Form 3160-5
(June 2015)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

NM OIL CONSERVATION
ARTESIA DISTRICT
APR 03 2018
RECEIVED

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

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 page 2

5. Lease Serial No.
NMNM59386

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.
Multiple--See Attached

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

9. API Well No.
Multiple--See Attached

3a. Address
5 GREENWAY PLAZA SUITE 110
HOUSTON, TX 77046-0521

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

Carlsbad Field Office
OCD Artesia

10. Field and Pool or Exploratory Area
PIERCE CROSSING-BONE SPRING, E

4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)*
Multiple--See Attached

11. County or Parish, State
EDDY COUNTY, NM

12. CHECK THE 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	☐ Hydraulic Fracturing	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other Change to Original APD
	☐ 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 must 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 must be filed once testing has been completed. Final Abandonment Notices must 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 to amend the APD for the following wells. The two wells will have a similar design. The specific details (i.e. depths, cement volumes, etc) attached are for the 22H. The 23H well flanks the 22H on the pad and will have slightly shallower intermediate and production casing points.

Corral Canyon 36-25 Federal Com #22H - 30-015-44632 - NMNM59386
Corral Canyon 36-25 Federal Com #23H - 30-015-44633 - NMNM59386

1. Amend the intermediate, and production casings size, type, and depth, see attached.

2. Amend the intermediate and production casing cementing program,see attached.

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

BC 4-4-18
Accepted for record - NMOCD

14. I hereby certify that the foregoing is true and correct.

Electronic Submission #407223 verified by the BLM Well Information System
For OXY USA INCORPORATED, sent to the Carlsbad
Committed to AFMSS for processing by PRISCILLA PEREZ on 03/16/2018 (18PP1293SE)

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

Signature (Electronic Submission) — Date 03/09/2018

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By ZOTA STEVENS — Title PETROLEUM ENGINEER — Date 03/28/2018

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 Carlsbad

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.

(Instructions on page 2)

**** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ****

Additional data for EC transaction #407223 that would not fit on the form

Wells/Facilities, continued

Agreement	Lease	Well/Fac Name, Number	API Number	Location
NMNM59386	NMNM59386	CORRAL CANYON 36-25 FED COM 215H	30-015-44632-00-X1	Sec 1 T25S R29E 381FNL 1528FWL 32.165501 N Lat, 103.941666 W Lon
NMNM59386	NMNM59386	CORRAL CANYON 36-25 FED COM 231H	30-015-44633-00-X1	Sec 1 T25S R29E 381FNL 1563FWL 32.165501 N Lat, 103.941551 W Lon

32. Additional remarks, *continued*

3. Amend the pressure control equipment due to casing size changes, see attached.

4. Amend the mud program, depth and type, see attached.

OXY respectfully requests a variance for annular clearance around production tubular couplings in the open hole interval comprised of the curve and lateral portions of the well. The production string clearance inside the intermediate string meets the requirements for >0.422in clearance as shown in the table below. The clearances for the production string are as follows:

5-1/2" 20# P110 DQX casing - Coupling OD-6.05'

Casing ID - 7-5/8" 26.4# L-80 BTC casing - Clearance .04595
Open Hole ID - 6-3/4" - Clearance 0.35

OXY USA Inc. - Corral Canyon 36-25 Federal Com #22H, 23H – Amended Drill Plan

This is a bulk sundry request for two wells on the same pad. The wells related to this sundry request are:

30-015-44632	Corral Canyon 36-25 Fed Com 22H	1216821
30-015-44633	Corral Canyon 36-25 Fed Com 23H	1216822

Both wells will have similar designs. The specific details (i.e. depths, cement volumes, etc…) below are for the 22H. The 23H flank the 22H on the pad and will have slightly shallower intermediate and production casing points.

1. Geologic Formations

TVD of Target	9,111ft	Pilot Hole Depth:	N/A
MD at TD:	20,576ft	Deepest Expected fresh Water	439ft

Delaware Basin

Formation	TVD - RKB	Expected Fluids
Rustler	439	Brine
Salado	964	Losses
Castile	1939	
Lamar/Delaware	3285	
Bell Canyon	3342	Water
Cherry Canyon	4223	Oil/Gas
Brushy Canyon	5585	Oil/Gas
Bone Spring	7097	Oil/Gas
1st Bone Spring	7982	Oil/Gas
2nd Bone Spring	8313	Oil/Gas

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

2. Casing Program

Hole Size	Casing Interval From (ft)	Casing Interval To (ft)	Csg. Size (in)	Weight (lbs/ft)	Grade	Conn.	Safety Factor Collapse	Safety Factor Burst	Safety Factor Body Tension	Safety Factor Joint Tension
17.5	0	~~566~~ 558	13.375	54.5	J-55	BTC	> 1.125	> 1.2	> 1.4	> 1.4
9.875	0	8,590	7.625	26.4	L-80	BTC	> 1.125	> 1.2	> 1.4	> 1.4
6.75	0	20,576	5.5	20	P-110	DQX	> 1.125	> 1.2	> 1.4	> 1.4
							Designs 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.

3. Cementing Program

Casing	Slurry	#Sks	Wt. (Lb/gal)	Yld ft3/sack	H20 gal/sk	500# Comp. Strength	Slurry Description
Surface	Surface already set by spudder rig						
1st Stage Intermediate	Lead	435	10.2	2.58	11.568	6:59	Pozzolan Cement, Retarder
	Tail	160	13.2	1.61	7.804	7:11	Class H Cement, Retarder, Dispersant, Salt
DV/ECP Tool @ 3335ft							
2nd Stage Intermediate	Tail	1,079	13.6	1.67	8.765	7:32	Class C Cement, Accelerator, Dispersant
Production Casing	Tail	876	13.2	1.38	6.686	3:49	Class H Cement, Retarder, Dispersant, Salt

Casing String	Top of Lead (ft)	Bottom of Lead (ft)	Top of Tail (ft)	Bottom of Tail (ft)	% Excess Lead	% Excess Tail
Surface	N/A	N/A	0	566	N/A	100%
1st Stage Intermediate Casing	3235	7590	7590	8590	20%	20%
2nd Stage Intermediate Casing	N/A	N/A	0	3335	N/A	150%
Production Casing	N/A	N/A	8090	20576	N/A	15%

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	x	70 % of working Pressure
			Blind Ram	x	250/5000 psi
			Pipe Ram		
			Double Ram	x	
			Other*		

*Specify if additional ram is utilized.

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

OXY USA Inc. - Corral Canyon 36-25 Federal Com #22H, 23H – Amended Drill Plan

OXY would like to request a variance for annular clearance around production tubular couplings in the open hole interval comprised of the curve and lateral portions of the well. The production string clearance inside the intermediate string meets the requirements for >0.422in clearance as shown in the table below. The clearances for the production string are as follows:

Description	Csg/Hole ID	Coupl. OD	Clearance
DQX Coupling in 7-5/8" Casing	6.969	6.05	0.4595
DQX Coupling in 6.75in OH	6.75	6.05	0.35

	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?	

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.

5. Mud Program

Depth		Type	Weight (ppg)	Viscosity	Water Loss
From (ft)	To (ft)				
0	~~566~~ 558	Water-Based Mud	8.4-8.6	40-60	N/C
~~566~~	3335	WBM or OBM	9.8 - 10	35-45	N/C
3335	8,590	WBM or OBM	8.8-9.6	38-50	N/C
8,590	20,576	OBM	8.8-9.6	35-50	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.

OXY proposes to drill out the 13.375" surface casing shoe with either a salt saturated direct emulsion or an oil based mud system. We will drill with one or the other fluid system until intermediate casing point is reached. OBM will be used in the lateral section.

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

BH Pressure at deepest TVD	**4548 psi**
Abnormal Temperature	**No**
BH Temperature at deepest TVD	**176°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 two wells top down for each well: all intermediate sections and production sections will be drilled top down for each well. 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: 2526.6 bbls.

9. Company Personnel

Name	Title	Office Phone	Mobile Phone
Philippe Haffner	Drilling Engineer	713-985-6379	832-767-9047
Diego Tellez	Drilling Engineer Supervisor	713-350-4602	713-303-4932
Simon Benavides	Drilling Superintendent	713-522-8652	281-684-6897
John Willis	Drilling Manager	713-366-5556	713-259-1417

PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	**OXY USA INC**
LEASE NO.:	**NMNM59386**
WELL NAME & NO.:	**23 H- CORRAL CANYON 36-25 FED COM**
SURFACE HOLE FOOTAGE:	**381' FNL & 1563' FWL**
BOTTOM HOLE FOOTAGE	**1143' FSL & 2268' FWL**
LOCATION:	**Section 1, T. 25 S., R 29 E., NMPM**
COUNTY:	**Eddy County, New Mexico**

COA

All previous COAs still apply expect the following:

H2S	○ Yes	◉ No	
Potash	◉ None	○ Secretary	○ R-111-P
Cave/Karst Potential	◉ Low	○ Medium	○ High
Variance	○ None	◉ Flex Hose	○ Other
Wellhead	○ Conventional	◉ Multibowl	○ Both
Other	☐ 4 String Area	☐ Capitan Reef	☐ WIPP

Operator shall filled 1/3rd casing with fluild while running intermediate casing to maintain collapse safety factor.

1. The minimum required fill of cement behind the **7-5/8** inch intermediate casing is: Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.

   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.

Variance for annular spacing between 5 ½ x 7 5/8 inches is approved.

2. The minimum required fill of cement behind the **5-1/2** inch production casing is:
   - Cement should tie-back at least 200 feet into previous casing string. Operator shall provide method of verification. **Additional cement maybe required. Excess calculates to 18%.**

ZS 032818

Medium

13 3/8	surface csg in a		17 1/2	inch hole.		Design Factors		SURFACE	
Segment	#/ft	Grade		Coupling	Body	Collapse	Burst	Length	Weight
"A"	54.50	J 55		BUTT	28.06	4.53	0.61	558	30,411
"B"								0	0
w/8.4#/g mud, 30min Sfc Csg Test psig:	1,500			Tail Cmt	does	circ to sfc.	Totals:	558	30,411

Comparison of Proposed to Minimum Required Cement Volumes

Hole Size	Annular Volume	1 Stage Cmt Sx	1 Stage CuFt Cmt	Min Cu Ft	1 Stage % Excess	Drilling Mud Wt	Calc MASP	Req'd BOPE	Min Dist Hole-Cplg
17 1/2	0.6946	427	717	442	62	8.60	2573	3M	1.56

Class 'C' tail cmt yield above 1.35.

Burst Frac Gradient(s) for Segment(s) A, B = , b All > 0.70, OK.

7 5/8	casing inside the		13 3/8			Design Factors		INTERMEDIATE	
Segment	#/ft	Grade		Coupling	Body	Collapse	Burst	Length	Weight
"A"	26.40	L 80		BUTT	2.65	0.76	1.32	8,590	226,776
"B"								0	0
w/8.4#/g mud, 30min Sfc Csg Test psig:							Totals:	8,590	226,776
The cement volume(s) are intended to achieve a top of					0	ft from surface or a		558	overlap.

Hole Size	Annular Volume	1 Stage Cmt Sx	1 Stage CuFt Cmt	Min Cu Ft	1 Stage % Excess	Drilling Mud Wt	Calc MASP	Req'd BOPE	Min Dist Hole-Cplg
9 7/8	0.2148	look ↘	0	2044		10.00	2543	3M	0.69
D V Tool(s):			3335				sum of sx	Σ CuFt	Σ%excess
t by stage % :		28	99				1704	3259	59

Class 'C' tail cmt yld > 1.35 ALT COLLAPSE SF: 0.76*1.5= 1.14

Tail cmt

5 1/2	casing inside the		7 5/8			Design Factors		PRODUCTION	
Segment	#/ft	Grade		Coupling	Body	Collapse	Burst	Length	Weight
"A"	20.00	P 110		DQX	3.51	2.59	2.77	8,602	172,040
"B"	20.00	P 110		DQX	8.04	2.17	2.77	11,974	239,480
w/8.4#/g mud, 30min Sfc Csg Test psig:	1,892						Totals:	20,576	411,520
B would be:					61.29	2.44	if it were a vertical wellbore.		

	MTD	Max VTD	Csg VD	Curve KOP	Dogleg°	Severity°	MEOC
	20576	9125	9125	8602	90	10	9499.9

The cement volume(s) are intended to achieve a top of 8390 ft from surface or a 200 overlap.

Hole Size	Annular Volume	1 Stage Cmt Sx	1 Stage CuFt Cmt	Min Cu Ft	1 Stage % Excess	Drilling Mud Wt	Calc MASP	Req'd BOPE	Min Dist Hole-Cplg
6 3/4	0.0835	876	1209	1026	18	9.60			0.35

Class 'H' tail cmt yld > 1.20

0			5 1/2			Design Factors			
Segment	#/ft	Grade		Coupling	Joint	Collapse	Burst	Length	Weight
"A"								0	0
"B"								0	0
w/8.4#/g mud, 30min Sfc Csg Test psig:							Totals:	0	0
Cmt vol calc below includes this csg, TOC intended					0	ft from surface or a		20576	overlap.

Hole Size	Annular Volume	1 Stage Cmt Sx	1 Stage CuFt Cmt	Min Cu Ft	1 Stage % Excess	Drilling Mud Wt	Calc MASP	Req'd BOPE	Min Dist Hole-Cplg
6 1/8			0	0		9.60			

Capitan Reef est top XXXX.