OCD-ARTESIA AUG 18 2009

ATS-09-220

Form 3160-3
(April 2004)

372

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

# APPLICATION FOR PERMIT TO DRILL OR REENTER

| | |
|---|---|
| 1a. Type of work ☑ DRILL ☐ REENTER | 5 Lease Serial No **NM-0311499** |
| | 6 If Indian, Allotee or Tribe Name |
| | 7 If Unit or CA Agreement, Name and No |
| 1b. Type of Well ☐ Oil Well ☑ Gas Well ☐ Other ☑ Single Zone ☐ Multiple Zone | 8 Lease Name and Well No **Burton Flat Deep Unit 45** ✓ |
| 2 Name of Operator **Devon Energy Production Company, LP** | 9 API Well No. 30-015-37218 |
| 3a. Address **20 North Broadway, Oklahoma City, Oklahoma City 73102-8260** / 3b Phone No. *(include area code)* **405-552-7802** | 10 Field and Pool, or Exploratory **Burton Flat; Morrow** ✓ |
| 4. Location of Well *(Report location clearly and in accordance with any State requirements *)* At surface **SESE 1160' FSL & 670' FEL** At proposed prod zone **SESE 1160' FSL & 670' FEL** | 11 Sec, T. R M. or Blk and Survey or Area **Lot P Sec 34, T20S R28E** |
| 14 Distance in miles and direction from nearest town or post office* **Approximately 6 miles northeast of Carlsbad, NM** | 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) **670'** | 16 No of acres in lease **160** | 17 Spacing Unit dedicated to this well **320** |
| 18 Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft **1400'** | 19 Proposed Depth **11,700'** | 20 BLM/BIA Bond No. on file **CO-1104** |
| 21 Elevations (Show whether DF, KDB, RT, GL, etc) **3201' GL** | 22 Approximate date work will start* **03/15/2009** | 23 Estimated duration **45 days** |

## 24. Attachments

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

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

| | | |
|---|---|---|
| 25 Signature | Name *(Printed/Typed)* **Stephanie A. Ysasaga** | Date **02/02/2009** |
| Title **Sr. Staff Engineering Technician** | | |
| Approved by *(Signature)* **/s/ Don Peterson** | Name *(Printed/Typed)* | Date **AUG 14 2009** |
| Title **FIELD MANAGER** | Office **CARLSBAD FIELD OFFICE** | |

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached.

**APPROVAL FOR TWO YEARS**

Title 18 U S C Section 1001 and Title 43 U S C Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction

**(Instructions on page 2)*

NMR

**Capitan Controlled Water Basin**

**SEE ATTACHED FOR CONDITIONS OF APPROVAL**

**Approval Subject to General Requirements & Special Stipulations Attached**

DISTRICT I
1625 N. French Dr., Hobbs, NM 88240

DISTRICT II
1301 W. Grand Avenue, Artesia, NM 88210

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

DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department

# OIL CONSERVATION DIVISION

*1220 South St. Francis Dr.*
*Santa Fe, New Mexico 87505*

Form C-102
Revised October 12, 2005

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

☐ AMENDED REPORT

## WELL LOCATION AND ACREAGE DEDICATION PLAT

| API Number | Pool Code | Pool Name |
|---|---|---|
| 30-015-37218 | 73280 | BURTON FLAT; MORROW ✓ |

| Property Code | Property Name | Well Number |
|---|---|---|
| 302209 | BURTON FLAT DEEP UNIT | 45 |

| OGRID No. | Operator Name | Elevation |
|---|---|---|
| 6137 | DEVON ENERGY PRODUCTION COMPANY LP | 3201' |

### Surface Location

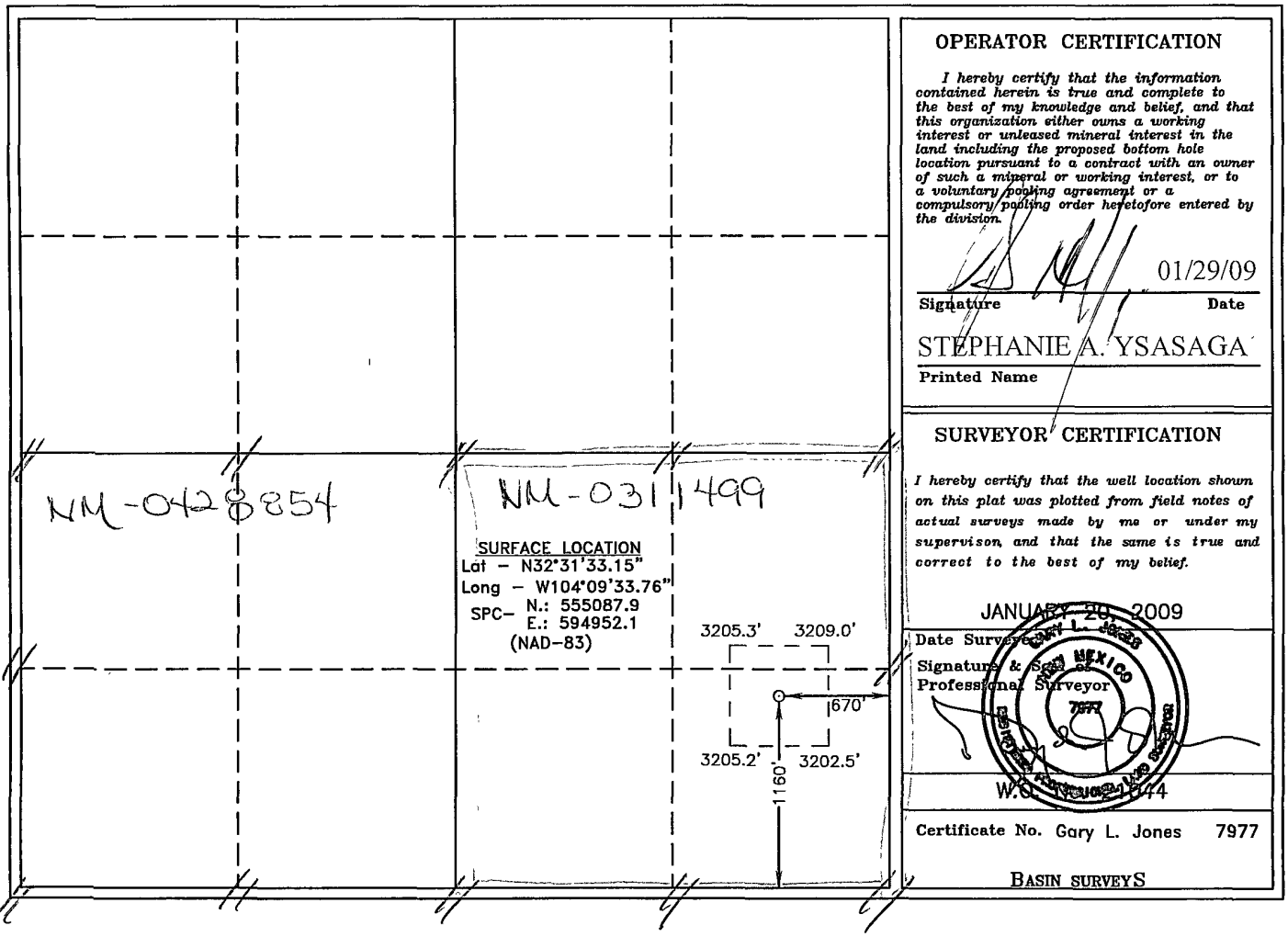
| UL or lot No. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---|---|---|---|---|---|---|---|---|---|
| P | 34 | 20 S | 28 E | | 1160 | SOUTH | 670 | EAST | EDDY |

### Bottom Hole Location If Different From Surface

| UL or lot No. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |

| Dedicated Acres | Joint or Infill | Consolidation Code | Order No. |
|---|---|---|---|
| 320 | | | |

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION




### OPERATOR CERTIFICATION

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

01/29/09

Signature Date

STEPHANIE A. YSASAGA

Printed Name

### 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.*

JANUARY 20, 2009

Date Surveyed

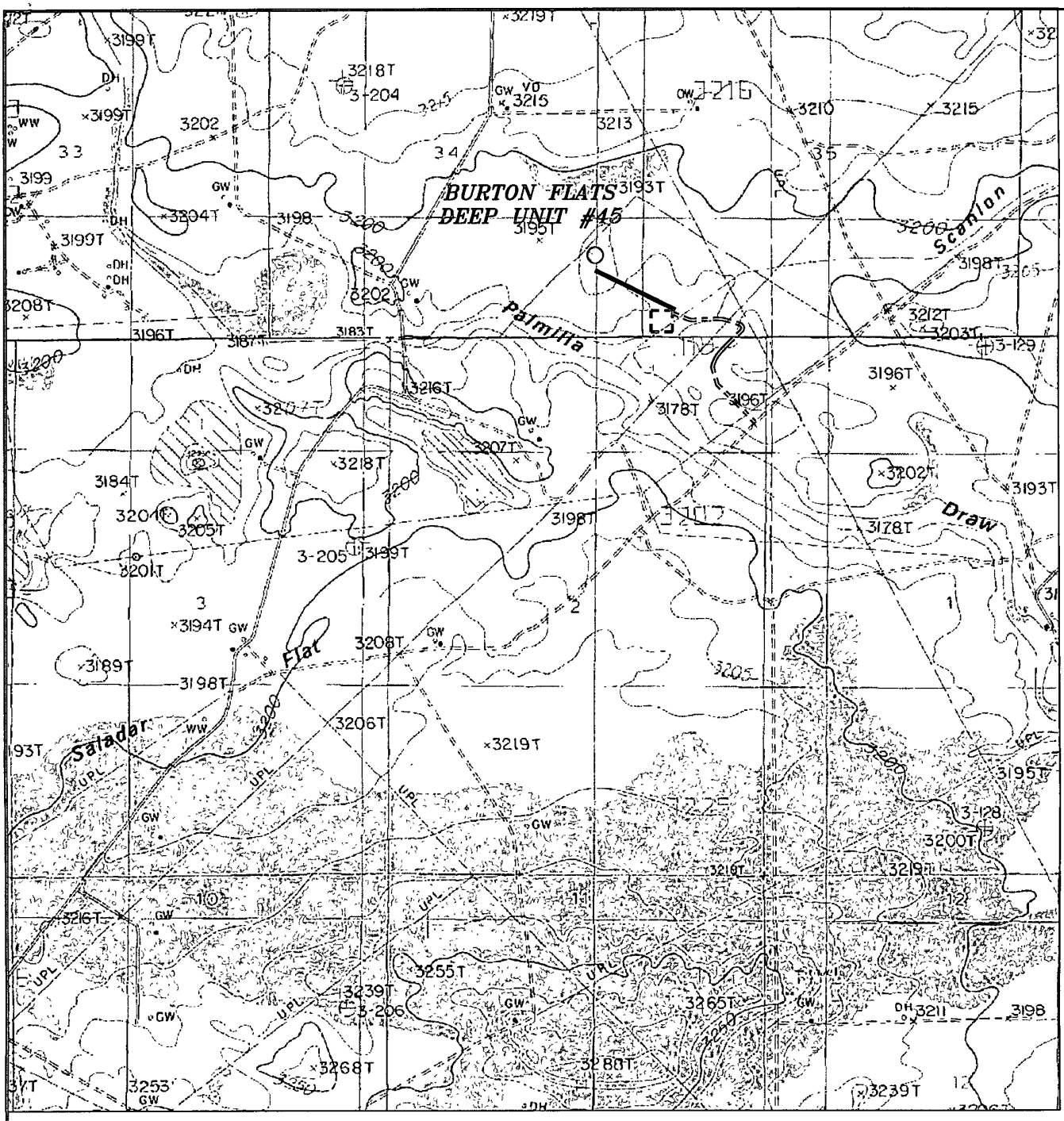
Signature & Seal of Professional Surveyor

NEW MEXICO 7977 REGISTERED PROFESSIONAL SURVEYOR

W.O. [illegible]44

Certificate No. Gary L. Jones 7977

BASIN SURVEYS

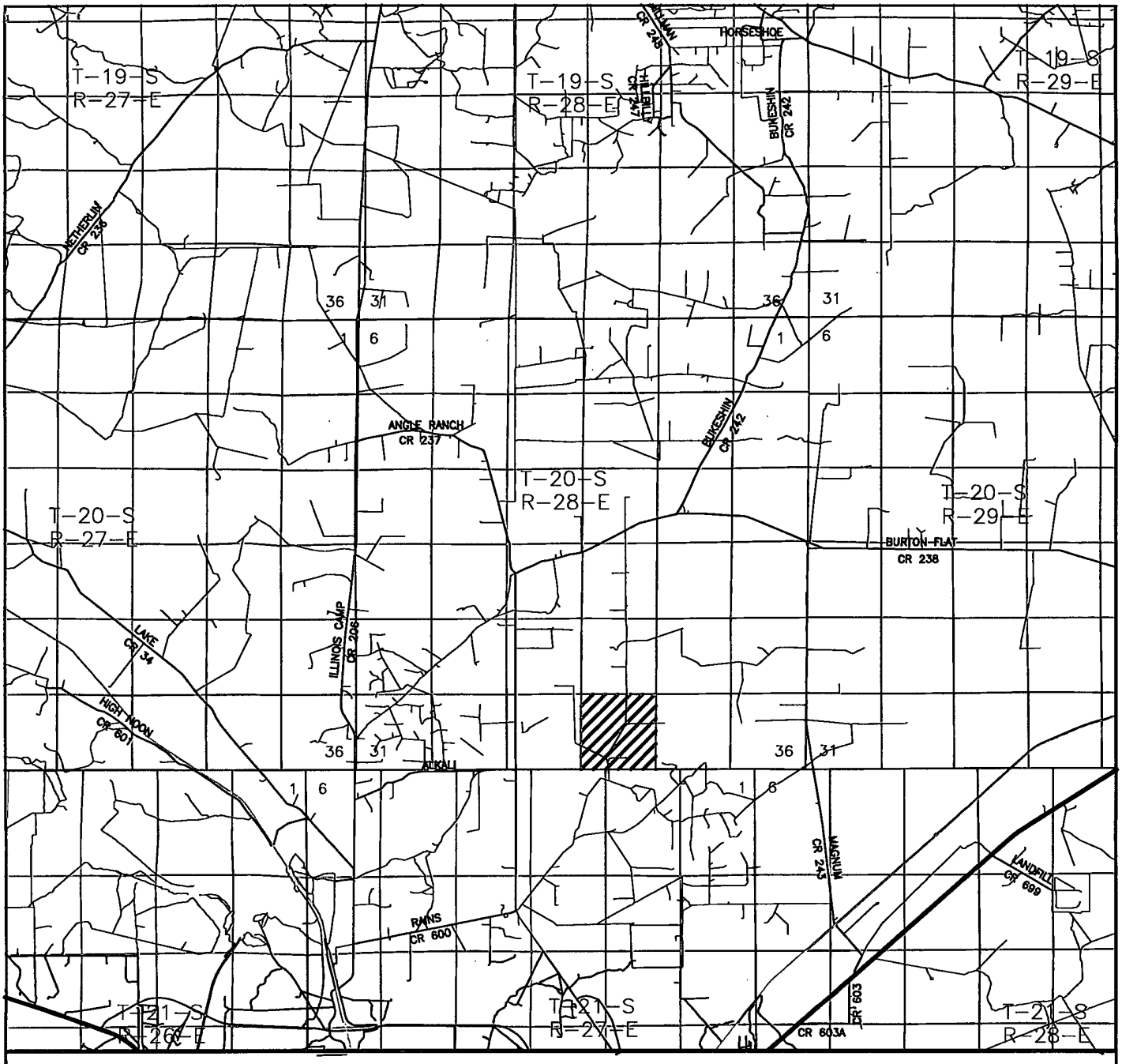



BURTON FLATS DEEP UNIT #45
Located at 1160' FSL AND 670' FEL
Section 34, Township 20 South, Range 28 East,
N.M.P.M., Eddy County, New Mexico.

Basin Surveys
focused on excellence in the oilfield
P.O. Box 1786
1120 N. West County Rd.
Hobbs, New Mexico 88241
(575) 393-7316 - Office
(575) 392-2206 - Fax
basinsurveys.com

| | |
|---|---|
| W.O. Number: | JMS 21044 |
| Survey Date: | 01-20-2009 |
| Scale: | 1" = 2000' |
| Date: | 01-22-2009 |

DEVON ENERGY PROD. CO., L.P.

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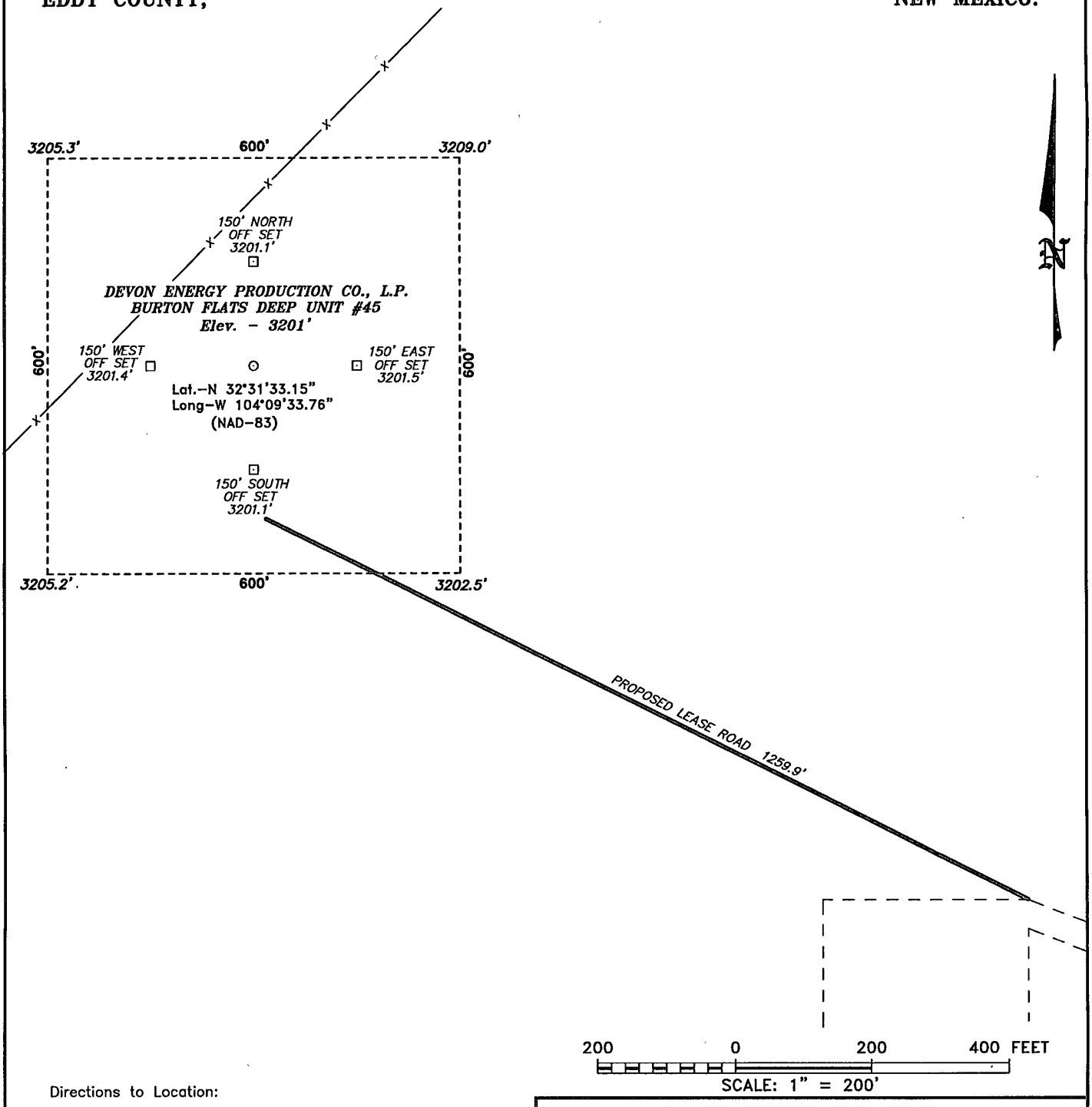
| Date: | 01-22-2009 |

DEVON ENERGY PROD. CO., L.P.

# SECTION 34, TOWNSHIP 20 SOUTH, RANGE 28 EAST, N.M.P.M.,
**EDDY COUNTY,** **NEW MEXICO.**




Directions to Location:

FROM THE JUNCTION OF RAINS AND ILLINOIS CAMP ROAD, GO EAST 2.2 MILES TO LEASE ROAD, ON LEASE ROAD GO NORTHEASTERLY 1.4 MILES TO LEASE ROAD, ON LEASE ROAD CONTINUE NORTHEASTERLY 1.2 MILES TO LEASE ROAD, ON LEASE ROAD GO NORTHERLY 0.6 MILES TO LEASE ROAD WINDING WESTERLY 0.2 MILES TO PROPOSED LEASE ROAD.

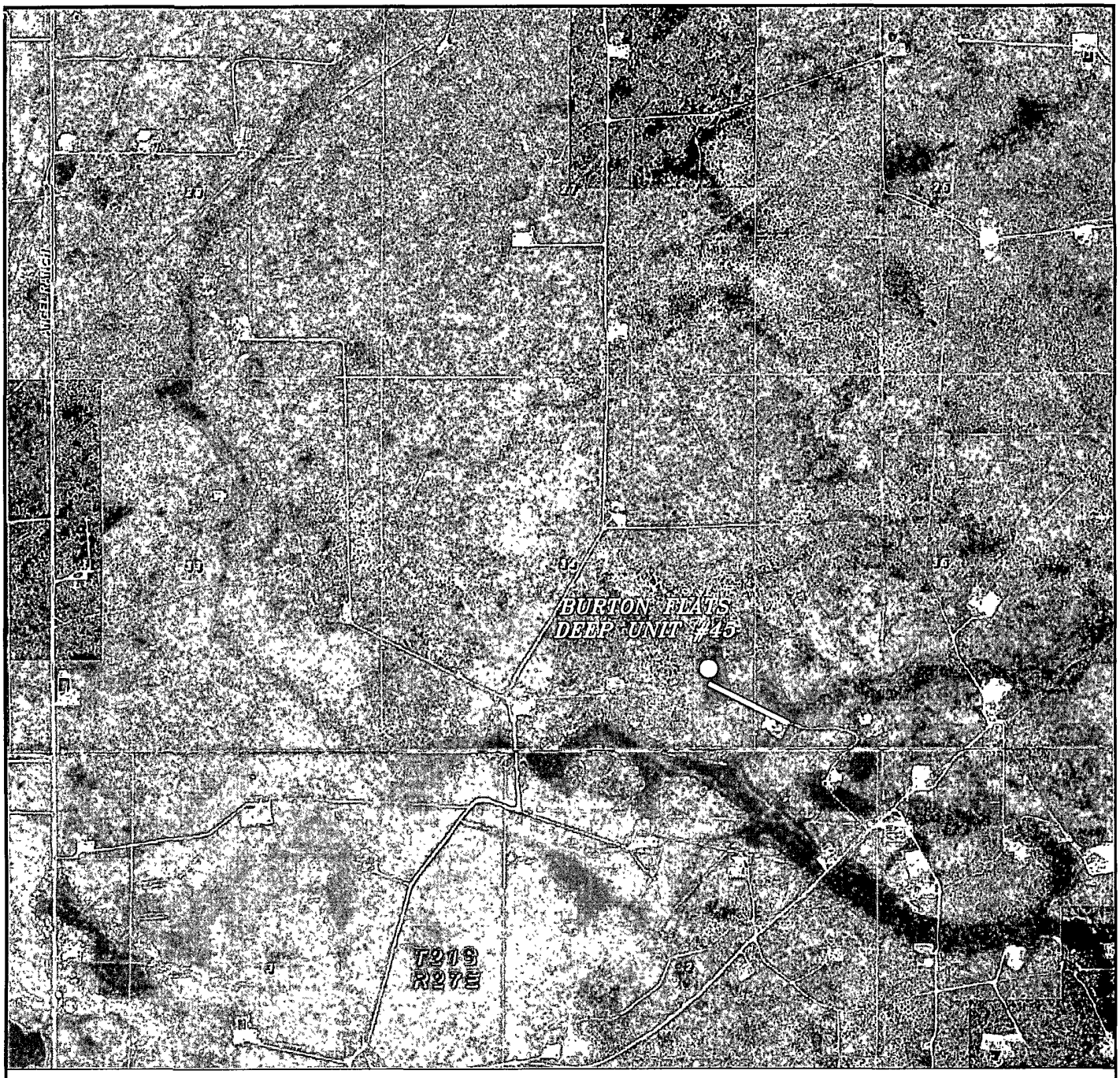
**DEVON ENERGY PROD. CO., L.P.**

REF: BURTON FLATS DEEP UNIT #45 / WELL PAD TOPO

THE BURTON FLATS DEEP UNIT #45 LOCATED 1160' FROM THE SOUTH LINE AND 670' FROM THE EAST LINE OF SECTION 34, TOWNSHIP 20 SOUTH, RANGE 28 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO.


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


| | | | |
|---|---|---|---|
| W.O. Number: 21044 | Drawn By: J. M. SMALL | | |
| Date: 01-22-2009 | Disk: 21044 JMS | Survey Date: 01-20-2009 | Sheet 1 of 1 Sheets |

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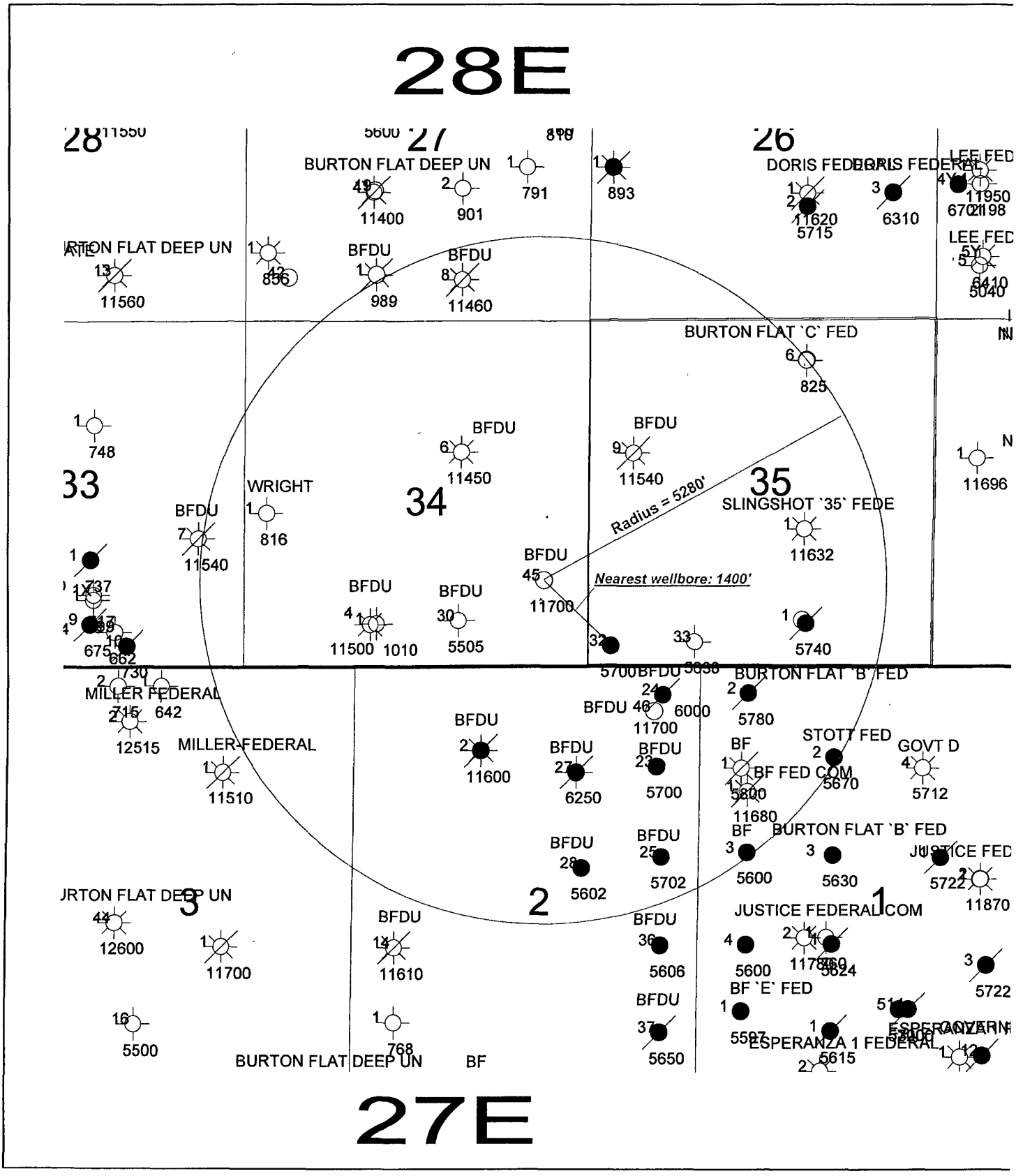
W.O. Number: JMS 21044

Scale: 1" = 2000'

*YELLOW TINT - USA LAND*
*BLUE TINT - STATE LAND*
*NATURAL COLOR - FEE LAND*

DEVON ENERGY PROD. CO., L.P.


28E
28
27
26
33
34
35
BURTON FLAT DEEP UN
DORIS FEDERAL
LEE FED
BURTON FLAT `C` FED
BFDU
WRIGHT
SLINGSHOT `35` FEDE
Radius = 5280'
Nearest wellbore: 1400'
MILLER FEDERAL
MILLER-FEDERAL
BURTON FLAT `B` FED
STOTT FED
GOVT D
BF FED COM
BF
BF `E` FED
JUSTICE FEDERAL COM
JUSTICE FED
ESPERANZA 1 FEDERAL
3
2
1
BURTON FLAT DEEP UN
BF
27E

Wells_TD_gt 11000 <BURTON FLAT>

Straight hole well

Well Status

- 2GAS
- D&A
- D&A-G
- D&A-OG
- D&AW
- D&AWG
- D&AWO
- P&A
- D&AWOG
- SERW
- W-INJ
- GAS
- GAS-WO
- INA-GAS
- INA-OIL
- J&AW
- LOC
- OIL
- OIL-WO
- TAW

Deviated well - Wellbore path

Deviated well - Wellbore path

Deviated well - Surface location

Deviated well - Surface locat

Deviated well - Bottom hole location

Well Status

- 2GAS
- GAS
- GAS-WO
- LOC

20 S

21 S

devon

**SENM Morrow/Strawn Project**
**Burton Flat Unit**
**Devon Burton Flat Deep Unit 45 One Mile Radius Plat**

| | | |
|---|---|---|
| Author: CDM | Isopach C I. 5 ft<br>Structure C I 20 ft | Date:<br>12 December, 2008 |
| BFDU 45 OMR gmp | Scale:<br>1 2000 | Burton Flat AOI |

# DRILLING PROGRAM

Devon Energy Production Company, LP
**Burton Flat Deep Unit 45**
Surface Location: 1160' FSL & 670' FEL, Unit P, Sec 34 T20S R28E, Eddy, NM
Bottom hole Location: 1160' FSL & 670' FEL, Unit P, Sec 34 T20S R28E, Eddy, NM

**1. Geologic Name of Surface Formation**

a. Quaternary

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

| | | | |
|---|---|---|---|
| a. | Alluvium/Tansil | Surface | Fresh Water |
| b. | Capitan Reef | 900' | |
| c. | Lamar | 2675' | |
| d. | Delaware Sd | 2750' | Oil |
| e. | Bone Spring | 5300' | Oil |
| f. | 1st Bone Spring Sd | 6490' | Oil |
| g. | 3rd Bone Spring Lm | 7630' | Oil |
| h. | 3rd Bone Spring Sd | 8500' | Oil |
| i. | Wolfcamp | 8940' | Gas |
| j. | Lower Wolfcamp | 9340' | Gas |
| k. | Penn Shale | 9560' | Gas |
| l. | Canyon | 9810' | Gas |
| m. | Strawn | 10070' | Gas |
| n. | Atoka | 10520' | Gas |
| o. | Morrow | 10960' | Gas |
| p. | Morrow Clastics | 11070' | Gas |
| q. | Middle Morrow Lm | 11100' | Gas |
| r. | Middle Morrow Shale | 11300' | Gas |
| s. | Lower Morrow | 11350' | Gas |
| t. | Barnett Shale | 11600' | Gas |
| u. | Total Depth | 11700' | |

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 630' and circulating cement back to surface. Fresh water sands will be protected by setting 9 5/8" casing at 2650' and circulating cement to surface. The Morrow intervals will be isolated by setting 5 ½" casing to total depth and circulating cement above the base of the 9 5/8" casing.

**3. Casing Program:**

| Hole Size | Hole Interval | OD Csg | Casing Interval | Weight | Collar | Grade |
|---|---|---|---|---|---|---|
| 17 ½" | 0' – 630' | 13 3/8" | 0'- 630' | 48#/ft | ST&C | H-40 |
| 12 ¼" | 630' – 2650' | 9 5/8" | 0' – 2650' | 40#/ft | LT&C | K-55 |
| 8 ¾" | 2650'–11700' | 5 ½" | 0' – 11700' | 17#/ft | LT&C | P-110 |

**Design Parameter Factors:**

| Casing Size | Collapse Design Factor | Burst Design Factor | Tension Design Factor |
|---|---|---|---|
| 13 3/8" | 2.64 | 1.67 | 2.42 |
| 9 5/8" | 1.85 | 1.77 | 1.89 |
| 5 ½" | 1.93 | 1.66 | 1.57 |

4. **Cement Program:** ← See COA

a. 13 3/8" Surface — Cement **Lead Slurry**: Lead: 360 sacks (35:65) Poz (Fly Ash):Premium Plus C Cement + 5% bwow Sodium Chloride + 0.125 lbs/sack Cello Flake + 4% bwoc Bentonite + 0.8% bwoc Sodium Metasilicate + 5% bwoc MPA-5 + 101.1% Fresh Water **Yield:** 1.83 cf/sack. **Tail:** 250 sacks Premium Plus C Cement + 2% bwoc Calcium Chloride + 0.125 lbs/sack Cello Flake + 56.3% Fresh Water **Yield:** 1.35 cf/sack. TOC to surface.

b. 9 5/8" Intermediate — Cement **Lead Slurry:** Lead: 900 sacks (35:65) Poz (Fly Ash):Premium Plus C Cement + 5% bwow Sodium Chloride + 0.125 lbs/sack Cello Flake + 6% bwoc Bentonite + 107.8% Fresh Water **Yield:** 2.04 cf/sack. TOC @ surface. **Tail:** 350 sacks (60:40) Poz (Fly Ash):Premium Plus C Cement + 5% bwow Sodium Chloride + 0.125 lbs/sack Cello Flake + 0.4% bwoc Sodium Metasilicate + 4% bwoc MPA-5 + 64.7% Fresh Water **Yield:** 1.37 cf/sack. TOC to surface.

c. 5 1/2" Production — **2 Stage with DV Tool @ 8000'**

**Stage 1:**

**Cement Slurry:** 875 sacks Class C Cement + 0.35% bwoc R-3 + 0.4% bwoc CD-32 + 1.4% bwoc FL-62 + 0.1% bwoc ASA-301 + 0.2% bwoc Sodium Metasilicate + 20 lbs/sack ASCA-1 + 72.3% Fresh Water. **Yield:** 1.57 cf/sack

**Stage 2**

**Lead Slurry:** LEAD: 820 sacks (35:65) Poz (Fly Ash): + 0.35% bwoc R-3 + 0.4% bwoc CD-32 + 1.4% bwoc FL-62 + 0.1% bwoc ASA-301 + 0.2% bwoc Sodium Metasilicate + 20 lbs/sack ASCA-1 + 52.9% Fresh Water
**Yield:** 1.95 cf/sack.

**Tail Slurry:** 510 sacks 40:60 Cement + 0.35% bwoc R-3 + 0.4% bwoc CD-32 + 1.4% bwoc FL-62 + 0.1% bwoc ASA-301 + 0.2% bwoc Sodium Metasilicate + 20 lbs/sack ASCA-1. **Yield:** 1.35 cf/sk. **TOC @ 2100'.** ← See COA

The above cement volumes could be revised pending the caliper measurement from the open hole logs. All casing is new and API approved.

5. **Pressure Control Equipment:** ← See COA

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 (3000 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. An annular and rotating head will be installed on the 13⅜ surface casing and utilized to setting depth of the 9⅝" intermediate casing. The annular and associated equipment will be tested ~~to 1000 psi with the rig pump before drilling out the 13-3/8" casing shoe.~~ The BOPE will be installed on the 9⅝" intermediate casing and utilized continuously until total depth is reached. Prior to drilling out the 9-5/8" casing shoe, the BOP's and Hydril will be tested as per BLM Drilling Operations Order #2.

See COA

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.

6. **Proposed Mud Circulation System**

| Depth | Mud Wt. | Visc | Fluid Loss | Type System |
|---|---|---|---|---|
| 0' – 630' | 8.4-9.4 | 32-34 | NC | FW/Gel |
| 630'– 2650' | 9.7-10.0 | 28-30 | NC | ~~Brine~~ Fresh water |
| 2650'–11700' | 8.3–10.5 | 28-40 | NC/9cc | Fresh Water |

per Operator MK 8/8/09

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

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

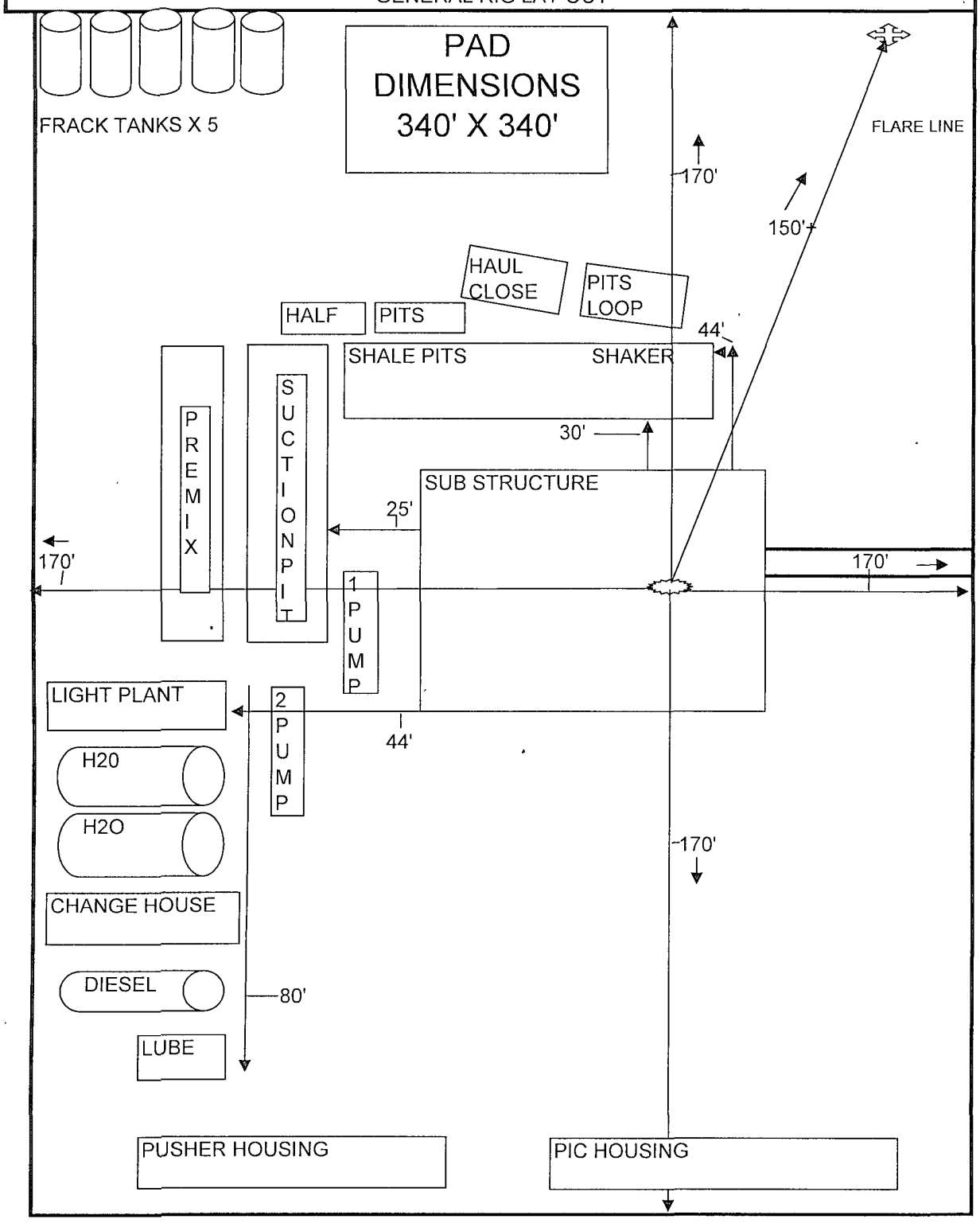
8. **Logging, Coring, and Testing Program:** ← See COA
   a. Drill stem tests will be based on geological sample shows.
   b. If a drill stem test is anticipated; a procedure, equipment to be used and safety measures will be provided via sundry notice to the BLM.
   c. The open hole electrical logging program will be:
      i. Total Depth to Intermediate Casing — Dual Laterolog-Micro Laterolog with SP and Gamma Ray. Compensated Neutron – Z Density log with Gamma Ray and Caliper.
      ii. Total Depth to Surface — Compensated Neutron with Gamma Ray
      iii. No coring program is planned
      iv. Additional testing will be initiated subsequent to setting the 5 ½" production casing. Specific intervals will be targeted based on log evaluation, geological sample shows and drill stem tests.

9. **Potential Hazards:**
   a. No abnormal pressures or temperatures are expected. There is no known presence of H2S in this area. 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 5000 psi and Estimated BHT 180°. No H2S is anticipated to be encountered.

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

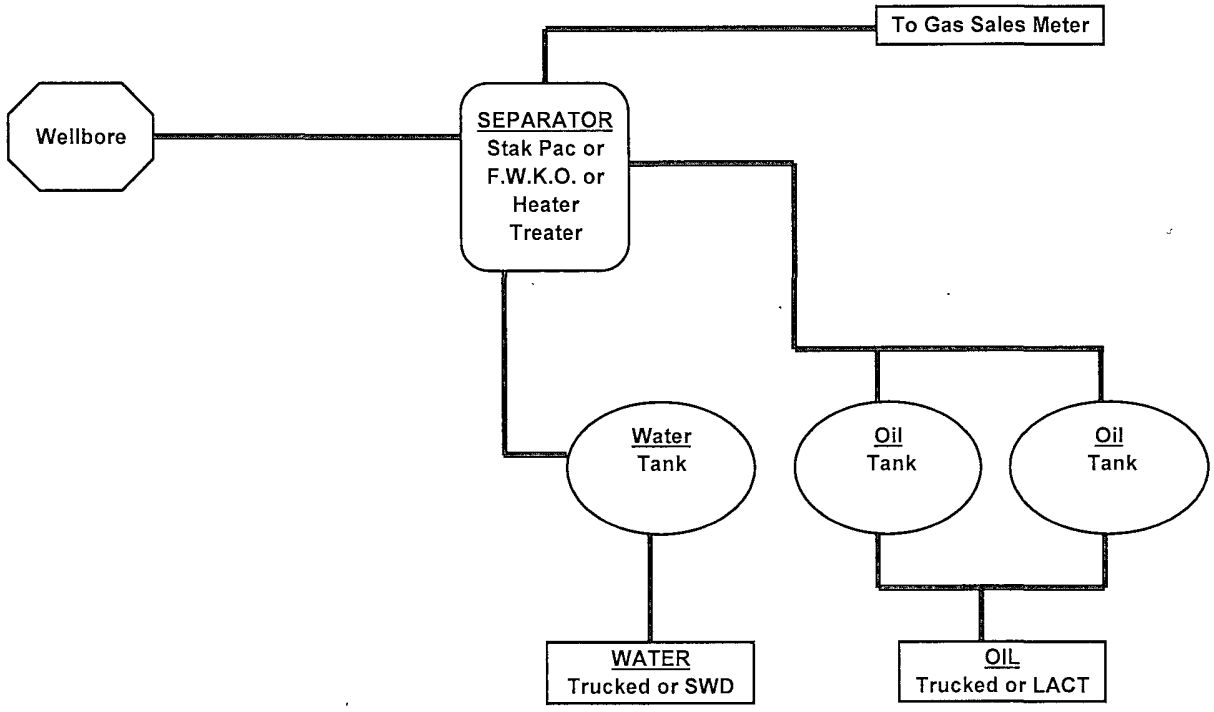
MCVAY RIG # 7

GENERAL RIG LAY OUT



DEVON ENERGY PRODUCTION COMPANY LP

General Production Facilities Diagram



Attachment to Exhibit #1
NOTES REGARDING BLOWOUT PREVENTERS
Devon Energy Production Company, LP
**Burton Flat Deep Unit 45**
Surface Location: 1160' FSL & 670' FEL, Unit P, Sec 34 T20S R28E, Eddy, NM
Bottom hole Location: 1160' FSL & 670' FEL, Unit P, Sec 34 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.

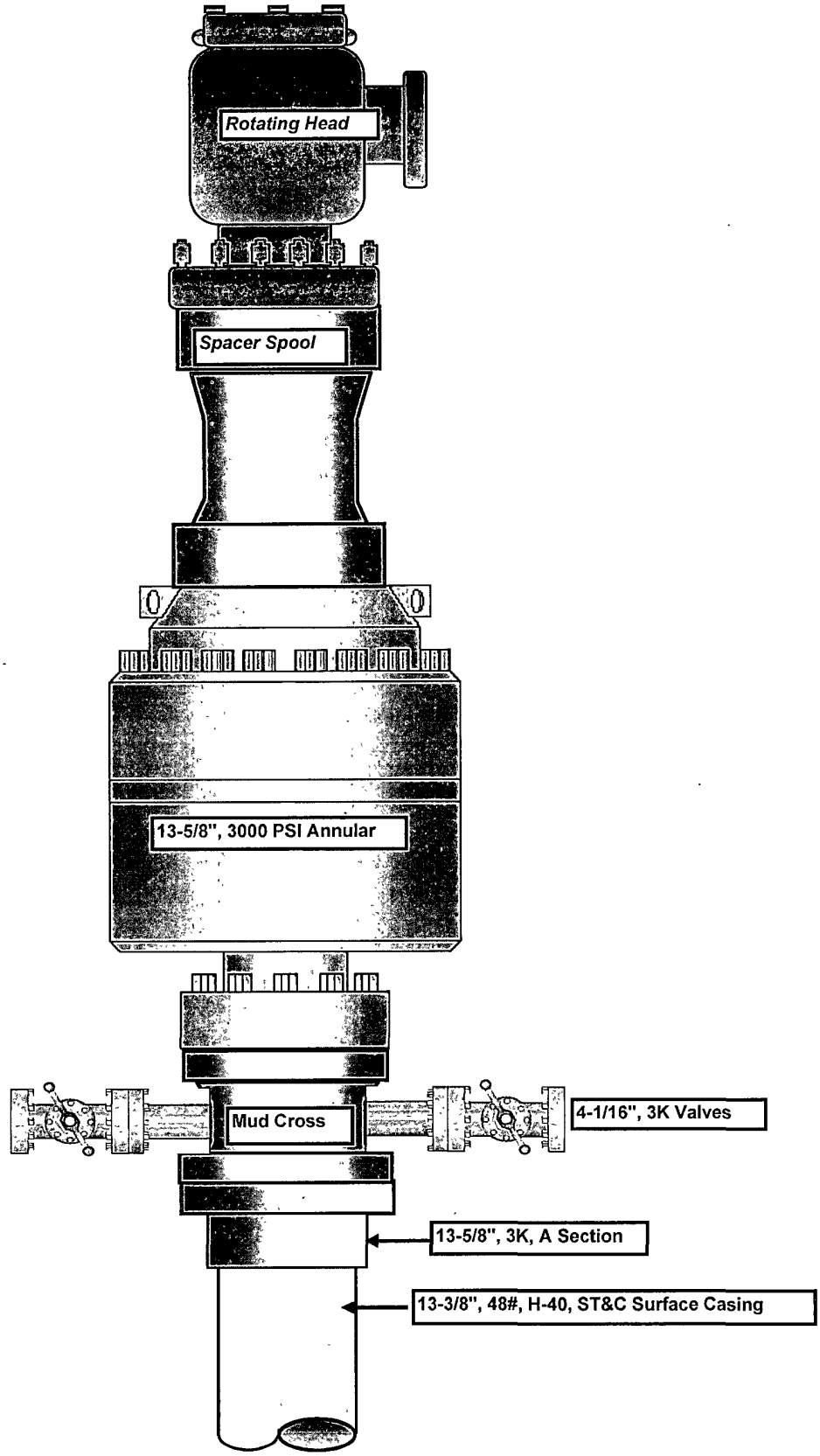
8. Will maintain a kelly cock attached to the kelly.

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

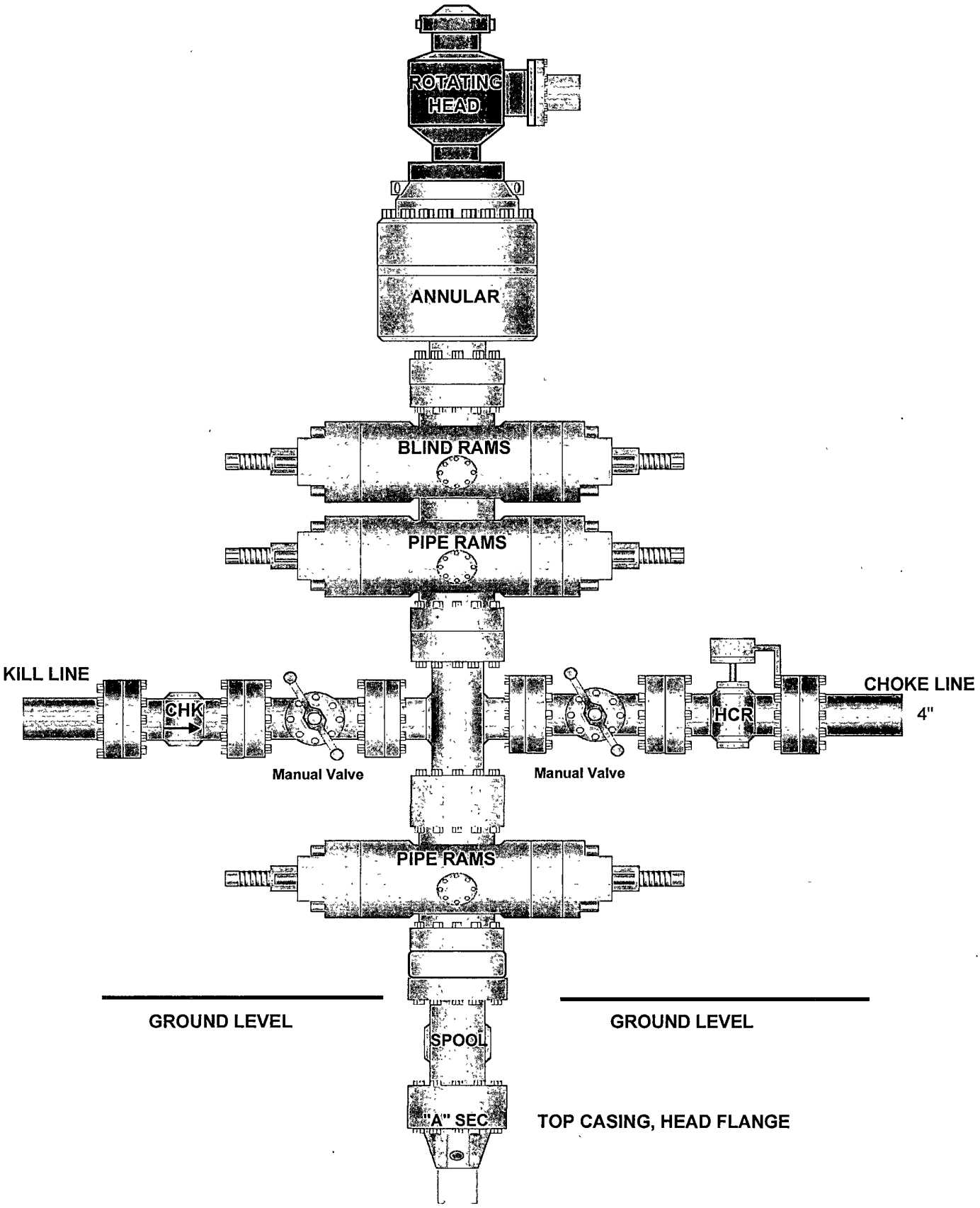
10. Hydraulic floor control for blowout preventer will be located as near in proximity to driller's controls as possible.

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.

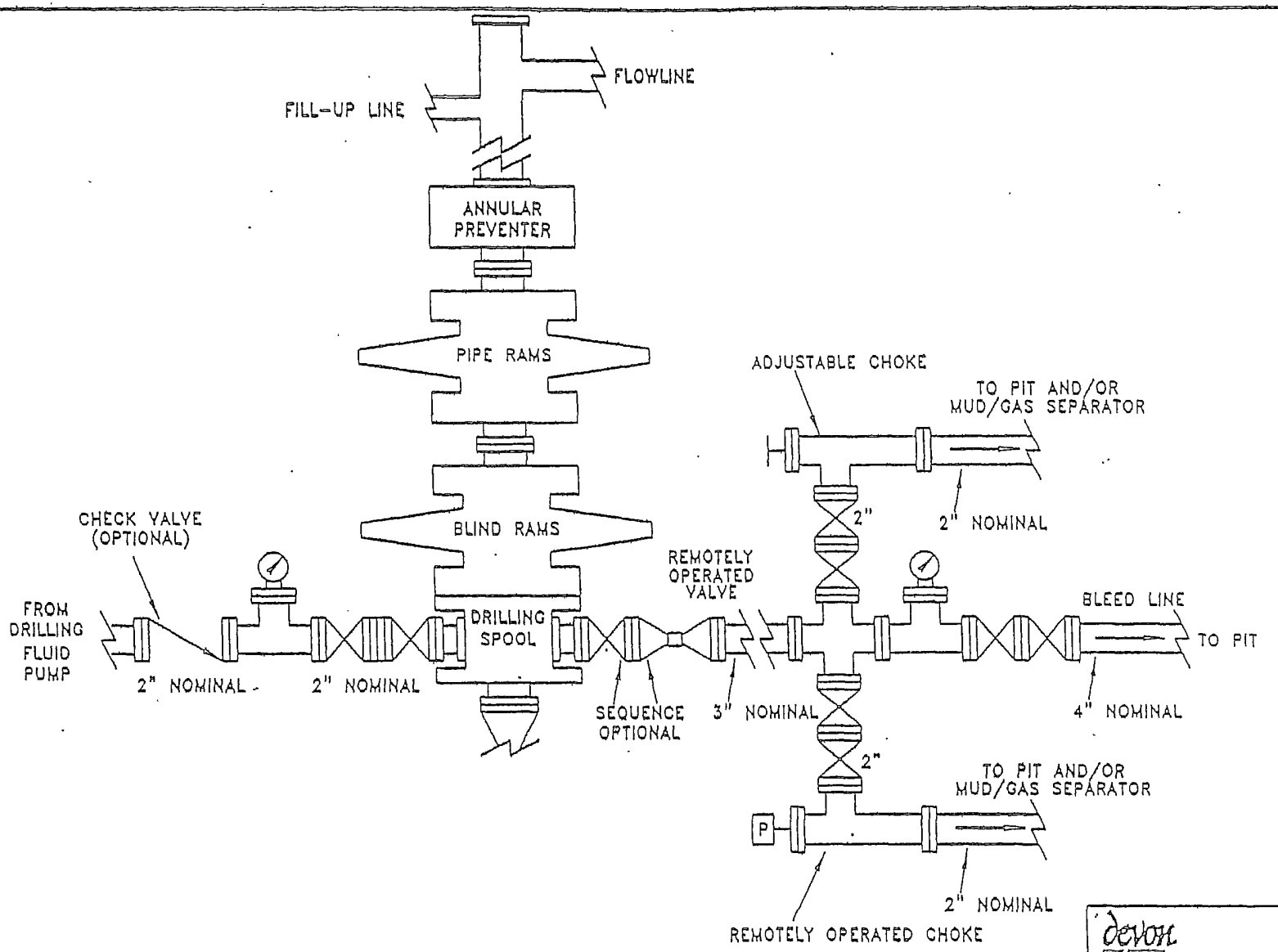
# 13-5/8" 3K Annular



# 13-5/8" x 5,000 psi BOP Stack




H:\Western Division Files\Rig Layouts\3 RAM Stack BOP.xls




devon

EXHIBIT 1

# PROPOSED 5-M BOPE AND CHOKE ARRANGEMENT

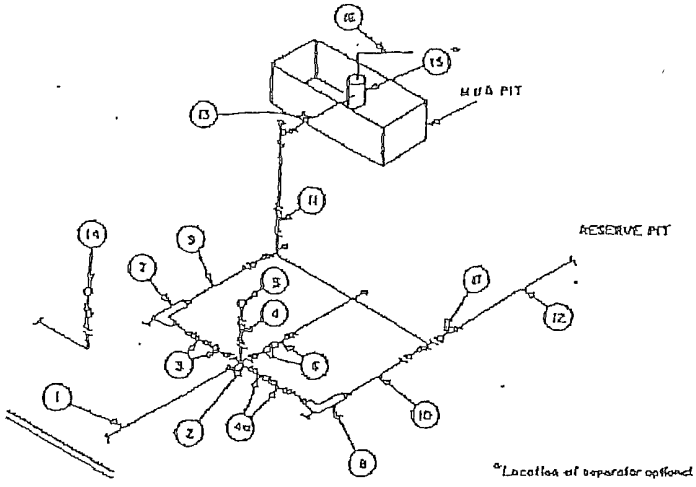
s:\...\nm\plots
5mbope.dwg

SC

Exhibit E

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

3 MWP - 5 MWP - 10 MWP




BEYOND SUBSTRUCTURE

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

*(1) Only one required in Class 3M.*

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

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

EQUIPMENT SPECIFICATIONS AND INSTALLATION INSTRUCTIONS

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

# 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"

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.

**Emergency Procedures**

In the case of a release of gas containing $H_2S$, 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 $H_2S$, measures for protection against the gas, equipment used for protection and emergency response. Additionally, responders must be equipped with $H_2S$ 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 ($SO_2$). 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 $H_2S$ and $SO_2$**

| Common Name | Chemical Formula | Specific Gravity | Threshold Limit | Hazardous Limit | Lethal Concentration |
|---|---|---|---|---|---|
| Hydrogen Sulfide | $H_2S$ | 1.189 Air = 1 | 10 ppm | 100 ppm/hr | 600 ppm |
| Sulfur Dioxide | $SO_2$ | 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

| Artesia (575) | Cellular | Office | Home |
|---|---|---|---|
| Foreman – BJ Cathey | 390-5893 | 748-0176 | 887-6026 |
| Asst. Foreman – Bobby Jones | 748-7447 | 748-0176 | 746-3194 |
| Don Mayberry | 748-7180 | 748-5235 | 746-4945 |
| Montral Walker | (575) 390-5182 | (575) 748-0193 | |
| Linda Berryman | (575) 513-0534 | (575) 748-0177 | |

## Agency Call List

**Lea County (505)** — Hobbs

| | |
|---|---|
| State Police | 392-5588 |
| City Police | 397-9265 |
| Sheriff's Office | 393-2515 |
| Ambulance | 911 |
| Fire Department | 397-9308 |
| LEPC (Local Emergency Planning Committee) | 393-2870 |
| NMOCD | 393-6161 |
| US Bureau of Land Management | 393-3612 |

**Eddy County (505)** — Carlsbad

| | |
|---|---|
| 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) | (575) 476-9600 |
| 24 HR | (575) 827-9126 |
| National Emergency Response Center (Washington, DC) | (800) 424-8802 |

**Emergency Services**

| | |
|---|---|
| Boots & Coots IWC | 1-800-256-9688 or (281) 931-8884 |
| Cudd Pressure Control | (915) 699-0139 or (915) 563-3356 |
| Halliburton | (575) 746-2757 |
| B. J. Services | (575) 746-3569 |
| Flight For Life - Lubbock, TX | (806) 743-9911 |
| Aerocare - Lubbock, TX | (806) 747-8923 |
| Med Flight Air Amb - Albuquerque, NM | (575) 842-4433 |
| Lifeguard Air Med Svc. Albuquerque, NM | (575) 272-3115 |

*Give GPS position:*

**SURFACE USE PLAN**
Devon Energy Production Company, LP
**Burton Flat Deep Unit 45**
Surface Location: 1160' FSL & 670' FEL, Unit P, Sec 34 T20S R28E, Eddy, NM
Bottom hole Location: 1160' FSL & 670' FEL, Unit P, Sec 34 T20S R28E, Eddy, NM

1. **Existing Roads:**
   a. The well site and elevation plat for the proposed well are reflected on the well site layout; Form C-102. 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 Rains and Illinois Camp road, go east 2.2 miles to lease road, on lease road go northeasterly 1.4 miles to lease road, on lease road continue northeasterly 1.2 miles to lease road, on lease road go northerly 0.6 miles to lease road winding westerly 0.2 miles to proposed lease road.

2. **New or Reconstructed Access Roads:**
   a. The well site layout, Form C-102 shows the existing County Road. Approximately 1259' 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. **Location of Existing Wells:**
   1 Mile Radius Plat shows all existing and proposed wells within a one-mile radius of the proposed location. See attached plat.

4. **Location of Existing and/or Proposed Production Facilities:**
   a. In the event the well is found productive, the Burton Flat Deep 45 tank battery would be utilized and the necessary production equipment will be installed at the well site. See Production Facilities Layout diagram.
   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.

5. **Location and Types of Water Supply:**
This location will be drilled using a combination of water mud systems (outlined in the Drilling Program). The water will be obtained from commercial water stations in the area and hauled to location by transport truck using the existing and proposed roads shown in the C-102. On occasion, water will be obtained from a pre-existing water well, running a pump directly to the drill rig. In these cases where a poly pipeline is used to transport water for drilling purposes, proper authorizations will be secured. If a poly pipeline is used, the size, distance, and map showing route will be provided to the BLM via sundry notice.

6. **Construction Materials:**
All caliche utilized for the drilling pad and proposed access road will be obtained from an existing BLM approved pit or from prevailing deposits found under the location. All roads will be constructed of 6" rolled and compacted caliche. Will use BLM recommended use of extra caliche from other locations close by for roads, if available.

7. **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. 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.
   f. Disposal of fluids to be transported by the following companies:
      i. American Production Service Inc, Odessa TX
      ii. Gandy Corporation, Lovington NM
      iii. I & W Inc, Loco Hill NM
      iv. Jims Water Service of Co Inc, Denver CO

8. **Ancillary Facilities:** No campsite or other facilities will be constructed as a result of this well.

9. **Well Site Layout**
   a. Exhibit D shows the proposed well site layout with dimensions of the pad 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 will be lined.
   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 to preclude endangering wildlife.

f. If a pit or closed loop system is utilized Devon will comply with the NMOCD requirements 19.15.17 and submit form C-144 to the appropriate NMOCD District Office. Copy to be provided to the BLM; processing and approval by the OCD.

**10. Plans for Surface Reclamation:**

a. After concluding the drilling and/or completion operations, if the well is found non-commercial, the caliche will be removed from the pad and transported to the original caliche pit or used for other drilling locations. The road will be reclaimed as directed by the BLM. The reserve pit area will be broken out and leveled after drying to a condition where these efforts are feasible. The original top soil will again be returned to the pad and contoured, as close as possible, to the original topography. Will close the pits per OCD compliance regulations.
b. The pit lining will be buried or hauled away in order to return the location and road to their pristine nature. All pits will be filled and location leveled, weather permitting, within 120 days after abandonment.
c. The location and road will be rehabilitated as recommended by the BLM.
d. If the well is a producer, the reserve pit fence will be torn down after the pit contents have dried. The reserve pit and those areas of the location not essential to production facilities will be reclaimed and seeded per BLM requirements.
e. If the well is deemed commercially productive, the reserve pit will be restored as described in 10(A) within 120 days subsequent to the completion date. Caliche from areas of the pad site not required for operations will be reclaimed. The original top soil will be returned to the area of the drill pad not necessary to operate the well. These unused areas of the drill pad will be contoured, as close as possible, to match the original topography.

**11. Surface Ownership**

a. The surface is owned by the US Government and is administered by the Bureau of Land Management. The surface is multiple use with the primary uses of the region for the grazing of livestock and the production of oil and gas.
b. The proposed road routes and the surface location will be restored as directed by the BLM.

**12. 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, sagebush, yucca and miscellanous weeds. No wildlife was observed but it is likely that deer, rabbits, coyotes, and rodents traverse the area.
b. There is no permanent or live water in the general proximity of the location.
c. There are no dwellings within 2 miles of location.
d. A Cultural Resources Examination will be completed by Southern New Mexico Archaeological Services, Inc. and forwarded to the BLM office in Carlsbad, New Mexico.

**13. Bond Coverage:**

Bond Coverage is Nationwide; Bond # is CO-1104

**Operators Representative:**

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


Greg McGowen
Operations Engineer Advisor

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

(405) 228-8965 (office)
(405) 464-9769 (cell)

Don Mayberry
Superintendent

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

(505) 748-0164 (office)
(505) 748-5235 (cell)


Certification

I hereby certify that I, or persons under my direct supervision, have inspected the proposed drill site and access road proposed herein; that I am familiar with the conditions that presently exist; that I have full knowledge of State and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or Devon Energy Production Company, L.P. am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

I hereby also certify that I, or Devon Energy Production Company, L.P. have made a good faith effort to provide the surface owner with a copy of the Surface Use Plan of Operations and any Conditions of Approval that are attached to the APD.

Executed this _02nd_ day of _February_, 2008.
Printed Name: Stephanie A. Ysasaga
Signed Name: _____
Position Title: Sr. Staff Engineering Technician
Address: 20 North Broadway, OKC OK 73102
Telephone: (405)-552-7802
Field Representative (if not above signatory): Don Mayberry (see above)
Address (if different from above):
Telephone (if different from above):
E-mail (optional):