

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

<b>Well Name:</b> FORTY NINER RIDGE UNIT	<b>Well Location:</b> T23S / R30E / SEC 16 / SWNE /	<b>County or Parish/State:</b>
<b>Well Number:</b> 127H	<b>Type of Well:</b> OIL WELL	<b>Allottee or Tribe Name:</b>
<b>Lease Number:</b> NMNM054827	<b>Unit or CA Name:</b> FORTY NINER RIDGE UNIT	<b>Unit or CA Number:</b> NMNM70951X
<b>US Well Number:</b> 3001549420	<b>Well Status:</b> Approved Application for Permit to Drill	<b>Operator:</b> MEWBOURNE OIL COMPANY

**Notice of Intent**

**Sundry ID:** 2782973

**Type of Submission:** Notice of Intent

**Type of Action:** APD Change

**Date Sundry Submitted:** 04/02/2024

**Time Sundry Submitted:** 11:43

**Date proposed operation will begin:** 04/16/2024

**Procedure Description:** Mewbourne requests the following changes be made to the Forty Niner Ridge Unit #127H (API #30-015-49420): 1. SHL change f/ 2394 FNL & 2353 FEL (16) to 2386 FNL & 2358 FEL (16) 2. Change target zone f/ Bonespring to Wolfcamp 3. Attached drlg plan, plot, csg & cmt assumptions corresponding to SHL & Target changes 4. Attached variance to perform Open Hole Annulus per R111Q guidelines. 5. Attached plat corresponding to SHL & Target changes. 6. Attached variance to perform Breaktesting and Offline Cementing.

**NOI Attachments**

**Procedure Description**

- Forty\_Niner\_Ridge\_Unit\_127H\_MOC\_Dir\_Plot\_20240402114221.pdf
- Mewbourne\_Offline\_Cementing\_Variance\_20240402114222.pdf
- Mewbourne\_Break\_Testing\_Variance\_20240402114222.pdf
- Forty\_Niner\_Ridge\_Unit\_\_127H\_CsgAssumptions\_20240402114216.pdf
- Forty\_Niner\_Ridge\_Unit\_\_127H\_Drlg\_Program\_20240402114216.pdf
- Forty\_Niner\_Ridge\_Unit\_\_127H\_R\_111Q\_Variance\_20240402114216.pdf
- Forty\_Niner\_Ridge\_Unit\_\_127H\_AddInfo\_20240402114216.pdf
- FORTY\_NINER\_RIDGE\_UNIT\_127H\_C102\_20240402114216.pdf

**Well Name:** FORTY NINER RIDGE UNIT

**Well Location:** T23S / R30E / SEC 16 / SWNE /

**County or Parish/State:**

**Well Number:** 127H

**Type of Well:** OIL WELL

**Allottee or Tribe Name:**

**Lease Number:** NMNM054827

**Unit or CA Name:** FORTY NINER RIDGE UNIT

**Unit or CA Number:** NMNM70951X

**US Well Number:** 3001549420

**Well Status:** Approved Application for Permit to Drill

**Operator:** MEWBOURNE OIL COMPANY

Forty\_Niner\_Ridge\_Unit\_127H\_MOC\_Dir\_Plan\_20240402114216.pdf

**Conditions of Approval**

**Additional**

FORTY\_NINER\_RIDGE\_UNIT\_127H\_10400068198\_A\_20240403141704.pdf

FORTY\_NINER\_RIDGE\_UNIT\_127H\_10400068198\_B\_20240403141705.pdf

FORTY\_NINER\_RIDGE\_UNIT\_127H\_Eng\_COA\_20240403141705.pdf

**Operator**

*I certify that the foregoing is true and correct. Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction. Electronic submission of Sundry Notices through this system satisfies regulations requiring a*

**Operator Electronic Signature:** RYAN MCDANIEL

**Signed on:** APR 02, 2024 11:42 AM

**Name:** MEWBOURNE OIL COMPANY

**Title:** Engineer

**Street Address:** 4801 BUSINESS PARK BLVD

**City:** HOBBS

**State:** NM

**Phone:** (575) 393-5905

**Email address:** RYANMCDANIEL@MEWBOURNE.COM

**Field**

**Representative Name:**

**Street Address:**

**City:**

**State:**

**Zip:**

**Phone:**

**Email address:**

**BLM Point of Contact**

**BLM POC Name:** CHRISTOPHER WALLS

**BLM POC Title:** Petroleum Engineer

**BLM POC Phone:** 5752342234

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

**Disposition:** Approved

**Disposition Date:** 04/04/2024

**Signature:** Chris Walls

Form 3160-5  
(June 2019)

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

FORM APPROVED  
OMB No. 1004-0137  
Expires: October 31, 2021

**SUNDRY NOTICES AND REPORTS ON WELLS**  
**Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.**

5. Lease Serial No.

6. If Indian, Allottee or Tribe Name

**SUBMIT IN TRIPLICATE - Other instructions on page 2**

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

1. Type of Well

Oil Well     Gas Well     Other

8. Well Name and No.

2. Name of Operator

9. API Well No.

3a. Address

3b. Phone No. (include area code)

10. Field and Pool or Exploratory Area

4. Location of Well (Footage, Sec., T.,R.,M., or Survey Description)

11. Country or Parish, State

**12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT OR OTHER DATA**

TYPE OF SUBMISSION	TYPE OF ACTION				
<input type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resume)	<input type="checkbox"/> Water Shut-Off	
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Alter Casing	<input type="checkbox"/> Hydraulic Fracturing	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity	
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recomplete	<input type="checkbox"/> Other	
	<input type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon		
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input type="checkbox"/> Water Disposal		

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.)

14. I hereby certify that the foregoing is true and correct. Name (Printed/Typed)

Title

Signature

Date

**THE SPACE FOR FEDERAL OR STATE OFFICE USE**

Approved by

Title

Date

Conditions of approval, if any, are attached. Approval of this notice 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.

Office

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.

(Instructions on page 2)

## GENERAL INSTRUCTIONS

This form is designed for submitting proposals to perform certain well operations and reports of such operations when completed as indicated on Federal and Indian lands pursuant to applicable Federal law and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local area or regional procedures and practices, are either shown below, will be issued by or may be obtained from the local Federal office.

## SPECIFIC INSTRUCTIONS

*Item 4* - Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult the local Federal office for specific instructions.

*Item 13*: Proposals to abandon a well and subsequent reports of abandonment should include such special information as is required by the local Federal office. In addition, such proposals and reports should include reasons for the abandonment; data on any former or present productive zones or other zones with present significant fluid contents not sealed off by cement or otherwise; depths (top and bottom) and method of placement of cement plugs; mud or other material placed below, between and above plugs; amount, size, method of parting of any casing, liner or tubing pulled and the depth to the top of any tubing left in the hole; method of closing top of well and date well site conditioned for final inspection looking for approval of the abandonment. If the proposal will involve **hydraulic fracturing operations**, you must comply with 43 CFR 3162.3-3, including providing information about the protection of usable water. Operators should provide the best available information about all formations containing water and their depths. This information could include data and interpretation of resistivity logs run on nearby wells. Information may also be obtained from state or tribal regulatory agencies and from local BLM offices.

## NOTICES

The privacy Act of 1974 and the regulation in 43 CFR 2.48(d) provide that you be furnished the following information in connection with information required by this application.

**AUTHORITY:** 30 U.S.C. 181 et seq., 351 et seq., 25 U.S.C. 396; 43 CFR 3160.

**PRINCIPAL PURPOSE:** The information is used to: (1) Evaluate, when appropriate, approve applications, and report completion of subsequent well operations, on a Federal or Indian lease; and (2) document for administrative use, information for the management, disposal and use of National Resource lands and resources, such as: (a) evaluating the equipment and procedures to be used during a proposed subsequent well operation and reviewing the completed well operations for compliance with the approved plan; (b) requesting and granting approval to perform those actions covered by 43 CFR 3162.3-2, 3162.3-3, and 3162.3-4; (c) reporting the beginning or resumption of production, as required by 43 CFR 3162.4-1(c) and (d) analyzing future applications to drill or modify operations in light of data obtained and methods used.

**ROUTINE USES:** Information from the record and/or the record will be transferred to appropriate Federal, State, local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecutions in connection with congressional inquiries or to consumer reporting agencies to facilitate collection of debts owed the Government.

**EFFECT OF NOT PROVIDING THE INFORMATION:** Filing of this notice and report and disclosure of the information is mandatory for those subsequent well operations specified in 43 CFR 3162.3-2, 3162.3-3, 3162.3-4.

The Paperwork Reduction Act of 1995 requires us to inform you that:

The BLM collects this information to evaluate proposed and/or completed subsequent well operations on Federal or Indian oil and gas leases.

Response to this request is mandatory.

The BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

**BURDEN HOURS STATEMENT:** Public reporting burden for this form is estimated to average 8 hours per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to U.S. Department of the Interior, Bureau of Land Management (1004-0137), Bureau Information Collection Clearance Officer (WO-630), 1849 C St., N.W., Mail Stop 401 LS, Washington, D.C. 20240

## Additional Information

### Location of Well

0. SHL: SWNE / 2394 FNL / 2353 FEL / TWSP: 23S / RANGE: 30E / SECTION: 16 / LAT: 32.3057689 / LONG: -103.8852538 ( TVD: 0 feet, MD: 0 feet )  
PPP: NWSE / 3550 FNL / 1840 FEL / TWSP: 23S / RANGE: 30E / SECTION: 16 / LAT: 32.30479 / LONG: -103.8835922 ( TVD: 10664 feet, MD: 10991 feet )  
PPP: NWNE / 0 FNL / 1840 FEL / TWSP: 23S / RANGE: 30E / SECTION: 21 / LAT: 32.2977859 / LONG: -103.8835812 ( TVD: 10703 feet, MD: 13539 feet )  
PPP: SWNE / 1340 FNL / 1840 FEL / TWSP: 23S / RANGE: 30E / SECTION: 21 / LAT: 32.2940997 / LONG: -103.8835754 ( TVD: 10709 feet, MD: 14880 feet )  
PPP: NWSE / 2650 FNL / 1840 FEL / TWSP: 23S / RANGE: 30E / SECTION: 21 / LAT: 32.2904987 / LONG: -103.8835697 ( TVD: 10714 feet, MD: 16190 feet )  
BHL: SWSE / 100 FSL / 1840 FEL / TWSP: 23S / RANGE: 30E / SECTION: 21 / LAT: 32.2834829 / LONG: -103.8835587 ( TVD: 10724 feet, MD: 18742 feet )

CONFIDENTIAL

FORTY NINER RIDGE UNIT 127H 10400068198 A

**FORTY NINER RIDGE UNIT 127H**

		13 3/8 in. surface casing in a		17 1/2 inch hole.		Design Factors					
Segment	#/ft	Grade	Coupling	Joint	Collapse	Burst	Length	B@s	a-B	a-C	Weight
"A"	48.00	H 40	STC	17.20	4.52	1.07	390	10	2.03	9.13	18,720
"B"			STC				0				0
Tail Cement does circ to sfc.							Totals:	390			18,720
Comparison of Proposed to Minimum Required Cement Volumes											
Hole Size	Annular Volume	1 Stage Cmt Sx	1 Stage CuFt Cmt	Min Cu Ft	1 Stage % Excess	Drilling Mud Wt	Calc MASP	Req'd BOPE	Minimum Clearance b/w Hole & Couplings		
17 1/2	0.6946	330	544	310	75	8.40	854	2M	1.56		
									5M BOPE below surface.		

		9 5/8 inch casing inside the		13 3/8 inch casing.		Design Factors					
Segment	#/ft	Grade	Coupling	Joint	Collapse	Burst	Length	B@s	a-B	a-C	Weight
"A"	36.00	J 55	LTC	3.65	1.25	0.64	3,450	2	1.10	2.37	124,200
"B"							0				0
							Totals:	3,450			124,200
The top of cement is intended to be at		0		ft. from the surface or have a		390		ft. overlap with previous casing.			
Hole Size	Annular Volume	1 Stage Cmt Sx	1 Stage CuFt Cmt	Min Cu Ft	1 Stage % Excess	Drilling Mud Wt	Calc MASP	Req'd BOPE	Minimum Clearance b/w Hole & Couplings		
12 1/4	0.3132	500	904	1105	-18	9.00	3188	5M	0.81		
Setting Depths for DV Tool(s):		1150		Stage 1 Stage 2		sum of sx		Σ CuFt		Σ % excess	
% Excess cement by stage:		25		17		750		1356		23	
Burst Frac Gradient(s) for Segment(s): A, B, C, D = 1.02, b, c, d All > 0.70, OK.						Excess cement for the 2nd stage is below the CFO's recommendation. More cement might be needed.					

		7 inch casing inside the		9 5/8 inch casing.		Design Factors					
Segment	#/ft	Grade	Coupling	Joint	Collapse	Burst	Length	B@s	a-B	a-C	Weight
"A"	26.00	P 110	LTC	2.31	1.1	1.5	10,650	2	2.37	1.95	276,900
"B"							0				0
							Totals:	10,650			276,900
The top of cement is intended to be at		3950		ft. from the surface or have a		-500		ft. overlap with previous casing.			
Hole Size	Annular Volume	1 Stage Cmt Sx	1 Stage CuFt Cmt	Min Cu Ft	1 Stage % Excess	Drilling Mud Wt	Calc MASP	Req'd BOPE	Minimum Clearance b/w Hole & Couplings		
8 3/4	0.1503	660	1023	1007	2	10.00	4198	5M	0.55		
Class 'C' tail cmt yld > 1.35						Operator is proposing to use R-111-Q guidelines for cementing production casing. 2nd stage will be Bradenhead within 180 days after well completion. Production casing must be kept fluid-filled to meet collapse design requirements.					

		4 1/2 inch Liner w/top @		10489 ft. from the surface.		Design Factors					
Segment	#/ft	Grade	Coupling	Joint	Collapse	Burst	Length	B@s	a-B	a-C	Weight
"A"	13.50	P 110	LTC	6.20	1.46	1.87	8,335	2	2.96	2.54	112,523
"B"							0				0
							Totals:	8,335			112,523
The top of cement is intended to be at		10489		ft. from the surface or have a		161		ft. overlap with previous casing.			
Hole Size	Annular Volume	1 Stage Cmt Sx	1 Stage CuFt Cmt	Min Cu Ft	1 Stage % Excess	Drilling Mud Wt	Calc MASP	Req'd BOPE	Minimum Clearance b/w Hole & Couplings		
6 1/8	0.0942	530	981	780	26	11.50			0.56		
Class 'H' tail cmt yld > 1.20											

FORTY NINER RIDGE UNIT 127H 10400068198 B

### FORTY NINER RIDGE UNIT 127H

		13 3/8 in. surface casing in a		17 1/2 inch hole.		Design Factors					
Segment	#/ft	Grade	Coupling	Joint	Collapse	Burst	Length	B@s	a-B	a-C	Weight
"A"	48.00	H 40	STC	17.20	4.52	1.07	390	10	2.03	9.13	18,720
"B"			STC				0				0
Tail Cement does circ to sfc.							Totals:	390			18,720
Comparison of Proposed to Minimum Required Cement Volumes											
Hole Size	Annular Volume	1 Stage Cmt Sx	1 Stage CuFt Cmt	Min Cu Ft	1 Stage % Excess	Drilling Mud Wt	Calc MASP	Req'd BOPE	Minimum Clearance b/w Hole & Couplings		
17 1/2	0.6946	330	544	310	75	8.40	854	2M	1.56		
									5M BOPE below surface.		

		9 5/8 inch casing inside the		13 3/8 inch casing.		Design Factors					
Segment	#/ft	Grade	Coupling	Joint	Collapse	Burst	Length	B@s	a-B	a-C	Weight
"A"	36.00	J 55	LTC	3.65	1.25	0.61	3,450	2	1.06	2.37	124,200
"B"							0				0
							Totals:	3,450			124,200
		The top of cement is intended to be at		0	ft. from the surface or have a		390	ft. overlap with previous casing.			
Hole Size	Annular Volume	1 Stage Cmt Sx	1 Stage CuFt Cmt	Min Cu Ft	1 Stage % Excess	Drilling Mud Wt	Calc MASP	Req'd BOPE	Minimum Clearance b/w Hole & Couplings		
12 1/4	0.3132	500	904	1105	-18	9.00	3331	5M	0.81		
Setting Depths for DV Tool(s):				1150	Stage 1	Stage 2	sum of sx	Σ CuFt	Σ % excess		
% Excess cement by stage:				25	17		750	1356	23		
Burst Frac Gradient(s) for Segment(s): A, B, C, D = 1.02, b, c, d All > 0.70, OK.						Excess cement for the 2nd stage is below the CFO's recommendation. More cement might be needed.					

		7 inch casing inside the		9 5/8 inch casing.		Design Factors					
Segment	#/ft	Grade	Coupling	Joint	Collapse	Burst	Length	B@s	a-B	a-C	Weight
"A"	26.00	HCP 110	LTC	2.22	1.33	1.72	11,535	2	2.99	2.34	299,910
"B"							0				0
							Totals:	11,535			299,910
		The top of cement is intended to be at		3950	ft. from the surface or have a		-500	ft. overlap with previous casing.			
Hole Size	Annular Volume	1 Stage Cmt Sx	1 Stage CuFt Cmt	Min Cu Ft	1 Stage % Excess	Drilling Mud Wt	Calc MASP	Req'd BOPE	Minimum Clearance b/w Hole & Couplings		
8 3/4	0.1503	660	1023	1140	-10	10.00	4198	5M	0.55		
Class 'C' tail cmt yld > 1.35											
Operator is proposing to use R-111-Q guidelines for cementing production casing. 2nd stage will be Bradenhead within 180 days after well completion. Insufficient cement to bring TOC to the proposed 3950 ft. in the 1st stage.											

		4 1/2 inch Liner w/top @		10689 ft. from the surface.		Design Factors					
Segment	#/ft	Grade	Coupling	Joint	Collapse	Burst	Length	B@s	a-B	a-C	Weight
"A"	13.50	P 110	LTC	6.53	1.46	1.87	8,135	2	2.96	2.54	109,823
"B"							0				0
							Totals:	8,135			109,823
		The top of cement is intended to be at		10689	ft. from the surface or have a		846	ft. overlap with previous casing.			
Hole Size	Annular Volume	1 Stage Cmt Sx	1 Stage CuFt Cmt	Min Cu Ft	1 Stage % Excess	Drilling Mud Wt	Calc MASP	Req'd BOPE	Minimum Clearance b/w Hole & Couplings		
6 1/8	0.0942	530	981	697	41	11.50			0.56		
Class 'H' tail cmt yld > 1.20											

## PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	MEWBOURNE OIL COMPANY
WELL NAME & NO.:	FORTY NINER RIDGE UNIT 127H
APD ID	10400068198
SURFACE HOLE FOOTAGE:	2386'/N & 2358'/E
BOTTOM HOLE FOOTAGE	330'/S & 1620'/E
SURFACE LOCATION:	Section 16, T.23 S., R.30 E. NMP.
COUNTY:	Eddy County, New Mexico

COA

H <sub>2</sub> S	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Potash	<input type="radio"/> None	<input type="radio"/> Secretary	<input checked="" type="radio"/> R-111-P
Cave/Karst Potential	<input type="radio"/> Low	<input type="radio"/> Medium	<input checked="" type="radio"/> High
Cave/Karst Potential	<input type="radio"/> Critical		
Variance	<input type="radio"/> None	<input checked="" type="radio"/> Flex Hose	<input type="radio"/> Other
Wellhead	<input type="radio"/> Conventional	<input checked="" type="radio"/> Multibowl	<input type="radio"/> Both
Other	<input type="checkbox"/> 4 String	<input type="checkbox"/> Capitan Reef	<input type="checkbox"/> WIPP
Other	<input checked="" type="checkbox"/> Fluid Filled	<input type="checkbox"/> Pilot Hole	<input type="checkbox"/> Open Annulus
Other Variances	<input checked="" type="checkbox"/> Offline cementing	<input checked="" type="checkbox"/> Squeeze cement	<input checked="" type="checkbox"/> Break testing
Special Requirements	<input type="checkbox"/> Water Disposal	<input type="checkbox"/> COM	<input checked="" type="checkbox"/> Unit

**SEE ORIGINAL COA FOR ALL OTHER REQUIREMENTS.**

**A. HYDROGEN SULFIDE**

A Hydrogen Sulfide (H<sub>2</sub>S) 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 Program**

1. The **13-3/8** inch surface casing shall be set at approximately **390 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 **3,450 ft.** The minimum required fill of cement behind the **9-5/8** inch intermediate casing is:
- **Cement to surface.** If cement does not circulate see B.1.a, c-d above. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to **Potash and cave/karst.**

**Note:** Excess cement volume for the 2<sup>nd</sup> stage is below the CFO's recommendation of 25%. More cement might be needed.

- ❖ In High Cave/Karst Areas if cement does not circulate to surface on the first two casing strings, the cement on the 3<sup>rd</sup> casing string must come to surface.
  - ❖ In Secretary Potash Areas if cement does not circulate to surface on the first two casing strings, the cement on the 3<sup>rd</sup> casing string must come to surface.
  - ❖ In R111 Potash Areas if cement does not circulate to surface on the first two casing strings, the cement on the 3<sup>rd</sup> casing string must come to surface.
3. Operator has proposed to set **7-inch 26# P-110** production casing at approximately **10,650 ft.** (10,646 ft. TVD). The minimum required fill of cement behind the **7-inch** production casing is:

**Option 1 (Single Stage): 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, 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 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 Echo-meter to verify Cement Slurry/Fluid top in the annulus AND/OR operator shall run a CBL from TD of the 7" casing to top of the salt after the second stage bradenhead to verify cement bond quality and TOC. Submit results to the BLM. Operator must run one CBL per Well Pad.

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.

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

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 Program**

1. The **13-3/8** inch surface casing shall be set at approximately **390 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 **3,450 ft.** The minimum required fill of cement behind the **9-5/8** inch intermediate casing is:

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

**Note:** Excess cement volume for the 2<sup>nd</sup> stage is below the CFO's recommendation of 25%. More cement might be needed.

- ❖ In High Cave/Karst Areas if cement does not circulate to surface on the first two casing strings, the cement on the 3<sup>rd</sup> casing string must come to surface.
- ❖ In Secretary Potash Areas if cement does not circulate to surface on the first two casing strings, the cement on the 3<sup>rd</sup> casing string must come to surface.
- ❖ In R111 Potash Areas if cement does not circulate to surface on the first two casing strings, the cement on the 3<sup>rd</sup> casing string must come to surface.

3. Operator has proposed to set **7-inch 26# HCP-110** production casing at approximately **11,535 ft.** (11,124 ft. TVD). The minimum required fill of cement behind the **7-inch** production casing is:

**Option 1 (Single Stage): 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, 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 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 Echo-meter to verify Cement Slurry/Fluid top in the annulus AND/OR operator

shall run a CBL from TD of the 7" casing to top of the salt after the second stage bradenhead to verify cement bond quality and TOC. Submit results to the BLM. Operator must run one CBL per Well Pad.

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.

**Note:** Cement volume for the 1<sup>st</sup> stage is insufficient to bring TOC to the proposed 3,950 ft. More cement is needed.

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)**

### **Unit Wells**

The well sign for a unit well shall include the unit number in addition to the surface and bottom hole lease numbers. This also applies to participating area numbers. If a participating area has not been established, the operator can use the general unit designation, but will replace the unit number with the participating area number when the sign is replaced.

### **Commercial Well Determination**

A commercial well determination shall be submitted after production has been established for at least six months. **(This is not necessary for secondary recovery unit wells)**

## 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](mailto: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 2<sup>nd</sup> 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**

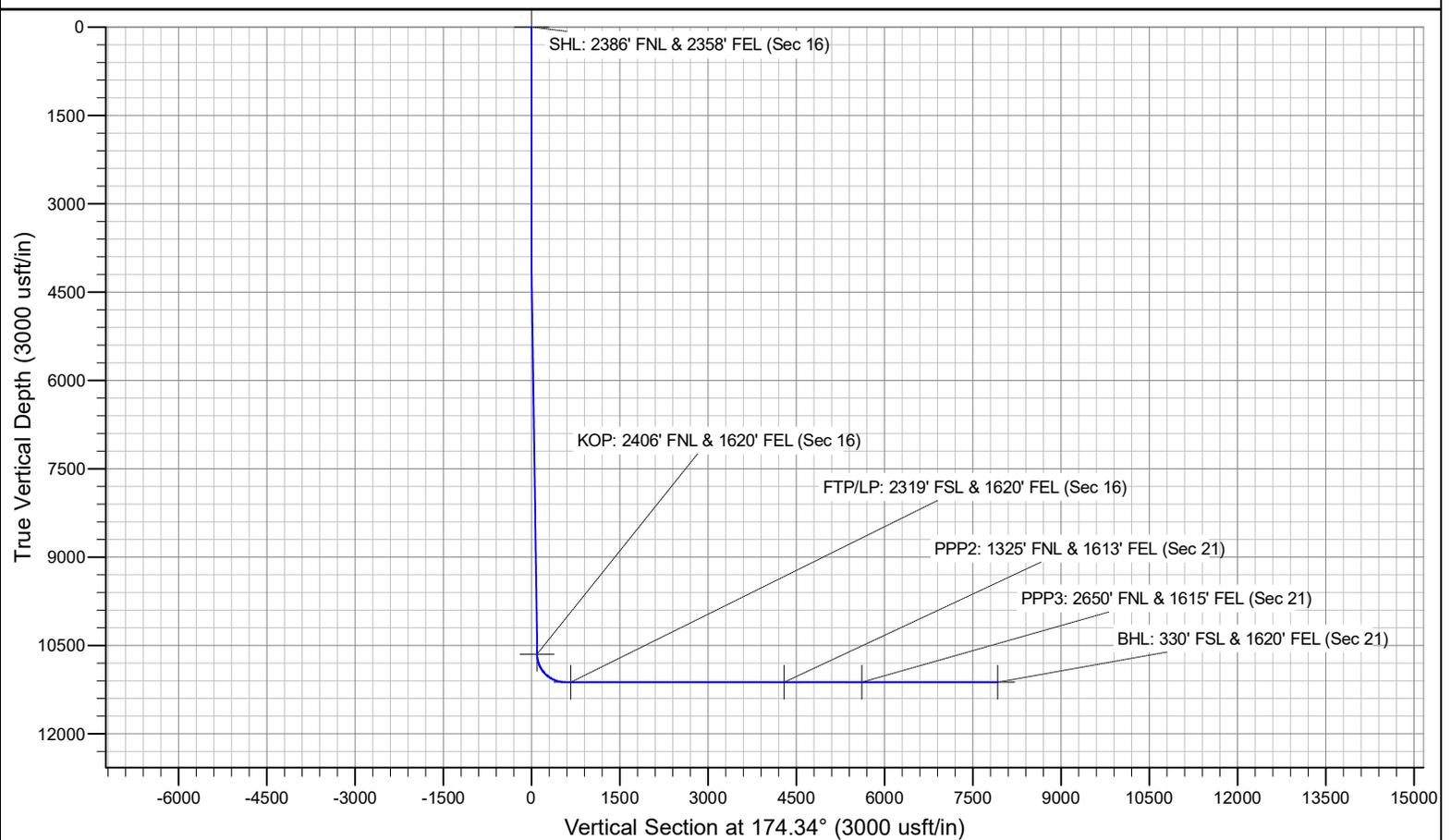
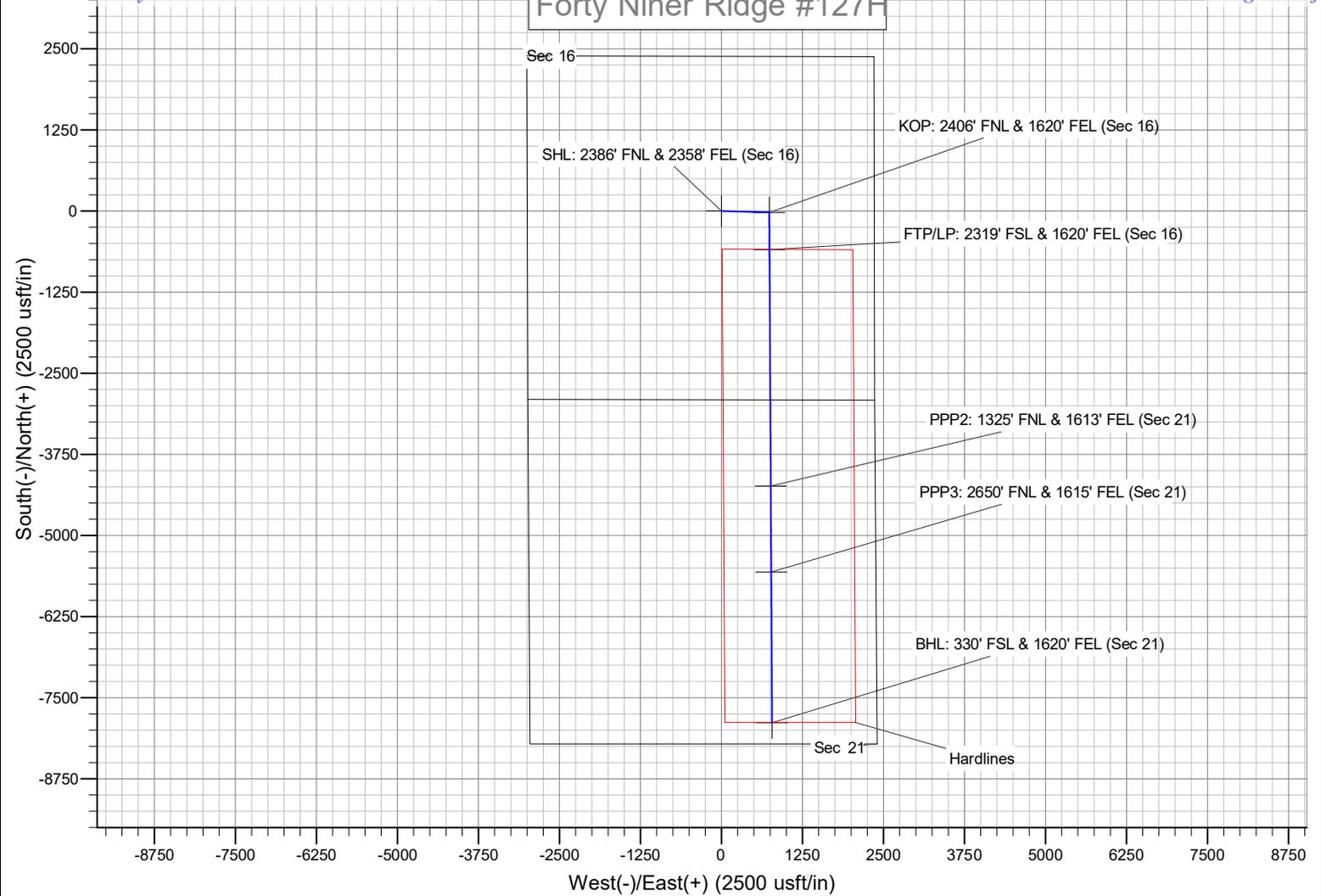
Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the Wolfcamp formation, and shall be used until production casing is run and cemented.

### **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 04/03/2024**

### Forty Niner Ridge #127H





## Mewbourne Oil Co.

### Surface & Intermediate Offline Cementing Variance

Mewbourne Oil Company requests a variance to perform offline cementing for surface and intermediate casing strings with the following conditions:

- Offline cementing will not be performed on production casing.
- Offline cementing will not be performed on a hole section with MASP > 5000 psi.
- Offline cementing will not be performed concurrently with offset drilling.

### Surface Casing Order of Operations:

1. Run 13 3/8" surface casing as per normal operations (TPGS and float collar).
2. Perform negative pressure test to confirm integrity of float equipment while running casing.
3. Confirm well is static.
4. Make up 13 5/8" wellhead or wellhead landing ring assembly and land on 20" conductor.
5. Fill pipe, circulate casing capacity and confirm float(s) are still holding.
6. Confirm well is static.
7. Back out landing joint and pull to rig floor. Lay down landing joint.
8. Walk rig to next well on pad with cement crew standing by to rig up.
9. Make up offline cement tool with forklift per wellhead manufacturer (Fig. 1 & 2).
10. Make up cement head on top of offline cement tool with forklift.
11. Commence cement operations.
12. If cement circulates, confirm well is static and proceed to step 16.
13. If cement does not circulate, notify the appropriate BLM office, wait a minimum of six hours, and run a temperature survey to determine the top of cement.
14. Use 1" pipe for remedial cement job until the surface casing is cemented to surface.
15. Confirm well is static.
16. Once cement job is complete, the cement head and offline cementing tool are removed. The wellhead technician returns to cellar to install wellhead/valves.
17. Install wellhead capping flange.

### Barriers

#### Before Walk:

- Float(s) in casing
- Kill weight fluid in casing
- Kill weight fluid in annulus



**After Walk:**

- Float(s) in casing
- Kill weight fluid in casing
- Kill weight fluid in annulus
- Offline cementing tool tested to 5000 psi and cement head
- Capping flange after cementing

**20" Surface Casing Order of Operations (4 string area):**

1. Run 20" surface casing as per normal operations (TPGS and float collar).
2. Perform negative pressure test to confirm integrity of float equipment while running casing.
3. Fill pipe, circulate casing capacity and confirm float(s) are still holding.
4. Confirm well is static.
5. Back out landing joint and pull to rig floor. Lay down landing joint.
6. Make up cement head.
7. Walk rig to next well on pad with cement crew standing by to rig up.
8. Commence cement operations.
9. If cement circulates, confirm well is static and proceed to step 13.
10. If cement does not circulate, notify the appropriate BLM office, wait a minimum of six hours, and run a temperature survey to determine the top of cement.
11. Use 1" pipe for remedial cement job until the surface casing is cemented to surface.
12. Confirm well is static.
13. Once cement job is complete, remove cement head and install cap.

**Barriers**

**Before Walk:**

- Float(s) in casing
- Kill weight fluid in casing
- Kill weight fluid in annulus
- Cement Head

**After Walk:**

- Float(s) in casing
- Kill weight fluid in casing
- Kill weight fluid in annulus
- Cement head
- Capping flange after cementing



### **Intermediate Casing Order of Operations:**

1. Run casing as per normal operations (float shoe and float collar).
2. Perform negative pressure test to confirm integrity of float equipment while running casing.
3. Confirm well is static (if running SBM).
4. Land casing.
5. Fill pipe, circulate casing capacity and confirm floats are still holding.
6. Confirm well is static.
7. Back out landing joint and pull to rig floor. Lay down landing joint. Install packoff & test.
8. Nipple down BOP.
9. Walk rig to next well on pad with cement crew standing by to rig up.
10. Make up offline cement tool using forklift per wellhead manufacturer (Fig. 3 - 8).
11. Make up cement head on top of offline cement tool.
12. Commence cement operations.
13. If cement circulates, confirm well is static and proceed to step 16.
14. If cement does not circulate (when required), notify the appropriate BLM office, wait a minimum of six hours, and run a temperature survey to determine the top of cement.
15. Pump remedial cement job if required.
16. Confirm well is static.
17. Remove cement head and offline cementing tool.
18. Install wellhead capping flange and 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 tested to 5000 psi and cement head
- Capping flange after cementing



**Risks:**

- Pressure build up in annulus before cementing
  - Contact BLM if a well control event occurs.
  - Rig up 3<sup>rd</sup> party pump or rig pumps to pump down casing and kill well.
  - Returns will be taken through the wellhead valves to a choke manifold (Fig 9 & 10).
  - Well could also be killed through the wellhead valves down the annulus.

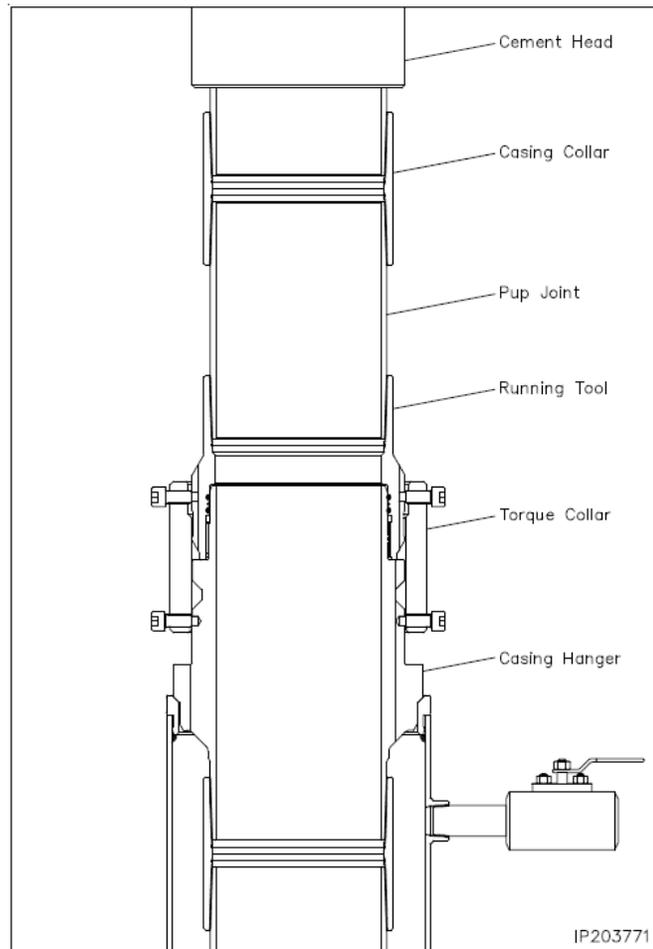


Figure 1. Cactus 13 3/8" 5M offline cementing tool. Pressure rating limited by the lesser of 5M tool rating or the 13 3/8" pup joint and casing.

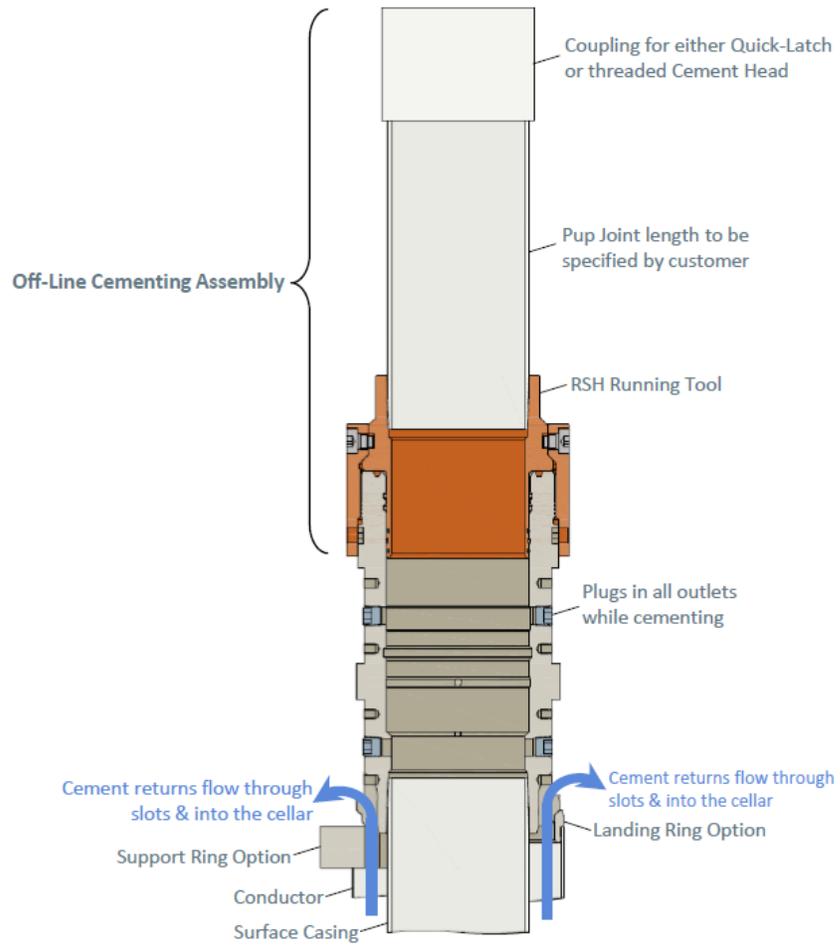


Figure 2. Vault 13 3/8" 5M offline cementing tool. Pressure rating limited by the lesser of 5M tool rating or the 13 3/8" pup joint and casing.

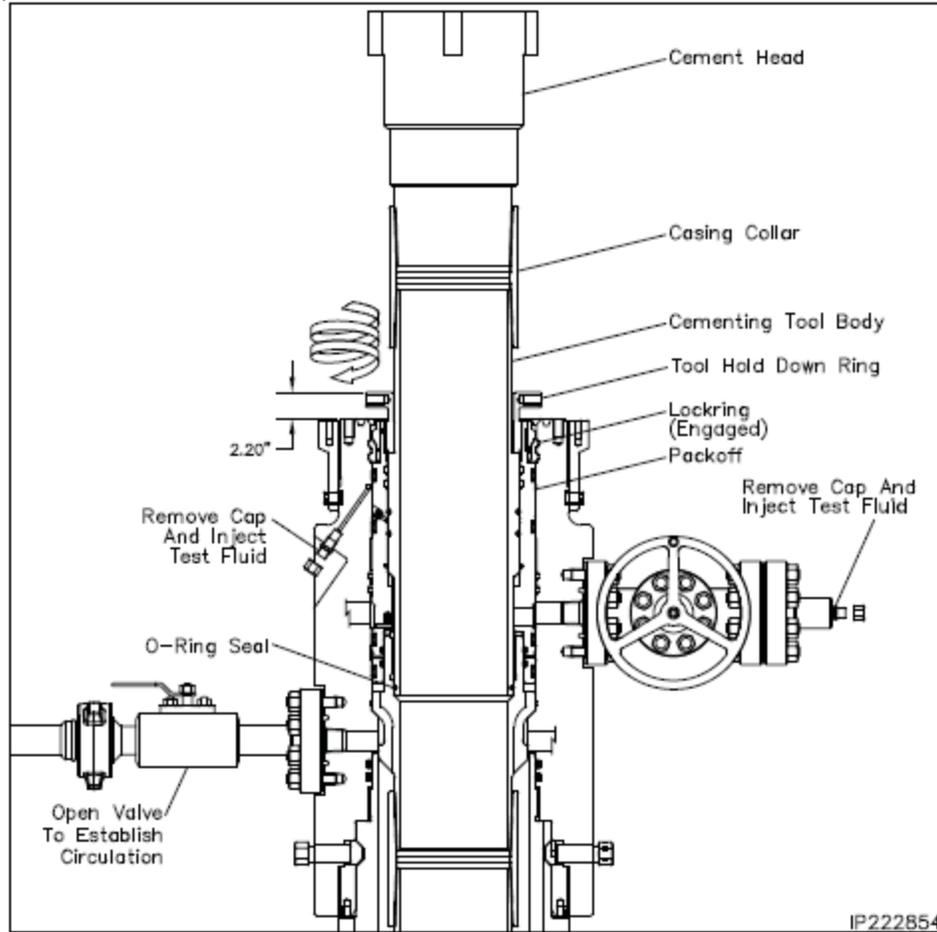


Figure 3. Cactus 9 5/8" 5M offline cementing tool. Pressure rating limited by the lesser of 5M tool rating or the 9 5/8" pup joint and casing.

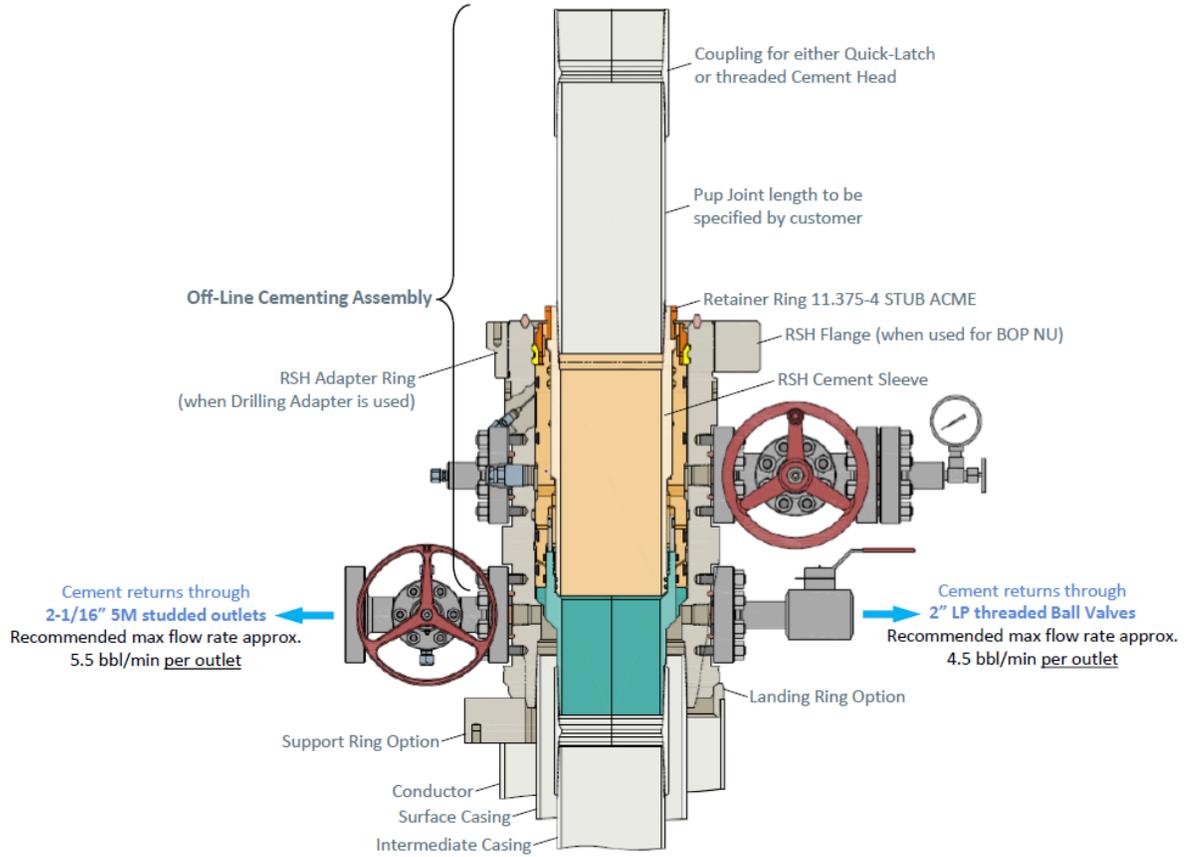


Figure 4. Vault 9 5/8" 5M offline cementing tool. Pressure rating limited by the lesser of 5M tool rating or the 9 5/8" pup joint and casing.

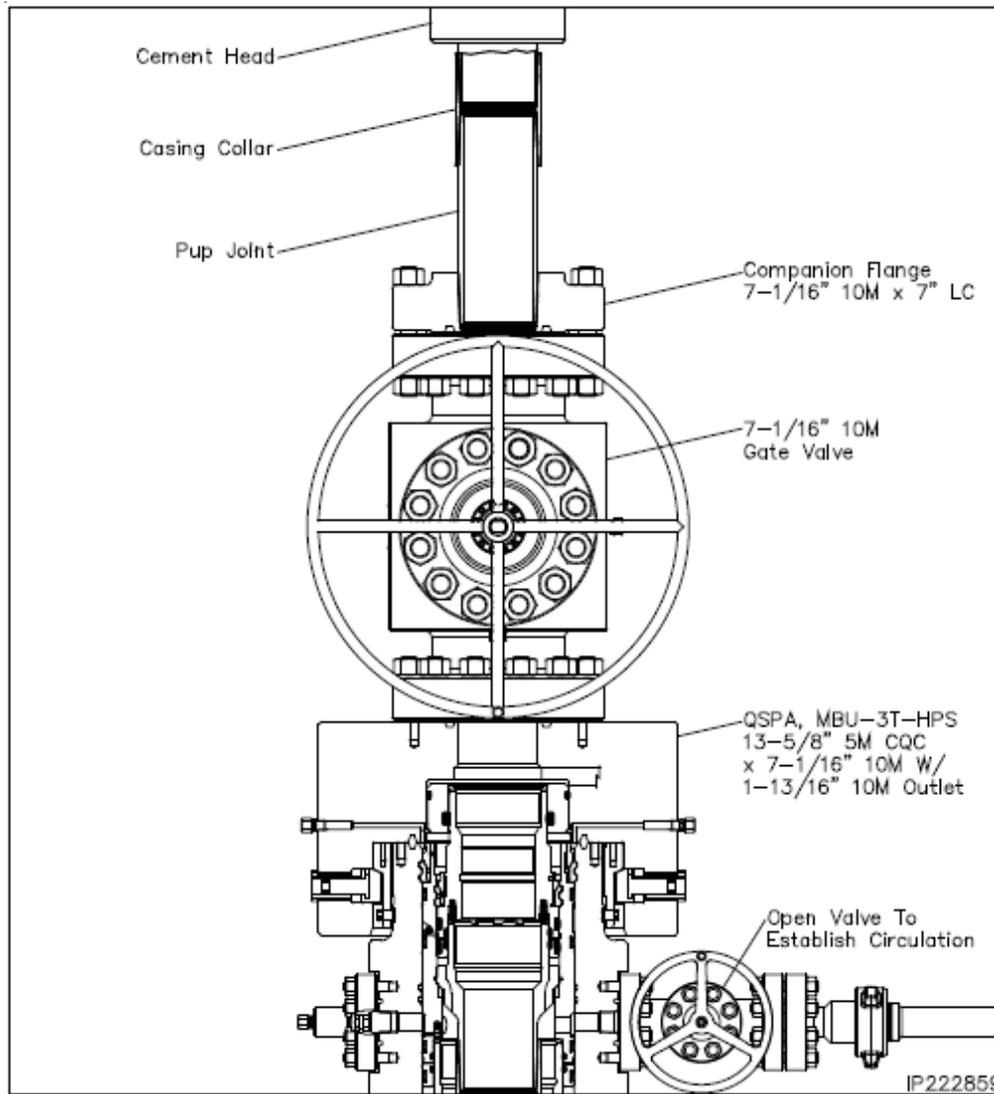


Figure 5. Cactus 7" 5M offline cementing tool. Pressure rating limited by the lesser of 5M tool rating or the 7" pup joint and casing.

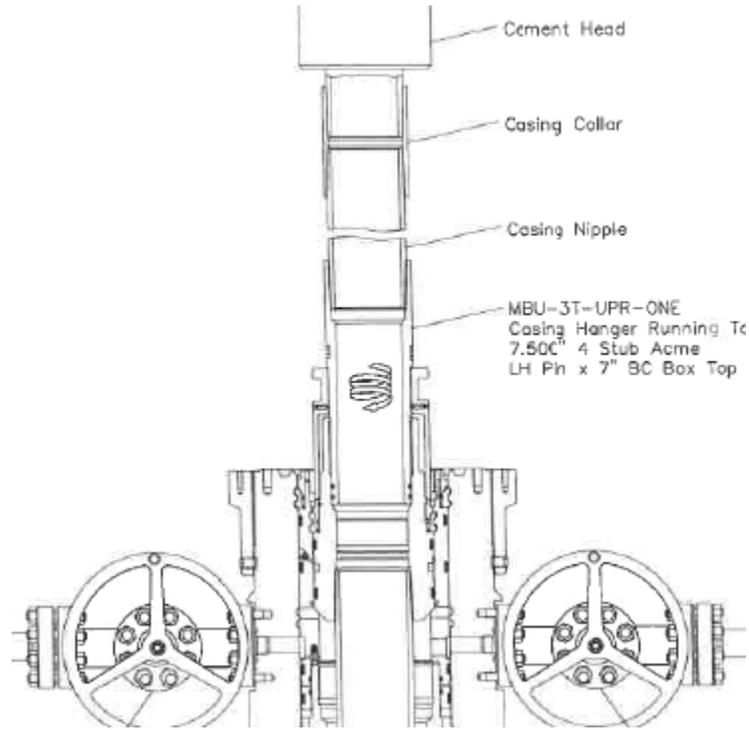


Figure 6. Cactus 7" 5M offline cementing tool. Pressure rating limited by the lesser of 5M tool rating or the 7" pup joint and casing.

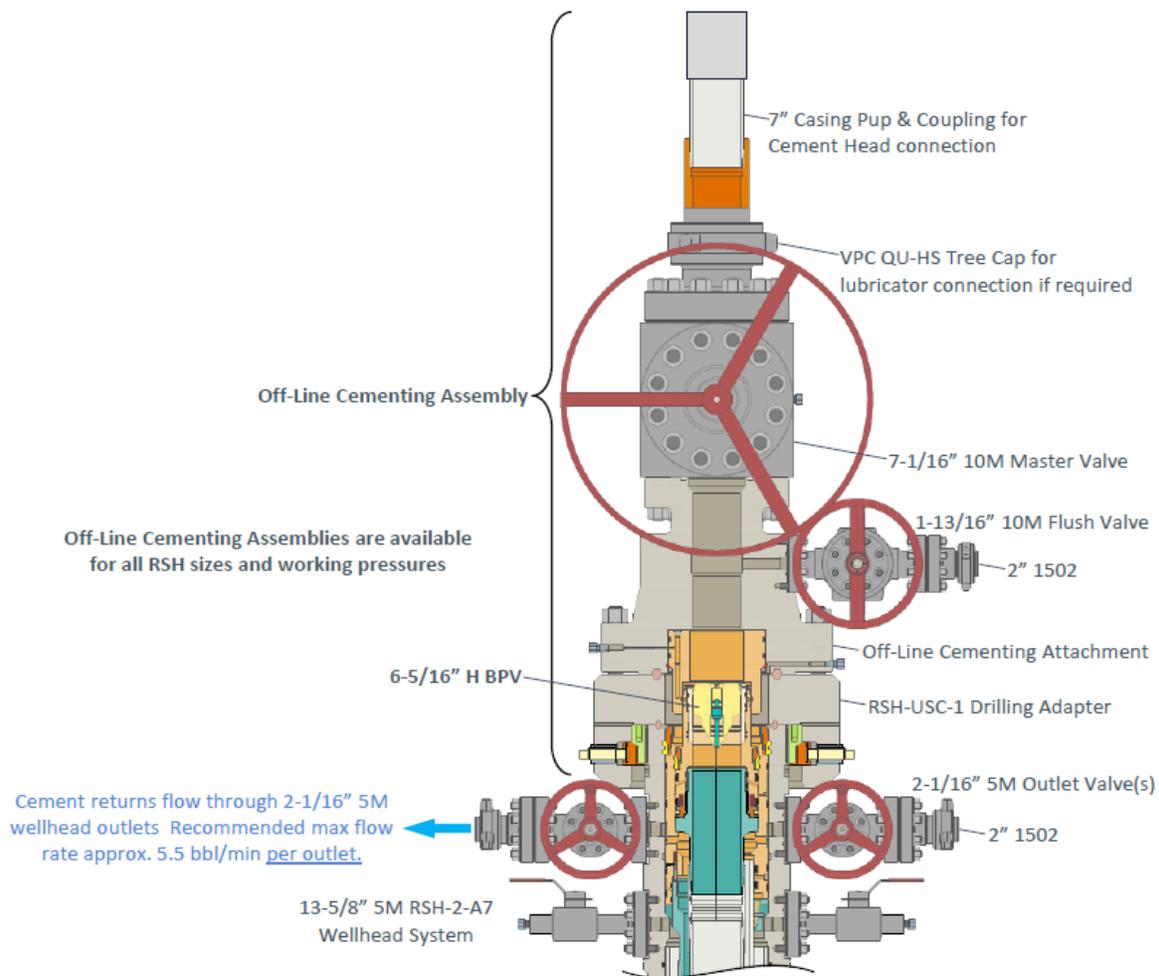


Figure 7. Vault 7" 5M offline cementing tool. Pressure rating limited by the lesser of 5M tool rating or the 7" pup joint and casing.

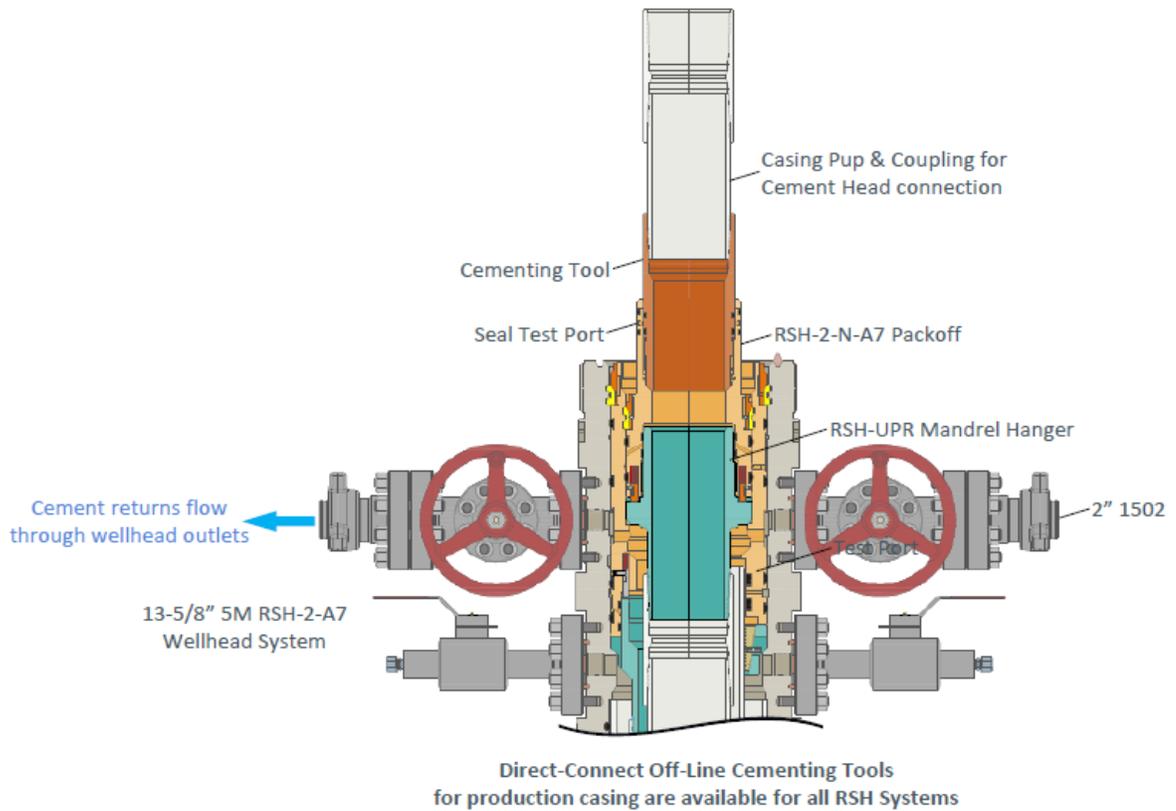


Figure 8. Vault 7" 5M offline cementing tool. Pressure rating limited by the lesser of 5M tool rating or the 7" pup joint and casing.

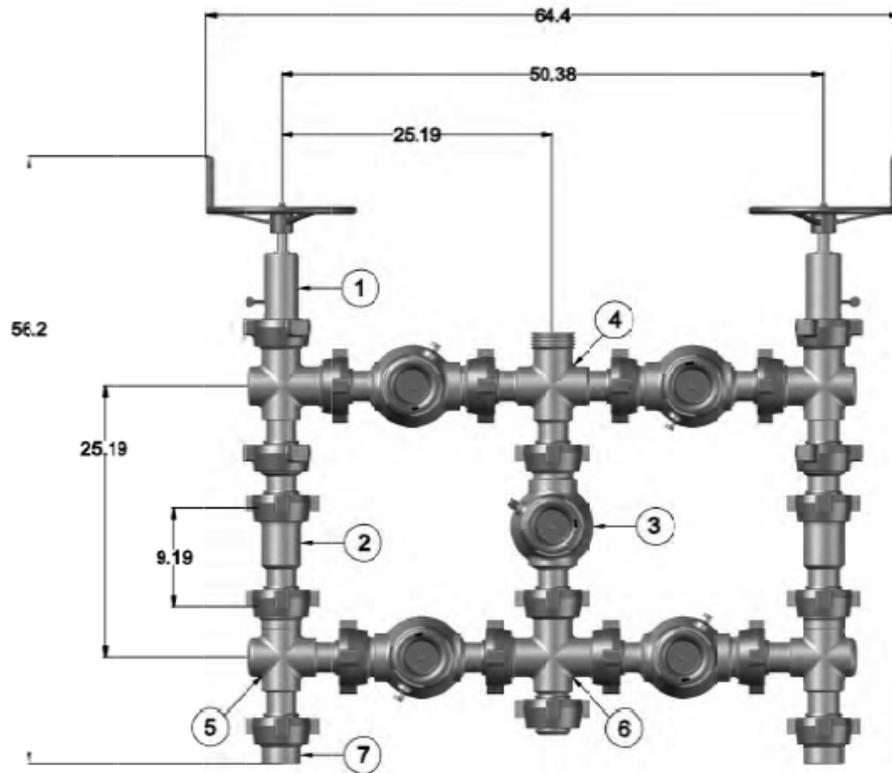


Figure 9. Five valve 15k choke manifold.

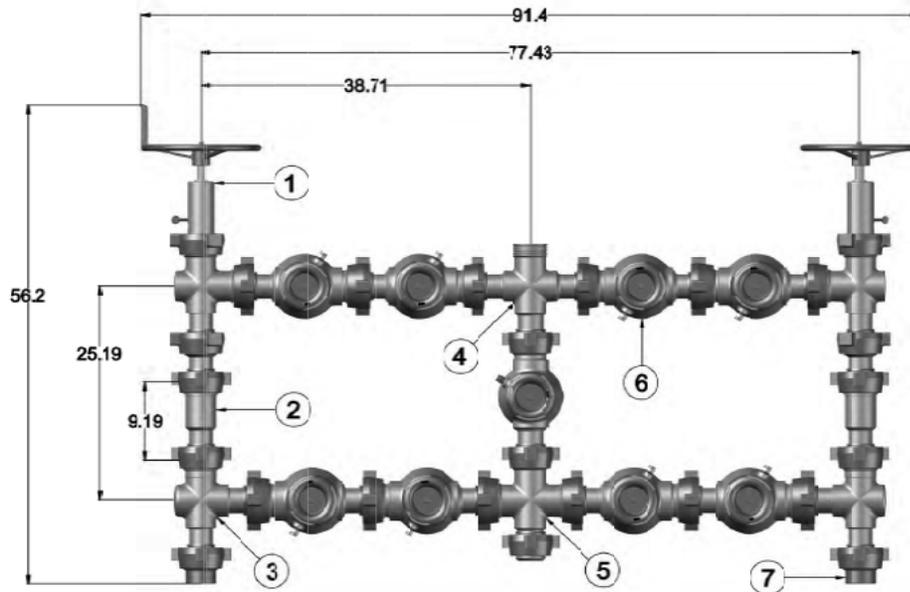


Figure 10. Nine valve 15k choke manifold.



## 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* (5<sup>th</sup> 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.



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.

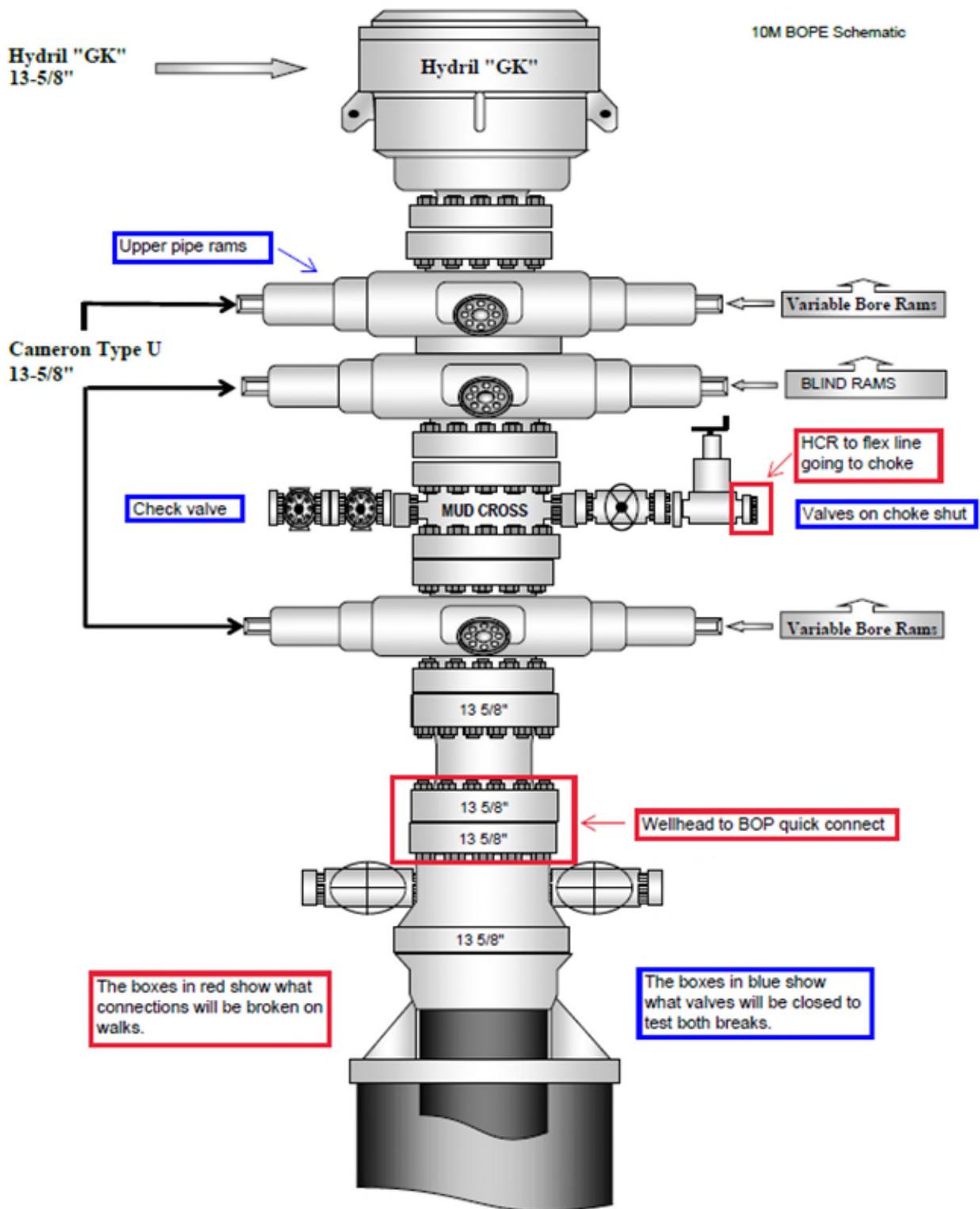


Figure 1. BOP diagram



# 5M BOPE & Closed Loop Equipment Schematic

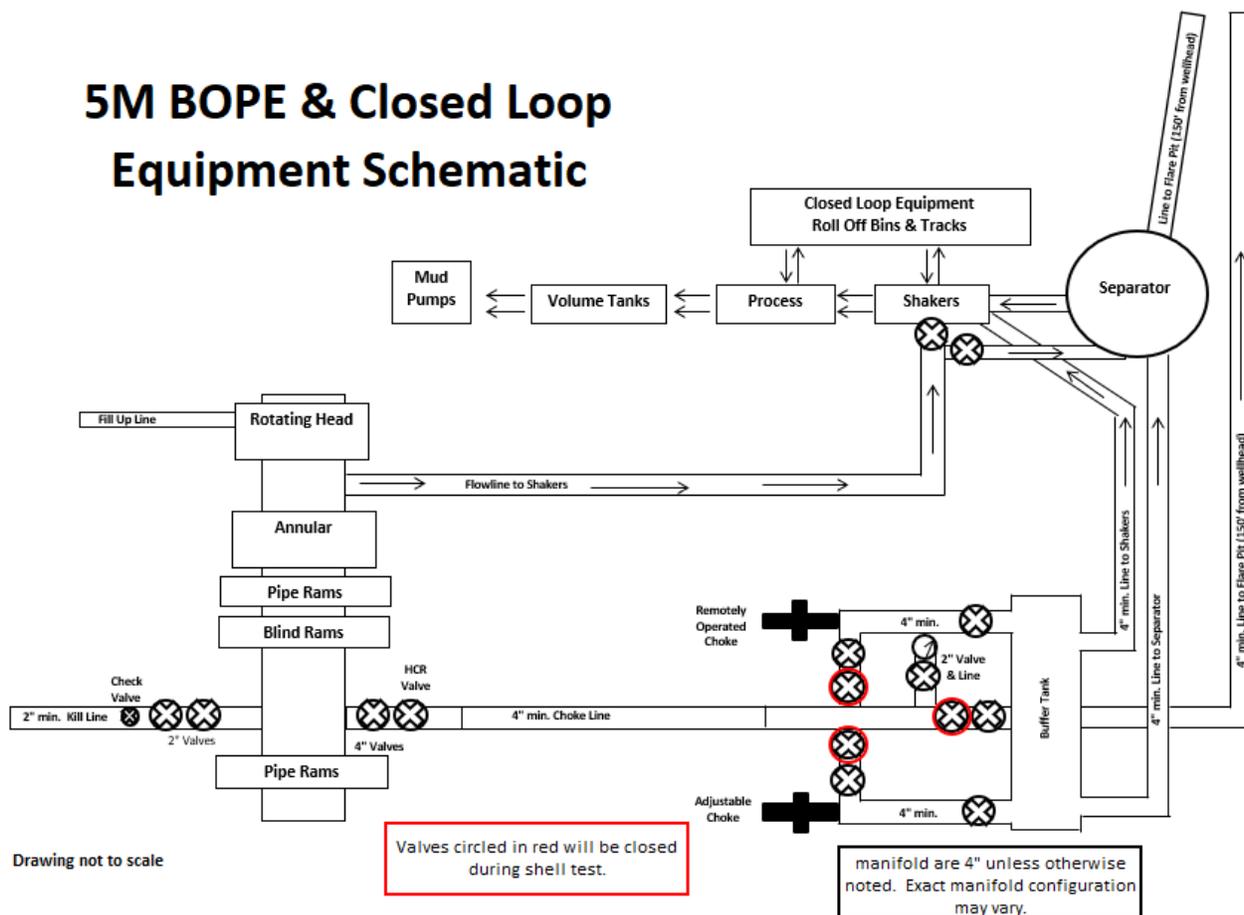


Figure 2. BOPE diagram



Figure 3. BOP handling system



Figure 4. BOP handling system

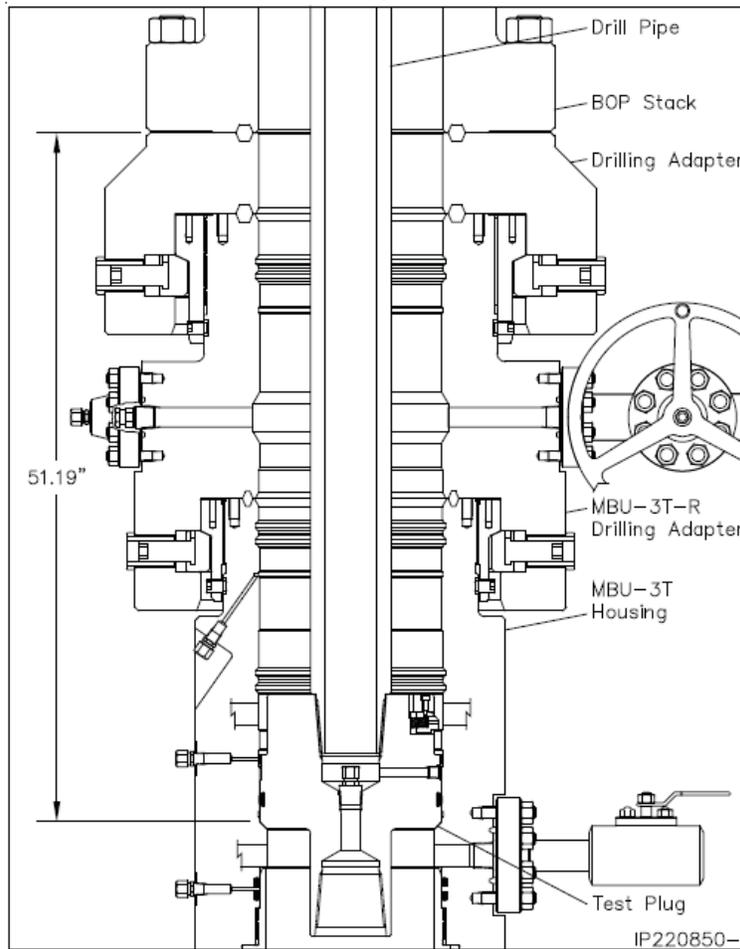


Figure 5. Cactus 5M wellhead with BOP quick connect

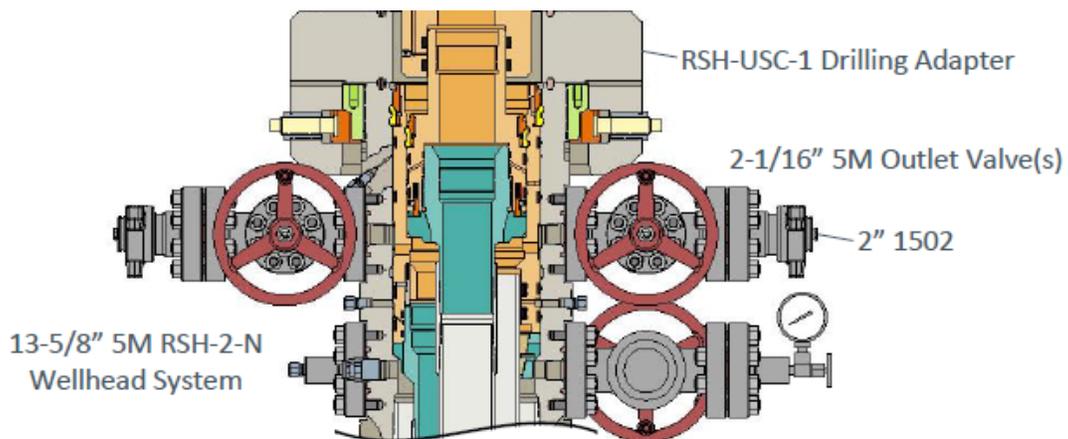


Figure 6. Vault 5M wellhead with BOP quick connect

Mewbourne Oil Company, Forty Niner Ridge Unit 127H  
 Sec 16, T23S, R30E  
 SHL: 2386' FNL 2358' FEL (Sec 16)  
 BHL: 330' FSL 1620' FEL (Sec 21)

Casing Program Design A						BLM Minimum Safety Factors	1.125	1.0	1.6 Dry	1.6 Dry
String	Hole Size	Top MD	Top TVD	Bot MD	Bot TVD	Csg. Size	SF Collapse	SF Burst	1.8 Wet	1.8 Wet
Surface	17.5"	0'	0'	390'	390'	13.375" 48# H40 STC	4.52	10.16	17.20	28.90
Int	12.25"	0'	0'	3450'	3450'	9.625" 36# J55 LTC	1.25	2.18	3.65	4.54
Production	8.75"	0'	0'	10650'	10646'	7" 26# P110 LTC	1.13	1.80	2.50	3.00
Liner	6.125"	10489'	10447'	18824'	11124'	4.5" 13.5# P110 LTC	1.60	1.87	3.00	3.75

Cement Program

Casing		# Sacks	Wt. lb/gal	Yield ft <sup>3</sup> /sack	TOC/BOC	Volume ft <sup>3</sup>	% Excess	Slurry Description
13.375 in	LEAD	130	12.5	2.12	0' - 199'	280	100%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	199' - 390'	268		Class C: Retarder
1st Stg 9.625 in	LEAD	300	12.5	2.12	1150' - 2771'	640	25%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	2771' - 3450'	268		Class C: Retarder
9.5/8" DV Tool @ 1150'								
2nd Stg 9.625 in	LEAD	150	12.5	2.12	0' - 811'	320	25%	Class C: Salt, Gel, Extender, LCM
	TAIL	100	14.8	1.34	811' - 1150'	134		Class C: Retarder
7 in	LEAD	260	12.5	2.12	3950' - 7607'	560	0%	Class C: Salt, Gel, Extender, LCM, Defoamer
	TAIL	400	15.6	1.18	7607' - 10689'	472		Class H: Retarder, Fluid Loss, Defoamer
4.5 in	LEAD	530	13.5	1.85	10489' - 18824'	990	25%	Class H: Salt, Gel, Fluid Loss, Retarder, Dispersant, Defoamer, Anti-settling Agent

Design A - Mud Program

Depth	Mud Wt	Mud Type
0' - 390'	8.4	Fresh Water
390' - 3450'	9	Brine
3450' - 10689'	10	Cut-Brine
10689' - 18824'	11.5	OBM

Geology

Formation	Est. Top (TVD)	Mineral Resources	Formation	Est. Top (TVD)	Mineral Resources
Rustler			Yeso		
Castile			Delaware (Lamar)	3590'	Oil/Natural Gas
Salt Top	435'	None	Bell Canyon	3620'	Oil/Natural Gas
Marker Bed 126	1175'	None	Cherry Canyon	4250'	Oil/Natural Gas
Salt Base	3370'	None	Manzanita Marker	4480'	Oil/Natural Gas
Seven Rivers			Basal Brushy Canyon	5855'	Oil/Natural Gas
Queen			Bone Spring	7150'	Oil/Natural Gas
Capitan			1st Bone Spring	8170'	Oil/Natural Gas
Grayburg			2nd Bone Spring	8540'	Oil/Natural Gas
San Andres			3rd Bone Spring	9300'	Oil/Natural Gas
Glorieta			Wolfcamp	10450'	Oil/Natural Gas

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 3 <sup>rd</sup> 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 2 <sup>nd</sup> 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 Open Annulus used to satisfy R-111-Q?	Y
If yes, at what depth is the TOC? 7" TOC @ 3950', BHS TOC @ 2950'	
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, Forty Niner Ridge Unit 127H  
 Sec 16, T23S, R30E  
 SHL: 2386' FNL 2358' FEL (Sec 16)  
 BHL: 330' FSL 1620' FEL (Sec 21)

Casing Program Design B						BLM Minimum Safety Factors	1.125	1.0	1.6 Dry	1.6 Dry
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'	390'	390'	13.375" 48# H40 STC	4.52	10.16	17.20	28.90
Int 2	12.25"	0'	0'	3450'	3450'	9.625" 36# J55 LTC	1.25	2.18	3.65	4.54
Production	8.75"	0'	0'	11535'	11124'	7" 26# HCP110 LTC	1.35	1.72	2.31	2.77
Liner	6.125"	10689'	10646'	18824'	11124'	4.5" 13.5# P110 LTC	1.60	1.87	3.08	3.84

Design B - Cement Program

Casing		# Sacks	Wt. lb/gal	Yield ft <sup>3</sup> /sack	TOC/BOC	Volume ft <sup>3</sup>	% Excess	Slurry Description
13.375 in	LEAD	130	12.5	2.12	0' - 199'	280	100%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	199' - 390'	268		Class C: Retarder
1st Stg 9.625 in	LEAD	300	12.5	2.12	1150' - 2771'	640	25%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	2771' - 3450'	268		Class C: Retarder
<b>9.5/8" DV Tool @ 1150'</b>								
2nd Stg 9.625 in	LEAD	150	12.5	2.12	0' - 811'	320	25%	Class C: Salt, Gel, Extender, LCM
	TAIL	100	14.8	1.34	811' - 1150'	134		Class C: Retarder
7 in	LEAD	260	12.5	2.12	3950' - 7607'	560	0%	Class C: Salt, Gel, Extender, LCM, Defoamer
	TAIL	400	15.6	1.18	7607' - 10689'	472		Class H: Retarder, Fluid Loss, Defoamer
4.5 in	LEAD	530	13.5	1.85	10689' - 18824'	990	25%	Class H: Salt, Gel, Fluid Loss, Retarder, Dispersant, Defoamer, Anti-

Design B - Mud Program

Depth	Mud Wt	Mud Type
0' - 390'	8.4	Fresh Water
390' - 3450'	9	Brine
3450' - 11535'	10	Cut-Brine
11535' - 18824'	11.5	OBM

Geology

Formation	Est. Top (TVD)	Mineral Resources	Formation	Est. Top (TVD)	Mineral Resources
Rustler			Yeso		
Castile			Delaware (Lamar)	3590'	Oil/Natural Gas
Salt Top	435'	None	Bell Canyon	3620'	Oil/Natural Gas
Marker Bed 126	1175'	None	Cherry Canyon	4250'	Oil/Natural Gas
Salt Base	3370'	None	Manzanita Marker	4480'	Oil/Natural Gas
Seven Rivers			Basal Brushy Canyon	5855'	Oil/Natural Gas
Queen			Bone Spring	7150'	Oil/Natural Gas
Capitan			1st Bone Spring	8170'	Oil/Natural Gas
Grayburg			2nd Bone Spring	8540'	Oil/Natural Gas
San Andres			3rd Bone Spring	9300'	Oil/Natural Gas
Glorieta			Wolfcamp	10450'	Oil/Natural Gas

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 3 <sup>rd</sup> 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 2 <sup>nd</sup> string set 100' to 600' below the base of salt?	Y
Is an Open Annulus used to satisfy R-111-Q?	Y
If yes, at what depth is the TOC? 7" TOC @ 3950', BHS TOC @ 2950'	
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, Forty Niner Ridge Unit 127H  
 Sec 16, T23S, R30E  
 SHL: 2386' FNL 2358' FEL (Sec 16)  
 BHL: 330' FSL 1620' FEL (Sec 21)

Well Location GL: 3143'

Point	Calls	Leases	Aliquot	Section	Township	Range	County	Lat	Long	TVD	MD
SHL	SHL: 2386' FNL & 2358' FEL (Sec 16)	State	SWNE	16	23S	30E	Eddy	32.3057915	103.8852725	0'	0'
KOP	KOP: 2406' FNL & 1620' FEL (Sec 16)	State	SWNE	16	23S	30E	Eddy	32.3057247	103.8828831	10,647'	10,689'
FTP	FTP: 2319' FSL & 1620' FEL (Sec 16)	State	NWSE	16	23S	30E	Eddy	32.3041499	103.8828872	11,124'	11,535'
PPP2	PPP2: 1325' FNL & 1613' FEL (Sec 21)	NMNM0543827	SWNE	21	23S	30E	Eddy	32.2941348	103.8828685	11,124'	15,178'
PPP3	PPP3: 2650' FNL & 1615' FEL (Sec 21)	NMNM104965	NWSE	21	23S	30E	Eddy	32.2904930	103.8828617	11,124'	16,503'
BHL	BHL: 330' FSL & 1620' FEL (Sec 21)	NMNM104965	SWSE	21	23S	30E	Eddy	32.2841125	103.8828498	11,124'	18,824'

GEOLOGY

Formation	Est. Top (TVD)	Lithology	Mineral Resources	Formation	Est. Top (TVD)	Lithology	Mineral Resources
Rustler				Yeso			
Castile				Delaware (Lamar)	3590'	Limestone/Dolomite	Oil/Natural Gas
Salt Top	435'	Salt	None	Bell Canyon	3620'	Sandstone	Oil/Natural Gas
Marker Bed 126	1175'		None	Cherry Canyon	4250'	Sandstone	Oil/Natural Gas
Salt Base	3370'	Salt	None	Manzanita Marker	4480'	Limestone	Oil/Natural Gas
Seven Rivers				Basal Brushy Canyon	5855'	Sandstone	Oil/Natural Gas
Queen				Bone Spring	7150'	Limestone	Oil/Natural Gas
Capitan				1st Bone Spring	8170'	Sandstone	Oil/Natural Gas
Grayburg				2nd Bone Spring	8540'	Sandstone	Oil/Natural Gas
San Andres				3rd Bone Spring	9300'	Sandstone	Oil/Natural Gas
Glorietta				Wolfcamp	10450'	Shale/Sandstone/Limestone	Oil/Natural Gas

Casing Program Design A						BLM Minimum Safety Factors		1.125	1.0	1.6 Dry	1.6 Dry
String	Hole Size	Top MD	Top TVD	Bot MD	Bot TVD	Csg. Size	SF Collapse	SF Burst	SF Jt Tension	1.8 Wet	1.8 Wet
Surface	17.5"	0'	0'	390'	390'	13.375" 48# H40 STC	4.52	10.16	17.20	28.90	28.90
Int	12.25"	0'	0'	3450'	3450'	9.625" 36# J55 LTC	1.25	2.18	3.65	4.54	4.54
Production	8.75"	0'	0'	10650'	10646'	7" 26# P110 LTC	1.13	1.80	2.50	3.00	3.00
Liner	6.125"	10489'	10447'	18824'	11124'	4.5" 13.5# P110 LTC	1.60	1.87	3.00	3.75	3.75

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

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Is casing API approved? If no, attach casing specification sheet.	Y
Is premium or uncommon casing planned? If yes attach casing specification sheet.	N
Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria).	Y
Will the pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing?	Y
Is well located within Capitan Reef?	N
If yes, does production casing cement tie back a minimum of 50' above the Reef?	
Is well within the designated 4 string boundary.	N
Is well located in SOPA but not in R-111-P?	N
If yes, are the first 2 strings cemented to surface and 3 <sup>rd</sup> 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 2 <sup>nd</sup> string set 100' to 600' below the base of salt?	Y
Is an Open Annulus used to satisfy R-111-Q?	Y
If yes, at what depth is the TOC? 7" TOC @ 3950', BHS TOC @ 2950'	
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, Forty Niner Ridge Unit 127H**  
**Sec 16, T23S, R30E**  
**SHL: 2386' FNL 2358' FEL (Sec 16)**  
**BHL: 330' FSL 1620' FEL (Sec 21)**

**Design A - Cement Program**

Csg. Size		# Sacks	Wt., lb/gal	Yield, ft <sup>3</sup> /sack	TOC/BOC	Volume, ft <sup>3</sup>	% Excess	Slurry Description
13.375 in	LEAD	130	12.5	2.12	0' - 199'	280	100%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	199' - 390'	268		Class C: Retarder
1st Stg 9.625 in	LEAD	300	12.5	2.12	1150' - 2771'	640	25%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	2771' - 3450'	268		Class C: Retarder
<b>9 5/8" DV Tool @ 1150'</b>								
2nd Stg 9.625 in	LEAD	150	12.5	2.12	0' - 811'	320	25%	Class C: Salt, Gel, Extender, LCM
	TAIL	100	14.8	1.34	811' - 1150'	134		Class C: Retarder
7 in	LEAD	260	12.5	2.12	3950' - 7607'	560	0%	Class C: Salt, Gel, Extender, LCM, Defoamer
	TAIL	400	15.6	1.18	7607' - 10689'	472		Class H: Retarder, Fluid Loss, Defoamer
4.5 in	LEAD	530	13.5	1.85	10489' - 18824'	990	25%	Class H: Salt, Gel, Fluid Loss, Retarder, Dispersant, Defoamer, Anti-

**Pressure Control Equipment**

BOP installed and tested before drilling hole, in:	Size, in	System Rated WP	Type	Tested to:	Rating Depth	
12.25	13.375	5M	Annular	X	2500#	18,824'
			Blind Ram	X		
		5M	Pipe Ram	X	5000#	
			Double Ram			
			Other*			

\*Specify if additional ram is utilized.

**Equipment:** Annular, Pipe Rams, Blind Rams, Other accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold. See attached schematics.

**Variance Request:** A variance is requested for the use of a 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.

**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.

<b>Y</b>	Formation integrity test will be performed per 43 CFR Part 3172. On Exploratory wells or on that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Will be tested in accordance with 43 CFR Part 3172.
<b>N</b>	Mewbourne Oil Company request a variance to use a 5000 psi annular BOP with a 10,000 psi BOP stack.

**Mud Program**

Depth (MD)	Mud Wt., lb/gal	Mud Type
	8.4	Fresh Water
0' - 390'	8.4	Fresh Water
390' - 3450'	9	Brine
3450' - 10689'	10	Cut-Brine
10689' - 18824'	11.5	OBM

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

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

Mewbourne Oil Company, Forty Niner Ridge Unit 127H

Sec 16, T23S, R30E

SHL: 2386' FNL 2358' FEL (Sec 16)

BHL: 330' FSL 1620' FEL (Sec 21)

Logging and Testing Procedures

Logging, Coring and Testing.	
Y	Will run GR/CNL from KOP (10689') to surface (horizontal well – vertical portion of hole). Stated logs run will be in the Completion Report and submitted to the BLM.
N	No logs are planned based on well control or offset log information. Offset Well:
N	Coring? If yes, explain:

Open & Cased Hole Logs Run In the Well

<input type="checkbox"/>	Caliper	<input type="checkbox"/>	Cement Bond Log	<input type="checkbox"/>	CNL/FDC
<input type="checkbox"/>	Compensated Densilog	<input checked="" type="checkbox"/>	Compensated Neutron Log	<input type="checkbox"/>	Computer Generated Log
<input type="checkbox"/>	Dip Meter Log	<input checked="" type="checkbox"/>	Directional Survey	<input type="checkbox"/>	Dual Induction/Microresistivity
<input type="checkbox"/>	Dual Lateral Log/Microspherically Focused	<input type="checkbox"/>	Electric Log	<input type="checkbox"/>	Formation Density Compensated Log
<input checked="" type="checkbox"/>	Gamma Ray Log	<input checked="" type="checkbox"/>	Measurement While Drilling	<input type="checkbox"/>	Mud Log/Geological Lithology Log
<input type="checkbox"/>	Other	<input type="checkbox"/>	Porosity-Resistivity Log	<input type="checkbox"/>	Sidewall Neutron Log
<input type="checkbox"/>	Sonic Log	<input type="checkbox"/>	Spontaneous Potential Log	<input type="checkbox"/>	Temperature Log

Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	6652 psi
BH Temperature	140
Abnormal Temp, Pressure, or Geologic Hazards	No

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

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

	H2S is present
X	H2S Plan attached

**Mewbourne Oil Company, Forty Niner Ridge Unit 127H**  
**Sec 16, T23S, R30E**  
**SHL: 2386' FNL 2358' FEL (Sec 16)**  
**BHL: 330' FSL 1620' FEL (Sec 21)**

**Other facets of operation**

Mewbourne Oil Company also requests approval to implement Design B as described below. BLM will be notified of elected design.

**Offline Cementing Variance:** Variance is request to perform offline cementing according to the attached procedure.

Casing Program Design B						BLM Minimum Safety Factors	1.125	1.0	1.6 Dry	1.6 Dry
String	Hole Size	Top MD	Top TVD	Bot MD	Bot TVD	Csg. Size	SF Collapse	SF Burst	SF Jt	SF Body
Surface	17.5"	0'	0'	390'	390'	13.375" 48# H40 STC	4.52	10.16	17.20	28.90
Int 2	12.25"	0'	0'	3450'	3450'	9.625" 36# J55 LTC	1.25	2.18	3.65	4.54
Production	8.75"	0'	0'	11535'	11124'	7" 26# HCP110 LTC	1.35	1.72	2.31	2.77
Liner	6.125"	10689'	10646'	18824'	11124'	4.5" 13.5# P110 LTC	1.60	1.87	3.08	3.84

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

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Is casing API approved? If no, attach casing specification sheet.	Y
Is premium or uncommon casing planned? If yes attach casing specification sheet.	N
Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria).	Y
Will the pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing?	Y
Is well located within Capitan Reef?	N
If yes, does production casing cement tie back a minimum of 50' above the Reef?	
Is well within the designated 4 string boundary.	N
Is well located in SOPA but not in R-111-P?	N
If yes, are the first 2 strings cemented to surface and 3 <sup>rd</sup> 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 2 <sup>nd</sup> 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 Open Annulus used to satisfy R-111-Q?	Y
If yes, at what depth is the TOC? 7" TOC @ 3950', BHS TOC @ 2950'	
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?	

**Design B - Cement Program**

Csg. Size		# Sacks	Wt., lb/gal	Yield, ft <sup>3</sup> /sack	TOC/BOC	Volume, ft <sup>3</sup>	% Excess	Slurry Description
13.375 in	LEAD	130	12.5	2.12	0' - 199'	280	100%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	199' - 390'	268		Class C: Retarder
1st Stg 9.625 in	LEAD	300	12.5	2.12	1150' - 2771'	640	25%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	2771' - 3450'	268		Class C: Retarder
<b>9 5/8" DV Tool @ 1150'</b>								
2nd Stg 9.625 in	LEAD	150	12.5	2.12	0' - 811'	320	25%	Class C: Salt, Gel, Extender, LCM
	TAIL	100	14.8	1.34	811' - 1150'	134		Class C: Retarder
7 in	LEAD	260	12.5	2.12	3950' - 7607'	560	0%	Class C: Salt, Gel, Extender, LCM, Defoamer
	TAIL	400	15.6	1.18	7607' - 10689'	472		Class H: Retarder, Fluid Loss, Defoamer
4.5 in	LEAD	530	13.5	1.85	10689' - 18824'	990	25%	Class H: Salt, Gel, Fluid Loss, Retarder, Dispersant, Defoamer, Anti-

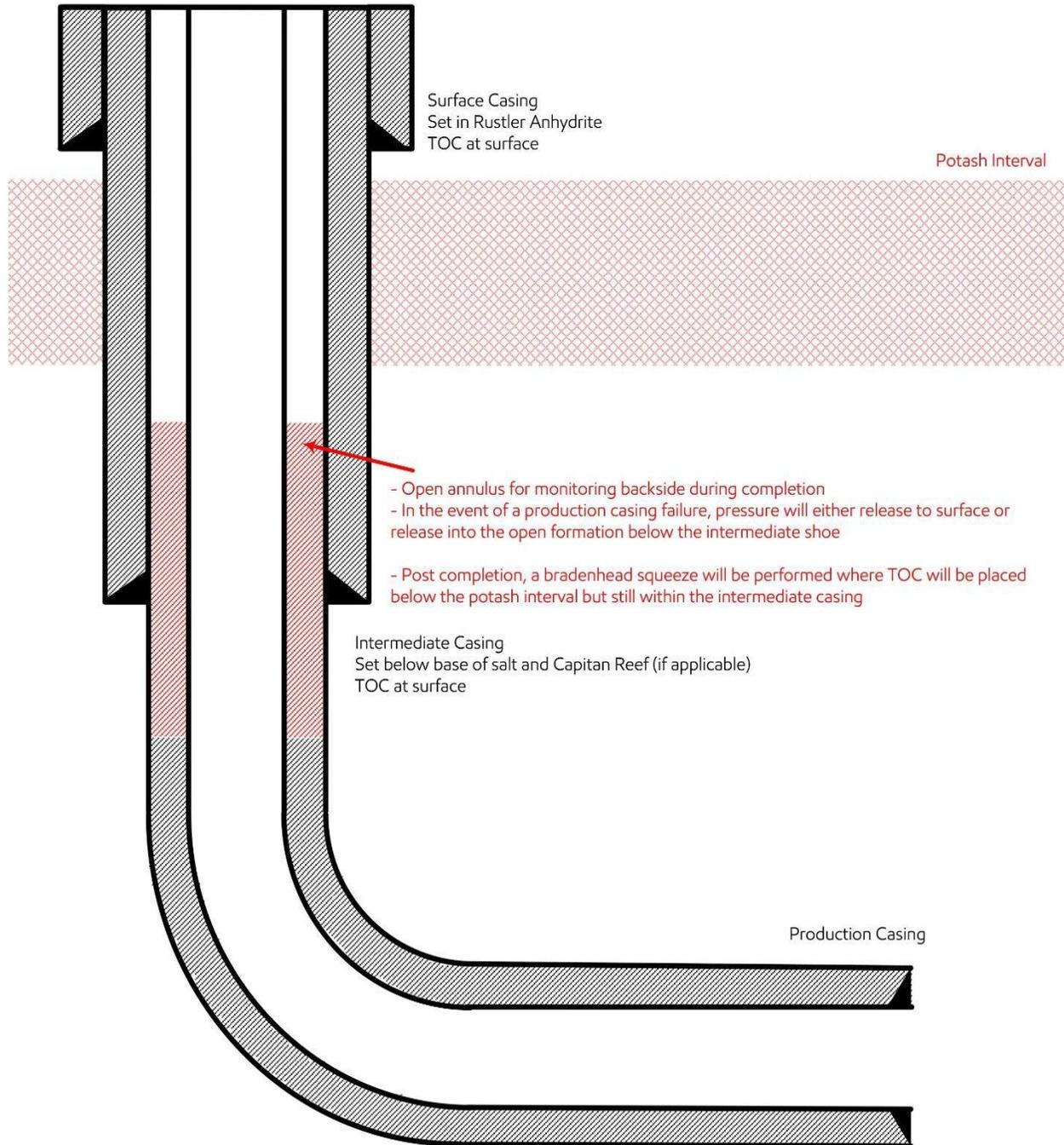
## **Mewbourne Oil Company Variance Request**

Mewbourne Oil Company request a variance for the production string per R-111P guidelines to be implemented as follows:

### **Production String**

- a) The Production string shall consist new oil field casing in good condition that meets API specifications, rated for the loads expected over the lifecycle of the well.
  
- b) For wells within the KPLA where a 2nd intermediate string will not be utilized resulting in a 3 String Design (Surface, Salt or Salt/Capitan Reef, Production), the following safeguard shall apply to safely divert flow of wellbore fluids away from the Salt Interval in the event of a catastrophic production casing failure. The Surface Equipment utilized during stimulation operations should be designed to relieve pressure from the production x intermediate casing annulus below the burst threshold of the casing string components.
  - i. A monitored open annulus will be incorporated during completion by leaving the 1st Intermediate Casing x Production Casing annulus un-cemented and monitored inside the 1st Intermediate String. Reference wellbore diagram.
    - i. The top of cement in the Production Casing x 1st Intermediate Casing Annulus shall stand uncemented at least 500' below the 1st Intermediate Casing Shoe. Zero percent excess shall be pumped on the Production Cementing Slurry to ensure no tie-back into the 1st Intermediate Casing Shoe.
    - ii. After Stimulation Operations have been concluded and no longer than 180 days after the well is brought online, the operator will be responsible for Bradenheading cement to ensure at least a 500' tie back has been established inside the 1st Intermediate (Salt String / Capitan String) but not higher than Marker Bed No. 126 (base of the Potash mining interval).
    - iii. The top of cement may be estimated through pumped displacement volumes or with the use of a fluid shot tool prior to filling backside with fluid.

### 3-String Design – Open Production Casing Annulus



Mewbourne Oil Company, Forty Niner Ridge Unit 127H  
 Sec 16, T23S, R30E  
 SHL: 2386' FNL 2358' FEL (Sec 16)  
 BHL: 330' FSL 1620' FEL (Sec 21)

Casing Program Design A						BLM Minimum Safety Factors	1.125	1.0	1.6 Dry	1.6 Dry
									1.8 Wet	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'	390'	390'	13.375" 48# H40 STC	4.52	10.16	17.20	28.90
Int	12.25"	0'	0'	3450'	3450'	9.625" 36# J55 LTC	1.25	2.18	3.65	4.54
Production	8.75"	0'	0'	10650'	10646'	7" 26# P110 LTC	1.13	1.80	2.50	3.00
Liner	6.125"	10489'	10447'	18824'	11124'	4.5" 13.5# P110 LTC	1.60	1.87	3.00	3.75

Cement Program

Casing		# Sacks	Wt. lb/gal	Yield ft <sup>3</sup> /sack	TOC/BOC	Volume ft <sup>3</sup>	% Excess	Slurry Description
13.375 in	LEAD	130	12.5	2.12	0' - 199'	280	100%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	199' - 390'	268		Class C: Retarder
1st Stg 9.625 in	LEAD	300	12.5	2.12	1150' - 2771'	640	25%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	2771' - 3450'	268		Class C: Retarder
9.5/8" DV Tool @ 1150'								
2nd Stg 9.625 in	LEAD	150	12.5	2.12	0' - 811'	320	25%	Class C: Salt, Gel, Extender, LCM
	TAIL	100	14.8	1.34	811' - 1150'	0		Class C: Retarder
7 in	LEAD	260	12.5	2.12	3950' - 7607'	560	0%	Class C: Salt, Gel, Extender, LCM, Defoamer
	TAIL	400	15.6	1.18	7607' - 10689'	472		Class H: Retarder, Fluid Loss, Defoamer
7" TOC @ 3950', BHS TOC @ 2950'								
Braden Head Sqz	LEAD	140	14.8	1.34	2950' - 3950'	190	25%	Class C
4.5 in	LEAD	530	13.5	1.85	10489' - 18824'	990	25%	Class H: Salt, Gel, Fluid Loss, Retarder, Dispersant, Defoamer, Anti-settling Agent

Casing Program Design B						BLM Minimum Safety Factors	1.125	1.0	1.6 Dry	1.6 Dry
									1.8 Wet	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'	390'	390'	13.375" 48# H40 STC	4.52	10.16	17.20	28.90
Int 2	12.25"	0'	0'	3450'	3450'	9.625" 36# J55 LTC	1.25	2.18	3.65	4.54
Production	8.75"	0'	0'	11535'	11124'	7" 26# HCP110 LTC	1.35	1.72	2.31	2.77
Liner	6.125"	10689'	10646'	18824'	11124'	4.5" 13.5# P110 LTC	1.60	1.87	3.08	3.84

Design B - Cement Program

Casing		# Sacks	Wt. lb/gal	Yield ft <sup>3</sup> /sack	TOC/BOC	Volume ft <sup>3</sup>	% Excess	Slurry Description
13.375 in	LEAD	130	12.5	2.12	0' - 199'	280	100%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	199' - 390'	268		Class C: Retarder
1st Stg 9.625 in	LEAD	50	12.5	2.12	2500' - 2776'	110	25%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	2776' - 3450'	268		Class C: Retarder
9.5/8" DV Tool @ 2500'								
2nd Stg 9.625 in	LEAD	400	12.5	2.12	0' - 2160'	850	25%	Class C: Salt, Gel, Extender, LCM
	TAIL	100	14.8	1.34	2160' - 2500'	0		Class C: Retarder
7 in	LEAD	330	12.5	2.12	3800' - 8420'	700	0%	Class C: Salt, Gel, Extender, LCM, Defoamer
	TAIL	400	15.6	1.18	8420' - 11535'	472		Class H: Retarder, Fluid Loss, Defoamer
7" TOC @ 3800', BHS TOC @ 2950'								
Braden Head Sqz	LEAD	120	14.8	1.34	2950' - 3800'	170	25%	Class C
4.5 in	LEAD	520	13.5	1.85	10689' - 18824'	970	25%	Class H: Salt, Gel, Fluid Loss, Retarder, Dispersant, Defoamer, Anti-

**Mewbourne Oil Company, Forty Niner Ridge Unit 127H**

**Sec 16, T23S, R30E**

**SHL: 2386' FNL 2358' FEL (Sec 16)**

**BHL: 330' FSL 1620' FEL (Sec 21)**

Operator Name:	Property Name:	Well Number
Mewbourne Oil Company	Forty Niner Ridge Unit	127H

**Kick Off Point (KOP)**

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
G	16	23	30	-	2406'	FNL	1620'	FEL	Eddy
Latitude					Longitude			NAD	
32.3057247					-103.8828831			83	

**First Take Point (FTP)**

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
J	16	23	30	-	2319'	FSL	1620'	FEL	Eddy
Latitude					Longitude			NAD	
32.3041499					-103.8828872			83	

**Last Take Point (LTP)**

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
O	21	23	30	-	330'	FSL	1620'	FEL	Eddy
Latitude					Longitude			NAD	
32.2841125					-103.8828498			83	

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

Is this well an infill well?  N

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

API #

Operator Name:	Property Name:	Well Number

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

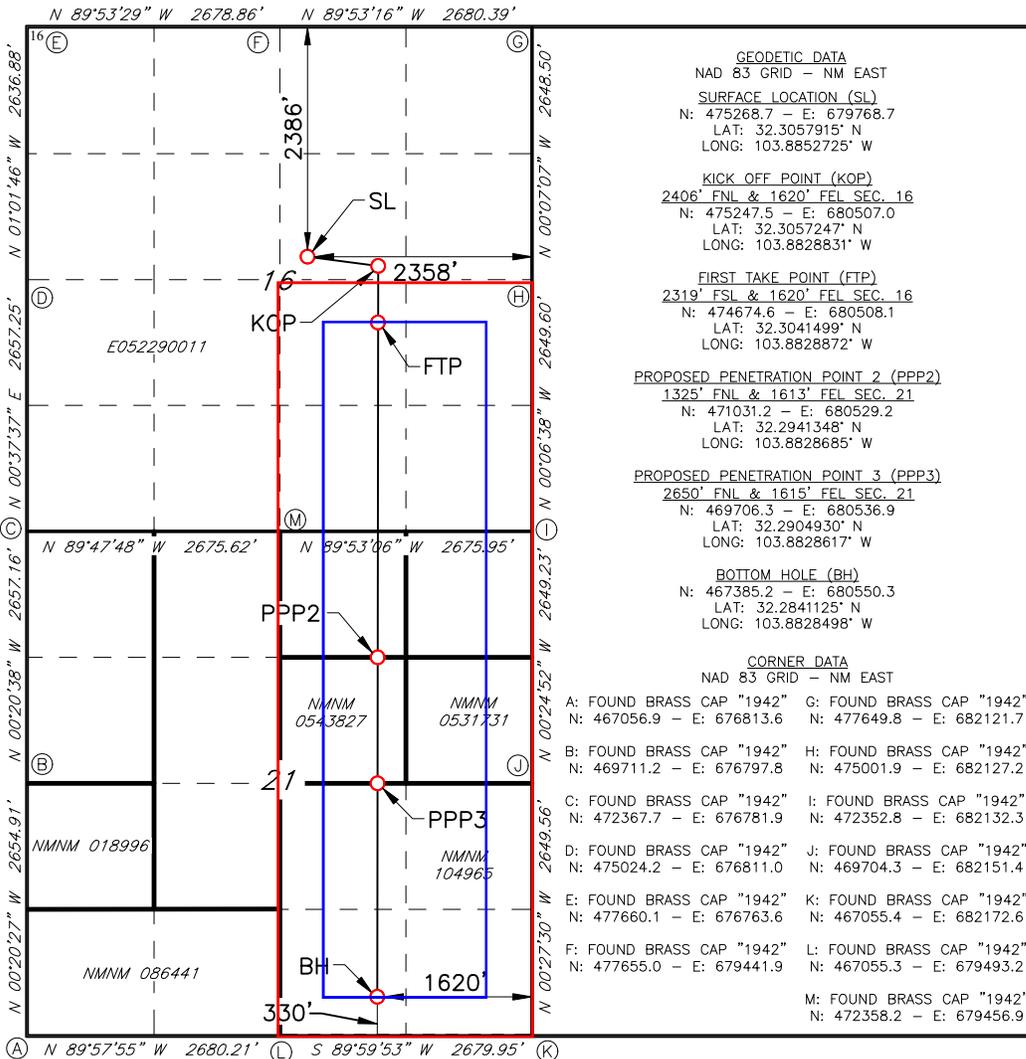
Table with 3 main columns: 1 API Number (30-015-49420), 2 Pool Code (98220), 3 Pool Name (Purple Sage Wolfcamp). Sub-headers include Property Code, Property Name (FORTY NINER RIDGE UNIT), Well Number (127H), OGRID NO. (14744), Operator Name (MEWBOURNE OIL COMPANY), and Elevation (3143').

10 Surface Location table with columns: UL or lot no. (G), Section (16), Township (23S), Range (30E), Lot Idn, Feet from the (2386), North/South line (NORTH), Feet From the (2358), East/West line (EAST), County (EDDY).

11 Bottom Hole Location If Different From Surface table with columns: UL or lot no. (O), Section (21), Township (23S), Range (30E), Lot Idn, Feet from the (330), North/South line (SOUTH), Feet from the (1620), East/West line (EAST), County (EDDY).

12 Dedicated Acres (480), 13 Joint or Infill, 14 Consolidation Code, 15 Order No.

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.



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.
Signature: Ryan McDaniel, Date: 4/2/24
Printed Name: Ryan McDaniel
E-mail Address: RyanMcDaniel@mewbourne.com

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.
Date of Survey: 3/13/2024
Signature and Seal of Professional Surveyor: Robert M. Howett
Certificate Number: 19680

Job No.: LS24030202

# **Mewbourne Oil Company**

**Eddy County, New Mexico NAD 83**

**Forty Niner Ridge #127H**

**Sec 16, T23S, R30E**

**SHL: 2386' FNL & 2358' FEL (Sec 16)**

**BHL: 330' FSL & 1620' FEL (Sec 21)**

**Plan: Design #1**

## **Standard Planning Report**

**02 April, 2024**

Planning Report

<b>Database:</b>	Hobbs	<b>Local Co-ordinate Reference:</b>	Site Forty Niner Ridge #127H
<b>Company:</b>	Mewbourne Oil Company	<b>TVD Reference:</b>	WELL @ 3171.0usft (Original Well Elev)
<b>Project:</b>	Eddy County, New Mexico NAD 83	<b>MD Reference:</b>	WELL @ 3171.0usft (Original Well Elev)
<b>Site:</b>	Forty Niner Ridge #127H	<b>North Reference:</b>	Grid
<b>Well:</b>	Sec 16, T23S, R30E	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	BHL: 330' FSL & 1620' FEL (Sec 21)		
<b>Design:</b>	Design #1		

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

<b>Site</b>	Forty Niner Ridge #127H				
<b>Site Position:</b>		<b>Northing:</b>	475,268.70 usft	<b>Latitude:</b>	32.3057916
<b>From:</b>	Map	<b>Easting:</b>	679,768.70 usft	<b>Longitude:</b>	-103.8852724
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b>	13-3/16 "		

<b>Well</b>	Sec 16, T23S, R30E					
<b>Well Position</b>	<b>+N/-S</b>	0.0 usft	<b>Northing:</b>	475,268.70 usft	<b>Latitude:</b>	32.3057916
	<b>+E/-W</b>	0.0 usft	<b>Easting:</b>	679,768.70 usft	<b>Longitude:</b>	-103.8852724
<b>Position Uncertainty</b>		0.0 usft	<b>Wellhead Elevation:</b>	3,171.0 usft	<b>Ground Level:</b>	3,143.0 usft
<b>Grid Convergence:</b>	0.24 °					

<b>Wellbore</b>	BHL: 330' FSL & 1620' FEL (Sec 21)				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	12/31/2014	7.30	60.12	48,254.34329249

<b>Design</b>	Design #1			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	174.34

<b>Plan Survey Tool Program</b>	<b>Date</b>	4/2/2024		
<b>Depth From (usft)</b>	<b>Depth To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>
1	0.0	18,824.0	Design #1 (BHL: 330' FSL & 1620	

<b>Plan Sections</b>										
<b>Measured Depth (usft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Dogleg Rate (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>	<b>TFO (°)</b>	<b>Target</b>
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
4,000.0	0.00	0.00	4,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
4,333.7	6.67	91.64	4,332.9	-0.6	19.4	2.00	2.00	0.00	91.64	
10,355.6	6.67	91.64	10,314.1	-20.6	718.9	0.00	0.00	0.00	0.00	
10,689.3	0.00	0.00	10,647.0	-21.2	738.3	2.00	-2.00	0.00	180.00	KOP: 2406' FNL & 16
11,438.6	90.00	179.68	11,124.0	-498.2	740.9	12.01	12.01	0.00	179.68	
18,824.0	90.00	179.68	11,124.0	-7,883.5	781.6	0.00	0.00	0.00	0.00	BHL: 330' FSL & 1620

Planning Report

<b>Database:</b>	Hobbs	<b>Local Co-ordinate Reference:</b>	Site Forty Niner Ridge #127H
<b>Company:</b>	Mewbourne Oil Company	<b>TVD Reference:</b>	WELL @ 3171.0usft (Original Well Elev)
<b>Project:</b>	Eddy County, New Mexico NAD 83	<b>MD Reference:</b>	WELL @ 3171.0usft (Original Well Elev)
<b>Site:</b>	Forty Niner Ridge #127H	<b>North Reference:</b>	Grid
<b>Well:</b>	Sec 16, T23S, R30E	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	BHL: 330' FSL & 1620' FEL (Sec 21)		
<b>Design:</b>	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	
<b>SHL: 2386' FNL &amp; 2358' FEL (Sec 16)</b>										
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00	
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00	
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00	
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00	
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00	
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00	
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00	
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00	
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00	
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00	
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00	
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	0.00	
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	0.00	
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	0.00	
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	0.00	
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	0.00	
3,100.0	0.00	0.00	3,100.0	0.0	0.0	0.0	0.00	0.00	0.00	
3,200.0	0.00	0.00	3,200.0	0.0	0.0	0.0	0.00	0.00	0.00	
3,300.0	0.00	0.00	3,300.0	0.0	0.0	0.0	0.00	0.00	0.00	
3,400.0	0.00	0.00	3,400.0	0.0	0.0	0.0	0.00	0.00	0.00	
3,500.0	0.00	0.00	3,500.0	0.0	0.0	0.0	0.00	0.00	0.00	
3,600.0	0.00	0.00	3,600.0	0.0	0.0	0.0	0.00	0.00	0.00	
3,700.0	0.00	0.00	3,700.0	0.0	0.0	0.0	0.00	0.00	0.00	
3,800.0	0.00	0.00	3,800.0	0.0	0.0	0.0	0.00	0.00	0.00	
3,900.0	0.00	0.00	3,900.0	0.0	0.0	0.0	0.00	0.00	0.00	
4,000.0	0.00	0.00	4,000.0	0.0	0.0	0.0	0.00	0.00	0.00	
4,100.0	2.00	91.64	4,100.0	-0.1	1.7	0.2	2.00	2.00	0.00	
4,200.0	4.00	91.64	4,199.8	-0.2	7.0	0.9	2.00	2.00	0.00	
4,300.0	6.00	91.64	4,299.5	-0.5	15.7	2.0	2.00	2.00	0.00	
4,333.7	6.67	91.64	4,332.9	-0.6	19.4	2.5	2.00	2.00	0.00	
4,400.0	6.67	91.64	4,398.8	-0.8	27.1	3.4	0.00	0.00	0.00	
4,500.0	6.67	91.64	4,498.1	-1.1	38.7	4.9	0.00	0.00	0.00	
4,600.0	6.67	91.64	4,597.4	-1.4	50.3	6.4	0.00	0.00	0.00	
4,700.0	6.67	91.64	4,696.8	-1.8	62.0	7.9	0.00	0.00	0.00	
4,800.0	6.67	91.64	4,796.1	-2.1	73.6	9.4	0.00	0.00	0.00	
4,900.0	6.67	91.64	4,895.4	-2.4	85.2	10.8	0.00	0.00	0.00	
5,000.0	6.67	91.64	4,994.7	-2.8	96.8	12.3	0.00	0.00	0.00	
5,100.0	6.67	91.64	5,094.1	-3.1	108.4	13.8	0.00	0.00	0.00	

Planning Report

<b>Database:</b>	Hobbs	<b>Local Co-ordinate Reference:</b>	Site Forty Niner Ridge #127H
<b>Company:</b>	Mewbourne Oil Company	<b>TVD Reference:</b>	WELL @ 3171.0usft (Original Well Elev)
<b>Project:</b>	Eddy County, New Mexico NAD 83	<b>MD Reference:</b>	WELL @ 3171.0usft (Original Well Elev)
<b>Site:</b>	Forty Niner Ridge #127H	<b>North Reference:</b>	Grid
<b>Well:</b>	Sec 16, T23S, R30E	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	BHL: 330' FSL & 1620' FEL (Sec 21)		
<b>Design:</b>	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	6.67	91.64	5,193.4	-3.4	120.0	15.3	0.00	0.00	0.00	
5,300.0	6.67	91.64	5,292.7	-3.8	131.6	16.8	0.00	0.00	0.00	
5,400.0	6.67	91.64	5,392.0	-4.1	143.3	18.2	0.00	0.00	0.00	
5,500.0	6.67	91.64	5,491.3	-4.4	154.9	19.7	0.00	0.00	0.00	
5,600.0	6.67	91.64	5,590.7	-4.8	166.5	21.2	0.00	0.00	0.00	
5,700.0	6.67	91.64	5,690.0	-5.1	178.1	22.7	0.00	0.00	0.00	
5,800.0	6.67	91.64	5,789.3	-5.4	189.7	24.1	0.00	0.00	0.00	
5,900.0	6.67	91.64	5,888.6	-5.8	201.3	25.6	0.00	0.00	0.00	
6,000.0	6.67	91.64	5,988.0	-6.1	213.0	27.1	0.00	0.00	0.00	
6,100.0	6.67	91.64	6,087.3	-6.4	224.6	28.6	0.00	0.00	0.00	
6,200.0	6.67	91.64	6,186.6	-6.8	236.2	30.1	0.00	0.00	0.00	
6,300.0	6.67	91.64	6,285.9	-7.1	247.8	31.5	0.00	0.00	0.00	
6,400.0	6.67	91.64	6,385.2	-7.4	259.4	33.0	0.00	0.00	0.00	
6,500.0	6.67	91.64	6,484.6	-7.8	271.0	34.5	0.00	0.00	0.00	
6,600.0	6.67	91.64	6,583.9	-8.1	282.7	36.0	0.00	0.00	0.00	
6,700.0	6.67	91.64	6,683.2	-8.4	294.3	37.4	0.00	0.00	0.00	
6,800.0	6.67	91.64	6,782.5	-8.8	305.9	38.9	0.00	0.00	0.00	
6,900.0	6.67	91.64	6,881.9	-9.1	317.5	40.4	0.00	0.00	0.00	
7,000.0	6.67	91.64	6,981.2	-9.5	329.1	41.9	0.00	0.00	0.00	
7,100.0	6.67	91.64	7,080.5	-9.8	340.7	43.4	0.00	0.00	0.00	
7,200.0	6.67	91.64	7,179.8	-10.1	352.3	44.8	0.00	0.00	0.00	
7,300.0	6.67	91.64	7,279.1	-10.5	364.0	46.3	0.00	0.00	0.00	
7,400.0	6.67	91.64	7,378.5	-10.8	375.6	47.8	0.00	0.00	0.00	
7,500.0	6.67	91.64	7,477.8	-11.1	387.2	49.3	0.00	0.00	0.00	
7,600.0	6.67	91.64	7,577.1	-11.5	398.8	50.7	0.00	0.00	0.00	
7,700.0	6.67	91.64	7,676.4	-11.8	410.4	52.2	0.00	0.00	0.00	
7,800.0	6.67	91.64	7,775.8	-12.1	422.0	53.7	0.00	0.00	0.00	
7,900.0	6.67	91.64	7,875.1	-12.5	433.7	55.2	0.00	0.00	0.00	
8,000.0	6.67	91.64	7,974.4	-12.8	445.3	56.7	0.00	0.00	0.00	
8,100.0	6.67	91.64	8,073.7	-13.1	456.9	58.1	0.00	0.00	0.00	
8,200.0	6.67	91.64	8,173.1	-13.5	468.5	59.6	0.00	0.00	0.00	
8,300.0	6.67	91.64	8,272.4	-13.8	480.1	61.1	0.00	0.00	0.00	
8,400.0	6.67	91.64	8,371.7	-14.1	491.7	62.6	0.00	0.00	0.00	
8,500.0	6.67	91.64	8,471.0	-14.5	503.4	64.0	0.00	0.00	0.00	
8,600.0	6.67	91.64	8,570.3	-14.8	515.0	65.5	0.00	0.00	0.00	
8,700.0	6.67	91.64	8,669.7	-15.1	526.6	67.0	0.00	0.00	0.00	
8,800.0	6.67	91.64	8,769.0	-15.5	538.2	68.5	0.00	0.00	0.00	
8,900.0	6.67	91.64	8,868.3	-15.8	549.8	70.0	0.00	0.00	0.00	
9,000.0	6.67	91.64	8,967.6	-16.1	561.4	71.4	0.00	0.00	0.00	
9,100.0	6.67	91.64	9,067.0	-16.5	573.0	72.9	0.00	0.00	0.00	
9,200.0	6.67	91.64	9,166.3	-16.8	584.7	74.4	0.00	0.00	0.00	
9,300.0	6.67	91.64	9,265.6	-17.1	596.3	75.9	0.00	0.00	0.00	
9,400.0	6.67	91.64	9,364.9	-17.5	607.9	77.3	0.00	0.00	0.00	
9,500.0	6.67	91.64	9,464.2	-17.8	619.5	78.8	0.00	0.00	0.00	
9,600.0	6.67	91.64	9,563.6	-18.1	631.1	80.3	0.00	0.00	0.00	
9,700.0	6.67	91.64	9,662.9	-18.5	642.7	81.8	0.00	0.00	0.00	
9,800.0	6.67	91.64	9,762.2	-18.8	654.4	83.3	0.00	0.00	0.00	
9,900.0	6.67	91.64	9,861.5	-19.1	666.0	84.7	0.00	0.00	0.00	
10,000.0	6.67	91.64	9,960.9	-19.5	677.6	86.2	0.00	0.00	0.00	
10,100.0	6.67	91.64	10,060.2	-19.8	689.2	87.7	0.00	0.00	0.00	
10,200.0	6.67	91.64	10,159.5	-20.1	700.8	89.2	0.00	0.00	0.00	
10,300.0	6.67	91.64	10,258.8	-20.5	712.4	90.6	0.00	0.00	0.00	
10,355.6	6.67	91.64	10,314.1	-20.6	718.9	91.5	0.00	0.00	0.00	
10,400.0	5.79	91.64	10,358.2	-20.8	723.7	92.1	2.00	-2.00	0.00	

Planning Report

<b>Database:</b>	Hobbs	<b>Local Co-ordinate Reference:</b>	Site Forty Niner Ridge #127H
<b>Company:</b>	Mewbourne Oil Company	<b>TVD Reference:</b>	WELL @ 3171.0usft (Original Well Elev)
<b>Project:</b>	Eddy County, New Mexico NAD 83	<b>MD Reference:</b>	WELL @ 3171.0usft (Original Well Elev)
<b>Site:</b>	Forty Niner Ridge #127H	<b>North Reference:</b>	Grid
<b>Well:</b>	Sec 16, T23S, R30E	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	BHL: 330' FSL & 1620' FEL (Sec 21)		
<b>Design:</b>	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)	
10,500.0	3.79	91.64	10,457.8	-21.0	732.1	93.1	2.00	-2.00	0.00	
10,600.0	1.79	91.64	10,557.7	-21.2	736.9	93.8	2.00	-2.00	0.00	
10,689.3	0.00	0.00	10,647.0	-21.2	738.3	93.9	2.00	-2.00	0.00	
<b>KOP: 2406' FNL &amp; 1620' FEL (Sec 16)</b>										
10,700.0	1.28	179.68	10,657.7	-21.3	738.3	94.1	12.01	12.01	0.00	
10,725.0	4.29	179.68	10,682.7	-22.5	738.3	95.3	12.01	12.01	0.00	
10,750.0	7.29	179.68	10,707.5	-25.1	738.3	97.8	12.01	12.01	0.00	
10,775.0	10.29	179.68	10,732.2	-28.9	738.3	101.6	12.01	12.01	0.00	
10,800.0	13.30	179.68	10,756.7	-34.0	738.4	106.7	12.01	12.01	0.00	
10,825.0	16.30	179.68	10,780.9	-40.4	738.4	113.0	12.01	12.01	0.00	
10,850.0	19.30	179.68	10,804.7	-48.0	738.4	120.6	12.01	12.01	0.00	
10,875.0	22.31	179.68	10,828.0	-56.9	738.5	129.5	12.01	12.01	0.00	
10,900.0	25.31	179.68	10,850.9	-67.0	738.6	139.5	12.01	12.01	0.00	
10,925.0	28.31	179.68	10,873.2	-78.3	738.6	150.7	12.01	12.01	0.00	
10,950.0	31.31	179.68	10,894.9	-90.7	738.7	163.1	12.01	12.01	0.00	
10,975.0	34.32	179.68	10,915.9	-104.2	738.8	176.6	12.01	12.01	0.00	
11,000.0	37.32	179.68	10,936.2	-118.9	738.8	191.2	12.01	12.01	0.00	
11,025.0	40.32	179.68	10,955.7	-134.5	738.9	206.8	12.01	12.01	0.00	
11,050.0	43.33	179.68	10,974.3	-151.2	739.0	223.4	12.01	12.01	0.00	
11,075.0	46.33	179.68	10,992.0	-168.8	739.1	240.9	12.01	12.01	0.00	
11,100.0	49.33	179.68	11,008.8	-187.3	739.2	259.4	12.01	12.01	0.00	
11,125.0	52.33	179.68	11,024.6	-206.7	739.3	278.7	12.01	12.01	0.00	
11,150.0	55.34	179.68	11,039.3	-226.9	739.4	298.8	12.01	12.01	0.00	
11,175.0	58.34	179.68	11,053.0	-247.8	739.5	319.6	12.01	12.01	0.00	
11,200.0	61.34	179.68	11,065.6	-269.4	739.7	341.1	12.01	12.01	0.00	
11,225.0	64.35	179.68	11,077.0	-291.7	739.8	363.3	12.01	12.01	0.00	
11,250.0	67.35	179.68	11,087.2	-314.5	739.9	386.0	12.01	12.01	0.00	
11,275.0	70.35	179.68	11,096.2	-337.8	740.0	409.2	12.01	12.01	0.00	
11,300.0	73.35	179.68	11,104.0	-361.6	740.2	432.8	12.01	12.01	0.00	
11,325.0	76.36	179.68	11,110.5	-385.7	740.3	456.8	12.01	12.01	0.00	
11,350.0	79.36	179.68	11,115.8	-410.1	740.4	481.2	12.01	12.01	0.00	
11,375.0	82.36	179.68	11,119.8	-434.8	740.6	505.8	12.01	12.01	0.00	
11,400.0	85.37	179.68	11,122.4	-459.7	740.7	530.5	12.01	12.01	0.00	
11,425.0	88.37	179.68	11,123.8	-484.6	740.9	555.3	12.01	12.01	0.00	
11,438.6	90.00	179.68	11,124.0	-498.2	740.9	568.9	12.01	12.01	0.00	
11,500.0	90.00	179.68	11,124.0	-559.6	741.3	630.0	0.00	0.00	0.00	
11,534.5	90.00	179.68	11,124.0	-594.1	741.5	664.4	0.00	0.00	0.00	
<b>FTP/LP: 2319' FSL &amp; 1620' FEL (Sec 16)</b>										
11,600.0	90.00	179.68	11,124.0	-659.6	741.8	729.6	0.00	0.00	0.00	
11,700.0	90.00	179.68	11,124.0	-759.6	742.4	829.1	0.00	0.00	0.00	
11,800.0	90.00	179.68	11,124.0	-859.6	742.9	928.7	0.00	0.00	0.00	
11,900.0	90.00	179.68	11,124.0	-959.6	743.5	1,028.3	0.00	0.00	0.00	
12,000.0	90.00	179.68	11,124.0	-1,059.6	744.0	1,127.8	0.00	0.00	0.00	
12,100.0	90.00	179.68	11,124.0	-1,159.6	744.6	1,227.4	0.00	0.00	0.00	
12,200.0	90.00	179.68	11,124.0	-1,259.6	745.1	1,327.0	0.00	0.00	0.00	
12,300.0	90.00	179.68	11,124.0	-1,359.6	745.7	1,426.5	0.00	0.00	0.00	
12,400.0	90.00	179.68	11,124.0	-1,459.6	746.2	1,526.1	0.00	0.00	0.00	
12,500.0	90.00	179.68	11,124.0	-1,559.6	746.8	1,625.7	0.00	0.00	0.00	
12,600.0	90.00	179.68	11,124.0	-1,659.6	747.3	1,725.2	0.00	0.00	0.00	
12,700.0	90.00	179.68	11,124.0	-1,759.6	747.9	1,824.8	0.00	0.00	0.00	
12,800.0	90.00	179.68	11,124.0	-1,859.6	748.4	1,924.4	0.00	0.00	0.00	
12,900.0	90.00	179.68	11,124.0	-1,959.6	749.0	2,023.9	0.00	0.00	0.00	
13,000.0	90.00	179.68	11,124.0	-2,059.6	749.5	2,123.5	0.00	0.00	0.00	
13,100.0	90.00	179.68	11,124.0	-2,159.6	750.1	2,223.1	0.00	0.00	0.00	

Planning Report

<b>Database:</b>	Hobbs	<b>Local Co-ordinate Reference:</b>	Site Forty Niner Ridge #127H
<b>Company:</b>	Mewbourne Oil Company	<b>TVD Reference:</b>	WELL @ 3171.0usft (Original Well Elev)
<b>Project:</b>	Eddy County, New Mexico NAD 83	<b>MD Reference:</b>	WELL @ 3171.0usft (Original Well Elev)
<b>Site:</b>	Forty Niner Ridge #127H	<b>North Reference:</b>	Grid
<b>Well:</b>	Sec 16, T23S, R30E	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	BHL: 330' FSL & 1620' FEL (Sec 21)		
<b>Design:</b>	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)
13,200.0	90.00	179.68	11,124.0	-2,259.6	750.6	2,322.6	0.00	0.00	0.00
13,300.0	90.00	179.68	11,124.0	-2,359.6	751.2	2,422.2	0.00	0.00	0.00
13,400.0	90.00	179.68	11,124.0	-2,459.6	751.7	2,521.8	0.00	0.00	0.00
13,500.0	90.00	179.68	11,124.0	-2,559.6	752.3	2,621.3	0.00	0.00	0.00
13,600.0	90.00	179.68	11,124.0	-2,659.6	752.8	2,720.9	0.00	0.00	0.00
13,700.0	90.00	179.68	11,124.0	-2,759.6	753.4	2,820.4	0.00	0.00	0.00
13,800.0	90.00	179.68	11,124.0	-2,859.6	753.9	2,920.0	0.00	0.00	0.00
13,900.0	90.00	179.68	11,124.0	-2,959.6	754.5	3,019.6	0.00	0.00	0.00
14,000.0	90.00	179.68	11,124.0	-3,059.6	755.0	3,119.1	0.00	0.00	0.00
14,100.0	90.00	179.68	11,124.0	-3,159.6	755.6	3,218.7	0.00	0.00	0.00
14,200.0	90.00	179.68	11,124.0	-3,259.6	756.1	3,318.3	0.00	0.00	0.00
14,300.0	90.00	179.68	11,124.0	-3,359.6	756.7	3,417.8	0.00	0.00	0.00
14,400.0	90.00	179.68	11,124.0	-3,459.6	757.2	3,517.4	0.00	0.00	0.00
14,500.0	90.00	179.68	11,124.0	-3,559.6	757.8	3,617.0	0.00	0.00	0.00
14,600.0	90.00	179.68	11,124.0	-3,659.6	758.3	3,716.5	0.00	0.00	0.00
14,700.0	90.00	179.68	11,124.0	-3,759.6	758.9	3,816.1	0.00	0.00	0.00
14,800.0	90.00	179.68	11,124.0	-3,859.6	759.4	3,915.7	0.00	0.00	0.00
14,900.0	90.00	179.68	11,124.0	-3,959.6	760.0	4,015.2	0.00	0.00	0.00
15,000.0	90.00	179.68	11,124.0	-4,059.6	760.5	4,114.8	0.00	0.00	0.00
15,100.0	90.00	179.68	11,124.0	-4,159.6	761.1	4,214.4	0.00	0.00	0.00
15,177.9	90.00	179.68	11,124.0	-4,237.5	761.5	4,292.0	0.00	0.00	0.00
<b>PPP2: 1325' FNL &amp; 1613' FEL (Sec 21)</b>									
15,200.0	90.00	179.68	11,124.0	-4,259.6	761.6	4,313.9	0.00	0.00	0.00
15,300.0	90.00	179.68	11,124.0	-4,359.6	762.2	4,413.5	0.00	0.00	0.00
15,400.0	90.00	179.68	11,124.0	-4,459.6	762.7	4,513.1	0.00	0.00	0.00
15,500.0	90.00	179.68	11,124.0	-4,559.6	763.3	4,612.6	0.00	0.00	0.00
15,600.0	90.00	179.68	11,124.0	-4,659.6	763.8	4,712.2	0.00	0.00	0.00
15,700.0	90.00	179.68	11,124.0	-4,759.6	764.4	4,811.7	0.00	0.00	0.00
15,800.0	90.00	179.68	11,124.0	-4,859.6	764.9	4,911.3	0.00	0.00	0.00
15,900.0	90.00	179.68	11,124.0	-4,959.5	765.5	5,010.9	0.00	0.00	0.00
16,000.0	90.00	179.68	11,124.0	-5,059.5	766.0	5,110.4	0.00	0.00	0.00
16,100.0	90.00	179.68	11,124.0	-5,159.5	766.6	5,210.0	0.00	0.00	0.00
16,200.0	90.00	179.68	11,124.0	-5,259.5	767.1	5,309.6	0.00	0.00	0.00
16,300.0	90.00	179.68	11,124.0	-5,359.5	767.7	5,409.1	0.00	0.00	0.00
16,400.0	90.00	179.68	11,124.0	-5,459.5	768.3	5,508.7	0.00	0.00	0.00
16,500.0	90.00	179.68	11,124.0	-5,559.5	768.8	5,608.3	0.00	0.00	0.00
16,502.9	90.00	179.68	11,124.0	-5,562.4	768.8	5,611.1	0.00	0.00	0.00
<b>PPP3: 2650' FNL &amp; 1615' FEL (Sec 21)</b>									
16,600.0	90.00	179.68	11,124.0	-5,659.5	769.4	5,707.8	0.00	0.00	0.00
16,700.0	90.00	179.68	11,124.0	-5,759.5	769.9	5,807.4	0.00	0.00	0.00
16,800.0	90.00	179.68	11,124.0	-5,859.5	770.5	5,907.0	0.00	0.00	0.00
16,900.0	90.00	179.68	11,124.0	-5,959.5	771.0	6,006.5	0.00	0.00	0.00
17,000.0	90.00	179.68	11,124.0	-6,059.5	771.6	6,106.1	0.00	0.00	0.00
17,100.0	90.00	179.68	11,124.0	-6,159.5	772.1	6,205.7	0.00	0.00	0.00
17,200.0	90.00	179.68	11,124.0	-6,259.5	772.7	6,305.2	0.00	0.00	0.00
17,300.0	90.00	179.68	11,124.0	-6,359.5	773.2	6,404.8	0.00	0.00	0.00
17,400.0	90.00	179.68	11,124.0	-6,459.5	773.8	6,504.4	0.00	0.00	0.00
17,500.0	90.00	179.68	11,124.0	-6,559.5	774.3	6,603.9	0.00	0.00	0.00
17,600.0	90.00	179.68	11,124.0	-6,659.5	774.9	6,703.5	0.00	0.00	0.00
17,700.0	90.00	179.68	11,124.0	-6,759.5	775.4	6,803.0	0.00	0.00	0.00
17,800.0	90.00	179.68	11,124.0	-6,859.5	776.0	6,902.6	0.00	0.00	0.00
17,900.0	90.00	179.68	11,124.0	-6,959.5	776.5	7,002.2	0.00	0.00	0.00
18,000.0	90.00	179.68	11,124.0	-7,059.5	777.1	7,101.7	0.00	0.00	0.00

Planning Report

<b>Database:</b>	Hobbs	<b>Local Co-ordinate Reference:</b>	Site Forty Niner Ridge #127H
<b>Company:</b>	Mewbourne Oil Company	<b>TVD Reference:</b>	WELL @ 3171.0usft (Original Well Elev)
<b>Project:</b>	Eddy County, New Mexico NAD 83	<b>MD Reference:</b>	WELL @ 3171.0usft (Original Well Elev)
<b>Site:</b>	Forty Niner Ridge #127H	<b>North Reference:</b>	Grid
<b>Well:</b>	Sec 16, T23S, R30E	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	BHL: 330' FSL & 1620' FEL (Sec 21)		
<b>Design:</b>	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)	
18,100.0	90.00	179.68	11,124.0	-7,159.5	777.6	7,201.3	0.00	0.00	0.00	
18,200.0	90.00	179.68	11,124.0	-7,259.5	778.2	7,300.9	0.00	0.00	0.00	
18,300.0	90.00	179.68	11,124.0	-7,359.5	778.7	7,400.4	0.00	0.00	0.00	
18,400.0	90.00	179.68	11,124.0	-7,459.5	779.3	7,500.0	0.00	0.00	0.00	
18,500.0	90.00	179.68	11,124.0	-7,559.5	779.8	7,599.6	0.00	0.00	0.00	
18,600.0	90.00	179.68	11,124.0	-7,659.5	780.4	7,699.1	0.00	0.00	0.00	
18,700.0	90.00	179.68	11,124.0	-7,759.5	780.9	7,798.7	0.00	0.00	0.00	
18,800.0	90.00	179.68	11,124.0	-7,859.5	781.5	7,898.3	0.00	0.00	0.00	
18,824.0	90.00	179.68	11,124.0	-7,883.5	781.6	7,922.2	0.00	0.00	0.00	
BHL: 330' FSL & 1620' FEL (Sec 21)										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
SHL: 2386' FNL & 2358' - plan hits target center - Point	0.00	0.00	0.0	0.0	0.0	475,268.70	679,768.70	32.3057916	-103.8852724	
KOP: 2406' FNL & 1620' - plan hits target center - Point	0.00	0.00	10,647.0	-21.2	738.3	475,247.50	680,507.00	32.3057248	-103.8828831	
FTP/LP: 2319' FSL & 16 - plan hits target center - Point	0.00	0.00	11,124.0	-594.1	741.5	474,674.60	680,510.15	32.3041500	-103.8828807	
BHL: 330' FSL & 1620' F - plan hits target center - Point	0.00	0.00	11,124.0	-7,883.5	781.6	467,385.20	680,550.30	32.2841125	-103.8828498	
PPP2: 1325' FNL & 161' - plan hits target center - Point	0.00	0.00	11,124.0	-4,237.5	761.5	471,031.20	680,530.22	32.2941348	-103.8828653	
PPP3: 2650' FNL & 161' - plan hits target center - Point	0.00	0.00	11,124.0	-5,562.4	768.8	469,706.30	680,537.51	32.2904928	-103.8828597	

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**District IV**  
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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 330086

**CONDITIONS**

Operator: MEWBOURNE OIL CO P.O. Box 5270 Hobbs, NM 88241	OGRID: 14744
	Action Number: 330086
	Action Type: [C-103] NOI Change of Plans (C-103A)

**CONDITIONS**

Created By	Condition	Condition Date
ward.rikala	All original COA's still apply. Additionally, if cement is not circulated to surface during cementing operations, then a CBL is required.	4/5/2024