

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. Type of Work DRILL	5. Lease Number NM-01614 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 Thompson 9. Well Number 11M	
4. Location of Well 730' FSL, 835' FEL  Latitude 36° 51.0, Longitude 108° 04.8	10. Field, Pool, Wildcat Otero Cha/Blanco MV/Basin DK  11. Sec., Twn, Rge, Mer. (NMPM) Sec. 34, T-31-N, R-12-W API # 30-045-30990	
14. Distance in Miles from Nearest Town 6.6 Miles from Hwy 550 and Hwy 574 in Aztec	12. County San Juan	13. State NM
15. Distance from Proposed Location to Nearest Property or Lease Line 730	17. Acres Assigned to Well Cha-160, MV/DK-320	
16. Acres in Lease	18. Distance from Proposed Location to Nearest Well, Drig, Compl, or Applied for on this Lease 1797	
19. Proposed Depth 6895	20. Rotary or Cable Tools Rotary	
21. Elevations (DF, FT, GR, Etc.) 5913' GR	22. Approx. Date Work will Start	
23. Proposed Casing and Cementing Program See Operations Plan attached	DRILLING OPERATIONS AUTHORIZED ARE SUBJECT TO COMPLIANCE WITH ATTACHED "GENERAL REQUIREMENTS"	
24. Authorized by: <u><i>Deann Case</i></u> Regulatory/Compliance Supervisor	Date <u>1-17-02</u>	

PERMIT NO.

APPROVAL DATE

APPROVED BY

TITLE

DATE

Archaeological Report to be submitted

Threatened and Endangered Species Report to be submitted

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.

NMOCU

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

DISTRICT II  
811 South First, Artesia, N.M. 88210

DISTRICT III  
1000 Rio Brazos Rd., Aztec, N.M. 87410

DISTRICT IV  
2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico  
Energy, Minerals & Natural Resources Department

Form C-102  
Revised August 15, 2000

OIL CONSERVATION DIVISION

2040 South Pacheco  
Santa Fe, NM 87505

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

<sup>1</sup> API Number 30-045 <b>30990</b>	<sup>2</sup> Pool Code 82329/72319/71599	<sup>3</sup> Pool Name Otero Chacra/Blanco MV/Basin DK
<sup>4</sup> Property Code 18628	<sup>5</sup> Property Name THOMPSON	<sup>6</sup> Well Number 11M
<sup>7</sup> OGRID No. 14538	<sup>8</sup> Operator Name BURLINGTON RESOURCES OIL & GAS, INC.	<sup>9</sup> Elevation 5913'

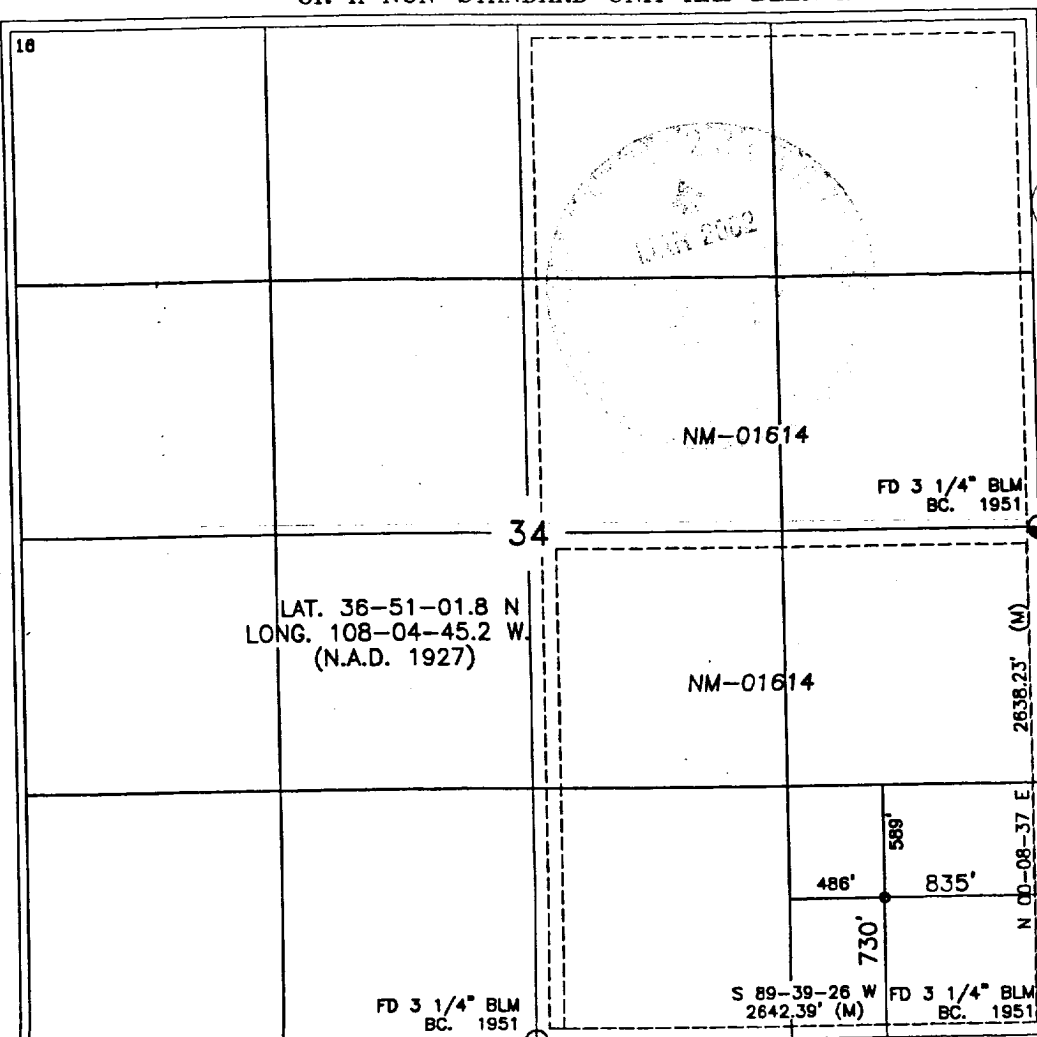
<sup>10</sup> Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	34	31-N	12-W		730	SOUTH	835	EAST	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 Cha-SE/160 MV/DK-E/320			<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.

*Peggy Cole*  
Signature

Peggy Cole

Printed Name

Regulatory Supervisor

Title

1-17-02

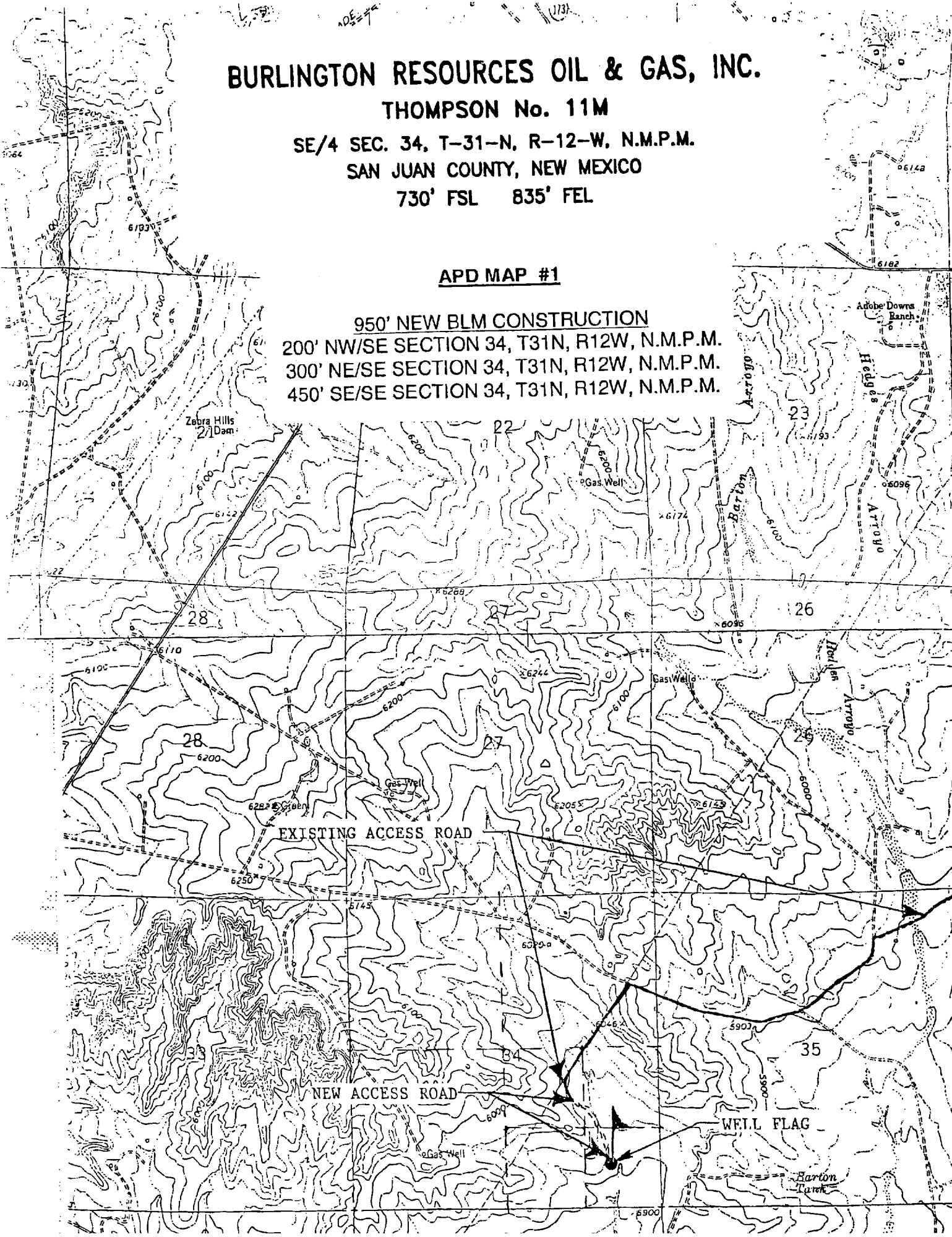
Date

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 knowledge and belief.

*[Signature]*  
Date of Survey  
Signature and Seal of Professional Surveyor:  
8894

Certificate Number

**BURLINGTON RESOURCES OIL & GAS, INC.****THOMPSON No. 11M****SE/4 SEC. 34, T-31-N, R-12-W, N.M.P.M.****SAN JUAN COUNTY, NEW MEXICO****730' FSL 835' FEL****APD MAP #1****950' NEW BLM CONSTRUCTION****200' NW/SE SECTION 34, T31N, R12W, N.M.P.M.****300' NE/SE SECTION 34, T31N, R12W, N.M.P.M.****450' SE/SE SECTION 34, T31N, R12W, N.M.P.M.**

## OPERATIONS PLAN

Well Name: Thompson 11M  
Location: 730 FSL, 835 FEL, Sec.34, T-31-N, R-12-W  
San Juan County, NM  
Latitude 36° 51.0'N, Longitude 108° 04.8'W  
Formation: Otero Chacra/Blanco MV/Basin Dakota  
Elevation: 5913'GL

<u>Formation Tops:</u>	<u>Top</u>	<u>Bottom</u>	<u>Contents</u>
Surface	San Jose	593'	
Ojo Alamo	593'	693'	aquifer
Kirtland	693'	1981'	gas
Fruitland	1981'	2280'	
Pictured Cliffs	2280'	2472'	gas
Lewis	2472'	3010'	gas
Mesaverde	3010'	3345'	gas
Chacra	3345'	3935'	gas
Massive Cliff House	3935'	4010'	gas
Menefee	4010'	4610'	gas
Intermediate TD	4160'		
Massive Point Lookout	4610'	4955'	gas
Mancos Shale	4955'	5880'	gas
Gallup	5880'	6623'	gas
Greenhorn	6623'	6673'	gas
Graneros	6673'	6738'	gas
Dakota	6738'		gas
TD	6895'		

### Logging Program:

Open hole logs - None  
Cased hole logs - Gr/Cement bond Log: TD to surface  
Cores - none

### Mud Program:

<u>Interval</u>	<u>Type</u>	<u>Weight</u>	<u>Vis.</u>	<u>Fluid Loss</u>
0- 200'	Spud	8.4-9.0	40-50	no control
200- 4160'	LSND	8.4-9.0	30-60	no control
4160- 6895'	Air/N2	n/a	n/a	n/a

Pit levels will be visually monitored to detect gain or loss of fluid control.

### 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' - 200'	9 5/8"	32.3#	H-40
8 3/4"	0' - 4160'	7"	23 & 20.0#	J-55
6 1/4"	4060' - 6895'	4 1/2"	10.5#	J-55

### Tubing Program:

0' - 6895'      2 3/8"      4.7#      J-55

### BOP Specifications, Wellhead and Tests:

#### Surface to Intermediate TD -

11" 3000 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" 3000 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, 3000 psi minimum choke manifold (Reference Figure #3).

**Completion Operations -**

7 1/16" 3000 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 2 3/8" x 3000 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 drilling crew.
- All BOP tests and 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 - cement with 159 sx Class "B" cement with 1/4# celloflake/sx and 3% calcium chloride (188 cu.ft. of slurry, 200% excess to circulate to surface). WOC 8 hrs. 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 w/519 sx 50/50 Class G/TXI lightweight w/1.75% sodium metasilicate, 8# gilsonite/sx and 1/2# celloflake/sx, .2% Defoamer, .15% Retarder. Tail w/95 sx 50/50 Class "G" Poz, 2% gel, 1/4 pps celloflake, 5 pps gilsonite, 0.1% antifoam agent, .1% Dispersant, .1% Retarder (1250 cu.ft. of slurry, 100% excess to circulate to surface.) WOC minimum of 8 hours before drilling out intermediate casing. If cement does not circulate to surface, a CBL will be run during completion operations to determine TOC. Test casing to 1500 psi for 30 minutes.

**See attached alternative intermediate lead slurry.**

7" intermediate casing alternative two stage: Stage collar at 1881'. First stage: cement with 535 sx 50/50 Class "G" Poz w/2% calcium chloride, 2% gel, 1/4 pps celloflake, 5 pps gilsonite, 0.1% antifoam agent. Second stage: 219 sx 50/50 Class G/TXI lightweight w/2.5% sodium metasilicate, 2% calcium chloride, 10# gilsonite/sx and 1/2# celloflake/sx (1250 cu.ft., 100% 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 at 693'. Two turbolating centralizers at the base of the Ojo Alamo at 693'. 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. Lead with 283 sx 50/50 Class "G" Poz with 5% gel, 0.25# celloflake/sx, 5# gilsonite/sx, 0.1% retardant and 0.25% fluid loss additive, 0.15% dispersant, 0.1% antifoam agent (407 cu.ft.), 40% excess to cement 4 1/2" x 7" overlap). WOC a minimum of 18 hrs prior to completing.

4 1/2" production casing alternative: Lead w/85 sx 9.5 PPG Litecrete Blend w/0.11% dispersant, 0.5% fluid loss. Tail w/154 sx Class G 50/50 poz w/5% gel, 0.25 pps celloflake, 5 pps gilsonite, 0.25% fluid loss, 0.15% dispersant, 0.1% retarder, 0.1% antifoam (436 cu.ft., 50% excess to cement 4 1/2" x 7" overlap).

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

Cement float shoe on bottom with float collar spaced on top of float shoe.

Note: To facilitate higher hydraulic stimulation completion work, no liner hanger will be used. In its place, a long string of 4 1/2" casing will be run and cemented with a minimum of 100' of cement overlap between the 4 1/2" x 7" casing strings. After completion of the well, a 4 1/2" retrievable bridge plug will be set below the top of cement in the 4 1/2" x 7" overlap. The 4 1/2" casing will then be backed off above the top of cement in the 4 1/2" x 7" overlap and laid down. The 4 1/2" bridge plug will then be retrieved and the production tubing will be run to produce the well.

- 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 (Gas/Mist Drilling):**

The following equipment will be operational while gas/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.
- Deduster equipment will be utilized.
- 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 Dakota and Mesa Verde 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
Dakota	2500 psi
- Sufficient LCM will be added to the mud system to maintain well control, if lost circulation is encountered.
- The east half of Section 34 is dedicated to the Mesa Verde and the Dakota and the SE quarter of Section 34 is dedicated to the Chacra in this well.
- This gas is dedicated.

Brennan D. Shurt  
Drilling Engineer

1/22/02

## **Alternative Intermediate Lead Slurry**

### **Dowell-**

Class G: D49(50:50) w/ 2.5% D79, 2% S1, 10pps D24, .5pps D29, .2%D46

where: D49-TXI Light weight Cement  
D79-Sodium Metasilicate  
S1-Calcium Chloride  
D24-Gilsonite  
D46-Antifoam Agent

### **Properties-**

Density: 11.4 lb/gal  
Yield: 2.58 cu ft./sk  
Water: 14.55 gal/sk  
Thick Time 70 b.c.(deg F): 4:06(101)  
Free Water: 0  
Fluid Loss: 462ml/30 min  
CS(crush)@24hr: 394  
CS(crush)@48hr: 550

### **Halliburton-**

Class H 47#/sk, 37#/sk Blended Silicalite, 3% Bentonite, 4% Calcium Chloride

### **Properties-**

Density: 11.4 lb/gal  
Yield: 2.42 cu.ft./sk  
Water: 14.02 gal/sk  
Thick Time(70 bc): 11:00+  
Fluid Loss: 702 cc/30min  
Free Water: 0%  
Compressive Strength (@25:19) : 500  
Compressive Strength (@48:00) : 630