Form 3160-5
(August 2007)

OCD Artesia

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB NO. 1004-0135
Expires: July 31, 2010

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE - Other instructions on reverse side.

5. Lease Serial No.
NMNM89819

6. If Indian, Allottee or Tribe Name

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

1. Type of Well
☒ Oil Well ☐ Gas Well ☐ Other

8. Well Name and No.
PATTON 18 FEDERAL 8H

2. Name of Operator
OXY USA INC.
Contact: DAVID STEWART
E-Mail: david_stewart@oxy.com

9. API Well No.
30-015-41343

3a. Address
P.O. BOX 50250
MIDLAND, TX 79710

3b. Phone No. (include area code)
Ph: 432-685-5717
Fx: 432-685-5742

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

4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)*
Sec 18 T24S R31E SWSE 150FSL 1700FEL
32.210356 N Lat, 103.813410 W Lon

11. County or Parish, and State
EDDY COUNTY, NM

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

TYPE OF SUBMISSION	TYPE OF ACTION			
☒ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☐ Subsequent Report	☐ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other Change to Original A PD
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

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

OXY USA Inc. respectfully requests approval for the following changes to the drilling plan:

1. Casing design modification, to drill the well with smaller bit sizes:
14-3/4" surface hole w/ 11-3/4" csg, 10-5/8" intermediate hole w/ 8-5/8" csg and 7-7/8" production hole w/ 5-1/2" csg. Details are below.

2. Cement program adjustment to the new bit/casing sizes. Cement program modifications detailed below.

3. The Surface and Intermediate casings strings will be tested to 70% of their burst rating for 30 minutes. This will also test the seals of the lock down pins that hold the pack-off in place in the Multibowl wellhead system.

RECEIVED
JUL 23 2013
NMOCD ARTESIA

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

14. I hereby certify that the foregoing is true and correct.
Electronic Submission #212413 verified by the BLM Well Information System
For OXY USA INC., sent to the Carlsbad
Committed to AFMSS for processing by KURT SIMMONS on 07/12/2013 ()

Name *(Printed/Typed)* DAVID STEWART — Title SR. REGULATORY ADVISOR

Signature (Electronic Submission) — Date 07/02/2013

Accepted for record
NMOCD 7/23/13

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

APPROVED
JUL 15 2013
/s/ Chris Walls
BUREAU OF LAND MANAGEMENT
CARLSBAD FIELD OFFICE

Approved By — Title — Date

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

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

**** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ****

Additional data for EC transaction #212413 that would not fit on the form

32. Additional remarks, continued

a.Surface Casing-
11-3/4" 42# H-40 ST&C new csg @ 0-898', 14-3/4" hole w/ 8.9# mud

Coll Rating (psi)-1070 Burst Rating (psi)-1980
SF Coll-2.69 SF Burst-1.43 SF Ten-1.69

b.Intermediate Casing-
8-5/8" 32# J-55 LT&C new csg @ 0-4200', 10-5/8" hole w/ 10.2# mud

Coll Rating (psi)-2530 Burst Rating (psi)-3930
SF Coll-3.23 SF Burst-1.42 SF Ten-1.92

c.Production Casing
5-1/2" 20# L-80 BT&C new csg @ 0-14745'M, 7-7/8" hole w/ 9.4# mud

Coll Rating (psi)-8830 Burst Rating (psi)-8990
SF Coll-1.77 SF Burst-1.25 SF Ten-1.98

Collapse and burst loads calculated using Stress Check with anticipated loads, see attached for design assumptions

a. Surface - Circulate cement to surface w/ 390sx PP cmt w/ 1% CaCl2 + 4% Bentonite + .25#/sx Poly-E-Flake, 13.5ppg 1.73 yield 589# 24hr CS 150% Excess followed 260sx PP cmt w/ 2% CaCl2, 14.8ppg 1.35 yield 1346# 24hr CS 150% Excess.

b. Intermediate - Circulate cement to surface w/ 820sx HES light PP cmt w/ 5% Salt + .3% HR-800, 12.9ppg 1.88 yield 660# 24hs CS 125% Excess followed by 220sx PP cmt w/ 1% CaCl2, 14.8ppg 1.34 yield 2125# 24hr CS 125% Excess.

c. Pilot Hole Plug Back -
Plug 1 - 300sx 50/50 Poz/PPC w/ .3% CFR-3 + .3% HR-601, 14.4ppg 1.23 yield >1500# 24hr CS 35% Excess, 11700-10900'
Plug 2 - 380sx 50/50 Poz/PPC w/ .3% CFR-3 + .3% HR-601, 14.4ppg 1.22 yield >1500# 24hr CS 35% Excess, 10900-9900'
Plug 3 - 290sx PPC w/ .3% CFR-3 + .2% HR-800, 17.5ppg .95 yield >1500# 24hr CS 35% Excess, 9900-9300'

d. Production - Circulate cement w/ 980sx Tuned Light cmt w/ 14.8#/sx Silicalite 50/50 Blend + 15#/sx Scotchlite HGS-6000 w/ .5#/sx CFR-3 + .15#/sx WG-17 + 1#/sx Cal-Seal 60 + 1.5# salt + 2% CaCl2 + .2#/sx HR-800 + .125#/sx Poly-E-Flake + 3#/sx Kol-Seal 10.2ppg 2.94 yield 947# 24hr CS 80% Excess followed by 700sx Super H cmt w/ 3#/sx salt + .4% CFR-3 + .5% Halad-344 + .2% HR-800, 13.2ppg 1.64 yield 1447# 24hr CS 40% Excess.
Contingency 2nd Stage- DVT @ 4250' If lost circulation is present in the first stage and cement is not brought to surface, the contingency 2nd stage will be pumped as follows:
Circulate cement w/ 370sx HES light PP cmt w/ 3#/sx Salt, 12.4ppg 2.05 yield 548# 24hs CS 80% Excess followed by 150sx PP cmt w/ 2% CaCl2, 14.8ppg 1.33 yield 1943# 24hr CS 40% Excess.

Description of Cement Additives: Calcium Chloride, Cal Seal 60, Salt (Accelerator); Silicalite (Additive Material); CFR-3 (Dispersant); WG-17 (Gelling Agent); Bentonite, Schotchlite HGS-6000 (Light Weight Additive); Kol-Seal, Poly-E-Flake (Lost Circulation Additive); Halad-344 (Low Fluid Loss Control); HR-601, HR-800 (Retarder)
The above cement volumes could be revised pending the caliper measurement.

Patton 18 Federal #8H
Casing Design Assumptions:

Burst Loads
CSG Test (Surface)
- Internal: Displacement fluid + 70% CSG Burst rating
- External: Pore Pressure from section TD to surface

CSG Test (Intermediate)
- Internal: Displacement fluid + 70% CSG Burst rating
- External: Pore Pressure from the Intermediate hole TD to Surface CSG shoe and MW of the drilling mud that was in the hole when the CSG was run to surface

CSG Test (Production)
- Internal: Displacement fluid + 80% CSG Burst rating
- External: Pore Pressure from the well TD the Intermediate CSG shoe and MW of the drilling mud that was in the hole when the CSG was run to surface

Gas Kick (Surface/Intermediate)
- Internal: Gas Kick based on Pore Pressure or Fracture Gradient @ CSG shoe with a gas 0.115psi/ft Gas gradient to surface while drilling the next hole section (e.g. Gas kick while drilling the production hole section is a burst load used to design the intermediate CSG)
- External: Pore Pressure from section TD to previous CSG shoe and MW of the drilling mud that was in the hole when the CSG was run to surface

Stimulation (Production)
- Internal: Displacement fluid + Max Frac treating pressure (not to exceed 80% CSG Burst rating)
- External: Pore Pressure from the well TD to the Intermediate CSG shoe and 8.5 ppg MWE to surface

Collapse Loads
Lost Circulation (Surface/Intermediate)
- Internal: Losses experienced while drilling the next hole section (e.g. losses while drilling the production hole section are used as a collapse load to design the intermediate CSG). After losses there will be a column of mud inside the CSG with an equivalent weight to the Pore Pressure of the lost circulation zone
- External: MW of the drilling mud that was in the hole when the CSG was run

Cementing (Surface/Intermediate/Production)
- Internal: Displacement Fluid
- External: Cement Slurries to TOC, MW to surface

Full Evacuation (Production)
- Internal: Atmospheric Pressure
- External: MW of the drilling mud that was in the hole when the CSG was run

Tension Loads
Running CSG (Surface/Intermediate/Production)
- Axial load of the buoyant weight of the string plus either 100 klb over-pull or string weight in air, whichever is less

Green Cement (Surface/Intermediate/Production)
- Axial load of the buoyant weight of the string plus the cement plug bump pressure (Final displacement + 500 psi)

Burst, Collapse and Tensile SF are calculated using Landmark's Stress Check (Casing Design) software.

CONDITIONS OF APPROVAL

OPERATOR'S NAME:	OXY USA INC
LEASE NO.:	NM89819
WELL NAME & NO.:	8H Patton 18 Federal
SURFACE HOLE FOOTAGE:	150' FSL & 1700' FEL
BOTTOM HOLE FOOTAGE	330' FNL & 1700' FEL
LOCATION:	Section 18, T.24 S., R.31 E., NMPM
COUNTY:	Eddy County, New Mexico

I. DRILLING

A. DRILLING OPERATIONS 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

1. **Hydrogen Sulfide (H2S) monitors shall be installed prior to drilling out the surface shoe. If Hydrogen Sulfide is encountered, provide measured concentrations and formations to the BLM in accordance with Onshore Oil and Gas Order #6.**

2. 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. **If the drilling rig is removed without approval – an Incident of Non-Compliance will be written and will be a "Major" violation.**

3. 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.

4. **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.**

B. CASING

Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size. 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.).

Centralizers required on surface casing per Onshore Order 2.III.B.1.f.

Wait on cement (WOC) time prior to drilling out for a primary cement job will be a minimum 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compressive strength, whichever is greater for all casing strings. DURING THIS WOC TIME, NO DRILL PIPE, ETC. SHALL BE RUN IN THE HOLE. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. IF OPERATOR DOES NOT HAVE THE WELL SPECIFIC CEMENT DETAILS ONSITE PRIOR TO PUMPING THE CEMENT FOR EACH CASING STRING, THE WOC WILL BE 30 HOURS. See individual casing strings for details regarding lead cement slurry requirements.

No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

Secretary's Potash
Possible water and brine flows in the Salado, Castile, Delaware, and Bone Spring. Possible lost circulation in the Delaware and Bone Spring.

1. The **11-3/4** inch surface casing shall be set at approximately **898** feet (a minimum of 25 feet 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 is to include the lead cement slurry.

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.

Formation below the 11-3/4" shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe (not the mud weight required to prevent dissolving the salt formation) and the mud weight for the bottom of the hole. Report results to BLM office.

2. The minimum required fill of cement behind the **8-5/8** inch intermediate casing is: **(Ensure casing is set in the base of the Castile or the Lamar at approximately 4200')**

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

Formation below the 8-5/8" shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe (not the mud weight required to prevent dissolving the salt formation) and the mud weight for the bottom of the hole. Report results to BLM office.

The pilot hole plugging procedure is approved as written.

3. The minimum required fill of cement behind the **5-1/2** inch production casing is:

a. First stage to DV tool:

☒ Cement to circulate. If cement does not circulate, contact the appropriate BLM office before proceeding with second stage cement job. Operator should have plans as to how they will achieve circulation on the next stage.

Operator has proposed a contingency DV tool at 4250'. If operator circulates cement to surface while pumping the first stage, operator is approved to run the DV tool cancellation plug and cancel the second stage of the proposed cement plan.

b. Second stage above DV tool:

☒ Cement to surface. If cement does not circulate, contact the appropriate BLM office.

4. 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.

C. 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. Variance approved to use flex line from BOP to choke manifold. 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**. If the BLM inspector questions the straightness of the hose, a BLM engineer will be contacted and will review in the field or via picture supplied by inspector to determine if changes are required (operator shall expect delays if this occurs).

3. **Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be 5000 (5M) psi. 5M/10M 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.**

    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. **Operator shall perform the intermediate casing integrity test to 70% of the casing burst. This will test the multi-bowl seals.**

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.**

4. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

   a. 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.

   b. 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 (18 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).

   c. 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.

   d. The results of the test shall be reported to the appropriate BLM office.

   e. 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.**

   f. 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.

D. DRILL STEM TEST

If drill stem tests are performed, Onshore Order 2.III.D shall be followed.

E. 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.

CRW 071613