

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

Form 3160-3  
(April 2004)

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

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

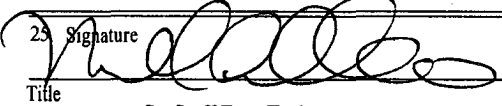
APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER	7. If Unit or CA Agreement, Name and No.
1b. Type of Well: <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone	8. Lease Name and Well No. <b>&lt;35381&gt;</b> <b>Rock Ridge 29 Federal 1</b>
2. Name of Operator <b>Devon Energy Production Company, LP</b>	9. API Well No. <b>30-025-37646</b>
3a. Address <b>20 North Broadway Oklahoma City, Oklahoma City 73102-8260</b>	10. Field and Pool, or Exploratory <b>Delaware Bone Spring</b>
3b. Phone No. (include area code) <b>405-552-8198</b>	11. Sec., T. R. M. or Blk. and Survey or Area <b>Sec 29, T22S R32E, Unit E</b>
4. Location of Well (Report location clearly and in accordance with any State requirements.) At surface <b>1980 FNL &amp; 990 FWL</b> At proposed prod. zone <b>1980 FNL &amp; 990 FWL</b> <b>Unit E</b>	12. County or Parish <b>Lea County</b>
14. Distance in miles and direction from nearest town or post office* <b>Approximately 35 miles West of Eunice, New Mexico</b>	13. State <b>NM</b>
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 <b>160 acres</b>
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	17. Spacing Unit dedicated to this well <b>40 acres</b>
19. Proposed Depth <b>8900'</b>	20. BLM/BIA Bond No. on file
21. Elevations (Show whether DF, KDB, RT, GL, etc.) <b>3572' GL</b>	22. Approximate date work will start* <b>12/15/2005</b>
23. Estimated duration <b>45 days</b>	

24. Attachments **Carlsbad Controlled Water Basin**

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

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

25. Signature 	Name (Printed/Typed) <b>Norvella Adams</b>	Date <b>09/26/2005</b>
Title <b>Sr. Staff Eng. Tech</b>		

Approved by (Signature) <b>/s/ Joe G. Lara</b>	Name (Printed/Typed) <b>/s/ Joe G. Lara</b>	Date <b>JAN 17 2006</b>
Title <b>ACTING FIELD MANAGER</b>	Office <b>CARLSBAD FIELD OFFICE</b>	

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)

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

**WITNESS**

**APPROVAL SUBJECT TO  
GENERAL REQUIREMENTS AND  
SPECIAL STIPULATIONS  
ATTACHED**

**Additional Operator Remarks:**

Devon Energy Production Company, LP proposes to drill a Delaware well to 8,900' for commercial quantities of oil and gas. If the well is deemed noncommercial, the wellbore will be plugged and abandoned per Federal regulations. Programs to adhere to onshore oil and gas regulations are outlined in the following exhibits and attachments.

Directions: From the junction of Co. Rd. 29 and Mills Ranch Road, go south on C-29 for 0.4 mile to lease road; then east on lease road for 2.0 miles to proposed lease road.

**DISTRICT II**  
**811 South First, Artesia, NM 88210**

Energy, Minerals and Natural Resources Department

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

**DISTRICT III**  
1000 Rio Brazos Rd., Aztec, NM 87410

**OIL CONSERVATION DIVISION**

**DISTRICT IV**  
2040 South Pacheco, Santa Fe, NM 87505

2040 South Pacheco  
Santa Fe, New Mexico 87504-2088

☐ AMENDED REPORT

# WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-025-37646	Pool Code ✓	Wildcat Bone Spring	Pool Name
Property Code 35381	Property Name ROCK RIDGE "29" FEDERAL		Well Number 1
OGRIID No. 6137	Operator Name DEVON ENERGY PRODUCTION CO., L.P.		Elevation 3572'

### Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
E	29	22 S	32 E		1980	NORTH	990	WEST	LEA

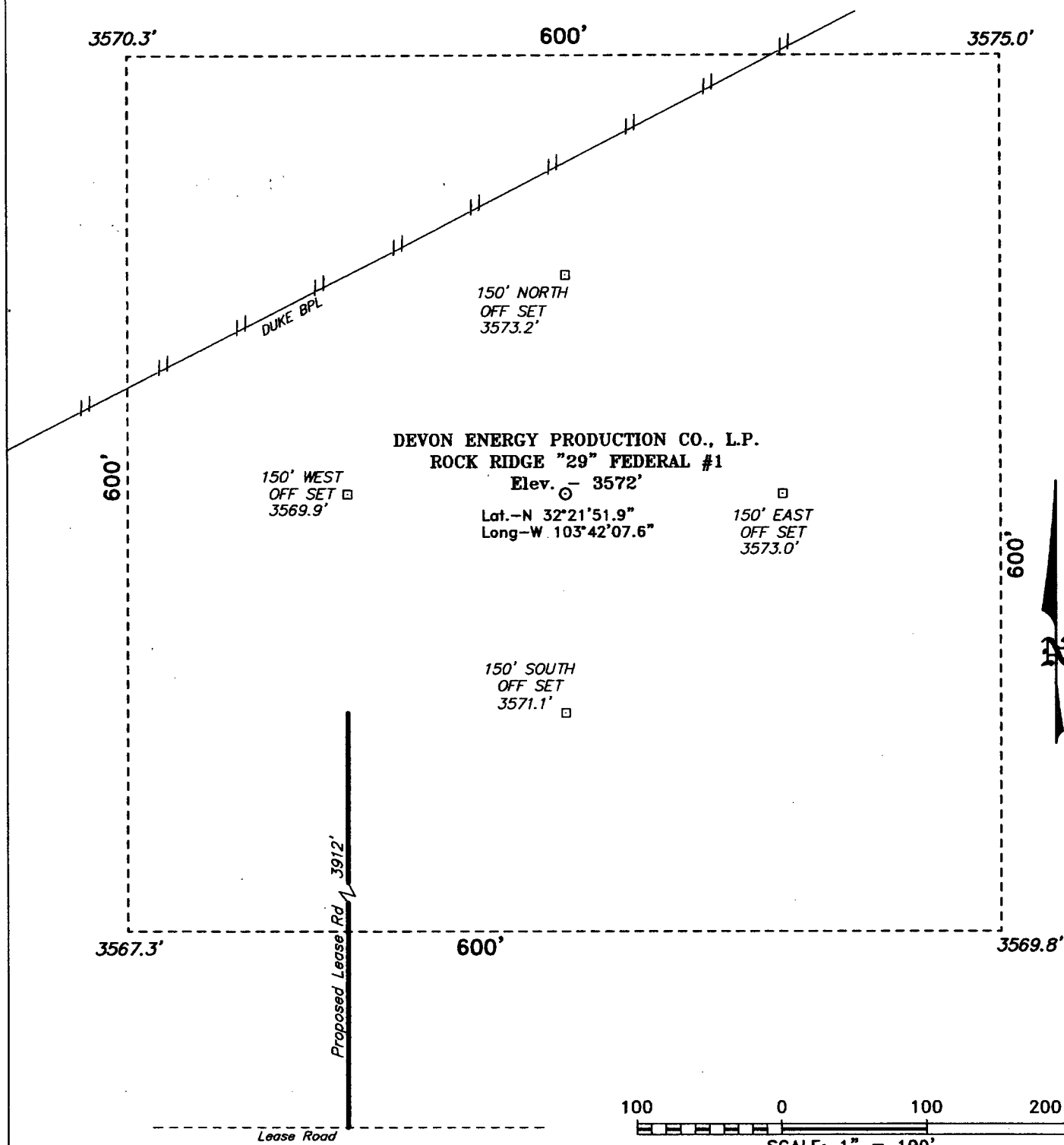
## Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
Dedicated Acres 40	Joint or Infill	Consolidation Code	Order No.						

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

	<div style="text-align: center; border-bottom: 1px solid black; margin-bottom: 10px;"> <b>OPERATOR CERTIFICATION</b> </div> <p style="font-size: small; text-align: center;">I hereby certify the the information contained herein is true and complete to the best of my knowledge and belief.</p> <div style="border-bottom: 1px solid black; margin-bottom: 5px;"> </div> <p style="text-align: center; font-size: small;">Signature Norvelia Adams</p> <div style="border-bottom: 1px solid black; margin-bottom: 5px;"> <p style="text-align: center; font-size: small;">Printed Name</p> <p style="text-align: center;">Sr. Staff Eng. Tech.</p> </div> <div style="border-bottom: 1px solid black; margin-bottom: 5px;"> <p style="text-align: center; font-size: small;">Title</p> <p style="text-align: center;">September 26, 2005</p> </div> <div style="border-bottom: 1px solid black; margin-bottom: 5px;"> <p style="text-align: center; font-size: small;">Date</p> </div>
	<div style="text-align: center; border-bottom: 1px solid black; margin-bottom: 10px;"> <b>SURVEYOR CERTIFICATION</b> </div> <p style="font-size: x-small; text-align: center;">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.</p> <div style="text-align: center; margin-bottom: 10px;"> </div> <div style="border-bottom: 1px solid black; margin-bottom: 5px;"> <p style="text-align: center; font-size: small;">Date Surveyed</p> <p style="text-align: center;">August 29, 2005</p> </div> <div style="border-bottom: 1px solid black; margin-bottom: 5px;"> <p style="text-align: center; font-size: small;">Signature &amp; Seal of Professional Surveyor</p> </div> <div style="border-bottom: 1px solid black; margin-bottom: 5px;"> <p style="text-align: center; font-size: small;">Certificate No.</p> <p style="text-align: center;">Gary L. Jones      7977</p> </div> <div style="text-align: center; font-weight: bold; font-size: small;">       BASIN SURVEYS     </div>

SECTION 29, TOWNSHIP 22 SOUTH, RANGE 32 EAST, N.M.P.M.,  
LEA COUNTY, NEW MEXICO.



Directions to Location:

FROM THE JUNCTION OF CO. RD. 29 AND MILLS RANCH ROAD, GO SOUTH ON C-29 FOR 0.4 MILE TO LEASE ROAD; THENCE EAST ON LEASE ROAD FOR 2.0 MILES TO PROPOSED LEASE ROAD.

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

W.O. Number: 5723

Drawn By: K. GOAD

Date: 09-09-2005

Disk: KJG CD#4 - 5723A.DWG

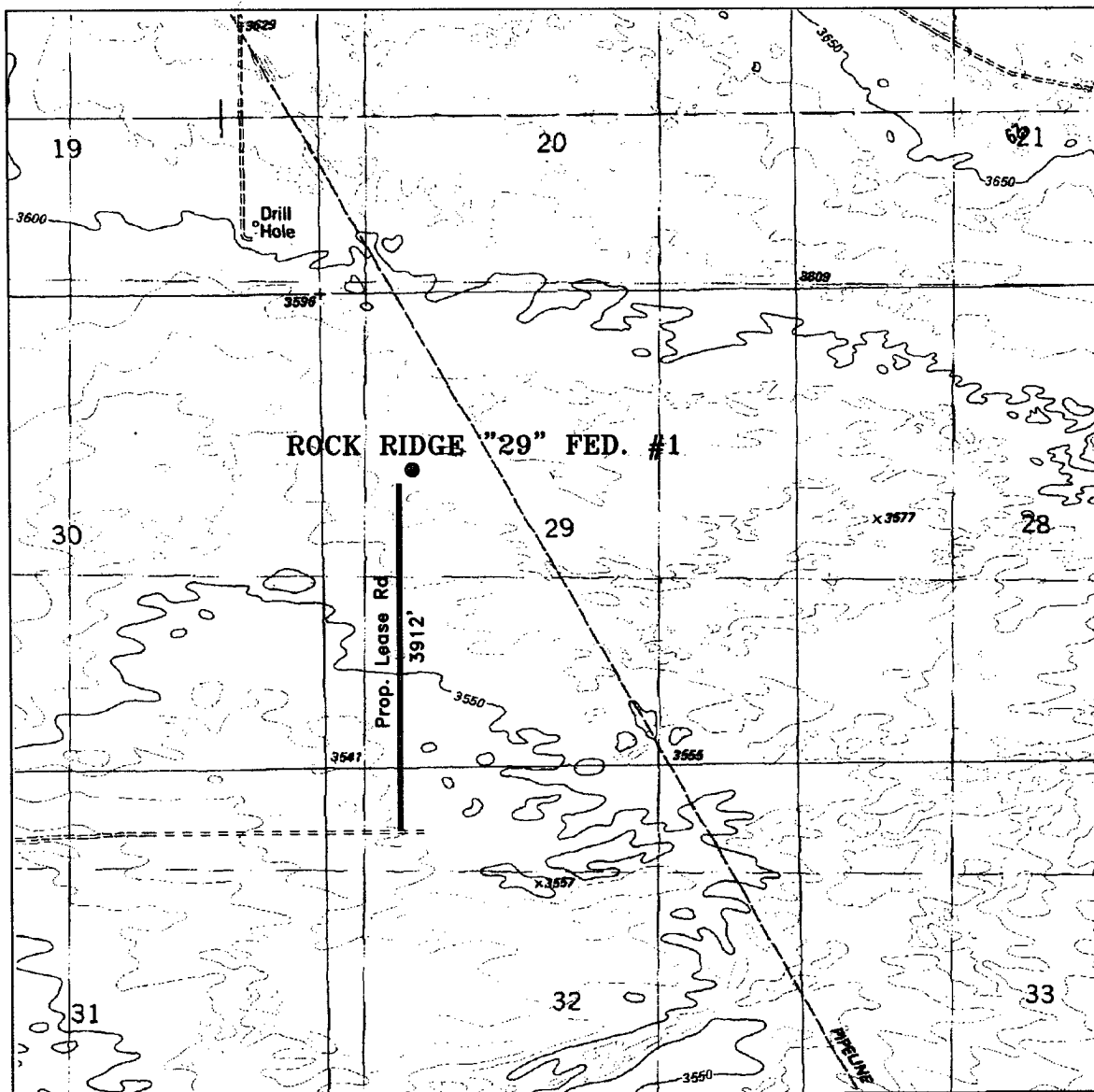
**DEVON ENERGY PROD. CO., L.P.**

REF: ROCK RIDGE "29" FED. No. 1 / Well Pad Topo

THE ROCK RIDGE "29" FED. No. 1 LOCATED 1980' FROM  
THE NORTH LINE AND 990' FROM THE WEST LINE OF  
SECTION 29, TOWNSHIP 22 SOUTH, RANGE 32 EAST,  
N.M.P.M., LEA COUNTY, NEW MEXICO.

Survey Date: 08-29-2005

Sheet 1 of 1 Sheets



# **ROCK RIDGE "29" FEDERAL #1**

Located at 1980' FNL and 990' FWL

Section 29, Township 22 South, Range 32 East,  
N.M.P.M., Lea County, New Mexico.



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

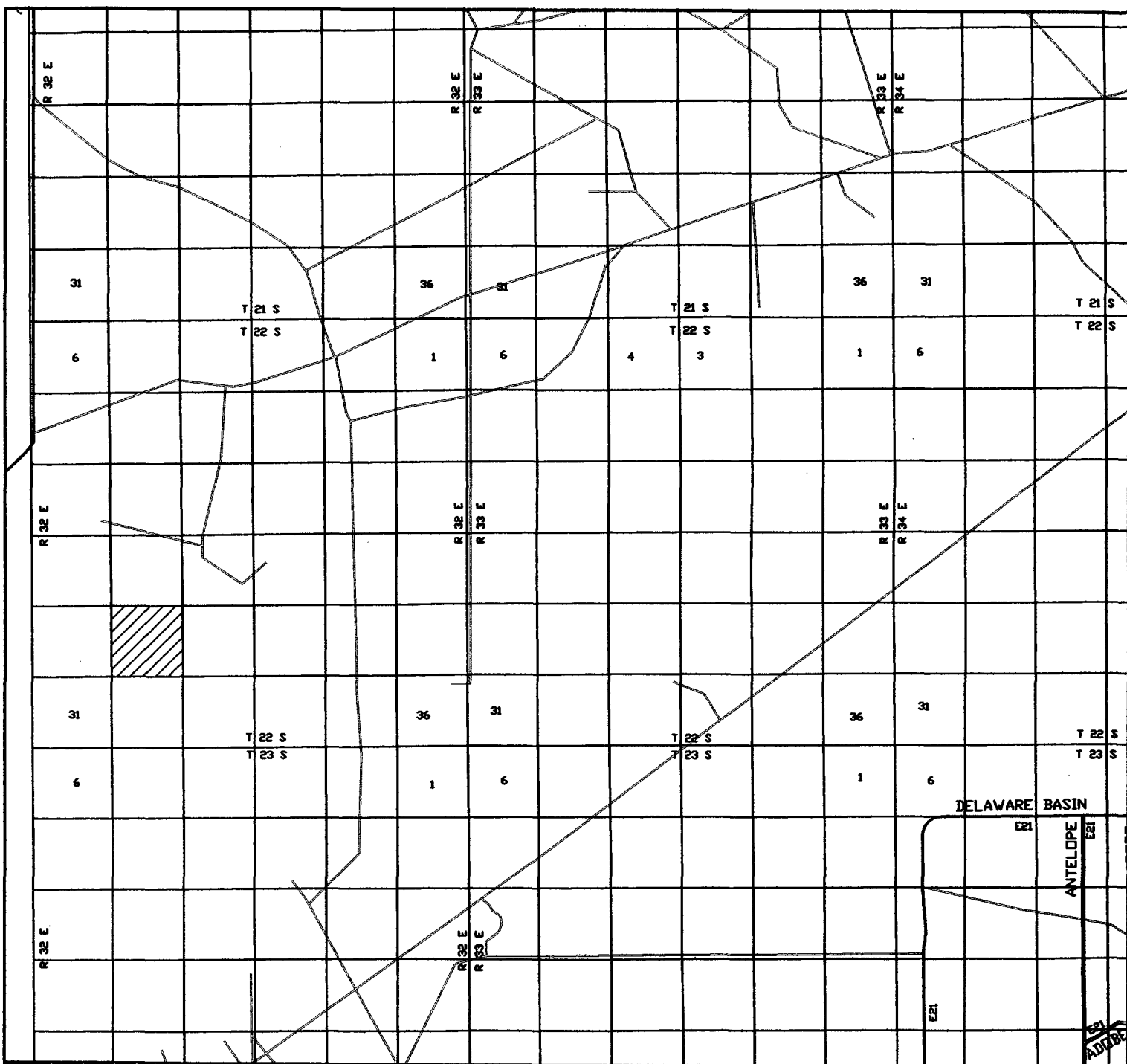
W.O. Number: 5723AA - KJG #1

Survey Date: 08-31-2005

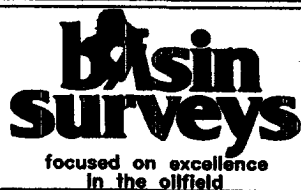
Scale: 1" = 2000'

Date: 09-09-2005

**DEVON ENERGY  
PROD. CO., L.P.**



ROCK RIDGE "29" FEDERAL #1  
 Located at 1980' FNL and 990' FWL  
 Section 29, Township 22 South, Range 32 East,  
 N.M.P.M., Lea County, New Mexico.



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: 5723AA - KJG #1

Survey Date: 08-31-2005

Scale: 1" = 2 miles

Date: 09-09-2005

DEVON ENERGY  
 PROD. CO., L.P.

## DRILLING PROGRAM

Devon Energy Production Company, LP

### **Rock Ridge 29 Federal 1**

Surface Location: 1980' FNL & 990' FWL, Unit E, Sec 29 T22S R32E, Lea, NM

Bottom hole Location: 1980' FNL & 990' FWL, Unit E, Sec 29 T22S R32E, Lea, NM

#### **1. Geologic Name of Surface Formation**

- a. Alluvium

#### **2. Estimated tops of geological markers:**

- a. Rustler 800'
- b. Salt 1280'
- c. Base of Salt 4390'
- d. Delaware 4600'
- e. Cherry Canyon 5500'
- f. Brushy Canyon 7100'
- g. Bone Spring LS 8500'

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

- a. Cherry Canyon 5550' Oil & Gas
- b. Brushy Canyon 7100' Oil & 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 13 3/8" casing at 825' and circulating cement back to surface. Potash and salt will be protected by setting 8 5/8" casing at 4565' and circulating cement to surface. The Delaware intervals will be isolated by setting 5 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>	<u>OD Csg</u>	<u>Weight</u>	<u>Grade</u>	<u>Type</u>
26"	0' -40'	20"		Conductor	ST&C
17 1/2"	0' - 825'	13 3/8"	48#	H-40	ST&C
11"	0' - 4000'	8 5/8"	32#	J55	LT&C
11"	0' - 4565	8 5/8"	32#	HCK-55	LT&C
7 7/8"	0'-500'	5 1/2"	17#	J-55	LT&C
7 7/8"	500'-6000'	5 1/2"	15.5#	J-55	LT&C
7 7/8"	600'-8900'	5 1/2"	17#	J-55	LT&C

#### **5. Cement & Setting Depth:**

- a. 20" Conductor Cement with ready-mix to surface.
- b. 13 3/8" Surface Cement to surface with 586 sx Poz C (35:65) + 2% CaCl<sub>2</sub> + 1/4 #/sx Cello Flake + 6 % Bentonite followed by 250 sx Class C + 2% CaCl<sub>2</sub> + 1/4 #/sx Cello Flake.

- c. 8 5/8" Intermediate Cement to surface with 1069 sx Poz C (35:65) + 5% NaCl<sub>2</sub> + ¼ #/sx Cello Flake + 6% Bentonite, followed by 300 sx 60:40 Class C + 5% NaCl<sub>2</sub> + ¼ #/sx Cello Flake + 0.4% Sodium Metasilicate + 4% MPA-1.
- d. 5 ½" Production Cemented 500' above the 8 5/8" shoe with 378 sx 35:65 + 3% NaCl<sub>2</sub> + 0.25% retarder + 0.3% FL-52 + ¼ #/sx Cello Flake + 3 #/sx LCM + 6% Bentonite, followed by 628 sx 60:40 Poz Class C + 1% NaCl<sub>2</sub> + 0.5% Bonding agent + ¼ #/sx Cello Flake + 2 #/sx Kol Seal + 4% MPA-1.

The above cement volumes could be revised pending the caliper measurement from the open hole logs.

#### 6. Pressure Control Equipment:

The blowout preventor equipment (BOP) shown in Exhibit #1 will consist of a (3M system) double ram type (3000 psi WP) preventor and a bag-type (Hydril) preventor (3000 psi WP). 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. Both BOP's 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 3000 psi WP rating.

#### 7. Proposed Mud Circulation System

<u>Depth</u>	<u>Mud Wt.</u>	<u>Visc</u>	<u>Fluid Loss</u>	<u>Type System</u>
0' – 825'	8.8-9.0	40-85	NC	Native spud mud
825' – 4565'	9.8-10.0	28-30	NC	Brine water
4565' – 8900'	8.5-8.8	28-30	NC	Fresh water w/gel

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 operations after drilling out the 13 3/8" casing shoe until the 8 5/8" casing is cemented. Breathing equipment will be on location upon drilling the 13 3/8" 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.
  - 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.

**10. Potential Hazards:**

- a. No abnormal pressures or temperatures are expected. There is no known presence of H<sub>2</sub>S in this area. If H<sub>2</sub>S 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 2900 psi and Estimated BHT 125°.

**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  
**Rock Ridge 29 Federal 1**

Surface Location: 1980' FNL & 990' FWL, Unit E, Sec 29 T22S R32E, Lea, NM  
Bottom hole Location: 1980' FNL & 990' FWL, Unit E, Sec 29 T22S R32E, Lea, NM

**1. Existing Roads:**

- a. The well site and elevation plat for the proposed 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. 29 and Mills Ranch Road, go south on C-29 for 0.4 mile to lease road; then east on lease road for 2.0 miles to proposed lease road.

**2. Access Road**

- a. Exhibit #3 shows the existing lease road. Approximately 3912' of new access road will be constructed. It 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, a tank battery would be constructed 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. The tank battery, all connections and all lines will adhere to API standards.
- d. The well will be operated by means of a gas driven prime mover. No power will be required.
- e. 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 portable chemical toilet 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 closed. If the drilling fluids do not evaporate in a reasonable time they will be hauled off by transports to a state approved disposal site. The reserve pit will be closed pursuant

to NM OCD rules and guidelines. 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 indicates 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 will be lined with a 12 mil synthetic woven liner.
- d. The reserve pit will be fenced on three sides with four strands of barbed wire during drilling and completion phases. After the 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. If the well is a producer, 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, sagebrush, yucca and miscellaneous weeds.
- b. The surface and minerals are 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. An archaeological survey will be submitted to the Bureau of Land Management
- 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.

James Blount  
Operations Engineer Advisor

Don Mayberry  
Superintendent

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

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

(405) 228-4301 (office)  
(405) 834-9207 (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: \_\_\_\_\_

Norvella Adams

Sr. Staff Engineering Technician

Date: September 26, 2005

Attachment to Exhibit #1  
NOTES REGARDING BLOWOUT PREVENTERS  
Devon Energy Production Company, LP  
**Rock Ridge 29 Federal 1**

Surface Location: 1980' FNL & 990' FWL, Unit E, Sec 29 T22S R32E, Lea, NM  
Bottom hole Location: 1980' FNL & 990' FWL, Unit E, Sec 29 T22S R32E, Lea, 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 3000 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.: **NM-96856**

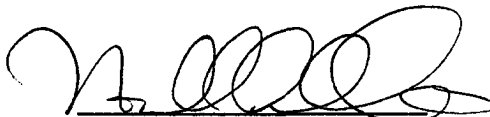
Legal Description of Land: **LP 160 acres SW/4 NW/4**  
**29-T22S-R32E**

Formation(s): **Delaware/Bone Spring**

Bond Coverage: **Nationwide**

BLM Bond File No.: **CO-1104**

Authorized Signature:

  
**Norvella Adams**

Title: **Sr. Staff Engineering Technician**

Date: **September 26, 2005**

## **HYDROGEN SULFIDE DRILLING OPERATIONS PLAN**

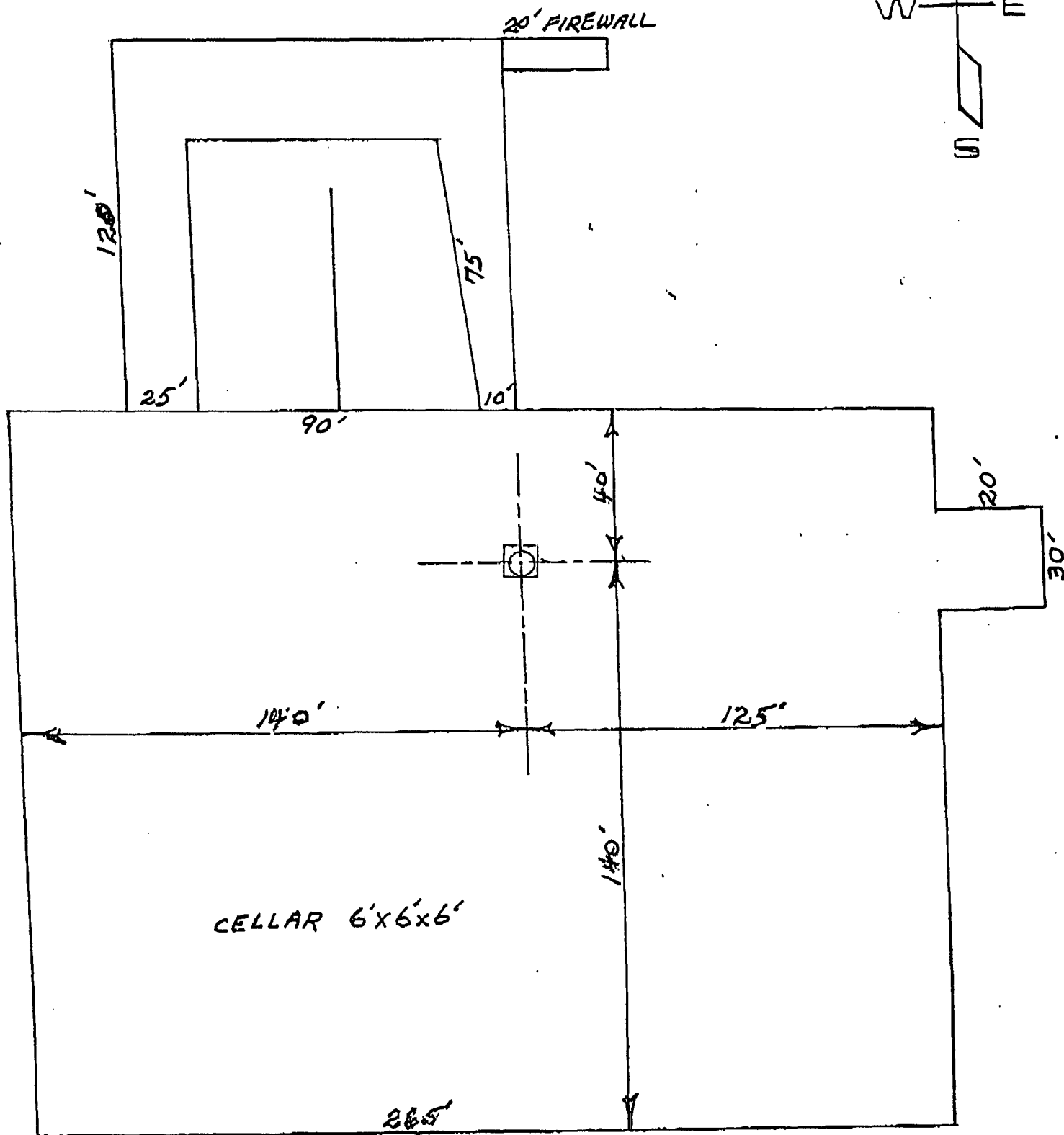
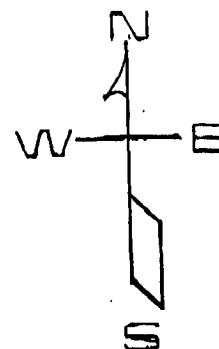
1. If H<sub>2</sub>S is present in this area the following will apply.
2. All Company and Contract personnel admitted on location must be trained by a qualified H<sub>2</sub>S safety instructor to the following:
  - a. Characteristics of H<sub>2</sub>S
  - b. Physical effects and hazards
  - c. Proper use of safety equipment and life support systems.
  - d. Principle and operation of H<sub>2</sub>S detectors, warning system and briefing areas
  - e. Evacuation procedures, routes and first aid.
  - f. Proper use of 30-minute pressure demand air pack.
3. H<sub>2</sub>S Detection and Alarm System
  - a. H<sub>2</sub>S detectors and audio alarm system to be located at bell nipple, end of blooie line (mud pit) and on derrick floor or doghouse.
4. 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
5. 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, H<sub>2</sub>S present in dangerous concentration. Only emergency personnel admitted to location.
6. Well Control Equipment
  - a. See Exhibit "E" & "E-1"
7. 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.
8. 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.
9. Drilling contractor supervisor will be required to be familiar with the effects H<sub>2</sub>S has on tubular goods and other mechanical equipment.

If H<sub>2</sub>S 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 H<sub>2</sub>S scavengers if necessary.



**DRILLING INC.**

2161



# MINIMUM BLOWOUT PREVENTER REQUIREMENTS

3,000 psi Working Pressure

3 MWP

EXHIBIT # 1

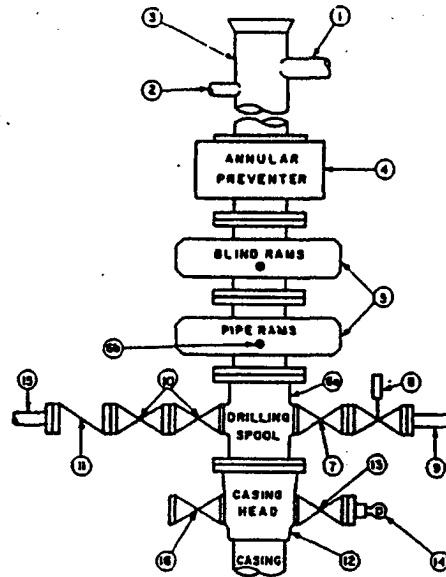
## STACK REQUIREMENTS

No.	Item	Min. I.D.	Min. Nominal
1	Flowline		
2	Fill up line		2"
3	Drilling nipple		
4	Annular preventer		
5	Two single or one dual hydraulically operated rams		
6a	Drilling spool with 2" min. kill line and 3" min choke line outlets		
	or		
6b	2" min. kill line and 3" min. choke line outlets in ram. (Alternate to 6a above.)		
7	Valve Gate <input type="checkbox"/> Plug <input type="checkbox"/>	3-1/8"	
8	Gate valve—power operated	3-1/8"	
9	Line to choke manifold		3"
10	Valves Gate <input type="checkbox"/> Plug <input type="checkbox"/>	2-1/16"	
11	Check valve	2-1/16"	
12	Casing head		
13	Valve Gate <input type="checkbox"/> Plug <input type="checkbox"/>	1-13/16"	
14	Pressure gauge with needle valve		
15	Kill line to rig mud pump manifold		2"

## OPTIONAL

16	Flanged valve	1-13/16"	
----	---------------	----------	--

CONFIGURATION A



## CONTRACTOR'S OPTION TO FURNISH:

1. All equipment and connections above bradenhead or casinghead. Working pressure of preventers to be 3,000 psi, minimum.
2. Automatic accumulator (80 gallon, minimum) capable of closing BOP in 30 seconds or less and, holding them closed against full rated working pressure.
3. BOP controls, to be located near drillers position.
4. Kelly equipped with Kelly cock.
5. Inside blowout preventer or its equivalent on derrick floor at all times with proper threads to fit pipe being used.
6. Kelly saver-sub equipped with rubber casing protector at all times.
7. Plug type blowout preventer tester.
8. Extra set pipe rams to fit drill pipe in use on location at all times.
9. Type RX ring gaskets in place of Type R.

## MEC TO FURNISH:

1. Bradenhead or casinghead and side valves.
2. Wear bushing, if required.

## GENERAL NOTES:

1. Deviations from this drawing may be made only with the express permission of MEC's Drilling Manager.
2. All connections, valves, fittings, piping, etc., subject to well or pump pressure must be flanged (suitable clamp connections acceptable) and have minimum working pressure equal to rated working pressure of preventers up through chokes. Valves must be full opening and suitable for high pressure mud service.
3. Controls to be of standard design and each marked, showing opening and closing position.
4. Chokes will be positioned so as not to hamper or delay changing of choke beans. Replaceable parts for adjustable choke, other bean sizes, retainers, and choke wrenches to be conveniently located for immediate use.
5. All valves to be equipped with handwheels or handles ready for immediate use.
6. Choke lines must be suitably anchored.

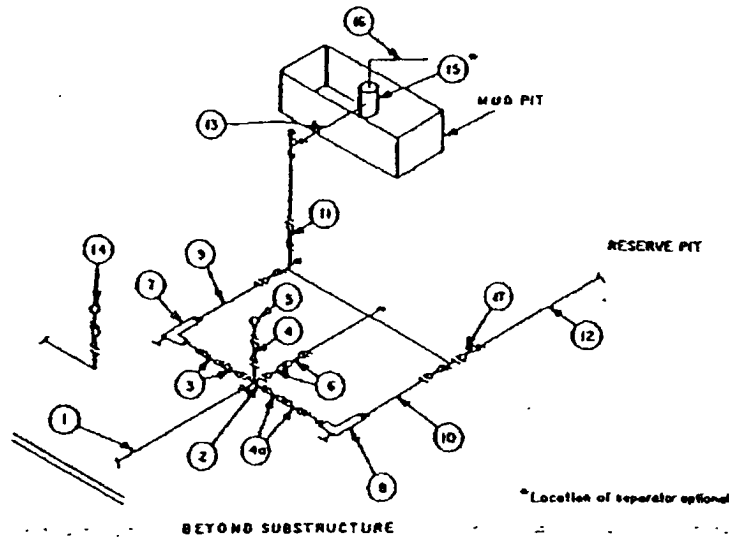
7. Handwheels and extensions to be connected and ready for use.
8. Valves adjacent to drilling spool to be kept open. Use outside valves except for emergency.
9. All seamless steel control piping (3000 psi working pressure) to have flexible joints to avoid stress. Hoses will be permitted.
10. Casinghead connections shall not be used except in case of emergency.
11. Do not use kill line for routine fill-up operations.



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

3 MWP - 5 MWP - 10 MWP

Exhibit E



MINIMUM REQUIREMENTS										
No.		3,000 MWP			5,000 MWP			10,000 MWP		
		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 <input type="checkbox"/> Plug <input type="checkbox"/> (2)	3-1/8"		3,000	3-1/8"		5,000	3-1/8"		10,000
4	Valve Gate <input type="checkbox"/> Plug <input type="checkbox"/> (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 <input type="checkbox"/> Plug <input type="checkbox"/> (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 <input type="checkbox"/> Plug <input type="checkbox"/> (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 <input type="checkbox"/> Plug <input type="checkbox"/> (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**

- All connections in choke manifold shall be welded, studded, flanged or Cameron clamp of comparable rating.
- All flanges shall be API 6B or 6BX and ring gaskets shall be API RX or BX. Use only BX for 10 MWP.
- All lines shall be securely anchored.
- Chokes shall be equipped with tungsten carbide seats and needles, and replacements shall be available.
- 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.
- 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.
- Discharge lines from chokes, choke bypass and from top of gas separator should vent as far as practical from the well.

Well name:  
 Operator: **Devon Energy**  
 String type: Production: Frac  
 Location: New Mexico

## Rock Ridge

### Design parameters:

#### Collapse

Mud weight: 10.200 ppg  
 Internal fluid density: 0.180 ppg

### Minimum design factors:

#### Collapse:

Design factor 1.125

### Environment:

H2S considered? No  
 Surface temperature: 75 °F  
 Bottom hole temperature: 151 °F  
 Temperature gradient: 0.85 °F/100ft  
 Minimum section length: 850 ft

#### Burst:

Design factor 1.00

#### Burst

Max anticipated surface pressure: 3,000 psi  
 Internal gradient: 0.663 psi/ft  
 Calculated BHP 8,900 psi  
 Annular backup: 8.34 ppg

#### 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)

Non-directional string.

Tension is based on air weight.  
 Neutral point: 7,600 ft

Estimated cost: 32,591 (\$)

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 (\$)
3	500	5.5	17.00	J-55	LT&C	500	500	4.767	1937
2	5500	5.5	15.50	J-55	LT&C	6000	6000	4.825	19421
1	2900	5.5	17.00	J-55	LT&C	8900	8900	4.767	11234

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
3	260	3689	14.17	3115	5320	1.71	143	247	1.73 J
2	3123	3758	1.20	4378	4810	1.10	134.5	217	1.61 J
1	4633	4910	1.06	5044	5320	1.05	49.3	247	5.01 J

Prepared by: **Wes Handley**  
 by: **Devon Energy**

Date: September 21, 2005  
 Oklahoma City, Oklahoma

#### Remarks:

Collapse is based on a vertical depth of 8900 ft, a mud weight of 10.2 ppg. An internal gradient of .009 psi/ft was used for collapse from TD. Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.

Burst strength is not adjusted for tension.

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

Well name:

**Rock Ridge**Operator: **Devon Energy**String type: **Production**Location: **New Mexico****Design parameters:****Collapse**Mud weight: 9.500 ppg  
Design is based on evacuated pipe.**Minimum design factors:****Collapse:**

Design factor 1.125

**Burst:**

Design factor 1.00

**Environment:**H2S considered? No  
Surface temperature: 75 °F  
Bottom hole temperature: 151 °F  
Temperature gradient: 0.85 °F/100ft  
Minimum section length: 850 ft**Burst**Max anticipated surface  
pressure: 668 psi  
Internal gradient: 0.418 psi/ft  
Calculated BHP 4,392 psi

No backup mud specified.

**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)

Non-directional string.

Tension is based on air weight.  
Neutral point: 7,689 ft

Estimated cost: 32,592 (\$)

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 (\$)
3	500	5.5	17.00	J-55	LT&C	500	500	4.767	1937
2	5500	5.5	15.50	J-55	LT&C	6000	6000	4.825	19421
1	2900	5.5	17.00	J-55	LT&C	8900	8900	4.767	11235

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
3	247	3689	14.95	878	5320	6.06	143	247	1.73 J
2	2961	3758	1.27	3179	4810	1.51	134.5	217	1.61 J
1	4392	4910	1.12	4392	5320	1.21	49.3	247	5.01 J

Prepared **Wes Handley**  
by: **Devon Energy**Date: September 21, 2005  
Oklahoma City, Oklahoma**Remarks:**Collapse is based on a vertical depth of 8900 ft, a mud weight of 9.5 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.

Burst strength is not adjusted for tension.

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

Well name:  
Operator: **Devon Energy**  
String type: Intermediate  
Location: New Mexico

## Rock Ridge

### Design parameters:

#### Collapse

Mud weight: 10.500 ppg  
Design is based on evacuated pipe.

### Minimum design factors:

#### Collapse:

Design factor 1.125

#### Burst:

Design factor 1.00

### Environment:

H2S considered? No  
Surface temperature: 75 °F  
Bottom hole temperature: 114 °F  
Temperature gradient: 0.85 °F/100ft  
Minimum section length: 850 ft

#### Burst

Max anticipated surface pressure: 2,551 psi  
Internal gradient: 0.207 psi/ft  
Calculated BHP 3,495 psi

No backup mud specified.

#### 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: 3,853 ft

Estimated cost: 37,529 (\$)

Non-directional string.

### Re subsequent strings:

Next setting depth: 8,900 ft  
Next mud weight: 9.500 ppg  
Next setting BHP: 4,392 psi  
Fracture mud wt: 19.250 ppg  
Fracture depth: 4,565 ft  
Injection pressure 4,565 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 (\$)
2	4000	8.625	32.00	J-55	LT&C	4000	4000	7.875	32234
1	565	8.625	32.00	HCK-55	LT&C	4565	4565	7.875	5295

Run Seq	Collapse Load (psi)	Collapse Strength (psi)	Collapse Design Factor	Burst Load (psi)	Burst Strength (psi)	Burst Design Factor	Tension Load (klps)	Tension Strength (klps)	Tension Design Factor
2	2182	2505	1.15	3379	3930	1.16	146.1	417	2.85 J
1	2490	4130	1.66	3495	3930	1.12	18.1	503.2	27.83 B

Prepared Wes Handley  
by: Devon Energy

Date: September 21, 2005  
Oklahoma City, Oklahoma

#### Remarks:

Collapse is based on a vertical depth of 4565 ft, a mud weight of 10.5 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.

Burst strength is not adjusted for tension.

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

Well name:  
 Operator: **Devon Energy**  
 String type: **Surface**  
 Location: **New Mexico**

## Rock Ridge

### Design parameters:

#### Collapse

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

### Minimum design factors:

#### Collapse:

Design factor 1.125

#### Burst:

Design factor 1.00

### Environment:

H2S considered? No  
 Surface temperature: 75 °F  
 Bottom hole temperature: 82 °F  
 Temperature gradient: 0.85 °F/100ft  
 Minimum section length: 825 ft

#### Burst

Max anticipated surface pressure: 923 psi  
 Internal gradient: 0.343 psi/ft  
 Calculated BHP 1,206 psi

No backup mud specified.

#### 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: 714 ft

Non-directional string.

#### Re subsequent strings:

Next setting depth: 4,565 ft  
 Next mud weight: 10.500 ppg  
 Next setting BHP: 2,490 psi  
 Fracture mud wt: 19.250 ppg  
 Fracture depth: 4,565 ft  
 Injection pressure: 4,565 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	825	13.375	48.00	H-40	ST&C	825	825	12.59	10231
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	394	740	1.88	1206	1730	1.43	39.6	322	8.13 J

Prepared by: **Wes Handley**  
 by: **Devon Energy**

Date: September 21, 2005  
 Oklahoma City, Oklahoma

#### Remarks:

Collapse is based on a vertical depth of 825 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.

Burst strength is not adjusted for tension.

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



**Devon Energy Corporation  
20 North Broadway  
Oklahoma City, Oklahoma 73102-8260**

# **Hydrogen Sulfide (H<sub>2</sub>S) Contingency Plan**

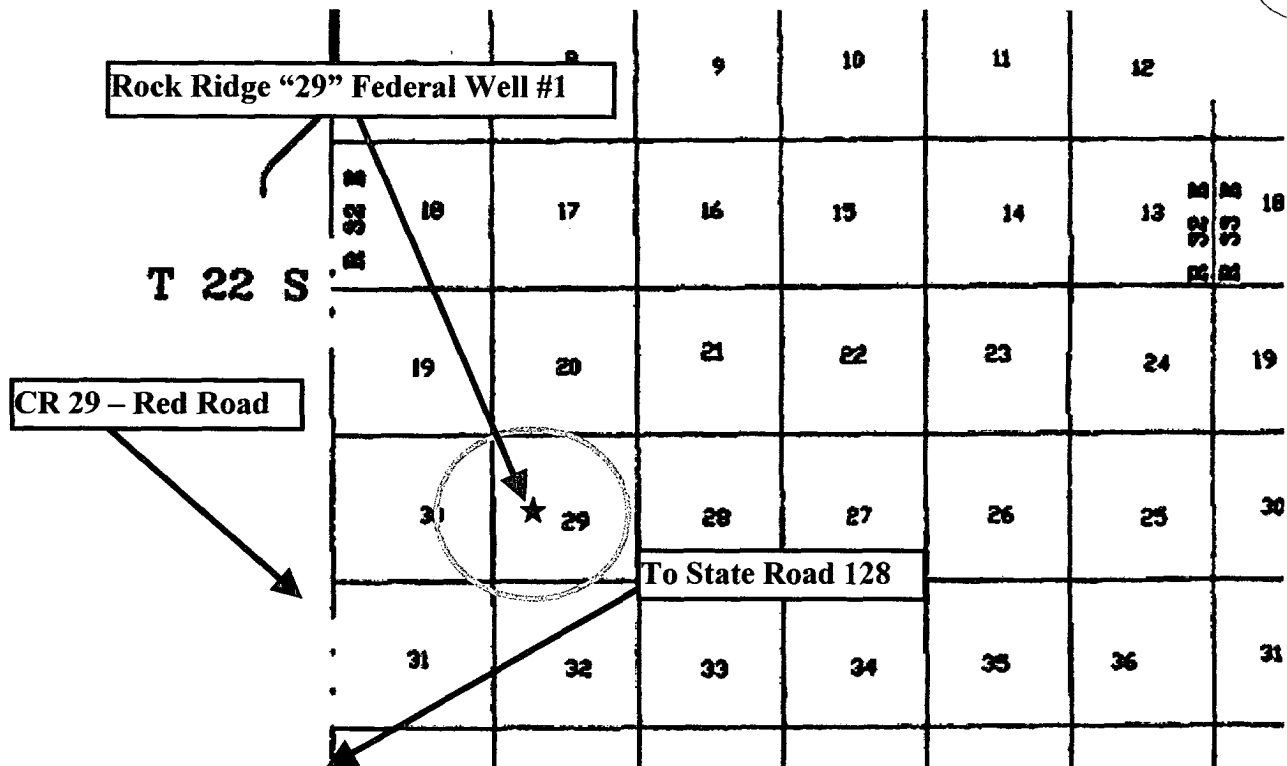
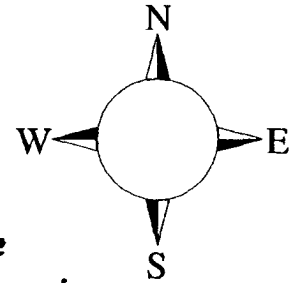
**For**

**Rock Ridge "29" Federal Well #1  
1980'FNL & 990' FWL,  
Sec-29, T-22S R-36E**

**Lea County NM**

## Rock Ridge "29" Federal Well # 1

This is an open drilling site. H<sub>2</sub>S monitoring equipment and emergency response equipment will be used within 500' of zones known to contain H<sub>2</sub>S, including warning signs, wind indicators and H<sub>2</sub>S monitor.



Assumed 100 ppm ROE = 3000' (Radius of Exposure)  
100 ppm H<sub>2</sub>S concentration shall trigger activation of this plan.

### Escape

Crews shall escape upwind of escaping gas in the event of an emergency release of gas. Escape can be facilitated West on the lease road to CR29 (Red Road). Crews should then block entrance to the lease road so as not to allow anyone traversing into a hazardous area. The blockade should be at a safe distance outside of the ROE There are no homes or buildings within the ROE.

## Emergency Procedures

In the case of a release of gas containing H<sub>2</sub>S, the first responder(s) must isolate the area and prevent entry by other persons into the 100 ppm ROE. Additionally the first responder(s) must evacuate any public places encompassed by the 100 ppm ROE. First responder(s) must take care not to injure themselves during this operation. Company and/or local officials must be contacted to aid in this operation. Evacuation of the public should be beyond the 100 ppm ROE.

All responders must have training in the detection of H<sub>2</sub>S, measures for protection against the gas, equipment used for protection and emergency response. Additionally, responders must be equipped with H<sub>2</sub>S monitors and air packs in order to control the release. Use the “buddy system” to ensure no injuries during the response.

## Ignition of Gas Source

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (SO<sub>2</sub>). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever there is an ignition of the gas

## Characteristics of H<sub>2</sub>S and SO<sub>2</sub>

Common Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentration
Hydrogen Sulfide	H <sub>2</sub> S	1.189 Air = 1	10 ppm	100 ppm/hr	600 ppm
Sulfur Dioxide	SO <sub>2</sub>	2.21 Air = 1	2 ppm	N/A	1000 ppm

## Contacting Authorities

Devon Energy Corp. personnel must liaison with local and state agencies to ensure a proper response to a major release. Additionally, the OCD must be notified of the release as soon as possible but no later than 4 hours. Agencies will ask for information such as type and volume of release, wind direction, location of release, etc. Be prepared with all information available. The following call list of essential and potential responders has been prepared for use during a release. Devon Energy Corp. Company response must be in coordination with the State of New Mexico’s ‘Hazardous Materials Emergency Response Plan’ (HMER)



## Devon Energy Corp. Company Call List

<u>Artesia (505)</u>	<u>Cellular</u>	<u>Office</u>	<u>Home</u>
Foreman – Joe Huber .....	390-5438 .....	748-0163 .....	885-4633
Don Mayberry .....	748-5235 .....	748-3371 .....	746-4945
Mike Myers .....	(505) 513-0782....	(505) 748-0187 ...	(505) 395-3020
Engineer – James Blount.....	(405) 834-9207....	(405) 552-4301 ...	(405) 348-0102

## Agency Call List

<u>Eddy</u>	<u>Artesia</u>	
<u>County</u>		
<u>(505)</u>	State Police .....	746-2703
	City Police .....	746-2703
	Sheriff's Office .....	746-9888
	Ambulance .....	911
	Fire Department .....	746-2701
	LEPC (Local Emergency Planning Committee) .....	746-2122
	NMOCD .....	748-1283
	<b>Carlsbad</b>	
	State Police .....	885-3137
	City Police .....	885-2111
	Sheriff's Office .....	887-7551
	Ambulance .....	911
	Fire Department .....	885-2111
	LEPC (Local Emergency Planning Committee).....	887-3798
	US Bureau of Land Management.....	887-6544
	New Mexico Emergency Response Commission (Santa Fe) ...	(505)476-9600
	24 HR .....	(505) 827-9126
	National Emergency Response Center (Washington, DC)	(800) 424-8802
	<b>Emergency Services</b>	
	Boots & Coots IWC .....	1-800-256-9688 or (281) 931-8884
	Cudd Pressure Control.....	(915) 699-0139 or (915) 563-3356
	Halliburton .....	(505) 746-2757
	B. J. Services.....	(505) 746-3569
<i>Give</i>	Flight For Life - Lubbock, TX .....	(806) 743-9911
<i>GPS</i>	Aerocare - Lubbock, TX .....	(806) 747-8923
<i>position:</i>	Med Flight Air Amb - Albuquerque, NM .....	(505) 842-4433
	Lifeguard Air Med Svc. Albuquerque, NM .....	(505) 272-3115

Prepared in conjunction with  
Wade Rohloff of;



## SPECIAL DRILLING STIPULATIONS

### THE FOLLOWING DATA IS REQUIRED ON THE WELL SIGN

Operator's Name: Devon Energy Production Co., LP Well Name & #: Rock Ridge 29 Federal #1  
Location: 1980 F N L & 990 F W L Sec. 29, T. 22 S., R. 32 E.  
Lease: NM96856 County: Lea State: New Mexico

The Special stipulations check marked below are applicable to the above described well and approval of this application to drill is conditioned upon compliance with such stipulations in addition to the General Requirements. The permittee should be familiar with the General Requirements, a copy of which is available from a Bureau of Land Management office. EACH PERMITTEE HAS THE RIGHT OF ADMINISTRATIVE APPEAL TO THESE STIPULATIONS PURSUANT TO TITLE 43 CRF 3165.3 AND 3165.4.

This permit is valid for a period of one year from the date of approval or until lease expiration or termination whichever is shorter.

#### I. SPECIAL ENVIRONMENT REQUIREMENTS

- (X ) Lesser Prairie Chicken (stips attached) ( ) Flood plain (stips attached)  
( ) San Simon Swale (stips attached) ( ) Other

#### II. ON LEASE - SURFACE REQUIREMENTS PRIOR TO DRILLING

( X ) The BLM will monitor construction of this drill site. Notify the ( X ) Carlsbad Field Office at (505) 234-5972 ( ) Hobbs Office (505) 393-3612, at least 3 working days prior to commencing construction.

( X ) Roads and the drill pad for this well must be surfaced with 6 inches of compacted caliche.

( ) All topsoil and vegetation encountered during the construction of the drill site area will be stockpiled and made available for resurfacing of the disturbed area after completion of the drilling operation. Topsoil on the subject location is approximately        inches in depth. Approximately        cubic yards of topsoil material will be stockpiled for reclamation.

( X ) Other:

#### III. WELL COMPLETION REQUIREMENTS

( ) A Communitization Agreement covering the acreage dedicated to the well must be filed for approval with the BLM. The effective date of the agreement must be prior to any sales.

( X ) Surface Restoration: If the well is a producer, the reserve pit(s) will be backfilled when dry, and cut-and-fill slopes will be reduced to a slope of 3:1 or less. All areas of the pad not necessary for production must be re-contoured to resemble the original contours of the surrounding terrain, and topsoil must be re-distributed and re-seeded with a drill equipped with a depth indicator (set at depth of ½ inch) with the following seed mixture, in pounds of Pure Live Seed (PLS), per acre. Seeding should be done either late in the fall (September 15 - November 15, before freeze up, or early as possible the following spring to take advantage of available ground moisture. **See attached seed mixture.**

( ) A. Seed Mixture 1 (Loamy Sites)  
Side Oats Grama (*Bouteloua curtipendula*) 5.0  
Sand Dropseed (*Sporobolus cryptandrus*) 1.0

( x ) B. Seed Mixture 2 (Sandy Sites)  
Sand Dropseed (*Sporobolus crptandrus*) 1.0  
Sand Lovegrass (*Eragostis trichodes*) 1.0  
Plains Bristlegrass (*Setaria magrostachya*) 2.0

( ) C. Seed Mixture 3 (Shallow Sites)  
Side oats Grama (*Boute curtipendula*) 1.0

( ) D. Seed Mixture 4 (Gypsum Sites)  
Alkali Sacaton (*Sporobolus airoides*) 1.0  
Four-Wing Saltbush (*Atriplex canescens*) 5.0

( ) OTHER

## RESERVE PIT CONSTRUCTION STANDARDS

The reserve pit shall be constructed entirely in cut material and lined with 6-mil plastic. Mineral material extracted from within the boundary of the APD during construction of the well pad and reserve pits and be used for the construction of this well pad and its immediate access road only, as long as that portion of the access road it is use on remains on-lease. Removal of any additional material from this location for construction or improvement of other well pads and other access or lease roads must first be purchased from BLM.

Reclamation: Reclamation of this type of deep pit will consist of pushing the pit walls into the pit when sufficiently dry to support track equipment. The pit liner is NOT TO BE RUPTURED to facilitate drying; a ten month period after completion of the well is allowed for drying of the pit contents.

The pit area must be contoured to the natural terrain with all contaminated drilling mud buried with at least 3 feet of clean soil. The reclaimed area will then be seeded as specified in this permit.

## OPTIONAL PIT CONSTRUCTION STANDARDS

The reserve pit may be constructed in predominantly fill material if:

- (1) Lined as specified above and
- (2) A temporary or emergency pit may be constructed immediately adjacent to the reserve pit as long as the pit remains within the APD boundary. Mineral material removed from this pit may be used for the construction of this well pad only and its immediate access road, as long as that portion of the access road the material is used on remains on-lease. Removal of any material from the APD boundary for use on other well locations or roads must first be purchased from BLM.

Reclamation of the reserve pit consists of bulldozing all reserve pit contents and contaminants into the borrow pit and covering with a minimum of 3 feet of clean soil material. The entire area must be re-contoured, all trash removed, and reseeded as specified in this permit.

## CULTURAL

Whether or not an archaeological survey has been completed and notwithstanding that operations are being conducted as approved, the lessee/operator/grantee shall notify the BLM immediately if previously unidentified cultural resources are observed during surface disturbing operations. From the time of the observation, the lessee/operator/grantee shall avoid operations that will result in disturbance to these cultural resources until directed to process by BLM.

## TRASH PIT STIPS

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.

BLM SERIAL #: NM96856  
COMPANY REFERENCE: Devon Energy Production Co., LP  
WELL # & NAME: Rock Ridge 29 Federal #1

Seed Mixture 2, for Sandy Sites

The holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)\* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed will be done in accordance with State law (s) and within nine (9) months prior to purchase. Commercial seed will be either certified or registered seed. The seed container will be tagged in accordance with State law(s) and available for inspection by the authorized officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (smaller/heavier seeds have a tendency to drop the bottom of the drill and are planted first). The holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. The seeding will be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth will not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed\* per acre:

<u>Species</u>	<u>lb/acre</u>
Sand dropseed ( <i>Sporobolus cryptandrus</i> )	1.0
Sand love grass ( <i>Eragrostis trichodes</i> )	1.0
Plains bristlegrass ( <i>Setaria macrostachya</i> )	2.0

\*Pounds of pure live seed:

Pounds of seed x percent purity x percent germination = pounds pure live seed

PRAIRIE CHICKENS

No surface use is allowed during the following time periods; unless otherwise specified, this stipulation does not apply to operation and maintenance of production facilities.

On the lands described below: All of section 29, T. 22 S., R 32 E.

For the purpose of: Protecting Prairie Chickens:

Drilling for oil and gas, and 3-D geophysical exploration operations will not be allowed in Lesser Prairie Chicken Habitat during the period of March 15 through June 15, each year. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, geophysical exploration other than 3-D operations, and pipeline, road, and well pad construction, will be allowed except between 3:00 a.m. and 9:00 a.m. The 3:00 a.m. and 9:00 a.m. restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during the period. Additionally, no new drilling will be allowed within up to 200 meters of leks known at the time of permitting. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 feet from the source of the noise.

## CONDITIONS OF APPROVAL - DRILLING

Operator's Name: Devon Energy Production Company, LP Well No. 1 - Rock Ridge 29 Federal

Location: 1980' FNL & 990' FWL sec. 29, T. 22 S., R. 32 E.

Lease: NM-96856

.....

### I. DRILLING OPERATIONS REQUIREMENTS:

1. The Bureau of Land Management (BLM) is to be notified at (505) 393-3612 in sufficient time for a representative to witness:

A. Spudding

B. Cementing casing: 13-3/8 inch 8-5/8 inch 5-1/2 inch

2. A Hydrogen Sulfide Contingency Plan should be activated prior to drilling in the Cherry Canyon formation. A copy of the plan shall be posted at the drilling site.

3. 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.

4. Include the API No. assigned to well by NMOCD on the subsequent report of setting the first casing string.

### II. CASING:

1. 13-3/8 inch surface casing should be set at approximately 825 feet in the Rustler Anhydrite above the Top of the Salt, below usable water and circulate cement to the surface. If cement does not circulate to the surface this 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. Minimum required fill of cement behind the 8-5/8 inch intermediate casing is sufficient to circulate to the surface.

3. Minimum required fill of cement behind the 5-1/2 inch production casing is sufficient to tie back 200 feet into the 8-5/8 inch intermediate casing set at approximately 4565 feet.

### III. PRESSURE CONTROL:

1. Before drilling below the 13-3/8 inch surface casing, the blowout preventer assembly shall consist of a minimum of One Annular Preventer or Two Ram-Type Preventers and a Kelly Cock/Stabbing Valve. Before drilling below the 8-5/8 inch intermediate casing, the blowout preventer assembly shall consist of a minimum of One Annular Preventer, Two Ram-Type Preventers, and a Kelly Cock/Stabbing Valve.

2. Before drilling below the 13-3/8 inch surface casing, the minimum working pressure of the blowout preventer and related equipment (BOPE) shall be 2000 psi. Before drilling below the 8-5/8 inch intermediate casing, the minimum working pressure of the blowout preventer and related equipment (BOPE) shall be 3000 psi.

3. The BOPE shall be installed before drilling below the 8-5/8 inch intermediate casing and shall be tested as described in Onshore Order No. 2. Any equipment failing to test satisfactorily shall be repaired or replaced.

A. The results of the test will be reported to the BLM Hobbs Office at 414 West Taylor, Hobbs, New Mexico 88240.

B. 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.

C. Testing must be done in a safe workman like manner. Hard line connections shall be required.

BLM Serial #: NM96856  
Company Reference: Devon Energy Production Co., LP  
Well # & Name: Rock Ridge 29 Federal #1

STANDARD STIPULATIONS FOR PERMANENT RESOURCE ROADS  
CARLSBAD FIELD OFFICE

A copy of the grant and attachments, including stipulations, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

The holder/grantee/permittee shall hereafter be identified as the holder in these stipulations. The Authorized Officer is the person who approves the Application for Permit to Drill (APD) and/or Right-of-Way (ROW).

GENERAL REQUIREMENTS

A. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.

B. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976, as amended (15 U.S.C. 2601, *et. seq.*) with regard to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized by this grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation and Liability Act, Section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the Authorized Officer concurrent with the filing of the reports to the involved Federal agency or State government.

C. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, *et. seq.* or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, *et. seq.*) on the right-of-way (unless the release or threatened release is wholly unrelated to the right-of-way holder's activity on the right-of-way). This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

D. If, during any phase of the construction, operation, maintenance, or termination of the road, any oil or other pollutant should be discharged, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil or other pollutant, wherever found, shall be the responsibility of the holder, regardless of fault. Upon failure of the holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all

damages to Federal lands resulting there from the Authorized Officer may take such measures as deemed necessary to control and cleanup the discharge and restore the area, including, where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve the holder of any liability or responsibility.

E. The holder shall minimize disturbance to existing fences and other improvements on public domain surface. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times.

The holder will make a documented good-faith effort to contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence.

F. The Holder shall ensure that the entire right-of-way, including the driving surface, ditching and drainage control structures, road verges and any construction sites or zones, will be kept free of the following plant species: Malta starthistle, African rue, Scotch thistle and salt cedar. The Holder agrees to comply with the following stipulations:

1. ROAD WIDTH AND GRADE

The road will have a driving surface of 14 feet (all roads shall have a minimum driving surface of 12 feet, unless local conditions dictate a different width). The maximum grade is 10 percent unless the box below is checked. Maximum width of surface disturbance from construction will be 30 feet.

☐ Those segments of road where grade is in excess of 10% for more than 300 feet shall be designed by a professional engineer.

2. CROWNING AND DITCHING

Crowning with materials on site and ditching on one side of the road on the uphill side will be required. The road cross-section will conform to the cross section diagrams in Figure 1. If conditions dictate, ditching may be required for both sides of the road; if local conditions permit, a flat-bladed road may be considered (if these conditions exist, check the appropriate box below). The crown shall have a grade of approximately 2% (i.e., 1" crown on a 12' wide road).

☒ Ditching will be required on both sides of the roadway as shown on the attached map or as staked in the field.

☐ Flat-blading is authorized on segment(s) delineated on the attached map.



### 3. DRAINAGE

Drainage control shall be ensured over the entire road through the use of borrow ditches, out-sloping, in-sloping, natural rolling topography, lead-off (turnout) ditches, culverts, and/or drainage dips.

A. All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval for lead-off ditches shall be determined according to the following table, but may be amended depending upon existing soil types and centerline road slope (in %):

#### SPACING INTERVAL FOR TURNOUT DITCHES

Percent slope	Spacing interval
0% - 4%	400' - 150'
4% - 6%	250' - 125'
6% - 8%	200' - 100'
8% - 10%	150' - 75'

A typical lead-off ditch has a minimum depth of 1 foot below and a berm 6 inches above natural ground level. The berm will be on the down-slope side of the lead-off ditch. The ditch end will tie into vegetation whenever possible.

For this road the spacing interval for lead-off ditches shall be at

☒ 400 foot intervals.

☐ \_\_\_\_\_ foot intervals.

☐ locations staked in the field as per spacing intervals above.

☐ locations delineated on the attached map.

B. Culvert pipes shall be used for cross drains where drainage dips or low water crossings are not feasible. The minimum culvert diameter must be 18 inches. Any culvert pipe installed shall be of sufficient diameter to pass the anticipated flow of water. Culvert location and required diameter are shown on the attached map (Further details can be obtained from the Roswell District Office or the appropriate Resource Area Office).

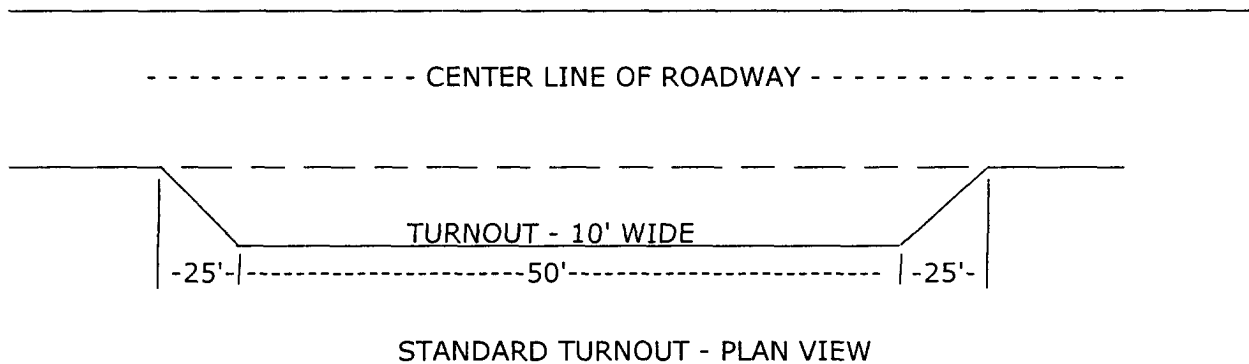
C. On road slopes exceeding 2%, drainage dips shall drain water into an adjacent lead-off ditch. Drainage dip location and spacing shall be determined by the formula:

$$\text{spacing interval} = \frac{400'}{\text{road slope in \%}} + 100'$$

Example: 4% slope: spacing interval =  $\frac{400}{4} + 100 = 200$  feet

#### 4. TURNOUTS

Unless otherwise approved by the Authorized Officer, vehicle turnouts will be required. Turnouts will be located at 2000-foot intervals, or the turnouts will be intervisible, whichever is less. Turnouts will conform to the following diagram:



#### 5. SURFACING

Surfacing of the road or those portions identified on the attached map may, at the direction of the Authorized Officer, be required, if necessary, to maintain traffic within the right-of-way with caliche, gravel, or other surfacing material which shall be approved by the Authorized Officer. When surfacing is required, surfacing materials will be compacted to a minimum thickness of six inches with caliche material. The width of surfacing shall be no less than the driving surface. Prior to using any mineral materials from an existing or proposed Federal source, authorization must be obtained from the Authorized Officer.

A sales contract for the removal of mineral materials (caliche, sand, gravel, fill dirt, etc.) from an authorized pit, site, or on location must be obtained from the BLM prior to using any such mineral material from public lands. Contact the BLM solid minerals staff for the various options to purchase mineral material.

#### 6. CATTLEGUARDS

Where used, all cattleguard grids and foundation designs and construction shall meet the American Association of State Highway and Transportation Officials (AASHTO) Load Rating H-20, although AASHTO U-80 rated grids shall be required where heavy loads (exceeding H-20 loading), are anticipated (See BLM standard drawings for cattleguards). Cattleguard grid length shall not be less than 8 feet and width of not less than 14 feet. A wire gate (16-foot minimum width) will be provided on one side of the cattleguard unless requested otherwise by the surface user.

7. MAINTENANCE

The holder shall maintain the road in a safe, usable condition. A maintenance program shall include, but not be limited to blading, ditching, culvert installation, culvert cleaning, drainage installation, cattleguard maintenance, and surfacing.

8. PUBLIC ACCESS

Public access along this road will not be restricted by the holder without specific written approval being granted by the Authorized Officer. Gates or cattleguards on public lands will not be locked or closed to public use unless closure is specifically determined to be necessary and is authorized in writing by the Authorized Officer.

9. CULTURAL RESOURCES

Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on the holder's behalf, on public or Federal land shall be immediately reported to the authorized officer. The holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the authorized officer. An evaluation of the discovery will be made by the authorized officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to the proper mitigation measures will be made by the authorized officer after consulting with the holder.

10. SPECIAL STIPULATIONS:

See reclamation 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 Road, Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
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: <u>Devon Energy Production Company, LP</u> Telephone: <u>405-552-8198</u> e-mail address: <u>norvella.adams@dev.com</u>				
Address: <u>PO Box 250 Artesia NM 88211</u>				
Facility or well name: <u>Rock Ridge 29 Federal 1</u> API #: <u>30-025-37646</u> U/L or Qtr/Qtr <u>E</u> Sec <u>29</u> T <u>22S</u> R <u>32E</u>				
County: <u>Lea</u> Latitude <u>N32°21'51.9"</u> Longitude <u>W103°42'07.6"</u> NAD: 1927 <input type="checkbox"/> 1983 <input type="checkbox"/>				
Surface Owner: Federal <input checked="" type="checkbox"/> State <input type="checkbox"/> Private <input type="checkbox"/> Indian <input type="checkbox"/>				
<table border="1"> <tr> <td> <b>Pit</b>  Type: Drilling <input checked="" type="checkbox"/> Production <input type="checkbox"/> Disposal <input type="checkbox"/>  Workover <input type="checkbox"/> Emergency <input type="checkbox"/>  Lined <input checked="" type="checkbox"/> Unlined <input type="checkbox"/>  Liner type: Synthetic <input checked="" type="checkbox"/> Thickness <u>12</u> mil Clay <input type="checkbox"/>  Pit Volume <u>15,000</u> bbl </td> <td> <b>Below-grade tank</b>  Volume: <u>      </u> bbl Type of fluid: <u>      </u>  Construction material: <u>      </u>  Double-walled, with leak detection? Yes <input type="checkbox"/> If not, explain why not: <u>      </u> </td> </tr> </table>			<b>Pit</b> Type: Drilling <input checked="" type="checkbox"/> Production <input type="checkbox"/> Disposal <input type="checkbox"/> Workover <input type="checkbox"/> Emergency <input type="checkbox"/> Lined <input checked="" type="checkbox"/> Unlined <input type="checkbox"/> Liner type: Synthetic <input checked="" type="checkbox"/> Thickness <u>12</u> mil Clay <input type="checkbox"/> Pit Volume <u>15,000</u> bbl	<b>Below-grade tank</b> Volume: <u>      </u> bbl Type of fluid: <u>      </u> Construction material: <u>      </u> Double-walled, with leak detection? Yes <input type="checkbox"/> If not, explain why not: <u>      </u>
<b>Pit</b> Type: Drilling <input checked="" type="checkbox"/> Production <input type="checkbox"/> Disposal <input type="checkbox"/> Workover <input type="checkbox"/> Emergency <input type="checkbox"/> Lined <input checked="" type="checkbox"/> Unlined <input type="checkbox"/> Liner type: Synthetic <input checked="" type="checkbox"/> Thickness <u>12</u> mil Clay <input type="checkbox"/> Pit Volume <u>15,000</u> bbl	<b>Below-grade tank</b> Volume: <u>      </u> bbl Type of fluid: <u>      </u> Construction material: <u>      </u> Double-walled, with leak detection? Yes <input type="checkbox"/> If not, explain why not: <u>      </u>			
Depth to ground water (vertical distance from bottom of pit to seasonal high water elevation of ground water.)	Less than 50 feet	(20 points)		
	50 feet or more, but less than 100 feet	(10 points)		
	100 feet or more	(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	(20 points)		
	No	(0 points)		
Distance to surface water: (horizontal distance to all wetlands, playas, irrigation canals, ditches, and perennial and ephemeral watercourses.)	Less than 200 feet	(20 points)		
	200 feet or more, but less than 1000 feet	(10 points)		
	1000 feet or more	(0 points)		
Ranking Score (Total Points)		0 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 you 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: 1/18/06

Printed Name/Title Norvella Adams / Sr. Staff Engineering Technician Signature Norvella Adams

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 CHRIS WILLIAMS - DIST. SUP. Signature Chris Williams

Date: 1/19/2006