

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

2006 JUL 20 6M 4

RECEIVED

070 FARMINGTON NM

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 845' FNL, 1980' FWL, Lat. 36 31' 13.1", Long. 107 14' 26.6"

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. (Also to nearest drig. unit line, if any) 845'

16. No. of Acres in lease

17. Spacing Unit dedicated to this well

MV-321.68 W/2

DK-322.82 N/2

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

500'

19. Proposed Depth

7650'

20. BLM/BIA Bond No. on file

National bond on file

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

7203' 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

Name (Printed/Typed)

Date

Title

Richard Corcoran

7-18-06

Land Manager

Approved by (Signature)

Name (Printed/Typed)

Date

Title

Office

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)

NMOCD

Entered 9-14

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

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., Aztec, 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

*API Number 30-039-30068		*Pool Code 72319/71599	*Pool Name Blanco Mesaverde/Basin Dakota
*Property Code 33455	*Property Name JICARILLA, 102 <i>Apache</i>		*Well Number 7N
*GRID No. 222374	*Operator Name CDX RIO, LLC		*Elevation 7203

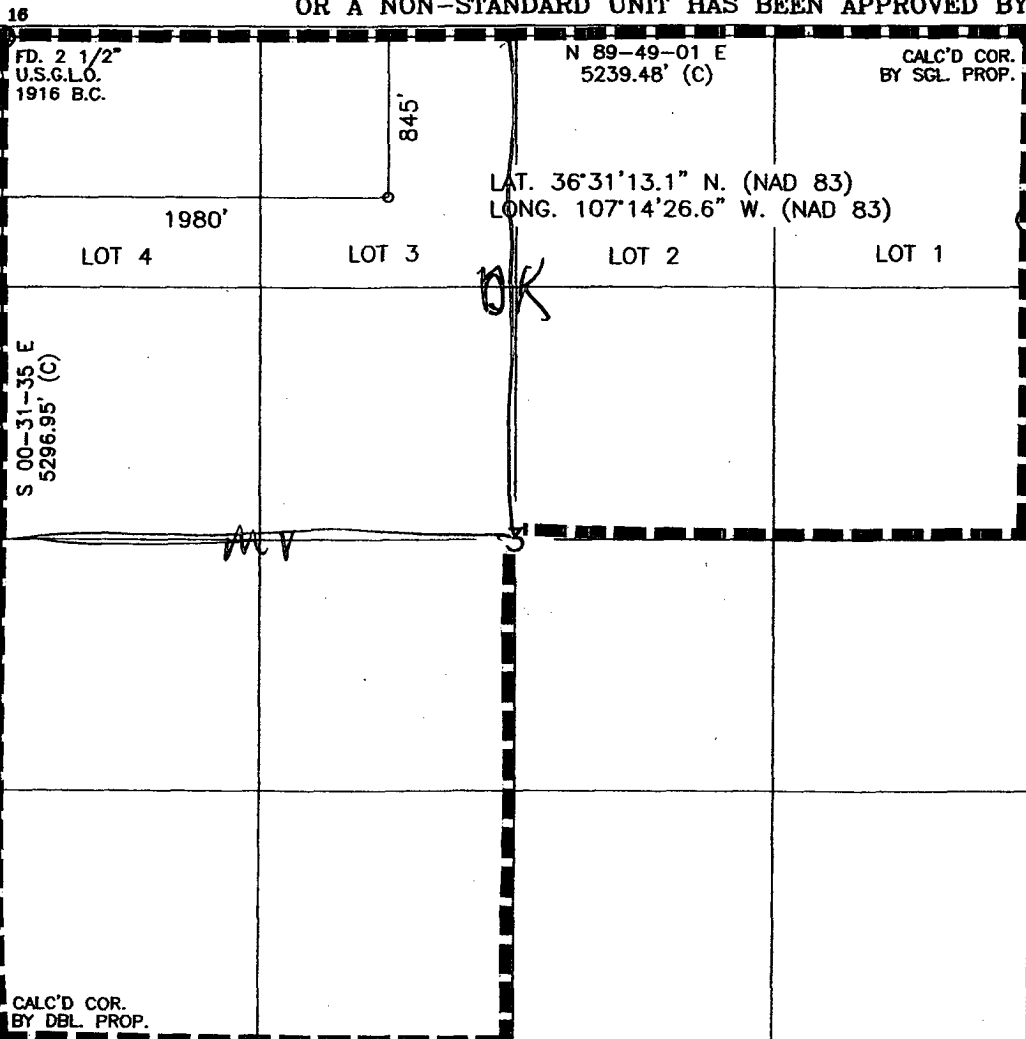
¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
C	3	26-N	4-W	3	845	NORTH	1980	WEST	RIO ARRIBA

¹¹ 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
*Dedicated Acres MV - W/321.68 DK - N/322.82			*Joint or Infill Y		*Consolidation Code		*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.

Richard Corcoran
Signature
Richard Corcoran
Printed Name
Land Manager rich.corcoran@cdxgas.com
Title
7-18-06
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.

SEPTEMBER 11, 2006
Date
Signature
NEW MEXICO
REGISTERED PROFESSIONAL SURVEYOR
14831
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- <u>30068</u>
5. Indicate Type of Lease STATE <input type="checkbox"/> FEE <input type="checkbox"/>
6. State Oil & Gas Lease No. Jicarilla 102
7. Lease Name or Unit Agreement Name Jicarilla 102
8. Well Number 7N
9. OGRID Number 222374
10. Pool name or Wildcat Blanco Mesaverde/Basin Dakota

11. Elevation (Show whether DR, RKB, RT, GR, etc.)
7203' GR

Pit or Below-grade Tank Application ☐ or Closure ☐ > 200'

Pit type New Drill Depth to Groundwater < 100' Distance from nearest fresh water well < 1000' Distance from nearest surface water < 1000'

Pit Liner Thickness: 12 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 Sundry ☒

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.

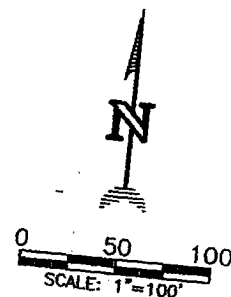
I hereby certify that the information above is true and complete to the best of my knowledge and belief. I further certify that any pit or below-grade tank has been/will be constructed or closed according to NMOC guidelines ☐, a general permit ☐ or an (attached) alternative OCD-approved plan ☐.

SIGNATURE Nancy Oltmanns TITLE Regulatory Consultant DATE 12/22/05

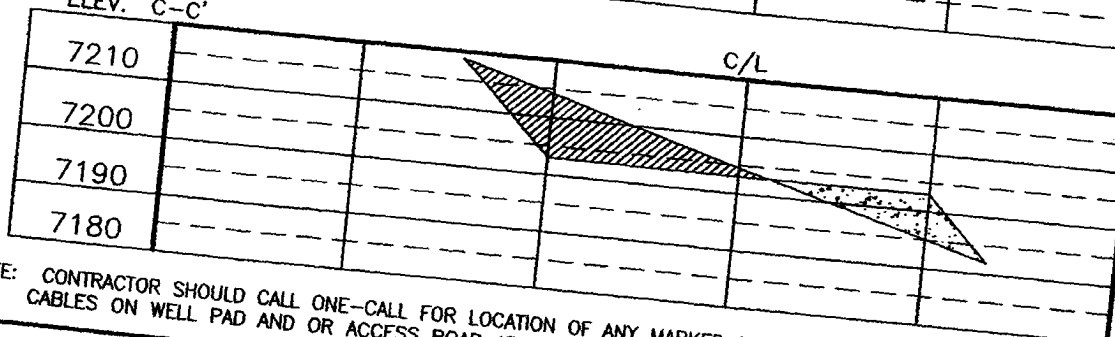
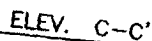
Type or print name Nancy Oltmanns E-mail address: nancy.oltmanns@cdxgas.com Telephone No. (505) 326-3003
For State Use Only

APPROVED BY: [Signature] TITLE DEPUTY OIL & GAS INSPECTOR, DIST. #3 DATE SEP 07 2006
Conditions of Approval (if any): _____


LAT. = 36°31'13.1" N.
LONG. = 107°14'26.6" W
NAD 83



ELEV. A-A'



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.

DATE		RECEIVED BY	
			
Daggett Enterprises, Inc. Surveying and Oil Field Services P. O. Box 15088 • Farmington, NM 87401 Phone (505) 326-1772 • Fax (505) 326-8019 NEW MEXICO L.S. No. 14931			
DRAWN BY: G.V.		COWLEY CDXGAS081 CFB	
ROW# CDXGAS081		DATE: 09/29/05	

Jicarilla 102 7N
General Drilling Plan
CDX Rio, LLC
Rio Arriba County, New Mexico

1. LOCATION:

845' FNL & 1980' FWL, Section 3, T26N, R4W
Rio Arriba County, New Mexico
UGL: 7203' Estimated KB: 7215

Field: Blanco Mesaverde and Basin Dakota
Surface: Jicarilla Contract #102
Minerals: Jicarilla Contract #102

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	3649	3566	Sandstone	Possible Differential Sticking, Gas, Water
Kirtland Formation	3813	3402	Shale	
Fruitland Formation	3918	3297	Coal, Shale, Sandstone	Possible Lost Circulation Zone, Gas, Water
Pictured Cliffs Sandstone	3969	3246	Sandstone	Possible Lost Circulation Zone, Gas, Water
Lewis Shale	4082	3133	Shale	Sloughing Shale
Huerfanito Bentonite Bed	4476	2739	Shale	Bentonite Shale
Chacra Interval	4927	2288	Siltstone	Gas, Water
Mesaverde Formation (MVRD)	5670	1545	Coal, Sandstone, Shale	Possible Lost Circulation, Gas, Water
Cliff House Sandstone (MVRD)	5670	1545	Sandstone	Possible Lost Circulation, Gas, Water
Menefee Member (MVRD)	5777	1438	Coal, Sandstone, Shale	Possible Lost Circulation, Gas, Water
Point Lookout Sandstone(MVRD)	6160	1056	Sandstone	Possible Lost Circulation, Gas, Water
Mancos Shale	6248	967	Shale	Sloughing Shale
Gallup Formation (GLLP)	7351	-136	Siltstone, Shale	Gas, Oil
Greenhorn Limestone	8104	-889	Limestone	Gas, Oil
Graneros Shale	8160	-945	Shale	Gas, Oil, Water
Dakota Formation (DKOT)	8185	-970	Sandstone, Shale, Coal	Gas, Oil, Water
Two Wells Sandstone (DKOT)	8185	-970	Sandstone	Gas, Oil, Water
Paguate Sandstone (DKOT)	8278	-1063	Sandstone	Gas, Oil, Water
Upper Cubero Sandstone(DKOT)	8327	-1112	Sandstone	Gas, Oil, Water
Main Body (DKOT)	8364	-1149	Shale, Sandstone	Gas, Oil, Water
Lower Cubero (DKOT)	8408	-1193	Shale, Sandstone	Gas, Oil, Water
Burro Canyon (DKOT)	8437	-1222	Sandstone	Gas, Water - TD immediately below L. Cubero.
Morrison Formation			Shale, Sandstone	On-site pick when black/brown cuttings start.
Proposed TD	8428	-1213		Avoid wet Burro Canyon.

1 8/7-18-06

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.

2 

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"	4376' +/- Lewis seat	7"
6 1/4"	8428'	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'	4376' +/-	23.0	N80	LTC	New
4 1/2"	Prod Liner	4256'	8428'	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

6350

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% CaCl₂, 1/4#/sx celloflake. 100% excess to circulate cement to surface. WOC 12 hrs.

Slurry weight: 15.2 ppg
Slurry yield: 1.27 ft³/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
	<u>100% excess (annulus)</u>	<u>96.1 cu ft</u>
	Total	209.6 cu ft

Note:

1. Design top of cement is the surface.
2. Have available 100 sx Type III cement with 2% CaCl₂ for top out purposes.

7" Intermediate Casing: '

1st Stage: 107 sacks of Type III cement: 4376' - 3713' (663')

Slurry weight: 14.5 ppg Annular Vol = 99.7 cf + 49.9 cf (50% Access)

Slurry yield: 1.4 ft³/sack = 149.6cf

2nd Stage: (Stage tool at 3713' +/-): 433 sacks of Premium Lite FM

Slurry weight: 12.4 ppg Volume = 831.4 cf

Slurry yield: 1.92 ft³/sack

4 

<u>Volume Basis:</u>	40' of 7" shoe joint	8.8 cu ft
	<u>4126' of 7" x 8 3/4" annulus</u>	<u>620.3 cu ft</u>
	250' of 7" x 9 5/8" csg	41.7 cu ft
	<u>50% excess (open hole annulus)</u>	<u>310.2 cu ft</u>
	Total	981.0 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 4376' – 8428' (4052')

Stage 1: 262 sacks of Premium Lite High Strength FM out guide shoe.

Slurry weight: 12.3 ppg

Slurry yield: 2.13 ft³/sack

Volume basis:	40' of 4 1/2" shoe joint	3.5 cu ft
	<u>4052' of 4 1/2" x 6 1/4" hole</u>	<u>415.8 cu ft</u>
	120' of 4 1/2" x 7" casing	13.3 cu ft
	<u>30% excess (annulus)</u>	<u>124.7 cu ft</u>
	Total	557.3 cu ft

Note:

1. Design top of cement is 4256' +/- 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 4376', 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 ₂ 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: December 1, 2006

Anticipated duration: 16 days

6 

Jicarilla 102 No. 7N

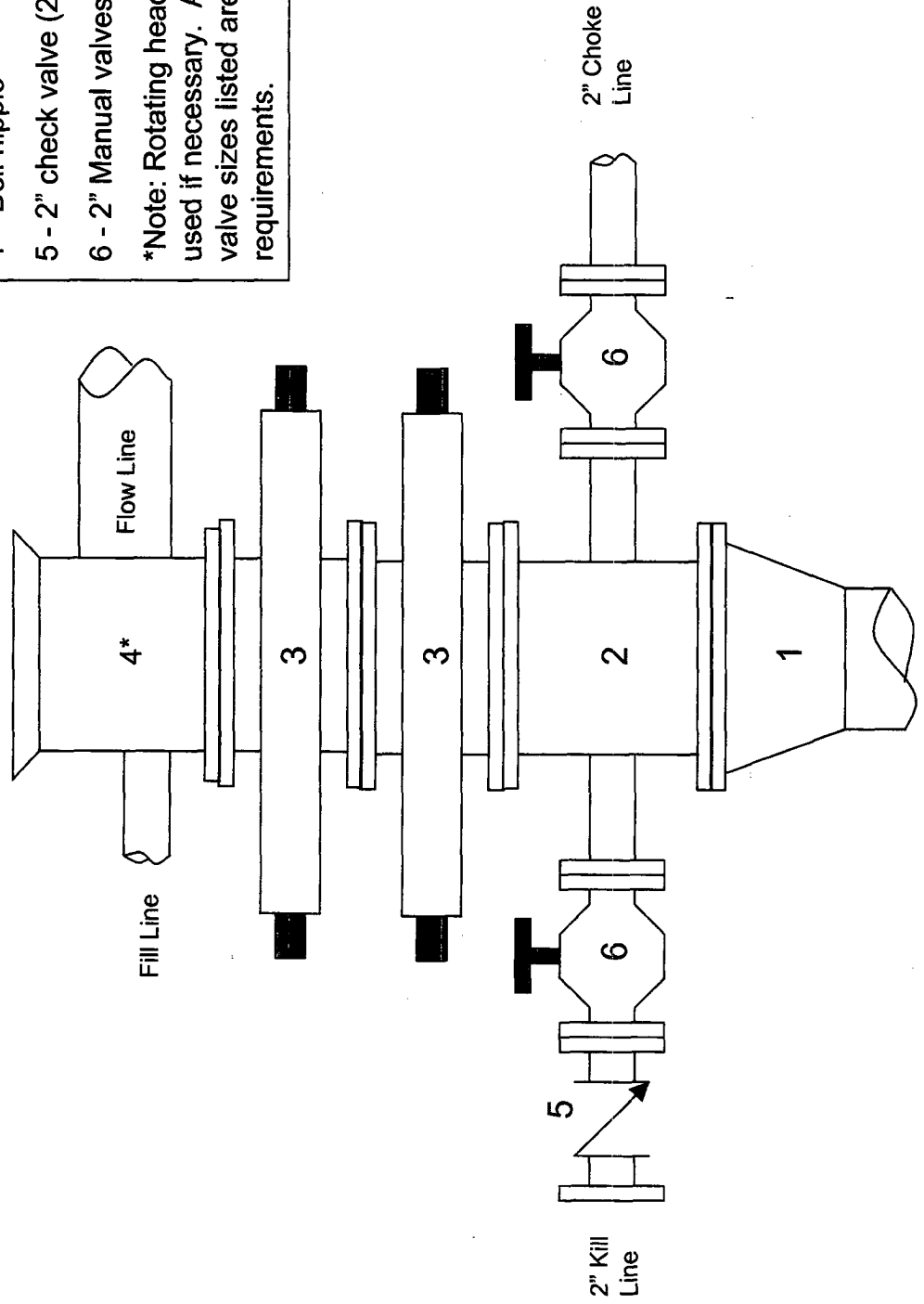
2000 psi BOP stack

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 102 No. 7N

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.

