ATS-11-61

OCD Hobbs

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Form 3160-3
(February 2005)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 1004-0137
Expires March 31, 2007

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.
USA NMNM 94118

6. If Indian, Allotee or Tribe Name

1a. Type of work: ☑ DRILL ☐ REENTER

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

1b. Type of Well: ☑ Oil Well ☐ Gas Well ☐ Other ☑ Single Zone ☐ Multiple Zone

8. Lease Name and Well No. <34380>
Rattlesnake Federal Unit #8H

2. Name of Operator
Devon Energy Production Co., LP <6137>

9. API Well No.
~~SH~~ 30-025-40067 <96661>

3a. Address **20 North Broadway, OKC, OK 73102**

3b. Phone No. *(include area code)*
(405)-228-8973

10. Field and Pool, or Exploratory Hardin Tank
~~SE Lea County; Leonard~~/Bone Spr

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*
At surface **SESE 330' FSL & 330' FEL Unit P**
At proposed prod. zone **NENE 330' FNL & 330' FEL Unit A**

11. Sec., T. R. M. or Blk. and Survey or Area
Sec 10 T26S R34E

14. Distance in miles and direction from nearest town or post office*
Approximately 15 miles southwest of Jal, NM.

12. County or Parish
Lea

13. State
NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)
330'

16. No. of acres in lease
1,760 ac

17. Spacing Unit dedicated to this well
160 acres

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.
See attached map

19. Proposed Depth
TVD 9649' MD 14,260'

20. BLM/BIA Bond No. on file
CO-1104

21. Elevations (Show whether DF, KDB, RT, GL, etc.)
3290' GL

22. Approximate date work will start*
06/01/2011

23. Estimated duration
45 days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, must be attached to this form:

1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification
6. Such other site specific information and/or plans as may be required by the BLM.

25. Signature Spence Laird | Name *(Printed/Typed)* **Spence Laird** | Date **10/21/2010**

Title **Regulatory Analyst**

Approved by *(Signature)* /s/ James Stovall | Name *(Printed/Typed)* | Date FEB 18 2011

Title CARLSBAD FIELD OFFICE | Office FIELD MANAGER

Application approval 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.
Conditions of approval, if any, are attached. APPROVAL FOR TWO YEARS

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)

SEE ATTACHED FOR CONDITIONS OF APPROVAL

Kz 02/25/11

Carlsbad Controlled Water Basin

APPROVAL SUBJECT TO GENERAL REQUIREMENTS AND SPECIAL STIPULATIONS ATTACHED

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

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State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised October 15,2009
Submit one copy to appropriate District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1] API Number	[2] Pool Code	[3] Pool Name
30-025-40067	96610	Hardin Tank ~~LEONARD~~ (BONE SPRING)

[4] Property Code	[5] Property Name	[6] Well Number
34380	RATTLESNAKE FED. UNIT	8H

[7] OGRID No.	[8] Operator Name	[9] Elevation
6137	DEVON ENERGY PRODUCTION COMPANY, L.P.	3290.6

[10] Surface Location

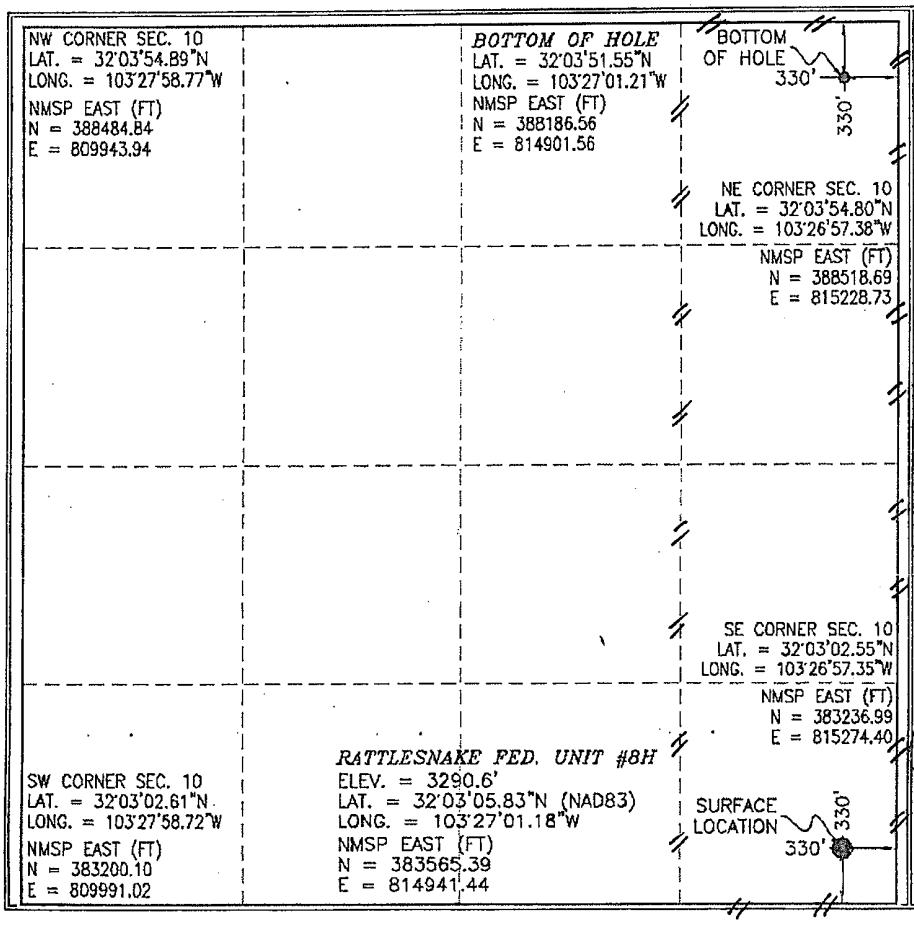
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	10	26 S	34 E		330	SOUTH	330	EAST	LEA

[11] Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	10	26 S	34 E		330	NORTH	330	EAST	LEA

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
160			

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.



[17] OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature 10/20/10 Date

Printed Name SPENCE LAIRD, REG. ANALYST

[18] SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

SEPTEMBER 2, 2010
Date of Survey

FILIMON F. JARAMILLO
NEW MEXICO
12797
REGISTERED LAND SURVEYOR

Signature and Seal of Professional Surveyor

Certificate Number FILIMON F. JARAMILLO, PLS 12797

SURVEY NO. 245

DRILLING PROGRAM

Devon Energy Production Company, LP
Rattlesnake Federal Unit #8H
Surface Location: 330' FSL & 330' FEL, Unit P, Sec 10 T26S R34E, Lea, NM
Bottom hole Location: 330' FNL & 330' FEL, Unit A, Sec 10 T26S R34E, Lea, NM

1. Geologic Name of Surface Formation

a. Quatemary

2. Estimated Tops of Geological Markers & Depths of Anticipated Fresh Water, Oil or Gas:

a.	Rustler	903'	Water	
b.	Salado Salt	1250'	Water	
c.	Bell Canyon	5241'	Oil	
d.	Cherry Canyon	6292'	Oil	
e.	Brushy Canyon	8307'	Oil	
f.	Bone Spring	9440'	Oil	Entry point: 9444'
g.	Leonard (Bone Spring)	9490'	Oil	
h.	Pilot Hole	10,190'	Oil	

No other formations are expected to yield oil, gas or fresh water in measurable volumes. The surface fresh water sands will be protected by setting 13 3/8" casing at 975' and circulating cement back to surface. The fresh water sands will be protected by setting 9 5/8" casing at 5300' and circulating cement to surface. The Bone Spring intervals will be isolated by setting 5 ½" casing to total depth and circulating cement above the base of the 9 5/8" casing. All casing is new and API approved.

3. Casing Program:

Hole Size	Hole Interval	OD Csg	Casing Interval	Weight	Collar	Grade
17 1/2"	0'-975'	13 3/8"	0'-~~950'~~ 975'	48#	STC	H-40
12 ¼"	975'-5300'	9 5/8"	0'-5300'	43.5#	BTC	N-80
12 ¼"	5300'–10,190'	PH				
8 ¾"	5300' -14,260'	5 ½"	0-9200'	17#	LTC	HCP-110
			9200'-14,260'	17#	BTC	HCP-110

Design Parameter Factors:

Casing Size	Collapse Design Factor	Burst Design Factor	Tension Design Factor
13 3/8"	1.6	3.6	6.7
9 5/8"	1.4	2.3	4.7
5 ½"	1.3	1.7	2.3

4. Cement Program:

All Cement Volumes exceed 25% excess

Plug Back Volume: cement plug from 10,190'-9,300' with 570 sacks class H with a .9 cuft/sack yield

13 3/8" Surface

Lead: 546 sacks Premium Plus C Cement + 0.125 lbs/sack Cello Flake + 4% bwoc Bentonite + 5% bwow Sodium Chloride + 0.8% bwoc Sodium Metasilicate + 5% bwoc MPA-5 + 101.1% Fresh Water
Yield: 1.75 cf/sack. TOC @ surface.

Tail: 300 sacks Premium Plus C Cement + 2% bwoc Calcium Chloride + 0.125 lbs/sack Cello Flake + 56.3% Fresh Water
Yield: 1.35 cf/sack.

9 5/8" Intermediate

Lead: 1316 sacks (35:65) Poz (Fly Ash):Premium Plus C Cement + 5% bwow Sodium Chloride + 0.125 lbs/sack Cello Flake + 6% bwoc Bentonite + 107.8% Fresh Water
Yield: 2.04 cf/sack. TOC @ surface.

Tail: 300 sacks (60:40) Poz (Fly Ash):Premium Plus C Cement + 5% bwow Sodium Chloride + 0.125 lbs/sack Cello Flake + 0.4% bwoc Sodium Metasilicate + 4% bwoc MPA-5 + 64.7% Water
Yield: 1.37 cf/sack.

5 1/2" Production

1 St Stage

Lead: 754 sacks (35:65) Poz + 0.2% bwoc Sodium Metasilicate + 1.4% bwoc FL-62 + 0.4% bwoc
Yield: 2.01 cf/sack.

Tail
Lead: 1352 sacks (50:50) Poz (Fly Ash):Premium Plus C Cement + 1% bwow Sodium Chloride + 0.125 lbs/sack Cello Flake + 6% bwoc Bentonite + 0.4% bwoc FL-52A + 0.4% bwoc R-3 + 103.1% Fresh Water
Yield: 1.28 cf/sack.

DV TOOL at ~6000'

2nd Stage

Lead: 120 sacks (35:65) Poz (Fly Ash):Class H Cement + 0.125 lbs/sack Cello Flake + 3 6% bwoc Bentonite + 0.4% bwoc FL-52A + 99.3% Fresh Water
Yield: 2.04 cf/sk

Tail: 100 sacks (60:40) Poz (Fly Ash): Class H Cement + 1% bwow Sodium Chloride + 0.15% bwoc + 63.2% Fresh Water
Yield: 1.37 cf/sk

TOC for All Strings:

Surface:	0'
1st Intermediate:	0'
Production:	4800'

The above cement volumes could be revised pending the caliper measurement from the open hole logs. Actual cement volumes will be adjusted based on fluid caliper and caliper log data.

5. **Pressure Control Equipment:**
BOP DESIGN: The 13 3/8" casing will have a 3,000# (Hydril) annular preventer which will be tested to 2000#. The blow out prevention system will consist of a bag type (hydril) preventer, a double ram preventer stack, and a rotating head. Both the hydril and ram stack will be hydraulically operated. Both BOP systems will be rated at 5000 psi. As shown in the attachment, the Surface Casing BOP will be a 3000 psi Hydril annular. It will be tested as a 2000 psi Hydril annular. Prior to drilling out the 9 5/8" intermediate shoe, the ram stack will be nipped up with 4.5" pipe rams installed and will be used in the BOP. **The hydril will be tested to 1000psi (high) and 250psi (low). 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 hydril, other BOP accessories include a kelly cock, floor safety valve, choke lines, and choke manifold rated at 5000 psi WP.

6. **Proposed Mud Circulation System**

Depth	Mud Wt.	Visc	Fluid Loss	Type System
0' – 975'	8.4-9.0	32-34	NC	Fresh Water /Gel
975'– 5300'	10.0	28-30	NC	Brine
5300'–14,260'	8.8-9.3	28-40	NC	Fresh Water/Brine

The necessary mud products for weight addition and fluid loss control will be on location at all times.

7. **Auxiliary Well Control and Monitoring Equipment:**
   a. A Kelly cock will be in the drill string at all times.
   b. A full opening drill pipe stabbing valve having the appropriate connections will be on the rig floor at all times.
   c. Hydrogen Sulfide detection equipment will be in operation after drilling out the 13 3/8" casing shoe until the 5 1/2" casing is cemented. Breathing equipment will be on location upon drilling the 13 3/8" shoe until total depth is reached.

8. **Logging, Coring, and Testing Program:** See COA
   a. Drill stem tests will be based on geological sample shows.
   b. If a drill stem test is anticipated; a procedure, equipment to be used and safety measures will be provided via sundry notice to the BLM.
   c. The open hole electrical logging program will be:
      i. Total Depth to Intermediate Casing Dual Laterolog-Micro Laterolog with SP and Gamma Ray. Compensated Neutron – Z Density log with Gamma Ray and Caliper.

ii. Total Depth to Surface — Compensated Neutron with Gamma Ray
iii. No coring program is planned
iv. Additional testing will be initiated subsequent to setting the 5 ½" production casing. Specific intervals will be targeted based on log evaluation, geological sample shows and drill stem tests.

9. Potential Hazards:

a. No abnormal pressures or temperatures are expected. There is no known presence of H2S in this area; therefore, no H2S is anticipated to be encountered. If H2S is encountered the operator will comply with the provisions of Onshore Oil and Gas Order No. 6. No lost circulation is expected to occur. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well. Estimated BHP 4600 psi and Estimated BHT 135°.

10. Anticipated Starting Date and Duration of Operations:

a. Road and location construction will begin after the BLM has approved the APD. Anticipated spud date will be as soon after BLM approval and as soon as a rig will be available. Move in operations and drilling is expected to take 32 days. If production casing is run then an additional 30 days will be needed to complete well and construct surface facilities and/or lay flow lines in order to place well on production.

devon

Project: Lea Co., New Mexico (Nad 83)
Site: Rattlesnake Fed Unit #8H
Well: Rattlesnake Fed Unit #8H
Wellbore: Lateral #1
Design: Design #1

CUDD
DRILLING & MEASUREMENT SERVICES

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	9312.03	0.00	0.00	9312.03	0.00	0.00	0.00	0.00	0.00	
3	10217.03	90.50	359.51	9884.97	577.94	-4.99	10.00	359.51	577.96	
4	14260.58	90.50	359.51	9849.68	4621.18	-39.88	0.00	0.00	4621.35	PBHL - TD (RFU#8H)

ANNOTATIONS

TVD	MD	Annotation
9312.02	9312.02	KOP - Build 10°/100'
9884.97	10217.02	EOC - Hold I:90.5° @ A:360.0°

PROJECT DETAILS: Lea Co., New Mexico (Nad 83)

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone
System Datum: Mean Sea Level

WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
PBHL - TD (RFU#8H)	9849.68	4621.18	-39.88	388186.56	814901.56	32° 3' 50.860 N	103° 27' 0.845 W	Point

WELL DETAILS: Rattlesnake Fed Unit #8H

Ground Level: 3295.00
WELL @ 3320.00ft (Original Well Elev)

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	383565.39	814941.44	32° 3' 5.130 N	103° 27' 0.821 W	

Plan: Design #1 (Rattlesnake Fed Unit #8H/Lateral #1)

Created By: Mike Starkey — Date: 10:04, October 20 2010
Checked: _____ Date: _____
Reviewed: _____ Date: _____
Approved: _____ Date: _____

G T M

Azimuths to Grid North
True North: -0.47°
Magnetic North: 7.13°

Magnetic Field
Strength: 48640.6snT
Dip Angle: 60.09°
Date: 08/24/2010
Model: IGRF200510