

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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.

Carlsbad Field Office
OCD Artesia

5. Lease Serial No.
NMNM94651
6. If Federal, State or Tribe Name
7. If Unit or CA/Agreement, Name and/or No.

SUBMIT IN TRIPLICATE - Other instructions on page 2

1. Type of Well <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other		8. Well Name and No. CEDAR CANYON 28 FEDERAL 9H
2. Name of Operator OXY USA INCORPORATED Contact: DAVID STEWART E-Mail: david_stewart@oxy.com		9. API Well No. 3005-44016
3a. Address 5 GREENWAY PLAZA SUITE 110 HOUSTON, TX 77046-0521	3b. Phone No. (include area code) Ph: 432.685.5717	10. Field and Pool or Exploratory Area UNKNOWN
4. Location of Well (Footage, Sec., T., R., M., or Survey Description) Sec 29 T24S R29E NENE 230FNL 319FEL		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			
<input checked="" type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resume)	<input type="checkbox"/> Water Shut-Off
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Alter Casing	<input type="checkbox"/> Hydraulic Fracturing	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recomplete	<input checked="" type="checkbox"/> Other
	<input type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon	Change to Original APD
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input type="checkbox"/> 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 recompleat 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 recompleat 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 approval for the following changes to the approved APD:

Amend casing/cementing program - Amend for surface casing setting depth and run production liner. OXY is requesting permission to have minimum fill of cement behind 4 1/2" liner to be 100' into the production casing. The reason for this is so OXY can come back and develop shallower benches from the same 7-5/8" mainbore in the future. Casing Tie Back Procedure attached. *refer to the attached well bore plan*

Surface Casing
10-3/4" 40.5# J55 BTC new csg @ 0-690' 14-3/4" hole
SF Coll-7.6 SF Burst-1.52 SF Body Ten-2.84 SF Joint Ten-3.18
Production Casing - 7-5/8" new casing @ 0-7950'M, 9-7/8" hole

**SEE ATTACHED FOR
CONDITIONS OF APPROVAL**

14. I hereby certify that the foregoing is true and correct.	
Electronic Submission #363250 verified by the BLM Well Information System For OXY USA INCORPORATED, sent to the Carlsbad Committed to AFMSS for processing by MUSTAFA HAQUE on 01/13/2017 (17MH0026SE)	
Name (Printed/Typed) DAVID STEWART	Title REGULATORY ADVISOR
Signature (Electronic Submission)	Date 01/09/2017

NM OIL CONSERVATION
ARTESIA DISTRICT
JAN 20 2017

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

RECEIVED

Approved By <u>MUSTAFA HAQUE</u>	Title <u>PETROLEUM ENGINEER</u>	Date <u>01/13/2017</u>
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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 #363250 that would not fit on the form

32. Additional remarks, continued

a. 7-5/8" 26.4# L-80 BTC new csg @ 0-7200'M
SF Coll-1.19 SF Burst-1.29 SF Body Ten-2.03 SF Joint Ten-2.03
b. 7-5/8" 29.7# L-80 BTC new csg @ 7200-7950'M
SF Coll-1.13 SF Burst-1.43 SF Body Ten-4.62 SF Joint Ten-4.7
A DV tool will be run at +/- 2964' in case a contingency second stage is required for cement to reach surface. If cement circulates on 1st stage, cancellation cone will be dropped.

Production Liner
4-1/2" 11.6# P-110 DQX new csg @ 7850-13659'M 6-3/4" hole
SF Coll-1.64 SF Burst-1.2 SF Body Ten-1.91 SF Joint Ten-2.05

Surface - Circulate cement w/ 472sx Cl C cmt w/ accelerator, 14.8ppg 1.68 yield, 500# CS in 8.1hr, 100% Excess

Production - Circulate cement w/ 825sx Cl C cmt w/ retarder, 10.2ppg 3.05 yield, 500# CS in 15.07hr, 75% Excess followed by 163sx Cl H cmt w/ retarder, dispersant, salt, 13.2ppg 1.65 yield, 500# CS in 12.57hr, 20% Excess.
Contingency 2nd Stage - Circulate cement to surface w/ 448sx Cl C cmt w/ accelerator, retarder, 12.9ppg 1.85 yield, 500# CS in 12.44hr, 75% Excess followed by 182sx Cl C cmt, 14.8ppg 1.33 yield, 500# CS in 6.31hr, 125% Excess.

Liner - Cement w/ 568sx Cl H cmt w/ retarder, dispersant, salt, 13.2ppg 1.63 yield, 500# CS in 15.15hr, 15% Excess. TOC @ 7850'

Mud program -

Depth	Mud WT	Vis Sec	Fluid Loss	Type
0 - 690'	8.4-8.6	40-60	N/C	EnerSeal (MMH)
690-2964'	9.8-10.0	35-45	N/C	Brine
2964-7950'	8.8-9.6	38-50	N/C	EnerSeal (MMH)
7950-13659'	8.8-9.6	35-50	N/C	OBM

**PECOS DISTRICT
CONDITIONS OF APPROVAL**

OPERATOR'S NAME:	OXY USA INC
LEASE NO.:	NMNM94651
WELL NAME & NO.:	9H- Cedar Canyon 28 Federal
SURFACE HOLE FOOTAGE:	1990'/N & 120'/E
BOTTOM HOLE FOOTAGE:	1710'/N & 160'/E, 28
LOCATION:	Section 29 T.24 S., R.29 E., NMPM
COUNTY:	Eddy County, New Mexico

All previous COAs still apply except for the following:

A. 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) 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. (For surface casing the BOP can be nipped up after the cement has reached 500 psi compressive strength.)

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

Medium cave/karst

Possible water flows in Castile and Salado.

Possible lost circulation in Rustler, Salado and Delaware.

1. The 10-3/4 inch surface casing shall be set at approximately 690 feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface. **If salt is encountered, set casing at least 25 feet above the salt.**
 - 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 10-3/4" 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 and the mud weight for the bottom of the hole. Report results to BLM office.

The 7-5/8 inch intermediate casing must be kept liquid filled while running into hole to meet minimum BLM requirements for collapse.

2. The minimum required fill of cement behind the 7-5/8 inch production casing, is:

Operator has proposed a contingency DV tool at 2964'. If operator circulates cement on the first stage, operator is approved to inflate the ACP and run the DV tool cancellation plug and cancel the second stage of the proposed cement plan. If cement does not circulate, operator will inflate ACP and proceed with the second stage.

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.

b. Second stage above DV tool:

- Cement to surface. If cement does not circulate see A.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.

Formation below the 7-5/8" 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.

3. The minimum required fill of cement behind the 4-1/2 inch production liner is:

Cement as proposed by operator. Operator shall provide method of verification.
Excess calculates to 15% - Additional cement might be required.

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.

MHH 01132017

OXY respectfully requests a dispensation from the approved permit as follows:

- **Change casing program**
 - a. Change surface casing depth consistent with other wells on pad.
 - b. Run a 4-1/2” production liner
 - c. Update production casing

Hole Size (in)	Casing Interval		Csg. Size (in)	Weight (lbs)	Grade	Conn.	SF	SF	Buoyant	Buoyant
	From (ft)	To (ft)					Collapse	Burst	Body SF Tension	Joint SF Tension
14.75	0	690	10.75	40.5	J55	BTC	7.6	1.52	2.84	3.18
9.875	0	7200	7.625	26.4	L80	BTC	1.19	1.29	2.03	2.03
9.875	7200	7950	7.625	29.7	L80	BTC	1.13	1.43	4.62	4.7
6.75	7850	13659	4.5	11.6	P-110	DQX	1.64	1.2	1.91	2.05

- **Change cementing program**
 - a. Due to changing casing set points, the planned cement volume will be adjusted.
 - b. OXY is requesting permission to have minimum fill of cement behind the 4-1/2” production liner to be 100’ into previous casing string. The reason for this is so that we can come back and develop shallower benches from the same 7-5/8” mainbore in the future.
 - c. Cement will be brought to the top of this liner hanger

Casing	# Sk	Wt. lb/ gal	Yld ft ³ / sack	H2O gal/sk	500# Comp. Strength (hours)	Slurry Description
Surface	472	14.2	1.678	7.59	8:10	Class C Cement, Accelerator
Production Casing	825	10.2	3.05	15.63	15:07	Class C Cement, Retarder
	163	13.2	1.65	8.45	12:57	Class H Cement, Retarder, Dispersant, Salt
DV/ECP Tool @ 2964' (We request the option to cancel the second stage if cement is circulated to surface during the first stage of cement operations)						
2nd Stage	448	12.9	1.85	9.86	12:44	Class C Cement, Accelerator, Retarder
	182	14.8	1.33	6.34	6:31	Class C cement
Production Liner	568	13.2	1.631	8.37	15:15	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	690		100%
Production Casing	0	6950	6950	7950	75%	20%
2nd Stage Production Casing	0	2464	2464	2964	75%	125%
Production Liner	N/A	N/A	7850	13659		15%

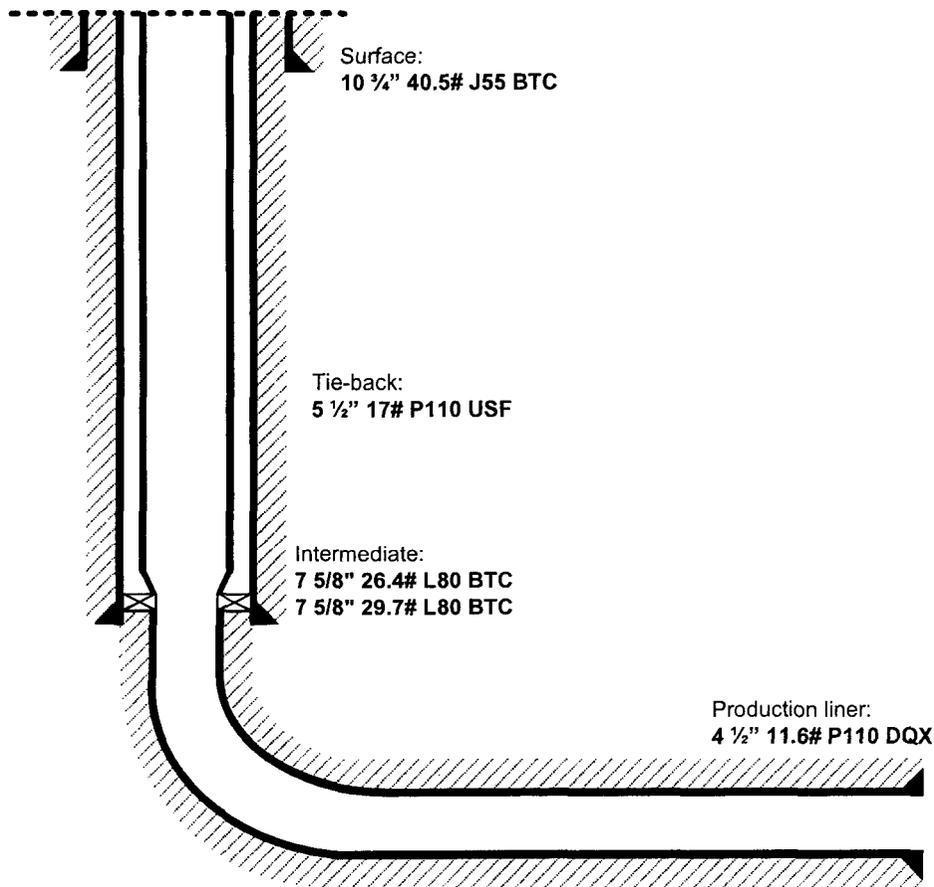
Attachment 3160-5 - OXY USA Inc. - Cedar Canyon 28 Federal 9H – 30-015-44016

Below is a summary that describes the general operational steps to drill and complete well Cedar Canyon 28 Federal #9H:

- Drill 14-3/4" hole x 10-3/4" casing for surface section. Cement to surface.
- Drill 9-7/8" hole x 7-5/8" casing for intermediate section. Cement to surface.
- Drill 6-3/4" hole x 4-1/2" liner for production section. Cement to top of liner, 100' inside 7-5/8" shoe.
- Release drilling rig from location.
- Move in workover rig and run a 5-1/2" 17# P110 USF tie-back frack string and seal assembly (see connection specs below). Tie into liner hanger Polished Bore Receptacle (PBR) with seal assembly.
- Pump hydraulic fracture job.
- Flowback and produce well.

When a decision is made to develop a secondary bench from this wellbore, a workover rig will be moved to location. The workover rig will then retrieve the tie-back frack string and seal assembly before temporarily abandoning the initial lateral.

General well schematic:



PERFORMANCE DATA

TMK UP ULTRA™ DRY 4.500 in 11.00 IPS D-110
 Technical Data Sheet

Property	Value	Units	Notes
Material	4140		
Heat Treatment	850°F		
Rockwell C	58		
Hardness	58	HRC	
Modulus of Elasticity	30	10 ⁶ PSI	
Poisson's Ratio	0.29		
Yield Strength	80	10 ³ PSI	
Tensile Strength	100	10 ³ PSI	
Elongation	10	%	
Impact	50	FT-LB	
Surface Finish	125	RA	
Minimum Order Quantity	1000	Feet	
Lead Time	4 Weeks		
Weight	0.000	lb/ft	
Volume	0.000	in ³ /ft	
Area	0.000	in ² /ft	
Per Foot	0.000	lb	
Per Foot	0.000	in ³	
Per Foot	0.000	in ²	



TMK ULTRA™ DRY is a high speed steel (HSS) drill bit designed for maximum performance in dry cutting applications. The unique design of the ULTRA™ DRY drill bit provides superior chip formation and excellent cutting edge strength, resulting in longer tool life and higher productivity. The ULTRA™ DRY drill bit is available in a variety of sizes and grades to meet your specific drilling needs. For more information, please contact your local TMK distributor or visit our website at www.tmkusa.com.



5-1/2" 17# P110 USF Tie-back string specifications:

PERFORMANCE DATA

TMK UP ULTRA USF
Technical Data Sheet

5.590 in

17.00 lbs-ft

P-110

Typical Parameters

Parameter	Value	Units
Outer Diameter	5.590	in
Weight	17.00	lbs-ft
Grade	P-110	
Material	TMK UP ULTRA USF	
Technical Data Sheet		

