

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

FORM APPROVED  
OMB No. 1004-0136  
Expires March 31, 2007

1a. Type of Work: ☒ DRILL ☐ REENTER

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

☐ Single Zone ☒ Multiple Zone

2. Name of Operator

CDX RIO, LLC

3a. Address

2010 Afton Place, Farmington, New Mexico 87401

3b. Phone No. (include area code)

(505) 326-3003

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

At surface 1780' FSL, 580' FWL Lat: 36 28' 11.7", Long: 107 24' 29.6"

At proposed prod. zone

Lot 3

14. Distance in miles and direction from nearest town or post office\*

30 miles from Lindrith, New Mexico

15. Distance from proposed\*  
location to nearest  
property or lease line, ft.  
(Also to nearest drig. unit line, if any) 580'

16. No. of Acres in lease

17. Spacing Unit dedicated to this well

319.16  
320 W/2

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

300'

19. Proposed Depth

7480

20. BLM/BIA Bond No. on file

National Bond on file

21. Elevations (Show whether DF, KDB, RT, GL, etc.)

6612' GR

22. Approximate date work will start\*

23. Estimated duration

24. Attachments

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

Richard Corcoran

Name (Printed/Typed)

Richard Corcoran

Date

5-25-06

Title

Land Manager

Approved by (Signature)

D. M. Anderson

Name (Printed/Typed)

Office

FEO

Date

9/5/06

Title

AFM

Application approval does not warrant or certify that 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.

\*(Instructions on reverse)

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"

NSL-5428

NMOC

entered 9-14

**RICT II**  
1001 W. Grand Ave., Artesia, N.M. 88210

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

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

**OIL CONSERVATION DIVISION**  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

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

RECEIVED  
072 FARMINGTON ☒ AMENDED REPORT

## WELL LOCATION AND ACREAGE DEDICATION PLAT

|                             |                                |                           |   |
|-----------------------------|--------------------------------|---------------------------|---|
| *API Number<br>30-039-29928 |                                | *Pool Code<br>72319/71599 | *Pool Name<br>Blanco Mesaverde/Basin Dakota |
| *Property Code<br>33454     | *Property Name<br>JICARILLA A  |                           | *Well Number<br>4M                          |
| *OGRID No.<br>222374        | *Operator Name<br>CDX RIO, LLC |                           | *Elevation<br>6612                          |

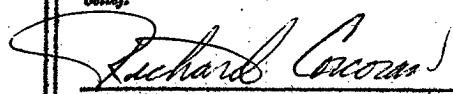
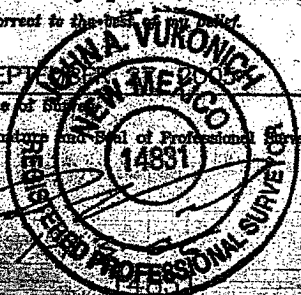
### <sup>10</sup> Surface Location

|               |         |          |       |         |               |                  |               |                |             |
|---------------|---------|----------|-------|---------|---------------|------------------|---------------|----------------|-------------|
| UL or lot no. | Section | Township | Range | Lot 14n | Feet from the | North/South line | Feet from the | East/West line | County      |
| L             | 19      | 26-N     | 5-W   | 3       | 1780          | SOUTH            | 580           | WEST           | RIO ARRIERA |

<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>13</sup> Dedicated Acres<br>MV - W/500<br>DK - W/500 |         |          | <sup>12</sup> Joint or Infill<br>Y |         | <sup>14</sup> Consolidation Code |                  | <sup>15</sup> Order No.<br>N8L5428 |                |        |

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

|  |       |  |
|--|-------|--|
| FD 3 1/4" BC<br>1957 BLM                                       | LOT 1 | 17 <b>OPERATOR CERTIFICATION</b><br>I hereby certify that the information contained herein<br>is true and complete to the best of my knowledge and<br>belief.<br><div style="text-align: center;"> <br/>       Signature     </div> <div>       Richard Corcoran<br/>       Printed Name     </div> <div>       Land Manager rich.corcoran@cdxgas.com<br/>       Title and E-mail address     </div> <div>       5-25-06<br/>       Date     </div> |
| N 00-08-52 E<br>5331.34' (M)                                   | LOT 2 | 18 <b>SURVEYOR CERTIFICATION</b><br>I hereby certify that the well location shown on this plat<br>was plotted from field notes of actual surveys made by<br>me or under my supervision, and that the same is true<br>and correct to the best of my belief.<br><div style="text-align: center;"> <br/>       Date of Survey<br/>       Signature and Seal of Professional Surveyor     </div>  |
| LOT 3  | LOT 4 |  |
| 580'   | 1780' |  |
| LAT. 36°28'11.7" N. (NAD 83)<br>LONG. 107°24'29.6" W. (NAD 83) |       | N 89-01-00 E<br>5340.87' (C)   |
| FD 3 1/4" BC<br>1957 BLM                                       |       | CALC'D COR.<br>BY DEL. PORP.   |
| Certificate Number   |       |  |

Submit 3 Copies To Appropriate District Office  
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

State of New Mexico  
Energy, Minerals and Natural Resources

Form C-103  
May 27, 2004

OIL CONSERVATION DIVISION  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

|  |
|--|
| WELL API NO.<br>30-039- <u>29928</u>   |
| 5. Indicate Type of Lease<br>STATE <input type="checkbox"/> FEE <input type="checkbox"/>   |
| 6. State Oil & Gas Lease No.<br>Jicarilla 110  |
| 7. Lease Name or Unit Agreement Name<br>Jicarilla A  |
| 8. Well Number 4M  |
| 9. OGRID Number 222374   |
| 10. Pool name or Wildcat<br>Blanco Mesaverde/Basin Dakota  |
| 11. Elevation (Show whether DR, RKB, RT, GR, etc.)<br>6612' GR   |
| Pit or Below-grade Tank Application <input type="checkbox"/> or Closure <input type="checkbox"/>   |
| Pit type <u>New Drill</u> Depth to Groundwater <u>&lt; 100'</u> Distance from nearest fresh water well <u>&lt; 1000'</u> Distance from nearest surface water <u>&lt; 1000'</u> |
| Pit Liner Thickness: <u>12</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 ☐

SUBSEQUENT REPORT OF:

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

OTHER: New Drill Pit Sundry

X ☐

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.

CDX RIO, LLC requests approval to construct a drilling pit in accordance with CDX RIO, LLC General Construction Plan submitted August, 2004. The pit will be a lined as per the general plan. The pit will be closed within 180 days from completion of project as per General Closure Plan submitted August, 2004.

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 X ☐ or an (attached) alternative OCD-approved plan ☐.

SIGNATURE Nancy Oltmanns

TITLE Regulatory Consultant

DATE 5/25/06

Type or print name Nancy Oltmanns

E-mail address: nancy.oltmanns@cdxgas.com Telephone No: (505) 326-3003

For State Use Only

APPROVED BY: [Signature]

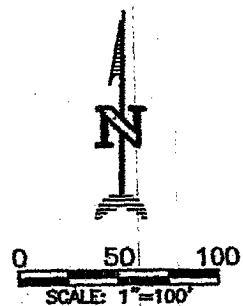
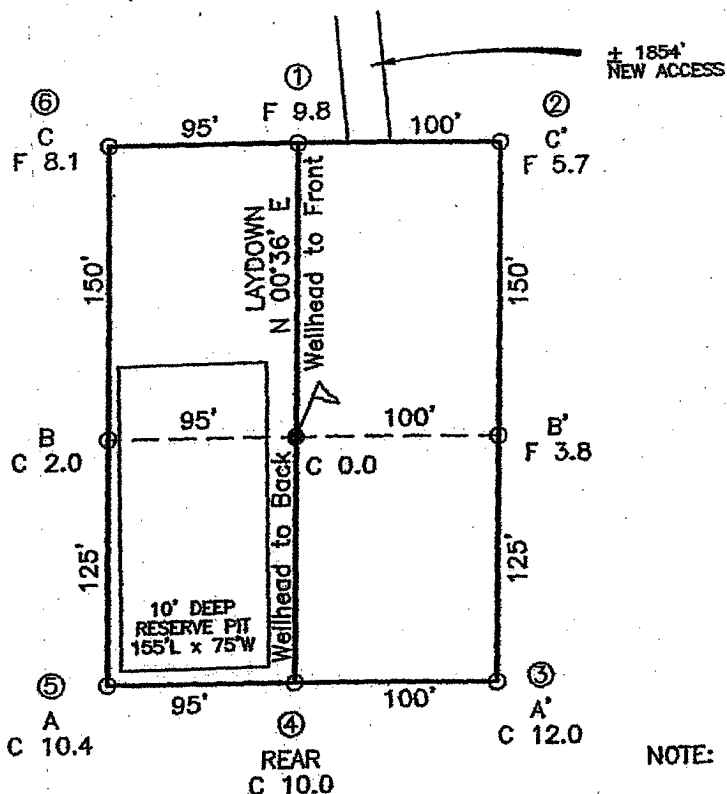
TITLE DEPUTY OIL & GAS INSPECTOR, DIST. 49

DATE SEP 07 2006

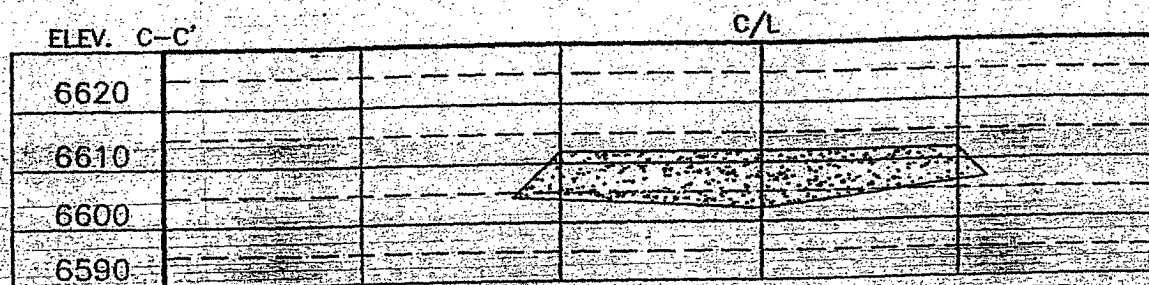
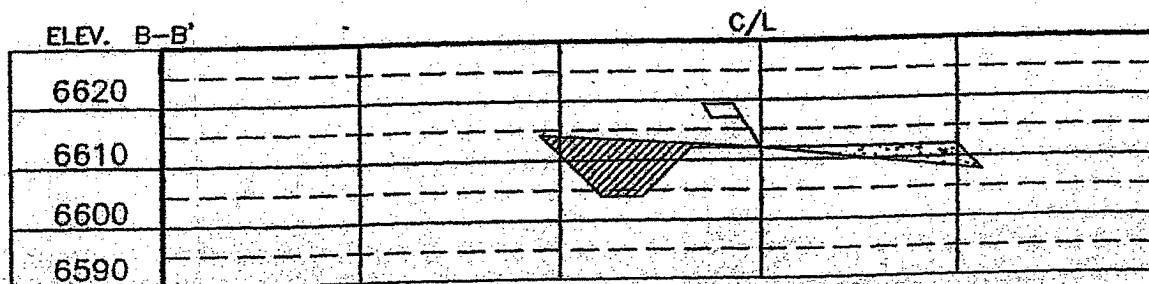
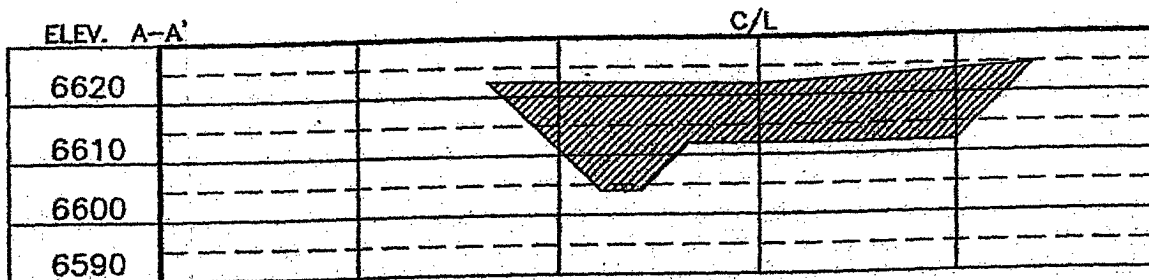
Conditions of Approval (if any):

CDX RIO, LLC  
 JICARILLA A No. 4M, 1780 FSL 580 FWL  
 SECTION 19, T26N, R5W, N.M.P.M., RIO ARriba COUNTY, N. M.  
 GROUND ELEVATION: 6612', DATE: SEPTEMBER 27, 2005

LAT. = 36°28'11.7" N.  
 LONG. = 107°24'29.6" W  
 NAD 83



NOTE: DAGGETT ENTERPRISES, INC. IS NOT LIABLE FOR UNDERGROUND UTILITIES OR PIPELINES. NEW MEXICO ONE CALL TO BE NOTIFIED 48 HOURS PRIOR TO EXCAVATION OR CONSTRUCTION.



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.

|          |      |          |      |
|----------|------|----------|------|
| REVISION | DATE | REVISION | DATE |
|          |      |          |      |

**Daggett Enterprises, Inc.**  
 Surveying and Oil Field Services  
 P. O. Box 15068 • Farmington, NM 87401  
 Phone (505) 328-1772 • Fax (505) 328-8019  
 NEW MEXICO LS. No. 14631  
 CABLE: CDXGAS102.CFB  
 DATE: 11/21/06

WIN BY G.V.  
 W# CDXGAS102

**Jicarilla A 4M  
General Drilling Plan  
CDX Rio, LLC  
Rio Arriba County, New Mexico**

**1. LOCATION:**

1780' FSL & 580' FWL, Section 19, T26N, R5W  
Rio Arriba County, New Mexico  
UGL: 6612' Estimated KB: 6624'

Field: Blanco Mesa Verde and Basin Dakota  
Surface: Jicarilla Contract #110  
Minerals: Jicarilla Contract #110

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

| Formation Tops                 | Top MD (KB) | Top Subsea (KB) | Rock Type              | Comments                                      |
|--------------------------------|-------------|-----------------|------------------------|---|
| Ojo Alamo Sandstone            | 2230        | 4394            | Sandstone              | Possible Differential Sticking, Gas, Water    |
| Kirtland Formation             | 2575        | 4049            | Shale                  |   |
| Fruitland Formation            | 2858        | 3766            | Coal, Shale, Sandstone | Possible Lost Circulation Zone, Gas, Water    |
| Pictured Cliffs Sandstone      | 3004        | 3620            | Sandstone              | Possible Lost Circulation Zone, Gas, Water    |
| Lewis Shale                    | 3124        | 3500            | Shale                  | Sloughing Shale                               |
| Huerfano Bentonite Bed         | 3457        | 3167            | Shale                  |   |
| Chacra Interval                | 3897        | 2727            | Siltstone              | Gas, Water                                    |
| Mesaverde Formation (MVRD)     | 4671        | 1953            | Coal, Sandstone, Shale | Possible Lost Circulation, Gas, Water         |
| Cliff House Sandstone (MVRD)   | 4671        | 1953            | Sandstone              | Possible Lost Circulation, Gas, Water         |
| Menefee Member (MVRD)          | 4762        | 1898            | Coal, Sandstone, Shale | Possible Lost Circulation, Gas, Water         |
| Point Lookout Sandstone (MVRD) | 5238        | 1386            | Sandstone              | Possible Lost Circulation, Gas, Water         |
| Mancos Shale                   | 5426        | 1198            | Shale                  | Sloughing Shale                               |
| Gallup Formation (GLLP)        | 6730        | -106            | Siltstone, Shale       | Gas, Oil                                      |
| Greenhorn Limestone            | 7144        | -520            | Limestone              | Gas, Oil                                      |
| Graneros Shale                 | 7204        | -580            | Shale                  | Gas, Oil, Water                               |
| Dakota Formation (DKOT)        | 7229        | -605            | Sandstone, Shale, Coal | Gas, Oil, Water                               |
| Two Wells Sandstone (DKOT)     | 7229        | -605            | Sandstone              | Gas, Oil, Water                               |
| Paguate Sandstone (DKOT)       | 7327        | -703            | Sandstone              | Gas, Oil, Water                               |
| Upper Cubero Sandstone (DKOT)  | 7365        | -741            | Sandstone              | Gas, Oil, Water                               |
| Main Body (DKOT)               | 7402        | -778            | Shale, Sandstone       | Gas, Oil, Water                               |
| Lower Cubero (DKOT)            | 7451        | -827            | Shale, Sandstone       | Gas, Oil, Water                               |
| Burro Canyon (DKOT)            | 7485        | -861            | Sandstone              | Gas, Water - TD immediately below L. Cubero.  |
| Morrison Formation             |             |                 | Shale, Sandstone       | On-site pick when black/brown cuttings start. |
| Proposed TD                    | 7480        | -856            |                        | Avoid wet Burro Canyon.                       |

8/5-22-06

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 and 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 AND CEMENTING DESIGN:

##### Casing Program:

| <u>Hole Size</u> | <u>Depth</u>         | <u>Casing Size</u> |
|------------------|----------------------|--------------------|
| 12 1/4"          | 250'                 | 9 5/8"             |
| 8 3/4"           | 3357' +/- Lewis seat | 7"                 |
| 6 1/4"           | 7480'                | 4 1/2"             |

| Csg Size | Casing Type  | Top (MD) | Bottom (MD) | Wt. (lb./ft) | Grade | Thread | Condition |
|----------|--------------|----------|-------------|--------------|-------|--------|-----------|
| 9-5/8"   | Surface      | 0'       | 250'        | 36.0         | J55   | STC    | New       |
| 7"       | Intermediate | 0'       | 3357' +/-   | 23.0         | N80   | LTC    | New       |
| 4 1/2"   | Prod Liner   | 3237'    | 7480'       | 11.6         | N80   | LTC    | New       |

| Casing Data |           |       |        | Collapse (psi) | Burst (psi) | Min. Tensile (Lbs.) |
|-------------|-----------|-------|--------|----------------|-------------|---------------------|
| OD          | Wt/Ft     | Grade | Thread |                |             |                     |
| 9-5/8"      | 36.0 lbs. | J55   | STC    | 2,020          | 3,520       | 394,000             |
| 7"          | 23.0 lbs. | N80   | LTC    | 3,830          | 6,340       | 442,000             |
| 4 1/2"      | 11.6 lbs. | N80   | LTC    | 7,010          | 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:

3,500 - 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 Kirtland formation. One centralizer below stage tool and one centralizer above stage tool.

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

## Cementing Program:

### 9-5/8" Surface casing: 250'

165 sxs Type III cement with 2% CaCl<sub>2</sub>, 1/4#/sx celloflake. 100% excess to circulate cement to surface. WOC 12 hrs.

Slurry weight: 15.2 ppg  
Slurry yield: 1.27 ft<sup>3</sup>/sack

|               |                                  |             |
|---------------|----------------------------------|-------------|
| Volume basis: | 40' of 9-5/8" shoe joint         | 17.4 cu ft  |
|               | 250' of 12-1/4" x 9-5/8" annulus | 96.1 cu ft  |
|               | 100% excess (annulus)            | 96.1 cu ft  |
|               | Total                            | 209.6 cu ft |

Note:

1. Design top of cement is the surface.
2. Have available 100 sx Type III cement with 2% CaCl<sub>2</sub> for top out purposes.


### 7" Intermediate Casing: 3357'

1st Stage: 142 sacks of Type III cement: 3357' - 2475' (882')

Slurry weight: 14.5 ppg      Annular Vol = 132.6 cf + 66.3 cf (50% Access)  
Slurry yield: 1.4 ft<sup>3</sup>/sack      = 198.9 cf

2<sup>nd</sup> Stage: (Stage tool at 2475' +/-): 288 sacks of Premium Lite FM

Slurry weight: 12.4 ppg      Volume = 552.3 cf  
Slurry yield: 1.92 ft<sup>3</sup>/sack

4 



|                      |                                     |                    |
|----------------------|-------------------------------------|--------------------|
| <u>Volume Basis:</u> | 40' of 7" shoe joint                | 8.8 cu ft          |
|                      | <u>3107' of 7" x 8 3/4" annulus</u> | <u>467.1 cu ft</u> |
|                      | 250' of 7" x 9 5/8" csg             | 41.7 cu ft         |
|                      | <u>50% excess (annulus)</u>         | <u>233.6 cu ft</u> |
|                      | Total                               | 751.2 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: Air Drilled Hole 3357' - 7480' (4123')**

Stage 1: 267 sacks of Premium Lite High Strength FM out guide shoe.

Slurry weight: 12.3 ppg  
Slurry yield: 2.13 ft<sup>3</sup>/sack

|               |                                      |                    |
|---------------|--------------------------------------|--------------------|
| Volume basis: | 40' of 4 1/2" shoe joint             | 3.5 cu ft          |
|               | <u>4123' of 4 1/2" x 6 1/4" hole</u> | <u>423.1 cu ft</u> |
|               | 120' of 4 1/2" x 7" casing           | 13.3 cu ft         |
|               | <u>30% excess (annulus)</u>          | <u>126.9 cu ft</u> |
|               | Total                                | 566.8 cu ft        |

Note:

1. Design top of cement is 3237' +/- ft. or 120 ft. into 7" intermediate casing.
2. Actual cement volumes to be based on caliper log plus 30%.

**5. MUD PROGRAM:**

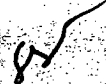
The surface hole will be drilled with spud mud. Gel and polymer sweeps will be used from surface to 250 feet as necessary to keep hole clean.

The intermediate hole will be drilled with water till mud up at about 2300 ft. From 2300' to 3357', intermediate casing depth, will be drilled with LSND mud. Anticipated mud weight ranges from 8.5 - 9.0 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.

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.

5 

**6. EVALUATION PROGRAM:**

Mud logger: None Planned

Testing: No DST is planned

Coring: None Planned

Electric logs:

Intermediate Hole: Non Planned

Production Hole: TMD-L or Open Hole Platform Express

**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: October 1, 2006**

Anticipated duration: 16 days

## Jicarilla A No. 4M

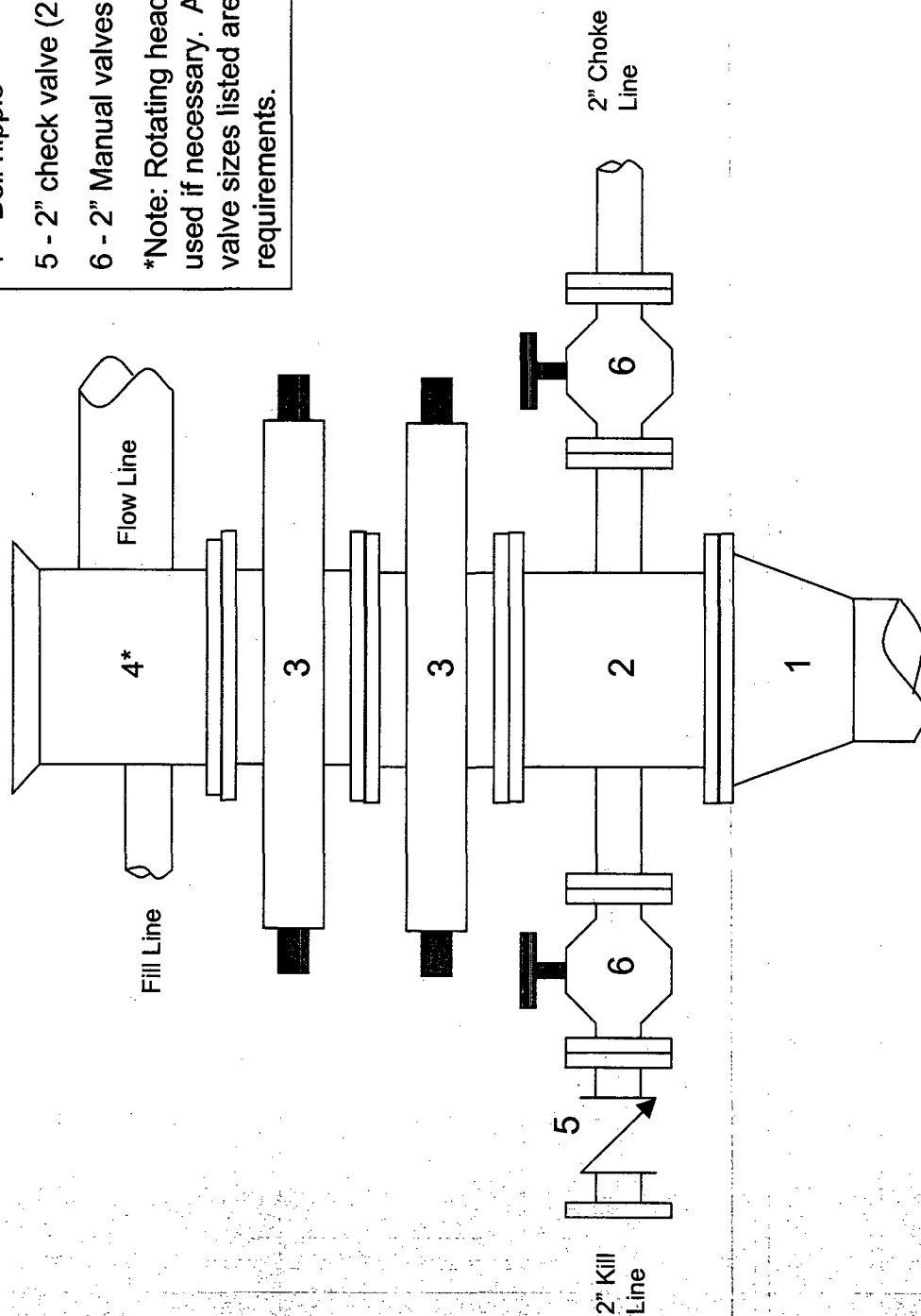
2000 psi BOP stack

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.



# Jicarilla A No. 4M

2000 psi Choke Manifold

Minimum requirements

## Components

- 1 – 2" Valve (2M)
- 2 – 2" Valve (2M)
- 3 – Mud cross with gauge (2M) flanged below the gauge.
- 4 – Replaceable beam choke (2M)
- 5 – Adjustable needle choke (2M)

Note: All line and valve sizes listed are minimum requirements.

