Form 3160-3
(September 2001)

FORM APPROVED
OMB No 1004-0136
Expires March 31, 2007

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

2006 MAY 30 PM 1

RECEIVED

5. Lease Serial No.	Jicarilla Contract 155
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 155 #19M
9. API Well No.	30-039-29937
10. Field and Pool, or Exploratory	Blanco Mesaverde/Basin Dakota
11. Sec , T., R., M., or Blk. and Survey or Area	Section 29, T-26-N, R-5-W
12. County or Parish	Rio Arriba
13. State	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 2380' FNL, 2440' FEL, Lat: 36 27' 31.4" N, Long: 107 22' 55.9" W
At proposed prod. zone

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

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 2380'

16. No. of Acres in lease

17. Spacing Unit dedicated to this well
MV - 320 N/2, DK - 320 E/2

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft 1000'

19. Proposed Depth
7236'

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

21. Elevations (Show whether DF, KDB, RT, GL, etc.)
6458' 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: Richard Corcoran	Name *(Printed/Typed)* Richard Corcoran	Date 5-30-06
Title: Land Manager		
Approved by *(Signature)*: Stephen Mason	Name *(Printed/Typed)*	Date 6/21/11
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.

A COMPLETE C-144 MUST BE SUBMITTED TO AND APPROVED BY THE NMOCD FOR: A PIT, CLOSED LOOP SYSTEM, BELOW GRADE TANK, OR PROPOSED ALTERNATIVE METHOD, PURSUANT TO NMOCD PART 19.15 17, PRIOR TO THE USE OR CONSTRUCTION OF THE ABOVE APPLICATIONS.

* submit revised C-102

RCVD JUN 22 '11
OIL CONS. DIV.
DIST. 3

AUG 09 2011

NMOCD

NOTIFY AZTEC OCD 24 HRS.
PRIOR TO CASING & CEMENT

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

This action is subject to technical and procedural review pursuant to 43 CFR 3165.3 and appeal pursuant to 43 CFR 3165.4

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	[2] Pool Code	[3] Pool Name
30-039-	72319/71599	Blanco Mesaverde/Basin Dakota

[4] Property Code	[5] Property Name	[6] Well Number
33457	JICARILLA 155	19M

[7] OGRID No.	[8] Operator Name	[9] Elevation
222374	CDX RIO, LLC	6458'

[10] Surface Location

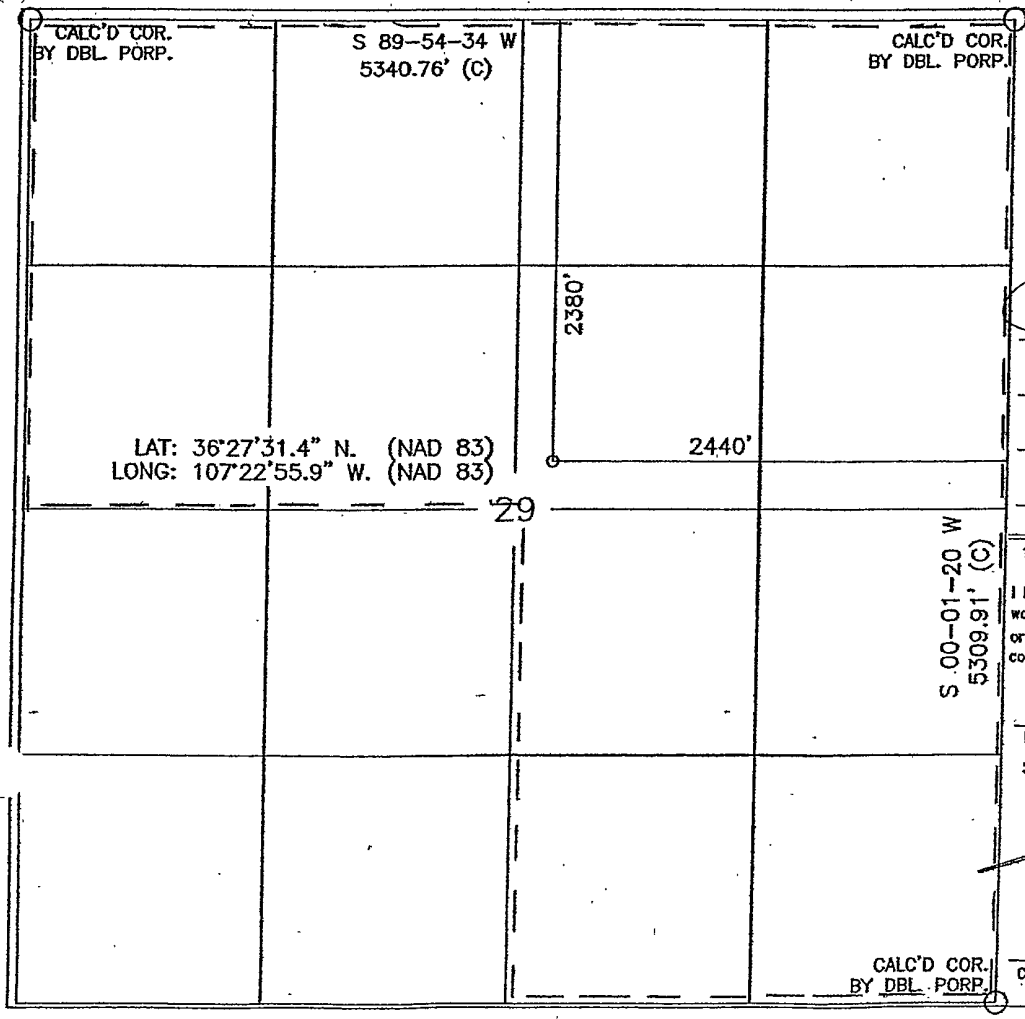
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
G	29	26-N	5-W		2380'	NORTH	2440'	EAST	RIO ARRIBA

[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	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
MV - N/320 DK - E/320	Y		

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 [illegible] 2005
Date of Survey

Signature and Seal of Professional Surveyor:

JOHN A. VUKONICH
NEW MEXICO
14831
REGISTERED PROFESSIONAL SURVEYOR

Certificate Number

Jicarilla 155 19M
General Drilling Plan
CDX Rio, LLC
Rio Arriba County, New Mexico

1. LOCATION:

2380' FNL & 2440' FEL, Section 29, T26N, R5W
Rio Arriba County, New Mexico
UGL: 6458' Estimated KB: 6470'

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	2056	4414	Sandstone	Possible Differential Sticking, Gas, Water
Kirtland Formation	2392	4078	Shale	
Fruitland Formation	2611	3859	Coal, Shale, Sandstone	Possible Lost Circulation Zone, Gas, Water
Pictured Cliffs Sandstone	2792	3678	Sandstone	Possible Lost Circulation Zone, Gas, Water
Lewis Shale	2885	3585	Shale	Sloughing Shale
Huerfanito Bentonite Bed	3239	3231	Shale	Bentonite Shale
Chacra Interval	3687	2783	Siltstone	Gas, Water
Mesaverde Formation (MVRD)	4439	2031	Coal, Sandstone, Shale	Possible Lost Circulation, Gas, Water
Cliff House Sandstone (MVRD)	4439	2031	Sandstone	Possible Lost Circulation, Gas, Water
Menefee Member (MVRD)	4499	1971	Coal, Sandstone, Shale	Possible Lost Circulation, Gas, Water
Point Lookout Sandstone(MVRD)	5092	1378	Sandstone	Possible Lost Circulation, Gas, Water
Mancos Shale	5239	1231	Shale	Sloughing Shale
Gallup Formation (GLLP)	6192	278	Siltstone, Shale	Gas, Oil
Greenhorn Limestone	6911	-441	Limestone	Gas, Oil
Graneros Shale	6969	-499	Shale	Gas, Oil, Water
Dakota Formation (DKOT)	6993	-523	Sandstone, Shale, Coal	Gas, Oil, Water
Two Wells Sandstone (DKOT)	6993	-523	Sandstone	Gas, Oil, Water
Paguate Sandstone (DKOT)	7088	-618	Sandstone	Gas, Oil, Water
Upper Cubero Sandstone(DKOT)	7128	-658	Sandstone	Gas, Oil, Water
Main Body (DKOT)	7158	-688	Shale, Sandstone	Gas, Oil, Water
Lower Cubero (DKOT)	7213	-743	Shale, Sandstone	Gas, Oil, Water
Burro Canyon (DKOT	7242	-772	Sandstone	Gas, Water - TD immediately below L. Cubero.
Morrison Formation			Shale, Sandstone	On-site pick when black/brown cuttings start.
Proposed TD	7236	-766		**Avoid wet Burro Canyon.**

1 W 5-25-06

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:

Hole Size	Depth	Casing Size
12 ¼"	250'	9 5/8"
8 ¾"	3139' +/- Lewis seat	7"
6 ¼"	7236'	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'	3139' +/-	23.0	N80	LTC	New
4 ½"	Prod Liner	3019'	7236'	11.6	N80	LTC	New

Casing Data				Collapse	Burst	Min. Tensile
OD	Wt/Ft	Grade	Thread	(psi)	(psi)	(Lbs.)
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~~ 6350	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% $CaCl_2$, ¼#/sx celloflake. 100% excess to circulate cement to surface. WOC 12 hrs.

Slurry weight: 15.2 ppg
Slurry yield: 1.27 ft^3/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
	100% excess (annulus)	96.1 cu ft
	Total	209.6 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: 3139'
1st Stage: 137 sacks of Type III cement: 3139' – 2292' (847')
Slurry weight: 14.5 ppg Annular Vol = 127.3 cf + 63.7 cf (50% Access)
Slurry yield: 1.4 ft^3/sack = 191.0 cf

2nd Stage: (Stage tool at 2292' +/-): 267 sacks of Premium Lite FM

Slurry weight: 12.4 ppg Volume = 511.0 cf
Slurry yield: 1.92 ft^3/sack

Volume Basis:		
	40' of 7" shoe joint	8.8 cu ft
	2889' of 7" x 8 ¾" annulus	434.3 cu ft
	250' of 7" x 9 5/8" csg	41.7 cu ft
	50% excess (open hole annulus)	217.2 cu ft
	Total	702.0 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 3139' – 7236' (4097')
Stage 1: 265 sacks of Premium Lite High Strength FM out guide shoe.

Slurry weight: 12.3 ppg
Slurry yield: 2.13 ft^3/sack

Volume basis:		
	40' of 4 1/2" shoe joint	3.5 cu ft
	4097' of 4 1/2 " x 6 1/4" hole	420.4 cu ft
	120' of 4 ½" x 7" casing	13.3 cu ft
	30% excess (annulus)	126.1 cu ft
	Total	563.3 cu ft

Note:
1. Design top of cement is 3019' +/- 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 3139', 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.

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:

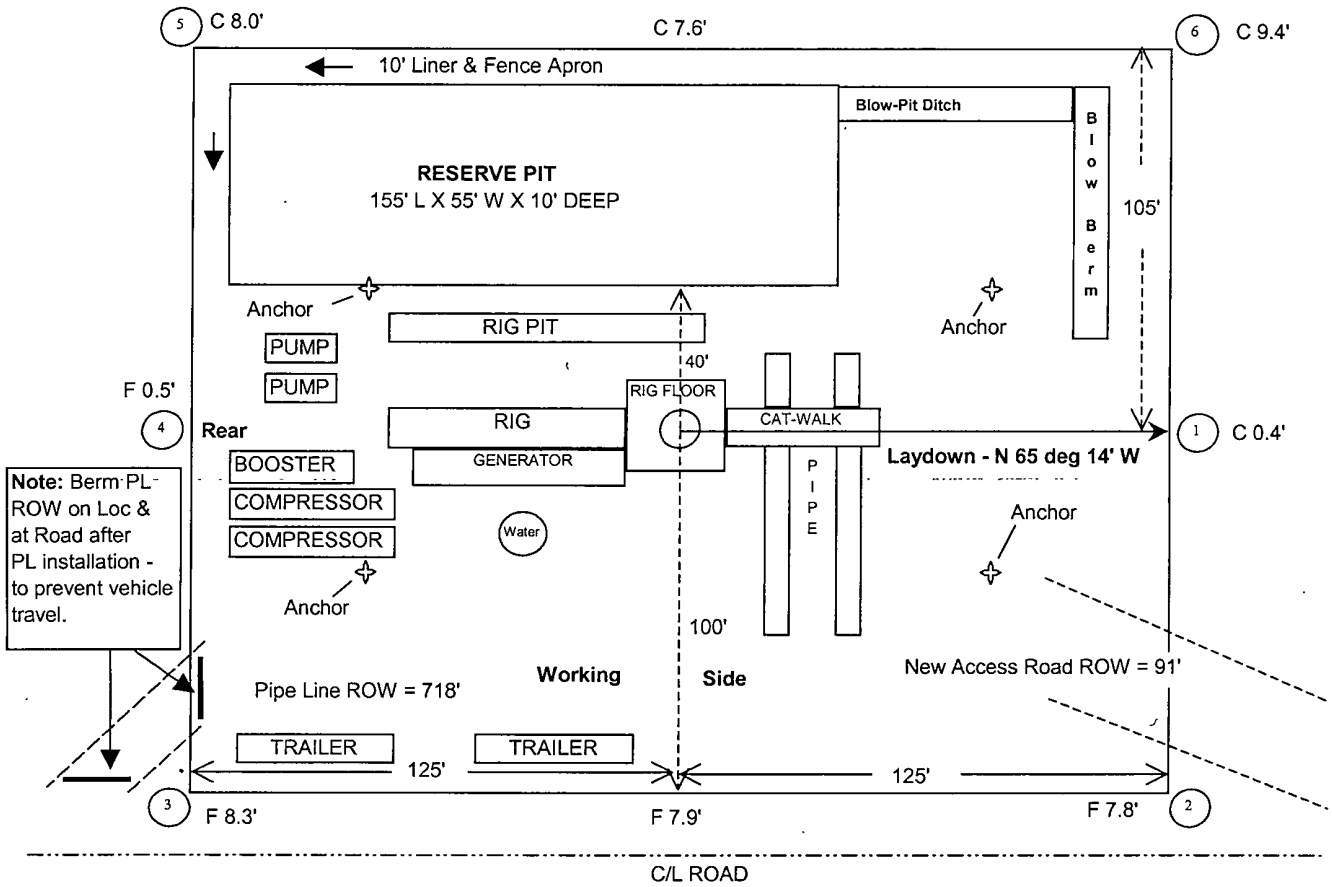
H_2S	None
Coal	Fruitland
Minerals	None
Water	None
Static BHT	175° F
Lost Circulation	Possible
Hole Deviation	None
Abnormal Pressures	None
Unusual Drilling Problems	None

8. ANTICIPATED STARTING DATE: November 1, 2006

Anticipated duration: 16 days

Neeley Consulting Service, LLC

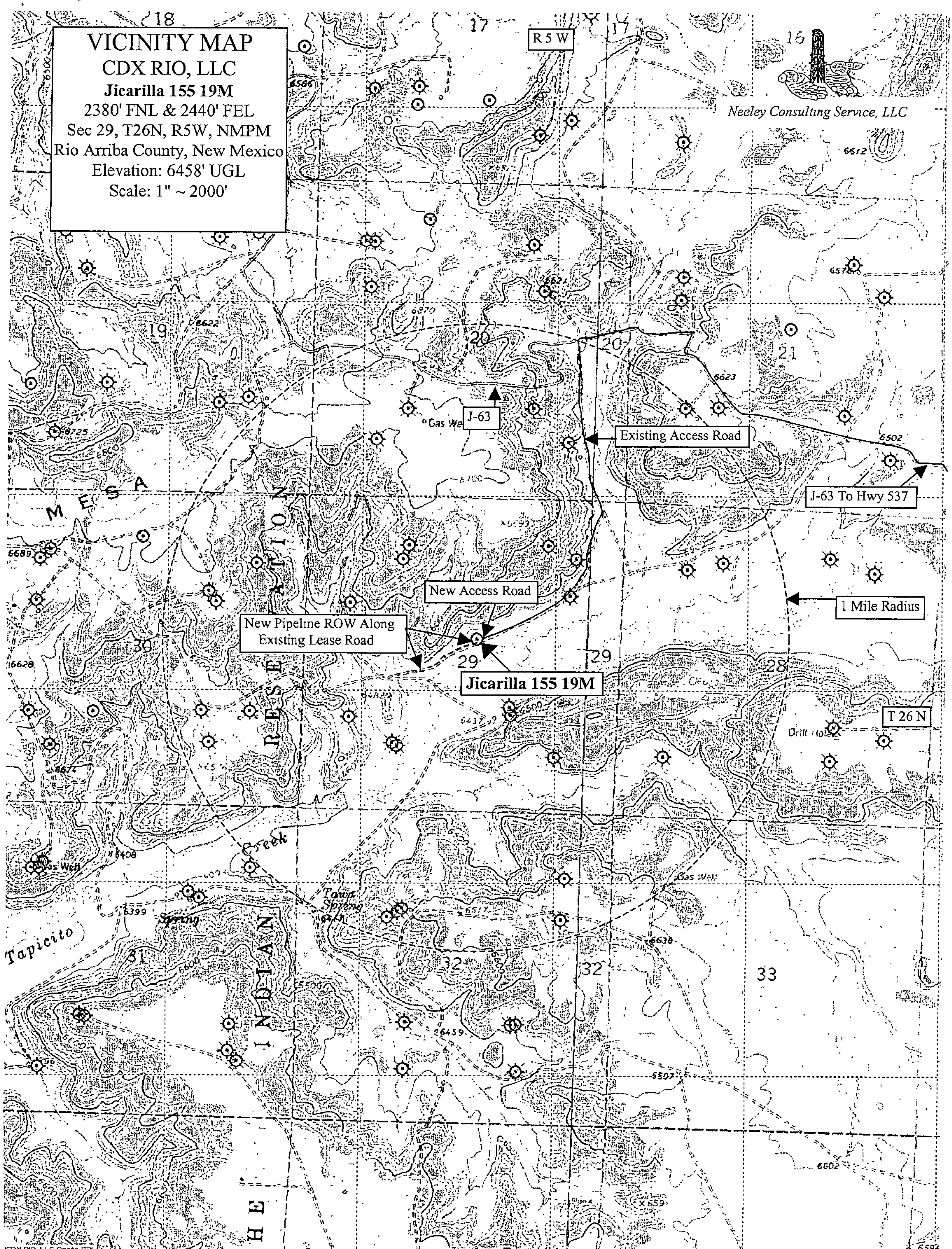
0' 50'
SCALE 1" = 50'



25' Construction Zone and Arche Buffer on West Side of Location, only.

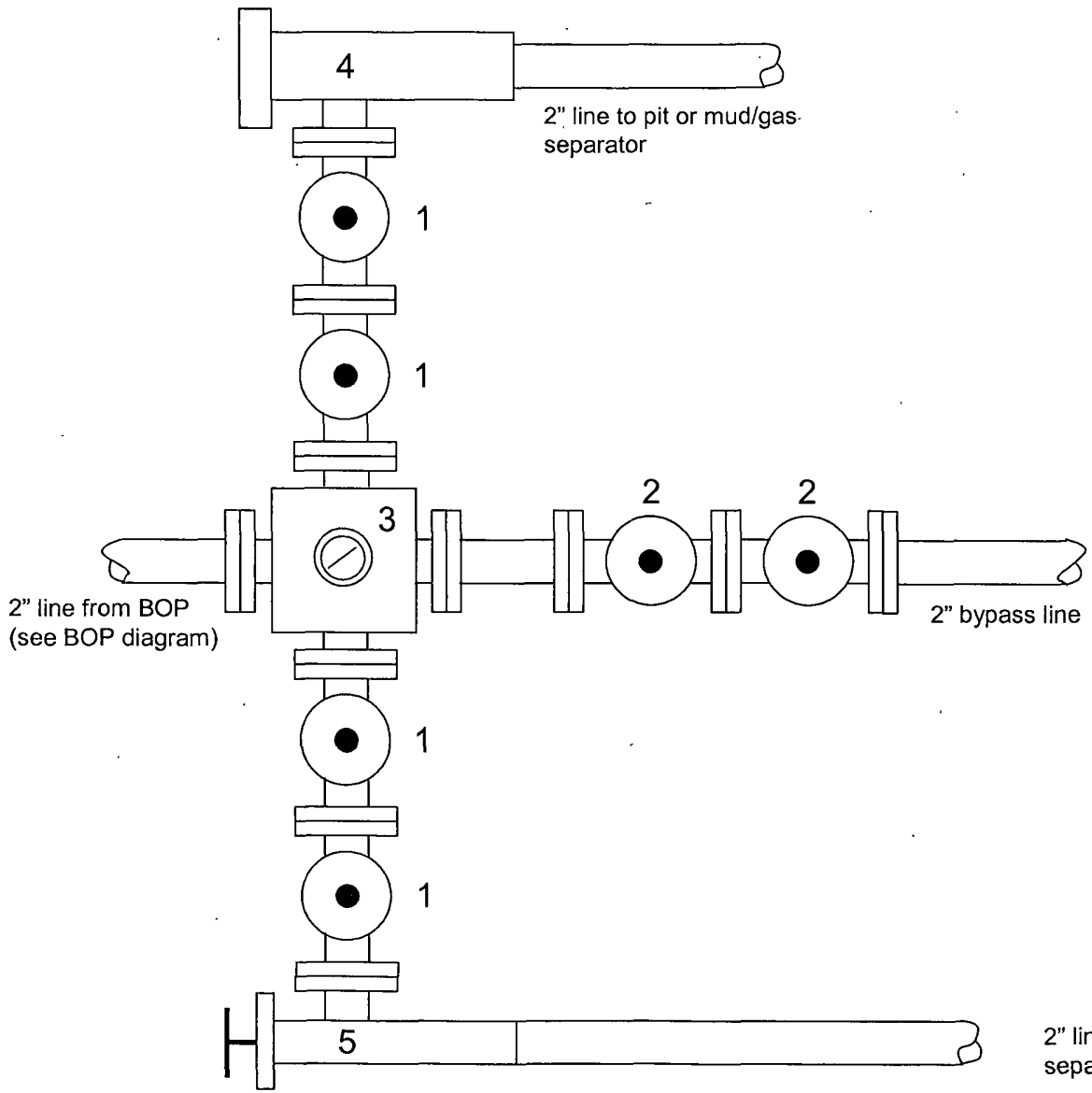
CDX RIO, LLC

Wellsite Layout Plat with Cut & Fills
Jicarilla Apache 155 19M
2380' FNL & 2440' FEL
Sec 29, T26N, R5W, NMPM
Rio Arriba Co., New Mexico
Elevation: 6458' UGL


VICINITY MAP
CDX RIO, LLC
Jicarilla 155 19M
2380' FNL & 2440' FEL
Sec 29, T26N, R5W, NMPM
Rio Arriba County, New Mexico
Elevation: 6458' UGL
Scale: 1" ~ 2000'
Neeley Consulting Service, LLC
R 5 W
T 26 N
J-63
Existing Access Road
J-63 To Hwy 537
New Access Road
1 Mile Radius
New Pipeline ROW Along Existing Lease Road
Jicarilla 155 19M
MESA
INDIAN RESERVATION
Tapicito
Creek
Spring
Town Spring
Gas Well
Drill Hole
18
17
16
19
20
21
30
29
28
31
32
33
CDX RIO, LLC Onsite IT3

Jicarilla 155 No. 19M

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.

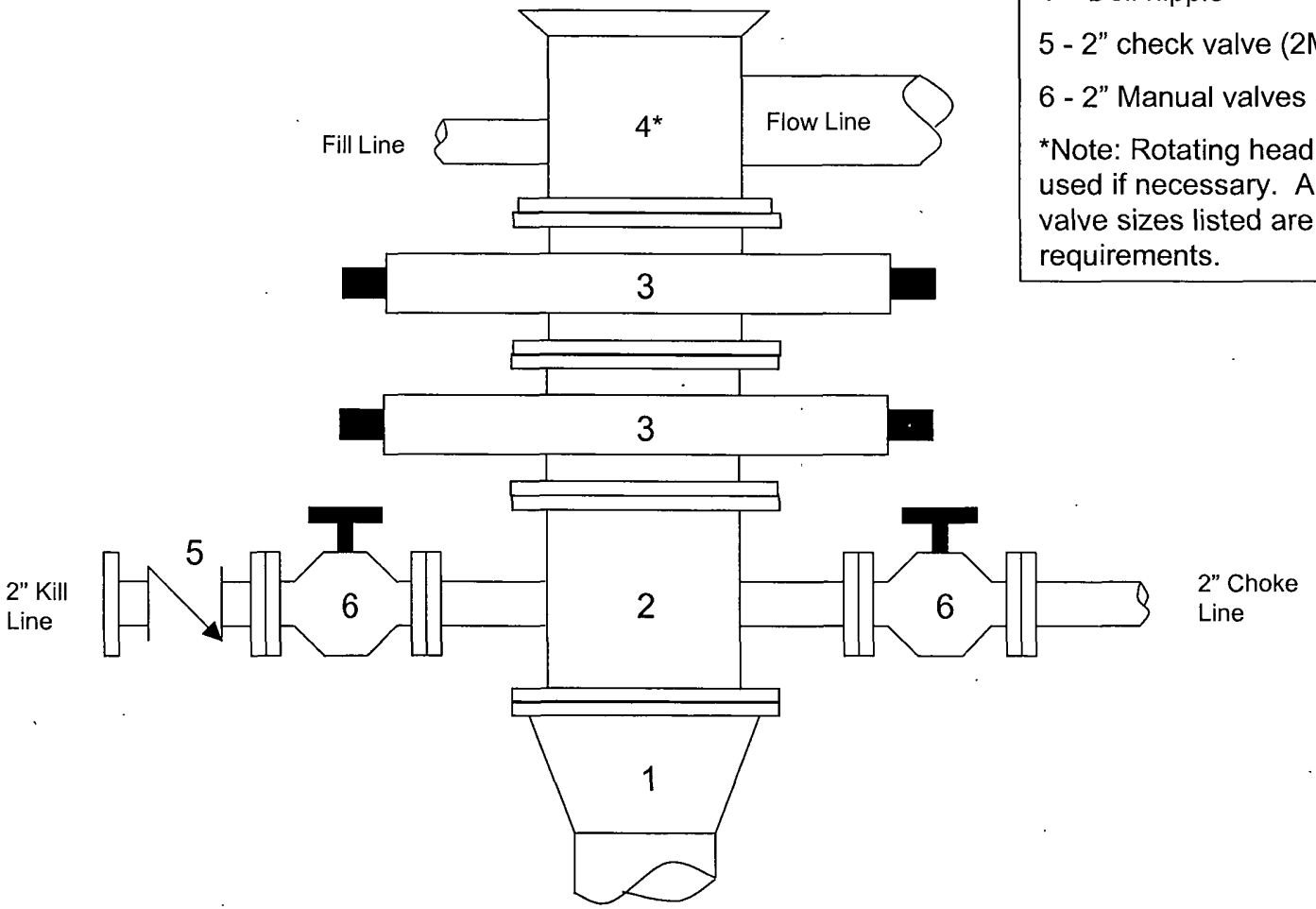
4 – Replaceable beam choke (2M)

5 – Adjustable needle choke (2M)

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

Jicarilla 155 19M

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.