

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: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. Jicarilla Contract 151	
1b. Type of Well: <input type="checkbox"/> Oil Well <input checked="" type="checkbox"/> Gas Well <input type="checkbox"/> Other <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		6. If Indian, Allottee or Tribe Name Jicarilla Apache	
2. Name of Operator CDX RIO, LLC		7. If Unit or CA Agreement, Name and No.	
3a. Address 2010 Afton Place, Farmington, New Mexico 87401		8. Lease Name and Well No. Jicarilla 151 #6G Apache Tribal	
3b. Phone No. (include area code) (505) 326-3003		9. API Well No. 30-039-29948	
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface 1590' FSL, 460' FEL, Lat: 36 29' 55.6" N, Long: 107 21' 25.8" W At proposed prod. zone		10. Field and Pool, or Exploratory Basin Dakota	
14. Distance in miles and direction from nearest town or post office* 30 miles from Lindrith, New Mexico		11. Sec., T., R., M., or Blk. and Survey or Area I Section 9, T-26-N, R-5-W	
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 460'		12. County or Parish Rio Arriba	
16. No. of Acres in lease		13. State NM	
17. Spacing Unit dedicated to this well 320 34880 E/2			
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 700'		20. BLM/BIA Bond No. on file National Bond on file	
19. Proposed Depth 7997'		21. Elevations (Show whether DF, KDB, RT, GL, etc.) 6993' 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. | 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 <i>Richard Corcoran</i>	Name (Printed/Typed) Richard Corcoran	Date 6-1-06
Title		
Land Manager		
Approved by (Signature) <i>[Signature]</i>	Name (Printed/Typed)	Date 9/5/06
Title AFM	Office FRO	

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".

NMOC

NSL-5413

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

¹ API Number 30-039-29948	² Pool Code 71599	³ Pool Name Basin Dakota
⁴ Property Code 33458	⁵ Property Name JICARILLA 151 Apache Tribal	⁶ Well Number 6G
⁷ GRID No. 222374	⁸ Operator Name CDX RIO, LLC	⁹ Elevation 6993'

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
1	9	26-N	5-W		1590'	SOUTH	460'	EAST	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
¹² Dedicated Acres DK - E/379.88 320					¹³ Joint or Infill Y		¹⁴ Consolidation Code		¹⁵ Order No. N 5L 5413

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

16

CALC'D COR. BY DBL. PORP.		17 OPERATOR CERTIFICATION	
		I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief	
CALC'D COR. BY DBL. PORP.		Signature <i>Richard Corcoran</i>	
		Richard Corcoran Printed Name	
CALC'D COR. BY DBL. PORP.		Land Manager rich.corcoran@cdxgas.com	
		Title and E-mail Address	
CALC'D COR. BY DBL. PORP.		Date 6-1-06	
		18 SURVEYOR CERTIFICATION	
CALC'D COR. BY DBL. PORP.		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.	
		OCTOBER 10, 2006 Date of Survey	
CALC'D COR. BY DBL. PORP.		Signature <i>[Signature]</i>	
		NEW MEXICO REGISTERED PROFESSIONAL SURVEYOR 71824 21-0	
CALC'D COR. BY DBL. PORP.		Certificate Number	
		N 89-53-11.8 W 5332.1' (C)	

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- 29948
5. Indicate Type of Lease STATE <input type="checkbox"/> FEE <input type="checkbox"/>
6. State Oil & Gas Lease No. Jicarilla Contract 151
7. Lease Name or Unit Agreement Name Jicarilla 151
8. Well Number 6G
9. OGRID Number 222374
10. Pool name or Wildcat Basin Dakota
11. Elevation (Show whether DR, RKB, RT, GR, etc.) 6993' GR
Pit or Below-grade Tank Application <input type="checkbox"/> or Closure <input type="checkbox"/>
Pit type New Drill <input type="checkbox"/> Depth to Groundwater <100' Distance from nearest fresh water well >1000' Distance from nearest surface water >200'
Pit Liner Thickness: 12 mil Below-Grade Tank: Volume bbls; Construction Material

SUNDRY NOTICES AND REPORTS ON WELLS
(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.)

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

2. Name of Operator
CDX RIO, LLC

3. Address of Operator
2010 Afton Place, Farmington, New Mexico 87401

4. Well Location

Unit Letter I : 1590' feet from the South line and 460' feet from the East line
Section 9 Township 26N Range 5W NMPM Rio Arriba County

11. Elevation (Show whether DR, RKB, RT, GR, etc.)
6993' GR

Pit or Below-grade Tank Application ☐ or Closure ☐

Pit type New Drill ☐ Depth to Groundwater <100' Distance from nearest fresh water well >1000' Distance from nearest surface water >200'

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
X

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 Agent DATE 6/1/06

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. 40 DATE SEP 07 2006
Conditions of Approval (if any):

Jicarilla 151 6G
General Drilling Plan
CDX Rio, LLC
Rio Arriba County, New Mexico

1. LOCATION:

1590' FSL & 460' FEL, Section 9, T26N, R5W
Rio Arriba County, New Mexico
UGL: 6993' Estimated KB: 7005'

Field: Basin Dakota
Surface: Jicarilla Contract #151
Minerals: Jicarilla Contract #151

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	2760	4245	Sandstone	Possible Differential Sticking, Gas, Water
Kirtland Formation	3183	3822	Shale	
Fruitland Formation	3415	3590	Coal, Shale, Sandstone	Possible Lost Circulation Zone, Gas, Water
Pictured Cliffs Sandstone	3576	3429	Sandstone	Possible Lost Circulation Zone, Gas, Water
Lewis Shale	3660	3345	Shale	Sloughing Shale
Huerfano Bentonite Bed	4039	2966	Shale	Bentonite Shale
Chacra Interval	4467	2538	Siltstone	Gas, Water
Mesaverde Formation (MVRD)	5236	1769	Coal, Sandstone, Shale	Possible Lost Circulation, Gas, Water
Cliff House Sandstone (MVRD)	5236	1769	Sandstone	Possible Lost Circulation, Gas, Water
Menefee Member (MVRD)	5336	1669	Coal, Sandstone, Shale	Possible Lost Circulation, Gas, Water
Point Lookout Sandstone(MVRD)	5735	1270	Sandstone	Possible Lost Circulation, Gas, Water
Mancos Shale	5952	1053	Shale	Sloughing Shale
Gallup Formation (GLLP)	6937	68	Siltstone, Shale	Gas, Oil
Greenhorn Limestone	7676	-671	Limestone	Gas, Oil
Graneros Shale	7739	-734	Shale	Gas, Oil, Water
Dakota Formation (DKOT)	7777	-772	Sandstone, Shale, Coal	Gas, Oil, Water
Two Wells Sandstone (DKOT)	7777	-772	Sandstone	Gas, Oil, Water
Paguate Sandstone (DKOT)	7856	-851	Sandstone	Gas, Oil, Water
Upper Cubero Sandstone(DKOT)	7893	-888	Sandstone	Gas, Oil, Water
Main Body (DKOT)	7929	-924	Shale, Sandstone	Gas, Oil, Water
Lower Cubero (DKOT)	7970	-965	Shale, Sandstone	Gas, Oil, Water
Burro Canyon (DKOT)	8004	-999	Sandstone	Gas, Water - TD immediately below L. Cubero.
Morrison Formation			Shale, Sandstone	On-site pick when black/brown cuttings start.
Proposed TD	7997	-992		Avoid wet Burro Canyon.

1 *SV* 5-26-06

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"	3939' +/- Lewis seat	7"
6 1/4"	7997'	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'	3939' +/-	23.0	N80	LTC	New
4 1/2"	Prod Liner	3819'	7997'	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 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

3 

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: 3939'

1st Stage: 138 sacks of Type III cement: 3939' - 3083' (856')

Slurry weight: 14.5 ppg Annular Vol = 128.7 cf + 64.4 cf (50% Access)
Slurry yield: 1.4 ft³/sack = 193.1 cf

2nd Stage: (Stage tool at 3083' +/-): 360 sacks of Premium Lite FM

Slurry weight: 12.4 ppg Volume = 689.3 cf
Slurry yield: 1.92 ft³/sack

4 8✓

<u>Volume Basis:</u>	40' of 7" shoe joint	8.8 cu ft
	<u>3689' of 7" x 8 3/4" annulus</u>	<u>554.6 cu ft</u>
	250' of 7" x 9 5/8" csg	41.7 cu ft
	<u>50% excess (open hole annulus)</u>	<u>277.3 cu ft</u>
	Total	882.4 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 3939' – 7997' (4058')

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>4058' of 4 1/2 " x 6 1/4" hole</u>	<u>416.4 cu ft</u>
	120' of 4 1/2" x 7" casing	13.3 cu ft
	<u>30% excess (annulus)</u>	<u>124.9 cu ft</u>
	Total	558.1 cu ft

Note:

1. Design top of cement is 3819' +/- 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 3939', 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: November 15, 2006

Anticipated duration: 16 days

Jicarilla 151 6G

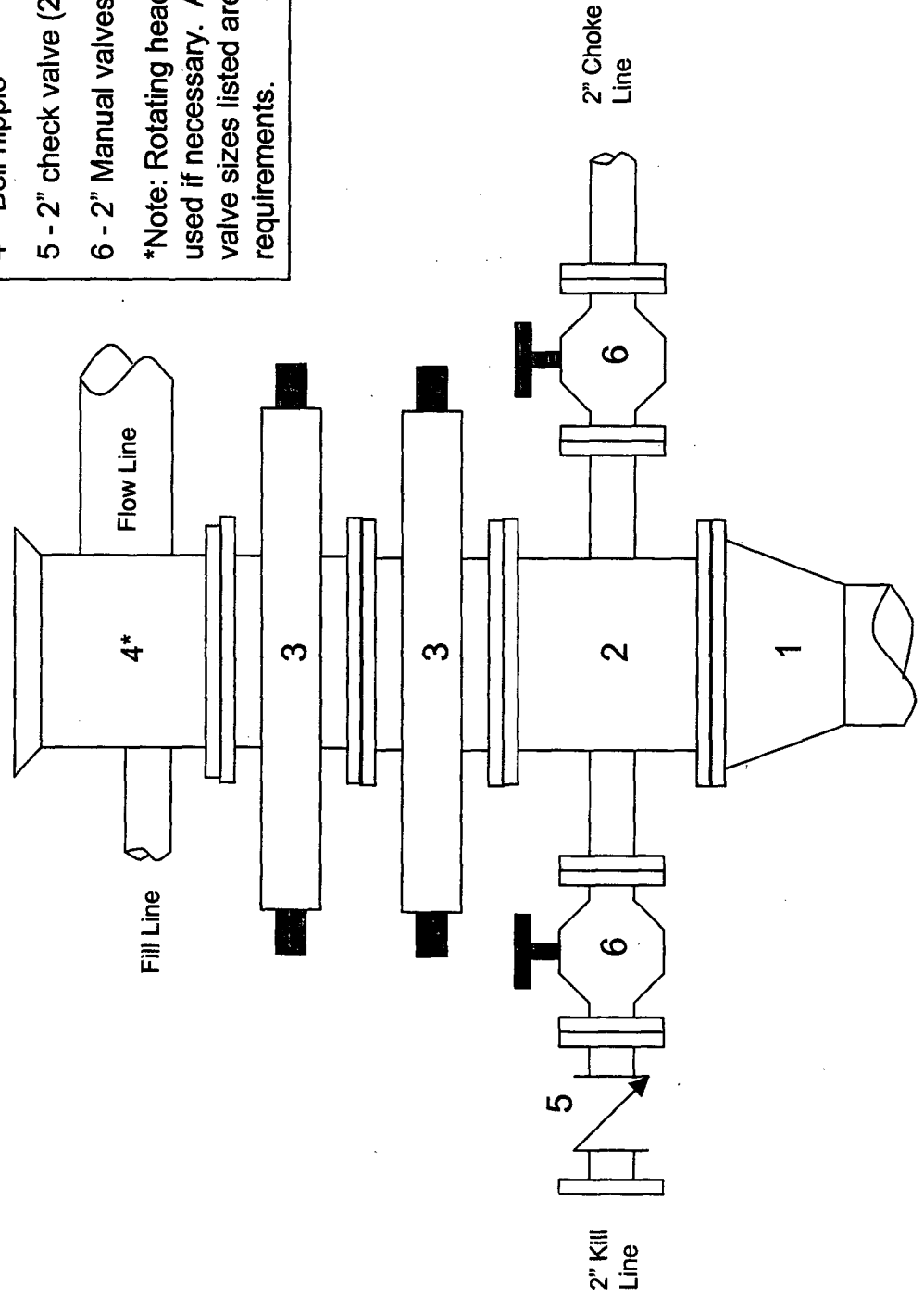
2000 psi BOP stack

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 151 No. 6G

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.

