Well Name: COTTON DRAW UNIT

Well Location: T25S / R31E / SEC 12 / SWSW /

County or Parish/State:

Well Number: 540H

Type of Well: OIL WELL

Allottee or Tribe Name:

Lease Number: NMNM0503

Unit or CA Name: COTTON DRAW UNIT

Unit or CA Number: NMNM70928X

US Well Number: 3001548929

Well Status: Approved Application for Permit to Drill

Operator: DEVON ENERGY PRODUCTION COMPANY LP

Notice of Intent

Sundry ID: 2652915

Type of Submission: Notice of Intent

Type of Action: Other

Date Sundry Submitted: 01/18/2022

Time Sundry Submitted: 07:36

Date proposed operation will begin: 01/18/2022

Procedure Description: Remediation plan below is a contingency request in case full losses occur during drilling. Devon Energy Production Co., L.P. (Devon) respectfully requests to conduct a two stage intermediate cement job with first stage bringing cement up to the Brushy Canyon loss zone, and second stage being a bradenhead squeeze in which cement will be brought to surface. Fluid level to be confirmed via Echo-meter. Please see attachment.

Surface Disturbance

Is any additional surface disturbance proposed?: No

NOI Attachments

Procedure Description

Sundry_PILOT_HOLE_Drilling_Plan_Cotton_Draw_Unit_540H_Int_Cement_20220118073558.pdf

12_25_31_O_Sundry_ID_2651724_Cotton_Draw_Unit_545H_Eddy_NM0000503_Devon_Energy_Production_Company_LP_13_22c_6_28_2021_LV_20220110092339_20220118073558.pdf

Well Name: COTTON DRAW UNIT

Well Location: T25S / R31E / SEC 12 / SWSW /

County or Parish/State:

Well Number: 540H

Type of Well: OIL WELL

Allottee or Tribe Name:

Lease Number: NMNM0503

Unit or CA Name: COTTON DRAW UNIT

Unit or CA Number: NMNM70928X

US Well Number: 3001548929

Well Status: Approved Application for Permit to Drill

Operator: DEVON ENERGY PRODUCTION COMPANY LP

Conditions of Approval

Additional Reviews

Cotton_Draw_Unit_540H_Sundry_ID_2652915_20220210103838.pdf

12_25_31_M_Sundry_ID_2652915_Cotton_Draw_Unit_540H_Eddy_NM0000503_Devon_Energy_Production_Company_LP_13_22d_1_6_2022_LV_20220210103838.pdf

Operator Certification

I certify that the foregoing is true and correct. 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. Electronic submission of Sundry Notices through this system satisfies regulations requiring a submission of Form 3160-5 or a Sundry Notice.

Operator Electronic Signature: JENNY HARMS

Signed on: JAN 18, 2022 07:36 AM

Name: DEVON ENERGY PRODUCTION COMPANY LP

Title: Regulatory Compliance Professional

Street Address: 333 West Sheridan Avenue

City: Oklahoma City **State:** OK

Phone: (405) 552-6560

Email address: jennifer.harms@dvn.com

Field Representative

Representative Name:

Street Address:

City: **State:** **Zip:**

Phone:

Email address:

BLM Point of Contact

BLM POC Name: CHRISTOPHER WALLS

BLM POC Title: Petroleum Engineer

BLM POC Phone: 5752342234

BLM POC Email Address: cwalls@blm.gov

Disposition: Approved

Disposition Date: 02/23/2022

Signature: Chris Walls

Cotton Draw Unit 540H

1. Geologic Formations

TVD of target	8788	Pilot hole depth	14330’
MD at TD:	19271	Deepest expected fresh water:	

Basin

Formation	Depth (TVD) from KB	Water/Mineral Bearing/ Target Zone?	Hazards*
Rustler	600		
Salado	861		
Castile	1998		
Delaware	4388		
Cherry Canyon	5618		
Brushy Canyon	6667		
L. Brushy Canyon	8078		
1st BSPG Lime	8356		
AVALON A	8405		
AVALON B	8757		
AVALON C	9090		
1BSSS	9368		
2BSLM	9608		
2BSSS	9959		
3BSLM	10449		
3BSSS	11335		
WFMP	11784		
WFMP XY	11804		
WFMP A 100	11945		
WFMP B200	12520		
WFMP B 300	12747		
WFMP C 100	12846		
UPS	13319		
Strawn LM	14131		

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

Cotton Draw Unit 540H

Casing Program

Hole Size	Casing Interval		Csg. Size	Weight (PPF)	Grade	Conn.
	From	To				
17.5”	0	665	13.375”	48	H-40	STC
9.875”	0	11953	8.625”	32	P110	Sprint
7.875”	0	19271	5.5”	17	P110	BTC
BLM Minimum Safety Factor				Collapse: 1.125	Burst: 1.00	Tension: 1.6 Dry 1.8 Wet

- All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h Must have table for contingency casing

2. Cementing Program (Primary Design)

Assuming no returns are established while drilling, Devon requests to pump a two stage cement job on the 9-5/8’’ intermediate casing string with the first stage being pumped conventionally with the calculated top of cement at the Brushy Canyon and the second stage performed as a bradenhead squeeze with planned cement from the Brushy Canyon to surface.

If necessary, a top out consisting of 500 sacks of Class C cement + 3% Salt + 1% PreMag-M + 6% Bentonite Gel (2.30 yld, 12.91 ppg) will be executed as a contingency. The final cement top will be verified by Echo-meter. Devon will include the Echo-meter verified fluid top and the volume of displacement fluid above the cement slurry in the annulus in all post-drill sundries on wells utilizing this cement program.
Devon will report to the BLM the volume of fluid (limited to 1 bbls) used to flush intermediate casing valves following backside cementing procedures.

Casing	# Sks	TOC	Wt. (lb/gal)	Yld (ft3/sack)	Slurry Description
Surface	520	Surf	13.2	1.4	Lead: Class C Cement + additives
Int 1	1197	Surf	13.0	2.3	2nd Stage: Bradenhead squeeze - Lead: Class C Cement + additives
	619	~6662'	13.2	1.4	Tail: Class H / C + additives
Production	43	500' tieback	9.0	3.3	Lead: Class H /C + additives
	1561	KOP	13.2	1.4	Tail: Class H / C + additives

Casing String	% Excess
Surface	50%
Intermediate	30%
Production	10%

Cotton Draw Unit 540H

3. Pressure Control Equipment

BOP installed and tested before drilling which hole?	Size?	Min. Required WP	Type	✓	Tested to:
Int 1	13-5/8”	5M	Annular	X	100% of rated working pressure
			Blind Ram	X	5M
			Pipe Ram		
			Double Ram	X	
			Other*		
Production	13-5/8”	10M	Annular (10M)	X	100% of rated working pressure
			Blind Ram	X	10M
			Pipe Ram		
			Double Ram	X	
			Other *		
			Annular		
			Blind Ram		
			Pipe Ram		
			Double Ram		
			Other *		
N	A variance is requested for the use of a diverter on the surface casing.				
Y	A variance is requested to run a 5 M annular on a 10M system.				

Cotton Draw Unit 540H

4. Mud Program

Section	5. Depth		Type	Weight (ppg)	Vis	Water Loss
	From	To				
Surface	0	665	FW	8.5 – 9.0	28-34	N/C
Intermediate	665	11,953	Brine/DBE	9 – 10.5	28-34	N/C
Pilot	11,953	14,310	WBM	13 - 15	50-70	15
Production	8,411	TD	OBM	8.5-9	28-34	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.

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

6. Logging and Testing Procedures

Logging, Coring and Testing.	
X	Will run GR/CNL 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.
	Drill stem test? If yes, explain
	Coring? If yes, explain RSWC collected in the intermediate hole section

Additional logs planned		Interval
X	Resistivity	Intermediate & Pilot Hole
X	Density	Intermediate & Pilot Hole
X	CBL	Production casing
X	Mud log	Intermediate Shoe to TD

7. Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	10920
Abnormal Temperature	No

Mitigation measure for abnormal conditions. Describe. Lost circulation material/sweeps/mud scavengers.

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

Cotton Draw Unit 540H

8. Other facets of operation

Is this a walking operation? Potentially

1. If operator elects, drilling rig will batch drill the surface holes and run/cement surface casing; walking the rig to next wells on the pad.
2. The drilling rig will then batch drill the intermediate sections and run/cement intermediate casing; the wellbore will be isolated with a blind flange and pressure gauge installed for monitoring the well before walking to the next well.
3. The drilling rig will then batch drill the production hole sections on the wells with OBM, run/cement production casing, and install TA caps or tubing heads for completions.

NOTE: During batch operations the drilling rig will be moved from well to well however, it will not be removed from the pad until all wells have production casing run/cemented.

Will be pre-setting casing? Potentially

1. Spudder rig will move in and drill surface hole.
    a. Rig will utilize fresh water based mud to drill surface hole to TD. Solids control will be handled entirely on a closed loop basis.
2. After drilling the surface hole section, the spudder rig will run casing and cement following all of the applicable rules and regulations (OnShore Order 2, all COAs and NMOCD regulations).
3. The wellhead will be installed and tested once the surface casing is cut off and the WOC time has been reached.
4. A blind flange with the same pressure rating as the wellhead will be installed to seal the wellbore. Pressure will be monitored with a pressure gauge installed on the wellhead.
5. Spudder rig operations is expected to take 4-5 days per well on a multi well pad.
6. The NMOCD will be contacted and notified 24 hours prior to commencing spudder rig operations.
7. Drilling operations will be performed with the drilling rig. At that time an approved BOP stack will be nippled up and tested on the wellhead before drilling operations commences on each well.
    a. The NMOCD will be contacted / notified 24 hours before the drilling rig moves back on to the pad with the pre-set surface casing.

Attachments
_x_ Directional Plan
___ Other, describe

Cotton Draw Unit 540H

9. Pilot Hole

Hole Size 7 7/8”	
From	**To**
11,953 (Pilot Begin)	14,310 (Pilot end)

- Pilot hole will be plugged back per NMOCD P&A requirements with a **cement plug**.
- Plug depths will be verified and tagged on the plug back.
- Devon will contact the NMOCD and give notice before performing any of the aforementioned procedures including the tagging of the cement plug.

PILOT HOLE ABDMNT:	
Slurry Top:	11,684
Slurry Base:	12,310
Slurry Weight:	15.6
Cement Plug Height:	626’
BP Set Depth	8,411
WHIP WINDOW	8,381-8,411

2BSS ABDMNT:	
Slurry Top:	9,859
Slurry Base:	9,959
Slurry Weight:	15.6
Cement Plug Height:	100’
BP Set Depth	8,411
WHIP WINDOW	8,381-8,411

	TOC	Wt. (lb/gal)	H_20 (gal/sk)	Yld (ft3/sack)	Slurry Description
Abandonment Plug - 2BSS	9,859'	15.6	5.24	1.18	• Lead: Class H Cement + Retarder – HR-601 – 0.1% BWOC • Suspension Agent – SA-1015 – 0.05% BWOC • Fluid Loss Additive – Halad-322 – 0.5% BWOC

	TOC	Wt. (lb/gal)	H_20 (gal/sk)	Yld (ft3/sack)	Slurry Description
Abandonment Plug - Wolf	11,684'	15.6	5.24	1.18	• Lead: Class H Cement + Retarder – HR-601 – 0.1% BWOC • Suspension Agent – SA-1015 – 0.05% BWOC • Fluid Loss Additive – Halad-322 – 0.5% BWOC

12-25-31-M Sundry ID 2652915 Cotton Draw Unit 540H Eddy NM0000503 Devon Energy Production Company LP 13-22d 1-6-2022 LV

Cotton Draw Unit 540H

13 3/8	surface csg in a	17 1/2	inch hole.		Design Factors			Surface			
Segment	#/ft	Grade	Coupling	Joint	Collapse	Burst	Length	B@s	a-B	a-C	Weight
"A"	48.00	h 40	stc	9.58	2.35	0.27	700	6	0.44	4.44	33,600
"B"			stc				0				0
	w/8.4#/g mud, 30min Sfc Csg Test psig: 906		Tail Cmt	does not	circ to sfc.	Totals:	700				33,600

Comparison of Proposed to Minimum Required Cement Volumes

Hole	Annular	1 Stage	1 Stage	Min	1 Stage	Drilling	Calc	Req'd			Min Dist
Size	Volume	Cmt Sx	CuFt Cmt	Cu Ft	% Excess	Mud Wt	MASP	BOPE			Hole-Cplg
17 1/2	0.6946	520	728	486	50	9.00	3890	5M			1.56

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

Site plat (pipe racks S or E) as per O.O.1.III.D.4.i. not found.

8 5/8	casing inside the	13 3/8			Design Factors			Int 1			
Segment	#/ft	Grade	Coupling	Joint	Collapse	Burst	Length	B@s	a-B	a-C	Weight
"A"	32.00	p 110	vam spring fj	1.95	0.61	1.1	11,953	1	1.84	1.03	382,496
"B"							0				0
	w/8.4#/g mud, 30min Sfc Csg Test psig:					Totals:	11,953				382,496
	The cement volume(s) are intended to achieve a top of			0	ft from surface or a		700				overlap.

Hole	Annular	1 Stage	1 Stage	Min	1 Stage	Drilling	Calc	Req'd			Min Dist
Size	Volume	Cmt Sx	CuFt Cmt	Cu Ft	% Excess	Mud Wt	MASP	BOPE			Hole-Cplg
9 7/8	0.1261	619	867	1753	-51	10.50	2175	3M			0.61
D V Tool(s):			6662				sum of sx	Σ CuFt			Σ%excess
t by stage % :		30	260				2316	4770			172

Class 'C' tail cmt yld > 1.35

Tail cmt

5 1/2	casing inside the	8 5/8			Design Factors			Prod 1			
Segment	#/ft	Grade	Coupling	Body	Collapse	Burst	Length	B@s	a-B	a-C	Weight
"A"	17.00	p 110	btc	3.65	1.82	2.59	19,271	3	4.89	3.44	327,607
"B"			0.00				0				0
	w/8.4#/g mud, 30min Sfc Csg Test psig: 1,933					Totals:	19,271				327,607
	The cement volume(s) are intended to achieve a top of			8181	ft from surface or a		3772				overlap.

Hole	Annular	1 Stage	1 Stage	Min	1 Stage	Drilling	Calc	Req'd			Min Dist
Size	Volume	Cmt Sx	CuFt Cmt	Cu Ft	% Excess	Mud Wt	MASP	BOPE			Hole-Cplg
7 7/8	0.1733	1604	2327	1936	20	9.00					0.91

Class 'C' tail cmt yld > 1.35

#N/A

0		5 1/2			Design Factors			<Choose Casing>			
Segment	#/ft	Grade	Coupling	#N/A	Collapse	Burst	Length	B@s	a-B	a-C	Weight
"A"			0.00				0				0
"B"			0.00				0				0
	w/8.4#/g mud, 30min Sfc Csg Test psig:					Totals:	0				0
	Cmt vol calc below includes this csg, TOC intended			#N/A	ft from surface or a		#N/A				overlap.

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

#N/A Capitan Reef est top XXXX.

12-25-31-O Sundry ID 2651724 Cotton Draw Unit 545H Eddy NM0000503 Devon Energy Production Company LP 13-22c 6-28-2021 LV

Cotton Draw Unit 545H

13 3/8	surface csg in a	17 1/2	inch hole.		Design Factors			Surface				
Segment	#/ft	Grade	Coupling	Body	Collapse	Burst	Length	B@s	a-B	a-C	Weight
"A"	48.00	h 40	btc	15.54	2.27	0.38	725	5	0.63	4.29	34,800
"B"			btc				0				0
	w/8.4#/g mud, 30min Sfc Csg Test psig: 895		Tail Cmt	does not	circ to sfc.	Totals:	725				34,800

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	520	728	504	45	9.00	2734	3M	1.56

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

Site plat (pipe racks S or E) as per O.O.1.III.D.4.i. not found.

9 5/8	casing inside the	13 3/8			Design Factors			Int 1				
Segment	#/ft	Grade	Coupling	Body	Collapse	Burst	Length	B@s	a-B	a-C	Weight
"A"	40.00	j 55	btc	1.87	0.56	0.96	8,400	1	1.81	0.94	336,000
"B"							0				0
	w/8.4#/g mud, 30min Sfc Csg Test psig:					Totals:	8,400				336,000
	The cement volume(s) are intended to achieve a top of			0	ft from surface or a		725				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
12 1/4	0.3132	504	706	2677	-74	10.50	2186	3M	0.81
D V Tool(s):			6662				sum of sx	Σ CuFt	Σ%excess
t by stage % :		30	26				1674	3397	27

Class 'C' tail cmt yld > 1.35

Burst Frac Gradient(s) for Segment(s): A, B, C, D = 0.47, b, c, d <0.70 a Problem!!

Tail cmt

5 1/2	casing inside the	9 5/8			Design Factors			Prod 1				
Segment	#/ft	Grade	Coupling	Body	Collapse	Burst	Length	B@s	a-B	a-C	Weight
"A"	17.00	p 110	btc	3.64	1.81	2.58	19,183	3	4.87	3.42	326,111
"B"							0				0
	w/8.4#/g mud, 30min Sfc Csg Test psig: 1,943					Totals:	19,183				326,111
	The cement volume(s) are intended to achieve a top of			8200	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
8 3/4	0.2526	2129	3057	2776	10	9.00			1.35

Class 'C' tail cmt yld > 1.35

#N/A

0		5 1/2			Design Factors			<Choose Casing>				
Segment	#/ft	Grade	Coupling	#N/A	Collapse	Burst	Length	B@s	a-B	a-C	Weight
"A"			0.00				0				0
"B"			0.00				0				0
	w/8.4#/g mud, 30min Sfc Csg Test psig:					Totals:	0				0
	Cmt vol calc below includes this csg, TOC intended			#N/A	ft from surface or a		#N/A				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
0		#N/A	#N/A	0	#N/A				

#N/A Capitan Reef est top XXXX.

PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	**Devon Energy Production Company LP**
LEASE NO.:	**NMNM0000503**
LOCATION:	Section 12, T.25 S., R.31 E., NMPM
COUNTY:	Eddy County, New Mexico
Sundry ID:	**2652915**

WELL NAME & NO.:	**Cotton Draw Unit 540H**
SURFACE HOLE FOOTAGE:	552'/S & 914'/W
BOTTOM HOLE FOOTAGE	20'/N & 330'/W

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
Wellhead Variance	○ Diverter		
Other	☐ 4 String Area	☐ Capitan Reef	☐ WIPP
Other	☑ Fluid Filled	☐ Pilot Hole	☐ Open Annulus
Cementing	☐ Cement Squeeze	☑ EchoMeter	
Special Requirements	☐ Water Disposal	☑ COM	☐ Unit
Special Requirements Variance	☐ Break Testing	☐ Offline Cementing	

All Previous COAs Still Apply.

A. CASING

1. The **13-3/8** inch surface casing shall be set at approximately **700 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 minimum required fill of cement behind the **8-5/8** inch intermediate casing is:

Option 1 (Single Stage):

- Cement to surface. If cement does not circulate see B.1.a, c-d above.

Option 2:

Operator has proposed to cement in two stages by conventionally cementing the first stage and performing a bradenhead squeeze on the second stage, contingent upon no returns to surface.

a. First stage: Operator will cement with intent to reach the top of the Brushy Canyon.

b. Second stage:

- Operator will perform bradenhead squeeze and top-out. Cement to surface. If cement does not reach surface, the appropriate BLM office shall be notified.

Operator has proposed to pump down 13-3/8" X 8-5/8" annulus after primary cementing stage. Operator must run Echo-meter to verify Cement Slurry/Fluid top in the annulus Or operator shall run a CBL from TD of the 8-5/8" casing to surface after the second stage BH to verify TOC.
Submit results to the BLM. No displacement fluid/wash out shall be utilized at the top of the cement slurry between second stage BH and top out. Operator must run one CBL per Well Pad.

If cement does not reach surface, the next casing string must come to surface.

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.

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) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

COMMENTS

Action 83861

COMMENTS

Operator: DEVON ENERGY PRODUCTION COMPANY, LP 333 West Sheridan Ave. Oklahoma City, OK 73102	OGRID: 6137
	Action Number: 83861
	Action Type: [C-103] NOI Change of Plans (C-103A)

COMMENTS

Created By	Comment	Comment Date
jagarcia	Approved, John Garcia, Petroleum Engineer	3/9/2022

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1625 N. French Dr., Hobbs, NM 88240
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jagarcia	None	3/9/2022