

DATE IN 5/15/06	SUSPENSE	ENGINEER MIKE STOGNER	LOGGED IN 5/15/06	TYPE NSL	APP NO. PTDS0613551820
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ABOVE THIS LINE FOR DIVISION USE ONLY

NEW MEXICO OIL CONSERVATION DIVISION

- Engineering Bureau -

1220 South St. Francis Drive, Santa Fe, NM 87505



CDX

Jicarilla 151 #6F and 66

ADMINISTRATIVE APPLICATION CHECKLIST

THIS CHECKLIST IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS WHICH REQUIRE PROCESSING AT THE DIVISION LEVEL IN SANTA FE

Application Acronyms:

[NSL-Non-Standard Location] **[NSP-Non-Standard Proration Unit]** **[SD-Simultaneous Dedication]**
[DHC-Downhole Commingling] **[CTB-Lease Commingling]** **[PLC-Pool/Lease Commingling]**
[PC-Pool Commingling] **[OLS - Off-Lease Storage]** **[OLM-Off-Lease Measurement]**
[WFX-Waterflood Expansion] **[PMX-Pressure Maintenance Expansion]**
[SWD-Salt Water Disposal] **[IPI-Injection Pressure Increase]**
[EOR-Qualified Enhanced Oil Recovery Certification] **[PPR-Positive Production Response]**

[1] TYPE OF APPLICATION - Check Those Which Apply for [A]

[A] Location - Spacing Unit - Simultaneous Dedication
 X NSL ☐ NSP ☐ SD

Check One Only for [B] or [C]

[B] Commingling - Storage - Measurement
☐ DHC ☐ CTB ☐ PLC ☐ PC ☐ OLS ☐ OLM

[C] Injection - Disposal - Pressure Increase - Enhanced Oil Recovery
☐ WFX ☐ PMX ☐ SWD ☐ IPI ☐ EOR ☐ PPR

[D] Other: Specify _____

[2] NOTIFICATION REQUIRED TO: - Check Those Which Apply, or ☐ Does Not Apply

[A] ☐ Working, Royalty or Overriding Royalty Interest Owners

[B] X Offset Operators, Leaseholders or Surface Owner

[C] ☐ Application is One Which Requires Published Legal Notice

[D] ☐ Notification and/or Concurrent Approval by BLM or SLO
 U.S. Bureau of Land Management - Commissioner of Public Lands, State Land Office

[E] ☐ For all of the above, Proof of Notification or Publication is Attached, and/or,

[F] ☐ Waivers are Attached

[3] SUBMIT ACCURATE AND COMPLETE INFORMATION REQUIRED TO PROCESS THE TYPE OF APPLICATION INDICATED ABOVE.

[4] **CERTIFICATION:** I hereby certify that the information submitted with this application for administrative approval is **accurate** and **complete** to the best of my knowledge. I also understand that **no action** will be taken on this application until the required information and notifications are submitted to the Division.

Note: Statement must be completed by an individual with managerial and/or supervisory capacity.

Richard Corcoran

Print or Type Name

Richard Corcoran

Signature

Land Manager

Title

5-10-06

Date

Rich.Corcoran@cdxgas.com
 Email Address

CDX RIO, LLC

2010 Afton Place
Farmington, New Mexico 87401
(505) 326-3003 – Fax (505) 325-4007

May 11, 2006

New Mexico Oil Conservation Division
Attn: Michael E. Stogner
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

RE: ADMINISTRATIVE APPROVAL OF UNORTHODOX LOCATION
JICARILLA APACHE TRIBAL 151 #6F, 2300' FNL & 2450' FEL
JICARILLA APACHE TRIBAL 151 #6G, 1590' FSL & 460' FEL
SECTION 9-T26N-R5W
RIO ARriba COUNTY, NEW MEXICO

Dear Mr. Stogner:

CDX Rio, LLC hereby requests Administrative Approval for the captioned Unorthodox Locations both proposed Basin Dakota wells under the provisions of New Mexico Oil Conservation Division (NMOCD) Order R-10987-A.

The locations of the proposed tests were selected to optimize recovery from the Basin Dakota formation. Drainage areas are elliptical in shape and have been determined from a study done on Township 26 North Ranges 4 and 5 West and are more specifically set out in the attached Geological/Engineering report. The Jicarilla Apache Tribal 151 #6F proposed location encroaches on CDX Rio, LLC's Jicarilla Apache Tribal 151 #5 well located in the SW/4 of Section 9-T26N-R5W. The Jicarilla Apache Tribal 151 #6G proposed location encroaches on CDX Rio, LLC's Jicarilla 151 #1 well in the SW/4 of Section 10 and the Jicarilla Apache Tribal 151 #2E well in the NW/4 of Section 10-T26N-R5W, all of which have the same ownership as the offending wells.

The proposed Jicarilla Apache Tribal 151 #6F well, to be located 2300' FNL & 2450' FEL of Section 9 and the proposed Jicarilla Apache Tribal 151 #6G well, to be located 1590' FSL & 460' FEL of Section 9 would be the third and fourth Basin Dakota wells in the E/2 of Section 9 - T26N-R5W, respectively. The Jicarilla Apache Tribal 151 #6 (API# 30-039-21676) located at 1,190' FNL and 1,060' FEL of Section 9-T26N-R5W, was drilled to a total depth of 8,270', completed in the Basin Dakota formation on December 12, 1968, and has cumulatively produced 820,600 MCFG through February of 2006. The Jicarilla Apache Tribal 151 #6E (API# 30-039-23165) located at 855' FSL and 1570' FEL of Section 9-T26N-R5W, was drilled to a total depth of 7,952', completed in the Basin Dakota formation on July 19, 1983, and has cumulatively produced 649,099 MCFG through February of 2006.

CDX Rio, LLC is the operator of ALL the adjoining spacing units in the Basin Dakota; consequently no other offsetting operators are affected.

Attached are well location plats showing dedicated acreage (C-102), a topographic plat of the area, a map showing all offsetting owners and our Geologic/Engineering explanation of the reservoir considerations establishing the increased recovery that we expect to gain by moving the proposed well to non-standard location.

Your favorable consideration of this request would be appreciated.

Sincerely,

Felicia Dillard

Felicia Dillard
Land Assistant
CDX Gas, LLC

RC/fd

*Both the
W/2 of Sec. 9 and the W/2 of
offsetting Sec. 10 is within
the Gicarilla
Apache Tribal
151 lease
therefore offsetting
interest is
common*

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-	² Pool Code 71599	³ Pool Name Basin Dakota
⁴ Property Code 33458	⁵ Property Name JICARILLA 151	⁶ Well Number 6F
⁷ OGRID No. 222374	⁸ Operator Name CDX RIO, LLC	⁹ Elevation 6979'

¹⁰ Surface Location

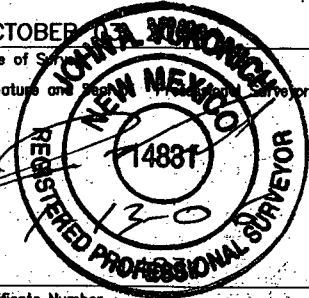
UL or lot no. G	Section 9	Township 26-N	Range 5-W	Lot Idn	Feet from the 2300'	North/South line NORTH	Feet from the 2450'	East/West line EAST	County RIO ARRIBA
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¹¹ Bottom Hole Location If Different From Surface

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/319.80	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

16 CALC'D COR. BY DBL. PORP.	N 89-53-42 W 5354.3' (C)	2300'	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 Signature Richard Corcoran Printed Name Land Manager rich.corcoran@cdxgas.com Title and E-mail Address Date
LAT: 36°30'09.6" N. (NAD 83) LONG: 107°21'49.9" W. (NAD 83)	9	2450'	2450'	
				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 13 Date of Survey Signature and Registered Surveyor:  Certificate Number
Standard 640-ac	Section		CALC'D COR. BY DBL. PORP.	

Rio Arriba County, NM



1 CDX Rio, LLC

VICINITY MAP

CDX RIO, LLC

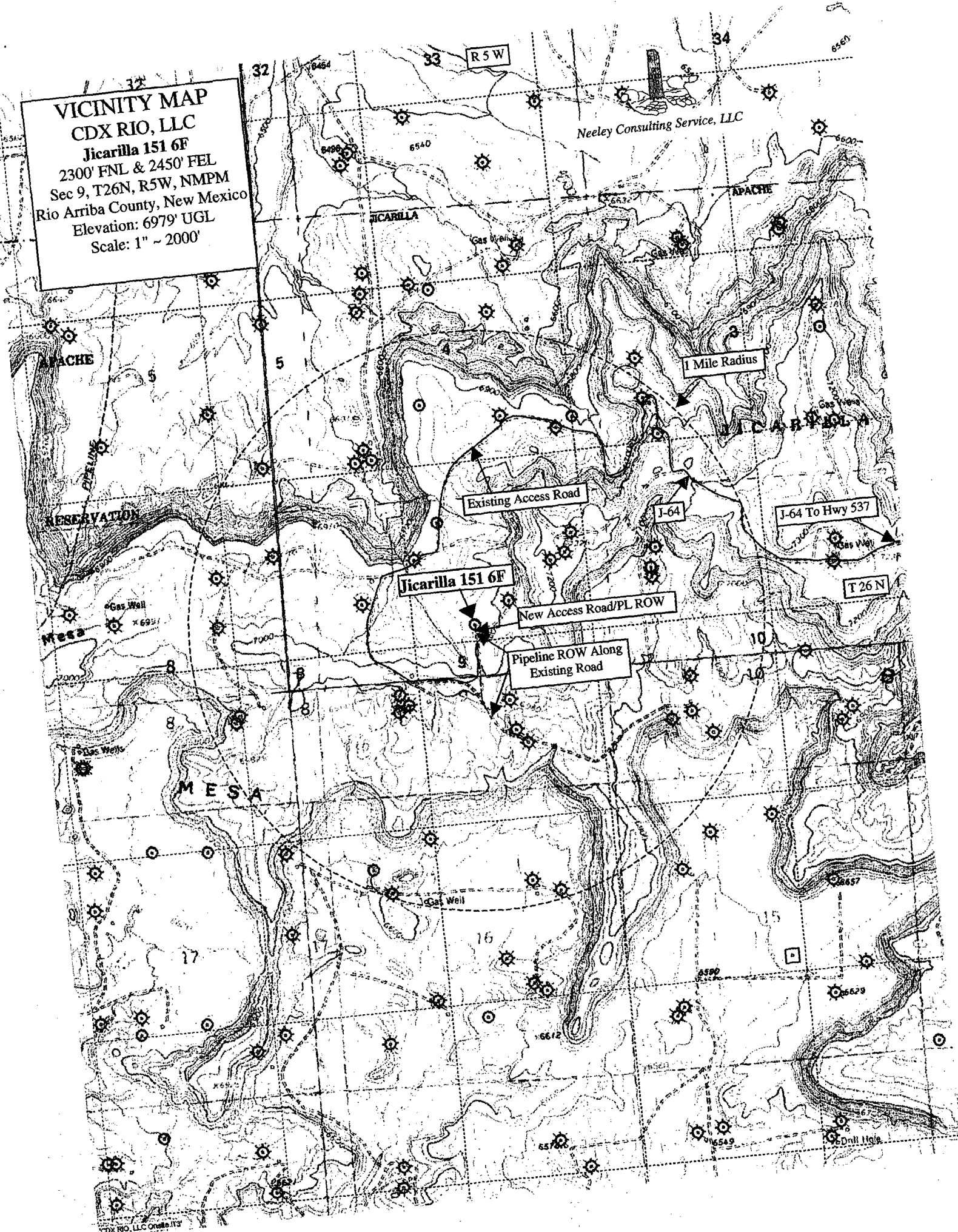
Jicarilla 151 6F

2300' FNL & 2450' FEL

Sec 9, T26N, R5W, NMPM
Rio Arriba County, New Mexico

Elevation: 6979' UGL

Scale: 1" ~ 2000'



Neeley Consulting Service, LLC

1 Mile Radius

Existing Access Road

Jicarilla 151 6F

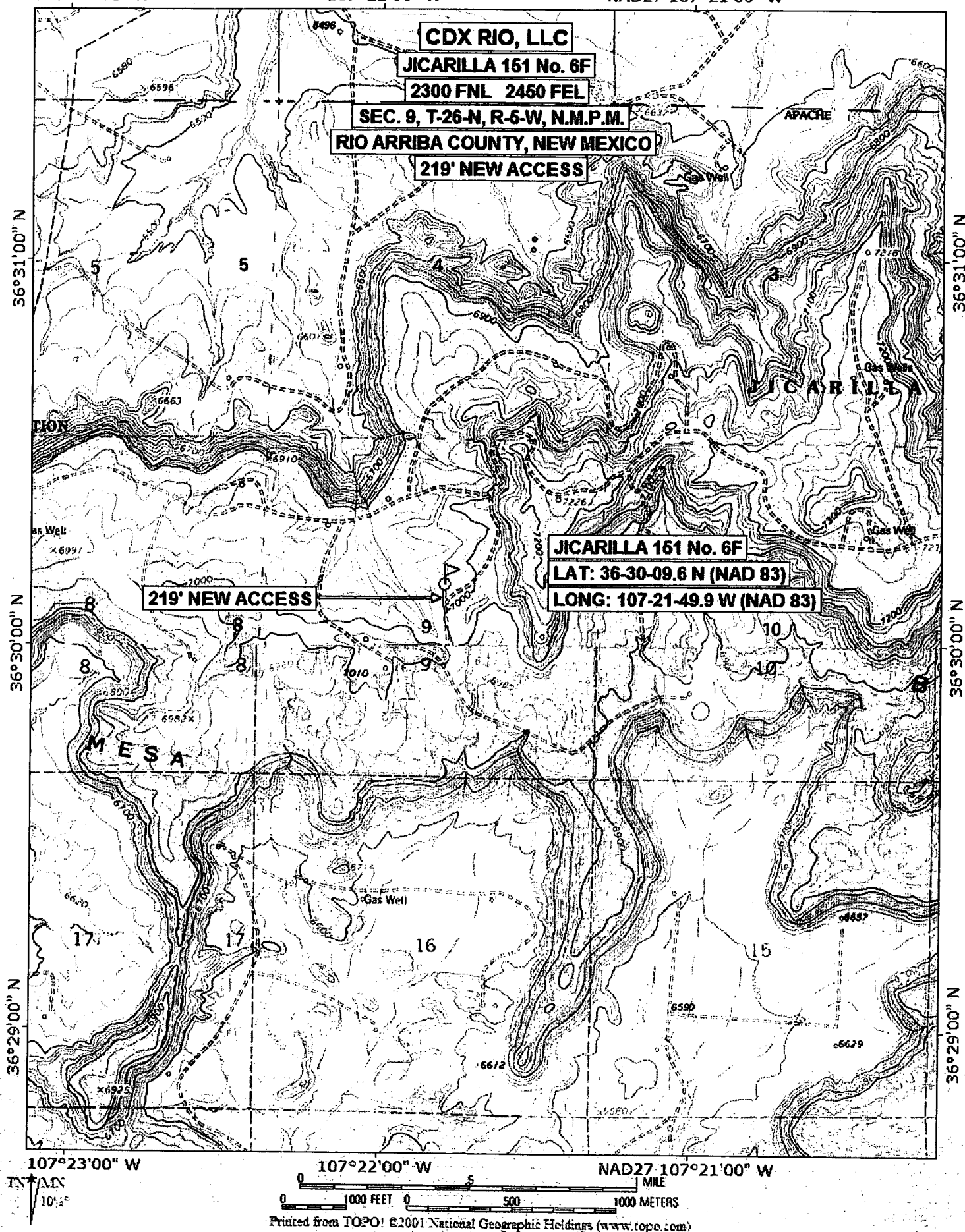
New Access Road/PL ROW

Pipeline ROW Along Existing Road

J-64 To Hwy 537

T 26 N

NAD27 107°21'00" W



DISTRICT I
1625 N. French Dr., Hobbs, N.M. 88240

DISTRICT II
1301 W. Grand Ave., Artesia, N.M. 88210

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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-	² Pool Code 71599	³ Pool Name Basin Dakota
⁴ Property Code 33458	⁵ Property Name JICARILLA 151	⁶ Well Number 6G
⁷ OGRID 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

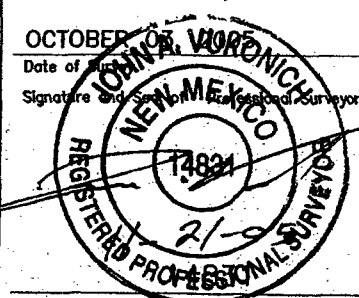
¹¹ Bottom Hole Location If Different From Surface

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/319.80	¹³ Joint or Infill Y	¹⁴ Consolidation Code	¹⁵ Order No.
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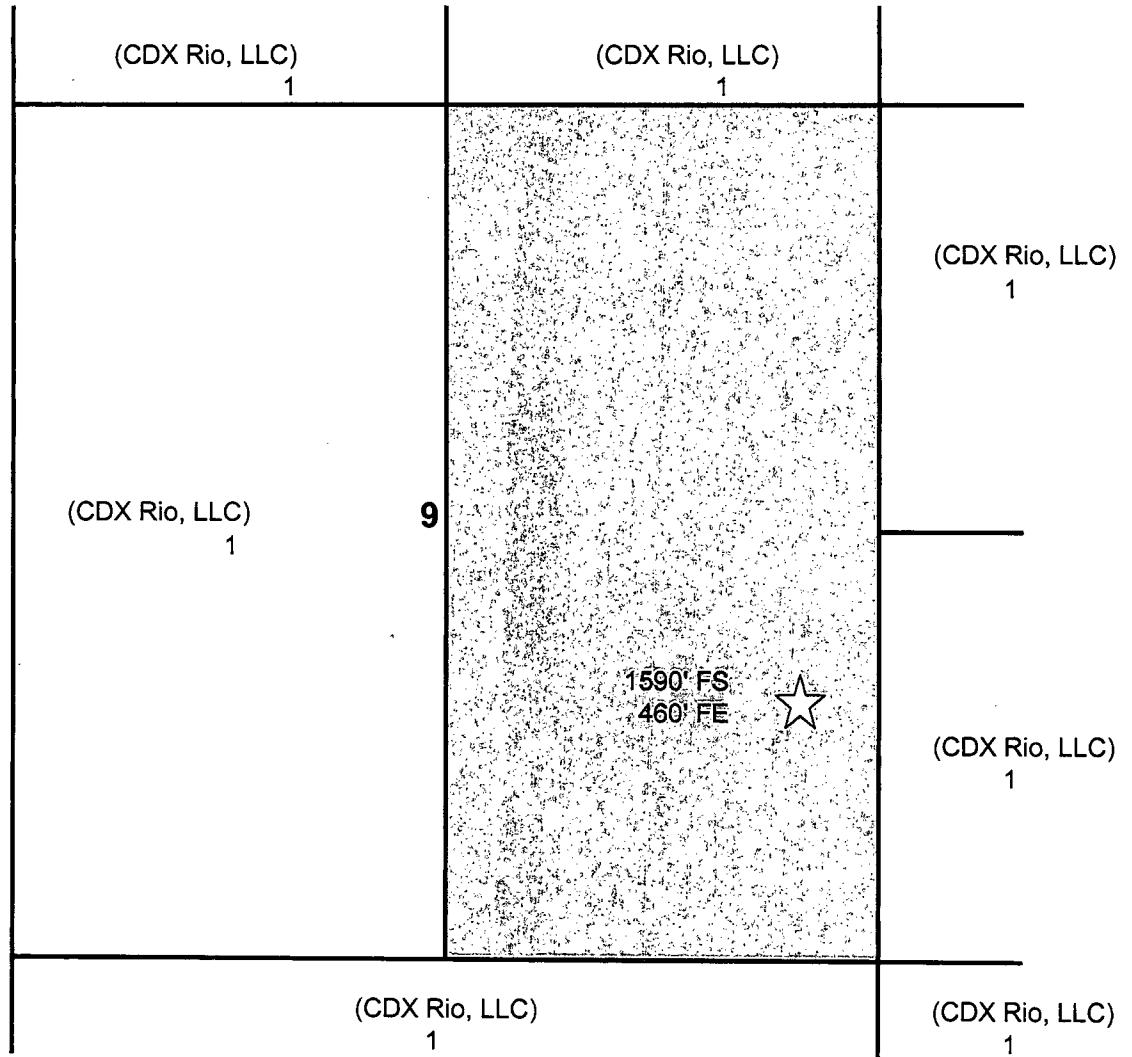
NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

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 Signature Richard Corcoran Printed Name Land Manager rich.corcoran@cdxgas.com Title and E-mail Address Date
9			
LAT: 36°29'55.6" N. (NAD 83) LONG: 107°21'25.8" W. (NAD 83)			
CALC'D COR. BY DBL. PORP.			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 10, 2003 Date of Survey Signature and Seal of Professional Surveyor:  Certificate Number 1

Standard 640-acre Section

CDX Rio, LLC
Jicarilla 151 #6G
OFFSET OPERATOR \ OWNER PLAT
Dakota Formation
E/2 Section 9 Township 26 North - Range 5 West
Rio Arriba County, NM



Tract 1 CDX Rio, LLC

VICINITY MAP

CDX RIO, LLC

Jicarilla 151 6G

1590' FSL & 460' FEL

Sec 9, T26N, R5W, NMPM

Rio Arriba County, New Mexico

Elevation: 6993' UGL

Scale: 1" ~ 2000'

R 5 W

Neeley Consulting Service, LLC

1 Mile Radius

Existing Access Road

J-64

J-64 To J-6 & Hwy 537

Jicarilla 151 6G

T 26 N

New Access Road/PL ROW

107°22'00" W

WGS84 107°21'00" W

36°31'00" N

36°31'00" N

36°30'00" N

36°30'00" N

36°29'00" N

36°29'00" N

CDX GAS, LLC

JICARILLA 151 No. 6G

1590 FSL 460 FEL

SEC. 9, T-26-N, R-5-W, N.M.P.M.

RIO ARriba COUNTY, NEW MEXICO

1010' NEW ACCESS

JICARILLA 151 No. 6G

LAT: 36-29-55.6 N (NAD 83)

LONG: 107-21-25.8 W (NAD 83)

1010' NEW ACCESS

107°22'00" W

WGS84 107°21'00" W

TN MN
10 1/2"

0 1000 FEET 0 500 1000 METERS

Map created with TOPO!® ©2002 National Geographic (www.nationalgeographic.com/topo)



To: Mike Stogner
From: Peter Kondrat, Senior Geologist and Rod Seale, Senior Petroleum Engineer
Subject: Approval Request of Mesaverde-Dakota Formations Unorthodox Infill Locations due to Reservoir Considerations
Location: CDX Rio, LLC Leasehold, Jicarilla Apache Nation, San Juan Basin
Date: May 3, 2006

Application:

CDX Rio, LLC respectfully requests the approval of the following listed unorthodox Mesaverde-Dakota Formations infill locations due to reservoir considerations.

Well Name & Number	Spot of Bottom Hole Location	Sec-Twn-Rng	Formations
14) Jicarilla 151 #6F	2300 FNL & 2450 FEL	9-T26N-R5W	DKOT
15) Jicarilla 151 #6G	1590 FSL & 460 FEL	9-T26N-R5W	DKOT

Summary:

CDX Rio, LLC is continuing its Mesaverde-Dakota 80-acre increased density infill development program of its San Juan Basin Tapicito Project located in the Jicarilla Apache Nation, Rio Arriba County, New Mexico. CDX is currently permitting both standard and non-standard locations to fulfill the development program. The proposed unorthodox gas well locations are necessitated by a combination of topographic, engineering and geologic factors. None of the proposed locations infringe on the correlative rights of other operators.

Utilizing geologic and engineering data, CDX has completed a detailed study identifying the most optimal locations for Mesaverde and Dakota Formation infill wells. These locations are defined as optimal because they ensure maximum recovery of reserves and minimize waste.

CDX has constructed various maps for the Mesaverde and Dakota Formations that depict:

- 1) Bulk volume hydrocarbon feet
- 2) Original GIP (OGIP)
- 3) Estimated Ultimate Recovery (EUR)
- 4) Remaining GIP (RGIP)
- 5) EUR Drainage Volume Ellipses that depict Producing Characteristics
- 6) Optimal Infill Development Locations

Exhibits

Attached are two sets of maps for each proposed unorthodox infill location.

- 1) Land plats that show CDX's leasehold and the proposed new drill bottom-hole locations.
- 2) Dakota Formation EUR drainage volume ellipses that depict the producing characteristics of the existing wells and also the proposed unorthodox infill locations. The volume ellipses acreage was computed using bulk volume hydrocarbon feet and EUR.
 - a. Both Mesaverde and Dakota Formations have fracture-permeability anisotropy resulting in elliptical drainages. Following the area's best practices the elliptical drainages were drawn at a 3.7:1 aspect ratio and with a maximum horizontal permeability direction of N10°.
 - b. The location of the Dakota Formation drainage ellipses is the primary reason for permitting non-standard locations. Dakota Formation infill locations were selected to optimize recovery for the rock unit.

References



NMOCD Case Number 12508; Order Number R-11503

NMOCD Case Number 12745; Order Number R-10987-B; 2002; To Amend the Special Rules and Regulations for the Basin-Dakota Pool to Increase Well Density and Amend the Well Location Requirements; Burlington Resources Oil and Gas Company and Conoco Incorporated; 15 pages

SPE Paper #60288; 2000; Producing Characteristics and Drainage Volume of Dakota Reservoirs, San Juan Basin; Arild Sunde, Her-Yuan Chen, Lawrence W. Teufel; 10 pages

SPE Paper #77742; 2002; An Effective Technique of Estimating Drainage Shape, Magnitude and Orientation in a Low-Permeability Gas Sand; Ryan L. Robinson and Thomas W. Engler; 8 pages

SPE Paper #39974; 1998; Drainage Efficiency in Naturally Fracture Tight Gas Sandstone Reservoirs; H. Harstad, L.W. Teufel and J.C. Lorenz; 11 pages

SPE Paper #39911; 1998; Potential for Infill Drilling in a Naturally Fractured Tight Gas Sandstone Reservoir; H. Harstad, L.W. Teufel and J.C. Lorenz; 11 pages

SPE Paper #38580; 1997; Methodology to Optimize Completions in the Mesaverde Formation, San Juan Basin, New Mexico; Brian P. Ault, Earuch F. Broacha and David L. Holcomb; 20 pages

SPE Paper #60295; 2000; Influence of Permeability Anisotropy and Reservoir Heterogeneity on Optimization of Infill Drilling in Naturally Fractured Tight-Gas Mesaverde Sandstone Reservoirs, San Juan Basin; H.K. Al-Hadrami and L.W. Teufel; 12 pages

SPE Paper #68598; 2001; Practical Methods to High-Grade Infill Opportunities Applied to the Mesaverde, Morrow and Cotton Valley Formations; J.W. Hudson, J.E. Jochen, J.P. Spivey; 11 pages

SPE Paper #21484; 1991; The Impact of Improved Technology on Potential Tight Gas Reserves in the San Juan Basin; M.R. Haas and T.E. Crist; 14 pages



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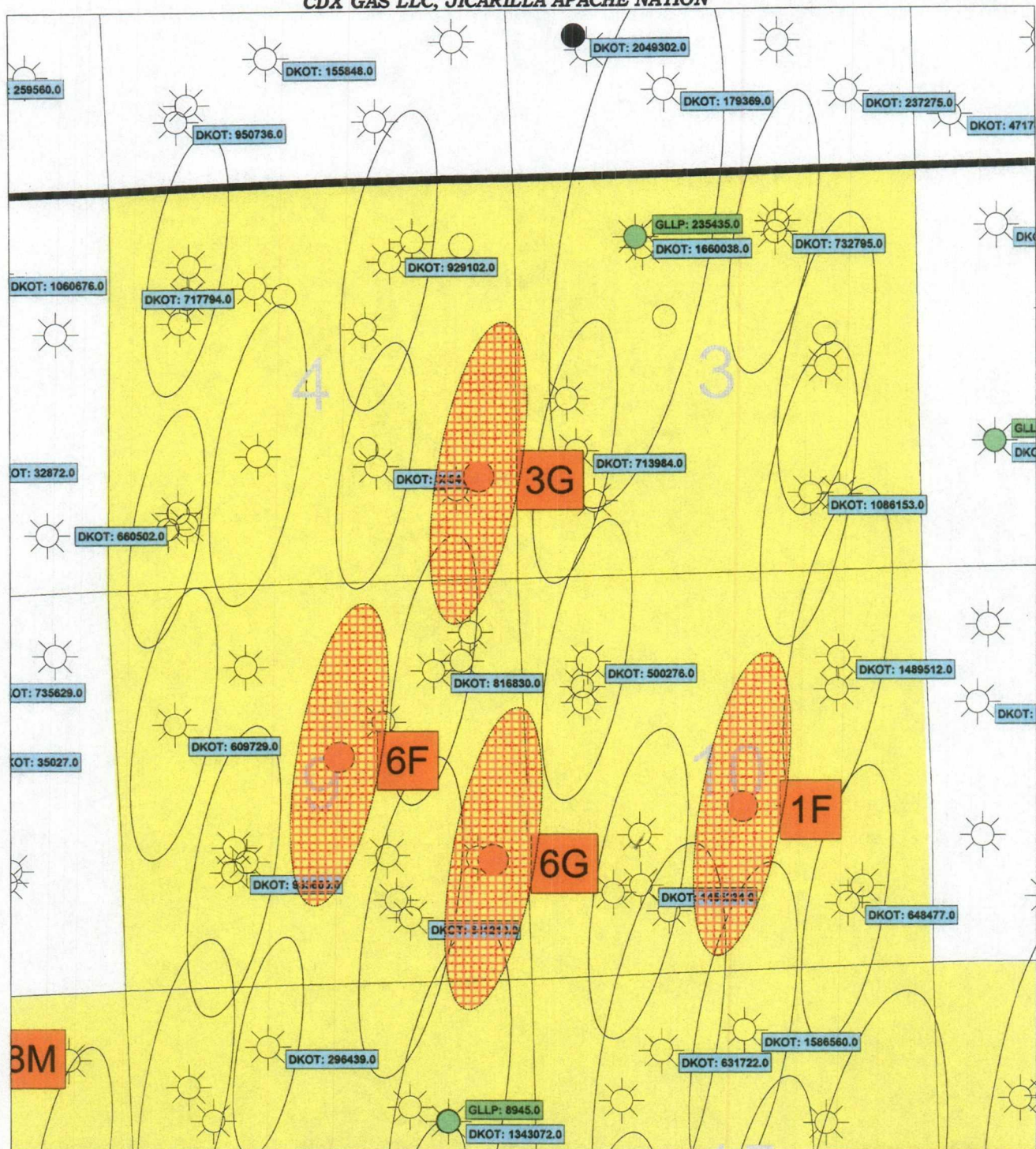
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PROPOSED JICARILLA 151 #3G, 151 #6F, 151 #6G & 151 #1F NEW DRILLS
DAKOTA FORMATION EUR DRAINAGES
CDX GAS LLC, JICARILLA APACHE NATION



DAKOTA FORMATION
 EXPECTED ULTIMATE
 RECOVERY (EUR)
 DRAINAGE ELLIPSE



PROPOSE DAKOTA
 FORMATION
 EXPECTED ULTIMATE
 RECOVERY (EUR)
 DRAINAGE ELLIPSE
 (80 ACRES)

1 inch = 2000 feet



151 #3G, 151 #6F,
 151 #6G, 151 #1F
 NEW DRILL
 LOCATIONS (DKOT)



GLLP/DKOT
 CUM GAS
 AS OF 9/2005



DKOT CUM GAS
 AS OF 9/2005



GLLP CUM GAS
 AS OF 9/2005

CDX GAS



CDX RIO, LLC
 DAKOTA FORMATION
 LEASEHOLD