Form 3160-3 FORM APPROVED OMB No. 1004-0137 (June 2015) Expires: January 31, 2018 **UNITED STATES** DEPARTMENT OF THE INTERIOR 5. Lease Serial No. NMNM013413A **BUREAU OF LAND MANAGEMENT** APPLICATION FOR PERMIT TO DRILL OR REENTER 6. If Indian, Allotee or Tribe Name 7. If Unit or CA Agreement, Name and No. **✓** DRILL REENTER 1a. Type of work: 1b. Type of Well: Oil Well ✓ Gas Well Other 8. Lease Name and Well No. 1c. Type of Completion: Hydraulic Fracturing ✓ Single Zone Multiple Zone OXBOW 23/24 W0LI FED COM **1**H 2. Name of Operator 9. API Well No. 30-015-54304 MEWBOURNE OIL COMPANY 3a. Address 3b. Phone No. (include area code) 10. Field and Pool, or Exploratory P O BOX 5270, HOBBS, NM 88241 (575) 393-5905 Purple Sage/Wolfcamp 4. Location of Well (Report location clearly and in accordance with any State requirements.*) 11. Sec., T. R. M. or Blk. and Survey or Area SEC 23/T25S/R28E/NMP At surface SESW / 867 FSL / 233 FWL / LAT 32.1105163 / LONG -104.0657488 At proposed prod. zone NESE / 1625 FSL / 330 FEL / LAT 32.1126674 / LONG -104.0332694 14. Distance in miles and direction from nearest town or post office* 12. County or Parish 13. State **EDDY** NM 30 miles 15. Distance from proposed* 16. No of acres in lease 17. Spacing Unit dedicated to this well 320 feet location to nearest property or lease line, ft. 320.0 (Also to nearest drig. unit line, if any) 18. Distance from proposed location* 19. Proposed Depth 20. BLM/BIA Bond No. in file to nearest well, drilling, completed, 50 feet 9749 feet / 19686 feet FED: applied for, on this lease, ft. 21. Elevations (Show whether DF, KDB, RT, GL, etc.) 22. Approximate date work will start* 23. Estimated duration 2959 feet 01/17/2022 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. 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above). 2. A Drilling Plan. 3. A Surface Use Plan (if the location is on National Forest System Lands, the 5. Operator certification. SUPO must be filed with the appropriate Forest Service Office). 6. Such other site specific information and/or plans as may be requested by the Name (Printed/Typed) Date 25. Signature BRADLEY BISHOP / Ph: (575) 393-5905 01/28/2022 (Electronic Submission) Title Regulatory Approved by (Signature) Date Name (Printed/Typed) (Electronic Submission) CODY LAYTON / Ph: (575) 234-5959 05/26/2023 Title Office Assistant Field Manager Lands & Minerals Carlsbad Field Office Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon. Conditions of approval, if any, are attached. Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.



(Continued on page 2)

*(Instructions on page 2)

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

UL or lot no.

M

Section

23

Township

25S

Range

28E

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

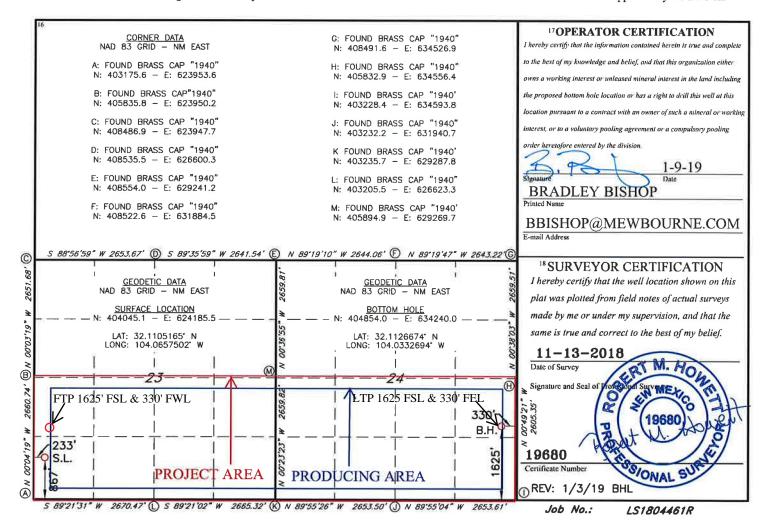
WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number		² Pool Code	³ Pool Name			
30-015-54304		98220 PURPLE SAGE; WOLFCAM				
⁴ Property Code			perty Name	6 Well Number		
326143		OXBOW 23/24 WOLI FED COM				
⁷ OGRID NO.		8 Op	erator Name	9 Elevation		
14744		MEWBOURNE	OIL COMPANY	2932'		
		¹⁰ Sur	face Location			

Lot Idn Feet from the North/South line Feet From the East/West line County 867 SOUTH 233 WEST **EDDY**

	Bottom Hole Location If Different From Surface									
UL or lot no.	Section	Townsh	ip Range	Lot Ide	n Feet from the	North/South line	Feet from the	East/West line	County	
I	24	25S	28E	,	1625	SOUTH	330	EAST	EDDY	
12 Dedicated Acres	13 Joint	or Infill	14 Consolidation	Code	15 Order No.					
640										

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.



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

Section 1 — Plan Description Effective May 25, 2021										
I. Operator: Mew	bourne C	Oil Co.	_OGRID:	14744	Date:	1/5/22				
II. Type: X Original	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 be recompleted from a sin	following inf ngle well pad	formation for each n or connected to a co	ew or recompletentral delivery pe	oint.						
			Anticipated Gas MCF/D	Anticipated Produced Water BBL/D						
Oxbow 23/24 W0LI Fed Com #1H		M 23 25S 28E	867' FSL x 233' FW	1500	5000	1000				
IV. Central Delivery Po V. Anticipated Schedule proposed to be recomplet	e: Provide the	gle well pad or com	ion for each new	al delivery point.	vell or set of wells					
Well Name	API	Spud Date	TD Reached Date	Completion Commencement						
Oxbow 23/24 W0Ll Fed Com #1H		3/5/22	4/5/22	5/5/22	5/20/2	2 5/20/22				
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 <u>EFFECTIVE APRIL 1, 2022</u>
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

IX. Anticipated Natural Gas Production:

capture requirement for the applicable reporting area.

Well	API	Anticipated Average Natural Gas Rate MCF/D	Anticipated Volume of Natural Gas for the First Year MCF
			e: 81

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 \square will \square 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	f the
natural gas gathering system(s) described above will continue to meet anticipated increases in line pressure caused by the new well	(s).

\Box	Attach Operat	or's plan to	manage p	roduction	in res	sponse to	the	increased	line	pressure.
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XIV. Confidentiality: Operator asserts confidentiality pursuant to Section 71-2-8 NMSA 1978 for the information provide	ed 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 of the	atior
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:

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

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

If Operator checks this box, Operator will select one of the following:

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

Venting and Flaring Plan.

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

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

Section 4 - Notices

- 1. If, at any time after Operator submits this Natural Gas Management Plan and before the well is spud:
- (a) Operator becomes aware that the natural gas gathering system it planned to connect the well(s) to has become unavailable or will not have capacity to transport one hundred percent of the production from the well(s), no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised venting and flaring plan containing the information specified in Paragraph (5) of Subsection D of 19.15.27.9 NMAC; or
- (b) Operator becomes aware that it has, cumulatively for the year, become out of compliance with its baseline natural gas capture rate or natural gas capture requirement, no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised Natural Gas Management Plan for each well it plans to spud during the next 90 days containing the information specified in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and shall file an update for each Natural Gas Management Plan until Operator is back in compliance with its baseline natural gas capture rate or natural gas capture requirement.
- 2. OCD may deny or conditionally approve an APD if Operator does not make a certification, fails to submit an adequate venting and flaring plan which includes alternative beneficial uses for the anticipated volume of natural gas produced, or if OCD determines that Operator will not have adequate natural gas takeaway capacity at the time a well will be spud.

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

Signature:	Bradley Bishop
Printed Name:	BRADLEY BISHOP
Title:	REGULATORY MANAGER
E-mail Address:	BBISHOP@MEWBOURNE.COM
Date:	1/5/22
Phone:	575-393-5905
	OIL CONSERVATION DIVISION (Only applicable when submitted as a standalone form)
Approved By:	
Title:	
Approval Date:	
Conditions of Ap	proval:
I	

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 pressure venting 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 the diversion 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.



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

Drilling Plan Data Report

05/30/2023

APD ID: 10400082750

Submission Date: 01/28/2022

Highlighted data reflects the most recent changes

Operator Name: MEWBOURNE OIL COMPANY

Well Number: 1H

Well Name: OXBOW 23/24 W0LI FED COM

Well Type: CONVENTIONAL GAS WELL

Well Work Type: Drill

Show Final Text

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical	Measured Depth	Lithologies	Mineral Resources	Producing Formatio
8032581	UNKNOWN	2960	28	28	OTHER : Top Soil	NONE	N
8032593	TOP SALT	1890	1070	1070	SALT	NONE	N
8032582	BOTTOM SALT	580	2380	2380	SALT	NONE	N
8032589	LAMAR	380	2580	2580	LIMESTONE	NATURAL GAS, OIL	N
8032585	BELL CANYON	345	2615	2615	SANDSTONE	NATURAL GAS, OIL	N
8032586	CHERRY CANYON	-500	3460	3460	SANDSTONE	NATURAL GAS, OIL	N
8032587	MANZANITA	-640	3600	3600	LIMESTONE	NATURAL GAS, OIL	N
8032580	BONE SPRING	-3340	6300	6300	LIMESTONE, SANDSTONE, SHALE	NATURAL GAS, OIL	N
8032583	BONE SPRING 1ST	-4240	7200	7200	SANDSTONE	NATURAL GAS, OIL	N
8032584	BONE SPRING 2ND	-5050	8010	8010	SANDSTONE	NATURAL GAS, OIL	N
8032588	WOLFCAMP	-6525	9485	9485	LIMESTONE, SANDSTONE, SHALE	NATURAL GAS, OIL	Y

Section 2 - Blowout Prevention

Pressure Rating (PSI): 5M Rating Depth: 19687

Equipment: Annular, Pipe Rams, Blind Rams

Requesting Variance? YES

Variance request: Request variance for the use of a flexible choke line from the BOP to Choke Manifold. Anchors not required by manufacturer. A multi-bowl wellhead will be used. See attached schematic.

Testing Procedure: BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working line of order to the order to the order of the orde

Well Name: OXBOW 23/24 W0LI FED COM Well Number: 1H

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

Choke Diagram Attachment:

Oxbow_23_24_W0LI_Fed_Com_1H_Flex_Line_Specs_20220120132148.pdf

Oxbow_23_24_W0LI_Fed_Com_1H_5M_BOPE_Choke_Diagram_20220120132148.pdf

Oxbow_23_24_W0LI_Fed_Com_1H_Flex_Line_Specs_API_16C_20220120132148.pdf

BOP Diagram Attachment:

Oxbow_23_24_W0LI_Fed_Com_1H_5M_Mutli_Bowl_WH_20220120132207.pdf
Oxbow_23_24_W0LI_Fed_Com_1H_5M_BOPE_Schematic_20220120132207.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	500	0	500	2959	2459	500	H-40	48	ST&C	3.53	7.29	DRY	6.28	DRY	10.5 6
2	INTERMED IATE	12.2 5	9.625	NEW	API	N	0	2450	0	2450	3326	509	2450	J-55	36	LT&C	1.59	2.76	DRY	5.14	DRY	6.39
_	PRODUCTI ON	8.75	7.0	NEW	API	N	0	9134	0	9097	3326	-6138	9134	P- 110	26	LT&C	1.39	2.21	DRY	2.92	DRY	3.49
4	LINER	6.12 5	4.5	NEW	API	N	9134	19687	9097	9749	-6138	-6790	10553	P- 110	13.5	LT&C	1.76	2.04	DRY	2.37	DRY	2.96

Casing Attachments

Well Name: OXBOW 23/24 W0LI FED COM Well Number: 1H

Casing ID: 1

String

SURFACE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Oxbow_23_24_W0LI_Fed_Com_1H_Csg_Assumptions_20220120132319.pdf

Casing ID: 2

String

INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Oxbow_23_24_W0LI_Fed_Com_1H_Csg_Assumptions_20220120132352.pdf

Casing ID: 3

String

PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Oxbow_23_24_W0LI_Fed_Com_1H_Csg_Assumptions_20220120132502.pdf

Well Name: OXBOW 23/24 W0LI 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):

Oxbow_23_24_W0LI_Fed_Com_1H_Csg_Assumptions_20220120132602.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	163	210	2.12	12.5	445	100	Class C	Salt, Gel, Extender, LCM
SURFACE	Tail	9	163	500	200	1.34	14.8	268	100	Class C	Retarder
INTERMEDIATE	Lead	7	0	1642	270	2.12	12.5	572	25	Class C	Salt, Gel, Extender, LCM
INTERMEDIATE	Tail		1642	2450	200	1.34	14.8	268	25	Class C	Retarder
PRODUCTION	Lead	1	2250	6047	390	2.12	12.5	827	25	Class C	Gel, Retarder, Defoamer, Extender
PRODUCTION	Tail		6047	9134	400	1.18	15.6	472	25	Class H	Retarder, Fluid loss, Defoamer
LINER	Lead		9134	1968 7	420	2.97	11.2	1247	25	Class C	Salt, Gel, Fluid Loss, Retarder, Dispersant, Defoamer, Anti-Settling Agent

Well Name: OXBOW 23/24 W0LI 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 in surface hole

Describe the mud monitoring system utilized: Pason/PVT/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)	Н	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
0	500	SPUD MUD	8.6	8.8		J					
500	2450	SALT SATURATED	10	10	1						
2450	9134	WATER-BASED MUD	8.6	9.5							
9134	1968 7	OIL-BASED MUD	10	12							

Section 6 - Test, Logging, Coring

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

Will use GR/CNL from offset Oxbow 26/25 W1LI Fed Com #1H.

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

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

Coring operation description for the well:

None

Well Name: OXBOW 23/24 W0LI FED COM Well Number: 1H

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 6367 Anticipated Surface Pressure: 4222

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

Oxbow_23_24_W0LI_Fed_Com_1H_H2S_Plan_20220120133036.pdf

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

 ${\sf Oxbow_23_24_W0Ll_Fed_Com_1H_Dir_Plan_20220120133057.pdf}$

Oxbow_23_24_W0LI_Fed_Com_1H_Dir_Plot_20220120133057.pdf

Other proposed operations facets description:

Other proposed operations facets attachment:

Oxbow_23_24_W0LI_Fed_Com_1H_Add_Info_20220120133102.pdf

Other Variance attachment:



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 Ref. :

Invoice No.:

AUSTIN DISTRIBUTING 4060578 500506

Test Date: Hose Serial No.: Created By: 4/30/2015 D-043015-7 JUSTIN CROPPER

Product Description:

10K3.548.0CK4.1/1610KFLGE/E LE

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

Test Pressure :

4 1/16 10K FLG

L36554102914D-043015-7 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:

Date:

Signature :

QUALITY

4/30/2015

Produciton:

Date :

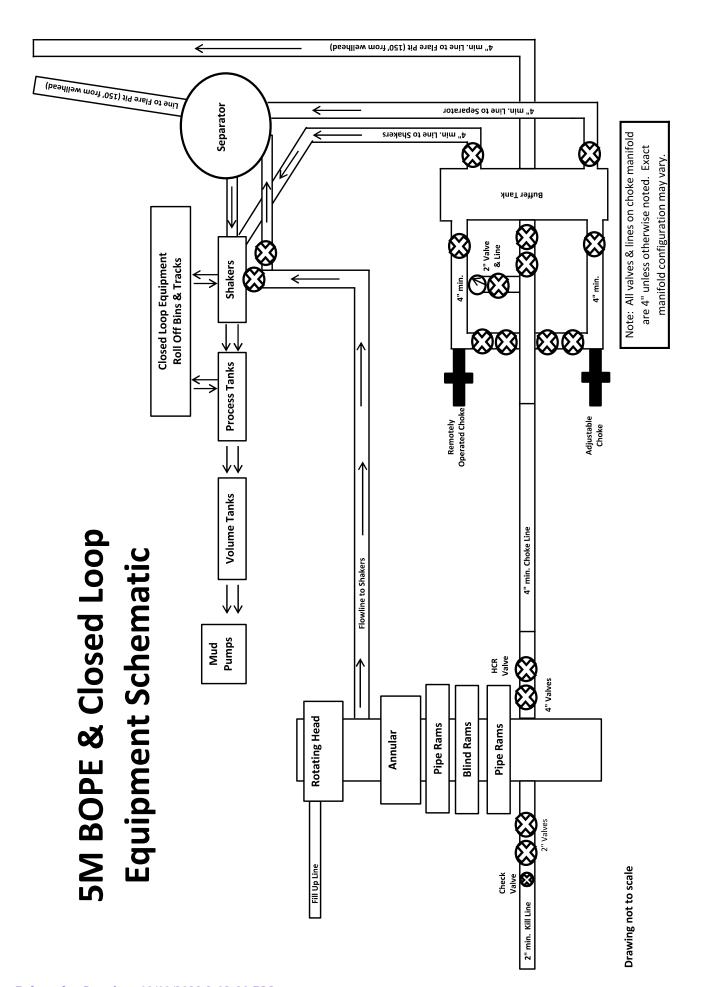
Signature :

PRODUCTION

, 4/30/2014

Forn PTC - 01 Rev.0 2







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

Test Date: 8/20/2018 A-7 AUSTIN INC DBA AUSTIN HOSE Customer: Hose Serial No.: H-082018-10 Customer Ref .: 4101901 Created By: Moosa Nagvi Invoice No.: 511956 10KF3.035.0CK41/1610KFLGFXDxFLT_L/E Product Description: End Fitting 2: 4 1/16 in. Float Flange End Fitting 1: 4 1/16 in. Fixed Flange Assembly Code: L40695052218H-082018-10 Gates Part No.: 68503010-9721632 Test Pressure: 15,000 psi. Working Pressure: 10,000 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:

Date : Signature : QUALITY

8/20/2018

Production: Date :

Signature:

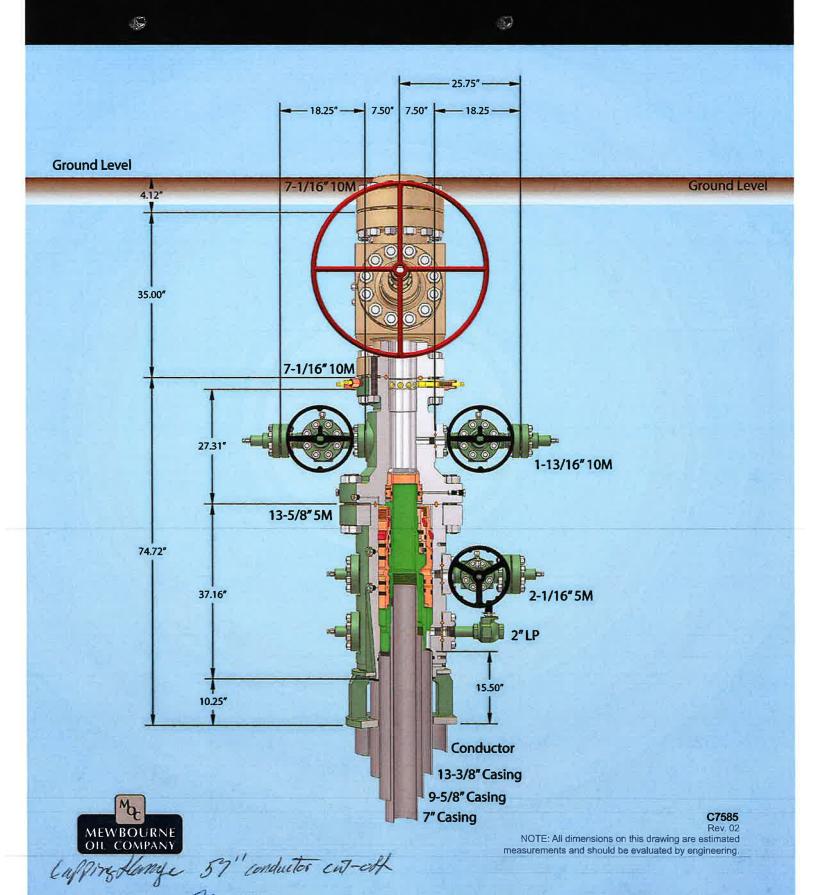
Form PTC - 01 Rev.0 2

PRODUCTION

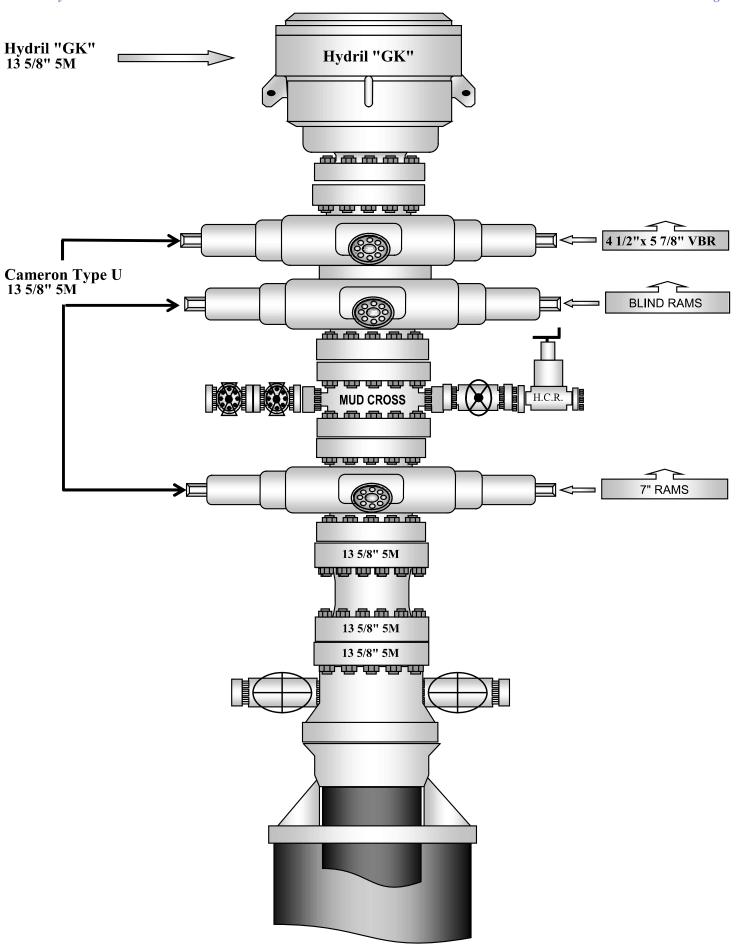
8/20/2018

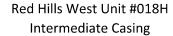


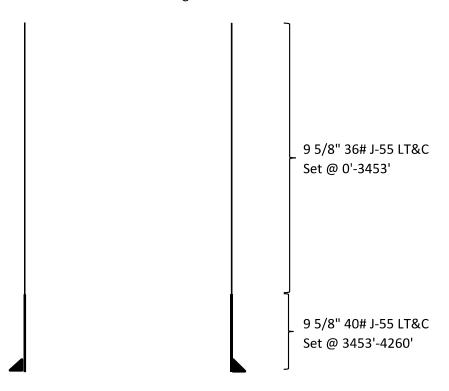
13-5/8" MN-DS Wellhead System



Released to Imaging: 10/10/2023 2:08:30 PM







	SF	SF	SF Jt	SF Body
Casing	Collapse	Burst	Tension	Tension
36# J-55	1.13	1.96	2.89	4.54
40# J-55	1.16	1.78	16.11	19.52

Mewbourne Oil Company, Oxbow 23/24 W0LI Fed Com #1H Sec 23, T25S, R28E

SHL: 867' FSL & 233' FWL, Sec 23

BHL: 1625' FSL & 330' FEL, Sec 24

Casing Program

Hole	Casing	Interval	Csg.	Weight	Grade	Conn.	SF	SF	SF Jt	SF Body
Size	From	To	Size	(lbs)			Collapse	Burst	Tension	Tension
17.5"	0'	500'	13.375"	48	H40	STC	3.53	7.29	6.28	10.56
12.25"	0'	2450'	9.625"	36	J55	LTC	1.59	2.76	5.14	6.39
8.75"	0'	9134'	7"	26	P110	LTC	1.39	2.21	2.92	3.49
6.125"	9134'	19687'	4.5"	13.5	P110	LTC	1.76	2.04	2.37	2.96
			BL	M Minimu	m Safety	1.125	1	1.6 Dry	1.6 Dry	
						Factor			1.8 Wet	1.8 Wet

	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	Y
justification (loading assumptions, casing design criteria).	
Will the pipe be kept at a minimum 1/3 fluid filled to avoid approaching the	Y
collapse pressure rating of the casing?	
Is well located within Capitan Reef?	N
If yes, does production casing cement tie back a minimum of 50' above the Reef?	11
Is well within the designated 4 string boundary.	
Is well located in SOPA but not in R-111-P?	N
If yes, are the first 2 strings cemented to surface and 3 rd string cement tied back	
500' into previous casing?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2 nd string set 100' to 600' below the base of salt?	
Is well located in high Cave/Karst?	N
If yes, are there two strings cemented to surface?	11
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
(For 2 string wens) if yes, is there a contingency casing it lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

Mewbourne Oil Company, Oxbow 23/24 W0LI Fed Com #1H Sec 23, T25S, R28E

SHL: 867' FSL & 233' FWL, Sec 23 BHL: 1625' FSL & 330' FEL, Sec 24

Casing Program

Hole	Casing	Interval	Csg.	Weight	Grade	Conn.	SF	SF	SF Jt	SF Body
Size	From	To	Size	(lbs)			Collapse	Burst	Tension	Tension
17.5"	0'	500'	13.375"	48	H40	STC	3.53	7.29	6.28	10.56
12.25"	0'	2450'	9.625"	36	J55	LTC	1.59	2.76	5.14	6.39
8.75"	0'	9134'	7"	26	P110	LTC	1.39	2.21	2.92	3.49
6.125"	9134'	19687'	4.5"	13.5	P110	LTC	1.76	2.04	2.37	2.96
				BL	M Minimu	m Safety	1.125	1	1.6 Dry	1.6 Dry
						Factor			1.8 Wet	1.8 Wet

	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	Y
justification (loading assumptions, casing design criteria).	
Will the pipe be kept at a minimum 1/3 fluid filled to avoid approaching the	Y
collapse pressure rating of the casing?	
Is well located within Capitan Reef?	N
If yes, does production casing cement tie back a minimum of 50' above the Reef?	IN
Is well within the designated 4 string boundary.	
is well within the designated 4 string boundary.	
Is well located in SOPA but not in R-111-P?	N
If yes, are the first 2 strings cemented to surface and 3 rd string cement tied back	
500' into previous casing?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2 nd string set 100' to 600' below the base of salt?	
T .111 4.1' 1' 1 C ./V .49	NI
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, Oxbow 23/24 W0LI Fed Com #1H

Sec 23, T25S, R28E SHL: 867' FSL & 233' FWL, Sec 23

BHL: 1625' FSL & 330' FEL, Sec 24

Casing Program

Hole	Casing	Interval	Csg.	Weight	Grade	Conn.	SF	SF	SF Jt	SF Body
Size	From	To	Size	(lbs)			Collapse	Burst	Tension	Tension
17.5"	0'	500'	13.375"	48	H40	STC	3.53	7.29	6.28	10.56
12.25"	0'	2450'	9.625"	36	J55	LTC	1.59	2.76	5.14	6.39
8.75"	0'	9134'	7"	26	P110	LTC	1.39	2.21	2.92	3.49
6.125"	9134'	19687'	4.5"	13.5	P110	LTC	1.76	2.04	2.37	2.96
			BLM Minimum Safety			1.125	1	1.6 Dry	1.6 Dry	
						Factor			1.8 Wet	1.8 Wet

	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.	
Is well located in SOPA but not in R-111-P?	N
If yes, are the first 2 strings cemented to surface and 3 rd string cement tied back 500' into previous casing?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2 nd string set 100' to 600' below the base of salt?	
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, Oxbow 23/24 W0LI Fed Com #1H Sec 23, T25S, R28E

SHL: 867' FSL & 233' FWL, Sec 23 BHL: 1625' FSL & 330' FEL, Sec 24

Casing Program

Hole	Casing	Interval	Csg.	Weight	Grade	Conn.	SF	SF	SF Jt	SF Body
Size	From	To	Size	(lbs)			Collapse	Burst	Tension	Tension
17.5"	0'	500'	13.375"	48	H40	STC	3.53	7.29	6.28	10.56
12.25"	0'	2450'	9.625"	36	J55	LTC	1.59	2.76	5.14	6.39
8.75"	0'	9134'	7"	26	P110	LTC	1.39	2.21	2.92	3.49
6.125"	9134'	19687'	4.5"	13.5	P110	LTC	1.76	2.04	2.37	2.96
			BL	M Minimu	m Safety	1.125	1	1.6 Dry	1.6 Dry	
						Factor			1.8 Wet	1.8 Wet

	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	Y
justification (loading assumptions, casing design criteria).	
Will the pipe be kept at a minimum 1/3 fluid filled to avoid approaching the	Y
collapse pressure rating of the casing?	
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.	
	.
Is well located in SOPA but not in R-111-P?	N
If yes, are the first 2 strings cemented to surface and 3 rd string cement tied back	
500' into previous casing?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2 nd string set 100' to 600' below the base of salt?	
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

Eddy County, New Mexico NAD 83 Oxbow 23/24 W0LI Fed Com #1H SL: 867 FSL & 233 FWL (Sec 23)

Sec 23, T25S, R28E

BHL: 1625 FSL & 330 FEL (Sec 24)

Plan: Design #1

Standard Planning Report

20 January, 2022

Hobbs Database: Company: Mewbourne Oil Company Project: Eddy County, New Mexico NAD 83

Oxbow 23/24 W0LI Fed Com #1H Site: Well: SL: 867 FSL & 233 FWL (Sec 23) Wellbore: BHL: 1625 FSL & 330 FEL (Sec 24)

Design #1

Local Co-ordinate Reference:

TVD Reference: MD Reference: North Reference:

Survey Calculation Method:

Site Oxbow 23/24 W0LI Fed Com #1H

WELL @ 2959.0usft (Original Well Elev) WELL @ 2959.0usft (Original Well Elev)

85.40

Minimum Curvature

Project Eddy County, New Mexico NAD 83

Map System: US State Plane 1983 North American Datum 1983 Geo Datum: New Mexico Eastern Zone Map Zone:

Design:

System Datum:

Ground Level

Oxbow 23/24 W0LI Fed Com #1H Site

Site Position: Northing: 404,045.00 usft 32.1105163 Latitude: From: Мар Easting: 624,186.00 usft Longitude: -104.0657488

0.0 usft Slot Radius: 13-3/16 " **Position Uncertainty:**

Well SL: 867 FSL & 233 FWL (Sec 23)

Well Position +N/-S 0.0 usft 404,045.00 usft Latitude: 32.1105163 Northing: +E/-W 0.0 usft Easting: 624,186.00 usft Longitude: -104.0657488 0.0 usft Wellhead Elevation: 2,959.0 usft Ground Level: 2,932.0 usft **Position Uncertainty**

Grid Convergence: 0.14°

Wellbore BHL: 1625 FSL & 330 FEL (Sec 24)

Magnetics **Model Name** Sample Date Declination Dip Angle Field Strength (°) (°) (nT) IGRF2010 12/27/2018 6.88 59.81 47,748.89238408

Design Design #1 **Audit Notes:** PROTOTYPE Version: Phase: Tie On Depth: 0.0 Depth From (TVD) +N/-S +E/-W Direction Vertical Section: (usft) (usft) (usft) (°)

0.0

0.0

1/20/2022 **Plan Survey Tool Program** Date

Depth From Depth To (usft) (usft) Survey (Wellbore)

Tool Name Remarks

0.0

Design #1 (BHL: 1625 FSL & 330 0.0 19,686.3

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	
500.0	0.00	0.00	500.0	0.0	0.0	0.00	0.00	0.00	0.00	
770.6	5.41	343.47	770.2	12.2	-3.6	2.00	2.00	0.00	343.47	
8,863.3	5.41	343.47	8,826.8	743.9	-220.8	0.00	0.00	0.00	0.00	
9,133.9	0.00	0.00	9,097.0	756.2	-224.4	2.00	-2.00	0.00	180.00	KOP: 1625 FSL & 10
9,874.8	88.98	89.71	9,574.0	758.6	244.1	12.01	12.01	0.00	89.71	
19,686.3	88.98	89.71	9,749.0	809.0	10,054.0	0.00	0.00	0.00	0.00	BHL: 1625 FSL & 330

Database: Hobbs

Company:Mewbourne Oil CompanyProject:Eddy County, New Mexico NAD 83

 Site:
 Oxbow 23/24 W0LI Fed Com #1H

 Well:
 SL: 867 FSL & 233 FWL (Sec 23)

 Wellbore:
 BHL: 1625 FSL & 330 FEL (Sec 24)

Design: Design #1

Local Co-ordinate Reference:

TVD Reference: MD Reference: North Reference:

Survey Calculation Method:

Site Oxbow 23/24 W0LI Fed Com #1H WELL @ 2959.0usft (Original Well Elev) WELL @ 2959.0usft (Original Well Elev)

Grid

ad Cumrau									
ed Survey									
Measured Depth	Inclination	Azimuth	Vertical Depth	+N/-S	+E/-W	Vertical Section	Dogleg Rate	Build Rate	Turn Rate
(usft)	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(°/100usft)	(°/100usft)	(°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
	& 233 FWL (Sec	•							
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	2.00	343.47	600.0	1.7	-0.5	-0.4	2.00	2.00	0.00
700.0	4.00	343.47	699.8	6.7	-2.0	-1.4	2.00	2.00	0.00
770.6	5.41	343.47	770.2	12.2	-3.6	-2.6	2.00	2.00	0.00
0.008	5.41	343.47	799.5	14.9	-4.4	-3.2	0.00	0.00	0.00
900.0	5.41	343.47	899.0	23.9	-7.1	-5.2	0.00	0.00	0.00
1,000.0	5.41	343.47	998.6	33.0	-9.8	-7.1	0.00	0.00	0.00
1,100.0	5.41	343.47	1,098.1	42.0	-12.5	-9.1	0.00	0.00	0.00
1,200.0	5.41	343.47	1,197.7	51.1	-15.2	-11.0	0.00	0.00	0.00
1,300.0	5.41	343.47	1,297.2	60.1	-17.8	-13.0	0.00	0.00	0.00
							0.00	0.00	
1,400.0 1,500.0	5.41 5.41	343.47 343.47	1,396.8 1,496.3	69.2 78.2	-20.5 -23.2	-14.9 -16.9	0.00	0.00	0.00 0.00
1,600.0	5.41	343.47 343.47	1,595.9	87.2	-25.2 -25.9	-18.8	0.00	0.00	0.00
1,700.0	5.41	343.47 343.47	1,695.5	96.3	-23.9 -28.6	-10.6 -20.8	0.00	0.00	0.00
1,800.0	5.41	343.47	1,795.0	105.3	-31.3	-20.6 -22.7	0.00	0.00	0.00
1,900.0	5.41	343.47	1,894.6	114.4	-33.9	-24.7	0.00	0.00	0.00
2,000.0	5.41	343.47	1,994.1	123.4	-36.6	-26.6	0.00	0.00	0.00
2,100.0	5.41	343.47	2,093.7	132.4	-39.3	-28.6	0.00	0.00	0.00
2,200.0	5.41	343.47	2,193.2	141.5	-42.0	-30.5	0.00	0.00	0.00
2,300.0	5.41	343.47	2,292.8	150.5	-44.7	-32.5	0.00	0.00	0.00
2,400.0	5.41	343.47	2,392.3	159.6	-47.4	-34.4	0.00	0.00	0.00
2,500.0	5.41	343.47	2,491.9	168.6	-50.0	-36.4	0.00	0.00	0.00
2,600.0	5.41	343.47	2,591.4	177.6	-52.7	-38.3	0.00	0.00	0.00
2,700.0	5.41	343.47	2,691.0	186.7	-55.4	-40.3	0.00	0.00	0.00
2,800.0	5.41	343.47	2,790.6	195.7	-58.1	-42.2	0.00	0.00	0.00
2,900.0	5.41	343.47	2,890.1	204.8	-60.8	-44.2	0.00	0.00	0.00
3,000.0	5.41	343.47	2,989.7	213.8	-63.5	-46.1	0.00	0.00	0.00
3,100.0	5.41	343.47	3,089.2	222.9	-66.1	-48.1	0.00	0.00	0.00
3,200.0	5.41	343.47	3,188.8	231.9	-68.8	-50.0	0.00	0.00	0.00
3,300.0	5.41	343.47	3,288.3	240.9	-71.5	-52.0	0.00	0.00	0.00
3,400.0	5.41	343.47	3,387.9	250.0	-74.2	-53.9	0.00	0.00	0.00
3,400.0	5.41 5.41	343.47 343.47	3,387.9 3,487.4	250.0 259.0	-74.2 -76.9	-53.9 -55.9	0.00	0.00	0.00
3,600.0	5.41	343.47 343.47	3,467.4 3,587.0	259.0 268.1	-76.9 -79.6	-55.9 -57.8	0.00	0.00	0.00
3,700.0	5.41	343.47	3,686.5	277.1	-79.0 -82.2	-57.8 -59.8	0.00	0.00	0.00
3,800.0	5.41	343.47	3,786.1	286.1	-84.9	-61.7	0.00	0.00	0.00
3,900.0	5.41	343.47	3,885.6	295.2	-87.6	-63.7	0.00	0.00	0.00
4,000.0	5.41	343.47	3,985.2	304.2	-90.3	-65.6	0.00	0.00	0.00
4,100.0	5.41	343.47	4,084.8	313.3	-93.0	-67.6	0.00	0.00	0.00
4,200.0	5.41	343.47	4,184.3	322.3	-95.7	-69.5	0.00	0.00	0.00
4,300.0	5.41	343.47	4,283.9	331.4	-98.3	-71.5	0.00	0.00	0.00
4,400.0	5.41	343.47	4,383.4	340.4	-101.0	-73.4	0.00	0.00	0.00
4,500.0	5.41	343.47	4,483.0	349.4	-103.7	-75.4	0.00	0.00	0.00
4,600.0	5.41	343.47	4,582.5	358.5	-106.4	-77.3	0.00	0.00	0.00
4,700.0	5.41	343.47	4,682.1	367.5	-109.1	-79.3	0.00	0.00	0.00
4,800.0	5.41	343.47	4,781.6	376.6	-111.8	-81.2	0.00	0.00	0.00
4,900.0	5.41	343.47	4,881.2	385.6	-114.4	-83.2	0.00	0.00	0.00
5,000.0	5.41	343.47	4,980.7	394.6	-117.1	-85.1	0.00	0.00	0.00
5,100.0	5.41	343.47	5,080.3	403.7	-119.8	-87.1	0.00	0.00	0.00

Hobbs Database: Company:

Project:

Site:

Mewbourne Oil Company Eddy County, New Mexico NAD 83 Oxbow 23/24 W0LI Fed Com #1H

Well: SL: 867 FSL & 233 FWL (Sec 23) Wellbore: BHL: 1625 FSL & 330 FEL (Sec 24)

Design: Design #1 Local Co-ordinate Reference:

TVD Reference: MD Reference: North Reference:

Survey Calculation Method:

Site Oxbow 23/24 W0LI Fed Com #1H WELL @ 2959.0usft (Original Well Elev) WELL @ 2959.0usft (Original Well Elev)

anned 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 5,300.0	5.41 5.41	343.47 343.47	5,179.9 5,279.4	412.7 421.8	-122.5 -125.2	-89.0 -91.0	0.00 0.00	0.00 0.00	0.00 0.00
5,400.0	5.41	343.47	5,379.0	430.8	-127.9	-92.9	0.00	0.00	0.00
5,500.0	5.41	343.47	5,478.5	439.9	-130.6	-94.9	0.00	0.00	0.00
5,600.0	5.41	343.47	5,578.1	448.9	-133.2	-96.8	0.00	0.00	0.00
5,700.0	5.41	343.47	5,677.6	457.9	-135.9	-98.8	0.00	0.00	0.00
5,800.0	5.41	343.47	5,777.2	467.0	-138.6	-100.7	0.00	0.00	0.00
5,900.0	5.41	343.47	5,876.7	476.0	-141.3	-102.6	0.00	0.00	0.00
6,000.0	5.41	343.47	5,976.3	485.1	-144.0	-104.6	0.00	0.00	0.00
6,100.0	5.41	343.47	6,075.8	494.1	-146.7	-106.5	0.00	0.00	0.00
6,200.0	5.41	343.47	6,175.4	503.1	-149.3	-108.5	0.00	0.00	0.00
6,300.0	5.41	343.47	6,275.0	512.2	-152.0	-110.4	0.00	0.00	0.00
6,400.0	5.41	343.47	6,374.5	521.2	-154.7	-112.4	0.00	0.00	0.00
6,400.0 6,500.0	5.41 5.41	343.47 343.47	6,374.5 6,474.1	521.2	-154.7 -157.4	-112.4 -114.3	0.00	0.00	
6,600.0		343.47 343.47	6,474.1 6,573.6	530.3 539.3	-157.4 -160.1	-114.3 -116.3	0.00	0.00	0.00 0.00
•	5.41								
6,700.0 6,800.0	5.41	343.47	6,673.2	548.4 557.4	-162.8	-118.2 -120.2	0.00	0.00 0.00	0.00
6,800.0	5.41	343.47	6,772.7	557.4	-165.4	-120.2	0.00	0.00	0.00
6,900.0	5.41	343.47	6,872.3	566.4	-168.1	-122.1	0.00	0.00	0.00
7,000.0	5.41	343.47	6,971.8	575.5	-170.8	-124.1	0.00	0.00	0.00
7,100.0	5.41	343.47	7,071.4	584.5	-173.5	-126.0	0.00	0.00	0.00
7,200.0	5.41	343.47	7,170.9	593.6	-176.2	-128.0	0.00	0.00	0.00
7,300.0	5.41	343.47	7,270.5	602.6	-178.9	-129.9	0.00	0.00	0.00
7,400.0	5.41	343.47	7,370.0	611.6	-181.5	-131.9	0.00	0.00	0.00
7,500.0	5.41	343.47	7,469.6	620.7	-184.2	-131.8	0.00	0.00	0.00
7,600.0	5.41	343.47	7,569.2	629.7	-186.9	-135.8	0.00	0.00	0.00
7,700.0	5.41	343.47	7,668.7	638.8	-189.6	-137.7	0.00	0.00	0.00
7,800.0	5.41	343.47	7,768.3	647.8	-192.3	-137.7	0.00	0.00	0.00
7,900.0	5.41	343.47	7,867.8	656.9	-195.0	-141.6	0.00	0.00	0.00
8,000.0	5.41	343.47	7,967.4	665.9	-197.6	-143.6	0.00	0.00	0.00
8,100.0	5.41	343.47	8,066.9	674.9	-200.3	-145.5	0.00	0.00	0.00
8,200.0	5.41	343.47	8,166.5	684.0	-203.0	-147.5	0.00	0.00	0.00
8,300.0	5.41	343.47	8,266.0	693.0	-205.7	-149.4	0.00	0.00	0.00
8,400.0	5.41	343.47	8,365.6	702.1	-208.4	-151.4	0.00	0.00	0.00
8,500.0	5.41	343.47	8,465.1	711.1	-211.1	-153.3	0.00	0.00	0.00
8,600.0	5.41	343.47	8,564.7	720.1	-213.7	-155.3	0.00	0.00	0.00
8,700.0	5.41	343.47	8,664.3	729.2	-216.4	-157.2	0.00	0.00	0.00
8,800.0	5.41	343.47	8,763.8	738.2	-219.1	-159.2	0.00	0.00	0.00
8,863.3	5.41	343.47	8,826.8	743.9	-220.8	-160.4	0.00	0.00	0.00
8,900.0	4.68	343.47	8,863.4	747.0	-221.7	-161.1	2.00	-2.00	0.00
9,000.0	2.68	343.47	8,963.2	753.2	-223.6	-162.4	2.00	-2.00	0.00
9,100.0	0.68	343.47	9,063.1	756.0	-224.4	-163.0	2.00	-2.00	0.00
9,133.9	0.00	0.00	9,097.0	756.2	-224.4	-163.1	2.00	-2.00	0.00
KOP: 1625	FSL & 10 FWL (S	ec 23)							
9,150.0	1.94	89.71	9,113.1	756.2	-224.2	-162.8	12.01	12.01	0.00
9,175.0	4.94	89.71	9,138.1	756.2	-222.7	-161.3	12.01	12.01	0.00
9,200.0	7.94	89.71	9,162.9	756.2	-219.9	-158.5	12.01	12.01	0.00
9,225.0	10.94	89.71	9,187.6	756.2	-215.8	-154.4	12.01	12.01	0.00
9,250.0	13.95	89.71	9,212.0	756.3	-210.4	-149.0	12.01	12.01	0.00
9,275.0	16.95	89.71	9,236.1	756.3	-203.7	-142.4	12.01	12.01	0.00
9,300.0	19.95	89.71	9,259.8	756.3	-195.8	-134.5	12.01	12.01	0.00
9,325.0	22.95	89.71	9,283.1	756.4	-186.7	-125.4	12.01	12.01	0.00
9,350.0	25.96	89.71	9,305.8	756.4	-176.3	-115.1	12.01	12.01	0.00
9,375.0	28.96	89.71	9,328.0	756.5	-164.8	-103.6	12.01	12.01	0.00

Hobbs Database:

Company: Mewbourne Oil Company Project: Eddy County, New Mexico NAD 83

Oxbow 23/24 W0LI Fed Com #1H Site: Well: SL: 867 FSL & 233 FWL (Sec 23) Wellbore: BHL: 1625 FSL & 330 FEL (Sec 24)

Design: Design #1

Local Co-ordinate Reference:

TVD Reference: MD Reference: North Reference:

Survey Calculation Method:

Site Oxbow 23/24 W0LI Fed Com #1H WELL @ 2959.0usft (Original Well Elev) WELL @ 2959.0usft (Original Well Elev)

gn:	Design #1								
ned Survey									
Measured Depth (usft)	l Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,400	.0 31.96	89.71	9,349.5	756.6	-152.1	-91.0	12.01	12.01	0.00
9,425	.0 34.96	89.71	9,370.4	756.6	-138.3	-77.2	12.01	12.01	0.00
9,450		89.71	9,390.5	756.7	-123.5	-62.4	12.01	12.01	0.00
9,475		89.71	9,409.8	756.8	-107.6	-4 6.5	12.01	12.01	0.00
9,500	.0 43.97	89.71	9,428.2	756.9	-90.7	-29.7	12.01	12.01	0.00
9,525	.0 46.97	89.71	9,445.8	757.0	-72.9	-11.9	12.01	12.01	0.00
9,550		89.71	9,462.3	757.1	-54.2	6.7	12.01	12.01	0.00
9,575		89.71	9,477.9	757.2	-34.6	26.2	12.01	12.01	0.00
9,600		89.71	9,492.4	757.3	-14.3	46.5	12.01	12.01	0.00
9,625	58.98	89.71	9,505.9	757.4	6.8	67.5	12.01	12.01	0.00
9,650	.0 61.99	89.71	9,518.2	757.5	28.6	89.2	12.01	12.01	0.00
9,675		89.71	9,529.3	757.6	50.9	111.5	12.01	12.01	0.00
9,700		89.71	9,539.3	757.7	73.8	134.4	12.01	12.01	0.00
9,723		89.71	9,547.5	757.8	95.6	156.0	12.01	12.01	0.00
			9,041.0	131.0	95.0	150.0	12.01	12.01	0.00
	5 FSL & 330 FWL (2	•	0.540.4	757.0	07.0	4	10.0:	10.01	2.22
9,725	70.99	89.71	9,548.1	757.8	97.3	157.7	12.01	12.01	0.00
9,750	.0 73.99	89.71	9,555.6	758.0	121.1	181.5	12.01	12.01	0.00
9,775		89.71	9,561.8	758.1	145.3	205.6	12.01	12.01	0.00
9,800			9,566.8						
		89.71		758.2	169.8	230.1	12.01	12.01	0.00
9,825		89.71	9,570.5	758.3	194.5	254.7	12.01	12.01	0.00
9,850	.0 86.00	89.71	9,572.9	758.5	219.4	279.5	12.01	12.01	0.00
9,874	.8 88.98	89.71	9,574.0	758.6	244.1	304.2	12.01	12.01	0.00
	FSL & 583 FWL (23		_,55	. 55.5		<u>.</u>	.2.01		5.55
9,900		, 89.71	9,574.5	758.7	269.4	329.3	0.00	0.00	0.00
		89.71			369.3			0.00	
10,000			9,576.2	759.2		429.0	0.00		0.00
10,100		89.71	9,578.0	759.8	469.3	528.7	0.00	0.00	0.00
10,200	.0 88.98	89.71	9,579.8	760.3	569.3	628.5	0.00	0.00	0.00
10,300	.0 88.98	89.71	9,581.6	760.8	669.3	728.2	0.00	0.00	0.00
10,400		89.71	9,583.4	761.3	769.3	827.9	0.00	0.00	0.00
10,500		89.71	9,585.2	761.8	869.3	927.6	0.00	0.00	0.00
10,600		89.71	9,586.9	762.3	969.2	1,027.3	0.00	0.00	0.00
10,700	.0 88.98	89.71	9,588.7	762.8	1,069.2	1,127.0	0.00	0.00	0.00
10,800	.0 88.98	89.71	9,590.5	763.4	1,169.2	1,226.7	0.00	0.00	0.00
10,900		89.71	9,592.3	763.9	1,269.2	1,326.4	0.00	0.00	0.00
11,000		89.71	9,594.1	764.4	1,369.2	1,426.1	0.00	0.00	0.00
11,100		89.71	9,595.9	764.9	1,469.2	1,525.8	0.00	0.00	0.00
11,200	.0 88.98	89.71	9,597.6	765.4	1,569.1	1,625.5	0.00	0.00	0.00
11,300	.0 88.98	89.71	9,599.4	765.9	1,669.1	1,725.2	0.00	0.00	0.00
44.400									
11,400		89.71	9,601.2	766.4	1,769.1	1,824.9	0.00	0.00	0.00
11,500		89.71	9,603.0	766.9	1,869.1	1,924.6	0.00	0.00	0.00
11,600		89.71	9,604.8	767.5	1,969.1	2,024.3	0.00	0.00	0.00
11,700	.0 88.98	89.71	9,606.6	768.0	2,069.0	2,124.0	0.00	0.00	0.00
11,800	.0 88.98	89.71	9,608.3	768.5	2,169.0	2,223.7	0.00	0.00	0.00
11,900		89.71	9,610.1	769.0	•				0.00
					2,269.0	2,323.4	0.00	0.00	
12,000		89.71	9,611.9	769.5	2,369.0	2,423.1	0.00	0.00	0.00
12,100		89.71	9,613.7	770.0	2,469.0	2,522.8	0.00	0.00	0.00
12,200	.0 88.98	89.71	9,615.5	770.5	2,569.0	2,622.5	0.00	0.00	0.00
12,300	.0 88.98	89.71	9,617.3	771.1	2,668.9	2,722.2	0.00	0.00	0.00
12,400		89.71	9,619.0	771.6	2,768.9	2,821.9	0.00	0.00	0.00
12,500		89.71	9,620.8	772.1	2,868.9	2,921.6	0.00	0.00	0.00
12,600		89.71	9,622.6	772.6	2,968.9	3,021.3	0.00	0.00	0.00
12,700	.0 88.98	89.71	9,624.4	773.1	3,068.9	3,121.0	0.00	0.00	0.00
12,800	.0 88.98	89.71	9,626.2	773.6	3,168.9	3,220.7	0.00	0.00	0.00
12,800									
1'2 UNN	.0 88.98	89.71	9,628.0	774.1	3,268.8	3,320.4	0.00	0.00	0.00

Database: Hobbs

Company: Mewbourne Oil Company
Project: Eddy County, New Mexico NAD 83
Site: Oxbow 23/24 W0LI Fed Com #1H
Well: SL: 867 FSL & 233 FWL (Sec 23)

Wellbore: BHL: 1625 FSL & 330 FEL (Sec 24)

Design: Design #1

Local Co-ordinate Reference:

TVD Reference:
MD Reference:
North Reference:

Survey Calculation Method:

Site Oxbow 23/24 W0LI Fed Com #1H WELL @ 2959.0usft (Original Well Elev) WELL @ 2959.0usft (Original Well Elev)

Grid

esign:	Design #1								
lanned 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)
13,000.0	88.98	89.71	9,629.7	774.7	3,368.8	3,420.1	0.00	0.00	0.00
13,100.0	88.98	89.71	9,631.5	775.2	3,468.8	3,519.8	0.00	0.00	0.00
13,200.0	88.98	89.71	9,633.3	775.7	3,568.8	3,619.5	0.00	0.00	0.00
13,300.0	88.98	89.71	9,635.1	776.2	3,668.8	3,719.2	0.00	0.00	0.00
13,400.0	88.98	89.71	9,636.9	776.2 776.7	3,000.0 3,768.8	3,818.9	0.00	0.00	0.00
13,500.0	88.98	89.71	9,638.7	776.7 777.2	3,766.6	3,918.6	0.00	0.00	0.00
13,600.0	88.98	89.71	9,640.4	777.7	3,968.7	4,018.3	0.00	0.00	0.00
13,700.0	88.98	89.71	9,642.2	778.2	4,068.7	4,118.0	0.00	0.00	0.00
13,800.0	88.98	89.71	9,644.0	778.8	4,168.7	4,217.7	0.00	0.00	0.00
13,900.0	88.98	89.71	9,645.8	779.3	4,268.7	4,317.4	0.00	0.00	0.00
14,000.0	88.98	89.71	9,647.6	779.8	4,368.7	4,417.1	0.00	0.00	0.00
14,100.0	88.98	89.71	9,649.4	780.3	4,468.6	4,516.8	0.00	0.00	0.00
14,200.0	88.98	89.71	9,651.1	780.8	4,568.6	4,616.5	0.00	0.00	0.00
14,300.0	88.98	89.71	9,652.9	781.3	4,668.6	4,716.2	0.00	0.00	0.00
14,400.0	88.98	89.71	9,654.7	781.8	4,768.6	4,815.9	0.00	0.00	0.00
14,500.0	88.98	89.71	9,656.5	782.4	4,868.6	4,915.6	0.00	0.00	0.00
14,600.0	88.98	89.71	9,658.3	782.9	4,968.5	5,015.3	0.00	0.00	0.00
14,700.0	88.98	89.71	9,660.1	783.4	5,068.5	5,115.0	0.00	0.00	0.00
14,800.0	88.98	89.71	9,661.8	783.9	5,168.5	5,214.7	0.00	0.00	0.00
14,900.0	88.98	89.71	9,663.6	784.4	5,268.5	5,314.4	0.00	0.00	0.00
15,000.0	88.98	89.71	9,665.4	784.9	5,368.5	5,414.1	0.00	0.00	0.00
15,100.0	88.98	89.71	9,667.2	785.4	5,468.5	5,513.8	0.00	0.00	0.00
15,200.0	88.98	89.71	9,669.0	786.0	5,568.4	5,613.5	0.00	0.00	0.00
15,300.0	88.98	89.71	9,670.8	786.5	5,668.4	5,713.2	0.00	0.00	0.00
15,400.0	88.98	89.71	9,672.5	787.0	5,768.4	5,812.9	0.00	0.00	0.00
15,500.0	88.98	89.71	9,674.3	787.5	5,868.4	5,912.7	0.00	0.00	0.00
15,600.0	88.98	89.71	9,676.1	788.0	5,968.4	6,012.4	0.00	0.00	0.00
15,700.0	88.98	89.71	9,677.9	788.5	6,068.4	6,112.1	0.00	0.00	0.00
15 000 0	00.00	90.74	0.670.7	700.0	6 160 2	6 044 9	0.00	0.00	0.00
15,800.0	88.98 88.98	89.71 89.71	9,679.7 9,681.5	789.0 789.5	6,168.3	6,211.8 6,311.5	0.00 0.00	0.00 0.00	0.00 0.00
15,900.0 16,000.0	88.98	89.71	9,683.3	769.5 790.1	6,268.3 6,368.3	6,411.2	0.00	0.00	0.00
16,049.7	88.98	89.71	9,684.1	790.1	6,418.0	6,460.8	0.00	0.00	0.00
	FSL & 1324 FWI		3,004.1	7 30.3	0,410.0	0,400.0	0.00	0.00	0.00
16,100.0	88.98	89.71	9,685.0	790.6	6,468.3	6,510.9	0.00	0.00	0.00
•			·		•	•			
16,200.0	88.98	89.71	9,686.8	791.1	6,568.3	6,610.6	0.00	0.00	0.00
16,300.0	88.98	89.71	9,688.6	791.6	6,668.3	6,710.3	0.00	0.00	0.00
16,400.0 16,500.0	88.98 88.98	89.71 89.71	9,690.4 9,692.2	792.1 792.6	6,768.2 6,868.2	6,810.0 6,909.7	0.00 0.00	0.00 0.00	0.00 0.00
16,600.0	88.98 88.98	89.71 89.71	9,692.2 9,694.0	792.6 793.1	6,868.2 6,968.2	6,909.7 7,009.4	0.00	0.00	0.00
16,700.0	88.98	89.71	9,695.7	793.7	7,068.2	7,109.1	0.00	0.00	0.00
16,800.0	88.98	89.71	9,697.5	794.2	7,168.2	7,208.8	0.00	0.00	0.00
16,900.0	88.98	89.71	9,699.3	794.7	7,268.2	7,308.5	0.00	0.00	0.00
17,000.0	88.98	89.71	9,701.1	795.2	7,368.1	7,408.2	0.00	0.00	0.00
17,100.0	88.98	89.71	9,702.9	795.7	7,468.1	7,507.9	0.00	0.00	0.00
17,200.0	88.98	89.71	9,704.7	796.2	7,568.1	7,607.6	0.00	0.00	0.00
17,300.0	88.98	89.71	9,706.4	796.7	7,668.1	7,707.3	0.00	0.00	0.00
17,369.6	88.98	89.71	9,707.7	797.1	7,737.7	7,776.7	0.00	0.00	0.00
	FSL & 2646 FEL								
17,400.0	88.98	89.71	9,708.2	797.3	7,768.1	7,807.0	0.00	0.00	0.00
17,500.0	88.98	89.71	9,710.0	797.8	7,868.0	7,906.7	0.00	0.00	0.00
17,600.0	88.98	89.71	9,711.8	798.3	7,968.0	8,006.4	0.00	0.00	0.00
17,700.0	88.98	89.71	9,713.6	798.8	8,068.0	8,106.1	0.00	0.00	0.00
17,800.0	88.98	89.71	9,715.4	799.3	8,168.0	8,205.8	0.00	0.00	0.00
17,900.0	88.98	89.71	9,717.1	799.8	8,268.0	8,305.5	0.00	0.00	0.00

Database: Hobbs

Company: Mewbourne Oil Company

Project: Eddy County, New Mexico NAD 83
Site: Oxbow 23/24 W0LI Fed Com #1H
Well: SL: 867 FSL & 233 FWL (Sec 23)

Wellbore: BHL: 1625 FSL & 330 FEL (Sec 24)

Design: Design #1

Local Co-ordinate Reference:

TVD Reference:
MD Reference:
North Reference:

Survey Calculation Method:

Site Oxbow 23/24 W0LI Fed Com #1H WELL @ 2959.0usft (Original Well Elev) WELL @ 2959.0usft (Original Well Elev)

Grid

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)
18,000.0	88.98	89.71	9,718.9	800.3	8,368.0	8,405.2	0.00	0.00	0.00
18,100.0	88.98	89.71	9,720.7	800.9	8,467.9	8,504.9	0.00	0.00	0.00
18,200.0	88.98	89.71	9,722.5	801.4	8,567.9	8,604.6	0.00	0.00	0.00
18,300.0	88.98	89.71	9,724.3	801.9	8,667.9	8,704.3	0.00	0.00	0.00
18,400.0	88.98	89.71	9,726.1	802.4	8,767.9	8,804.0	0.00	0.00	0.00
18,500.0	88.98	89.71	9,727.8	802.9	8,867.9	8,903.7	0.00	0.00	0.00
18,600.0	88.98	89.71	9,729.6	803.4	8,967.9	9,003.4	0.00	0.00	0.00
18,689.3	88.98	89.71	9,731.2	803.9	9,057.1	9,092.4	0.00	0.00	0.00
	FSL & 1327 FWL	` '							
18,700.0	88.98	89.71	9,731.4	803.9	9,067.8	9,103.1	0.00	0.00	0.00
18,800.0	88.98	89.71	9,733.2	804.4	9,167.8	9,202.8	0.00	0.00	0.00
18,900.0	88.98	89.71	9,735.0	805.0	9,267.8	9,302.5	0.00	0.00	0.00
19,000.0	88.98	89.71	9,736.8	805.5	9,367.8	9,402.2	0.00	0.00	0.00
19,100.0	88.98	89.71	9,738.5	806.0	9,467.8	9,501.9	0.00	0.00	0.00
19,200.0	88.98	89.71	9,740.3	806.5	9,567.8	9,601.6	0.00	0.00	0.00
19,300.0	88.98	89.71	9,742.1	807.0	9,667.7	9,701.3	0.00	0.00	0.00
19,400.0	88.98	89.71	9,743.9	807.5	9,767.7	9,801.0	0.00	0.00	0.00
19,500.0	88.98	89.71	9,745.7	808.0	9,867.7	9,900.7	0.00	0.00	0.00
19,600.0	88.98	89.71	9,747.5	808.6	9,967.7	10,000.4	0.00	0.00	0.00
19,686.3	88.98	89.71	9,749.0	809.0	10,054.0	10,086.5	0.00	0.00	0.00

Database: Hobbs

Company:Mewbourne Oil CompanyProject:Eddy County, New Mexico NAD 83Site:Oxbow 23/24 W0LI Fed Com #1H

 Well:
 SL: 867 FSL & 233 FWL (Sec 23)

 Wellbore:
 BHL: 1625 FSL & 330 FEL (Sec 24)

Design: Design #1

Local Co-ordinate Reference:

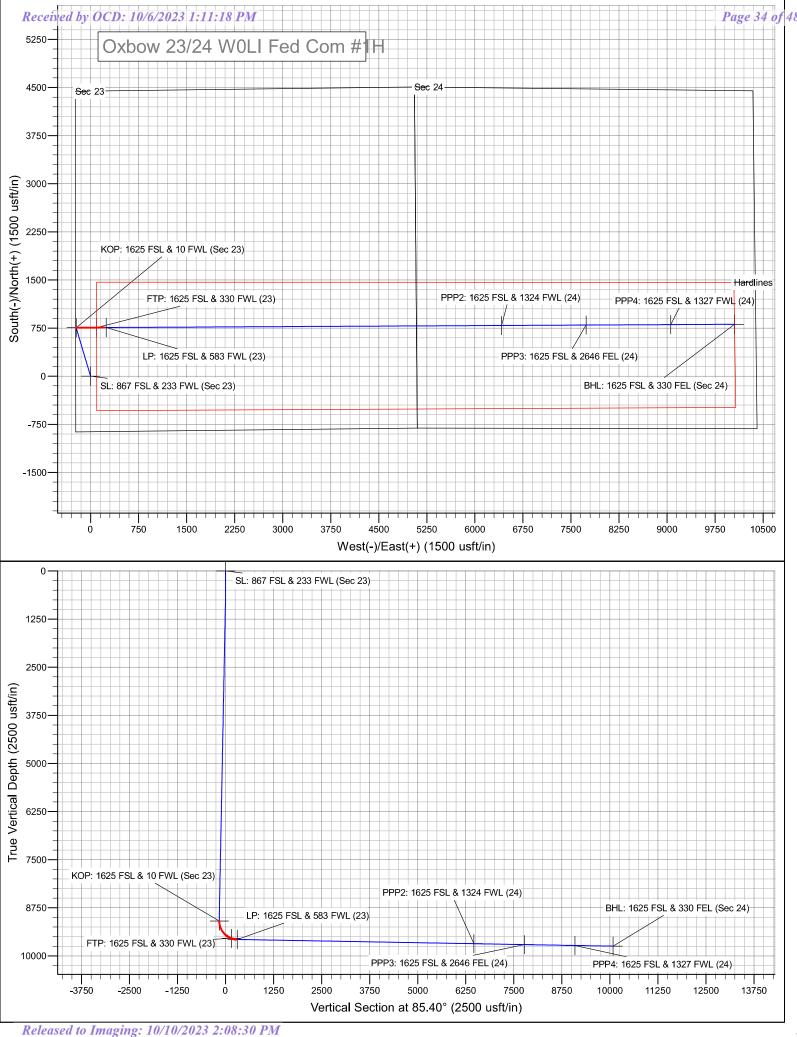
TVD Reference:
MD Reference:
North Reference:

Survey Calculation Method:

Site Oxbow 23/24 W0LI Fed Com #1H WELL @ 2959.0usft (Original Well Elev)

WELL @ 2959.0usft (Original Well Elev)

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
SL: 867 FSL & 233 FWL - plan hits target cente - Point	0.00 er	0.00	0.0	0.0	0.0	404,045.00	624,186.00	32.1105163	-104.0657488
KOP: 1625 FSL & 10 FV - plan hits target cente - Point	0.00 er	0.00	9,097.0	756.2	-224.4	404,801.19	623,961.56	32.1125965	-104.0664676
FTP: 1625 FSL & 330 F\ - plan hits target cente - Point	0.00 er	0.00	9,547.5	757.8	95.5	404,802.83	624,281.55	32.1125989	-104.0654341
LP: 1625 FSL & 583 FW - plan hits target cente - Point	0.00 er	0.00	9,574.0	758.6	244.1	404,803.60	624,430.12	32.1125999	-104.0649542
PPP2: 1625 FSL & 1324 - plan hits target cente - Point	0.00 er	0.00	9,684.1	790.3	6,418.0	404,835.32	630,604.04	32.1126433	- 104.0450131
PPP3: 1625 FSL & 2646 - plan hits target cente - Point	0.00 er	0.00	9,707.7	797.1	7,737.7	404,842.10	631,923.71	32.1126522	-104.0407507
PPP4: 1625 FSL & 1327 - plan hits target cente - Point	0.00 er	0.00	9,731.2	803.9	9,057.1	404,848.88	633,243.13	32.1126609	-104.0364892
BHL: 1625 FSL & 330 Ft - plan hits target cente - Point	0.00 er	0.00	9,749.0	809.0	10,054.0	404,854.00	634,240.00	32.1126674	-104.0332694



Inten [.]	t X	As Dril	led											
API#														
-	rator Na vbourne			oerty N			_I Fed	d Co	m		Well Number 1H			
Kick C	Off Point	(KOP)												
UL L	Section 23	Township 25S	Range 28E	Lot	Feet 1625		From N	I/S	Feet 10		Fron	n E/W	County	
132.	ide 112596	S5			Longitu -104.		4676		1				NAD 83	
First 1	Гаke Poir	nt (FTP)												
UL L	Section 23	Township 25S	Range 28E	Lot	Feet 1625		From N	I/S	Feet 330		Fron	n E/W	County EDDY	
Latitu 32. ′	ide 112598	39			Longitu -104.								NAD 83	
Last T	ake Poin	it (LTP)												
UL 	Section 24	Township 25S	Range 28E	Lot	Feet 1625	From	n N/S	Feet 330		From E	E/W	Count		
Latitu 32.	ide 112667	74			Longitu -104.		2694					NAD 83		
		e defining v	vell for th	e Horiz	zontal Sp	pacing	g Unit?		(]				
lf infil	ll is yes p ng Unit.		ide API if a		J lle, Oper	rator I	Name a	and v	vell n	umber	for I	Definir	ng well fo	r Horizontal
Ope	rator Na	me:				Prop	erty N	ame:						Well Number
					I									V7 06 /20 /201

KZ 06/29/2018

PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME: MEWBOURNE OIL COMPANY
LEASE NO.: NMNM013413A
LOCATION: Section 23, T.25 S., R.28 E., NMP
COUNTY: Eddy County, New Mexico

WELL NAME & NO.: Oxbow 23-24 W0LI Fed Com 1H

SURFACE HOLE FOOTAGE: 867'/S & 233'/W

BOTTOM HOLE FOOTAGE ATS/API ID: ATS-22-658

APD ID: 10400082750

Sundry ID: Oxbow 23-24 W0LI Fed Com 1H

867'/S & 233'/W

1625'/S & 330'/E

ATS-22-658

10400082750

COA

H2S	○ Yes	© No	
Potash	None	© Secretary	© R-111-P
Cave/Karst Potential	C Low	Medium	○ High
Cave/Karst Potential	Critical		
Variance	© None	Flex Hose	Other
Wellhead	 Conventional 	• Multibowl	○ Both
Wellhead Variance	Diverter		
Other	4 String	Capitan Reef	□WIPP
Other	Fluid Filled	Pilot Hole	Open Annulus
Cementing	Contingency	☐ EchoMeter	Primary Cement
_	Cement Squeeze		Squeeze
Special Requirements	Water Disposal	☑ COM	Unit
Special Requirements	Batch Sundry		
Special Requirements	☐ Break Testing	Offline	☐ Casing
Variance	-	Cementing	Clearance

A. HYDROGEN SULFIDE

Hydrogen Sulfide (H2S) monitors shall be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area shall meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.

B. CASING

Casing Design:

- 1. The 13-3/8 inch surface casing shall be set at approximately 500 feet (a minimum of 70 feet (Eddy County) into the Rustler Anhydrite, above the salt, and below usable fresh water) and cemented to the surface. The surface hole shall be 17 1/2 inch in diameter.
 - 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 in the Potash Area** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)
 - c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
 - d. If cement falls back, remedial cementing will be done prior to drilling out that string.
- 2. The minimum required fill of cement behind the 9-5/8 inch intermediate casing 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 cave/karst or potash.
 Cement excess 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 Medium Cave/Karst 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. The minimum required fill of cement behind the 7 inch production casing is:
 - Cement should tie-back at least **200 feet** into previous casing string. Operator shall provide method of verification.

Cement excess 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.

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

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 13-3/8 inch 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.
 - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
 - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
 - c. Manufacturer representative shall install the test plug for the initial BOP test.
 - d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
 - e. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.

D. SPECIAL REQUIREMENT (S)

Communitization Agreement

- The operator will submit a Communitization Agreement to the Santa Fe Office, 301 Dinosaur Trail Santa Fe, New Mexico 87508, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.
- The operator will submit an as-drilled survey well plat of the well completion, but are not limited to, those specified in Onshore Order 1 and 2.
- If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.

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

GENERAL REQUIREMENTS

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

- a. Spudding well (minimum of 24 hours)
- b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
- c. BOPE tests (minimum of 4 hours)
 - Eddy County
 Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (575) 361-2822
 - ✓ Lea CountyCall 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 Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.
- 2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the doghouse 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 hard band drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a

- larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.
- 8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

B. PRESSURE CONTROL

- 1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.
- 2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.
- 3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.
- 4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:
 - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
 - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
 - c. Manufacturer representative shall install the test plug for the initial BOP test
 - d. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.
 - e. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
- 5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

- a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead 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 Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).
- d. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.
- e. The results of the test shall be reported to the appropriate BLM office.
- f. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.
- g. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.
- h. BOP/BOPE must be tested by an independent service company within 500

feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

C. DRILLING MUD

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

D. WASTE MATERIAL AND FLUIDS

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

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

OTA 5/15/2023

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:

- 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.
- 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. <u>Protective Equipment for Essential Personnel</u>

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. <u>Hydrogen Sulfide Protection and Monitoring Equipment</u>

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. <u>Visual Warning Systems</u>

- 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 Fax 2 nd Fax	575-393-5905 575-397-6252 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: OXBOW 23/24 W0LI FED COM Well Number: 1H

Waste type: SEWAGE

Waste content description: Human waste & grey water

Amount of waste: 1500 gallons

Waste disposal frequency: Weekly

Safe containment description: 2,000 gallon plastic container

Safe containment attachment:

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

FACILITY

Disposal type description:

Disposal location description: City of Carlsbad Water Treatment facility

Waste type: GARBAGE

Waste content description: Garbage & trash

Amount of waste: 1500 pounds

Waste disposal frequency: One Time Only

Safe containment description: Enclosed trash trailer

Safe containment attachment:

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

FACILITY

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 Released to Imaging: 10/10/2023 2:08:30 PM **Operator Name: MEWBOURNE OIL COMPANY**

Well Name: OXBOW 23/24 W0LI FED COM Well Number: 1H

Description of cuttings location

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

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

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

WCuttings area liner

Cuttings area liner specifications and installation description

Section 8 - Ancillary

Are you requesting any Ancillary Facilities?: N

Ancillary Facilities

Comments:

Section 9 - Well Site

Well Site Layout Diagram:

Oxbow23_24W0LIFedCom1H_wellsitelayout_20220117145921.pdf

Comments:

Section 10 - Plans for Surface

Type of disturbance: New Surface Disturbance Multiple Well Pad Name: Oxbow 23/24 MP & LI FED COM WELLS

Multiple Well Pad Number: 4

Recontouring

Drainage/Erosion control construction: None Drainage/Erosion control reclamation: None

Well pad proposed disturbance

(acres): 3.5

Road proposed disturbance (acres):

0.74

Powerline proposed disturbance

(acres): 0

Pipeline proposed disturbance

Road interim reclamation (acres): 0

Well pad interim reclamation (acres):

Powerline interim reclamation (acres): Powerline long term disturbance

Pipeline interim reclamation (acres): 0 Pipeline long term disturbance

(acres): 0

(acres): 2.77

Other long term disturbance (acres): 0

Road long term disturbance (acres): 0

Other proposed disturbance (acres): 0 Other interim reclamation (acres): 0

Well pad long term disturbance

Total proposed disturbance: 4.24 PM otal interim reclamation: 0.73

Total long term disturbance: 2.77

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720 District II

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

CONDITIONS

Action 273316

CONDITIONS

Operator:	OGRID:	
MEWBOURNE OIL CO	14744	
P.O. Box 5270	Action Number:	
Hobbs, NM 88241	273316	
	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	10/10/2023
ward.rikala	Will require a File As Drilled C-102 and a Directional Survey with the C-104	10/10/2023
ward.rikala	Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string	10/10/2023
ward.rikala	Cement is required to circulate on both surface and intermediate1 strings of casing	10/10/2023
ward.rikala	If cement does not circulate on any string, a CBL is required for that string of casing	10/10/2023
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	10/10/2023