

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 108
1b. Type of Well: <input type="checkbox"/> Oil Well <input checked="" type="checkbox"/> Gas Well <input type="checkbox"/> Other <input type="checkbox"/> Single Zone <input checked="" 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	3b. Phone No. (include area code) (505) 326-3003	8. Lease Name and Well No. Jicarilla C #2M
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface 150' FSL, 275' FWL, Lat: 36 28' 48.5", Long: 107 20' 11.4" At proposed prod. zone		9. API Well No. 30-039-29927
14. Distance in miles and direction from nearest town or post office* 30 miles from Lindrith, New Mexico		10. Field and Pool, or Exploratory Blanco Mesaverde/Basin Dakota
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 150'	16. No. of Acres in lease	11. Sec., T., R., M., or Blk. and Survey or Area M Section 14, T-26-N, R-5-W
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 300'	19. Proposed Depth 7916'	12. County or Parish Rio Arriba
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 6962' GR	22. Approximate date work will start*	13. State NM
17. Spacing Unit dedicated to this well 320 S/2		
20. BLM/BIA Bond No. on file National Bond on file		
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 5-25-06
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Title		
Land Manager		
Approved by (Signature) <i>D. Manriquez</i>	Name (Printed/Typed)	Date 9/3/08
Title AFM	Office FFU	

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

Entered 9-14

✓ ~~RECEIVED~~ NSL-5417

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

RECEIVED

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-039-29927	² Pool Code 72319/71599	³ Pool Name Blanco Mesaverde/Basin Dakota
⁴ Property Code 33461	⁵ Property Name JICARILLA C	⁶ Well Number 2M
⁷ GRID No. 222374	⁸ Operator Name CDX RIO, LLC	⁹ Elevation 6962

¹⁰ Surface Location

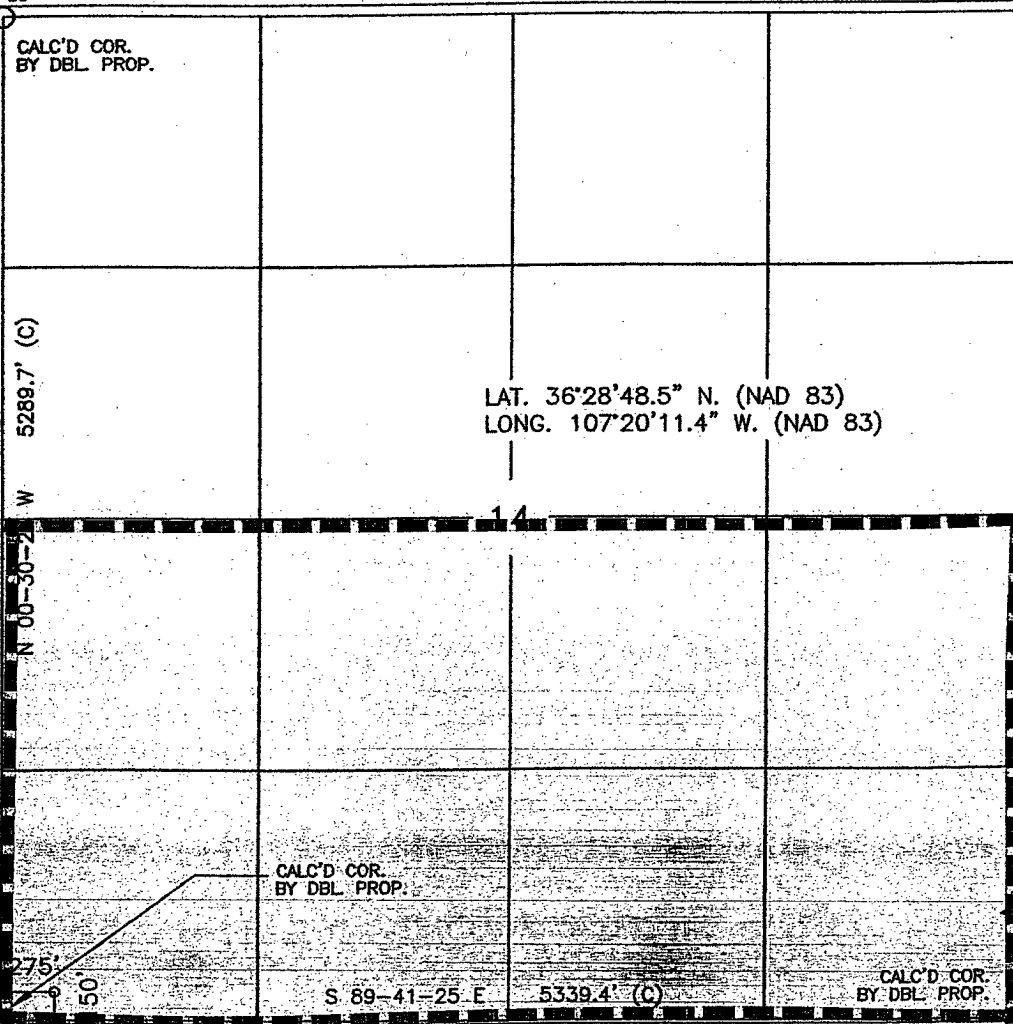
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	14	26-N	5-W		150	SOUTH	275	WEST	RIO ARriba

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
¹² Dedicated Acres MV - S/320 DK - S/320					¹³ Joint or Infill Y		¹⁴ Consolidation Code		¹⁵ 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

16



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

5-25-06
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.

SEP 25 2005
Date

John R. Vukovich
Signature and Seal of Professional Surveyor



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>29927</u>
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 2M
9. OGRID Number 222374
10. Pool name or Wildcat Blanco Mesaverde/Basin Dakota

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 M : 150 feet from the South line and 275 feet from the West line
Section 14 Township 26N Range 5W NMPM Rio Arriba County

11. Elevation (Show whether DR, RKB, RT, GR, etc.)
6962' 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 <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

☒

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 5/23/06

Type or print name Nancy Oltmanns

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

For State Use Only

APPROVED BY:

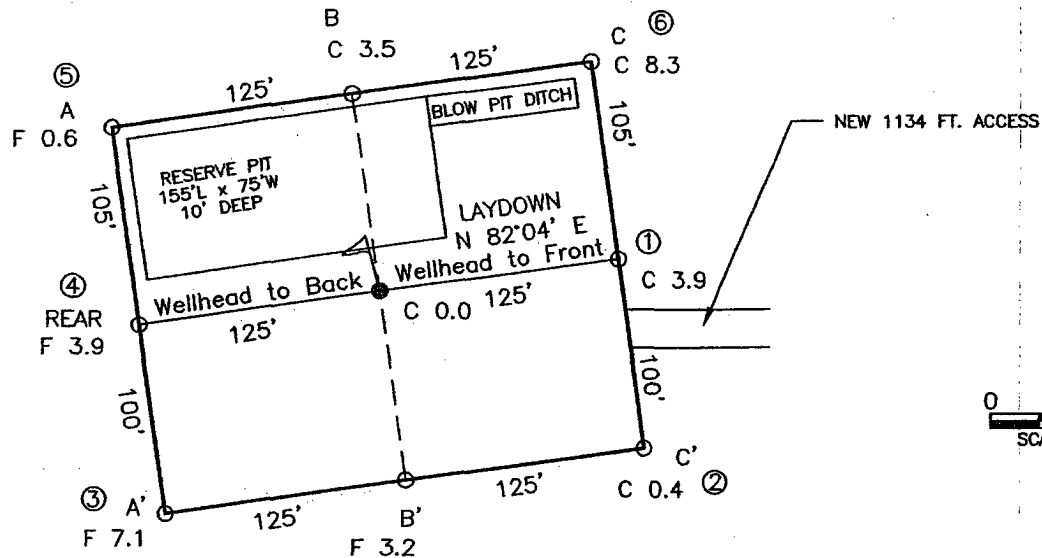
TITLE DEPUTY OIL & GAS INSPECTOR, DIST. 29

DATE SEP 07 2006

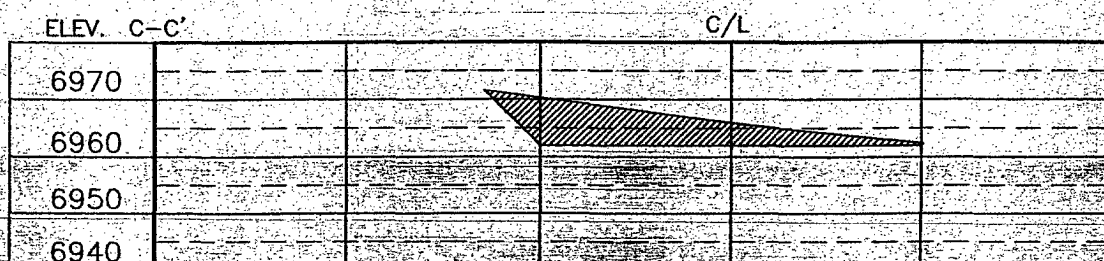
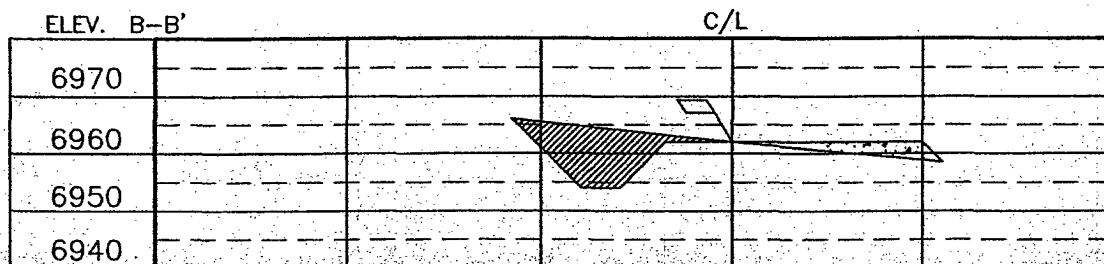
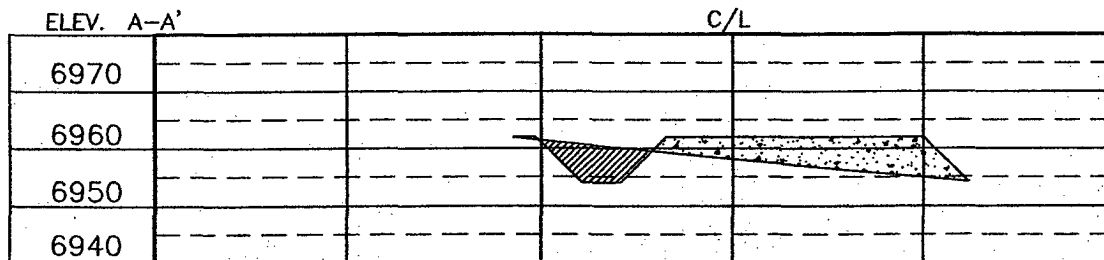
Conditions of Approval (if any):

CDX RIO, LLC
 JICARILLA C No. 2M, 150 FSL 275 FWL
 SECTION 14, T26N, R5W, N.M.P.M., RIO ARRIBA COUNTY, N. M.
 GROUND ELEVATION: 6962', DATE: SEPTEMBER 21, 2005

LAT. = 36°28'48.5" N.
 LONG. = 107°20'11.4" 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	BY	DATE	BY

Daggett Enterprises, Inc.
 Surveying and Oil Field Services
 P.O. Box 15068 • Farmington, NM 87401
 Phone (505) 328-1772 • Fax (505) 328-9019
 NEW MEXICO U.S. No. 14831
 CAPLE: CDXGAS092CFB
 DATE: 11/02/05

UNW/ B. LEIDY
 ROW/ CDXGAS092

Jicarilla C 2M
General Drilling Plan
CDX Rio, LLC
Rio Arriba County, New Mexico

1. LOCATION:

150' FSL & 275' FWL, Section 14, T26N, R5W
Rio Arriba County, New Mexico
UGL: 6962' Estimated KB: 6974'

Field: Blanco Mesa Verde and Basin Dakota
Surface: Jicarilla Contract #108
Minerals: Jicarilla Contract #108

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			Sandstone	Possible Differential Sticking, Gas, Water
Kirtland Formation	3154	3820	Shale	
Fruitland Formation	3314	3660	Coal, Shale, Sandstone	Possible Lost Circulation Zone, Gas, Water
Pictured Cliffs Sandstone	3479	3495	Sandstone	Possible Lost Circulation Zone, Gas, Water
Lewis Shale	3634	3340	Shale	Sloughing Shale
Huerfano Bentonite Bed	3974	3000	Shale	
Chacra Interval	4418	2556	Siltstone	Gas, Water
Mesaverde Formation (MVRD)	5198	1776	Coal, Sandstone, Shale	Possible Lost Circulation, Gas, Water
Cliff House Sandstone (MVRD)	5198	1776	Sandstone	Possible Lost Circulation, Gas, Water
Menefee Member (MVRD)	5295	1679	Coal, Sandstone, Shale	Possible Lost Circulation, Gas, Water
Point Lookout Sandstone(MVRD)	5706	1268	Sandstone	Possible Lost Circulation, Gas, Water
Mancos Shale	5893	1081	Shale	Sloughing Shale
Gallup Formation (GLLP)	6858	116	Siltstone, Shale	Gas, Oil
Greenhorn Limestone	7602	-628	Limestone	Gas, Oil
Graneros Shale	7665	-691	Shale	Gas, Oil, Water
Dakota Formation (DKOT)	7702	-728	Sandstone, Shale, Coal	Gas, Oil, Water
Two Wells Sandstone (DKOT)	7702	-728	Sandstone	Gas, Oil, Water
Paguate Sandstone (DKOT)	7782	-808	Sandstone	Gas, Oil, Water
Upper Cubero Sandstone(DKOT)	7818	-844	Sandstone	Gas, Oil, Water
Main Body (DKOT)	7851	-877	Shale, Sandstone	Gas, Oil, Water
Lower Cubero (DKOT)	7899	-925	Shale, Sandstone	Gas, Oil, Water
Burro Canyon (DKOT)	7936	-962	Sandstone	Gas, Water - TD immediately below L. Cubero.
Morrison Formation			Shale, Sandstone	On-site pick when black/brown cuttings start.
Proposed TD	7916	-942		Avoid wet Burro Canyon.

1 85-23-06

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"	3874' +/- Lewis seat	7"
6 1/4"	7916'	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'	3874' +/-	23.0	N80	LTC	New
4 1/2"	Prod Liner	3754'	7916'	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

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'

137 sxs Type III cement with 2% 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 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	78.3 cu ft
	<u>100% excess (annulus)</u>	<u>78.3 cu ft</u>
	Total	174.0 cu ft

Note:

1. Design top of cement is the surface.
2. Have available 100 sx Type III cement with 2% CaCl_2 for top out purposes.

7" Intermediate Casing: 3874'

1st Stage: 133 sacks of Type III cement: 3874' - 3054' (820')

Slurry weight: 14.5 ppg Annular Vol = 123.3 cf + 61.7 cf (50% Access)
Slurry yield: 1.4 ft³/sack = 185.0 cf

2nd Stage: (Stage tool at 3054' +/-): 356 sacks of Premium Lite FM

Slurry weight: 12.4 ppg Volume = 682.7 cf
Slurry yield: 1.92 ft³/sack

4 

<u>Volume Basis:</u>	40' of 7" shoe joint	8.8 cu ft
	<u>3624' of 7" x 8 3/4" annulus</u>	<u>544.8 cu ft</u>
	250' of 7" x 9 5/8" csg	41.7 cu ft
	<u>50% excess (open hole annulus)</u>	<u>272.4 cu ft</u>
	Total	867.7 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 3874' – 7916' (4042')

Stage 1: 261 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>4042' of 4 1/2 " x 6 1/4" hole</u>	<u>414.8 cu ft</u>
	120' of 4 1/2" x 7" casing	13.3 cu ft
	<u>30% excess (annulus)</u>	<u>124.4 cu ft</u>
	Total	556.0 cu ft

Note:

1. Design top of cement is 3754' +/- 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 3874', 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.

5.8

Jicarilla C No. 2M

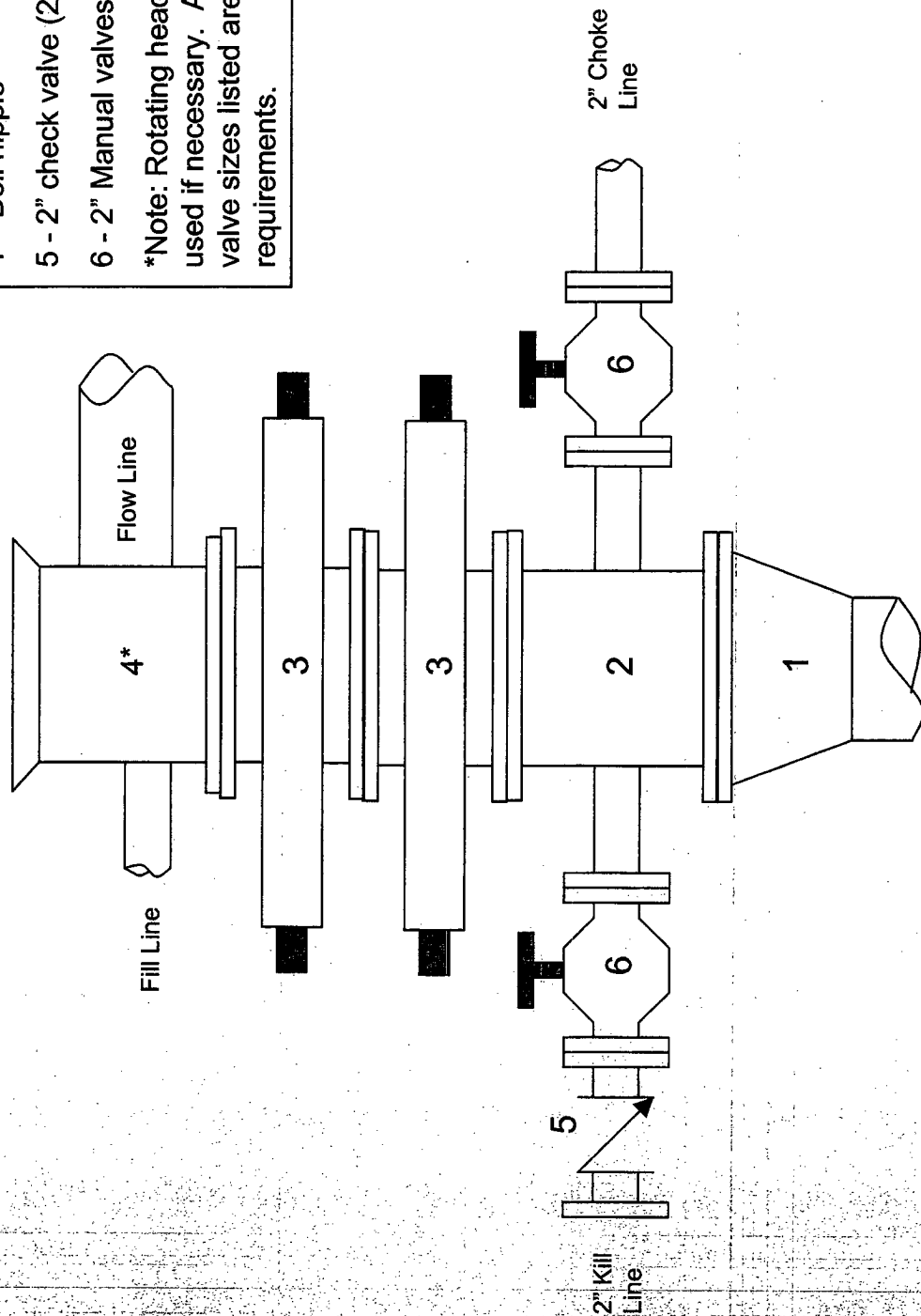
2000 psi BOP stack

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 C No. 2M

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.

