Carlsbad Field Office
OCD Hobbs

Form 3160-3
(June 2015)

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

HOBBS OCD
OCT 10 2018
RECEIVED

1a. Type of work: ☑ DRILL ☐ REENTER	5. Lease Serial No. NMNM027507
1b. Type of Well: ☐ Oil Well ☑ Gas Well ☐ Other	6. If Indian, Allotee or Tribe Name
1c. Type of Completion: ☐ Hydraulic Fracturing ☑ Single Zone ☐ Multiple Zone	7. If Unit or CA Agreement, Name and No.
2. Name of Operator MEWBOURNE OIL COMPANY (14744)	8. Lease Name and Well No. RED HILLS WEST 21 W1AP FED COM 2H (315628)
3a. Address PO Box 5270 Hobbs NM 88240	3b. Phone No. *(include area code)* (575)393-5905
	9. API Well No. 30-025-45247
	10. Field and Pool, or Exploratory ~~RED HILLS WOLFCAMP GAS~~ / WILDCA (98203)
4. Location of Well *(Report location clearly and in accordance with any State requirements.*)* At surface NENE / 185 FNL / 620 FEL / LAT 32.0350594 / LONG -103.6733937 At proposed prod. zone SESE / 330 FSL / 330 FEL / LAT 32.0217695 / LONG -103.6724275	11. Sec., T. R. M. or Blk. and Survey or Area SEC 21 / T26S / R32E / NMP
14. Distance in miles and direction from nearest town or post office* 30 miles	12. County or Parish LEA / 13. State NM
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drlg. unit line, if any) 185 feet	16. No of acres in lease 640 / 17. Spacing Unit dedicated to this well 320
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 50 feet	19. Proposed Depth 12140 feet / 16897 feet / 20. BLM/BIA Bond No. in file FED: NM1693
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3188 feet	22. Approximate date work will start* 09/19/2018 / 23. Estimated duration 60 days

24. Attachments

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

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

25. Signature	Name *(Printed/Typed)*	Date
(Electronic Submission)	Bradley Bishop / Ph: (575)393-5905	06/20/2018
Title: Regulatory		
Approved by *(Signature)* (Electronic Submission)	Name *(Printed/Typed)* Cody Layton / Ph: (575)234-5959	Date 09/24/2018
Title: Assistant Field Manager Lands & Minerals	Office CARLSBAD	

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

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

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GCP Rec 10/10/18

APPROVED WITH CONDITIONS

KZ 10/11/18

REQUIRES NSL

(Continued on page 2)

*(Instructions on page 2)

Approval Date: 09/24/2018

Online

INSTRUCTIONS

GENERAL: This form is designed for submitting proposals to perform certain well operations, as indicated on Federal and Indian lands and leases for action by appropriate Federal agencies, pursuant to applicable Federal laws 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, either are shown below or will be issued by, or may be obtained from local Federal offices.

ITEM I: If the proposal is to redrill to the same reservoir at a different subsurface location or to a new reservoir, use this form with appropriate notations. Consult applicable Federal regulations concerning subsequent work proposals or reports on the well.

ITEM 4: Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local Federal offices for specific instructions.

ITEM 14: Needed only when location of well cannot readily be found by road from the land or lease description. A plat, or plats, separate or on the reverse side, showing the roads to, and the surveyed location of, the wen, and any other required information, should be furnished when required by Federal agency offices.

ITEMS 15 AND 18: If well is to be, or has been directionany drilled, give distances for subsurface location of hole in any present or objective productive zone.

ITEM 22: Consult applicable Federal regulations, or appropriate officials, concerning approval of the proposal before operations are started.

ITEM 24: 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 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., 25 U.S.C. 396; 43 CFR 3160
PRINCIPAL PURPOSES: The information will be used to: (1) process and evaluate your application for a permit to drill a new oil, gas, or service wen or to reenter a plugged and abandoned well; and (2) document, for administrative use, information for the management, disposal and use of National Resource Lands and resources including (a) analyzing your proposal to discover and extract the Federal or Indian resources encountered; (b) reviewing procedures and equipment and the projected impact on the land involved; and (c) evaluating the effects of the proposed operation on the surface and subsurface water and other environmental impacts.
ROUTINE USE: Information from the record and/or the record win be transferred to appropriate Federal, State, and local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecution, in connection with congressional inquiries and for regulatory responsibilities.
EFFECT OF NOT PROVIDING INFORMATION: Filing of this application and disclosure of the information is mandatory only if you elect to initiate a drilling or reentry operation on an oil and gas lease.

The Paperwork Reduction Act of 1995 requires us to inform you that:
The BLM conects this information to anow evaluation of the technical, safety, and environmental factors involved with drilling for oil and/or gas on Federal and Indian oil and gas leases. This information will be used to analyze and approve applications. Response to this request is mandatory only if the operator elects to initiate drilling or reentry operations on an oil and gas lease. 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 Conection Clearance Officer (WO-630), 1849 C Street, N.W., Mail Stop 401 LS, Washington, D.C. 20240.

(Continued on page 3)

Typical

Review and Appeal Rights

A person contesting a decision shall request a State Director review. This request must be filed within 20 working days of receipt of the Notice with the appropriate State Director (see 43 CFR 3165.3). The State Director review decision may be appealed to the Interior Board of Land Appeals, 801 North Quincy Street, Suite 300, Arlington, VA 22203 (see 43 CFR 3165.4). Contact the above listed Bureau of Land Management office for further information.

CONFIDENTIAL

AFMSS

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

Application Data Report

09/25/2018

APD ID: 10400031416 **Submission Date:** 06/20/2018

Operator Name: MEWBOURNE OIL COMPANY

Well Name: RED HILLS WEST 21 W1AP FED COM **Well Number:** 2H

Well Type: CONVENTIONAL GAS WELL **Well Work Type:** Drill

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - General

APD ID: 10400031416 **Tie to previous NOS?** **Submission Date:** 06/20/2018

BLM Office: CARLSBAD **User:** Bradley Bishop **Title:** Regulatory

Federal/Indian APD: FED **Is the first lease penetrated for production Federal or Indian?** FED

Lease number: NMNM027507 **Lease Acres:** 640

Surface access agreement in place? **Allotted?** **Reservation:**

Agreement in place? NO **Federal or Indian agreement:**

Agreement number:

Agreement name:

Keep application confidential? YES

Permitting Agent? NO **APD Operator:** MEWBOURNE OIL COMPANY

Operator letter of designation: RedHillsWest21_W1APFedCom2H_operatorletterofdesignation_20180619083031.pdf

Operator Info

Operator Organization Name: MEWBOURNE OIL COMPANY

Operator Address: PO Box 5270 **Zip:** 88240

Operator PO Box:

Operator City: Hobbs **State:** NM

Operator Phone: (575)393-5905

Operator Internet Address:

Section 2 - Well Information

Well in Master Development Plan? NO **Mater Development Plan name:**

Well in Master SUPO? NO **Master SUPO name:**

Well in Master Drilling Plan? NO **Master Drilling Plan name:**

Well Name: RED HILLS WEST 21 W1AP FED COM **Well Number:** 2H **Well API Number:**

Field/Pool or Exploratory? Field and Pool **Field Name:** RED HILLS WOLFCAMP GAS **Pool Name:** WILDCAT WOLFCAMP

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

Operator Name: MEWBOURNE [illegible] COMPANY

Well Name: RED HILLS WEST 21 W1AP FED COM **Well Number:** 2H

Describe other minerals:

Is the proposed well in a Helium production area? N **Use Existing Well Pad?** NO **New surface disturbance?**

Type of Well Pad: SINGLE WELL **Multiple Well Pad Name:** **Number:**

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

Well Work Type: Drill

Well Type: CONVENTIONAL GAS WELL

Describe Well Type:

Well sub-Type: APPRAISAL

Describe sub-type:

Distance to town: 30 Miles **Distance to nearest well:** 50 FT **Distance to lease line:** 185 FT

Reservoir well spacing assigned acres Measurement: 320 Acres

Well plat: RedHillsWest21_W1APFedCom2H_wellplat_20180619083509.pdf

Well work start Date: 09/19/2018 **Duration:** 60 DAYS

Section 3 - Well Location Table

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD83 **Vertical Datum:** NAVD88

Survey number:

	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD
SHL Leg #1	185	FNL	620	FEL	26S	32E	21	Aliquot NENE	32.0350594	-103.6733937	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 027507	3188	0	0
KOP Leg #1	10	FNL	330	FEL	26S	32E	21	Aliquot NENE	32.0355417	-103.6724577	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 027507	-8364	11560	11552
PPP Leg #1	330	FNL	330	FEL	26S	32E	21	Aliquot NENE	32.0346566	-103.6724557	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 027507	-8879	12200	12067

Operator Name: MEWBOURNE OIL COMPANY

Well Name: RED HILLS WEST 21 W1AP FED COM **Well Number:** 2H

	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD
PPP Leg #1	2676	FNL	330	FEL	26S	32E	21	Aliquot NESE	32.0282158	-103.6724416	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 107393	-8944	14552	12132
EXIT Leg #1	330	FSL	330	FEL	26S	32E	21	Aliquot SESE	32.0217695	-103.6724275	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 107393	-8952	16897	12140
BHL Leg #1	330	FSL	330	FEL	26S	32E	21	Aliquot SESE	32.0217695	-103.6724275	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 107393	-8952	16897	12140

United States Department of the Interior
Bureau of Land Management
Carlsbad Field Office
620 E Greene Street
Carlsbad, New Mexico 88201-1287

Statement Accepting Responsibility for Operations

Operator Name:	Mewbourne Oil Company
Street or Box:	P.O. Box 5270
City, State:	Hobbs, New Mexico
Zip Code:	88241

The undersigned accepts all applicable terms, conditions, stipulations, and restrictions concerning operations conducted of the leased land or portion thereof, as described below.

Lease Number:	NMNM 027507, NMNM 107393
Legal Description of Land:	Section 21, T26S, R32E, Lea County, New Mexico. Location @ 185 FNL & 620 FEL
Formation (if applicable):	Wolfcamp
Bond Coverage:	$150,000
BLM Bond File:	NM1693 nationwide, NMB000919

Bradley C Bishop

Authorized Signature: _____

Name: Bradley Bishop
Title: Regulatory Manager

Date: 6-18-18

Operator Name: MEWBOURNE OIL COMPANY

Well Name: RED HILLS WEST 21 W1AP FED COM **Well Number:** 2H

Pressure Rating (PSI): 10M **Rating Depth:** 16897

Equipment: Annular, Pipe Rams, Blind Rams

Requesting Variance? YES

Variance request: A variance is requested for use of a 5000 psi annular BOP with the 10,000 psi BOP stack. Request variance for the use of a flexible choke line from the BOP to Choke Manifold. Anchors not required by manufacturer. A multi-bowl wellhead will be used. See attached schematic.
Testing Procedure: BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested. Pipe rams will be operationally checked each 24 hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold.

Choke Diagram Attachment:

Red_Hills_West_21_W1AP_Fed_Com_2H_10M_BOPE_Choke_Diagram_20180620131637.pdf

Red_Hills_West_21_W1AP_Fed_Com_2H_Flex_Line_Specs_20180620131647.pdf

BOP Diagram Attachment:

Red_Hills_West_21_W1AP_Fed_Com_2H_10M_BOPE_Schematic_20180620131658.pdf

Red_Hills_West_21_W1AP_Fed_Com_2H_10M_Multi_Bowl_WH_20180620131710.pdf

Red_Hills_West_21_W1AP_Fed_Com_2H_10M_Annular_BOP_Variance_20180620131719.pdf

Section 3 - Casing

Casing ID	String Type	Hole Size	Csg Size	Condition	Standard	Tapered String	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Calculated casing length MD	Grade	Weight	Joint Type	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
1	SURFACE	17.5	13.375	NEW	API	N	0	626	0	626	3188	2562	626	H-40	48	STC	2.69	6.04	DRY	10.72	DRY	18
2	INTERMEDIATE	12.25	9.625	NEW	API	Y	0	4360	0	4360	3188	-1172	4360	J-55	36	LTC	1.13	1.96	DRY	2.82	DRY	3.51
3	PRODUCTION	8.75	7.0	NEW	API	N	0	12458	0	12125	3188	-8937	12458	P-110	26	LTC	1.37	1.74	DRY	2	DRY	2.56
4	LINER	6.125	4.5	NEW	API	N	11560	16897	11552	12140	-8364	-8952	5337	P-110	13.5	LTC	1.3	1.51	DRY	4.69	DRY	5.86

Casing Attachments

Operator Name: MEWBOURNE OIL COMPANY

Well Name: RED HILLS WEST 21 W1AP FED COM **Well Number:** 2H

Casing Attachments

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Red_Hills_West_21_W1AP_Fed_Com_2H_Csg_Assumptions_20180620132431.pdf

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

Inspection Document:

Spec Document:

Tapered String Spec:

Red_Hills_West_21_W1AP_Fed_Com_2H_Inter_Tapered_String_Diagram_20180620132005.pdf

Casing Design Assumptions and Worksheet(s):

Red_Hills_West_21_W1AP_Fed_Com_2H_Csg_Assumptions_20180620132439.pdf

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Red_Hills_West_21_W1AP_Fed_Com_2H_Csg_Assumptions_20180620132448.pdf

Operator Name: MEWBOURNE OIL COMPANY

Well Name: RED HILLS WEST 21 W1AP FED COM **Well Number:** 2H

Casing Attachments

Casing ID: 4 **String Type:** LINER

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Red_Hills_West_21_W1AP_Fed_Com_2H_Csg_Assumptions_20180620132455.pdf

Section 4 - Cement

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	436	290	2.12	12.5	615	100	Class C	Salt, Gel, Extender, LCM
SURFACE	Tail		436	626	200	1.34	14.8	268	100	Class C	Retarder
INTERMEDIATE	Lead		0	3701	710	2.12	12.5	1505	25	Class C	Salt, Gel, Extender, LCM
INTERMEDIATE	Tail		3701	4360	200	1.34	14.8	268	25	Class C	Retarder
PRODUCTION	Lead	5650	4160	4818	50	2.12	12.5	106	25	Class C	Gel, Retarder, Defoamer, Extender
PRODUCTION	Tail		4818	5650	100	1.34	14.8	134	25	Class C	Retarder
PRODUCTION	Lead	5650	5650	9963	385	2.12	12.5	816	25	Class C	Gel, Retarder, Defoamer, Extender
PRODUCTION	Tail		9963	12458	400	1.18	15.6	472	25	Class H	Retarder, Fluid Loss, Defoamer
LINER	Lead		11152	16700	210	2.97	11.2	624	25	Class C	Salt, Gel, Fluid Loss, Retarder, Dispersant, Defoamer, Anti-Settling Agent

Operator Name: MEWBOURNE OIL COMPANY

Well Name: RED HILLS WEST 21 W1AP FED COM **Well Number:** 2H

Section 5 - Circulating Medium

Mud System Type: Closed

Will an air or gas system be Used? NO

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

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

Describe what will be on location to control well or mitigate other conditions: Lost circulation material Sweeps Mud scavengers in surface hole

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

Circulating Medium Table

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
0	626	SPUD MUD	8.6	8.8							
626	4360	SALT SATURATED	10	10							
4360	11552	WATER-BASED MUD	8.6	9.5							
11552	12140	OIL-BASED MUD	10	13							

Section 6 - Test, Logging, Coring

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

Will run GR/CNL from KOP (11560') to surface.
Will run MWD GR from KOP (11560') to TD.

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

CNL,DS,GR,MWD,MUDLOG

Coring operation description for the well:

None

Operator Name: MEWBOURNE OIL COMPANY

Well Name: RED HILLS WEST 21 W1AP FED COM **Well Number:** 2H

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 8207 **Anticipated Surface Pressure:** 5590.98

Anticipated Bottom Hole Temperature(F): 165

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

Describe:

Contingency Plans geoharzards description:

Contingency Plans geohazards attachment:

Hydrogen Sulfide drilling operations plan required? YES

Hydrogen sulfide drilling operations plan:

Red_Hills_West_21_W1PA_Fed_Com_2H_H2S_Plan_20180620134031.pdf

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

Red_Hills_West_21_W1AP_Fed_Com_2H_Dir_Plan_20180620134116.pdf

Red_Hills_West_21_W1AP_Fed_Com_2H_Dir_Plot_20180620134123.pdf

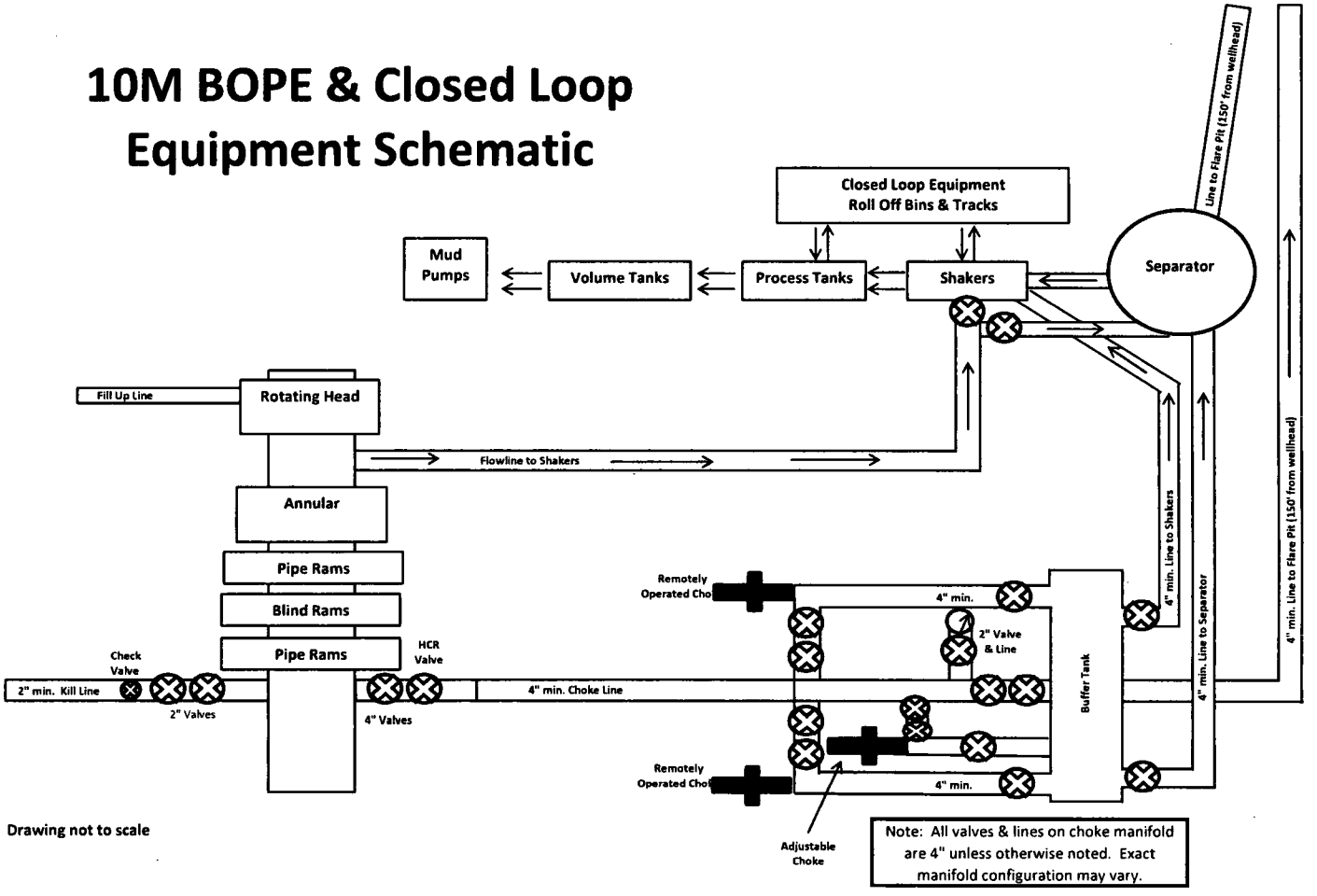
Other proposed operations facets description:

Other proposed operations facets attachment:

Red_Hills_West_21_W1AP_Fed_Com_2H_Drlg_Program_20180620134134.doc

Other Variance attachment:

10M BOPE & Closed Loop Equipment Schematic



ENGINEERING & SERVICES

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

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

10K CEMENTING ASSEMBLY PRESSURE TEST CERTIFICATE

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

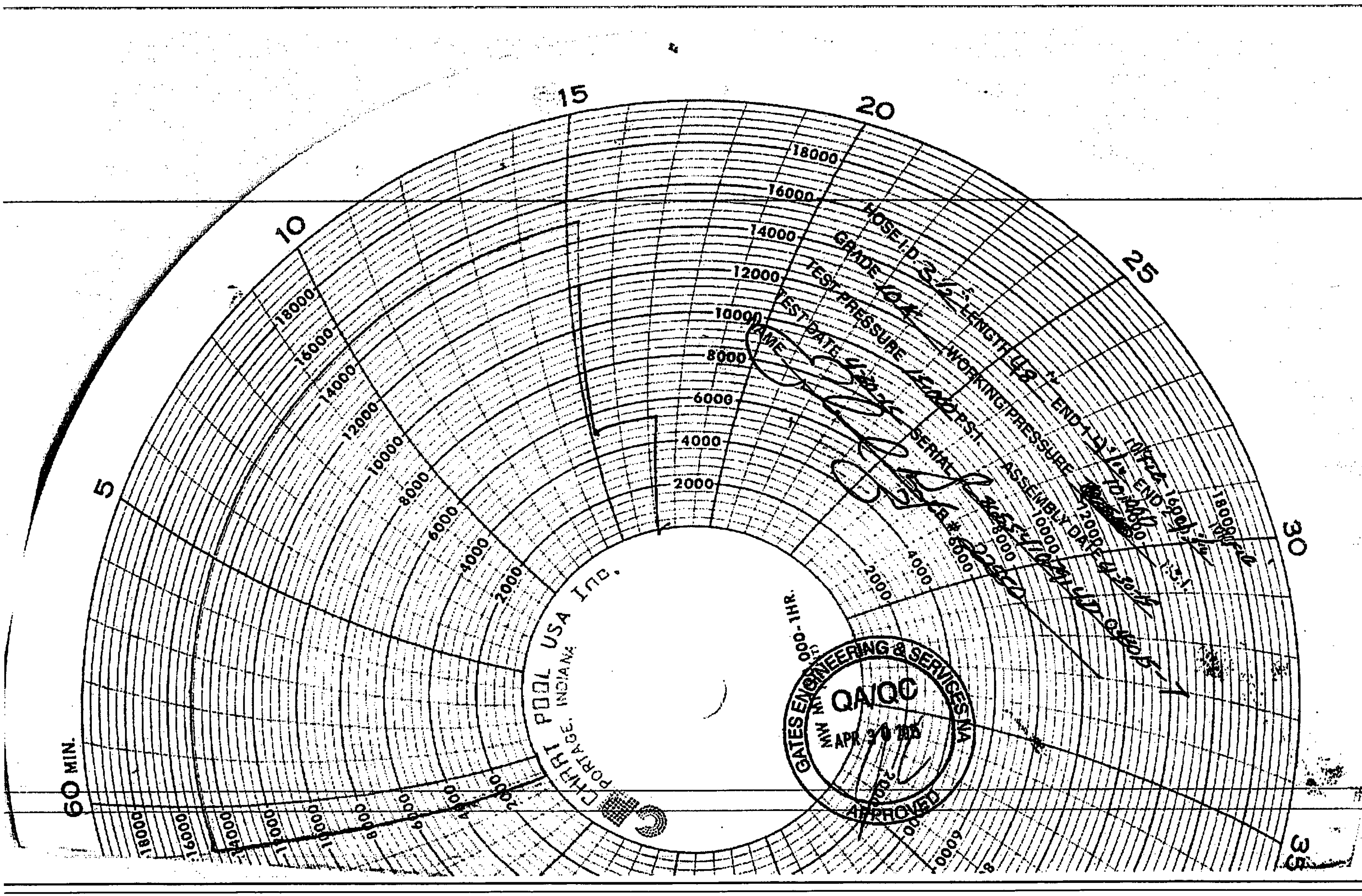
Product Description:	10K3.548.0CK4.1/1610KFLGE/E LE

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

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

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

Form-PTC - 01 Rev.0 2



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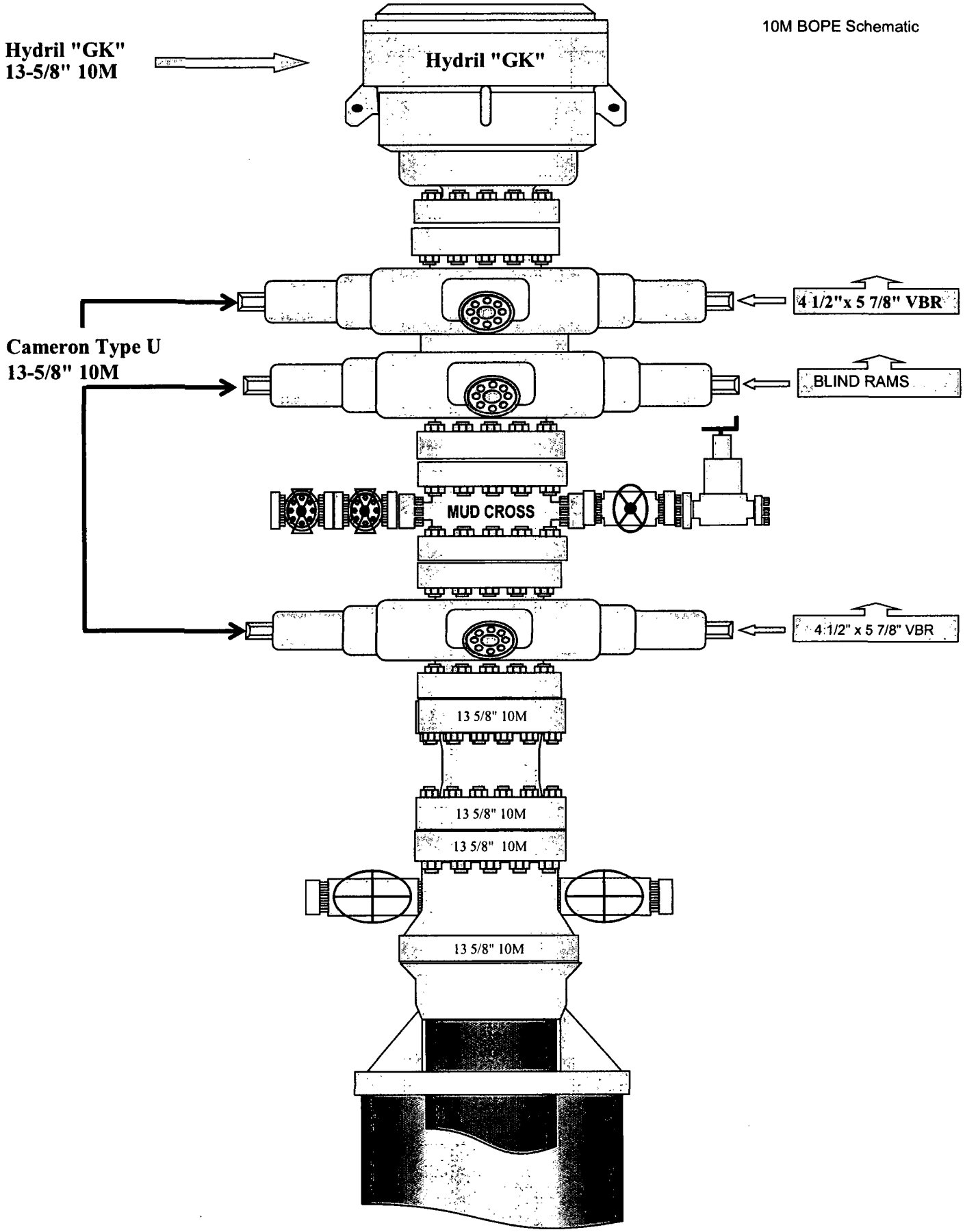
QA/QC
APPROVED

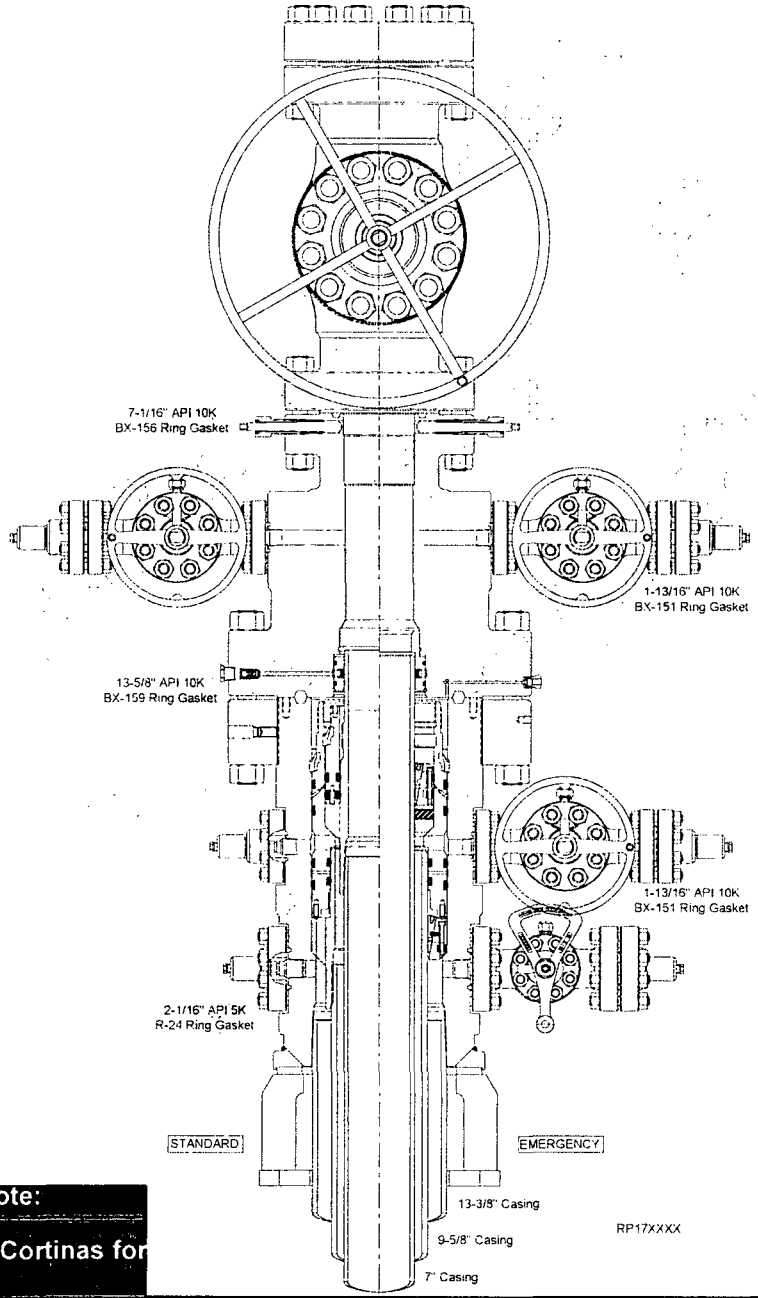
10M BOPE Schematic



NOTE DRAFT Publication is for Review ONLY. NOT approved for System Installation. NOT approved for field usage. NOT approved for distribution. If you obtain a DRAFT copy - it is your responsibility to verify SAP revision level or contact Houston Engineering to ensure document has been approved and released.

RUNNING PROCEDURE

Mewbourne Oil Co



Publication Status Note:

Draft A sent to John Cortinas for review; RA 04/29/17

Surface Systems Publication

CAMERON A Schlumberger Company	**13-5/8" 10K MN-DS System** **13-3/8" x 9-5/8" x 7" Casing Program**	**RP-003815** **Rev 01 Draft A**

10,000 PSI Annular BOP Variance Request

Mewbourne Oil Company request a variance to use a 5000 psi annular BOP with a 10,000 psi BOP stack. The component and compatibility tables along with the general well control plans demonstrate how the 5000 psi annular BOP will be protected from pressures that exceed its rated working pressure (RWP). The pressure at which the control of the wellbore is transferred from the annular preventer to another available preventer will not exceed 3500 psi (70% of the RWP of the 5000 psi annular BOP).

1. Component and Preventer Compatibility Tables

The tables below outline the tubulars and the compatible preventers in use. This table, combined with the drilling fluid, documents that two barriers to flow will be maintained at all times.

12-1/4" Intermediate Hole Section 10M psi Requirement					
Component	**OD**	**Primary Preventer**	**RWP**	**Alternate Preventer(s)**	**RWP**
Drillpipe	5.000" or 4.500"	Annular	5M	Upper 3.5"-5.5" VBR Lower 3.5"-5.5" VBR	10M 10M
HWDP	5.000" or 4.500"	Annular	5M	Upper 3.5"-5.5" VBR Lower 3.5"-5.5" VBR	10M 10M
Jars	6.500"	Annular	5M	-	-
DCs and MWD tools	6.500"-8.000"	Annular	5M	-	-
Mud Motor	8.000"-9.625"	Annular	5M	-	-
Intermediate Casing	9.625"	Annular	5M	-	-
Open-Hole	-	Blind Rams	10M	-	-

8-3/4" Production Hole Section 10M psi Requirement					
Component	**OD**	**Primary Preventer**	**RWP**	**Alternate Preventer(s)**	**RWP**
Drillpipe	5.000" or 4.500"	Annular	5M	Upper 3.5"-5.5" VBR Lower 3.5"-5.5" VBR	10M 10M
HWDP	5.000" or 4.500"	Annular	5M	Upper 3.5"-5.5" VBR Lower 3.5"-5.5" VBR	10M 10M
Jars	6.500"	Annular	5M	-	-
DCs and MWD tools	6.500"-8.000"	Annular	5M	-	-
Mud Motor	6.750"-8.000"	Annular	5M	-	-
Production Casing	7"	Annular	5M	-	-
Open-Hole	-	Blind Rams	10M	-	-

6-1/8" Lateral Hole Section 10M psi Requirement					
Component	**OD**	**Primary Preventer**	**RWP**	**Alternate Preventer(s)**	**RWP**
Drillpipe	4.500"	Annular	5M	Upper 3.5"-5.5" VBR Lower 3.5"-5.5" VBR	10M 10M
HWDP	4.500"	Annular	5M	Upper 3.5"-5.5" VBR Lower 3.5"-5.5" VBR	10M 10M
DCs and MWD tools	4.750"-5.500"	Annular	5M	Upper 3.5"-5.5" VBR Lower 3.5"-5.5" VBR	10M 10M
Mud Motor	4.750"-5.500"	Annular	5M	Upper 3.5"-5.5" VBR Lower 3.5"-5.5" VBR	10M 10M
Production Casing	4.500"	Annular	5M	Upper 3.5"-5.5" VBR Upper 3.5"-5.5" VBR	10M 10M
Open-Hole	-	Blind Rams	10M	-	-

VBR = Variable Bore Ram

2. Well Control Procedures

Below are the minimal high-level tasks prescribed to assure a proper shut-in while drilling, tripping, running casing, pipe out of the hole (open hole), and moving the BHA through the BOPs. At least one well control drill will be performed weekly per crew to demonstrate compliance with the procedure and well control plan. The well control drill will be recorded in the daily drilling log. The type of drill will be determined by the ongoing operations, but reasonable attempts will be made to vary the type of drill conducted (pit, trip, open hole, choke, etc.). This well control plan will be available for review by rig personnel in the Mewbourne Oil Company drilling supervisor's office on location and on the rig floor. All BOP equipment will be tested as per Onshore O&G Order No. 2 with the exception of the 5000 psi annular which will be tested to 70% of its RWP.

General Procedure While Drilling

1. Sound alarm (alert crew)
2. Space out drill string
3. Shut down pumps (stop pumps and rotary)
4. Shut-in well (uppermost applicable BOP, typically annular preventer, first. HCR & choke will already be in the closed position.)
5. Confirm shut-in
6. Notify toolpusher/company representative
7. Read and record the following:
    a. SIDPP & SICP
    b. Pit gain
    c. Time
8. Regroup and identify forward plan

9. If pressure has built or is anticipated during the kill to reach 70% or greater of the RWP of the annular preventer, confirm spacing and close the upper variable bore rams.

General Procedure While Tripping

1. Sound alarm (alert crew)
2. Stab full-opening safety valve & close
3. Space out drill string
4. Shut-in well (uppermost applicable BOP, typically annular preventer, first. HCR & choke will already be in the closed position.)
5. Confirm shut-in
6. Notify toolpusher/company representative
7. Read and record the following:
    a. SIDPP & SICP
    b. Pit gain
    c. Time
8. Regroup and identify forward plan
9. If pressure has built or is anticipated during the kill to reach 70% of the RWP of the annular preventer, confirm spacing and close the upper variable bore rams.

General Procedure While Running Production Casing

1. Sound alarm (alert crew)
2. Stab crossover and full-opening safety valve and close
3. Space out string
4. Shut-in well (uppermost applicable BOP, typically annular preventer, first. HCR & choke will already be in the closed position.)
5. Confirm shut-in
6. Notify toolpusher/company representative
7. Read and record the following:
    a. SIDPP & SICP
    b. Pit gain
    c. Time
8. Regroup and identify forward plan
9. If pressure has built or is anticipated during the kill to reach 70% or greater of the RWP of the annular preventer, confirm spacing and close the upper variable bore rams.

General Procedure With No Pipe In Hole (Open Hole)

1. Sound alarm (alert crew)
2. Shut-in with blind rams (HCR & choke will already be in the closed position)
3. Confirm shut-in
4. Notify toolpusher/company representative
5. Read and record the following:
    a. SICP
    b. Pit gain
    c. Time
6. Regroup and identify forward plan

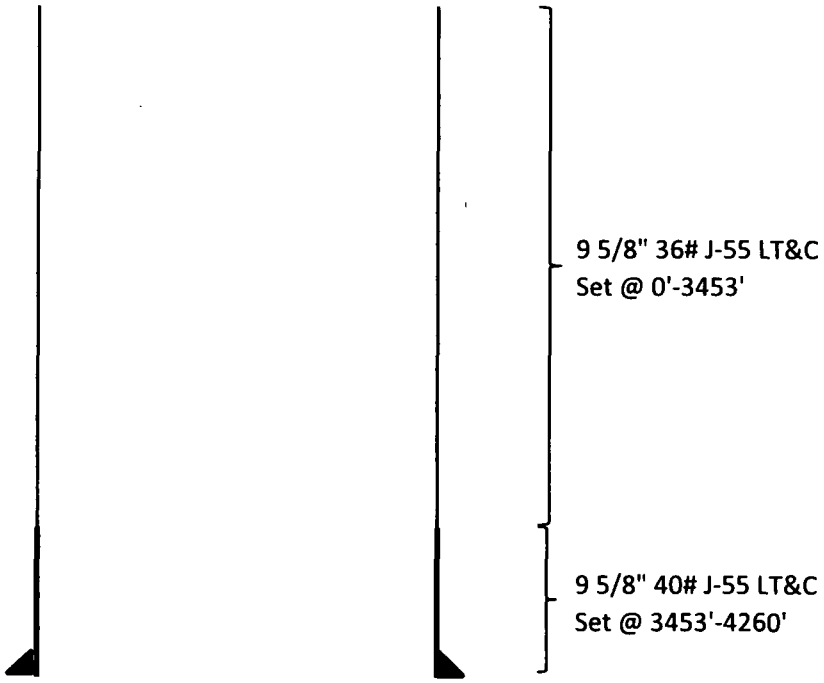
General Procedures While Pulling BHA Through Stack

1. PRIOR to pulling last joint of drillpipe through stack:
    a. Perform flow check. If flowing, continue to (b).
    b. Sound alarm (alert crew)
    c. Stab full-opening safety valve and close
    d. Space out drill string with tool joint just beneath the upper variable bore rams
    e. Shut-in using upper variable bore rams (HCR & choke will already be in the closed position)
    f. Confirm shut-in
    g. Notify toolpusher/company representative
    h. Read and record the following:
        i. SIDPP & SICP
        ii. Pit gain
        iii. Time
    i. Regroup and identify forward plan
2. With BHA in the stack and compatible ram preventer and pipe combination immediately available:
    a. Sound alarm (alert crew)
    b. Stab crossover and full-opening safety valve and close
    c. Space out drill string with upset just beneath the upper variable bore rams
    d. Shut-in using upper variable bore rams (HCR & choke will already be in the closed position)
    e. Confirm shut-in
    f. Notify toolpusher/company representative
    g. Read and record the following:
        i. SIDPP & SICP

    ii. Pit gain
    iii. Time
h. Regroup and identify forward plan

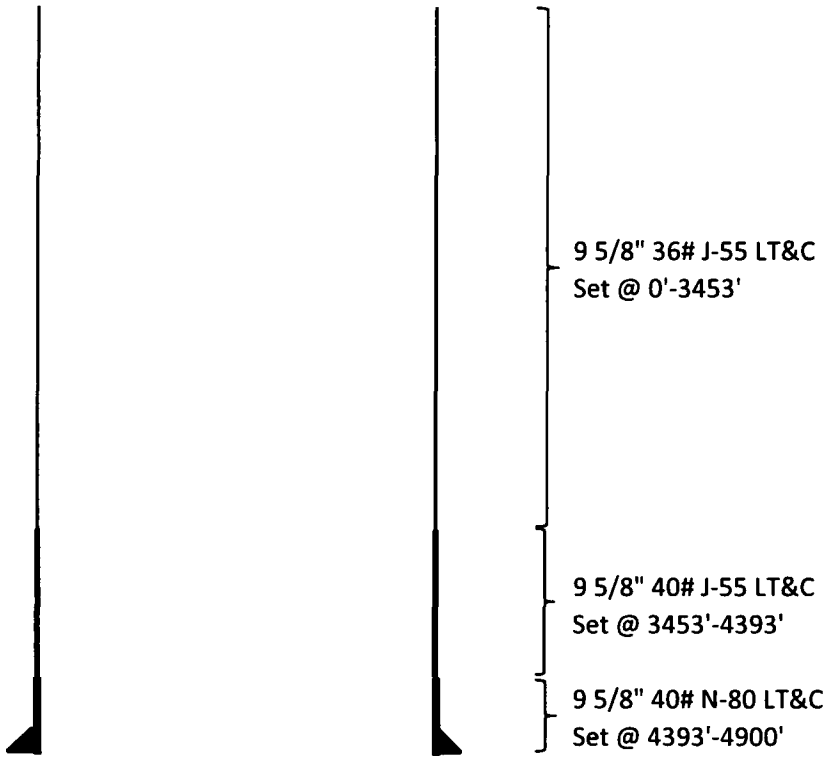
3. With BHA in the stack and NO compatible ram preventer and pipe combination immediately available:
    a. Sound alarm (alert crew)
    b. If possible, pull string clear of the stack and follow "Open Hole" procedure.
    c. If impossible to pull string clear of the stack:
    d. Stab crossover, make up one joint/stand of drillpipe and full-opening safety valve and close
    e. Space out drill string with tooljoint just beneath the upper variable bore ram
    f. Shut-in using upper variable bore ram (HCR & choke will already be in the closed position)
    g. Confirm shut-in
    h. Notify toolpusher/company representative
    i. Read and record the following:
        i. SIDPP & SICP
        ii. Pit gain
        iii. Time
    j. Regroup and identify forward plan

Red Hills West Unit #018H
Intermediate Casing



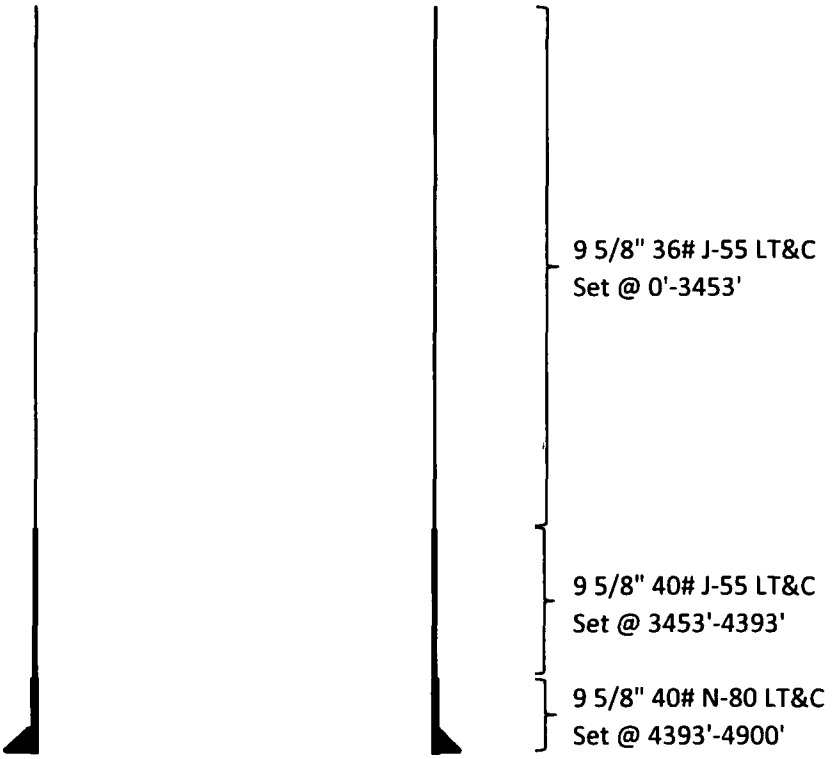
Casing	SF Collapse	SF Burst	SF Jt Tension	SF Body Tension
36# J-55	1.13	1.96	2.89	4.54
40# J-55	1.16	1.78	16.11	19.52

Salado Draw 9 W1DM Fed Com #3H
Intermediate Casing



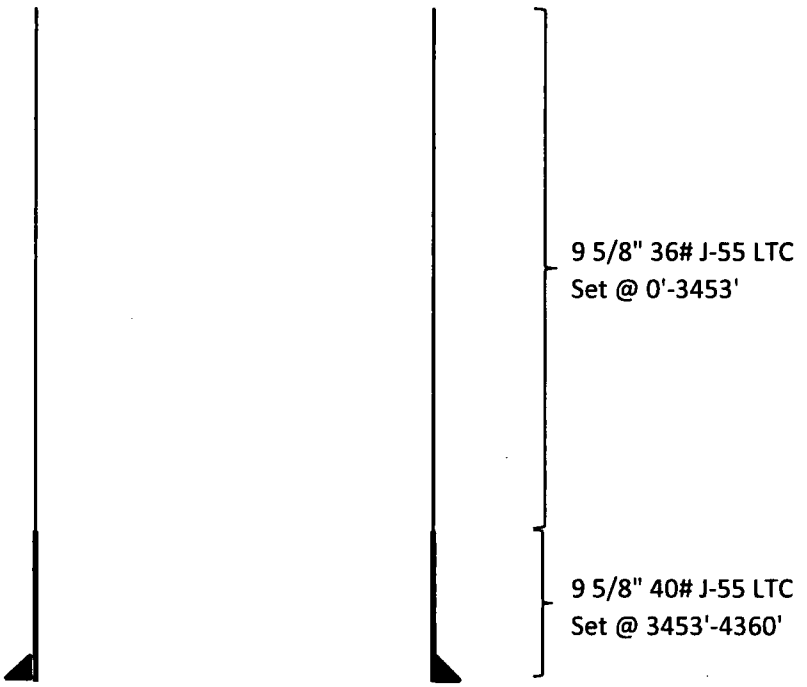
Casing	SF Collapse	SF Burst	SF Jt Tension	SF Body Tension
36# J-55	1.13	1.96	2.49	4.54
40# J-55	1.13	1.73	8.98	16.75
40# N-80	1.21	2.26	36.35	45.18

Salado Draw 9/16 W1BO Fed Com #3H
Intermediate Casing



Casing	SF Collapse	SF Burst	SF Jt Tension	SF Body Tension
36# J-55	1.13	1.96	2.78	4.54
40# J-55	1.13	1.73	8.98	16.75
40# N-80	1.21	2.26	36.35	45.18

Red Hills West 21 W1AP Fed Com #2H
Intermediate Csg



Casing	SF Collapse	SF Burst	SF Jt Tension	SF Body Tension
36# J-55	1.13	1.96	2.82	3.51
40# J-55	1.13	1.74	14.33	17.36

Mewbourne Oil Company, Red Hills West 21 W1AP Fed Com #2H
Sec 21, T26S, R32E
SL: 185' FNL & 620' FEL
BHL: 330' FSL & 330' FEL

Casing Program

Hole Size	Casing Interval From	Casing Interval To	Csg. Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Jt Tension	SF Body Tension
17.5"	0'	626'	13.375"	48	H40	STC	2.69	6.04	10.72	18.00
12.25"	0'	3453'	9.625"	36	J55	LTC	1.13	1.96	2.82	3.51
12.25"	3453'	4360'	9.625"	40	J55	LTC	1.13	1.74	14.33	17.36
8.75"	0'	12458'	7"	26	HCP110	LTC	1.37	1.74	2.00	2.56
6.125"	11560'	16897'	4.5"	13.5	P110	LTC	1.30	1.51	4.69	5.86
				BLM Minimum Safety Factor			1.125	1	1.6 Dry 1.8 Wet	1.6 Dry 1.8 Wet

All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h
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.	
Is well located in SOPA but not in R-111-P?	N
If yes, are the first 2 strings cemented to surface and 3rd string cement tied back 500' into previous casing?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2nd string set 100' to 600' below the base of salt?	
Is well located in high Cave/Karst?	N
If yes, are there two strings cemented to surface?	
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

Mewbourne Oil Company, Red Hills West 21 W1AP Fed Com #2H
Sec 21, T26S, R32E
SL: 185' FNL & 620' FEL
BHL: 330' FSL & 330' FEL

Casing Program

Hole Size	Casing Interval From	Casing Interval To	Csg. Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Jt Tension	SF Body Tension
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12.25"	0'	3453'	9.625"	36	J55	LTC	1.13	1.96	2.82	3.51
12.25"	3453'	4360'	9.625"	40	J55	LTC	1.13	1.74	14.33	17.36
8.75"	0'	12458'	7"	26	HCP110	LTC	1.37	1.74	2.00	2.56
6.125"	11560'	16897'	4.5"	13.5	P110	LTC	1.30	1.51	4.69	5.86
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Must have table for contingency casing

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

Mewbourne Oil Company, Red Hills West 21 W1AP Fed Com #2H
Sec 21, T26S, R32E
SL: 185' FNL & 620' FEL
BHL: 330' FSL & 330' FEL

Casing Program

Hole Size	Casing Interval From	Casing Interval To	Csg. Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Jt Tension	SF Body Tension
17.5"	0'	626'	13.375"	48	H40	STC	2.69	6.04	10.72	18.00
12.25"	0'	3453'	9.625"	36	J55	LTC	1.13	1.96	2.82	3.51
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6.125"	11560'	16897'	4.5"	13.5	P110	LTC	1.30	1.51	4.69	5.86
				BLM Minimum Safety Factor			1.125	1	1.6 Dry 1.8 Wet	1.6 Dry 1.8 Wet

All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h
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.	
Is well located in SOPA but not in R-111-P?	N
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Is well located in R-111-P and SOPA?	N
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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, Red Hills West 21 W1AP Fed Com #2H
Sec 21, T26S, R32E
SL: 185' FNL & 620' FEL
BHL: 330' FSL & 330' FEL

Casing Program

Hole Size	Casing Interval From	Casing Interval To	Csg. Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Jt Tension	SF Body Tension
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6.125"	11560'	16897'	4.5"	13.5	P110	LTC	1.30	1.51	4.69	5.86
				BLM Minimum Safety Factor			1.125	1	1.6 Dry 1.8 Wet	1.6 Dry 1.8 Wet

All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h
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.	
Is well located in SOPA but not in R-111-P?	N
If yes, are the first 2 strings cemented to surface and 3rd string cement tied back 500' into previous casing?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2nd string set 100' to 600' below the base of salt?	
Is well located in high Cave/Karst?	N
If yes, are there two strings cemented to surface?	
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

Hydrogen Sulfide Drilling Operations Plan
Mewbourne Oil Company

1. General Requirements

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

2. Hydrogen Sulfide Training

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

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

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

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

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

3. Hydrogen Sulfide Safety Equipment and Systems

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

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

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

Mewbourne Oil Company, Red Hills West 21 W1AP Fed Com #2H
Sec 21, T26S, R32E
SL: 185' FNL & 620' FEL
BHL: 330' FSL & 330' FEL

1. Geologic Formations

TVD of target	12140'	Pilot hole depth	NA
MD at TD:	16897'	Deepest expected fresh water:	225'

Basin

Formation	Depth (TVD) from KB	Water/Mineral Bearing/ Target Zone?	Hazards*
Quaternary Fill	Surface		
Rustler	551		
Top Salt	918		
Base Salt	4216		
Yates		Oil/Gas	
Seven Rivers		Oil/Gas	
Queen		Oil/Gas	
Grayburg			
Lamar	4435	Oil/Gas	
Bell Canyon	4467	Oil/Gas	
Cherry Canyon	5417	Oil/Gas	
Manzanita Marker	5655		
Brushy Canyon	7015	Oil/Gas	
Bone Spring	8566	Oil/Gas	
1st Bone Spring Sand	9487	Oil/Gas	
2nd Bone Spring Sand	10112	Oil/Gas	
3rd Bone Spring Sand	11340	Oil/Gas	
Abo			
Wolfcamp	11694	Target Zone	
Devonian			
Fusselman			
Ellenburger			
Granite Wash			

*H2S, water flows, loss of circulation, abnormal pressures, etc.

Mewbourne Oil Company, Red Hills West 21 W1AP Fed Com #2H
Sec 21, T26S, R32E
SL: 185' FNL & 620' FEL
BHL: 330' FSL & 330' FEL

2. Casing Program

Hole Size	Casing Interval From	Casing Interval To	Csg. Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Jt Tension	SF Body Tension
17.5"	0'	626'	13.375"	48	H40	STC	2.69	6.04	10.72	18.00
12.25"	0'	3453'	9.625"	36	J55	LTC	1.13	1.96	2.82	3.51
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8.75"	0'	12458'	7"	26	HCP110	LTC	1.37	1.74	2.00	2.56
6.125"	11560'	16897'	4.5"	13.5	P110	LTC	1.30	1.51	4.69	5.86
BLM Minimum Safety Factor			1.125	1	1.6 Dry 1.8 Wet		1.6 Dry 1.8 Wet			

All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h
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.	
Is well located in SOPA but not in R-111-P?	N
If yes, are the first 2 strings cemented to surface and 3rd string cement tied back 500' into previous casing?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2nd string set 100' to 600' below the base of salt?	
Is well located in high Cave/Karst?	N
If yes, are there two strings cemented to surface?	
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

Mewbourne Oil Company, Red Hills West 21 W1AP Fed Com #2H
Sec 21, T26S, R32E
SL: 185' FNL & 620' FEL
BHL: 330' FSL & 330' FEL

3. Cementing Program

Casing	# Sks	Wt. lb/ gal	Yld ft3/ sack	H_20 gal/ sk	500# Comp. Strength (hours)	Slurry Description
Surf.	290	12.5	2.12	11	10	Lead: Class C + Salt + Gel + Extender + LCM
	200	14.8	1.34	6.3	8	Tail: Class C + Retarder
Inter.	710	12.5	2.12	11	10	Lead: Class C + Salt + Gel + Extender + LCM
	200	14.8	1.34	6.3	8	Tail: Class C + Retarder
Prod. Stg 1	385	12.5	2.12	11	9	Lead: Class C + Gel + Retarder + Defoamer + Extender
	400	15.6	1.18	5.2	10	Tail: Class H + Retarder + Fluid Loss + Defoamer
ECP/DV Tool @ 5650'						
Prod. Stg 2	50	12.5	2.12	11	9	Lead: Class C + Gel + Retarder + Defoamer + Extender
	100	14.8	1.34	6.3	8	Tail: Class C + Retarder
Liner	225	11.2	2.97	18	16	Class C + Salt + Gel + Fluid Loss + Retarder + Dispersant + Defoamer + Anti-Settling Agent

A copy of cement test will be available on location at time of cement job providing pump times, compressive strengths, etc.

Casing String	TOC	% Excess
Surface	0'	100%
Intermediate	0'	25%
Production	4160'	25%
Liner	11560'	25%

4. Pressure Control Equipment

	Variance: 5M Annular

BOP installed and tested before drilling which hole?	Size?	System Rated WP	Type	✓	Tested to:
12 1/4"	13 5/8"	10M	Annular	X	5000#
			Blind Ram	X	10000#
			Pipe Ram	X	
			Double Ram		
			Other*		

*Specify if additional ram is utilized.

BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested.

Pipe rams will be operationally checked each 24 hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold. See attached schematics.

X	Formation integrity test will be performed per Onshore Order #2. On Exploratory wells or on that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i.
Y	A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. See attached for specs and hydrostatic test chart.
	N Are anchors required by manufacturer?
Y	A multibowl wellhead is being used. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system must be tested. • Provide description here: See attached schematic.

Mewbourne Oil Company, Red Hills West 21 W1AP Fed Com #2H
Sec 21, T26S, R32E
SL: 185' FNL & 620' FEL
BHL: 330' FSL & 330' FEL

5. Mud Program

Depth		Type	Weight (ppg)	Viscosity	Water Loss
From	To				
0'	626'	FW Gel	8.6-8.8	28-34	N/C
626'	4360'	Saturated Brine	10.0	28-34	N/C
4360'	11560'	Cut Brine	8.6-9.5	28-34	N/C
11560'	16897'	OBM	10.0-13.0	30-40	<10cc

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

6. Logging and Testing Procedures

Logging, Coring and Testing.	
X	Will run GR/CNL from KOP (11560') to surface (horizontal well – vertical portion of hole). Stated logs run will be in the Completion Report and submitted to the BLM.
	No Logs are planned based on well control or offset log information.
	Drill stem test? If yes, explain
	Coring? If yes, explain

Additional logs planned		Interval
X	Gamma Ray	11560' (KOP) to TD
	Density	
	CBL	
	Mud log	
	PEX	

7. Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	8207 psi
Abnormal Temperature	No

Mitigation measure for abnormal conditions. Describe. Lost circulation material/sweeps/mud scavengers in surface hole.

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

8. Other facets of operation

Is this a walking operation? If yes, describe.
Will be pre-setting casing? If yes, describe.

Attachments
___ Directional Plan
___ Other, describe

APD ID: 10400031416 **Submission Date:** 06/20/2018

Operator Name: MEWBOURNE OIL COMPANY

Well Name: RED HILLS WEST 21 W1AP FED COM **Well Number:** 2H

Well Type: CONVENTIONAL GAS WELL **Well Work Type:** Drill

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - Existing Roads

Will existing roads be used? YES

Existing Road Map:

RedHillsWest21_W1APFedCom2H_existingroadmap_20180619083614.pdf

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

ROW ID(s)

ID:

Do the existing roads need to be improved? NO

Existing Road Improvement Description:

Existing Road Improvement Attachment:

Section 2 - New or Reconstructed Access Roads

Will new roads be needed? NO

Section 3 - Location of Existing Wells

Existing Wells Map? YES

Attach Well map:

RedHillsWest21_W1APFedCom2H_existingwellmap_20180619083634.pdf

Existing Wells description:

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

Submit or defer a Proposed Production Facilities plan? SUBMIT

Production Facilities description:

Production Facilities map:

RedHillsWest21_W1APFedCom2H_productionfacilitymap_20180619090550.pdf

Section 5 - Location and Types of Water Supply

Water Source Table

Water source use type: CAMP USE, DUST CONTROL, INTERMEDIATE/PRODUCTION CASING, STIMULATION, SURFACE CASING

Water source type: IRRIGATION

Describe type:

Source longitude: -103.40123

Source latitude: 32.204

Source datum: NAD83

Water source permit type: WATER WELL

Source land ownership: FEDERAL

Water source transport method: TRUCKING

Source transportation land ownership: FEDERAL

Water source volume (barrels): 1940

Source volume (acre-feet): 0.2500526

Source volume (gal): 81480

Water source and transportation map:

RedHillsWest21_W1APFedCom2H_watersourceandtransmap_20180619090612.pdf

Water source comments:

New water well? NO

New Water Well Info

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

Well target aquifer:

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

Aquifer comments:

Aquifer documentation:

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

Operator Name: MEWBOURNE OIL COMPANY

Well Name: RED HILLS WEST 21 W1AP FED COM **Well Number:** 2H

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

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

Drilling method: **Drill material:**

Grout material: **Grout depth:**

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

Well Production type: **Completion Method:**

Water well additional information:

State appropriation permit:

Additional information attachment:

Section 6 - Construction Materials

Construction Materials description: Caliche

Construction Materials source location attachment:

RedHillsWest21_W1APFedCom2H_calichesourceandtransmap_20180619085701.pdf

Section 7 - Methods for Handling Waste

Waste type: DRILLING

Waste content description: Drill cuttings

Amount of waste: 940 barrels

Waste disposal frequency : One Time Only

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

Safe containmant attachment:

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

Disposal type description:

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

Waste type: SEWAGE

Waste content description: Human waste & grey water

Amount of waste: 1500 gallons

Waste disposal frequency : Weekly

Safe containment description: 2,000 gallon plastic container

Safe containmant attachment:

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

Disposal type description:

Operator Name: MEWBOURNE OIL COMPANY

Well Name: RED HILLS WEST 21 W1AP FED COM **Well Number:** 2H

Disposal location description: City of Carlsbad Water Treatment facility

Waste type: GARBAGE

Waste content description: Garbage & trash

Amount of waste: 1500 pounds

Waste disposal frequency : One Time Only

Safe containment description: Enclosed trash trailer

Safe containmant attachment:

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

Disposal type description:

Disposal location description: Waste Management facility in Carlsbad.

Reserve Pit

Reserve Pit being used? NO

Temporary disposal of produced water into reserve pit?

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

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

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

Reserve pit liner

Reserve pit liner specifications and installation description

Cuttings Area

Cuttings Area being used? NO

Are you storing cuttings on location? NO

Description of cuttings location

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

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

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

WCuttings area liner

Cuttings area liner specifications and installation description

Section 8 - Ancillary Facilities

Are you requesting any Ancillary Facilities?: NO

Ancillary Facilities attachment:

Comments:

Section 9 - Well Site Layout

Well Site Layout Diagram:

RedHillsWest21_W1APFedCom2H_wellsitelayout_20180619085732.pdf

Comments:

Section 10 - Plans for Surface Reclamation

Type of disturbance: New Surface Disturbance

Multiple Well Pad Name:

Multiple Well Pad Number:

Recontouring attachment:

Drainage/Erosion control construction: None

Drainage/Erosion control reclamation: None

Well pad proposed disturbance (acres): 3.65	**Well pad interim reclamation (acres):** 0.592	**Well pad long term disturbance (acres):** 3.058
Road proposed disturbance (acres): 0	**Road interim reclamation (acres):** 0.383	**Road long term disturbance (acres):** 0.383
Powerline proposed disturbance (acres): 0	**Powerline interim reclamation (acres):** 0	**Powerline long term disturbance (acres):** 0
Pipeline proposed disturbance (acres): 0	**Pipeline interim reclamation (acres):** 2.9834712E-7	**Pipeline long term disturbance (acres):** 2.9834712E-7
Other proposed disturbance (acres): 0	**Other interim reclamation (acres):** 1.205	**Other long term disturbance (acres):** 1.205
Total proposed disturbance: 3.65	**Total interim reclamation:** 2.1800003	**Total long term disturbance:** 4.6460004

Disturbance Comments: In areas to be heavily disturbed, the top 6 inches of soil material, will be stripped and stockpiled on the perimeter of the well location to keep topsoil viable, and to make redistribution of topsoil more efficient during interim reclamation. Stockpiled topsoil should include vegetative material. Topsoil will be clearly segregated and stored separately from subsoils. Contaminated soil will not be stockpiled, but properly treated and handled prior to topsoil salvaging.
Reconstruction method: The areas planned for interim reclamation will then be recontoured to the original contour if feasible, or if not feasible, to an interim contour that blends with the surrounding topography as much as possible. Where applicable, the fill material of the well pad will be backfilled into the cut to bring the area back to the original contour. The interim cut and fill slopes prior to re-seeding will not be steeper than a 3:1 ratio, unless the adjacent native topography is steeper. Note: Constructed slopes may be much steeper during drilling, but will be recontoured to the above ratios during interim reclamation.
Topsoil redistribution: Topsoil will be evenly respread and aggressively revegetated over the entire disturbed area not needed for all-weather operations including cuts & fills. To seed the area, the proper BLM seed mixture, free of noxious weeds, will be used.

Soil treatment: NA

Existing Vegetation at the well pad: Various brush & grasses

Existing Vegetation at the well pad attachment:

Existing Vegetation Community at the road: Various brush & grasses

Existing Vegetation Community at the road attachment:

Existing Vegetation Community at the pipeline: NA

Existing Vegetation Community at the pipeline attachment:

Existing Vegetation Community at other disturbances: NA

Existing Vegetation Community at other disturbances attachment:

Non native seed used? NO

Non native seed description:

Seedling transplant description:

Will seedlings be transplanted for this project? NO

Seedling transplant description attachment:

Will seed be harvested for use in site reclamation? NO

Seed harvest description:

Seed harvest description attachment:

Seed Management

Seed Table

Seed type:

Seed source:

Seed name:

Source name:

Source address:

Source phone:

Seed cultivar:

Seed use location:

PLS pounds per acre:

Proposed seeding season:

Seed Summary

Total pounds/Acre:

Seed Type	Pounds/Acre

Seed reclamation attachment:

Operator Contact/Responsible Official Contact Info

First Name: Bradley **Last Name:** Bishop

Phone: (575)393-5905 **Email:** bbishop@mewbourne.com

Seedbed prep: Final seedbed preparation will consist of contour cultivating to a depth of 4 to 6 inches within 24 hours prior to seeding, dozer tracking, or other imprinting in order to break the soil crust and create seed germination micro-sites.
Seed BMP: To seed the area, the proper BLM seed mixture, free of noxious weeds, will be used.

Seed method: drilling or broadcasting seed over entire reclaimed area.

Existing invasive species? NO

Existing invasive species treatment description:

Existing invasive species treatment attachment:

Weed treatment plan description: NA

Weed treatment plan attachment:

Monitoring plan description: vii. All reclaimed areas will be monitored periodically to ensure that revegetation occurs, that the area is not redisturbed, and that erosion and invasive/noxious weeds are controlled.
Monitoring plan attachment:

Success standards: regrowth within 1 full growing season of reclamation.

Pit closure description: NA

Pit closure attachment:

Section 11 - Surface Ownership

Disturbance type: WELL PAD

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

Operator Name: MEWBOURNE OIL COMPANY

Well Name: RED HILLS WEST 21 W1AP FED COM **Well Number:** 2H

USFWS Local Office:

Other Local Office:

USFS Region:

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

Disturbance type: NEW ACCESS ROAD

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

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

Disturbance type: EXISTING ACCESS ROAD

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

Operator Name: MEWBOURNE OIL COMPANY

Well Name: RED HILLS WEST 21 W1AP FED COM **Well Number:** 2H

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

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

Section 12 - Other Information

Right of Way needed? NO **Use APD as ROW?**

ROW Type(s):

ROW Applications

SUPO Additional Information:

Use a previously conducted onsite? YES

Previous Onsite information: JUN 25 2015 Met with Trish Badbear (BLM) & RRC Surveying & staked location at 185' FNL & 330' FEL, Sec 21, T26S, R32E, Lea Co., NM. This location was unacceptable due to topography. Moved to 185' FNL & 570' FEL, Sec 21, T26S, R32E, Lea Co. NM. (Elevation @ 3160'). This appears to be a drillable location with pit area to the N. Topsoil will be 30' on S. If battery is needed, it will be on W side. Reclaim 70' N & S with battery. Reclaim all sides 70' with no battery. No new road needed. Shares pad with Red Hills West 21 W1AP Fed Com #3H 80' to the W. Arch approved through MOA. Will need to move MOC gas line. (BPS) JUN 18 2018 Changed name from Red Hills West 21 A2AP Fed Com #2H. Met w/RRC Surveying & re-staked location @ 185' FNL & 620' FEL Sec 21, T26S, R32E, Lea Co. NM. (Elevation @ 3161'). Topsoil will be 30' wide on S. Reclaim 60' S. Pad is built, but will need extended approx. 50 S. No new road needed. Arch. cleared through previous approval. Will require BLM onsite. Lat 32.03505940 N, Long -10367339368 W NAD83

Other SUPO Attachment

RedHillsWest21_W1APFedCom2H_interimreclamationdiagram_20180619085943.pdf

RedHillsWest21_W1APFedCom2H_gascaptureplan_20180619085956.pdf

Section 1 - General

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

Section 2 - Lined Pits

Would you like to utilize Lined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Lined pit PWD on or off channel:

Lined pit PWD discharge volume (bbl/day):

Lined pit specifications:

Pit liner description:

Pit liner manufacturers information:

Precipitated solids disposal:

Decribe precipitated solids disposal:

Precipitated solids disposal permit:

Lined pit precipitated solids disposal schedule:

Lined pit precipitated solids disposal schedule attachment:

Lined pit reclamation description:

Lined pit reclamation attachment:

Leak detection system description:

Leak detection system attachment:

Lined pit Monitor description:

Lined pit Monitor attachment:

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

Is the reclamation bond a rider under the BLM bond?

Lined pit bond number:

Lined pit bond amount:

Additional bond information attachment:

Section 3 - Unlined Pits

Would you like to utilize Unlined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

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

Unlined pit PWD on or off channel:

Unlined pit PWD discharge volume (bbl/day):

Unlined pit specifications:

Precipitated solids disposal:

Decribe precipitated solids disposal:

Precipitated solids disposal permit:

Unlined pit precipitated solids disposal schedule:

Unlined pit precipitated solids disposal schedule attachment:

Unlined pit reclamation description:

Unlined pit reclamation attachment:

Unlined pit Monitor description:

Unlined pit Monitor attachment:

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

Beneficial use user confirmation:

Estimated depth of the shallowest aquifer (feet):

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

TDS lab results:

Geologic and hydrologic evidence:

State authorization:

Unlined Produced Water Pit Estimated percolation:

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

Is the reclamation bond a rider under the BLM bond?

Unlined pit bond number:

Unlined pit bond amount:

Additional bond information attachment:

Section 4 - Injection

Would you like to utilize Injection PWD options? NO

Produced Water Disposal (PWD) Location:

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

Injection PWD discharge volume (bbl/day):

Injection well mineral owner:

Injection well type:

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

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

Injection well new surface disturbance (acres):

Minerals protection information:

Mineral protection attachment:

Underground Injection Control (UIC) Permit?

UIC Permit attachment:

Section 5 - Surface Discharge

Would you like to utilize Surface Discharge PWD options? NO

Produced Water Disposal (PWD) Location:

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

Surface discharge PWD discharge volume (bbl/day):

Surface Discharge NPDES Permit?

Surface Discharge NPDES Permit attachment:

Surface Discharge site facilities information:

Surface discharge site facilities map:

Section 6 - Other

Would you like to utilize Other PWD options? NO

Produced Water Disposal (PWD) Location:

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

Other PWD discharge volume (bbl/day):

Other PWD type description:

Other PWD type attachment:

Have other regulatory requirements been met?

Other regulatory requirements attachment:

AFMSS

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

Bond Info Data Report

09/25/2018

Bond Information

Federal/Indian APD: FED

BLM Bond number: NM1693

BIA Bond number:

Do you have a reclamation bond? NO

Is the reclamation bond a rider under the BLM bond?

Is the reclamation bond BLM or Forest Service?

BLM reclamation bond number:

Forest Service reclamation bond number:

Forest Service reclamation bond attachment:

Reclamation bond number:

Reclamation bond amount:

Reclamation bond rider amount:

Additional reclamation bond information attachment:

APD ID: 10400031416 **Submission Date:** 06/20/2018

Operator Name: MEWBOURNE OIL COMPANY

Well Name: RED HILLS WEST 21 W1AP FED COM **Well Number:** 2H

Well Type: CONVENTIONAL GAS WELL **Well Work Type:** Drill

Highlighted data reflects the most recent changes

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Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
1	UNKNOWN	3161	27	27		NONE	No
2	RUSTLER	2610	551	551	DOLOMITE,ANHYDRITE	USEABLE WATER	No
3	TOP SALT	2243	918	918	SALT	NONE	No
4	BOTTOM SALT	-1055	4216	4216	SALT	NONE	No
5	LAMAR	-1274	4435	4435	LIMESTONE	NATURAL GAS,OIL	No
6	BELL CANYON	-1306	4467	4467	SANDSTONE	NATURAL GAS,OIL	No
7	CHERRY CANYON	-2256	5417	5417	SANDSTONE	NATURAL GAS,OIL	No
8	MANZANITA	-2494	5655	5655	LIMESTONE	NATURAL GAS,OIL	No
9	BRUSHY CANYON	-3854	7015	7015	SANDSTONE	NATURAL GAS,OIL	No
10	BONE SPRING	-5405	8566	8566	LIMESTONE,SHALE	NATURAL GAS,OIL	No
11	BONE SPRING 1ST	-6326	9487	9487	SANDSTONE	NATURAL GAS,OIL	No
12	BONE SPRING 2ND	-6951	10112	10112	SANDSTONE	NATURAL GAS,OIL	No
13	BONE SPRING 3RD	-8179	11340	11350	SANDSTONE	NATURAL GAS,OIL	No
14	WOLFCAMP	-8533	11694	11704	LIMESTONE,SHALE,SANDSTONE	NATURAL GAS,OIL	Yes

Section 2 - Blowout Prevention