

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

RECEIVED

FORM APPROVED  
OMB No. 1004-0136  
Expires July 31, 2010

AUG 26 2010

## APPLICATION FOR PERMIT TO DRILL OR REENTER

Bureau of Land Management  
Farmington Field Office

1a. Type of Work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		<b>CONFIDENTIAL</b>		5. Lease Serial No. NMSF078463
1b. Type of Well: <input type="checkbox"/> Oil Well <input checked="" type="checkbox"/> Gas Well <input type="checkbox"/> Other <input type="checkbox"/> Single Zone <input checked="" type="checkbox"/> Multiple Zone		2. Name of Operator NOBLE ENERGY INC		6. If Indian, Allottee or Tribe Name
3a. Address 5802 US HIGHWAY 64 FARMINGTON, NM 87401		3b. Phone No. (include area code) Ph: 303-228-4316 Fx: 303-228-4286		7. If Unit or CA Agreement, Name and No. NMNM-112636
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface SENE 1980FNL 660FEL At proposed prod. zone		10. Field and Pool, or Exploratory BASIN DK/FRUITLAND COAL		8. Lease Name and Well No. RIO BRAVO 27-8
14. Distance in miles and direction from nearest town or post office* 8 MILES FROM FARMINGTON, NEW MEXICO		11. Sec., T., R., M., or Blk. and Survey or Area Sec 27 T31N R13W Mer NMP		9. API Well No. 30-045-32691
15. Distance from proposed location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 660'		16. No. of Acres in Lease 449.25		12. County or Parish SAN JUAN
18. Distance from proposed location to nearest well, drilling, completed, applied for, on this lease, ft. 1592'		19. Proposed Depth 6600 MD 6600 TVD		13. State NM
21. Elevations (Show whether DF, KB, RT, GL, etc.) 5639 GL		22. Approximate date work will start 02/28/2006		17. Spacing Unit dedicated to this well 329.25
		20. BLM/BIA Bond No. on file NMB0484		23. Estimated duration 14 DAYS

## 24. Attachments

RCVD FEB 17 '11

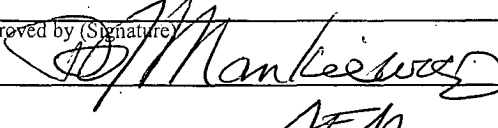
The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, shall be attached to this form:

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.

OIL CONS. DIV.

DIST. 3

25. Signature (Electronic Submission)	Name (Printed/Typed) JEAN M MUSE Ph: 303-228-4316	Date 08/26/2010
Title REGULATORY COMPLIANCE		
Approved by (Signature) 	Name (Printed/Typed) AFM	Date 2/16/11
Title AFM		

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.

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)

BLM'S APPROVAL OR ACCEPTANCE OF THIS APPLICATION FOR NOBLE ENERGY INC, sent to the Farmington  
ACTION DOES NOT RELIEVE THE LESSEE AND  
OPERATOR FROM OBTAINING ANY OTHER  
AUTHORIZATION REQUIRED FOR OPERATIONS  
ON FEDERAL AND INDIAN LANDS

MAR 04 2011

\*\* OPERATOR-SUBMITTED \*\* OPERATOR-SUBMITTED \*\* OPERATOR-SUBMITTED \*\*

DRILLING OPERATIONS AUTHORIZED ARE  
SUBJECT TO COMPLIANCE WITH ATTACHED  
GENERAL REQUIREMENTS.

NMOCD

This action is subject to technical and  
procedural review pursuant to 43 CFR 3165.3  
and appeal pursuant to 43 CFR 3165.4

District I  
PO Box 1980, Hobbs, NM 88241-1980

District II  
PO Drawer 60, Artesia, NM 88211-0719

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

District IV  
PO Box 2088, Santa Fe, NM 87504-2088

State of New Mexico  
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION  
PO Box 2088  
Santa Fe, NM 87504-2088

Form C-102  
Revised February 21, 1994  
Instructions on back  
Submit to Appropriate District Office  
State Lease - 4 Copies  
Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

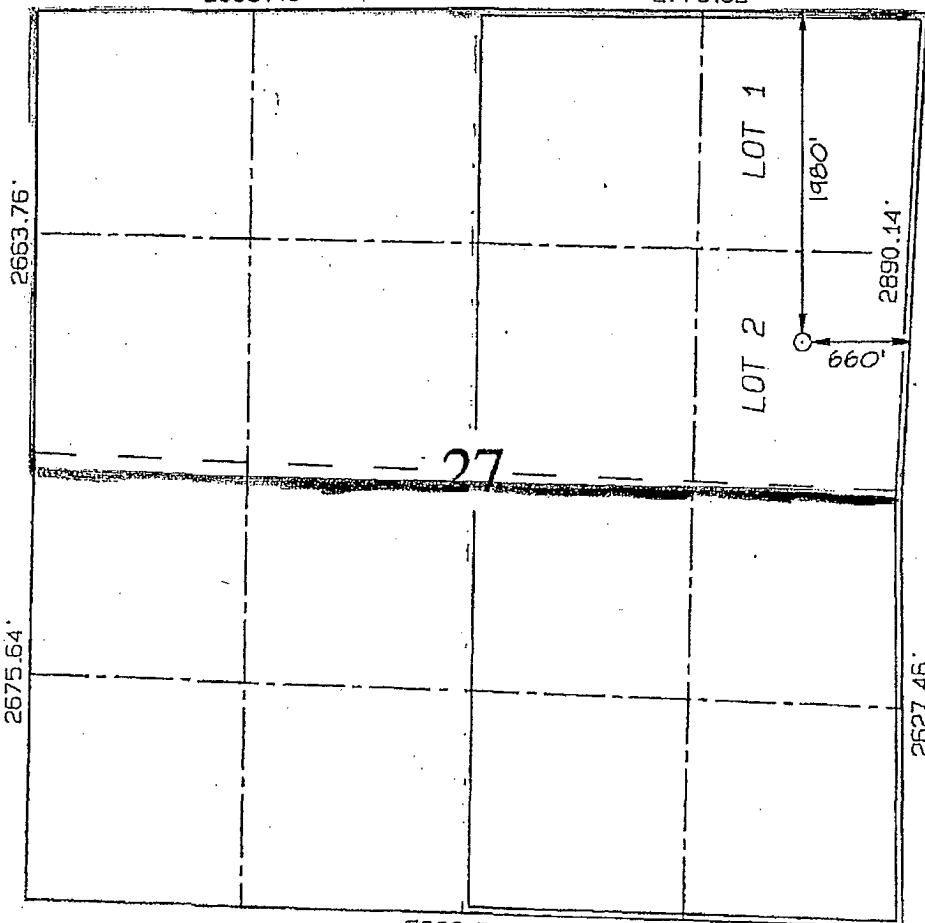
*API Number 30045-32691		*Pool Code 71599 / 71629	*Pool Name BASIN DAKOTA / BASIN FRUITLAND COAL
*Property Code 304653	*Property Name RIO BRAVO 27		*Well Number 08
*OGRID No. 173252	*Operator Name Noble Energy, Inc.		*Elevation 5539'

*Surface Location									
UL or lot no. H	Section 27	Township 31N	Range 13W	Lot Idn	Feet from the 1980	North/South line NORTH	Feet from the 660	East/West line EAST	County SAN JUAN

11 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 329.25 Acres - N/2									
*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  
2693.46' 2776.62'



17 OPERATOR CERTIFICATION  
I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief

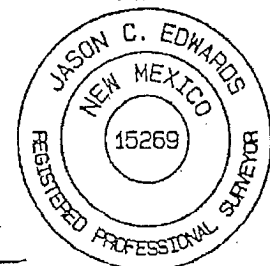
Signature  
JEAN M. MUSE  
Printed Name  
Regulatory Compliance  
Title  
7.27.10  
Date

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

Date Revised: DECEMBER 13, 2005  
Survey Date: OCTOBER 1, 2004

Signature and Seal of Professional Surveyor



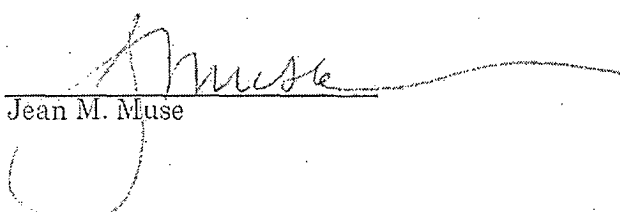
JASON C. EDWARDS  
Certificate Number 15269

**Additional Operator Remarks:**

This is an after-the-fact APD.

14. Certification:

I hereby certify that I, or persons under my direct supervision, have inspected the proposed drill site and access route; that I am familiar with the conditions which 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 Patina San Juan, Inc., and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved. This statement is subject to 18 U.S. Code 001 for filing of a false statement.

  
\_\_\_\_\_  
Jean M. Muse

7.27.10  
\_\_\_\_\_  
Date

**Rio Bravo 27 #08**  
**General Drilling Plan**  
**Noble Energy, Inc.**  
**San Juan County, New Mexico**

**1. LOCATION:**

Est. elevation: 5639'  
SENE of Section 27, T31N, R13W  
San Juan, New Mexico

Field: Blanco Mesa Verde & Basin Dakota  
Surface: Federal  
Minerals: Federal

**2. SURFACE FORMATION, ESTIMATED TOPS AND WATER, OIL, GAS OR MINERAL BEARING FORMATIONS (TVD):**

Surface formation – Nacimiento

<u>Formation</u>	<u>Estimated Formation Top (Ft)</u>
Ojo Alamo	749
Kirtland	858
Fruitland**	1169
Pictured Cliffs**	1628
Lewis	1934
Cliff House**	2720
Menefee**	3487
Point Lookout***	3873
Mancos	4568
Gallup	5753
Greenhorn	6267
Graneros	6329
Dakota ***	6399
TD	6600

Legend:      \* Freshwater bearing formation  
             \*\* Possible hydrocarbon bearing formation  
             \*\*\* Probable hydrocarbon bearing formation  
             # Possible H2S bearing formation

All fresh water and prospectively valuable minerals encountered during drilling will be recorded by depth and adequately protected.

### 3. **PRESSURE CONTROL EQUIPMENT:**

BOP equipment will be tested to its rated working pressure or 70-percent of the internal yield of the surface casing, but not to exceed 1,000 psi. See attachments for BOP and choke manifold diagrams.

#### **Production Hole BOP Requirements and Test Plan**

11" – 2,000 psi single ram (blind)

11" – 2,000 psi single ram (pipe)

Test as follows:

a) Pipe rams:	1,000 psi (High)	250 psi (low)
b) Choke manifold:	1,000 psi (High)	250 psi (low)
c) Choke lines:	1,000 psi (High)	250 psi (low)

All ram type preventers and related equipment will be hydraulically tested at nipple-up. They will also be retested in either of the following events:

- A pressure seal is broken.
- 30 days have elapsed since the last successful test of the equipment.

Furthermore, BOP's will be checked daily as to mechanical operating condition. All ram type preventers will have hand wheels, which will be operative and accessible at the time the preventers are installed. See attached Exhibit for details on the BOP equipment.

#### **AUXILIARY EQUIPMENT:**

- a) Manually operated kelly cock (upper and lower)
- b) Full opening manually operated safety valves in the full open position, capable of fitting all drill stem connections.

#### 4. CASING DESIGN:

Hole Data				
Interval	Bit Size (Inches)	Casing Size (Inches)	Top (Ft)	Bottom (Ft)
Surface	13.50	9.625	0	300
Intermediate	8.75	7.0	0	4600
Production	6.25	4.5	4300	6600

Casing Data							
OD (Inches)	ID (Inches)	Weight (Lbs/Ft)	Grade	Thread	Collapse (psi)	Burst (psi)	Min. Tensile (Lbs)
9.625	8.921	36.0	J55	STC	2,020	3,520	394,000
7.000	6.366	23.0	L80	LTC	3,830	6,340	435,000
4.5	4.276	11.6	N80	LTC	6,350	7,780	223,000

#### MINIMUM CASING DESIGN FACTORS:

COLLAPSE: 1.125

BURST: 1.00

TENSION: 1.80

Area Fracture Gradient Range: 0.7 – 0.8 psi/foot

Maximum anticipated reservoir pressure: 2,500 psi

Maximum anticipated mud weight: 9.0 ppg

Maximum surface treating pressure: 3,750 psi

Float Equipment:

**Surface Casing:** Guide shoe on bottom and 3 centralizers on the bottom 3 joints.

**Intermediate Casing:** Float shoe on bottom joint and a float collar one joint up from float shoe. One centralizer 10 ft above float shoe and nine centralizers spaced every joint above the float collar. Stage tool above the Cliffhouse formation. One centralizer below stage tool and one centralizer above stage tool.

**Production Casing:** 4 1/2" whirler type cement nosed guide shoe and a float collar on top of bottom joint with centralizers over potential hydrocarbon bearing zones.

## CEMENTING PROGRAMS:

### 9-5/8" Surface casing:

225 sx Type III cement with 3%  $\text{CaCl}_2$ , 1/4#/sx cellofakes. 100% excess to circulate ✓  
cement to surface. WOC 12 hrs. Pressure test surface casing to 1000 psi for 30 minutes.

Slurry weight: 14.5 ppg  
Slurry yield: 1.42 ft<sup>3</sup>/sack

Volume basis:	40' of 9-5/8" shoe joint	17 cu ft
	300' of 13-1/2" x 9-5/8" annulus	147 cu ft
	<u>100% excess (annulus)</u>	<u>147 cu ft</u>
	Total	311 cu ft

Note:

1. Design top of cement is the surface.
2. Have available 100 sx Type III cement with 2%  $\text{CaCl}_2$  for top out purposes.

### 7" Intermediate Casing:

1<sup>st</sup> Stage:

195 sx of Type III cement plus additives

Slurry weight: 12.3 ppg

Slurry yield: 2.22 ft<sup>3</sup>/sx

2<sup>nd</sup> Stage: (Stage tool at ±2500')

Lead: 195 sx of Type III cement plus additives

Slurry weight: 12.3 ppg

Slurry yield: 2.22 ft<sup>3</sup>/sx

Tail: 50 sx of Type III cement plus additives

Slurry weight: 14.5 ppg

Slurry yield: 1.40 ft<sup>3</sup>/sx

Volume Basis:	40' of 7" shoe joint	9 cu ft
	4300' of 7" x 8 3/4" hole	647 cu ft
	300' of 7" x 9 5/8" casing	50 cu ft
	<u>30% excess (annulus)</u>	<u>209 cu ft</u>
	Total	915 cu ft

Note:

1. Design top of cement is surface.
2. Actual cement volumes to be based on caliper log plus 30%.



**4 1/2" Production casing:**

175 sx of Type III cement plus additives

Slurry weight: 12.5 ppg

Slurry yield: 2.06 ft<sup>3</sup>/sx

Volume basis:	40' of 4 1/2" shoe joint	5 cu ft
	2000' of 4 1/2" x 6 1/4" hole	205 cu ft
	300' of 4 1/2" x 7" casing overlap	33 cu ft
	200' above 4.5" liner (without drill pipe)	44 cu ft
	<u>30% excess (annulus)</u>	<u>72 cu ft</u>
	Total	359 cu ft

Note:

1. Design top of cement is  $\pm 4100'$  (200' above the top of the 4.5" liner w/out drill pipe).
2. Actual cement volumes to be based on caliper log plus 30%.

**5. MUD PROGRAM:**

The surface hole will be drilled with spud mud. Gel and polymer sweeps will be used from surface to 300 feet as necessary to keep hole clean.

The intermediate hole will be drilled with water until mud up at about 3100 ft. From mud up point to intermediate casing depth ( $\pm 4600'$ ), it will be drilled with a LSND mud. Anticipated mud weight ranges from 8.5 – 9.2 ppg. Mud weight will be increased as required to maintain hole stability and control gas influx.

The production hole will be drilled with air or air/mist to TD.

Sufficient mud materials to maintain stable wellbore conditions (for either well control or lost circulation scenarios) will be maintained at the well site.

No chrome-based additives will be used in the mud system.

**6. EVALUATION PROGRAM:**

Mud logger: From base of surface casing to TD.

Testing: No DST is planned

Coring: None Planned

Electric logs: Intermediate Hole:

1) DIL-GR-SP: TD to base of surface casing.

2) LDT-CNL-GR-CAL-PE: TD to base of surface casing

Production Hole:

1) No open hole logs

2) Cased hole resistivity & porosity logs

**7. ABNORMAL PRESSURE AND TEMPERATURE:**

H <sub>2</sub> S	None
Coal	Fruitland
Minerals	None
Water	None
Static BHT	175° F
Lost Circulation	Possible
Hole Deviation	None
Abnormal Pressures	None
Unusual Drilling Problems	None

**8. ANTICIPATED STARTING DATE: Q1, 2006**

Anticipated duration: 16 days

NOBLE ENERGY PRODUCTION, INC.

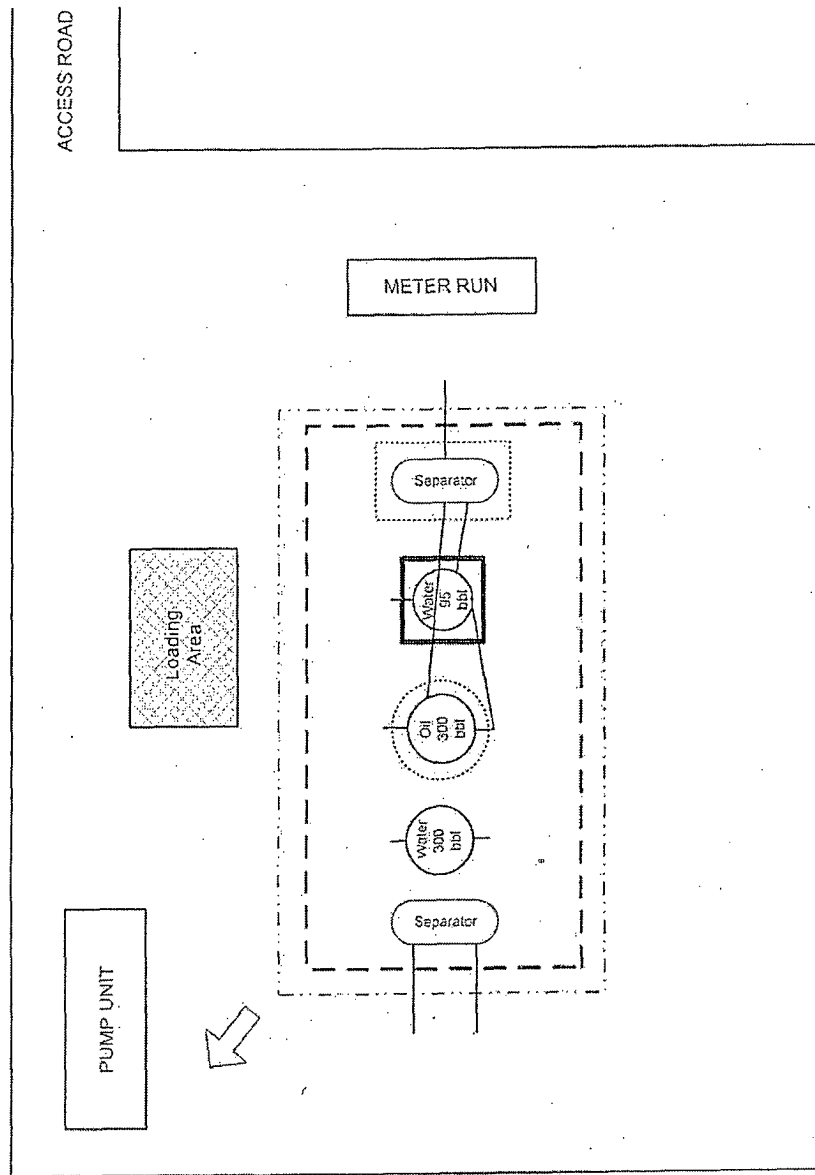
SITE ID: 303341  
RIO BRAVO 27-08  
SEC. 27 T31N R13W



NOT TO SCALE

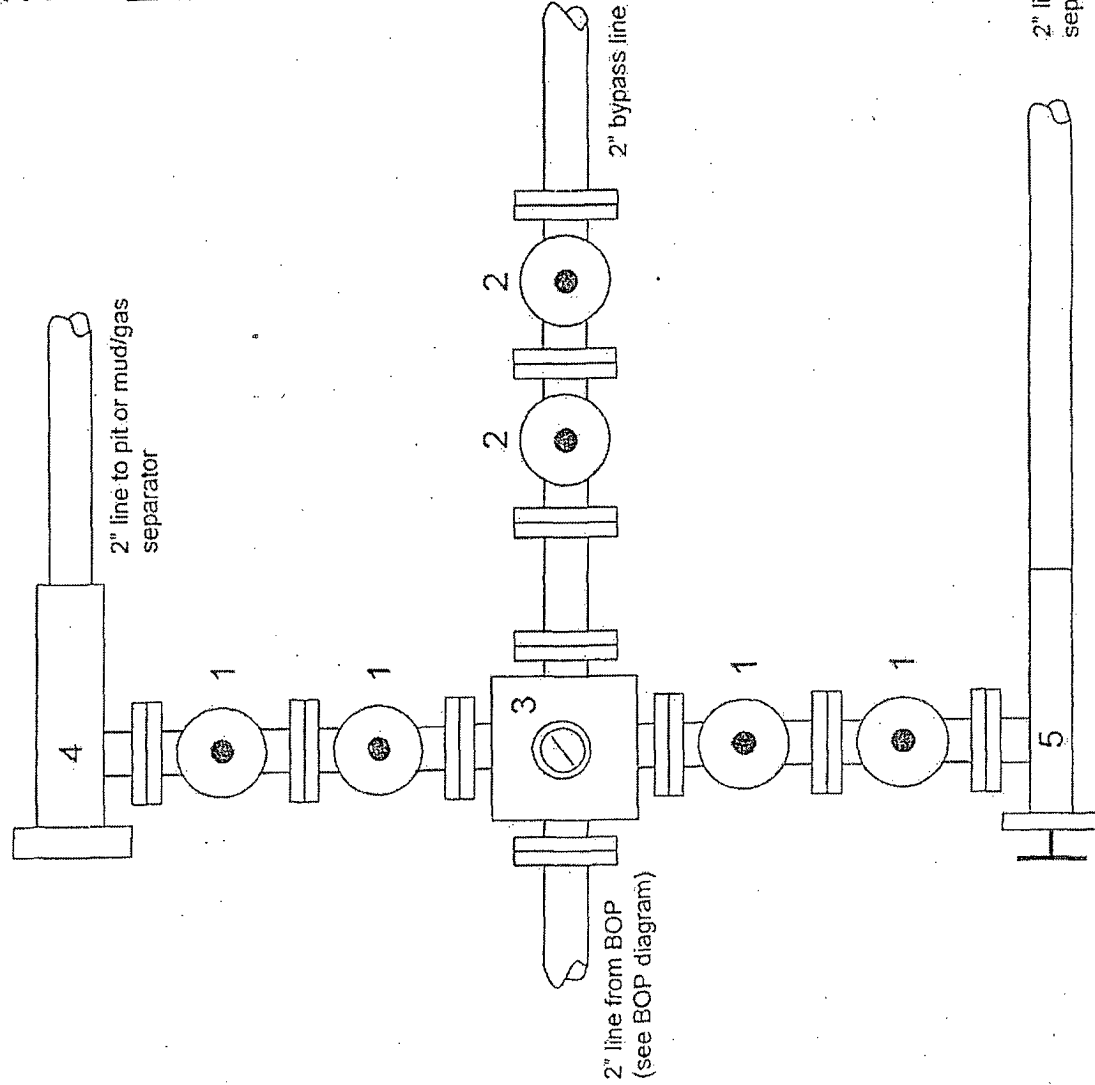
### LEGEND

- FENCE
- - - BERM
- ABOVEGROUND PIPING
- RAISED PAD
- ... DEPRESSION
- WELL HEAD
- ⊗
- ↓ DIRECTION OF FLOW
- bbl
- BARREL(S)



# **Rio Bravo 27 #08** **2000 psi Choke Manifold** **Minimum requirements**

Components
1 – 2" Valve (2M)
2 – 2" Valve (2M)
3 – Mud cross with gauge (2M) flanged below the gage.
4 – Adjustable choke (2M)
5 – Adjustable choke (2M)
Note: All line and valve sizes listed are minimum requirements.



# Rio Bravo 27 #08

2000 psi BOP stack

Minimum requirements

## Components

- 1 - Wellhead 9-5/8" (2M)
- 2 - Drilling spool 11" (2M)
- 3 - A double or two single rams with blinds on bottom 11" (2M)
- 4 - Bell nipple\*
- 5 - 2" check valve (2M)
- 6 - 2" Manual valves (2M)

\*Note: Rotating head may also be used if necessary. Also, all line and valve sizes listed are minimum requirements.

