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.: NMNM31375

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.: CAPER 20/29 FED COM 417H

2. Name of Operator: MEWBOURNE OIL COMPANY

9. API Well No.: 30-025-55069

3a. Address: P O BOX 5270, HOBBS, NM 88241

3b. Phone No. *(include area code)*: (575) 393-5905

10. Field and Pool, or Exploratory: Bilbrey Basin/Bone Spring

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

At surface: SESW / 300 FSL / 1515 FWL / LAT 32.4722452 / LONG -103.7005254

At proposed prod. zone: SESE / 100 FSL / 1320 FEL / LAT 32.4426862 / LONG -103.6925687

11. Sec., T. R. M. or Blk. and Survey or Area: SEC 17/T21S/R32E/NMP

14. Distance in miles and direction from nearest town or post office*: 20 miles

12. County or Parish: LEA

13. State: NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any): 330 feet

16. No of acres in lease:

17. Spacing Unit dedicated to this well: 640.0

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.: 20 feet

19. Proposed Depth: 9721 feet / 20811 feet

20. BLM/BIA Bond No. in file: FED:

21. Elevations (Show whether DF, KDB, RT, GL, etc.): 3633 feet

22. Approximate date work will start*: 06/22/2024

23. Estimated duration: 60 days

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 |
|---|---|---|
| (Electronic Submission) | BRADLEY BISHOP / Ph: (575) 393-5905 | 04/23/2024 |

Title: Regulatory

| Approved by *(Signature)* | Name *(Printed/Typed)* | Date |
|---|---|---|
| (Electronic Submission) | CODY LAYTON / Ph: (575) 234-5959 | 04/03/2025 |

| Title | Office |
|---|---|
| Assistant Field Manager Lands & Minerals | Carlsbad Field 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: 04/03/2025**

Santa Fe Main Office
Phone: (505) 476-3441 Fax: (55) 476-3462
General Information
Phone: (505) 629-6116

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

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION

C-102
Revised July 9, 2024
Submit Electronically via OCD Permitting

Submittal Type: ☒ Initial Submittal ☐ Amended Report ☐ As Drilled

**WELL LOCATION INFORMATION**

| API Number | Pool Code | Pool Name |
|---|---|---|
| 30-025-55069 | 5695 | BILBREY BASIN; BONE SPRING |

| Property Code | Property Name | Well Number |
|---|---|---|
| 336069 | CAPER 20/29 FED COM | 417H |

| OGRID No. | Operator Name | Ground Level Elevation |
|---|---|---|
| 14744 | MEWBOURNE OIL COMPANY | 3633 |

Surface Owner: ☐ State ☐ Fee ☐ Tribal ☒ Federal
Mineral Owner: ☐ State ☐ Fee ☐ Tribal ☒ Federal

**Surface Location**

| UL | Section | Township | Range | Lot | Ft. from N/S | Ft. from E/W | Latitude | Longitude | County |
|---|---|---|---|---|---|---|---|---|---|
| N | 17 | 21S | 32E | | 300 FSL | 1515 FWL | 32.4722452 | -103.7005254 | LEA |

**Bottom Hole Location**

| UL | Section | Township | Range | Lot | Ft. from N/S | Ft. from E/W | Latitude | Longitude | County |
|---|---|---|---|---|---|---|---|---|---|
| P | 29 | 21S | 32E | | 100 FSL | 1320 FEL | 32.4426862 | -103.6925687 | LEA |

| Dedicated Acres | Infill or Defining Well | Defining Well API | Overlapping Spacing Unit (Y/N) | Consolidation Code |
|---|---|---|---|---|
| 640 | DEFINING | | Y | N/A |

Order Numbers. | Well setbacks are under Common Ownership: ☐Yes ☐No

**Kick Off Point (KOP)**

| UL | Section | Township | Range | Lot | Ft. from N/S | Ft. from E/W | Latitude | Longitude | County |
|---|---|---|---|---|---|---|---|---|---|
| P | 17 | 21 | 32 | | 473 FSL | 1320 FEL | 32.4727494 | -103.6925539 | LEA |

**First Take Point (FTP)**

| UL | Section | Township | Range | Lot | Ft. from N/S | Ft. from E/W | Latitude | Longitude | County |
|---|---|---|---|---|---|---|---|---|---|
| A | 20 | 21 | 32 | | 100 FNL | 1320 FEL | 32.4711747 | -103.6925547 | LEA |

**Last Take Point (LTP)**

| UL | Section | Township | Range | Lot | Ft. from N/S | Ft. from E/W | Latitude | Longitude | County |
|---|---|---|---|---|---|---|---|---|---|
| P | 29 | 21 | 32 | | 100 FSL | 1320 FEL | 32.4426862 | -103.6925687 | LEA |

| Unitized Area or Area of Uniform Interest | Spacing Unit Type ☒ Horizontal ☐ Vertical | Ground Floor Elevation: 3633 |
|---|---|---|

OPERATOR CERTIFICATIONS

*I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and, if the well is a vertical or directional well, 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 a working interest or unleased mineral interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.*

*If this well is a horizontal well, I further certify that this organization has received the consent of at least one lessee or owner of a working interest or unleased mineral interest in each tract (in the target pool or formation) in which any part of the well's completed interval will be located or obtained a compulsory pooling order from the division.*

Ryan Mcdaniel — 4/3/25
Signature — Date

RYAN MCDANIEL
Printed Name

RYANMCDANIEL@MEWBOURNE.COM
Email Address

SURVEYOR CERTIFICATIONS

*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.*

ROBERT M. HOWETT NEW MEXICO 19680 PROFESSIONAL SURVEYOR

Signature and Seal of Professional Surveyor

Robert M. Howett

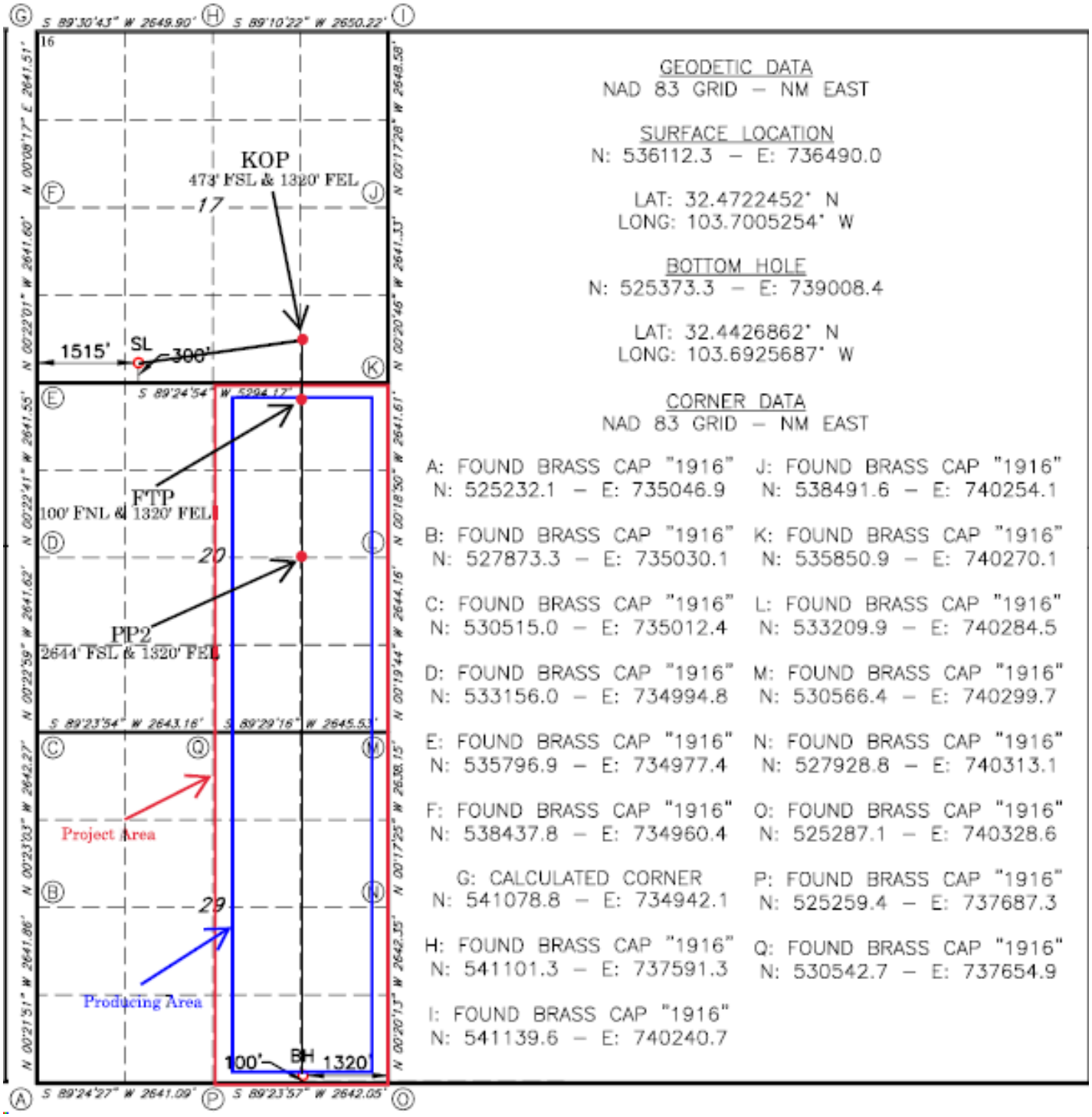
Certificate Number: 19680
Date of Survey

*Note: 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.*

ACREAGE DEDICATION PLATS

This grid represents a standard section. You may superimpose a non-standard section, or larger area, over this grid. Operators must outline the dedicated acreage in a red box, clearly show the well surface location and bottom hole location, if it is directionally drilled, with the dimensions from the section lines in the cardinal directions. If this is a horizontal wellbore show on this plat the location of the First Take Point and Last Take Point, and the point within the Completed interval (other than the First Take Point or Last Take Point) that is closest to any outer boundary of the tract.

Surveyors shall use the latest United States government survey or dependent resurvey. Well locations will be in reference to the New Mexico Principal Meridian. If the land is not surveyed, contact the OCD Engineering Bureau. Independent subdivision surveys will not be acceptable.



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:** Mewbourne Oil Co. **OGRID:** 14744 **Date:** 4/2/24

**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 |
|---|---|---|---|---|---|---|
| CAPER 20/29 FED COM 417H | | N 17 21S 32E | 300' FSL x 1515' FWL | 2000 | 3500 | 3500 |
| | | | | Y1:300 Y2:180 Y3:120 | Y1:600 Y2:400 Y3:300 | Y1:450 Y2:250 Y3:200 |

**IV. Central Delivery Point Name:** CAPER 20/29 FED COM 455H [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 |
|---|---|---|---|---|---|---|
| CAPER 20/29 FED COM 417H | | 7/2/24 | 8/2/24 | 9/2/24 | 9/17/24 | 9/17/24 |
| | | | | | | |

**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.

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**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: | Bradley Bishop |
| Printed Name: | BRADLEY BISHOP |
| Title: | REGULATORY MANAGER |
| E-mail Address: | BBISHOP@MEWBOURNE.COM |
| Date: | 4/2/24 |
| Phone: | 575-393-5905 |

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

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

Mewbourne Oil Company

Natural Gas Management Plan – Attachment

VI. Separation equipment will be sized by construction engineering staff based on stated manufacturer daily throughput capacities and anticipated daily production rates to ensure adequate capacity. Closed vent system piping, compression needs, and VRUs will be sized utilizing ProMax modelling software to ensure adequate capacity for anticipated production volumes and conditions.

VII. Mewbourne Oil Company (MOC) will take following actions to comply with the regulations listed in 19.15.27.8 :

A. MOC will maximize the recovery of natural gas by minimizing the waste, as defined by 19.15.2 NMAC, of natural gas through venting and flaring. MOC will ensure that well(s) will be connected to a natural gas gathering system with sufficient capacity to transport natural gas. If there is no adequate takeaway for the gas, well(s) will be shut in until the natural gas gathering system is available.

B. All drilling operations will be equipped with a rig flare located at least 100 ft from the nearest surface hole. Rig flare will be utilized to combust any natural gas that is brought to surface during normal drilling operations. In the case of emergency venting or flaring the volumes will be estimated and reported appropriately.

C. During completion operations any natural gas brought to surface will be flared. Immediately following the finish of completion operations, all well flow will be directed to permanent separation equipment. Produced natural gas from separation equipment will be sent to sales. It is not anticipated that gas will not meet pipeline standards. However, if natural gas does not meet gathering pipeline quality specifications, MOC will flare the natural gas for 60 days or until the natural gas meets the pipeline quality specifications, whichever is sooner. MOC will ensure that the flare is sized properly and is equipped with automatic igniter or continuous pilot. The gas sample will analyzed twice per week and the gas will be routed into a gathering system as soon as pipeline specifications are met.

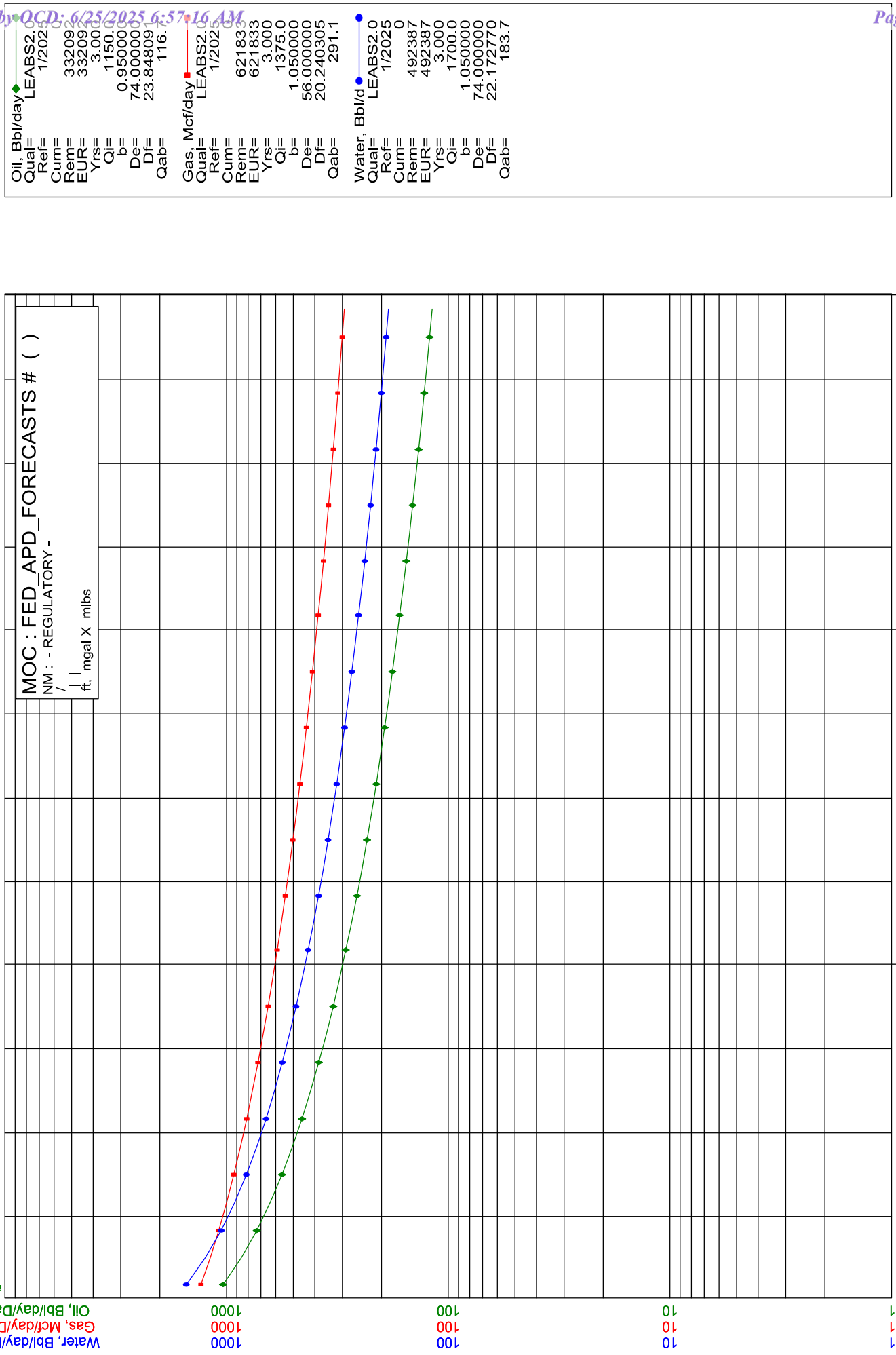
D. Natural gas will not be flared with the exceptions and provisions listed in the 19.15.27.8 D.(1) through (4). If there is no adequate takeaway for the separator gas, well(s) will be shut in until the natural gas gathering system is available with exception of emergency or malfunction situations. Venting and/or flaring volumes will be estimated and reported appropriately.

E. MOC will comply with the performance standards requirements and provisions listed in 19.15.27.8 E.(1) through (8). All equipment will be designed and sized to handle maximum anticipated pressures and throughputs in order to minimize the waste. Production storage tanks constructed after May 25, 2021 will be equipped with automatic gauging system. Flares constructed after May 25, 2021 will be equipped with automatic igniter or continuous pilot. Flares will be located at least 100' from the well and storage tanks unless otherwise approved by the division. MOC will conduct AVO inspections as described in 19.15.27.8 E (5) (a) with frequencies specified in 19.15.27.8 E (5) (b) and (c). All emergencies will be resolved as quickly and safely as feasible to minimize waste.

F. The volume of natural gas that is vented or flared as the result of malfunction or emergency during drilling and completions operations will be estimated. The volume of natural gas that is vented, flared or beneficially used during production operations, will be measured or estimated. MOC will install equipment to measure

the volume of natural gas flared from existing process piping or a flowline piped from equipment such as high pressure separators, heater treaters, or vapor recovery units associated with a well or facility associated with a well authorized by an APD issued after May 25, 2021 that has an average daily production greater than 60 Mcf/day. If metering is not practicable due to circumstances such as low flow rate or low pressureventing and flaring, MOC will estimate the volume of vented or flared natural gas. Measuring equipment will conform to industry standards and will not be designed or equipped with a manifold that allows thediversion of natural gas around the metering element except for the sole purpose of inspecting and servicing the measurement equipment.

VIII. For maintenance activities involving production equipment and compression, venting will be limited to the depressurization of the subject equipment to ensure safe working conditions. For maintenance of production and compression equipment the associated producing wells will be shut in to eliminate venting. For maintenance of VRUs all gas normally routed to the VRU will be routed to flare to eliminate venting.


Oil, Bbl/day
Qual= LEABS2.0
Ref= 1/2025
Cum= 0
Rem= 33209
EUR= 33209
Yrs= 3.000
Qi= 1150.0
b= 0.950000
De= 74.000000
Df= 23.84809
Qab= 116.7
Gas, Mcf/day
Qual= LEABS2.0
Ref= 1/2025
Cum= 0
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EUR= 621833
Yrs= 3.000
Qi= 1375.0
b= 1.050000
De= 56.000000
Df= 20.240305
Qab= 291.1
Water, Bbl/d
Qual= LEABS2.0
Ref= 1/2025
Cum= 0
Rem= 492387
EUR= 492387
Yrs= 3.000
Qi= 1700.0
b= 1.050000
De= 74.000000
Df= 22.172770
Qab= 183.7
MOC : FED_APD_FORECASTS # ( )
NM : - REGULATORY -
ft, mgal X mlbs
Water, Bbl/day/Day
Gas, Mcf/day/Day
Oil, Bbl/day/Day
1000
100
10
1
YEAR 1
YEAR 2
YEAR 3
Q1
Q2
Q3
Q4

AFMSS

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

# Drilling Plan Data Report
04/03/2025

**APD ID:** 10400098173
**Submission Date:** 04/23/2024
**Operator Name:** MEWBOURNE OIL COMPANY
**Well Name:** CAPER 20/29 FED COM
**Well Number:** 417H
**Well Type:** OIL WELL
**Well Work Type:** Drill

Highlighted data reflects the most recent changes

Show Final Text

## Section 1 - Geologic Formations

| Formation ID | Formation Name | Elevation | True Vertical | Measured Depth | Lithologies | Mineral Resources | Producing Formatio |
|---|---|---|---|---|---|---|---|
| 15348338 | UNKNOWN | 3634 | 28 | 28 | OTHER : Topsoil | NONE | N |
| 15348352 | RUSTLER | 2619 | 1015 | 1015 | ANHYDRITE, DOLOMITE | USEABLE WATER | N |
| 15348339 | TOP SALT | 2479 | 1155 | 1155 | SALT | NONE | N |
| 15348341 | BASE OF SALT | -546 | 4180 | 4180 | SALT | NONE | N |
| 15348342 | LAMAR | -896 | 4530 | 4530 | DOLOMITE, LIMESTONE | NATURAL GAS, OIL | N |
| 15348343 | BELL CANYON | -941 | 4575 | 4575 | SANDSTONE | NATURAL GAS, OIL | N |
| 15348345 | MANZANITA | -2064 | 5698 | 5698 | LIMESTONE | NATURAL GAS, OIL | N |
| 15348346 | BRUSHY CANYON | -3066 | 6700 | 6700 | SANDSTONE | NATURAL GAS, OIL | N |
| 15348347 | BONE SPRING | -4806 | 8440 | 8440 | LIMESTONE, SHALE | NATURAL GAS, OIL | N |
| 15348348 | BONE SPRING 1ST | -5856 | 9490 | 9490 | SANDSTONE | NATURAL GAS, OIL | Y |
| 15348349 | BONE SPRING 2ND | -6506 | 10140 | 10140 | SANDSTONE | NATURAL GAS, OIL | N |

## Section 2 - Blowout Prevention

**Pressure Rating (PSI):** 5M
**Rating Depth:** 20811

**Equipment:** Annular, Pipe Rams, Blind Rams, 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
**Requesting Variance?** YES

**Variance request:** A variance is requested for the use of a variable choke line from the BOP to the choke manifold. See attached for hydrostatic test chart. Anchors are not required by manufacturer. Variance is requested to use a multi bowl wellhead. Variance is requested to perform break testing according to attached procedure. If a breaktesting variance is approved & incorporated, API Standard 53 will be incorporated and testing annular BOP to 70% of RWP or 100% of MASP, whichever is greater, will be performed.

**Operator Name:** MEWBOURNE OIL COMPANY

**Well Name:** CAPER 20/29 FED COM **Well Number:** 417H

**Testing Procedure:** BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per 43 CFR Part 3172 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.

**Choke Diagram Attachment:**

Caper_20_29_Fed_Com__417H_5M_BOPE_Choke_Diagram_20240422101720.pdf

Flex_Line_Specs_API_16C_20241108091901.pdf

**BOP Diagram Attachment:**

Caper_20_29_Fed_Com__417H_5M_BOPE_Schematic_20240422101750.pdf

MOC_Break_Testing_Variance_20240422101810.pdf

Multibowl_5K_WH_Schematic_20241108102405.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 | 1100 | 0 | 1100 | 3633 | 2533 | 1100 | H-40 | 48 | ST&C | 1.57 | 3.52 | DRY | 6.1 | DRY | 10.25 |
| 2 | INTERMEDIATE | 12.25 | 9.625 | NEW | API | N | 0 | 3385 | 0 | 3385 | -8529 | 248 | 3385 | J-55 | 36 | LT&C | 1.13 | 1.96 | DRY | 2.75 | DRY | 3.43 |
| 3 | INTERMEDIATE | 12.25 | 9.625 | NEW | API | N | 3385 | 4307 | 3385 | 4307 | 248 | -674 | 922 | J-55 | 40 | LT&C | 1.13 | 1.73 | DRY | 12.21 | DRY | 14.79 |
| 4 | INTERMEDIATE | 12.25 | 9.625 | NEW | API | N | 4307 | 4450 | 4307 | 4450 | -674 | -817 | 143 | L-80 | 40 | LT&C | 1.31 | 2.44 | DRY | 99.99 | DRY | 99.99 |
| 5 | PRODUCTION | 8.75 | 7.0 | NEW | API | N | 0 | 9546 | 0 | 9058 | -8529 | -5425 | 9546 | P-110 | 26 | LT&C | 1.36 | 2.18 | DRY | 2.79 | DRY | 3.34 |
| 6 | LINER | 6.125 | 4.5 | NEW | API | N | 9346 | 20811 | 8858 | 9721 | -5225 | -6088 | 11465 | P-110 | 13.5 | LT&C | 1.92 | 2.23 | DRY | 2.18 | DRY | 2.73 |

**Casing Attachments**

**Operator Name:** MEWBOURNE OIL COMPANY

**Well Name:** CAPER 20/29 FED COM **Well Number:** 417H

**Casing Attachments**

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

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

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

13.375in_48__H40_STC_Csg_20241108092115.pdf

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

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

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

9.625in_36__J55_LTC_Csg_20241108092042.pdf

**Casing ID:** 3 **String** INTERMEDIATE

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

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

9.625in_40__J55_LTC_Csg_20241108100944.pdf

**Operator Name:** MEWBOURNE OIL COMPANY

**Well Name:** CAPER 20/29 FED COM **Well Number:** 417H

**Casing Attachments**

**Casing ID:** 4 **String** INTERMEDIATE

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

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

9.625in_40__L80_LTC_Csg_20241108101057.pdf

**Casing ID:** 5 **String** PRODUCTION

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

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

7in_26__P110_LTC_Csg_20241108092201.pdf

**Casing ID:** 6 **String** LINER

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

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

4.5in_13.5__P110_LTC_Csg_20241108100847.pdf

## Section 4 - Cement

**Operator Name:** MEWBOURNE OIL COMPANY

**Well Name:** CAPER 20/29 FED COM **Well Number:** 417H

| String Type | Lead/Tail | Stage Tool Depth | Top MD | Bottom MD | Quantity(sx) | Yield | Density | Cu Ft | Excess% | Cement type | Additives |
|---|---|---|---|---|---|---|---|---|---|---|---|
| INTERMEDIATE | Lead | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | NA | NA |
| SURFACE | Lead | | 0 | 910 | 600 | 2.12 | 12.5 | 1280 | 100 | Class C | Salt, Gel, Extender, LCM |
| SURFACE | Tail | | 910 | 1100 | 200 | 1.34 | 14.8 | 268 | 100 | Class C | Retarder |
| INTERMEDIATE | Lead | | 0 | 3764 | 690 | 2.12 | 12.5 | 1470 | 25 | Class C | Salt, Gel, Extender, LCM |
| INTERMEDIATE | Tail | | 3764 | 4450 | 200 | 1.34 | 14.8 | 268 | 25 | Class C | Retarder |
| PRODUCTION | Lead | | 3950 | 5450 | 210 | 1.34 | 14.8 | 290 | 25 | Class C | Gel, Retarder, Defoamer, Extender |
| PRODUCTION | Lead | | 5450 | 7259 | 130 | 2.12 | 12.5 | 280 | 0 | Class C | Salt, Gel, Extender, LCM, Defoamer |
| PRODUCTION | Tail | | 7259 | 9546 | 300 | 1.18 | 15.6 | 354 | 0 | Class H | Retarder, Fluid Loss, Defoamer |
| LINER | Lead | | 9346 | 20811 | 730 | 1.85 | 13.5 | 1360 | 25 | Class H | Salt, Gel, Fluid Loss, Retarder, Dispersant, Defoamer, Anti-Settling Agent |

## Section 5 - Circulating Medium

**Mud System Type:** Closed

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

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

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

**Describe what will be on location to control well or mitigate other conditions:** Formation integrity test will be performed per 43 CFR Part 3172. 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 43 CFR Part 3172.

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

**Operator Name:** MEWBOURNE OIL COMPANY

**Well Name:** CAPER 20/29 FED COM **Well Number:** 417H

## Circulating Medium Table

| Top Depth | Bottom Depth | Mud Type | Min Weight (lbs/gal) | Max Weight (lbs/gal) | Density (lbs/cu ft) | Gel Strength (lbs/100 sqft) | PH | Viscosity (CP) | Salinity (ppm) | Filtration (cc) | Additional Characteristics |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 1100 | SPUD MUD | 8.4 | 8.6 | | | | | | | |
| 1100 | 4450 | SALT SATURATED | 10 | 10.2 | | | | | | | |
| 4450 | 9546 | WATER-BASED MUD | 8.6 | 9.7 | | | | | | | |
| 9546 | 20811 | OIL-BASED MUD | 10 | 11 | | | | | | | |

## Section 6 - Test, Logging, Coring

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

No logs are planned based on well control or offset log information. Offset Well: Caper 20/29 W0BO Fee #1H

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

DIRECTIONAL SURVEY,MEASUREMENT WHILE DRILLING,MUD LOG/GEOLOGIC LITHOLOGY LOG,

**Coring operation description for the well:**

None

## Section 7 - Pressure

**Anticipated Bottom Hole Pressure:** 5560 **Anticipated Surface Pressure:** 3421

**Anticipated Bottom Hole Temperature(F):** 140

**Anticipated abnormal pressures, temperatures, or potential geologic hazards?** NO

**Describe:**

**Contingency Plans geoharzards description:**

**Contingency Plans geohazards**

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

**Hydrogen sulfide drilling operations**

Caper_20_29_Fed_Com__417H_H2S_Plan_20240422103435.pdf

**Operator Name:** MEWBOURNE OIL COMPANY

**Well Name:** CAPER 20/29 FED COM **Well Number:** 417H

## Section 8 - Other Information

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

Caper_20_29_Fed_Com_417H_MOC_Dir_Plan_20240422103457.pdf

Caper_20_29_Fed_Com_417H_MOC_Dir_Plot_20240422103503.pdf

**Other proposed operations facets description:**

Variance is request to perform offline cementing according to the attached procedure. Variance request for Open annulus and braden head squeeze.

**Other proposed operations facets attachment:**

Caper_20_29_Fed_Com__417H_AddInfo_20240422103543.pdf

Caper_20_29_Fed_Com_417H_Drlg_Program_R_111Q_3_string_var_20241108102219.pdf

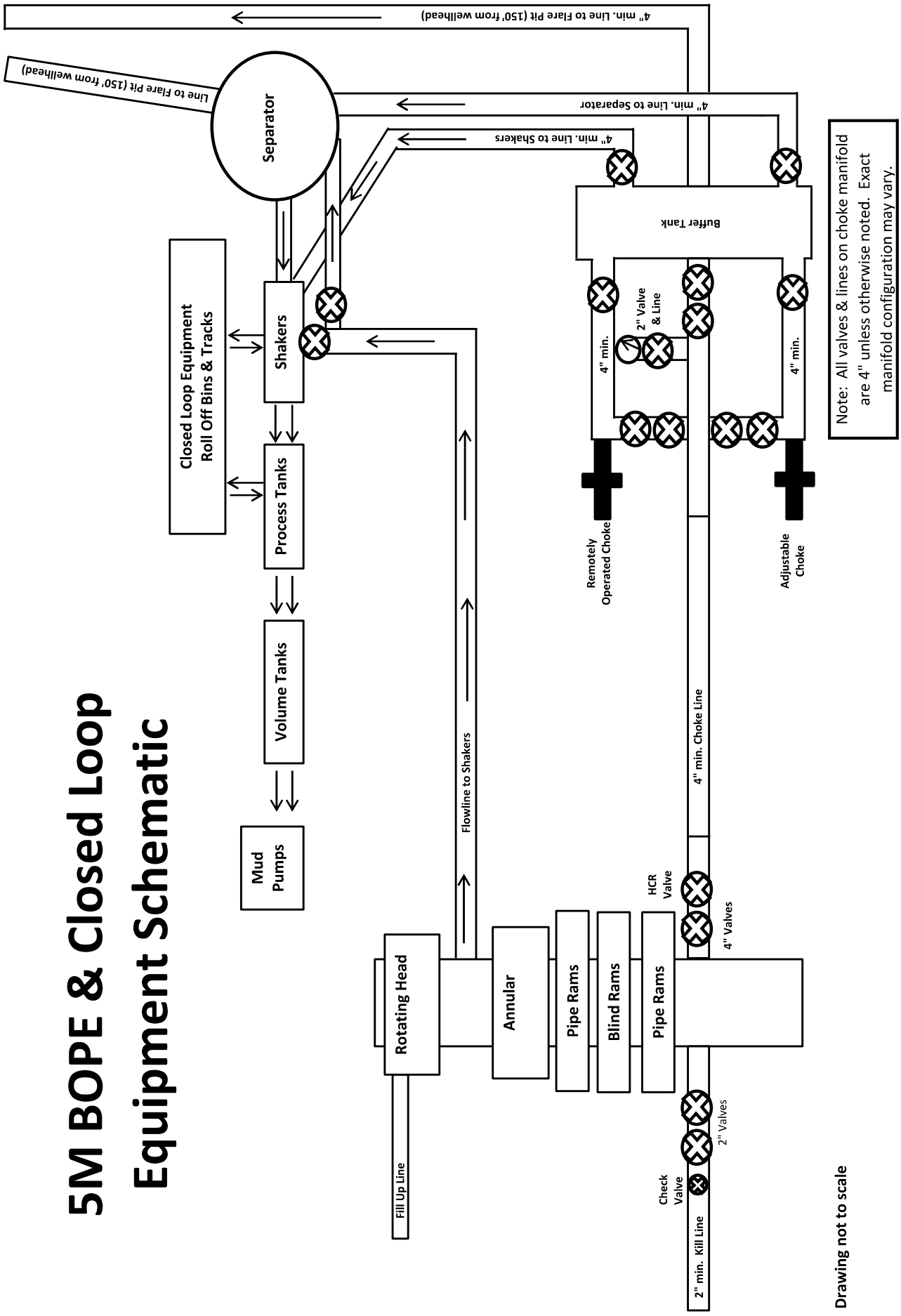
Caper_20_29_Fed_Com__417H_NGMP_20241108104152.pdf

**Other Variance attachment:**

MOC_Offline_Cementing_Variance_20240422103615.pdf

MOC_Break_Testing_Variance_20241108102340.pdf

# 5M BOPE & Closed Loop Equipment Schematic



LETONE

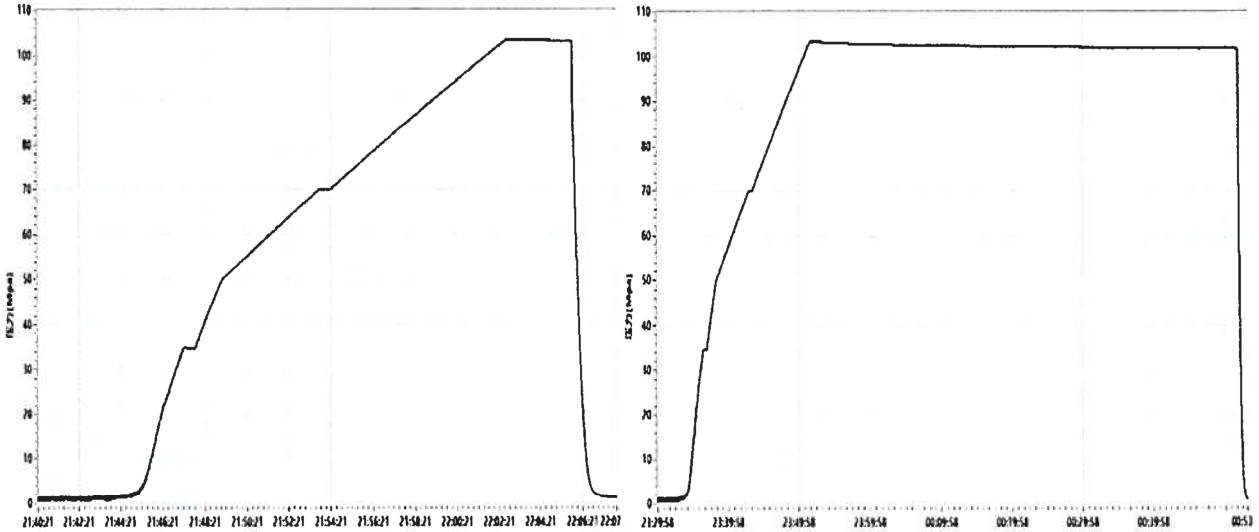
## LUOHE LETONE HYDRAULICS TECHNOLOGY CO.,LTD

### HYDROSTATIC TESTING REPORT

**LTYY/QR-5.7.1-28** №: 230826015

| | | | |
|---|---|---|---|
| Product Name | Choke And Kill Hose | Standard | API Spec 16C 3rd edition |
| Product Specification | 3″×10000psi×60ft（18.29m） | Serial Number | 7660144 |
| Inspection Equipment | MTU-BS-1600-3200-E | Test medium | Water |
| Inspection Department | Q.C. Department | Inspection Date | 2023.08.26 |
| Rate of length change | | | |
| Standard requirements | At working pressure ,the rate of length change should not more than ±2% | | |
| Testing result | 10000psi (69.0MPa) ,Rate of length change 0.7% | | |
| Hydrostatic testing | | | |
| Standard requirements | At 1.5 times working pressure, the initial pressure-holding period of not less than three minutes, the second pressure-holding period of not less than one hour, no leaks. | | |
| Testing result | 15000psi (103.5MPa), 3 min for the first time, 60 min for the second time, no leakage | | |

Graph of pressure testing:



| | | | | | |
|---|---|---|---|---|---|
| Conclusion | The inspected items meet standard requirements of API Spec 16C 3rd edition | | | | |
| Approver | Jiaolong Chen | Auditor | Huiqing Dong | Inspector | Zhansheng Wang |

LETONE

LUOHE LETONE HYDRAULICS TECHNOLOGY CO.,LTD

CERTIFICATE OF QUALITY

**LTYY/QR-5.7.1-19B** №: LT2023-126-002

| | | | |
|---|---|---|---|
| Customer Name | Austin Hose | | |
| Product Name | Choke And Kill Hose | | |
| Product Specification | 3″×10000psi×60ft（18.29m） | Quantity | 2PCS |
| Serial Number | 7660143~7660144 | FSL | FSL3 |
| Temperature Range | -29℃～+121℃ | Standard | API Spec 16C 3rd edition |
| Inspection Department | Q.C. Department | Inspection date | 2023.08.26 |

| Inspection Items | Inspection results |
|---|---|
| Appearance Checking | In accordance with API Spec 16C 3rd edition |
| Size and Lengths | In accordance with API Spec 16C 3rd edition |
| Dimensions and Tolerances | In accordance with API Spec 16C 3rd edition |
| End Connections: 4-1/16″×10000psi Integral flange for sour gas service | In accordance with API Spec 6A 21st edition |
| End Connections: 4-1/16″×10000psi Integral flange for sour gas service | In accordance with API Spec 17D 3rd edition |
| Hydrostatic Testing | In accordance with API Spec 16C 3rd edition |
| product Marking | In accordance with API Spec 16C 3rd edition |
| Inspection conclusion | The inspected items meet standard requirements of API Spec 16C 3rd edition |
| Remarks | |

| | | | | | |
|---|---|---|---|---|---|
| Approver | Jiaolong Chen | Auditor | Hinging Dong | Inspector | Zhansheng Wang |

LETONE

**LUOHE LETONE HYDRAULICS TECHNOLOGY CO.,LTD**

CERTIFICATE OF CONFORMANCE

**№:LT230826016**

Product Name: Choke And Kill Hose

Product Specification: 3″×10000psi×60ft（18.29m）

Serial Number: 7660143~7660144

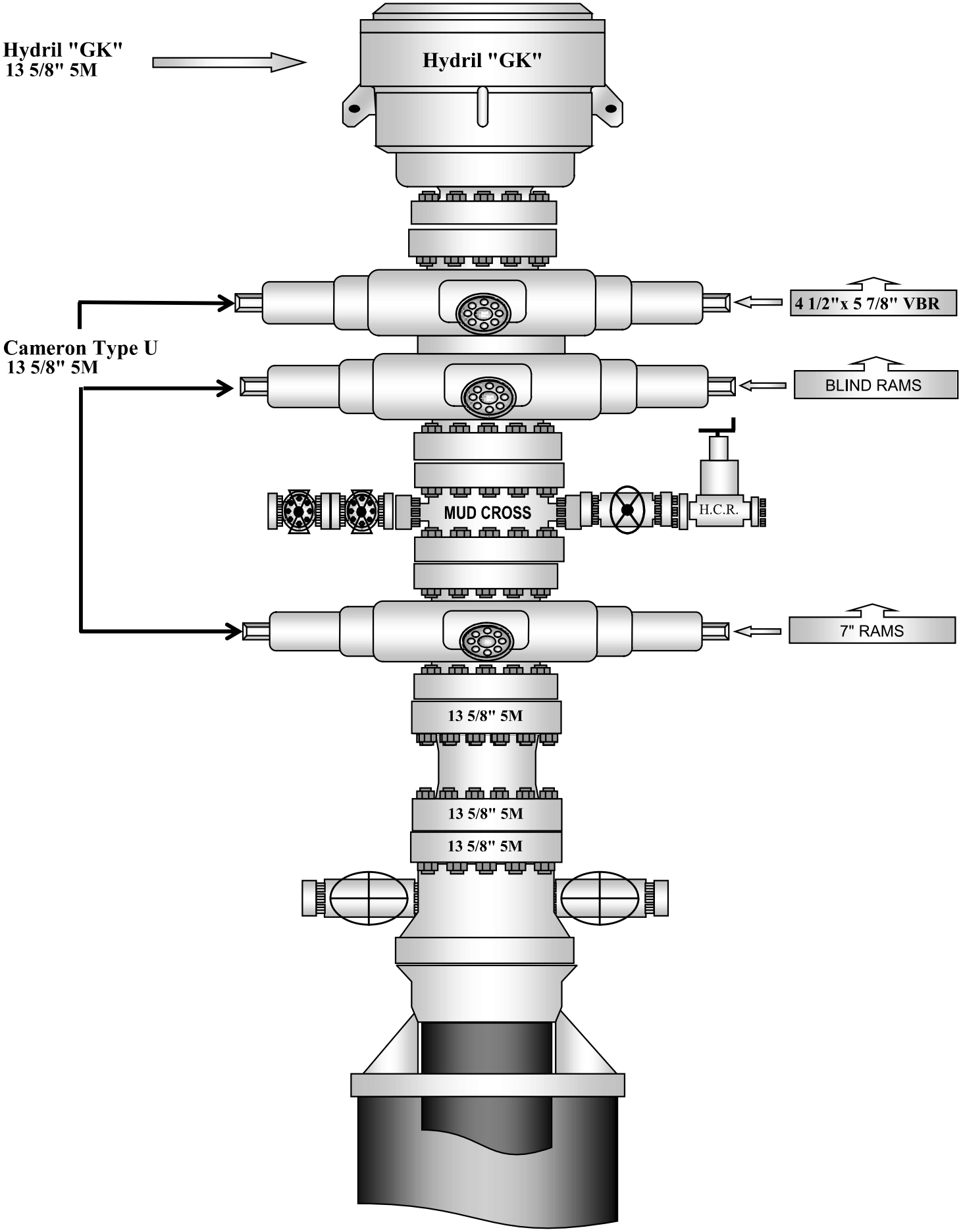
End Connections: 4-1/16″×10000psi Integral flange for sour gas service

The Choke And Kill Hose assembly was produced by LUOHE LETONE HYDRAULICS TECHNOLOGY CO.,LTD . in Aug 2023, and inspected by LUOHE LETONE HYDRAULICS TECHNOLOGY CO.,LTD. according to API Spec 16C 3rd edition on Aug 26, 2023. The overall condition is good. This is to certify that the Choke And Kill Hose complies with all current standards and specifications for API Spec 16C 3rd edition .

QC Manager: Jiaolong Chen Date:Aug 26, 2023

# 5M BOPE Schematic





MEWBOURNE OIL COMPANY

# Mewbourne Oil Co.

## BOP Break Testing Variance

Mewbourne Oil Company requests a variance from the minimum standards for well control equipment testing of 43 CFR 3172 to allow a testing schedule of the blow out preventer (BOP) and blow out prevention equipment (BOPE) along with batch drilling & offline cementing operations. Modern rig upgrades which facilitate pad drilling allow the BOP stack to be moved between wells on a multi-well pad without breaking any BOP stack components apart. Widespread use of these technologies has led to break testing BOPE being endorsed as safe and reliable. American Petroleum Institute (API) best practices are frequently used by regulators to develop their regulations. API Standard 53, *Well Control Equipment Systems for Drilling Wells* (5th Ed., Dec. 2018) Section 5.3.7.1 states "A pressure test of the pressure containing component shall be performed following the disconnection or repair, limited to the affected component."

## Procedures

1. Full BOPE test at first installation on the pad.
   - Full BOPE test at least every 21 days.
   - Function test BOP elements per 43 CFR 3172.
   - Contact the BLM if a well control event occurs.
2. After the well section is secured and the well is confirmed to be static, the BOP will be disconnected from the wellhead and walked with the rig to another well on the pad. Two breaks on the BOPE will be made (Fig. 1).
   - Connection between the flex line and the HCR valve
   - Connection between the wellhead and the BOP quick connect (Fig. 5 & 6).
3. A capping flange will be installed after cementing per wellhead vendor procedure & casing pressure will be monitored via wellhead valve.
4. The BOP will be removed and carried by a hydraulic carrier (Fig. 3 & 4).
5. The rig will then walk to the next well.
6. Confirm that the well is static and remove the capping flange.
7. The connection between the flex line and HCR valve and the connection between the wellhead and the BOP quick connect will be reconnected.
8. Install a test plug into the wellhead.
9. A test will then be conducted against the upper pipe rams and choke, testing both breaks (Fig. 1 & 2).
10. The test will be held at 250 psi low and to the high value submitted in the APD, not to exceed 5000 psi.
11. The annular, blind rams and lower pipe rams will then be function tested.
12. If a pad consists of three or more wells, steps 4 through 11 will be repeated.

MEWBOURNE OIL COMPANY

13. A break test will only be conducted if the intermediate section can be drilled and cased within 21 days of the last full BOPE test.

## Barriers

**Before Nipple Down:**

- Floats in casing
- Kill weight fluid in casing
- Kill weight fluid in annulus
- Solid body mandrel and/or packoff

**After Nipple Down:**

- Floats in casing
- Kill weight fluid in casing
- Kill weight fluid in annulus
- Solid body mandrel and/or packoff
- Offline cementing tool and/or cement head
- Capping flange after cementing

## Summary

A variance is requested to only test broken pressure seals on the BOPE when moving between wells on a multi-well pad if the following conditions are met:

- A full BOPE test is conducted on the first well on the pad. API Standard 53 requires testing annular BOP to 70% of RWP or 100% of MASP, whichever is greater.
- If the first well on the pad is not the well with the deepest intermediate section, a full BOPE test will also be performed when moving to a deeper well.
- The hole section being drilled has a MASP under 5000 psi.
- If a well control event occurs, Mewbourne will contact BLM for permission to continue break testing.
- If significant (>50%) losses occur, full BOPE testing will be required going forward.
- Full BOPE test will be required prior to drilling the production hole.

While walking the rig, the BOP stack will be secured via hydraulic winch or hydraulic carrier. A full BOPE test will be performed at least every 21 days.

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OIL COMPANY

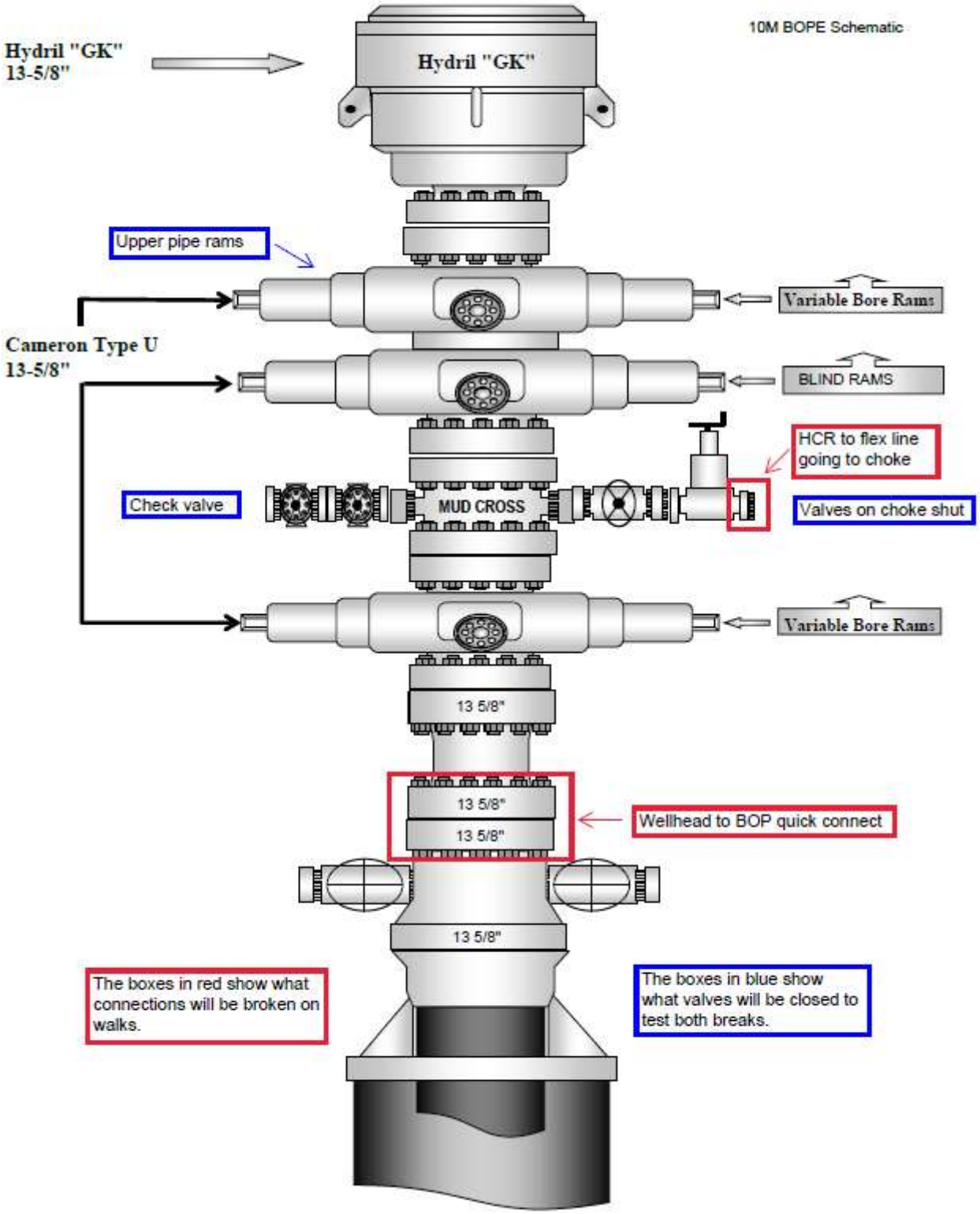



Figure 1. BOP diagram

MEWBOURNE
OIL COMPANY

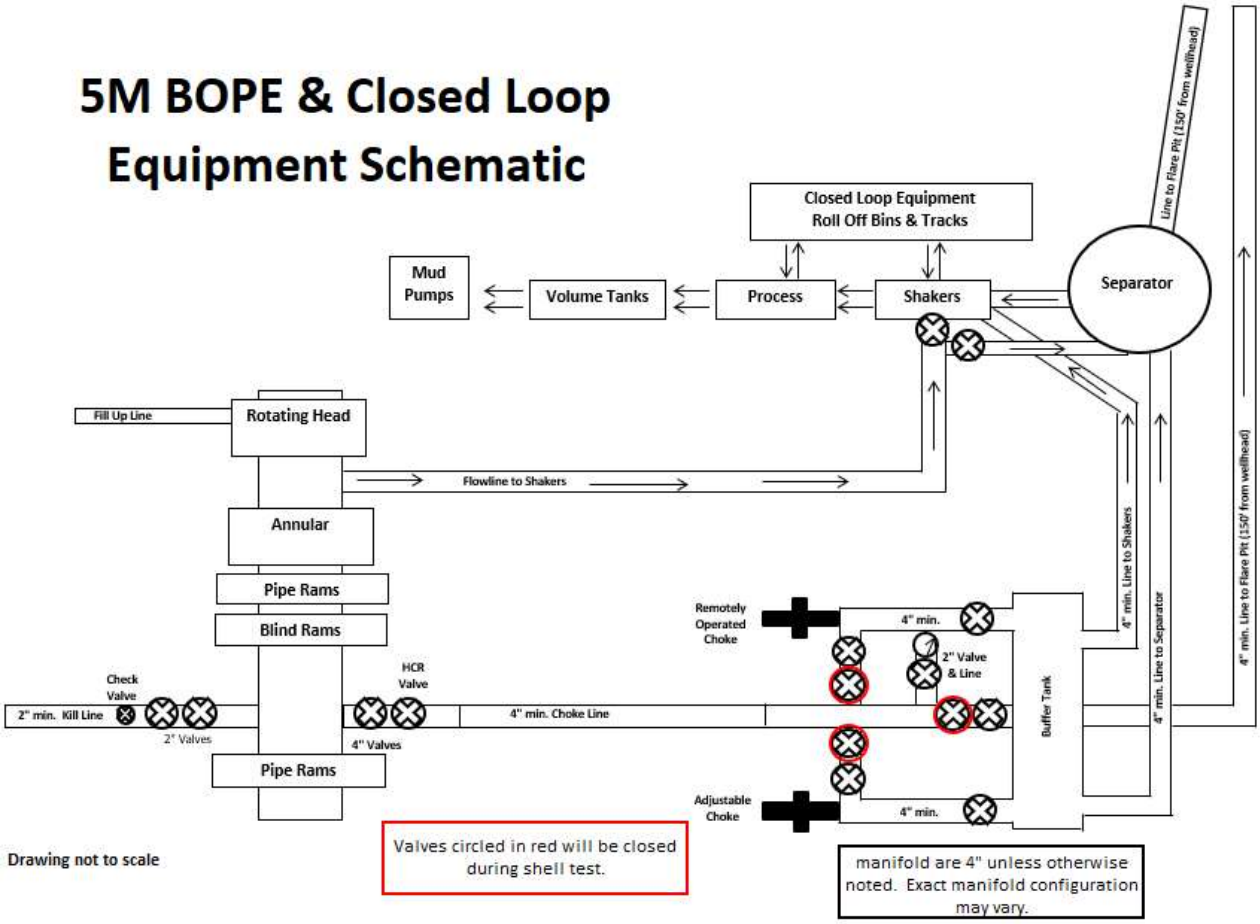



Figure 2. BOPE diagram

MEWBOURNE
OIL COMPANY


Figure 3. BOP handling system

MEWBOURNE
OIL COMPANY

Figure 4. BOP handling system

MEWBOURNE
OIL COMPANY

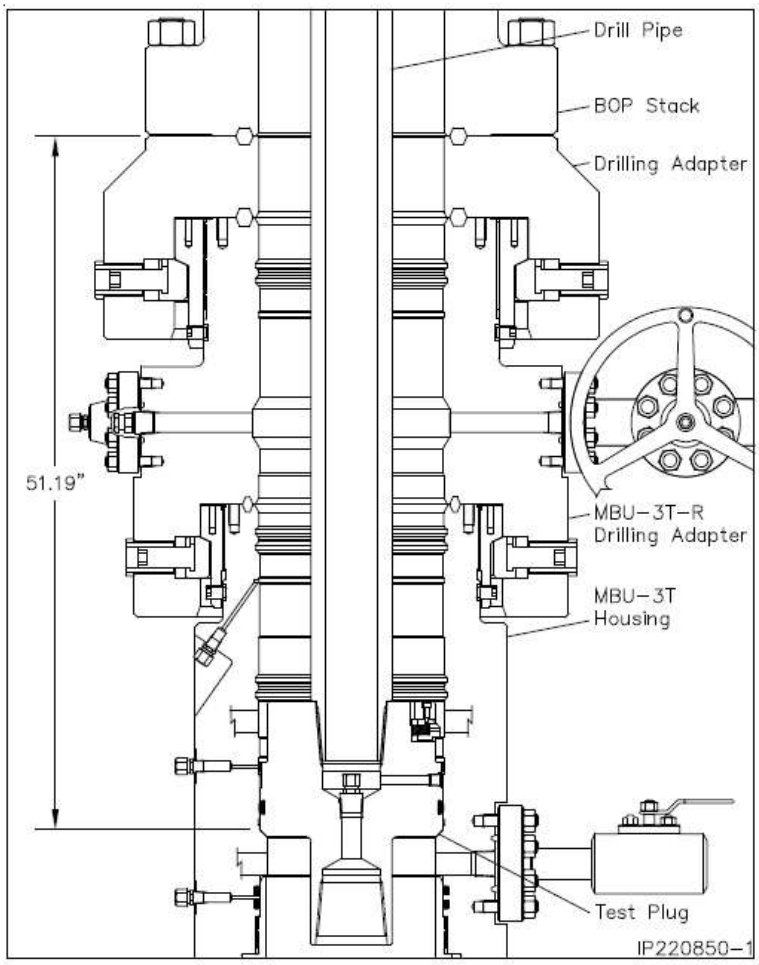



Figure 5. Cactus 5M wellhead with BOP quick connect

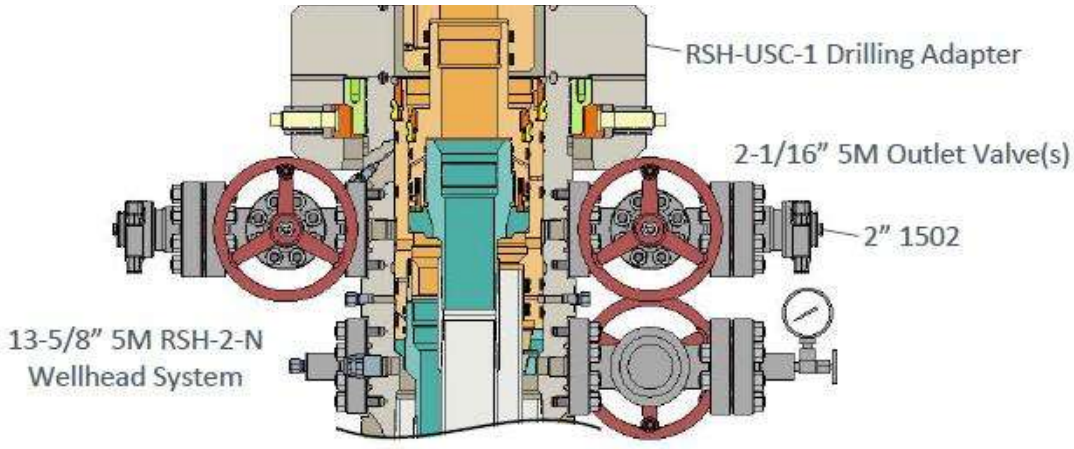
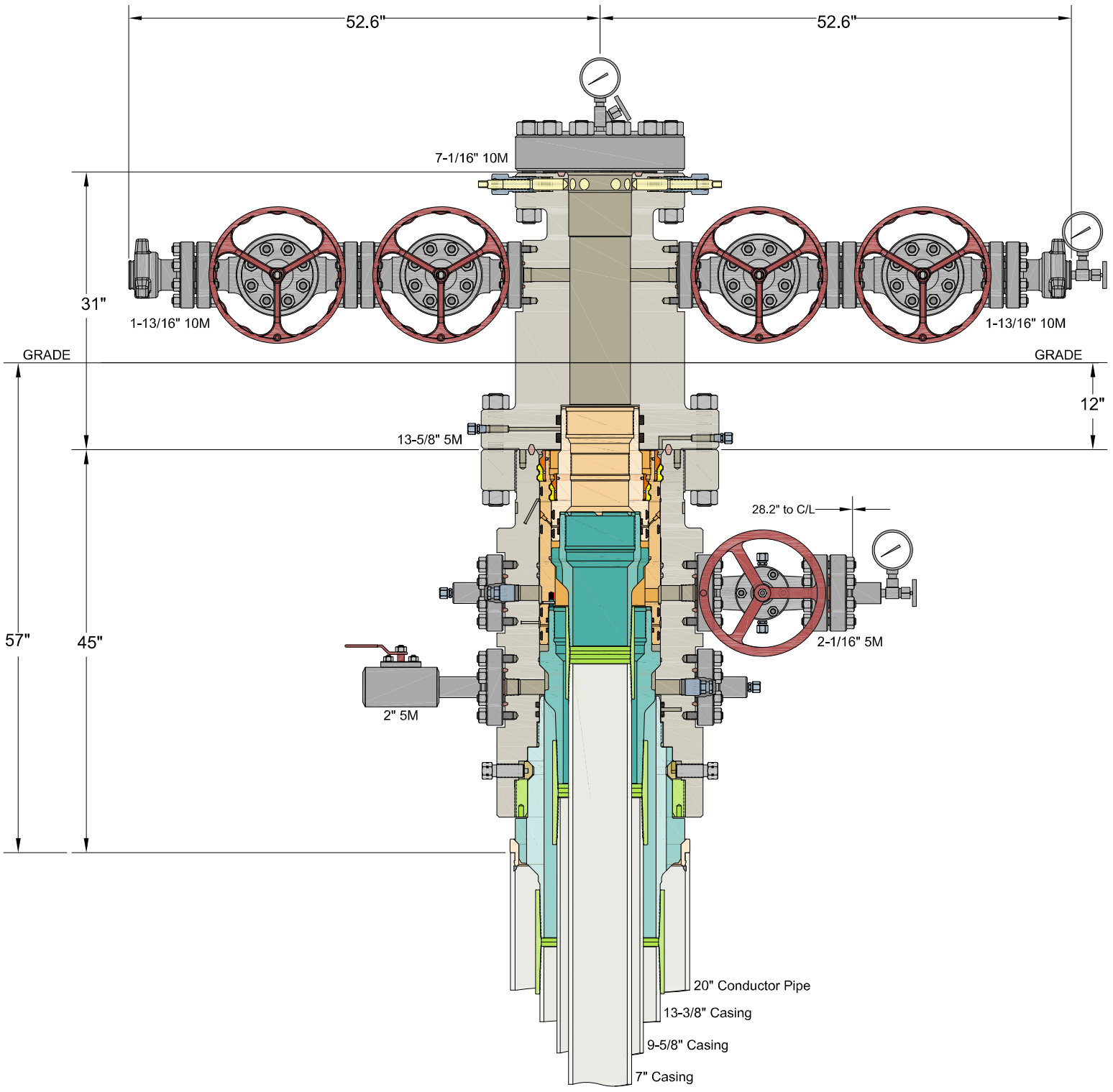



Figure 6. Vault 5M wellhead with BOP quick connect






ALL DIMENSIONS APPROXIMATE

| CACTUS WELLHEAD LLC | MEWBOURNE OIL COMPANY NEW MEXICO | | |
|---|---|---|---|
| 20" x 13-3/8" x 9-5/8" x 7" MBU-3T-CFL-R-DBLO Wellhead System With 9-5/8" & 7" Fluted Mandrel Casing Hangers And 13-5/8" 5M x 7-1/16" 10M CTH-DBLHPS Tubing Head | DRAWN | DLE | 18APR22 |
| | APPRV | | |
| | DRAWING NO. | HBE0000660 | |

Tenaris

# API LTC

| Coupling | Pipe Body |
|---|---|
| Grade: **J55 (Casing)** | Grade: **J55 (Casing)** |
| Body: **Bright Green** | 1st Band: **Bright Green** |
| 1st Band: **White** | 2nd Band: **-** |
| 2nd Band: **-** | 3rd Band: **-** |
| 3rd Band: **-** | 4th Band: **-** |

| | | | | | |
|---|---|---|---|---|---|
| **Outside Diameter** | 9.625 in. | **Wall Thickness** | 0.352 in. | **Grade** | J55 (Casing) |
| **Min. Wall Thickness** | 87.50 % | **Pipe Body Drift** | API Standard | **Type** | Casing |
| **Connection OD Option** | Regular | | | | |

## Pipe Body Data

| Geometry | | | | Performance | |
|---|---|---|---|---|---|
| **Nominal OD** | 9.625 in. | **Drift** | 8.765 in. | **SMYS** | 55,000 psi |
| **Wall Thickness** | 0.352 in. | **Plain End Weight** | 34.89 lb/ft | **Min UTS** | 75,000 psi |
| **Nominal Weight** | 36 lb/ft | **OD Tolerance** | API | **Body Yield Strength** | 564 x1000 lb |
| **Nominal ID** | 8.921 in. | | | **Min. Internal Yield Pressure** | 3520 psi |
| | | | | **Collapse Pressure** | 2020 psi |
| | | | | **Max. Allowed Bending** | 26 °/100 ft |

## Connection Data

| Geometry | | Performance | | Make-Up Torques | |
|---|---|---|---|---|---|
| **Thread per In** | 8 | **Joint Strength** | 453 x1000 lb | **Minimum Torque** | 3400 ft-lb |
| **Connection OD** | 10.625 in. | **Coupling Face Load** | 433 x1000 lb | **Optimum Torque** | 4530 ft-lb |
| **Hand Tight Stand Off** | 3.500 in. | **Internal Pressure Capacity** | 3520 psi | **Maximum Torque** | 5660 ft-lb |

## Notes

For products according to API Standards 5CT & 5B; Performance calculated considering API Technical Report 5C3 (Sections 9 & 10) equations.
For geometrical and steel grades combinations not considered in the API Standards 5CT and/or 5B; Performance calculations indirectly derived from API Technical Report 5C3 (Sections 9 & 10) equations.
Couplings OD are shown according to current API 5CT 10th Edition.

Tenaris

# API STC

| Coupling | Pipe Body |
|---|---|
| Grade: **H40** | Grade: **H40** |
| Body: **-** | 1st Band: **Black** |
| 1st Band: **Black** | 2nd Band: **-** |
| 2nd Band: **-** | 3rd Band: **-** |
| 3rd Band: **-** | 4th Band: **-** |

| | | | | | |
|---|---|---|---|---|---|
| **Outside Diameter** | 13.375 in. | **Wall Thickness** | 0.330 in. | **Grade** | H40 |
| **Min. Wall Thickness** | 87.50 % | **Pipe Body Drift** | API Standard | **Type** | Casing |
| **Connection OD Option** | Regular | | | | |

## Pipe Body Data

| Geometry | | | | Performance | |
|---|---|---|---|---|---|
| **Nominal OD** | 13.375 in. | **Drift** | 12.559 in. | **SMYS** | 40,000 psi |
| **Wall Thickness** | 0.330 in. | **Plain End Weight** | 46.02 lb/ft | **Min UTS** | 60,000 psi |
| **Nominal Weight** | 48 lb/ft | **OD Tolerance** | API | **Body Yield Strength** | 541 x1000 lb |
| **Nominal ID** | 12.715 in. | | | **Min. Internal Yield Pressure** | 1730 psi |
| | | | | **Collapse Pressure** | 740 psi |
| | | | | **Max. Allowed Bending** | 14 °/100 ft |

## Connection Data

| Geometry | | Performance | | Make-Up Torques | |
|---|---|---|---|---|---|
| **Thread per In** | 8 | **Joint Strength** | 322 x1000 lb | **Minimum Torque** | 2420 ft-lb |
| **Connection OD** | 14.375 in. | **Coupling Face Load** | 377 x1000 lb | **Optimum Torque** | 3220 ft-lb |
| **Hand Tight Stand Off** | 3.500 in. | **Internal Pressure Capacity** | 1730 psi | **Maximum Torque** | 4030 ft-lb |

## Notes

For products according to API Standards 5CT & 5B; Performance calculated considering API Technical Report 5C3 (Sections 9 & 10) equations.
For geometrical and steel grades combinations not considered in the API Standards 5CT and/or 5B; Performance calculations indirectly derived from API Technical Report 5C3 (Sections 9 & 10) equations.
Couplings OD are shown according to current API 5CT 10th Edition.

Tenaris

# API LTC

| Coupling | Pipe Body |
|---|---|
| Grade: **P110** | Grade: **P110** |
| Body: **White** | 1st Band: **White** |
| 1st Band: **-** | 2nd Band: **-** |
| 2nd Band: **-** | 3rd Band: **-** |
| 3rd Band: **-** | 4th Band: **-** |

| | | | | | |
|---|---|---|---|---|---|
| **Outside Diameter** | 7.000 in. | **Wall Thickness** | 0.362 in. | **Grade** | P110 |
| **Min. Wall Thickness** | 87.50 % | **Pipe Body Drift** | API Standard | **Type** | Casing |
| **Connection OD Option** | Regular | | | | |

## Pipe Body Data

| Geometry | | | | Performance | |
|---|---|---|---|---|---|
| **Nominal OD** | 7.000 in. | **Drift** | 6.151 in. | **SMYS** | 110,000 psi |
| **Wall Thickness** | 0.362 in. | **Plain End Weight** | 25.69 lb/ft | **Min UTS** | 125,000 psi |
| **Nominal Weight** | 26 lb/ft | **OD Tolerance** | API | **Body Yield Strength** | 830 x1000 lb |
| **Nominal ID** | 6.276 in. | | | **Min. Internal Yield Pressure** | 9960 psi |
| | | | | **Collapse Pressure** | 6230 psi |
| | | | | **Max. Allowed Bending** | 72 °/100 ft |

## Connection Data

| Geometry | | Performance | | Make-Up Torques | |
|---|---|---|---|---|---|
| **Thread per In** | 8 | **Joint Strength** | 693 x1000 lb | **Minimum Torque** | 5200 ft-lb |
| **Connection OD** | 7.875 in. | **Coupling Face Load** | 799 x1000 lb | **Optimum Torque** | 6930 ft-lb |
| **Hand Tight Stand Off** | 3 in. | **Internal Pressure Capacity** | 9960 psi | **Maximum Torque** | 8660 ft-lb |

## Notes

For products according to API Standards 5CT & 5B; Performance calculated considering API Technical Report 5C3 (Sections 9 & 10) equations.
For geometrical and steel grades combinations not considered in the API Standards 5CT and/or 5B; Performance calculations indirectly derived from API Technical Report 5C3 (Sections 9 & 10) equations.
Couplings OD are shown according to current API 5CT 10th Edition.

Tenaris

# API LTC

| Coupling | Pipe Body |
|---|---|
| Grade: **P110** | Grade: **P110** |
| Body: **White** | 1st Band: **White** |
| 1st Band: **-** | 2nd Band: **-** |
| 2nd Band: **-** | 3rd Band: **-** |
| 3rd Band: **-** | 4th Band: **-** |

| | | | | | |
|---|---|---|---|---|---|
| **Outside Diameter** | 4.500 in. | **Wall Thickness** | 0.290 in. | **Grade** | P110 |
| **Min. Wall Thickness** | 87.50 % | **Pipe Body Drift** | API Standard | **Type** | Casing |
| **Connection OD Option** | Regular | | | | |

## Pipe Body Data

| Geometry | | | | Performance | |
|---|---|---|---|---|---|
| **Nominal OD** | 4.500 in. | **Drift** | 3.795 in. | **SMYS** | 110,000 psi |
| **Wall Thickness** | 0.290 in. | **Plain End Weight** | 13.05 lb/ft | **Min UTS** | 125,000 psi |
| **Nominal Weight** | 13.500 lb/ft | **OD Tolerance** | API | **Body Yield Strength** | 422 x1000 lb |
| **Nominal ID** | 3.920 in. | | | **Min. Internal Yield Pressure** | 12,410 psi |
| | | | | **Collapse Pressure** | 10,690 psi |
| | | | | **Max. Allowed Bending** | 112 °/100 ft |

## Connection Data

| Geometry | | Performance | | Make-Up Torques | |
|---|---|---|---|---|---|
| **Thread per In** | 8 | **Joint Strength** | 338 x1000 lb | **Minimum Torque** | 2750 ft-lb |
| **Connection OD** | 5.250 in. | **Coupling Face Load** | 473 x1000 lb | **Optimum Torque** | 3660 ft-lb |
| **Hand Tight Stand Off** | 3 in. | **Internal Pressure Capacity** | 12,410 psi | **Maximum Torque** | 4580 ft-lb |

## Notes

For products according to API Standards 5CT & 5B; Performance calculated considering API Technical Report 5C3 (Sections 9 & 10) equations.
For geometrical and steel grades combinations not considered in the API Standards 5CT and/or 5B; Performance calculations indirectly derived from API Technical Report 5C3 (Sections 9 & 10) equations.
Couplings OD are shown according to current API 5CT 10th Edition.

Tenaris

# API LTC

| Coupling | Pipe Body |
|---|---|
| Grade: **J55 (Casing)** | Grade: **J55 (Casing)** |
| Body: **Bright Green** | 1st Band: **Bright Green** |
| 1st Band: **White** | 2nd Band: **-** |
| 2nd Band: **-** | 3rd Band: **-** |
| 3rd Band: **-** | 4th Band: **-** |

| | | | | | |
|---|---|---|---|---|---|
| **Outside Diameter** | 9.625 in. | **Wall Thickness** | 0.395 in. | **Grade** | J55 (Casing) |
| **Min. Wall Thickness** | 87.50 % | **Pipe Body Drift** | API Standard | **Type** | Casing |
| **Connection OD Option** | Regular | | | | |

## Pipe Body Data

| Geometry | | | | Performance | |
|---|---|---|---|---|---|
| **Nominal OD** | 9.625 in. | **Drift** | 8.679 in. | **SMYS** | 55,000 psi |
| **Wall Thickness** | 0.395 in. | **Plain End Weight** | 38.97 lb/ft | **Min UTS** | 75,000 psi |
| **Nominal Weight** | 40 lb/ft | **OD Tolerance** | API | **Body Yield Strength** | 630 x1000 lb |
| **Nominal ID** | 8.835 in. | | | **Min. Internal Yield Pressure** | 3950 psi |
| | | | | **Collapse Pressure** | 2570 psi |
| | | | | **Max. Allowed Bending** | 26 °/100 ft |

## Connection Data

| Geometry | | Performance | | Make-Up Torques | |
|---|---|---|---|---|---|
| **Thread per In** | 8 | **Joint Strength** | 520 x1000 lb | **Minimum Torque** | 3900 ft-lb |
| **Connection OD** | 10.625 in. | **Coupling Face Load** | 433 x1000 lb | **Optimum Torque** | 5200 ft-lb |
| **Hand Tight Stand Off** | 3.500 in. | **Internal Pressure Capacity** | 3950 psi | **Maximum Torque** | 6500 ft-lb |

## Notes

For products according to API Standards 5CT & 5B; Performance calculated considering API Technical Report 5C3 (Sections 9 & 10) equations.
For geometrical and steel grades combinations not considered in the API Standards 5CT and/or 5B; Performance calculations indirectly derived from API Technical Report 5C3 (Sections 9 & 10) equations.
Couplings OD are shown according to current API 5CT 10th Edition.

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# API LTC

| Coupling | Pipe Body |
|---|---|
| Grade: **L80 Type 1** | Grade: **L80 Type 1** |
| Body: **Red** | 1st Band: **Red** |
| 1st Band: **Brown** | 2nd Band: **Brown** |
| 2nd Band: **-** | 3rd Band: **-** |
| 3rd Band: **-** | 4th Band: **-** |

| | | | | | |
|---|---|---|---|---|---|
| **Outside Diameter** | 9.625 in. | **Wall Thickness** | 0.395 in. | **Grade** | L80 Type 1 |
| **Min. Wall Thickness** | 87.50 % | **Pipe Body Drift** | API Standard | **Type** | Casing |
| **Connection OD Option** | Regular | | | | |

## Pipe Body Data

| Geometry | | | | Performance | |
|---|---|---|---|---|---|
| **Nominal OD** | 9.625 in. | **Drift** | 8.679 in. | **SMYS** | 80,000 psi |
| **Wall Thickness** | 0.395 in. | **Plain End Weight** | 38.97 lb/ft | **Min UTS** | 95,000 psi |
| **Nominal Weight** | 40 lb/ft | **OD Tolerance** | API | **Body Yield Strength** | 916 x1000 lb |
| **Nominal ID** | 8.835 in. | | | **Min. Internal Yield Pressure** | 5750 psi |
| | | | | **Collapse Pressure** | 3090 psi |
| | | | | **Max. Allowed Bending** | 38 °/100 ft |

## Connection Data

| Geometry | | Performance | | Make-Up Torques | |
|---|---|---|---|---|---|
| **Thread per In** | 8 | **Joint Strength** | 727 x1000 lb | **Minimum Torque** | 5450 ft-lb |
| **Connection OD** | 10.625 in. | **Coupling Face Load** | 630 x1000 lb | **Optimum Torque** | 7270 ft-lb |
| **Hand Tight Stand Off** | 3.500 in. | **Internal Pressure Capacity** | 5750 psi | **Maximum Torque** | 9090 ft-lb |

## Notes

For products according to API Standards 5CT & 5B; Performance calculated considering API Technical Report 5C3 (Sections 9 & 10) equations.
For geometrical and steel grades combinations not considered in the API Standards 5CT and/or 5B; Performance calculations indirectly derived from API Technical Report 5C3 (Sections 9 & 10) equations.
Couplings OD are shown according to current API 5CT 10th Edition.

**Mewbourne Oil Company, Caper 20/29 Fed Com 417H**
**Sec 17, T21S, R32E**
**SHL: 300' FSL 1515' FWL (Sec 17)**
**BHL: 100' FSL 1320' FEL (Sec 29)**

**Well Location** **GL: 3633'**

| Point | Calls | Leases | Aliquot | Section | Township | Range | County | Lat | Long | TVD | MD |
|---|---|---|---|---|---|---|---|---|---|---|---|
| SHL | SHL: 300' FSL & 1515' FWL (Sec 17) | NMNM094095 | SESW | 17 | 21S | 32E | Lea | 32.4722452 | -103.7005254 | 0' | 0' |
| KOP | KOP: 473' FSL & 1320' FEL (Sec 17) | NMNM094095 | SESE | 17 | 21S | 32E | Lea | 32.4727494 | -103.6925539 | 9,058' | 9,546' |
| FTP | FTP: 100' FNL & 1320' FEL (Sec 20) | NMNM031375 | NENE | 20 | 21S | 32E | Lea | 32.4711747 | -103.6925547 | 9,631' | 10,446' |
| PPP2 | PPP2: 2641' FSL & 1320' FEL (Sec 20) | NMNM014331 | NESE | 20 | 21S | 32E | Lea | 32.4641902 | -103.6925584 | 9,653' | 12,987' |
| BHL | BHL: 100' FSL & 1320' FEL (Sec 29) | NMNM014331 | SESE | 29 | 21S | 32E | Lea | 32.4426862 | -103.6925687 | 9,721' | 20,811' |

**GEOLOGY**

| Formation | Est. Top (TVD) | Lithology | Mineral Resources | Formation | Est. Top (TVD) | Lithology | Mineral Resources |
|---|---|---|---|---|---|---|---|
| Rustler | 1015' | Dolomite/Anhydrite | Usable Water | Yeso | | | |
| Castile | | | | Delaware (Lamar) | 4530' | Limestone/Dolomite | Oil/Natural Gas |
| Salt Top | 1155' | Salt | None | Bell Canyon | 4575' | Sandstone | Oil/Natural Gas |
| Marker Bed 126 | 2220' | Salt | None | Cherry Canyon | | | |
| Salt Base | 4180' | Salt | None | Manzanita Marker | 5698' | Limestone | Oil/Natural Gas |
| Yates | | | | Basal Brushy Canyon | 6700' | Sandstone | Oil/Natural Gas |
| Seven Rivers | | | | Bone Spring | 8440' | Limestone | Oil/Natural Gas |
| Queen | | | | **1st Bone Spring** | **9490'** | **Sandstone** | **Oil/Natural Gas** |
| Capitan | | | | 2nd Bone Spring | 10140' | Sandstone | Oil/Natural Gas |
| Grayburg | | | | 3rd Bone Spring | | | |
| San Andres | | | | Wolfcamp | | | |

**All casing strings will be tested in accordance with 43 CFR Part 3172. Must have table for contingency casing.**

| | Y or N |
|---|---|
| Is casing new? If used, attach certification as required in Onshore Order #1 | Y |
| Is casing API approved? 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 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? | |
| Is well within the designated 4 string boundary. | N |
| | |
| Is well located in SOPA but not in R-111-Q? | N |
| If yes, are the first 2 strings cemented to surface and 3rd string cement tied back 500' into previous casing? | |
| | |
| Is well located in R-111-Q and SOPA? | Y |
| If yes, are the first three strings cemented to surface? | N |
| Is 2nd string set 100' to 600' below the base of salt? | Y |
| Is an open annulus used to satisfy R-111-Q? If yes, see cement design. | Y |
| Is an engineered weak point used to satisfy R-111-Q? | |
| If yes, at what depth is the weak point planned? | |
| | |
| Is well located in high Cave/Karst? | N |
| If yes, are there two strings cemented to surface? | |
| (For 2 string wells) If yes, is there a contingency casing if lost circulation occurs? | |
| | |
| Is well located in critical Cave/Karst? | N |
| If yes, are there three strings cemented to surface? | |

**Mewbourne Oil Company, Caper 20/29 Fed Com 417H**
**Sec 17, T21S, R32E**
**SHL: 300' FSL 1515' FWL (Sec 17)**
**BHL: 100' FSL 1320' FEL (Sec 29)**

**Pressure Control Equipment**

| BOP installed and tested before drilling hole, in: | Size, in | System Rated WP | Type | | Tested to: | Rating Depth |
|---|---|---|---|---|---|---|
| 12.25 | 13.375 | 5M | Annular | X | 2500#/3500# | 20,811' |
| | | 5M | Blind Ram | X | 5000# | |
| | | | Pipe Ram | X | | |
| | | | Double Ram | | | |
| | | | Other* | | | |

*Specify if additional ram is utilized.

**Equipment:** Annular, Pipe Rams, Blind Rams, 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.

**Variance Request:** A variance is requested for the use of a flexible choke line from the BOP to the choke manifold. See attached for hydrostatic test chart. Anchors are not required by manufacturer. Variance is requested to use a multi bowl wellhead. Variance is requested to perform break testing according to attached procedure. If a breaktesting variance is approved & incorporated, API Standard 53 will be incorporated and testing annular BOP to 70% of RWP or 100% of MASP, whichever is greater, will be performed.

**Testing Procedure:** BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per 43 CFR Part 3172 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.

| | |
|---|---|
| Y | Formation integrity test will be performed per 43 CFR Part 3172.<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 43 CFR Part 3172. |
| N | Mewbourne Oil Company request a variance to use a 5000 psi annular BOP with a 10,000 psi BOP stack. |

**Mud Program**

| Depth (MD) | Mud Wt., lb/gal | Mud Type |
|---|---|---|
| | 8.4 - 8.6 | Fresh Water |
| 0' - 1100' | 8.4 - 8.6 | Fresh Water |
| 1100' - 4450' | 10.0 - 10.2 | Brine |
| 4450' - 9546' | 8.6 - 9.7 | Cut-Brine |
| 9546' - 20811' | 10.0 - 11. | OBM |

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? | Pason/PVT/Visual Monitoring |

**Mewbourne Oil Company, Caper 20/29 Fed Com 417H**
**Sec 17, T21S, R32E**
**SHL: 300' FSL 1515' FWL (Sec 17)**
**BHL: 100' FSL 1320' FEL (Sec 29)**

**Logging and Testing Procedures**

| Logging, Coring and Testing. | |
|---|---|
| N | Will run GR/CNL from KOP (9546') to surface (horizontal well – vertical portion of hole). Stated logs run will be in the Completion Report and submitted to the BLM. |
| Y | No logs are planned based on well control or offset log information. Offset Well: Caper 20/29 W0BO Fee #1H |
| N | Coring? If yes, explain: |

**Open & Cased Hole Logs Run In the Well**

| | | | | | |
|---|---|---|---|---|---|
| ☐ | Caliper | ☐ | Cement Bond Log | ☐ | CNL/FDC |
| ☐ | Compensated Densilog | ☐ | Compensated Neutron Log | ☐ | Computer Generated Log |
| ☐ | Dip Meter Log | ☑ | **Directional Survey** | ☐ | Dual Induction/Microresistivity |
| ☐ | Dual Lateral Log/Microspherically Focused | ☐ | Electric Log | ☐ | Formation Density Compensated Log |
| ☐ | Gamma Ray Log | ☑ | **Measurement While Drilling** | ☐ | Mud Log/Geological Lithology Log |
| ☐ | Other | ☐ | Porosity-Resistivity Log | ☐ | Sidewall Neutron Log |
| ☐ | Sonic Log | ☐ | Spontaneous Potential Log | ☐ | Temperature Log |

**Drilling Conditions**

| Condition | Specify what type and where? |
|---|---|
| BH Pressure at deepest TVD | 5560 psi |
| BH Temperature | 140 |
| Abnormal Temp, Pressure, or Geologic Hazards | No |

Mitigation measure for abnormal conditions. Describe. Lost circulation material/sweeps/mud scavengers in surface hole. Weighted mud for possible over-pressure in Wolfcamp formation.

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.

| | |
|---|---|
| | H2S is present |
| X | H2S Plan attached |

**Mewbourne Oil Company, Caper 20/29 Fed Com 417H**
**Sec 17, T21S, R32E**
**SHL: 300' FSL 1515' FWL (Sec 17)**
**BHL: 100' FSL 1320' FEL (Sec 29)**

### Other facets of operation

Mewbourne Oil Company also requests approval to implement additional designs as described below &/or in other attachments. BLM will be notified of elected design.

**Offline Cementing Variance:** Variance is requested to perform offline cementing according to the attached procedure. **R-111Q:** Mewbourne proposes performing Open Hole Cementing per R-111Q Guidelines if well is in Potash.

**All casing strings will be tested in accordance with 43 CFR Part 3172. Must have table for contingency casing.**

| | Y or N |
|---|---|
| Is casing new? If used, attach certification as required in Onshore Order #1 | Y |
| Is casing API approved? 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 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? | |
| Is well within the designated 4 string boundary. | N |
| | |
| Is well located in SOPA but not in R-111-Q? | N |
| If yes, are the first 2 strings cemented to surface and 3rd string cement tied back 500' into previous casing? | |
| | |
| Is well located in R-111-Q and SOPA? | Y |
| If yes, are the first three strings cemented to surface? | N |
| Is 2nd string set 100' to 600' below the base of salt? | Y |
| Is an open annulus used to satisfy R-111-Q? If yes, see cement design. | Y |
| Is an engineered weak point used to satisfy R-111-Q? | |
| If yes, at what depth is the weak point planned? | |
| | |
| Is well located in high Cave/Karst? | N |
| If yes, are there two strings cemented to surface? | |
| (For 2 string wells) If yes, is there a contingency casing if lost circulation occurs? | |
| | |
| Is well located in critical Cave/Karst? | N |
| If yes, are there three strings cemented to surface? | |

# Mewbourne Oil Company
# R-111Q Procedure

Mewbourne Oil Company request permission to perform Open Hole Annulus procedure per R-111Q guidelines to be implemented as follows:

**Production String**

*a)* The Production string shall consist new oil field casing in good condition that meets API specifications, rated for the loads expected over the lifecycle of the well.

*b)* For wells within the KPLA where a 2nd intermediate string will not be utilized resulting in a 3 String Design (Surface, Salt or Salt/Capitan Reef, Production), the following safeguard shall apply to safely divert flow of wellbore fluids away from the Salt Interval in the event of a catastrophic production casing failure. The Surface Equipment utilized during stimulation operations should be designed to relieve pressure from the production x intermediate casing annulus below the burst threshold of the casing string components.

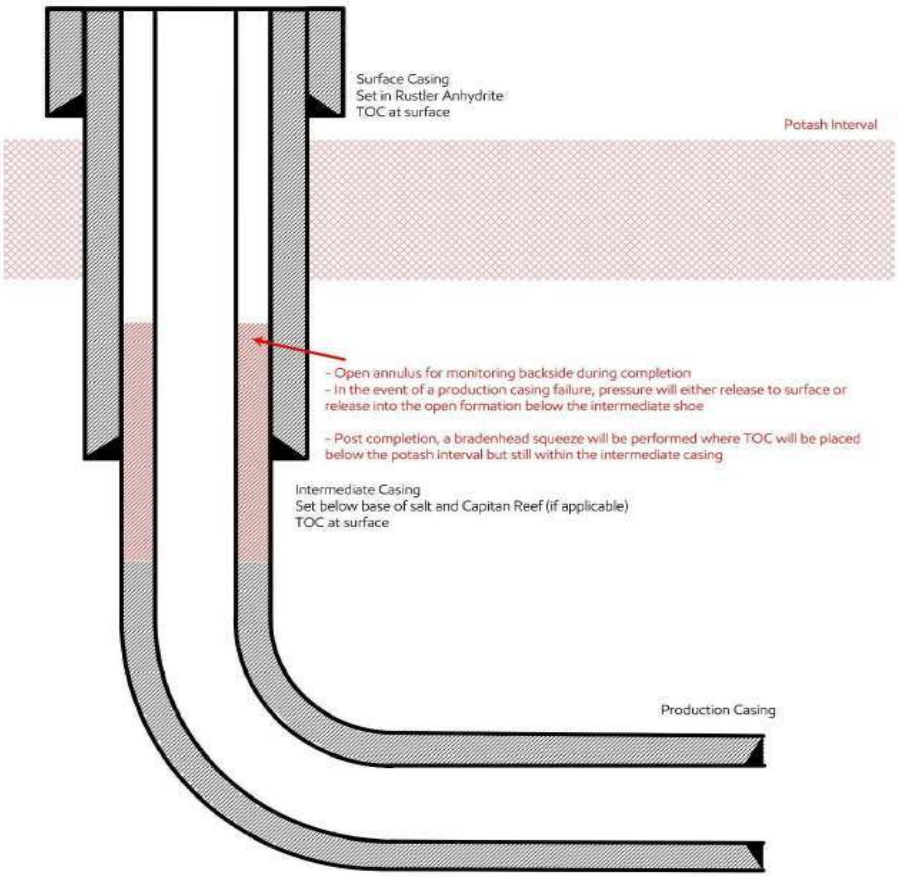
*i.* A monitored open annulus will be incorporated during completion by leaving the 1st Intermediate Casing x Production Casing annulus un-cemented and monitored inside the 1st Intermediate String. Reference wellbore diagram.

i.The top of cement in the Production Casing x 1st Intermediate Casing Annulus shall stand uncemented at least 500' below the 1st Intermediate Casing Shoe. Zero percent excess shall be pumped on the Production Cementing Slurry to ensure no tie-back into the 1st Intermediate Casing Shoe.

ii.After Stimulation Operations have been concluded and no longer than 180 days after the well is brought online, the operator will be responsible for Bradenheading cement to ensure at least a 500' tie back has been established inside the 1st Intermediate (Salt String / Capitan String) but not higher than Marker Bed No. 126 (base of the Potash mining interval).

iii.The top of cement may be estimated through pumped displacement volumes or with the use of a fluid shot tool prior to filling backside with fluid.

# 3-String Design – Open Production Casing Annulus



**Mewbourne Oil Company, Caper 20/29 Fed Com 417H**
**Sec 17, T21S, R32E**
**SHL: 300' FSL 1515' FWL (Sec 17)**
**BHL: 100' FSL 1320' FEL (Sec 29)**

| Casing Program Design A | | | | | | BLM Minimum Safety Factors | 1.125 | 1.0 | 1.6 Dry<br>1.8 Wet | 1.6 Dry<br>1.8 Wet |
|---|---|---|---|---|---|---|---|---|---|---|
| String | Hole Size | Top MD | Top TVD | Bot MD | Bot TVD | Csg. Size | SF Collapse | SF Burst | SF Jt Tension | SF Body Tension |
| Surface | 17.5" | 0' | 0' | 1100' | 1100' | 13.375" 48# H40 STC | 1.57 | 3.52 | 6.10 | 10.25 |
| Intermediate | 12.25" | 0' | 0' | 3385' | 3385' | 9.625" 36# J55 LTC | 1.13 | 1.96 | 2.75 | 3.43 |
| Intermediate | 12.25" | 3385' | 3385' | 4307' | 4307' | 9.625" 40# J55 LTC | 1.13 | 1.73 | 12.21 | 14.79 |
| Intermediate | 12.25" | 4307' | 4307' | 4450' | 4450' | 9.625" 40# L80 LTC | 1.31 | 2.44 | 128.85 | 160.14 |
| Production | 8.75" | 0' | 0' | 9546' | 9058' | 7" 26# P110 LTC | 1.36 | 2.18 | 2.79 | 3.34 |
| Liner | 6.125" | 9346' | 8858' | 20811' | 9721' | 4.5" 13.5# P110 LTC | 1.92 | 2.23 | 2.18 | 2.73 |

**Cement Program**

| Casing | | # Sacks | Wt. lb/gal | Yield $ft^3$/sack | TOC/BOC | Volume $ft^3$ | % Excess | Slurry Description |
|---|---|---|---|---|---|---|---|---|
| 13.375 in | LEAD | 600 | 12.5 | 2.12 | 0' - 910' | 1280 | 100% | Class C: Salt, Gel, Extender, LCM |
| | TAIL | 200 | 14.8 | 1.34 | 910' - 1100' | 268 | | Class C: Retarder |
| 9.625 in | LEAD | 690 | 12.5 | 2.12 | 0' - 3764' | 1470 | 25% | Class C: Salt, Gel, Extender, LCM |
| | TAIL | 200 | 14.8 | 1.34 | 3764' - 4450' | 268 | | Class C: Retarder |
| 7 in | LEAD | 130 | 12.5 | 2.12 | 5450' - 7259' | 280 | 0% | Class C: Salt, Gel, Extender, LCM, Defoamer |
| | TAIL | 300 | 15.6 | 1.18 | 7259' - 9546' | 354 | | Class H: Retarder, Fluid Loss, Defoamer |
| 7" TOC @ 5450', BHS TOC @ 3950' | | | | | | | | |
| Braden Head Sqz | LEAD | 210 | 14.8 | 1.34 | 3950' - 5450' | 290 | 25% | Class C |
| 4.5 in | LEAD | 730 | 13.5 | 1.85 | 9346' - 20811' | 1360 | 25% | Class H: Salt, Gel, Fluid Loss, Retarder, Dispersant, Defoamer, Anti-settling Agent |

| Casing Program Design B | | | | | | BLM Minimum Safety Factors | 1.125 | 1.0 | 1.6 Dry<br>1.8 Wet | 1.6 Dry<br>1.8 Wet |
|---|---|---|---|---|---|---|---|---|---|---|
| String | Hole Size | Top MD | Top TVD | Bot MD | Bot TVD | Csg. Size | SF Collapse | SF Burst | SF Jt Tension | SF Body Tension |
| Surface | 17.5" | 0' | 0' | 1100' | 1100' | 13.375" 48# H40 STC | 1.57 | 3.52 | 6.10 | 10.25 |
| Int | 12.25" | 0' | 0' | 3385' | 3385' | 9.625" 36# J55 LTC | 1.13 | 1.96 | 2.75 | 3.43 |
| Int | 12.25" | 3385' | 3385' | 4307' | 4307' | 9.625" 40# J55 LTC | 1.13 | 1.73 | 12.21 | 14.79 |
| Int | 12.25" | 4307' | 4307' | 4450' | 4450' | 9.625" 40# L80 LTC | 1.31 | 2.44 | 128.85 | 160.14 |
| Production | 8.75" | 0' | 0' | 10446' | 9631' | 7" 26# P110 LTC | 1.28 | 2.05 | 2.55 | 3.06 |
| Liner | 6.125" | 9546' | 9058' | 20811' | 9721' | 4.5" 13.5# P110 LTC | 1.92 | 2.23 | 2.22 | 2.77 |

**Design B - Cement Program**

| Casing | | # Sacks | Wt. lb/gal | Yield $ft^3$/sack | TOC/BOC | Volume $ft^3$ | % Excess | Slurry Description |
|---|---|---|---|---|---|---|---|---|
| 13.375 in | LEAD | 600 | 12.5 | 2.12 | 0' - 910' | 1280 | 100% | Class C: Salt, Gel, Extender, LCM |
| | TAIL | 200 | 14.8 | 1.34 | 910' - 1100' | 268 | | Class C: Retarder |
| 1st Stg 9.625 in | LEAD | 690 | 12.5 | 2.12 | 0' - 3764' | 1470 | 25% | Class C: Salt, Gel, Extender, LCM |
| | TAIL | 200 | 14.8 | 1.34 | 3764' - 4450' | 268 | | Class C: Retarder |
| 7 in | LEAD | 140 | 12.5 | 2.12 | 5450' - 7391' | 300 | 0% | Class C: Salt, Gel, Extender, LCM, Defoamer |
| | TAIL | 400 | 15.6 | 1.18 | 7391' - 10446' | 472 | | Class H: Retarder, Fluid Loss, Defoamer |
| 7" TOC @ 5450', BHS TOC @ 3950' | | | | | | | | |
| Braden Head Sqz | LEAD | 200 | 14.8 | 1.34 | 3950' - 5450' | 270 | 25% | Class C |
| 4.5 in | LEAD | 720 | 13.5 | 1.85 | 9546' - 20811' | 1340 | 25% | Class H: Salt, Gel, Fluid Loss, Retarder, Dispersant, Defoamer, Anti-settling Agent |

**Mewbourne Oil Company, Caper 20/29 Fed Com 417H**
**Sec 17, T21S, R32E**
**SHL: 300' FSL 1515' FWL (Sec 17)**
**BHL: 100' FSL 1320' FEL (Sec 29)**

| Casing Program Design C | | | | | | BLM Minimum Safety Factors | 1.125 | 1.0 | 1.6 Dry<br>1.8 Wet | 1.6 Dry<br>1.8 Wet |
|---|---|---|---|---|---|---|---|---|---|---|
| String | Hole Size | Top MD | Top TVD | Bot MD | Bot TVD | Csg. Size | SF Collapse | SF Burst | SF Jt Tension | SF Body Tension |
| Surface | 17.5" | 0' | 0' | 1100' | 1100' | 13.375" 48# H40 STC | 1.57 | 3.52 | 6.10 | 10.25 |
| Intermediate | 12.25" | 0' | 0' | 3385' | 3385' | 9.625" 36# J55 LTC | 1.13 | 1.96 | 2.75 | 3.43 |
| Intermediate | 12.25" | 3385' | 3385' | 4307' | 4307' | 9.625" 40# J55 LTC | 1.13 | 1.73 | 12.21 | 14.79 |
| Intermediate | 12.25" | 4307' | 4307' | 4450' | 4450' | 9.625" 40# L80 LTC | 1.31 | 2.44 | 128.85 | 160.14 |
| Production | 8.75" | 0' | 0' | 9546' | 9058' | 7" 26# P110 LTC | 1.28 | 2.05 | 2.79 | 3.34 |
| Production | 8.5" | 9546' | 9058' | 20811' | 9721' | 4.5" 13.5# RYS110 CDC HTQ | 1.92 | 2.23 | 2.81 | 2.77 |

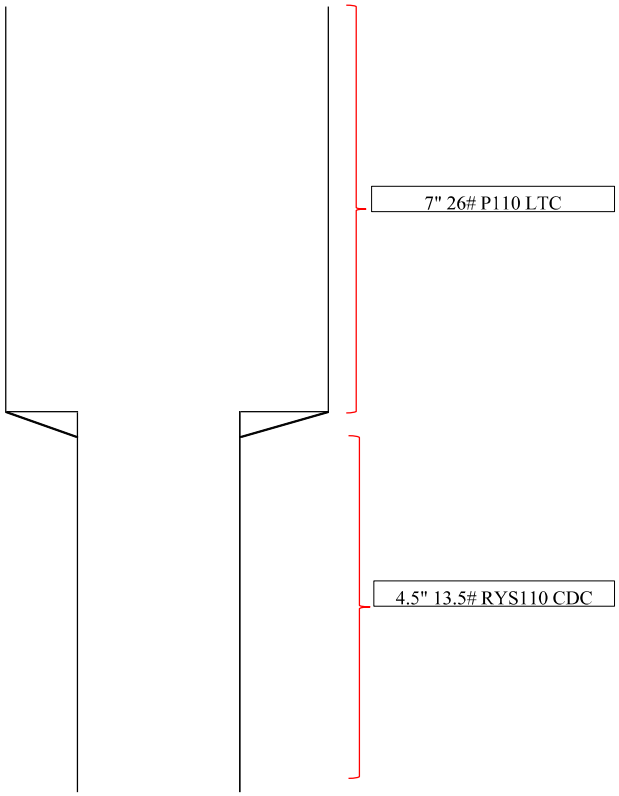
**Cement Program C**

| Casing | | # Sacks | Wt. lb/gal | Yield $ft^3$/sack | TOC/BOC | Volume $ft^3$ | % Excess | Slurry Description |
|---|---|---|---|---|---|---|---|---|
| 13.375 in | LEAD | 600 | 12.5 | 2.12 | 0' - 910' | 1280 | 100% | Class C: Salt, Gel, Extender, LCM |
| | TAIL | 200 | 14.8 | 1.34 | 910' - 1100' | 268 | | Class C: Retarder |
| 1st Stg 9.625 in | LEAD | 690 | 12.5 | 2.12 | 0' - 3764' | 1470 | 25% | Class C: Salt, Gel, Extender, LCM |
| | TAIL | 200 | 14.8 | 1.34 | 3764' - 4450' | 268 | | Class C: Retarder |
| 7 in - 4.5 in | LEAD | 740 | 12.5 | 2.12 | 5450' - 7137' | 1570 | 0% | Class C: Salt, Gel, Extender, LCM, Defoamer |
| | TAIL | 1900 | 15.6 | 1.18 | 7262' - 20811' | 2242 | | Class H: Retarder, Fluid Loss, Defoamer |
| 7" TOC @ 5450', BHS TOC @ 3950' | | | | | | | | |
| Braden Head Sqz | LEAD | 200 | 14.8 | 1.34 | 3950' - 5450' | 270 | 25% | Class C |

**Mewbourne Oil Company, Caper 20/29 Fed Com 417H**
Sec 17, T21S, R32E
SHL: 300' FSL & 1515' FWL (Sec 17)
BHL: 100' FSL & 1320' FEL (Sec 29)

**Casing Design C**

| *Hole Size* | *From* | *To* | *Csg. Size* | *#/ft* | *Grade* | *Conn.* | *SF Collapse* | *SF Burst* | *SF Jt Tension* | *SF Body Tension* |
|---|---|---|---|---|---|---|---|---|---|---|
| 8.75 | 0' | 9546' | 7" | 26# | P110 | LTC | 1.28 | 2.05 | 2.79 | 3.34 |
| 8.5 | 9546' | 20811' | 4.5" | 13.5# | RYS110 | CDC HTQ | 1.92 | 2.23 | 2.81 | 2.77 |



# Mewbourne Oil Company

**Lea County, New Mexico NAD 83**
**Caper 20/29 Fed Com #417H**
**SHL: 300' FSL & 1515' FWL (Sec 17)**

**BHL: 100' FSL & 1320' FEL (Sec 29)**

**Plan: Design #1**

# Standard Planning Report

**18 April, 2024**

# Planning Report

| | | | |
|---|---|---|---|
| **Database:** | Hobbs | **Local Co-ordinate Reference:** | Site Caper 20/29 Fed Com #417H |
| **Company:** | Mewbourne Oil Company | **TVD Reference:** | Well @ 3661.0usft (Original Well) |
| **Project:** | Lea County, New Mexico NAD 83 | **MD Reference:** | Well @ 3661.0usft (Original Well) |
| **Site:** | Caper 20/29 Fed Com #417H | **North Reference:** | Grid |
| **Well:** | SHL: 300' FSL & 1515' FWL (Sec 17) | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | BHL: 100' FSL & 1320' FEL (Sec 29) | | |
| **Design:** | Design #1 | | |

**Project** Lea County, New Mexico NAD 83

| | | | |
|---|---|---|---|
| **Map System:** | US State Plane 1983 | **System Datum:** | Mean Sea Level |
| **Geo Datum:** | North American Datum 1983 | | |
| **Map Zone:** | New Mexico Eastern Zone | | |

**Site** Caper 20/29 Fed Com #417H

| | | | | | |
|---|---|---|---|---|---|
| **Site Position:** | | **Northing:** | 536,112.40 usft | **Latitude:** | 32.4722455 |
| **From:** | Map | **Easting:** | 736,490.40 usft | **Longitude:** | -103.7005241 |
| **Position Uncertainty:** | 0.0 usft | **Slot Radius:** | 13-3/16 " | | |

**Well** SHL: 300' FSL & 1515' FWL (Sec 17)

| | | | | | | |
|---|---|---|---|---|---|---|
| **Well Position** | **+N/-S** | 0.0 usft | **Northing:** | 536,112.40 usft | **Latitude:** | 32.4722455 |
| | **+E/-W** | 0.0 usft | **Easting:** | 736,490.40 usft | **Longitude:** | -103.7005241 |
| **Position Uncertainty** | | 0.0 usft | **Wellhead Elevation:** | 3,661.0 usft | **Ground Level:** | 3,633.0 usft |
| **Grid Convergence:** | | 0.34 ° | | | | |

**Wellbore** BHL: 100' FSL & 1320' FEL (Sec 29)

| Magnetics | Model Name | Sample Date | Declination (°) | Dip Angle (°) | Field Strength (nT) |
|---|---|---|---|---|---|
| | IGRF2010 | 12/31/2014 | 7.23 | 60.31 | 48,395.85983477 |

**Design** Design #1

**Audit Notes:**

| | | | | |
|---|---|---|---|---|
| **Version:** | **Phase:** | PROTOTYPE | **Tie On Depth:** | 0.0 |

| Vertical Section: | Depth From (TVD) (usft) | +N/-S (usft) | +E/-W (usft) | Direction (°) |
|---|---|---|---|---|
| | 0.0 | 0.0 | 0.0 | 166.81 |

**Plan Survey Tool Program** **Date** 4/18/2024

| | Depth From (usft) | Depth To (usft) | Survey (Wellbore) | Tool Name | Remarks |
|---|---|---|---|---|---|
| 1 | 0.0 | 20,810.6 | Design #1 (BHL: 100' FSL & 1320 | | |

**Plan Sections**

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) | TFO (°) | Target |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 2,300.0 | 0.00 | 0.00 | 2,300.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 3,499.0 | 23.98 | 85.39 | 3,464.3 | 19.9 | 246.5 | 2.00 | 2.00 | 0.00 | 85.39 | |
| 8,346.8 | 23.98 | 85.39 | 7,893.7 | 178.1 | 2,210.4 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 9,545.9 | 0.00 | 0.00 | 9,058.0 | 198.0 | 2,456.9 | 2.00 | -2.00 | 0.00 | 180.00 | KOP: 473' FSL & 132( |
| 10,441.0 | 89.50 | 179.68 | 9,631.0 | -370.0 | 2,460.1 | 10.00 | 10.00 | 0.00 | 179.68 | |
| 20,810.6 | 89.50 | 179.68 | 9,721.0 | -10,739.1 | 2,517.7 | 0.00 | 0.00 | 0.00 | 0.00 | BHL: 100' FSL & 132( |

# Planning Report

| | | | |
|---|---|---|---|
| **Database:** | Hobbs | **Local Co-ordinate Reference:** | Site Caper 20/29 Fed Com #417H |
| **Company:** | Mewbourne Oil Company | **TVD Reference:** | Well @ 3661.0usft (Original Well) |
| **Project:** | Lea County, New Mexico NAD 83 | **MD Reference:** | Well @ 3661.0usft (Original Well) |
| **Site:** | Caper 20/29 Fed Com #417H | **North Reference:** | Grid |
| **Well:** | SHL: 300' FSL & 1515' FWL (Sec 17) | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | BHL: 100' FSL & 1320' FEL (Sec 29) | | |
| **Design:** | Design #1 | | |

**Planned Survey**

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| **SHL: 300' FSL & 1515' FWL (Sec 17)** | | | | | | | | | |
| 100.0 | 0.00 | 0.00 | 100.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 200.0 | 0.00 | 0.00 | 200.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 300.0 | 0.00 | 0.00 | 300.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 400.0 | 0.00 | 0.00 | 400.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 500.0 | 0.00 | 0.00 | 500.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 600.0 | 0.00 | 0.00 | 600.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 700.0 | 0.00 | 0.00 | 700.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 800.0 | 0.00 | 0.00 | 800.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 900.0 | 0.00 | 0.00 | 900.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 1,000.0 | 0.00 | 0.00 | 1,000.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 1,100.0 | 0.00 | 0.00 | 1,100.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 1,200.0 | 0.00 | 0.00 | 1,200.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 1,300.0 | 0.00 | 0.00 | 1,300.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 1,400.0 | 0.00 | 0.00 | 1,400.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 1,500.0 | 0.00 | 0.00 | 1,500.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 1,600.0 | 0.00 | 0.00 | 1,600.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 1,700.0 | 0.00 | 0.00 | 1,700.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 1,800.0 | 0.00 | 0.00 | 1,800.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 1,900.0 | 0.00 | 0.00 | 1,900.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 2,000.0 | 0.00 | 0.00 | 2,000.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 2,100.0 | 0.00 | 0.00 | 2,100.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 2,200.0 | 0.00 | 0.00 | 2,200.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 2,300.0 | 0.00 | 0.00 | 2,300.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 2,400.0 | 2.00 | 85.39 | 2,400.0 | 0.1 | 1.7 | 0.3 | 2.00 | 2.00 | 0.00 |
| 2,500.0 | 4.00 | 85.39 | 2,499.8 | 0.6 | 7.0 | 1.0 | 2.00 | 2.00 | 0.00 |
| 2,600.0 | 6.00 | 85.39 | 2,599.5 | 1.3 | 15.6 | 2.3 | 2.00 | 2.00 | 0.00 |
| 2,700.0 | 8.00 | 85.39 | 2,698.7 | 2.2 | 27.8 | 4.2 | 2.00 | 2.00 | 0.00 |
| 2,800.0 | 10.00 | 85.39 | 2,797.5 | 3.5 | 43.4 | 6.5 | 2.00 | 2.00 | 0.00 |
| 2,900.0 | 12.00 | 85.39 | 2,895.6 | 5.0 | 62.4 | 9.3 | 2.00 | 2.00 | 0.00 |
| 3,000.0 | 14.00 | 85.39 | 2,993.1 | 6.8 | 84.8 | 12.7 | 2.00 | 2.00 | 0.00 |
| 3,100.0 | 16.00 | 85.39 | 3,089.6 | 8.9 | 110.6 | 16.6 | 2.00 | 2.00 | 0.00 |
| 3,200.0 | 18.00 | 85.39 | 3,185.3 | 11.3 | 139.8 | 20.9 | 2.00 | 2.00 | 0.00 |
| 3,300.0 | 20.00 | 85.39 | 3,279.8 | 13.9 | 172.2 | 25.8 | 2.00 | 2.00 | 0.00 |
| 3,400.0 | 22.00 | 85.39 | 3,373.2 | 16.8 | 207.9 | 31.1 | 2.00 | 2.00 | 0.00 |
| 3,499.0 | 23.98 | 85.39 | 3,464.3 | 19.9 | 246.5 | 36.9 | 2.00 | 2.00 | 0.00 |
| 3,600.0 | 23.98 | 85.39 | 3,556.6 | 23.2 | 287.4 | 43.0 | 0.00 | 0.00 | 0.00 |
| 3,700.0 | 23.98 | 85.39 | 3,648.0 | 26.4 | 327.9 | 49.1 | 0.00 | 0.00 | 0.00 |
| 3,800.0 | 23.98 | 85.39 | 3,739.3 | 29.7 | 368.4 | 55.2 | 0.00 | 0.00 | 0.00 |
| 3,900.0 | 23.98 | 85.39 | 3,830.7 | 33.0 | 408.9 | 61.3 | 0.00 | 0.00 | 0.00 |
| 4,000.0 | 23.98 | 85.39 | 3,922.1 | 36.2 | 449.4 | 67.3 | 0.00 | 0.00 | 0.00 |
| 4,100.0 | 23.98 | 85.39 | 4,013.4 | 39.5 | 489.9 | 73.4 | 0.00 | 0.00 | 0.00 |
| 4,200.0 | 23.98 | 85.39 | 4,104.8 | 42.7 | 530.5 | 79.5 | 0.00 | 0.00 | 0.00 |
| 4,300.0 | 23.98 | 85.39 | 4,196.2 | 46.0 | 571.0 | 85.5 | 0.00 | 0.00 | 0.00 |
| 4,400.0 | 23.98 | 85.39 | 4,287.5 | 49.3 | 611.5 | 91.6 | 0.00 | 0.00 | 0.00 |
| 4,500.0 | 23.98 | 85.39 | 4,378.9 | 52.5 | 652.0 | 97.7 | 0.00 | 0.00 | 0.00 |
| 4,600.0 | 23.98 | 85.39 | 4,470.3 | 55.8 | 692.5 | 103.7 | 0.00 | 0.00 | 0.00 |
| 4,700.0 | 23.98 | 85.39 | 4,561.6 | 59.1 | 733.0 | 109.8 | 0.00 | 0.00 | 0.00 |
| 4,800.0 | 23.98 | 85.39 | 4,653.0 | 62.3 | 773.5 | 115.9 | 0.00 | 0.00 | 0.00 |
| 4,900.0 | 23.98 | 85.39 | 4,744.4 | 65.6 | 814.0 | 121.9 | 0.00 | 0.00 | 0.00 |
| 5,000.0 | 23.98 | 85.39 | 4,835.7 | 68.9 | 854.6 | 128.0 | 0.00 | 0.00 | 0.00 |
| 5,100.0 | 23.98 | 85.39 | 4,927.1 | 72.1 | 895.1 | 134.1 | 0.00 | 0.00 | 0.00 |
| 5,200.0 | 23.98 | 85.39 | 5,018.5 | 75.4 | 935.6 | 140.1 | 0.00 | 0.00 | 0.00 |

# Planning Report

| | | | |
|---|---|---|---|
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| **Project:** | Lea County, New Mexico NAD 83 | **MD Reference:** | Well @ 3661.0usft (Original Well) |
| **Site:** | Caper 20/29 Fed Com #417H | **North Reference:** | Grid |
| **Well:** | SHL: 300' FSL & 1515' FWL (Sec 17) | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | BHL: 100' FSL & 1320' FEL (Sec 29) | | |
| **Design:** | Design #1 | | |

**Planned Survey**

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
|---|---|---|---|---|---|---|---|---|---|
| 5,300.0 | 23.98 | 85.39 | 5,109.8 | 78.7 | 976.1 | 146.2 | 0.00 | 0.00 | 0.00 |
| 5,400.0 | 23.98 | 85.39 | 5,201.2 | 81.9 | 1,016.6 | 152.3 | 0.00 | 0.00 | 0.00 |
| 5,500.0 | 23.98 | 85.39 | 5,292.6 | 85.2 | 1,057.1 | 158.3 | 0.00 | 0.00 | 0.00 |
| 5,600.0 | 23.98 | 85.39 | 5,383.9 | 88.5 | 1,097.6 | 164.4 | 0.00 | 0.00 | 0.00 |
| 5,700.0 | 23.98 | 85.39 | 5,475.3 | 91.7 | 1,138.1 | 170.5 | 0.00 | 0.00 | 0.00 |
| 5,800.0 | 23.98 | 85.39 | 5,566.7 | 95.0 | 1,178.6 | 176.6 | 0.00 | 0.00 | 0.00 |
| 5,900.0 | 23.98 | 85.39 | 5,658.0 | 98.3 | 1,219.2 | 182.6 | 0.00 | 0.00 | 0.00 |
| 6,000.0 | 23.98 | 85.39 | 5,749.4 | 101.5 | 1,259.7 | 188.7 | 0.00 | 0.00 | 0.00 |
| 6,100.0 | 23.98 | 85.39 | 5,840.8 | 104.8 | 1,300.2 | 194.8 | 0.00 | 0.00 | 0.00 |
| 6,200.0 | 23.98 | 85.39 | 5,932.2 | 108.0 | 1,340.7 | 200.8 | 0.00 | 0.00 | 0.00 |
| 6,300.0 | 23.98 | 85.39 | 6,023.5 | 111.3 | 1,381.2 | 206.9 | 0.00 | 0.00 | 0.00 |
| 6,400.0 | 23.98 | 85.39 | 6,114.9 | 114.6 | 1,421.7 | 213.0 | 0.00 | 0.00 | 0.00 |
| 6,500.0 | 23.98 | 85.39 | 6,206.3 | 117.8 | 1,462.2 | 219.0 | 0.00 | 0.00 | 0.00 |
| 6,600.0 | 23.98 | 85.39 | 6,297.6 | 121.1 | 1,502.7 | 225.1 | 0.00 | 0.00 | 0.00 |
| 6,700.0 | 23.98 | 85.39 | 6,389.0 | 124.4 | 1,543.3 | 231.2 | 0.00 | 0.00 | 0.00 |
| 6,800.0 | 23.98 | 85.39 | 6,480.4 | 127.6 | 1,583.8 | 237.2 | 0.00 | 0.00 | 0.00 |
| 6,900.0 | 23.98 | 85.39 | 6,571.7 | 130.9 | 1,624.3 | 243.3 | 0.00 | 0.00 | 0.00 |
| 7,000.0 | 23.98 | 85.39 | 6,663.1 | 134.2 | 1,664.8 | 249.4 | 0.00 | 0.00 | 0.00 |
| 7,100.0 | 23.98 | 85.39 | 6,754.5 | 137.4 | 1,705.3 | 255.4 | 0.00 | 0.00 | 0.00 |
| 7,200.0 | 23.98 | 85.39 | 6,845.8 | 140.7 | 1,745.8 | 261.5 | 0.00 | 0.00 | 0.00 |
| 7,300.0 | 23.98 | 85.39 | 6,937.2 | 144.0 | 1,786.3 | 267.6 | 0.00 | 0.00 | 0.00 |
| 7,400.0 | 23.98 | 85.39 | 7,028.6 | 147.2 | 1,826.8 | 273.6 | 0.00 | 0.00 | 0.00 |
| 7,500.0 | 23.98 | 85.39 | 7,119.9 | 150.5 | 1,867.4 | 279.7 | 0.00 | 0.00 | 0.00 |
| 7,600.0 | 23.98 | 85.39 | 7,211.3 | 153.8 | 1,907.9 | 285.8 | 0.00 | 0.00 | 0.00 |
| 7,700.0 | 23.98 | 85.39 | 7,302.7 | 157.0 | 1,948.4 | 291.9 | 0.00 | 0.00 | 0.00 |
| 7,800.0 | 23.98 | 85.39 | 7,394.0 | 160.3 | 1,988.9 | 297.9 | 0.00 | 0.00 | 0.00 |
| 7,900.0 | 23.98 | 85.39 | 7,485.4 | 163.5 | 2,029.4 | 304.0 | 0.00 | 0.00 | 0.00 |
| 8,000.0 | 23.98 | 85.39 | 7,576.8 | 166.8 | 2,069.9 | 310.1 | 0.00 | 0.00 | 0.00 |
| 8,100.0 | 23.98 | 85.39 | 7,668.1 | 170.1 | 2,110.4 | 316.1 | 0.00 | 0.00 | 0.00 |
| 8,200.0 | 23.98 | 85.39 | 7,759.5 | 173.3 | 2,150.9 | 322.2 | 0.00 | 0.00 | 0.00 |
| 8,300.0 | 23.98 | 85.39 | 7,850.9 | 176.6 | 2,191.4 | 328.3 | 0.00 | 0.00 | 0.00 |
| 8,346.8 | 23.98 | 85.39 | 7,893.7 | 178.1 | 2,210.4 | 331.1 | 0.00 | 0.00 | 0.00 |
| 8,400.0 | 22.92 | 85.39 | 7,942.4 | 179.8 | 2,231.5 | 334.3 | 2.00 | -2.00 | 0.00 |
| 8,500.0 | 20.92 | 85.39 | 8,035.2 | 182.8 | 2,268.7 | 339.8 | 2.00 | -2.00 | 0.00 |
| 8,600.0 | 18.92 | 85.39 | 8,129.2 | 185.6 | 2,302.7 | 344.9 | 2.00 | -2.00 | 0.00 |
| 8,700.0 | 16.92 | 85.39 | 8,224.4 | 188.0 | 2,333.3 | 349.5 | 2.00 | -2.00 | 0.00 |
| 8,800.0 | 14.92 | 85.39 | 8,320.5 | 190.2 | 2,360.7 | 353.6 | 2.00 | -2.00 | 0.00 |
| 8,900.0 | 12.92 | 85.39 | 8,417.6 | 192.2 | 2,384.6 | 357.2 | 2.00 | -2.00 | 0.00 |
| 9,000.0 | 10.92 | 85.39 | 8,515.4 | 193.8 | 2,405.2 | 360.3 | 2.00 | -2.00 | 0.00 |
| 9,100.0 | 8.92 | 85.39 | 8,613.9 | 195.2 | 2,422.4 | 362.9 | 2.00 | -2.00 | 0.00 |
| 9,200.0 | 6.92 | 85.39 | 8,713.0 | 196.3 | 2,436.1 | 364.9 | 2.00 | -2.00 | 0.00 |
| 9,300.0 | 4.92 | 85.39 | 8,812.4 | 197.2 | 2,446.4 | 366.4 | 2.00 | -2.00 | 0.00 |
| 9,400.0 | 2.92 | 85.39 | 8,912.2 | 197.7 | 2,453.2 | 367.5 | 2.00 | -2.00 | 0.00 |
| 9,500.0 | 0.92 | 85.39 | 9,012.1 | 198.0 | 2,456.5 | 368.0 | 2.00 | -2.00 | 0.00 |
| 9,545.9 | 0.00 | 0.00 | 9,058.0 | 198.0 | 2,456.9 | 368.0 | 2.00 | -2.00 | 0.00 |
| **KOP: 473' FSL & 1320' FEL (Sec 17)** | | | | | | | | | |
| 9,550.0 | 0.41 | 179.68 | 9,062.1 | 198.0 | 2,456.9 | 368.0 | 10.00 | 10.00 | 0.00 |
| 9,600.0 | 5.41 | 179.68 | 9,112.1 | 195.4 | 2,456.9 | 370.5 | 10.00 | 10.00 | 0.00 |
| 9,650.0 | 10.41 | 179.68 | 9,161.6 | 188.6 | 2,457.0 | 377.2 | 10.00 | 10.00 | 0.00 |
| 9,700.0 | 15.41 | 179.68 | 9,210.3 | 177.4 | 2,457.0 | 388.1 | 10.00 | 10.00 | 0.00 |
| 9,750.0 | 20.41 | 179.68 | 9,257.8 | 162.0 | 2,457.1 | 403.1 | 10.00 | 10.00 | 0.00 |
| 9,800.0 | 25.41 | 179.68 | 9,303.9 | 142.6 | 2,457.2 | 422.1 | 10.00 | 10.00 | 0.00 |
| 9,850.0 | 30.41 | 179.68 | 9,348.1 | 119.2 | 2,457.3 | 444.9 | 10.00 | 10.00 | 0.00 |

# Planning Report

| | | | |
|---|---|---|---|
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| **Project:** | Lea County, New Mexico NAD 83 | **MD Reference:** | Well @ 3661.0usft (Original Well) |
| **Site:** | Caper 20/29 Fed Com #417H | **North Reference:** | Grid |
| **Well:** | SHL: 300' FSL & 1515' FWL (Sec 17) | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | BHL: 100' FSL & 1320' FEL (Sec 29) | | |
| **Design:** | Design #1 | | |

**Planned Survey**

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
|---|---|---|---|---|---|---|---|---|---|
| 9,900.0 | 35.41 | 179.68 | 9,390.0 | 92.0 | 2,457.5 | 471.4 | 10.00 | 10.00 | 0.00 |
| 9,950.0 | 40.41 | 179.68 | 9,429.5 | 61.3 | 2,457.7 | 501.3 | 10.00 | 10.00 | 0.00 |
| 10,000.0 | 45.41 | 179.68 | 9,466.1 | 27.3 | 2,457.8 | 534.5 | 10.00 | 10.00 | 0.00 |
| 10,050.0 | 50.41 | 179.68 | 9,499.6 | -9.8 | 2,458.1 | 570.6 | 10.00 | 10.00 | 0.00 |
| 10,100.0 | 55.41 | 179.68 | 9,529.7 | -49.7 | 2,458.3 | 609.5 | 10.00 | 10.00 | 0.00 |
| 10,150.0 | 60.41 | 179.68 | 9,556.3 | -92.0 | 2,458.5 | 650.8 | 10.00 | 10.00 | 0.00 |
| 10,200.0 | 65.41 | 179.68 | 9,579.0 | -136.5 | 2,458.8 | 694.2 | 10.00 | 10.00 | 0.00 |
| 10,250.0 | 70.41 | 179.68 | 9,597.8 | -182.9 | 2,459.0 | 739.3 | 10.00 | 10.00 | 0.00 |
| 10,300.0 | 75.41 | 179.68 | 9,612.5 | -230.6 | 2,459.3 | 785.9 | 10.00 | 10.00 | 0.00 |
| 10,350.0 | 80.40 | 179.68 | 9,623.0 | -279.5 | 2,459.6 | 833.5 | 10.00 | 10.00 | 0.00 |
| 10,400.0 | 85.40 | 179.68 | 9,629.2 | -329.1 | 2,459.8 | 881.9 | 10.00 | 10.00 | 0.00 |
| 10,441.0 | 89.50 | 179.68 | 9,631.0 | -370.0 | 2,460.1 | 921.8 | 10.00 | 10.00 | 0.00 |
| 10,445.9 | 89.50 | 179.68 | 9,631.0 | -374.9 | 2,460.1 | 926.5 | 0.00 | 0.00 | 0.00 |
| **FTP/LP: 100' FNL & 1320' FEL (Sec 20)** | | | | | | | | | |
| 10,500.0 | 89.50 | 179.68 | 9,631.5 | -429.0 | 2,460.4 | 979.3 | 0.00 | 0.00 | 0.00 |
| 10,600.0 | 89.50 | 179.68 | 9,632.4 | -529.0 | 2,460.9 | 1,076.8 | 0.00 | 0.00 | 0.00 |
| 10,700.0 | 89.50 | 179.68 | 9,633.2 | -629.0 | 2,461.5 | 1,174.3 | 0.00 | 0.00 | 0.00 |
| 10,800.0 | 89.50 | 179.68 | 9,634.1 | -729.0 | 2,462.1 | 1,271.8 | 0.00 | 0.00 | 0.00 |
| 10,900.0 | 89.50 | 179.68 | 9,635.0 | -829.0 | 2,462.6 | 1,369.2 | 0.00 | 0.00 | 0.00 |
| 11,000.0 | 89.50 | 179.68 | 9,635.9 | -929.0 | 2,463.2 | 1,466.7 | 0.00 | 0.00 | 0.00 |
| 11,100.0 | 89.50 | 179.68 | 9,636.7 | -1,029.0 | 2,463.7 | 1,564.2 | 0.00 | 0.00 | 0.00 |
| 11,200.0 | 89.50 | 179.68 | 9,637.6 | -1,129.0 | 2,464.3 | 1,661.7 | 0.00 | 0.00 | 0.00 |
| 11,300.0 | 89.50 | 179.68 | 9,638.5 | -1,229.0 | 2,464.8 | 1,759.2 | 0.00 | 0.00 | 0.00 |
| 11,400.0 | 89.50 | 179.68 | 9,639.3 | -1,329.0 | 2,465.4 | 1,856.6 | 0.00 | 0.00 | 0.00 |
| 11,500.0 | 89.50 | 179.68 | 9,640.2 | -1,429.0 | 2,465.9 | 1,954.1 | 0.00 | 0.00 | 0.00 |
| 11,600.0 | 89.50 | 179.68 | 9,641.1 | -1,529.0 | 2,466.5 | 2,051.6 | 0.00 | 0.00 | 0.00 |
| 11,700.0 | 89.50 | 179.68 | 9,641.9 | -1,629.0 | 2,467.1 | 2,149.1 | 0.00 | 0.00 | 0.00 |
| 11,800.0 | 89.50 | 179.68 | 9,642.8 | -1,729.0 | 2,467.6 | 2,246.6 | 0.00 | 0.00 | 0.00 |
| 11,900.0 | 89.50 | 179.68 | 9,643.7 | -1,829.0 | 2,468.2 | 2,344.1 | 0.00 | 0.00 | 0.00 |
| 12,000.0 | 89.50 | 179.68 | 9,644.5 | -1,929.0 | 2,468.7 | 2,441.5 | 0.00 | 0.00 | 0.00 |
| 12,100.0 | 89.50 | 179.68 | 9,645.4 | -2,029.0 | 2,469.3 | 2,539.0 | 0.00 | 0.00 | 0.00 |
| 12,200.0 | 89.50 | 179.68 | 9,646.3 | -2,129.0 | 2,469.8 | 2,636.5 | 0.00 | 0.00 | 0.00 |
| 12,300.0 | 89.50 | 179.68 | 9,647.1 | -2,229.0 | 2,470.4 | 2,734.0 | 0.00 | 0.00 | 0.00 |
| 12,400.0 | 89.50 | 179.68 | 9,648.0 | -2,328.9 | 2,470.9 | 2,831.5 | 0.00 | 0.00 | 0.00 |
| 12,500.0 | 89.50 | 179.68 | 9,648.9 | -2,428.9 | 2,471.5 | 2,929.0 | 0.00 | 0.00 | 0.00 |
| 12,600.0 | 89.50 | 179.68 | 9,649.7 | -2,528.9 | 2,472.1 | 3,026.4 | 0.00 | 0.00 | 0.00 |
| 12,700.0 | 89.50 | 179.68 | 9,650.6 | -2,628.9 | 2,472.6 | 3,123.9 | 0.00 | 0.00 | 0.00 |
| 12,800.0 | 89.50 | 179.68 | 9,651.5 | -2,728.9 | 2,473.2 | 3,221.4 | 0.00 | 0.00 | 0.00 |
| 12,900.0 | 89.50 | 179.68 | 9,652.3 | -2,828.9 | 2,473.7 | 3,318.9 | 0.00 | 0.00 | 0.00 |
| 12,987.0 | 89.50 | 179.68 | 9,653.1 | -2,915.9 | 2,474.2 | 3,403.7 | 0.00 | 0.00 | 0.00 |
| **PPP2: 2641' FSL & 1320' FEL (Sec 20)** | | | | | | | | | |
| 13,000.0 | 89.50 | 179.68 | 9,653.2 | -2,928.9 | 2,474.3 | 3,416.4 | 0.00 | 0.00 | 0.00 |
| 13,100.0 | 89.50 | 179.68 | 9,654.1 | -3,028.9 | 2,474.8 | 3,513.8 | 0.00 | 0.00 | 0.00 |
| 13,200.0 | 89.50 | 179.68 | 9,654.9 | -3,128.9 | 2,475.4 | 3,611.3 | 0.00 | 0.00 | 0.00 |
| 13,300.0 | 89.50 | 179.68 | 9,655.8 | -3,228.9 | 2,476.0 | 3,708.8 | 0.00 | 0.00 | 0.00 |
| 13,400.0 | 89.50 | 179.68 | 9,656.7 | -3,328.9 | 2,476.5 | 3,806.3 | 0.00 | 0.00 | 0.00 |
| 13,500.0 | 89.50 | 179.68 | 9,657.5 | -3,428.9 | 2,477.1 | 3,903.8 | 0.00 | 0.00 | 0.00 |
| 13,600.0 | 89.50 | 179.68 | 9,658.4 | -3,528.9 | 2,477.6 | 4,001.3 | 0.00 | 0.00 | 0.00 |
| 13,700.0 | 89.50 | 179.68 | 9,659.3 | -3,628.9 | 2,478.2 | 4,098.7 | 0.00 | 0.00 | 0.00 |
| 13,800.0 | 89.50 | 179.68 | 9,660.2 | -3,728.9 | 2,478.7 | 4,196.2 | 0.00 | 0.00 | 0.00 |
| 13,900.0 | 89.50 | 179.68 | 9,661.0 | -3,828.9 | 2,479.3 | 4,293.7 | 0.00 | 0.00 | 0.00 |
| 14,000.0 | 89.50 | 179.68 | 9,661.9 | -3,928.9 | 2,479.8 | 4,391.2 | 0.00 | 0.00 | 0.00 |
| 14,100.0 | 89.50 | 179.68 | 9,662.8 | -4,028.9 | 2,480.4 | 4,488.7 | 0.00 | 0.00 | 0.00 |
| 14,200.0 | 89.50 | 179.68 | 9,663.6 | -4,128.9 | 2,481.0 | 4,586.1 | 0.00 | 0.00 | 0.00 |

# Planning Report

| | | | |
|---|---|---|---|
| **Database:** | Hobbs | **Local Co-ordinate Reference:** | Site Caper 20/29 Fed Com #417H |
| **Company:** | Mewbourne Oil Company | **TVD Reference:** | Well @ 3661.0usft (Original Well) |
| **Project:** | Lea County, New Mexico NAD 83 | **MD Reference:** | Well @ 3661.0usft (Original Well) |
| **Site:** | Caper 20/29 Fed Com #417H | **North Reference:** | Grid |
| **Well:** | SHL: 300' FSL & 1515' FWL (Sec 17) | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | BHL: 100' FSL & 1320' FEL (Sec 29) | | |
| **Design:** | Design #1 | | |

**Planned Survey**

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
|---|---|---|---|---|---|---|---|---|---|
| 14,300.0 | 89.50 | 179.68 | 9,664.5 | -4,228.8 | 2,481.5 | 4,683.6 | 0.00 | 0.00 | 0.00 |
| 14,400.0 | 89.50 | 179.68 | 9,665.4 | -4,328.8 | 2,482.1 | 4,781.1 | 0.00 | 0.00 | 0.00 |
| 14,500.0 | 89.50 | 179.68 | 9,666.2 | -4,428.8 | 2,482.6 | 4,878.6 | 0.00 | 0.00 | 0.00 |
| 14,600.0 | 89.50 | 179.68 | 9,667.1 | -4,528.8 | 2,483.2 | 4,976.1 | 0.00 | 0.00 | 0.00 |
| 14,700.0 | 89.50 | 179.68 | 9,668.0 | -4,628.8 | 2,483.7 | 5,073.6 | 0.00 | 0.00 | 0.00 |
| 14,800.0 | 89.50 | 179.68 | 9,668.8 | -4,728.8 | 2,484.3 | 5,171.0 | 0.00 | 0.00 | 0.00 |
| 14,900.0 | 89.50 | 179.68 | 9,669.7 | -4,828.8 | 2,484.8 | 5,268.5 | 0.00 | 0.00 | 0.00 |
| 15,000.0 | 89.50 | 179.68 | 9,670.6 | -4,928.8 | 2,485.4 | 5,366.0 | 0.00 | 0.00 | 0.00 |
| 15,100.0 | 89.50 | 179.68 | 9,671.4 | -5,028.8 | 2,486.0 | 5,463.5 | 0.00 | 0.00 | 0.00 |
| 15,200.0 | 89.50 | 179.68 | 9,672.3 | -5,128.8 | 2,486.5 | 5,561.0 | 0.00 | 0.00 | 0.00 |
| 15,300.0 | 89.50 | 179.68 | 9,673.2 | -5,228.8 | 2,487.1 | 5,658.4 | 0.00 | 0.00 | 0.00 |
| 15,400.0 | 89.50 | 179.68 | 9,674.0 | -5,328.8 | 2,487.6 | 5,755.9 | 0.00 | 0.00 | 0.00 |
| 15,500.0 | 89.50 | 179.68 | 9,674.9 | -5,428.8 | 2,488.2 | 5,853.4 | 0.00 | 0.00 | 0.00 |
| 15,600.0 | 89.50 | 179.68 | 9,675.8 | -5,528.8 | 2,488.7 | 5,950.9 | 0.00 | 0.00 | 0.00 |
| 15,700.0 | 89.50 | 179.68 | 9,676.6 | -5,628.8 | 2,489.3 | 6,048.4 | 0.00 | 0.00 | 0.00 |
| 15,800.0 | 89.50 | 179.68 | 9,677.5 | -5,728.8 | 2,489.8 | 6,145.9 | 0.00 | 0.00 | 0.00 |
| 15,900.0 | 89.50 | 179.68 | 9,678.4 | -5,828.8 | 2,490.4 | 6,243.3 | 0.00 | 0.00 | 0.00 |
| 16,000.0 | 89.50 | 179.68 | 9,679.2 | -5,928.8 | 2,491.0 | 6,340.8 | 0.00 | 0.00 | 0.00 |
| 16,100.0 | 89.50 | 179.68 | 9,680.1 | -6,028.7 | 2,491.5 | 6,438.3 | 0.00 | 0.00 | 0.00 |
| 16,200.0 | 89.50 | 179.68 | 9,681.0 | -6,128.7 | 2,492.1 | 6,535.8 | 0.00 | 0.00 | 0.00 |
| 16,300.0 | 89.50 | 179.68 | 9,681.9 | -6,228.7 | 2,492.6 | 6,633.3 | 0.00 | 0.00 | 0.00 |
| 16,400.0 | 89.50 | 179.68 | 9,682.7 | -6,328.7 | 2,493.2 | 6,730.7 | 0.00 | 0.00 | 0.00 |
| 16,500.0 | 89.50 | 179.68 | 9,683.6 | -6,428.7 | 2,493.7 | 6,828.2 | 0.00 | 0.00 | 0.00 |
| 16,600.0 | 89.50 | 179.68 | 9,684.5 | -6,528.7 | 2,494.3 | 6,925.7 | 0.00 | 0.00 | 0.00 |
| 16,700.0 | 89.50 | 179.68 | 9,685.3 | -6,628.7 | 2,494.9 | 7,023.2 | 0.00 | 0.00 | 0.00 |
| 16,800.0 | 89.50 | 179.68 | 9,686.2 | -6,728.7 | 2,495.4 | 7,120.7 | 0.00 | 0.00 | 0.00 |
| 16,900.0 | 89.50 | 179.68 | 9,687.1 | -6,828.7 | 2,496.0 | 7,218.2 | 0.00 | 0.00 | 0.00 |
| 17,000.0 | 89.50 | 179.68 | 9,687.9 | -6,928.7 | 2,496.5 | 7,315.6 | 0.00 | 0.00 | 0.00 |
| 17,100.0 | 89.50 | 179.68 | 9,688.8 | -7,028.7 | 2,497.1 | 7,413.1 | 0.00 | 0.00 | 0.00 |
| 17,200.0 | 89.50 | 179.68 | 9,689.7 | -7,128.7 | 2,497.6 | 7,510.6 | 0.00 | 0.00 | 0.00 |
| 17,300.0 | 89.50 | 179.68 | 9,690.5 | -7,228.7 | 2,498.2 | 7,608.1 | 0.00 | 0.00 | 0.00 |
| 17,400.0 | 89.50 | 179.68 | 9,691.4 | -7,328.7 | 2,498.7 | 7,705.6 | 0.00 | 0.00 | 0.00 |
| 17,500.0 | 89.50 | 179.68 | 9,692.3 | -7,428.7 | 2,499.3 | 7,803.0 | 0.00 | 0.00 | 0.00 |
| 17,600.0 | 89.50 | 179.68 | 9,693.1 | -7,528.7 | 2,499.9 | 7,900.5 | 0.00 | 0.00 | 0.00 |
| 17,700.0 | 89.50 | 179.68 | 9,694.0 | -7,628.7 | 2,500.4 | 7,998.0 | 0.00 | 0.00 | 0.00 |
| 17,800.0 | 89.50 | 179.68 | 9,694.9 | -7,728.7 | 2,501.0 | 8,095.5 | 0.00 | 0.00 | 0.00 |
| 17,900.0 | 89.50 | 179.68 | 9,695.7 | -7,828.7 | 2,501.5 | 8,193.0 | 0.00 | 0.00 | 0.00 |
| 18,000.0 | 89.50 | 179.68 | 9,696.6 | -7,928.6 | 2,502.1 | 8,290.5 | 0.00 | 0.00 | 0.00 |
| 18,100.0 | 89.50 | 179.68 | 9,697.5 | -8,028.6 | 2,502.6 | 8,387.9 | 0.00 | 0.00 | 0.00 |
| 18,200.0 | 89.50 | 179.68 | 9,698.3 | -8,128.6 | 2,503.2 | 8,485.4 | 0.00 | 0.00 | 0.00 |
| 18,300.0 | 89.50 | 179.68 | 9,699.2 | -8,228.6 | 2,503.7 | 8,582.9 | 0.00 | 0.00 | 0.00 |
| 18,400.0 | 89.50 | 179.68 | 9,700.1 | -8,328.6 | 2,504.3 | 8,680.4 | 0.00 | 0.00 | 0.00 |
| 18,500.0 | 89.50 | 179.68 | 9,700.9 | -8,428.6 | 2,504.9 | 8,777.9 | 0.00 | 0.00 | 0.00 |
| 18,600.0 | 89.50 | 179.68 | 9,701.8 | -8,528.6 | 2,505.4 | 8,875.3 | 0.00 | 0.00 | 0.00 |
| 18,700.0 | 89.50 | 179.68 | 9,702.7 | -8,628.6 | 2,506.0 | 8,972.8 | 0.00 | 0.00 | 0.00 |
| 18,800.0 | 89.50 | 179.68 | 9,703.5 | -8,728.6 | 2,506.5 | 9,070.3 | 0.00 | 0.00 | 0.00 |
| 18,900.0 | 89.50 | 179.68 | 9,704.4 | -8,828.6 | 2,507.1 | 9,167.8 | 0.00 | 0.00 | 0.00 |
| 19,000.0 | 89.50 | 179.68 | 9,705.3 | -8,928.6 | 2,507.6 | 9,265.3 | 0.00 | 0.00 | 0.00 |
| 19,100.0 | 89.50 | 179.68 | 9,706.2 | -9,028.6 | 2,508.2 | 9,362.8 | 0.00 | 0.00 | 0.00 |
| 19,200.0 | 89.50 | 179.68 | 9,707.0 | -9,128.6 | 2,508.7 | 9,460.2 | 0.00 | 0.00 | 0.00 |
| 19,300.0 | 89.50 | 179.68 | 9,707.9 | -9,228.6 | 2,509.3 | 9,557.7 | 0.00 | 0.00 | 0.00 |
| 19,400.0 | 89.50 | 179.68 | 9,708.8 | -9,328.6 | 2,509.9 | 9,655.2 | 0.00 | 0.00 | 0.00 |
| 19,500.0 | 89.50 | 179.68 | 9,709.6 | -9,428.6 | 2,510.4 | 9,752.7 | 0.00 | 0.00 | 0.00 |
| 19,600.0 | 89.50 | 179.68 | 9,710.5 | -9,528.6 | 2,511.0 | 9,850.2 | 0.00 | 0.00 | 0.00 |

# Planning Report

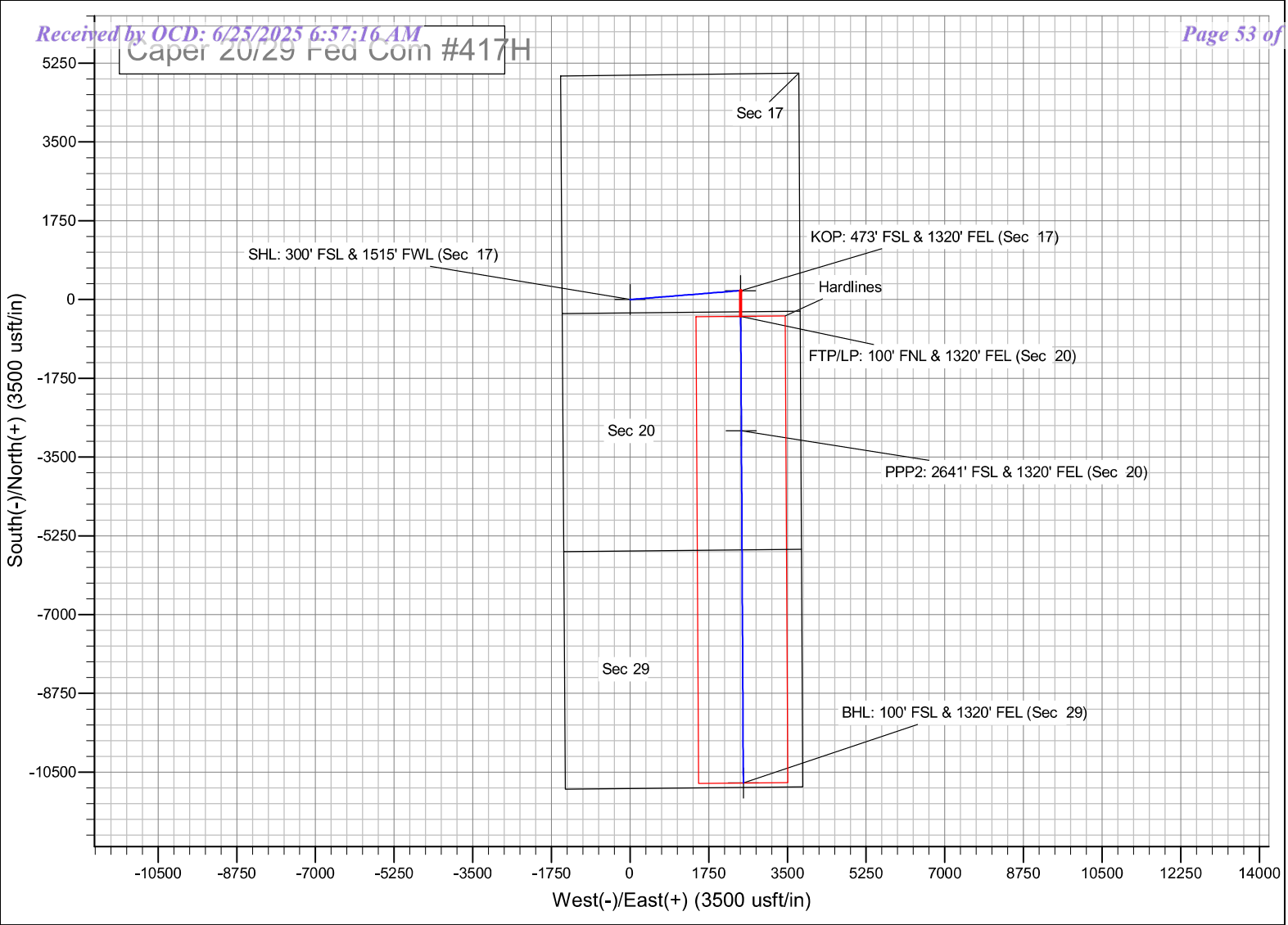
| | | | |
|---|---|---|---|
| **Database:** | Hobbs | **Local Co-ordinate Reference:** | Site Caper 20/29 Fed Com #417H |
| **Company:** | Mewbourne Oil Company | **TVD Reference:** | Well @ 3661.0usft (Original Well) |
| **Project:** | Lea County, New Mexico NAD 83 | **MD Reference:** | Well @ 3661.0usft (Original Well) |
| **Site:** | Caper 20/29 Fed Com #417H | **North Reference:** | Grid |
| **Well:** | SHL: 300' FSL & 1515' FWL (Sec 17) | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | BHL: 100' FSL & 1320' FEL (Sec 29) | | |
| **Design:** | Design #1 | | |

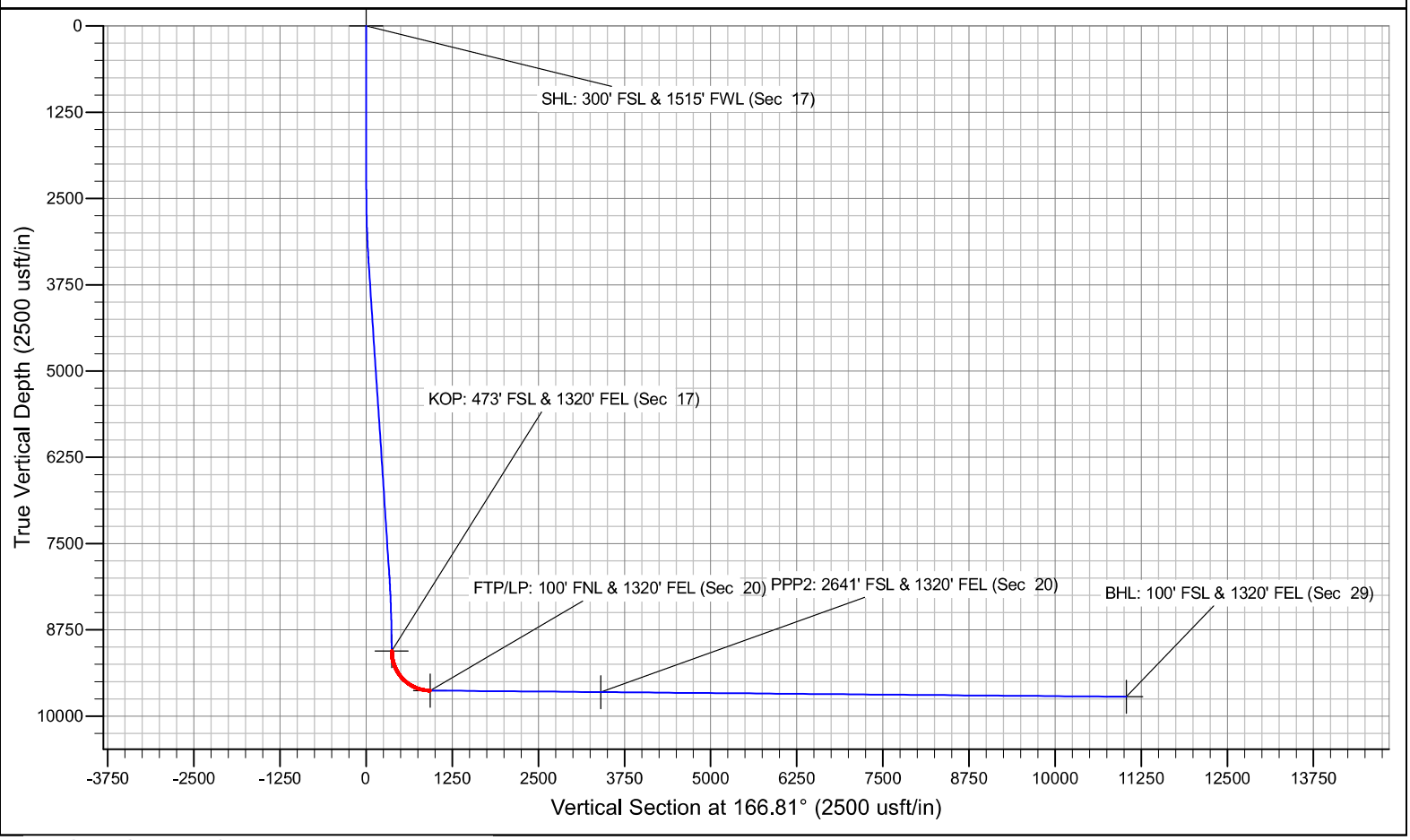
**Planned Survey**

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
|---|---|---|---|---|---|---|---|---|---|
| 19,700.0 | 89.50 | 179.68 | 9,711.4 | -9,628.6 | 2,511.5 | 9,947.6 | 0.00 | 0.00 | 0.00 |
| 19,800.0 | 89.50 | 179.68 | 9,712.2 | -9,728.6 | 2,512.1 | 10,045.1 | 0.00 | 0.00 | 0.00 |
| 19,900.0 | 89.50 | 179.68 | 9,713.1 | -9,828.5 | 2,512.6 | 10,142.6 | 0.00 | 0.00 | 0.00 |
| 20,000.0 | 89.50 | 179.68 | 9,714.0 | -9,928.5 | 2,513.2 | 10,240.1 | 0.00 | 0.00 | 0.00 |
| 20,100.0 | 89.50 | 179.68 | 9,714.8 | -10,028.5 | 2,513.7 | 10,337.6 | 0.00 | 0.00 | 0.00 |
| 20,200.0 | 89.50 | 179.68 | 9,715.7 | -10,128.5 | 2,514.3 | 10,435.1 | 0.00 | 0.00 | 0.00 |
| 20,300.0 | 89.50 | 179.68 | 9,716.6 | -10,228.5 | 2,514.9 | 10,532.5 | 0.00 | 0.00 | 0.00 |
| 20,400.0 | 89.50 | 179.68 | 9,717.4 | -10,328.5 | 2,515.4 | 10,630.0 | 0.00 | 0.00 | 0.00 |
| 20,500.0 | 89.50 | 179.68 | 9,718.3 | -10,428.5 | 2,516.0 | 10,727.5 | 0.00 | 0.00 | 0.00 |
| 20,600.0 | 89.50 | 179.68 | 9,719.2 | -10,528.5 | 2,516.5 | 10,825.0 | 0.00 | 0.00 | 0.00 |
| 20,700.0 | 89.50 | 179.68 | 9,720.0 | -10,628.5 | 2,517.1 | 10,922.5 | 0.00 | 0.00 | 0.00 |
| 20,800.0 | 89.50 | 179.68 | 9,720.9 | -10,728.5 | 2,517.6 | 11,019.9 | 0.00 | 0.00 | 0.00 |
| 20,810.6 | 89.50 | 179.68 | 9,721.0 | -10,739.1 | 2,517.7 | 11,030.3 | 0.00 | 0.00 | 0.00 |
| **BHL: 100' FSL & 1320' FEL (Sec 29)** | | | | | | | | | |

**Design Targets**

| Target Name - hit/miss target - Shape | Dip Angle (°) | Dip Dir. (°) | TVD (usft) | +N/-S (usft) | +E/-W (usft) | Northing (usft) | Easting (usft) | Latitude | Longitude |
|---|---|---|---|---|---|---|---|---|---|
| SHL: 300' FSL & 1515' F<br>- plan hits target center<br>- Point | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 536,112.40 | 736,490.40 | 32.4722455 | -103.7005241 |
| KOP: 473' FSL & 1320' F<br>- plan hits target center<br>- Point | 0.00 | 0.00 | 9,058.0 | 198.0 | 2,456.9 | 536,310.40 | 738,947.30 | 32.4727494 | -103.6925539 |
| FTP/LP: 100' FNL & 132<br>- plan hits target center<br>- Point | 0.00 | 0.00 | 9,631.0 | -374.9 | 2,460.1 | 535,737.48 | 738,950.48 | 32.4711747 | -103.6925547 |
| PPP2: 2641' FSL & 132(<br>- plan hits target center<br>- Point | 0.00 | 0.00 | 9,653.1 | -2,915.9 | 2,474.2 | 533,196.50 | 738,964.61 | 32.4641902 | -103.6925584 |
| BHL: 100' FSL & 1320' F<br>- plan hits target center<br>- Point | 0.00 | 0.00 | 9,721.0 | -10,739.1 | 2,517.7 | 525,373.30 | 739,008.10 | 32.4426864 | -103.6925696 |


Caper 20/29 Fed Com #417H
Sec 17
SHL: 300' FSL & 1515' FWL (Sec 17)
KOP: 473' FSL & 1320' FEL (Sec 17)
Hardlines
FTP/LP: 100' FNL & 1320' FEL (Sec 20)
Sec 20
PPP2: 2641' FSL & 1320' FEL (Sec 20)
Sec 29
BHL: 100' FSL & 1320' FEL (Sec 29)
South(-)/North(+) (3500 usft/in)
West(-)/East(+) (3500 usft/in)


SHL: 300' FSL & 1515' FWL (Sec 17)
KOP: 473' FSL & 1320' FEL (Sec 17)
FTP/LP: 100' FNL & 1320' FEL (Sec 20)
PPP2: 2641' FSL & 1320' FEL (Sec 20)
BHL: 100' FSL & 1320' FEL (Sec 29)
True Vertical Depth (2500 usft/in)
Vertical Section at 166.81° (2500 usft/in)

**Mewbourne Oil Company, Caper 20/29 Fed Com #417H**
**Sec 17, T21S, R32E**
**SHL: 300' FSL 1515' FWL (Sec 17)**
**BHL: 100' FSL 1320' FEL (Sec 29)**

| Operator Name: | Property Name: | Well Number |
|---|---|---|
| Mewbourne Oil Company | Caper 20/29 Fed Com | #417H |

Kick Off Point (KOP)

| UL | Section | Township | Range | Lot | Feet | From N/S | Feet | From E/W | County |
|---|---|---|---|---|---|---|---|---|---|
| P | 17 | 21 | 32 | - | 473' | FSL | 1320' | FEL | Lea |
| Latitude | | | | | Longitude | | | | NAD |
| 32.4727494 | | | | | -103.6925539 | | | | 83 |

First Take Point (FTP)

| UL | Section | Township | Range | Lot | Feet | From N/S | Feet | From E/W | County |
|---|---|---|---|---|---|---|---|---|---|
| A | 20 | 21 | 32 | - | 100' | FNL | 1320' | FEL | Lea |
| Latitude | | | | | Longitude | | | | NAD |
| 32.4711747 | | | | | -103.6925547 | | | | 83 |

Last Take Point (LTP)

| UL | Section | Township | Range | Lot | Feet | From N/S | Feet | From E/W | County |
|---|---|---|---|---|---|---|---|---|---|
| P | 29 | 21 | 32 | - | 100' | FSL | 1320' | FEL | Lea |
| Latitude | | | | | Longitude | | | | NAD |
| 32.4426862 | | | | | -103.6925687 | | | | 83 |

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

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 |
|---|---|---|
| | | |

# PECOS DISTRICT
# DRILLING CONDITIONS OF APPROVAL

| | |
|---|---|
| **OPERATOR'S NAME:** | MEWBOURNE OIL COMPANY |
| **WELL NAME & NO.:** | CAPER 20/29 FED COM 417H |
| **APD ID:** | 10400098173 |
| **LOCATION:** | Section 17, T.21 S., R.32 E. NMP. |
| **COUNTY:** | Lea County, New Mexico |

COA

| | | | | |
|---|---|---|---|---|
| **$H_2S$** | ○ No | | ◉ Yes | |
| **Potash / WIPP** | ○ None | ○ Secretary | ◉ R-111-Q | ☐ Open Annulus<br>3-String Design: Open Production Casing Annulus<br>☐ WIPP |
| **Cave / Karst** | ◉ Low | ○ Medium | ○ High | ○ Critical |
| **Wellhead** | ○ Conventional | ◉ Multibowl | ○ Both | ○ Diverter |
| **Cementing** | ☑ Primary Squeeze | ☐ Cont. Squeeze | ☐ EchoMeter | ☐ DV Tool |
| **Special Req** | ☐ Capitan Reef | ☐ Water Disposal | ☑ COM | ☐ Unit |
| **Waste Prev.** | ○ Self-Certification | ○ Waste Min. Plan | ◉ APD Submitted prior to 06/10/2024 | |
| **Additional Language** | ☑ Flex Hose<br>☐ Four-String | ☐ Casing Clearance<br>☑ Offline Cementing | ☐ Pilot Hole<br>☑ Fluid-Filled | ☑ Break Testing |

## A. HYDROGEN SULFIDE

A Hydrogen Sulfide ($H_2S$) Drilling Plan shall be activated **AT SPUD**. As a result, the Hydrogen Sulfide area must meet **43 CFR 3176** requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.

*APD is within the R-111-Q defined boundary. Operator must follow all applicable procedures and requirements listed within the updated order.*

## B. CASING DESIGN

**Casing Design A**

1. The **13-3/8** inch surface casing shall be set at approximately **1,100 ft.** (a minimum of 25 feet (Lea County) into the Rustler Anhydrite and above the salt) and cemented to the surface. **If salt is encountered, set casing at least 25 ft. above the salt.**
    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



 **Approval Date: 04/03/2025**

six hours after pumping cement and ideally between 8-10 hours after completing the cement job.

b. Wait on cement (WOC) time for a primary cement job will be a minimum of **8 hours** or **500 psi 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 psi compressive strength, whichever is greater.
d. If cement falls back, remedial cementing will be done prior to drilling out that string.

2. The **9-5/8 in.** intermediate casing shall be set at approximately **4,450 ft.** The minimum required fill of cement behind the **9-5/8** inch intermediate casing is:

- **Cement to surface.** If cement does not circulate see B.1.a, c-d above. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to Potash.

**Note:** Excess cement is less than 25%, more cement is required if washout occurs. Adjust cement volume and excess based on a fluid caliper or similar method that reflects the as-drilled size of the wellbore.

**Note:** Intermediate casing must be kept fluid-filled to meet minimum collapse design requirements.

3. Operator has proposed to set **7 in.** production casing at approximately **9,546 ft.** (9,058 ft. TVD). The minimum required fill of cement behind the **7 in.** production casing is:

- Operator has proposed to cement in two stages by conventionally cementing the first stage and performing a bradenhead squeeze on the second stage within 180 days after well completion in accordance with the R-111-Q guidelines.
  a. First stage: Operator will cement production casing with intent to bring cement to top of Brushy Canyon formation. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst and Potash.

  b. Second stage: Operator will perform bradenhead squeeze within 180 days after completion per R-111-Q requirements. Cement shall be tie-back **at least 500 ft. into intermediate casing and below the Marker Bed 126.** If cement does not circulate, the appropriate BLM office shall be notified.

❖ Operator must run a cement evaluation tool (fluid shot tool, Temperature log or CBL, etc.) to verify TOC after the second stage bradenhead. Submit the results to the BLM. If cement does not tie-back at least 500 ft. into the previous casing shoe, the appropriate BLM office shall be notified.

❖ A monitored open annulus will be incorporated during completion by leaving the Intermediate Casing x Production Casing annulus un-cemented and monitored

inside the Intermediate String. Operator must follow monitoring requirements listed within R-111-Q. Tieback requirements shall be met within 180 days.

4. The minimum required fill of cement behind the **4-1/2 in.** production liner is:
   - Cement should tie-back **at least 100 feet** into previous casing string. Operator shall provide method of verification.

**Casing Design B**

1. The **13-3/8** inch surface casing shall be set at approximately **1,100 ft.** (a minimum of 25 feet (Lea County) into the Rustler Anhydrite and above the salt) and cemented to the surface. **If salt is encountered, set casing at least 25 ft. above the salt.**
   a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic-type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
   b. Wait on cement (WOC) time for a primary cement job will be a minimum of **8 hours** or **500 psi 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 psi compressive strength, whichever is greater.
   d. If cement falls back, remedial cementing will be done prior to drilling out that string.

2. The **9-5/8 in.** intermediate casing shall be set at approximately **4,450 ft.** The minimum required fill of cement behind the **9-5/8** inch intermediate casing is:

   - **Cement to surface.** If cement does not circulate see B.1.a, c-d above. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to Potash.

   **Note:** Excess cement is less than 25%, more cement is required if washout occurs. Adjust cement volume and excess based on a fluid caliper or similar method that reflects the as-drilled size of the wellbore.

   **Note:** Intermediate casing must be kept fluid-filled to meet minimum collapse design requirements.

3. Operator has proposed to set **7 in.** production casing at approximately **10,446 ft.** (9,631 ft. TVD). The minimum required fill of cement behind the **7 in.** production casing is:

- Operator has proposed to cement in two stages by conventionally cementing the first stage and performing a bradenhead squeeze on the second stage within 180 days after well completion in accordance with the R-111-Q guidelines.
  a. First stage: Operator will cement production casing with intent to bring cement to top of Brushy Canyon formation. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst and Potash.

  b. Second stage: Operator will perform bradenhead squeeze within 180 days after completion per R-111-Q requirements. Cement shall be tie-back **at least 500 ft. into intermediate casing and below the Marker Bed 126.** If cement does not circulate, the appropriate BLM office shall be notified.

❖ Operator must run a cement evaluation tool (fluid shot tool, Temperature log or CBL, etc.) to verify TOC after the second stage bradenhead. Submit the results to the BLM. If cement does not tie-back at least 500 ft. into the previous casing shoe, the appropriate BLM office shall be notified.

❖ A monitored open annulus will be incorporated during completion by leaving the Intermediate Casing x Production Casing annulus un-cemented and monitored inside the Intermediate String. Operator must follow monitoring requirements listed within R-111-Q. Tieback requirements shall be met within 180 days.

4. The minimum required fill of cement behind the **4-1/2 in.** production liner is:
   - Cement should tie-back **at least 100 feet** into previous casing string. Operator shall provide method of verification.

**Casing Design C**

1. The **13-3/8** inch surface casing shall be set at approximately **1,100 ft.** (a minimum of 25 feet (Lea County) into the Rustler Anhydrite and above the salt) and cemented to the surface. **If salt is encountered, set casing at least 25 ft. above the salt.**
   a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic-type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
   b. Wait on cement (WOC) time for a primary cement job will be a minimum of **8 hours** or **500 psi 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 psi compressive strength, whichever is greater.
   d. If cement falls back, remedial cementing will be done prior to drilling out that string.



 **Approval Date: 04/03/2025**

2. The **9-5/8 in.** intermediate casing shall be set at approximately **4,450 ft.** The minimum required fill of cement behind the **9-5/8** inch intermediate casing is:

   - **Cement to surface.** If cement does not circulate see B.1.a, c-d above. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to Potash.

   **Note:** Excess cement is less than 25%, more cement is required if washout occurs. Adjust cement volume and excess based on a fluid caliper or similar method that reflects the as-drilled size of the wellbore.

   **Note:** Intermediate casing must be kept fluid-filled to meet minimum collapse design requirements.

3. Operator has proposed to set **7** x **4-1/2** inch tapered production casing at approximately **20,811 ft.** (9,721 ft. TVD). (Casing and hole size change at the KOP, approximately at 9,546 ft.) The minimum required fill of cement behind the **7** x **4-1/2** inch tapered production casing is:

   - Operator has proposed to cement in two stages by conventionally cementing the first stage and performing a bradenhead squeeze on the second stage within 180 days after well completion in accordance with the R-111-Q guidelines.
     a. First stage: Operator will cement production casing with intent to bring cement to top of Brushy Canyon formation. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst and Potash.

     b. Second stage: Operator will perform bradenhead squeeze within 180 days after completion per R-111-Q requirements. Cement shall be tie-back **at least 500 ft. into intermediate casing and below the Marker Bed 126.** If cement does not circulate, the appropriate BLM office shall be notified.

   ❖ Operator must run a cement evaluation tool (fluid shot tool, Temperature log or CBL, etc.) to verify TOC after the second stage bradenhead. Submit the results to the BLM. If cement does not tie-back at least 500 ft. into the previous casing shoe, the appropriate BLM office shall be notified.

   ❖ A monitored open annulus will be incorporated during completion by leaving the Intermediate Casing x Production Casing annulus un-cemented and monitored inside the Intermediate String. Operator must follow monitoring requirements listed within R-111-Q. Tieback requirements shall be met within 180 days.

**Offline Cementing**

Operator has been **(Approved)** to pump the proposed cement program offline in the **Surface and intermediate(s) intervals**. Offline cementing should commence within 24

hours of landing the casing for the interval. Notify the BLM 4hrs prior to the commencement of any offline cementing procedure at **Lea County: 575-689-5981**.

## 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. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **5000 (5M)** psi. Before drilling out surface casing shoe, BOP/ BOPE and annular preventer must be pressure tested in accordance with **title 43 CFR 3172 and API Standard 53.**

    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.

**BOPE Break Testing Variance**

- BOPE Break Testing is ONLY permitted for intervals utilizing a 5M BOPE or less. **(Annular preventer must be tested to a minimum of 70% of BOPE working pressure and shall be higher than the MASP.)**
- BOPE Break Testing is NOT permitted to drilling the production hole section.
- Variance only pertains to the intermediate hole-sections and no deeper than the Bone Springs formation.
- While in transfer between wells, the BOPE shall be secured by the hydraulic carrier or cradle.
- Any well control event while drilling require notification to the BLM Petroleum Engineer **(575-706-2779)** prior to the commencement of any BOPE Break Testing operations.
- A full BOPE test is required prior to drilling the first deep intermediate hole section. If any subsequent hole interval is deeper than the first, a full BOPE test will be required. (200' TVD tolerance between intermediate shoes is allowable).
- The BLM is to be contacted (575-689-5981 Lea County) 4 hours prior to BOPE tests.
- As a minimum, a full BOPE test shall be performed at 21-day intervals.

- In the event any repairs or replacement of the BOPE is required, the BOPE shall test as per **43 CFR 3172**.
- If in the event break testing is not utilized, then a full BOPE test would be conducted.

**D. SPECIAL REQUIREMENT (S)**

**Communitization Agreement**

- The operator will submit a Communitization Agreement to the Santa Fe Office, 301 Dinosaur Trail Santa Fe, New Mexico 87508, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.

- If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.

- In addition, the well sign shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

# GENERAL REQUIREMENTS

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

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

**Contact Lea County Petroleum Engineering Inspection Staff:**

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

i. Notify the BLM when moving in and removing the Spudder Rig.
ii. 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.
iii. BOP/BOPE test to be conducted per **43 CFR 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 doghouse or stairway area.
3. For intervals in which cement to surface is required, cement to surface should be verified with a visual check and density or pH check to differentiate cement from spacer and drilling mud. The results should be documented in the driller's log and daily reports.

**A. CASING**

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

5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.
6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.
7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.
8. Whenever a casing string is cemented in the R-111-Q 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 3172**.
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:
    i. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
    ii. 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.
    iii. Manufacturer representative shall install the test plug for the initial BOP test.
    iv. Whenever any seal subject to test pressure is broken, all the tests in 43 CFR 3172.6(b)(9) must be followed.

v. 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.
   i. 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).
   ii. 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.)
   iii. 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 3172** with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for 8 hours or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).
   iv. 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.
   v. The results of the test shall be reported to the appropriate BLM office.
   vi. 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.

vii. 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.

viii. 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 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.

**SA 11/20/2024**

# Hydrogen Sulfide Drilling Operations Plan
**Mewbourne Oil Company**

## 1. General Requirements

Rule 118 does not apply to this well because MOC has researched this area and no high concentrations of H2S were found. MOC will have on location and working all H2S safety equipment before the Delaware formation for purposes of safety and insurance requirements.

## 2. Hydrogen Sulfide Training

All personnel, whether regularly assigned, contracted, or employed on an unscheduled basis, will have received training from a qualified instructor in the following areas prior to entering the drilling pad area of the well:

1. The hazards and characteristics of hydrogen sulfide gas.
2. The proper use of personal protective equipment and life support systems.
3. The proper use of hydrogen sulfide detectors, alarms, warning systems, briefing areas, evacuation procedures.
4. The proper techniques for first aid and rescue operations.

Additionally, supervisory personnel will be trained in the following areas:

1 The effects of hydrogen sulfide on metal components. If high tensile tubular systems are utilized, supervisory personnel will be trained in their special maintenance requirements.
2 Corrective action and shut in procedures, blowout prevention, and well control procedures while drilling a well.
3 The contents of the Hydrogen Sulfide Drilling Operations Plan.

There will be an initial training session prior to encountering a know hydrogen sulfide source. The initial training session shall include a review of the site specific Hydrogen Sulfide Drilling Operations Plan.

## 3. Hydrogen Sulfide Safety Equipment and Systems

All hydrogen sulfide safety equipment and systems will be installed, tested, and operational prior to drilling below the 9 5/8" intermediate casing.

1. Well Control Equipment
   - A. Choke manifold with minimum of one adjustable choke/remote choke.
   - B. Blowout preventers equipped with blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit
   - C. Auxiliary equipment including annular type blowout preventer.
2. Protective Equipment for Essential Personnel
   Thirty minute self contained work unit located in the dog house and at briefing areas.

Additionally: If H2S is encountered in concentrations less than 10 ppm, fans will be placed in work areas to prevent the accumulation of hazardous amounts of poisonous gas. If higher concentrations of H2S are detected the well will be shut in and a rotating head, mud/gas separator, remote choke and flare line with igniter will be installed.

3. Hydrogen Sulfide Protection and Monitoring Equipment
Two portable hydrogen sulfide monitors positioned on location for optimum coverage and detection. The units shall have audible sirens to notify personnel when hydrogen sulfide levels exceed 20 PPM.

4. Visual Warning Systems
A. Wind direction indicators as indicated on the wellsite diagram.
B. Caution signs shall be posted on roads providing access to location. Signs shall be painted a high visibility color with lettering of sufficient size to be readable at reasonable distances from potentially contaminated areas.

**4. Mud Program**

The mud program has been designed to minimize the amount of hydrogen sulfide entrained in the mud system. Proper mud weight, safe drilling practices, and the use of hydrogen sulfide scavengers will minimize hazards while drilling the well.

**5. Metallurgy**

All tubular systems, wellheads, blowout preventers, drilling spools, kill lines, choke manifolds, and valves shall be suitable for service in a hydrogen sulfide environment when chemically treated.

**6. Communications**

State & County Officials phone numbers are posted on rig floor and supervisors trailer. Communications in company vehicles and toolpushers are either two way radios or cellular phones.

**7. Well Testing**

Drill stem testing is not an anticipated requirement for evaluation of this well. If a drill stem test is required, it will be conducted with a minimum number of personnel in the immediate vicinity. The test will be conducted during daylight hours only.

**8. Emergency Phone Numbers**

| | |
|---|---|
| **Eddy County Sheriff's Office** | **911 or 575-887-7551** |
| **Ambulance Service** | **911 or 575-885-2111** |
| **Carlsbad Fire Dept** | **911 or 575-885-2111** |
| **Loco Hills Volunteer Fire Dept.** | **911 or 575-677-3266** |
| **Closest Medical Facility - Columbia Medical Center of Carlsbad** | **575-492-5000** |

| | | |
|---|---|---|
| **Mewbourne Oil Company** | **Hobbs District Office** | **575-393-5905** |
| | **Fax** | **575-397-6252** |
| | **2nd Fax** | **575-393-7259** |
| **District Manager** | **Robin Terrell** | **575-390-4816** |
| **Drilling Superintendent** | **Frosty Lathan** | **575-390-4103** |
| | **Bradley Bishop** | **575-390-6838** |
| **Drilling Foreman** | **Wesley Noseff** | **575-441-0729** |

**Operator Name:** MEWBOURNE OIL COMPANY

**Well Name:** CAPER 20/29 FED COM **Well Number:** 417H

## Section 7 - Methods for Handling

**Waste type:** DRILLING

**Waste content description:** Drill Cuttings

**Amount of waste:** 3240 barrels

**Waste disposal frequency :** One Time Only

**Safe containment description:** Drill cuttings will be properly contained in steel tanks (20 yard roll off bins.)

**Safe containmant attachment:**

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

**Disposal type description:**

**Disposal location description:** NMOCD approved disposal locations are CRI or Lea Land, both facilities are located on HWY 62/180, Sec 27 T20S R32E.

**Waste type:** SEWAGE

**Waste content description:** Human waste & Grey water

**Amount of waste:** 1500 gallons

**Waste disposal frequency :** Weekly

**Safe containment description:** 2000 gallon plastic container

**Safe containmant attachment:**

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

**Disposal type description:**

**Disposal location description:** City of Carlsbad Water Treatment Facility

**Waste type:** GARBAGE

**Waste content description:** Garbage & Trash

**Amount of waste:** 1500 pounds

**Waste disposal frequency :** One Time Only

**Safe containment description:** Enclosed Trash Trailer

**Safe containmant attachment:**

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

**Disposal type description:**

**Disposal location description:** Waste Management Facility in Carlsbad, NM

## Reserve Pit

**Reserve Pit being used?** NO

**Operator Name:** MEWBOURNE OIL COMPANY

**Well Name:** CAPER 20/29 FED COM **Well Number:** 417H

**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

**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:**

Caper_20_29_Fed_Com__417H_WellSiteLayout_20240422103950.pdf

**Comments:** None

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

General Information
Phone: (505) 629-6116

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

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



## ACKNOWLEDGMENTS

| | |
|---|---|
| Operator:<br>MEWBOURNE OIL CO<br>P.O. Box 5270<br>Hobbs, NM 88241 | OGRID:<br>14744 |
| | Action Number:<br>478591 |
| | Action Type:<br>[C-101] BLM - Federal/Indian Land Lease (Form 3160-3) |

**ACKNOWLEDGMENTS**

| | |
|---|---|
| ☐ | I hereby certify that no additives containing PFAS chemicals will be added to the completion or recompletion of this well. |

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

COMMENTS

Action 478591

## COMMENTS

| | |
|---|---|
| Operator:<br>MEWBOURNE OIL CO<br>P.O. Box 5270<br>Hobbs, NM 88241 | OGRID:<br>14744 |
| | Action Number:<br>478591 |
| | Action Type:<br>[C-101] BLM - Federal/Indian Land Lease (Form 3160-3) |

**COMMENTS**

| Created By | Comment | Comment Date |
|---|---|---|
| jeffrey.harrison | Submitted as defining well for spacing unit. | 8/26/2025 |

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



## CONDITIONS

| Operator: | OGRID: |
|---|---|
| MEWBOURNE OIL CO<br>P.O. Box 5270<br>Hobbs, NM 88241 | 14744 |
| | Action Number: 478591 |
| | Action Type: [C-101] BLM - Federal/Indian Land Lease (Form 3160-3) |

**CONDITIONS**

| Created By | Condition | Condition Date |
|---|---|---|
| mleal | Cement is required to circulate on both surface and intermediate1 strings of casing. | 6/25/2025 |
| mleal | If cement does not circulate on any string, a Cement Bond Log (CBL) is required for that string of casing. | 6/25/2025 |
| jeffrey.harrison | This well is within the R-111-Q defined boundary. Operator must follow all procedures and requirements listed within the order. | 8/26/2025 |
| jeffrey.harrison | Designs must align to one of the six options mandated within R-111-Q. No alterations or modifications are permitted to any of the casing design options mandated within order R-111-Q. If you have any questions, please contact Justin.Wrinkle@emnrd.nm.gov. | 8/26/2025 |
| jeffrey.harrison | Please clearly identify the specific casing program design utilized on ALL relevant subsequent submittals for this well. | 8/26/2025 |
| jeffrey.harrison | Any string of casing or liner that is not circulated to surface must have a minimum of 200' of cement tie-back into the previous string of casing. | 8/26/2025 |
| jeffrey.harrison | Notify the OCD 24 hours prior to casing & cement. | 8/26/2025 |
| jeffrey.harrison | File As Drilled C-102 and a directional Survey with C-104 completion packet. | 8/26/2025 |
| jeffrey.harrison | A [C-103] Sub. Drilling (C-103N) is required within (10) days of spud. | 8/26/2025 |
| jeffrey.harrison | 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. | 8/26/2025 |
| jeffrey.harrison | 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. | 8/26/2025 |