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.: NMLC063621

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.: MILKSHAKE 9/10 B2LI FED COM 1H

2. Name of Operator: MEWBOURNE OIL COMPANY

9. API Well No.: 30-015-55220

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

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

10. Field and Pool, or Exploratory: NORTH SHUGART; BONE SPRING/1st E

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

At surface: SWSE / 1190 FSL / 1850 FEL / LAT 32.7580079 / LONG -103.9915696

At proposed prod. zone: NESE / 1980 FSL / 100 FEL / LAT 32.7601201 / LONG -103.9515316

11. Sec., T. R. M. or Blk. and Survey or Area: SEC 8/T18S/R30E/NMP

14. Distance in miles and direction from nearest town or post office*: 10 miles

12. County or Parish: EDDY

13. State: NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any): 100 feet

16. No of acres in lease:

17. Spacing Unit dedicated to this well: 320.0

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.: 30 feet

19. Proposed Depth: 8267 feet / 18928 feet

20. BLM/BIA Bond No. in file: FED: NM 1693

21. Elevations (Show whether DF, KDB, RT, GL, etc.): 3538 feet

22. Approximate date work will start*: 05/25/2022

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: (Electronic Submission)

Name *(Printed/Typed)*: BRADLEY BISHOP / Ph: (575) 393-5905

Date: 08/30/2022

Title: Regulatory

Approved by *(Signature)*: (Electronic Submission)

Name *(Printed/Typed)*: CODY LAYTON / Ph: (575) 234-5959

Date: 06/07/2024

Title: Assistant Field Manager Lands & Minerals

Office: 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: 06/07/2024

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

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

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number	2 Pool Code	3 Pool Name
30-015-55220	56405 39513	Loco Hills SHUGART NORTH; BONE SPRING, East

4 Property Code	5 Property Name	6 Well Number
336074	MILKSHAKE 9/10 B2LI FED COM	1H

7 OGRID NO.	8 Operator Name	9 Elevation
14744	MEWBOURNE OIL COMPANY	3510'

10 Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet From the	East/West line	County
O	8	18S	30E		1190	SOUTH	1850	EAST	EDDY

11 Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
I	10	18S	30E		1980	SOUTH	100	EAST	EDDY

12 Dedicated Acres	13 Joint or Infill	14 Consolidation Code	15 Order No.
320			

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

16

GEODETIC DATA
NAD 83 GRID – NM EAST

SURFACE LOCATION
N: 639664.7 – E: 646399.6

LAT: 32.7580079° N
LON: 103.9915696° W

GEODETIC DATA
NAD 83 GRID – NM EAST

BOTTOM HOLE
N: 640475.2 – E: 658705.1

LAT: 32.7601201° N
LONG: 103.9515316° W

CORNER DATA
NAD 83 GRID – NM EAST

A: FOUND BRASS CAP "1916"
N: 638477.2 – E: 642974.5

B: FOUND BRASS CAP "1916"
N: 641117.2 – E: 642965.7

C: FOUND BRASS CAP "1916"
N: 643757.2 – E: 642956.8

D: FOUND BRASS CAP "1916"
N: 643753.4 – E: 645596.1

E: FOUND BRASS CAP "1916"
N: 643749.9 – E: 648235.3

F: FOUND BRASS CAP "1916"
N: 643753.6 – E: 650875.9

G: FOUND BRASS CAP "1916"
N: 643759.8 – E: 653515.9

H: FOUND BRASS CAP "1916"
N: 643765.2 – E: 656154.0

I: FOUND BRASS CAP "1916"
N: 643770.9 – E: 658794.1

J: FOUND BRASS CAP "1916"
N: 641135.5 – E: 658802.6

K: FOUND BRASS CAP "1916"
N: 638496.0 – E: 658812.4

L: FOUND BRASS CAP "1916"
N: 638487.4 – E: 656172.0

M: FOUND BRASS CAP "1916"
N: 638481.4 – E: 653533.4

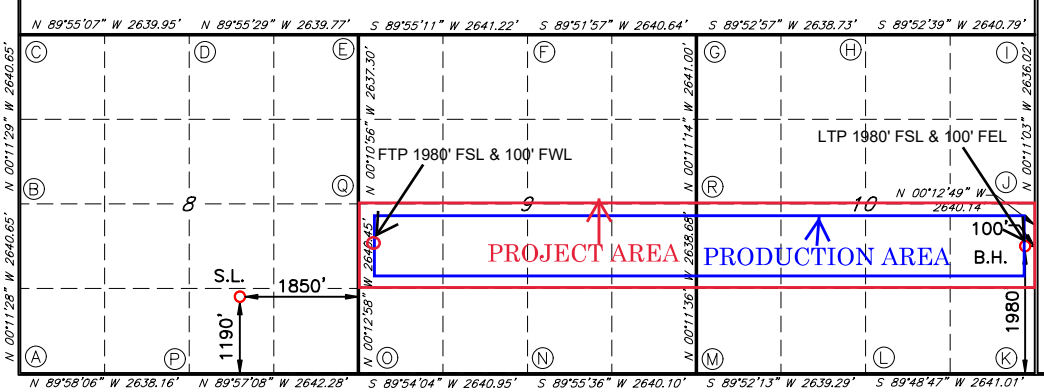
N: FOUND BRASS CAP "1916"
N: 638478.1 – E: 650893.9

O: FOUND BRASS CAP "1916"
N: 638473.5 – E: 648253.6

P: FOUND 1/2" REBAR
N: 638475.7 – E: 645612.0

Q: FOUND BRASS CAP "1916"
N: 641113.3 – E: 648243.7

R: FOUND BRASS CAP "1916"
N: 641119.5 – E: 653524.5



17 OPERATOR CERTIFICATION

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

Ryan McDaniel 8/29/22
Signature Date

RAYAN MCDANIEL
Printed Name

RMCDANIEL@MEWBOURNE.COM
E-mail Address

18 SURVEYOR CERTIFICATION

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

03/14/2022
Date of Survey

Signature and Seal of Professional Surveyor:

ROBERT M. HOWETT NEW MEXICO 19680 PROFESSIONAL SURVEYOR

19680
Certificate Number

S.L. & PAD MOVE – 06/14/22

Job No.: LS22030278R

Approval Date: 06/07/2024

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:** 5/2/22

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
Milkshake 9/10 B2LI Fed Com 1H		O 8 18S 30E	1190' FSL x 1850' FEL	2000	2000	1500

IV. Central Delivery Point Name: Milkshake 9/10 B2LI Fed Com 1H [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
Milkshake 9/10 B2LI Fed Com 1H		7/2/22	8/2/22	9/2/22	9/17/22	9/17/22

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.

Page 8

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:	5/2/22
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.

AFMSS

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

Drilling Plan Data Report
06/07/2024

APD ID: 10400087751
Submission Date: 08/30/2022

Operator Name: MEWBOURNE OIL COMPANY

Well Name: MILKSHAKE 9/10 B2LI FED COM
Well Number: 1H

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
13552515	UNKNOWN	3510	28	28	OTHER : Topsoil	NONE	N
13552516	RUSTLER	3221	289	289	ANHYDRITE, DOLOMITE	USEABLE WATER	N
13552526	TOP SALT	3025	485	485	SALT	NONE	N
13552527	BASE OF SALT	2210	1300	1300	SALT	NONE	N
13552529	YATES	2046	1464	1464	SANDSTONE	NATURAL GAS, OIL	N
13552530	SEVEN RIVERS	1665	1845	1845	DOLOMITE	NATURAL GAS, OIL	N
13552531	QUEEN	1053	2457	2457	DOLOMITE, SANDSTONE	NATURAL GAS, OIL	N
13552532	SAN ANDRES	585	2925	2925	DOLOMITE	NATURAL GAS, OIL	N
13552523	BONE SPRING	-858	4368	4368	LIMESTONE, SHALE	NATURAL GAS, OIL	N
13552524	BONE SPRING 1ST	-3522	7032	7032	SANDSTONE	NATURAL GAS, OIL	N
13552534	BONE SPRING 2ND	-4034	7544	7544	SANDSTONE	NATURAL GAS, OIL	Y

Section 2 - Blowout Prevention

Pressure Rating (PSI): 5M
Rating Depth: 18928

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: MILKSHAKE 9/10 B2LI FED COM **Well Number:** 1H

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:

Milkshake_9_10_B2LI_Fed_Com_1H_5M_BOPE_Choke_Diagram_20220830084149.pdf

Milkshake_9_10_B2LI_Fed_Com_1H_Flex_Line_Specs_API_16C_20220830084149.pdf

Milkshake_9_10_B2LI_Fed_Com_1H_Flex_Line_Specs_20220830084149.pdf

MOC_Break_Testing_Variance_20240409084036.pdf

BOP Diagram Attachment:

Milkshake_9_10_B2LI_Fed_Com_1H_5M_BOPE_Schematic_20220830084157.pdf

Milkshake_9_10_B2LI_Fed_Com_1H_5M_Mutli_Bowl_WH_20220830084157.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	375	0	375	3538	3163	375	H-40	48	ST&C	4.7	10.56	DRY	17.89	DRY	30.06
2	INTERMEDIATE	12.25	9.625	NEW	API	N	0	1700	0	1700		1838	1700	J-55	36	LT&C	2.54	4.42	DRY	7.4	DRY	9.22
3	PRODUCTION	8.75	7.0	NEW	API	N	0	7678	0	7462		-3924	7678	P-110	26	LT&C	1.39	1.87	DRY	2.6	DRY	3.03
4	LINER	6.125	4.5	NEW	API	N	7478	18950	7262	8261	-3724	-4723	11472	P-110	13.5	LT&C	2.16	2.51	DRY	2.18	DRY	2.72

Casing Attachments

Operator Name: MEWBOURNE OIL COMPANY

Well Name: MILKSHAKE 9/10 B2LI FED COM **Well Number:** 1H

Casing Attachments

Casing ID: 1 **String** SURFACE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Milkshake_9_10_B2LI_Fed_Com__1H_CsgAssumptions_20240409090352.pdf

Casing ID: 2 **String** INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Milkshake_9_10_B2LI_Fed_Com__1H_CsgAssumptions_20240409090415.pdf

Casing ID: 3 **String** PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Milkshake_9_10_B2LI_Fed_Com__1H_CsgAssumptions_20240409090404.pdf

Operator Name: MEWBOURNE OIL COMPANY

Well Name: MILKSHAKE 9/10 B2LI FED COM **Well Number:** 1H

Casing Attachments

Casing ID: 4 **String** LINER

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Milkshake_9_10_B2LI_Fed_Com__1H_CsgAssumptions_20240409090427.pdf

Section 4 - Cement

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	185	120	2.12	12.5	260	100	Class C	Salt, Gel, Extender, LCM
SURFACE	Tail		160	375	200	1.34	14.8	201	100	Class C	Retarder
INTERMEDIATE	Lead		0	1028	190	2.12	12.5	370	25	Class C	Salt, Gel, Extender, LCM
INTERMEDIATE	Tail		1028	1700	200	1.34	14.8	472	25	Class C	Retarder
PRODUCTION	Lead		2200	4607	170	2.12	12.5	370	0	Class C	Salt, Gel, Extender, LCM, Defoamer
PRODUCTION	Tail		4607	7678	400	1.18	15.6	472	0	Class H	Retarder
LINER	Lead		7478	18950	730	1.85	13.5	1360	25	Class H	Salt, Gel, Fluid Loss, Retarder, Dispersant, Defoamer, Anti-settling Agent

Operator Name: MEWBOURNE OIL COMPANY

Well Name: MILKSHAKE 9/10 B2LI FED COM **Well Number:** 1H

Section 5 - Circulating Medium

Mud System Type: Closed

Will an air or gas system be Used? NO

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

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

Describe what will be on location to control well or mitigate other conditions: Lost circulation material, sweeps, mud scavengers

Describe the mud monitoring system utilized: Visual Monitoring

Circulating Medium Table

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
0	375	SPUD MUD	8.4	8.8							
375	1700	SALT SATURATED	10	10							
1700	7678	WATER-BASED MUD	8.6	10							
7678	18950	OIL-BASED MUD	8.6	12							

Section 6 - Test, Logging, Coring

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

Will run GR/CNL logs from KOP to surface.

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

DIRECTIONAL SURVEY,MEASUREMENT WHILE DRILLING,MUD LOG/GEOLOGIC LITHOLOGY LOG,COMPENSATED NEUTRON LOG,GAMMA RAY LOG,

Coring operation description for the well:

None

Operator Name: MEWBOURNE OIL COMPANY

Well Name: MILKSHAKE 9/10 B2LI FED COM **Well Number:** 1H

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 4940 **Anticipated Surface Pressure:** 3121

Anticipated Bottom Hole Temperature(F): 165

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

Milkshake_9_10_B2LI_Fed_Com_1H_H2S_Plan_20220830085241.pdf

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

Milkshake_9_10_B2LI_Fed_Com_1H_MOC_Dir_Plot_20240409090707.pdf
Milkshake_9_10_B2LI_Fed_Com_1H_MOC_Dir_Plan_20240409090707.pdf

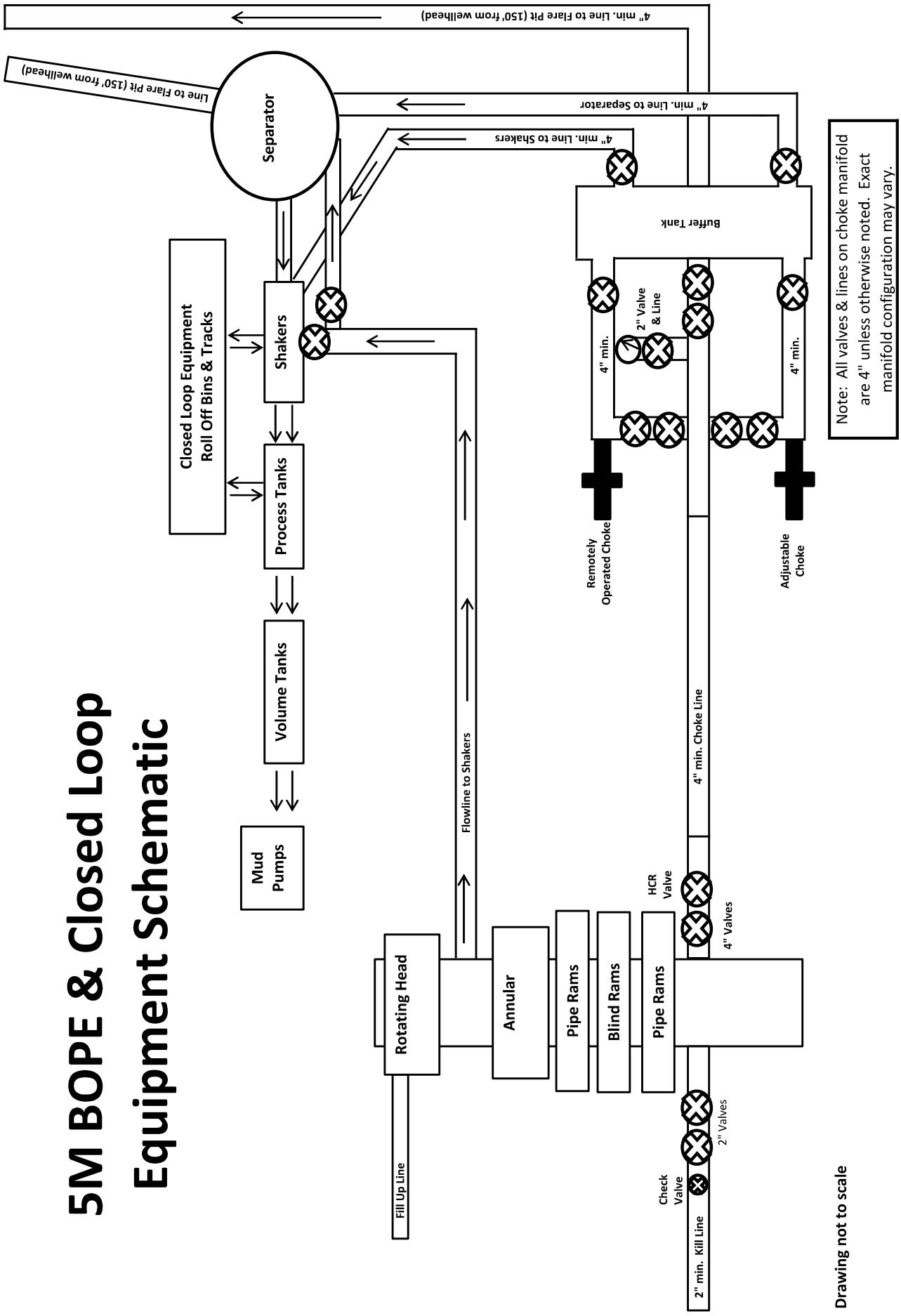
Other proposed operations facets description:

Other proposed operations facets attachment:

Milkshake_9_10_B2LI_Fed_Com_1H_Add_Info_20220830085651.pdf
Milkshake_9_10_B2LI_Fed_Com__1H_Drlg_Program_20240409090726.pdf

Other Variance attachment:

Milkshake_9_10_B2LI_Fed_Com__1H_R_111Q_Variance_20240409090745.pdf
MOC_Offline_Cementing_Variance_20240409090813.pdf


5M BOPE & Closed Loop
Equipment Schematic
4" min. Line to Flare Pit (150' from wellhead)
Line to Flare Pit (150' from wellhead)
Separator
4" min. Line to Separator
4" min. Line to Shakers
Buffer Tank
Closed Loop Equipment
Roll Off Bins & Tracks
Shakers
Process Tanks
Volume Tanks
Mud Pumps
Flowline to Shakers
4" min.
2" Valve & Line
4" min.
Remotely Operated Choke
Adjustable Choke
Note: All valves & lines on choke manifold are 4" unless otherwise noted. Exact manifold configuration may vary.
4" min. Choke Line
HCR Valve
4" Valves
Rotating Head
Annular
Pipe Rams
Blind Rams
Pipe Rams
Fill Up Line
Check Valve
2" Valves
2" min. Kill Line
Drawing not to scale

GATES ENGINEERING & SERVICES NORTH AMERICA
7603 Prairie Oak Dr.
Houston, TX 77086

PHONE: (281) 602 - 4119
FAX:
EMAIL: Troy.Schmidt@gates.com
WEB: www.gates.com

10K CHOKE & KILL ASSEMBLY PRESSURE TEST CERTIFICATE

Customer:	A-7 AUSTIN INC DBA AUSTIN HOSE	Test Date:	8/20/2018
Customer Ref.:	4101901	Hose Serial No.:	H-082018-10
Invoice No.:	511956	Created By:	Moosa Naqvi

Product Description:	10KF3.035.0CK41/1610KFLGFXDxFLT L/E

End Fitting 1:	4 1/16 in. Fixed Flange	End Fitting 2:	4 1/16 in. Float Flange
Gates Part No.:	68503010-9721632	Assembly Code:	L40695052218H-082018-10
Working Pressure:	10,000 psi.	Test Pressure:	15,000 psi.

Gates Engineering & Services North America certifies that the following hose assembly has successfully passed all pressure testing requirements set forth in Gates specifications: GTS-04-052 (for 5K assemblies) or GTS-04-053 (10K assemblies), which include reference to Specification API 16C (2nd Edition); sections 7.5.4, 7.5.9, and 10.8.7. A test graph will accompany this test certificate to illustrate conformity to test requirements.

Quality:	QUALITY	Production:	PRODUCTION
Date :	8/20/2018	Date :	8/20/2018
Signature :	Moosa Naqvi	Signature :	

Form PTC - 01 Rev.0 2

ENGINEERING & SERVICES

GATES E & S NORTH AMERICA, INC.
134 44TH STREET
CORPUS CHRISTI, TEXAS 78405

PHONE: 361-887-9807
FAX: 361-887-0812
EMAIL: *Tim.Cantu@gates.com*
WEB: www.gates.com

10K CEMENTING ASSEMBLY PRESSURE TEST CERTIFICATE

Customer :	AUSTIN DISTRIBUTING	Test Date:	4/30/2015
Customer Ref. :	4060578	Hose Serial No.:	D-043015-7
Invoice No. :	500506	Created By:	JUSTIN CROPPER

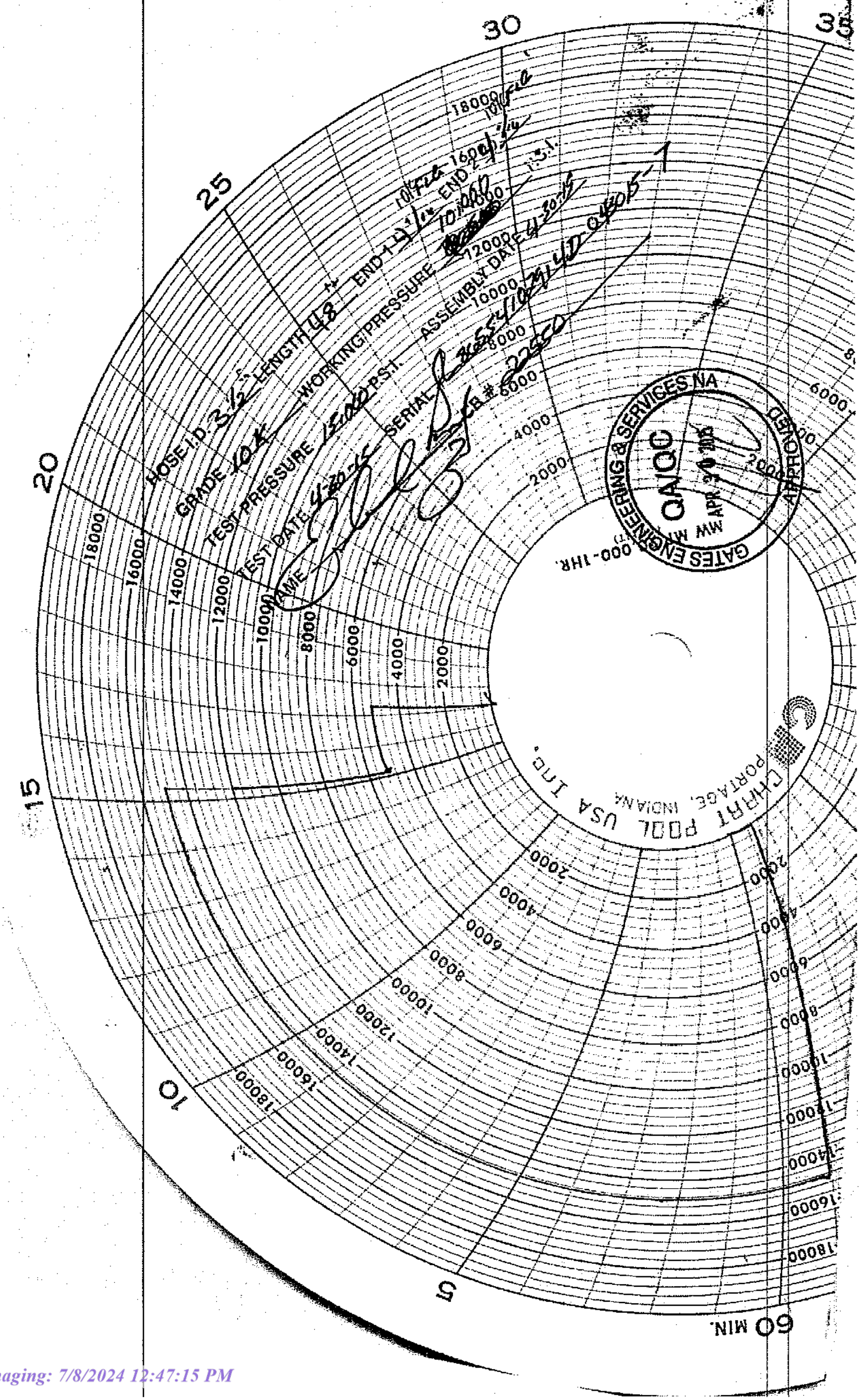
Product Description:	10K3.548.0CK4.1/1610KFLGE/E LE

End Fitting 1 :	4 1/16 10K FLG	End Fitting 2 :	4 1/16 10K FLG
Gates Part No. :	4773-6290	Assembly Code :	L36554102914D-043015-7
Working Pressure :	10,000 PSI	Test Pressure :	15,000 PSI

Gates E & S North America, Inc. certifies that the following hose assembly has been tested to the Gates Oilfield Roughneck Agreement/Specification requirements and passed the 15 minute hydrostatic test per API Spec 7K/Q1, Fifth Edition, June 2010, Test pressure 9.6.7 and per Table 9 to 15,000 psi in accordance with this product number. Hose burst pressure 9.6.7.2 exceeds the minimum of 2.5 times the working pressure per Table 9.

Quality Manager :	QUALITY	Produciton:	PRODUCTION
Date :	4/30/2015	Date :	4/30/2015
Signature :		Signature :	

Form-PTC - 01 Rev.0 2


HOSE I.D.
LENGTH
END
GRADE
WORKING PRESSURE
TEST PRESSURE
P.S.I.
ASSEMBLY DATE
TEST DATE
SERIAL
NAME
CB #
GATES ENGINEERING & SERVICES NA
QA/QC
APPROVED
CHART POOL USA INC.
PORTAGE, INDIANA
60 MIN.

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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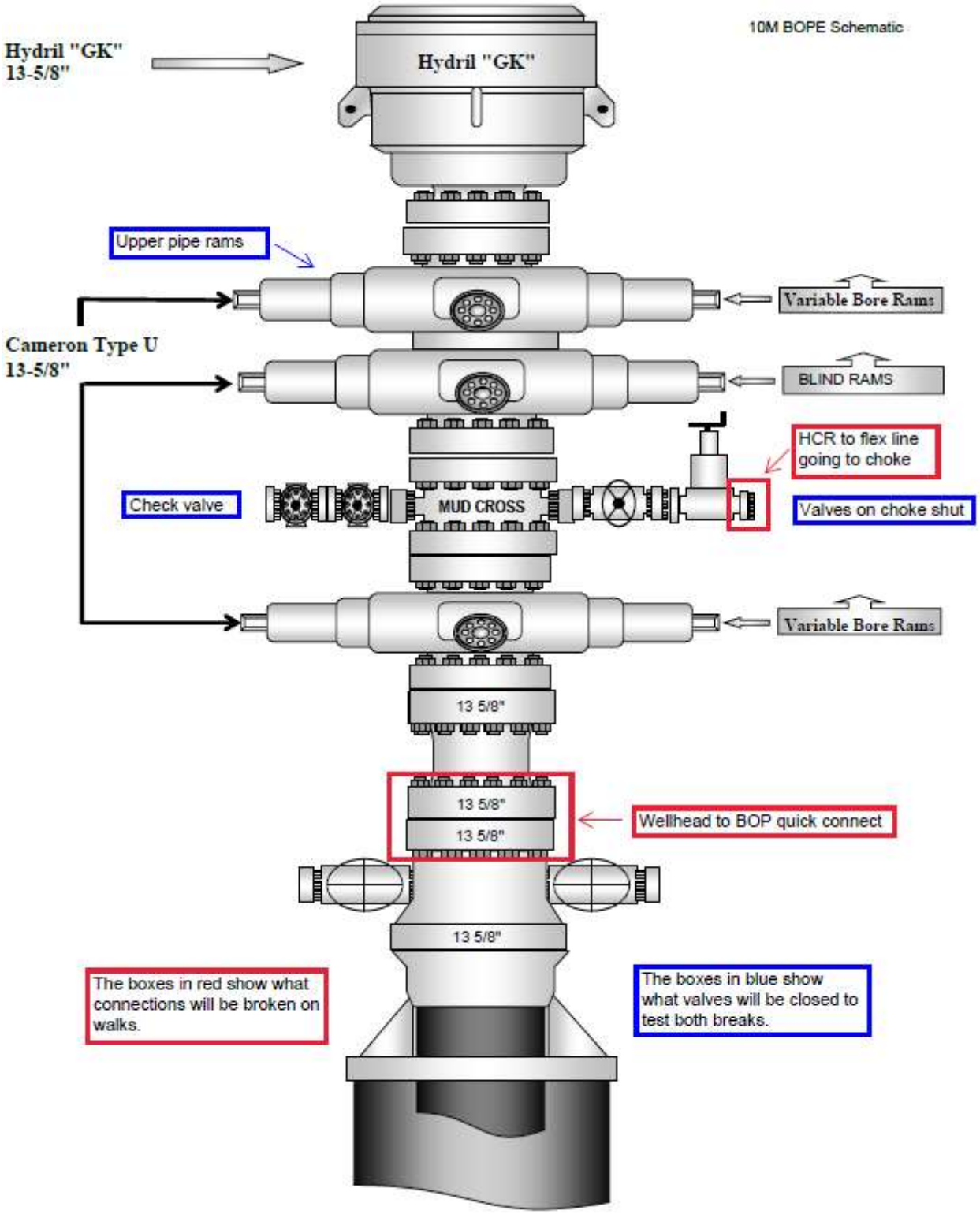

Figure 1. BOP diagram

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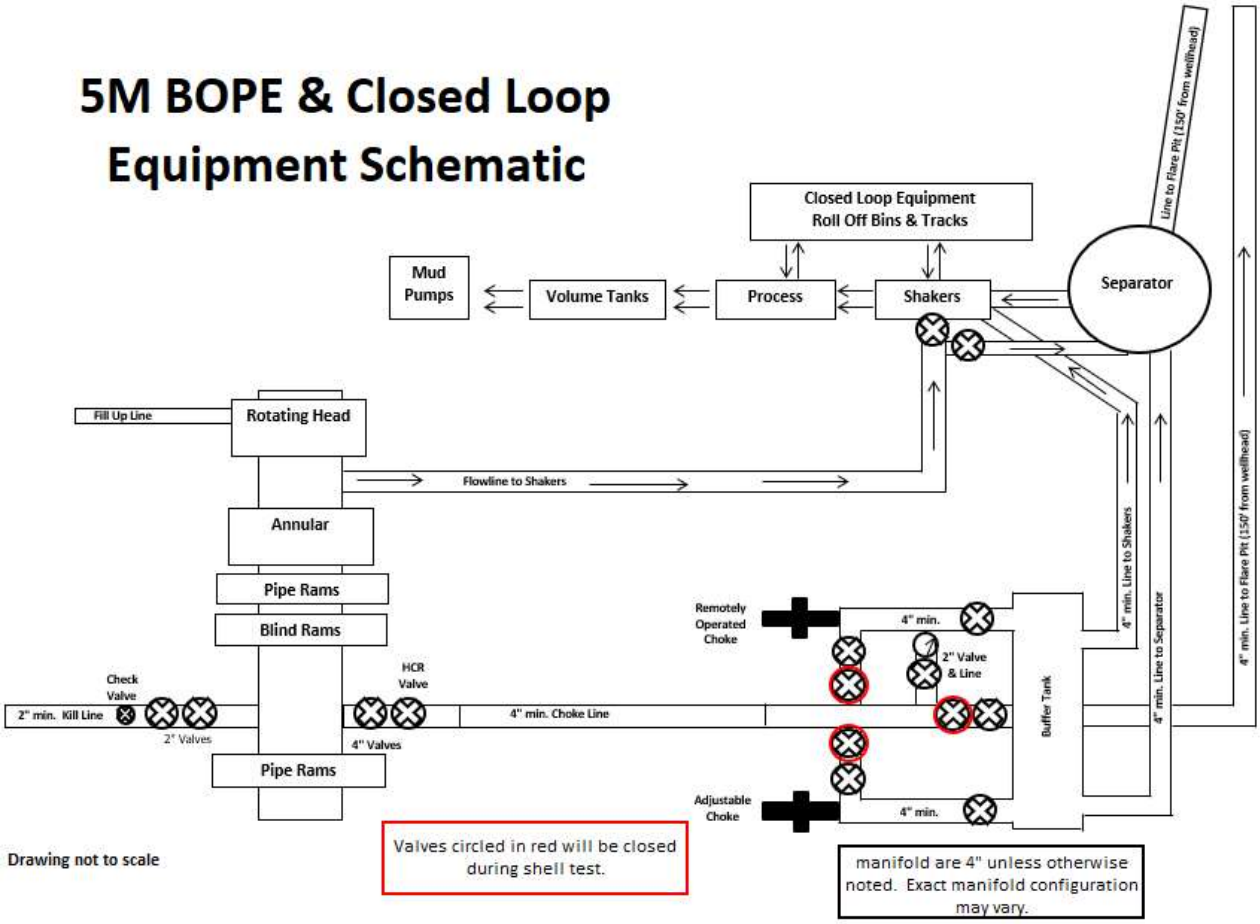


Figure 2. BOPE diagram

MEWBOURNE
OIL COMPANY

Figure 3. BOP handling system

MEWBOURNE
OIL COMPANY

Figure 4. BOP handling system

MEWBOURNE
OIL COMPANY

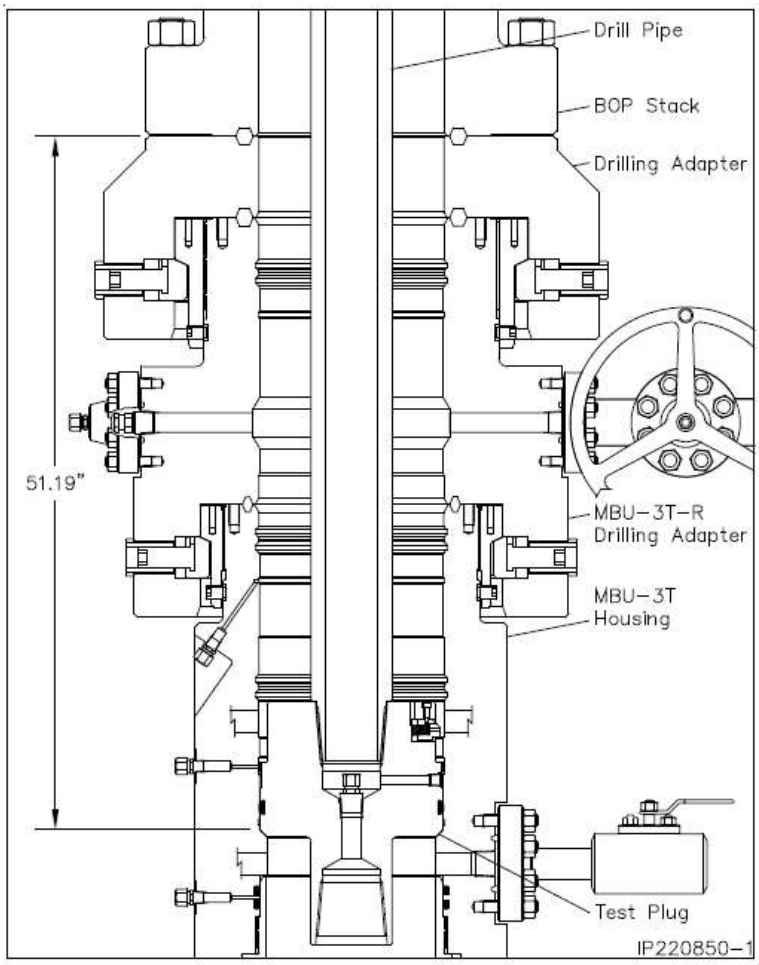


Figure 5. Cactus 5M wellhead with BOP quick connect

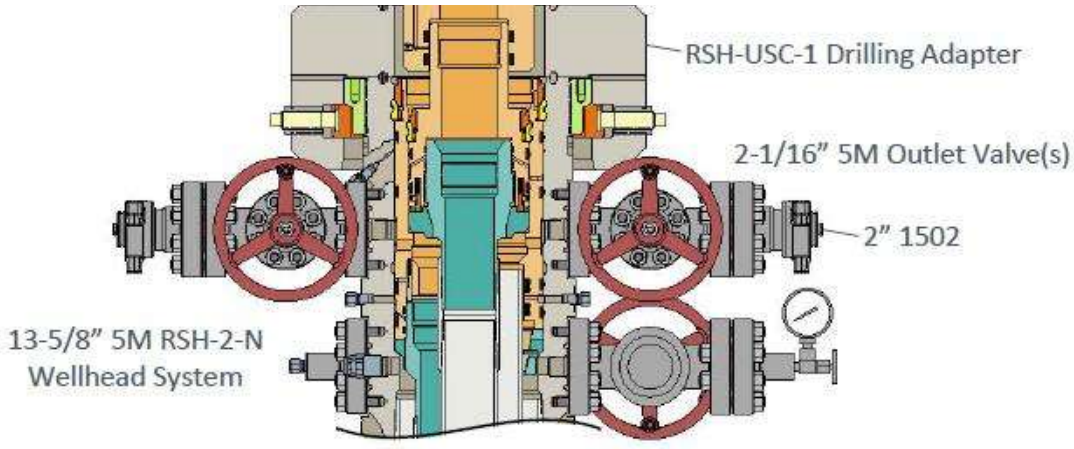
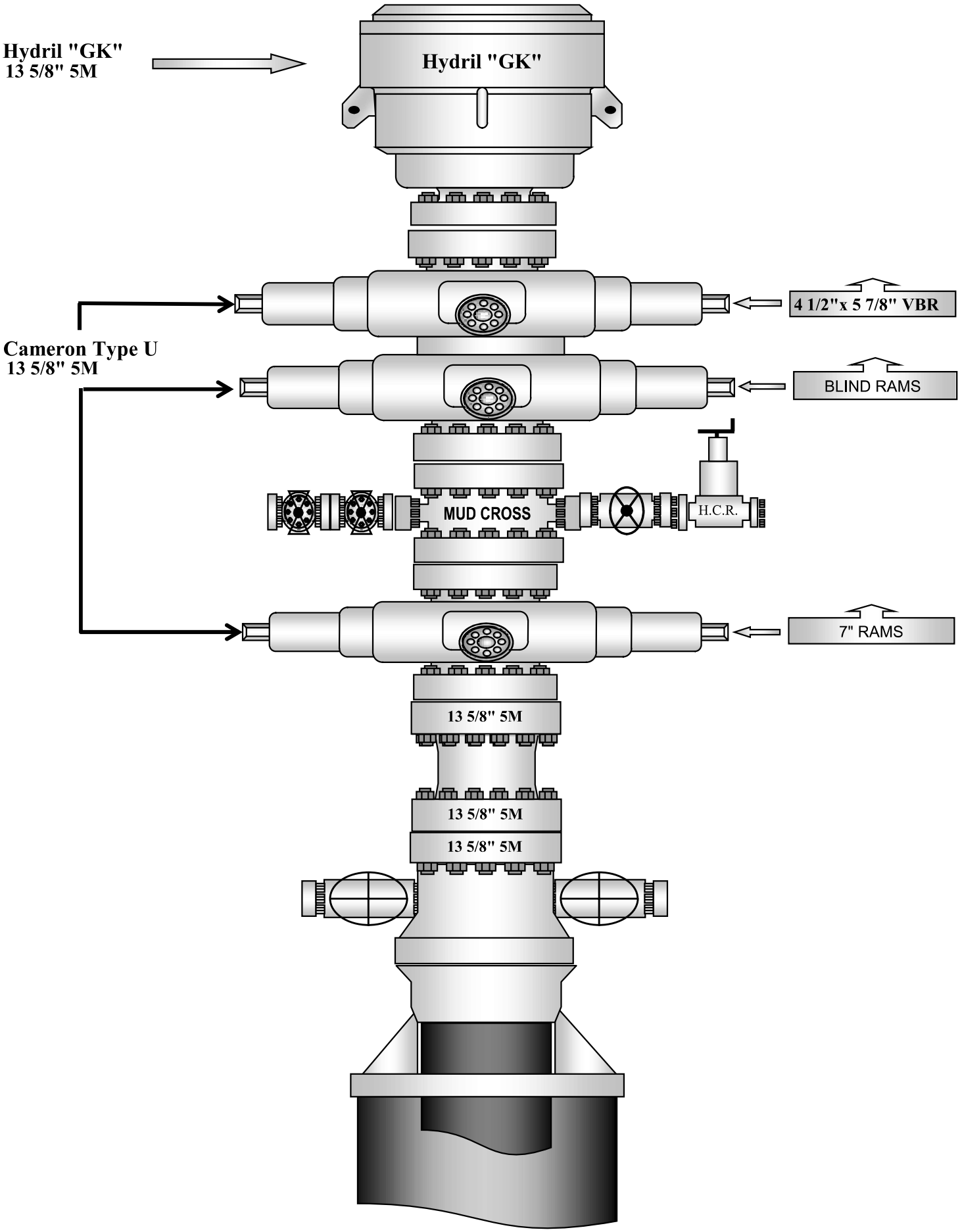


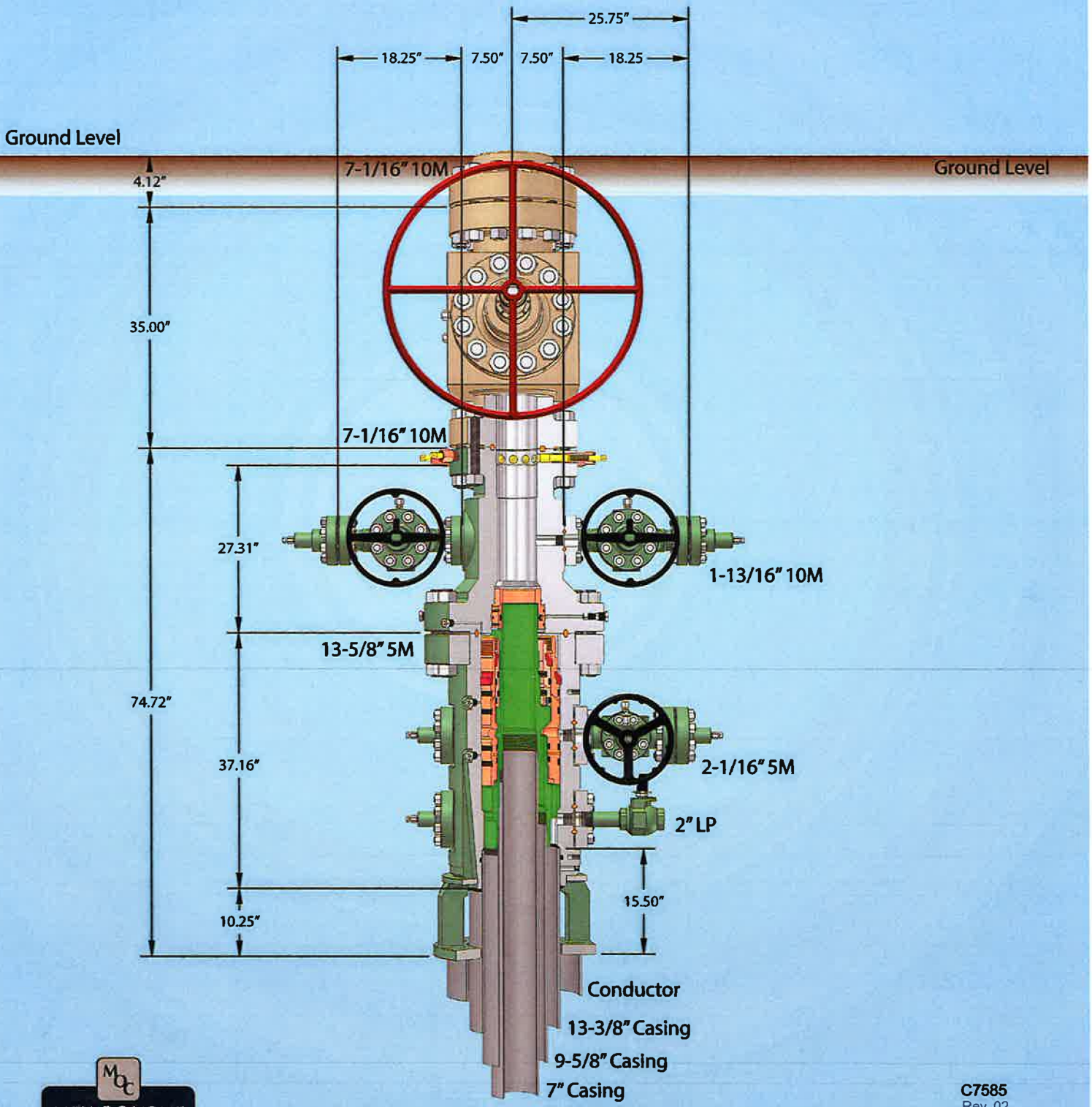
Figure 6. Vault 5M wellhead with BOP quick connect

5M BOPE Schematic



CAMERON
A Schlumberger Company

13-5/8" MN-DS Wellhead System



MEWBOURNE OIL COMPANY

C7585
Rev. 02

NOTE: All dimensions on this drawing are estimated measurements and should be evaluated by engineering.

Capping flange 57" conductor cut-off

Mewbourne Oil Company, Milkshake 9/10 B2LI Fed Com #1H
Sec 8, T18S, R30E
SHL: 1190' FSL 1850' FEL (Sec 8)
BHL: 1980' FSL 100' FEL (Sec 10)

Casing Program Design A						BLM Minimum Safety Factors	1.125	1.0	1.6 Dry 1.8 Wet	1.6 Dry 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'	375'	375'	13.375" 48# H40 STC	4.70	10.56	17.89	30.06
Int	12.25"	0'	0'	1700'	1700'	9.625" 36# J55 LTC	2.54	4.42	7.40	9.22
Production	8.75"	0'	0'	7678'	7462'	7" 26# N-80 LTC	1.39	1.87	2.60	3.03
Liner	6.125"	7478'	7262'	18950'	8261'	4.5" 13.5# P110 LTC	2.16	2.51	2.18	2.72

Cement Program

Casing		# Sacks	Wt. lb/gal	Yield ft^3/sack	TOC/BOC	Volume ft^3	% Excess	Slurry Description
13.375 in	LEAD	120	12.5	2.12	0' - 185'	260	100%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	185' - 375'	268		Class C: Retarder
9.625 in	LEAD	190	12.5	2.12	0' - 1028'	410	25%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	1028' - 1700'	268		Class C: Retarder
7 in	LEAD	170	12.5	2.12	2200' - 4607'	370	0%	Class C: Salt, Gel, Extender, LCM, Defoamer
	TAIL	400	15.6	1.18	4607' - 7678'	472		Class H: Retarder, Fluid Loss, Defoamer
4.5 in	LEAD	730	13.5	1.85	7478' - 18950'	1360	25%	Class H: Salt, Gel, Fluid Loss, Retarder, Dispersant, Defoamer, Anti-

Design A - Mud Program

Depth	Mud Wt	Mud Type
0' - 375'	8.4	Fresh Water
375' - 1700'	9	Brine
1700' - 7678'	10	Cut-Brine
7678' - 18950'	11.5	OBM

Geology

Formation	Est. Top (TVD)	Mineral Resources	Formation	Est. Top (TVD)	Mineral Resources
Rustler	289'	Usable Water	Yeso		
Castile			Delaware (Lamar)		
Salt Top	485'	None	Bell Canyon		
Salt Base	1300'	None	Cherry Canyon		
Yates	1464'	Oil/Natural Gas	Manzanita Marker		
Seven Rivers	1845'	Oil/Natural Gas	Basal Brushy Canyon		
Queen	2457'	Oil/Natural Gas	Bone Spring	4368'	Oil/Natural Gas
Capitan			1st Bone Spring	7032'	Oil/Natural Gas
Grayburg	2643'	None	2nd Bone Spring	7544'	Oil/Natural Gas
San Andres	2925'	Oil/Natural Gas	3rd Bone Spring		
Glorieta			Wolfcamp		

All casing strings will be tested in accordance with 43 CFR Part 3170 Subpart 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-P?	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-P 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, Milkshake 9/10 B2LI Fed Com #1H
Sec 8, T18S, R30E
SHL: 1190' FSL 1850' FEL (Sec 8)
BHL: 1980' FSL 100' FEL (Sec 10)

Casing Program Design B						BLM Minimum Safety Factors	1.125	1.0	1.6 Dry 1.8 Wet	1.6 Dry 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'	375'	375'	13.375" 48# H40 STC	4.70	10.56	17.89	30.06
Int 2	12.25"	0'	0'	1700'	1700'	9.625" 36# J55 LTC	2.54	4.42	7.40	9.22
Production	8.75"	0'	0'	9589'	8035'	7" 26# HCP110 LTC	1.87	2.38	2.78	3.33
Liner	6.125"	7678'	7462'	18950'	8261'	4.5" 13.5# P110 LTC	2.16	2.51	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	120	12.5	2.12	0' - 185'	260	100%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	185' - 375'	268		Class C: Retarder
9.625 in	LEAD	190	12.5	2.12	0' - 1028'	410	25%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	1028' - 1700'	268		Class C: Retarder
7 in	LEAD	310	12.5	2.12	2200' - 6508'	660	0%	Class C: Salt, Gel, Extender, LCM, Defoamer
	TAIL	400	15.6	1.18	6508' - 9589'	472		Class H: Retarder, Fluid Loss, Defoamer
4.5 in	LEAD	710	13.5	1.85	7678' - 18950'	1320	25%	Class H: Salt, Gel, Fluid Loss, Retarder, Dispersant, Defoamer, Anti-

Design B - Mud Program

Depth	Mud Wt	Mud Type
0' - 375'	8.4	Fresh Water
375' - 1700'	9	Brine
1700' - 9589'	10	Cut-Brine
9589' - 18950'	11.5	OBM

Geology

Formation	Est. Top (TVD)	Mineral Resources	Formation	Est. Top (TVD)	Mineral Resources
Rustler	289'	Usable Water	Yeso		
Castile			Delaware (Lamar)		
Salt Top	485'	None	Bell Canyon		
Salt Base	1300'	None	Cherry Canyon		
Yates	1464'	Oil/Natural Gas	Manzanita Marker		
Seven Rivers	1845'	Oil/Natural Gas	Basal Brushy Canyon		
Queen	2457'	Oil/Natural Gas	Bone Spring	4368'	Oil/Natural Gas
Capitan			1st Bone Spring	7032'	Oil/Natural Gas
Grayburg	2643'	None	2nd Bone Spring	7544'	Oil/Natural Gas
San Andres	2925'	Oil/Natural Gas	3rd Bone Spring		
Glorieta			Wolfcamp		

All casing strings will be tested in accordance with 43 CFR Part 3170 Subpart 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-P?	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-P 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, Milkshake 9/10 B2LI Fed Com #1H
Sec 8, T18S, R30E
SHL: 1190' FSL 1850' FEL (Sec 8)
BHL: 1980' FSL 100' FEL (Sec 10)

Casing Program Design A						BLM Minimum Safety Factors	1.125	1.0	1.6 Dry 1.8 Wet	1.6 Dry 1.8 Wet
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Liner	6.125"	7478'	7262'	18950'	8261'	4.5" 13.5# P110 LTC	2.16	2.51	2.18	2.72

Cement Program

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	TAIL	200	14.8	1.34	1028' - 1700'	268		Class C: Retarder
7 in	LEAD	170	12.5	2.12	2200' - 4607'	370	0%	Class C: Salt, Gel, Extender, LCM, Defoamer
	TAIL	400	15.6	1.18	4607' - 7678'	472		Class H: Retarder, Fluid Loss, Defoamer
4.5 in	LEAD	730	13.5	1.85	7478' - 18950'	1360	25%	Class H: Salt, Gel, Fluid Loss, Retarder, Dispersant, Defoamer, Anti-

Design A - Mud Program

Depth	Mud Wt	Mud Type
0' - 375'	8.4	Fresh Water
375' - 1700'	9	Brine
1700' - 7678'	10	Cut-Brine
7678' - 18950'	11.5	OBM

Geology

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Seven Rivers	1845'	Oil/Natural Gas	Basal Brushy Canyon		
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Capitan			1st Bone Spring	7032'	Oil/Natural Gas
Grayburg	2643'	None	2nd Bone Spring	7544'	Oil/Natural Gas
San Andres	2925'	Oil/Natural Gas	3rd Bone Spring		
Glorieta			Wolfcamp		

All casing strings will be tested in accordance with 43 CFR Part 3170 Subpart 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-P?	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-P 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, Milkshake 9/10 B2LI Fed Com #1H
Sec 8, T18S, R30E
SHL: 1190' FSL 1850' FEL (Sec 8)
BHL: 1980' FSL 100' FEL (Sec 10)

Casing Program Design B						BLM Minimum Safety Factors	1.125	1.0	1.6 Dry 1.8 Wet	1.6 Dry 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'	375'	375'	13.375" 48# H40 STC	4.70	10.56	17.89	30.06
Int 2	12.25"	0'	0'	1700'	1700'	9.625" 36# J55 LTC	2.54	4.42	7.40	9.22
Production	8.75"	0'	0'	9589'	8035'	7" 26# HCP110 LTC	1.87	2.38	2.78	3.33
Liner	6.125"	7678'	7462'	18950'	8261'	4.5" 13.5# P110 LTC	2.16	2.51	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	120	12.5	2.12	0' - 185'	260	100%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	185' - 375'	268		Class C: Retarder
9.625 in	LEAD	190	12.5	2.12	0' - 1028'	410	25%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	1028' - 1700'	268		Class C: Retarder
7 in	LEAD	310	12.5	2.12	2200' - 6508'	660	0%	Class C: Salt, Gel, Extender, LCM, Defoamer
	TAIL	400	15.6	1.18	6508' - 9589'	472		Class H: Retarder, Fluid Loss, Defoamer
4.5 in	LEAD	710	13.5	1.85	7678' - 18950'	1320	25%	Class H: Salt, Gel, Fluid Loss, Retarder, Dispersant, Defoamer, Anti-

Design B - Mud Program

Depth	Mud Wt	Mud Type
0' - 375'	8.4	Fresh Water
375' - 1700'	9	Brine
1700' - 9589'	10	Cut-Brine
9589' - 18950'	11.5	OBM

Geology

Formation	Est. Top (TVD)	Mineral Resources	Formation	Est. Top (TVD)	Mineral Resources
Rustler	289'	Usable Water	Yeso		
Castile			Delaware (Lamar)		
Salt Top	485'	None	Bell Canyon		
Salt Base	1300'	None	Cherry Canyon		
Yates	1464'	Oil/Natural Gas	Manzanita Marker		
Seven Rivers	1845'	Oil/Natural Gas	Basal Brushy Canyon		
Queen	2457'	Oil/Natural Gas	Bone Spring	4368'	Oil/Natural Gas
Capitan			1st Bone Spring	7032'	Oil/Natural Gas
Grayburg	2643'	None	2nd Bone Spring	7544'	Oil/Natural Gas
San Andres	2925'	Oil/Natural Gas	3rd Bone Spring		
Glorieta			Wolfcamp		

All casing strings will be tested in accordance with 43 CFR Part 3170 Subpart 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-P?	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-P 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, Milkshake 9/10 B2LI Fed Com #1H
Sec 8, T18S, R30E
SHL: 1190' FSL 1850' FEL (Sec 8)
BHL: 1980' FSL 100' FEL (Sec 10)

Casing Program Design A						BLM Minimum Safety Factors	1.125	1.0	1.6 Dry 1.8 Wet	1.6 Dry 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'	375'	375'	13.375" 48# H40 STC	4.70	10.56	17.89	30.06
Int	12.25"	0'	0'	1700'	1700'	9.625" 36# J55 LTC	2.54	4.42	7.40	9.22
Production	8.75"	0'	0'	7678'	7462'	7" 26# N-80 LTC	1.39	1.87	2.60	3.03
Liner	6.125"	7478'	7262'	18950'	8261'	4.5" 13.5# P110 LTC	2.16	2.51	2.18	2.72

Cement Program

Casing		# Sacks	Wt. lb/gal	Yield ft^3/sack	TOC/BOC	Volume ft^3	% Excess	Slurry Description
13.375 in	LEAD	120	12.5	2.12	0' - 185'	260	100%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	185' - 375'	268		Class C: Retarder
9.625 in	LEAD	190	12.5	2.12	0' - 1028'	410	25%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	1028' - 1700'	268		Class C: Retarder
7 in	LEAD	170	12.5	2.12	2200' - 4607'	370	0%	Class C: Salt, Gel, Extender, LCM, Defoamer
	TAIL	400	15.6	1.18	4607' - 7678'	472		Class H: Retarder, Fluid Loss, Defoamer
4.5 in	LEAD	730	13.5	1.85	7478' - 18950'	1360	25%	Class H: Salt, Gel, Fluid Loss, Retarder, Dispersant, Defoamer, Anti-

Design A - Mud Program

Depth	Mud Wt	Mud Type
0' - 375'	8.4	Fresh Water
375' - 1700'	9	Brine
1700' - 7678'	10	Cut-Brine
7678' - 18950'	11.5	OBM

Geology

Formation	Est. Top (TVD)	Mineral Resources	Formation	Est. Top (TVD)	Mineral Resources
Rustler	289'	Usable Water	Yeso		
Castile			Delaware (Lamar)		
Salt Top	485'	None	Bell Canyon		
Salt Base	1300'	None	Cherry Canyon		
Yates	1464'	Oil/Natural Gas	Manzanita Marker		
Seven Rivers	1845'	Oil/Natural Gas	Basal Brushy Canyon		
Queen	2457'	Oil/Natural Gas	Bone Spring	4368'	Oil/Natural Gas
Capitan			1st Bone Spring	7032'	Oil/Natural Gas
Grayburg	2643'	None	2nd Bone Spring	7544'	Oil/Natural Gas
San Andres	2925'	Oil/Natural Gas	3rd Bone Spring		
Glorieta			Wolfcamp		

All casing strings will be tested in accordance with 43 CFR Part 3170 Subpart 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-P?	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-P 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, Milkshake 9/10 B2LI Fed Com #1H
Sec 8, T18S, R30E
SHL: 1190' FSL 1850' FEL (Sec 8)
BHL: 1980' FSL 100' FEL (Sec 10)

Casing Program Design B						BLM Minimum Safety Factors	1.125	1.0	1.6 Dry 1.8 Wet	1.6 Dry 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'	375'	375'	13.375" 48# H40 STC	4.70	10.56	17.89	30.06
Int 2	12.25"	0'	0'	1700'	1700'	9.625" 36# J55 LTC	2.54	4.42	7.40	9.22
Production	8.75"	0'	0'	9589'	8035'	7" 26# HCP110 LTC	1.87	2.38	2.78	3.33
Liner	6.125"	7678'	7462'	18950'	8261'	4.5" 13.5# P110 LTC	2.16	2.51	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	120	12.5	2.12	0' - 185'	260	100%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	185' - 375'	268		Class C: Retarder
9.625 in	LEAD	190	12.5	2.12	0' - 1028'	410	25%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	1028' - 1700'	268		Class C: Retarder
7 in	LEAD	310	12.5	2.12	2200' - 6508'	660	0%	Class C: Salt, Gel, Extender, LCM, Defoamer
	TAIL	400	15.6	1.18	6508' - 9589'	472		Class H: Retarder, Fluid Loss, Defoamer
4.5 in	LEAD	710	13.5	1.85	7678' - 18950'	1320	25%	Class H: Salt, Gel, Fluid Loss, Retarder, Dispersant, Defoamer, Anti-

Design B - Mud Program

Depth	Mud Wt	Mud Type
0' - 375'	8.4	Fresh Water
375' - 1700'	9	Brine
1700' - 9589'	10	Cut-Brine
9589' - 18950'	11.5	OBM

Geology

Formation	Est. Top (TVD)	Mineral Resources	Formation	Est. Top (TVD)	Mineral Resources
Rustler	289'	Usable Water	Yeso		
Castile			Delaware (Lamar)		
Salt Top	485'	None	Bell Canyon		
Salt Base	1300'	None	Cherry Canyon		
Yates	1464'	Oil/Natural Gas	Manzanita Marker		
Seven Rivers	1845'	Oil/Natural Gas	Basal Brushy Canyon		
Queen	2457'	Oil/Natural Gas	Bone Spring	4368'	Oil/Natural Gas
Capitan			1st Bone Spring	7032'	Oil/Natural Gas
Grayburg	2643'	None	2nd Bone Spring	7544'	Oil/Natural Gas
San Andres	2925'	Oil/Natural Gas	3rd Bone Spring		
Glorieta			Wolfcamp		

All casing strings will be tested in accordance with 43 CFR Part 3170 Subpart 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-P?	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-P 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, Milkshake 9/10 B2LI Fed Com #1H
Sec 8, T18S, R30E
SHL: 1190' FSL 1850' FEL (Sec 8)
BHL: 1980' FSL 100' FEL (Sec 10)

Casing Program Design A						BLM Minimum Safety Factors	1.125	1.0	1.6 Dry 1.8 Wet	1.6 Dry 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'	375'	375'	13.375" 48# H40 STC	4.70	10.56	17.89	30.06
Int	12.25"	0'	0'	1700'	1700'	9.625" 36# J55 LTC	2.54	4.42	7.40	9.22
Production	8.75"	0'	0'	7678'	7462'	7" 26# N-80 LTC	1.39	1.87	2.60	3.03
Liner	6.125"	7478'	7262'	18950'	8261'	4.5" 13.5# P110 LTC	2.16	2.51	2.18	2.72

Cement Program

Casing		# Sacks	Wt. lb/gal	Yield ft^3/sack	TOC/BOC	Volume ft^3	% Excess	Slurry Description
13.375 in	LEAD	120	12.5	2.12	0' - 185'	260	100%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	185' - 375'	268		Class C: Retarder
9.625 in	LEAD	190	12.5	2.12	0' - 1028'	410	25%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	1028' - 1700'	268		Class C: Retarder
7 in	LEAD	170	12.5	2.12	2200' - 4607'	370	0%	Class C: Salt, Gel, Extender, LCM, Defoamer
	TAIL	400	15.6	1.18	4607' - 7678'	472		Class H: Retarder, Fluid Loss, Defoamer
4.5 in	LEAD	730	13.5	1.85	7478' - 18950'	1360	25%	Class H: Salt, Gel, Fluid Loss, Retarder, Dispersant, Defoamer, Anti-

Design A - Mud Program

Depth	Mud Wt	Mud Type
0' - 375'	8.4	Fresh Water
375' - 1700'	9	Brine
1700' - 7678'	10	Cut-Brine
7678' - 18950'	11.5	OBM

Geology

Formation	Est. Top (TVD)	Mineral Resources	Formation	Est. Top (TVD)	Mineral Resources
Rustler	289'	Usable Water	Yeso		
Castile			Delaware (Lamar)		
Salt Top	485'	None	Bell Canyon		
Salt Base	1300'	None	Cherry Canyon		
Yates	1464'	Oil/Natural Gas	Manzanita Marker		
Seven Rivers	1845'	Oil/Natural Gas	Basal Brushy Canyon		
Queen	2457'	Oil/Natural Gas	Bone Spring	4368'	Oil/Natural Gas
Capitan			1st Bone Spring	7032'	Oil/Natural Gas
Grayburg	2643'	None	2nd Bone Spring	7544'	Oil/Natural Gas
San Andres	2925'	Oil/Natural Gas	3rd Bone Spring		
Glorieta			Wolfcamp		

All casing strings will be tested in accordance with 43 CFR Part 3170 Subpart 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-P?	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-P 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, Milkshake 9/10 B2LI Fed Com #1H
Sec 8, T18S, R30E
SHL: 1190' FSL 1850' FEL (Sec 8)
BHL: 1980' FSL 100' FEL (Sec 10)

Casing Program Design B						BLM Minimum Safety Factors	1.125	1.0	1.6 Dry 1.8 Wet	1.6 Dry 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'	375'	375'	13.375" 48# H40 STC	4.70	10.56	17.89	30.06
Int 2	12.25"	0'	0'	1700'	1700'	9.625" 36# J55 LTC	2.54	4.42	7.40	9.22
Production	8.75"	0'	0'	9589'	8035'	7" 26# HCP110 LTC	1.87	2.38	2.78	3.33
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Design B - Cement Program

Casing		# Sacks	Wt. lb/gal	Yield ft^3/sack	TOC/BOC	Volume ft^3	% Excess	Slurry Description
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9.625 in	LEAD	190	12.5	2.12	0' - 1028'	410	25%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	1028' - 1700'	268		Class C: Retarder
7 in	LEAD	310	12.5	2.12	2200' - 6508'	660	0%	Class C: Salt, Gel, Extender, LCM, Defoamer
	TAIL	400	15.6	1.18	6508' - 9589'	472		Class H: Retarder, Fluid Loss, Defoamer
4.5 in	LEAD	710	13.5	1.85	7678' - 18950'	1320	25%	Class H: Salt, Gel, Fluid Loss, Retarder, Dispersant, Defoamer, Anti-

Design B - Mud Program

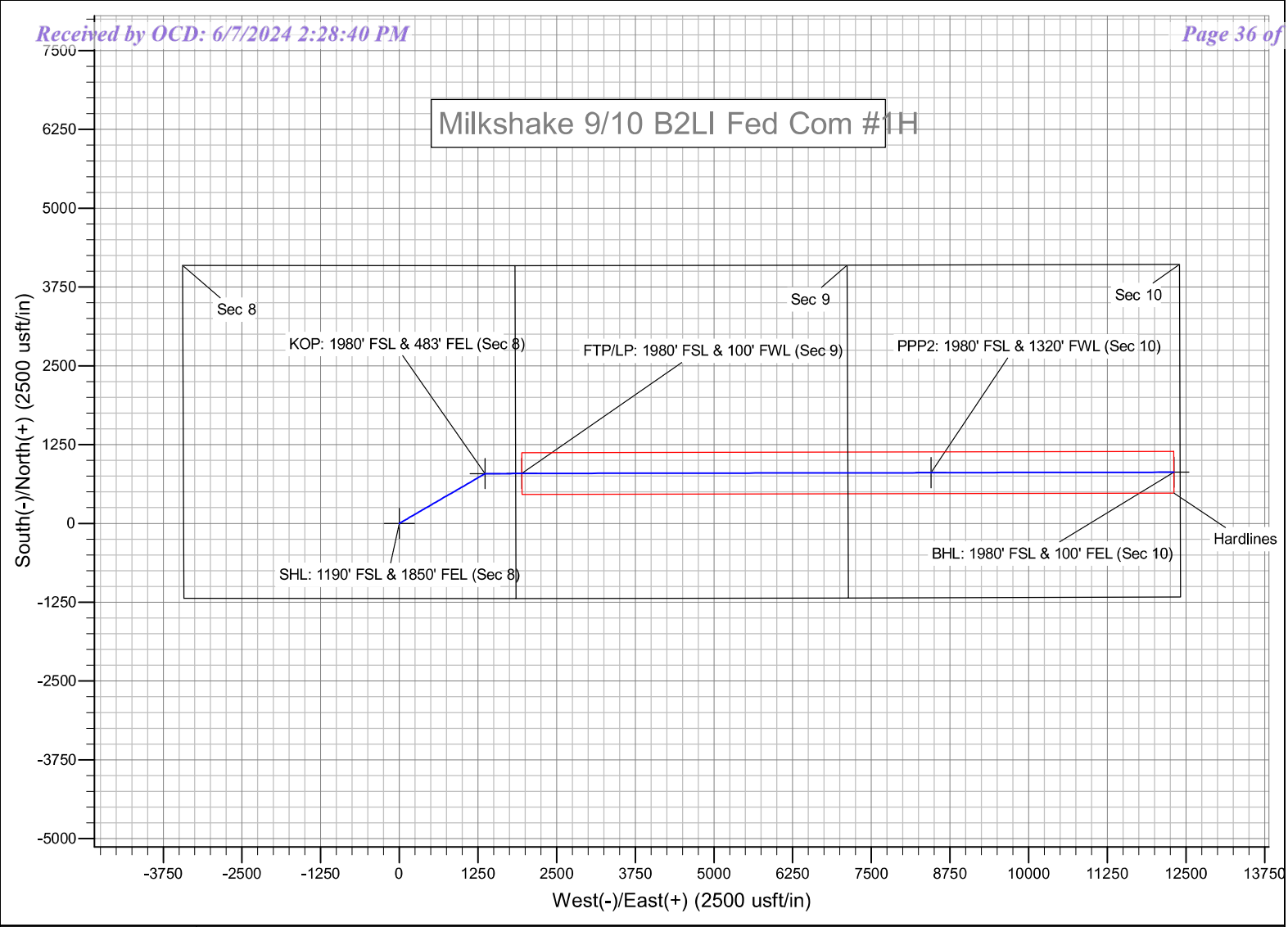
Depth	Mud Wt	Mud Type
0' - 375'	8.4	Fresh Water
375' - 1700'	9	Brine
1700' - 9589'	10	Cut-Brine
9589' - 18950'	11.5	OBM

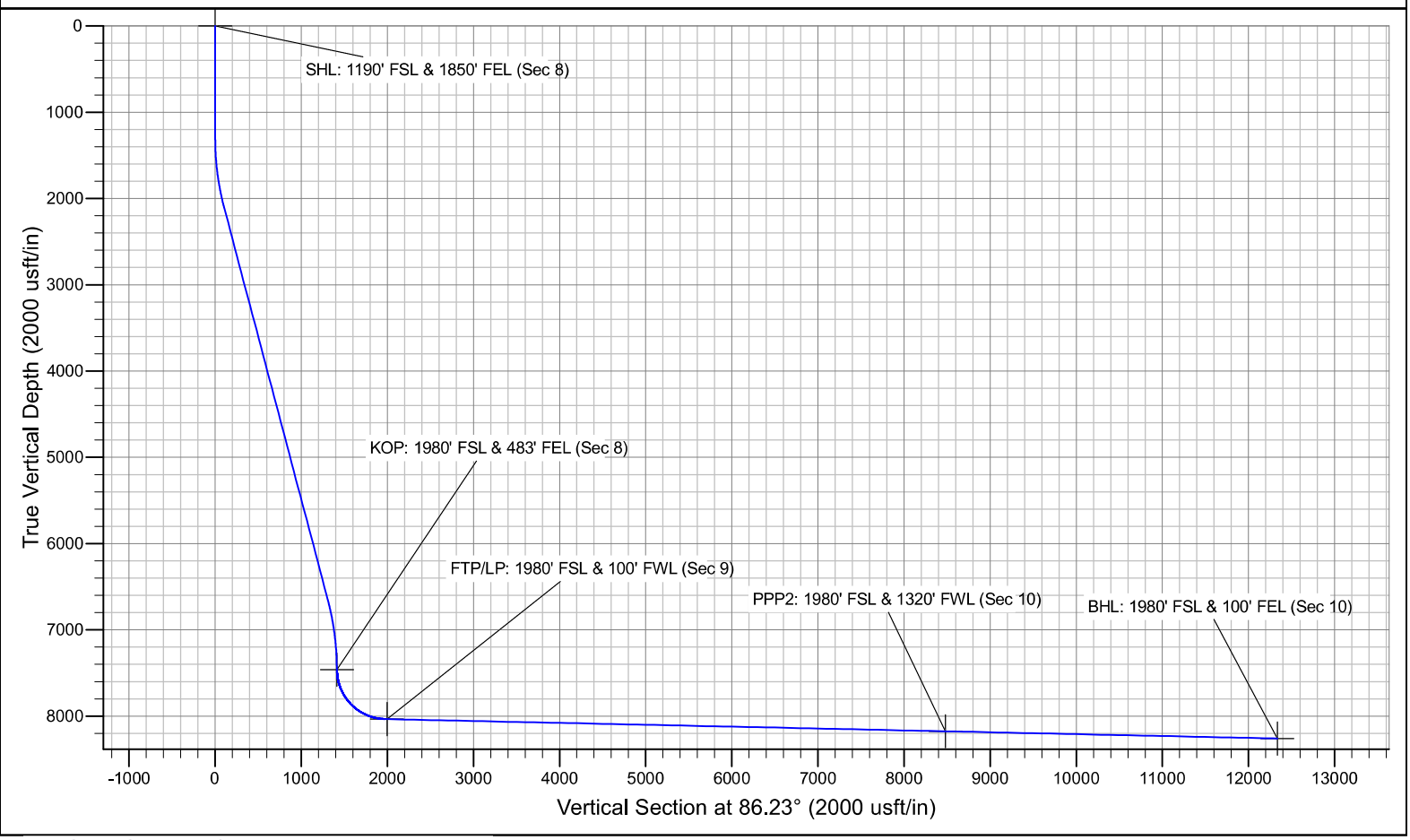
Geology

Formation	Est. Top (TVD)	Mineral Resources	Formation	Est. Top (TVD)	Mineral Resources
Rustler	289'	Usable Water	Yeso		
Castile			Delaware (Lamar)		
Salt Top	485'	None	Bell Canyon		
Salt Base	1300'	None	Cherry Canyon		
Yates	1464'	Oil/Natural Gas	Manzanita Marker		
Seven Rivers	1845'	Oil/Natural Gas	Basal Brushy Canyon		
Queen	2457'	Oil/Natural Gas	Bone Spring	4368'	Oil/Natural Gas
Capitan			1st Bone Spring	7032'	Oil/Natural Gas
Grayburg	2643'	None	2nd Bone Spring	7544'	Oil/Natural Gas
San Andres	2925'	Oil/Natural Gas	3rd Bone Spring		
Glorieta			Wolfcamp		

All casing strings will be tested in accordance with 43 CFR Part 3170 Subpart 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-P?	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-P 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?	


Milkshake 9/10 B2LI Fed Com #1H
Sec 8
Sec 9
Sec 10
KOP: 1980' FSL & 483' FEL (Sec 8)
FTP/LP: 1980' FSL & 100' FWL (Sec 9)
PPP2: 1980' FSL & 1320' FWL (Sec 10)
SHL: 1190' FSL & 1850' FEL (Sec 8)
BHL: 1980' FSL & 100' FEL (Sec 10)
Hardlines
South(-)/North(+) (2500 usft/in)
West(-)/East(+) (2500 usft/in)


SHL: 1190' FSL & 1850' FEL (Sec 8)
KOP: 1980' FSL & 483' FEL (Sec 8)
FTP/LP: 1980' FSL & 100' FWL (Sec 9)
PPP2: 1980' FSL & 1320' FWL (Sec 10)
BHL: 1980' FSL & 100' FEL (Sec 10)
True Vertical Depth (2000 usft/in)
Vertical Section at 86.23° (2000 usft/in)

Mewbourne Oil Company

Eddy County, New Mexico NAD 83
Milkshake 9/10 B2LI Fed Com #1H
Sec 08, T18S, R30E
SHL: 1190' FSL & 1850' FEL (Sec 8)
BHL: 1980' FSL & 100' FEL (Sec 10)

Plan: Design #1

Standard Planning Report

05 April, 2024

Planning Report

Database:	Hobbs	**Local Co-ordinate Reference:**	Site Milkshake 9/10 B2LI Fed Com #1H
Company:	Mewbourne Oil Company	**TVD Reference:**	WELL @ 3538.0usft (Original Well Elev)
Project:	Eddy County, New Mexico NAD 83	**MD Reference:**	WELL @ 3538.0usft (Original Well Elev)
Site:	Milkshake 9/10 B2LI Fed Com #1H	**North Reference:**	Grid
Well:	Sec 08, T18S, R30E	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	BHL: 1980' FSL & 100' FEL (Sec 10)		
Design:	Design #1		

Project	Eddy County, New Mexico NAD 83		
Map System:	US State Plane 1983	**System Datum:**	Ground Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Milkshake 9/10 B2LI Fed Com #1H				
Site Position:		**Northing:**	639,664.70 usft	**Latitude:**	32.7580079
From:	Map	**Easting:**	646,399.60 usft	**Longitude:**	-103.9915696
Position Uncertainty:	0.0 usft	**Slot Radius:**	13-3/16 "		

Well	Sec 08, T18S, R30E					
Well Position	**+N/-S**	0.0 usft	**Northing:**	639,664.70 usft	**Latitude:**	32.7580079
	+E/-W	0.0 usft	**Easting:**	646,399.60 usft	**Longitude:**	-103.9915696
Position Uncertainty		0.0 usft	**Wellhead Elevation:**	3,538.0 usft	**Ground Level:**	3,510.0 usft
Grid Convergence:		0.18 °				

Wellbore	BHL: 1980' FSL & 100' FEL (Sec 10)				
Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	IGRF2010	12/31/2014	7.38	60.52	48,510.93933254

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	86.23

Plan Survey Tool Program **Date** 4/5/2024

	Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.0	18,950.0	Design #1 (BHL: 1980' FSL & 100		

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	
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,122.9	16.46	59.94	2,111.6	58.8	101.6	2.00	2.00	0.00	59.94	
6,855.6	16.46	59.94	6,650.4	730.4	1,262.0	0.00	0.00	0.00	0.00	
7,678.4	0.00	0.00	7,462.0	789.2	1,363.6	2.00	-2.00	0.00	180.00	KOP: 1980' FSL & 48
8,566.2	88.75	89.89	8,035.0	790.3	1,924.3	10.00	10.00	0.00	89.89	
18,950.0	88.75	89.89	8,261.0	810.5	12,305.5	0.00	0.00	0.00	0.00	BHL: 1980' FSL & 10

Planning Report

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Company:	Mewbourne Oil Company	**TVD Reference:**	WELL @ 3538.0usft (Original Well Elev)
Project:	Eddy County, New Mexico NAD 83	**MD Reference:**	WELL @ 3538.0usft (Original Well Elev)
Site:	Milkshake 9/10 B2LI Fed Com #1H	**North Reference:**	Grid
Well:	Sec 08, T18S, R30E	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	BHL: 1980' FSL & 100' FEL (Sec 10)		
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: 1190' FSL & 1850' FEL (Sec 8)									
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	2.00	59.94	1,400.0	0.9	1.5	1.6	2.00	2.00	0.00
1,500.0	4.00	59.94	1,499.8	3.5	6.0	6.3	2.00	2.00	0.00
1,600.0	6.00	59.94	1,599.5	7.9	13.6	14.1	2.00	2.00	0.00
1,700.0	8.00	59.94	1,698.7	14.0	24.1	25.0	2.00	2.00	0.00
1,800.0	10.00	59.94	1,797.5	21.8	37.7	39.0	2.00	2.00	0.00
1,900.0	12.00	59.94	1,895.6	31.4	54.2	56.1	2.00	2.00	0.00
2,000.0	14.00	59.94	1,993.1	42.6	73.7	76.3	2.00	2.00	0.00
2,100.0	16.00	59.94	2,089.6	55.6	96.1	99.5	2.00	2.00	0.00
2,122.9	16.46	59.94	2,111.6	58.8	101.6	105.2	2.00	2.00	0.00
2,200.0	16.46	59.94	2,185.6	69.7	120.5	124.8	0.00	0.00	0.00
2,300.0	16.46	59.94	2,281.5	83.9	145.0	150.2	0.00	0.00	0.00
2,400.0	16.46	59.94	2,377.4	98.1	169.5	175.6	0.00	0.00	0.00
2,500.0	16.46	59.94	2,473.3	112.3	194.1	201.0	0.00	0.00	0.00
2,600.0	16.46	59.94	2,569.2	126.5	218.6	226.4	0.00	0.00	0.00
2,700.0	16.46	59.94	2,665.1	140.7	243.1	251.8	0.00	0.00	0.00
2,800.0	16.46	59.94	2,761.0	154.9	267.6	277.2	0.00	0.00	0.00
2,900.0	16.46	59.94	2,856.9	169.1	292.1	302.6	0.00	0.00	0.00
3,000.0	16.46	59.94	2,952.8	183.3	316.7	328.0	0.00	0.00	0.00
3,100.0	16.46	59.94	3,048.7	197.5	341.2	353.4	0.00	0.00	0.00
3,200.0	16.46	59.94	3,144.6	211.6	365.7	378.8	0.00	0.00	0.00
3,300.0	16.46	59.94	3,240.5	225.8	390.2	404.2	0.00	0.00	0.00
3,400.0	16.46	59.94	3,336.4	240.0	414.7	429.6	0.00	0.00	0.00
3,500.0	16.46	59.94	3,432.3	254.2	439.2	455.0	0.00	0.00	0.00
3,600.0	16.46	59.94	3,528.2	268.4	463.8	480.4	0.00	0.00	0.00
3,700.0	16.46	59.94	3,624.1	282.6	488.3	505.8	0.00	0.00	0.00
3,800.0	16.46	59.94	3,720.0	296.8	512.8	531.2	0.00	0.00	0.00
3,900.0	16.46	59.94	3,815.9	311.0	537.3	556.6	0.00	0.00	0.00
4,000.0	16.46	59.94	3,911.8	325.2	561.8	582.0	0.00	0.00	0.00
4,100.0	16.46	59.94	4,007.7	339.4	586.4	607.4	0.00	0.00	0.00
4,200.0	16.46	59.94	4,103.6	353.6	610.9	632.8	0.00	0.00	0.00
4,300.0	16.46	59.94	4,199.5	367.7	635.4	658.2	0.00	0.00	0.00
4,400.0	16.46	59.94	4,295.4	381.9	659.9	683.6	0.00	0.00	0.00
4,500.0	16.46	59.94	4,391.3	396.1	684.4	709.0	0.00	0.00	0.00
4,600.0	16.46	59.94	4,487.2	410.3	709.0	734.4	0.00	0.00	0.00
4,700.0	16.46	59.94	4,583.1	424.5	733.5	759.8	0.00	0.00	0.00
4,800.0	16.46	59.94	4,679.1	438.7	758.0	785.2	0.00	0.00	0.00
4,900.0	16.46	59.94	4,775.0	452.9	782.5	810.6	0.00	0.00	0.00
5,000.0	16.46	59.94	4,870.9	467.1	807.0	836.0	0.00	0.00	0.00
5,100.0	16.46	59.94	4,966.8	481.3	831.6	861.4	0.00	0.00	0.00

Planning Report

Database:	Hobbs	**Local Co-ordinate Reference:**	Site Milkshake 9/10 B2LI Fed Com #1H
Company:	Mewbourne Oil Company	**TVD Reference:**	WELL @ 3538.0usft (Original Well Elev)
Project:	Eddy County, New Mexico NAD 83	**MD Reference:**	WELL @ 3538.0usft (Original Well Elev)
Site:	Milkshake 9/10 B2LI Fed Com #1H	**North Reference:**	Grid
Well:	Sec 08, T18S, R30E	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	BHL: 1980' FSL & 100' FEL (Sec 10)		
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)
5,200.0	16.46	59.94	5,062.7	495.5	856.1	886.8	0.00	0.00	0.00
5,300.0	16.46	59.94	5,158.6	509.7	880.6	912.2	0.00	0.00	0.00
5,400.0	16.46	59.94	5,254.5	523.8	905.1	937.6	0.00	0.00	0.00
5,500.0	16.46	59.94	5,350.4	538.0	929.6	963.0	0.00	0.00	0.00
5,600.0	16.46	59.94	5,446.3	552.2	954.2	988.4	0.00	0.00	0.00
5,700.0	16.46	59.94	5,542.2	566.4	978.7	1,013.8	0.00	0.00	0.00
5,800.0	16.46	59.94	5,638.1	580.6	1,003.2	1,039.2	0.00	0.00	0.00
5,900.0	16.46	59.94	5,734.0	594.8	1,027.7	1,064.6	0.00	0.00	0.00
6,000.0	16.46	59.94	5,829.9	609.0	1,052.2	1,090.0	0.00	0.00	0.00
6,100.0	16.46	59.94	5,925.8	623.2	1,076.8	1,115.4	0.00	0.00	0.00
6,200.0	16.46	59.94	6,021.7	637.4	1,101.3	1,140.8	0.00	0.00	0.00
6,300.0	16.46	59.94	6,117.6	651.6	1,125.8	1,166.2	0.00	0.00	0.00
6,400.0	16.46	59.94	6,213.5	665.8	1,150.3	1,191.6	0.00	0.00	0.00
6,500.0	16.46	59.94	6,309.4	680.0	1,174.8	1,217.0	0.00	0.00	0.00
6,600.0	16.46	59.94	6,405.3	694.1	1,199.4	1,242.4	0.00	0.00	0.00
6,700.0	16.46	59.94	6,501.2	708.3	1,223.9	1,267.8	0.00	0.00	0.00
6,800.0	16.46	59.94	6,597.1	722.5	1,248.4	1,293.2	0.00	0.00	0.00
6,855.6	16.46	59.94	6,650.4	730.4	1,262.0	1,307.3	0.00	0.00	0.00
6,900.0	15.57	59.94	6,693.1	736.5	1,272.6	1,318.3	2.00	-2.00	0.00
7,000.0	13.57	59.94	6,789.9	749.1	1,294.4	1,340.8	2.00	-2.00	0.00
7,100.0	11.57	59.94	6,887.5	760.0	1,313.2	1,360.3	2.00	-2.00	0.00
7,200.0	9.57	59.94	6,985.8	769.2	1,329.1	1,376.8	2.00	-2.00	0.00
7,300.0	7.57	59.94	7,084.7	776.7	1,342.0	1,390.1	2.00	-2.00	0.00
7,400.0	5.57	59.94	7,184.0	782.4	1,351.9	1,400.4	2.00	-2.00	0.00
7,500.0	3.57	59.94	7,283.7	786.4	1,358.8	1,407.5	2.00	-2.00	0.00
7,600.0	1.57	59.94	7,383.6	788.7	1,362.7	1,411.6	2.00	-2.00	0.00
7,678.4	0.00	0.00	7,462.0	789.2	1,363.6	1,412.5	2.00	-2.00	0.00
KOP: 1980' FSL & 483' FEL (Sec 8)									
7,700.0	2.16	89.89	7,483.6	789.2	1,364.0	1,412.9	10.00	10.00	0.00
7,750.0	7.15	89.89	7,533.4	789.2	1,368.1	1,417.0	10.00	10.00	0.00
7,800.0	12.15	89.89	7,582.7	789.2	1,376.4	1,425.3	10.00	10.00	0.00
7,850.0	17.15	89.89	7,631.0	789.2	1,389.1	1,438.0	10.00	10.00	0.00
7,900.0	22.15	89.89	7,678.1	789.3	1,405.9	1,454.7	10.00	10.00	0.00
7,950.0	27.15	89.89	7,723.5	789.3	1,426.7	1,475.5	10.00	10.00	0.00
8,000.0	32.15	89.89	7,767.0	789.4	1,451.5	1,500.2	10.00	10.00	0.00
8,050.0	37.15	89.89	7,808.1	789.4	1,479.9	1,528.6	10.00	10.00	0.00
8,100.0	42.14	89.89	7,846.6	789.5	1,511.8	1,560.4	10.00	10.00	0.00
8,150.0	47.14	89.89	7,882.1	789.6	1,546.9	1,595.4	10.00	10.00	0.00
8,200.0	52.14	89.89	7,914.5	789.6	1,585.0	1,633.5	10.00	10.00	0.00
8,250.0	57.14	89.89	7,943.4	789.7	1,625.8	1,674.1	10.00	10.00	0.00
8,300.0	62.14	89.89	7,968.7	789.8	1,668.9	1,717.2	10.00	10.00	0.00
8,350.0	67.14	89.89	7,990.1	789.9	1,714.0	1,762.3	10.00	10.00	0.00
8,400.0	72.13	89.89	8,007.5	790.0	1,760.9	1,809.0	10.00	10.00	0.00
8,450.0	77.13	89.89	8,020.7	790.1	1,809.1	1,857.1	10.00	10.00	0.00
8,500.0	82.13	89.89	8,029.7	790.2	1,858.3	1,906.2	10.00	10.00	0.00
8,550.0	87.13	89.89	8,034.4	790.3	1,908.0	1,955.8	10.00	10.00	0.00
8,566.2	88.75	89.89	8,035.0	790.3	1,924.3	1,972.0	10.00	10.00	0.00
8,588.6	88.75	89.89	8,035.5	790.3	1,946.6	1,994.3	0.00	0.00	0.00
FTP: 1980' FSL & 100' FWL (Sec 9) - LP: 1980' FSL & 100' FWL (Sec 9)									
8,600.0	88.75	89.89	8,035.7	790.4	1,958.0	2,005.7	0.00	0.00	0.00
8,700.0	88.75	89.89	8,037.9	790.6	2,058.0	2,105.5	0.00	0.00	0.00
8,800.0	88.75	89.89	8,040.1	790.7	2,158.0	2,205.3	0.00	0.00	0.00
8,900.0	88.75	89.89	8,042.3	790.9	2,257.9	2,305.0	0.00	0.00	0.00
9,000.0	88.75	89.89	8,044.4	791.1	2,357.9	2,404.8	0.00	0.00	0.00

Planning Report

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Project:	Eddy County, New Mexico NAD 83	**MD Reference:**	WELL @ 3538.0usft (Original Well Elev)
Site:	Milkshake 9/10 B2LI Fed Com #1H	**North Reference:**	Grid
Well:	Sec 08, T18S, R30E	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	BHL: 1980' FSL & 100' FEL (Sec 10)		
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)
9,100.0	88.75	89.89	8,046.6	791.3	2,457.9	2,504.6	0.00	0.00	0.00
9,200.0	88.75	89.89	8,048.8	791.5	2,557.9	2,604.4	0.00	0.00	0.00
9,300.0	88.75	89.89	8,051.0	791.7	2,657.9	2,704.1	0.00	0.00	0.00
9,400.0	88.75	89.89	8,053.1	791.9	2,757.8	2,803.9	0.00	0.00	0.00
9,500.0	88.75	89.89	8,055.3	792.1	2,857.8	2,903.7	0.00	0.00	0.00
9,600.0	88.75	89.89	8,057.5	792.3	2,957.8	3,003.5	0.00	0.00	0.00
9,700.0	88.75	89.89	8,059.7	792.5	3,057.8	3,103.2	0.00	0.00	0.00
9,800.0	88.75	89.89	8,061.9	792.7	3,157.7	3,203.0	0.00	0.00	0.00
9,900.0	88.75	89.89	8,064.0	792.9	3,257.7	3,302.8	0.00	0.00	0.00
10,000.0	88.75	89.89	8,066.2	793.1	3,357.7	3,402.5	0.00	0.00	0.00
10,100.0	88.75	89.89	8,068.4	793.3	3,457.7	3,502.3	0.00	0.00	0.00
10,200.0	88.75	89.89	8,070.6	793.5	3,557.6	3,602.1	0.00	0.00	0.00
10,300.0	88.75	89.89	8,072.7	793.7	3,657.6	3,701.9	0.00	0.00	0.00
10,400.0	88.75	89.89	8,074.9	793.9	3,757.6	3,801.6	0.00	0.00	0.00
10,500.0	88.75	89.89	8,077.1	794.1	3,857.6	3,901.4	0.00	0.00	0.00
10,600.0	88.75	89.89	8,079.3	794.2	3,957.5	4,001.2	0.00	0.00	0.00
10,700.0	88.75	89.89	8,081.4	794.4	4,057.5	4,101.0	0.00	0.00	0.00
10,800.0	88.75	89.89	8,083.6	794.6	4,157.5	4,200.7	0.00	0.00	0.00
10,900.0	88.75	89.89	8,085.8	794.8	4,257.5	4,300.5	0.00	0.00	0.00
11,000.0	88.75	89.89	8,088.0	795.0	4,357.4	4,400.3	0.00	0.00	0.00
11,100.0	88.75	89.89	8,090.1	795.2	4,457.4	4,500.0	0.00	0.00	0.00
11,200.0	88.75	89.89	8,092.3	795.4	4,557.4	4,599.8	0.00	0.00	0.00
11,300.0	88.75	89.89	8,094.5	795.6	4,657.4	4,699.6	0.00	0.00	0.00
11,400.0	88.75	89.89	8,096.7	795.8	4,757.3	4,799.4	0.00	0.00	0.00
11,500.0	88.75	89.89	8,098.9	796.0	4,857.3	4,899.1	0.00	0.00	0.00
11,600.0	88.75	89.89	8,101.0	796.2	4,957.3	4,998.9	0.00	0.00	0.00
11,700.0	88.75	89.89	8,103.2	796.4	5,057.3	5,098.7	0.00	0.00	0.00
11,800.0	88.75	89.89	8,105.4	796.6	5,157.3	5,198.5	0.00	0.00	0.00
11,900.0	88.75	89.89	8,107.6	796.8	5,257.2	5,298.2	0.00	0.00	0.00
12,000.0	88.75	89.89	8,109.7	797.0	5,357.2	5,398.0	0.00	0.00	0.00
12,100.0	88.75	89.89	8,111.9	797.2	5,457.2	5,497.8	0.00	0.00	0.00
12,200.0	88.75	89.89	8,114.1	797.4	5,557.2	5,597.5	0.00	0.00	0.00
12,300.0	88.75	89.89	8,116.3	797.6	5,657.1	5,697.3	0.00	0.00	0.00
12,400.0	88.75	89.89	8,118.4	797.8	5,757.1	5,797.1	0.00	0.00	0.00
12,500.0	88.75	89.89	8,120.6	797.9	5,857.1	5,896.9	0.00	0.00	0.00
12,600.0	88.75	89.89	8,122.8	798.1	5,957.1	5,996.6	0.00	0.00	0.00
12,700.0	88.75	89.89	8,125.0	798.3	6,057.0	6,096.4	0.00	0.00	0.00
12,800.0	88.75	89.89	8,127.1	798.5	6,157.0	6,196.2	0.00	0.00	0.00
12,900.0	88.75	89.89	8,129.3	798.7	6,257.0	6,296.0	0.00	0.00	0.00
13,000.0	88.75	89.89	8,131.5	798.9	6,357.0	6,395.7	0.00	0.00	0.00
13,100.0	88.75	89.89	8,133.7	799.1	6,456.9	6,495.5	0.00	0.00	0.00
13,200.0	88.75	89.89	8,135.9	799.3	6,556.9	6,595.3	0.00	0.00	0.00
13,300.0	88.75	89.89	8,138.0	799.5	6,656.9	6,695.0	0.00	0.00	0.00
13,400.0	88.75	89.89	8,140.2	799.7	6,756.9	6,794.8	0.00	0.00	0.00
13,500.0	88.75	89.89	8,142.4	799.9	6,856.8	6,894.6	0.00	0.00	0.00
13,600.0	88.75	89.89	8,144.6	800.1	6,956.8	6,994.4	0.00	0.00	0.00
13,700.0	88.75	89.89	8,146.7	800.3	7,056.8	7,094.1	0.00	0.00	0.00
13,800.0	88.75	89.89	8,148.9	800.5	7,156.8	7,193.9	0.00	0.00	0.00
13,900.0	88.75	89.89	8,151.1	800.7	7,256.8	7,293.7	0.00	0.00	0.00
14,000.0	88.75	89.89	8,153.3	800.9	7,356.7	7,393.5	0.00	0.00	0.00
14,100.0	88.75	89.89	8,155.4	801.1	7,456.7	7,493.2	0.00	0.00	0.00
14,200.0	88.75	89.89	8,157.6	801.3	7,556.7	7,593.0	0.00	0.00	0.00
14,300.0	88.75	89.89	8,159.8	801.5	7,656.7	7,692.8	0.00	0.00	0.00
14,400.0	88.75	89.89	8,162.0	801.6	7,756.6	7,792.5	0.00	0.00	0.00

Planning Report

Database:	Hobbs	**Local Co-ordinate Reference:**	Site Milkshake 9/10 B2LI Fed Com #1H
Company:	Mewbourne Oil Company	**TVD Reference:**	WELL @ 3538.0usft (Original Well Elev)
Project:	Eddy County, New Mexico NAD 83	**MD Reference:**	WELL @ 3538.0usft (Original Well Elev)
Site:	Milkshake 9/10 B2LI Fed Com #1H	**North Reference:**	Grid
Well:	Sec 08, T18S, R30E	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	BHL: 1980' FSL & 100' FEL (Sec 10)		
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)
14,500.0	88.75	89.89	8,164.1	801.8	7,856.6	7,892.3	0.00	0.00	0.00
14,600.0	88.75	89.89	8,166.3	802.0	7,956.6	7,992.1	0.00	0.00	0.00
14,700.0	88.75	89.89	8,168.5	802.2	8,056.6	8,091.9	0.00	0.00	0.00
14,800.0	88.75	89.89	8,170.7	802.4	8,156.5	8,191.6	0.00	0.00	0.00
14,900.0	88.75	89.89	8,172.9	802.6	8,256.5	8,291.4	0.00	0.00	0.00
15,000.0	88.75	89.89	8,175.0	802.8	8,356.5	8,391.2	0.00	0.00	0.00
15,090.0	88.75	89.89	8,177.0	803.0	8,446.4	8,481.0	0.00	0.00	0.00
PPP2: 1980' FSL & 1320' FWL (Sec 10)									
15,100.0	88.75	89.89	8,177.2	803.0	8,456.5	8,491.0	0.00	0.00	0.00
15,200.0	88.75	89.89	8,179.4	803.2	8,556.4	8,590.7	0.00	0.00	0.00
15,300.0	88.75	89.89	8,181.6	803.4	8,656.4	8,690.5	0.00	0.00	0.00
15,400.0	88.75	89.89	8,183.7	803.6	8,756.4	8,790.3	0.00	0.00	0.00
15,500.0	88.75	89.89	8,185.9	803.8	8,856.4	8,890.0	0.00	0.00	0.00
15,600.0	88.75	89.89	8,188.1	804.0	8,956.3	8,989.8	0.00	0.00	0.00
15,700.0	88.75	89.89	8,190.3	804.2	9,056.3	9,089.6	0.00	0.00	0.00
15,800.0	88.75	89.89	8,192.4	804.4	9,156.3	9,189.4	0.00	0.00	0.00
15,900.0	88.75	89.89	8,194.6	804.6	9,256.3	9,289.1	0.00	0.00	0.00
16,000.0	88.75	89.89	8,196.8	804.8	9,356.3	9,388.9	0.00	0.00	0.00
16,100.0	88.75	89.89	8,199.0	805.0	9,456.2	9,488.7	0.00	0.00	0.00
16,200.0	88.75	89.89	8,201.1	805.1	9,556.2	9,588.5	0.00	0.00	0.00
16,300.0	88.75	89.89	8,203.3	805.3	9,656.2	9,688.2	0.00	0.00	0.00
16,400.0	88.75	89.89	8,205.5	805.5	9,756.2	9,788.0	0.00	0.00	0.00
16,500.0	88.75	89.89	8,207.7	805.7	9,856.1	9,887.8	0.00	0.00	0.00
16,600.0	88.75	89.89	8,209.9	805.9	9,956.1	9,987.5	0.00	0.00	0.00
16,700.0	88.75	89.89	8,212.0	806.1	10,056.1	10,087.3	0.00	0.00	0.00
16,800.0	88.75	89.89	8,214.2	806.3	10,156.1	10,187.1	0.00	0.00	0.00
16,900.0	88.75	89.89	8,216.4	806.5	10,256.0	10,286.9	0.00	0.00	0.00
17,000.0	88.75	89.89	8,218.6	806.7	10,356.0	10,386.6	0.00	0.00	0.00
17,100.0	88.75	89.89	8,220.7	806.9	10,456.0	10,486.4	0.00	0.00	0.00
17,200.0	88.75	89.89	8,222.9	807.1	10,556.0	10,586.2	0.00	0.00	0.00
17,300.0	88.75	89.89	8,225.1	807.3	10,655.9	10,686.0	0.00	0.00	0.00
17,400.0	88.75	89.89	8,227.3	807.5	10,755.9	10,785.7	0.00	0.00	0.00
17,500.0	88.75	89.89	8,229.4	807.7	10,855.9	10,885.5	0.00	0.00	0.00
17,600.0	88.75	89.89	8,231.6	807.9	10,955.9	10,985.3	0.00	0.00	0.00
17,700.0	88.75	89.89	8,233.8	808.1	11,055.8	11,085.0	0.00	0.00	0.00
17,800.0	88.75	89.89	8,236.0	808.3	11,155.8	11,184.8	0.00	0.00	0.00
17,900.0	88.75	89.89	8,238.1	808.5	11,255.8	11,284.6	0.00	0.00	0.00
18,000.0	88.75	89.89	8,240.3	808.7	11,355.8	11,384.4	0.00	0.00	0.00
18,100.0	88.75	89.89	8,242.5	808.8	11,455.7	11,484.1	0.00	0.00	0.00
18,200.0	88.75	89.89	8,244.7	809.0	11,555.7	11,583.9	0.00	0.00	0.00
18,300.0	88.75	89.89	8,246.9	809.2	11,655.7	11,683.7	0.00	0.00	0.00
18,400.0	88.75	89.89	8,249.0	809.4	11,755.7	11,783.5	0.00	0.00	0.00
18,500.0	88.75	89.89	8,251.2	809.6	11,855.7	11,883.2	0.00	0.00	0.00
18,600.0	88.75	89.89	8,253.4	809.8	11,955.6	11,983.0	0.00	0.00	0.00
18,700.0	88.75	89.89	8,255.6	810.0	12,055.6	12,082.8	0.00	0.00	0.00
18,800.0	88.75	89.89	8,257.7	810.2	12,155.6	12,182.5	0.00	0.00	0.00
18,900.0	88.75	89.89	8,259.9	810.4	12,255.6	12,282.3	0.00	0.00	0.00
18,950.0	88.75	89.89	8,261.0	810.5	12,305.5	12,332.2	0.00	0.00	0.00
BHL: 1980' FSL & 100' FEL (Sec 10)									

Planning Report

Database:	Hobbs	**Local Co-ordinate Reference:**	Site Milkshake 9/10 B2LI Fed Com #1H
Company:	Mewbourne Oil Company	**TVD Reference:**	WELL @ 3538.0usft (Original Well Elev)
Project:	Eddy County, New Mexico NAD 83	**MD Reference:**	WELL @ 3538.0usft (Original Well Elev)
Site:	Milkshake 9/10 B2LI Fed Com #1H	**North Reference:**	Grid
Well:	Sec 08, T18S, R30E	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	BHL: 1980' FSL & 100' FEL (Sec 10)		
Design:	Design #1		

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: 1190' FSL & 1850' - plan hits target center - Point	0.00	0.00	0.0	0.0	0.0	639,664.70	646,399.60	32.7580079	-103.9915696
KOP: 1980' FSL & 483' I - plan hits target center - Point	0.00	0.00	7,462.0	789.2	1,363.6	640,453.90	647,763.20	32.7601649	-103.9871255
FTP: 1980' FSL & 100' F - plan hits target center - Point	0.00	0.00	8,035.5	790.3	1,946.6	640,455.04	648,346.18	32.7601628	-103.9852291
LP: 1980' FSL & 100' FV - plan hits target center - Point	0.00	0.00	8,035.5	790.3	1,946.6	640,455.04	648,346.18	32.7601628	-103.9852291
PPP2: 1980' FSL & 132(- plan hits target center - Point	0.00	0.00	8,177.0	803.0	8,446.4	640,467.69	654,846.04	32.7601370	-103.9640849
BHL: 1980' FSL & 100' F - plan hits target center - Point	0.00	0.00	8,261.0	810.5	12,305.5	640,475.20	658,705.10	32.7601201	-103.9515314

Intent [X] As Drilled [ ]

API #

Operator Name:	Property Name:	Well Number
Mewbourne Oil Co.	Milkshake 9/10 B2LI Fed Com	1H

Kick Off Point (KOP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
I	8	18S	30E		1980	S	483	E	Eddy

Latitude	Longitude	NAD
32.7601649	-103.9871256	83

First Take Point (FTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
L	9	18S	30E		1980	S	100	W	Eddy

Latitude	Longitude	NAD
32.7601628	-103.9852291	83

Last Take Point (LTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
I	10	18S	30E		1980	S	100	E	Eddy

Latitude	Longitude	NAD
32.7601201	-103.9515314	83

Is this well the defining well for the Horizontal Spacing Unit? [N]

Is this well an infill well? [Y]

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
Mewbourne Oil Co.	Milkshake 9/10 B2MP Fed Com	1H

KZ 06/29/2018

PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	MEWBOURNE OIL COMPANY
WELL NAME & NO.:	MILKSHAKE 9/10 B2LI FED COM 1H
APD ID:	10400087751
SURFACE HOLE FOOTAGE:	1190'/S & 1850'/E
BOTTOM HOLE FOOTAGE	1980'/S & 100'/E
SURFACE LOCATION:	Section 8, T.18 S., R.30 E. NMP.
COUNTY:	Eddy County, New Mexico

COA

H_2S	◉ Yes	○ No	
Potash	○ None	◉ Secretary	○ R-111-P
Cave/Karst Potential	◉ Low	○ Medium	○ High
Cave/Karst Potential	○ Critical		
Variance	○ None	◉ Flex Hose	○ Other
Wellhead	○ Conventional	◉ Multibowl	○ Both
Other	☐ 4 String	☐ Capitan Reef	☐ WIPP
Other	☐ Fluid Filled	☐ Pilot Hole	☐ Open Annulus
Other Variances	☑ Offline Cementing	☑ Primary squeeze	☑ BOPE break test
Special Requirements	☐ Water Disposal	☑ COM	☐ Unit

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.

B. CASING DESIGN

Primary Casing Design

1. The **13-3/8** inch surface casing shall be set at approximately **375 ft.** (a minimum of 70 feet (Eddy 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 **24 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** inch intermediate casing shall be set in a competent bed at approximately **1,700 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 for the 1st stage 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.

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

3. Operator has proposed to set **7 inch 26# N-80** production casing at approximately **7,678 ft.** (7,462 ft. TVD). The minimum required fill of cement behind the **7-inch** production casing is:

Option 1 (Single Stage or Two stage with a DV tool): Cement shall be tie-back **at least 500 ft.** into intermediate casing. If cement does not circulate, contact the appropriate BLM office. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst, and potash.

Option 2 (Two Stage): 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. 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.

Note: Operator has proposed to pump down 9-5/8" X 7" annulus within 180 days after well completion in accordance with R-111-Q guidelines. Operator must run a cement evaluation tool (Temperature log or CBL, etc.) to verify TOC after the second stage bradenhead. Submit the results to the BLM.

Casing test must be conducted in accordance with title 43 CFR 3172. Surface pressure applied will vary based on fluid in the casing and burst conditions.

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.

Alternate Casing Design

1. The **13-3/8** inch surface casing shall be set at approximately **375 ft.** (a minimum of 70 feet (Eddy 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.**
    e. 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.
    f. Wait on cement (WOC) time for a primary cement job will be a minimum of **24 hours** or **500 psi compressive strength**, whichever is greater. (This is to include the lead cement)
    g. 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.
    h. If cement falls back, remedial cementing will be done prior to drilling out that string.

2. The **9-5/8** inch intermediate casing shall be set in a competent bed at approximately **1,700 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 for the 1st stage 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.

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

3. Operator has proposed to set **7 inch 26# HCP-110** production casing at approximately **9,589 ft.** (8,035 ft. TVD). The minimum required fill of cement behind the **7-inch** production casing is:

   Option 1 (Single Stage or Two stage with a DV tool): Cement shall be tie-back **at least 500 ft.** into intermediate casing. If cement does not circulate, contact the appropriate BLM office. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst, and potash.

   Option 2 (Two Stage): 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.

   c. 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.

   d. Second stage: Operator will perform bradenhead squeeze **within 180 days** after completion. 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.

   Note: Operator has proposed to pump down 9-5/8" X 7" annulus within 180 days after well completion in accordance with R-111-Q guidelines. Operator must run a cement evaluation tool (Temperature log or CBL, etc.) to verify TOC after the second stage bradenhead. Submit the results to the BLM.

   Casing test must be conducted in accordance with title 43 CFR 3172. Surface pressure applied will vary based on fluid in the casing and burst conditions.

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.

C. PRESSURE CONTROL

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

2. Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **5000 (5M)** psi. Before drilling the surface casing shoe out, the BOP/BOPE and annular preventer shall 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 the **title 43 CFR 3172.6(b)(9)** must be followed.

BOPE Break Testing Variance (Note: For a minimum 5M BOPE or less (Utilizing a 10M BOPE system)

- BOPE Break Testing is ONLY permitted for 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 **(575-361-2822 Eddy 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 **title 43 CFR 3172**.

- If in the event break testing is not utilized, then a full BOPE test would be conducted.

Offline Cementing

Offline cementing variance is approved for surface and intermediate casings only. Contact the BLM prior to the commencement of any offline cementing procedure.

D. SPECIAL REQUIREMENT (S)

Communitization Agreement

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

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

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

GENERAL REQUIREMENTS

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

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

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

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

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

   a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).

   b. When the operator proposes to set surface casing with Spudder Rig
      - Notify the BLM when moving in and removing the Spudder Rig.
      - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
      - BOP/BOPE test to be conducted per **title 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 dog house or stairway area.

3. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

A. CASING

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

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

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

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

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

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

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

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

B. PRESSURE CONTROL

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

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

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

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

    a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
    b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
    c. Manufacturer representative shall install the test plug for the initial BOP test.
    d. Whenever any seal subject to test pressure is broken, all the tests in the **title 43 CFR 3172.6(b)(9)** must be followed.
    e. If the cement does not circulate and one-inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.

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

    a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including

lead cement), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

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

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

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

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

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

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

h. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per **43 CFR 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 05/10/2024

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: MILKSHAKE 9/10 B2LI FED COM **Well Number:** 1H

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.

Reserve Pit

Reserve Pit being used? NO

Temporary disposal of produced water into reserve pit? NO

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

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

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

Reserve pit liner

Reserve pit liner specifications and installation description

Cuttings Area

Cuttings Area being used? NO

Are you storing cuttings on location? N

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

Operator Name: MEWBOURNE OIL COMPANY

Well Name: MILKSHAKE 9/10 B2LI FED COM **Well Number:** 1H

Section 8 - Ancillary

Are you requesting any Ancillary Facilities?: N

Ancillary Facilities

Comments:

Section 9 - Well Site

Well Site Layout Diagram:

Milkshake_9_10_B2LI_Fed_Com_1H_WellSiteLayout_20220829140423.pdf

Comments:

Section 10 - Plans for Surface Reclamation

Type of disturbance: New Surface Disturbance

Multiple Well Pad Name: Milkshake 9/10 LI and MP

Multiple Well Pad Number: 2

Recontouring

Drainage/Erosion control construction: NONE

Drainage/Erosion control reclamation: NONE

Well pad proposed disturbance (acres): 5.92	**Well pad interim reclamation (acres):** 0.578	**Well pad long term disturbance (acres):** 5.34
Road proposed disturbance (acres): 0.07	**Road interim reclamation (acres):** 0	**Road long term disturbance (acres):** 0
Powerline proposed disturbance (acres): 0	**Powerline interim reclamation (acres):** 0	**Powerline long term disturbance (acres):** 0
Pipeline proposed disturbance (acres):	**Pipeline interim reclamation (acres):** 0	**Pipeline long term disturbance (acres):** 0
Other proposed disturbance (acres): 0	**Other interim reclamation (acres):** 0	**Other long term disturbance (acres):** 0
Total proposed disturbance: 5.99	**Total interim reclamation:** 0.578	**Total long term disturbance:** 5.34

Disturbance Comments: In areas to be heavily disturbed, the top 6 inches of soil material, will be stripped and stockpiled on the perimeter of the well location to keep topsoil viable, and to make redistribution of topsoil more efficient during interim reclamation. Stockpiled topsoil should include vegetative material. Topsoil will be clearly segregated and stored separately from subsoils. Contaminated soil will not be stockpiled, but properly treated and handled prior to topsoil salvaging.

Reconstruction method: The areas planned for interim reclamation will then be recontoured to the original contour if feasible, or if not feasible, to an interim contour that blends with the surrounding topography as much as possible. Where applicable, the fill material of the well pad will be backfilled into the cut to bring the area back to the original contour. The interim cut and fill slopes prior to re-seeding will not be steeper than a 3:1 ration, unless the adjacent native topography is steeper. Note: Constructed slopes may be much steeper during drilling, but will be recontoured to the above ratios during interim reclamation.
Topsoil redistribution: Topsoil will be evenly respread and aggressively revegetated over the entire disturbed area not needed for all-weather operations including cuts & fills. To see the area, the proper BLM seed mixture, free of noxious weeks, will be used.

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

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

CONDITIONS

Action 352172

CONDITIONS

Operator: MEWBOURNE OIL CO P.O. Box 5270 Hobbs, NM 88241	OGRID: 14744
	Action Number: 352172
	Action Type: [C-101] BLM - Federal/Indian Land Lease (Form 3160-3)

CONDITIONS

Created By	Condition	Condition Date
ward.rikala	Notify OCD 24 hours prior to casing & cement	7/8/2024
ward.rikala	Will require a File As Drilled C-102 and a Directional Survey with the C-104	7/8/2024
ward.rikala	Cement is required to circulate on both surface and intermediate1 strings of casing	7/8/2024
ward.rikala	If cement does not circulate on any string, a CBL is required for that string of casing	7/8/2024
ward.rikala	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	7/8/2024
ward.rikala	Before this well can produce, the well name needs to be changed per conventional naming.	7/8/2024