

UNITED STATES  
DEPARTMENT OF THE INTERIOR **OCD-ARTESIA**  
BUREAU OF LAND MANAGEMENT

FORM APPROVED  
OMB No. 1004-0137  
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.**

5. Lease Serial No.  
NM-0465285

6. If Indian, Allottee or Tribe Name

**SUBMIT IN TRIPLICATE - Other instructions on page 2.**

1. Type of Well

☐ Oil Well ☒ Gas Well ☐ Other

2. Name of Operator  
Devon Energy Production Company, L.P.

3a. Address  
20 N Broadway, Ste 1500  
Oklahoma City, OK 73102-8260

3b. Phone No. (include area code)  
405-228-8699

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

8. Well Name and No  
Cotton Draw 89

9. API Well No  
30-015-31381

10. Field and Pool or Exploratory Area  
Paduca South; Wolfcamp

4. Location of Well (Footage, Sec, T, R., M., or Survey Description)  
250 FSL & 1980 FEL Sec 3 T25S R31E

11. Country 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"/> Fracture Treat	<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 Sidetrack
	<input type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon	
	<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 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, L. P. respectfully requests to sidetrack the above well with the intent to convert to an SWD in the Devonian by the following drilling procedure:  
Casing Program

Hole Size 6" Hole Interval 12400- 17100' OD Csg 5" Casing Interval 12200- 17100' Weight 18#

Mud Program

Depth 12400-17100' Mud Wt 11-12 visc 32-34 Fluid Loss N/C

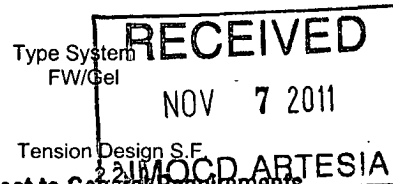
Design Parameter Factors

Casing Size S.F. 5" Collapse Design S.F. 1.4 Burst Design S.F. 1.5

(Please see attached procedure, BOP Design, cementing and wellbore schematics)

Cementing Program: Cement volumes are designed using a minimum of 20% excess cement.

SEE ATTACHED FOR  
CONDITIONS OF APPROVAL



Approval Subject to General Requirements  
& Special Stipulations Attached

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

Name (Printed/Typed)  
Judy A. Barnett

Title Regulatory Specialist

Date 08/23/2011

Accepted for record

NMOC D

DEC 02 2011

THIS SPACE FOR FEDERAL OR STATE OFFICE USE **APPROVED**

Approved by

**PETROLEUM ENGINEER**

Title

Office

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.

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)

COTTON DRAW 89  
API# 30-015-31381  
SEC 3-25S-31E  
Eddy County, NM  
August 22, 2011

#### BOP DESIGN

The blow out prevention system will consist of a bag type (hydri) preventer, a double ram preventer stack, and a rotating head. Both the hydri and ram stack will be hydraulically operated. Both BOP systems will be rated at 5000psi. **Tests on the 5000psi BOP will be conducted per the BLM Drilling Operations Order #2.**

The ram system 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 hydri, other BOP accessories include a kelly cock, floor safety valve, choke lines, and choke manifold rated at 5000 psi WP

#### 5" Liner

Lead w/ 310 sacks Class H Cement + 17.5% bwoc Silica Sand, 100 mesh, Sacked + 17.5% bwoc Silica Flour + 0.5% bwoc BA-11 + 0.25% bwoc Sodium Metasilicate + 0.1% bwoc ASA-301 + 0.1% bwoc R-21 + 0.5% bwoc CD-32 + 0.7% bwoc FL-25 + 57.2% Fresh Water  
TOC  
5" Liner 12,000'

#### Procedure for converting CDU 89 to a SWD:

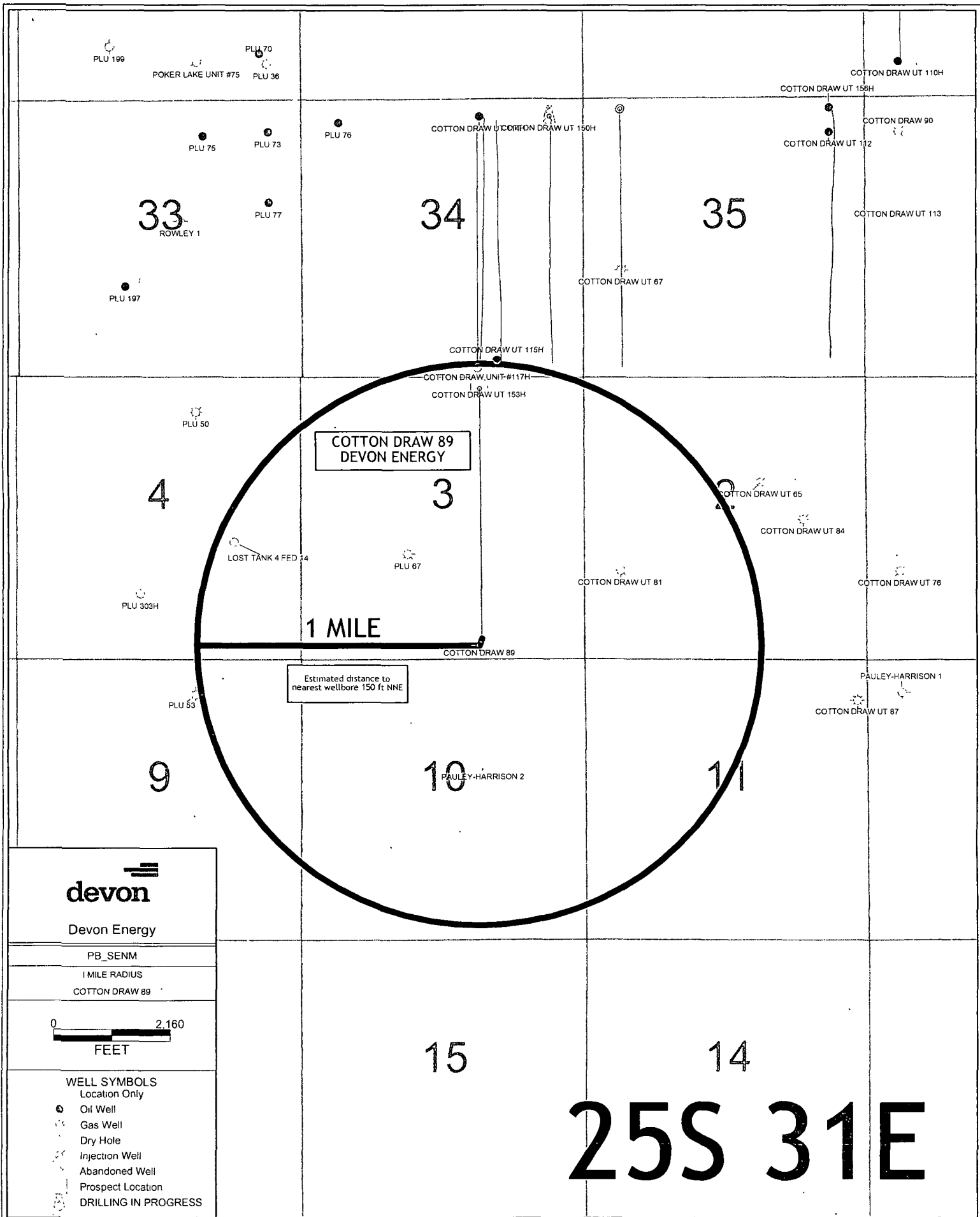
##### Operations personnel will perform the following with a workover/completion rig:

- 1) Pull tubing and packer (see wellbore schematic)
- 2) Set a CIBP at 12,975' w/ 35' of cement
- 3) Set CIBP @ 12,450' and pressure test csg to 3000 psi.
- 4) After the drilling rig has been removed, drill the Devonian formation from 17,100' to a total depth of 17,400' using a completion rig.

##### Drilling personnel will perform the following with a drilling rig:

Install 5K annular and 5K double ram BOP equipment and test as per BLM Land order #2.  
A Whipstock assembly (includes annular packoff) will run and set at 12,400' and window will be cut in the 7" casing.  
Drilling will commence with a 6" bit, directional tools and continue to the top of the Devonian at 17,100'.  
A 5" flush liner will be run from 17,100' to 12,200'. The liner will be set with a hanger, a 10K packer and cemented.  
The drilling rig will be moved from the location and a completion rig will drill the Devonian.

Note: There will be four plugs above the existing Wolfcamp perforations: CIBP @ 12,975'; CIBP @ 12,975'; Whipstock @ 12,400' and liner packer @ 12,200'.



**DEVON ENERGY PRODUCTION COMPANY LP**

Well Name: COTTON DRAW UNIT 89		Field: PADUCA	
Location: 250' FSL & 1980' FEL; SEC 3-T25S-R31E		County: EDDY	State: NM
Elevation: 3436' KB; 3419' GL; 17' KB-GL		Spud Date: 10/23/00	Compl Date: 1/24/01
API#: 30-015-31381	Prepared by:	Date: 8/17/10	Rev:

**CURRENT WELLBORE**

17-1/2" Hole

13-3/8", 48#, H40, @ 695'

Cmt'd w/790 sx, circ 135 sx to surface

Calc. TOC on 7" csg @ 3767'

12-1/4" Hole

9-5/8", 40#, @ 4,350'

Cmt'd w/1130 sx, tail w/450 sx, circ 29 sx to surf

DV Tool @ 8528'

Top of 5" liner @ 12,508'

2-7/8" AB MOD, L80, production tubing (6/23/01)

On/Off w/1.87 profile

Baker Reliant Packer @ 12,904' (2/11/01)

8-1/2" Hole

7", 29#, @ 12,917'

1st Stg cmt, 500 sx, tail w/150 sx, circ 42 sx off DV tool

2nd Stg cmt; 500 sx, tail w/150 sx

WOLFCAMP

12994' - 13094'

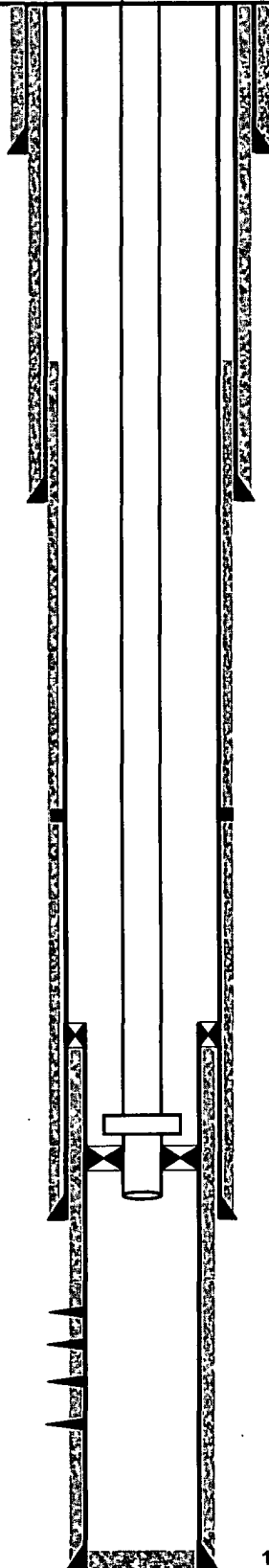
6" Hole

5", 18#, C95 liner @ 13,250'

Cmt'd w/50 sx

13200' PBTd

13,250' TD



**DEVON ENERGY PRODUCTION COMPANY LP**

Well Name: COTTON DRAW UNIT 89		Field: PADUCA	
Location: 250' FSL & 1980' FEL; SEC 3-T25S-R31E		County: EDDY	State: NM
Elevation: 3436' KB; 3419' GL; 17' KB-GL		Spud Date: 10/23/00	Compl Date: 1/24/01
API#: 30-015-31381	Prepared by: Ronnie Slack	Date: 8/25/11	Rev:

**Proposed S/T for Devonian SWD**

17-1/2" Hole  
13-3/8", 48#, H40, @ 695'  
 Cmt'd w/790 sx, circ 135 sx to surface

Calc. TOC on 7" csg @ 3767'

12-1/4" Hole  
9-5/8", 40#, @ 4,350'  
 Cmt'd w/1130 sx, tail w/450 sx

DV Tool @ 8528'

**Proposed:**  
 5" liner top @ 12,200'

**Proposed:**  
 Whipstock 12,400'

**Proposed:**  
 CIBP @ 12,450'

**Top of 5" liner @ 12,508'**

8-1/2" Hole  
7", 29#, @ 12,917'  
 1st Stg cmt; 500 sx, tail w/150 sx  
 2nd Stg cmt; 500 sx, tail w/150 sx

**Proposed:**  
 CIBP w/35' cmt @ 12,975'

**WOLFCAMP**  
 12994' - 13094'

6" Hole  
5", 18#, C95 liner @ 13,250'  
 Cmt'd w/50 sx

13200' PBTB

13,250' TD  
 Original Hole

**Proposed:**  
 Tapered string of 3-1/2" X 2-7/8"  
 IPC Injection tubing

**Proposed:**  
 5", 18#, FJ liner from 12,200 to 17,100'

**Proposed:**  
 Open Hole Devonian SWD From 17,100' to 17,400'

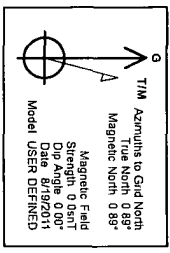
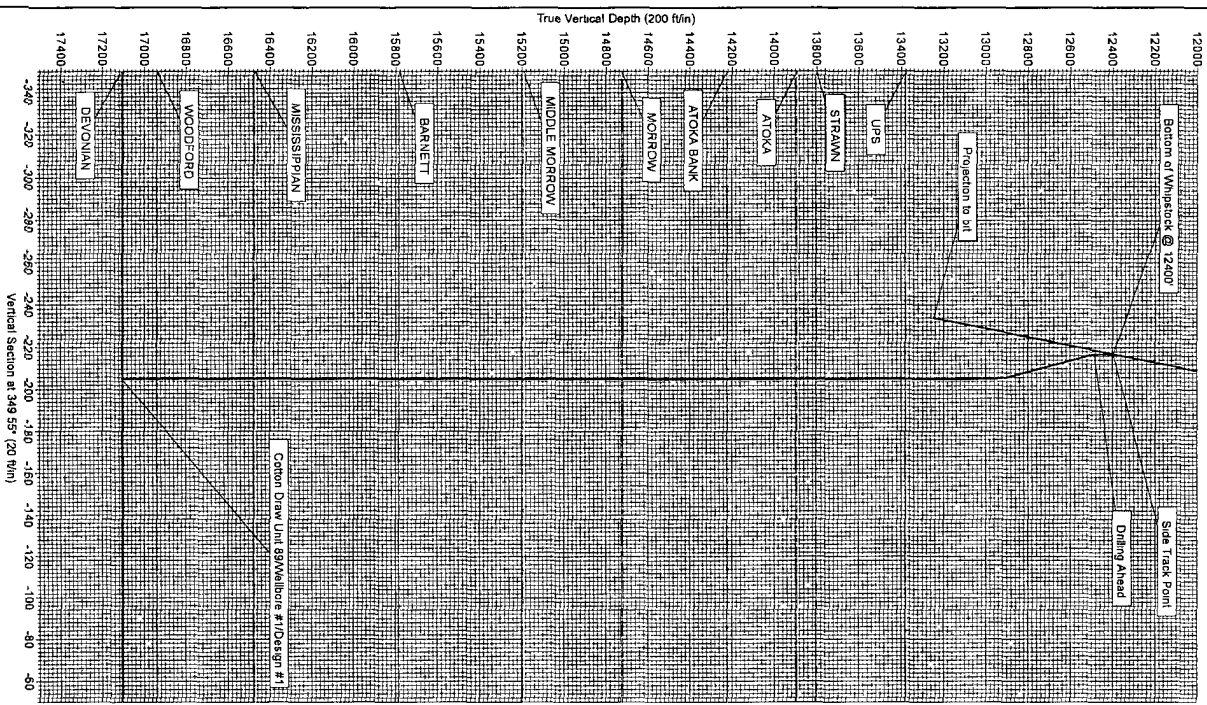
**Proposed:**  
 5" IPC Packer @ 17,075'

**Proposed TD of S/T @ 17,400**

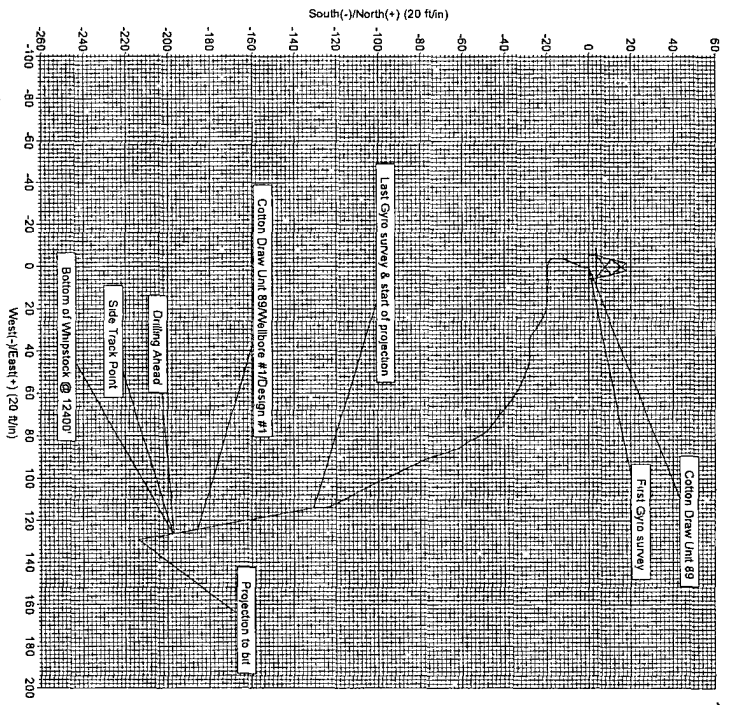
**Proposed:**  
 1 Plug back orig wellbore w/ cibp @ 12,975' w/35' cmt and CIBP @ 12,450'.  
 2 Set whipstock w/annular pack off @ 12,400'  
 3 Cut window in 7" csg. Drill 6" hole to 17,100'  
 4 Set 5" flush jt liner from +/- 12,200' to 17,100', using hanger & 10K packer  
 5 MIRU cmtl ng, drill through Devonian for open hole SWD completion from 17,100 to 17,400.



Project Eddy Co. New Mexico (Nad 83)  
Site Cotton Draw Unit 89  
Well Cotton Draw Unit 89  
Wellbore #1  
Design Design #1



ANNOTATIONS		
TVD	MD	Annotation
12365.61	12400.00	Side Track Point
12454.50	12400.00	Drilling Ahead



SECTION DETAILS									
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect Target
1	12400.00	1.14	168.55	12396.61	-167.12	126.53	0.00	-2.16	77
2	12459.00	1.50	346.55	12364.60	-196.55	126.58	0.00	-2.16	49
3	12518.00	1.50	346.55	12346.45	-182.25	124.20	3.00	-180.00	-205.05
4	12550.00	0.00	0.00	12346.45	-155.60	124.20	0.00	180.00	-205.05
5	17054.54	0.00	0.00	17055.00	-185.60	124.20	0.00	0.00	-205.05

WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)  
No target data is available

PROJECT DETAILS Eddy Co. New Mexico (Nad 83)  
Geodetic System US State Plane 1983  
Datum North American Datum 1983  
Ellipsoid GRS 80  
Zone New Mexico Eastern Zone  
System Datum Mean Sea Level

Plan Design #1 (Cotton Draw Unit 89 Wellbore #1)  
Created By Eric Minchew Date 14.29, August 19 2011  
Checked \_\_\_\_\_ Date \_\_\_\_\_  
Reviewed \_\_\_\_\_ Date \_\_\_\_\_  
Approved \_\_\_\_\_ Date \_\_\_\_\_

WELL DETAILS Cotton Draw Unit 89  
Ground Level 3419.00  
WELL @ 3444.00ft (Original Well Elev)  
+N/-S +E/-W Northing Easting 30° 59' 18.404 N 105° 3' 38.987 W  
Latitude Longitude  
0.00 0.00



# **Devon Energy Production Co, LP**

**Eddy Co., New Mexico (Nad 83)**

**Cotton Draw Unit 89**

**Cotton Draw Unit 89**

**30-015-31381-0100**

**Wellbore #1**

**Plan: Design #1**

## **Standard Planning Report**

**19 August, 2011**



# CUDD Drilling and Measurement Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Site Cotton Draw Unit 89
Company:	Devon Energy Production Co. LP	TVD Reference:	WELL @ 3444.00ft (Original Well Elev)
Project:	Eddy Co.; New Mexico (Nad 83)	MD Reference:	WELL @ 3444.00ft (Original Well Elev)
Site:	Cotton Draw Unit 89	North Reference:	Grid
Well:	Cotton Draw Unit 89	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Project	Eddy Co.; New Mexico (Nad 83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Cotton Draw Unit 89, Sec 3, T-25S, R-31E		
Site Position:		Northing:	0 00 usft
From:	None	Easting:	0 00 usft
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "
		Latitude:	0° 0' 0.000 N
		Longitude:	0° 0' 0.000 E
		Grid Convergence:	0 30 °

Well	Cotton Draw Unit 89		
Well Position	+N/-S	0 00 ft	Northing:
	+E/-W	0.00 ft	Easting:
Position Uncertainty	0.00 ft	Wellhead Elevation:	3,444.00 ft
		Latitude:	30° 59' 18.404 N
		Longitude:	106° 3' 38.987 W
		Ground Level:	3,419.00 ft

Wellbore	Wellbore #1		
----------	-------------	--	--

Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
	User Defined	8/19/2011	(°)	(°)	(nT)
			0 00	0 00	0

Design	Design #1		
--------	-----------	--	--

Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	12,400.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(ft)	(ft)	(ft)	(°)
	0 00	0 00	0.00	349.55

Plan Sections										
Measured Depth	Inclination	Azimuth	Vertical Depth	+N/-S	+E/-W	Dogleg Rate	Build Rate	Turn Rate	TFO	Target
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(°/100usft)	(°/100usft)	(°/100usft)	(°)	
12,400.00	1.14	169.55	12,396.61	-197.12	126.33	0.00	0.00	0.00	0.00	
12,488.00	1.50	349.55	12,484.60	-196.85	126.28	3.00	0.41	-204.55	180.00	
12,900.00	1.50	349.55	12,896.46	-186.25	124.32	0.00	0.00	0.00	0.00	
12,950.00	0.00	0.00	12,946.46	-185.60	124.20	3.00	-3.00	0.00	180.00	
17,108.55	0.00	0.00	17,105.00	-185.60	124.20	0.00	0.00	0.00	0.00	





# CUDD Drilling and Measurement Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Site Cotton Draw Unit 89
Company:	Devon Energy Production Co. LP	TVD Reference:	WELL @ 3444.00ft (Original Well Elev)
Project:	Eddy Co. New Mexico (Nad 83)	MD Reference:	WELL @ 3444.00ft (Original Well Elev)
Site:	Cotton Draw Unit 89	North Reference:	Grid
Well:	Cotton Draw Unit 89	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
12,400.00	1.14	169.55	12,396.61	-197.12	126.33	-216.77	0.00	0.00	0.00	
<b>Side Track Point</b>										
12,488.00	1.50	349.55	12,484.60	-196.85	126.28	-216.49	3.00	0.41	-204.55	
<b>Drilling Ahead</b>										
12,500.00	1.50	349.55	12,496.60	-196.54	126.22	-216.18	0.00	0.00	0.00	
12,600.00	1.50	349.55	12,596.56	-193.97	125.75	-213.56	0.00	0.00	0.00	
12,700.00	1.50	349.55	12,696.53	-191.39	125.27	-210.94	0.00	0.00	0.00	
12,800.00	1.50	349.55	12,796.50	-188.82	124.80	-208.32	0.00	0.00	0.00	
12,900.00	1.50	349.55	12,896.46	-186.25	124.32	-205.71	0.00	0.00	0.00	
12,950.00	0.00	0.00	12,946.46	-185.60	124.20	-205.05	3.00	-3.00	0.00	
13,000.00	0.00	0.00	12,996.46	-185.60	124.20	-205.05	0.00	0.00	0.00	
13,100.00	0.00	0.00	13,096.46	-185.60	124.20	-205.05	0.00	0.00	0.00	
13,200.00	0.00	0.00	13,196.46	-185.60	124.20	-205.05	0.00	0.00	0.00	
13,300.00	0.00	0.00	13,296.46	-185.60	124.20	-205.05	0.00	0.00	0.00	
13,378.55	0.00	0.00	13,375.00	-185.60	124.20	-205.05	0.00	0.00	0.00	
<b>UPS</b>										
13,400.00	0.00	0.00	13,396.46	-185.60	124.20	-205.05	0.00	0.00	0.00	
13,500.00	0.00	0.00	13,496.46	-185.60	124.20	-205.05	0.00	0.00	0.00	
13,600.00	0.00	0.00	13,596.46	-185.60	124.20	-205.05	0.00	0.00	0.00	
13,700.00	0.00	0.00	13,696.46	-185.60	124.20	-205.05	0.00	0.00	0.00	
13,800.00	0.00	0.00	13,796.46	-185.60	124.20	-205.05	0.00	0.00	0.00	
13,803.55	0.00	0.00	13,800.00	-185.60	124.20	-205.05	0.00	0.00	0.00	
<b>STRAWN</b>										
13,893.55	0.00	0.00	13,890.00	-185.60	124.20	-205.05	0.00	0.00	0.00	
<b>ATOKA</b>										
13,900.00	0.00	0.00	13,896.46	-185.60	124.20	-205.05	0.00	0.00	0.00	
14,000.00	0.00	0.00	13,996.46	-185.60	124.20	-205.05	0.00	0.00	0.00	
14,100.00	0.00	0.00	14,096.46	-185.60	124.20	-205.05	0.00	0.00	0.00	
14,200.00	0.00	0.00	14,196.46	-185.60	124.20	-205.05	0.00	0.00	0.00	
14,223.55	0.00	0.00	14,220.00	-185.60	124.20	-205.05	0.00	0.00	0.00	
<b>ATOKA BANK</b>										
14,300.00	0.00	0.00	14,296.46	-185.60	124.20	-205.05	0.00	0.00	0.00	
14,400.00	0.00	0.00	14,396.46	-185.60	124.20	-205.05	0.00	0.00	0.00	
14,500.00	0.00	0.00	14,496.46	-185.60	124.20	-205.05	0.00	0.00	0.00	
14,600.00	0.00	0.00	14,596.46	-185.60	124.20	-205.05	0.00	0.00	0.00	
14,700.00	0.00	0.00	14,696.46	-185.60	124.20	-205.05	0.00	0.00	0.00	
14,728.55	0.00	0.00	14,725.00	-185.60	124.20	-205.05	0.00	0.00	0.00	
<b>MORROW</b>										
14,800.00	0.00	0.00	14,796.46	-185.60	124.20	-205.05	0.00	0.00	0.00	
14,900.00	0.00	0.00	14,896.46	-185.60	124.20	-205.05	0.00	0.00	0.00	
15,000.00	0.00	0.00	14,996.46	-185.60	124.20	-205.05	0.00	0.00	0.00	
15,100.00	0.00	0.00	15,096.46	-185.60	124.20	-205.05	0.00	0.00	0.00	
15,193.55	0.00	0.00	15,190.00	-185.60	124.20	-205.05	0.00	0.00	0.00	
<b>MIDDLE MORROW</b>										
15,200.00	0.00	0.00	15,196.46	-185.60	124.20	-205.05	0.00	0.00	0.00	
15,300.00	0.00	0.00	15,296.46	-185.60	124.20	-205.05	0.00	0.00	0.00	
15,400.00	0.00	0.00	15,396.46	-185.60	124.20	-205.05	0.00	0.00	0.00	
15,500.00	0.00	0.00	15,496.46	-185.60	124.20	-205.05	0.00	0.00	0.00	
15,600.00	0.00	0.00	15,596.46	-185.60	124.20	-205.05	0.00	0.00	0.00	
15,700.00	0.00	0.00	15,696.46	-185.60	124.20	-205.05	0.00	0.00	0.00	
15,783.55	0.00	0.00	15,780.00	-185.60	124.20	-205.05	0.00	0.00	0.00	
<b>BARNETT</b>										
15,800.00	0.00	0.00	15,796.46	-185.60	124.20	-205.05	0.00	0.00	0.00	



# CUDD Drilling and Measurement Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Site Cotton Draw Unit 89
Company:	Devon Energy Production Co, LP	TVD Reference:	WELL @ 3444.00ft (Original Well Elev)
Project:	Eddy Co., New Mexico (Nad 83)	MD Reference:	WELL @ 3444.00ft (Original Well Elev)
Site:	Cotton Draw Unit 89	North Reference:	Grid
Well:	Cotton Draw Unit 89	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
15,900.00	0.00	0.00	15,896.46	-185.60	124.20	-205.05	0.00	0.00	0.00
16,000.00	0.00	0.00	15,996.46	-185.60	124.20	-205.05	0.00	0.00	0.00
16,100.00	0.00	0.00	16,096.46	-185.60	124.20	-205.05	0.00	0.00	0.00
16,200.00	0.00	0.00	16,196.46	-185.60	124.20	-205.05	0.00	0.00	0.00
16,300.00	0.00	0.00	16,296.46	-185.60	124.20	-205.05	0.00	0.00	0.00
16,400.00	0.00	0.00	16,396.46	-185.60	124.20	-205.05	0.00	0.00	0.00
16,473.55	0.00	0.00	16,470.00	-185.60	124.20	-205.05	0.00	0.00	0.00
MISSISSIPPIAN									
16,500.00	0.00	0.00	16,496.46	-185.60	124.20	-205.05	0.00	0.00	0.00
16,600.00	0.00	0.00	16,596.46	-185.60	124.20	-205.05	0.00	0.00	0.00
16,700.00	0.00	0.00	16,696.46	-185.60	124.20	-205.05	0.00	0.00	0.00
16,800.00	0.00	0.00	16,796.46	-185.60	124.20	-205.05	0.00	0.00	0.00
16,900.00	0.00	0.00	16,896.46	-185.60	124.20	-205.05	0.00	0.00	0.00
16,938.55	0.00	0.00	16,935.00	-185.60	124.20	-205.05	0.00	0.00	0.00
WOODFORD									
17,000.00	0.00	0.00	16,996.46	-185.60	124.20	-205.05	0.00	0.00	0.00
17,108.55	0.00	0.00	17,105.00	-185.60	124.20	-205.05	0.00	0.00	0.00
DEVONIAN									

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
13,378.55	13,375.00	UPS		0.00		
13,803.55	13,800.00	STRAWN		0.00		
13,893.55	13,890.00	ATOKA		0.00		
14,223.55	14,220.00	ATOKA BANK		0.00		
14,728.55	14,725.00	MORROW		0.00		
15,193.55	15,190.00	MIDDLE MORROW		0.00		
15,783.55	15,780.00	BARNETT		0.00		
16,473.55	16,470.00	MISSISSIPPIAN		0.00		
16,938.55	16,935.00	WOODFORD		0.00		
17,108.55	17,105.00	DEVONIAN		0.00		

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
12,400.00	12,396.61	-197.12	126.33	Side Track Point	
12,488.00	12,484.60	-196.85	126.28	Drilling Ahead	



# **Devon Energy Production Co, LP**

**Eddy Co., New Mexico (Nad 83)**

**Cotton Draw Unit 89**

**Cotton Draw Unit 89**

**30-015-31381-0100**

**Wellbore #1**

**Design #1**

## **Anticollision Report**

**19 August, 2011**



# CUDD Drilling and Measurement Anticollision Report

Company:	Devon Energy Production Co. LP	Local Co-ordinate Reference:	Site Cotton Draw Unit 89
Project:	Eddy Co., New Mexico (Nad 83)	TVD Reference:	WELL @ 3444.00ft (Original Well Elev)
Reference Site:	Cotton Draw Unit 89	MD Reference:	WELL @ 3444.00ft (Original Well Elev)
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Cotton Draw Unit 89	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore:	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Reference:	Design #1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 10,000.00 ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program		Date 8/19/2011		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
12,400.00	17,108.42	Design #1 (Wellbore #1)	CUDD MWD	MWD - Standard CUDD MWD

Summary							
Site Name	Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Cotton Draw Unit 89							
Cotton Draw Unit 89 - Wellbore #1 - Wellbore #1		12,400.00	12,400.00	0.00	-30.42	0.000	Level 1, CC, ES, SF

Offset Design										Cotton Draw Unit 89 - Cotton Draw Unit 89 - Wellbore #1 - Wellbore #1				Offset Site Error		0.00 ft
Survey Program		100-NS-GYRO-MS												Offset Well Error		0.00 ft
Reference		Offset		Semi Major Axis						Distance						
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre - N-S	Offset Wellbore Centre - E-W	Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning			
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)					
12,400.00	12,396.61	12,400.00	12,396.61	0.00	30.45	0.00	-197.12	126.33	0.00	-30.42	30.42	0.000	Level 1, CC, ES, SF			
12,452.91	12,449.52	12,452.90	12,449.50	0.07	30.59	180.00	-198.16	126.52	0.73	-29.89	30.63	0.024	Level 1			
12,488.00	12,484.60	12,487.97	12,484.56	0.12	30.68	180.00	-198.84	126.65	2.03	-29.10	31.12	0.065	Level 1			
12,500.00	12,496.60	12,499.96	12,496.55	0.16	30.71	180.00	-199.08	126.69	2.58	-28.58	31.16	0.083	Level 1			
12,600.00	12,596.56	12,599.85	12,596.42	0.37	30.96	180.00	-201.03	127.05	7.19	-24.32	31.51	0.228	Level 1			
12,700.00	12,696.53	12,699.74	12,696.29	0.60	31.22	180.00	-202.99	127.41	11.79	-20.12	31.91	0.369	Level 1			
12,800.00	12,796.50	12,799.64	12,796.17	0.83	31.47	180.00	-204.94	127.77	16.40	-15.95	32.35	0.507	Level 1			
12,900.00	12,896.46	12,899.53	12,896.04	1.07	31.72	180.00	-206.90	128.13	21.00	-11.80	32.80	0.640	Level 1			
12,950.00	12,946.46	12,912.00	12,908.51	1.17	31.76	169.55	-207.14	128.18	43.81	10.97	32.85	1.334	Level 3			
13,000.00	12,996.46	12,912.00	12,908.51	1.26	31.76	169.55	-207.14	128.18	90.63	57.69	32.94	2.751				
13,100.00	13,096.46	12,912.00	12,908.51	1.48	31.76	169.55	-207.14	128.18	189.22	156.05	33.17	5.705				
13,200.00	13,196.46	12,912.00	12,908.51	1.70	31.76	169.55	-207.14	128.18	288.78	255.39	33.39	8.649				
13,300.00	13,296.46	12,912.00	12,908.51	1.92	31.76	169.55	-207.14	128.18	388.56	354.95	33.61	11.560				
13,400.00	13,396.46	12,912.00	12,908.51	2.14	31.76	169.55	-207.14	128.18	488.44	454.60	33.84	14.435				
13,500.00	13,496.46	12,912.00	12,908.51	2.36	31.76	169.55	-207.14	128.18	588.35	554.29	34.06	17.274				
13,600.00	13,596.46	12,912.00	12,908.51	2.58	31.76	169.55	-207.14	128.18	688.29	654.01	34.28	20.076				
13,700.00	13,696.46	12,912.00	12,908.51	2.80	31.76	169.55	-207.14	128.18	788.25	753.74	34.51	22.842				
13,800.00	13,796.46	12,912.00	12,908.51	3.02	31.76	169.55	-207.14	128.18	888.22	853.48	34.73	25.573				
13,900.00	13,896.46	12,912.00	12,908.51	3.25	31.76	169.55	-207.14	128.18	988.19	953.23	34.96	28.269				
14,000.00	13,996.46	12,912.00	12,908.51	3.47	31.76	169.55	-207.14	128.18	1,088.17	1,052.99	35.18	30.930				
14,100.00	14,096.46	12,912.00	12,908.51	3.70	31.76	169.55	-207.14	128.18	1,188.15	1,152.74	35.41	33.558				
14,200.00	14,196.46	12,912.00	12,908.51	3.92	31.76	169.55	-207.14	128.18	1,288.13	1,252.50	35.63	36.153				
14,300.00	14,296.46	12,912.00	12,908.51	4.15	31.76	169.55	-207.14	128.18	1,388.12	1,352.26	35.85	38.715				
14,400.00	14,396.46	12,912.00	12,908.51	4.37	31.76	169.55	-207.14	128.18	1,488.11	1,452.03	36.08	41.245				
14,500.00	14,496.46	12,912.00	12,908.51	4.59	31.76	169.55	-207.14	128.18	1,588.10	1,551.79	36.30	43.745				
14,600.00	14,596.46	12,912.00	12,908.51	4.82	31.76	169.55	-207.14	128.18	1,688.09	1,651.56	36.53	46.213				

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



# CUDD Drilling and Measurement

## Anticollision Report

Company:	Devon Energy Production Co. LP	Local Co-ordinate Reference:	Site: Cotton Draw Unit 89
Project:	Eddy Co. New Mexico (Nad 83)	TVD Reference:	WELL @ 3444.00ft (Original Well Elev)
Reference Site:	Cotton Draw Unit 89	MD Reference:	WELL @ 3444.00ft (Original Well Elev)
Site Error:	0'00 ft	North Reference:	Grid
Reference Well:	Cotton Draw Unit 89	Survey Calculation Method:	Minimum Curvature
Well Error:	0'00 ft	Output errors are at:	2.00 sigma
Reference Wellbore:	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Offset Design: Cotton Draw Unit 89 - Cotton Draw Unit 89 - Wellbore #1 - Wellbore #1													Offset Site Error:
Survey Program: 100 NS-GYRO-MS													Offset Well Error:
Reference	Offset	Semi Major Axis		Distance		Warning							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
14,700.00	14,696.46	12,912.00	12,908.51	5.04	31.76	169.55	-207.14	128.18	1,788.08	1,751.33	36.75	48.651	
14,800.00	14,796.46	12,912.00	12,908.51	5.27	31.76	169.55	-207.14	128.18	1,888.07	1,851.10	36.98	51.060	
14,900.00	14,896.46	12,912.00	12,908.51	5.49	31.76	169.55	-207.14	128.18	1,988.07	1,950.86	37.20	53.439	
15,000.00	14,996.46	12,912.00	12,908.51	5.72	31.76	169.55	-207.14	128.18	2,088.06	2,050.63	37.43	55.790	
15,100.00	15,096.46	12,912.00	12,908.51	5.94	31.76	169.55	-207.14	128.18	2,188.06	2,150.40	37.65	58.113	
15,200.00	15,196.46	12,912.00	12,908.51	6.17	31.76	169.55	-207.14	128.18	2,288.05	2,250.17	37.88	60.409	
15,300.00	15,296.46	12,912.00	12,908.51	6.39	31.76	169.55	-207.14	128.18	2,388.05	2,349.95	38.10	62.677	
15,400.00	15,396.46	12,912.00	12,908.51	6.62	31.76	169.55	-207.14	128.18	2,488.04	2,449.72	38.33	64.919	
15,500.00	15,496.46	12,912.00	12,908.51	6.84	31.76	169.55	-207.14	128.18	2,588.04	2,549.49	38.55	67.134	
15,600.00	15,596.46	12,912.00	12,908.51	7.06	31.76	169.55	-207.14	128.18	2,688.04	2,649.26	38.77	69.324	
15,700.00	15,696.46	12,912.00	12,908.51	7.29	31.76	169.55	-207.14	128.18	2,788.03	2,749.03	39.00	71.489	
15,800.00	15,796.46	12,912.00	12,908.51	7.51	31.76	169.55	-207.14	128.18	2,888.03	2,848.81	39.22	73.629	
15,900.00	15,896.46	12,912.00	12,908.51	7.74	31.76	169.55	-207.14	128.18	2,988.03	2,948.58	39.45	75.744	
16,000.00	15,996.46	12,912.00	12,908.51	7.96	31.76	169.55	-207.14	128.18	3,088.02	3,048.35	39.67	77.836	
16,100.00	16,096.46	12,912.00	12,908.51	8.19	31.76	169.55	-207.14	128.18	3,188.02	3,148.12	39.90	79.903	
16,200.00	16,196.46	12,912.00	12,908.51	8.41	31.76	169.55	-207.14	128.18	3,288.02	3,247.90	40.12	81.948	
16,300.00	16,296.46	12,912.00	12,908.51	8.64	31.76	169.55	-207.14	128.18	3,388.02	3,347.67	40.35	83.970	
16,400.00	16,396.46	12,912.00	12,908.51	8.86	31.76	169.55	-207.14	128.18	3,488.02	3,447.44	40.57	85.970	
16,500.00	16,496.46	12,912.00	12,908.51	9.09	31.76	169.55	-207.14	128.18	3,588.01	3,547.22	40.80	87.947	
16,600.00	16,596.46	12,912.00	12,908.51	9.31	31.76	169.55	-207.14	128.18	3,688.01	3,646.99	41.02	89.903	
16,700.00	16,696.46	12,912.00	12,908.51	9.54	31.76	169.55	-207.14	128.18	3,788.01	3,746.76	41.25	91.838	
16,800.00	16,796.46	12,912.00	12,908.51	9.76	31.76	169.55	-207.14	128.18	3,888.01	3,846.54	41.47	93.752	
16,900.00	16,896.46	12,912.00	12,908.51	9.99	31.76	169.55	-207.14	128.18	3,988.01	3,946.31	41.70	95.645	
17,000.00	16,996.46	12,912.00	12,908.51	10.21	31.76	169.55	-207.14	128.18	4,088.00	4,046.08	41.92	97.517	
17,108.55	17,105.00	12,912.00	12,908.51	10.45	31.76	169.55	-207.14	128.18	4,196.55	4,154.38	42.16	99.527	
17,109.28	17,105.74	12,912.00	12,908.51	10.46	31.76	169.55	-207.14	128.18	4,197.28	4,155.12	42.17	99.543	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



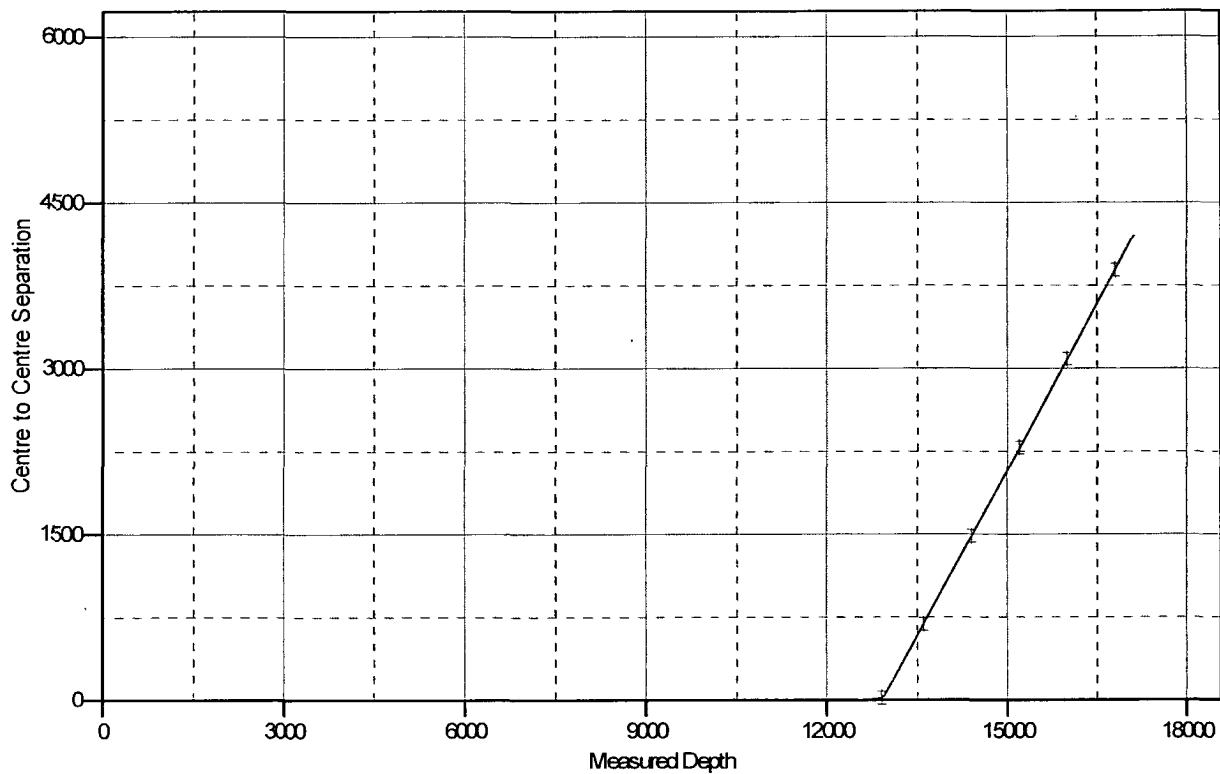
# CUDD Drilling and Measurement

## Anticollision Report

Company:	Devon Energy Production Co., LP	Local Co-ordinate Reference:	Site: Cotton Draw Unit 89
Project:	Eddy Co., New Mexico (Nad 83)	TVD Reference:	WELL @ 3444.00ft (Original Well Elev)
Reference Site:	Cotton Draw Unit 89	MD Reference:	WELL @ 3444.00ft (Original Well Elev)
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Cotton Draw Unit 89	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at:	2.00 sigma
Reference Wellbore:	Wellbore #1	Database:	EDM 5000 1 Single User Db
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 3444.00ft (Original Well Elev) Coordinates are relative to Cotton Draw Unit 89  
Offset Depths are relative to Offset Datum  
Central Meridian is 104° 20' 0.000 W  
Coordinate System is US State Plane 1983, New Mexico Eastern Zone  
Grid Convergence at Surface is -0.89°

### Ladder Plot



### LEGEND

— Cotton Draw Unit 89, Wellbore #1, Wellbore #1 V0

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



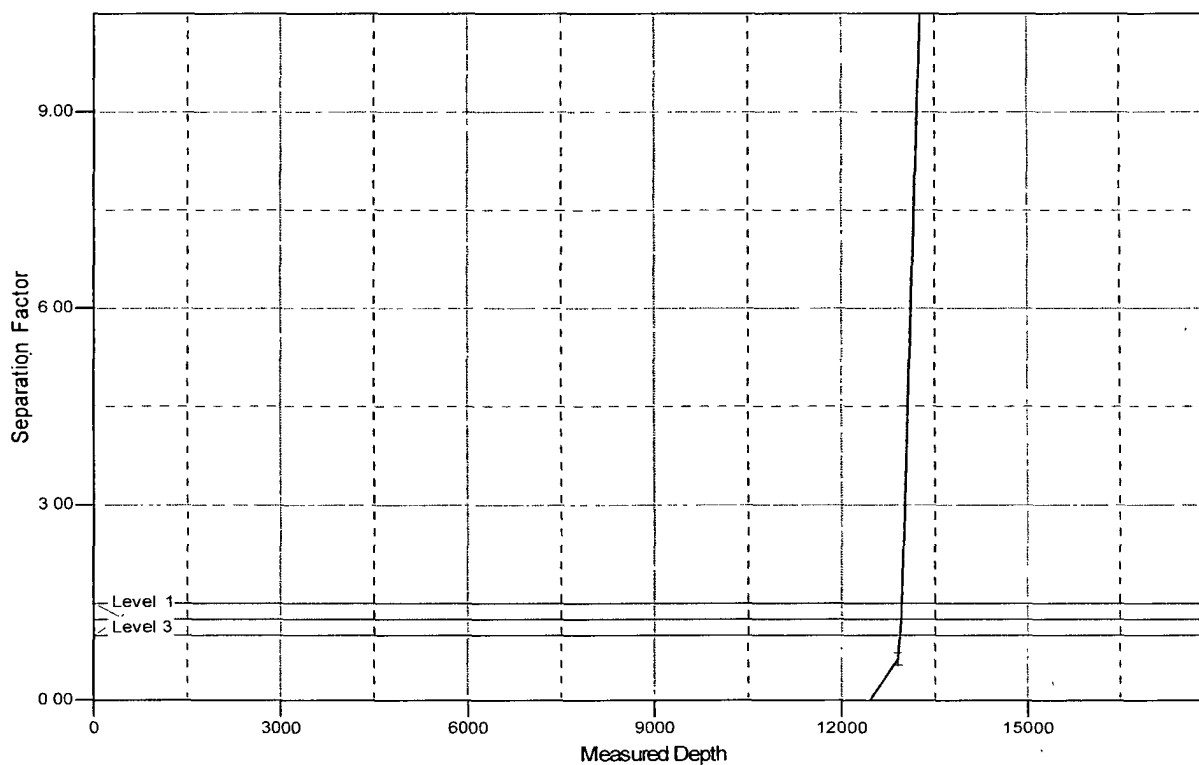
# CUDD Drilling and Measurement Anticollision Report

Company:	Devon Energy Production Co., LP	Local Co-ordinate Reference:	Site Cotton Draw Unit 89
Project:	Eddy Co., New Mexico (Nad 83)	TVD Reference:	WELL @ 3444.00ft (Original Well Elev)
Reference Site:	Cotton Draw Unit 89	MD Reference:	WELL @ 3444.00ft (Original Well Elev)
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Cotton Draw Unit 89	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at:	2.00 sigma
Reference Wellbore:	Wellbore #1	Database:	EDM, 5000.1 Single User Db
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 3444.00ft (Original Well Elev)  
 Offset Depths are relative to Offset Datum  
 Central Meridian is 104° 20' 0 000 W

Coordinates are relative to Cotton Draw Unit 89  
 Coordinate System is US State Plane 1983, New Mexico Eastern Zone  
 Grd Convergence at Surface is: -0.89°

## Separation Factor Plot



## LEGEND

— Cotton Draw Unit 89, Wellbore #1, Wellbore #1 V0

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

## PECOS DISTRICT CONDITIONS OF APPROVAL

<b>OPERATOR'S NAME:</b>	<b>Devon Energy Production Company, LP</b>
<b>LEASE NO.:</b>	<b>NM046525</b>
<b>WELL NAME &amp; NO.:</b>	<b>Cotton Draw 89</b>
<b>SURFACE HOLE FOOTAGE:</b>	<b>250' FSL &amp; 1980' FEL</b>
<b>BOTTOM HOLE FOOTAGE</b>	
<b>LOCATION:</b>	<b>Section 3, T. 25 S., R 31 E., NMPM</b>
<b>COUNTY:</b>	<b>Eddy County, New Mexico</b>

### I. DRILLING

#### A. DRILLING OPERATIONS REQUIREMENTS

The BLM is to be notified a minimum of 4 hours in advance for a representative to witness:

- a. Spudding well
- b. Setting and/or Cementing of all casing strings
- c. BOPE tests

☒ **Eddy County**

Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220,  
(575) 361-2822

1. **Although there are no measured amounts of Hydrogen Sulfide reported, it is always a potential hazard. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.**
2. **Once the Drilling / Deepening Rig is on location it shall not be removed from over the hole without prior approval unless the liner has been run and cemented without drillout, or the well has been properly plugged. If the drilling rig is removed without approval – an Incident of Non-Compliance will be written and will be a “Major” violation.**
3. **The record of the drilling rate and copies of logs run in the open hole as well as all other logs run on the borehole 30 days from completion shall be submitted to the BLM office. If available, a digital copy of the logs is to be submitted in addition to the paper copies.**
4. Surface disturbance not to exceed originally approved pad without prior approval.



5. Deepening of this well and conversion to water disposal in the Devonian Formation is contingent on like approval by the state.
6. A closed loop mud system is required.

## **B. CASING**

**Changes to the approved APD casing and cement program require submitting a sundry and receiving approval prior to work. Failure to obtain approval prior to work will result in an Incident of Non-Compliance being issued.**

**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.**

1. **The plugback of the existing wellbore shall comply with BLM abandonment guidelines. Plugback procedures shall adequately perform the following:**
  - a) **isolate the existing perforations in the Wolfcamp;**
  - b) **isolate the top of the Wolfcamp formation;**
  - c) **place a cement plug over the interval corresponding to the 7" casing shoe; and**
  - d) **place a cement plug across the top of the existing 5" liner.**

**NOTE: A detailed discussion of the plugback requirement is attached.**

**The Operator shall contact the BLM to witness the tag of the bottom plug.**

2. **The CIT to be performed on the 7" casing per Onshore Oil and Gas Order 2.III.B.1.h should not exceed 70 percent of the minimum internal yield. BLM shall be contacted to witness this test of wellbore integrity.**
3. **For the purpose of this sidetrack procedure, the window cut in the casing must be considered the equivalent of the new casing point for drilling deeper. Therefore, to comply with Onshore Order 2, a Formation Integrity Test of that equivalent casing shoe shall be performed. The formation at the window shall be tested to 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' of new hole at the window. Report results to BLM office.**

4. The minimum required fill of cement behind the 5" inch liner string is:

☒ **Liner Top Packer**

A liner top packer is to be used in addition to circulating cement to the Top of the Liner.

- a. If cement does not circulate off of the top of the liner liner and the liner top packer does not set, the appropriate BLM office shall be notified and a cement bond log shall be run to verify the top of the cement.
5. In addition to the requirement for at least 100' of liner lap, Onshore Order 2 also requires the interval of overlap be sealed and tested. The liner shall be tested by a fluid entry or pressure test to determine whether a seal between the liner top and next larger casing string has been achieved. The test pressure shall be the maximum anticipated pressure to which the seal will be exposed when deeper drilling is conducted. BLM requires this test be completed by the drilling rig before moving off of location.
6. **A Formation Integrity Test of the new 5" liner shoe shall be performed according to Onshore Order 2.III.B.1.i.**
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. **Submit a Subsequent Completion report (Sundry Form 3160-5) detailing all work done on the well. Guidelines for submittal are attached.**

**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. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the 7" casing window shall be **10,000 (10M) psi. 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.**
3. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness BOP/BOPE tests.

- a. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer**.
- b. The results of the test shall be reported to the appropriate BLM office.
- c. 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.**
- d. 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.

#### **D. DRILLING MUD**

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before cutting the sidetrack window in the 7" casing, and shall be used until the deepening procedure has reached TD for the openhole completion in the Devonian Formation.

**The mud program requirements of Onshore Order 2.III.C shall be complied with, including the use of a trip tank.**

#### **E. WELL COMPLETION**

**PRESSURE CONTROL: The BOP/BOPE requirement and H2S monitoring for the Completion Rig shall meet the sidetrack and drilling standards of 10,000 psi (10M) unless the Operator provides BLM with a sundry for an alternate BOP/BOPE requirement. This sundry, if submitted, shall include data obtained from the actual sidetrack / drilling operations of this well. The 10M BOP specification shall not be changed unless approval is received to do so.**

1. **10,000 (10M) BOP** to be used. All blowout preventer (BOP) and related equipment (BOPE) shall comply with reasonable well control requirements. A two ram system with a blind ram and a pipe ram designed for the size of the work string shall be adequate. Tapered work strings will require an additional pipe ram. The manifold shall comply with Onshore Oil and Gas Order #2 Attachment I (2M Diagrams of Choke Manifold Equipment). The accumulator system shall have an immediately available power source to close the rams and retain 200 psi above pre-charge. The pre-charge test shall follow requirements in Onshore Order #2. 10M systems shall require two independent power sources, one of which may be nitrogen bottles (three minimum) maintaining a charge equal to the manufacturer's recommendations.

2. Approval is only granted for disposal of water produced on the same lease agreement. If the well is to be dedicated for disposal of Unit produced water, then it must be returned to the unit prior to initiating injection.
3. Documentation is to be provided to the BLM to prove the injection zone does not contain production in paying quantities. (example documentation- mud log shows, cores, DST, well swabbing, open hole logs with evaluation, etc.)

#### **F. 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.

**TMM 28 Oct 2011**

## **COTTON DRAW 89: PLUG BACK REQUIREMENTS**

### **DATA**

Existing 7" Casing Shoe:	12917' MD
Existing 5" C-95 18# FL4S Liner:	12508'-13250' MD
Planned Window in 7" Casing:	12400' MD
Top Bone Springs:	8260' MD
Top Wolfcamp:	11640' MD
Wolfcamp Perforations (Sundry):	12994'-13094' MD
PBTD of Original Hole:	13200' MD
TD of Original Hole:	13250' MD

**The plugback procedures for the non-productive interval of the wellbore shall comply with Onshore Order III.G pertaining to well Abandonment; and with BLM area Guidelines for Plugging. NOTE: All cement plugs will be Class H and a minimum of 100' in length or a minimum of 25 sacks of cement whichever is greater.**

**ANNULAR SPACE** – The Operator shall confirm TOC behind the Existing 5" C-95 Liner. If a CBL does not exist or wellfile records do not confirm cement was circulated off of the Liner top, then a CBL shall be run. If cement is not confirmed behind the liner, including in the liner lap, then remedial work must be done to cement the annular void. BLM is to be contacted in order to confirm the extent of cement behind the liner prior to placing the first cement plug inside the wellbore.

**WELL PREPARATION: MUD** – Spot mud inside of the existing liner. The mud to be of sufficient density to exert hydrostatic pressure exceeding the greatest formation pressure in the formations behind the liner. This mud is to fill the interval in the 5" liner between the original PBTD and the whipstock after plug back is completed. (Mud density shall be a minimum of 9 ppg.)

**PLUG 1: ISOLATION OF OPEN PERFORATIONS IN 5" LINER** – Set a CIBP at 12967' MD (approximately 27' above the open perforations).

**PLUG 2: ACROSS THE INTERVAL CORRESPONDING TO THE 7" CASING SHOE** - A 30 sack cement plug shall be placed at 12967' MD and extend to approximately 12667' MD to be across the 7" shoe interval at 12917' MD. Contact BLM to witness the tag of this plug since it is set on the CIBP above the perforations.

**PLUG 3: ACROSS THE TOP OF THE LINER** - A 25 sack cement plug shall be placed at 12623' MD and extend to approximately 12393' MD to be across the top of the 7" liner at 12508' MD.

**PLUG 4: ISOLATION OF THE TOP OF THE WOLFCAMP FORMATION** – A 25 sack cement plug shall be placed at 11690' MD and extend to approximately 11460' MD to isolate the top of the Wolfcamp at 11640' MD (PETRA).

BUREAU OF LAND MANAGEMENT  
Carlsbad Field Office  
620 East Greene Street  
Carlsbad, New Mexico 88220  
575-234-5972

**Permanent Abandonment of Federal Wells  
Conditions of Approval**

Failure to comply with the following Conditions of Approval may result in a Notice of Incidents of Noncompliance (INC) in accordance with 43 CFR 3163.1.

1. Plugging operations shall commence within ninety (90) days from the approval date of this Notice of Intent to Abandon.

If you are unable to plug the well by the 90<sup>th</sup> day provide this office, prior to the 90<sup>th</sup> day, with the reason for not meeting the deadline and a date when we can expect the well to be plugged. Failure to do so will result in enforcement action.

The rig used for the plugging procedure cannot be released and moved off without the prior approval of the authorized officer. Failure to do so may result in enforcement action.

2. Notification: Contact the appropriate BLM office at least 24 hours prior to the commencing of any plugging operations. For wells in Chaves and Roosevelt County, call 575-627-0272; Eddy County, call 575-361-2822; Lea County, call 575-393-3612.

3. Blowout Preventers: A blowout preventer (BOP), as appropriate, shall be installed before commencing any plugging operation. The BOP must be installed and maintained as per API and manufacturer recommendations. The minimum BOP requirement is a 2M system for a well not deeper than 9,090 feet; a 3M system for a well not deeper than 13,636 feet; and a 5M system for a well not deeper than 22,727 feet.

4. Mud Requirement: Mud shall be placed between all plugs. Minimum consistency of plugging mud shall be obtained by mixing at the rate of 25 sacks (50 pounds each) of gel per 100 barrels of brine water. Minimum nine (9) pounds per gallon.

5. Cement Requirement: Sufficient cement shall be used to bring any required plug to the specified depth and length. Any given cement volumes on the proposed plugging procedure are merely estimates and are not final. Unless specific approval is received, no plug except the surface plug shall be less than 25 sacks of cement. Any plug that requires a tag will have a minimum WOC time of 4 hours.

In lieu of a cement plug across perforations in a cased hole (not for any other plugs), a bridge plug set within 50 feet to 100 feet above the perforations shall be capped with 25 sacks of cement. If a bailer is used to cap this plug, 35 feet of cement shall be sufficient. **Before pumping or bailing cement on top of CIBP, tag will be required to verify depth. Based on depth, a tag of the cement may be deemed necessary.**

Unless otherwise specified in the approved procedure, the cement plug shall consist of either Neat Class "C", for up to 7,500 feet of depth or Neat Class "H", for deeper than 7,500 feet plugs.

6. Dry Hole Marker: All casing shall be cut-off at the base of the cellar or 3 feet below final restored ground level (whichever is deeper). **The BLM is to be notified a minimum of 4 hours prior to the wellhead being cut off to verify that cement is to surface in the casing and all annuluses. Wellhead cut off shall commence within ten (10) calendar days of the well being plugged. If the cut off cannot be done by the 10<sup>th</sup> day, the BLM is to be contacted with justification to receive an extension for completing the cut off.**

The well bore shall then be capped with a 4-inch pipe, 10-feet in length, 4 feet above ground and embedded in cement, unless otherwise noted in COA (requirements will be attached). The following information shall be permanently inscribed on the dry hole marker: well name and number, name of the operator, lease serial number, surveyed location (quarter-quarter section, section, township and range or other authorized survey designation acceptable to the authorized officer such as metes and bounds).

7. Subsequent Plugging Reporting: Within 30 days after plugging work is completed, file one original and three copies of the Subsequent Report of Abandonment, Form 3160-5 to BLM. The report should give in detail the manner in which the plugging work was carried out, the extent (by depths) of cement plugs placed, and the size and location (by depths) of casing left in the well. **Show date well was plugged.**

8. Trash: All trash, junk and other waste material shall be contained in trash cages or bins to prevent scattering and will be removed and deposited in an approved sanitary landfill. Burial on site is not permitted.

Following the submission and approval of the Subsequent Report of Abandonment, surface restoration will be required. See attached reclamation procedure.

DHW 122010

**BEGINNING SEPTEMBER 20, 2010**

1. **APD PACKAGES MUST CONTAIN: AN ORIGINAL AND 3 (THREE) COPIES INCLUDING ALL ATTACHMENTS. (PLEASE STAPLE THE APD AND ATTACHMENTS TOGETHER AS SETS).**
2. **SUNDRY NOTICES MUST CONTAIN: AN ORIGINAL AND 3 (THREE) COPIES INCLUDING ALL ATTACHMENTS. (PLEASE STAPLE THE SUNDRY NOTICE AND ATTACHMENTS TOGETHER AS SETS).**
3. **WELL COMPLETION REPORTS MUST CONTAIN: AN ORIGINAL AND 4 (FOUR) COPIES INCLUDING ALL ATTACHMENTS. (PLEASE STAPLE THE WELL COMPLETION REPORT AND ATTACHMENTS TOGETHER AS SETS).**

**YOU MAY SUBMIT THE SUNDRY NOTICE AT THE SAME TIME. DON'T ATTACH IT AND ANY OF ITS ATTACHMENTS TO THE WELL COMPLETION REPORT.**

---

**ALSO PLEASE NOTE THE FOLLOWING:**

**AS PER 43 CFR 3160.0-9(c)(1)**

**OPERATING FORMS**

<b>FORM NO.</b>	<b>NAME &amp; FILING DATE</b>	<b>OMB NO.</b>
3160-3	Application for Permit to Drill, Deepen or Plug Back—Filed 30 days prior to planned action .....	1004-0136
3160-4	With Completion of Recompletion Report and Log—Due 30 days after well completion .....	1004-0137
3160-5	Sundry Notice and Reports on Wells—Subsequent report —Due 30 days after operations completed.....	1004-0135

**APPLICATION FOR PERMIT TO DRILL OR REENTER, SUNDRY NOTICES, AND WELL COMPLETION REPORTS NOT CONTAINING THE PROPER AMOUNT OF COPIES WITH ATTACHMENTS WILL BE RETURNED TO THE OPERATOR**

---

*Thank You  
Betty Hill  
(LIE-blm)*



*Sent to Operator*

Gentlemen:

I will send back all correspondence from now on which does not have the correct amount of copies, with all attachments in order and stapled to each copy. Please see attached list of BLM Carlsbad Field Office copy requirements. This is sent to you just in case you lost the first copy of it I sent to your office last year. If you have any questions, send me an email or give me a call.

---

Betty Hill  
Legal Instruments Examiner  
Carlsbad Field Office  
620 E. Greene Street  
Carlsbad, NM 88220  
Betty\_Hill@nm.blm.gov  
575-234-5937  
575-885-9264 FAX