Form 3160-3
(August 1999)

EC

OCD-ARTESIA

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 1004-0136
Expires November 30, 2000

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.
NMNM64583

6. If Indian, Allottee or Tribe Name

1a. Type of Work: ☒ DRILL ☐ REENTER

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

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

8. Lease Name and Well No.
TELLTALE 11 FEDERAL COM 1

2. Name of Operator
DEVON ENERGY PRODUCTION CO L P
Contact: LINDA GUTHRIE
E-Mail: LINDA.GUTHRIE@DVN.COM

9. API Well No.
30-015-33954

3a. Address
20 NORTH BROADWAY SUITE 1500
OKLAHOMA CITY, OK 73102

3b. Phone No. (include area code)
Ph: 405.228.8209

10. Field and Pool, or Exploratory
CARLSBAD MORROW, South

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*

At surface NWSW 1940FSL 1110FWL

At proposed prod. zone NWSW 1940FSL 1110FWL

RECEIVED
FEB 16 2005
OCD-ARTESIA

11. Sec., T., R., M., or Blk. and Survey or Area
Sec 11 T22S R27E Mer NMP

14. Distance in miles and direction from nearest town or post office*
APPROXIMATELY 3 MI EAST OF CARLSBAD, NM

12. County or Parish
EDDY

13. State
NM

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

16. No. of Acres in Lease
200.00

17. Spacing Unit dedicated to this well
320.00

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

19. Proposed Depth
12150 MD

20. BLM/BIA Bond No. on file

21. Elevations (Show whether DF, KB, RT, GL, etc.
3098 GL

22. Approximate date work will start
03/01/2005

23. Estimated duration
45 DAYS

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:

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)	Date
(Electronic Submission)	LINDA GUTHRIE Ph: 405.228.8209	01/13/2005

Title
REGULATORY SPECIALIST

Approved by (Signature)	Name (Printed/Typed)	Date
/s/ Maria Ketson	/s/ Maria Ketson	FEB 14 2005

Title	Office
FOR FIELD MANAGER	CARLSBAD FIELD OFFICE

Application approval does not warrant or certify 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.

Additional Operator Remarks (see next page)

Electronic Submission #52939 verified by the BLM Well Information System
For DEVON ENERGY PRODUCTION CO L P, sent to the Carlsbad
Committed to AFMSS for processing by LINDA ASKWIG on 01/13/2005 (05LA0257AE)

APPROVAL SUBJECT TO
GENERAL REQUIREMENTS
AND SPECIAL STIPULATIONS
ATTACHED

**** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ****

Additional Operator Remarks:

Devon Energy Production Co., LP proposes to drill to total depth 12,150+/- for commercial quantities of 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 attached exhibits.

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

State of New Mexico
Energy, Minerals and Natural Resources Department

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

Form C-102
Revised March 17, 1999

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name

Property Code	Property Name	Well Number
	TELLTALE "11" FEDERAL COM	1

OGRID No.	Operator Name	Elevation
6137	DEVON ENERGY PRODUCTION COMPANY LP	3098'

Surface Location

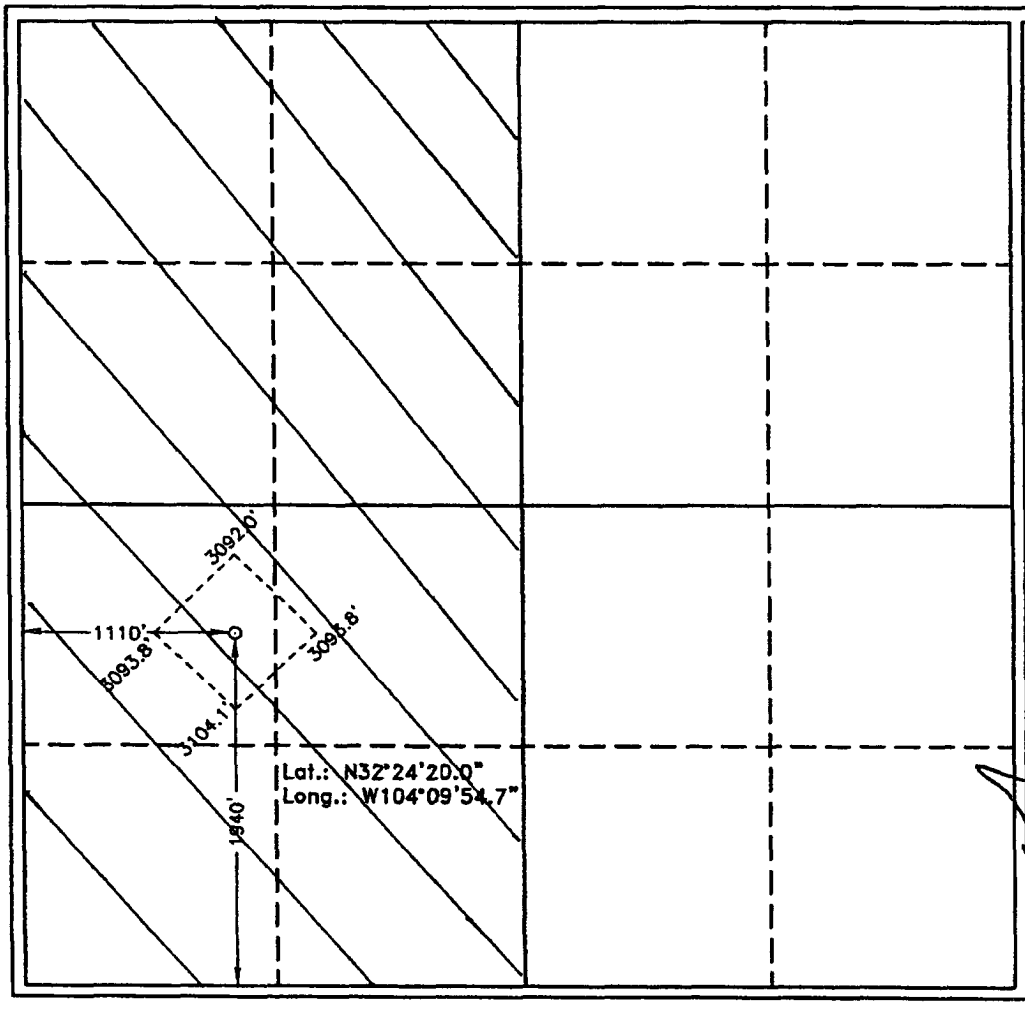
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
L	11	22-S	27-E		1940'	SOUTH	1110'	WEST	EDDY

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

Linda Guthrie
Signature

Linda Guthrie
Printed Name

Sr. Regulatory Specialist
Title

01/12/2005
Date

SURVEYOR CERTIFICATION

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

October 01, 2004
Date Surveyed

Signature & Seal of Professional Surveyor

GARY L. JONES
NEW MEXICO
7977
REGISTERED PROFESSIONAL LAND SURVEYOR

W.O. No. 4696

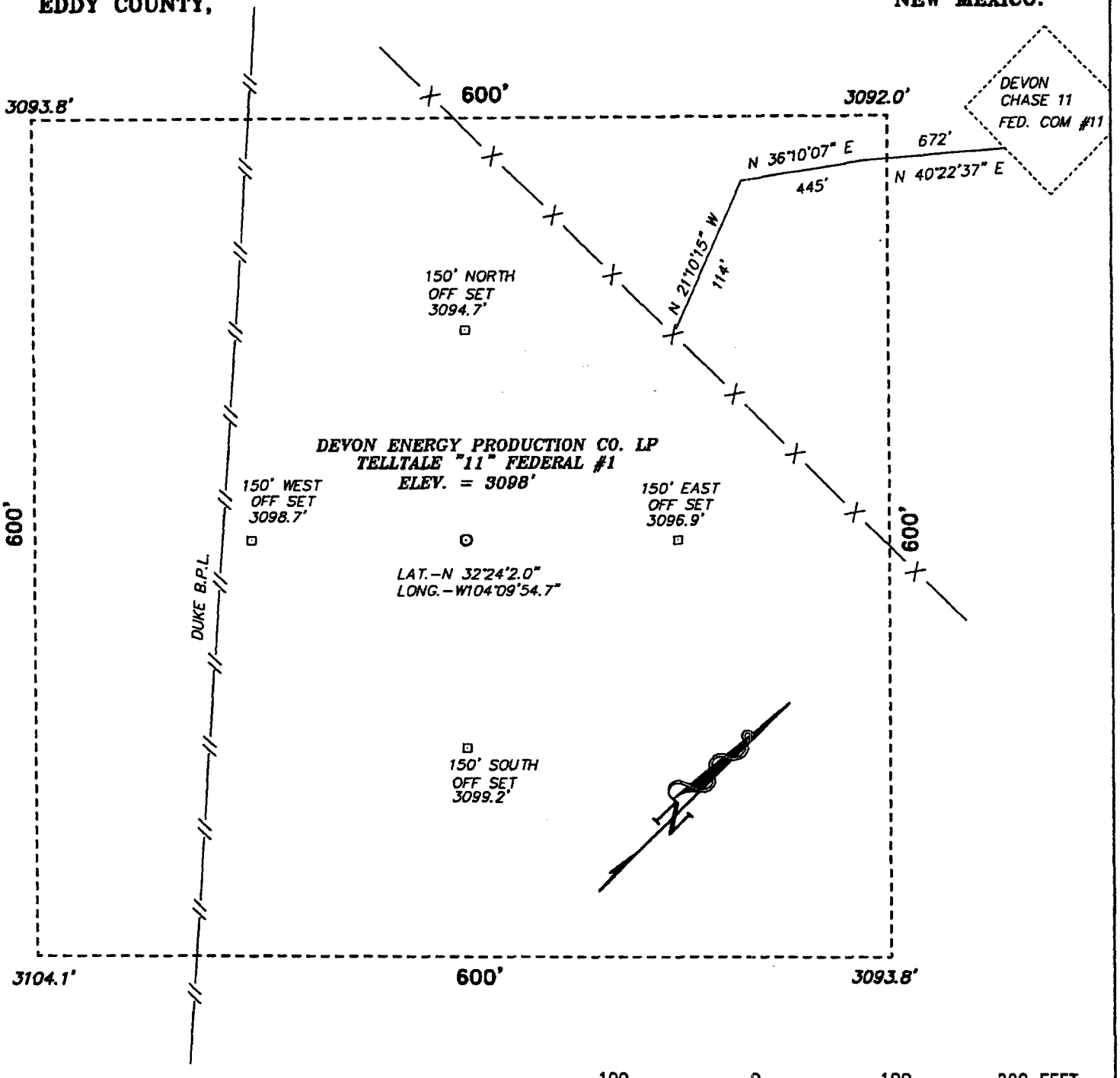
Certificate No. Gary L. Jones 7977

JLP

BASIN SURVEYS

SECTION 11, TOWNSHIP 22 SOUTH, RANGE 27 EAST, N.M.P.M.,

EDDY COUNTY, **NEW MEXICO.**



Directions to Location:

FROM THE JUNCTION OF US HWY 62 & 180 AND CO. RD. 605 GO SOUTHEAST APPROX. 2.4 MILES TO THE CHASE "11" FGEDERAL COM #1 WELL.

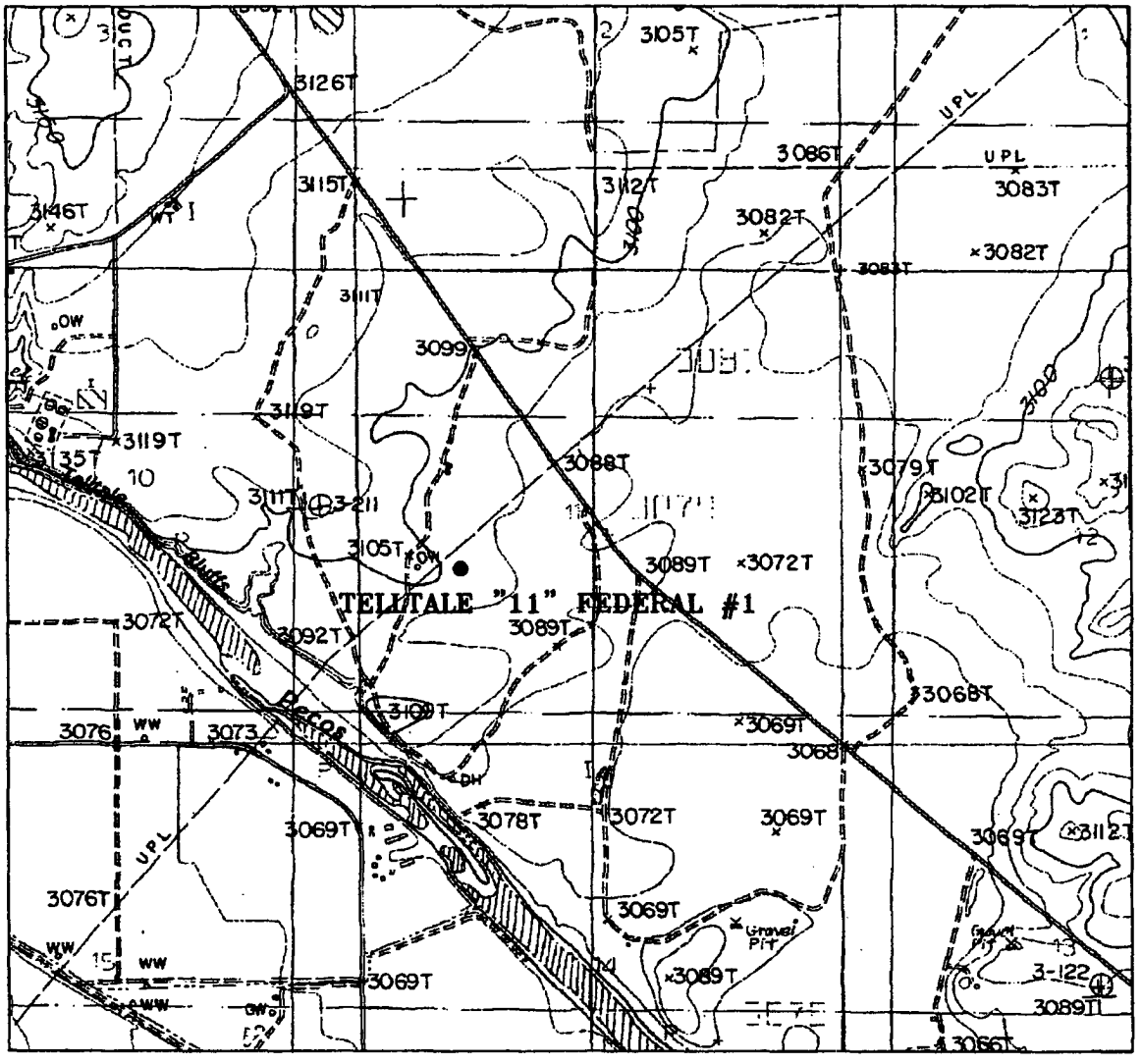
DEVON ENERGY PRODUCTION CO. LP.

REF: TELLTALE "11" FEDERAL COM #1 / Well Pad Topo

TELLTALE "11" FEDERAL COM # 1 LOCATED 1940' FROM THE SOUTH LINE AND 1110' FROM THE WEST LINE OF SECTION 11, TOWNSHIP 22 SOUTH, RANGE 27 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO.

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

W.O. Number: 4696	Drawn By: JAMES PRESLEY		
Date: 10/04/04	Disk: JLP #1 – DEV4696A	Survey Date: 10/01/04	Sheet 1 of 1 Sheets



TELLTALE "11" FEDERAL #1
Located at 1940' FSL and 1110' FWL
Section 11, Township 22 South, Range 27 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
(505) 393-7316 - Office
(505) 392-3074 - Fax
basinsurveys.com

W.O. Number:	4696AA - JLP #1
Survey Date:	10/01/04
Scale:	1" = 2000'
Date:	10/04/04

DEVON ENERGY PRODUCTION COMPANY LP.

DRILLING PROGRAM

Devon Energy Production Company, LP
Telltale 11 Federal Com 1
Surface Location: 1940 FSL & 1110 FWL, Unit Letter L, Sec 11 T22S R27E, Eddy, NM
Bottom hole Location: 1940 FSL & 1110 FWL, Unit Letter L, Sec 11 T22S R27E, Eddy, NM

1. **Geologic Name of Surface Formation**

   a. Ochoan

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

a.	Delaware	2,000'
b.	Manzanita	2,850'
c.	Bone Springs Lime	5,325'
d.	Base Leonard	9,045'
e.	Strawn Lime	10,290'
f.	Atoka	10,815'
g.	Morrow Clastics	11,500'
h.	Lower Morrow	11,730'
i.	Barnett Shale	11,850'
j.	Total Depth	12,150'

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

a.	**Morrow**	**Gas**
b.	**Strawn**	**Gas**

4. 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 450' and circulating cement back to surface. Potash and salt will be protected by setting 9 5/8" casing @2700' and circulating cement to surface. The Delaware intervals will be isolated by setting 5 ½" casing to total depth and circulating cement above the base of the 9 5/8" casing.

5. **Casing Program:**

Hole Size	Interval	OD Csg	Weight	Collar	Grade
17 ½"	0' –450'	13 3/8"	48#	ST&C	H40
12 ¼"	0' – 2,700'	9 5/8"	36#	LT&C	J55
8 ¾"	0' – 12,150'	5 ½"	17#	LT&C	HCP-110

6. **Cement & Setting Depth:**

WITNESS

a. 13 3/8" Surface — Set 450' of 13 3/8", 48#, H-40 ST&C casing. Cement with 214 sx of Class C 35:65 Poz, tail in with 200 sx of Class C cement. Circulate cement to surface.

b.	9 5/8"	Intermediate	Set 2,700' of 9 5/8", 36#, J55, LT&C casing. Cement lead w/650 sx 35:65 Poz Class C. Cement tail w/250 sx Class C. Circulate cement to surface.
c.	5 ½"	Production	Set 12,150' of 5 ½", 17#, HCP-110, LT&C casing. Cement with 1767 sx 60/40 Poz Class H, tail w/ 876 sx Super C Modified. Circulate cement to 2400'.

7. **Pressure Control Equipment:**
   a. The blowout preventer equipment (BOP) shown in Exhibit #1 will consist of a (5M system) double ram type (5000 psi WP) preventer and a bag-type (Hydril) preventer (3000 psi WP). Both units will be hydraulically operated and the ram type preventer will be equipped with blind rams on top and drill pipe rams on bottom. Both BOP's will be installed on the 9 5/8" surface casing and utilized continuously until total depth is reached. **The BOP will be pressure tested with the rig pump to 1200 psi prior to drilling out the ~~9 5/8~~ 13 3/8" casing shoe.** As per BLM Drilling Order #2, prior to drilling out the casing shoe, the BOP's and Hydril will be function tested.
   b. 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 driller's 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.

8. **Proposed Mud Circulation System**

Depth	Mud Wt.	Visc	Fluid Loss	Type System
0' – 450'	8.4 - 9.0	32-34	NC	Fresh Water
450' – 2700'	9.7-10.1	28-32	NC	Brine Water
2700' – 8,700	8.4-9.4	28-32	NC	Cut Brine Water
8700' – 10,500'	9.4-9.8	28-32	NC	Brine
10,500-TD	10.0-10.8	30-45	5-8 cc	Brine

Sufficient mud materials will be kept on location at all times in order to combat lost circulation, or unexpected kicks. In order to run DST's, open hole logs, & casing, the viscosity and/or water loss may have to be adjusted to meet these needs.

9. **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 9 5/8" casing shoe until the 5 ½" casing is cemented. Breathing equipment will be on location upon drilling the 9 5/8" shoe until total depth is reached.

10. **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. TD to Intermediate Casing Dual Laterolog-Micro Laterolog with SP and Gamma ray. Compensated Neutron-Z-Density Log with Gamma Ray and Caliper.
ii. TD 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/or drill stem tests.

11. Potential Hazards:

a. No abnormal pressures or temperatures are expected. The H2S Contingency Plan will be provided under separate cover and will be at the drilling site. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well. Estimated BHP 3500 psi and Estimated BHT 170°.

12. 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 45 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.

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.
9. 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.

SURFACE USE PLAN

Devon Energy Production Company, LP

Telltale 11 Federal Com 1

Surface Location: 1940 FSL & 1110 FWL, Unit Letter L, Sec 11 T22S R27E, Eddy, NM

Bottom hole Location: 1940 FSL & 1110 FWL, Unit Letter L, Sec 11 T22S R27E, Eddy, 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. Approximately 1,231 feet of new road will need to be built. All new construction will conform to the specifications outlined in Item #2 below
   c. Directions to Location: From the junction of US Hwy 62 & 180 and Co. Rd. 605, go southeast approximately 2.4 miles to the Chase 11 Federal Com #1 well. Then west and southwest to proposed location.
2. **Access Road**

Exhibit #3 shows the existing and proposed lease road. All new construction will adhere to the following.

   a. The maximum width of the road will be 15'.
   b. 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.
   d. The average grade will be less than 5%.
   e. No cattle guards, grates or fence cuts will be required.
   f. No turnouts are planned.
3. **Location of Existing and/or Proposed Facilities**
   a. In the event the well is found productive, a tank battery would be constructed and the necessary production equipment will be installed at the well site.
   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. If the well is productive, rehabilitation plans are as follows:
      i. The reserve pit will be closed pursuant to New Mexico OCD rules and regulations.
      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 into the reserve pit.
   b. Drilling fluids will be contained in steel mud tanks. The reserve pit will contain excess drilling fluid or fluid from the well during drilling, cementing, and completion operations. The reserve pit will be an earthen pit roughly 150' x 150' x 8', or smaller, in size.
   c. The reserve pit will be fenced on three sides throughout drilling operations and will be totally isolated upon removal of the rotary rig. The pit will be lined using a 12 mil synthetic woven liner pursuant to NM OCD rules and guidelines.

d. 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.
e. Salts remaining after completion of well will be picked up by the supplier, including broken sacks.
f. Wastewater from living quarters will be drained into hole with a minimum depth of 10'. These holes will be covered during drilling and will be back filled when the well is completed. A Porto-john will be provided for the rig crews. This equipment will be properly maintained during the drilling and completion operations and will be removed when all operations are complete.
g. Water produced from the well during completion operations will be disposed into a steel tank or reserve pit, if volumes prove excessive. After placing the well on production through the production facilities, all water will be collected in tanks. Produced oil will be separated into steel stock tanks until sold.

5. **Well Site Layout**
   a. Exhibit D shows the proposed well site layout.
   b. No permanent living facilities are planned, but temporary trailers for the tool pusher, drilling foreman and mud logger may be on location throughout drilling operations.
6. **Plans for Restoration of the Surface**
   a. After concluding the drilling and/or completion operations, if the well is found non-commercial, the road will be reclaimed as directed by the BLM. The reserve pit will be closed and the original top soil, if any, will be returned to the pad and contoured as closely as possible to the original topography.
   b. The pit lining and contents will be disposed pursuant to NM OCD rules and guidelines.
   c. The reserve pit will be fenced on three sides throughout drilling operations. After the rotary rig is removed, the reserve pit will be fenced on the fourth side to preclude endangering wildlife. The fencing will remain in place until the pit is reclaimed.
   d. If the well is deemed commercially production, the reserve pit will be restored and unused areas of the drill pad will be contoured as closely as possible to match the original topography.
7. **Other Information:**
   a. The wellsite and access route are located in a relatively flat area.
   b. The surface and minerals are owned by the US Government and is administered by the Bureau of Land Management.
   c. An archaeological survey will be conducted of the well pad location and the results will be filed with the Bureau of Land Management in Carlsbad Field office.

Operators Representative:

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

Wyatt Abbitt
Operations Engineering Advisor
Devon Energy Production Company, L.P.
20 North Broadway, Suite 1500
Oklahoma City, OK 73102-8260
(405) 552-8137 (office)
(405) 245-3471 (Cellular)

Don Mayberry
Superintendent
Devon Energy Production Company, L.P.
Post Office Box 250
Artesia, NM 88211-0250
(505) 748-3371 (office)
(505) 746-4945 (home)

Certification

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

Signed: Linda Guthrie Date: January 12, 2005

Linda Guthrie
Sr. Regulatory Specialist

Attachment to Exhibit #1
NOTES REGARDING BLOWOUT PREVENTERS
Devon Energy Production Company, LP
Telltale 11 Federal Com 1
Surface Location: 1940 FSL & 1110 FWL, Unit Letter L, Sec 11 T22S R27E, Eddy, NM
Bottom hole Location: 1940 FSL & 1110 FWL, Unit Letter L, Sec 11 T22S R27E, 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 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.

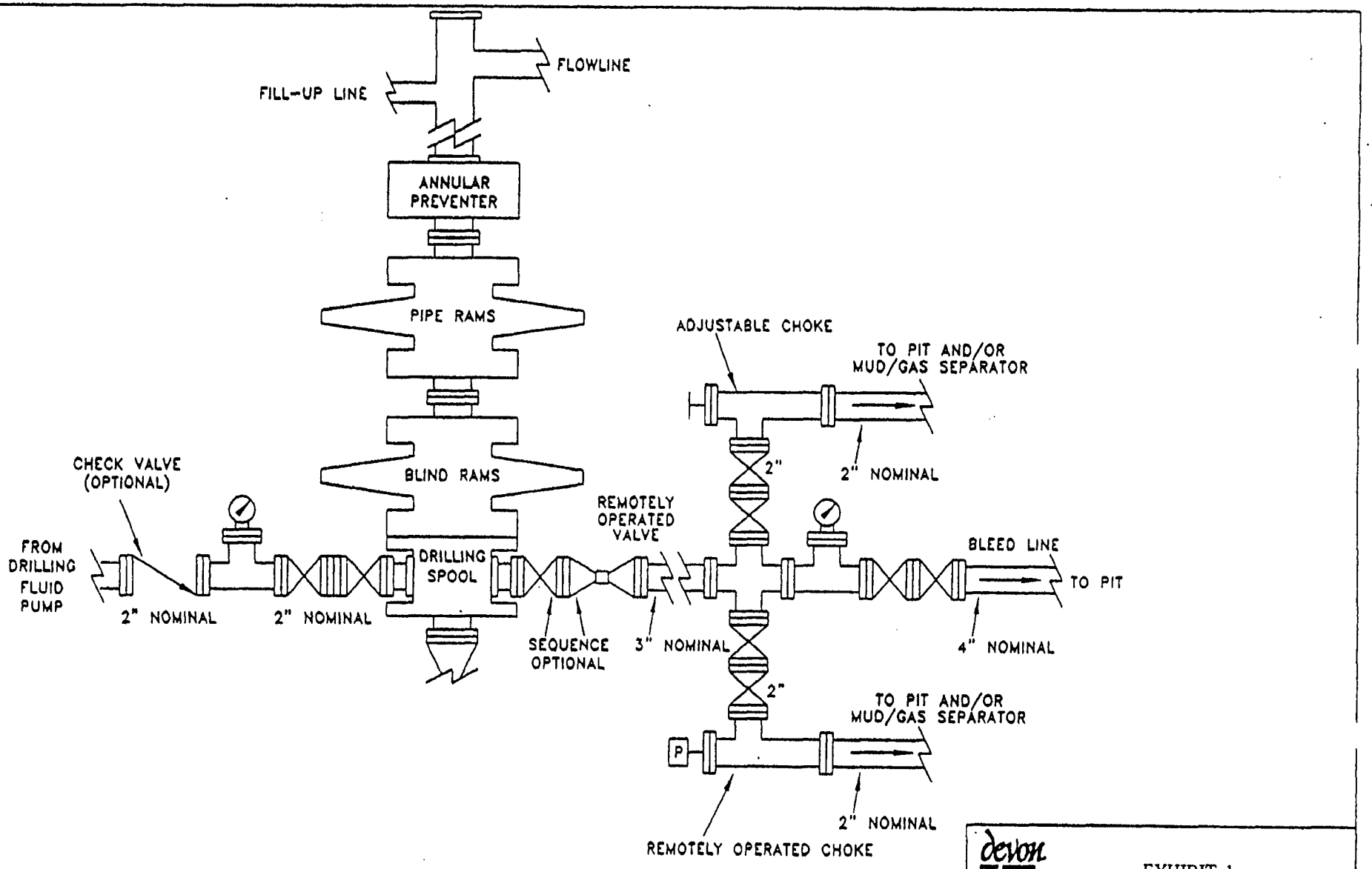
UNITED STATES DEPARTMENT OF THE INTERIOR
Bureau of Land Management
Roswell Field Office
2909 West Second Street
Roswell, New Mexico 88201-1287

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.:	**NMNM-64583**
Legal Description of Land:	**200 acres 11-22S-27E**
Formation(s):	**Morrow**
Bond Coverage:	**Nationwide**
BLM Bond File No.:	**CO-1104**
Authorized Signature:	Linda Guthrie **Linda Guthrie**
Title:	**Regulatory Specialist**
Date:	01/12/2005



devon

EXHIBIT 1

PROPOSED 5-M BOPE AND CHOKE ARRANGEMENT

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

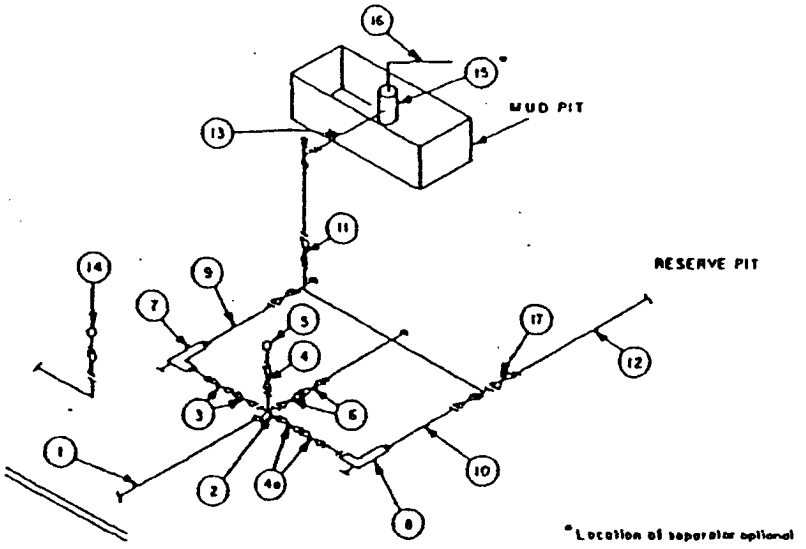
SC

10/00

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

3 MWP - 5 MWP - 10 MWP

EXHIBIT 1
DEVON ENERGY PRODUCTION COMPANY, L.P.



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.