New Mexico Oil Conservation Division, District I
1625 N. French Drive
Hobbs, NM 88240

Form 3160-3
(April 2004)

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.
NMNM-100568

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.
Rattlesnake Federal Unit 2 34380

2. Name of Operator
Devon Energy Production Company, LP 6137

9. API Well No.
30-025-37297

3a. Address **20 North Broadway, Oklahoma City, Oklahoma City 73102-8260**

3b. Phone No. *(include area code)*
405-552-8198

10. Field and Pool, or Exploratory
Wildcat; Morrow

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*
At surface **1100 FNL & 1310 FWL**
At proposed prod. zone

11. Sec., T. R. M. or Blk. and Survey or Area
Sec 26, T26S R34E

14. Distance in miles and direction from nearest town or post office*
Approximately 20 miles west of Jal, NM

12. County or Parish
Lea County

13. State
NM

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

16. No. of acres in lease
1920

17. Spacing Unit dedicated to this well
320

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

19. Proposed Depth
16600 MD 16600 TVD

20. BLM/BIA Bond No. on file

21. Elevations (Show whether DF, KDB, RT, GL, etc.)
3217' GL

22. Approximate date work will start*
06/01/2005

23. Estimated duration
70 days

CARLSBAD CONTROLLED WATER BASIN

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, shall 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 shall 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 authorized officer.

25. Signature
Name *(Printed/Typed)* **Norvella Adams**
Date **04/28/2005**
Title **Sr. Staff Eng. Tech**

Approved by *(Signature)* /s/ Joe G. Lara
Name *(Printed/Typed)* /s/ Joe G. Lara
Date JUN 13 2005
Title **ACTING FIELD MANAGER**
Office **CARLSBAD FIELD OFFICE**

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 1 YEAR

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)

APPROVAL SUBJECT TO
GENERAL REQUIREMENTS
AND SPECIAL STIPULATIONS
ATTACHED

DECLARED WATER BASIN
CEMENT BEHIND THE 13 3/8"
CASING MUST BE CIRCULATED

WITNESS

Ka

Additional Operator Remarks:

Devon Energy Production Company, LP proposes to drill to approximately 16,600' to test the Morrow for commercial quantities of gas. If deemed non-commercial, the wellbore will be plugged and abandoned as per Federal regulations. Programs to adhere to onshore oil and gas regulations are outlined in the following exhibits and attachments.

Approximately 2281' of new access road will need to be constructed.

DISTRICT I
1625 N. French Dr., Hobbs, NM 88240
DISTRICT II
811 South First, Artesia, NM 88210
DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410
DISTRICT IV
2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION
2040 South Pacheco
Santa Fe, New Mexico 87504-2088

Form C-102
Revised March 17, 1999

Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
30-025-37297		Wildcat; Morrow

Property Code	Property Name	Well Number
34380	RATTLESNAKE FEDERAL UNIT	2

OGRID No.	Operator Name	Elevation
6137	DEVON ENERGY PRODUCTION CO., L.P.	3217'

Surface Location

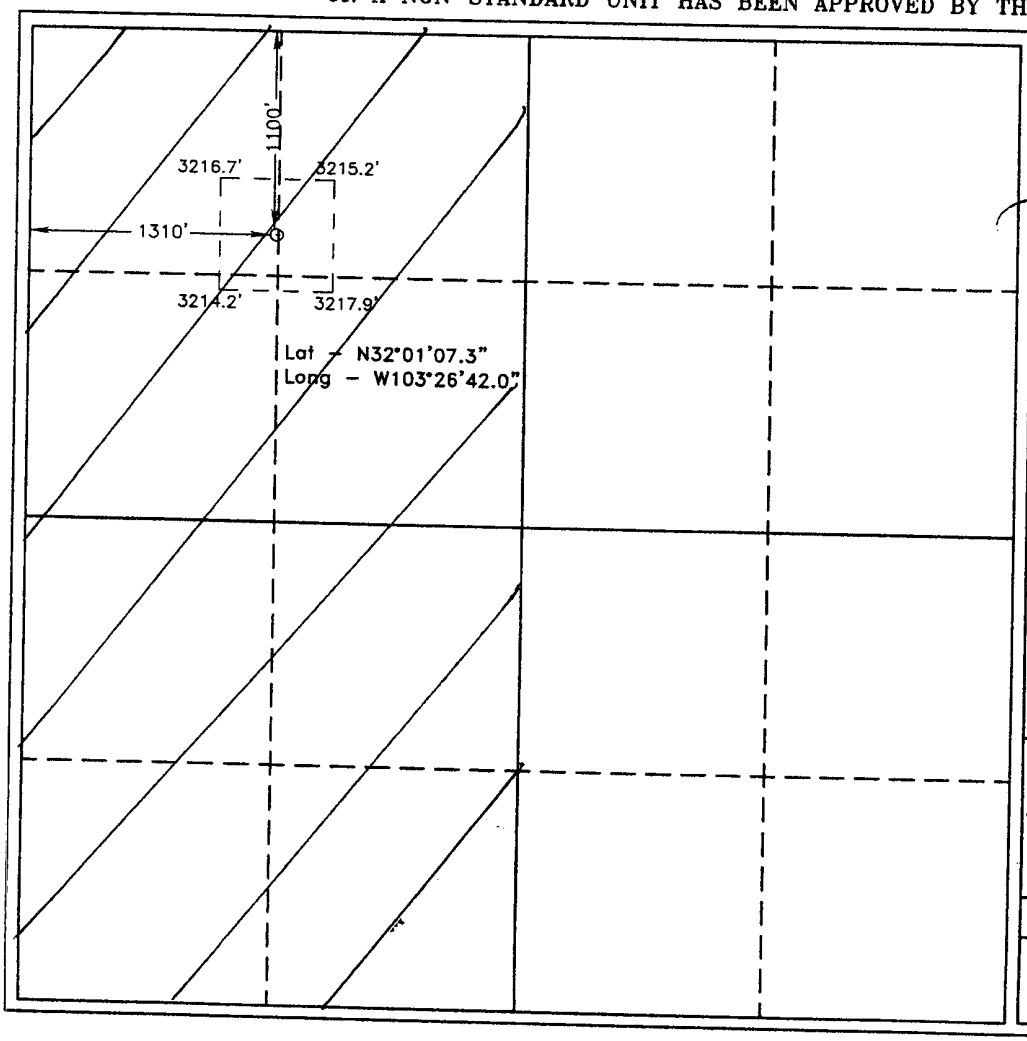
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
D	26	26 S	34 E		1100	NORTH	1310	WEST	LEA

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

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
320			

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



OPERATOR CERTIFICATION

I hereby certify the the information contained herein is true and complete to the best of my knowledge and belief.

Signature
Norvella Adams
Printed Name
Sr. Staff Eng. Tech.
Title
April 28, 2005
Date

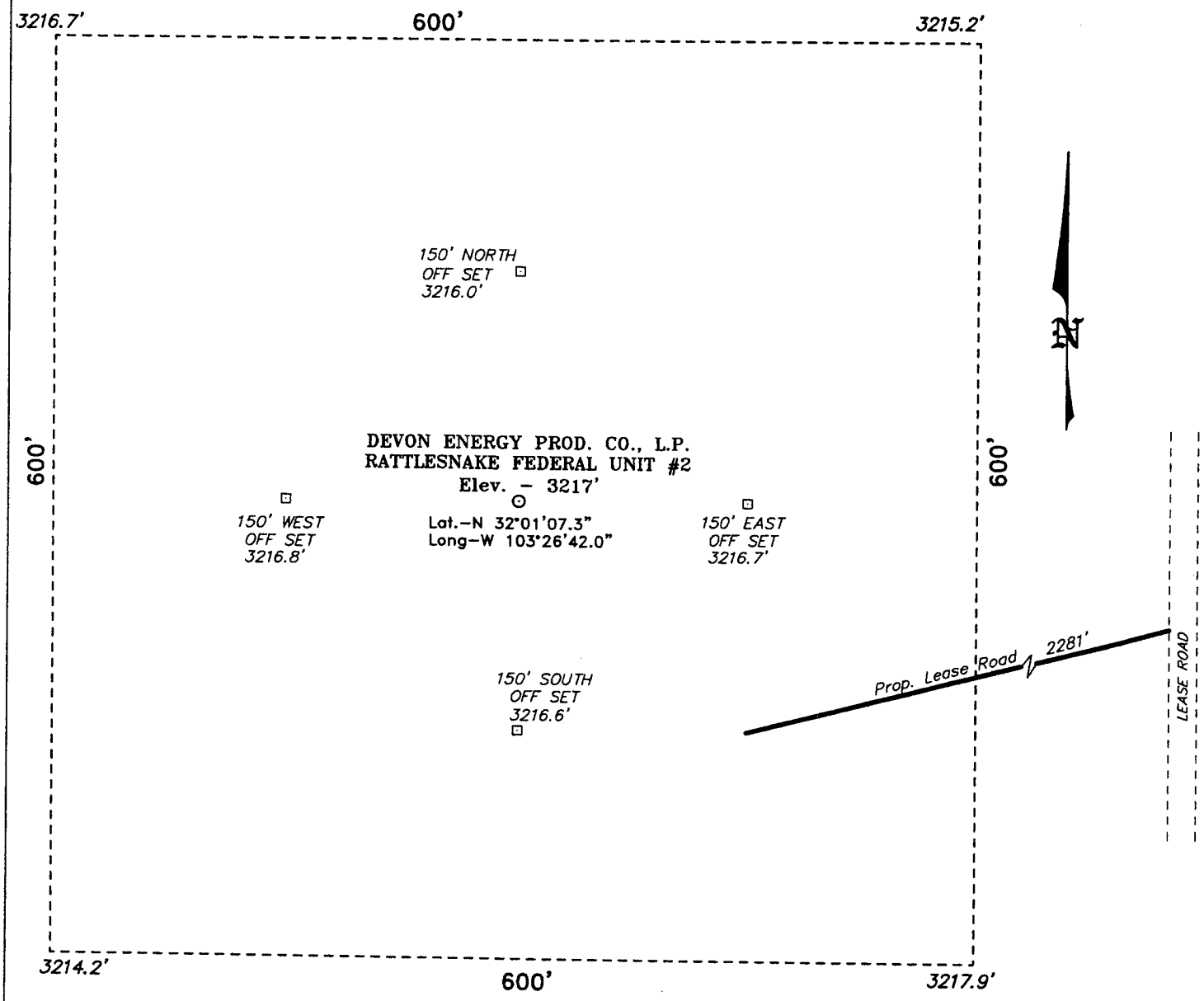
SURVEYOR CERTIFICATION

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 supervison, and that the same is true and correct to the best of my belief.

APRIL 13, 2005
Date Surveyed
Signature & Seal of Professional Surveyor
7977
W.O. No. 5310
Certificate No. Gary L. Jones 7977

BASIN SURVEYS

SECTION 26, TOWNSHIP 26 SOUTH, RANGE 34 EAST, N.M.P.M.,
LEA COUNTY, NEW MEXICO.



Directions to Location:

FROM THE JUNCTION OF WHITWORTH STREET AND 3RD STREET IN JAL, GO SOUTH BY SOUTHWEST ON 3RD FOR 7 MILES TO THE BECKHAM RANCH ROAD RIGHT; THENCE WESTERLY ON SAID ROAD FOR 5.2 MILES TO A "T" AND TURN RIGHT GOING NORTH, NORTHWEST AND WEST ON MAIN LEASE ROAD FOR 3.7 MILES TO A "Y"; THENCE TAKE THE RIGHT FORK CONTINUING WESTERLY FOR 1.5 MILE TO THE JUMBO AMERICAN WELL LOCATION AND PROPOSED LEASE ROAD AT SOUTHWEST CORNER.

100 0 100 200 FEET

SCALE: 1" = 100'

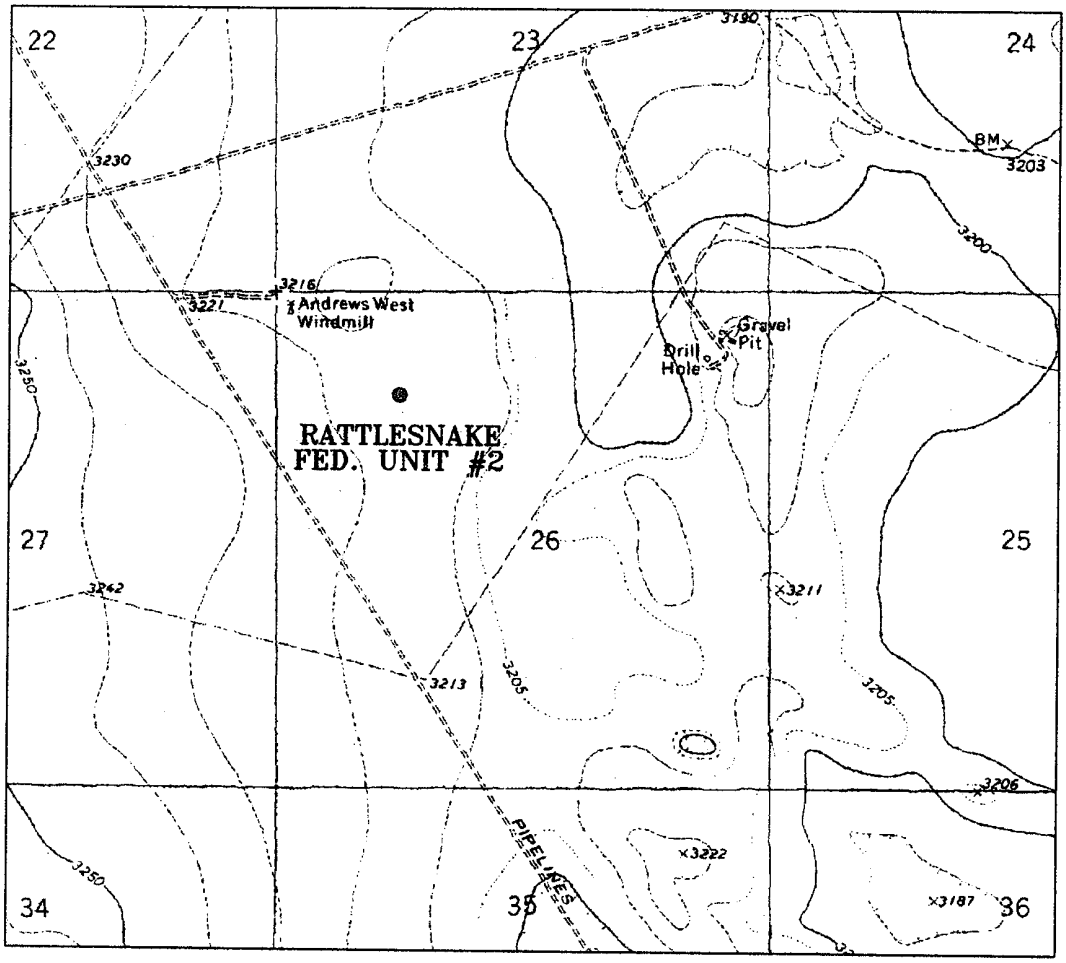
DEVON ENERGY PROD. CO., L.P.

REF: RATTLESNAKE FED. UNIT No. 2 / Well Pad Topo

THE RATTLESNAKE FED. UNIT No. 2 LOCATED 1100' FROM THE NORTH LINE AND 1310' FROM THE WEST LINE OF SECTION 26, TOWNSHIP 26 SOUTH, RANGE 34 EAST, N.M.P.M., LEA COUNTY, NEW MEXICO.

BASIN SURVEYS P.O. BOX 1786 - HOBBS, NEW MEXICO

W.O. Number: 5310	Drawn By: K. GOAD	Survey Date: 04-14-2005	Sheet 1 of 1 Sheets
Date: 04-18-2005	Disk: KJG CD#4 - 5310A.DWG		



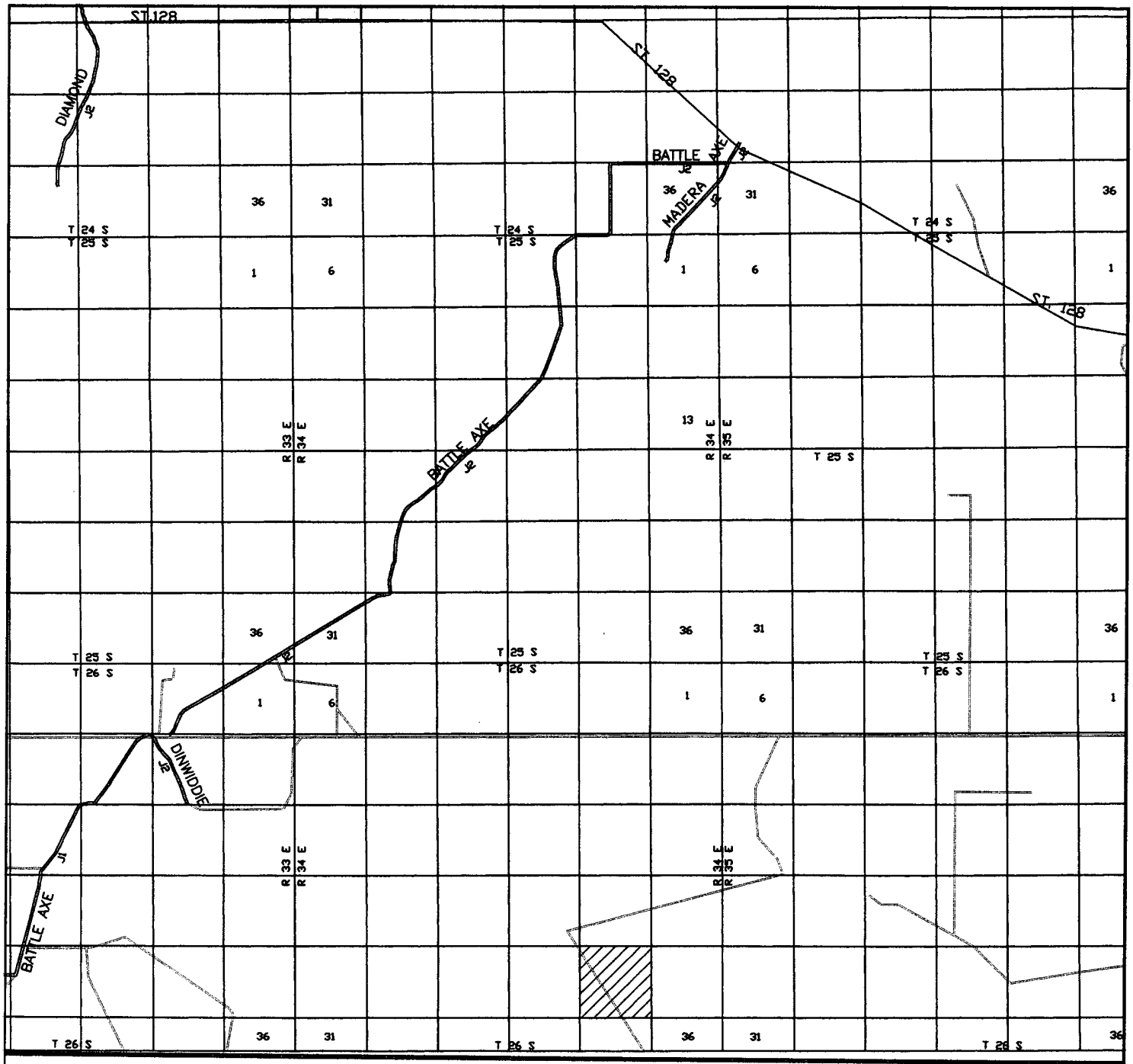
RATTLESNAKE FEDERAL UNIT #2

1100' FNL AND 1310' FWL
Section 26, Township 26 South, Range 34 East,
N.M.P.M., Lea County, New Mexico.

basin surveys
focused on excellence in the oilfield
P.O. Box 1786
1120 N. West County Rd.
Hobbs, New Mexico 88241
(505) 393-7316 - Office
(505) 392-3074 - Fax
basinsurveys.com

W.O. Number:	5310AA - KJG CD#4
Survey Date:	04-13-2005
Scale:	1" = 2000'
Date:	04-18-2005

DEVON ENERGY PROD. CO., L.P.



RATTLESNAKE FEDERAL UNIT #2
1100' FNL AND 1310' FWL
Section 26, Township 26 South, Range 34 East, N.M.P.M., Lea County, New Mexico.

basin surveys
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P.O. Box 1786
1120 N. West County Rd.
Hobbs, New Mexico 88241
(505) 393-7316 - Office
(505) 392-3074 - Fax
basinsurveys.com

W.O. Number:	5310AA - KJG CD#4
Survey Date:	04-13-2005
Scale:	1" = 2 MILES
Date:	04-18-2005

DEVON ENERGY PROD. CO., L.P.

DRILLING PROGRAM

Devon Energy Production Company, LP
RATTLESNAKE FEDERAL UNIT #2
Unit Letter D, 1100 FNL & 1310 FWL, Section 26-26S-34E
Lea County, New Mexico

1. Geologic Name of Surface Formation

   Alluvium

2. Estimated Tops of Important Geologic Markers

Rustler	940'
Top Salt	1,300'
Base Salt	5,050'
Delaware	5320'
Bone Spring	9,600'
Wolfcamp	12,640'
Strawn	15,110'
Atoka	15,210'
Morrow	15,820'
TD	16,600'

3. Estimated Depths of Anticipated Fresh Water, Oil or Gas

   The estimated depths at which water, oil and gas will be encountered are as follows.

Water:	None expected in area
Oil	Bone Spring @ 9,600'
Gas:	Wolfcamp @ 12,640'

4. Casing Program

INTERVALS	LENGTH	CASING
Surface 0 – 1035'	1035'	13 3/8" 48# H-40 STC
Intermediate 0 – 5350'	5350'	9 5/8" 40# N-80 LT&C
Production 0 – 13,400'	13400'	7 5/8" 39# P110 FL-4S
Liner 13,100' – 16,600'	3500'	5 ½" 23# HCP-110 STL

Cementing Program

HOLE SIZE	DEPTH	CEMENT	TOC	WOC HRS
Surface 17 ½"	1035'	**Lead:** 466 sxs 35/65 POZ + 6% gel + 1/4#/sx celloflk) **Tail:** 300 sxs Cl "C" + 2% CaCl2	Surf.	12
Intermediate 12 ¼"	5350'	**Lead:** 1167 sxs 50/50 POZ + 10% gel 5% salt +1/4#/sx celloflk **Tail:** 300 sx 60/40 POZ + 5% salt.	Surf.	12
Production 8 3/4"	13,400'	**Lead**: 380 sx Class H **Tail:** 403 sx Class C	4850	24
Liner 5 1/2"	13,100' – 16,600'	**Cmt w/330 sx Class H**		

The cement volumes for the 5 1/2" liner will be revised pending the caliper measurement from the open hole logs.

5. Minimum Specifications for Pressure Control

Prior to intermediate, the blowout preventor equipment will consist of a 3M system. A 3000 WP double and a 3000 annular preventor. **The equipment will be tested to 1000 psi with the rig pump.** The 9 5/8" csg will have a 10M double and a 5M annular preventor. The 7 5/8" csg and the 5 1/2" will have a 10M double and single and a 10M annular preventor. Units will be hydraulically operated. See Exhibit #2 for Choke Manifold and Closing Unit. Blind rams on top, pipe rams on bottom to correspond with size of drill pipe in use. BOP will be tested as well as choke manifold. BOP will be worked at least once each day while drilling & blind ram will be worked on trips when no drill pipe is in hole. Full opening stabbing valve and upper Kelly cock will be utilized. Anticipated BHP 11700 psi and 210° BHT.

Pipe rams will be operated and checked each 24 hour period and each time the drill pipe is out of the hole. These functional tests will be documented on the daily drillers log. A 2" kill line and 3" choke line will be incorporated in the drilling spool below the ram-type BOP. Other accessory BOP equipment will include a kelly cock, floor safety valve, choke lines and choke manifold having 8000 psi WP rating.

6. Types and Characteristics of the Proposed Mud System

The well will be drilled to total depth with fresh water and brine mud systems. Depths of systems are as follows.

Depth	Type	Weight (ppg)	Viscosity (1/sec)	Water Loss (cc)
0' – 1035'	Fresh Water	<9.0	35-40	No control
1035' – 5350'	Brine	9.9 – 10	28-30	No control
5350' – 13,400'	Fresh Water	8.3 – 9.0	36-38	15-20 cc
13,400' – TD	Cut Brine/Starch	10.0 – 16.5	36-45	8- 10

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.

8. Logging, Testing and Coring Program

A. Drill stem tests may be run on potential pay interval.

B. The open hole electrical logging program will be as follows.

1) DLL/MSFL/GR from total depth to base of intermediate casing.
2) CNL/LDT/GR from total depth to base of intermediate casing with CNL/GR to surface.

C. No coring program is planned.

D. Additional testing may be initiated subsequent to setting the 5 1/2" production liner. Specific intervals will be targeted based on log evaluation, geological sample shows and drill stem tests.

9. Abnormal Pressures, Temperatures and Potential Hazards

No abnormal pressures or temperatures are foreseen. However, the Atoka, if present may be overpressured and could require up to 16.5 ppg mud to control. The anticipated bottom hole temperature at total depth is 210 degrees and maximum bottom hole pressure is 11700 psi. No Hydrogen sulfide or other hazardous gases or fluids have been encountered, reported or are known to exist at this depth in this area. No major loss circulation intervals have been encountered in adjacent wells.

10. Anticipated Starting Date and Duration of Operations

Road and location preparation will not be undertaken until approval has been received from the BLM. If approved, this well will be drilled as part of a development project. The anticipated spud date for the project is in May 1, 2005. The drilling operation should require approximately 70 days. If the well is deemed productive, completion operations will require, at minimum, an additional 30 days of testing to ascertain whether permanent production facilities will be constructed.

SURFACE USE AND OPERATING PLAN

Devon Energy Production Company, LP
RATTLESNAKE FEDERAL UNIT #2
Unit Letter D, 1100 FNL & 1310 FWL, Section 26-26S-34E
Lea County, New Mexico

1. Existing Roads

A. The well site and elevation plat for the proposed well are reflected on Exhibit #2. This well was staked by Basin Surveys in Hobbs, NM.

B. All roads into the location are depicted in Exhibit #3. New construction from the existing lease road will be used to access the location. New construction will conform to the specifications outlined in Item #2 below.

C. Directions to location: From the Junction of Whitworth Street and 3rd Street in Jal, Go South by Southwest on 3rd for 7 miles to the Beckham Ranch Road Right; then westerly on said road for 5.2 miles to a "T" and turn right going north, northwest and west on main lease road for 3.7 miles to a "Y"; then take the right fork continuing westerly for 1.5 miles to the Jumbo American well location and proposed lease road at southwest corner.

2. Proposed Access Road

Exhibit #3 shows the existing lease road. Access to this location will require the construction of about 2,281' of proposed access road. All new construction will adhere to the following.

A. The maximum width of the road will be 15'. It will be crowned and made of 6" of rolled and compacted caliche. Water will be deflected, as necessary, to avoid accumulation and prevent surface erosion.

B. Surface material will be native caliche. This material will be obtained from a BLM approved pit nearest in proximity to the location. The average grade will be approximately 1%.

C. No cattle guards, grates or fence cuts will be required. No turnouts are planned.

3. Location of Existing and/or Proposed Facilities

A. In the event the well is found productive, a tank battery would be constructed and the necessary production equipment will be installed at the well site.

1) If necessary, the well will be operated by means of an electric prime mover. Electric power poles will be set along side of the access road.

2) The tank battery, all connections and all lines will adhere to API standards.

B. If the well is productive, rehabilitation plans are as follows.

1) The reserve pit will be closed pursuant to OCD rules and guidelines and reclaimed as per BLM specifications.

2) The original topsoil from the well site will be returned to the location. The drill site will then be contoured as close as possible to the original state.

5. Location and Type of Water Supply

The proposed well will be drilled using a combination of brine and fresh water mud systems (outlined in Drilling Program). The water will be obtained from commercial sources and will be transported over the existing and proposed roads. No water well will be drilled on the location.

6. Source of Construction Materials

All caliche utilized for the drilling pad and proposed access road will be obtained from an existing BLM approved pit. All roads will be constructed of 6" rolled and compacted caliche.

7. Methods of Handling Waste Disposal

A. Drill cuttings will be disposed into the reserve pit.

B. Drilling fluids will be contained in steel mud tanks. The reserve pit will contain excess drilling fluid or fluid from the well during drilling, cementing and completion operations. The reserve pit will be an earthen pit roughly 200' x 240' x 8', or smaller, in size.

C. The reserve pit will be fenced on three sides throughout drilling operations and will be totally isolated upon removal of the rotary rig. The pit will be lined using a 12 mil woven synthetic liner to minimize loss of drilling fluids.

D. Water produced from the well during completion operations will be disposed into a steel tank or reserve pit, if volumes prove excessive. After placing the well on production through the production facilities, all water will be collected in tanks. Produced oil will be separated into steel stock tanks until sold.

E. A portable chemical toilet will be available on the location for human waste during the drilling operations.

F. Garbage, trash and waste paper produced during drilling operations will be collected in a contained trailer and disposed at an approved landfill. All waste material will be contained to prevent scattering by the wind. All water, fluids, salt or other chemicals will be disposed into the reserve pit. No toxic waste or hazardous chemicals will be generated by this operation.

G. All waste material will be removed within 30 days after the well is either completed or abandoned. The reserve pit will be completely fenced until it is reclaimed as per BLM specifications. Only the portion of the drilling pad used by the production
equipment (pumping unit and tank battery) will remain in use. If the well is deemed non-commercial only a dry hole marker will remain.

8. Ancillary Facilities

No permanent campsite or other facilities will be constructed as a result of this well.

9. Well Site Layout

A. The drilling pad is shown on Exhibit #5 The pad, pits and general location of the rig equipment are displayed. Top soil will be stored adjacent to the pad until reclamation efforts are undertaken. Only modest cuts will be necessary to build the pad which will be covered with 6" of compacted caliche.

B. No permanent living facilities are planned, but temporary trailers for the tool pusher, drilling foreman and mud logger may be on location throughout drilling operations.

C. The reserve pit will be lined using a 12 mil woven synthetic liner.

10. Plans for Restoration of Surface

A. After concluding the drilling and/or completion operations, if the well is found non-commercial, the pad and road will be reclaimed as directed by the BLM. The reserve pit area will be reclaimed pursuant to OCD rules and BLM specifications. The original top soil will be returned to the pad and contoured, as close as possible, to the original topography.

B. The location and road will be rehabilitated as recommended by the BLM.

C. The reserve pit will be fenced on three sides throughout drilling operations. After the rotary rig is removed, the reserve pit will be fenced on the fourth side to preclude endangering wildlife. The fencing will be in place until the pit is reclaimed.

D. If the well is deemed commercially productive, the reserve pit will be restored as described in 10 (A). Caliche from areas of the pad site not required for operations will be reclaimed. The original top soil will be returned to the area of the drilling pad not necessary to operate the well. These unused areas of the drilling pad will be contoured, as closely as possible, to match the original topography.

11. Surface Ownership

The well site is owned by the Bureau of Land Management.

The surface location will be restored as directed by the BLM.

12. Other Information

A. The project area is located in a relatively flat area. The top soil at the wellsite is sandy. Vegetation in the area is moderately sparse, with prairie grasses, some mesquite bushes, and shinnery oak. No wildlife was observed but it is likely that deer, rabbits, coyotes, and rodents traverse the area.

B. There is no permanent water in the immediate area.

C. Land use is for oil and gas production, grazing and hunting.

D. A Cultural Resources Examination will be completed by Southern New Mexico Archaeological Services, Inc. and forwarded to the BLM office in Carlsbad, New Mexico.

13. Lessee's and Operator's Representative

The Devon Energy Production Company, L.P. representatives responsible for ensuring compliance of the surface use plan are listed below.

Bill Greenlees
Operations Engineering Advisor

Devon Energy Production Company, L.P.
20 North Broadway, Suite 1500
Oklahoma City, OK 73102-8260

(405) 552-8194 (office)
(405) 203-7778 (cell)

Don Mayberry
Superintendent

Devon Energy Production Company, L.P.
Post Office Box 250
Artesia, NM 88211-0250

(505) 748-3371 (office)
(505) 746-4945 (home)

Certification

I hereby certify that I, or persons under my direct supervision, have inspected the proposed drill site and access road; that I am familiar with the conditions that presently exist; that the statements made in this plan are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed by Devon Energy Production Company, L.P. and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved.

Signed: _____ Date: April 28, 2005

Norvella Adams
Sr. Staff Engineering Technician

Attachment to Exhibit #1
NOTES REGARDING BLOWOUT PREVENTERS
Devon Energy Production Company, LP
RATTLESNAKE FEDERAL UNIT #2
Unit Letter D, 1100 FNL & 1310 FWL, Section 26-26S-34E
Lea County, New Mexico

1. Drilling nipple will be constructed so it can be removed mechanically without the aid of a welder. The minimum internal diameter will equal BOP bore.

2. Wear ring will be properly installed in head.

3. Blowout preventer and all associated fittings will be in operable condition to withstand a minimum 5000/10000 psi working pressure.

4. All fittings will be flanged.

5. A full bore safety valve tested to a minimum 3000 psi WP with proper thread connections will be available on the rotary rig floor at all times.

6. All choke lines will be anchored to prevent movement.

7. All BOP equipment will be equal to or larger in bore than the internal diameter of the last casing string.

8. Will maintain a kelly cock attached to the kelly.

9. Hand wheels and wrenches will be properly installed and tested for safe operation.

10. Hydraulic floor control for blowout preventer will be located as near in proximity to driller's controls as possible.

11. All BOP equipment will meet API standards and include a minimum 40 gallon accumulator having two independent means of power to initiate closing operation.

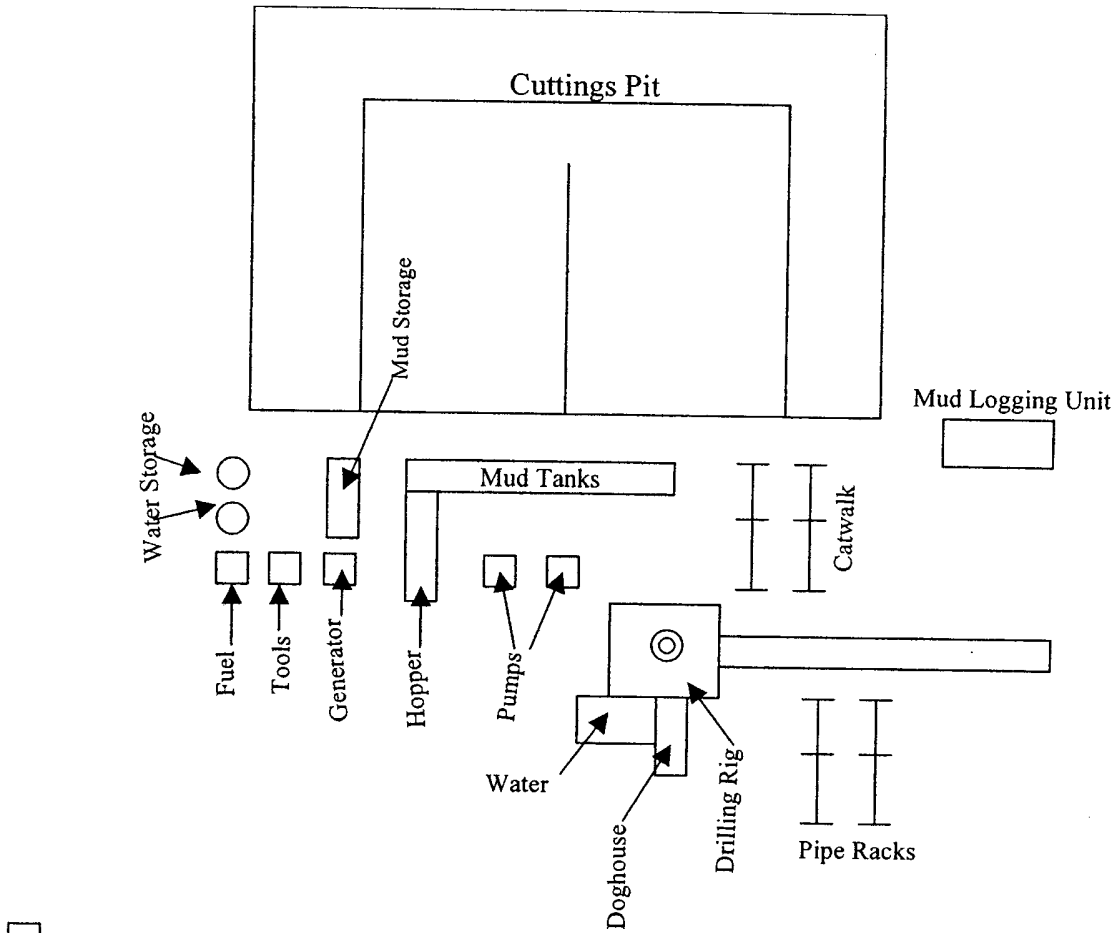
UNITED STATES DEPARTMENT OF THE INTERIOR
Bureau of Land Management
Roswell Field Office
2909 West Second Street
Roswell, New Mexico 88201-1287

Statement Accepting Responsibility for Operations

Operator Name:	**Devon Energy Production Company, LP**
Street or Box:	**20 North Broadway, Suite 1500**
City, State:	**Oklahoma City, Oklahoma**
Zip Code:	**73102-8260**

The undersigned accepts all applicable terms, conditions, stipulations and restrictions concerning operations conducted on the leased land or portion thereof, as described below.

Lease No.:	**NMNM100568**
Legal Description of Land:	**320 acres 26-26S-34E**
Formation(s):	**Wildcat (Morrow)**
Bond Coverage:	**Nationwide**
BLM Bond File No.:	**CO1104**
Authorized Signature:	**Norvella Adams**
Title:	**Sr. Staff Engineering Technician**
Date:	April 28, 2005



N

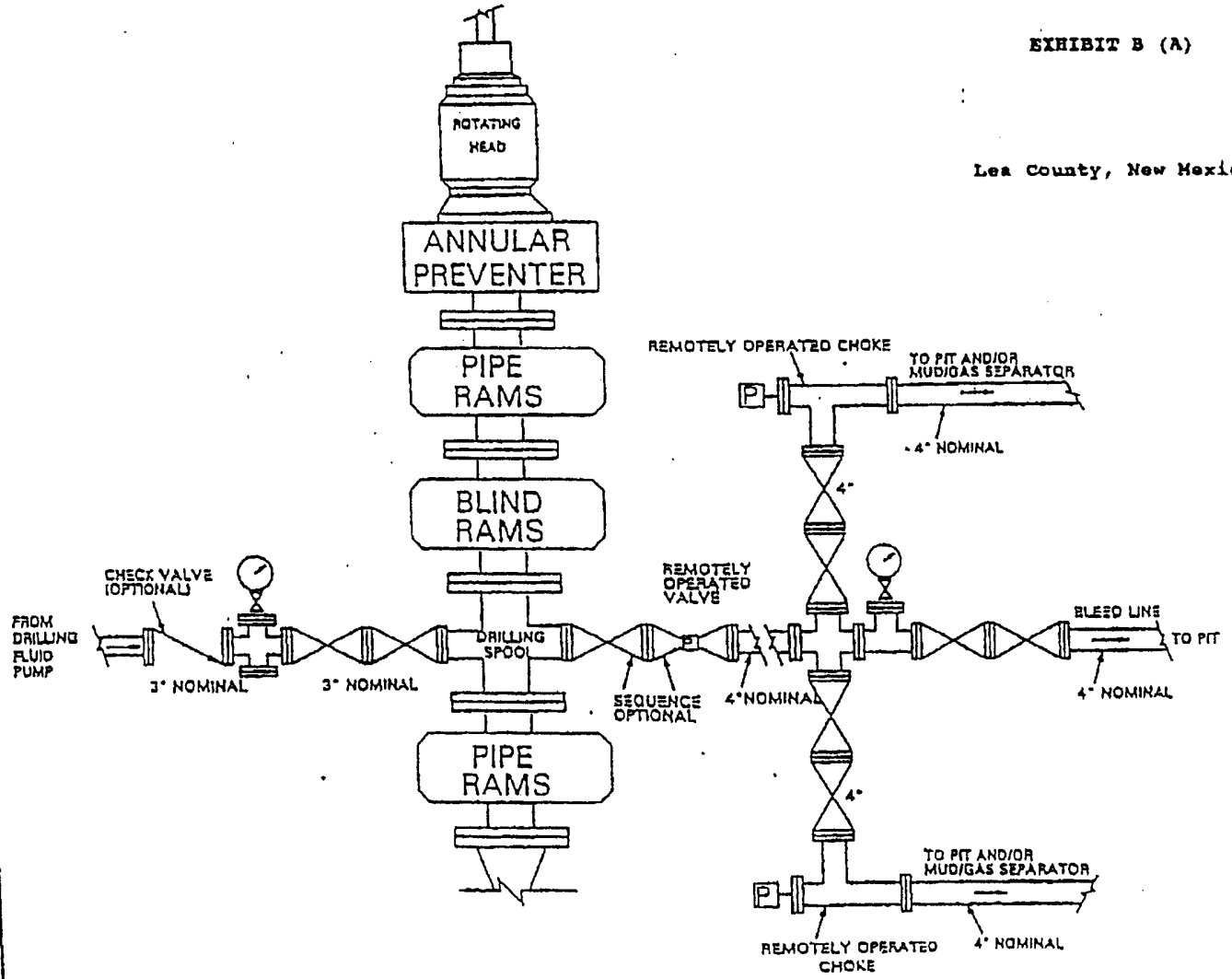
Devon Energy Production Company, LP

Drilling Pad
Exhibit #

PROPOSED 10-M BOPE AND CHOKE ARRANGEMENT

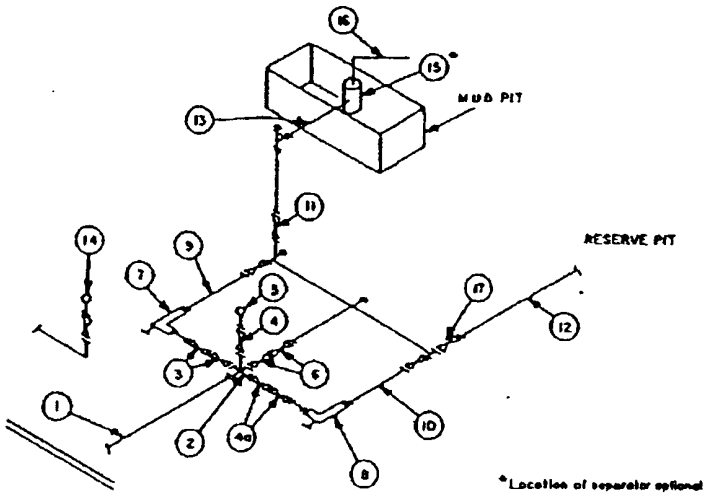
EXHIBIT B (A)

Lea County, New Mexico



MINIMUM CHOKE MANIFOLD
3,000, 5,000 and 10,000 PSI Working Pressure

3 MWP - 5 MWP - 10 MWP



MINIMUM REQUIREMENTS										
		3,000 MWP			5,000 MWP			10,000 MWP		
No.		I.D.	NOMINAL	RATING	I.D.	NOMINAL	RATING	I.D.	NOMINAL	RATING
1	Line from drilling spool		3"	3,000		3"	5,000		3"	10,000
2	Cross 3"x3"x3"x2"			3,000			5,000			
	Cross 3"x3"x3"x3"									10,000
3	Valves(1) Gate ☐ Plug ☐(2)	3-1/8"		3,000	3-1/8"		5,000	3-1/8"		10,000
4	Valve Gate ☐ Plug ☐(2)	1-13/16"		3,000	1-13/16"		5,000	1-13/16"		10,000
4a	Valves(1)	2-1/16"		3,000	2-1/16"		5,000	3-1/8"		10,000
5	Pressure Gauge			3,000			5,000			10,000
6	Valves Gate ☐ Plug ☐(2)	3-1/8"		3,000	3-1/8"		5,000	3-1/8"		10,000
7	Adjustable Choke(3)	2"		3,000	2"		5,000	2"		10,000
8	Adjustable Choke	1"		3,000	1"		5,000	2"		10,000
9	Line		3"	3,000		3"	5,000		3"	10,000
10	Line		2"	3,000		2"	5,000		3"	10,000
11	Valves Gate ☐ Plug ☐(2)	3-1/8"		3,000	3-1/8"		5,000	3-1/8"		10,000
12	Lines		3"	1,000		3"	1,000		3"	2,000
13	Lines		3"	1,000		3"	1,000		3"	2,000
14	Remote reading compound standpipe pressure gauge			3,000			5,000			10,000
15	Gas Separator		2'x5'			2'x5'			2'x5'	
16	Line		4"	1,000		4"	1,000		4"	2,000
17	Valves Gate ☐ Plug ☐(2)	3-1/8"		3,000	3-1/8"		5,000	3-1/8"		10,000

(1) Only one required in Class 3M.

(2) Gate valves only shall be used for Class 10M.

(3) Remote operated hydraulic choke required on 5,000 psi and 10,000 psi for drilling.

EQUIPMENT SPECIFICATIONS AND INSTALLATION INSTRUCTIONS

1. All connections in choke manifold shall be welded, studded, flanged or Cameron clamp of comparable rating.
2. All flanges shall be API 6B or 6BX and ring gaskets shall be API RX or BX. Use only BX for 10 MWP.
3. All lines shall be securely anchored.
4. Chokes shall be equipped with tungsten carbide seats and needles, and replacements shall be available.
5. Choke manifold pressure and standpipe pressure gauges shall be available at the choke manifold to assist in regulating chokes. As an alternate with automatic chokes, a choke manifold pressure gauge shall be located on the rig floor in conjunction with the standpipe pressure gauge.
6. Line from drilling spool to choke manifold should be as straight as possible. Lines downstream from chokes shall make turns by large bends or 90° bends using bull plugged tees.
7. Discharge lines from chokes, choke bypass and from top of gas separator should vent as far as practical from the well.

Well name:	Rattlesnake Federal Unit # 2
Operator:	Devon Energy
String type:	Surface
Location:	New Mexico

Design parameters:

Collapse

Mud weight: 9.200 ppg
Design is based on evacuated pipe.

Burst

Max anticipated surface pressure: 911 psi
Internal gradient: 0.120 psi/ft
Calculated BHP 1,035 psi

Annular backup: 8.34 ppg

Minimum design factors:

Collapse:
Design factor 1.125

Burst:
Design factor 1.00

Tension:

8 Round STC:	1.80 (J)
8 Round LTC:	1.80 (J)
Buttress:	1.60 (J)
Premium:	1.50 (J)
Body yield:	1.60 (B)

Tension is based on air weight.
Neutral point: 896 ft

Environment:

H2S considered?	No
Surface temperature:	75 °F
Bottom hole temperature:	89 °F
Temperature gradient:	1.40 °F/100ft
Minimum section length:	1,000 ft
Minimum Drift:	2.250 in
Cement top:	Surface

Non-directional string.

Re subsequent strings:

Next setting depth:	5,350 ft
Next mud weight:	10.100 ppg
Next setting BHP:	2,807 psi
Fracture mud wt:	19.250 ppg
Fracture depth:	1,035 ft
Injection pressure	1,035 psi

Run Seq	Segment Length (ft)	Size (in)	Nominal Weight (lbs/ft)	Grade	End Finish	True Vert Depth (ft)	Measured Depth (ft)	Drift Diameter (in)	Est. Cost ($)
1	1035	13.375	48.00	H-40	ST&C	1035	1035	12.59	12835

Run Seq	Collapse Load (psi)	Collapse Strength (psi)	Collapse Design Factor	Burst Load (psi)	Burst Strength (psi)	Burst Design Factor	Tension Load (kips)	Tension Strength (kips)	Tension Design Factor
1	495	740	1.50	911	1795	1.97	49.7	322	6.48 J

Prepared by: Don Culpepper
Devon Energy
Phone: 405.552.7944
FAX: 405.552.4621
Date: September 9,2004
Oklahoma City, Oklahoma

Remarks:
Collapse is based on a vertical depth of 1035 ft, a mud weight of 9.2 ppg The casing is considered to be evacuated for collapse purposes. Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.

In addition, burst strength is biaxially adjusted for tension.

Engineering responsibility for use of this design will be that of the purchaser.

Well name:	**Rattlesnake Federal Unit # 2**
Operator:	Devon Energy
String type:	Intermediate
Location:	New Mexico

Design parameters:

Collapse

Mud weight:	10.100 ppg
Internal fluid density:	1.000 ppg

Burst

Max anticipated surface pressure:	4,708 psi
Internal gradient:	0.116 psi/ft
Calculated BHP	5,330 psi
Annular backup:	8.34 ppg

Minimum design factors:

Collapse:

Design factor	1.125

Burst:

Design factor	1.00

Tension:

8 Round STC:	1.80 (J)
8 Round LTC:	1.80 (J)
Buttress:	1.60 (J)
Premium:	1.50 (J)
Body yield:	1.60 (B)

Tension is based on air weight.
Neutral point: 4,546 ft

Environment:

H2S considered?	No
Surface temperature:	75 °F
Bottom hole temperature:	150 °F
Temperature gradient:	1.40 °F/100ft
Minimum section length:	1,000 ft
Minimum Drift:	8.750 in
Cement top:	Surface

Non-directional string.

Re subsequent strings:

Next setting depth:	13,400 ft
Next mud weight:	9.000 ppg
Next setting BHP:	6,265 psi
Fracture mud wt:	19.250 ppg
Fracture depth:	5,350 ft
Injection pressure	5,350 psi

Run Seq	Segment Length (ft)	Size (in)	Nominal Weight (lbs/ft)	Grade	End Finish	True Vert Depth (ft)	Measured Depth (ft)	Drift Diameter (in)	Est. Cost ($)
1	5350	9.625	40.00	N-80	LT&C	5350	5350	8.75	68078

Run Seq	Collapse Load (psi)	Collapse Strength (psi)	Collapse Design Factor	Burst Load (psi)	Burst Strength (psi)	Burst Design Factor	Tension Load (kips)	Tension Strength (kips)	Tension Design Factor
1	2529	3090	1.22	4708	6235	1.32	214	737	3.44 J

Prepared by: Don Culpepper
Devon Energy
Phone: 405.552.7944
FAX: 405.552.4621
Date: September 9,2004
Oklahoma City, Oklahoma

Remarks:
Collapse is based on a vertical depth of 5350 ft, a mud weight of 10.1 ppg An internal gradient of .052 psi/ft was used for collapse from TD to 0
Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.

In addition, burst strength is biaxially adjusted for tension.

Well name:	Rattlesnake Federal Unit # 2
Operator:	Devon Energy
String type:	Intermediate: Prod'n
Location:	New Mexico

Design parameters:

Collapse

Mud weight: 9.000 ppg
Design is based on evacuated pipe.

Burst

Max anticipated surface pressure: 11,559 psi
Internal gradient: 0.116 psi/ft
Calculated BHP 13,116 psi

Annular backup: 8.34 ppg

Minimum design factors:

Collapse:
Design factor 1.125

Burst:
Design factor 1.00

Tension:

8 Round STC:	1.80 (J)
8 Round LTC:	1.80 (J)
Buttress:	1.60 (J)
Premium:	1.50 (J)
Body yield:	1.60 (B)

Tension is based on air weight.
Neutral point: 11,602 ft

Environment:

H2S considered?	No
Surface temperature:	75 °F
Bottom hole temperature:	263 °F
Temperature gradient:	1.40 °F/100ft
Minimum section length:	1,000 ft
Minimum Drift:	6.500 in
Cement top:	4,850 ft

Non-directional string.

Re subsequent strings:

Next setting depth:	15,600 ft
Next mud weight:	16.500 ppg
Next setting BHP:	13,371 psi
Fracture mud wt:	30.000 ppg
Fracture depth:	13,400 ft
Injection pressure	20,883 psi

Run Seq	Segment Length (ft)	Size (in)	Nominal Weight (lbs/ft)	Grade	End Finish	True Vert Depth (ft)	Measured Depth (ft)	Drift Diameter (in)	Est. Cost ($)
1	13400	7.625	39.00	P-110	FL-4S	13400	13400	6.5	245421

Run Seq	Collapse Load (psi)	Collapse Strength (psi)	Collapse Design Factor	Burst Load (psi)	Burst Strength (psi)	Burst Design Factor	Tension Load (kips)	Tension Strength (kips)	Tension Design Factor
1	6265	11080	1.77	11559	14286	1.24	522.6	889	1.70 J

Prepared by: Don Culpepper
Devon Energy
Phone: 405.552.7944
FAX: 405.552.4621

Date: September 9,2004
Oklahoma City, Oklahoma

Remarks:
Collapse is based on a vertical depth of 13400 ft, a mud weight of 9 ppg The casing is considered to be evacuated for collapse purposes.
Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.

In addition, burst strength is biaxially adjusted for tension.

Well name:	Rattlesnake Federal Unit # 2
Operator:	Devon Energy
String type:	Liner: Production
Location:	New Mexico

Design parameters:

Collapse

Mud weight: 14.200 ppg
Design is based on evacuated pipe.

Burst

Max anticipated surface pressure: 10,316 psi
Internal gradient: 0.116 psi/ft
Calculated BHP 12,245 psi

Annular backup: 8.34 ppg

Minimum design factors:

Collapse:
Design factor 1.125

Burst:
Design factor 1.00

Tension:

8 Round STC:	1.80 (J)
8 Round LTC:	1.80 (J)
Buttress:	1.60 (J)
Premium:	1.50 (J)
Body yield:	1.60 (B)

Tension is based on air weight.
Neutral point: 15,856 ft

Environment:

H2S considered?	No
Surface temperature:	75 °F
Bottom hole temperature:	307 °F
Temperature gradient:	1.40 °F/100ft
Minimum section length:	1,000 ft
Minimum Drift:	4.500 in
Cement top:	13,107 ft

Liner top: 13,100 ft
Non-directional string.

Run Seq	Segment Length (ft)	Size (in)	Nominal Weight (lbs/ft)	Grade	End Finish	True Vert Depth (ft)	Measured Depth (ft)	Drift Diameter (in)	Est. Cost ($)
1	3500	5.5	23.00	HCP-110	ST-L	16600	16600	4.545	37445

Run Seq	Collapse Load (psi)	Collapse Strength (psi)	Collapse Design Factor	Burst Load (psi)	Burst Strength (psi)	Burst Design Factor	Tension Load (kips)	Tension Strength (kips)	Tension Design Factor
1	12245	14540	1.19	6163	15120	2.45	80.5	563	6.99 J

Prepared by: Don Culpepper
Devon Energy
Phone: 405.552.7944
FAX: 405.552.4621
Date: September 10,2004
Oklahoma City, Oklahoma

Remarks:
For this liner string, the top is rounded to the nearest 100 ft.Collapse is based on a vertical depth of 16600 ft, a mud weight of 14.2 ppg The casi Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.

In addition, burst strength is biaxially adjusted for tension.

Engineering responsibility for use of this design will be that of the purchaser.

District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-144
June 1, 2004

For drilling and production facilities, submit to appropriate NMOCD District Office.
For downstream facilities, submit to Santa Fe office

Pit or Below-Grade Tank Registration or Closure

Is pit or below-grade tank covered by a "general plan"? Yes ☒ No ☐
Type of action: Registration of a pit or below-grade tank ☒ Closure of a pit or below-grade tank ☐

Operator: Devon Energy Production Company, LP Telephone: 405-552-8198 e-mail address: norvella.adams@dvn.com
Address: PO Box 250 Artesia NM 88211
Facility or well name: Rattlesnake Fed Unit #2 API #: 30-025-37297 U/L or Qtr/Qtr NW/NW Sec 26 T 26S R 34E
County: Lea Latitude _____ Longitude _____ NAD: 1927 ☐ 1983 ☐
Surface Owner: Federal ☒ State ☐ Private ☐ Indian ☐

Pit	Below-grade tank	
Type: Drilling ☒ Production ☐ Disposal ☐ Workover ☐ Emergency ☐ Lined ☒ Unlined ☐ Liner type: Synthetic ☒ Thickness 12 mil Clay ☐ Pit Volume _____ bbl	Volume: _____ bbl Type of fluid: _____ Construction material: _____ Double-walled, with leak detection? Yes ☐ If not, explain why not.	
Depth to ground water (vertical distance from bottom of pit to seasonal high water elevation of ground water.)	Less than 50 feet 50 feet or more, but less than 100 feet 100 feet or more	(20 points) (10 points) (0 points)
Wellhead protection area: (Less than 200 feet from a private domestic water source, or less than 1000 feet from all other water sources.)	Yes No	(20 points) (0 points)
Distance to surface water: (horizontal distance to all wetlands, playas, irrigation canals, ditches, and perennial and ephemeral watercourses.)	Less than 200 feet 200 feet or more, but less than 1000 feet 1000 feet or more	(20 points) (10 points) (0 points)
	Ranking Score (Total Points)	

If this is a pit closure: (1) Attach a diagram of the facility showing the pit's relationship to other equipment and tanks. (2) Indicate disposal location: (check the onsite box if your are burying in place) onsite ☐ offsite ☐ If offsite, name of facility_____. (3) Attach a general description of remedial action taken including remediation start date and end date. (4) Groundwater encountered: No ☐ Yes ☐ If yes, show depth below ground surface_____ft. and attach sample results. (5) Attach soil sample results and a diagram of sample locations and excavations.

Additional Comments:

I hereby certify that the information above is true and complete to the best of my knowledge and belief. **I further certify that the above-described pit or below-grade tank has been/will be constructed or closed according to NMOCD guidelines ☐, a general permit ☒, or an (attached) alternative OCD-approved plan ☐.**

Date: 6/17/05
Printed Name/Title Norvella Adams / Sr. Staff Eng. Tech Signature _____

Your certification and NMOCD approval of this application/closure does not relieve the operator of liability should the contents of the pit or tank contaminate ground water or otherwise endanger public health or the environment. Nor does it relieve the operator of its responsibility for compliance with any other federal, state, or local laws and/or regulations.

Approval:
Printed Name/Title PAUL F. KAUTZ PETROLEUM ENGINEER Signature _____ Date: JUN 17 2005