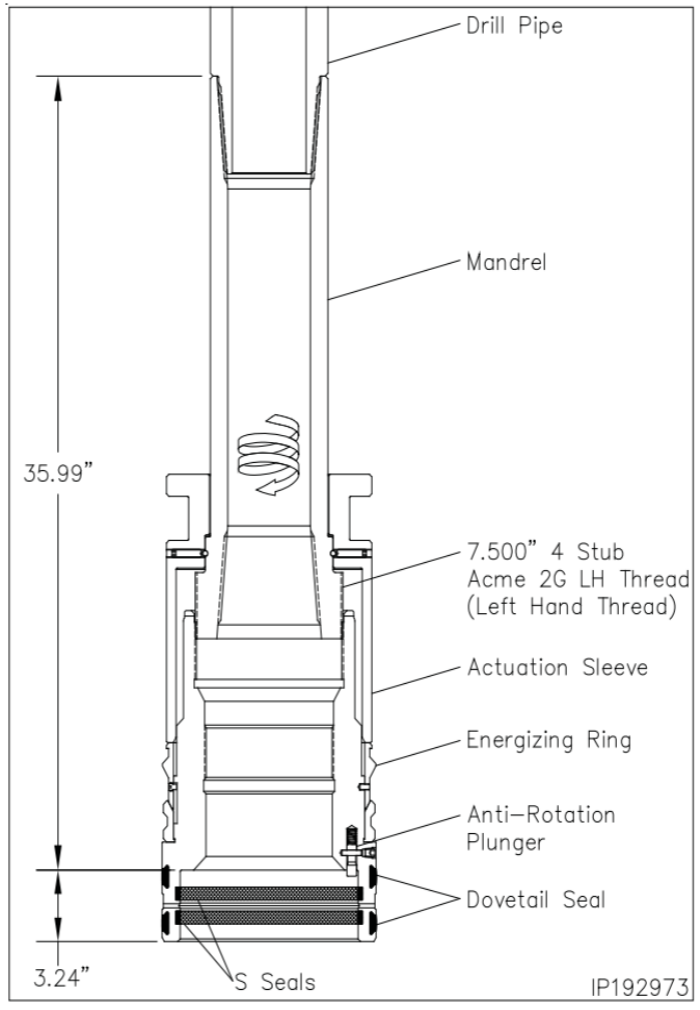
## Offline Cementing

1. Land casing on **solid body** mandrel hanger
   a) Engage packoff and lockring
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

# Conventional Cementing Equipment-Fluted Mandrel

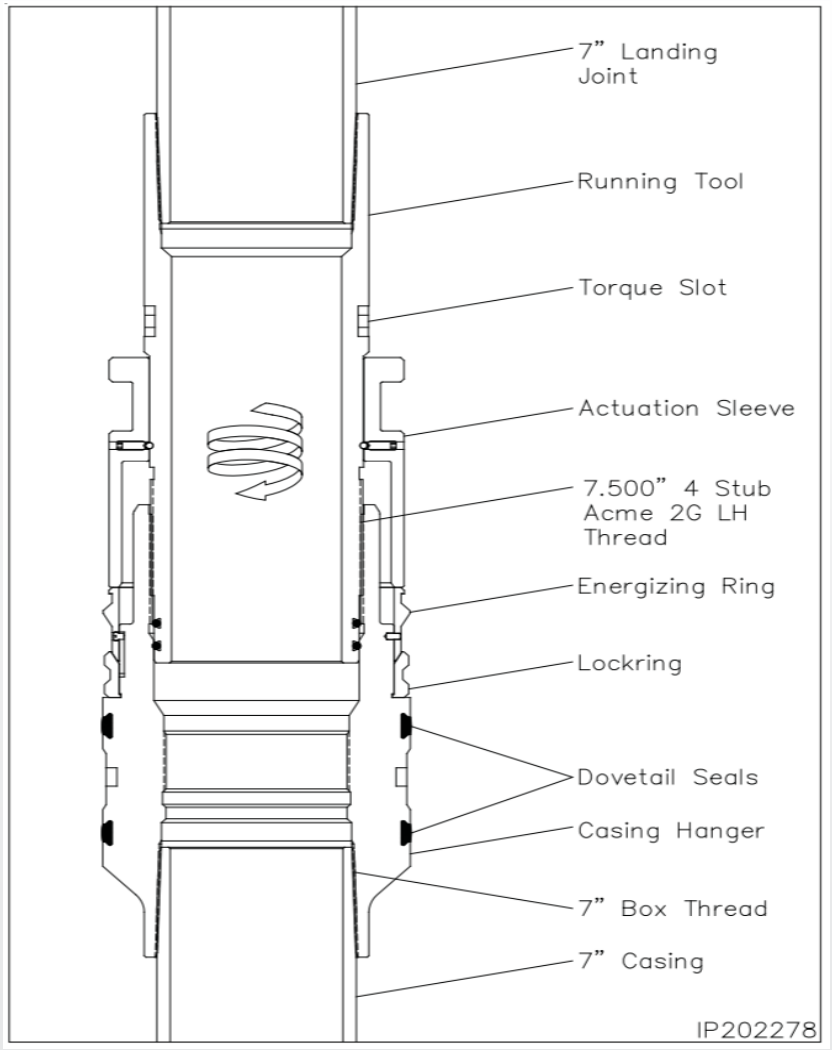
- Fluted Hanger allows returns up past the hanger body
- Returns throughout cement job flow up through BOP stack and into flowline
- Packoff is installed **after** cement job to isolate pressure above and below hanger
- Lockring engaged during packoff installation



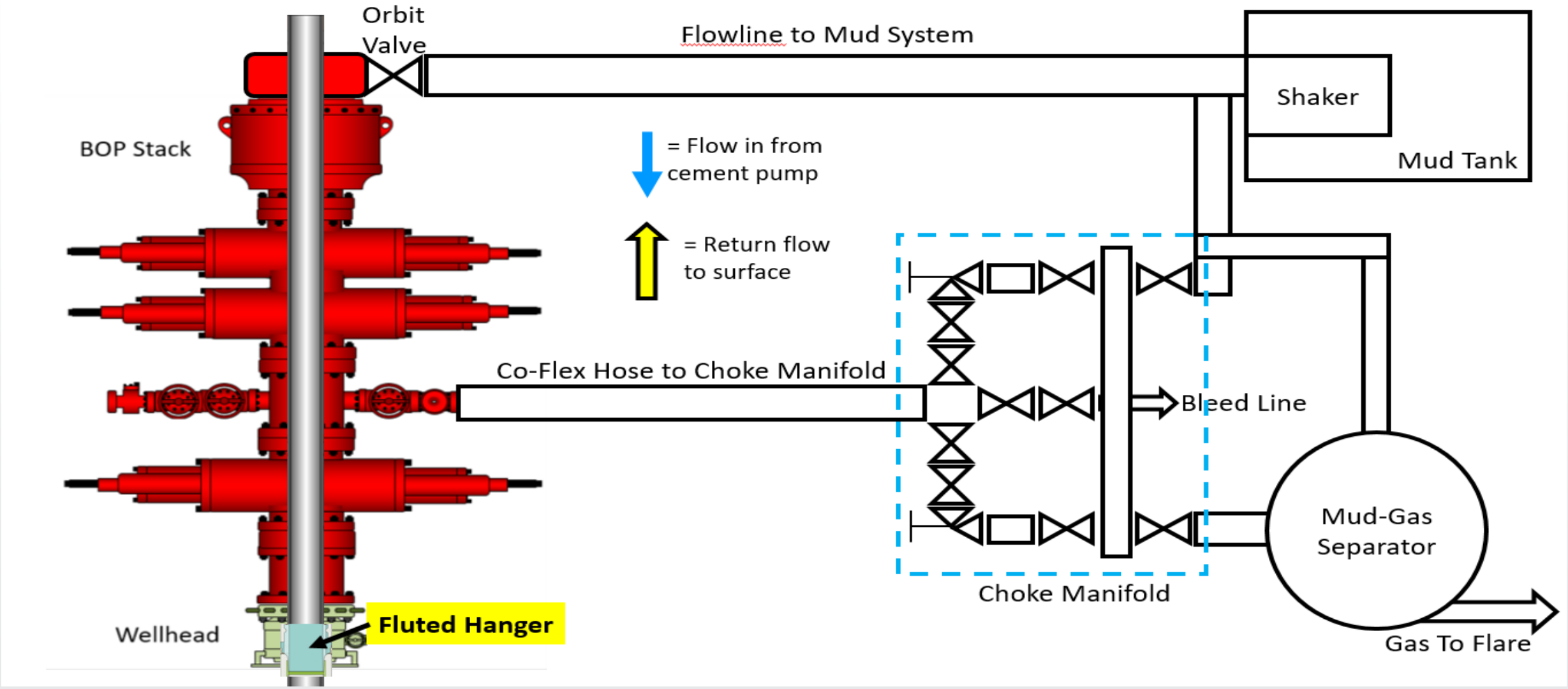



# Offline Cementing Equipment-Solid Body Mandrel Hanger

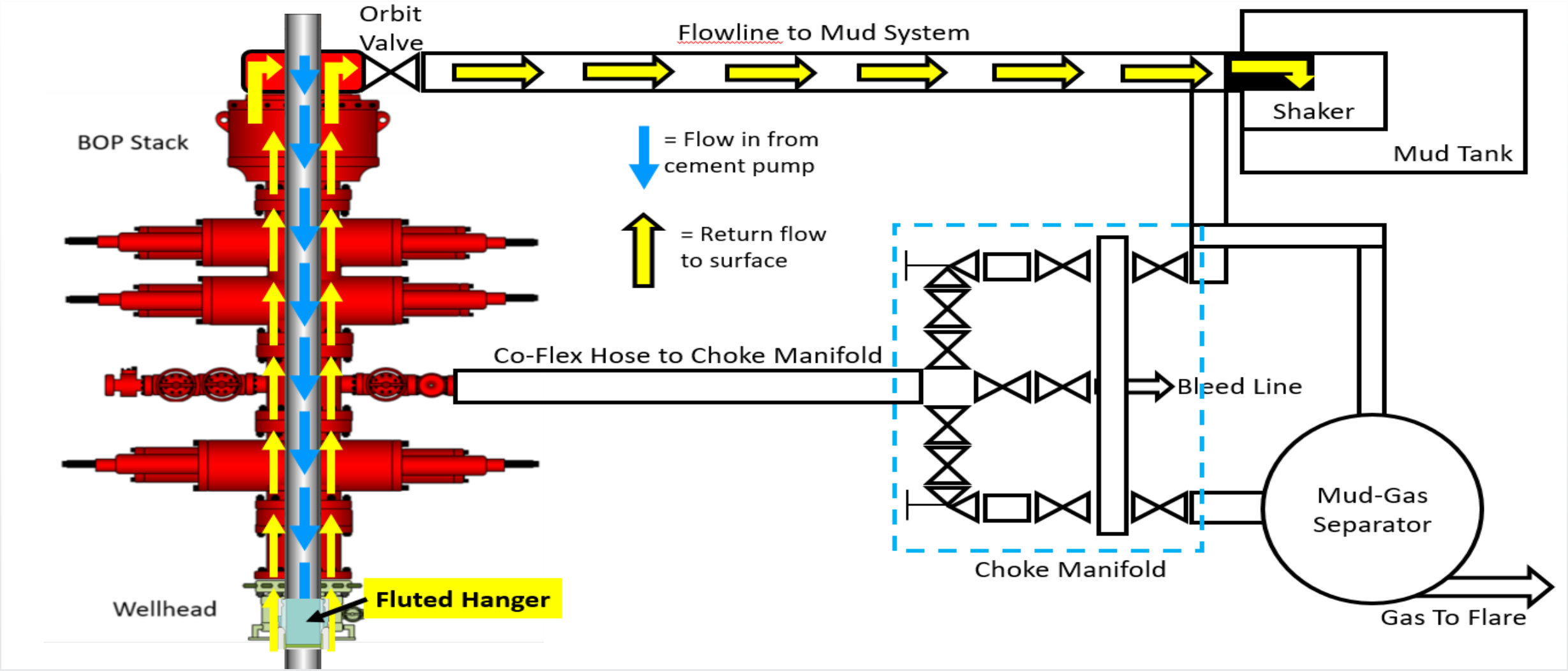
- Solid Body Mandrel Hanger allows for casing to be landed and pressure isolated in one step, **prior** to cementing
- Lockring is engaged to lock casing in place
- Casing is isolated and returns throughout cement job flow through the casing valves and through flowback iron independent of rig



# Conventional Cementing Flow Diagram



# Conventional Cementing Flow Diagram



# Offline Cementing -- Intermediate Casing

= Flow in from cement pump

= Return flow to surface

Cement Company Iron

Tank

Mud-Gas Separator

Gas To Flare

**Solid Body Hanger**

3” Flowback Iron

Same process flow as other casing valve

Choke Manifold

Open Top Tank

# Offline Cementing -- Intermediate Casing

= Flow in from cement pump

= Return flow to surface

Cement Company Iron

Tank

Mud-Gas Separator

Gas To Flare

**Solid Body Hanger**

3” Flowback Iron

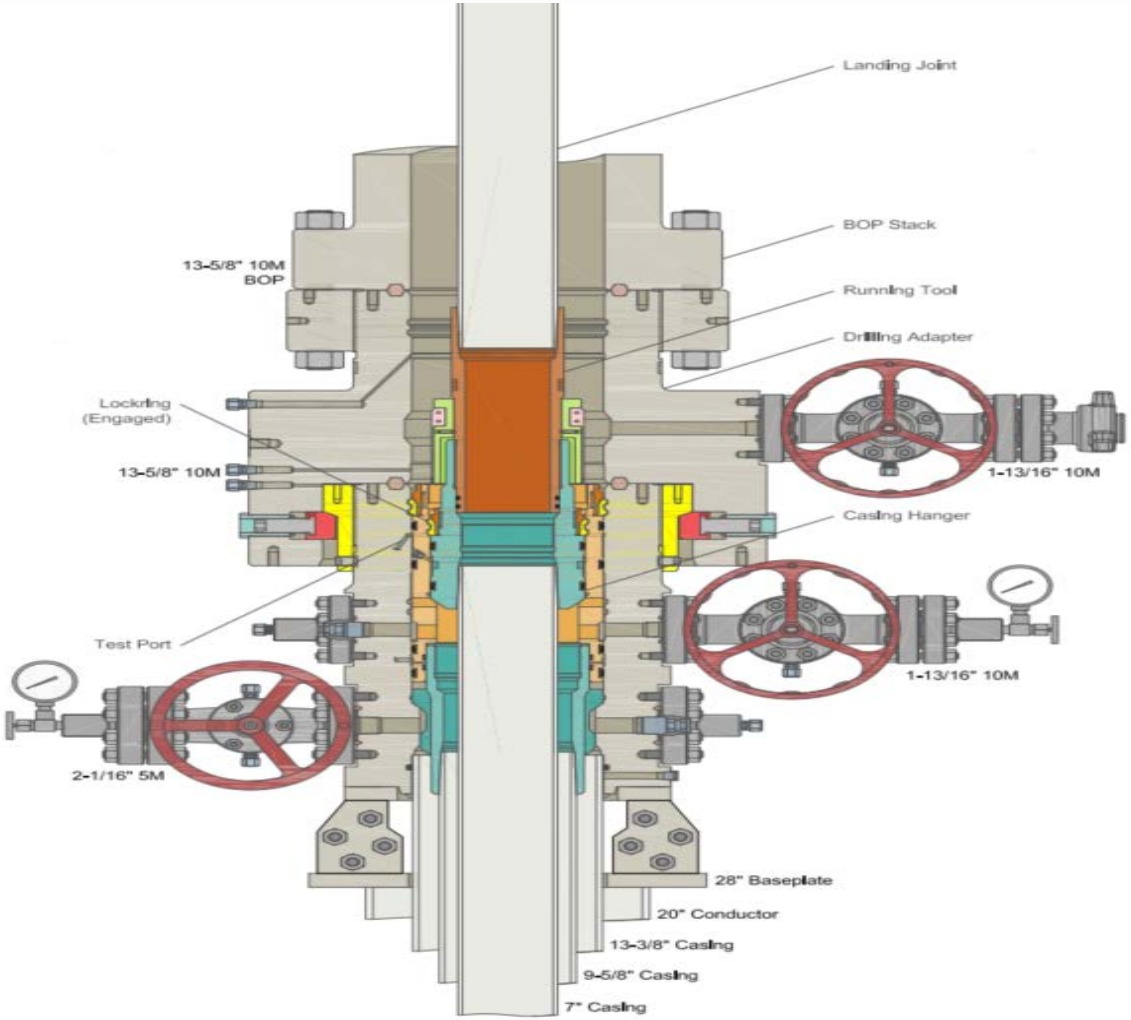
Same process flow as other casing valve

Choke Manifold

Open Top Tank

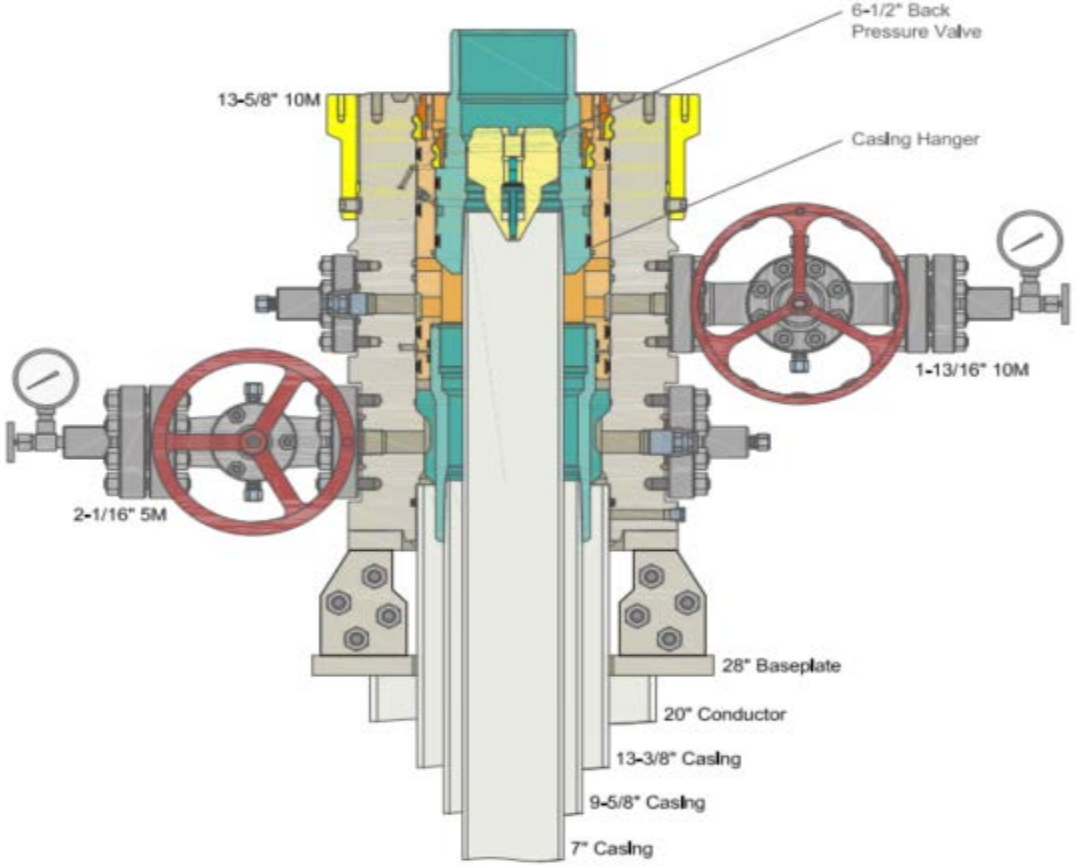
# Offline Cementing Progression

- Run 7” casing
- Land 11” nominal x 7” hanger
- Test casing hanger
- Energize 11” nom x 7” hanger lock ring and pull test
- Re-test casing hanger
- Barriers & Procedures after landing casing before setting packoff
  - 10K BOP & 5K Annular-Internal and Annular barrier
  - Kill Weight Fluid in annulus and casing (ensure well is static before setting solid body packoff) Internal and Annular barrier
    - **If well is not static we <u>WILL NOT</u> set solid body packoff.**
  - 10K float collar-Internal Barrier
  - 10k float Shoe-Internal Barrier
    - **<u>After circulating a 1.5 casing capacities to ensure full column of mud and no entrained gas pumps will be shut off and floats checked for flow</u>**



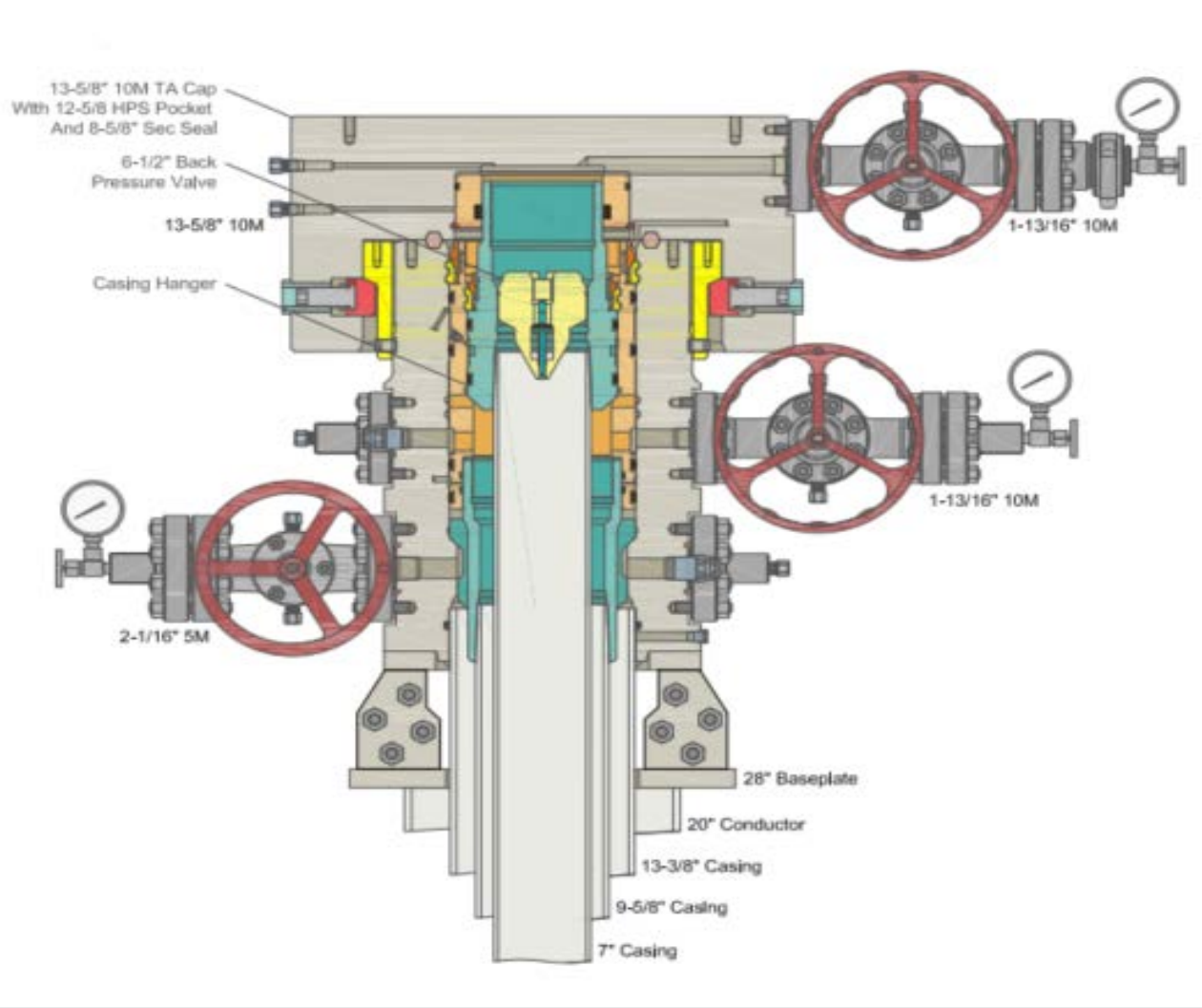
# Offline Cementing Progression

- Pick up running tool with 6-1/2” nominal Back Pressure valve run into well and set
- Barriers and procedures **BEFORE** removing BOP’s
  - Kill weight Fluid in annulus-Annular Barrier
  - Solid Body Packoff-Annular Barrier
  - 10K Float Equipment-Internal Barrier
  - 10K Back pressure valve installed with BOP still on well-Internal Barrier
    - BPV will be tested before it arrives on location by Cactus



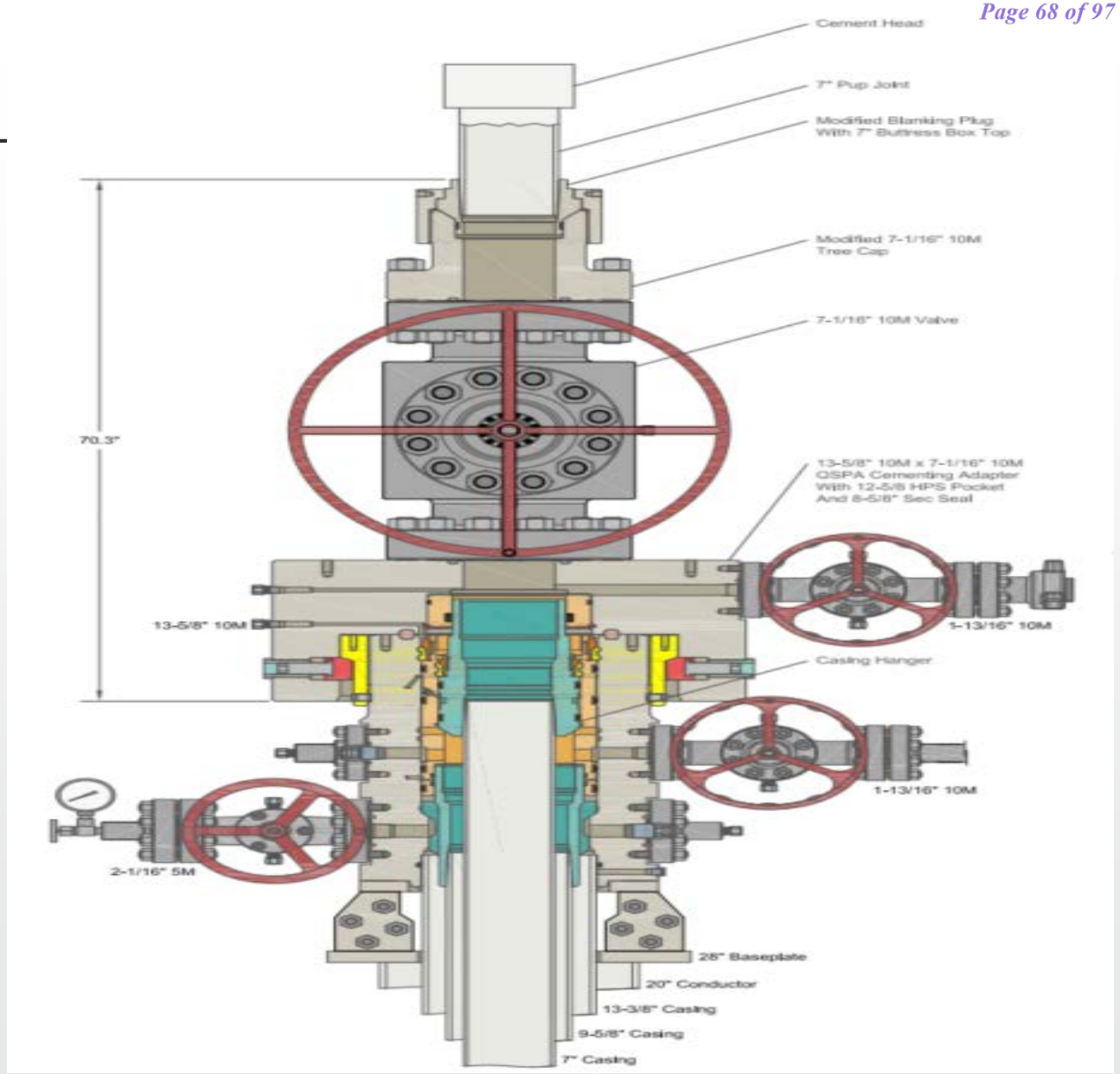
# Offline Cementing Progression

- Nipple down BOP
- Nipple up TA Cap and test
- Skid Drilling Rig
- Barriers and procedures **AFTER** removing BOP's
  - Kill weight Fluid in annulus-Annular Barrier
  - Solid Body Packoff-Annular Barrier
  - 10K Float Equipment-Internal Barrier
  - 10K Back pressure valve-Internal Barrier
  - 10K rated TA cap with Valve-Internal Barrier



# Offline Cementing Progression

- Check Pressure on TA Cap and remove
- Install adaptor with Gate valve for off line cementing and test
- Rig up flowback iron independent of rig
- Retrieve Back Pressure Valve
- Shut in well
- Rig up to cement and pump job
- NU 10K TA cap after cement job
- Barriers and procedures before **rigging up cementing equipment**
  - **Address well and ensure no pressure on TA cap**
    - **Ability to pump into well through casing valves on backside to kill if needed**
  - Kill weight Fluid in annulus-Annular barrier
  - Solid Body Packoff-Annular barrier
  - 10K Float Equipment-Internal Barrier
  - 10K Back pressure valve-Internal Barrier



# Offline Cementing Risk and COA Compliance

- All testing and breaks tested in accordance with Onshore Order # 2 and COA's
- If no cement to surface, bradenhead squeeze still possible with offline cementing equipment
- Time from skid rig to offline cementing ops typically 24 hours
- Conditions where we would not Offline Cement
  - Well is flowing
- All wellhead equipment equipment rated to 10K maintaining APD compliant
  - 10K flowback iron independent of rig circulating system
  - 10K Back Pressure Valve
  - 10K Gate Valve & TA combo for second barrier during operations
  - 10K 1-13/16 Valve coming off TA cap
  - 10K TA Cap

Hydrogen Sulfide Drilling Operations Plan
**Loosey Goosey 4-9 Fed Com 301H**
Cimarex Energy Co.
Lea Co., NM

1 All Company and Contract personnel admitted on location must be trained by a qualified H2S safety instructor to the following:

A. Characteristics of $H_2S$
B. Physical effects and hazards
C. Principal and operation of H2S detectors, warning system and briefing areas.
D. Evacuation procedure, routes and first aid.
E. Proper use of safety equipment & life support systems
F. Essential personnel meeting Medical Evaluation criteria will receive additional training on the proper use of 30 minute pressure demand air packs.

$H_2S$ Detection and Alarm Systems:

A. H2S sensors/detectors to be located on the drilling rig floor, in the base of the sub structure/cellar area, on the mud pits in the shale shaker area. Additional H2S detectors may play placed as deemed necessary.

B. An audio alarm system will be installed on the derrick floor and in the top doghouse.

3 Windsock and/or wind streamers:

A. Windsock at mudpit area should be high enough to be visible.

B. Windsock on the rig floor and / or top doghouse should be high enough to be visible.

4 Condition Flags and Signs

A. Warning sign on access road to location.
B. Flags to be displayed on sign at entrance to location. Green flag indicates normal safe condition. Yellow flag indicates potential pressure and danger. Red flag indicates danger ($H_2S$ present in dangerous concentration). Only H2S trained and certified personnel admitted to location.

5 Well control equipment:

A. See exhibit "E-1"

6 Communication:

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

7 Drillstem Testing:
No DSTs r cores are planned at this time.

8 Drilling contractor supervisor will be required to be familiar with the effects $H_2S$ has on tubular goods and other mechanical equipment.

9 If H2S is encountered, mud system will be altered if necessary to maintain control of formation. A mud gas separator will be brought into service along with H2S scavengers if necessary.

$H_2S$ Contingency Plan
**Loosey Goosey 4-9 Fed Com 301H**
Cimarex Energy Co.
Lea Co., NM

**Emergency Procedures**

In the event of a release of gas containing $H_2S$, the first responder(s) must:

« Isolate the area and prevent entry by other persons into the 100 ppm ROE.
« Evacuate any public places encompassed by the 100 ppm ROE.
« Be equipped with $H_2S$ monitors and air packs in order to control the release.
« Use the "buddy system" to ensure no injuries occur during the 432-620-1975
« Take precautions to avoid personal injury during this operation.
« Contact operator and/or local officials to aid in operation. See list of phone numbers attached.
« Have received training in the:
  · Detection of $H_2S$, and
  · Measures for protection against the gas,
  · Equipment used for protection and emergency response.

**Ignition of Gas Source**

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide ($SO_2$). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally, the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever there is an ignition of the gas.

**Characteristics of $H_2S$ and $SO_2$**

Please see attached International Chemical Safety Cards.

**Contacting Authorities**

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

$H_2S$ Contingency Plan Emergency Contacts
**Loosey Goosey 4-9 Fed Com 301H**
Cimarex Energy Co.
Lea Co., NM

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

**Key Personnel**

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

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

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

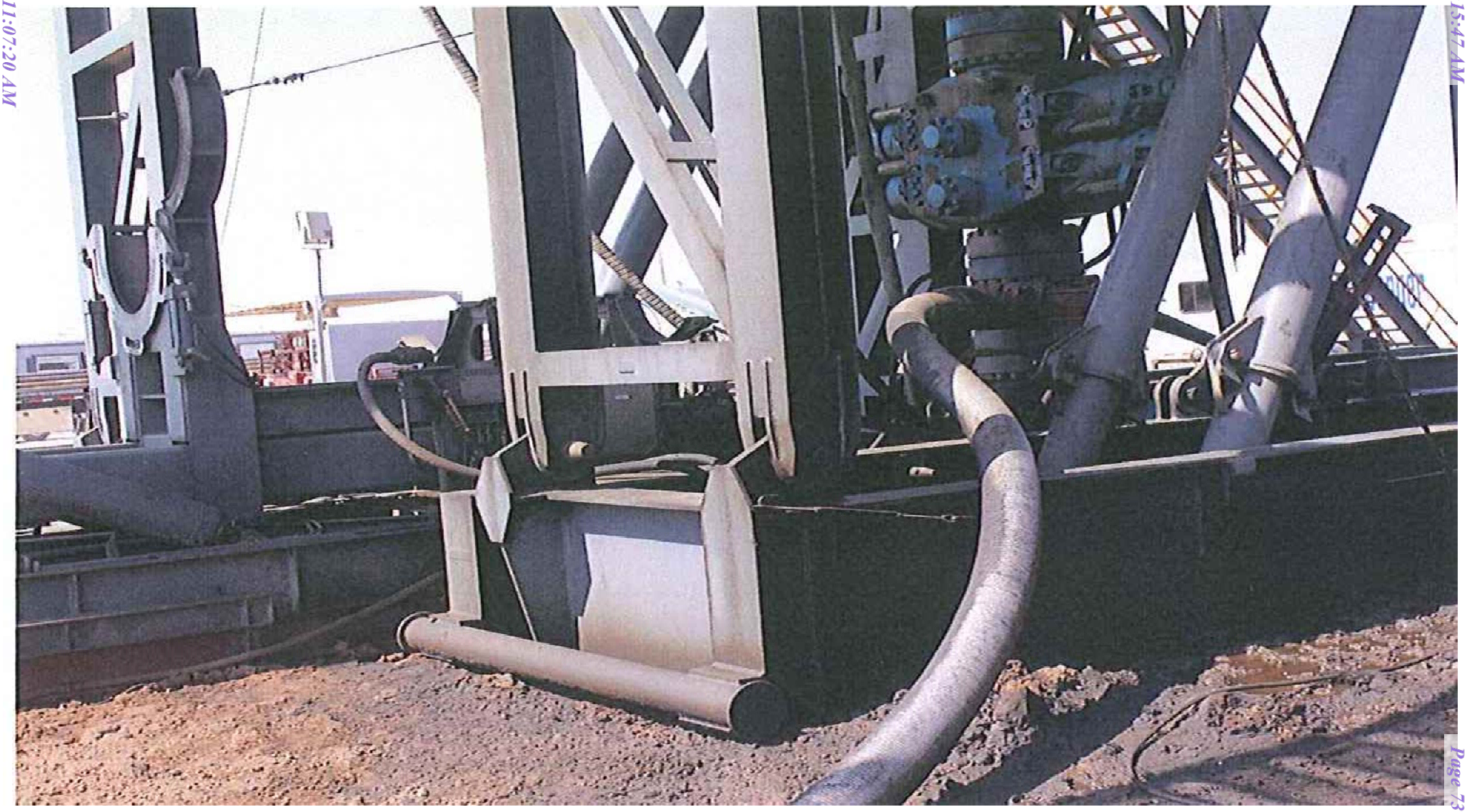
| **Santa Fe** | | | |
|---|---|---|---|
| New Mexico Emergency Response Commission (Santa Fe) | 505-476-9600 | | |
| New Mexico Emergency Response Commission (Santa Fe) 24 Hrs | 505-827-9126 | | |
| New Mexico State Emergency Operations Center | 505-476-9635 | | |

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

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

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

Co-Flex Hose
Loosey Goosey 4-9 Fed Com 301H
Cimarex Energy Co.



Co-Flex Hose Hydrostatic Test
Loosey Goosey 4-9 Fed Com 301H
Cimarex Energy Co.

Midwest Hose & Specialty, Inc.

# INTERNAL HYDROSTATIC TEST REPORT

| Customer: | P.O. Number: |
|---|---|
| Oderco Inc | odyd-271 |

## HOSE SPECIFICATIONS

| Type: | Hose Length: |
|---|---|
| Stainless Steel Armor Choke & Kill Hose | 45'ft. |

| I.D. | O.D. |
|---|---|
| 4 INCHES | 9 INCHES |

| WORKING PRESSURE | TEST PRESSURE | BURST PRESSURE |
|---|---|---|
| 10,000 PSI | 15,000 PSI | 0 PSI |

## COUPLINGS

| Stem Part No. | Ferrule No. |
|---|---|
| OKC<br>OKC | OKC<br>OKC |
| Type of Coupling: Swage-It | |

## PROCEDURE

*Hose assembly pressure tested with water at ambient temperature.*

| TIME HELD AT TEST PRESSURE | ACTUAL BURST PRESSURE: |
|---|---|
| 15 MIN. | 0 PSI |

| Hose Assembly Serial Number: | Hose Serial Number: |
|---|---|
| 79793 | OKC |

Comments:

| Date: | Tested: | Approved: |
|---|---|---|
| 3/8/2011 | A. Jaime Sanchez | |

Midwest Hose & Specialty, Inc.

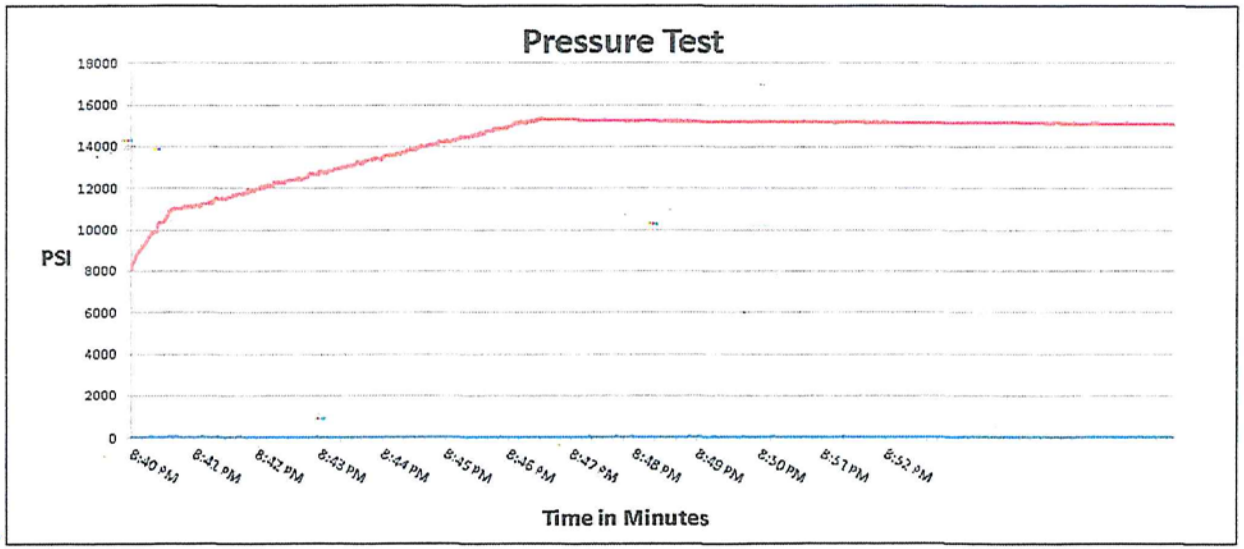
# Internal Hydrostatic Test Graph

March 3, 2011

**Customer:** Houston

**Pick Ticket #:** 94260

| Hose Specifications | | Verification | |
|---|---|---|---|
| Hose Type | Length | Type of Fitting | Coupling Method |
| C & K | 45' | 4 1/16 10K | Swage |
| I.D. | O.D. | Die Size | Final O.D. |
| 4" | 6.09" | 6.38" | 6.25" |
| Working Pressure | Burst Pressure | Hose Serial # | Hose Assembly Serial # |
| 10000 PSI | Standard Safety Multiplier Applies | 5544 | 79793 |




| Test Pressure | Time Held at Test Pressure | Actual Burst Pressure | Peak Pressure |
|---|---|---|---|
| 15000 PSI | 11 Minutes | | 15483 PSI |

**Comments:** Hose assembly pressure tested with water at ambient temperature.

**Tested By:** *Zac Mcconnell*

**Approved By:** *Kim Thomas*

Co-Flex Hose Hydrostatic Test
Loosey Goosey 4-9 Fed Com 301H
Cimarex Energy Co.

Co-Flex Hose
Loosey Goosey 4-9 Fed Com 301H
Cimarex Energy Co.

Midwest Hose
& Specialty, Inc.

## Certificate of Conformity

| Customer: | PO |
|---|---|
| DEM | ODYD-271 |

**SPECIFICATIONS**

| Sales Order | Dated: |
|---|---|
| 79793 | 3/8/2011 |

We hereby cerify that the material supplied for the referenced purchase order to be true according to the requirements of the purchase order and current industry standards

Supplier:
Midwest Hose & Specialty, Inc.
10640 Tanner Road
Houston, Texas 77041

**Comments:**

| Approved: | Date: |
|---|---|
| Ismael Garcia | 3/8/2011 |

Co-Flex Hose
Loosey Goosey 4-9 Fed Com 301H
Cimarex Energy Co.

Midwest Hose
& Specialty, Inc.

# Specification Sheet
# Choke & Kill Hose

The Midwest Hose & Specialty Choke & Kill hose is manufactured with only premium componets.The reinforcement cables, inner liner and cover are made of the highest quality material to handle the tough drilling applications of today's industry. The end connections are available with API flanges, API male threads, hubs, hammer unions or other special fittings upon request. Hose assembly is manufactured to API 7K. This assembly is wrapped with fire resistant vermculite coated fiberglass insulation, rated at 2000 degrees with stainless steel armor cover.

| | |
|---|---|
| **Working Pressure:** | 5,000 or 10,000 psi working pressure |
| **Test Pressure:** | 10,000 or 15,000 psi test pressure |
| **Reinforcement:** | Multiple steel cables |
| **Cover:** | Stainless Steel Armor |
| **Inner Tube:** | Petroleum resistant, Abrasion resistant |
| **End Fitting:** | API flanges, API male threads, threaded or butt weld hammer unions, unibolt and other special connections |
| **Maximum Length:** | 110 Feet |
| **ID:** | 2-1/2", 3", 3-1/2", 4" |
| **Operating Temperature:** | -22 deg F to +180 deg F (-30 deg C to +82 deg C) |

P.O. Box 96558 – 1421 S.E. 29th St. Oklahoma City, OK 73143 * (405) 670-6718 * Fax: (405) 670-6816

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

# SUPO Data Report
01/25/2024

**APD ID:** 10400083750
**Submission Date:** 03/17/2022
**Operator Name:** CIMAREX ENERGY COMPANY
**Well Name:** LOOSEY GOOSEY 4-9 FED COM
**Well Number:** 301H
**Well Type:** OIL WELL
**Well Work Type:** Drill

Highlighted data reflects the most recent changes
Show Final Text

## Section 1 - Existing Roads

**Will existing roads be used?** YES

**Existing Road Map:**

Chapadoniz_and_Loosey_Goosey_E2W2_Pad_Existing_Access_Road_20220309153233.pdf

**Existing Road Purpose:** ACCESS,FLUID TRANSPORT **Row(s) Exist?** NO

### ROW ID(s)

**ID:** NM137119

**Do the existing roads need to be improved?** NO

**Existing Road Improvement Description:**

**Existing Road Improvement Attachment:**

## Section 2 - New or Reconstructed Access Roads

**Will new roads be needed?** YES

**New Road Map:**

Chapadoniz_and_Loosey_Goosey_E2W2_New_Access_Road_ROW_20220309153251.pdf

**New road type:** COLLECTOR

**Length:** 1524 Feet **Width (ft.):** 30

**Max slope (%):** 2 **Max grade (%):** 6

**Army Corp of Engineers (ACOE) permit required?** N

**ACOE Permit Number(s):**

**New road travel width:** 18

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

**New road access plan**

**Operator Name:** CIMAREX ENERGY COMPANY

**Well Name:** LOOSEY GOOSEY 4-9 FED COM **Well Number:** 301H

**Access road engineering design?** N

**Access road engineering design**

**Turnout?** N

**Access surfacing type:** OTHER

**Access topsoil source:** ONSITE

**Access surfacing type description:** Caliche

**Access onsite topsoil source depth:** 6

**Offsite topsoil source description:**

**Onsite topsoil removal process:** Push off and stockpile alongside the location

**Access other construction information:** The operator will prevent and abate fugitive dust as needed created by vehicular traffic, equipment operations or other events.
**Access miscellaneous information:** N/a

**Number of access turnouts:** **Access turnout map:**

## Drainage Control

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

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

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

**Road Drainage Control Structures (DCS) attachment:**

## Access Additional Attachments

## Section 3 - Location of Existing Wells

**Existing Wells Map?** YES

**Attach Well map:**

Chapadoniz_and_Loosey_Goosey_E2W2_Pad_One_Mile_Radius_20220309153522.pdf

**Operator Name:** CIMAREX ENERGY COMPANY

**Well Name:** LOOSEY GOOSEY 4-9 FED COM **Well Number:** 301H

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

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

**Production Facilities description:** Production from this well pad will be routed to the proposed Loosey Goosey 4-9 E2W2 Battery located in the SW of section 33 19S 34E .1524' of new access road will be built. 9460' of offlease 3phase 4wire 40v overhead powerline will be built. Bulklines/Flowlines will be On-Pad.
**Production Facilities map:**

Mighty_Loosey_Chap_Power_ROW_20220301143624.pdf

Loosey_Goosey_4_9_Fed_Com_E2W2_Temp_Water_Route_20220309154332.pdf

Mighty_Chapadoniz_and_Loosey_Goosey_E2W2_On_Pad_Battery_20220317083156.pdf

Loosey_Goosey_4_9_Fed_Com_E2W2_SUPO_20220317083205.pdf

## Section 5 - Location and Types of Water Supply

### Water Source Table

**Water source type:** MUNICIPAL

**Water source use type:** SURFACE CASING

INTERMEDIATE/PRODUCTION CASING

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

**Source datum:**

**Water source permit type:** WATER RIGHT

**Permit Number:**

**Water source transport method:** TRUCKING

**Source land ownership:** FEDERAL

**Source transportation land ownership:** FEDERAL

**Water source volume (barrels):** 5000 **Source volume (acre-feet):** 0.64446548

**Source volume (gal):** 210000

---

**Water source and transportation**

Loosey_Goosey_4_9_Drilling_Water_Route_20220309154538.pdf

**Water source comments:**

**New water well?** N

### New Water Well Info

**Operator Name:** CIMAREX ENERGY COMPANY

**Well Name:** LOOSEY GOOSEY 4-9 FED COM **Well Number:** 301H

**Well latitude:** **Well Longitude:** **Well datum:**

**Well target aquifer:**

**Est. depth to top of aquifer(ft):** **Est thickness of aquifer:**

**Aquifer comments:**

**Aquifer documentation:**

**Well depth (ft):** **Well casing type:**

**Well casing outside diameter (in.):** **Well casing inside diameter (in.):**

**New water well casing?** **Used casing source:**

**Drilling method:** **Drill material:**

**Grout material:** **Grout depth:**

**Casing length (ft.):** **Casing top depth (ft.):**

**Well Production type:** **Completion Method:**

**Water well additional information:**

**State appropriation permit:**

**Additional information attachment:**

## Section 6 - Construction Materials

**Using any construction materials:** YES

**Construction Materials description:** Caliche will be obtained from the actual well site if available. If not available onsite caliche will be obtained for a pit located in SESW SWSE of Sec. 25 19S 33E & SW of Sec 13 19S 33E

**Construction Materials source location**

## Section 7 - Methods for Handling

**Waste type:** DRILLING

**Waste content description:** Drilling Fluids, drill cuttings, water and other waste produced from the well during drilling operations.
**Amount of waste:** 15000 barrels

**Waste disposal frequency :** Weekly

**Safe containment description:** N/A

**Safe containmant attachment:**

**Waste disposal type:** HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** COMMERCIAL
**Disposal type description:**

**Disposal location description:** Haul to R360 Environmental Solutions, 4507 Carlsbad Hwy, Hobbs, NM 88240

**Operator Name:** CIMAREX ENERGY COMPANY

**Well Name:** LOOSEY GOOSEY 4-9 FED COM **Well Number:** 301H

**Waste type:** SEWAGE

**Waste content description:** Human Waste

**Amount of waste:** 300 gallons

**Waste disposal frequency :** Weekly

**Safe containment description:** Waste will be properly contained and disposed of properly at a state approved disposal facility.

**Safe containmant attachment:**

**Waste disposal type:** HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** PRIVATE

**Disposal type description:**

**Disposal location description:** A licensed 3rd party contractor will be used to haul and dispose human waste to City of Toyah TX waste water facility.

**Waste type:** GARBAGE

**Waste content description:** Garbage and trash produced during drilling and completion operations

**Amount of waste:** 32500 pounds

**Waste disposal frequency :** Weekly

**Safe containment description:** N/A

**Safe containmant attachment:**

**Waste disposal type:** HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** COMMERCIAL

**Disposal type description:**

**Disposal location description:** A licensed 3rd party hauls trash to Lea County Landfill

## Reserve Pit

**Reserve Pit being used?** NO

**Temporary disposal of produced water into reserve pit?** NO

**Reserve pit length (ft.)** **Reserve pit width (ft.)**

**Reserve pit depth (ft.)** **Reserve pit volume (cu. yd.)**

**Is at least 50% of the reserve pit in cut?**

**Reserve pit liner**

**Reserve pit liner specifications and installation description**

## Cuttings Area

**Cuttings Area being used?** NO

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

**Operator Name:** CIMAREX ENERGY COMPANY

**Well Name:** LOOSEY GOOSEY 4-9 FED COM **Well Number:** 301H

**Description of cuttings location**

**Cuttings area length (ft.)** **Cuttings area width (ft.)**

**Cuttings area depth (ft.)** **Cuttings area volume (cu. yd.)**

**Is at least 50% of the cuttings area in cut?**

**WCuttings area liner**

**Cuttings area liner specifications and installation description**

## Section 8 - Ancillary

**Are you requesting any Ancillary Facilities?:** N

**Ancillary Facilities**

**Comments:**

## Section 9 - Well Site

**Well Site Layout Diagram:**

Loosey_Goosey_4_9_Fed_Com_301H_Wellsite_Layout_20220309154612.pdf

Loosey_Goosey_4_9_E2W2_Well_List_20220309155135.docx

**Comments:**

## Section 10 - Plans for Surface Reclamation

**Type of disturbance:** New Surface Disturbance **Multiple Well Pad Name:** Loosey Goosey 4-9 Fed Com

**Multiple Well Pad Number:** E2W2

**Recontouring**

Chapadoniz_and_Loosey_Goosey_E2W2_Interim_Reclaim_20220309155155.pdf

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

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

**Operator Name:** CIMAREX ENERGY COMPANY

**Well Name:** LOOSEY GOOSEY 4-9 FED COM **Well Number:** 301H

| | | |
|---|---|---|
| **Well pad proposed disturbance (acres):** 12.861 | **Well pad interim reclamation (acres):** 3.335 | **Well pad long term disturbance (acres):** 9.526 |
| **Road proposed disturbance (acres):** 1.05 | **Road interim reclamation (acres):** 0 | **Road long term disturbance (acres):** 1.05 |
| **Powerline proposed disturbance (acres):** 6.512 | **Powerline interim reclamation (acres):** 0 | **Powerline long term disturbance (acres):** 6.512 |
| **Pipeline proposed disturbance (acres):** 17.78 | **Pipeline interim reclamation (acres):** 0 | **Pipeline long term disturbance (acres):** 17.78 |
| **Other proposed disturbance (acres):** 0 | **Other interim reclamation (acres):** 0 | **Other long term disturbance (acres):** 0 |
| **Total proposed disturbance:** 38.203 | **Total interim reclamation:** 3.335 | **Total long term disturbance:** 34.868 |

**Disturbance Comments:**

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

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

**Soil treatment:** The soil surface would be prepared to provide a seedbed for reestablishment of desirable vegetation. Establish control of erosion and invasion of non-native plants to reestablish plant community.
**Existing Vegetation at the well pad:** N/A

**Existing Vegetation at the well pad**

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

**Existing Vegetation Community at the road**

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

**Existing Vegetation Community at the pipeline**

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

**Existing Vegetation Community at other disturbances**

**Non native seed used?** N

**Non native seed description:**

**Seedling transplant description:**

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

**Operator Name:** CIMAREX ENERGY COMPANY

**Well Name:** LOOSEY GOOSEY 4-9 FED COM **Well Number:** 301H

**Seedling transplant description**

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

**Seed harvest description:**

**Seed harvest description attachment:**

## Seed

### Seed Table

### Seed Summary

**Total pounds/Acre:**

| Seed Type | Pounds/Acre |
|---|---|

**Seed reclamation**

## Operator Contact/Responsible Official

**First Name:** amithy **Last Name:** Crawford

**Phone:** (432)620-1909 **Email:** amithy.crawford@coterra.com

**Seedbed prep:**

**Seed BMP:**

**Seed method:**

**Existing invasive species?** N

**Existing invasive species treatment description:**

**Existing invasive species treatment**

**Weed treatment plan description:** N/A

**Weed treatment plan**

**Monitoring plan description:** N/A

**Monitoring plan**

**Success standards:** N/A

**Pit closure description:** N/A

**Pit closure attachment:**

## Section 11 - Surface Ownership

**Operator Name:** CIMAREX ENERGY COMPANY

**Well Name:** LOOSEY GOOSEY 4-9 FED COM **Well Number:** 301H

**Disturbance type:** PIPELINE

**Describe:**

**Surface Owner:** BUREAU OF LAND MANAGEMENT,STATE GOVERNMENT

**Other surface owner description:**

**BIA Local Office:**

**BOR Local Office:**

**COE Local Office:**

**DOD Local Office:**

**NPS Local Office:**

**State Local Office:** NMSLO

**Military Local Office:**

**USFWS Local Office:**

**Other Local Office:**

**USFS Region:**

**USFS Forest/Grassland:** **USFS Ranger District:**

**Disturbance type:** WELL PAD

**Describe:**

**Surface Owner:** BUREAU OF LAND MANAGEMENT

**Other surface owner description:**

**BIA Local Office:**

**BOR Local Office:**

**COE Local Office:**

**DOD Local Office:**

**NPS Local Office:**

**State Local Office:**

**Military Local Office:**

**USFWS Local Office:**

**Other Local Office:**

**USFS Region:**

**USFS Forest/Grassland:** **USFS Ranger District:**

**Operator Name:** CIMAREX ENERGY COMPANY

**Well Name:** LOOSEY GOOSEY 4-9 FED COM **Well Number:** 301H

**Disturbance type:** TRANSMISSION LINE

**Describe:**

**Surface Owner:** BUREAU OF LAND MANAGEMENT,STATE GOVERNMENT

**Other surface owner description:**

**BIA Local Office:**

**BOR Local Office:**

**COE Local Office:**

**DOD Local Office:**

**NPS Local Office:**

**State Local Office:** NMSLO

**Military Local Office:**

**USFWS Local Office:**

**Other Local Office:**

**USFS Region:**

**USFS Forest/Grassland:** **USFS Ranger District:**

**Disturbance type:** NEW ACCESS ROAD

**Describe:**

**Surface Owner:** BUREAU OF LAND MANAGEMENT

**Other surface owner description:**

**BIA Local Office:**

**BOR Local Office:**

**COE Local Office:**

**DOD Local Office:**

**NPS Local Office:**

**State Local Office:**

**Military Local Office:**

**USFWS Local Office:**

**Other Local Office:**

**USFS Region:**

**USFS Forest/Grassland:** **USFS Ranger District:**

**Operator Name:** CIMAREX ENERGY COMPANY

**Well Name:** LOOSEY GOOSEY 4-9 FED COM **Well Number:** 301H

## Section 12 - Other

**Right of Way needed?** Y **Use APD as ROW?** Y

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

## ROW

**SUPO Additional Information:**

**Use a previously conducted onsite?** N

**Previous Onsite information:**

## Other SUPO

# Cimarex Loosey Goosey 4-9 Fed Com E2W2
# Surface Use Plan

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

**Existing Roads**

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

**New or Reconstructed Access Roads**

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

- Length: 1524'
- Width: 30'
- Road Plat - Exhibit D.
- A ROW will be submitted to the BLM for approval.
- Cimarex Energy will complete improvements to the driving surface as needed.
- The maximum width of the driving surface for all roads above will be 18'.
- The road will be crowned and ditched with a 2% slope from the tip of the crown to the edge of the driving surface.
- The ditches will be 1' deep with 3:1 slopes.
- The driving surface will be made of 6" rolled and compacted caliche.
- Cimarex Energy will prevent and abate fugitive dust as needed, whether created by vehicular traffic, equipment operations, or other events.

**Well Radius Map**

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

**Proposed or Existing Production Facility**

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

- Loosey Goosey 4-9 E2W2 CTB - Exhibit F
  - Direction to facility
  - Facility pad location layout and cut and fill
  - Facility pad archeological boundary
  - Facility pad flowline corridor
  - Facility pad access road

**Gas Pipeline Specifications**

- No new gas pipelines are required for this project.

**Salt Water Disposal Specifications**

- No new SWD pipelines are required for this project.

**Power Lines**

# Cimarex Loosey Goosey 4-9 Fed Com E2W2
# Surface Use Plan

- Cimarex plans to construct an off-lease power line to service the Mighty Pheasant wells.
- Overhead power line from an existing power source located in the .
- Length: 9,460'.
- Poles: 34
- Specifications: 480 volt, 4 wire, 3 phase.
- Please see Exhibit I for proposed route.
- A ROW application will be submitted to the BLM for the proposed route.

**Well Site Location**

- Proposed well pad/location layout - Exhibit J.
- Proposed Rig layout - Exhibit K
    - The rig layout, including V-door and flare line may change depending on rig availability. The pad dimensions and orientation will remain the same. No additional disturbance is anticipated if a rig layout change is necessary to accommodate the drilling rig. If additional disturbance is required a sundry notice will be submitted to the BLM for approval.
    - Mud pits in the closed circulation system will be steel pits and the cuttings will be stored in the steel containment pits.
    - Cuttings will be stored in steel pits until they are hauled to a state-approved disposal facility.
- Archeological boundary - Exhibit L
- Multi well pad: 301H 302H 202H 102H 201H 101H & Chapadoniz 33-28 Fed Com 1H
- Pad Size: 500 x 560
- Construction Material
    - If possible, native caliche will be obtained from the excavation of drill site. The primary way of obtaining caliche will be by "turning over" the location. This means caliche will be obtained from the actual well site. A caliche permit will be obtained from BLM prior to pushing up any caliche. 2,400 cu yds is the max amount of caliche needed for pad and roads. Amount will vary for each pad. The procedure below has been approved by BLM personnel:
        - The top 6 inches of topsoil is pushed off and stockpiled along the side of the location.
        - An approximate 120' x 120' area is used within the proposed well site to remove caliche.
        - Subsoil is removed and piled alongside the 120' x 120' area within the pad site.
        - When caliche is found, material will be stockpiled within the pad site to build the location and road.
        - Then subsoil is pushed back in the hole and caliche is spread accordingly across entire location and road.
        - Once well is drilled, the stockpiled top soil will be used for interim reclamation and spread along areas where caliche is picked up and the location size is reduced. Neither caliche nor subsoil will be stockpiled outside of the well pad. Topsoil will be stockpiled along the edge of the pad as depicted in Exhibit J - Layout Diagram.
        - Caliche will be obtained from the actual well site if available. If not available onsite caliche will be obtained for a pit located in SESW SWSE of Sec. 25 19S 33E & SW of Sec 13 19S 33E
    - Mud pits in the closed circulation system will be steel pits and the cuttings will be stored in steel containment pits.
- Cuttings will be stored in steel pits until they are hauled to a state-approved disposal facility.
- If the well is a producer, those areas of the location not essential to production facilities will be reclaimed and seeded per BLM requirements. Exhibit P: Interim Reclamation Diagram.
- There are no known dwellings within 1.5 miles of this location.

**Bulkline Pipelines**

All proposed pipelines will be constructed on-Pad

**Water Resources**

1- 12" temporary layflat poly fresh water line. 5 miles in length.

**Methods of Handling Waste**

# Cimarex Loosey Goosey 4-9 Fed Com E2W2
# Surface Use Plan

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

**Ancillary Facilities**
No camps or airstrips to be constructed.

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

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

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

**On Site Notes and Information**:
Location was droned

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BUREAU OF LAND MANAGEMENT

# PWD Data Report

01/25/2024

**APD ID:** 10400083750 **Submission Date:** 03/17/2022

**Operator Name:** CIMAREX ENERGY COMPANY

**Well Name:** LOOSEY GOOSEY 4-9 FED COM **Well Number:** 301H

**Well Type:** OIL WELL **Well Work Type:** Drill

## Section 1 - General

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

## Section 2 - Lined

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

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

**PWD surface owner:** **PWD disturbance (acres):**

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

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

**Lined pit**

**Pit liner description:**

**Pit liner manufacturers**

**Precipitated solids disposal:**

**Decribe precipitated solids disposal:**

**Precipitated solids disposal**

**Lined pit precipitated solids disposal schedule:**

**Lined pit precipitated solids disposal schedule**

**Lined pit reclamation description:**

**Lined pit reclamation**

**Leak detection system description:**

**Leak detection system**

**Operator Name:** CIMAREX ENERGY COMPANY

**Well Name:** LOOSEY GOOSEY 4-9 FED COM **Well Number:** 301H

**Lined pit Monitor description:**

**Lined pit Monitor**

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

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

**Lined pit bond number:**

**Lined pit bond amount:**

**Additional bond information**

## Section 3 - Unlined

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

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

**PWD disturbance (acres):** **PWD surface owner:**

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

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

**Unlined pit**

**Precipitated solids disposal:**

**Decribe precipitated solids disposal:**

**Precipitated solids disposal**

**Unlined pit precipitated solids disposal schedule:**

**Unlined pit precipitated solids disposal schedule**

**Unlined pit reclamation description:**

**Unlined pit reclamation**

**Unlined pit Monitor description:**

**Unlined pit Monitor**

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

**Beneficial use user**

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

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

**TDS lab results:**

**Geologic and hydrologic**

**State**

**Unlined Produced Water Pit Estimated**

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

**Operator Name:** CIMAREX ENERGY COMPANY

**Well Name:** LOOSEY GOOSEY 4-9 FED COM **Well Number:** 301H

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

**Unlined pit bond number:**

**Unlined pit bond amount:**

**Additional bond information**

## Section 4 -

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

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

**PWD surface owner:** **PWD disturbance (acres):**

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

**Injection well mineral owner:**

**Injection well type:**

**Injection well number:** **Injection well name:**

**Assigned injection well API number?** **Injection well API number:**

**Injection well new surface disturbance (acres):**

**Minerals protection information:**

**Mineral protection**

**Underground Injection Control (UIC) Permit?**

**UIC Permit**

## Section 5 - Surface

**Would you like to utilize Surface Discharge PWD options?** N

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

**PWD surface owner:** **PWD disturbance (acres):**

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

**Surface Discharge NPDES Permit?**

**Surface Discharge NPDES Permit attachment:**

**Surface Discharge site facilities information:**

**Surface discharge site facilities map:**

## Section 6 -

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

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

**PWD surface owner:** **PWD disturbance (acres):**

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

**Operator Name:** CIMAREX ENERGY COMPANY

**Well Name:** LOOSEY GOOSEY 4-9 FED COM **Well Number:** 301H

**Other PWD type description:**

**Other PWD type**

**Have other regulatory requirements been met?**

**Other regulatory requirements**

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

# Bond Info Data
01/25/2024

**APD ID:** 10400083750
**Submission Date:** 03/17/2022
**Operator Name:** CIMAREX ENERGY COMPANY
**Well Name:** LOOSEY GOOSEY 4-9 FED COM
**Well Number:** 301H
**Well Type:** OIL WELL
**Well Work Type:** Drill

Highlighted data reflects the most recent changes
Show Final Text

## Bond

**Federal/Indian APD:** FED

**BLM Bond number:** NMB001188

**BIA Bond number:**

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

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

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

**BLM reclamation bond number:**

**Forest Service reclamation bond number:**

**Forest Service reclamation bond**

**Reclamation bond number:**

**Reclamation bond amount:**

**Reclamation bond rider amount:**

**Additional reclamation bond information**

**District I**
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
**District II**
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
**District III**
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
**District IV**
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

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



## CONDITIONS

| Operator: | OGRID: |
|---|---|
| CIMAREX ENERGY CO.<br>6001 Deauville Blvd<br>Midland, TX 79706 | 215099 |
| | Action Number:<br>308831 |
| | Action Type:<br>[C-101] BLM - Federal/Indian Land Lease (Form 3160-3) |

**CONDITIONS**

| Created By | Condition | Condition Date |
|---|---|---|
| pkautz | Will require a File As Drilled C-102 and a Directional Survey with the C-104 | 2/6/2024 |
| pkautz | Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string | 2/6/2024 |
| pkautz | Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system | 2/6/2024 |
| pkautz | Cement is required to circulate on both surface and intermediate1 strings of casing | 2/6/2024 |
| pkautz | If cement does not circulate on any string, a CBL is required for that string of casing | 2/6/2024 |