Form 3160-3
(June 2015)

OCD – HOBBS
07/30/2020
RECEIVED

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.
NMNM069377

6. If Indian, Allotee or Tribe Name

1a. Type of work: ☑ DRILL ☐ REENTER

1b. Type of Well: ☑ Oil Well ☐ Gas Well ☐ Other

1c. Type of Completion: ☐ Hydraulic Fracturing ☐ Single Zone ☑ Multiple Zone

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

8. Lease Name and Well No.
LION OIL 28-33 FEDERAL COM
35H [327301]

2. Name of Operator
OXY USA INCORPORATED [16696]

9. API Well No. 30-025-47488

3a. Address
5 Greenway Plaza, Suite 110 Houston TX 77046

3b. Phone No. *(include area code)*
(713)366-5716

10. Field and Pool, or Exploratory
COTTON DRAW BONE SPRING / COTT

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*
At surface NWNE / 255 FNL / 1515 FEL / LAT 32.36919 / LONG -103.6760204
At proposed prod. zone SESE / 20 FSL / 380 FEL / LAT 32.3409301 / LONG -103.6723159

11. Sec., T. R. M. or Blk. and Survey or Area
SEC 28 / T22S / R32E / NMP

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

12. County or Parish
LEA

13. State
NM

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

16. No of acres in lease
320

17. Spacing Unit dedicated to this well
640

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

19. Proposed Depth
11716 feet / 22654 feet

20. BLM/BIA Bond No. in file
FED: ESB000226

21. Elevations (Show whether DF, KDB, RT, GL, etc.)
3626 feet

22. Approximate date work will start*
09/01/2020

23. Estimated duration
15 days

24. Attachments

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

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

25. Signature
(Electronic Submission)

Name *(Printed/Typed)*
Leslie Reeves / Ph: (713)497-2492

Date
03/14/2019

Title
Advisor Regulatory

Approved by *(Signature)*
(Electronic Submission)

Name *(Printed/Typed)*
Cody Layton / Ph: (575)234-5959

Date
07/30/2020

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.

GCP Rec 07/30/2020

SL

APPROVED WITH CONDITIONS

KZ
08/06/2020

Approval Date: 07/30/2020

(Continued on page 2)

*(Instructions on page 2)

Additional Operator Remarks

Location of Well

1. SHL: NWNE / 255 FNL / 1515 FEL / TWSP: 22S / RANGE: 32E / SECTION: 28 / LAT: 32.36919 / LONG: -103.6760204 (TVD: 0 feet, MD: 0 feet)
   PPP: NENE / 100 FNL / 380 FEL / TWSP: 22S / RANGE: 32E / SECTION: 28 / LAT: 32.3696284 / LONG: -103.6723449 (TVD: 11716 feet, MD: 12225 feet)
   PPP: SESE / 7 FSL / 379 FEL / TWSP: 22S / RANGE: 32E / SECTION: 28 / LAT: 32.355406 / LONG: -103.67233 (TVD: 11716 feet, MD: 17387 feet)
   BHL: SESE / 20 FSL / 380 FEL / TWSP: 22S / RANGE: 32E / SECTION: 33 / LAT: 32.3409301 / LONG: -103.6723159 (TVD: 11716 feet, MD: 22654 feet)

BLM Point of Contact

Name: Tenille Ortiz
Title: Legal Instruments Examiner
Phone: 5752342224
Email: tortiz@blm.gov

PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Oxy USA Incorporated
WELL NAME & NO.:	Lion Oil 28-33 Federal Com 35H
SURFACE HOLE FOOTAGE:	255'/N & 1515'/E
BOTTOM HOLE FOOTAGE	20'/S & 380'/E
LOCATION:	Section 28, T.22 S., R.32 E., NMPM
COUNTY:	Lea County, New Mexico

COA

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

A. HYDROGEN SULFIDE

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

B. CASING

Casing Design:

1. The **10-3/4** inch surface casing shall be set at approximately **1193** 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 completing the cement job.

b. Wait on cement (WOC) time for a primary cement job will be a minimum of **8 hours** 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.

Intermediate casing must be kept fluid filled to meet BLM minimum collapse requirement.

2. The **7-5/8** inch intermediate casing shall be set at approximately **11358** feet. The minimum required fill of cement behind the **7-5/8** inch intermediate casing is:

Option 1 (Single Stage):

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

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 to surface. If cement does not circulate, contact the appropriate BLM office.
  Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.

3. The minimum required fill of cement behind the **5-1/2** 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.

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.

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.

Option 1:

a. 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.

b. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the intermediate casing shoe shall be **5000 (5M)** psi.

Option 2:

1. 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 Santa Fe Office, 301 Dinosaur Trail Santa Fe, New Mexico 87508, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.
- If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.
- In addition, the well sign shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

GENERAL REQUIREMENTS

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

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

☒ Eddy County
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 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
      - BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.

2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.

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

A. CASING

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

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

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

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.

NMK07202020

APD ID: 10400039914
Submission Date: 03/14/2019
Operator Name: OXY USA INCORPORATED
Well Name: LION OIL 28-33 FEDERAL COM
Well Number: 35H
Well Type: OIL WELL
Well Work Type: Drill

Highlighted data reflects the most recent changes

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Section 1 - General

APD ID: 10400039914
Tie to previous NOS? N
Submission Date: 03/14/2019
BLM Office: CARLSBAD
User: Leslie Reeves
Title: Advisor Regulatory
Federal/Indian APD: FED
Is the first lease penetrated for production Federal or Indian? FED
Lease number: NMNM069377
Lease Acres: 320
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: OXY USA INCORPORATED
Operator letter of designation:

Operator Info

Operator Organization Name: OXY USA INCORPORATED
Operator Address: 5 Greenway Plaza, Suite 110
Zip: 77046
Operator PO Box:
Operator City: Houston
State: TX
Operator Phone: (713)366-5716
Operator Internet Address:

Section 2 - Well Information

Well in Master Development Plan? NO
Master Development Plan name:
Well in Master SUPO? NO
Master SUPO name:
Well in Master Drilling Plan? NO
Master Drilling Plan name:
Well Name: LION OIL 28-33 FEDERAL COM
Well Number: 35H
Well API Number:
Field/Pool or Exploratory? Field and Pool
Field Name: COTTON DRAW BONE SPRING
Pool Name: COTTON DRAW BONE SPRING
Is the proposed well in an area containing other mineral resources? USEABLE WATER

Operator Name: OXY USA INCORPORATED

Well Name: LION OIL 28-33 FEDERAL COM **Well Number:** 35H

Is the proposed well in an area containing other mineral resources? USEABLE WATER

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

Type of Well Pad: MULTIPLE WELL **Multiple Well Pad Name:** LION OIL 28-33 FEDERAL COM **Number:** 34H & 35H

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

Well Work Type: Drill

Well Type: OIL WELL

Describe Well Type:

Well sub-Type: INFILL

Describe sub-type:

Distance to town: 25 Miles **Distance to nearest well:** 35 FT **Distance to lease line:** 20 FT

Reservoir well spacing assigned acres Measurement: 640 Acres

Well plat: LionOil28_33FdCom35H_SitePlan_20190313092403.pdf

LionOil28_33FdCom35H_C102_20190313092455.pdf

Well work start Date: 09/01/2020 **Duration:** 15 DAYS

Section 3 - Well Location Table

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD83 **Vertical Datum:** NAVD88

Survey number: **Reference Datum:**

Wellbore	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	Will this well produce from this lease?
SHL Leg #1	255	FNL	1515	FEL	22S	32E	28	Aliquot NWNE	32.36919	-103.6760204	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 069377	3626	0	0	
KOP Leg #1	50	FNL	380	FEL	22S	32E	28	Aliquot NENE	32.36919	-103.6760204	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 069377	-8090	12212	11716	

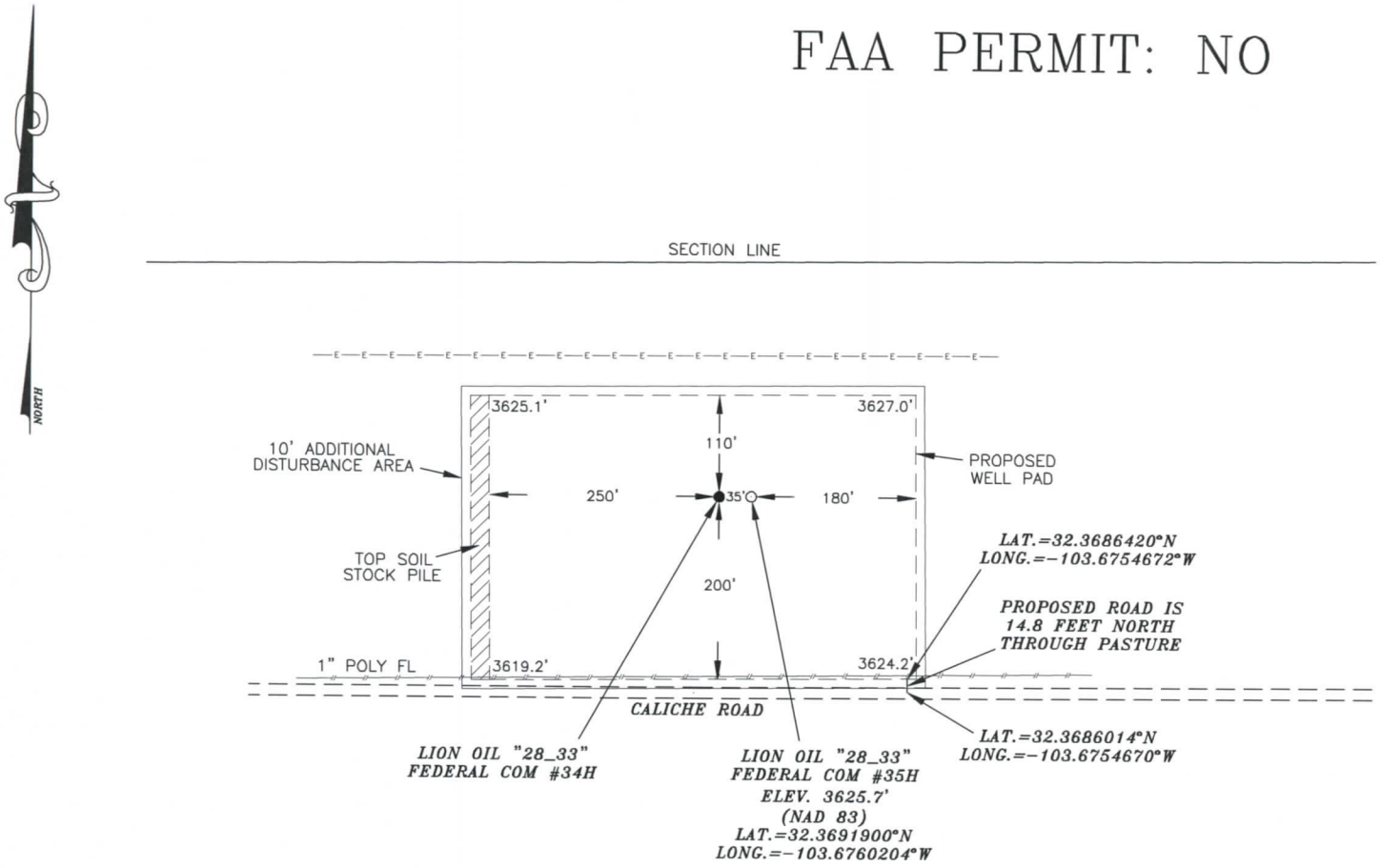
Operator Name: OXY USA INCORPORATED

Well Name: LION OIL 28-33 FEDERAL COM **Well Number:** 35H

Wellbore	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	Will this well produce from this lease?
PPP Leg #1-1	7	FSL	379	FEL	22S	32E	28	Aliquot SESE	32.355406	-103.67233	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 077060	-8090	17387	11716	
PPP Leg #1-2	100	FNL	380	FEL	22S	32E	28	Aliquot NENE	32.3696284	-103.6723449	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 069377	-8090	12225	11716	
EXIT Leg #1	100	FSL	380	FEL	22S	32E	33	Aliquot SESE	32.34115	-103.6723161	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 077060	-8090	22554	11716	
BHL Leg #1	20	FSL	380	FEL	22S	32E	33	Aliquot SESE	32.3409301	-103.6723159	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 077060	-8090	22654	11716	

OXY USA INC.
LION OIL "28_33" FEDERAL COM #35H
SITE PLAN

FAA PERMIT: NO



TERRY J ASEL NEW MEXICO 15079 REGISTERED PROFESSIONAL LAND SURVEYOR

LEGEND

- – – – DENOTES PROPOSED WELL PAD
- —·—·— DENOTES PROPOSED ROAD
- ▨ DENOTES STOCK PILE AREA

200' 0 200' 400' FEET

SCALE: 1"=200'

SURVEYORS CERTIFICATE

I, TERRY J. ASEL, NEW MEXICO PROFESSIONAL SURVEYOR NO. 15079, DO HEREBY CERTIFY THAT I CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND MEETS THE "MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO" AS ADOPTED BY THE NEW MEXICO STATE BOARD OF REGISTRATION FOR PROFESSIONAL ENGINEERS AND SURVEYORS.

Terry J. Asel 1/18/2019

Terry J. Asel N.M. R.P.L.S. No. 15079

Asel Surveying

P.O. BOX 393 – 310 W. TAYLOR
HOBBS, NEW MEXICO – 575-393-9146

OXY USA INC.

LION OIL "28_33" FEDERAL COM #35H
LOCATED AT 255' FNL & 1515' FEL IN
SECTION 28, TOWNSHIP 22 SOUTH, RANGE 32
EAST, N.M.P.M., LEA COUNTY, NEW MEXICO

Survey Date: 11/19/18	Sheet 1 of 1 Sheets	
W.O. Number: 181119WL-c	Drawn By: KA	Rev:
Date: 01/16/19	181119WL-c	Scale: 1"=200'

APD ID: 10400039914 **Submission Date:** 03/14/2019

Operator Name: OXY USA INCORPORATED

Well Name: LION OIL 28-33 FEDERAL COM **Well Number:** 35H

Well Type: OIL 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
416710	RUSTLER	3626	832	832	ANHYDRITE, DOLOMITE, SHALE	USEABLE WATER	N
416709	SALADO	2354	1272	1272	ANHYDRITE, DOLOMITE, HALITE, SHALE	OTHER : SALT	N
416707	CASTILE	725	2901	2901	ANHYDRITE	OTHER : salt	N
416711	LAMAR	-1024	4650	4650	LIMESTONE, SANDSTONE, SILTSTONE	NATURAL GAS, OIL, OTHER : BRINE	N
416712	BELL CANYON	-1068	4694	4694	SANDSTONE, SILTSTONE	NATURAL GAS, OIL, OTHER, USEABLE WATER : BRINE	N
416713	CHERRY CANYON	-1987	5613	5630	SANDSTONE, SILTSTONE	NATURAL GAS, OIL, OTHER : BRINE	N
416714	BRUSHY CANYON	-3249	6875	6931	LIMESTONE, SANDSTONE, SILTSTONE	NATURAL GAS, OIL, OTHER : BRINE	N
416708	BONE SPRING	-4906	8532	8639	LIMESTONE, SANDSTONE, SILTSTONE	NATURAL GAS, OIL	N
416718	BONE SPRING 1ST	-6049	9675	9817	LIMESTONE, SANDSTONE, SILTSTONE	NATURAL GAS, OIL	N
416715	BONE SPRING 2ND	-6337	9963	10114	LIMESTONE, SANDSTONE, SILTSTONE	NATURAL GAS, OIL	Y
416716	BONE SPRING 3RD	-7163	10789	10952	LIMESTONE, SANDSTONE, SILTSTONE	NATURAL GAS, OIL	Y

Section 2 - Blowout Prevention

Pressure Rating (PSI): 5M **Rating Depth:** 11716

Equipment: 13-5/8" 5M Annular, Blind Ram, Double Ram

Requesting Variance? YES

Variance request: Request for the use of a flexible choke line from the BOP to Choke Manifold.

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. A multibowl wellhead or a unionized multibowl

wellhead system will be employed. The wellhead and connection to the BOPE will meet all API 6A requirements. 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 will be tested. We will test the flange connection of the wellhead with a test port that is directly in the flange. BOP Break Testing Request - As per the agreement reached in the OXY/BLM meeting on Feb 22, 2018, OXY requests permission to allow BOP Break Testing under the following conditions: 1. After a full BOP test is conducted on the first well on the pad. 2. When skidding to drill an intermediate section that does not penetrate into the Wolfcamp. 3. Full BOP test will be required prior to drilling any production section.

Choke Diagram Attachment:

LionOil28_33FdCom35H_ChokeManifold_20190313100550.pdf

BOP Diagram Attachment:

LionOil28_33FdCom35H_FlexHoseCert_20190313100606.pdf

LionOil28_33FdCom35H_BOP5M_20190313100614.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	14.75	10.75	NEW	API	N	0	1212	0	1212			1212	J-55	40.5	BUTT	1.125	1.2	BUOY	1.4	BUOY	1.4
2	INTERMEDIATE	9.875	7.625	NEW	API	N	0	11352	0	11184			11352	HCL-80	26.4	BUTT	1.125	1.2	BUOY	1.4	BUOY	1.4
3	PRODUCTION	6.75	5.5	NEW	API	N	0	22654	0	11716			22654	P-110	20	OTHER - DQX	1.125	1.2	BUOY	1.4	BUOY	1.4

Casing Attachments

Operator Name: OXY USA INCORPORATED

Well Name: LION OIL 28-33 FEDERAL COM **Well Number:** 35H

Casing Attachments

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

LionOil28_33FdCom35H_CsgCriteria_20190313100720.pdf

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

LionOil28_33FdCom35H_CsgCriteria_20190313100909.pdf

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

LionOil28_33FdCom35H_CsgCriteria_20190313100954.pdf

LionOil28_33FdCom35H_5.500in_x_20.00__P110_HCTMK_UP_SF_TORQ_20190313101006.pdf

LionOil28_33FdCom35H_5.500in_x_20.00__P_110_TMK_UP_DQX_20190313101022.pdf

Operator Name: OXY USA INCORPORATED

Well Name: LION OIL 28-33 FEDERAL COM **Well Number:** 35H

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	1212	1001	1.33	14.8	1331	100	Cl C	Accelerator
INTERMEDIATE	Lead	4700	0	4700	1068	1.67	13.6	1784	100	Cl C	Accelerator, Retarder
INTERMEDIATE	Lead	4700	4600	10352	575	2.58	10.2	1484	20	Pozzolan C	Retarder
INTERMEDIATE	Tail		10352	11352	167	1.61	13.2	269	20	Cl H	Retarder, Dispersant, Salt
PRODUCTION	Lead		10852	22654	865	1.38	13.2	1194	20	CL H	Retarder, Dispersant, Salt

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: Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements. The following is a general list of products: Barite, Bentonite, Gypsum, Lime, Soda Ash, Caustic Soda, Nut Plug, Cedar Fiber, Cotton Seed Hulls, Drilling Paper, Salt Water Clay, CaCl2.

Describe the mud monitoring system utilized: PVT/MD Totco/Visual Monitoring

Circulating Medium Table

Operator Name: OXY USA INCORPORATED

Well Name: LION OIL 28-33 FEDERAL COM **Well Number:** 35H

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
1212	11352	OTHER : Saturated Brine Based Mud or OBM	8	10							
11352	22654	OTHER : Water-Based and/or Oil-Based Mud	9.5	12							
0	1212	WATER-BASED MUD	8.6	8.8							

Section 6 - Test, Logging, Coring

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

GR from TD to surface (horizontal well – vertical portion of hole). Mud Log from intermediate shoe to TD.

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

GR,MUDLOG

Coring operation description for the well:

No coring is planned at this time.

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 7311 **Anticipated Surface Pressure:** 4733.47

Anticipated Bottom Hole Temperature(F): 174

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:

LionOil28_33FdCom35H_H2S1_20190313101428.pdf
LionOil28_33FdCom35H_H2S2_20190313101435.pdf
LionOil28_33FdCom35H_H2SEmergCont_20190313101443.pdf

Operator Name: OXY USA INCORPORATED

Well Name: LION OIL 28-33 FEDERAL COM **Well Number:** 35H

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

LionOil28_33FdCom35H_DirectPlot_20190313101508.pdf

LionOil28_33FdCom35H_DirectPlan_20190313101515.pdf

Other proposed operations facets description:

OXY requests the option to set casing shallower yet still below the salts if losses or hole conditions require this. Cement volumes may be adjusted if casing is set shallower and a DV tool will be run in case a contingency second stage is required for cement to reach surface. If cement circulated to surface during first stage we will drop a cancelation cone and not pump the second stage.

OXY requests the option to run production casing with DQX and/or SF TORQ connections to accommodate hole conditions or drilling operations.

OXY requests to pump a two stage cement job on the intermediate II casing string with the first stage being pumped conventionally with the calculated TOC @ the Bone Spring and the second stage performed as a bradenhead squeeze with planned cement from the Bone Spring to surface.

Annular Clearance Variance Request - As per the agreement reached in the OXY/BLM meeting on Feb 22, 2018, Oxy requests permission to allow deviation from the 0.422” annular clearance requirement from Onshore Order #2 under the following conditions:
1. Annular clearance to meet or exceed 0.422” between intermediate casing ID and production casing coupling only on the first 500’ overlap between both casings.
2. Annular clearance less than 0.422” is acceptable for the curve and lateral portions of the production open hole section.

Well will be drilled with a walking/skidding operation. Plan to drill the multiple well pad in batch by section: all surface sections, intermediate sections and production sections. The wellhead will be secured with a night cap whenever the rig is not over the well.

OXY requests the option to contract a Surface Rig to drill, set surface casing, and cement for this well. If the timing between rigs is such that OXY would not be able to preset surface, the Primary Rig will MIRU and drill the well in its entirety per the APD. Please see the attached document for information on the spudder rig.

Other proposed operations facets attachment:

LionOil28_33FdCom35H_SpudRigData_20190313101618.pdf

LionOil28_33FdCom35H_GasCapPlan_20190313101728.pdf

LionOil28_33FdCom35H_DrillPlan_20190313101737.pdf

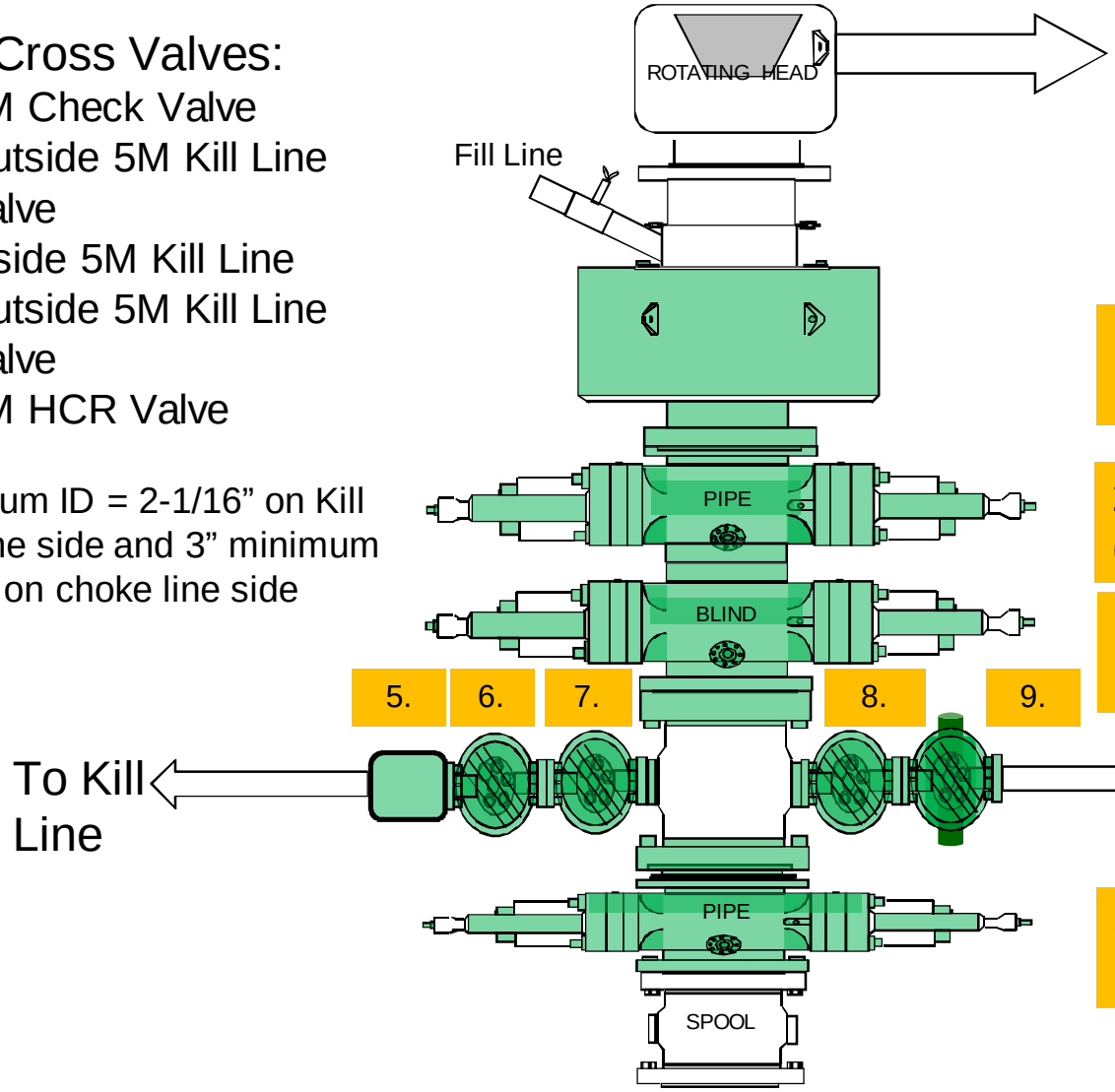
Other Variance attachment:

5M BOP Stack

Mud Cross Valves:

5. 5M Check Valve
6. Outside 5M Kill Line Valve
7. Inside 5M Kill Line
8. Outside 5M Kill Line Valve
9. 5M HCR Valve

*Minimum ID = 2-1/16” on Kill Line side and 3” minimum ID on choke line side

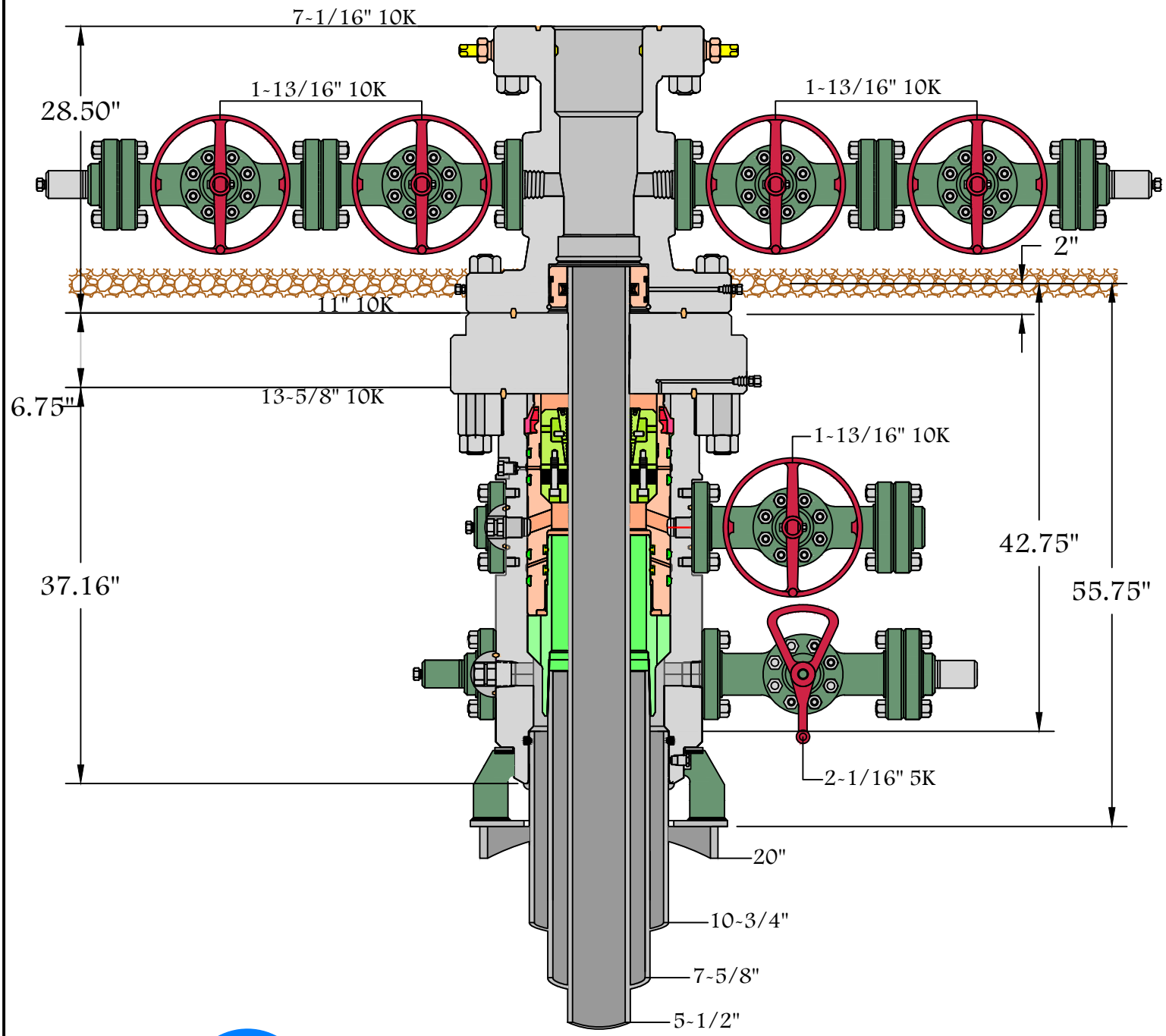


1. 5000 psi Annular (13-5/8” ID)

2. 5,000 psi Upper Pipe Ram (13-5/8” ID)

3. 5,000 psi Blind Ram (13-5/8” ID)

4. 5,000 psi Lower Pipe Ram (13-5/8” ID)



13-5/8" 10K MN-DS

CAMERON
A Schlumberger Company

Name:	Date:	Working Pressure:	#

Project:	PRD NM DIRECTIONAL PLANS (NAD 1983)
Site:	LION OIL 28_33 FED COM
Well:	LION OIL 28_33 FED COM 35H
Wellbore:	Wellbore #1
Design:	Permitting Plan

PROJECT DETAILS: NM DIRECTIONAL PLANS (NAD 1983)

Geodetic System:	US State Plane 1983
Datum:	North American Datum 1983
Ellipsoid:	GRS 1980
Zone:	New Mexico Eastern Zone
System Datum:	Mean Sea Level

Azimuths to Grid North
True North: -0.35°
Magnetic North: 6.41°

Magnetic Field
Strength: 48107.6snT
Dip Angle: 60.12°
Date: 11/19/2018
Model: HDGM

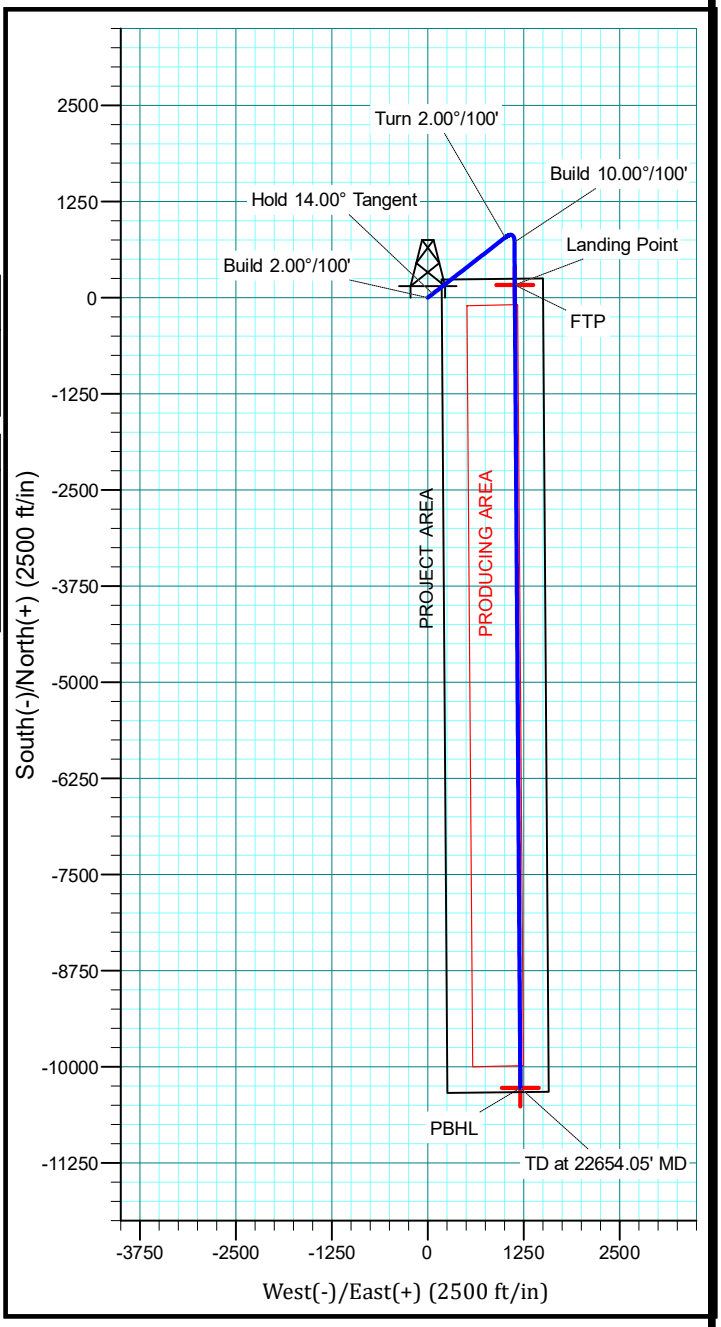
WELL DETAILS: LION OIL 28_33 FED COM 35H

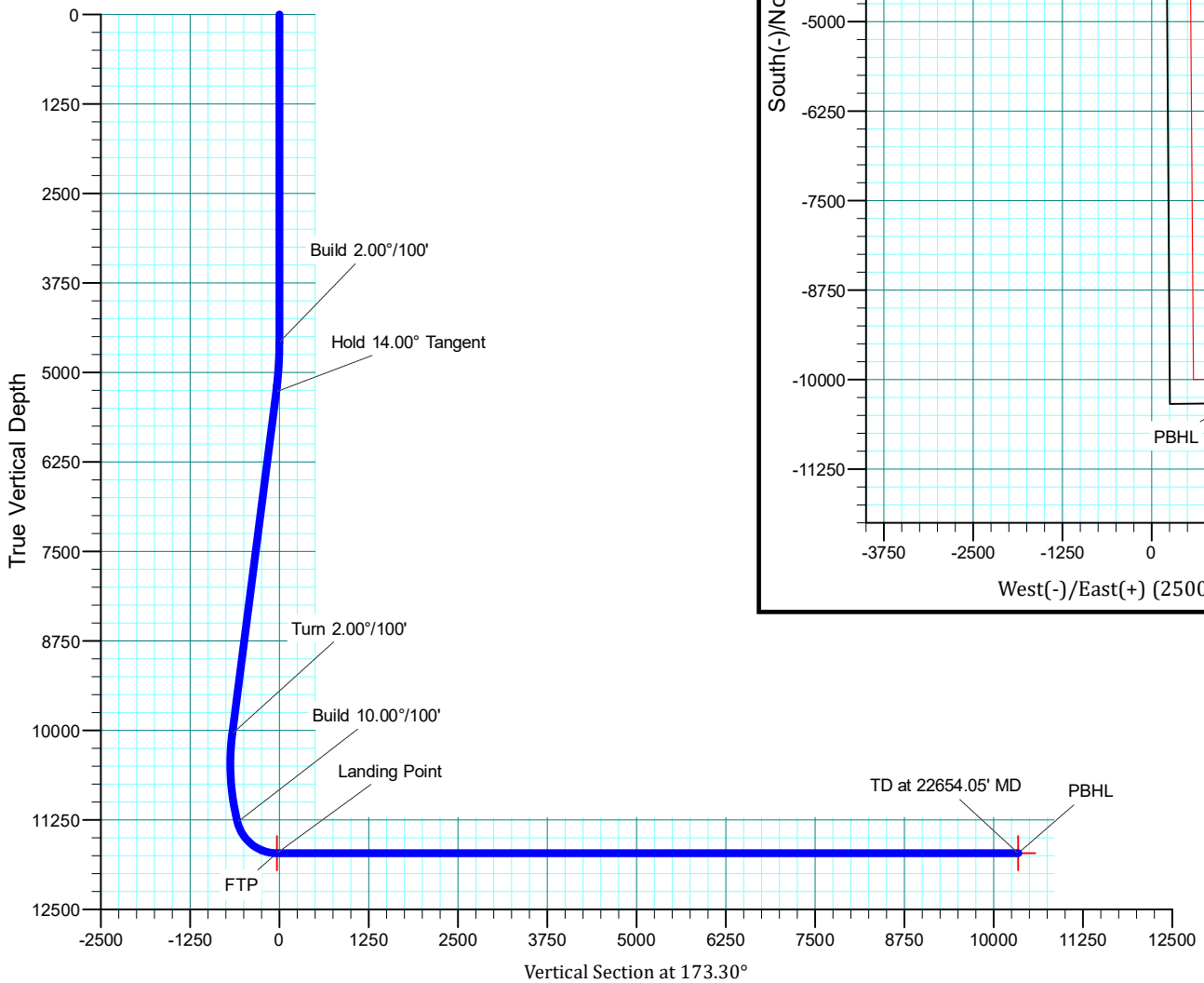
Ground Level: 3625.70

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	498666.17	744277.89	32° 22' 9.083446 N	103° 40' 33.673494 W

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSect	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
4578.00	0.00	0.00	4578.00	0.00	0.00	0.00	0.00	0.00	Build 2.00°/100'
5278.06	14.00	52.17	5271.11	52.20	67.22	2.00	52.17	-44.00	Hold 14.00° Tangent
10199.69	14.00	52.17	10046.52	782.51	1007.71	0.00	0.00	-659.57	Turn 2.00°/100'
11452.48	14.00	179.60	11281.85	722.97	1130.43	2.00	153.02	-586.12	Build 10.00°/100'
12212.48	90.00	179.60	11716.20	167.05	1134.31	10.00	0.00	-33.54	Landing Point
22654.05	90.00	179.60	11716.20	-10274.27	1207.25	0.00	0.00	10344.95	TD at 22654.05' MD





OXY

PRD NM DIRECTIONAL PLANS (NAD 1983)
LION OIL 28_33 FED COM
LION OIL 28_33 FED COM 35H

Wellbore #1

Plan: Permitting Plan

Standard Planning Report

19 November, 2018

Database:	HOPSPP	**Local Co-ordinate Reference:**	Well LION OIL 28_33 FED COM 35H
Company:	ENGINEERING DESIGNS	**TVD Reference:**	RKB=26.5' @ 3652.20ft
Project:	PRD NM DIRECTIONAL PLANS (NAD 1983)	**MD Reference:**	RKB=26.5' @ 3652.20ft
Site:	LION OIL 28_33 FED COM	**North Reference:**	Grid
Well:	LION OIL 28_33 FED COM 35H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permitting Plan		

Project PRD NM DIRECTIONAL PLANS (NAD 1983)

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		Using geodetic scale factor

Site LION OIL 28_33 FED COM

Site Position:		**Northing:**	498,014.35 usft	**Latitude:**	32° 22' 2.611384 N
From:	Map	**Easting:**	744,642.56 usft	**Longitude:**	103° 40' 29.468370 W
Position Uncertainty:	0.00 ft	**Slot Radius:**	13.200 in	**Grid Convergence:**	0.35 °

Well LION OIL 28_33 FED COM 35H

Well Position	**+N/-S**	651.85 ft	**Northing:**	498,666.17 usft	**Latitude:**	32° 22' 9.083446 N
	+E/-W	-364.69 ft	**Easting:**	744,277.89 usft	**Longitude:**	103° 40' 33.673494 W
Position Uncertainty		0.00 ft	**Wellhead Elevation:**	0.00 ft	**Ground Level:**	3,625.70 ft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	11/19/2018	6.77	60.12	48,108

Design Permitting Plan

Audit Notes:

Version:	**Phase:**	PROTOTYPE	**Tie On Depth:**	0.00

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	173.30

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
4,578.00	0.00	0.00	4,578.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,278.06	14.00	52.17	5,271.11	52.20	67.22	2.00	2.00	0.00	52.17	
10,199.69	14.00	52.17	10,046.52	782.51	1,007.71	0.00	0.00	0.00	0.00	
11,452.48	14.00	179.60	11,281.85	722.97	1,130.43	2.00	0.00	10.17	153.02	
12,212.48	90.00	179.60	11,716.20	167.05	1,134.31	10.00	10.00	0.00	0.00	FTP (Lion Oil 28_33
22,654.06	90.00	179.60	11,716.20	-10,274.27	1,207.25	0.00	0.00	0.00	0.00	PBHL (Lion Oil

Database:	HOPSPP	**Local Co-ordinate Reference:**	Well LION OIL 28_33 FED COM 35H
Company:	ENGINEERING DESIGNS	**TVD Reference:**	RKB=26.5' @ 3652.20ft
Project:	PRD NM DIRECTIONAL PLANS (NAD 1983)	**MD Reference:**	RKB=26.5' @ 3652.20ft
Site:	LION OIL 28_33 FED COM	**North Reference:**	Grid
Well:	LION OIL 28_33 FED COM 35H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permitting Plan		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00
4,578.00	0.00	0.00	4,578.00	0.00	0.00	0.00	0.00	0.00	0.00
4,600.00	0.44	52.17	4,600.00	0.05	0.07	-0.04	2.00	2.00	0.00
4,700.00	2.44	52.17	4,699.96	1.59	2.05	-1.34	2.00	2.00	0.00
4,800.00	4.44	52.17	4,799.78	5.27	6.79	-4.44	2.00	2.00	0.00
4,900.00	6.44	52.17	4,899.32	11.09	14.28	-9.35	2.00	2.00	0.00
5,000.00	8.44	52.17	4,998.48	19.03	24.50	-16.04	2.00	2.00	0.00
5,100.00	10.44	52.17	5,097.12	29.09	37.46	-24.52	2.00	2.00	0.00
5,200.00	12.44	52.17	5,195.12	41.25	53.12	-34.77	2.00	2.00	0.00

Database:	HOPSPP	**Local Co-ordinate Reference:**	Well LION OIL 28_33 FED COM 35H
Company:	ENGINEERING DESIGNS	**TVD Reference:**	RKB=26.5' @ 3652.20ft
Project:	PRD NM DIRECTIONAL PLANS (NAD 1983)	**MD Reference:**	RKB=26.5' @ 3652.20ft
Site:	LION OIL 28_33 FED COM	**North Reference:**	Grid
Well:	LION OIL 28_33 FED COM 35H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permitting Plan		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,278.06	14.00	52.17	5,271.11	52.20	67.22	-44.00	2.00	2.00	0.00
5,300.00	14.00	52.17	5,292.40	55.46	71.42	-46.74	0.00	0.00	0.00
5,400.00	14.00	52.17	5,389.43	70.30	90.53	-59.25	0.00	0.00	0.00
5,500.00	14.00	52.17	5,486.46	85.13	109.63	-71.76	0.00	0.00	0.00
5,600.00	14.00	52.17	5,583.49	99.97	128.74	-84.27	0.00	0.00	0.00
5,700.00	14.00	52.17	5,680.52	114.81	147.85	-96.77	0.00	0.00	0.00
5,800.00	14.00	52.17	5,777.55	129.65	166.96	-109.28	0.00	0.00	0.00
5,900.00	14.00	52.17	5,874.58	144.49	186.07	-121.79	0.00	0.00	0.00
6,000.00	14.00	52.17	5,971.61	159.33	205.18	-134.30	0.00	0.00	0.00
6,100.00	14.00	52.17	6,068.63	174.17	224.29	-146.80	0.00	0.00	0.00
6,200.00	14.00	52.17	6,165.66	189.01	243.40	-159.31	0.00	0.00	0.00
6,300.00	14.00	52.17	6,262.69	203.84	262.51	-171.82	0.00	0.00	0.00
6,400.00	14.00	52.17	6,359.72	218.68	281.62	-184.33	0.00	0.00	0.00
6,500.00	14.00	52.17	6,456.75	233.52	300.73	-196.83	0.00	0.00	0.00
6,600.00	14.00	52.17	6,553.78	248.36	319.84	-209.34	0.00	0.00	0.00
6,700.00	14.00	52.17	6,650.81	263.20	338.95	-221.85	0.00	0.00	0.00
6,800.00	14.00	52.17	6,747.84	278.04	358.05	-234.36	0.00	0.00	0.00
6,900.00	14.00	52.17	6,844.87	292.88	377.16	-246.86	0.00	0.00	0.00
7,000.00	14.00	52.17	6,941.90	307.72	396.27	-259.37	0.00	0.00	0.00
7,100.00	14.00	52.17	7,038.93	322.55	415.38	-271.88	0.00	0.00	0.00
7,200.00	14.00	52.17	7,135.95	337.39	434.49	-284.39	0.00	0.00	0.00
7,300.00	14.00	52.17	7,232.98	352.23	453.60	-296.89	0.00	0.00	0.00
7,400.00	14.00	52.17	7,330.01	367.07	472.71	-309.40	0.00	0.00	0.00
7,500.00	14.00	52.17	7,427.04	381.91	491.82	-321.91	0.00	0.00	0.00
7,600.00	14.00	52.17	7,524.07	396.75	510.93	-334.42	0.00	0.00	0.00
7,700.00	14.00	52.17	7,621.10	411.59	530.04	-346.92	0.00	0.00	0.00
7,800.00	14.00	52.17	7,718.13	426.43	549.15	-359.43	0.00	0.00	0.00
7,900.00	14.00	52.17	7,815.16	441.26	568.26	-371.94	0.00	0.00	0.00
8,000.00	14.00	52.17	7,912.19	456.10	587.37	-384.45	0.00	0.00	0.00
8,100.00	14.00	52.17	8,009.22	470.94	606.47	-396.95	0.00	0.00	0.00
8,200.00	14.00	52.17	8,106.25	485.78	625.58	-409.46	0.00	0.00	0.00
8,300.00	14.00	52.17	8,203.27	500.62	644.69	-421.97	0.00	0.00	0.00
8,400.00	14.00	52.17	8,300.30	515.46	663.80	-434.48	0.00	0.00	0.00
8,500.00	14.00	52.17	8,397.33	530.30	682.91	-446.98	0.00	0.00	0.00
8,600.00	14.00	52.17	8,494.36	545.14	702.02	-459.49	0.00	0.00	0.00
8,700.00	14.00	52.17	8,591.39	559.98	721.13	-472.00	0.00	0.00	0.00
8,800.00	14.00	52.17	8,688.42	574.81	740.24	-484.51	0.00	0.00	0.00
8,900.00	14.00	52.17	8,785.45	589.65	759.35	-497.01	0.00	0.00	0.00
9,000.00	14.00	52.17	8,882.48	604.49	778.46	-509.52	0.00	0.00	0.00
9,100.00	14.00	52.17	8,979.51	619.33	797.57	-522.03	0.00	0.00	0.00
9,200.00	14.00	52.17	9,076.54	634.17	816.68	-534.54	0.00	0.00	0.00
9,300.00	14.00	52.17	9,173.57	649.01	835.79	-547.04	0.00	0.00	0.00
9,400.00	14.00	52.17	9,270.60	663.85	854.89	-559.55	0.00	0.00	0.00
9,500.00	14.00	52.17	9,367.62	678.69	874.00	-572.06	0.00	0.00	0.00
9,600.00	14.00	52.17	9,464.65	693.52	893.11	-584.57	0.00	0.00	0.00
9,700.00	14.00	52.17	9,561.68	708.36	912.22	-597.07	0.00	0.00	0.00
9,800.00	14.00	52.17	9,658.71	723.20	931.33	-609.58	0.00	0.00	0.00
9,900.00	14.00	52.17	9,755.74	738.04	950.44	-622.09	0.00	0.00	0.00
10,000.00	14.00	52.17	9,852.77	752.88	969.55	-634.60	0.00	0.00	0.00
10,100.00	14.00	52.17	9,949.80	767.72	988.66	-647.10	0.00	0.00	0.00
10,199.69	14.00	52.17	10,046.52	782.51	1,007.71	-659.57	0.00	0.00	0.00
10,200.00	14.00	52.18	10,046.83	782.56	1,007.77	-659.61	2.00	-1.78	3.75
10,300.00	12.25	56.46	10,144.22	795.83	1,026.16	-670.65	2.00	-1.75	4.28
10,400.00	10.58	62.10	10,242.24	805.99	1,043.12	-678.76	2.00	-1.66	5.64

Database:	HOPSPP	**Local Co-ordinate Reference:**	Well LION OIL 28_33 FED COM 35H
Company:	ENGINEERING DESIGNS	**TVD Reference:**	RKB=26.5' @ 3652.20ft
Project:	PRD NM DIRECTIONAL PLANS (NAD 1983)	**MD Reference:**	RKB=26.5' @ 3652.20ft
Site:	LION OIL 28_33 FED COM	**North Reference:**	Grid
Well:	LION OIL 28_33 FED COM 35H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permitting Plan		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
10,500.00	9.06	69.71	10,340.77	813.02	1,058.63	-683.93	2.00	-1.53	7.61
10,600.00	7.75	80.11	10,439.70	816.90	1,072.65	-686.15	2.00	-1.31	10.39
10,700.00	6.79	94.02	10,538.91	817.65	1,085.19	-685.43	2.00	-0.97	13.91
10,800.00	6.32	111.14	10,638.26	815.25	1,096.22	-681.76	2.00	-0.46	17.12
10,900.00	6.47	129.11	10,737.65	809.71	1,105.73	-675.15	2.00	0.15	17.98
11,000.00	7.19	144.86	10,836.95	801.03	1,113.71	-665.60	2.00	0.72	15.75
11,100.00	8.34	157.03	10,936.03	789.23	1,120.14	-653.13	2.00	1.15	12.17
11,200.00	9.77	165.99	11,034.79	774.32	1,125.03	-637.75	2.00	1.43	8.95
11,300.00	11.37	172.56	11,133.10	756.32	1,128.36	-619.49	2.00	1.60	6.58
11,400.00	13.07	177.49	11,230.83	735.25	1,130.12	-598.35	2.00	1.71	4.93
11,452.48	14.00	179.60	11,281.85	722.97	1,130.43	-586.12	2.00	1.77	4.01
11,500.00	18.75	179.60	11,327.43	709.58	1,130.52	-572.81	10.00	10.00	0.00
11,600.00	28.75	179.60	11,418.84	669.35	1,130.80	-532.83	10.00	10.00	0.00
11,700.00	38.75	179.60	11,501.88	613.87	1,131.19	-477.67	10.00	10.00	0.00
11,800.00	48.75	179.60	11,574.03	544.80	1,131.67	-409.02	10.00	10.00	0.00
11,900.00	58.75	179.60	11,633.08	464.26	1,132.24	-328.97	10.00	10.00	0.00
12,000.00	68.75	179.60	11,677.25	374.69	1,132.86	-239.93	10.00	10.00	0.00
12,100.00	78.75	179.60	11,705.19	278.81	1,133.53	-144.63	10.00	10.00	0.00
12,200.00	88.75	179.60	11,716.06	179.53	1,134.22	-45.95	10.00	10.00	0.00
12,212.48	90.00	179.60	11,716.20	167.05	1,134.31	-33.54	10.00	10.00	0.00
12,300.00	90.00	179.60	11,716.20	79.53	1,134.92	53.45	0.00	0.00	0.00
12,400.00	90.00	179.60	11,716.20	-20.47	1,135.62	152.84	0.00	0.00	0.00
12,500.00	90.00	179.60	11,716.20	-120.46	1,136.32	252.24	0.00	0.00	0.00
12,600.00	90.00	179.60	11,716.20	-220.46	1,137.02	351.64	0.00	0.00	0.00
12,700.00	90.00	179.60	11,716.20	-320.46	1,137.72	451.03	0.00	0.00	0.00
12,800.00	90.00	179.60	11,716.20	-420.46	1,138.42	550.43	0.00	0.00	0.00
12,900.00	90.00	179.60	11,716.20	-520.45	1,139.11	649.82	0.00	0.00	0.00
13,000.00	90.00	179.60	11,716.20	-620.45	1,139.81	749.22	0.00	0.00	0.00
13,100.00	90.00	179.60	11,716.20	-720.45	1,140.51	848.61	0.00	0.00	0.00
13,200.00	90.00	179.60	11,716.20	-820.45	1,141.21	948.01	0.00	0.00	0.00
13,300.00	90.00	179.60	11,716.20	-920.44	1,141.91	1,047.41	0.00	0.00	0.00
13,400.00	90.00	179.60	11,716.20	-1,020.44	1,142.61	1,146.80	0.00	0.00	0.00
13,500.00	90.00	179.60	11,716.20	-1,120.44	1,143.31	1,246.20	0.00	0.00	0.00
13,600.00	90.00	179.60	11,716.20	-1,220.44	1,144.00	1,345.59	0.00	0.00	0.00
13,700.00	90.00	179.60	11,716.20	-1,320.43	1,144.70	1,444.99	0.00	0.00	0.00
13,800.00	90.00	179.60	11,716.20	-1,420.43	1,145.40	1,544.39	0.00	0.00	0.00
13,900.00	90.00	179.60	11,716.20	-1,520.43	1,146.10	1,643.78	0.00	0.00	0.00
14,000.00	90.00	179.60	11,716.20	-1,620.43	1,146.80	1,743.18	0.00	0.00	0.00
14,100.00	90.00	179.60	11,716.20	-1,720.42	1,147.50	1,842.57	0.00	0.00	0.00
14,200.00	90.00	179.60	11,716.20	-1,820.42	1,148.19	1,941.97	0.00	0.00	0.00
14,300.00	90.00	179.60	11,716.20	-1,920.42	1,148.89	2,041.37	0.00	0.00	0.00
14,400.00	90.00	179.60	11,716.20	-2,020.42	1,149.59	2,140.76	0.00	0.00	0.00
14,500.00	90.00	179.60	11,716.20	-2,120.41	1,150.29	2,240.16	0.00	0.00	0.00
14,600.00	90.00	179.60	11,716.20	-2,220.41	1,150.99	2,339.55	0.00	0.00	0.00
14,700.00	90.00	179.60	11,716.20	-2,320.41	1,151.69	2,438.95	0.00	0.00	0.00
14,800.00	90.00	179.60	11,716.20	-2,420.41	1,152.39	2,538.35	0.00	0.00	0.00
14,900.00	90.00	179.60	11,716.20	-2,520.40	1,153.08	2,637.74	0.00	0.00	0.00
15,000.00	90.00	179.60	11,716.20	-2,620.40	1,153.78	2,737.14	0.00	0.00	0.00
15,100.00	90.00	179.60	11,716.20	-2,720.40	1,154.48	2,836.53	0.00	0.00	0.00
15,200.00	90.00	179.60	11,716.20	-2,820.40	1,155.18	2,935.93	0.00	0.00	0.00
15,300.00	90.00	179.60	11,716.20	-2,920.39	1,155.88	3,035.32	0.00	0.00	0.00
15,400.00	90.00	179.60	11,716.20	-3,020.39	1,156.58	3,134.72	0.00	0.00	0.00
15,500.00	90.00	179.60	11,716.20	-3,120.39	1,157.27	3,234.12	0.00	0.00	0.00
15,600.00	90.00	179.60	11,716.20	-3,220.39	1,157.97	3,333.51	0.00	0.00	0.00

Database:	HOPSPP	**Local Co-ordinate Reference:**	Well LION OIL 28_33 FED COM 35H
Company:	ENGINEERING DESIGNS	**TVD Reference:**	RKB=26.5' @ 3652.20ft
Project:	PRD NM DIRECTIONAL PLANS (NAD 1983)	**MD Reference:**	RKB=26.5' @ 3652.20ft
Site:	LION OIL 28_33 FED COM	**North Reference:**	Grid
Well:	LION OIL 28_33 FED COM 35H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permitting Plan		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
15,700.00	90.00	179.60	11,716.20	-3,320.38	1,158.67	3,432.91	0.00	0.00	0.00
15,800.00	90.00	179.60	11,716.20	-3,420.38	1,159.37	3,532.30	0.00	0.00	0.00
15,900.00	90.00	179.60	11,716.20	-3,520.38	1,160.07	3,631.70	0.00	0.00	0.00
16,000.00	90.00	179.60	11,716.20	-3,620.38	1,160.77	3,731.10	0.00	0.00	0.00
16,100.00	90.00	179.60	11,716.20	-3,720.38	1,161.47	3,830.49	0.00	0.00	0.00
16,200.00	90.00	179.60	11,716.20	-3,820.37	1,162.16	3,929.89	0.00	0.00	0.00
16,300.00	90.00	179.60	11,716.20	-3,920.37	1,162.86	4,029.28	0.00	0.00	0.00
16,400.00	90.00	179.60	11,716.20	-4,020.37	1,163.56	4,128.68	0.00	0.00	0.00
16,500.00	90.00	179.60	11,716.20	-4,120.37	1,164.26	4,228.08	0.00	0.00	0.00
16,600.00	90.00	179.60	11,716.20	-4,220.36	1,164.96	4,327.47	0.00	0.00	0.00
16,700.00	90.00	179.60	11,716.20	-4,320.36	1,165.66	4,426.87	0.00	0.00	0.00
16,800.00	90.00	179.60	11,716.20	-4,420.36	1,166.36	4,526.26	0.00	0.00	0.00
16,900.00	90.00	179.60	11,716.20	-4,520.36	1,167.05	4,625.66	0.00	0.00	0.00
17,000.00	90.00	179.60	11,716.20	-4,620.35	1,167.75	4,725.05	0.00	0.00	0.00
17,100.00	90.00	179.60	11,716.20	-4,720.35	1,168.45	4,824.45	0.00	0.00	0.00
17,200.00	90.00	179.60	11,716.20	-4,820.35	1,169.15	4,923.85	0.00	0.00	0.00
17,300.00	90.00	179.60	11,716.20	-4,920.35	1,169.85	5,023.24	0.00	0.00	0.00
17,400.00	90.00	179.60	11,716.20	-5,020.34	1,170.55	5,122.64	0.00	0.00	0.00
17,500.00	90.00	179.60	11,716.20	-5,120.34	1,171.24	5,222.03	0.00	0.00	0.00
17,600.00	90.00	179.60	11,716.20	-5,220.34	1,171.94	5,321.43	0.00	0.00	0.00
17,700.00	90.00	179.60	11,716.20	-5,320.34	1,172.64	5,420.83	0.00	0.00	0.00
17,800.00	90.00	179.60	11,716.20	-5,420.33	1,173.34	5,520.22	0.00	0.00	0.00
17,900.00	90.00	179.60	11,716.20	-5,520.33	1,174.04	5,619.62	0.00	0.00	0.00
18,000.00	90.00	179.60	11,716.20	-5,620.33	1,174.74	5,719.01	0.00	0.00	0.00
18,100.00	90.00	179.60	11,716.20	-5,720.33	1,175.44	5,818.41	0.00	0.00	0.00
18,200.00	90.00	179.60	11,716.20	-5,820.32	1,176.13	5,917.81	0.00	0.00	0.00
18,300.00	90.00	179.60	11,716.20	-5,920.32	1,176.83	6,017.20	0.00	0.00	0.00
18,400.00	90.00	179.60	11,716.20	-6,020.32	1,177.53	6,116.60	0.00	0.00	0.00
18,500.00	90.00	179.60	11,716.20	-6,120.32	1,178.23	6,215.99	0.00	0.00	0.00
18,600.00	90.00	179.60	11,716.20	-6,220.31	1,178.93	6,315.39	0.00	0.00	0.00
18,700.00	90.00	179.60	11,716.20	-6,320.31	1,179.63	6,414.79	0.00	0.00	0.00
18,800.00	90.00	179.60	11,716.20	-6,420.31	1,180.33	6,514.18	0.00	0.00	0.00
18,900.00	90.00	179.60	11,716.20	-6,520.31	1,181.02	6,613.58	0.00	0.00	0.00
19,000.00	90.00	179.60	11,716.20	-6,620.30	1,181.72	6,712.97	0.00	0.00	0.00
19,100.00	90.00	179.60	11,716.20	-6,720.30	1,182.42	6,812.37	0.00	0.00	0.00
19,200.00	90.00	179.60	11,716.20	-6,820.30	1,183.12	6,911.76	0.00	0.00	0.00
19,300.00	90.00	179.60	11,716.20	-6,920.30	1,183.82	7,011.16	0.00	0.00	0.00
19,400.00	90.00	179.60	11,716.20	-7,020.29	1,184.52	7,110.56	0.00	0.00	0.00
19,500.00	90.00	179.60	11,716.20	-7,120.29	1,185.21	7,209.95	0.00	0.00	0.00
19,600.00	90.00	179.60	11,716.20	-7,220.29	1,185.91	7,309.35	0.00	0.00	0.00
19,700.00	90.00	179.60	11,716.20	-7,320.29	1,186.61	7,408.74	0.00	0.00	0.00
19,800.00	90.00	179.60	11,716.20	-7,420.28	1,187.31	7,508.14	0.00	0.00	0.00
19,900.00	90.00	179.60	11,716.20	-7,520.28	1,188.01	7,607.54	0.00	0.00	0.00
20,000.00	90.00	179.60	11,716.20	-7,620.28	1,188.71	7,706.93	0.00	0.00	0.00
20,100.00	90.00	179.60	11,716.20	-7,720.28	1,189.41	7,806.33	0.00	0.00	0.00
20,200.00	90.00	179.60	11,716.20	-7,820.28	1,190.10	7,905.72	0.00	0.00	0.00
20,300.00	90.00	179.60	11,716.20	-7,920.27	1,190.80	8,005.12	0.00	0.00	0.00
20,400.00	90.00	179.60	11,716.20	-8,020.27	1,191.50	8,104.52	0.00	0.00	0.00
20,500.00	90.00	179.60	11,716.20	-8,120.27	1,192.20	8,203.91	0.00	0.00	0.00
20,600.00	90.00	179.60	11,716.20	-8,220.27	1,192.90	8,303.31	0.00	0.00	0.00
20,700.00	90.00	179.60	11,716.20	-8,320.26	1,193.60	8,402.70	0.00	0.00	0.00
20,800.00	90.00	179.60	11,716.20	-8,420.26	1,194.29	8,502.10	0.00	0.00	0.00
20,900.00	90.00	179.60	11,716.20	-8,520.26	1,194.99	8,601.50	0.00	0.00	0.00
21,000.00	90.00	179.60	11,716.20	-8,620.26	1,195.69	8,700.89	0.00	0.00	0.00

Database:	HOPSPP	**Local Co-ordinate Reference:**	Well LION OIL 28_33 FED COM 35H
Company:	ENGINEERING DESIGNS	**TVD Reference:**	RKB=26.5' @ 3652.20ft
Project:	PRD NM DIRECTIONAL PLANS (NAD 1983)	**MD Reference:**	RKB=26.5' @ 3652.20ft
Site:	LION OIL 28_33 FED COM	**North Reference:**	Grid
Well:	LION OIL 28_33 FED COM 35H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permitting Plan		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
21,100.00	90.00	179.60	11,716.20	-8,720.25	1,196.39	8,800.29	0.00	0.00	0.00
21,200.00	90.00	179.60	11,716.20	-8,820.25	1,197.09	8,899.68	0.00	0.00	0.00
21,300.00	90.00	179.60	11,716.20	-8,920.25	1,197.79	8,999.08	0.00	0.00	0.00
21,400.00	90.00	179.60	11,716.20	-9,020.25	1,198.49	9,098.47	0.00	0.00	0.00
21,500.00	90.00	179.60	11,716.20	-9,120.24	1,199.18	9,197.87	0.00	0.00	0.00
21,600.00	90.00	179.60	11,716.20	-9,220.24	1,199.88	9,297.27	0.00	0.00	0.00
21,700.00	90.00	179.60	11,716.20	-9,320.24	1,200.58	9,396.66	0.00	0.00	0.00
21,800.00	90.00	179.60	11,716.20	-9,420.24	1,201.28	9,496.06	0.00	0.00	0.00
21,900.00	90.00	179.60	11,716.20	-9,520.23	1,201.98	9,595.45	0.00	0.00	0.00
22,000.00	90.00	179.60	11,716.20	-9,620.23	1,202.68	9,694.85	0.00	0.00	0.00
22,100.00	90.00	179.60	11,716.20	-9,720.23	1,203.38	9,794.25	0.00	0.00	0.00
22,200.00	90.00	179.60	11,716.20	-9,820.23	1,204.07	9,893.64	0.00	0.00	0.00
22,300.00	90.00	179.60	11,716.20	-9,920.22	1,204.77	9,993.04	0.00	0.00	0.00
22,400.00	90.00	179.60	11,716.20	-10,020.22	1,205.47	10,092.43	0.00	0.00	0.00
22,500.00	90.00	179.60	11,716.20	-10,120.22	1,206.17	10,191.83	0.00	0.00	0.00
22,600.00	90.00	179.60	11,716.20	-10,220.22	1,206.87	10,291.23	0.00	0.00	0.00
22,654.06	90.00	179.60	11,716.20	-10,274.27	1,207.25	10,344.95	0.00	0.00	0.00

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
FTP (Lion Oil 28_33 - plan hits target center - Point	0.00	0.00	11,716.20	167.05	1,134.31	498,833.21	745,412.15	32° 22' 10.667205 N	103° 40' 20.436515
PBHL (Lion Oil 28_33 - plan hits target center - Point	0.00	0.00	11,716.20	-10,274.27	1,207.25	488,392.37	745,485.08	32° 20' 27.348567 N	103° 40' 20.337835

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
4,578.00	4,578.00	0.00	0.00	Build 2.00°/100'
5,278.06	5,271.11	52.20	67.22	Hold 14.00° Tangent
10,199.69	10,046.52	782.51	1,007.71	Turn 2.00°/100'
11,452.48	11,281.85	722.97	1,130.43	Build 10.00°/100'
12,212.48	11,716.20	167.05	1,134.31	Landing Point
22,654.06	11,716.20	-10,274.27	1,207.25	TD at 22654.05' MD

Oxy USA Inc. - Lion Oil 28_33 Fed Com 35H

1. Geologic Formations

TVD of target	11716'	Pilot Hole Depth	N/A
MD at TD:	22654'	Deepest Expected fresh water:	832'

Delaware Basin

Formation	TVD - RKB	Expected Fluids
Rustler	832	
Salado	1,272	Salt
Castile	2,901	Salt
Lamar/Delaware	4,650	Oil/Gas/Brine
Bell Canyon	4,694	Oil/Gas/Brine
Cherry Canyon	5,613	Oil/Gas/Brine
Brushy Canyon	6,875	Losses
Bone Spring	8,532	Oil/Gas
1st Bone Spring	9,675	Oil/Gas
2nd Bone Spring	9,963	Oil/Gas
3rd Bone Spring	**10,789**	**Oil/Gas**

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

2. Casing Program

Hole Size (in)	Casing Interval		Csg. Size (in)	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	Buoyant Body SF Tension	Buoyant Joint SF Tension
	From (ft)	To (ft)								
14.75	0	1212	10.75	40.5	J-55	BTC	1.125	1.2	1.4	1.4
9.875	0	11352	7.625	26.4	L-80 HC	BTC	1.125	1.2	1.4	1.4
6.75	0	22654	5.5	20	P-110	DQX	1.125	1.2	1.4	1.4
							SF Values will meet or Exceed			

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

*Oxy requests the option to set casing shallower yet still below the salts if losses or hole conditions require this. Cement volumes may be adjusted if casing is set shallower and a DV tool may be run in case hole conditions merit pumping a second stage cement job to comply with permitted top of cement. If cement circulated to surface during first stage, we will drop a cancelation cone and not pump the second stage.

*Oxy requests the option to run production casing with DQX and/or SF TORQ connections to accommodate hole conditions or drilling operations.

Annular Clearance Variance Request

As per the agreement reached in the Oxy/BLM meeting on Feb 22, 2018, Oxy requests permission to allow deviation from the 0.422" annular clearance requirement from Onshore Order #2 under the following conditions:

1. Annular clearance to meet or exceed 0.422" between intermediate casing ID and production casing coupling only on the first 500' overlap between both casings.
2. Annular clearance less than 0.422" is acceptable for the curve and lateral portions of the production open hole section.

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y

Does casing meet API specifications? If no, attach casing specification sheet.	Y
Is premium or uncommon casing planned? If yes attach casing specification sheet.	Y
Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria).	Y
Will the intermediate 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?	

3. Cementing Program

Casing String	# Sks	Wt. (lb/gal)	Yld (ft3/sack)	H20 (gal/sk)	500# Comp. Strength (hours)	Slurry Description
Surface (Lead)	N/A	N/A	N/A	N/A	N/A	N/A
Surface (Tail)	1001	14.8	1.33	6.365	5:26	Class C Cement, Accelerator
Intermediate 1st Stage (Lead)	575	10.2	2.58	11.568	6:59	Pozzolan Cement, Retarder
Intermediate 1st Stage (Tail)	167	13.2	1.61	7.804	7:11	Class H Cement, Retarder, Dispersant, Salt
DV/ECP Tool @ 4700 (We request the option to cancel the second stage if cement is circulated to surface during the first stage of cement operations)						
Intermediate 2nd Stage (Lead)	N/A	N/A	N/A	N/A	N/A	N/A
Intermediate 2nd Stage (Tail)	1068	13.6	1.67	8.765	7:32	Class C Cement, Accelerator, Retarder
Production (Lead)	N/A	N/A	N/A	N/A	N/A	N/A
Production (Tail)	865	13.2	1.38	6.686	3:39	Class H Cement, Retarder, Dispersant, Salt

Casing String	Top (ft)	Bottom (ft)	% Excess
Surface (Lead)	N/A	N/A	N/A
Surface (Tail)	0	1212	100%
Intermediate 1st Stage (Lead)	4600	10352	20%
Intermediate 1st Stage (Tail)	10352	11352	20%
Intermediate 2nd Stage (Lead)	N/A	N/A	N/A
Intermediate 2nd Stage (Tail)	0	4700	100%
Production (Lead)	N/A	N/A	N/A
Production (Tail)	10852	22654	20%

4. Pressure Control Equipment

BOP installed and tested before drilling which hole?	Size?	Min. Required WP	Type	✓	Tested to:
9.875" Hole	13-5/8"	5M	Annular	✓	70% of working pressure
			Blind Ram	✓	250/5000psi
			Pipe Ram		
			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.

	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 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.
Y	Are anchors required by manufacturer?
	A multibowl or a unionized multibowl wellhead system will be employed. The wellhead and connection to the BOPE will meet all API 6A requirements. 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. We will test the flange connection of the wellhead with a test port that is directly in the flange. We are proposing that we will run the wellhead through the rotary prior to cementing surface casing as discussed with the BLM on October 8, 2015. See attached schematics.

BOP Break Testing Request

As per the agreement reached in the Oxy/BLM meeting on Feb 22, 2018, Oxy requests permission to allow BOP Break Testing under the following conditions:

- After a full BOP test is conducted on the first well on the pad.
- When skidding to drill an intermediate section that does not penetrate into the Wolfcamp.

- Full BOP test will be required prior to drilling any production hole.

5. Mud Program

Depth		Type	Weight (ppg)	Viscosity	Water Loss
From (ft)	To (ft)				
0	1212	Water-Based Mud	8.6-8.8	40-60	N/C
1212	11352	Saturated Brine-Based or Oil-Based Mud	8.0-10.0	35-45	N/C
11352	22654	Water-Based or Oil-Based Mud	9.5-12.0	38-50	N/C

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times. The following is a general list of products: Barite, Bentonite, Gypsum, Lime, Soda Ash, Caustic Soda, Nut Plug, Cedar Fiber, Cotton Seed Hulls, Drilling Paper, Salt Water Clay, CACL2. Oxy will use a closed mud system.

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

6. Logging and Testing Procedures

Logging, Coring and Testing.	
Yes	Will run GR from TD 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.
No	Drill stem test? If yes, explain
No	Coring? If yes, explain

Additional logs planned		Interval
No	Resistivity	
No	Density	
No	CBL	
Yes	Mud log	ICP - TD
No	PEX	

7. Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	7311 psi
Abnormal Temperature	No
BH Temperature at deepest TVD	174°F

Pump high viscosity sweeps as needed for hole cleaning. The mud system will be monitored visually/manually as well as with an electronic PVT. The necessary mud products for additional weight and fluid loss control will be on location at all times. Appropriately weighted mud will be used to isolate potential gas, oil, and water zones until such time as casing can be cemented into place for zonal isolation.

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.	
N	H2S is present
Y	H2S Plan attached

8. Other facets of operation

	Yes/No
Will the well be drilled with a walking/skidding operation? If yes, describe. • We plan to drill the three well pad in batch by section: all surface sections, intermediate sections and production sections. The wellhead will be secured with a night cap whenever the rig is not over the well.	Yes
Will more than one drilling rig be used for drilling operations? If yes, describe. • Oxy requests the option to contract a Surface Rig to drill, set surface casing, and cement for this well. If the timing between rigs is such that Oxy would not be able to preset surface, the Primary Rig will MIRU and drill the well in its entirety per the APD. Please see the attached document for information on the spudder rig.	Yes

Total estimated cuttings volume: 1717 bbls**.**

9. Company Personnel

Name	Title	Office Phone	Mobile Phone
Garrett Granier	Drilling Engineer	713-513-6633	832-265-0581
Diego Tellez	Drilling Engineer Supervisor	713-350-4602	713-303-4932
Simon Benavides	Drilling Superintendent	713-522-8652	281-684-6897
John Willis	Drilling Manager	713-366-5556	713-259-1417

APD ID: 10400039914 **Submission Date:** 03/14/2019

Operator Name: OXY USA INCORPORATED

Well Name: LION OIL 28-33 FEDERAL COM **Well Number:** 35H

Well Type: OIL WELL **Well Work Type:** Drill

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:

Operator Name: OXY USA INCORPORATED

Well Name: LION OIL 28-33 FEDERAL COM **Well Number:** 35H

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

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?

Operator Name: OXY USA INCORPORATED

Well Name: LION OIL 28-33 FEDERAL COM **Well Number:** 35H

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):

Operator Name: OXY USA INCORPORATED

Well Name: LION OIL 28-33 FEDERAL COM **Well Number:** 35H

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

07/30/2020

APD ID: 10400039914

Submission Date: 03/14/2019

Operator Name: OXY USA INCORPORATED

Well Name: LION OIL 28-33 FEDERAL COM

Well Number: 35H

Well Type: OIL WELL

Well Work Type: Drill

Highlighted data reflects the most recent changes

Show Final Text

Bond Information

Federal/Indian APD: FED

BLM Bond number: ESB000226

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: