Form 3160-3 (April 2004)	il Cons. DIV-D W. Grand Aver sia, NM 88210	list. 2 nue 0	FORM API OMB No. 11 Expires Man	004-0137
UNITED STATES DEPARTMENT OF THE	S INTERIOR	•	5. Lease Serial No. NM-96212	
BUREAU OF LAND MAN APPLICATION FOR PERMIT TO			6. If Indian, Allotee or	Tribe Name
1a. Type of work: DRILL REENT			7 If Unit or CA Agreem	
ib. Type of Well: ☐Oil Well Gas Well Other	Single Zone	ltiple Zone	8. Lease Name and We Angell Ranch 6 I	
2. Name of Operator Devon Energy Production Company, I			9. API Well No. 30-015-	
3a. Address 20 North Broadway Oklahoma City, Oklahoma City 73102-8260	3b. Phone No. (include area code) 405-552-7802	0310	10. Field and Pool, or Exp Angell Ranch At	
4. Location of Well (Report location clearly and in accordance with a At surface Unit C (NE/4 NW/4) 1080' FNL &	my State requirements.*	VEN	11. Sec., T. R. M. or Blk. Lot 3 Sec 6, T205	·
At proposed prod. zone Unit C (NE/4 NW/4) 1080' FNL &				13. State
14. Distance in miles and direction from nearest town or post office* Approximately 10 miles northeast of Carlsbad, New Me	exico.	16814	12. County or Parish Eddy 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 331.30	17. Spacir 320	ng Unit dedicated to this wel	1
 Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 	19. Proposed Depth 11,200'	20. BLM/	/BIA Bond No. on file	
21. Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will	start*	23. Estimated duration 45 days	
3357'	12/15/2005			
······································	24. Attachments		Controlled Water	· Dosin
The following, completed in accordance with the requirements of Onsho 1. Well plat certified by a registered surveyor. 2. A Drilling Plan.	24. Attachments ore Oil and Gas Order No.1, shall b 4. Bond to cove Item 20 above 5. Operator certi	e attached to the er the operation e). ification ite specific inf		isting bond on file (see
 The following, completed in accordance with the requirements of Onsho Well plat certified by a registered surveyor. A Drilling Plan. A Surface Use Plan (if the location is on National Forest System SUPO shall be filed with the appropriate Forest Service Office). 	24. Attachments ore Oil and Gas Order No.1, shall be ore Oil and Gas Order No.1, shall be 4. Bond to cove Item 20 above 5. Operator certific 6. Such other si authorized of Name (Printed/Typed)	e attached to the er the operation e). ification ite specific inf fficer.	his form: ons unless covered by an ex formation and/or plans as m	isting bond on file (see ay be required by the ate
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*(Instructions on page 2)

WITNESS ; M'4" LEMENT SOL

9.5

APPROVAL SUBJECT TO GENERAL REQUIREMENTS AND SPECIAL STIPULATIONS ATTACHED

If earthen pits are used in association with the drilling of this well, an OCD pit permit must be obtained prior to pit construction.

Additional Operator Remarks:

Devon Energy Production Company, LP proposes to drill a Morrow well to 11,200' for commercial quantities of oil and gas. If the well is deemed noncommercial, the wellbore will be plugged and abandoned per Federal regulations. Devon Energy Production Co., LP plans to drill the well per the attached Drilling and Surface Use Plan.

Directions To Location:

From the Junction of Co. Rd 206 and Co. Rd. 237, go North on Co. Rd 206 for 1.0 mile to lease road; thence northeast on lease road for 0.1 mile; thence northeast for 0.3 mile to a proposed lease road.

Access Road:

Approximately 1720' of access road will be required. Archeological survey's will be requested for the pad and access road.

H2S:

No H2S is anticipated to be encountered.

DISTRICT 'I 1625 N. Prench 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 67505 State of New Mexico

Energy, Minerals and Natural Resources Department

Form C-102 Revised March 17, 1999

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

OIL CONSERVATION DIVISION

2040 South Pacheco Santa Fe, New Mexico 87504-2088

WELL LOCATION AND ACREAGE DEDICATION PLAT

□ AMENDED REPORT

API Number **Pool** Code Pool Name 10310 Angell Ranch Atoka - Morrow Property Name Well Number **Property Code** ANGELL RANCH "6" FEDERAL 2 **Operator** Name Elevation OGRID No. DEVON ENERGY PRODUCTION CO., L.P. 3357' : 6137 Surface Location Feet from the North/South line East/West line Lot Idn Feet from the UL or lot No. Section Township Range County LOT 3 6 20 S 28 E 1080 NORTH 1500 WEST EDDY Bottom Hole Location If Different From Surface Range UL or lot No. Section Township 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 LOT 3 LOT 4 LOT 2 LOT 1 OPERATOR CERTIFICATION I hereby certify the the information mtained herein is true and complete to the best of my knowledge and belief. 3361.3' 3356.4 L 1500 Signatur 3353.9' Stephanie A. Xszsaga 3362.7 Printed Name Senior Engineering/Technician Lat - N32*36'24.7" Title Long - W104 13'15.2' 10/26/05 Date LOT 5 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. OCTOBER 18 2005 Date Superedy L. JONES Signatore & Seal of LOT 6 Signat sional Profe Certifie NPOH; 7977 LOT 7 BASIN SURVEYS



DRILLING PROGRAM

Devon Energy Production Company, LP Angell Ranch 6 Federal 2

Surface Location: 1080' FNL & 1500' FWL, Lot 3, Sec 6 T20S R28E, Eddy, NM Bottom hole Location: 1080' FNL & 1500' FWL, Lot 3, Sec 6 T20S R28E, Eddy, NM

1. Geologic Name of Surface Formation

a. Quaternary

2. Estimated tops of geological markers:

a.	Yates	870'
b.	Queen	1160'
c.	San Andres	1700'
d.	Delaware	2700'
e.	Bone Spring	3835'
f.	Wolfcamp	8550'
g.	Cisco-Canyon	9135'
h.	Strawn	9850'
i.	Atoka	10300'
j.	Morrow	10775'
k.	Barnett Shale	11025'
1.	Total Depth	11200'

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

a.	Yates	870'	Water
b.	Delaware	2700'	Gas & Oil
c.	Bone Spring	3835'	Gas & Oil
d.	Wolfcamp	8550'	Gas
e.	Cisco-Canyon	9135'	Gas
f.	Strawn	9850'	Gas
g.	Atoka	10300'	Gas
h.	Morrow	10775'	Gas

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 11 3/4" casing at 400' and circulating cement back to surface. Fresh water sands will be protected by setting 8 5/8" casing at 2700' and circulating cement to surface. The Morrow intervals will be isolated by setting 5 $\frac{1}{2}$ " casing to total depth and circulating cement above the base of the 8 5/8" casing.

4. Casing Program:

<u>Hole Size</u>	<u>Interval</u>	OD Csg	Weight	<u>Collar</u>	Grade
14 ¾"	0' -400'	11 3/4"	42#	ST&C	H-40
11"	400'- 2700'	8 5/8"	. 32#	LT&C	J-55
7 7/8"	2700'11200'	5 ½"	17#	LT&C	HCP110

Ce	ement Prog	gram:	
a.	11 3/4"	Surface	Cement to surface with 94 sx 35:65 Poz "C", 2% CaCl, ¼ pps celloflake, 6% bentonite, 12.8 ppg, Tail with 150 sx "C", 2% CaCl, ¼ pps celloflake, 14.8 ppg.
b.	8 5/8"	Intermediate	Cement to surface with 490 sx 35:65 Poz "C", 5% NaCl, ¼ pps celloflake, 5 pps LCM-1, 6% Bentonite, 12.7 ppg, Tail with 250 sx "C" 2% CaCl, 14.8 ppg.
c.	5 1/2"	Production	Cement 1 st Stage: with 448 sx (15:61:11) Poz C CSE-2, 3% KCL, 0.75% EC-1, ¼ pps Celloflake, 0.3% CD-32, 5 pps LCM-1, 0.6% FI-25, 0.1% Sodium Metasilicate 0.6% FL-52A, 13.3 ppg, DV @ 8500'. Stage 2: with 1186 sx (60:40) Poz H, 2% NaCl, 0.75% BA-10, 0.1% R-3, ¼ pps Celloflake, 2 pps KolSeal, 4% MPA-1, 13.8 ppg. TOC @ 2200'.

The above cement volumes could be revised pending the caliper measurement from the open hole logs. The top of cement is designed to reach approximately 500' above the 8 5/8" casing shoe.

6. Pressure Control Equipment:

5.

The blowout preventor equipment (BOP) shown in Exhibit #1 will consist of a (5M system) double ram type (5000 psi WP) preventor and a bag-type (Hydril) preventor (5000 psi WP) and rotating head. Both units will be hydraulically operated and the ram type preventor will be equipped with blind rams on top and 4 ½" drill pipe rams on bottom. The drilling head will be installed on the 13 3/8" surface casing and utilized continuously until total depth is reached. All BOP's and associated equipment will be tested to 1200 psi with the rig pump before drilling out the 13 3/8" casing shoe (70% of 48#, H-40 casing). Prior to drilling out the 8 5/8" casing shoe, the BOP's and Hydril will be tested as per BLM Drilling Operations Order #2.

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 5000 psi WP rating.

7. Proposed Mud Circulation System

<u>Depth</u>	<u>Mud Wt.</u>	Visc	Fluid Loss	Type System
0' - 400'	8.4-8.6	32-34	NC	Fresh Water
400' – 2700'	9.5-10	29	NC	Brine
2700'- 8000'	8.5-9.3	29	NC	Cut Brine
8000'-9800'	9.3-10	29	NC	Cut Brine/Brine
9800'-11200'	10-10.2	32-40	10-6	Brine/Polymer

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

8. 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 11 3/4" casing shoe until the 5 1/2" casing is cemented. Breathing equipment will be on location upon drilling the 11 3/4" shoe until total depth is reached.

9. Logging, Coring, and Testing Program:

- a. Drill stem tests will be based on geological sample shows.
- b. 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.

Compensated Neutron with Gamma Ray

- ii. Total Depth to Surface
- iii. No coring program is planned
- iv. Additional testing will be initiated subsequent to setting the 5 ¹/₂" production casing. Specific intervals will be targeted based on log evaluation, geological sample shows and drill stem tests.

10. Potential Hazards:

a. No abnormal pressures or temperatures are expected. There is no known presence of H2S in this area. 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 4700 psi and Estimated BHT 180°.

11. 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.

SURFACE USE PLAN Devon Energy Production Company, LP Angell Ranch 6 Federal 2

Surface Location: 1080' FNL & 1500' FWL, Lot 3, Sec 6 T20S R28E, Eddy, NM Bottom hole Location: 1080' FNL & 1500' FWL, Lot 3, Sec 6 T20S R28E, Eddy, NM

1. Existing Roads:

- a. The well site and elevation plat for the proposed well are reflected on Exhibit 2. The well was staked by Basin Surveys.
- b. All roads into the location are depicted on Exhibit 3.
- c. Directions to Location: From the Junction of Co. Rd 206 and Co. Rd. 237, go North on Co. Rd 206 for 1.0 mile to lease road; thence northeast on lease road for 0.1 mile; thence northeast for 0.3 mile to a proposed lease road.

2. Access Road

- a. Exhibit #3 shows the existing lease road. Approximately 1720' of new access road will be constructed as follows:
- b. 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.
- c. 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%.
- d. No cattle guards, grates or fence cuts will be required. No turnouts are planned.

3. **Proposed Facilities**

- a. In the event the well is found productive, the Angell Ranch 6 Federal 2 tank battery would be utilized and the necessary production equipment will be installed at the well site.
- b. 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.
- c. All flow lines will adhere to API standards.
- d. If the well is productive, rehabilitation plans are as follows:
 - i. The reserve pit will be back-filled after the contents of the pit are dry (within 120 days after completion, weather permitting).
 - ii. 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.

4. Methods of Handling Waste Material:

- a. Drill cuttings will be disposed of in the reserve pits.
- b. All trash, junk and other waste material will be contained in trash cages or trash bins to prevent scattering. When the job is completed all contents will be removed and disposed of in an approved sanitary landfill.
- c. The supplier, including broken sacks, will pick up salts remaining after completion of well.
- d. Wastewater from living quarters will be drained into hole with a minimum of 10'. These holes will be covered during drilling and will be back filled when the well is completed. A Porto-john

will be provided for the rig crews. This equipment will be properly maintained during the drilling and completion operations and will be removed when all operations are complete.

e. Remaining drilling fluids will be allowed to evaporate in the reserve pits until the pits are dry enough to be broken out for further drying. If the drilling fluids do not evaporate in a reasonable time they will be hauled off by transports to a state approved disposal site. Later pits will be broken out to speed dry. Water produced during completion will be put in reserve pits. Oil and condensate produced will be put in a storage tank and sold.

5. Well Site Layout

- a. Exhibit D Shows the proposed well site layout.
- b. This exhibit indicated proposed location of reserve and sump pits and living facilities.
- c. Mud pits in the active circulating system will be steel pits & the reserve pit is proposed to be unlined unless subsurface conditions encountered during pit construction indicate that lining is needed for lateral containment of fluids.
- d. If needed, the reserve pit is to be lined with polyethylene. The pit liner will be 6 mils thick. Pit liner will extend a minimum 2'00" over the reserve pits dikes where the liner will be anchored down.
- e. The reserve pit will be fenced on three sides with four strands of barbed wire during drilling and completion phases. The fourth side will be fenced after all drilling operations have ceased. If the well is a producer, the reserve pit fence will be torn down. The reserve pit and those areas of the location not essential to production facilities will be reclaimed and seeded per BLM requirements.

6. Other Information:

- a. The area surrounding the well site is grassland. The topsoil is very sandy in nature. The vegetation is moderately sparse with native prairie grass, some mesquite bushes and shinnery oak. No wildlife was observed but it is likely that deer, rabbits, coyotes, and rodents traverse the area.
- b. The surface is owned by the US Government and is administered by the Bureau of Land Management. The surface is of limited use except for the grazing of livestock and the production of oil and gas.
- c. A Cultural Resources Examination will be completed by Southern New Mexico Archaeological Services, Inc. and forwarded to the BLM office in Carlsbad, New Mexico.
- d. There are no dwellings within 2 miles of location.

Operators Representative:

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

Wyatt Abbitt	Don Mayberry
Operations Engineer Advisor	Superintendent
Devon Energy Production Company, L.P.	Devon Energy Production Company, L.P.
20 North Broadway, Suite 1500	Post Office Box 250
Oklahoma City, OK 73102-8260	Artesia, NM 88211-0250

(405) 552-8137 (office) (405) 245-3471 (Cellular) (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:	November 3, 2005
	Stephanie A. Ysasaga	_	
	Sectior Engineering Technician		

Attachment to Exhibit #1 NOTES REGARDING BLOWOUT PREVENTERS Devon Energy Production Company, LP Angell Ranch 6 Federal 2

Surface Location: 1080' FNL & 1500' FWL, Lot 3, Sec 6 T20S R28E, Eddy, NM Bottom hole Location: 1080' FNL & 1500' FWL, Lot 3, Sec 6 T20S R28E, Eddy, NM

- 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 psi working pressure.
- 4. All fittings will be flanged.
- 5. A full bore safety valve tested to a minimum 5000 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: Street or Box: City, State: Zip Code: Devon Energy Production Company, LP 20 North Broadway, Suite 1500 Oklahoma City, Oklahoma 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.:

Legal Description of Land:

Formation(s):

Bond Coverage:

BLM Bond File No.:

Authorized Signature:

Title:

Date:

NM-96212

320 acres 6-T20S-R28E Unit C (NE/4 NW/4) 1080' FNL & 1500' FWL

Angell Ranch Atoka - Morrow

Nationwide

CO-1104

Stephanie A. Ysasaga Senidr Engineering/Technician 11/03/05

HYDROGEN SULFIDE DRILLING OPERATIONS PLAN

- 1. All Company and Contract personnel admitted on location must be trained by a qualified H2S safety instructor to the following:
 - a. Characteristics of H2S
 - b. Physical effects and hazards
 - c. Proper use of safety equipment and life support systems.
 - d. Principle and operation of H2S detectors, warning system and briefing areas
 - e. Evacuation procedures, routes and first aid.
 - f. Proper use of 30-minute pressure demand air pack.
- 2. H2S Detection and Alarm System
 - a. H2S detectors and audio alarm system to be located at bell nipple, end of blooie line (mud pit) and on derrick floor or doghouse.
- 3. Windsock and/or wind streamers
 - a. Windsock at mud pit area should be high enough to be visible
 - b. Windsock at briefing area should be high enough to be visible
 - c. There should be a windsock at entrance to location
- 4. Condition Flags and Signs
 - a. Warning Sign on access road to location
 - b. Flags to be displayed on sign at entrance to location. Green flag, normal safe condition. Yellow flag indicates potential pressure and danger. Red flag, danger, H2S present in dangerous concentration. Only emergency personnel admitted to location.
- 5. Well Control Equipment a. See Exhibit "E" & "E-1"
 - a. See Exhibit "E" & "E-1"
- 6. Communication
 - a. While working under masks chalkboards will be used for communication.
 - b. Hand signals will be used where chalk board is inappropriate
 - c. Two way radio will be used to communicate off location in case of emergency help is required. In most cases cellular telephones will be available at most drilling foreman's trailer or living quarters.
- 7. Drill stem Testing
 - a. Exhausts will be watered
 - b. Flare line will be equipped with an electric igniter or a propane pilot light in case gas reaches the surface.
 - c. If the location is near to a dwelling a closed DST will be performed.
- 8. Drilling contractor supervisor will be required to be familiar with the effects H2S has on tubular goods and other mechanical equipment.

If H2S is encountered, mud system will be altered if necessary to maintain control or formation. A mud gas separator will be brought into service along with H2S scavengers if necessary.

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





			MINI	NUM REQL	AREMENT	5				
	· · · · · · · · · · · · · · · · · · ·	1	3,000 MWP	,		5,000 MWP			10,000 MW	
Na.		1.0.	NOMINAL	RATING	LD.	NOMINAL	RATING	LD.	NOMINAL.	RATING
1	Line from drifting spool	1	3-	3,000		3.	5.000		3"	10.000
2	Cross 3"13"13"12"			3,000			5,000			
Z	Cross 3"x3"x3"x3"	1								10.000
3	Valves(1) Gale [] Plug [](2)	3-1/8-		3,000	3-1/8*		\$.000	3-1/8"		10.000
4	Valve Gate D Plug D(2)	1-13/16*		3,000	1-13/16*		5,000	1-13/16"		10,000
48	Values(1)	2-1/16*		3,000	2-1/16*		5,000	3-1/8*	·	10,000
5	Pressure Gauge	1		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	z		5,000	2-		10,000
8	Adjustable Choky	1.		3,000	1*		5,000	2-		10.000
9	Line	1.	3"	3,000		3-	5,000		3"	10,000
10	Line		2*	3,000		2-	5,000		3	10,000
11	Valves Gale [] Valves 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		37	2,000
14	Remote reading compound standpipe pressure gauge			0.000			5,000	•		10,000
15	Gas Separator		235"			25			245	
16	Litve		4*	1,000		r -	1.000		4"	2,030
17	Gate [] Valves Plug [][7]	2-1/8-		3,000	3-1/8"		5,000	3-1/8-		10,000

(1) Only one required in Class JM.

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

(3) Remote operated hydraulic choka 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, llanged or Cameron clamp of comparable railing.
- 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.



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•• • • •

Operator's Name:	DEVON ENERGY PRODUCTION COMPANY, LP
Well Name & No.	2 – ANGELL RANCH 6 FEDERAL
Location:	1080' FNL & 1500' FWL – SEC 6 – T20S – R28E – EDDY COUNTY
Lease:	NM-96212
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I. DRILLING OPERATIONS REQUIREMENTS:

1. The Bureau of Land Management (BLM) is to be notified at the Roswell Field Office, 2909 West Second St., Roswell NM 88201, (505) 627-0272 for wells in Chaves and Roosevelt Counties; the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (505) 234-5909 or (505) 361-2822 (After hours) - for wells in Eddy County; and the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (505) 393-3612 for wells in Lea County, in sufficient time for a representative to witness:

A. Spudding

B. Cementing casing: 11-3/4 inch 8-5/8 inch 5-1/2 inch

C. BOP tests

2 Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.

3. Submit a Sundry Notice (Form 3160-5, one original and five copies) for each casing string, describing the casing and cementing operations. Include pertinent information such as; spud date, hole size, casing (size, weight, grade and thread type), cement (type, quantity and top), water zones and problems or hazards encountered. The Sundry shall be submitted within 15 days of completion of each casing string. The reports may be combined into the same Sundry if they fall within the same 15 day time frame.

4. The API No. assigned to the well by NMOCD shall be included on the subsequent report of setting the first casing string.

II. CASING:

1. The <u>11-3/4</u> inch surface casing shall be set at <u>400 feet</u>, below usable water and cement circulated to the surface. If cement does not circulate to the surface the appropriate BLM office shall be notified and a temperature survey or cement bond log shall be run to verify the top of the cement. Remedial cementing shall be completed prior to drilling out that string.

2. The minimum required fill of cement behind the <u>8-5/8</u> inch intermediate casing is <u>circulate cement to</u> <u>the surface</u>.

3. The minimum required fill of cement behind the <u>5-1/2</u> inch production casing is <u>cement shall extend</u> <u>upward a minimum of 500 feet above the uppermost hydrocarbon bearing interval.</u>

III. PRESSURE CONTROL:

1. All BOP systems and related equipment shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2. The BOP and related equipment shall be installed and operational before drilling below the **<u>11-3/4</u>** inch casing shoe and shall be tested as described in Onshore Order No. 2. Any equipment failing to test satisfactorily shall be repaired or replaced.

2. Minimum working pressure of the blowout preventer and related equipment (BOPE) required for drilling the surface and intermediate casing shall be <u>2000</u> psi. Minimum working pressure of the blowout preventer and related equipment (BOPE) required for drilling below the <u>8-5/8</u> inch casing shall be <u>5000</u> psi.

3. The appropriate BLM office shall be notified in sufficient time for a representative to witness the tests.

- A variance to test the BOP and associated equipment before drilling out of the 13-3/8" casing to the
- reduced pressure of <u>1200</u> psi with the rig pumps is approved.
- The tests shall be done by an independent service company.
- The results of the test shall be reported to the appropriate BLM office.
- Testing fluid must be water or an appropriate clear liquid suitable for sub-freezing temperatures. Use of drilling mud for testing is not permitted since it can mask small leaks.
- Testing must be done in a safe workman-like manner. Hard line connections shall be required.
- BOPE must be tested prior to drilling into the Wolfcamp Formation by an independent service company.

IV. DRILLING MUD:

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the <u>Wolfcamp</u> Formation, and shall be used until production casing is run and cemented. Monitoring equipment shall consist of the following:

- 1. Recording pit level indicator to indicate volume gains and losses.
- 2. Mud measuring device for accurately determining the mud volumes necessary to fill the hole during trips.
- 3. Flow-sensor on the flow line to warn of abnormal mud returns from the well.