Form 3160-3
(June 2015)

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.: NMNM099034

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.: HEADS CC 9-4 FEDERAL COM 41H

2. Name of Operator: OXY USA INCORPORATED

9. API Well No.: 30 015 47592

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: Purple Sage Wolfcamp ~~CORRAL DRAW BONE SPRING/RED TA~~

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*

At surface: NENW / 771 FNL / 1415 FWL / LAT 32.222616 / LONG -103.99296

At proposed prod. zone: LOT 4 / 20 FNL / 380 FWL / LAT 32.253975 / LONG -103.996866

11. Sec., T. R. M. or Blk. and Survey or Area: SEC 16/T24S/R29E/NMP

14. Distance in miles and direction from nearest town or post office*: 8 miles

12. County or Parish: EDDY

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: 878.94

17. Spacing Unit dedicated to this well: 640.0

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

19. Proposed Depth: 10943 feet / 21943 feet

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

21. Elevations (Show whether DF, KDB, RT, GL, etc.): 2928 feet

22. Approximate date work will start*: 11/14/2021

23. Estimated duration: 20 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) 366-5716

Date: 02/12/2020

Title: Advisor Regulatory

Approved by *(Signature)*: (Electronic Submission)

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

Date: 08/07/2020

Title: Assistant Field Manager Lands & Minerals

Office: Carlsbad Field Office

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

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

Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system.

- Will require a directional survey with the C-104
- NSL Will require an administrative order for non-standard location prior to placing the well on production

APPROVED WITH CONDITIONS

Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string

KP 10/20/2020 GEO Review

(Continued on page 2)

*(Instructions on page 2)

Approval Date: 08/07/2020

Entered - KMS NMOCD

DISTRICT I
1625 N. FRENCH DR., HOBBS, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720

DISTRICT II
811 S. FIRST ST., ARTESIA, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720

DISTRICT III
1000 RIO BRAZOS RD., AZTEC, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170

DISTRICT IV
1220 S. ST. FRANCIS DR., SANTA FE, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 SOUTH ST. FRANCIS DR.
Santa Fe, New Mexico 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate
District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
30-015-47592	98220	PURPLE SAGE; WOLFCAMP

Property Code	Property Name	Well Number
328290	HEADS CC 9_4 FEDERAL COM	41H

OGRID No.	Operator Name	Elevation
16696	OXY USA INC.	2927.5'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
C	16	24-S	29-E		771	NORTH	1415	WEST	EDDY

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
4	4	24-S	29-E		20	NORTH	380	WEST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
640			

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

PROPOSED BOTTOM HOLE LOCATION NAD 83
Y=456292.4 N
X=645350.0 E
LAT.=32.253975° N
LONG.=103.996866° W

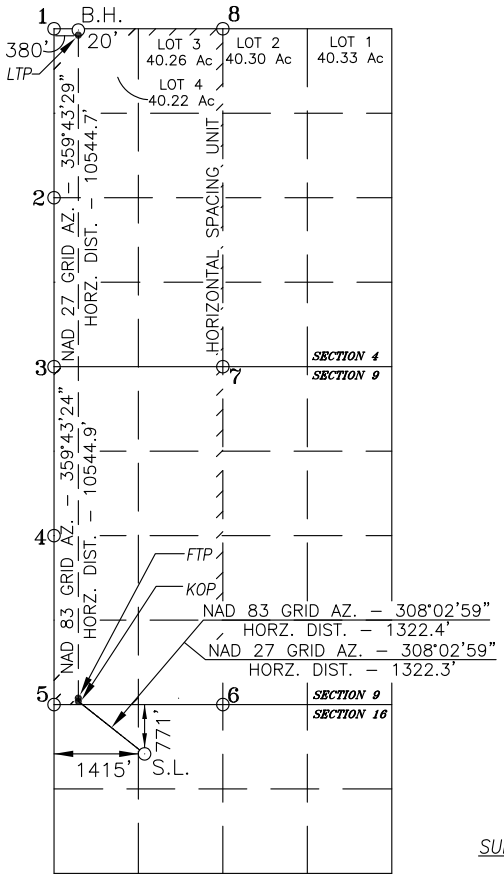
LTP NAD 83
100' FNL & 380' FWL
Y=456212.4 N
X=645350.4 E
LAT.=32.253755° N
LONG.=103.996866° W

NAD 83 POINT LEGEND	
1	Y=456311.0 N X=644969.9 E
2	Y=453660.3 N X=644983.6 E
3	Y=451006.8 N X=644997.4 E
4	Y=448351.8 N X=645008.9 E
5	Y=445695.4 N X=645021.1 E
6	Y=445710.8 N X=647666.6 E
7	Y=451020.7 N X=647641.0 E
8	Y=456320.9 N X=647615.9 E

FTP NAD 83
100' FSL & 380' FWL
Y=445797.6 N
X=645400.7 E
LAT.=32.225126° N
LONG.=103.996809° W

KOP NAD 83
50' FSL & 380' FWL
Y=445747.6 N
X=645400.9 E
LAT.=32.224988° N
LONG.=103.996809° W

SURFACE LOCATION NAD 83
Y=444932.6 N
X=646442.2 E
LAT.=32.222739° N
LONG.=103.993449° W



PROPOSED BOTTOM HOLE LOCATION NAD 27
Y=456233.2 N
X=604166.4 E
LAT.=32.253853° N
LONG.=103.996376° W

LTP NAD 27
100' FNL & 380' FWL
Y=456153.2 N
X=604166.8 E
LAT.=32.253633° N
LONG.=103.996376° W

NAD 27 POINT LEGEND	
1	Y=456251.8 N X=603786.3 E
2	Y=453601.2 N X=603800.0 E
3	Y=450947.8 N X=603813.7 E
4	Y=448292.8 N X=603825.1 E
5	Y=445636.4 N X=603837.3 E
6	Y=445651.8 N X=606482.7 E
7	Y=450961.7 N X=606457.3 E
8	Y=456261.7 N X=606432.3 E

FTP NAD 27
100' FSL & 380' FWL
Y=445738.6 N
X=604216.8 E
LAT.=32.225003° N
LONG.=103.996320° W

KOP NAD 27
50' FSL & 380' FWL
Y=445688.6 N
X=604217.1 E
LAT.=32.224866° N
LONG.=103.996319° W

SURFACE LOCATION NAD 27
Y=444873.6 N
X=605258.4 E
LAT.=32.222616° N
LONG.=103.992960° W

OPERATOR CERTIFICATION

I hereby certify that the information herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Leslie T. Reeves 2/12/20
Signature Date

LESLIE REEVES
Printed Name

LESLIE_REEVES@OXY.COM
E-mail Address

SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

JANUARY 2, 2020
Date of Survey

Signature & Seal of Professional Surveyor

CHAD L. HARCROW
NEW MEXICO
17777
LICENSED PROFESSIONAL SURVEYOR

Chad Harcrow 1/13/20
Certificate No. CHAD HARCROW 17777

W.O. #19-2389 DRAWN BY: DS

PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	OXY USA Inc.
LEASE NO.:	NMNM099034
WELL NAME & NO.:	HEADS CC 9-4 FEDERAL COM / 41H
SURFACE HOLE FOOTAGE:	771'/N & 1415'/W
BOTTOM HOLE FOOTAGE	20'/N & 380'/W
LOCATION:	Section 16, T.24 S., R.29 E., NMPM
COUNTY:	Eddy 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

Break Testing	○ Yes	◉ No

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 **545** feet (a minimum of 70 feet (Eddy 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 **10477** 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.

❖ In **Medium Cave/Karst Areas** if cement does not circulate to surface on the first two casing strings, the cement on the 3rd casing string must come to surface.

Operator has proposed to pump down 10-3/4" X 7-5/8" annulus. Operator must run a CBL from TD of the 7-5/8" casing to surface. Submit results to BLM.

3. The minimum required fill of cement behind the **5-1/2 X 5** 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 **10,000 (10M)** psi. **Variance is approved to use a 5000 (5M) Annular which shall be tested to 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 **10,000 (10M)** psi. **Variance is approved to use a 5000 (5M) Annular which shall be tested to 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.

Offline Cementing

- Contact the BLM prior to the commencement of any offline cementing procedure.

BOP Break Testing Variance

- BOP break testing is not permitted on this well.

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

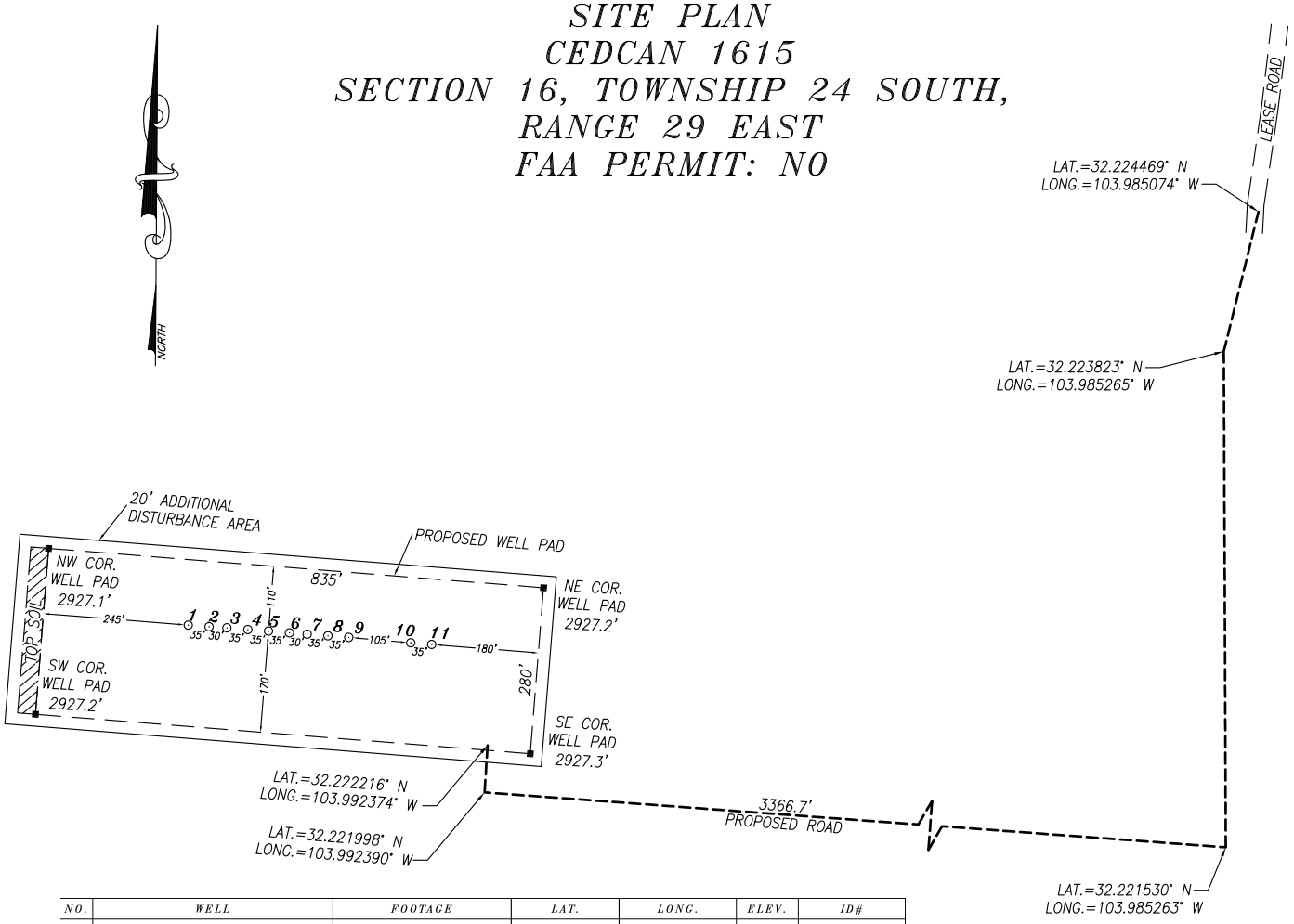
All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location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

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

NMK07022020

OXY USA INC.

SITE PLAN
CEDCAN 1615
SECTION 16, TOWNSHIP 24 SOUTH, RANGE 29 EAST
FAA PERMIT: NO



NO.	WELL	FOOTAGE	LAT.	LONG.	ELEV.	ID#
1	HEADS CC 9_4 FED COM #21H	757' FNL & 1245' FWL	32.222776° N	103.993999° W	2926.9'	IP-SMS-3667
2	HEADS CC 9_4 FED COM #22H	760' FNL & 1280' FWL	32.222768° N	103.993886° W	2927.4'	IP-SMS-3668
3	HEADS CC 9_4 FED COM #23H	762' FNL & 1310' FWL	32.222762° N	103.993789° W	2927.4'	IP-SMS-3669
4	HEADS CC 9_4 FED COM #42H	766' FNL & 1345' FWL	32.222754° N	103.993676° W	2927.3'	IP-SMS-3678
5	HEADS CC 9_4 FED COM #52H	769' FNL & 1380' FWL	32.222746° N	103.993563° W	2927.6'	IP-SMS-3681
6	HEADS CC 9_4 FED COM #41H	771' FNL & 1415' FWL	32.222739° N	103.993449° W	2927.5'	IP-SMS-3677
7	HEADS CC 9_4 FED COM #51H	773' FNL & 1445' FWL	32.222733° N	103.993353° W	2927.2'	IP-SMS-3680
8	HEADS CC 9_4 FED COM #45H	776' FNL & 1480' FWL	32.222725° N	103.993240° W	2927.2'	IP-SMS-3686
9	HEADS CC 9_4 FED COM #55H	779' FNL & 1515' FWL	32.222717° N	103.993127° W	2927.1'	IP-SMS-3687
10	HEADS CC 9_4 FED COM #311H	789' FNL & 1619' FWL	32.222691° N	103.992789° W	2927.2'	IP-SMS-3673
11	HEADS CC 9_4 FED COM #37H	792' FNL & 1654' FWL	32.222683° N	103.992676° W	2927.3'	IP-SMS-3675

NOTES:

1) LATS & LONGS SHOWN HEREON ARE MERCATOR GRID AND CONFORM TO THE NEW MEXICO COORDINATE SYSTEM "NEW MEXICO EAST ZONE" NORTH AMERICAN DATUM 1983.

2) DISTANCES ARE GRID VALUES.

3) ALL FEATURES ARE EXISTING UNLESS OTHERWISE NOTED

CERTIFICATION
I, CHAD HARCROW, A NEW MEXICO REGISTERED PROFESSIONAL SURVEYOR CERTIFY THAT I DIRECTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

CHAD HARCROW NEW MEXICO 17777 LICENSED PROFESSIONAL SURVEYOR

Chad Harcrow 1/13/20
CHAD HARCROW N.M.P.S. NO. 17777 DATE

HARCROW SURVEYING, LLC
2316 W. MAIN ST, ARTESIA, N.M. 88210
PH: (575) 746-2158
c.harcrow@harcrowsurveying.com

600 0 300 600 Feet
Scale: 1"=300'

OXY USA INC.		
SURVEY DATE: JAN. 2, 2020		SITE PLAN
DRAFTING DATE: JAN. 9, 2020		PAGE: 1 OF 1
APPROVED BY: CH	DRAWN BY: WN	FILE: 19-2376

APD ID: 10400054231 **Submission Date:** 02/12/2020

Operator Name: OXY USA INCORPORATED

Well Name: HEADS CC 9-4 FEDERAL COM **Well Number:** 41H

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

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
659995	RUSTLER	2928	130	130	ANHYDRITE, DOLOMITE, SHALE	USEABLE WATER	N
659996	SALADO	2323	605	605	ANHYDRITE, DOLOMITE, HALITE, SHALE	OTHER : Salt	N
659997	CASTILE	1643	1285	1285	ANHYDRITE	OTHER : Salt	N
659998	LAMAR	78	2850	2850	LIMESTONE, SANDSTONE, SILTSTONE	NATURAL GAS, OIL, OTHER : Brine	N
659999	BELL CANYON	13	2915	2915	SANDSTONE, SILTSTONE	NATURAL GAS, OIL, OTHER : Brine	N
660000	CHERRY CANYON	-835	3763	3763	SANDSTONE, SILTSTONE	NATURAL GAS, OIL, OTHER : Brine	N
660001	BRUSHY CANYON	-2084	5012	5012	LIMESTONE, SANDSTONE, SILTSTONE	NATURAL GAS, OIL, OTHER : Brine	N
660002	BONE SPRING	-3656	6584	6584	LIMESTONE, SANDSTONE, SILTSTONE	NATURAL GAS, OIL	Y
660003	BONE SPRING 1ST	-4663	7591	7591	LIMESTONE, SANDSTONE, SILTSTONE	NATURAL GAS, OIL	Y
660004	BONE SPRING 2ND	-5478	8406	8559	LIMESTONE, SANDSTONE, SILTSTONE	NATURAL GAS, OIL	Y
660007	BONE SPRING 3RD	-6605	9533	9604	LIMESTONE, SANDSTONE, SILTSTONE	NATURAL GAS, OIL	Y
660008	WOLFCAMP	-6957	9885	9961	SANDSTONE, SILTSTONE	NATURAL GAS, OIL	Y

Section 2 - Blowout Prevention

Pressure Rating (PSI): 10M **Rating Depth:** 11022

Equipment: 13-5/8" 5M Annular, 5M/10M Blind Ram, 5M/10M Double Ram

Requesting Variance? YES

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

Testing Procedure: OXY will utilize a 5M annular with a 10M BOPE stack. The 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. The 15M tubing head that is shown on the wellhead diagram will not be installed until after drilling operations are complete and the drilling BOP stack is removed. 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 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. Per BLMs Memorandum No. NM-2017-008: Decision and Rationale for a Variance Allowing the Use of a 5M Annular Preventer with a 10M BOP Stack, OXY requests to employ a 5M annular with a 10M BOPE stack in the pilot and lateral sections of the well and will ensure that two barriers to flow are maintained at all times. Please see attached Well Control Plan. BOP Break Testing Request OXY requests permission to adjust the BOP break testing requirements as per the agreement reached in the OXY/BLM meeting on September 5, 2019. A separate sundry will be sent prior to spud that reflects the pad based break testing plan. BOP break test under the following conditions: 1. After a full BOP test is conducted 2. When skidding to drill an intermediate section where ICP is set into the third Bone Spring or shallower. 3. When skidding to drill a production section that does not penetrate into the third Bone Spring or deeper. If the kill line is broken prior to skid, two tests will be performed. 1. Wellhead flange, co-flex hose, kill line connections and upper pipe rams 2. Wellhead flange, HCR valve, check valve, upper pipe rams If the kill line is not broken prior to skid, only one test will be performed. 1. Wellhead flange, co-flex hose, check valve, upper pipe rams

Choke Diagram Attachment:

HeadsCC9_4FdCom41H_ChkManifold_20200212132408.pdf

BOP Diagram Attachment:

HeadsCC9_4FdCom41H_BOP_20200212132416.pdf

HeadsCC9_4FdCom41H_FlexHoseCert_20200212132421.pdf

HeadsCC9_4FdCom41H_WellControlPlan_20200212132426.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	545	0	545	2928	2383	545	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	10472	0	10388	3101	-7460	10472	HCL-80	26.4	BUTT	1.125	1.2	BUOY	1.4	BUOY	1.4
3	PRODUCTION	6.75	5.5	NEW	API	Y	0	11022	0	10876	3101	-7948	11022	P-110	26	OTHER - DQX/SFWTORQ/DQWTORQ	1.125	1.2	BUOY	1.4	BUOY	1.4
4	PRODUCTION	6.75	5.0	NEW	API	Y	11022	21942	10876	10943	-7948	-8015	10920	P-110	21.4	OTHER - DQWTORQ	1.125	1.2	BUOY	1.4	BUOY	1.4

Operator Name: OXY USA INCORPORATED

Well Name: HEADS CC 9-4 FEDERAL COM **Well Number:** 41H

Casing Attachments

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

HeadsCC9_4FdCom41H_CsgCriteria_20200212132825.pdf

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

HeadsCC9_4FdCom41H_CsgCriteria_20200212132918.pdf

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

Inspection Document:

Spec Document:

Tapered String Spec:

HeadsCC9_4FdCom41H_5.5_x_26_P110_CYHP_TMK_UP__TORQSFW_20200212133104.pdf

Casing Design Assumptions and Worksheet(s):

HeadsCC9_4FdCom41H_CsgCriteria_20200212133040.pdf

Operator Name: OXY USA INCORPORATED

Well Name: HEADS CC 9-4 FEDERAL COM **Well Number:** 41H

Casing Attachments

Casing ID: 4 **String Type:** PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

HeadsCC9_4FdCom41H_5_x_21.4_P110_CYHP_TMK_UP__TORQDQW_20200212133144.pdf

Casing Design Assumptions and Worksheet(s):

HeadsCC9_4FdCom41H_CsgCriteria_20200212133158.pdf

Section 4 - Cement

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	545	443	1.33	14.8	589	100	Cl C	Accelerator
INTERMEDIATE	Lead	2	0	5262	647	1.92	12.9	1242	10	Class C	Accelerator
INTERMEDIATE	Lead	2	5262	10472	719	1.65	13.2	1186	5	Class H	Accelerator
PRODUCTION	Lead		9972	21942	1147	1.38	13.2	1583		Cl H	Retarder, Dispersant, Salt
PRODUCTION	Lead		9972	21942	1147	1.38	13.2	1583	20	Cl H	Retarder, Dispersant, Salt

Operator Name: OXY USA INCORPORATED

Well Name: HEADS CC 9-4 FEDERAL COM **Well Number:** 41H

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

Circulating Medium Table

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
0	545	WATER-BASED MUD	8.6	8.8							
545	10472	OTHER : Saturated Brine Based Mud and/or Oil Based Mud	8	10							
10472	21942	OTHER : Water Based and/or oil Based Mud	9.5	13							

Operator Name: OXY USA INCORPORATED

Well Name: HEADS CC 9-4 FEDERAL COM **Well Number:** 41H

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 casing shoe to TD.

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

GAMMA RAY LOG,MUD LOG/GEOLOGICAL LITHOLOGY LOG,

Coring operation description for the well:

No coring is planned at this time.

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 7451 **Anticipated Surface Pressure:** 5026

Anticipated Bottom Hole Temperature(F): 169

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:

HeadsCC9_4FdCom41H_H2S1_20200212133641.pdf
HeadsCC9_4FdCom41H_H2S2_20200212133646.pdf
HeadsCC9_4FdCom41H_H2S3ECL_20200212133652.pdf

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

HeadsCC9_4FdCom41H_DirectPlot_20200212133707.pdf
HeadsCC9_4FdCom41H_DirectPlan_20200212133713.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 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, SF TORQ, and/or DQW TORQ connections to accommodate hole conditions or drilling operations.

OXY requests to pump a two stage Intermediate casing cement job with the first stage being pumped conventionally with the calculated TOC @ the Brushy Canyon and the second stage performed as a bradenhead squeeze with planned cement from the top of the Brushy Canyon to Surface.

OXY requests a variance to cement the 7-5/8" intermediate casing string offline, see attached for additional

information.

OXY requests permission to adjust the CBL requirement after bradenhead cement jobs, on 7-5/8 intermediate casings, as per the agreement reached in the OXY/BLM meeting on September 5, 2019.
Three string wells:
1. CBL will be required on one well per pad
2. If the pumped volume of cement is less than permitted in the APD, BLM will be notified and a CBL may be run
3. Echometer will be used after bradenhead cement job to determine TOC before pumping top-out cement

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. See attached for additional spudder rig information.

Other proposed operations facets attachment:

HeadsCC9_4FdCom41H_DrillPlan_20200212133738.pdf

HeadsCC9_4FdCom41H_SpudRigData_20200212133743.pdf

Other Variance attachment:

PROJECT DETAILS: NM DIRECTIONAL PLANS (NAD 1983)

Project: PRD NM DIRECTIONAL PLANS (NAD 1983)
Site: Heads CC 9_4
Well: Heads CC 9_4 Federal Com 41H
Wellbore: Wellbore #1
Design: Permitting Plan

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

System Datum: Mean Sea Level

WELL DETAILS: Heads CC 9_4 Federal Com 41H

Ground Level: 2927.50

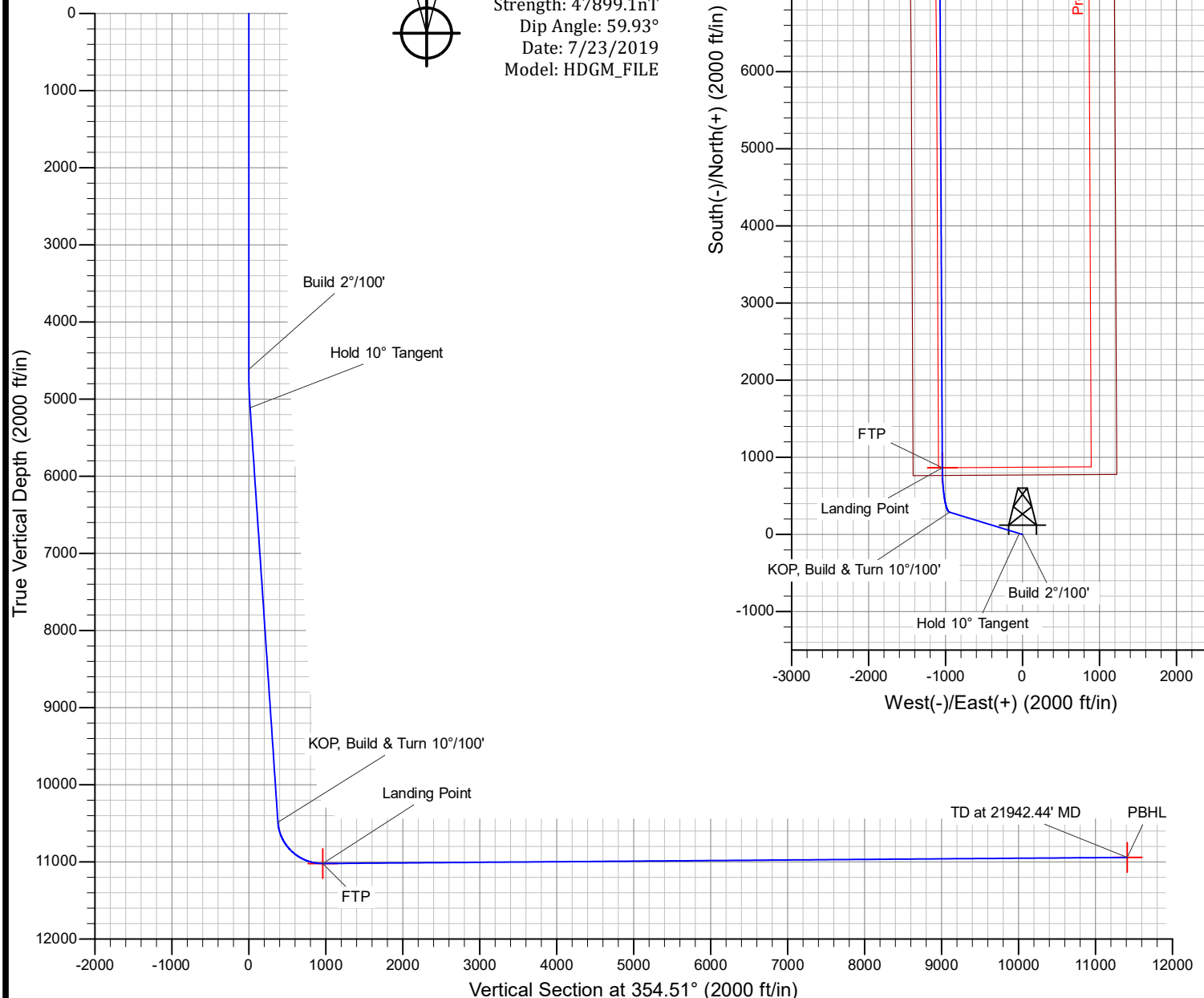
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	444932.60	646442.20	32° 13' 21.861186 N	103° 59' 36.418180 W

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	
4615.00	0.00	0.00	4615.00	0.00	0.00	0.00	0.00	0.00	Build 2°/100'
5114.96	10.00	286.96	5112.42	12.69	-41.62	2.00	286.96	16.62	Hold 10° Tangent
10571.61	10.00	286.96	10486.20	289.06	-947.88	0.00	0.00	378.45	KOP, Build & Turn 10°/100'
11446.38	90.43	359.72	11022.00	865.07	-1041.58	10.00	72.94	960.78	Landing Point
21942.44	90.43	359.72	10943.00	11360.71	-1092.29	0.00	0.00	11413.10	TD at 21942.44' MD

Azimuths to Grid North
True North: -0.18°
Magnetic North: 6.77°

Magnetic Field
Strength: 47899.1nT
Dip Angle: 59.93°
Date: 7/23/2019
Model: HDGM_FILE



OXY

PRD NM DIRECTIONAL PLANS (NAD 1983)
Heads CC 9_4
Heads CC 9_4 Federal Com 41H

Wellbore #1

Plan: Permitting Plan

Standard Planning Report

30 January, 2020

Database:	HOPSPP	**Local Co-ordinate Reference:**	Well Heads CC 9_4 Federal Com 41H
Company:	ENGINEERING DESIGNS	**TVD Reference:**	RKB=26.5' @ 2954.00ft
Project:	PRD NM DIRECTIONAL PLANS (NAD 1983)	**MD Reference:**	RKB=26.5' @ 2954.00ft
Site:	Heads CC 9_4	**North Reference:**	Grid
Well:	Heads CC 9_4 Federal Com 41H	**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 Heads CC 9_4

Site Position:		**Northing:**	446,198.60 usft	**Latitude:**	32° 13' 34.318660 N
From:	Map	**Easting:**	648,677.50 usft	**Longitude:**	103° 59' 10.348611 W
Position Uncertainty:	2.00 ft	**Slot Radius:**	13.200 in	**Grid Convergence:**	0.19 °

Well Heads CC 9_4 Federal Com 41H

Well Position	**+N/-S**	-1,266.10 ft	**Northing:**	444,932.60 usft	**Latitude:**	32° 13' 21.861186 N
	+E/-W	-2,235.48 ft	**Easting:**	646,442.20 usft	**Longitude:**	103° 59' 36.418180 W
Position Uncertainty		1.00 ft	**Wellhead Elevation:**	0.00 ft	**Ground Level:**	2,927.50 ft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM_FILE	7/23/2019	6.95	59.93	47,899.10000000

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	354.51

Plan Survey Tool Program **Date** 1/30/2020

	Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	21,942.44	Permitting Plan (Wellbore #1)	B001Mb_MWD+HRGM	
				OWSG MWD + HRGM	

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	
4,615.00	0.00	0.00	4,615.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,114.96	10.00	286.96	5,112.42	12.69	-41.62	2.00	2.00	0.00	286.96	
10,571.62	10.00	286.96	10,486.20	289.06	-947.88	0.00	0.00	0.00	0.00	
11,446.38	90.43	359.72	11,022.00	865.07	-1,041.58	10.00	9.19	8.32	72.94	FTP (Heads CC 9_4
21,942.44	90.43	359.72	10,943.00	11,360.71	-1,092.29	0.00	0.00	0.00	0.00	PBHL (Heads CC

Database:	HOPSPP	**Local Co-ordinate Reference:**	Well Heads CC 9_4 Federal Com 41H
Company:	ENGINEERING DESIGNS	**TVD Reference:**	RKB=26.5' @ 2954.00ft
Project:	PRD NM DIRECTIONAL PLANS (NAD 1983)	**MD Reference:**	RKB=26.5' @ 2954.00ft
Site:	Heads CC 9_4	**North Reference:**	Grid
Well:	Heads CC 9_4 Federal Com 41H	**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
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00
4,615.00	0.00	0.00	4,615.00	0.00	0.00	0.00	0.00	0.00	0.00
4,700.00	1.70	286.96	4,699.99	0.37	-1.21	0.48	2.00	2.00	0.00
4,800.00	3.70	286.96	4,799.87	1.74	-5.71	2.28	2.00	2.00	0.00
4,900.00	5.70	286.96	4,899.53	4.13	-13.55	5.41	2.00	2.00	0.00
5,000.00	7.70	286.96	4,998.84	7.53	-24.71	9.86	2.00	2.00	0.00
5,100.00	9.70	286.96	5,097.69	11.95	-39.18	15.64	2.00	2.00	0.00
5,114.96	10.00	286.96	5,112.42	12.69	-41.62	16.62	2.00	2.00	0.00

Database:	HOPSPP	**Local Co-ordinate Reference:**	Well Heads CC 9_4 Federal Com 41H
Company:	ENGINEERING DESIGNS	**TVD Reference:**	RKB=26.5' @ 2954.00ft
Project:	PRD NM DIRECTIONAL PLANS (NAD 1983)	**MD Reference:**	RKB=26.5' @ 2954.00ft
Site:	Heads CC 9_4	**North Reference:**	Grid
Well:	Heads CC 9_4 Federal Com 41H	**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)
5,200.00	10.00	286.96	5,196.17	17.00	-55.75	22.26	0.00	0.00	0.00
5,300.00	10.00	286.96	5,294.66	22.07	-72.36	28.89	0.00	0.00	0.00
5,400.00	10.00	286.96	5,393.14	27.13	-88.96	35.52	0.00	0.00	0.00
5,500.00	10.00	286.96	5,491.62	32.20	-105.57	42.15	0.00	0.00	0.00
5,600.00	10.00	286.96	5,590.10	37.26	-122.18	48.78	0.00	0.00	0.00
5,700.00	10.00	286.96	5,688.58	42.32	-138.79	55.41	0.00	0.00	0.00
5,800.00	10.00	286.96	5,787.06	47.39	-155.40	62.04	0.00	0.00	0.00
5,900.00	10.00	286.96	5,885.54	52.45	-172.00	68.68	0.00	0.00	0.00
6,000.00	10.00	286.96	5,984.02	57.52	-188.61	75.31	0.00	0.00	0.00
6,100.00	10.00	286.96	6,082.50	62.58	-205.22	81.94	0.00	0.00	0.00
6,200.00	10.00	286.96	6,180.98	67.65	-221.83	88.57	0.00	0.00	0.00
6,300.00	10.00	286.96	6,279.47	72.71	-238.44	95.20	0.00	0.00	0.00
6,400.00	10.00	286.96	6,377.95	77.78	-255.05	101.83	0.00	0.00	0.00
6,500.00	10.00	286.96	6,476.43	82.84	-271.65	108.46	0.00	0.00	0.00
6,600.00	10.00	286.96	6,574.91	87.91	-288.26	115.09	0.00	0.00	0.00
6,700.00	10.00	286.96	6,673.39	92.97	-304.87	121.72	0.00	0.00	0.00
6,800.00	10.00	286.96	6,771.87	98.04	-321.48	128.36	0.00	0.00	0.00
6,900.00	10.00	286.96	6,870.35	103.10	-338.09	134.99	0.00	0.00	0.00
7,000.00	10.00	286.96	6,968.83	108.17	-354.70	141.62	0.00	0.00	0.00
7,100.00	10.00	286.96	7,067.31	113.23	-371.30	148.25	0.00	0.00	0.00
7,200.00	10.00	286.96	7,165.79	118.30	-387.91	154.88	0.00	0.00	0.00
7,300.00	10.00	286.96	7,264.28	123.36	-404.52	161.51	0.00	0.00	0.00
7,400.00	10.00	286.96	7,362.76	128.43	-421.13	168.14	0.00	0.00	0.00
7,500.00	10.00	286.96	7,461.24	133.49	-437.74	174.77	0.00	0.00	0.00
7,600.00	10.00	286.96	7,559.72	138.56	-454.35	181.40	0.00	0.00	0.00
7,700.00	10.00	286.96	7,658.20	143.62	-470.95	188.03	0.00	0.00	0.00
7,800.00	10.00	286.96	7,756.68	148.69	-487.56	194.67	0.00	0.00	0.00
7,900.00	10.00	286.96	7,855.16	153.75	-504.17	201.30	0.00	0.00	0.00
8,000.00	10.00	286.96	7,953.64	158.82	-520.78	207.93	0.00	0.00	0.00
8,100.00	10.00	286.96	8,052.12	163.88	-537.39	214.56	0.00	0.00	0.00
8,200.00	10.00	286.96	8,150.61	168.95	-553.99	221.19	0.00	0.00	0.00
8,300.00	10.00	286.96	8,249.09	174.01	-570.60	227.82	0.00	0.00	0.00
8,400.00	10.00	286.96	8,347.57	179.08	-587.21	234.45	0.00	0.00	0.00
8,500.00	10.00	286.96	8,446.05	184.14	-603.82	241.08	0.00	0.00	0.00
8,600.00	10.00	286.96	8,544.53	189.21	-620.43	247.71	0.00	0.00	0.00
8,700.00	10.00	286.96	8,643.01	194.27	-637.04	254.35	0.00	0.00	0.00
8,800.00	10.00	286.96	8,741.49	199.33	-653.64	260.98	0.00	0.00	0.00
8,900.00	10.00	286.96	8,839.97	204.40	-670.25	267.61	0.00	0.00	0.00
9,000.00	10.00	286.96	8,938.45	209.46	-686.86	274.24	0.00	0.00	0.00
9,100.00	10.00	286.96	9,036.93	214.53	-703.47	280.87	0.00	0.00	0.00
9,200.00	10.00	286.96	9,135.42	219.59	-720.08	287.50	0.00	0.00	0.00
9,300.00	10.00	286.96	9,233.90	224.66	-736.69	294.13	0.00	0.00	0.00
9,400.00	10.00	286.96	9,332.38	229.72	-753.29	300.76	0.00	0.00	0.00
9,500.00	10.00	286.96	9,430.86	234.79	-769.90	307.39	0.00	0.00	0.00
9,600.00	10.00	286.96	9,529.34	239.85	-786.51	314.03	0.00	0.00	0.00
9,700.00	10.00	286.96	9,627.82	244.92	-803.12	320.66	0.00	0.00	0.00
9,800.00	10.00	286.96	9,726.30	249.98	-819.73	327.29	0.00	0.00	0.00
9,900.00	10.00	286.96	9,824.78	255.05	-836.34	333.92	0.00	0.00	0.00
10,000.00	10.00	286.96	9,923.26	260.11	-852.94	340.55	0.00	0.00	0.00
10,100.00	10.00	286.96	10,021.74	265.18	-869.55	347.18	0.00	0.00	0.00
10,200.00	10.00	286.96	10,120.23	270.24	-886.16	353.81	0.00	0.00	0.00
10,300.00	10.00	286.96	10,218.71	275.31	-902.77	360.44	0.00	0.00	0.00
10,400.00	10.00	286.96	10,317.19	280.37	-919.38	367.07	0.00	0.00	0.00
10,500.00	10.00	286.96	10,415.67	285.44	-935.98	373.71	0.00	0.00	0.00

Database:	HOPSPP	**Local Co-ordinate Reference:**	Well Heads CC 9_4 Federal Com 41H
Company:	ENGINEERING DESIGNS	**TVD Reference:**	RKB=26.5' @ 2954.00ft
Project:	PRD NM DIRECTIONAL PLANS (NAD 1983)	**MD Reference:**	RKB=26.5' @ 2954.00ft
Site:	Heads CC 9_4	**North Reference:**	Grid
Well:	Heads CC 9_4 Federal Com 41H	**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)
10,571.62	10.00	286.96	10,486.20	289.06	-947.88	378.45	0.00	0.00	0.00
10,600.00	11.16	301.11	10,514.10	291.20	-952.59	381.03	10.00	4.10	49.86
10,700.00	18.40	329.25	10,610.85	309.82	-968.99	401.13	10.00	7.24	28.14
10,800.00	27.40	340.70	10,702.91	345.19	-984.70	437.84	10.00	9.00	11.45
10,900.00	36.89	346.69	10,787.51	396.24	-999.25	490.05	10.00	9.49	5.99
11,000.00	46.57	350.48	10,862.07	461.42	-1,012.20	556.17	10.00	9.68	3.79
11,100.00	56.34	353.21	10,924.31	538.75	-1,023.15	634.20	10.00	9.77	2.73
11,200.00	66.16	355.38	10,972.36	625.88	-1,031.77	721.75	10.00	9.82	2.17
11,300.00	76.00	357.25	11,004.75	720.16	-1,037.80	816.18	10.00	9.84	1.86
11,400.00	85.86	358.95	11,020.50	818.73	-1,041.05	914.61	10.00	9.86	1.71
11,446.38	90.43	359.72	11,022.00	865.07	-1,041.58	960.78	10.00	9.86	1.66
11,500.00	90.43	359.72	11,021.60	918.69	-1,041.84	1,014.18	0.00	0.00	0.00
11,600.00	90.43	359.72	11,020.84	1,018.69	-1,042.33	1,113.77	0.00	0.00	0.00
11,700.00	90.43	359.72	11,020.09	1,118.68	-1,042.81	1,213.35	0.00	0.00	0.00
11,800.00	90.43	359.72	11,019.34	1,218.68	-1,043.29	1,312.93	0.00	0.00	0.00
11,900.00	90.43	359.72	11,018.59	1,318.68	-1,043.77	1,412.52	0.00	0.00	0.00
12,000.00	90.43	359.72	11,017.83	1,418.67	-1,044.26	1,512.10	0.00	0.00	0.00
12,100.00	90.43	359.72	11,017.08	1,518.67	-1,044.74	1,611.68	0.00	0.00	0.00
12,200.00	90.43	359.72	11,016.33	1,618.66	-1,045.22	1,711.27	0.00	0.00	0.00
12,300.00	90.43	359.72	11,015.58	1,718.66	-1,045.71	1,810.85	0.00	0.00	0.00
12,400.00	90.43	359.72	11,014.82	1,818.66	-1,046.19	1,910.43	0.00	0.00	0.00
12,500.00	90.43	359.72	11,014.07	1,918.65	-1,046.67	2,010.02	0.00	0.00	0.00
12,600.00	90.43	359.72	11,013.32	2,018.65	-1,047.16	2,109.60	0.00	0.00	0.00
12,700.00	90.43	359.72	11,012.56	2,118.64	-1,047.64	2,209.18	0.00	0.00	0.00
12,800.00	90.43	359.72	11,011.81	2,218.64	-1,048.12	2,308.77	0.00	0.00	0.00
12,900.00	90.43	359.72	11,011.06	2,318.64	-1,048.61	2,408.35	0.00	0.00	0.00
13,000.00	90.43	359.72	11,010.31	2,418.63	-1,049.09	2,507.93	0.00	0.00	0.00
13,100.00	90.43	359.72	11,009.55	2,518.63	-1,049.57	2,607.52	0.00	0.00	0.00
13,200.00	90.43	359.72	11,008.80	2,618.62	-1,050.05	2,707.10	0.00	0.00	0.00
13,300.00	90.43	359.72	11,008.05	2,718.62	-1,050.54	2,806.68	0.00	0.00	0.00
13,400.00	90.43	359.72	11,007.30	2,818.62	-1,051.02	2,906.27	0.00	0.00	0.00
13,500.00	90.43	359.72	11,006.54	2,918.61	-1,051.50	3,005.85	0.00	0.00	0.00
13,600.00	90.43	359.72	11,005.79	3,018.61	-1,051.99	3,105.43	0.00	0.00	0.00
13,700.00	90.43	359.72	11,005.04	3,118.60	-1,052.47	3,205.01	0.00	0.00	0.00
13,800.00	90.43	359.72	11,004.29	3,218.60	-1,052.95	3,304.60	0.00	0.00	0.00
13,900.00	90.43	359.72	11,003.53	3,318.60	-1,053.44	3,404.18	0.00	0.00	0.00
14,000.00	90.43	359.72	11,002.78	3,418.59	-1,053.92	3,503.76	0.00	0.00	0.00
14,100.00	90.43	359.72	11,002.03	3,518.59	-1,054.40	3,603.35	0.00	0.00	0.00
14,200.00	90.43	359.72	11,001.27	3,618.58	-1,054.89	3,702.93	0.00	0.00	0.00
14,300.00	90.43	359.72	11,000.52	3,718.58	-1,055.37	3,802.51	0.00	0.00	0.00
14,400.00	90.43	359.72	10,999.77	3,818.58	-1,055.85	3,902.10	0.00	0.00	0.00
14,500.00	90.43	359.72	10,999.02	3,918.57	-1,056.33	4,001.68	0.00	0.00	0.00
14,600.00	90.43	359.72	10,998.26	4,018.57	-1,056.82	4,101.26	0.00	0.00	0.00
14,700.00	90.43	359.72	10,997.51	4,118.56	-1,057.30	4,200.85	0.00	0.00	0.00
14,800.00	90.43	359.72	10,996.76	4,218.56	-1,057.78	4,300.43	0.00	0.00	0.00
14,900.00	90.43	359.72	10,996.01	4,318.56	-1,058.27	4,400.01	0.00	0.00	0.00
15,000.00	90.43	359.72	10,995.25	4,418.55	-1,058.75	4,499.60	0.00	0.00	0.00
15,100.00	90.43	359.72	10,994.50	4,518.55	-1,059.23	4,599.18	0.00	0.00	0.00
15,200.00	90.43	359.72	10,993.75	4,618.54	-1,059.72	4,698.76	0.00	0.00	0.00
15,300.00	90.43	359.72	10,993.00	4,718.54	-1,060.20	4,798.35	0.00	0.00	0.00
15,400.00	90.43	359.72	10,992.24	4,818.54	-1,060.68	4,897.93	0.00	0.00	0.00
15,500.00	90.43	359.72	10,991.49	4,918.53	-1,061.17	4,997.51	0.00	0.00	0.00
15,600.00	90.43	359.72	10,990.74	5,018.53	-1,061.65	5,097.10	0.00	0.00	0.00
15,700.00	90.43	359.72	10,989.98	5,118.52	-1,062.13	5,196.68	0.00	0.00	0.00

Database:	HOPSPP	**Local Co-ordinate Reference:**	Well Heads CC 9_4 Federal Com 41H
Company:	ENGINEERING DESIGNS	**TVD Reference:**	RKB=26.5' @ 2954.00ft
Project:	PRD NM DIRECTIONAL PLANS (NAD 1983)	**MD Reference:**	RKB=26.5' @ 2954.00ft
Site:	Heads CC 9_4	**North Reference:**	Grid
Well:	Heads CC 9_4 Federal Com 41H	**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)
15,800.00	90.43	359.72	10,989.23	5,218.52	-1,062.61	5,296.26	0.00	0.00	0.00
15,900.00	90.43	359.72	10,988.48	5,318.52	-1,063.10	5,395.85	0.00	0.00	0.00
16,000.00	90.43	359.72	10,987.73	5,418.51	-1,063.58	5,495.43	0.00	0.00	0.00
16,100.00	90.43	359.72	10,986.97	5,518.51	-1,064.06	5,595.01	0.00	0.00	0.00
16,200.00	90.43	359.72	10,986.22	5,618.50	-1,064.55	5,694.60	0.00	0.00	0.00
16,300.00	90.43	359.72	10,985.47	5,718.50	-1,065.03	5,794.18	0.00	0.00	0.00
16,400.00	90.43	359.72	10,984.72	5,818.50	-1,065.51	5,893.76	0.00	0.00	0.00
16,500.00	90.43	359.72	10,983.96	5,918.49	-1,066.00	5,993.35	0.00	0.00	0.00
16,600.00	90.43	359.72	10,983.21	6,018.49	-1,066.48	6,092.93	0.00	0.00	0.00
16,700.00	90.43	359.72	10,982.46	6,118.48	-1,066.96	6,192.51	0.00	0.00	0.00
16,800.00	90.43	359.72	10,981.71	6,218.48	-1,067.45	6,292.10	0.00	0.00	0.00
16,900.00	90.43	359.72	10,980.95	6,318.48	-1,067.93	6,391.68	0.00	0.00	0.00
17,000.00	90.43	359.72	10,980.20	6,418.47	-1,068.41	6,491.26	0.00	0.00	0.00
17,100.00	90.43	359.72	10,979.45	6,518.47	-1,068.89	6,590.84	0.00	0.00	0.00
17,200.00	90.43	359.72	10,978.69	6,618.46	-1,069.38	6,690.43	0.00	0.00	0.00
17,300.00	90.43	359.72	10,977.94	6,718.46	-1,069.86	6,790.01	0.00	0.00	0.00
17,400.00	90.43	359.72	10,977.19	6,818.46	-1,070.34	6,889.59	0.00	0.00	0.00
17,500.00	90.43	359.72	10,976.44	6,918.45	-1,070.83	6,989.18	0.00	0.00	0.00
17,600.00	90.43	359.72	10,975.68	7,018.45	-1,071.31	7,088.76	0.00	0.00	0.00
17,700.00	90.43	359.72	10,974.93	7,118.44	-1,071.79	7,188.34	0.00	0.00	0.00
17,800.00	90.43	359.72	10,974.18	7,218.44	-1,072.28	7,287.93	0.00	0.00	0.00
17,900.00	90.43	359.72	10,973.43	7,318.44	-1,072.76	7,387.51	0.00	0.00	0.00
18,000.00	90.43	359.72	10,972.67	7,418.43	-1,073.24	7,487.09	0.00	0.00	0.00
18,100.00	90.43	359.72	10,971.92	7,518.43	-1,073.73	7,586.68	0.00	0.00	0.00
18,200.00	90.43	359.72	10,971.17	7,618.42	-1,074.21	7,686.26	0.00	0.00	0.00
18,300.00	90.43	359.72	10,970.42	7,718.42	-1,074.69	7,785.84	0.00	0.00	0.00
18,400.00	90.43	359.72	10,969.66	7,818.42	-1,075.17	7,885.43	0.00	0.00	0.00
18,500.00	90.43	359.72	10,968.91	7,918.41	-1,075.66	7,985.01	0.00	0.00	0.00
18,600.00	90.43	359.72	10,968.16	8,018.41	-1,076.14	8,084.59	0.00	0.00	0.00
18,700.00	90.43	359.72	10,967.40	8,118.40	-1,076.62	8,184.18	0.00	0.00	0.00
18,800.00	90.43	359.72	10,966.65	8,218.40	-1,077.11	8,283.76	0.00	0.00	0.00
18,900.00	90.43	359.72	10,965.90	8,318.40	-1,077.59	8,383.34	0.00	0.00	0.00
19,000.00	90.43	359.72	10,965.15	8,418.39	-1,078.07	8,482.93	0.00	0.00	0.00
19,100.00	90.43	359.72	10,964.39	8,518.39	-1,078.56	8,582.51	0.00	0.00	0.00
19,200.00	90.43	359.72	10,963.64	8,618.38	-1,079.04	8,682.09	0.00	0.00	0.00
19,300.00	90.43	359.72	10,962.89	8,718.38	-1,079.52	8,781.68	0.00	0.00	0.00
19,400.00	90.43	359.72	10,962.14	8,818.38	-1,080.01	8,881.26	0.00	0.00	0.00
19,500.00	90.43	359.72	10,961.38	8,918.37	-1,080.49	8,980.84	0.00	0.00	0.00
19,600.00	90.43	359.72	10,960.63	9,018.37	-1,080.97	9,080.43	0.00	0.00	0.00
19,700.00	90.43	359.72	10,959.88	9,118.36	-1,081.45	9,180.01	0.00	0.00	0.00
19,800.00	90.43	359.72	10,959.13	9,218.36	-1,081.94	9,279.59	0.00	0.00	0.00
19,900.00	90.43	359.72	10,958.37	9,318.36	-1,082.42	9,379.18	0.00	0.00	0.00
20,000.00	90.43	359.72	10,957.62	9,418.35	-1,082.90	9,478.76	0.00	0.00	0.00
20,100.00	90.43	359.72	10,956.87	9,518.35	-1,083.39	9,578.34	0.00	0.00	0.00
20,200.00	90.43	359.72	10,956.11	9,618.34	-1,083.87	9,677.92	0.00	0.00	0.00
20,300.00	90.43	359.72	10,955.36	9,718.34	-1,084.35	9,777.51	0.00	0.00	0.00
20,400.00	90.43	359.72	10,954.61	9,818.34	-1,084.84	9,877.09	0.00	0.00	0.00
20,500.00	90.43	359.72	10,953.86	9,918.33	-1,085.32	9,976.67	0.00	0.00	0.00
20,600.00	90.43	359.72	10,953.10	10,018.33	-1,085.80	10,076.26	0.00	0.00	0.00
20,700.00	90.43	359.72	10,952.35	10,118.32	-1,086.29	10,175.84	0.00	0.00	0.00
20,800.00	90.43	359.72	10,951.60	10,218.32	-1,086.77	10,275.42	0.00	0.00	0.00
20,900.00	90.43	359.72	10,950.85	10,318.32	-1,087.25	10,375.01	0.00	0.00	0.00
21,000.00	90.43	359.72	10,950.09	10,418.31	-1,087.73	10,474.59	0.00	0.00	0.00
21,100.00	90.43	359.72	10,949.34	10,518.31	-1,088.22	10,574.17	0.00	0.00	0.00

Database:	HOPSPP	**Local Co-ordinate Reference:**	Well Heads CC 9_4 Federal Com 41H
Company:	ENGINEERING DESIGNS	**TVD Reference:**	RKB=26.5' @ 2954.00ft
Project:	PRD NM DIRECTIONAL PLANS (NAD 1983)	**MD Reference:**	RKB=26.5' @ 2954.00ft
Site:	Heads CC 9_4	**North Reference:**	Grid
Well:	Heads CC 9_4 Federal Com 41H	**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)
21,200.00	90.43	359.72	10,948.59	10,618.30	-1,088.70	10,673.76	0.00	0.00	0.00
21,300.00	90.43	359.72	10,947.84	10,718.30	-1,089.18	10,773.34	0.00	0.00	0.00
21,400.00	90.43	359.72	10,947.08	10,818.30	-1,089.67	10,872.92	0.00	0.00	0.00
21,500.00	90.43	359.72	10,946.33	10,918.29	-1,090.15	10,972.51	0.00	0.00	0.00
21,600.00	90.43	359.72	10,945.58	11,018.29	-1,090.63	11,072.09	0.00	0.00	0.00
21,700.00	90.43	359.72	10,944.82	11,118.28	-1,091.12	11,171.67	0.00	0.00	0.00
21,800.00	90.43	359.72	10,944.07	11,218.28	-1,091.60	11,271.26	0.00	0.00	0.00
21,900.00	90.43	359.72	10,943.32	11,318.28	-1,092.08	11,370.84	0.00	0.00	0.00
21,942.44	90.43	359.72	10,943.00	11,360.71	-1,092.29	11,413.10	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
PBHL (Heads CC 9_4 - plan hits target center - Point	0.00	0.00	10,943.00	11,360.71	-1,092.29	456,292.40	645,350.00	32° 15' 14.310316 N	103° 59' 48.718620
FTP (Heads CC 9_4 - plan hits target center - Point	0.00	0.00	11,022.00	865.07	-1,041.58	445,797.60	645,400.70	32° 13' 30.453573 N	103° 59' 48.511138

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
4,615.00	4,615.00	0.00	0.00	Build 2°/100'
5,114.96	5,112.42	12.69	-41.62	Hold 10° Tangent
10,571.62	10,486.20	289.06	-947.88	KOP, Build & Turn 10°/100'
11,446.38	11,022.00	865.07	-1,041.58	Landing Point
21,942.44	10,943.00	11,360.71	-1,092.29	TD at 21942.44' MD

Oxy USA Inc. - Heads CC 9_4 Federal Com 41H

1. Geologic Formations

TVD of target	11022'	Pilot Hole Depth	N/A
MD at TD:	21942'	Deepest Expected fresh water:	397'

Delaware Basin

Formation	TVD - RKB	Expected Fluids
Rustler	130	
Salado	605	Salt
Castile	1,285	Salt
Lamar/Delaware	2,850	Oil/Gas/Brine
Bell Canyon	2,915	Oil/Gas/Brine
Cherry Canyon	3,763	Oil/Gas/Brine
Brushy Canyon	5,012	Losses
Bone Spring	6,584	Oil/Gas
1st Bone Spring	7,591	Oil/Gas
2nd Bone Spring	8,406	Oil/Gas
3rd Bone Spring	9,533	Oil/Gas
Wolfcamp	**9,885**	**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	545	10.75	40.5	J-55	BTC	1.125	1.2	1.4	1.4
9.875	0	10472	7.625	26.4	L-80 HC	BTC	1.125	1.2	1.4	1.4
6.75	0	11022	5.5	26	P-110 CYHP	TORQ SFW	1.125	1.2	1.4	1.4
6.75	11022	21942	5	21.4	P-110 CYHP	TORQ DQW	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, SF TORQ, and/or DQW 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)	443	14.8	1.33	6.365	5:26	Class C Cement, Accelerator
Intermediate 1st Stage (Lead)	N/A	N/A	N/A	N/A	N/A	N/A
Intermediate 1st Stage (Tail)	719	13.2	1.65	8.640	11:54	Class H Cement, Retarder, Dispersant, Salt
Intermediate 2nd Stage (Tail Slurry) to be pumped as Bradenhead Squeeze from surface, down the Intermediate annulus						
Intermediate 2nd Stage (Lead)	N/A	N/A	N/A	N/A	N/A	N/A
Intermediate 2nd Stage (Tail)	647	12.9	1.92	10.41	23:10	Class C Cement, Accelerator
Production (Lead)	N/A	N/A	N/A	N/A	N/A	N/A
Production (Tail)	1147	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	545	100%
Intermediate 1st Stage (Lead)	N/A	N/A	N/A
Intermediate 1st Stage (Tail)	5262	10472	5%
Intermediate 2nd Stage (Lead)	N/A	N/A	N/A
Intermediate 2nd Stage (Tail)	0	5262	10%
Production (Lead)	N/A	N/A	N/A
Production (Tail)	9972	21942	20%

Offline Cementing

Oxy requests a variance to cement the 9.625" and/or 7.625" intermediate casing strings offline in accordance to the approved variance, EC Tran 461365.

The summarized operational sequence will be as follows:

1. Run casing as per normal operations. While running casing, conduct negative pressure test and confirm integrity of the float equipment (float collar and shoe).
2. Land casing.
3. Fill pipe with kill weight fluid, and confirm well is static.
    a. If well is not static notify BLM and kill well.
    b. Once well is static notify BLM with intent to proceed with nipple down and offline cementing.
4. Set and pressure test annular packoff.
5. After confirmation of both annular barriers and internal barriers, nipple down BOP and install cap flange. If any barrier fails to test, the BOP stack will not be nippled down until after the cement job is completed.
6. Skid rig to next well on pad.
7. Confirm well is static before removing cap flange.
8. If well is not static notify BLM and kill well prior to cementing or nippling up for further remediation.
9. Install offline cement tool.
10. Rig up cement equipment.
    a. Notify BLM prior to cement job.
11. Perform cement job.
12. Confirm well is static and floats are holding after cement job.
13. Remove cement equipment, offline cement tools and install night cap with pressure gauge for monitoring.

Oxy requests permission to adjust the CBL requirement after bradenhead cement jobs, on 7-5/8" intermediate casings, as per the agreement reached in the OXY/BLM meeting on September 5, 2019.

Three string wells:

- CBL will be required on one well per pad
- If the pumped volume of cement is less than permitted in the APD, BLM will be notified and a CBL may be run
- Echometer will be used after bradenhead cement job to determine TOC before pumping top-out cement

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
		5M	Blind Ram	✓	250 psi / 5000 psi
			Pipe Ram		
			Double Ram	✓	
			Other*		
6.75" Hole	13-5/8"	5M	Annular	✓	100% of working pressure
		10M	Blind Ram	✓	250 psi / 5100 psi
			Pipe Ram		
			Double Ram	✓	
			Other*		

*Specify if additional ram is utilized.

Per BLM's Memorandum No. NM-2017-008: *Decision and Rationale for a Variance Allowing the Use of a 5M Annular Preventer with a 10M BOP Stack*, Oxy requests to employ a 5M annular with a 10M BOPE stack in the pilot and lateral sections of the well and will ensure that two barriers to flow are maintained at all times. Please see attached Well Control Plan.

Oxy will utilize a 5M annular with a 10M BOPE stack. The 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

Oxy requests permission to adjust the BOP break testing requirements as per the agreement reached in the OXY/BLM meeting on September 5, 2019. A separate sundry will be sent prior to spud that reflects the pad based break testing plan.

BOP break test under the following conditions:

- After a full BOP test is conducted
- When skidding to drill an intermediate section where ICP is set into the third Bone Spring or shallower.
- When skidding to drill a production section that does not penetrate into the third Bone Spring or deeper.

If the kill line is broken prior to skid, two tests will be performed.

1) Wellhead flange, co-flex hose, kill line connections and upper pipe rams
2) Wellhead flange, HCR valve, check valve, upper pipe rams

If the kill line is not broken prior to skid, only one test will be performed.

1) Wellhead flange, co-flex hose, check valve, upper pipe rams

5. Mud Program

Depth		Type	Weight (ppg)	Viscosity	Water Loss
From (ft)	To (ft)				
0	545	Water-Based Mud	8.6-8.8	40-60	N/C
545	10472	Saturated Brine-Based or Oil-Based Mud	8.0-10.0	35-45	N/C
10472	21942	Water-Based or Oil-Based Mud	9.5-13.0	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	7451 psi
Abnormal Temperature	No
BH Temperature at deepest TVD	169°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 four 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: 1563.3 bbls**.**

9. Company Personnel

Name	Title	Office Phone	Mobile Phone
Garrett Granier	Drilling Engineer	713-513-6633	832-265-0581
William Turner	Drilling Engineer Supervisor	713-350-4951	661-817-4586
Simon Benavides	Drilling Superintendent	713-522-8652	281-684-6897
Diego Tellez	Drilling Manager	713-350-4602	713-303-4932

APD ID: 10400054231 **Submission Date:** 02/12/2020

Operator Name: OXY USA INCORPORATED

Well Name: HEADS CC 9-4 FEDERAL COM **Well Number:** 41H

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

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - Existing Roads

Will existing roads be used? YES

Existing Road Map:

HeadsCC9_4FdCom41H_ExistRoads_20200212133813.pdf

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

ROW ID(s)

ID:

Do the existing roads need to be improved? NO

Existing Road Improvement Description:

Existing Road Improvement Attachment:

Section 2 - New or Reconstructed Access Roads

Will new roads be needed? YES

New Road Map:

HeadsCC9_4FdCom41H_NewRoad_20200212133829.pdf

New road type: LOCAL

Length: 3366.7 Feet **Width (ft.):** 30

Max slope (%): 0 **Max grade (%):** 0

Army Corp of Engineers (ACOE) permit required? N

ACOE Permit Number(s):

New road travel width: 14

New road access erosion control: Watershed Diversion every 200' if needed.

New road access plan or profile prepared? Y

New road access plan attachment:

HeadsCC9_4FdCom41H_NewRoad_20200212141537.pdf

Access road engineering design? N

Operator Name: OXY USA INCORPORATED

Well Name: HEADS CC 9-4 FEDERAL COM **Well Number:** 41H

Access road engineering design attachment:

Turnout? N

Access surfacing type: OTHER

Access topsoil source: ONSITE

Access surfacing type description: Caliche

Access onsite topsoil source depth: 0

Offsite topsoil source description:

Onsite topsoil removal process: If available

Access other construction information: Turnouts every 1000 as needed.

Access miscellaneous information: A new access road will be built. The access road will run approximately 1060.4 ft south and 2226.8 ft west and north 79.5 ft from an existing road to the southeast corner of the proposed location.

Number of access turnouts: **Access turnout map:**

Drainage Control

New road drainage crossing: CULVERT

Drainage Control comments: Watershed Diversion every 200' if needed.

Road Drainage Control Structures (DCS) description: Watershed Diversion every 200' if needed.

Road Drainage Control Structures (DCS) attachment:

Access Additional Attachments

Section 3 - Location of Existing Wells

Existing Wells Map? YES

Attach Well map:

HeadsCC9_4FdCom41H_ExistWells_20200212142315.pdf

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

Submit or defer a Proposed Production Facilities plan? SUBMIT

Production Facilities description: a. In the event the well is found productive, the Heads CC 9 Central Tank Battery would be utilized and the necessary production equipment will be installed at the well site. See proposed CTN layout and facilities layout diagram. b. All flow lines will adhere to API standards. They will consist of 3 4 composite flowlines per well to the Heads CTB operating 75% MAWP and 2 4 surface flowlines to the Heads CTB for transfer during flowback, surface lines to follow surveyed route. Survey of a strip of land 30 wide and ~24,469.3 in length crossing in Section 16, 17, 8 & 9 T24S R29E, NMPM, Eddy County, NM and being 15 left and 15 right of the centerline survey, see attached.

Production Facilities map:

HeadsCC9_4FdCom41H_LeaseFacilityInfo_20200212142338.pdf

Operator Name: OXY USA INCORPORATED

Well Name: HEADS CC 9-4 FEDERAL COM **Well Number:** 41H

Section 5 - Location and Types of Water Supply

Water Source Table

Water source type: GW WELL

Water source use type: SURFACE CASING

INTERMEDIATE/PRODUCTION CASING

Source latitude: **Source longitude:**

Source datum:

Water source permit type: WATER WELL

Water source transport method: PIPELINE

TRUCKING

Source land ownership: COMMERCIAL

Source transportation land ownership: COMMERCIAL

Water source volume (barrels): 2000 **Source volume (acre-feet):** 0.25778619

Source volume (gal): 84000

Water source and transportation map:

HeadsCC9_4FdCom41H_GRRWtrSrc_20200212142550.pdf

HeadsCC9_4FdCom41H_MesqWtrSrc_20200212142600.pdf

Water source comments: This well will be drilled using a combination of water mud systems. It will be obtained from commercial water stations (Gregory Rockhouse, Mesquite) in the area and will be hauled to location by transport truck using existing and proposed roads.

New water well? N

New Water Well Info

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

Well target aquifer:

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

Aquifer comments:

Aquifer documentation:

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

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

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

Operator Name: OXY USA INCORPORATED

Well Name: HEADS CC 9-4 FEDERAL COM **Well Number:** 41H

Drilling method: **Drill material:**

Grout material: **Grout depth:**

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

Well Production type: **Completion Method:**

Water well additional information:

State appropriation permit:

Additional information attachment:

Section 6 - Construction Materials

Using any construction materials: YES

Construction Materials description: Primary - All caliche utilized for the drilling pad and proposed access road will be obtained from an existing BLM/State/Fee approved pit or from prevailing deposits found on the location. Will use BLM recommended extra caliche from other locations close by for roads, if available. Secondary - The secondary way of obtaining caliche to build locations and roads will be by turning over the location. This means, caliche will be obtained from the actual well site. A caliche permit will be obtained from BLM prior to pushing up any caliche. 2400 cubic yards is max amount of caliche needed for pad and roads. Amount will vary for each pad. The procedure below has been approved by BLM personnel: a. The top 6 of topsoil is pushed off and stockpiled along the side of the location. b. An approximate 120 X 120 area is used within the proposed well site to remove caliche. c. Subsoil is removed and piled alongside the 120 X 120 within the pad site. d. When caliche is found, material will be stockpiled within the pad site to build the location and road. e. Then subsoil is pushed back in the hole and caliche is spread accordingly across entire location and road. f. Once the well is drilled the stockpiled top soil will be used for interim reclamation and spread along areas where caliche is picked up and the location size is reduced. Neither caliche nor subsoil will be stockpiled outside of the well pad. Topsoil will be stockpiled along the edge of the pad. Caliche will be provided from one of the following three pits located in Sections 6, 20, 22 T24S R29E and/or Section 2 T25S R29E. Water will be provided from one of the three frac ponds located in Sections 15, 21, 22 T24S R29E and/or Section 2 T25S R29E.

Construction Materials source location attachment:

Section 7 - Methods for Handling Waste

Waste type: DRILLING

Waste content description: Water-Based Cuttings, Water-Based Mud, Oil-Based Cuttings, Oil-Based Mud, Produced Water

Amount of waste: 1566 barrels

Waste disposal frequency : Daily

Safe containment description: Haul-Off Bins

Safe containmant attachment:

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

Disposal type description:

Disposal location description: An approved facility that can process drill cuttings, drill fluids, flowback water, produced water, contaminated soils, and other non-hazardous wastes.

Reserve Pit

Reserve Pit being used? NO

Operator Name: OXY USA INCORPORATED

Well Name: HEADS CC 9-4 FEDERAL COM **Well Number:** 41H

Temporary disposal of produced water into reserve pit? NO

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

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

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

Reserve pit liner

Reserve pit liner specifications and installation description

Cuttings Area

Cuttings Area being used? NO

Are you storing cuttings on location? N

Description of cuttings location

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

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

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

WCuttings area liner

Cuttings area liner specifications and installation description

Section 8 - Ancillary Facilities

Are you requesting any Ancillary Facilities?: N

Ancillary Facilities attachment:

Comments:

Section 9 - Well Site Layout

Well Site Layout Diagram:

HeadsCC9_4FdCom41H_WellSiteCL_20200212142824.pdf

Comments: V-Door-East - CL Tanks-North - Pad-280' X 835' - 11 Wells

Operator Name: OXY USA INCORPORATED

Well Name: HEADS CC 9-4 FEDERAL COM **Well Number:** 41H

Section 10 - Plans for Surface Reclamation

Type of disturbance: New Surface Disturbance

Multiple Well Pad Name: HEADS CC 9-4 FEDERAL COM

Multiple Well Pad Number: 21H, 22H, 23H, 42H, 52H, 41H 51H, 45H, 55H, 311H, 37H

Recontouring attachment:

Drainage/Erosion control construction: Reclamation to be wind rowed as needed to control erosion

Drainage/Erosion control reclamation: Reclamation to be wind rowed as needed to control erosion

Well pad proposed disturbance (acres): 5.37
Road proposed disturbance (acres): 2.32
Powerline proposed disturbance (acres): 0
Pipeline proposed disturbance (acres): 16.85
Other proposed disturbance (acres): 0

Total proposed disturbance: 24.54

Well pad interim reclamation (acres): 1.54
Road interim reclamation (acres): 1.24
Powerline interim reclamation (acres): 0
Pipeline interim reclamation (acres): 11.23
Other interim reclamation (acres): 0

Total interim reclamation: 14.010000000000002

Well pad long term disturbance (acres): 3.83
Road long term disturbance (acres): 1.08
Powerline long term disturbance (acres): 0
Pipeline long term disturbance (acres): 5.62
Other long term disturbance (acres): 0

Total long term disturbance: 10.530000000000001

Disturbance Comments: See Below

Reconstruction method: If the well is deemed commercially productive, caliche from the areas of the pad site not required for operations will be reclaimed. The original topsoil will be returned to the area of the drill pad not necessary to operate the well. These unused areas of the drill pad will be contoured, as close as possible, to match the original topography, and the area will be seeded with an approved BLM mixture to re-establish vegetation. After concluding the drilling and/or completion operations, if the well is found non-commercial, the caliche will be removed from the pad and transported to the original caliche pit or used for other drilling locations. The road will be reclaimed as directed by the BLM. The original topsoil will again be returned to the pad and contoured, as close as possible, to the original topography, and the area will be seeded with an approved BLM mixture to re-establish vegetation.
Topsoil redistribution: The original topsoil will be returned to the area of the drill pad not necessary to operate the well.

Soil treatment: To be determined by the BLM.

Existing Vegetation at the well pad: To be determined by the BLM at Onsite.

Existing Vegetation at the well pad attachment:

Existing Vegetation Community at the road: To be determined by the BLM at Onsite.

Existing Vegetation Community at the road attachment:

Existing Vegetation Community at the pipeline: To be determined by the BLM at Onsite.

Existing Vegetation Community at the pipeline attachment:

Existing Vegetation Community at other disturbances: To be determined by the BLM at Onsite.

Existing Vegetation Community at other disturbances attachment:

Operator Name: OXY USA INCORPORATED

Well Name: HEADS CC 9-4 FEDERAL COM **Well Number:** 41H

Non native seed used? N

Non native seed description:

Seedling transplant description:

Will seedlings be transplanted for this project? N

Seedling transplant description attachment:

Will seed be harvested for use in site reclamation? N

Seed harvest description:

Seed harvest description attachment:

Seed Management

Seed Table

Seed Summary

Total pounds/Acre:

Seed Type	Pounds/Acre

Seed reclamation attachment:

Operator Contact/Responsible Official Contact Info

First Name: Michael **Last Name:** Wilson

Phone: (575)631-6618 **Email:** Michael_Wilson@oxy.com

Seedbed prep:

Seed BMP:

Seed method:

Existing invasive species? N

Existing invasive species treatment description:

Existing invasive species treatment attachment:

Weed treatment plan description: To be determined by the BLM.

Weed treatment plan attachment:

Monitoring plan description: To be determined by the BLM.

Monitoring plan attachment:

Success standards: To be determined by the BLM.

Operator Name: OXY USA INCORPORATED

Well Name: HEADS CC 9-4 FEDERAL COM **Well Number:** 41H

Pit closure description: NA

Pit closure attachment:

Section 11 - Surface Ownership

Disturbance type: WELL PAD

Describe:

Surface Owner: OTHER

Other surface owner description: Fee - OXY USA Inc.

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

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

Disturbance type: NEW ACCESS ROAD

Describe:

Surface Owner: OTHER

Other surface owner description: Fee - OXY USA Inc.

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

Operator Name: OXY USA INCORPORATED

Well Name: HEADS CC 9-4 FEDERAL COM **Well Number:** 41H

USFWS Local Office:

Other Local Office:

USFS Region:

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

Disturbance type: PIPELINE

Describe:

Surface Owner: OTHER

Other surface owner description: Fee - OXY USA Inc.

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

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

Disturbance type: OTHER

Describe: Electric Line

Surface Owner: OTHER

Other surface owner description: Fee - OXY USA Inc.

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

Operator Name: OXY USA INCORPORATED

Well Name: HEADS CC 9-4 FEDERAL COM **Well Number:** 41H

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

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

Section 12 - Other Information

Right of Way needed? N **Use APD as ROW?**

ROW Type(s):

ROW Applications

SUPO Additional Information: Permian Basin MOA To be submitted after APD acceptance. GIS Shapefiles available for BLM download from shared FTP site after APD submittal.
Use a previously conducted onsite? N

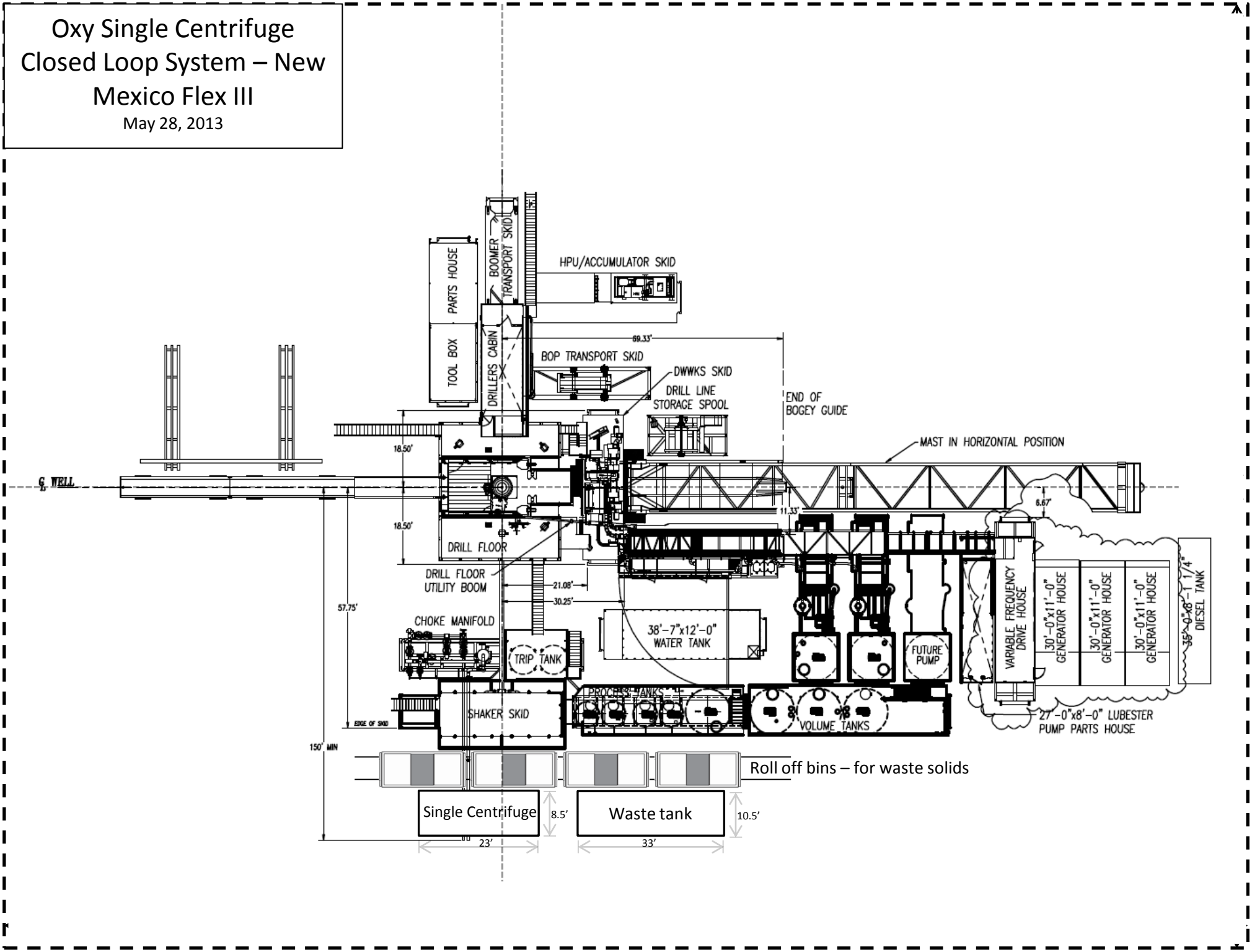
Previous Onsite information:

Other SUPO Attachment

HeadsCC9_4FdCom41H_AM_20200212143015.pdf
HeadsCC9_4FdCom41H_GasCapturePlan_20200212143022.pdf
HeadsCC9_4FdCom41H_Loc_20200212143032.pdf
HeadsCC9_4FdCom41H_SUPO_20200212143041.pdf
HeadsCC9_4FdCom41H_StakeForm_20200212143046.pdf
HeadsCC9_4FdCom41H_Topo_20200212143053.pdf

Oxy Single Centrifuge Closed Loop System – New Mexico Flex III

May 28, 2013



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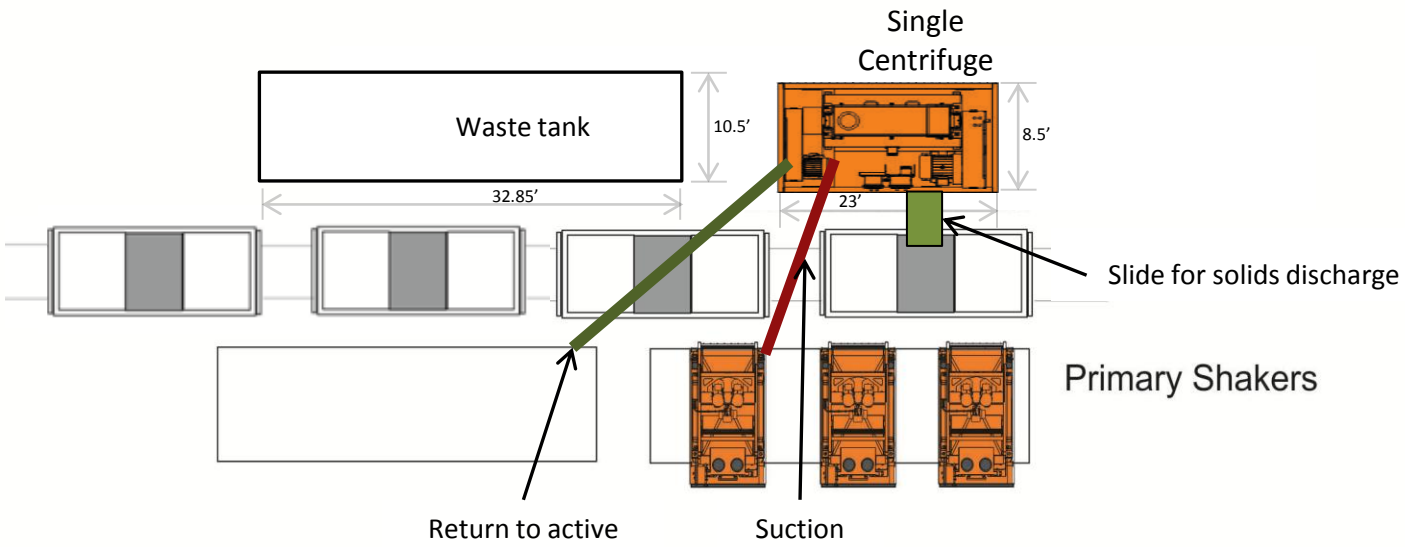

Oxy Single Centrifuge Closed Loop System – New Mexico Flex III

May 28, 2013

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Submit Original
to Appropriate
District Office

GAS CAPTURE PLAN

Date: 08/15/2019

☒ Original
☐ Amended - Reason for Amendment:

Operator & OGRID No.: OXY USA INC. - 16696

This Gas Capture Plan outlines actions to be taken by the Operator to reduce well/production facility flaring/venting for new completion (new drill, recomplete to new zone, re-frac) activity.

Note: Form C-129 must be submitted and approved prior to exceeding 60 days allowed by Rule (Subsection A of 19.15.18.12 NMAC).

Well(s)/Production Facility – Name of facility

The well(s) that will be located at the production facility are shown in the table below.

Well Name	API	Well Location (ULSTR)	Footages	Expected MCF/D	Flared or Vented	Comments
Heads CC 9-4 Fd Com 1H	Pending	M-9-24S-29E	350 FSL 235 FWL	3,100	0	
Heads CC 9-4 Fd Com 2H	Pending	M-9-24S-29E	350 FSL 305 FWL	3,100	0	
Heads CC 9-4 Fd Com 3H	Pending	N-9-24S-29E	520 FSL 2400 FWL	3,100	0	
Heads CC 9-4 Fd Com 4H	Pending	N-9-24S-29E	520 FSL 2435 FWL	3,100	0	
Heads CC 9-4 Fd Com 5H	Pending	O-9-24S-29E	910 FSL 1365 FEL	3,100	0	
Heads CC 9-4 Fd Com 6H	Pending	P-9-24S-29E	910 FSL 1295 FEL	3,100	0	
Heads CC 9-4 Fd Com 11H	Pending	M-9-24S-29E	350 FSL 270 FWL	3,800	0	
Heads CC 9-4 Fd Com 12H	Pending	N-9-24S-29E	520 FSL 2365 FWL	3,800	0	
Heads CC 9-4 Fd Com 13H	Pending	N-9-24S-29E	520 FSL 2465 FWL	3,800	0	
Heads CC 9-4 Fd Com 14H	Pending	O-9-24S-29E	910 FSL 1330 FEL	3,800	0	
Heads CC 9-4 Fd Com 21H	Pending	L-9-24S-29E	1353 FSL 1102 FWL	2,000	0	
Heads CC 9-4 Fd Com 22H	Pending	L-9-24S-29E	1349 FSL 1137 FWL	2,000	0	
Heads CC 9-4 Fd Com 23H	Pending	L-9-24S-29E	1344 FSL 1172 FWL	2,000	0	
Heads CC 9-4 Fd Com 24H	Pending	O-9-24S-29E	487 FSL 1667 FEL	2,000	0	
Heads CC 9-4 Fd Com 25H	Pending	O-9-24S-29E	482 FSL 1632 FEL	2,000	0	
Heads CC 9-4 Fd Com 26H	Pending	O-9-24S-29E	478 FSL 1597 FEL	2,000	0	
Heads CC 9-4 Fd Com 31H	Pending	M-9-24S-29E	250 FSL 880 FWL	5,500	0	
Heads CC 9-4 Fd Com 22H	Pending	M-9-24S-29E	250 FSL 915 FWL	5,500	0	
Heads CC 9-4 Fd Com 33H	Pending	M-9-24S-29E	250 FSL 950 FWL	5,500	0	
Heads CC 9-4 Fd Com 34H	Pending	O-9-24S-29E	100 FSL 2163 FEL	5,500	0	
Heads CC 9-4 Fd Com 35H	Pending	O-9-24S-29E	100 FSL 2128 FEL	5,500	0	
Heads CC 9-4 Fd Com 36H	Pending	B-16-24S-29E	963 FNL 1646 FEL	5,500	0	
Heads CC 9-4 Fd Com 37H	Pending	C-16-24S-29E	792 FNL 1654 FWL	5,500	0	
Heads CC 9-4 Fd Com 38H	Pending	B-16-24S-29E	960 FNL 1680 FEL	5,500	0	
Heads CC 9-4 Fd Com 311H	Pending	C-16-24S-29E	789 FNL 1619 FWL	5,500	0	
Heads CC 9-4 Fd Com 312H	Pending	B-16-24S-29E	957 FNL 1715 FEL	5,500	0	
Heads CC 9-4 Fd Com 41H	Pending	D-16-24S-29E	760 FNL 1280 FWL	7,000	0	
Heads CC 9-4 Fd Com 42H	Pending	D-16-24S-29E	765 FNL 1345 FWL	7,000	0	
Heads CC 9-4 Fd Com 43H	Pending	B-16-24S-29E	933 FNL 1989 FEL	7,000	0	
Heads CC 9-4 Fd Com 44H	Pending	B-16-24S-29E	936 FNL 1954 FEL	7,000	0	

Well Name	API	Well Location (ULSTR)	Footages	Expected MCF/D	Flared or Vented	Comments
Heads CC 9-4 Fd Com 51H	Pending	D-16-24S-29E	762 FNL 1310 FWL	7,000	0	
Heads CC 9-4 Fd Com 52H	Pending	C-16-24S-29E	768 FNL 1380 FWL	7,000	0	
Heads CC 9-4 Fd Com 53H	Pending	A-16-24S-29E	1017 FNL 1040 FEL	7,000	0	
Heads CC 9-4 Fd Com 54H	Pending	A-16-24S-29E	1020 FNL 1005 FEL	7,000	0	
Heads CC 9-4 Fd Com 71H	Pending	N-9-24S-29E	520 FSL 2090 FWL	1,200	0	
Heads CC 9-4 Fd Com 72H	Pending	N-9-24S-29E	520 FSL 2125 FWL	1,200	0	
Heads CC 9-4 Fd Com 73H	Pending	B-16-24S-29E	380 FNL 1525 FEL	1,200	0	
Heads CC 9-4 Fd Com 74H	Pending	B-16-24S-29E	415 FNL 1525 FEL	1,200	0	

Gathering System and Pipeline Notification

Well(s) will be connected to a production facility after flowback operations are complete, where a gas transporter system is in place. The gas produced from production facility is dedicated to Enterprise Field Services, LLC ("Enterprise") and is connected to Enterprise low/high pressure gathering system located in Eddy County, New Mexico. OXY USA INC. ("OXY") provides (periodically) to Enterprise a drilling, completion and estimated first production date for wells that are scheduled to be drilled in the foreseeable future. In addition, OXY and Enterprise have periodic conference calls to discuss changes to drilling and completion schedules. Gas from these wells will be processed at OXY USA WTP LP Processing Plant located in Sec. 23, Twn. 21S, Rng. 23E, Eddy County, New Mexico. The actual flow of the gas will be based on compression operating parameters and gathering system pressures.

Flowback Strategy

After the fracture treatment/completion operations, well(s) will be produced to temporary production tanks and gas will be flared or vented. During flowback, the fluids and sand content will be monitored. When the produced fluids contain minimal sand, the wells will be turned to production facilities. Gas sales should start as soon as the wells start flowing through the production facilities, unless there are operational issues on Enterprise system at that time. Based on current information, it is OXY's belief the system can take this gas upon completion of the well(s).

Safety requirements during cleanout operations from the use of underbalanced air cleanout systems may necessitate that sand and non-pipeline quality gas be vented and/or flared rather than sold on a temporary basis.

Alternatives to Reduce Flaring

Below are alternatives considered from a conceptual standpoint to reduce the amount of gas flared.

- Power Generation – On lease
    - Only a portion of gas is consumed operating the generator, remainder of gas will be flared
- Compressed Natural Gas – On lease
    - Gas flared would be minimal, but might be uneconomical to operate when gas volume declines
- NGL Removal – On lease
    - Plants are expensive, residue gas is still flared, and uneconomical to operate when gas volume declines

APD ID: 10400054231 **Submission Date:** 02/12/2020

Operator Name: OXY USA INCORPORATED

Well Name: HEADS CC 9-4 FEDERAL COM **Well Number:** 41H

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? N

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: HEADS CC 9-4 FEDERAL COM **Well Number:** 41H

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? N

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: HEADS CC 9-4 FEDERAL COM **Well Number:** 41H

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? N

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? N

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? N

Produced Water Disposal (PWD) Location:

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

Other PWD discharge volume (bbl/day):

Operator Name: OXY USA INCORPORATED

Well Name: HEADS CC 9-4 FEDERAL COM **Well Number:** 41H

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

10/13/2020

APD ID: 10400054231

Submission Date: 02/12/2020

Operator Name: OXY USA INCORPORATED

Well Name: HEADS CC 9-4 FEDERAL COM

Well Number: 41H

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: