

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

RECEIVED

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

2004 FEB 26 PM 3:00

1a. Type of Work DRILL	5. Lease Number SF-080670 Unit Reporting Number
1b. Type of Well GAS	6. If Indian, All. or Tribe
2. Operator <b>BURLINGTON RESOURCES</b> Oil & Gas Company	7. Unit Agreement Name
3. Address & Phone No. of Operator PO Box 4289, Farmington, NM 87499 (505) 326-9700	8. Farm or Lease Name San Juan 27-4 Unit 9. Well Number 46N
4. Location of Well 1000' FNL, 2600' FWL  Latitude 36° 32.0660'N, Longitude 107° 17.4633'W	10. Field, Pool, Wildcat Blanco MV/Basin DK 11. Sec., Twn, Rge, Mer. (NMPM) Sec. 31, T-27-N, R-4-W API # 30-045- 039 27646
14. Distance in Miles from Nearest Town Gobernador 18 Miles	12. County Rio Arriba ✓ 13. State NM
15. Distance from Proposed Location to Nearest Property or Lease Line 1000'	
16. Acres in Lease	17. Acres Assigned to Well MV-323.16, DK-321.16 w/1 N/A
18. Distance from Proposed Location to Nearest Well, Drig, Compl, or Applied for on this Lease 2000'	
19. Proposed Depth 8062	20. Rotary or Cable Tools Rotary
21. Elevations (DF, FT, GR, Etc.) 6829' GR	22. Approx. Date Work will Start
23. Proposed Casing and Cementing Program See Operations Plan attached	
24. Authorized by: <u>Frances Dend</u> Regulatory/Compliance Assistant	<u>2-6-04</u> Date

PERMIT NO. \_\_\_\_\_ APPROVAL DATE \_\_\_\_\_  
APPROVED BY [Signature] TITLE AFM DATE 3-2-05

Archaeological Report Attached

Threatened and Endangered Species Report Attached

NOTE: This format is issued in lieu of U.S. BLM Form 3160-3

Title 18 U.S.C. Section 1001, makes 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 presentations as to any matter within its jurisdiction.

*Minimum Surface Casing 200'*

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

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

NMOCB

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

District II  
PO Drawer DD, 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 30-039 <b>27646</b>		*Pool Code 72319/71599	*Pool Name Blanco Mesaverde/Basin Dakota
*Property Code 7452	*Property Name SAN JUAN 27-4 UNIT		*Well Number 46N
*OGRID No. 14538	*Operator Name BURLINGTON RESOURCES OIL & GAS COMPANY, LP		*Elevation 6829'

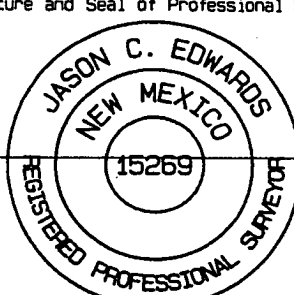
<sup>10</sup> Surface Location

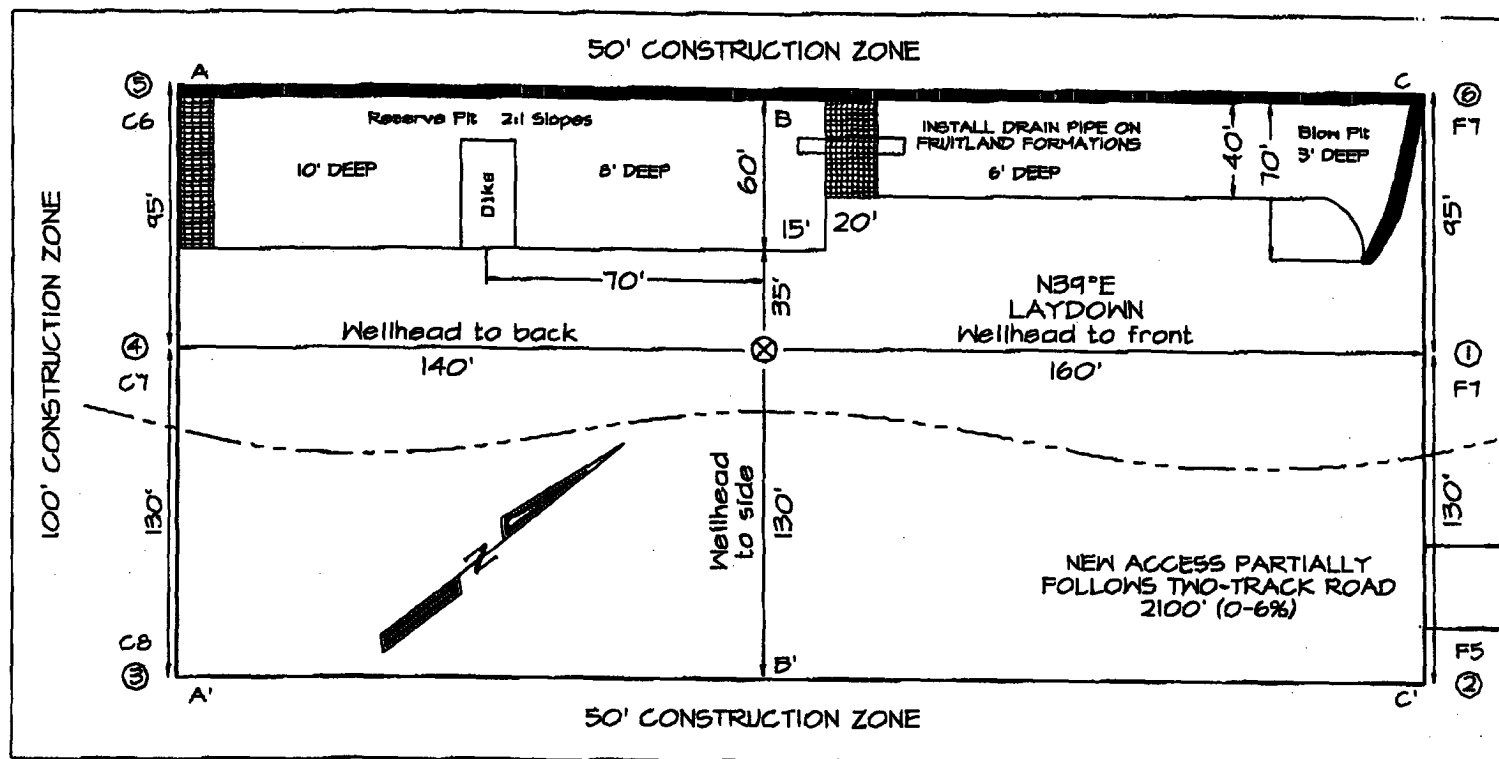
UL or lot no. C	Section 31	Township 27N	Range 4W	Lot Idn	Feet from the 1000	North/South line NORTH	Feet from the 2600	East/West line WEST	County RIO ARriba
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<sup>11</sup> Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
<sup>12</sup> Dedicated Acres MV-W/323.16 DK-N/321.16					<sup>13</sup> Joint or Infill	<sup>14</sup> Consolidation Code	<sup>15</sup> Order No.		

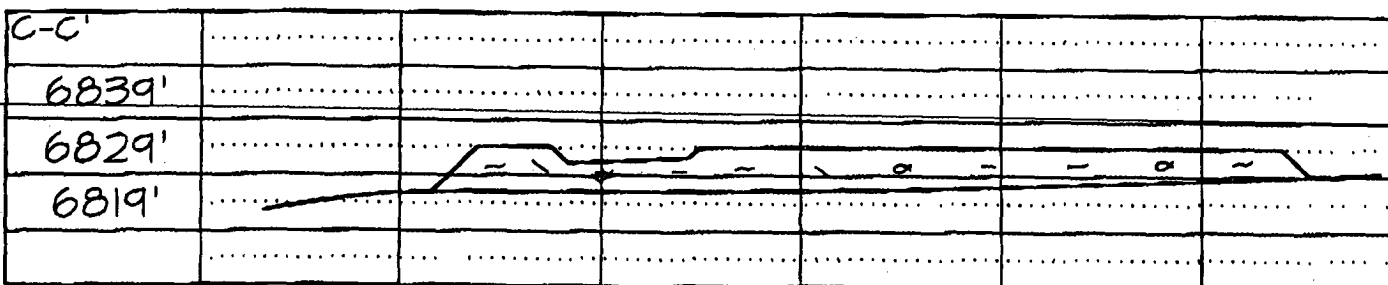
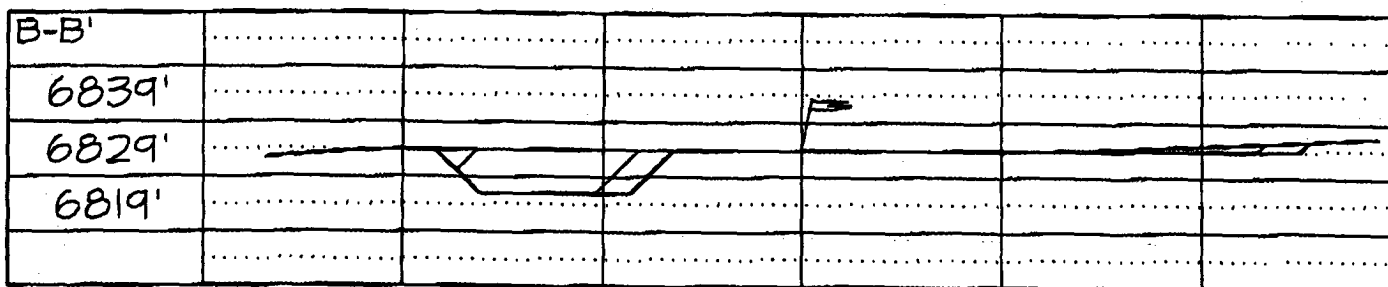
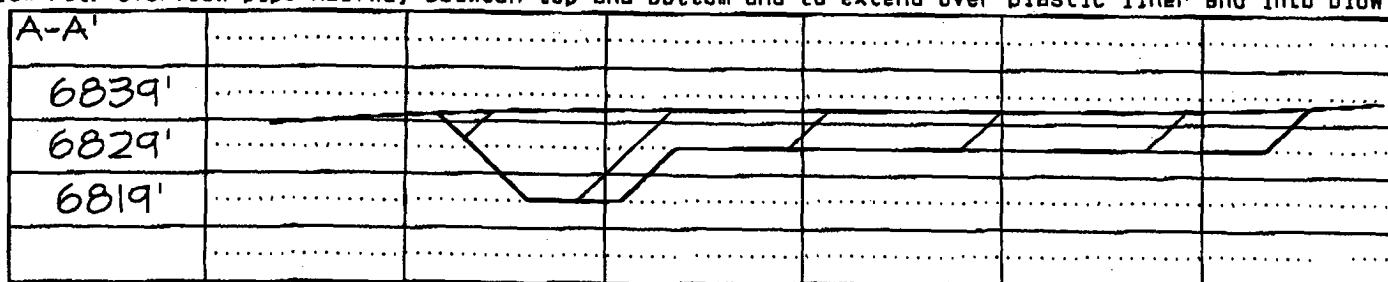
NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

<sup>16</sup> 1332.54' LOT 1 LAT: 36°32.0660'N LONG: 107°17.4633'W DATUM: NAD27 2600'	1320.00'	2640.00'	<sup>17</sup> OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief <u>Frances Bond</u> Signature Frances Bond Printed Name Regulatory Assistant Title 2-6-04 Date
5280.00'	USA SF-080670 31	5280.00'	<sup>18</sup> 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. Survey Date: SEPTEMBER 25, 2003 Signature and Seal of Professional Surveyor  JASON C. EDWARDS Certificate Number 15269
LOT 2			
LOT 3			
LOT 4			
1359.60'	1320.00'	2640.00'	



**SIZE OF WELLPAD** 225' X 300' (325' x 450') = 336 ACRES

Reserve Pit Dike: to be 8' above Deep side (overflow - 3' wide and 1' above shallow side).  
Blow Pit: overflow pipe halfway between top and bottom and to extend over plastic liner and into blow pit



Note: Contractor should call One-Call for location of any marked or unmarked buried pipelines or cables on well pad and/or access road at least two (2) working days prior to construction

# OPERATIONS PLAN

**Well Name:** San Juan 27-4 Unit 46N  
**Location:** 1000' FNL, 2600' FWL, Section 31, T-27-N, R-4-W  
Rio Arriba County, New Mexico  
Latitude 36° 32.0660'N, Longitude 107° 17.4633'W  
**Formation:** Blanco Mesa Verde/Basin Dakota  
**Elevation:** 6829 GR

<b><u>Formation Tops:</u></b>	<b><u>Top</u></b>	<b><u>Bottom</u></b>	<b><u>Contents</u></b>
Surface	San Jose	3086'	
Ojo Alamo	3086'	3281'	aquifer
Kirtland	3281'	3451'	gas
Fruitland	3451'	3636'	
Pictured Cliffs	3636'	3721'	gas
Lewis	3721'	4116'	gas
<b>Intermediate TD</b>	<b>3821'</b>		
Huerfanito Bentonite	4116'	4626'	gas
Chacra	4626'	5201'	gas
Cliff House	5201'	5441'	
Menefee	5441'	5801'	gas
Point Lookout	5801'	6286'	gas
Mancos	6286'	6936'	gas
Gallup	6936'	7739'	gas
Greenhorn	7739'	7802'	gas
Graneros	7802'	7824'	gas
Dakota	7824'	7958'	gas
T/Upper Cubero	7958'	7996'	gas
T/Lower Cubero	7996'	8047'	gas
T/Oak Canyon	8047'		
<b>TD</b>	<b>8062'</b>		

## **Logging Program:**

Mud Logs/Coring/DST -  
Mud logs - none  
Coring - none  
DST - none  
Open hole - none  
Cased hole - Gamma Ray, CBL - surface to TD

## **Mud Program:**

<b><u>Interval</u></b>	<b><u>Type</u></b>	<b><u>Weight</u></b>	<b><u>Vis.</u></b>	<b><u>Fluid Loss</u></b>
0- 120'	Spud MUD/Air/Air Mist	8.4-9.0	40-50	no control
120- 3821'	LSND	8.4-9.0	30-60	no control
3821- 8062'	Air/Air Mist/Nitrogen	n/a	n/a	n/a

## **Casing Program (as listed, the equivalent, or better):**

<b><u>Hole Size</u></b>	<b><u>Depth Interval</u></b>	<b><u>Csg.Size</u></b>	<b><u>Wt.</u></b>	<b><u>Grade</u></b>
12 1/4"	0' - 120'	9 5/8"	32.3#	H-40
8 3/4"	0' - 3821'	7"	20.0#	J-55
6 1/4"	0' - 7800'	4 1/2"	10.5#	J-55
6 1/4"	7800' - 8062	4 1/2"	11.6#	N-80

Tubing Program: 0' - 8062' 2 3/8" 4.7# J-55

BOP Specifications, Wellhead and Tests:

**Surface to Intermediate TD -**

11" 2000 psi minimum double gate BOP stack (Reference Figure #1). After nipple-up prior to drilling out surface casing, rams and casing will be tested to 600 psi for 30 minutes.

**Intermediate TD to Total Depth -**

11" 2000 psi minimum double gate BOP stack (Reference Figure #1). After nipple-up prior to drilling out intermediate casing, rams and casing will be tested to 1500 psi for 30 minutes.

**Surface to Total Depth -**

2" nominal, 2000 psi minimum choke manifold (Reference Figure #3).

**Completion Operations -**

7 1/16" 2000 psi double gate BOP stack (Reference Figure #2). After nipple-up prior to completion, pipe rams, casing and liner top will be tested to 2000 psi for 15 minutes.

**Wellhead -**

9 5/8" x 7" x 4 1/2" x 2 3/8" x 2000 psi tree assembly.

**General -**

- Pipe rams will be actuated once each day and blind rams will be actuated once each trip to test proper functioning.
- An upper kelly cock valve with handle available and drill string valves to fit each drill string will be available on the rig floors at all times.
- BOP pit level drill will be conducted weekly for each drill crew.
- All BOP tests & drills will be recorded in daily drilling reports.
- Blind and pipe rams will be equipped with extension hand wheels.

Cementing:

9 5/8" surface casing pre-set drilled-

Cement with 24 sacks Type I, II cement with 20% flyash mixed at 14.5 ppg, 1.61 cu ft per sack yield. (38 cu.ft. of slurry, bring cement to surface). Wait on cement for 24 hours for pre-set holes before pressure testing or drilling out from under surface. Test casing to 600 psi for 30 minutes.

9 5/8" surface casing conventionally drilled -

Cement with 88 sacks Type III cement with 0.25 pps Celloflake, 3% calcium chloride. (113 cu ft, 200% excess, bring cement to surface). Wait on cement appropriate time until cement achieves 250 psi compressive strength at 60 degrees F. prior to nipple up of BOPE. Wait on cement for 8 hrs for conventionally set holes before pressure testing or drilling out from under surface.

Saw tooth guide shoe on bottom. Bowspring centralizers will be run in accordance with Onshore Order #2.

7" intermediate casing -

Lead with 343 sacks Premium Lite cement with 3% calcium chloride, 0.25 pps Celloflake, 5 pps LCM-1, 0.4% fluid loss, 0.4% sodium metasilicate. Tail w/90 sacks Type III cmt w/1% calcium chloride, 0.25 pps Celloflake, 0.2% fluid loss (855 cu ft- 50% excess to circulate to surface.) WOC minimum of 8 hours before drilling out intermediate casing. If cement does not circulate to surface, a CBL or a temperature survey will be run to determine TOC. Test casing to 1500 psi for 30 minutes.

7" intermediate casing alternative two stage: Stage collar set 300' above the top of the Fruitland. First stage: Lead with 13 sacks Premium Lite cmt w/3% calcium chloride, 0.25 pps Celloflake, 0.4% fluid loss, 5 pps LCM-1 & 4% sodium metasilicate. Tail with 90 sacks with Type III cement with 1% calcium chloride, 0.25 pps Celloflake, 0.2% fluid loss. Second stage: Lead with 331 sacks with Premium Lite cement with 3% calcium chloride, 0.25 pps Celloflake, 5 pps LCM-1, 0.4% fluid loss, 0.4% sodium metasilicate (855 cu. ft.-50% excess to circulate to surface).

Cement nose guide shoe on bottom with float collar spaced on top of shoe joint. Bowspring centralizers spaced every other joint off bottom, to the base of the Ojo Alamo @ 3281'. Two turbolating centralizers at the base of the Ojo Alamo 3281'. Bowspring centralizers spaced every fourth joint from the base of the Ojo Alamo to the base of the surface casing.

#### 4 1/2" Production/Casing -

Cement to cover minimum of 100' of 4 1/2" x 7" overlap. Cement with 292 sacks Premium Lite HS w/ 0.25 pps Celloflake, 0.3% CD-32, 6.25 pps LCM-1 and 1% FL-52. (578 cu ft, 30% excess to cement 4 1/2" x 7" overlap). WOC a minimum of 18 hrs prior to completing.

Cement float collar stacked on top of float shoe.

Note: If open hole logs are run, cement volumes will be based on 25% excess over caliper volumes.

Cement nose guide shoe on bottom with float collar spaced on top of shoe joint. The liner hanger will have a rubber packoff.

- If hole conditions permit, an adequate water spacer will be pumped ahead of each cement job to prevent cement/ mud contamination or cement hydration.

#### Special Drilling Operations (Air/Mist Drilling):

The following equipment will be operational while air/mist drilling:

- An anchored blooie line will be utilized to discharge all cuttings and circulating medium to the blow pit a minimum of 100' from the wellhead.
- The blooie line will be equipped with an automatic igniter or pilot light.
- Compressors will be located a minimum of 100' from the wellhead in the opposite direction from the blooie line.
- Engines will have spark arresters or water cooled exhaust.
- The rotating head will be properly lubricated and maintained.
- A float valve will be utilized above the bit.
- Mud circulating equipment, water, and mud materials will be sufficient to maintain control of the well.

#### Additional Information:

- The Mesa Verde and Dakota formations will be completed and Commingled.
- No abnormal temperatures or hazards are anticipated.
- Anticipated pore pressures are as follows:
 

Fruitland Coal	300 psi
Pictured Cliffs	600 psi
Mesa Verde	700 psi
- Sufficient LCM will be added to the mud system to maintain well control, if lost circulation is encountered below the top of the Pictured Cliffs.
- The West half of Section 31 is dedicated to the Mesa Verde and the North half of Section 31 is dedicated to the Dakota.
- This gas is dedicated.

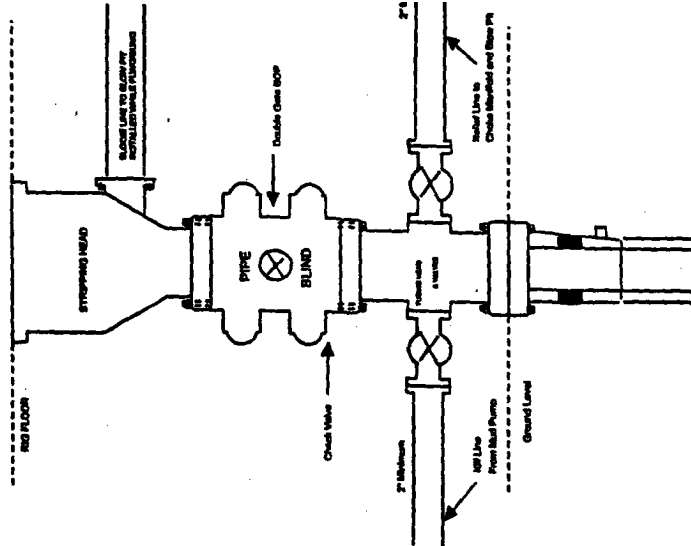
*Dakota ~ 2500 psi*

*Sean Bourgen*  
Drilling Engineer

*February 25, 2004*  
Date

# BURLINGTON RESOURCES

Completion/Workover Rig  
BOP Configuration  
2,000 psi System

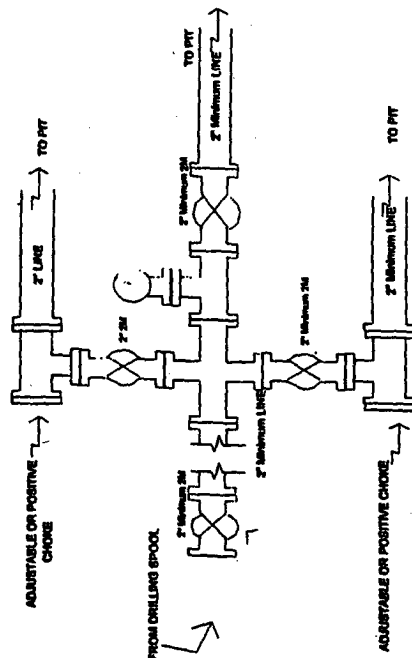


Minimum BOP Installation for all Completion/Workover Operations. 7-1/16" bore, 2000 psi minimum working pressure double gate BOP to be equipped with blind and pipe rams. A stripping head to be installed on the top of the BOP. All BOP equipment is 2000 psi working pressure or greater excluding 800 psi stripping head.

Figure #2

# BURLINGTON RESOURCES

Drilling Rig  
Choke Manifold Configuration  
2000 psi System

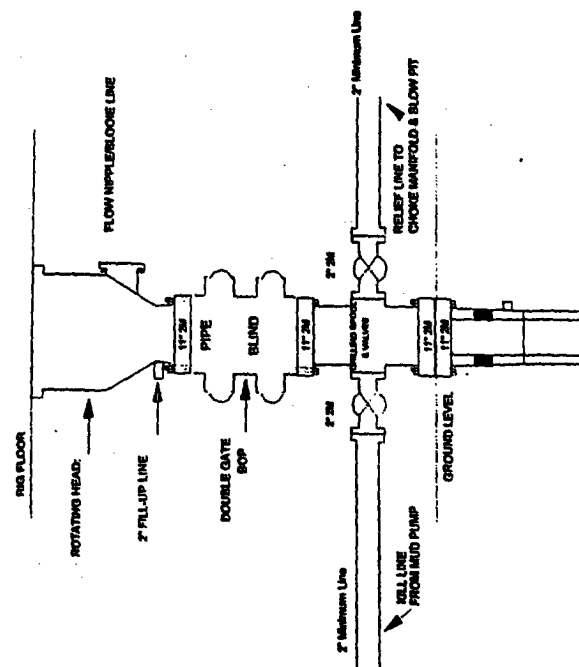


Choke manifold Installation from Surface Casing Point to Total Depth. 2,000psi working pressure equipment with two chokes.

Figure #3

# Burlington Resources

Drilling Rig  
2000 psi System



BOP Installation from Surface Casing Point to Total Depth. 11" Bore to Normal 2000 psi working pressure double gate BOP to be equipped with blind rams and pipe rams. A 800 psi casing head on top of ram preventers. All BOP equipment is 2,000 psi working pressure

Figure #1