Form 3160-3
(August 2007)

NOS: Ø
APDP: N/A
MP:
SMA: Tribal
BOND: OKC 606114
CA/PA: N/A

RECEIVED
JAN 02 2013
Farmington Field Office
Bureau of Land Manage

FORM APPROVED
OMB No. 1004-0137
Expires July 31, 2010

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.
BIA 360

6. If Indian, Allotee or Tribe Name
JICARILLA APACHE NATION

1a. Type of work: ☑ DRILL ☐ REENTER

7. If Unit or CA Agreement, Name and No.

1b. Type of Well: ☑ Oil Well ☐ Gas Well ☐ Other ☑ Single Zone ☐ Multiple Zone

8. Lease Name and Well No.
BONANZA 10

2. Name of Operator ELM RIDGE EXPLORATION COMPANY, LLC

9. API Well No.
30-043- 21138

3a. Address P. O. BOX 156
BLOOMFIELD, NM 87413

3b. Phone No. *(include area code)*
505 632 3476

10. Field and Pool, or Exploratory
LINDRITH GALLUP-DAKOTA, WEST

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*
At surface 660' FNL & 1650' FWL 12-22n-3w
At proposed prod. zone 660' FSL & 660' FWL 1-22n-3w

11. Sec., T. R. M. or Blk. and Survey or Area
SHL: NENW (C) 12-22N-3W NMPM
BHL: SWSW (M) 1-22N-3W NMPM

14. Distance in miles and direction from nearest town or post office*
15 AIR MILES NW OF CUBA, NM

12. County or Parish
SANDOVAL

13. State
NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)
3,630'

16. No. of acres in lease
2,541

17. Spacing Unit dedicated to this well
SW4 SEC. 1

RCVD APR 30 '13
OIL CONS. DIV.

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.
975' (CA 10)

19. Proposed Depth
7,605' MD

20. BLM/BIA Bond No. on file
BIA nationwide OKC 606114

DIST. 3

21. Elevations (Show whether DF, KDB, RT, GL, etc.)
7,180' GRADED

22. Approximate date work will start*
02/01/2013

23. Estimated duration
5 WEEKS

Hold C104
for Directional Survey
and "As Drilled" plat

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, must 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 must 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 BLM.

25. Signature — Name *(Printed/Typed)*: BRIAN WOOD (505 466-8120) — Date: 12/20/2012

Title: CONSULTANT (FAX 505 466-9682)

Approved by *(Signature)*: /s/ Manuel Montoya — Name *(Printed/Typed)*: — Date: 4/25/13

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.

(Continued on page 2)

*(Instructions on page 2)

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

BLM'S APPROVAL OR ACCEPTANCE OF THIS ACTION DOES NOT RELIEVE THE LESSEE AND OPERATOR FROM OBTAINING ANY OTHER AUTHORIZATION REQUIRED FOR OPERATIONS ON FEDERAL AND INDIAN LANDS

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

Hold C104
for Directional Survey
and "As Drilled" plat

NOTIFY AZTEC OCD 24 HRS. PRIOR TO CASING & CEMENT

JUN 11 2013

NMOCD

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.

DISTRICT I
1625 N. French Dr., Hobbs, N.M. 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
DISTRICT II
811 S. First St., Artesia, N.M. 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
DISTRICT III
1000 Rio Brazos Rd., Aztec, N.M. 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, N.M. 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, N.M. 87505

RECEIVED
JAN 02 2013
Farmington Field Office
Bureau of Land Management

Form C-102
Revised August 1, 2011
Submit one copy to appropriate District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1] API Number	[2] Pool Code	LINDRITH GALLUP-DAKOTA, WEST
30-043- 21138	39189	

[4] Property Code	[5] Property Name	[6] Well Number
27875	BONANZA	10

[7] OGRID No.	[8] Operator Name	[9] Elevation
149052	ELM RIDGE EXPLORATION COMPANY, LLC	7180

[10] Surface Location

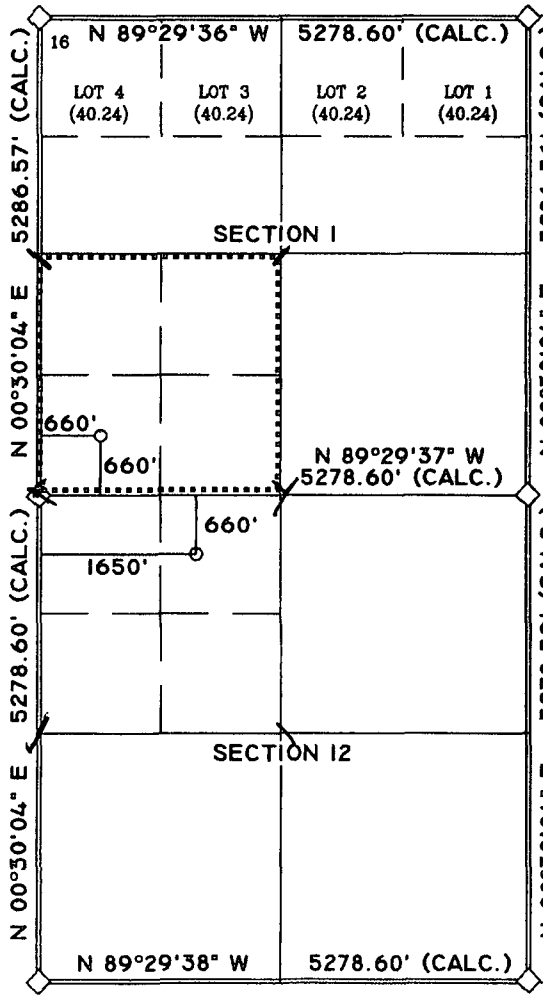
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
C	12	22 N	3 W	700	660	NORTH	1650	WEST	SANDOVAL

[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
M	1	22 N	3 W	700	660	SOUTH	660	WEST	SANDOVAL

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
160.94			

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



BOTTOM HOLE
LAT: 36.1603772° N
LONG: 107.1149078° W
NAD 83
LAT: 36°09.62161' N
LONG: 107°06.85856' W
NAD 27

SURFACE
LAT: 36.1567491° N
LONG: 107.1115532° W
NAD 83
LAT: 36°09.40391' N
LONG: 107°06.65729' W
NAD 27

LEGEND:
○ = SURFACE LOCATION
○ = BOTTOM HOLE LOCATION
◇ = CALCULATED SECTION CORNER, REFERENCED FROM U.S.D.I. B.L.M. PROTRACTION DIAGRAM DATED 8/04/09

[17] OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature — Date: 12-20-12

BRIAN WOOD

brian@permitswest.com

E-mail Address

[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.

09/26/12
Date of Survey

Signature and Seal of Professional Surveyor:

JOHN A. WILSONICH
NEW MEXICO
14831
REGISTERED PROFESSIONAL SURVEYOR

14831
Certificate Number

10-29-2012

Elm Ridge Exploration Company

Site: Sec 12 T-22-N,R-3-W
Well: Bonanza #10
Wellbore: DD
Design: #1

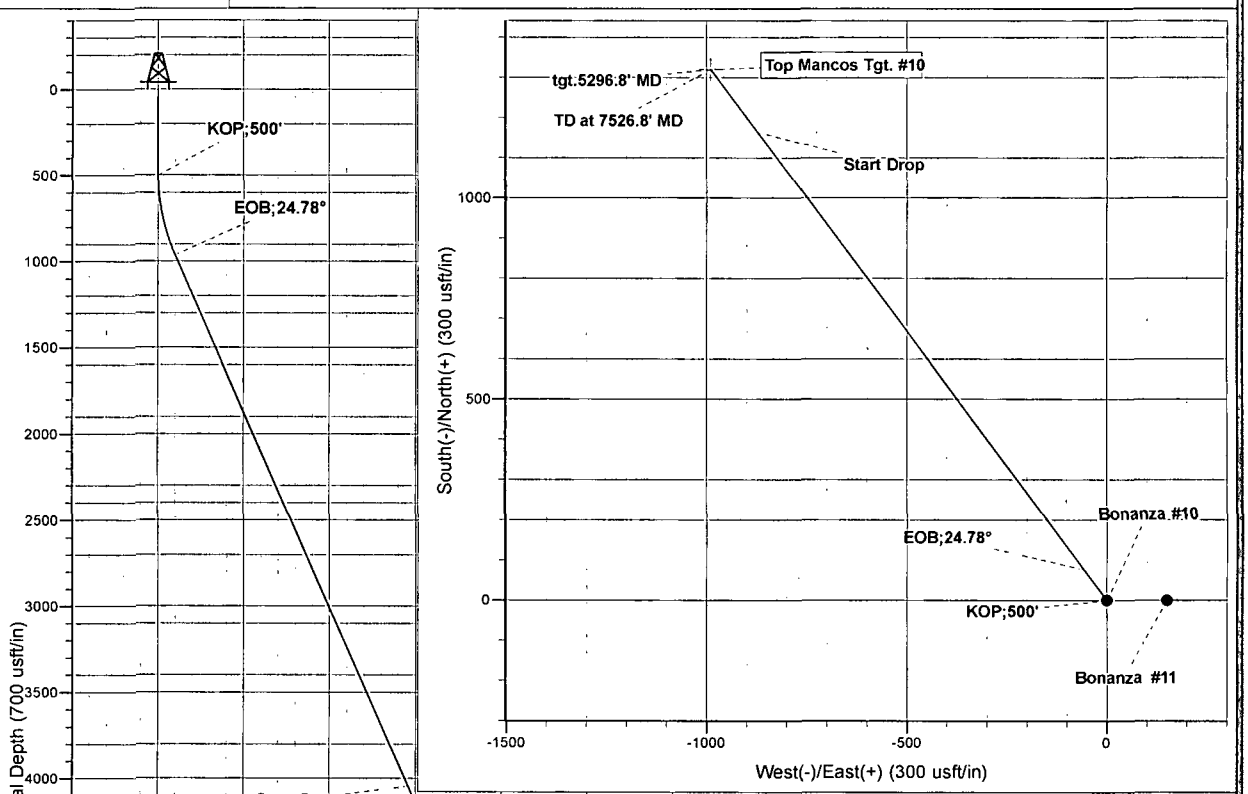
Reference Details - WELL CENTRE

Geodetic System: US State Plane 1983
Ellipsoid: GRS 1980
Zone: New Mexico Central Zone
Northing: 1877450.27
Easting: 1386086.66
Latitude: 36° 9' 24.297 N
Longitude: 107° 6' 41.592 W
Grid Convergence: 0.51° East
Ground Elevation: 7180.0
KB Elevation: Est RKB @ 7192.0usft (#10)

T Azimuths to True North
M Magnetic North: 9.32°
A
Magnetic Field
Strength: 50292.9snT
Dip Angle: 63.04°
Date: 5/6/2013
Model: IGRF2010

PLAN DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	500.0	0.00	0.00	500.0	0.0	0.0	0.00	0.00	0.0	
3	975.6	23.78	323.14	962.1	77.8	-58.4	5.00	323.14	97.3	
4	4345.5	23.78	323.14	4045.8	1165.1	-873.6	0.00	0.00	1456.2	
5	5296.8	0.00	0.00	4970.0	1320.8	-990.3	2.50	180.00	1650.8	Top Mancos Tgt. #10
6	7526.8	0.00	0.00	7200.0	1320.8	-990.3	0.00	0.00	1650.8	



ANNOTATIONS

TVD	MD	Annotation
500.0	500.0	KOP;500'
962.1	975.6	EOB;24.78°
4045.8	4345.5	Start Drop
4970.0	5296.8	tgt.5296.8' MD
7200.0	7526.8	TD at 7526.8' MD

FORMATION TOP DETAILS

No formation data is available

MESA WEST DIRECTIONAL

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well Bonanza #10
Company:	Elm Ridge Exploration Company	**TVD Reference:**	Est RKB @ 7192.0usft (#10)
Project:	Bonanza (Nad83)	**MD Reference:**	Est RKB @ 7192.0usft (#10)
Site:	Sec 12 T-22-N,R-3-W	**North Reference:**	True
Well:	Bonanza #10	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	DD		
Design:	#1		

Project	Bonanza (Nad83)		
Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Central Zone		

Site	Sec 12 T-22-N,R-3-W				
Site Position:		**Northing:**	1,877,448.86 usft	**Latitude:**	36° 9' 24.296 N
From:	Lat/Long	**Easting:**	1,386,236.69 usft	**Longitude:**	107° 6' 39.762 W
Position Uncertainty:	0.0 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	-0.51 °

Well	Bonanza #10				
Well Position	**+N/-S**	0.1 usft	**Northing:**	1,877,450.27 usft	**Latitude:**	36° 9' 24.297 N
	+E/-W	-150.0 usft	**Easting:**	1,386,086.66 usft	**Longitude:**	107° 6' 41.592 W
Position Uncertainty		0.0 usft	**Wellhead Elevation:**		**Ground Level:**	7,180.0 usft

Wellbore	DD			
Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	IGRF2010	5/6/2013	9.32	63.04	50,293

Design	#1			
Audit Notes:				
Version:	**Phase:**	PLAN	**Tie On Depth:**	0.0

Vertical Section:	**Depth From (TVD) (usft)**	**+N/-S (usft)**	**+E/-W (usft)**	**Direction (°)**
	0.0	0.0	0.0	323.14

Plan Sections

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.00	0.00	0.00	0.00	
975.6	23.78	323.14	962.1	77.8	-58.4	5.00	5.00	0.00	323.14	
4,345.5	23.78	323.14	4,045.8	1,165.1	-873.6	0.00	0.00	0.00	0.00	
5,296.8	0.00	0.00	4,970.0	1,320.8	-990.3	2.50	-2.50	0.00	180.00	Top Mancos Tgt. #10
7,526.8	0.00	0.00	7,200.0	1,320.8	-990.3	0.00	0.00	0.00	0.00	

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well Bonanza #10
Company:	Elm Ridge Exploration Company	**TVD Reference:**	Est RKB @ 7192.0usft (#10)
Project:	Bonanza (Nad83)	**MD Reference:**	Est RKB @ 7192.0usft (#10)
Site:	Sec 12 T-22-N,R-3-W	**North Reference:**	True
Well:	Bonanza #10	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	DD		
Design:	#1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	-7,192.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP;500'										
500.0	0.00	0.00	500.0	-6,692.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	5.00	323.14	599.9	-6,592.1	3.5	-2.6	4.4	5.00	5.00	0.00
700.0	10.00	323.14	699.0	-6,493.0	13.9	-10.4	17.4	5.00	5.00	0.00
800.0	15.00	323.14	796.6	-6,395.4	31.2	-23.4	39.0	5.00	5.00	0.00
900.0	20.00	323.14	891.9	-6,300.1	55.3	-41.5	69.1	5.00	5.00	0.00
EOB;24.78°										
975.6	23.78	323.14	962.1	-6,229.9	77.8	-58.4	97.3	5.00	5.00	0.00
1,000.0	23.78	323.14	984.4	-6,207.6	85.7	-64.3	107.1	0.00	0.00	0.00
1,100.0	23.78	323.14	1,075.9	-6,116.1	118.0	-88.5	147.5	0.00	0.00	0.00
1,200.0	23.78	323.14	1,167.4	-6,024.6	150.2	-112.6	187.8	0.00	0.00	0.00
1,300.0	23.78	323.14	1,258.9	-5,933.1	182.5	-136.8	228.1	0.00	0.00	0.00
1,400.0	23.78	323.14	1,350.4	-5,841.6	214.8	-161.0	268.4	0.00	0.00	0.00
1,500.0	23.78	323.14	1,441.9	-5,750.1	247.0	-185.2	308.8	0.00	0.00	0.00
1,600.0	23.78	323.14	1,533.4	-5,658.6	279.3	-209.4	349.1	0.00	0.00	0.00
1,700.0	23.78	323.14	1,625.0	-5,567.0	311.6	-233.6	389.4	0.00	0.00	0.00
1,800.0	23.78	323.14	1,716.5	-5,475.5	343.8	-257.8	429.7	0.00	0.00	0.00
1,900.0	23.78	323.14	1,808.0	-5,384.0	376.1	-282.0	470.1	0.00	0.00	0.00
2,000.0	23.78	323.14	1,899.5	-5,292.5	408.3	-306.2	510.4	0.00	0.00	0.00
2,100.0	23.78	323.14	1,991.0	-5,201.0	440.6	-330.4	550.7	0.00	0.00	0.00
2,200.0	23.78	323.14	2,082.5	-5,109.5	472.9	-354.5	591.0	0.00	0.00	0.00
2,300.0	23.78	323.14	2,174.0	-5,018.0	505.1	-378.7	631.4	0.00	0.00	0.00
2,400.0	23.78	323.14	2,265.5	-4,926.5	537.4	-402.9	671.7	0.00	0.00	0.00
2,500.0	23.78	323.14	2,357.0	-4,835.0	569.7	-427.1	712.0	0.00	0.00	0.00
2,600.0	23.78	323.14	2,448.5	-4,743.5	601.9	-451.3	752.3	0.00	0.00	0.00
2,700.0	23.78	323.14	2,540.0	-4,652.0	634.2	-475.5	792.7	0.00	0.00	0.00
2,800.0	23.78	323.14	2,631.6	-4,560.4	666.5	-499.7	833.0	0.00	0.00	0.00
2,900.0	23.78	323.14	2,723.1	-4,468.9	698.7	-523.9	873.3	0.00	0.00	0.00
3,000.0	23.78	323.14	2,814.6	-4,377.4	731.0	-548.1	913.6	0.00	0.00	0.00
3,100.0	23.78	323.14	2,906.1	-4,285.9	763.2	-572.3	954.0	0.00	0.00	0.00
3,200.0	23.78	323.14	2,997.6	-4,194.4	795.5	-596.5	994.3	0.00	0.00	0.00
3,300.0	23.78	323.14	3,089.1	-4,102.9	827.8	-620.6	1,034.6	0.00	0.00	0.00
3,400.0	23.78	323.14	3,180.6	-4,011.4	860.0	-644.8	1,074.9	0.00	0.00	0.00
3,500.0	23.78	323.14	3,272.1	-3,919.9	892.3	-669.0	1,115.3	0.00	0.00	0.00
3,600.0	23.78	323.14	3,363.6	-3,828.4	924.6	-693.2	1,155.6	0.00	0.00	0.00
3,700.0	23.78	323.14	3,455.1	-3,736.9	956.8	-717.4	1,195.9	0.00	0.00	0.00
3,800.0	23.78	323.14	3,546.6	-3,645.4	989.1	-741.6	1,236.2	0.00	0.00	0.00
3,900.0	23.78	323.14	3,638.1	-3,553.9	1,021.4	-765.8	1,276.6	0.00	0.00	0.00
4,000.0	23.78	323.14	3,729.7	-3,462.3	1,053.6	-790.0	1,316.9	0.00	0.00	0.00
4,100.0	23.78	323.14	3,821.2	-3,370.8	1,085.9	-814.2	1,357.2	0.00	0.00	0.00
4,200.0	23.78	323.14	3,912.7	-3,279.3	1,118.1	-838.4	1,397.5	0.00	0.00	0.00
4,300.0	23.78	323.14	4,004.2	-3,187.8	1,150.4	-862.5	1,437.9	0.00	0.00	0.00
Start Drop										
4,345.5	23.78	323.14	4,045.8	-3,146.2	1,165.1	-873.6	1,456.2	0.00	0.00	0.00
4,400.0	22.42	323.14	4,096.0	-3,096.0	1,182.2	-886.4	1,477.6	2.50	-2.50	0.00

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well Bonanza #10
Company:	Elm Ridge Exploration Company	**TVD Reference:**	Est RKB @ 7192.0usft (#10)
Project:	Bonanza (Nad83)	**MD Reference:**	Est RKB @ 7192.0usft (#10)
Site:	Sec 12 T-22-N,R-3-W	**North Reference:**	True
Well:	Bonanza #10	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	DD		
Design:	#1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,500.0	19.92	323.14	4,189.2	-3,002.8	1,211.1	-908.0	1,513.7	2.50	-2.50	0.00
4,600.0	17.42	323.14	4,283.9	-2,908.1	1,236.7	-927.2	1,545.7	2.50	-2.50	0.00
4,700.0	14.92	323.14	4,380.0	-2,812.0	1,259.0	-943.9	1,573.5	2.50	-2.50	0.00
4,800.0	12.42	323.14	4,477.1	-2,714.9	1,277.9	-958.1	1,597.2	2.50	-2.50	0.00
4,900.0	9.92	323.14	4,575.2	-2,616.8	1,293.4	-969.7	1,616.5	2.50	-2.50	0.00
5,000.0	7.42	323.14	4,674.1	-2,517.9	1,305.4	-978.8	1,631.6	2.50	-2.50	0.00
5,100.0	4.92	323.14	4,773.5	-2,418.5	1,314.0	-985.2	1,642.4	2.50	-2.50	0.00
5,200.0	2.42	323.14	4,873.3	-2,318.7	1,319.2	-989.1	1,648.8	2.50	-2.50	0.00
tgt.5296.8' MD										
5,296.8	0.00	0.00	4,970.0	-2,222.0	1,320.8	-990.3	1,650.8	2.50	-2.50	0.00
TD at 7526.8' MD										
7,526.8	0.00	0.00	7,200.0	8.0	1,320.8	-990.3	1,650.8	0.00	0.00	0.00

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Top Mancos Tgt. #10 - plan hits target center - Point	0.00	0.00	4,970.0	1,320.8	-990.3	1,878,779.79	1,385,108.13	36° 9' 37.358 N	107° 6' 53.668 W

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
500.0	500.0	0.0	0.0	KOP;500'
975.6	962.1	77.8	-58.4	EOB;24.78°
4,345.5	4,045.8	1,165.1	-873.6	Start Drop
5,296.8	4,970.0	1,320.8	-990.3	tgt.5296.8' MD
7,526.8	7,200.0	1,320.8	-990.3	TD at 7526.8' MD

Elm Ridge Exploration Company, LLC
Bonanza 10
SHL: 660 FNL & 1650 FWL Sec. 12, T. 22 N., R. 3 W.
BHL: 660 FSL & 660 FWL Sec. 1, T. 22 N., R. 3 W.
Sandoval County, New Mexico

Drilling Program

1. ESTIMATED FORMATION TOPS

Formation Name	TVD	KB Depth	Elevation
San Jose	0'	10'	+7,180'
Nacimiento	1,015'	1,025'	+6,165'
Ojo Alamo	2,260'	2,270'	+4,920'
Kirtland	2,375'	2,380'	+4,805'
Fruitland Coal	2,510'	2,520'	+4,670'
Pictured Cliffs Ss	2,615'	2,625'	+4,565'
Lewis shale	2,740'	2,750'	+4,440'
Chacra Ss	3,365'	3,375'	+3,815'
Cliff House Ss	4,105'	4,115'	+3,075'
Menefee	4,200'	4,210'	+2,980'
Point Lookout Ss	4,680'	4,690'	+2,500'
Mancos Shale	4,975'	4,985'	+2,205'
Gallup Ss	5,700'	5,710'	+1,480'
Greenhorn	6,720'	6,730'	+460'
Graneros	6,780'	6,790'	+400'
Dakota Ss	6,810'	6,820'	+370'
Measured Total Depth*	7,605'	7,210'	-20'

* True vertical depth = 7,200'

2. NOTABLE ZONES

Oil & Gas Zones	Water Zones	Coal Zone
Ojo Alamo	San Jose	Fruitland
Pictured Cliffs	Ojo Alamo	
Chacra	Fruitland	
Gallup		
Dakota		

All water zones will be protected with casing, cement, and weighted mud. Fresh water will be recorded by depth. Oil and gas shows will be tested for commercial potential based on the well site geologist's recommendations.

3. PRESSURE CONTROL

The drilling contract has not yet been awarded, thus the exact BOP model to be used is not yet known. A typical 3,000-psi model is on PAGE 3. The ≥3,000-psi BOP and choke manifold system will be installed and tested to 2,000-psi before drilling the surface casing plug. It will remain in use until the well is completed or abandoned. A safety valve and sub with a full opening valve to fit the drill pipe and collars will be available on the rig floor in the open position at all times for use when the Kelly is not in use.

All BOP mechanical and pressure tests will be recorded on the driller's log. BOPs will be inspected and opened and closed at least daily to assure good mechanical working order. Inspections will be recorded on the daily drilling report. Pressure tests will be conducted before drilling out from under all casing strings that are set and cemented in place.

4. CASING & CEMENT

Hole Size	O. D.	Weight (lb/ft)	Grade	Type	Age	Setting Depth
12-1/4"	8-5/8"	24	J-55	S T & C	New	360'
7-7/8"	5-1/2"	15.5	J-55	L T & C	New	7,605'

	Drift inch	Torque feet-pounds	Burst psi	Collapse psi	Tension 1000 psi	Pressure Test psi
Surface	7.972	3070	2950	1370	381	1000
Production	4.653	2020	4810	4040	248	3500

Surface casing will be cemented to the surface with ≈310 cubic feet (≈262 sacks) Class B with 1/4 pound per sack cellophane + 2% $CaCl_2$. Yield = 1.18 cubic feet per sack. Weight = 15.2 pounds per gallon. Volume = 100% excess. Centralizers will be installed on the middle of the shoe joint and every other centralizer thereafter. Thread-lock the guide shoe and bottom of float collar only. Use API casing dope. Will test to ≈800 psi for ≈30 minutes.

Production casing will be cemented to the surface in two stages with ≥75% excess. A stage tool will be set at ≈4,775' (≈200' above the Mancos). Will pressure test to 2,000-psi for 30 minutes.

First stage volume will be ≈1,377 cubic feet. First stage will consist of 370 sacks (≈692 cubic feet) Halliburton light with 65/35 poz mix + 1/4 pound per sack Flocele + 2% $CaCl_2$ mixed at a yield of 1.87 cubic feet per sack and a weight of 12.7 pounds per gallon. That will be followed by 685 sacks (808 cubic feet) Class B + 2% $CaCl_2$ mixed at a yield of 1.18 cubic feet per sack and a weight of 15.2 pounds per gallon.

Second stage volume will be ≈1,692 cubic feet. Second stage will consist of ≈875 sacks (1,636 cubic feet) of Halliburton light with 65/35 poz mix + 1/4 pound per sack Flocele + 2% $CaCl_2$ mixed at a yield of 1.87 cubic feet per sack and a weight of 12.7 pounds per gallon. That will be followed by ≈50 sacks (59 cubic feet) Class B + 2% $CaCl_2$ mixed at a yield of 1.18 cubic feet per sack and a weight of 15.2 pounds per gallon.

5. MUD PROGRAM

Depth	Type	ppg	Viscosity	Fluid Loss	pH
0' - 360'	Fresh water gel	9.0	50	NC	9
360' - TD'	Fresh water gel	9.0	38-50	6.0	9

Sufficient material to maintain mud properties, control lost circulation, and contain a blowout will be available at the well site while drilling. Rig personnel will check the mud hourly. Material to soak up possible oil or fuel spills will be on site.

6. CORES, TESTS, & LOGS

No core or drill stem test is planned. Spectral density, high-resolution induction, and cement bond logs will be run the base of the surface casing to TD. Samples will be collected every ≈10' from ≈200' above the Point Lookout to and through the Gallup and Dakota.

7. DOWN HOLE CONDITIONS

No abnormal pressures, temperatures, nor hydrogen sulfide are expected. Maximum bottom hole pressure will be ≤3,139 psi.

8. OTHER INFORMATION

The anticipated spud date is upon approval. It is expected it will take ≈2 weeks to drill and ≈3 weeks to complete the well.

Surface Use Plan

1. DIRECTIONS & EXISTING ROADS (See PAGES 10 - 13)

From the equivalent of Mile Post 80.5 on US 550...
Go NE 2.9 miles on gravel J-37
Then turn right and go ESE 1.3 miles on dirt J-38 to just past a cattle guard
Turn left and go Northeast 1.5 miles to a 3-way junction
Then turn right and go Southeast 0.4 mile on a dirt road
Turn left and go Northeast 0.1mile to Elm Ridge's Chacon Amigos 10 pad
Then turn right and go East 813' cross country to the well site

Roads will be maintained to at least equal to their present condition.

2. ROAD TO BE BUILT OR UPGRADED (See PAGES 12 & 13)

Upgrades will consist of repairing potholes. The ≈813' of new road will be built to BLM Gold Book standards. Road will be crowned and ditched, have a ≈14' wide running surface, and will be rocked where needed. Borrow ditches will be turned out in at least 3 places. Turnouts will be feathered out. An ≥18" x 30' culvert will be installed at the entrance to the pad. Maximum disturbed width will be 30' (all within 40' pipeline corridor). Maximum cut or fill = 3'. Maximum grade = 6%. No cattle guard is needed.

3. EXISTING WELLS (See PAGE 11)

Twenty-three gas or oil wells, two plugged and abandoned wells, and one water well are within a mile radius. There are no injection wells within a mile.

4. PROPOSED PRODUCTION FACILITIES (See PAGES 12 & 13)

Production facilities will include a separator, dehydrator, meter run, and two ≈300 bbl tanks. All of the equipment will be painted a flat juniper green.

A 1,082.34' long steel 4-1/2" O. D. natural gas pipeline will be laid west to Elm Ridge's existing Chacon Amigos 10 pad. The pipeline will be buried ≈36" deep and 10' to 15' from the road.

5. WATER SUPPLY

Water will be trucked from the Tribal water well that is one mile northwest of the junction of NM 537 and US 550.

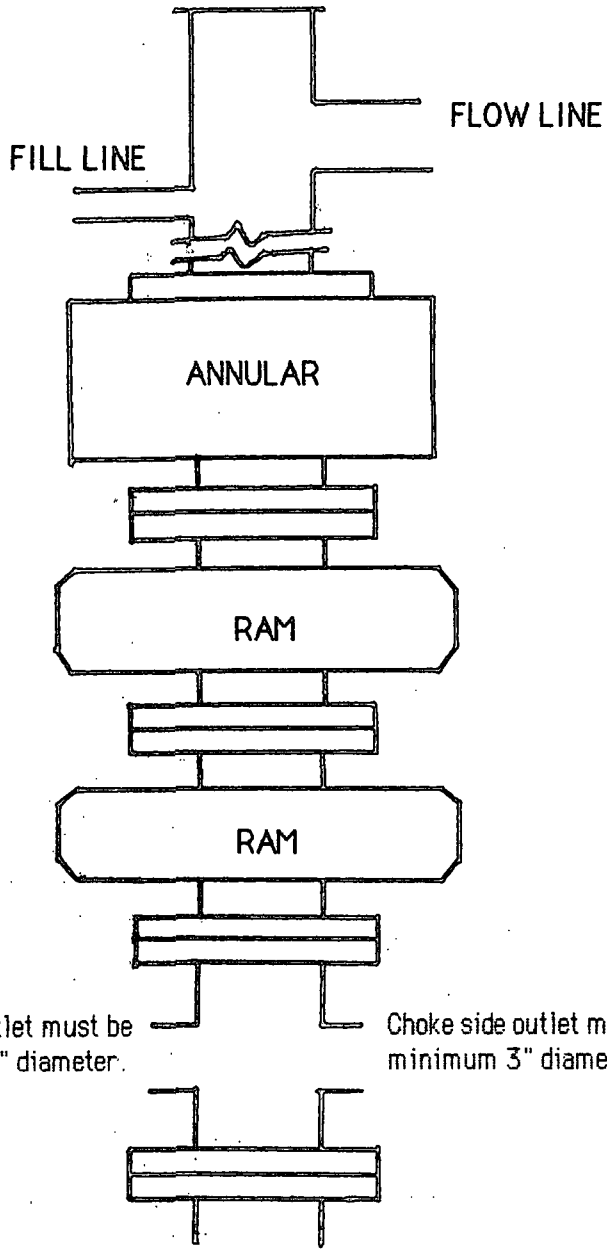
6. CONSTRUCTION MATERIALS & METHODS (See PAGES 14 & 15)

Sagebrush will be brush hogged. The top 6" of soil and will be bladed and piled north of the pad. Pit subsoil will be piled north of the pit and separate from the topsoil pile. A diversion ditch will be cut north of the piles. Silt traps will be built above and below the pad.

7. WASTE DISPOSAL

A ≥20 mil plastic liner will be installed in the reserve pit. The pit will be fenced sheep tight on 3 sides with woven wire fence topped with barbed wire. The fourth side will be fenced once the rig moves off. The fence will be kept in good repair while the pit dries. Once dry, pit contents will be buried in place.

All trash will be placed in a portable trash cage. It will be hauled to an approved landfill. Human waste will be disposed of in chemical toilets.



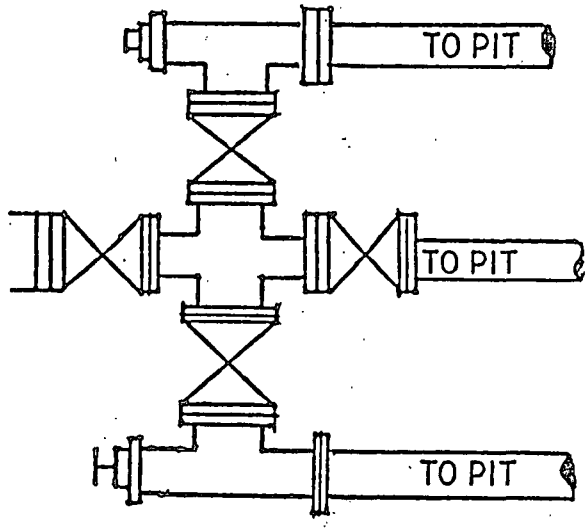
Kill side outlet must be minimum 2" diameter.

Choke side outlet must be minimum 3" diameter.

Kill line will be minimum 2" diameter and have 2 valves, one of which shall be a minimum 2" check valve.

TYPICAL BOP STACK & CHOKE MANIFOLD

There will be at least 2 chokes and 2 choke line valves (3" minimum). The choke line will be 3" in diameter. There will be a pressure gauge on the choke manifold.



Upper kelly cock will have handle available.
Safety valve and subs will fit all drill string connections in use.
All BOPE connections subjected to well pressure will be flanged, welded, or clamped.