Form 3160-3 (June 2015)		OMB No	APPROVED 5. 1004-0137 nuary 31, 2018		
UNITED STATES DEPARTMENT OF THE INTE BUREAU OF LAND MANAGE		5. Lease Serial No. NMNM013641			
APPLICATION FOR PERMIT TO DRIL	6. If Indian, Allotee	or Tribe Name			
1a. Type of work:   Image: Constraint of the second seco	TER	7. If Unit or CA Agr	eement, Name and No.		
1b. Type of Well:     ✓ Oil Well     Gas Well     Other		8. Lease Name and	Well No.		
1c. Type of Completion:       ☐ Hydraulic Fracturing       ✓ Single	Zone Multiple Zone	IBEX 15/10 B1PA I 327862 2H	FED COM		
2. Name of Operator MEWBOURNE OIL COMPANY 14744			-025-47060		
	Phone No. (include area code) 5) 393-5905	10. Field and Pool, of ANTELOPE RIDG	or Exploratory 2209 E WEST/BONE SPRIIN		
4. Location of Well (Report location clearly and in accordance with a		11. Sec., T. R. M. or SEC 15/T23S/R34	Blk. and Survey or Area		
At surface SESE / 140 FSL / 275 FEL / LAT 32.2977431 / L		SEC 13/1233/104			
At proposed prod. zone NENE / 100 FNL / 450 FEL / LAT 32.	.29763467 LONG -103.4508751	12. County or Parish	13. State		
14. Distance in miles and direction from nearest town or post office* 20 miles		LEA	NM		
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)16.400		ing Unit dedicated to the	his well		
to nearest well, drilling, completed, and	P. Proposed Depth       20, BLM/BIA Bond No. in file         526 feet / 19918 feet       FED: NM1693				
	Approximate date work will start* 20/2019	<ul><li>23. Estimated duration</li><li>60 days</li></ul>			
24	4. Attachments				
<ul><li>The following, completed in accordance with the requirements of Ons (as applicable)</li><li>1. Well plat certified by a registered surveyor.</li><li>2. A Drilling Data</li></ul>	hore Oil and Gas Order No. 1, and the 4. Bond to cover the operation Item 20 above).		-		
<ol> <li>A Drilling Plan.</li> <li>A Surface Use Plan (if the location is on National Forest System La SUPO must be filed with the appropriate Forest Service Office).</li> </ol>		ormation and/or plans as	may be requested by the		
25. Signature (Electronic Submission)	Name (Printed/Typed) Bradley Bishop / Ph: (575) 393-5	Date 08/27/2019			
Title Regulatory					
Approved by (Signature) (Electronic Submission)	Name (Printed/Typed)         Date           Cody Layton / Ph: (575) 234-5959         03/30/2020				
Title Assistant Field Manager Lands & Minerals	Office Carlsbad Field Office				
Application approval does not warrant or certify that the applicant hol applicant to conduct operations thereon. Conditions of approval, if any, are attached.	ds legal or equitable title to those right:	s in the subject lease w	hich would entitle the		
Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make of the United States any false, fictitious or fraudulent statements or rep			any department or agency		

GCP Rec 04/01/2020



KZ 04/06/2020

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# PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

<b>OPERATOR'S NAME:</b>	Mewbourne Oil Company
LEASE NO.:	NMNM013641
WELL NAME & NO.:	IBEX 15/10 B1PA FED COM 2H
SURFACE HOLE FOOTAGE:	140'/S & 275'/E
<b>BOTTOM HOLE FOOTAGE</b>	100'/N & 450'/E
LOCATION:	Section 15, T.23 S., R.34 E., NMPM
	Lea County, New Mexico

# COA

H2S	• Yes	C No	
Potash	None	C Secretary	C R-111-P
Cave/Karst Potential	• Low	C Medium	C High
Cave/Karst Potential	Critical		
Variance	© None	🖲 Flex Hose	© Other
Wellhead	Conventional	Multibowl	© Both
Other	4 String Area	🗖 Capitan Reef	□ WIPP
Other	Fluid Filled	Cement Squeeze	🗖 Pilot Hole
Special Requirements	Water Disposal	COM	🗖 Unit

## A. HYDROGEN SULFIDE

A Hydrogen Sulfide (H2S) Drilling Plan shall be activated 500 feet prior to drilling into the Delaware formation. As a result, the Hydrogen Sulfide area must meet Onshore Order 6 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

#### Casing Design:

- 1. The 13-3/8 inch surface casing shall be set at approximately 1350 feet (a minimum of 25 feet (Lea County) into the Rustler Anhydrite and above the salt) and cemented to the surface.
  - 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

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completing the cement job.

- b. Wait on cement (WOC) time for a primary cement job will be a minimum of <u>8</u>
   <u>hours</u> or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)
- c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
- d. If cement falls back, remedial cementing will be done prior to drilling out that string.
- 2. The **9-5/8** inch intermediate casing shall be set at approximately **4985** feet. 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. Excess cement calculates to 17%, additional cement might be required.
- 3. The minimum required fill of cement behind the 7 inch production casing is:

## **Option 1 (Single Stage):**

 Cement should tie-back at least 200 feet into previous casing string. Operator shall provide method of verification.
 Excess cement calculates to -5%, additional cement might be required.

## **Option 2:**

Operator has proposed a DV tool, the depth may be adjusted as long as the cement is changed proportionally. The DV tool may be cancelled if cement circulates to surface on the first stage.

- a. First stage to DV tool: Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.
- b. Second stage above DV tool:
  - Cement should tie-back at least **200 feet** into previous casing string. Operator shall provide method of verification.

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

## C. PRESSURE CONTROL

- 1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).'
- 2. Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **5000 (5M)** psi.
  - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
  - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
  - c. Manufacturer representative shall install the test plug for the initial BOP test.
  - d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
  - e. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.

# D. SPECIAL REQUIREMENT (S)

## **Communitization Agreement**

- The operator will submit a Communitization Agreement to the Carlsbad Field Office, 620 E Greene St. Carlsbad, New Mexico 88220, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.
- If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.
- In addition, the well sign shall include the surface and bottom hole lease numbers. <u>When the Communitization Agreement number is known, it shall also be on the sign.</u>

# **GENERAL REQUIREMENTS**

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

- a. Spudding well (minimum of 24 hours)
- b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
- c. BOPE tests (minimum of 4 hours)
  - Eddy County Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (575) 361-2822
  - Lea County
     Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (575)
     393-3612
- 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 Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.
- 2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the 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.

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## 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.
- <u>Wait on cement (WOC) for Potash Areas:</u> 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 <u>24</u> <u>hours</u>. WOC time will be recorded in the driller's log. The casing intergrity test can be done (prior to the cement setting up) immediately after bumping the plug.
- 3. <u>Wait on cement (WOC) for Water Basin:</u> 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 <u>8 hours</u>. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. The casing intergrity 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 Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.
- 2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.
- 3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.
- 4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:
  - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
  - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
  - c. Manufacturer representative shall install the test plug for the initial BOP test.
  - d. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.
  - e. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
- 5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
  - a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including

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lead when specified), 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 plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time, except the casing pressure test can be initiated immediately after bumping the plug (only applies to single stage cement jobs).
- c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).
- d. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.
- e. The results of the test shall be reported to the appropriate BLM office.
- f. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.
- g. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.
- h. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

## C. DRILLING MUD

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

## D. WASTE MATERIAL AND FLUIDS

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

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

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# **Casing Program**

Hole	Casing	g Interval	Csg.	Weight	Grade	Conn.	SF	SF	SF Jt	SF Body
Size	From	То	Size	(lbs)			Collapse	Burst	Tension	Tension
17.5"	0'	1350'	13.375"	48	H40	STC	1.25	2.80	4.97	8.35
12.25"	0'	4985'	9.625"	40	L80	LTC	1.19	2.22	3.65	4.59
8.75"	0'	9800'	7"	26	P110	LTC	1.31	2.09	2.72	3.26
6.125"	9196'	19923'	4.5"	13.5	P110	LTC	1.82	2.11	2.33	2.91
			BLM Minimum Safety Factor			1.125	1	1.6 Dry	1.6 Dry	
									1.8 Wet	1.8 Wet

All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h

	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.	Ν
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?	Y
If yes, does production casing cement tie back a minimum of 50' above the Reef?	
Is well within the designated 4 string boundary.	
Is well located in SOPA but not in R-111-P?	N
If yes, are the first 2 strings cemented to surface and 3 <sup>rd</sup> string cement tied back 500' into previous casing?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2 <sup>nd</sup> 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?	

# **Casing Program**

Hole	Casing	g Interval	Csg.	Weight	Grade	Conn.	SF	SF	SF Jt	SF Body
Size	From	То	Size	(lbs)			Collapse	Burst	Tension	Tension
17.5"	0'	1350'	13.375"	48	H40	STC	1.25	2.80	4.97	8.35
12.25"	0'	4985'	9.625"	40	L80	LTC	1.19	2.22	3.65	4.59
8.75"	0'	9800'	7"	26	P110	LTC	1.31	2.09	2.72	3.26
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Is casing API approved? If no, attach casing specification sheet.	Y
Is premium or uncommon casing planned? If yes attach casing specification sheet.	Ν
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?	Y
If yes, does production casing cement tie back a minimum of 50' above the Reef?	
Is well within the designated 4 string boundary.	
Is well located in SOPA but not in R-111-P?	N
If yes, are the first 2 strings cemented to surface and 3 <sup>rd</sup> string cement tied back 500' into previous casing?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2 <sup>nd</sup> 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?	
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8.75"	0'	9800'	7"	26	P110	LTC	1.31	2.09	2.72	3.26
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All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h

	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.	Ν
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?	Y
If yes, does production casing cement tie back a minimum of 50' above the Reef?	
Is well within the designated 4 string boundary.	
Is well located in SOPA but not in R-111-P?	N
If yes, are the first 2 strings cemented to surface and 3 <sup>rd</sup> string cement tied back 500' into previous casing?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2 <sup>nd</sup> 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?	

# **Casing Program**

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8.75"	0'	9800'	7"	26	P110	LTC	1.31	2.09	2.72	3.26
6.125"	9196'	19923'	4.5"	13.5	P110	LTC	1.82	2.11	2.33	2.91
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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.	Ν
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?	Y
If yes, does production casing cement tie back a minimum of 50' above the Reef?	
Is well within the designated 4 string boundary.	
Is well located in SOPA but not in R-111-P?	N
If yes, are the first 2 strings cemented to surface and 3 <sup>rd</sup> string cement tied back 500' into previous casing?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2 <sup>nd</sup> 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. <u>Well Control Equipment</u>
  - A. Choke manifold with minimum of one adjustable choke/remote choke.
  - B. Blowout preventers equipped with blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit
  - C. Auxiliary equipment including annular type blowout preventer.
- 2. <u>Protective Equipment for Essential Personnel</u>

Thirty minute self contained work unit located in the dog house and at briefing areas.

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

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

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

#### 4. <u>Visual Warning Systems</u>

A. Wind direction indicators as indicated on the wellsite diagram.

B. Caution signs shall be posted on roads providing access to location. Signs shall be painted a high visibility color with lettering of sufficient size to be readable at reasonable distances from potentially contaminated areas.

#### 4. Mud Program

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

#### 5. Metallurgy

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

#### 6. Communications

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

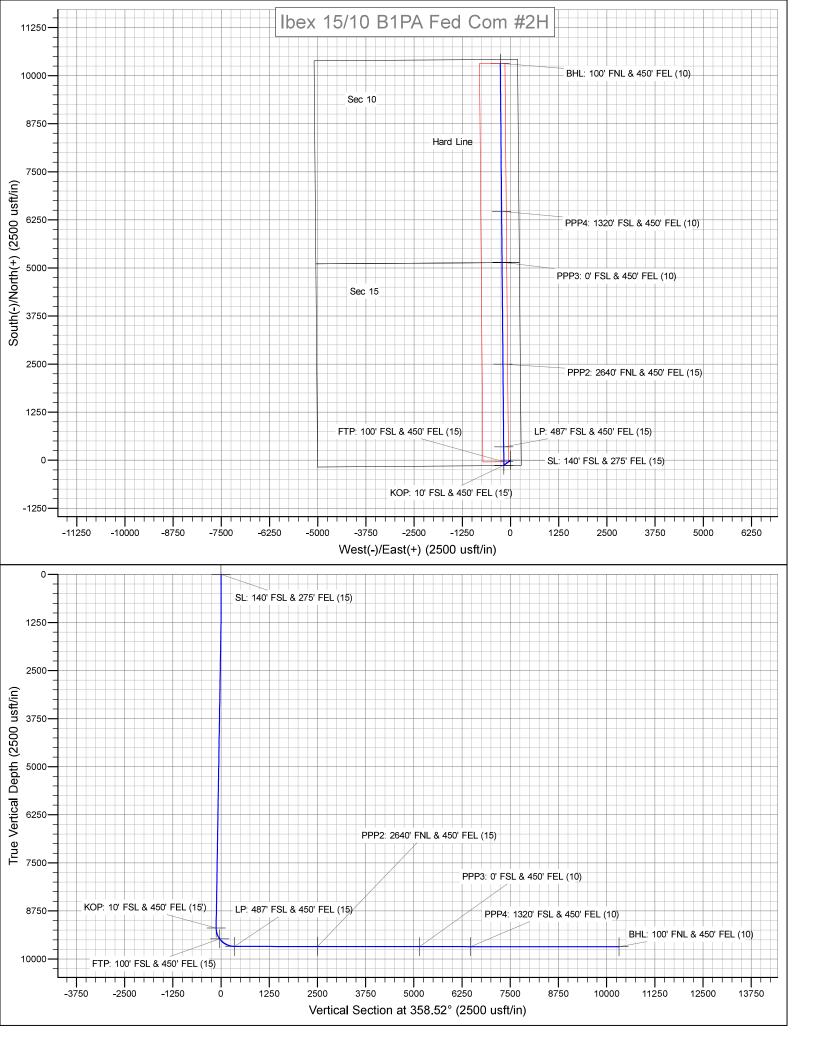
#### 7. Well Testing

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

#### 8. Emergency Phone Numbers

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

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



# **Mewbourne Oil Company**

Eddy County, New Mexico NAD 83 Ibex 15/10 B1PA Fed Com #2H Sec 15, T23S, R34E SHL: 140' FSL & 275' FEL, Sec 15 BHL: 100' FNL & 450' FEL, Sec 10

Plan: Design #1

# **Standard Planning Report**

19 August, 2019

Database: Company: Project: Site: Well: Well: Wellbore: Design:	Eddy ( Ibex 1) Sec 15	ourne Oil Com County, New M 5/10 B1PA Fe 5, T23S, R34E 100' FNL & 45	Mexico NAD 83 d Com #2H		TVD Refer MD Refer North Ref	ence:		Site Ibex 15/10 WELL @ 3439.0 WELL @ 3439.0 Grid Minimum Curva	Dusft (Original ) Dusft (Original )	/Vell Elev)
Project	Eddy C	ounty, New M	lexico NAD 83							
Map System: Geo Datum: Map Zone:	North Am	e Plane 1983 herican Datum kico Eastern Z			System Da	tum:	Gı	round Level		
Site	bex 15	/10 B1PA Fed	Com #2H							
Site Position: From: Position Uncertainty:	Мар		Easti	hing: ing: Radius:		,175.00 usft ,187.00 usft 13-3/16 "	Latitude: Longitude: Grid Converç	jence:		32.2977431 -103.4502893 0.47 °
Well	Sec 15,	T23S, R34E								
Well Position	+N/-S		0.0 usft N	lorthing:		473,175.00	usft Lat	itude:		32.2977431
Position Uncertainty	+E/-W			asting: Vellhead Eleva	ation:	814,187.00 3,439.0		ngitude: ound Level:		-103.4502893 3,412.0 usft
Wellbore	BHL: 1	00' FNL & 450	0' FEL, Sec 10	1						
Magnetics	Мо	del Name	Samp	ole Date	Declina (°)	ition	-	Angle °)		Strength 1T)
		User Defined	1	8/16/2019		0.00		0.00		0
Design	Design	#1								
Audit Notes:										
Version:			Pha	se:	PROTOTYPE	Tie	On Depth:		0.0	
Vertical Section:		l	Depth From (1 (usft)	ſVD)	+N/-S (usft)		:/-W sft)	Dir	ection (°)	
			3,439.0		0.0	0	0.0	3	58.52	
Plan Sections										
•	nation °)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0		0.00	0.00	0.00	0.00	
1,200.0	0.00	0.00	1,200.0	0.0		0.00	0.00	0.00	0.00	
1,305.1 9,094.4	1.58 1.58	233.24 233.24	1,305.1 9,091.4	0.9- 129.1-		1.50 0.00	1.50 0.00	0.00 0.00	233.24 0.00	
3,034.4		0.00	9,091.4	-129.1		1.50	-1.50	0.00		KOP: 10' FSL & 450' I
9,199.5	0.00	0.00								
9,199.5 9,949.0	0.00 89.94	359.50	9,674.0	347.0		12.00	12.00	0.00	-0.50	

Database:	Hobbs	Local Co-ordinate Reference:	Site Ibex 15/10 B1PA Fed Com #2H
Company:	Mewbourne Oil Company	TVD Reference:	WELL @ 3439.0usft (Original Well Elev)
Project:	Eddy County, New Mexico NAD 83	MD Reference:	WELL @ 3439.0usft (Original Well Elev)
Site:	Ibex 15/10 B1PA Fed Com #2H	North Reference:	Grid
Well:	Sec 15, T23S, R34E	Survey Calculation Method:	Minimum Curvature
Wellbore:	BHL: 100' FNL & 450' FEL, Sec 10		
Design:	Design #1		

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
SL: 140' ESL	& 275' FEL (15)								
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	1.50	233.24	1,300.0	-0.8	-1.0	-0.8	1.50	1.50	0.00
1,305.1	1.58	233.24	1,305.1	-0.9	-1.2	-0.8	1.50	1.50	0.00
	1.58	233.24		-2.4	-3.2	-2.3	0.00	0.00	
1,400.0 1,500.0	1.58	233.24 233.24	1,400.0 1,400.0				0.00		0.00
1,500.0			1,499.9	-4.1	-5.5	-3.9		0.00	0.00
1,600.0	1.58	233.24	1,599.9	-5.7	-7.7	-5.5	0.00	0.00	0.00
1,700.0	1.58	233.24	1,699.8	-7.4	-9.9	-7.1	0.00	0.00	0.00
1,800.0	1.58	233.24	1,799.8	-9.0	-12.1	-8.7	0.00	0.00	0.00
1,900.0	1.58	233.24	1,899.8	-10.7	-14.3	-10.3	0.00	0.00	0.00
2,000.0	1.58	233.24	1,999.7	-12.3	-16.5	-11.9	0.00	0.00	0.00
2,100.0	1.58	233.24	2,099.7	-14.0	-18.7	-13.5	0.00	0.00	0.00
2,200.0	1.58	233.24	2,199.6	-15.6	-20.9	-15.1	0.00	0.00	0.00
2,300.0	1.58	233.24	2,299.6	-17.2	-23.1	-16.6	0.00	0.00	0.00
2,400.0	1.58	233.24	2,399.6	-18.9	-25.3	-18.2	0.00	0.00	0.00
2,500.0	1.58	233.24	2,499.5	-20.5	-27.5	-19.8	0.00	0.00	0.00
2,600.0	1.58	233.24	2,599.5	-22.2	-29.7	-21.4	0.00	0.00	0.00
2,700.0	1.58	233.24	2,699.5	-23.8	-31.9	-23.0	0.00	0.00	0.00
2,800.0	1.58	233.24	2,799.4	-25.5	-34.1	-24.6	0.00	0.00	0.00
2,900.0	1.58	233.24	2,899.4	-27.1	-36.3	-26.2	0.00	0.00	0.00
3,000.0	1.58	233.24	2,999.3	-28.8	-38.5	-27.8	0.00	0.00	0.00
3,000.0	1.58	233.24	3,099.3	-30.4	-40.7	-27.0	0.00	0.00	0.00
3,200.0	1.58	233.24	3,199.3	-32.1	-42.9	-31.0	0.00	0.00	0.00
3,300.0	1.58	233.24	3,299.2	-33.7	-45.1	-32.5	0.00	0.00	0.00
3,400.0	1.58	233.24	3,399.2	-35.4	-47.3	-34.1	0.00	0.00	0.00
3,500.0	1.58	233.24	3,499.2	-37.0	-49.5	-35.7	0.00	0.00	0.00
3,600.0	1.58	233.24	3,599.1	-38.7	-51.7	-37.3	0.00	0.00	0.00
3,700.0	1.58	233.24	3,699.1	-40.3	-53.9	-38.9	0.00	0.00	0.00
3,800.0	1.58	233.24	3,799.0	-41.9	-56.1	-40.5	0.00	0.00	0.00
3,900.0	1.58	233.24	3,899.0	-43.6	-58.4	-42.1	0.00	0.00	0.00
4,000.0	1.58	233.24	3,999.0	-45.2	-60.6	-43.7	0.00	0.00	0.00
4,100.0	1.58	233.24	4,098.9	-46.9	-62.8	-45.3	0.00	0.00	0.00
4,200.0	1.58	233.24	4,198.9	-48.5	-65.0	-46.8	0.00	0.00	0.00
4,300.0	1.58	233.24	4,298.9	-50.2	-67.2	-48.4	0.00	0.00	0.00
4,400.0	1.58	233.24	4,398.8	-51.8	-69.4	-50.0	0.00	0.00	0.00
		233.24 233.24		-51.8 -53.5	-69.4 -71.6		0.00		
4,500.0	1.58		4,498.8			-51.6		0.00	0.00
4,600.0	1.58	233.24	4,598.7	-55.1	-73.8	-53.2	0.00	0.00	0.00
4,700.0	1.58	233.24	4,698.7	-56.8	-76.0	-54.8	0.00	0.00	0.00
4,800.0	1.58	233.24	4,798.7	-58.4	-78.2	-56.4	0.00	0.00	0.00
4,900.0	1.58	233.24	4,898.6	-60.1	-80.4	-58.0	0.00	0.00	0.00
5,000.0	1.58	233.24	4,998.6	-61.7	-82.6	-59.6	0.00	0.00	0.00
5,100.0	1.58	233.24	5,098.6	-63.4	-84.8	-61.2	0.00	0.00	0.00

Database:	Hobbs	Local Co-ordinate Reference:	Site Ibex 15/10 B1PA Fed Com #2H
Company:	Mewbourne Oil Company	TVD Reference:	WELL @ 3439.0usft (Original Well Elev)
Project:	Eddy County, New Mexico NAD 83	MD Reference:	WELL @ 3439.0usft (Original Well Elev)
Site:	Ibex 15/10 B1PA Fed Com #2H	North Reference:	Grid
Well:	Sec 15, T23S, R34E	Survey Calculation Method:	Minimum Curvature
Wellbore:	BHL: 100' FNL & 450' FEL, Sec 10		
Design:	Design #1		

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	1.58	233.24	5,198.5	-65.0	-87.0	-62.7	0.00	0.00	0.00
5,300.0	1.58	233.24	5,298.5	-66.7	-89.2	-64.3	0.00	0.00	0.00
5,400.0	1.58	233.24	5,398.4	-68.3	-91.4	-65.9	0.00	0.00	0.00
5,500.0	1.58	233.24	5,498.4	-69.9	-93.6	-67.5	0.00	0.00	0.00
5,600.0	1.58	233.24	5,598.4	-71.6	-95.8	-69.1	0.00	0.00	0.00
5,700.0	1.58	233.24	5,698.3	-73.2	-98.0	-70.7	0.00	0.00	0.00
5,800.0	1.58	233.24	5,798.3	-74.9	-100.2	-72.3	0.00	0.00	0.00
5,900.0	1.58	233.24	5,898.2	-76.5	-102.4	-73.9	0.00	0.00	0.0
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6,000.0	1.58	233.24	5,998.2	-78.2	-104.6	-75.5	0.00	0.00	0.0
6,100.0	1.58	233.24	6,098.2	-79.8	-106.8	-77.0	0.00	0.00	0.0
6,200.0	1.58	233.24	6,198.1	-81.5	-109.0	-78.6	0.00	0.00	0.0
6,300.0	1.58	233.24	6,298.1	-83.1	-111.3	-80.2	0.00	0.00	0.0
6,400.0	1.58	233.24	6,398.1	-84.8	-113.5	-81.8	0.00	0.00	0.0
6,500.0	1.58	233.24	6,498.0	-86.4	-115.7	-83.4	0.00	0.00	0.0
6,600.0	1.58	233.24	6,598.0	-88.1	-117.9	-85.0	0.00	0.00	0.0
6,700.0	1.58	233.24	6,697.9	-89.7	-120.1	-86.6	0.00	0.00	0.0
6,800.0	1.58	233.24	6,897.9 6,797.9	-09.7 -91.4	-120.1	-88.2	0.00	0.00	0.0
	1.50	200.24			-122.3			0.00	
6,900.0	1.58	233.24	6,897.9	-93.0	-124.5	-89.8	0.00	0.00	0.0
7,000.0	1.58	233.24	6,997.8	-94.6	-126.7	-91.4	0.00	0.00	0.0
7,100.0	1.58	233.24	7,097.8	-96.3	-128.9	-92.9	0.00	0.00	0.0
7,200.0	1.58	233.24	7,197.8	-97.9	-131.1	-94.5	0.00	0.00	0.0
7,300.0	1.58	233.24	7,297.7	-99.6	-133.3	-96.1	0.00	0.00	0.0
7,400.0	1.58	233.24	7,397.7	-101.2	-135.5	-97.7	0.00	0.00	0.0
7,500.0	1.58	233.24	7,497.6	-102.9	-137.7	-99.3	0.00	0.00	0.0
7,600.0	1.58	233.24	7,597.6	-104.5	-139.9	-100.9	0.00	0.00	0.0
7,700.0	1.58	233.24	7,697.6	-106.2	-142.1	-102.5	0.00	0.00	0.0
7,800.0	1.58	233.24	7,797.5	-107.8	-144.3	-104.1	0.00	0.00	0.0
7,900.0	1.58	233.24	7,897.5	-109.5	-146.5	-105.7	0.00	0.00	0.0
8,000.0	1.58	233.24	7,997.5	-111.1	-148.7	-107.2	0.00	0.00	0.0
8,000.0	1.58	233.24	8,097.4	-112.8	-150.9	-107.2	0.00	0.00	0.0
,									
8,200.0	1.58	233.24	8,197.4	-114.4	-153.1	-110.4	0.00	0.00	0.0
8,300.0	1.58	233.24	8,297.3	-116.1	-155.3	-112.0	0.00	0.00	0.0
8,400.0	1.58	233.24	8,397.3	-117.7	-157.5	-113.6	0.00	0.00	0.0
8,500.0	1.58	233.24	8,497.3	-119.3	-159.7	-115.2	0.00	0.00	0.0
8,600.0	1.58	233.24	8,597.2	-121.0	-161.9	-116.8	0.00	0.00	0.0
8,700.0	1.58	233.24	8,697.2	-122.6	-164.1	-118.4	0.00	0.00	0.0
8,800.0	1.58	233.24	8,797.1	-124.3	-166.4	-120.0	0.00	0.00	0.0
8,900.0	1.58	233.24	8,897.1	-125.9	-168.6	-121.5	0.00	0.00	0.0
9,000.0	1.58	233.24	8,997.1	-127.6	-170.8	-123.1	0.00	0.00	0.0
9,094.4	1.58	233.24	9,091.4	-129.1	-172.8	-124.6	0.00	0.00	0.0
9,100.0	1.49	233.24	9,097.0	-129.2	-173.0	-124.7	1.50	-1.50	0.0
9,199.5	0.00	0.00	9,196.5	-130.0	-174.0	-125.5	1.50	-1.50	0.0
KOP: 10' FS	L & 450' FEL (15	')							
	•		0.107.0	100.0		105.5	10.05	10.05	
9,200.0	0.06	359.50	9,197.0	-130.0	-174.0	-125.5	12.00	12.00	0.0
9,300.0	12.06	359.50	9,296.3	-119.5	-174.1	-114.9	12.00	12.00	0.0
9,400.0	24.06	359.50	9,391.2	-88.5	-174.4	-84.0	12.00	12.00	0.0
9,497.5	35.76	359.50	9,475.6	-40.0	-174.8	-35.5	12.00	12.00	0.0
FTP: 100' FS	6L & 450' FEL (15	5)							
9,500.0	36.06	359.50	9,477.6	-38.5	-174.8	-34.0	12.00	12.00	0.0
0 600 0	49.00	250 50		<u> </u>		20.0	10.00	40.00	0.0
9,600.0	48.06	359.50	9,551.7	28.3	-175.4	32.8	12.00	12.00	0.0
9,700.0	60.06	359.50	9,610.3	109.1	-176.1	113.6	12.00	12.00	0.0
9,800.0	72.06	359.50	9,650.8	200.4	-176.9	204.9	12.00	12.00	0.0
9,900.0	84.06	359.50	9,671.4	298.0	-177.8	302.5	12.00	12.00	0.0
9,949.1	89.94	359.50	9,674.0	347.0	-178.2	351.5	11.99	11.99	0.0

Database:	Hobbs	Local Co-ordinate Reference:	Site bex 15/10 B1PA Fed Com #2H
Company:	Mewbourne Oil Company	TVD Reference:	WELL @ 3439.0usft (Original Well Elev)
Project:	Eddy County, New Mexico NAD 83	MD Reference:	WELL @ 3439.0usft (Original Well Elev)
Site:	Ibex 15/10 B1PA Fed Com #2H	North Reference:	Grid
Well:	Sec 15, T23S, R34E	Survey Calculation Method:	Minimum Curvature
Wellbore:	BHL: 100' FNL & 450' FEL, Sec 10		
Design:	Design #1		

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)
LP: 487' FSL	. & 450' FEL (15)								
10,000.0	89.94	359.50	9,674.1	397.9	-178.6	402.4	0.00	0.00	0.00
10,100.0	89.94	359.50	9,674.2	497.9	-179.5	502.4	0.00	0.00	0.00
10,200.0	89.94	359.50	9,674.3	597.9	-180.4	602.4	0.00	0.00	0.00
10,300.0	89.94	359.50	9,674.4	697.9	-181.3	702.4	0.00	0.00	0.00
10,400.0	89.94	359.50	9,674.5	797.9	-182.2	802.3	0.00	0.00	0.00
10,500.0	89.94	359.50	9,674.6	897.9	-183.0	902.3	0.00	0.00	0.00
10,600.0	89.94	359.50	9,674.7	997.9	-183.9	1,002.3	0.00	0.00	0.00
10,700.0	89.94	359.50	9,674.8	1,097.9	-184.8	1,102.3	0.00	0.00	0.0
	89.94						0.00		
10,800.0		359.50	9,674.9	1,197.9	-185.7	1,202.3		0.00	0.0
10,900.0	89.94	359.50	9,675.0	1,297.9	-186.6	1,302.3	0.00	0.00	0.0
11,000.0	89.94	359.50	9,675.1	1,397.9	-187.5	1,402.3	0.00	0.00	0.0
11,100.0	89.94	359.50	9,675.2	1,497.9	-188.3	1,502.2	0.00	0.00	0.0
11,200.0	89.94	359.50	9,675.3	1,597.9	-189.2	1,602.2	0.00	0.00	0.0
11,300.0	89.94	359.50	9,675.4	1,697.9	-190.1	1,702.2	0.00	0.00	0.0
11,400.0	89.94	359.50	9,675.5	1,797.9		1,702.2	0.00	0.00	0.0
11,400.0	09.94	339.30	5,075.5	1,797.9	-191.0	1,002.2		0.00	
11,500.0	89.94	359.50	9,675.6	1,897.9	-191.9	1,902.2	0.00	0.00	0.0
11,600.0	89.94	359.50	9,675.7	1,997.9	-192.7	2,002.2	0.00	0.00	0.0
11,700.0	89.94	359.50	9,675.8	2,097.9	-193.6	2,102.2	0.00	0.00	0.0
11,800.0	89.94	359.50	9,675.9	2,197.9	-194.5	2,202.1	0.00	0.00	0.0
11,900.0	89.94	359.50	9,676.0	2,297.9	-195.4	2,302.1	0.00	0.00	0.0
11,000.0					100.4				
12,000.0	89.94	359.50	9,676.1	2,397.9	-196.3	2,402.1	0.00	0.00	0.0
12,099.2	89.94	359.50	9,676.2	2,497.0	-197.1	2,501.2	0.00	0.00	0.0
PPP2: 2640'	FNL & 450' FEL	(15)							
12,100.0	89.94	359.50	9,676.2	2,497.8	-197.1	2,502.1	0.00	0.00	0.0
12,200.0	89.94	359.50	9,676.3	2,597.8	-198.0	2,602.1	0.00	0.00	0.0
12,300.0	89.94	359.50	9,676.4	2,697.8	-198.9	2,702.1	0.00	0.00	0.0
12,400.0	89.94	359.50	9,676.5	2,797.8	-199.8	2,802.1	0.00	0.00	0.0
12,500.0	89.94	359.50	9,676.6	2,897.8	-200.7	2,902.0	0.00	0.00	0.0
12,600.0	89.94	359.50	9,676.7	2,997.8	-201.5	3,002.0	0.00	0.00	0.0
12,700.0	89.94	359.50	9,676.8	3,097.8	-202.4	3,102.0	0.00	0.00	0.0
12,800.0	89.94	359.50	9,676.9	3,197.8	-203.3	3,202.0	0.00	0.00	0.0
12,900.0	89.94	359.50	9,677.0	3,297.8	-204.2	3,302.0	0.00	0.00	0.0
13,000.0	89.94	359.50	9,677.1	3,397.8	-205.1	3,402.0	0.00	0.00	0.0
13,100.0	89.94	359.50	9,677.2	3,497.8	-205.9	3,502.0	0.00	0.00	0.0
13,200.0	89.94	359.50	9,677.3	3,597.8	-206.8	3,601.9	0.00	0.00	0.0
13,300.0	89.94	359.50	9,677.4	3,697.8	-207.7	3,701.9	0.00	0.00	0.0
13,400.0	89.94	359.50	9,677.5	3,797.8	-208.6	3,801.9	0.00	0.00	0.0
								0.00	
13,500.0	89.94	359.50	9,677.6	3,897.8	-209.5	3,901.9	0.00		0.0
13,600.0	89.94	359.50	9,677.7	3,997.8	-210.3	4,001.9	0.00	0.00	0.0
13,700.0	89.94	359.50	9,677.8	4,097.8	-211.2	4,101.9	0.00	0.00	0.0
13,800.0	89.94	359.50	9,677.9	4,197.8	-212.1	4,201.9	0.00	0.00	0.0
13,900.0	89.94	359.50	9,678.0	4,297.8	-213.0	4,301.8	0.00	0.00	0.0
14,000.0	89.94	359.50	9,678.1	4,397.8	-213.0	4,401.8	0.00	0.00	0.0
14,000.0	89.94	359.50	9,678.2	4,397.8	-213.9	4,401.8	0.00	0.00	0.0
14,200.0	89.94	359.50	9,678.3	4,597.8	-215.6	4,601.8	0.00	0.00	0.0
14,300.0	89.94	359.50	9,678.4	4,697.8	-216.5	4,701.8	0.00	0.00	0.0
14,400.0	89.94	359.50	9,678.5	4,797.8	-217.4	4,801.8	0.00	0.00	0.0
14,500.0	89.94	359.50	9,678.6	4,897.8	-218.3	4,901.8	0.00	0.00	0.0
14,600.0	89.94	359.50	9,678.7	4,997.8	-219.1	5,001.7	0.00	0.00	0.0
14,000.0	89.94	359.50	9,678.8	5,097.7	-219.1	5,101.7	0.00	0.00	0.0
						5,101.7 5,153.0			0.0
14,751.3	89.94	359.50	9,678.8	5,149.0	-220.5	5.153.0	0.00	0.00	0.0

Database:	Hobbs	Local Co-ordinate Reference:	Site Ibex 15/10 B1PA Fed Com #2H
Company:	Mewbourne Oil Company	TVD Reference:	WELL @ 3439.0usft (Original Well Elev)
Project:	Eddy County, New Mexico NAD 83	MD Reference:	WELL @ 3439.0usft (Original Well Elev)
Site:	Ibex 15/10 B1PA Fed Com #2H	North Reference:	Grid
Well:	Sec 15, T23S, R34E	Survey Calculation Method:	Minimum Curvature
Wellbore:	BHL: 100' FNL & 450' FEL, Sec 10		
Design:	Design #1		

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
14,800.0	89.94	359.50	9,678.9	5,197.7	-220.9	5,201.7	0.00	0.00	0.00
14,900.0	89.94	359.50	9,679.0	5,297.7	-221.8	5,301.7	0.00	0.00	0.00
15,000.0	89.94	359.50	9,679.1	5,397.7	-222.7	5,401.7	0.00	0.00	0.00
15,100.0	89.94	359.50	9,679.2	5,497.7	-223.5	5,501.7	0.00	0.00	0.00
15,200.0	89.94	359.50	9,679.3	5,597.7	-224.4	5,601.7	0.00	0.00	0.00
15,300.0	89.94	359.50	9,679.4	5,697.7	-225.3	5,701.6	0.00	0.00	0.00
15,400.0	89.94	359.50	9,679.5	5,797.7	-226.2	5,801.6	0.00	0.00	0.00
15,500.0	89.94	359.50	9,679.6	5,897.7	-227.1	5,901.6	0.00	0.00	0.00
15,600.0	89.94	359.50	9,679.7	5,997.7	-227.9	6,001.6	0.00	0.00	0.00
15,700.0	89.94	359.50	9,679.8	6,097.7	-228.8	6,101.6	0.00	0.00	0.00
15,800.0	89.94	359.50	9,679.9	6,197.7	-229.7	6,201.6	0.00	0.00	0.00
15,900.0	89.94	359.50	9,680.0	6,297.7	-230.6	6,301.6	0.00	0.00	0.00
16,000.0	89.94	359.50	9,680.1	6,397.7	-231.5	6,401.5	0.00	0.00	0.00
16,072.3	89.94	359.50	9,680.1	6,470.0	-232.1	6,473.8	0.00	0.00	0.00
	FSL & 450' FEL								
16,100.0	89.94	359.50	9,680.2	6,497.7	-232.3	6,501.5	0.00	0.00	0.00
16,200.0	89.94	359.50	9,680.3	6,597.7	-233.2	6,601.5	0.00	0.00	0.00
16,300.0	89.94	359.50	9,680.4	6,697.7	-234.1	6,701.5	0.00	0.00	0.00
16,400.0	89.94	359.50	9,680.5	6,797.7	-235.0	6,801.5	0.00	0.00	0.00
16,500.0	89.94	359.50	9,680.6	6,897.7	-235.9	6,901.5	0.00	0.00	0.00
16,600.0	89.94	359.50	9,680.7	6,997.7	-236.7	7,001.4	0.00	0.00	0.00
16,700.0	89.94	359.50	9,680.8	7,097.7	-237.6	7,101.4	0.00	0.00	0.00
16,800.0	89.94	359.50	9,680.9	7,097.7	-237.6	7,101.4	0.00	0.00	0.00
16,900.0	89.94	359.50	9,681.0	7,297.7	-239.4	7,301.4	0.00	0.00	0.00
17,000.0	89.94	359.50	9,681.1	7,397.7	-240.3	7,301.4	0.00	0.00	0.00
17,000.0	89.94	359.50	9,681.2	7,497.7	-240.3	7,401.4	0.00	0.00	0.00
17,200.0	89.94	359.50	9,681.3	7,597.6	-242.0	7,601.4	0.00	0.00	0.00
17,300.0	89.94	359.50	9,681.4	7,697.6	-242.9	7,701.3	0.00	0.00	0.00
17,400.0	89.94	359.50	9,681.5	7,797.6	-243.8	7,801.3	0.00	0.00	0.00
17,500.0	89.94	359.50	9,681.6	7,897.6	-244.7	7,901.3	0.00	0.00	0.00
17,600.0	89.94	359.50	9,681.7	7,997.6	-245.5	8,001.3	0.00	0.00	0.00
17,700.0	89.94	359.50	9,681.8	8,097.6	-246.4	8,101.3	0.00	0.00	0.00
17,800.0	89.94	359.50	9,681.9	8,197.6	-247.3	8,201.3	0.00	0.00	0.00
17,900.0	89.94	359.50	9,682.0	8,297.6	-248.2	8,301.3	0.00	0.00	0.00
18,000.0	89.94	359.50	9,682.1	8,397.6	-249.1	8,401.2	0.00	0.00	0.00
18,100.0	89.94	359.50	9,682.2	8,497.6	-249.9	8,501.2	0.00	0.00	0.00
18,200.0	89.94	359.50	9,682.3	8,597.6	-250.8	8,601.2	0.00	0.00	0.00
18,300.0	89.94	359.50	9,682.4	8,697.6	-251.7	8,701.2	0.00	0.00	0.00
18,400.0	89.94	359.50	9,682.5	8,797.6	-252.6	8,801.2	0.00	0.00	0.00
18,500.0	89.94	359.50	9,682.6	8,897.6	-253.5	8,901.2	0.00	0.00	0.00
18,600.0	89.94	359.50	9,682.7	8,997.6	-254.4	9,001.2	0.00	0.00	0.00
18,700.0	89.94	359.50	9,682.8	9,097.6	-255.2	9,101.1	0.00	0.00	0.00
18,700.0	89.94	359.50	9,682.9	9,097.6 9,197.6	-255.2	9,101.1 9,201.1	0.00	0.00	0.00
18,900.0	89.94	359.50	9,683.0	9,297.6	-257.0	9,301.1	0.00	0.00	0.00
19,000.0	89.94	359.50		,	-257.0	9,301.1 9,401.1	0.00	0.00	0.00
			9,683.1	9,397.6					
19,100.0	89.94	359.50	9,683.2	9,497.6	-258.8	9,501.1	0.00	0.00	0.00
19,200.0	89.94	359.50	9,683.3	9,597.6	-259.6	9,601.1	0.00	0.00	0.00
19,300.0	89.94	359.50	9,683.4	9,697.6	-260.5	9,701.1	0.00	0.00	0.00
19,400.0	89.94	359.50	9,683.5	9,797.6	-261.4	9,801.0	0.00	0.00	0.00
19,500.0	89.94	359.50	9,683.6	9,897.6	-262.3	9,901.0	0.00	0.00	0.00
19,600.0	89.94	359.50	9,683.7	9,997.6	-263.2	10,001.0	0.00	0.00	0.00
19,700.0	89.94	359.50	9,683.8	10,097.6	-264.0	10,101.0	0.00	0.00	0.00
19,800.0	89.94	359.50	9,683.9	10,197.5	-264.9	10,201.0	0.00	0.00	0.00
19,900.0	89.94	359.50	9,684.0	10,297.5	-265.8	10,301.0	0.00	0.00	0.00

Database:	Hobbs	Local Co-ordinate Reference:	Site Ibex 15/10 B1PA Fed Com #2H
Company:	Mewbourne Oil Company	TVD Reference:	WELL @ 3439.0usft (Original Well Elev)
Project:	Eddy County, New Mexico NAD 83	MD Reference:	WELL @ 3439.0usft (Original Well Elev)
Site:	Ibex 15/10 B1PA Fed Com #2H	North Reference:	Grid
Well:	Sec 15, T23S, R34E	Survey Calculation Method:	Minimum Curvature
Wellbore:	BHL: 100' FNL & 450' FEL, Sec 10		
Design:	Design #1		

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
19,923.5	89.94	359.50	9,684.0	10,321.0	-266.0	10,324.4	0.00	0.00	0.00

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
SL: 140' FSL & 275' FEL - plan hits target cente - Point	0.00 er	0.00	0.0	0.0	0.0	473,175.00	814,187.00	32.2977431	-103.4502893
KOP: 10' FSL & 450' FEl - plan hits target cente - Point	0.00 er	0.00	9,196.5	-130.0	-174.0	473,045.00	814,013.00	32.2973897	-103.4508559
FTP: 100' FSL & 450' FE - plan hits target cente - Point	0.00 er	0.00	9,475.5	-40.0	-174.8	473,135.00	814,012.21	32.2976371	-103.4508560
LP: 487' FSL & 450' FEL - plan hits target cente - Point	0.00 er	0.00	9,674.0	347.0	-178.2	473,522.00	814,008.80	32.2987009	-103.4508567
PPP2: 2640' FNL & 450' - plan hits target cente - Point	0.00 er	0.00	9,676.2	2,497.0	-197.1	475,672.00	813,989.87	32.3046107	-103.4508607
PPP3: 0' FSL & 450' FEI - plan hits target cente - Point	0.00 er	0.00	9,678.8	5,149.0	-220.5	478,324.00	813,966.53	32.3119003	-103.4508656
PPP4: 1320' FSL & 450' - plan hits target cente - Point	0.00 er	0.00	9,680.1	6,470.0	-232.1	479,645.00	813,954.90	32.3155314	-103.4508681
BHL: 100' FNL & 450' FE - plan hits target cente - Point	0.00 er	0.00	9,684.0	10,321.0	-266.0	483,496.00	813,921.00	32.3261168	-103.4508751

# 1. Geologic Formations

TVD of target	9684'	Pilot hole depth	NA
MD at TD:	19923'	Deepest expected fresh water:	275'

Basin	

Formation	Depth (TVD)	Water/Mineral Bearing/	Hazards*
	from KB	Target Zone?	
Quaternary Fill	Surface		
Rustler	1080		
Top of Salt	1400		
Base of Salt			
Delaware (Lamar)	5060	Oil	
Bell Canyon			
Cherry Canyon			
Manzanita Marker			
Brushy Canyon			
Bone Spring	8540	Oil/Gas	
1 <sup>st</sup> Bone Spring Sand	9625	Target Zone	
2 <sup>nd</sup> Bone Spring Sand			
3 <sup>rd</sup> Bone Spring Sand			
Abo			
Wolfcamp			
Devonian			
Fusselman			
Ellenburger			
Granite Wash			

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

## 2. Casing Program

Hole	Casing Interval		Csg.	Weight	t Grad	le Conn	. SF	SF	SF Jt	SF Body
Size	From	То	Size	(lbs)			Collapse	Burst	Tension	Tension
17.5"	0'	1350'	13.375"	48	H40	STC	1.25	2.80	4.97	8.35
12.25"	0'	4985'	9.625"	40	L80	LTC	1.19	2.22	3.65	4.59
8.75"	0'	9800'	7"	26	P110	LTC	1.31	2.09	2.72	3.26
6.125"	9196'	19923'	4.5"	13.5	P110	LTC	1.82	2.11	2.33	2.91
BLM Minimum Safety Fac			Factor 1	.125	1	1.6 Dry	1.6 Dry			
						1.8 Wet	1.8 Wet			

All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h

	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.	Ν
Does the above casing design meet or exceed BLM's minimum standards? If not provide	Y
justification (loading assumptions, casing design criteria).	
Will the pipe be kept at a minimum 1/3 fluid filled to avoid approaching the	Y
collapse pressure rating of the casing?	
Is well located within Capitan Reef?	Y
If yes, does production casing cement tie back a minimum of 50' above the Reef?	1
Is well within the designated 4 string boundary.	
Is well located in SOPA but not in R-111-P?	Ν
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?	N
If yes, are the first three strings cemented to surface?	
Is 2 <sup>nd</sup> 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?	

## 3. Cementing Program

Casing	# Sks	Wt. lb/ gal	Yld ft3/ sack	H <sub>2</sub> 0 gal/ sk	500# Comp. Strength (hours)	Slurry Description	
Surf.	570	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.	780	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	110	12.5	2.12	11	9	Lead: Class C + Gel + Retarder + Defoamer + Extender	
0	400	15.6	1.18	5.2	10	Tail: Class H + Retarder + Fluid Loss + Defoamer	
					ECP/DV T	ool @ 6100'	
Prod.	100	12.5	2.12	11	10	Lead: Class C + Salt + Gel + Extender + LCM	
Stg 2	100	14.8	1.34	6.3	8	Tail: Class C + Retarder	
Liner	430	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.

Casing String	TOC	% Excess
Surface	0'	100%
Intermediate	0'	25%
Production	4785'	25%
Liner	9196'	25%

## 4. Pressure Control Equipment

N Variance: A variance is requested for use of a 5000 psi annular BOP with the 10,000 psi BOP stack. Please see attached description and procedure.

BOP installed and tested before drilling which hole?	Size?	System Rated WP	Туре		<b>√</b>	Tested to:
			A	nnular	Χ	2,500#
	13-5/8"	5M	Blind Ram		Χ	
12-1/4"			Pipe Ram		Χ	5,000#
			Double Ram			5,000#
			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.

Χ	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.

-	A vari	ance is requested for the use of a flexible choke line from the BOP to Choke							
Y	Manifold. See attached for specs and hydrostatic test chart.								
	Ν	Are anchors required by manufacturer?							
Y	A mul	tibowl wellhead is being used. The BOP will be tested per Onshore Order #2 after							
	install	ation on the surface casing which will cover testing requirements for a maximum of							
	30 day	ys. If any seal subject to test pressure is broken the system must be tested.							
	•	Provide description here: See attached schematic.							

## 5. Mud Program

TVD		Туре	Weight (ppg)	Viscosity	Water Loss
From	То				
0	1350	FW Gel	8.6-8.8	28-34	N/C
1950	4985	Saturated Brine	10.0	28-34	N/C
4900	9650	Cut Brine	8.6-9.5	28-34	N/C
9650	9684	OBM	8.6-10.0	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	Pason/PVT/Visual Monitoring
of fluid?	

## 6. Logging and Testing Procedures

Logg	Logging, Coring and Testing.		
Χ	Will run GR/CNL from KOP (9196') 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
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Χ	Gamma Ray	9196' (KOP) to TD
	Density	
	CBL	
	Mud log	
	PEX	

## 7. Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	5035 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
Χ	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