Form 3160-5
(June 2015)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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

Carlsbad Field Office
OCD Hobbs

HOBBS OCD

MAY 25 2017

RECEIVED

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.
NMLC061873

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.
COTTON DRAW UNIT 312H

2. Name of Operator
DEVON ENERGY PRODUCTION COM LP
Contact: ERIN WORKMAN
E-Mail: Erin.workman@dvn.com

9. API Well No.
30-025-43330-00-X1

3a. Address
6488 SEVEN RIVERS HIGHWAY
ARTESIA, NM 88211

3b. Phone No. (include area code)
Ph: 405-552-7970

10. Field and Pool or Exploratory Area
WOLFCAMP

4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)*
Sec 7 T25S R32E SESE 449FSL 1225FEL

11. County or Parish, State
LEA 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 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 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.

Devon Energy Production Company, LP respectfully requests changes to the casing for the currently drilling Cotton Draw Unit VDW 312, per the attached document. The prevised permit document is attached with the changes highlighted in yellow.

Attachment: CDU VDW 312 Sundry_Liner

SEE ATTACHED FOR CONDITIONS OF APPROVAL

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

Electronic Submission #376445 verified by the BLM Well Information System
For DEVON ENERGY PRODUCTION COM LP, sent to the Carlsbad
Committed to AFMSS for processing by DEBORAH MCKINNEY on 05/18/2017 (17DLM1739SE)

Name *(Printed/Typed)* ERIN WORKMAN — Title REGULATORY COMPLIANCE PROF.

Signature (Electronic Submission) — Date 05/16/2017

APPROVED

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By Teungku Muchlis Krueng — Title PETROLEUM ENGINEER — Date MAY 19 2017

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 BUREAU OF LAND MANAGEMENT CARLSBAD FIELD 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.

(Instructions on page 2)

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

1. Geologic Formations

TVD of target	13,125'	Pilot hole depth	
MD at TD:	13,125'	Deepest expected fresh water:	

Basin

Formation	Depth (TVD) from KB	Water/Mineral Bearing/ Target Zone?	Hazards*
Rustler	699		
Salado	1001		
Base of Salt	4224		
Delaware	4458		
Bell Canyon	4493		
Cherry Canyon	5420		
Brushy Canyon	6776		
1BSLM	8357		
1BSSS	9436		
2BSLM	9640		
2BSSS	10003		
3BSLM	10523		
3BSSS	11272		
3BSSS_L	11581		
WFMP X	11726		
WFMP 100	11847		
WFMP 200	12178		
WFMP 300	12633		
WFMP 400	12913		
TD	13125		

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

2. Casing Program

Hole Size	Casing Interval		Csg. Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
	From	To							
26"	0	725'	20"	94	J-55	BTC	1.35	4.48	4.43
17-1/2"	0	4,350'	13-3/8"	68	J-55	BTC	1.37	4.06	2.42
12-1/4"	0	11,300'	9-5/8"	40	P-110 EC	BTC	2.03	1.31	2.35
8-1/2"	0	12,500'	7"	29	P-110	BTC	3.6	1.25	2.6
6-1/8"	12,400'	13,125'	4.5"	13.5	P-110	BTC	3.8	1.46	4.2
				BLM Minimum Safety Factor			1.125	1.00	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

	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.	N
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	# Sks	Wt. lb/ gal	H_2O gal/sk	Yld ft3/ sack	500# Comp. Strength (hours)	Slurry Description
20"	1924	14.8	6.37	1.33	7	Tail: Class C Cement
13-3/8" Int 1	1708	12.8	10.681	1.99	21.5	Lead: (65:35) Class C Cement: Poz (Fly Ash): 8% BWOB Bentonite + 8% BWOW Salt + 0.2 gal/sk Anti-Foam + 0.2% BWOB Dispersant + 0.4% BWOB Retarder
	705	14.8	6.352	1.33	5	Tail: Class C Cement: 0.2% BWOB Retarder
9-5/8" Inter II	733	9.07	12.292	2.99	17.5	Lead: LiteFILL Blend Cement: 0.5% Retarder + 0.05 gal/sk Anit-Foam
	586	13.2	7.459	1.55	5	Tail: (50:50) Class H Cement: Poz (Fly Ash): 0.4% BWOB Retarder + 0.02 gal/sk Anti-Foam + 0.2% BWOB FLAC + 10% BWOB Extender + 2% BWOB Expanding Agent
7" Prod	350	13.2	7.459	1.55	5	Tail: (50:50) Class H Cement: Poz (Fly Ash): 0.4% BWOB Retarder + 0.02 gal/sk Anti-Foam + 0.4% BWOB FLAC + 10% BWOB Extender + 2% BWOB Expanding Agent
4.5" Liner	50	13.2	7.459	1.55	5	Tail: (50:50) Class H Cement: Poz (Fly Ash): 0.4% BWOB Retarder + 0.02 gal/sk Anti-Foam + 0.4% BWOB FLAC + 10% BWOB Extender + 2% BWOB Expanding Agent

Casing String	TOC	% Excess
20" Surface	0'	50%
13-3/8" Intermediate 1	0'	50%
9-5/8" Intermediate 2	3,850	25%
7" Production Casing	11,000'	25%
4.5" Production Liner	TOL @ 12,400'	25%

4. Pressure Control Equipment

N	A variance is requested for the use of a diverter on the surface casing. See attached for schematic.

BOP installed and tested before drilling which hole?	Size?	Min. Required WP	Type		Tested to:
17-1/2"	21-1/4"	2M	Annular	x	50% of working pressure
			Blind Ram		2M
			Pipe Ram		
			Double Ram		
			Other*		
12-1/4"	13-5/8"	5M	Annular	x	50% of working pressure
			Blind Ram	X	5M
			Pipe Ram	X	
			Double Ram	X	
			Other*		
8-1/2"	13-5/8"	10M	Annular	X	50% working pressure
			Blind Ram	X	10M
			Pipe Ram	X	
			Double Ram	X	
			Other*		
6-1/8"	11" or 13-5/8"	10M	Annular	X	50% working pressure
			Blind Ram	X	10M
			Pipe Ram	X	
			Double Ram	X	

*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.

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.

Y	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.
Y	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?
Y	A multibowl wellhead may be used. 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. Devon proposes using 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 (3M) psi. • Wellhead will be installed by wellhead representatives. • If the welding is performed by a third party, the wellhead representative will monitor the temperature to verify that it does not exceed the maximum temperature of the seal. • Wellhead representative will install the test plug for the initial BOP test. • Wellhead company will install a solid steel body pack-off to completely isolate the lower head after cementing intermediate casing. After installation of the pack-off, the pack-off and the lower flange will be tested to 5M, as shown on the attached schematic. Everything above the pack-off will not have been altered whatsoever from the initial nipple up. Therefore the BOP components will not be retested at that time. • If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head will be cut and top out operations will be conducted. • Devon will pressure test all seals above and below the mandrel (but still above the casing) to full working pressure rating. • Devon will test the casing to 0.22 psi/ft or 1500 psi, whichever is greater, as per Onshore Order #2. After running the 13-3/8" surface casing, a 13-5/8" BOP/BOPE system with a minimum rating of 3M will be installed on the wellhead system and will undergo a 250 psi low pressure test followed by a 5,000 psi high pressure test. The 5,000 psi high and 250 psi low test will cover testing requirements a maximum of 30 days, as per Onshore Order #2. If the well is not complete within 30 days of this BOP test, another full BOP test will be conducted, as per Onshore Order #2. After running the 9-5/8' intermediate casing with a mandrel hanger, the 13-5/8" BOP/BOPE system with a minimum rating of 5M will already be installed on the wellhead. The pipe rams will be operated and checked each 24 hour period and each time the drill pipe is out of the hole. These tests will be logged in the daily driller's log. A 2" kill line

	and 3" choke line will be incorporated into the drilling spool below the ram BOP. In addition to the rams and annular preventer, additional BOP accessories include a kelly cock, floor safety valve, choke lines, and choke manifold rated at 5,000 psi WP. Devon's proposed wellhead manufactures will be FMC Technologies, Cactus Wellhead, or Cameron. Devon requests a variance to use a flexible line with flanged ends between the BOP and the choke manifold (choke line). The line will be kept as straight as possible with minimal turns.

5. Mud Program

Depth		Type	Weight (ppg)	Viscosity	Water Loss
From	To				
0	725	FW Gel	8.6-8.8	28-34	N/C
725'	4,350'	Saturated Brine	10.0-10.2	28-34	N/C
4,350'	11,300'	Cut Brine/WBM	8.5-9.8	28-34	N/C
11,300	12,475'	Cut Brine/WBM	9.8-12.0	30-40	<20
12,475'	13,125'	Cut Brine/WBM	12.0-15.0	30-40	<20

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.
x	Core will be taken in the production hole.
x	No Logs are planned based on well control or offset log information.
	Drill stem test? If yes, explain

Additional logs planned		Interval
X	Resistivity	Int. shoe to TD
X	Density	Int. shoe to TD

X	CBL	Production casing
X	Mud log	Intermediate shoe to TD
X	PEX	**Int. shoe to TD**

7. Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	8190 psi
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

8. Other facets of operation

Is this a walking operation? No.
Will be pre-setting casing? No.

Attachments
__ Directional Plan
___ Other, describe

Lesser Prairie-Chicken.

20	surface csg in a	26	inch hole.		Design Factors		SURFACE	
Segment	#/ft	Grade	Coupling	Joint	Collapse	Burst	Length	Weight
"A"	94.00	J 55	BUTT	19.00	1.45	0.91	785	73,790
"B"							0	0
w/8.4#/g mud, 30min Sfc Csg Test psig:	1,134		Tail Cmt	does	circ to sfc.	Totals:	785	73,790

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
26	1.5053	1924	2559	1315	95	8.80	1363	2M	2.50

Burst Frac Gradient(s) for Segment(s) A, B = 2.69, b All > 0.70, OK.

13 3/8	casing inside the	20			Design Factors		INTERMEDIATE	
Segment	#/ft	Grade	Coupling	Body	Collapse	Burst	Length	Weight
"A"	68.00	J 55	BUTT	3.57	1.25	0.6	4,400	299,200
"B"							0	0
w/8.4#/g mud, 30min Sfc Csg Test psig:						Totals:	4,400	299,200
The cement volume(s) are intended to achieve a top of			0	ft from surface or a			785	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
17 1/2	0.6946	2413	4337	3348	30	10.20	3267	5M	1.56

*Assumed for 1/3 Fluid Filled Collapse Calculation

Burst Frac Gradient(s) for Segment(s): A, B, C, D = 0.78, b, c, d All > 0.70, OK.

#N/A

9 5/8	casing inside the	13 3/8			Design Factors		INTERMEDIATE	
Segment	#/ft	Grade	Coupling	Joint	Collapse	Burst	Length	Weight
"A"	40.00	P 110	BUTT	1.90	0.74	1.15	11,300	452,000
"B"							0	0
w/8.4#/g mud, 30min Sfc Csg Test psig:	1,355					Totals:	11,300	452,000
The cement volume(s) are intended to achieve a top of			3850	ft from surface or a			550	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
12 1/4	0.3132	1319	3100	#N/A	#N/A	9.80	5042	10M	1.31

Class 'H' tail cmt yld > 1.20 MASP is within 10% of 5000psig, need exrta equip? Alternate collapse=1.29 OK

Tail cmt

7	casing inside the	9 5/8			Design Factors		PRODUCTION	
Segment	#/ft	Grade	Coupling	Body	Collapse	Burst	Length	Weight
"A"	29.00	P 110	BUTT	2.56	1.635	1.1	12,500	362,500
"B"							0	0
w/8.4#/g mud, 30min Sfc Csg Test psig:	2,750					Totals:	12,500	362,500
The cement volume(s) are intended to achieve a top of			11000	ft from surface or a			300	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
8 1/2	0.1268	350	543	#N/A	#N/A	12.00	7340	10M	0.42

Class 'H' tail cmt yld > 1.20 Collapse OK. Must be 1/3 full MASP is within 10% of 5000psig, need exrta equip?

Tail cmt

4 1/2	Liner w/top @	12400			Design Factors		LINER	
Segment	#/ft	Grade	Coupling	Body	Collapse	Burst	Length	Weight
"A"	13.50	P 110	BUTT		1.56	1.21	725	9,788
"B"							0	0
w/8.4#/g mud, 30min Sfc Csg Test psig:	2,750					Totals:	725	9,788
The cement volume(s) are intended to achieve a top of			12400	ft from surface or a			100	overlap.

Hole	Annular	1 Stage	1 Stage	Min	1 Stage	Drilling			Min Dist
Size	Volume	Cmt Sx	CuFt Cmt	Cu Ft	% Excess	Mud Wt			Hole-Cplg
6 1/8	0.0942	50	78	72	7	15.00			0.56

Class 'H' tail cmt yld > 1.20 Collapse OK. Must be 1/3 full

Krueng, Teungku Muchlis <tkrueng@blm.gov>

CDU VDW 312 - Adding Liner

Fisher, Jonathan <Jonathan.Fisher@dvn.com> 19 May 2017 at 10:25
To: "Krueng, Teungku Muchlis" <tkrueng@blm.gov>

Seven,

Email chain from the previous sundry is below.

Also, I attached the previously approved sundry for reference.

As discussed, we will maintain the pipe full of fluid while running the 7" casing and 4-1/2" liner.

Please let me know if require anything else.

Thanks,

Jonathan Fisher

Drilling Engineer

Devon Energy Corporation

333 W Sheridan Ave

Oklahoma City, OK 73102

405-465-6842 Mobile

405-228-8976 Office

From: Fisher, Jonathan
Sent: Monday, March 27, 2017 2:55 PM
To: 'Nimmer, Charles' <cnimmer@blm.gov>
Cc: Good, Linda <Linda.Good@dvn.com>; Harkrider, JD <JD.Harkrider@dvn.com>
Subject: RE: Cotton Draw Unit 312H

Charles,

As discussed earlier; we are good to accomplish/accommodate comments #1,2, & 3 below.

All previous COA still apply except the following:

1. **5-1/2** inch production casing to be removed.

2. The minimum required fill of cement behind the **7** inch production casing is:

   ☒ Cement should tie-back at least 200 feet into previous casing string. Operator shall provide method of verification.

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

   ☒ Cement should tie-back to the top of the liner. Operator shall provide method of verification. **Excess calculates to 7%, additional cement may be required.**

TMAK 05192017