

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

2006 AUG 16 AM 7 31

1a. Type of Work DRILL	5. Lease Number NMSF-078049-A Unit Reporting Number	
1b. Type of Well GAS	6. If Indian, All. or Tribe	
2. Operator <b>BURLINGTON</b> RESOURCES Oil & Gas Company, LP	7. Unit Agreement Name	
3. Address & Phone No. of Operator PO Box 4289, Farmington, NM 87499  (505) 326-9700	8. Farm or Lease Name Bolin-Hardie 9. Well Number #1E	
4. Location of Well Unit K (NESW), 1955' FSL & 1570' FWL  Latitude 36° .68064'N Longitude 107° .66735'W	10. Field, Pool, Wildcat Basin DK / Blanco MV  11. Sec., Twn, Rge, Mer. (NMPM) K Sec. 34, T29N, R08W API # 30-045- 33897	
14. Distance in Miles from Nearest Town	12. County San Juan	13. State NM
15. Distance from Proposed Location to Nearest Property or Lease Line 1570''	17. Acres Assigned to Well DK & MV - 344.51 W/2 320 AC	
16. Acres in Lease	18. Distance from Proposed Location to Nearest Well, Drlg, Compl, or Applied for on this Lease	
19. Proposed Depth 7311;	20. Rotary or Cable Tools Rotary	
21. Elevations (DF, FT, GR, Etc.) 6295' GL	22. Approx. Date Work will Start	
23. Proposed Casing and Cementing Program See Operations Plan attached		
24. Authorized by: <u>Patsy Cluskey</u> Sr. Regulatory Specialist	Date <u>8/15/06</u>	

PERMIT NO. \_\_\_\_\_ APPROVAL DATE \_\_\_\_\_  
APPROVED BY [Signature] TITLE AFM DATE 9/14/06

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.

NMOCB

8

DISTRICT I  
1035 N. French Dr., Hobbs, N.M. 88240

DISTRICT II  
911 South West, Artesia, N.M. 88210

DISTRICT III  
1000 Rio Grande Rd., Alamo, N.M. 87410

DISTRICT IV  
3010 South Pacheco, Santa Fe, N.M. 87505

State of New Mexico  
Energy, Minerals & Natural Resources Department

Form O-102  
Revised August 15, 2000

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

OIL CONSERVATION DIVISION

3040 South Pacheco  
Santa Fe, NM 87505

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

<sup>1</sup> API Number 30-045-33897	<sup>2</sup> Pool Code 72319/71599	<sup>3</sup> Pool Name Blanco Mesaverde/Bastakota
<sup>4</sup> Property Code 36018	<sup>5</sup> Property Name BOLIN-HARDIE	<sup>6</sup> Well Number 1 E
<sup>7</sup> CORD No. 14538	<sup>8</sup> Operator Name BURLINGTON RESOURCES O&G CO LP	<sup>9</sup> Elevation 6295'

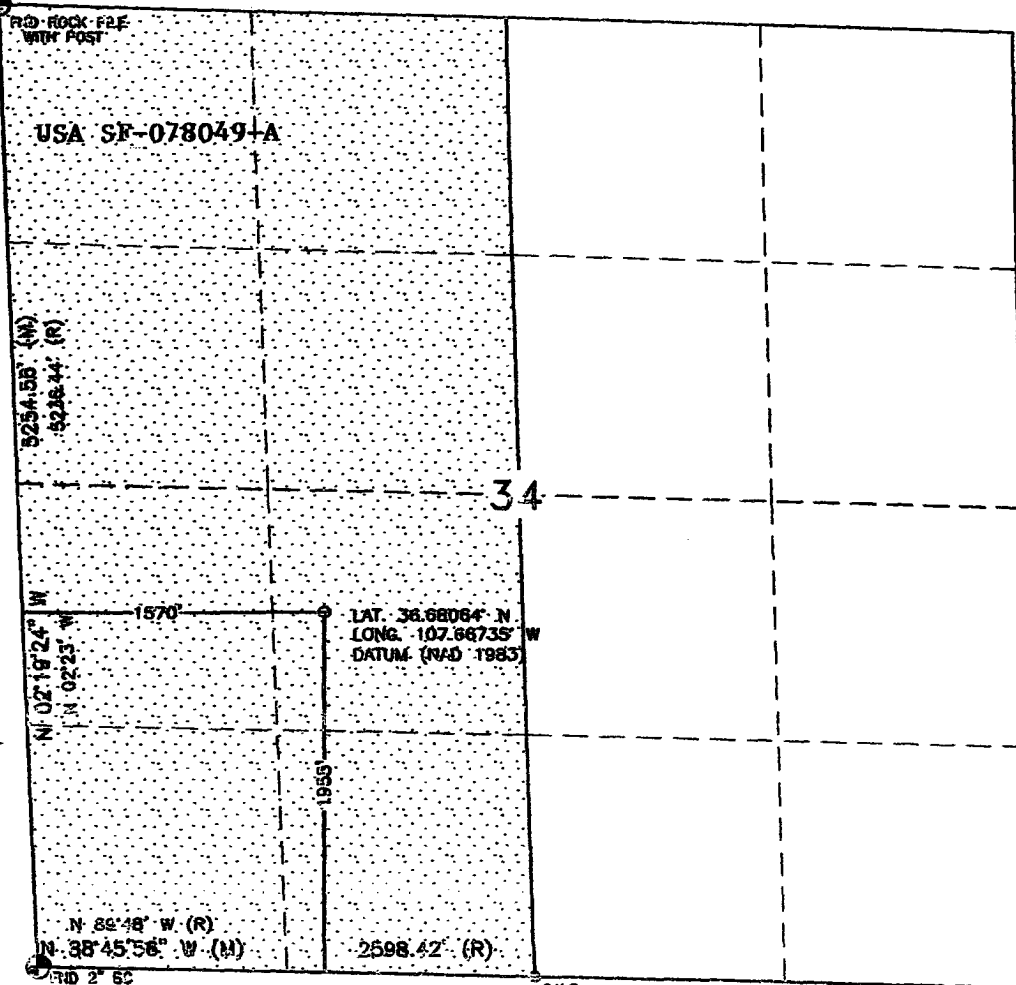
<sup>10</sup> Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
K	34	29N	8W		1955'	SOUTH	1570'	WEST	SAN JUAN

<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 320 314.51 Acres - (W/2)					<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



17 OPERATOR CERTIFICATION

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

Signature  
Amanda Sanchez

Printed Name

Regulatory Analyst

Title 6-13-06

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.

JUNE 8, 2006

Date of Survey

Signature and Seal of Professional Surveyor:

David R. Russell

DAVID RUSSELL

Certificate Number

10201

District I

1625 N. French Dr., Hobbs, NM 88240

District II

1301 W. Grand Ave., Artesia, NM 88210

District III

1000 Rio Brazos Rd., Aztec, NM 87410

District IV

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

Energy, Minerals and Natural Resources

**OIL CONSERVATION DIVISION**

1220 South St. Francis Dr.  
Santa Fe, NM 87505

May 27, 2004

<b>SUNDRY NOTICES AND REPORTS ON WELLS</b> (DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)		WELL API NO. 30-045- <u>36018</u>
1. Type of Well: Oil Well <input type="checkbox"/> Gas Well <input checked="" type="checkbox"/> Other		5. Indicate Type of Lease STATE <input type="checkbox"/> FEE <input type="checkbox"/>
2. Name of Operator BURLINGTON RESOURCES OIL & GAS COMPANY LP		6. State Oil & Gas Lease No. NMSF-078049-A
3. Address of Operator 3401 E. 30TH STREET, FARMINGTON, NM 87402		7. Lease Name or Unit Agreement Name Bolin-Hardie
4. Well Location Unit Letter <u>K</u> : <u>1955'</u> feet from the <u>South</u> line and <u>1570'</u> feet from the <u>West</u> line Section <u>34</u> Township <u>29N</u> Rng <u>8W</u> NMPM County <u>San Juan</u>		8. Well Number #1E
11. Elevation (Show whether DR, RKB, RT, GR, etc.) 6295' GL		9. OGRID Number 14538
Pit or Below-grade Tank Application <input type="checkbox"/> or Closure <input type="checkbox"/>		10. Pool name or Wildcat Basin Dakota / Blanco Mesaverde
Pit type <u>new drill</u> Depth to Groundwater <u>&gt;100'</u> Distance from nearest fresh water well <u>&gt;1000'</u> Distance from nearest surface water <u>7200'</u> Pit Liner Thickness: <u>n/a</u> mil Below-Grade Tank: Volume <u>        </u> bbls; Construction Material <u>        </u>		

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

**NOTICE OF INTENTION TO:**

PERFORM REMEDIAL WORK ☐ PLUG AND ABANDON ☐  
 TEMPORARILY ABANDON ☐ CHANGE PLANS ☐  
 PULL OR ALTER CASING ☐ MULTIPLE COMPL ☐

OTHER: New Drill Pit ☒

**SUBSEQUENT REPORT OF:**

REMEDIAL WORK ☐ ALTERING CASING ☐  
 COMMENCE DRILLING OPNS. ☐ P AND A ☐  
 CASING/CEMENT JOB ☐

OTHER: ☐

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 1103. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

New Drill, Unlined:

Burlington Resources proposes to construct a new drilling pit and an associated vent/flame pit. Based on Burlington's interpretation of the Ecosphere's risk ranking criteria, the new drilling pit and vent/flame pit will be an unlined pit as detailed in Burlington's Revised Drilling / Workover Pit Construction / Operation Procedures dated November 11, 2004 on file at the NMOCD office. A portion of the vent/flame pit will be designed to manage fluids, and that portion will be unlined, as per the risk ranking criteria. Burlington Resources anticipates closing these pits according to the Drilling / Workover Pit Closure Procedure dated August 2, 2004 on file at the NMOCD office.

I hereby certify that the information above is true and complete to the best of my knowledge and belief. I further certify that any pit or below-grade tank has been/will be constructed or closed according to NMOCD guidelines ☐, a general permit ☒ or an (attached) alternative OCD-approved plan ☐.

SIGNATURE Patsy Clugston TITLE Sr. Regulatory Specialist DATE 8/15/2006

Type or print name Patsy Clugston E-mail address: pclugston@br-inc.com Telephone No. 505-326-9518

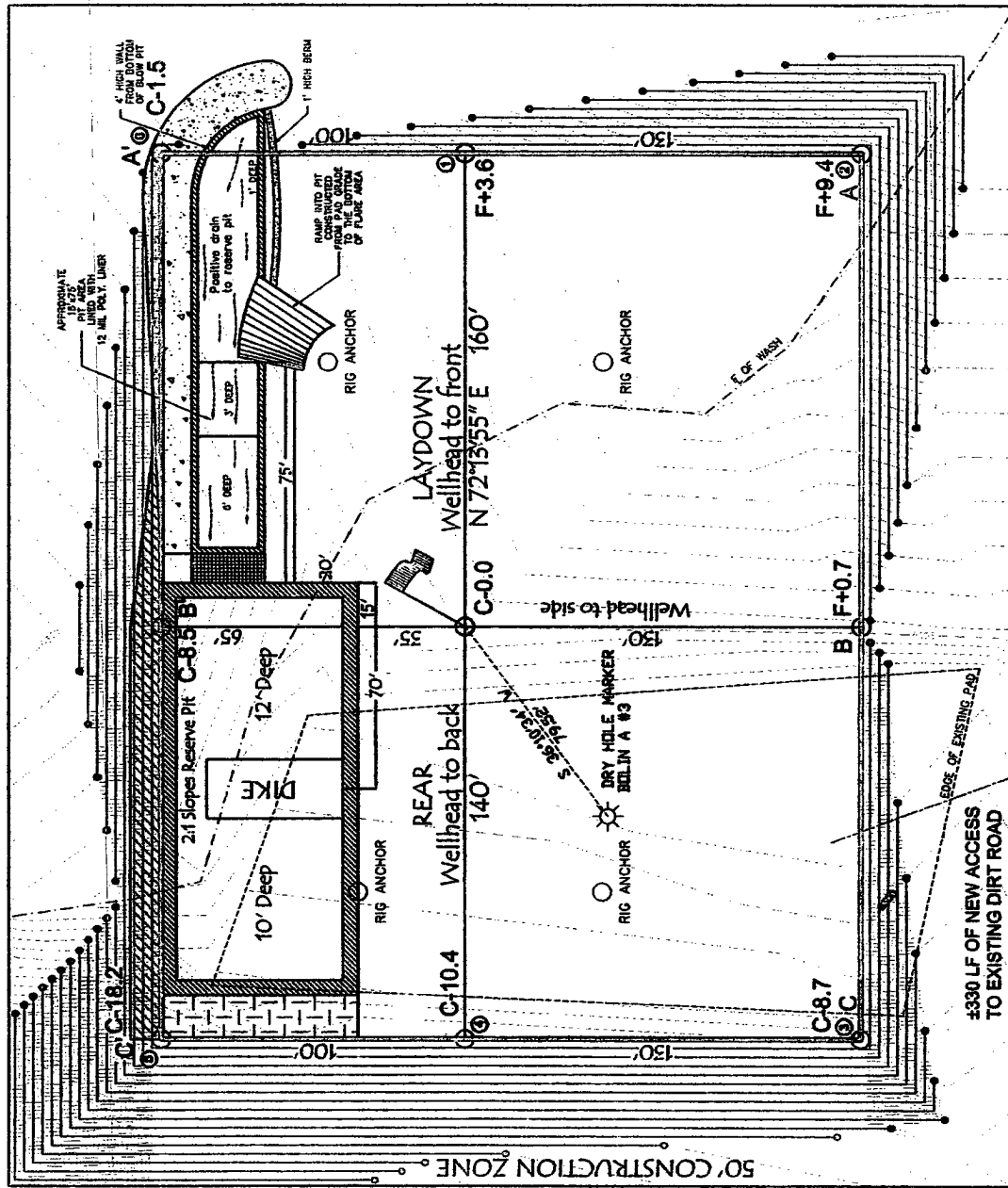
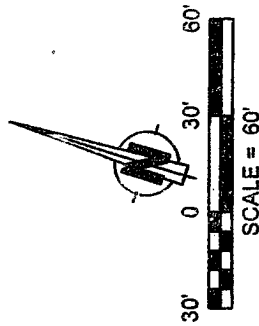
**For State Use Only**

APPROVED BY [Signature] TITLE DEPUTY OIL & GAS INSPECTOR, DIST. 60 DATE SEP 18 2006

Conditions of Approval (if any):

LATITUDE: 36.68064°N  
 LONGITUDE: 107.66735°W  
 DATUM: NAD 83

**BURLINGTON RESOURCES O&G CO LP**  
 BOLIN-HARDIE #1 E  
 1955' FSL & 1570' FWL  
 LOCATED IN THE NE/4 SW/4 OF SECTION 34,  
 T29N, R8W, N.M.P.M.,  
 SAN JUAN COUNTY, NEW MEXICO  
 GROUND ELEVATION: 6295', NAVD 88  
 FINISHED PAD ELEVATION: 6294.9', NAVD 88

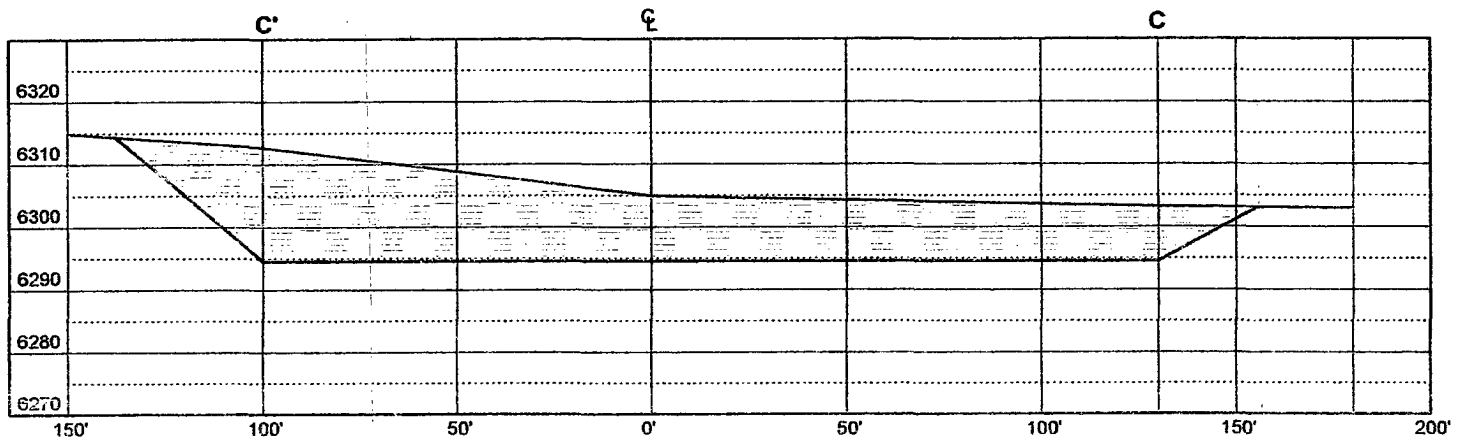


1 FOOT CONT'OUR INTERVAL SHOWN  
 SCALE: 1" = 60'  
 JOB No.: C0F003  
 DATE: 06/08/06

NOTE:  
 RESERVE PIT DIKE: TO BE 8' ABOVE DEEP SIDE (OVERFLOW - 3' WIDE AND 1' ABOVE SHALLOW SIDE).  
 RUSSELL SURVEYING, INC. IS NOT LIABLE FOR UNDERGROUND UTILITIES OR PIPELINES.  
 CONTRACTOR SHOULD CALL ONE-CALL FOR LOCATION OF ANY MARKED OR UNMARKED, BURIED PIPELINES OR  
 CABLES ON WELL PAD, IN CONSTRUCTION ZONE AND/OR ACCESS ROAD AT LEAST TWO (2) WORKING DAYS PRIOR  
 TO CONSTRUCTION.

**Russell Surveying**  
 1409 W. Aztec Blvd. #5  
 Aztec, New Mexico 87410  
 (505) 334-8637

FINISHED PAD ELEVATION: 6294.9', NAVD 88



**Russell Surveying**  
1409 W. Aztec Blvd. #5  
Aztec, New Mexico 87410  
(505) 334-8637

## OPERATIONS PLAN

Well Name: BOLIN-HARDIE 1E  
Location: 1955' FSL & 1570' FWL, Section Sec 34 T29N R08W  
San Juan County, New Mexico  
Formation: Blanco Mesaverde/Basin Dakota  
Elevation: 6295' GL

<u>Formation Tops:</u>	<u>Top</u>	<u>Bottom</u>	<u>Contents</u>
Surface	San Jose	1857'	
Ojo Alamo	1857'	1977'	aquifer
Kirtland	1977'	2662'	gas
Fruitland Coal	2662'	2807'	gas
Pictured Cliffs	2807'	2972'	gas
Lewis	2972'	3397'	
Huerfanito Bentonite	3397'		
Chacra	3784'	4437'	gas
Massive Cliff House	4437'	4602'	gas
Menefee	4602'	5037'	gas
Massive Point Lookout	5037'	5482'	gas
Mancos Shale	5482'	6260'	
Upper Gallup	6260'	6995'	gas
Greenhorn	6995'	7055'	gas
Graneros	7055'	7105'	gas
Two Wells	7105'	7195'	gas
Paguate	7195'	7234'	gas
Upper Cubero	7234'	7262'	gas
Lower Cubero	7262'	7311'	gas
Encinal	7311'	7311'	gas
Total Depth:	7311'		gas

### 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:

<u>Interval</u>	<u>Type</u>	<u>Weight</u>	<u>Vis.</u>	<u>Fluid Loss</u>
0 - 120'	Spud MUD/Air/Air Mist	8.4 - 9.0	40 - 50	no control
120' - 3072'	LSND	8.4 - 9.0	30 - 60	no control
3072' - 7311'	Air/Air Mist/Nitrogen	n/a	n/a	n/a

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

<u>Hole Size</u>	<u>Depth Interval</u>	<u>Csg.Size</u>	<u>Wt.</u>	<u>Grade</u>
12 1/4"	0' - 120'	9 5/8"	32.3#	H-40
8 3/4"	0' - 3072'	7"	20#	J-55
6 1/4"	0' - 7311'	4 1/2"	10.5#/11.6#	J-55

**Tubing Program:**

<u>Depth Interval</u>	<u>Csg.Size</u>	<u>Wt.</u>	<u>Grade</u>
0' - 7311'	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, BOPE 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, BOPE 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 23 sx 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.

**Conventionally Drilled** - Cement with 88 sx Type III cement with 0.25 pps Celloflake, 2% CaCl. (113 cu ft of slurry, 200% excess, bring cement to surface) Wait on cement for 8 hrs for conventionally set holes before pressure testing or drilling out from under 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. Test casing to 600 psi for 30 minutes.

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

## 7" intermediate casing -

Lead with 264 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 (124 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 w/17 sacks Premium Lite cement with 3% calcium chloride, .25 pps celloflake, 5 pps LCM-1, 0.4% fluid loss. Tail w/90 sxs Type III cmt w/1% calcium chloride, 0.25 pps Celloflake, 0.2% fluid loss. Second stage: 247 sacks Premium Lite cement with 3% calcium chloride, .25 pps celloflake, 5 pps LCM-1, 0.4% fluid loss, 0.4% sodium metasilicate (686 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 @ 1977'. Two turbolating centralizers at the base of the Ojo Alamo @ 1977'. 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 -

Pump 277 sxs Premium Lite HS FM w/0.25 pps celloflake, 0.3% CD-32, 6.25 pps LCM-1, 1% fluid loss, 6% gel, 7 pps CSE (549 cu.ft., 30% excess to achieve 100' overlap in 4-1/2" x 7" annulus). WOC a minimum of 18 hrs prior to completing.



Cementing: Continued

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:

- This will be a Dakota only.
- No abnormal temperatures or hazards are anticipated.
- Anticipated pore pressures are as follows:

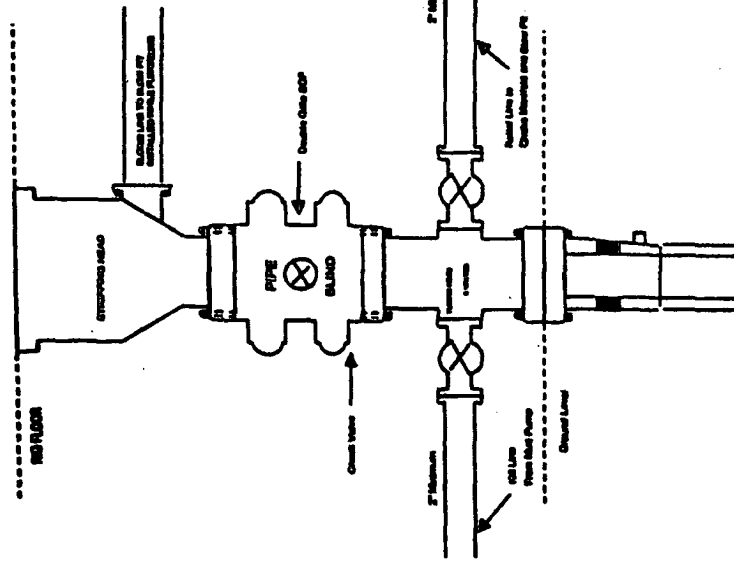
Fruitland Coal	300 psi
Pictured Cliffs	600 psi
Mesa Verde	700 psi
Dakota	2000 psi
- Sufficient LCM will be added to the mud system to maintain well control, if lost circulation is encountered below the top of the Pictured Cliffs.
- The West half of Section 34 is dedicated to the Dakota formation.
- This gas is dedicated.

  
Drilling Engineer

  
Date

# BURLINGTON RESOURCES

Completion/Workover Rig  
BOP Configuration  
2,000 psi System

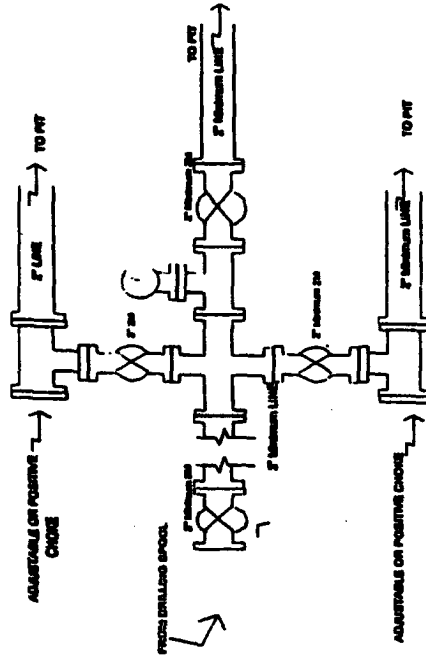


Minimum BOP Installation for all Completion/Workover Operations. 7-1/16" bore, 2000 psi minimum working pressure double gate BOP to be equipped with blind and pipe rams. A stripping head to be installed on the top of the BOP. All BOP equipment is 2000 psi working pressure or greater excluding 800 psi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

Figure #2

# BURLINGTON RESOURCES

Drilling Rig  
Choke Manifold Configuration  
2000 psi System

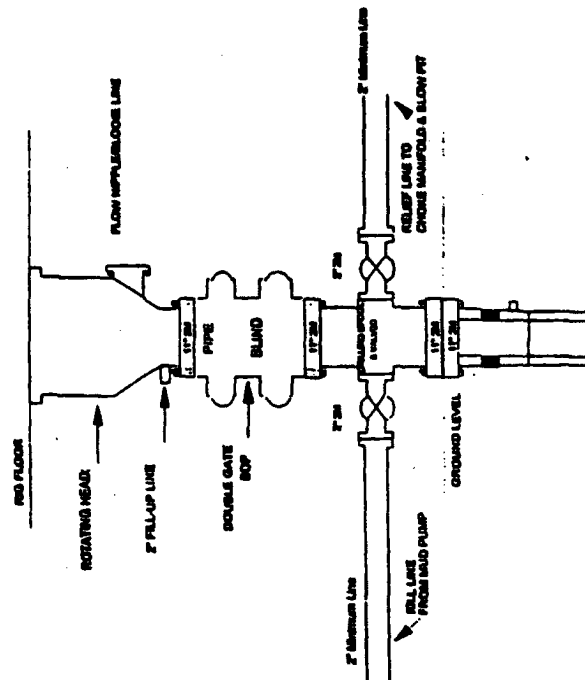


Choke manifold installation from Surface Casing Point to Total Depth. 2,000psi working pressure equipment with two chokes.

Figure #3

# Burlington Resources

Drilling Rig  
2000 psi System



BOP Installation from Surface Casing Point to Total Depth. 11" Bore 10" Minimum, 2000 psi working pressure double gate BOP to be equipped with blind and pipe rams. All BOP equipment is 2,000 psi working pressure or greater.

Figure #1