

UNITED STATES 6 PM 3 00

DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

FORM APPROVED OMB  
No. 1004-0137  
Expires March 31, 2007

5. Lease Serial No. Jicarilla Contract 108
6. If Indian, Allottee or Tribe Name Jicarilla Apache
7. If Unit or CA Agreement, Name and No.
8. Lease Name and Well No. Jicarilla C #4F
9. API Well No. 30-039-29590
10. Field and Pool, or Exploratory Blanco Mesaverde/Basin Dakota
11. Sec., T. R. M. or Blk. and Survey or Area N Sec. 24, T-26-N, R-5-W
12. County or Parish Rio Arriba
13. State NM

1 a. TYPE OF WORK: ☒ DRILL ☐ REENTER

1 b. TYPE OF WELL: ☐ Oil Well ☒ Gas Well ☐ Other ☐ Single Zone ☒ Multiple Zone

2. NAME OF OPERATOR:  
CDX Rio, LLC

3 a. 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 660'FSL, 2100'FWL

At proposed prod. zone

14. Distance in miles and direction from nearest town or post office\*  
30 miles east of Lindrith, New Mexico

15. Distance from proposed\*  
location to nearest  
property or lease line, ft. 660'  
(Also to nearest drig. unit line, if any)

16. No. of acres in lease

17. Spacing Unit dedicated to this well:  
320 W/2

18. Distance from proposed location\*  
to nearest well, drilling, completed,  
applied for, on this lease, ft. 1500'

19. Proposed Depth  
7550'

20. BLM/BIA Bond No. on file  
National Bond on file

21. Elevations (Show whether DF, KDB, RT, GL, etc.)  
6588' 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 plan certified by a registered surveyor.                                                                                                | 4. Bond to cover the operations unless covered by an existing bond on file (see item 20 above).    |
| 2. A Drilling Plan.                                                                                                                             | 5. Operator certification.                                                                         |
| 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). | 6. Such other site specific information and/or plans as may be required by the authorized officer. |

25. Signature	Name (Printed/Typed) Richard Corcoran	Date 6/28/05
Title Land Manager		

Approved by (Signature)	Name (Printed/Typed)	Date 11/17/05
Title AFM	Office FFO	

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 page 2)

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".

NMOCD

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CDX Rio, LLC

3 a. Address: 4801 N. Butler Avenue, #2000  
Farmington, New Mexico 87401

3b. Phone No. (include area code)  
(505) 326-3003

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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

05/12/2005

Title

Land Manager

Approved by (Signature)

Name (Printed/Typed)

Date

Title

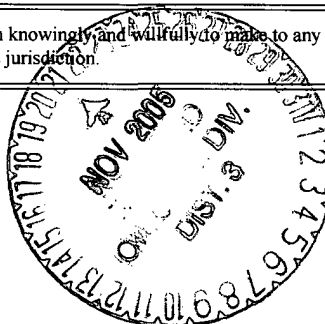
Office

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States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

\*(Instructions on page 2)



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

DISTRICT II  
1301 W. Grand Ave., Artesia, N.M. 88210

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

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

State of New Mexico  
Energy, Minerals & Natural Resources Department

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

Form C-102  
Revised June 10, 2003  
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 30-039- 29590	<sup>2</sup> Pool Code 72319/71599	<sup>3</sup> Pool Name Blanco Mesaverde/Basin Dakota
<sup>4</sup> Property Code 33461	<sup>5</sup> Property Name JICARILLA C-	<sup>6</sup> Well Number 4F
<sup>7</sup> OGRIID No. 222374	<sup>8</sup> Operator Name CDX GAS, LLC	<sup>9</sup> Elevation 6588'



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

UL or lot no. N	Section 24	Township 26-N	Range 5-W	Lot Idn	Feet from the 660	North/South line SOUTH	Feet from the 2100	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/320 DK - W/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

<sup>16</sup> CALC'D CORNER BY DBL. PROP.  5299.73' (C)  N 00-22-31 W  2100'  CALC'D CORNER BY DBL. PROP. S 88-51-57 E 660'	          LAT. 36°28'00.4"N (NAD 83) LONG. 107°18'44.2" W (NAD 83)  5338.43' (C)	          CALC'D CORNER BY SGL. PROP.	<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.   Signature Richard Corcoran Printed Name Land Manager Title 5/10/05 Date  <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.   Date Signature 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. 30-039- <b>29590</b>
5. Indicate Type of Lease STATE <input type="checkbox"/> FEE <input type="checkbox"/>
6. State Oil & Gas Lease No. Jicarilla Contract 108
7. Lease Name or Unit Agreement Name Jicarilla C
8. Well Number 4F
9. OGRID Number 222374
10. Pool name or Wildcat Blanco Mesaverde/Basin Dakota
11. Elevation (Show whether DR, RKB, RT, GR, etc.) 6588' 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>450'</u> Distance from nearest fresh water well <u>&gt;1000'</u> Distance from nearest surface water <u>&gt;1000'</u>
Pit Liner Thickness: <u>12</u> mil Below-Grade Tank: Volume _____ bbls; Construction Material _____

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.

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.

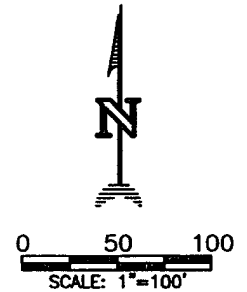
I hereby certify that the information above is true and complete to the best of my knowledge and belief. I further certify that any pit or below-grade tank has been/will be constructed or closed according to NMOCD guidelines ☒, a general permit ☐ or an (attached) alternative OCD-approved plan ☐.

SIGNATURE Nancy Oltmanns TITLE Agent DATE 6/28/05  
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. III DATE NOV 21 2005  
Conditions of Approval (if any): \_\_\_\_\_

LAT. = 36°28'00.4" N.  
LONG. = 107°18'44.2" W  
NAD 83



ELEV.	C-C'	C/L
6600		
6590		
6580		
6570		

REVISION:	DATE:	REVISED BY:
		
<p><b>Daggett Enterprises, Inc.</b>  <b>Surveying and Oil Field Services</b>  P. O. Box 15068 • Farmington, NM 87401  Phone (505) 328-1772 • Fax (505) 328-6019  NEW MEXICO L.S. No. 14831</p>		
DRAWN BY: B.L.	CURLIE: CDXGAS089CFB	
ROW# CDXGAS08	DATE: 04/09/05	

**Jicarilla C No. 4F  
General Drilling Plan  
CDX Rio, LLC  
Rio Arriba County, New Mexico**

**1. LOCATION:**

SESW of Section 24, T26N, R5W  
Rio Arriba County, New Mexico

Field: Blanco MV & Basin DK  
Surface: Jicarilla Contract #108  
Minerals: Jicarilla Contract #108

**2. SURFACE FORMATION, 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	2234	4355	Sandstone	Possible Differential, Gas, Water
Kirtland Formation	2628	3961	Shale	
Fruitland Formation	2868	3721	Coal, Shale, Sandstone	Possible Lost Circulation Zone, Gas, Water
Pictured Cliffs Sandstone	3061	3528	Sandstone	Possible Differential, Gas, Water
Lewis Shale	3154	3435	Shale	
Huerfano Bentonite Bed	3534	3055	Shale	
Chacra Interval	3982	2607	Siltstone	Gas, Water
Mesaverde Formation (MVRD)	4728	1861	Coal, Sandstone, Shale	Possible Lost Circulation, Gas, Water
Cliff House Sandstone (MVRD)	4728	1861	Sandstone	Possible Lost Circulation, Gas, Water
Menefee Member (MVRD)	4839	1750	Coal, Sandstone, Shale	Possible Lost Circulation, Gas, Water
Point Lookout Sandstone (MVRD)	5287	1302	Sandstone	Possible Lost Circulation, Gas, Water
Mancos Shale	5474	1115	Shale	
Gallup Formation (GLLP)	6467	122	Siltstone, Shale	Gas
Greenhorn Limestone	7194	-605	Limestone	Gas
Graneros Shale	7255	-666	Shale	Gas, Water, Possible Overpressure
Dakota Formation (DKOT)	7289	-700	Sandstone, Shale, Coal	Gas, Water, Possible Overpressure
Two Wells Sandstone (DKOT)	7289	-700	Sandstone	Gas, Water, Possible Overpressure
Paguate Sandstone (DKOT)	7376	-787	Sandstone	Gas, Water, Possible Overpressure
Upper Cubero Sandstone (DKOT)	7413	-824	Sandstone	Gas, Water, Possible Overpressure
Main Body (DKOT)	7444	-855	Shale, Sandstone	Gas, Water, Possible Overpressure
Lower Cubero (DKOT)	7490	-901	Shale, Sandstone	Gas, Water, Possible Overpressure
Burro Canyon (DKOT)			Sandstone	Gas, Water, Possible Overpressure
Morrison Formation			Shale, Sandstone	Gas, Water, Possible Overpressure
Proposed TD	7514	-925		

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:

Hole Size	Depth	Casing Size
12 1/4"	250'	9 5/8"
8 3/4"	3500' +/- Lewis seat	7"
6 1/4"	7550'	4 1/2"

Hole 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'	3500' +/-	23.0	N80	LTC	New
4 1/2"	Production	0	7550'	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	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: 3,500 - 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 Pictured Cliffs 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:

140 sxs Type III cement with 2%  $\text{CaCl}_2$ , 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 cu ft
	250' of 12-1/4" x 9-5/8" annulus	78 cu ft
	<u>100% excess (annulus)</u>	<u>78 cu ft</u>
	Total	173 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:

1st Stage: 175 sacks of Type III cement

Slurry weight: 14.5 ppg  
Slurry yield: 1.4 ft<sup>3</sup>/sack

2<sup>nd</sup> Stage: (Stage tool at 3000' +/-): 365 sacks of Premium Lite FM

Slurry weight: 12.4 ppg  
Slurry yield: 1.92 ft<sup>3</sup>/sack

Volume Basis: 40' of 7" shoe joint 9 cu ft

3250' of 7" x 8 3/4" annulus	684 cu ft
250' of 7" x 9 5/8" hole	42 cu ft
<u>30% excess (annulus)</u>	<u>204 cu ft</u>
Total	939 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:**

Stage 1: 180 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	5 cu ft
	4 1/2 " x 6 1/4" hole	257 cu ft
	4 1/2" x 7" casing	33 cu ft
	<u>30% excess (annulus)</u>	<u>88 cu ft</u>
	Total	383 cu ft

Note:

1. Design top of cement is 3200 +/- ft. or 300 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 3500', 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.

# Jicarilla C No. 4F

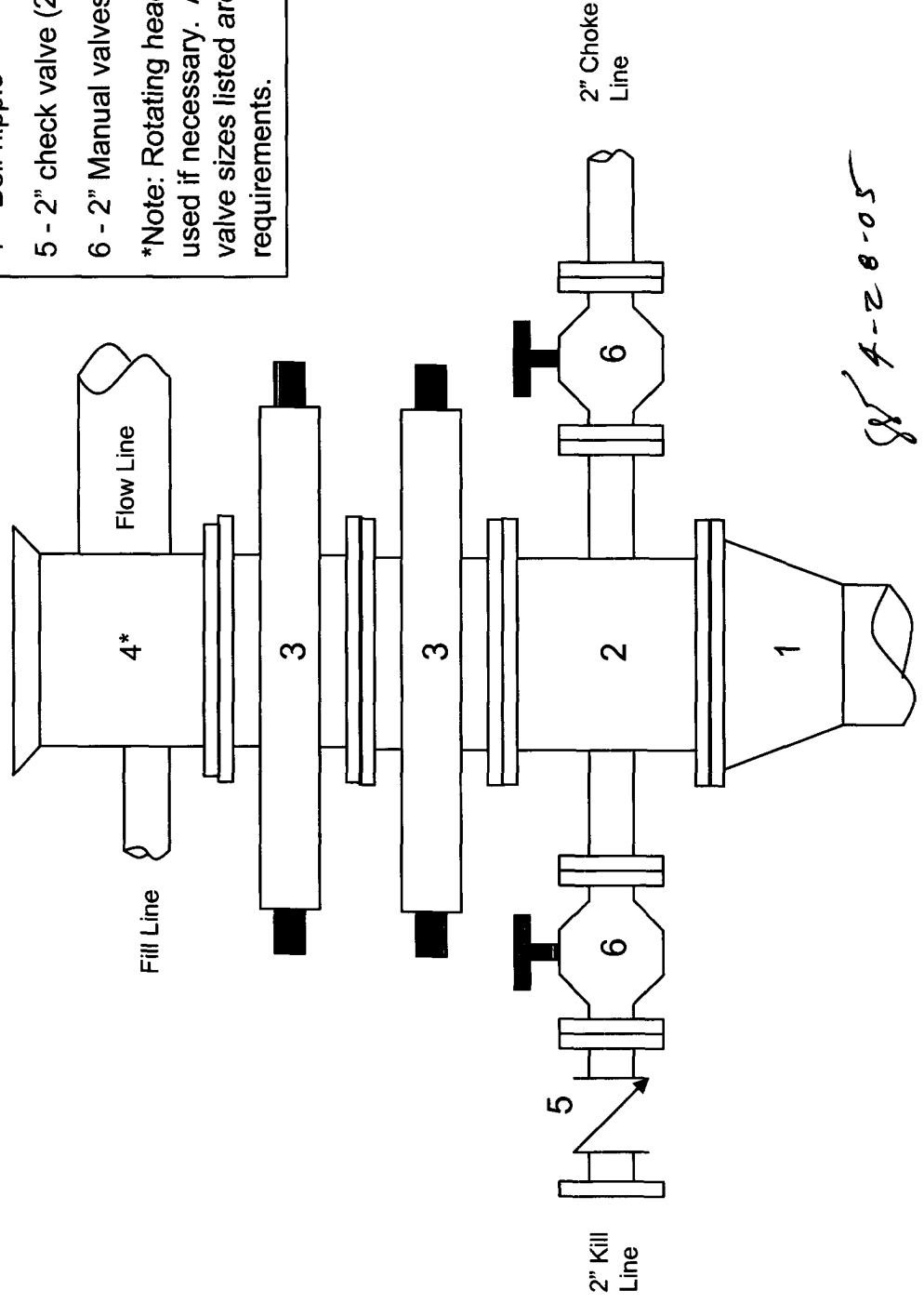
2000 psi BOP stack

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.



8/4-28-05

# Jicarilla C No. 4F

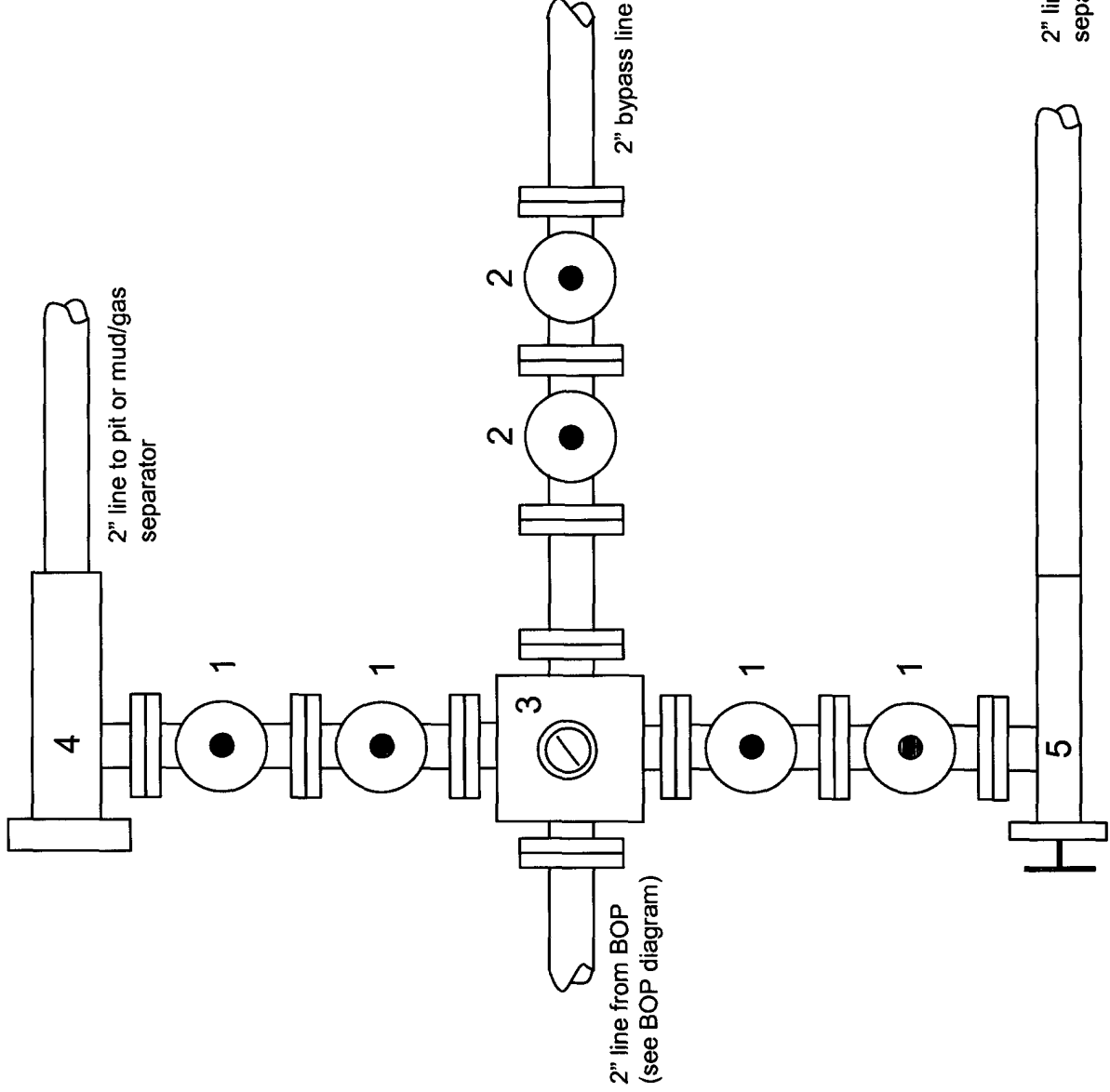
## 2000 psi Choke Manifold

### 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.



2" line to pit or mud/gas separator

W 4.28.05