

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 155	
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		8. Lease Name and Well No Jicarilla 155 #13N	
3b Phone No. (include area code) (505) 326-3003		9. API Well No. 30-039- 29936	
4 Location of Well (Report location clearly and in accordance with any State requirements *) At surface 1550' FSL, 1810' FWL, Lat: 36 27' 17.3", Long: 107 24' 14.4" At proposed prod. zone		10. Field and Pool, or Exploratory Blanco Mesaverde/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 Section 30, 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) 1550'		12. County or Parish Rio Arriba	
16 No. of Acres in lease		13. State NM	
17. Spacing Unit dedicated to this well 319.59 MV -180, DK - 319.59 S/2			
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft 500'		20. BLM/BIA Bond No. on file National Bond on file	
19. Proposed Depth 7400'			
21 Elevations (Show whether DF, KDB, RT, GL, etc ) 6539' 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 <i>Richard Corcoran</i>	Name (Printed/Typed) Richard Corcoran	Date 5-30-06
Title Land Manager		
Approved by (Signature) <i>[Signature]</i>	Name (Printed/Typed) AFM	Date 6/27/11
Title AFM	Office FEO	

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)

\* Hold C-104 for NSL order

\* Submit revised C-102

NOTIFY AZTEC OCD 24 HRS.  
PRIOR TO CASING & CEMENT

NMOCD

AUG 09 2011



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".

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**

<sup>1</sup> API Number 30-039- 29936	<sup>2</sup> Pool Code 72319/71599	<sup>3</sup> Pool Name Blanco Mesaverde/Basin Dakota
<sup>4</sup> Property Code 33457	<sup>5</sup> Property Name JICARILLA 155	<sup>6</sup> Well Number 13N
<sup>7</sup> GRID No. 222374	<sup>8</sup> Operator Name CDX RIO, LLC	<sup>9</sup> Elevation 6539'

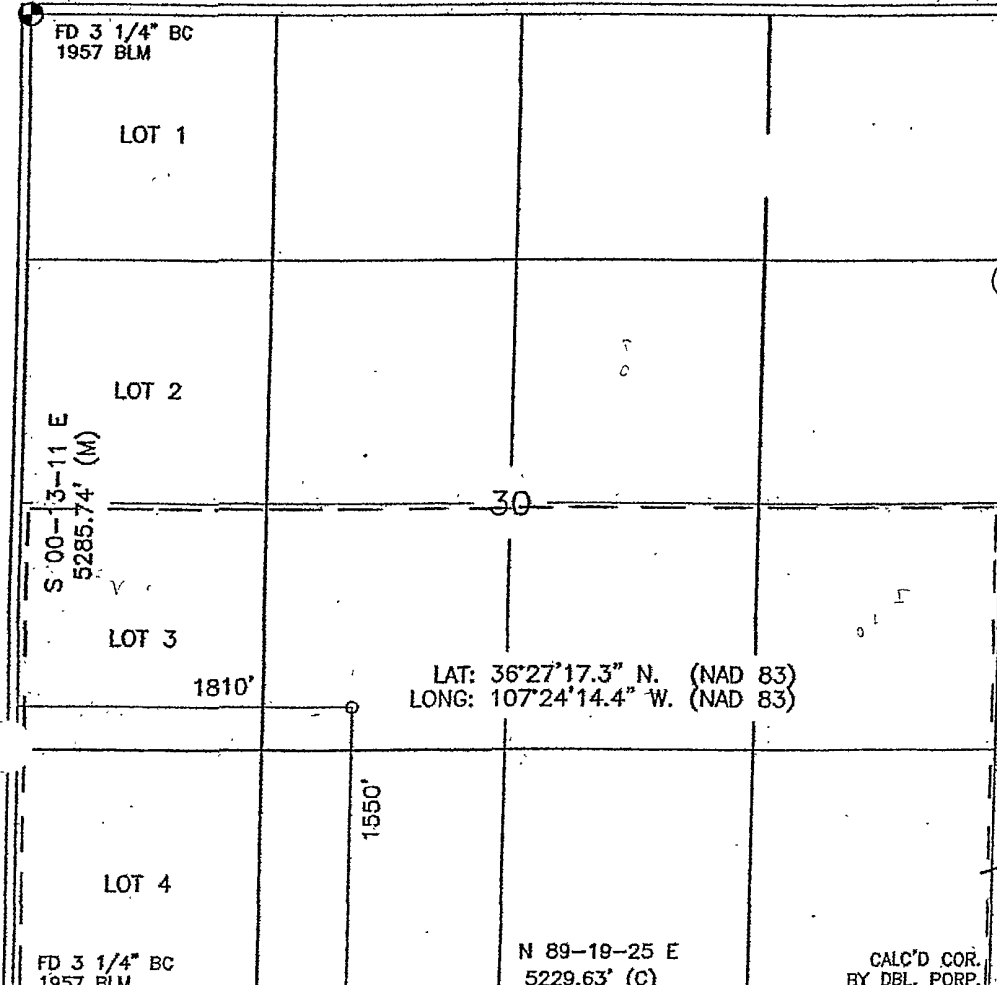
<sup>10</sup> Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
K	30	26-N	5-W		1550'	SOUTH	1810'	WEST	RIO ARRIBA

<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 - 159.59 - S/319.59 DK - S/319.59		<sup>13</sup> Joint or Infill Y		<sup>14</sup> Consolidation Code		<sup>15</sup> Order No. — Mesaverde — NSP-1400 —			

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 and E-mail Address  
5-30-06  
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.

OCTOBER 2003  
Date of Survey  
Signature and Seal  
  
Certificate Number

CALC'D COR.  
BY DBL. PORP.

**Jicarilla 155 13N**  
**General Drilling Plan**  
**CDX Rio, LLC**  
**Rio Arriba County, New Mexico**

**1. LOCATION:**

1550' FSL & 1810' FWL, Section 30, T26N, R5W  
Rio Arriba County, New Mexico  
UGL: 6539' Estimated KB: 6551'

Field: Blanco Mesa Verde and Basin Dakota  
Surface: Jicarilla Contract #155  
Minerals: Jicarilla Contract #155

**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	2232	4319	Sandstone	Possible Differential Sticking, Gas, Water
Kirtland Formation	2442	4109	Shale	
Fruitland Formation	2682	3869	Coal, Shale, Sandstone	Possible Lost Circulation Zone, Gas, Water
Pictured Cliffs Sandstone	2867	3684	Sandstone	Possible Lost Circulation Zone, Gas, Water
Lewis Shale	2955	3596	Shale	Sloughing Shale
Huerfano Bentonite Bed	3292	3259	Shale	Bentonite Shale
Chacra Interval	3743	2808	Siltstone	Gas, Water
Mesaverde Formation (MVRD)	4512	2039	Coal, Sandstone, Shale	Possible Lost Circulation, Gas, Water
Cliff House Sandstone (MVRD)	4512	2039	Sandstone	Possible Lost Circulation, Gas, Water
Menefee Member (MVRD)	4572	1979	Coal, Sandstone, Shale	Possible Lost Circulation, Gas, Water
Point Lookout Sandstone(MVRD)	5073	1478	Sandstone	Possible Lost Circulation, Gas, Water
Mancos Shale	5288	1263	Shale	Sloughing Shale
Gallup Formation (GLLP)	6270	281	Siltstone, Shale	Gas, Oil
Greenhorn Limestone	7002	-451	Limestone	Gas, Oil
Graneros Shale	7057	-506	Shale	Gas, Oil, Water
Dakota Formation (DKOT)	7085	-535	Sandstone, Shale, Coal	Gas, Oil, Water
Two Wells Sandstone (DKOT)	7085	-535	Sandstone	Gas, Oil, Water
Paguate Sandstone (DKOT)	7182	-631	Sandstone	Gas, Oil, Water
Upper Cubero Sandstone(DKOT)	7221	-670	Sandstone	Gas, Oil, Water
Main Body (DKOT)	7254	-703	Shale, Sandstone	Gas, Oil, Water
Lower Cubero (DKOT)	7305	-754	Shale, Sandstone	Gas, Oil, Water
Burro Canyon (DKOT)	7331	-780	Sandstone	Gas, Water - TD immediately below L. Cubero.
Morrison Formation			Shale, Sandstone	On-site pick when black/brown cuttings start.
Proposed TD	7400	-849		Avoid wet Burro Canyon.

1 W5-25-06

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"	3192' +/- Lewis seat	7"
6 1/4"	7400'	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'	3192' +/-	23.0	N80	LTC	New
4 1/2"	Prod Liner	3072'	7400'	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	<del>7,010</del> 7,050	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%  $\text{CaCl}_2$ , 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	17.4 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%  $\text{CaCl}_2$  for top out purposes.

### 7" Intermediate Casing: 3192'

1st Stage: 137 sacks of Type III cement: 3192' - 2342' (850')

Slurry weight: 14.5 ppg      Annular Vol = 127.8 cf + 63.9 cf (50% Access)  
Slurry yield: 1.4 ft<sup>3</sup>/sack      = 191.7cf

2<sup>nd</sup> Stage: (Stage tool at 2342' +/-): 272 sacks of Premium Lite FM

Slurry weight: 12.4 ppg      Volume = 522.3 cf  
Slurry yield: 1.92 ft<sup>3</sup>/sack

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<u>Volume Basis:</u>	40' of 7" shoe joint	8.8 cu ft
	<u>2942'</u> of 7" x 8 3/4" annulus	<u>442.3</u> cu ft
	250' of 7" x 9 5/8" csg	41.7 cu ft
	<u>50% excess (annulus)</u>	<u>221.2</u> cu ft
	Total	714.0 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 3192' – 7400' (4208')**

Stage 1: 272 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>4208'</u> of 4 1/2 " x 6 1/4" hole	<u>431.8</u> cu ft
	120' of 4 1/2" x 7" casing	13.3 cu ft
	<u>30% excess (annulus)</u>	<u>129.5</u> cu ft
	Total	578.1 cu ft

Note:

1. Design top of cement is 3072' +/- 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 3192', 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

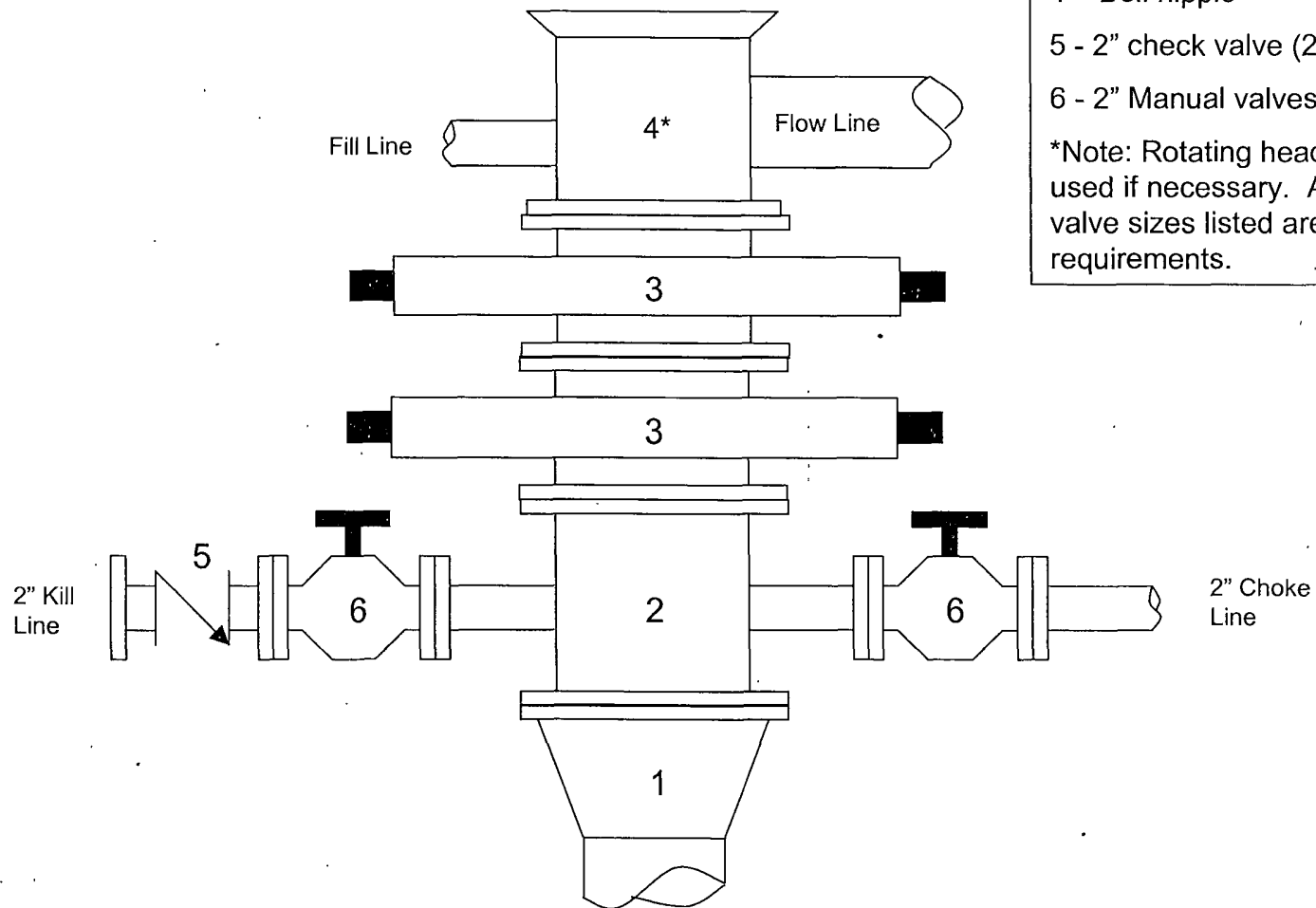
**8. ANTICIPATED STARTING DATE: October 15, 2006**

Anticipated duration: 16 days

# Jicarilla 155 13N

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 155 No. 13N

2000 psi Choke Manifold

Minimum requirements

### Components

1 – 2" Valve (2M)

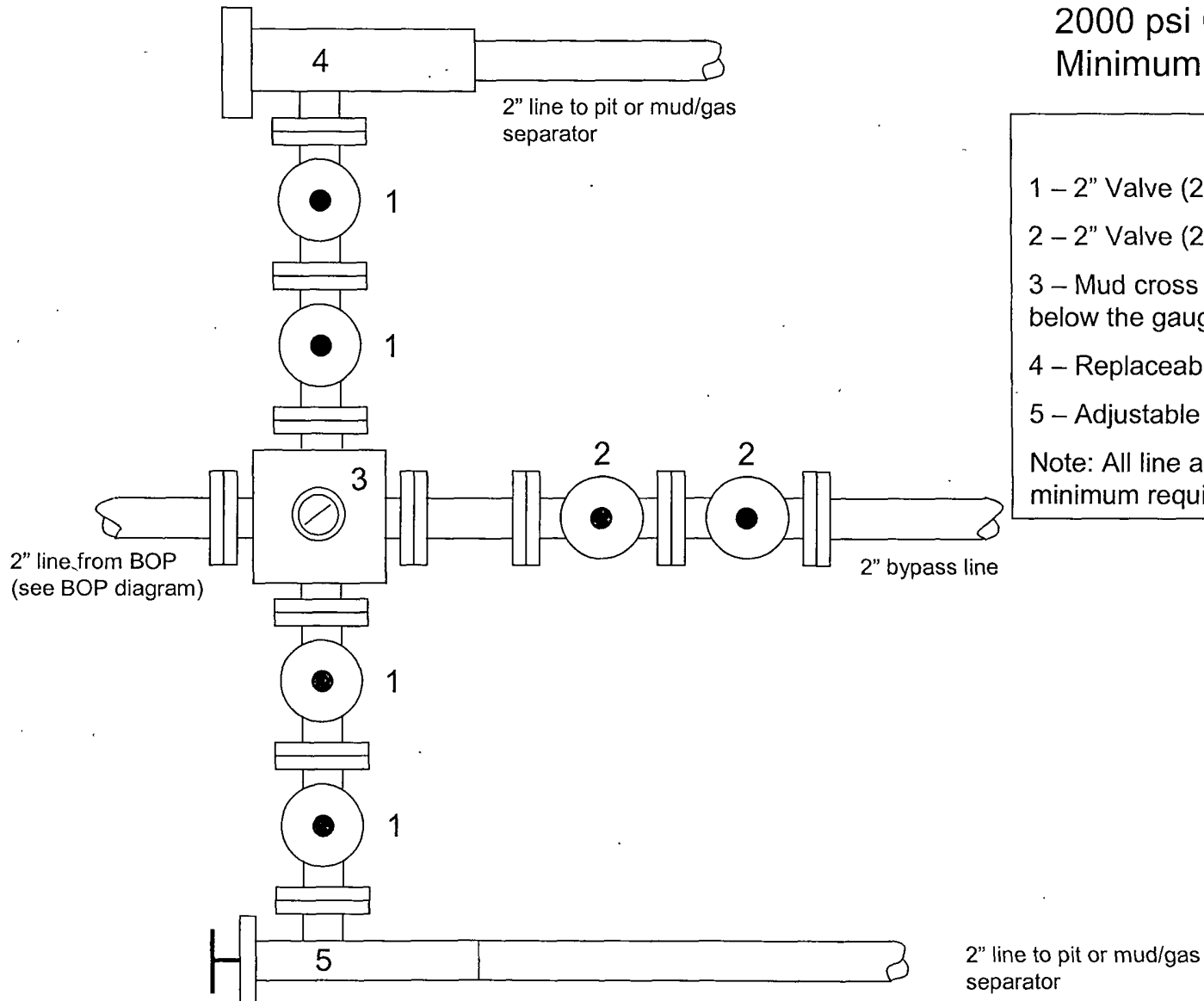
2 – 2" Valve (2M)

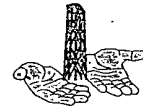
3 – Mud cross with gauge (2M) flanged below the gauge.

4 – Replaceable beam choke (2M)

5 – Adjustable needle choke (2M)

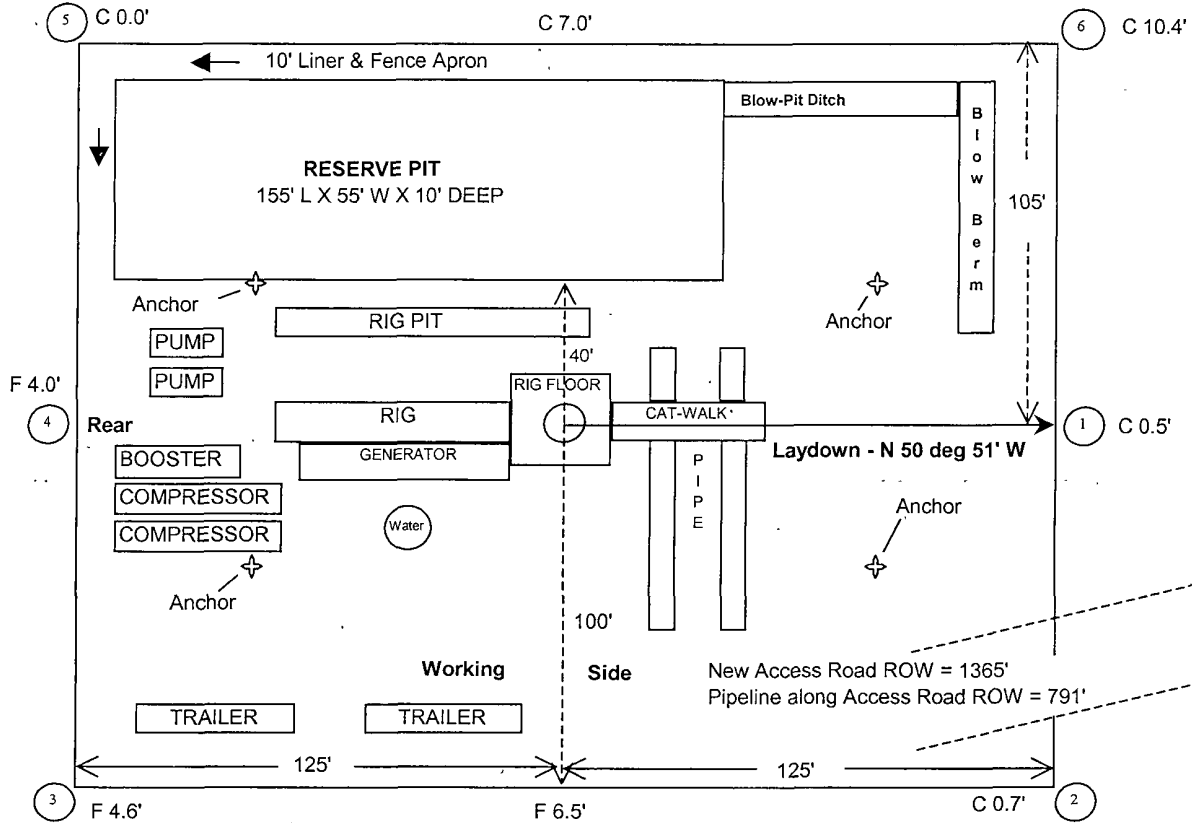
Note: All line and valve sizes listed are minimum requirements.





Neeley Consulting Service, LLC

0' 50'  
SCALE 1" = 50'



No Construction Zone nor Arche Buffer Zone.

### CDX RIO, LLC

#### Wellsite Layout Plat with Cut & Fills

Jicarilla Apache 155 13N

1550' FSL & 1810' FWL

Sec 30, T26N, R5W, NMPPM

Rio Arriba Co., New Mexico

Elevation: 6539' UGL

# VICINITY MAP

CDX RIO, LLC

Jicarilla 155 13N

1550' FSL & 1810' FWL

Sec 30, T26N, R5W, NMPM

Rio Arriba County, New Mexico

Elevation: 6539' UGL

Scale: 1" ~ 2000'

Neeley Consulting Service, LLC

