

State of New Mexico
Energy, Minerals and Natural Resources Department

Susana Martinez
Governor

David Martin
Cabinet Secretary-Designate

Brett F. Woods, Ph.D.
Deputy Cabinet Secretary

Jami Bailey, Division Director
Oil Conservation Division



New Mexico Oil Conservation Division approval and conditions
listed below are made in accordance with OCD Rule 19.15.7.11
and are in addition to the actions approved by BLM on the
following 3160-3 APD form.

Operator Signature Date: 6/24/13

Well information;

Operator: Elm Ridge, Well Name and Number: Bonanza #13

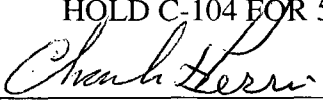
API#: 30-043-21162, Section 1, Township 22 N S, Range 3 E W

Conditions of Approval:

(See the below checked and handwritten conditions)

- ☒ Notify Aztec OCD 24hrs prior to casing & cement.
- ☒ Hold C-104 for directional survey & "As Drilled" Plat
- ☐ Hold C-104 for NSL, NSP, DHC
- ☐ Spacing rule violation. Operator must follow up with change of status notification on other well to be shut in or abandoned
- ☐ Regarding the use of a pit, closed loop system or below grade tank, the operator must comply with the following as applicable:
 - A pit requires a complete C-144 be submitted and approved prior to the construction or use of the pit, pursuant to 19.15.17.8.A
 - A closed loop system requires notification prior to use, pursuant to 19.15.17.9.A
 - A below grade tank requires a registration be filed prior to the construction or use of the below grade tank, pursuant to 19.15.17.8.C
- ☐ Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string
- ☐ Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils

*****THIS APPROVAL IS FOR POOL: LINDRITH GALLUP-DAKOTA WEST; ONLY
HOLD C-104 FOR 5.9 COMPLIANCE


NMOCD Approved by Signature

1-6-14 ca
Date

RECEIVED

JUN 26 2013

Form 3160-3
(August 2007)

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Farmington Field Office

Bureau of Land Management

Lease Serial No.
BIA 360

APPLICATION FOR PERMIT TO DRILL OR REENTER

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 13
2. Name of Operator ELM RIDGE EXPLORATION COMPANY, LLC		9. API Well No. 30-043- 21162
3a. Address P. O. BOX 156 BLOOMFIELD, NM 87413	3b. Phone No. (include area code) 505 632 3476	10. Field and Pool, or Exploratory WC MANCOS & LINDRITH GAL-DK, W
4. Location of Well (Report location clearly and in accordance with any State requirements.) At surface 1216' FNL & 1925' FWL 1-22N-3W At proposed prod. zone 1980' FNL & 660' FWL 1-22N-3W		11. Sec., T. R. M. or Blk. and Survey or Area SHL: NENW (C) 1-22N-3W NMPM BHL: SWNW (E) 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
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) SHL: 1216' BHL: 1980'		16. No. of acres in lease 2,541
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. SHL: 432' (360 #1) BHL: 1040' (Bonanza 12)		17. Spacing Unit dedicated to this well MANCOS: SWNW 40 GALLUP-DAKOTA: NW4 160.48
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 7,182' GRADED		20. BLM/BIA Bond No. on file BIA nationwide OKC 606114
22. Approximate date work will start* 08/01/2013		23. Estimated duration 5 WEEKS RCVD DEC 26 '13

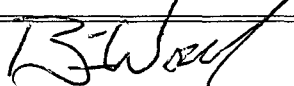
24. Attachments

OIL CONS. DIV.

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, must be attached to this form:

DIST. 3

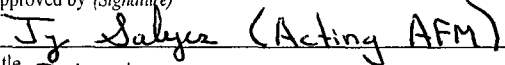
- Well plat certified by a registered surveyor.
- A Drilling Plan.
- A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office).
- Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
- Operator certification
- 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 06/17/2013
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Title

CONSULTANT

(FAX 505 466-9682)

Approved by (Signature) 	Name (Printed/Typed) Troy Salyers (Acting AFM)	Date 12/23/13
Title Petroleum Engineer	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)

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

NMOC
FY

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

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
1825 N. French Dr., Hobbs, N.M. 88240
Phone: (575) 393-6181 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) 478-3480 Fax: (505) 478-3482

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION

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

RECEIVED

JUN 26 2013

Form C-102

Revised August 1, 2011

Submit one copy to appropriate

District Office

Farmington Field Office
Bureau of Land Management
AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-043-21162	Pool Code 39189	Pool Name LINDRITH GALLUP-DAKOTA. WEST
Property Code 007744 27875	Property Name BONANZA	Well Number 13
GRID No. 149052	Operator Name ELM RIDGE EXPLORATION COMPANY, LLC	Elevation 7182

10 Surface Location

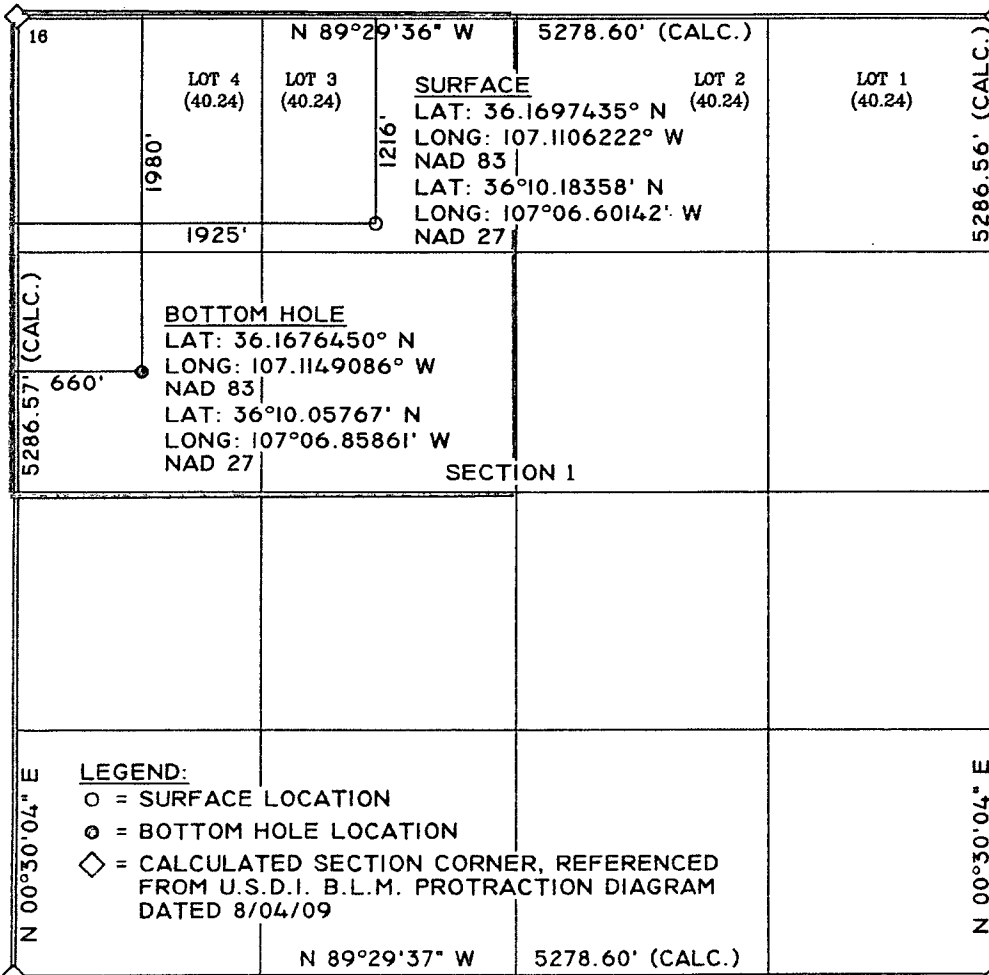
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
C	1	22 N	3 W	LOT 3	1216	NORTH	1925	WEST	SANDOVAL

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
E	1	22 N	3 W		1980	NORTH	660	WEST	SANDOVAL

Dedicated Acres 160.00	Joint or Infill	Consolidation Code	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



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: *Brian Wood* Date: 6-17-13

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 knowledge.

02/28/13

Date of Survey

Signature and Seal: *John Vukovich* Professional Surveyor No. 14831

JOHN VUKOVICH
NEW MEXICO
REGISTERED PROFESSIONAL SURVEYOR

14831

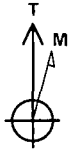
Certificate Number: 3-20-2013

Elm Ridge Exploration Company.

Project: Sandoval County (Nad83)
Site: NENW-1-22N-3W
Well: Bonanza #13
Wellbore: DD
Plan: #1

Reference Details - WELL CENTRE

Geodetic System: US State Plane 1983
Ellipsoid: GRS 1980
Zone: New Mexico Central Zone
Northing: 1882178.10
Easting: 1386403.43
Latitude: 36° 10' 11.077 N
Longitude: 107° 6' 38.240 W
Grid Convergence: 0.51° East
Ground Elevation: 7182.0
KB Elevation: Est RKB @ 7194.0usft

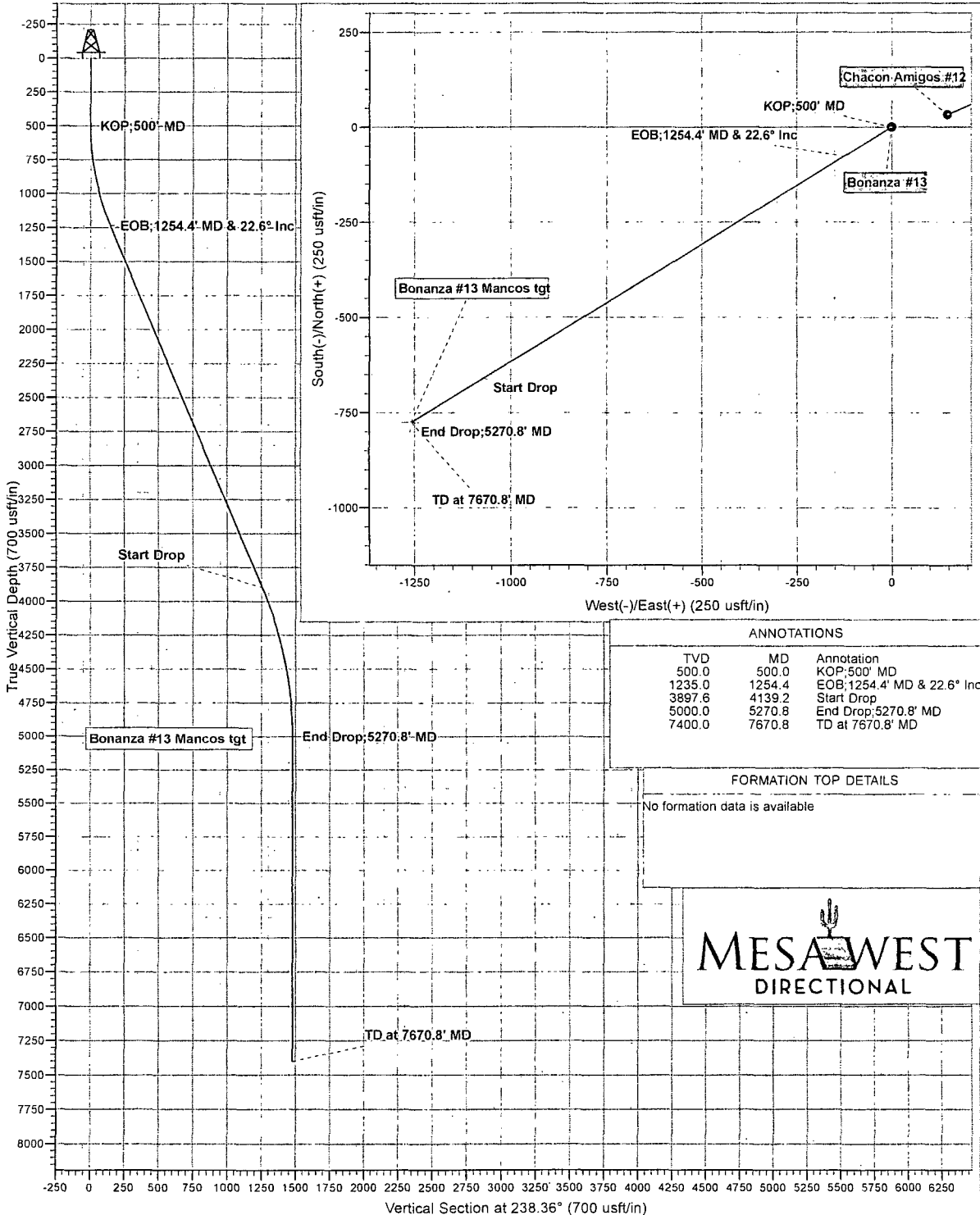


Azimuths to True North
Magnetic North: 9.30°

Magnetic Field
Strength: 50290.5nT
Dip Angle: 63.04°
Date: 6/12/2013
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	1254.4	22.63	238.36	1235.0	-77.1	-125.2	3.00	238.36	147.1	
4	4139.2	22.63	238.36	3897.6	-659.5	-1070.4	0.00	0.00	1257.2	
5	5270.8	0.00	0.00	5000.0	-775.2	-1258.2	2.00	180.00	1477.8	Bonanza #13 Mancos tgt
6	7670.8	0.00	0.00	7400.0	-775.2	-1258.2	0.00	0.00	1477.8	



Mesa West Directional

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Bonanza #13
Company:	Elm Ridge Exploration Company.	TVD Reference:	Est RKB @ 7194.0usft
Project:	Sandoval County (Nad83)	MD Reference:	Est RKB @ 7194.0usft
Site:	Elm Ridge Bonanza #13 (NENW 1)	North Reference:	True
Well:	Bonanza #13	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	#1		

Project	Sandoval County (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		Elm Ridge Bonanza #13 (NENW 1)			
Site Position:		Northing:	1,882,178.11 usft	Latitude:	36° 10' 11.077 N
From:	Lat/Long	Easting:	1,386,403.43 usft	Longitude:	107° 6' 38.240 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-0.51

Well	Bonanza #13					
Well Position	+N/-S	0.0 usft	Northing:	1,882,178.11 usft	Latitude:	36° 10' 11.077 N
	+E/-W	0.0 usft	Easting:	1,386,403.43 usft	Longitude:	107° 6' 38.240 W
Position Uncertainty	0.0 usft	Wellhead Elevation:		Ground Level:	7,182.0 usft	

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	IGRF2010	6/12/2013	9.30	63.04	50,290

Design	#1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(usft)	(usft)	(usft)	(°)
	0.0	0.0	0.0	238.36

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	
1,254.4	22.63	238.36	1,235.0	-77.1	-125.2	3.00	3.00	0.00	238.36	
4,139.2	22.63	238.36	3,897.6	-659.5	-1,070.4	0.00	0.00	0.00	0.00	
5,270.8	0.00	0.00	5,000.0	-775.2	-1,258.2	2.00	-2.00	0.00	180.00	Bonanza #13 Mancos
7,670.8	0.00	0.00	7,400.0	-775.2	-1,258.2	0.00	0.00	0.00	0.00	

Mesa West Directional

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Bonanza #13
Company:	Elm Ridge Exploration Company.	TVD Reference:	Est RKB @ 7194.0usft
Project:	Sandoval County (Nad83)	MD Reference:	Est RKB @ 7194.0usft
Site:	Elm Ridge Bonanza #13 (NENW 1)	North Reference:	True
Well:	Bonanza #13	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	-7,194.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP;500' MD										
500.0	0.00	0.00	500.0	-6,694.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	3.00	238.36	600.0	-6,594.0	-1.4	-2.2	2.6	3.00	3.00	0.00
700.0	6.00	238.36	699.6	-6,494.4	-5.5	-8.9	10.5	3.00	3.00	0.00
800.0	9.00	238.36	798.8	-6,395.2	-12.3	-20.0	23.5	3.00	3.00	0.00
900.0	12.00	238.36	897.1	-6,296.9	-21.9	-35.5	41.7	3.00	3.00	0.00
1,000.0	15.00	238.36	994.3	-6,199.7	-34.1	-55.4	65.1	3.00	3.00	0.00
1,100.0	18.00	238.36	1,090.2	-6,103.8	-49.0	-79.6	93.5	3.00	3.00	0.00
1,200.0	21.00	238.36	1,184.4	-6,009.6	-66.5	-108.0	126.9	3.00	3.00	0.00
EOB;1254.4' MD & 22.6° Inc										
1,254.4	22.63	238.36	1,235.0	-5,959.0	-77.1	-125.2	147.1	3.00	3.00	0.00
1,300.0	22.63	238.36	1,277.0	-5,917.0	-86.3	-140.2	164.6	0.00	0.00	0.00
1,400.0	22.63	238.36	1,369.3	-5,824.7	-106.5	-172.9	203.1	0.00	0.00	0.00
1,500.0	22.63	238.36	1,461.6	-5,732.4	-126.7	-205.7	241.6	0.00	0.00	0.00
1,600.0	22.63	238.36	1,553.9	-5,640.1	-146.9	-238.4	280.1	0.00	0.00	0.00
1,700.0	22.63	238.36	1,646.2	-5,547.8	-167.1	-271.2	318.5	0.00	0.00	0.00
1,800.0	22.63	238.36	1,738.5	-5,455.5	-187.3	-304.0	357.0	0.00	0.00	0.00
1,900.0	22.63	238.36	1,830.8	-5,363.2	-207.5	-336.7	395.5	0.00	0.00	0.00
2,000.0	22.63	238.36	1,923.1	-5,270.9	-227.6	-369.5	434.0	0.00	0.00	0.00
2,100.0	22.63	238.36	2,015.4	-5,178.6	-247.8	-402.3	472.5	0.00	0.00	0.00
2,200.0	22.63	238.36	2,107.7	-5,086.3	-268.0	-435.0	511.0	0.00	0.00	0.00
2,300.0	22.63	238.36	2,200.0	-4,994.0	-288.2	-467.8	549.4	0.00	0.00	0.00
2,400.0	22.63	238.36	2,292.3	-4,901.7	-308.4	-500.5	587.9	0.00	0.00	0.00
2,500.0	22.63	238.36	2,384.6	-4,809.4	-328.6	-533.3	626.4	0.00	0.00	0.00
2,600.0	22.63	238.36	2,476.9	-4,717.1	-348.8	-566.1	664.9	0.00	0.00	0.00
2,700.0	22.63	238.36	2,569.2	-4,624.8	-369.0	-598.8	703.4	0.00	0.00	0.00
2,800.0	22.63	238.36	2,661.5	-4,532.5	-389.1	-631.6	741.8	0.00	0.00	0.00
2,900.0	22.63	238.36	2,753.8	-4,440.2	-409.3	-664.4	780.3	0.00	0.00	0.00
3,000.0	22.63	238.36	2,846.1	-4,347.9	-429.5	-697.1	818.8	0.00	0.00	0.00
3,100.0	22.63	238.36	2,938.4	-4,255.6	-449.7	-729.9	857.3	0.00	0.00	0.00
3,200.0	22.63	238.36	3,030.7	-4,163.3	-469.9	-762.6	895.8	0.00	0.00	0.00
3,300.0	22.63	238.36	3,123.0	-4,071.0	-490.1	-795.4	934.3	0.00	0.00	0.00
3,400.0	22.63	238.36	3,215.3	-3,978.7	-510.3	-828.2	972.7	0.00	0.00	0.00
3,500.0	22.63	238.36	3,307.6	-3,886.4	-530.4	-860.9	1,011.2	0.00	0.00	0.00
3,600.0	22.63	238.36	3,399.9	-3,794.1	-550.6	-893.7	1,049.7	0.00	0.00	0.00
3,700.0	22.63	238.36	3,492.2	-3,701.8	-570.8	-926.5	1,088.2	0.00	0.00	0.00
3,800.0	22.63	238.36	3,584.5	-3,609.5	-591.0	-959.2	1,126.7	0.00	0.00	0.00
3,900.0	22.63	238.36	3,676.8	-3,517.2	-611.2	-992.0	1,165.2	0.00	0.00	0.00
4,000.0	22.63	238.36	3,769.1	-3,424.9	-631.4	-1,024.7	1,203.6	0.00	0.00	0.00
4,100.0	22.63	238.36	3,861.4	-3,332.6	-651.6	-1,057.5	1,242.1	0.00	0.00	0.00
Start Drop										
4,139.2	22.63	238.36	3,897.6	-3,296.4	-659.5	-1,070.4	1,257.2	0.00	0.00	0.00
4,200.0	21.42	238.36	3,953.9	-3,240.1	-671.4	-1,089.8	1,280.0	2.00	-2.00	0.00
4,300.0	19.42	238.36	4,047.7	-3,146.3	-689.7	-1,119.5	1,314.9	2.00	-2.00	0.00
4,400.0	17.42	238.36	4,142.5	-3,051.5	-706.3	-1,146.4	1,346.5	2.00	-2.00	0.00

Mesa West Directional

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Bonanza #13
Company:	Elm Ridge Exploration Company.	TVD Reference:	Est RKB @ 7194.0usft
Project:	Sandoval County (Nad83)	MD Reference:	Est RKB @ 7194.0usft
Site:	Elm Ridge Bonanza #13 (NENW 1)	North Reference:	True
Well:	Bonanza #13	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	15.42	238.36	4,238.4	-2,955.6	-721.1	-1,170.4	1,374.7	2.00	-2.00	0.00
4,600.0	13.42	238.36	4,335.3	-2,858.7	-734.2	-1,191.6	1,399.6	2.00	-2.00	0.00
4,700.0	11.42	238.36	4,432.9	-2,761.1	-745.5	-1,209.9	1,421.1	2.00	-2.00	0.00
4,800.0	9.42	238.36	4,531.3	-2,662.7	-754.9	-1,225.3	1,439.2	2.00	-2.00	0.00
4,900.0	7.42	238.36	4,630.2	-2,563.8	-762.6	-1,237.8	1,453.8	2.00	-2.00	0.00
5,000.0	5.42	238.36	4,729.6	-2,464.4	-768.5	-1,247.3	1,465.0	2.00	-2.00	0.00
5,100.0	3.42	238.36	4,829.3	-2,364.7	-772.5	-1,253.8	1,472.7	2.00	-2.00	0.00
5,200.0	1.42	238.36	4,929.2	-2,264.8	-774.7	-1,257.4	1,476.9	2.00	-2.00	0.00
End Drop;5270.8' MD - Bonanza #13 Mancos tgt										
5,270.8	0.00	0.00	5,000.0	-2,194.0	-775.2	-1,258.2	1,477.8	2.00	-2.00	171.76
TD at 7670.8' MD										
7,670.8	0.00	0.00	7,400.0	206.0	-775.2	-1,258.2	1,477.8	0.00	0.00	0.00

Design Targets									
Target Name	hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude Longitude
Bonanza #13 Mancos tg	- plan hits target center	0.00	359.49	5,000.0	-775.2	-1,258.2	1,881,414.11	1,385,138.43	36° 10' 3.410 N 107° 6' 53.585 W
	- Point								

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
500.0	500.0	0.0	0.0	KOP;500' MD	
1,254.4	1,235.0	-77.1	-125.2	EOB;1254.4' MD & 22.6° Inc	
4,139.2	3,897.6	-659.5	-1,070.4	Start Drop	
5,270.8	5,000.0	-775.2	-1,258.2	End Drop;5270.8' MD	
7,670.8	7,400.0	-775.2	-1,258.2	TD at 7670.8' MD	

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Drilling Program

1. ESTIMATED FORMATION TOPS

<u>Formation Name</u>	<u>TVD</u>	<u>KB Depth</u>	<u>Elevation</u>
San Jose	0'	12'	+7,182'
Ojo Alamo	2,342'	2,354'	+4,840'
Kirtland	2,452'	2,464'	+4,730'
Fruitland Coal	2,552'	2,564'	+4,630'
Pictured Cliffs Ss	2,672'	2,684'	+4,510'
Lewis shale	2,747'	2,759'	+4,435'
Chacra Ss	3,447'	3,459'	+3,735'
Cliff House Ss	4,202'	4,214'	+2,980'
Menefee	4,262'	4,274'	+2,920'
Point Lookout Ss	4,687'	4,699'	+2,495'
Mancos Shale	4,902'	4,914'	+2,280'
Gallup Ss	5,687'	5,699'	+1,495'
Greenhorn	6,832'	6,844'	+350'
Graneros	6,877'	6,889'	+305'
Dakota Ss	6,912'	6,924'	+270'
Measured Total Depth*	7,670'	7,614'	-20'

* True vertical depth = 7,400'

2. NOTABLE ZONES

Oil & Gas Zones

Ojo Alamo
Pictured Cliffs
Mancos
Gallup
Dakota

Water Zones

San Jose
Ojo Alamo
Fruitland

Coal Zone

Fruitland

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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 $\geq 3,000$ -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. BOPE 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

<u>Hole Size</u>	<u>O. D.</u>	<u>Weight (lb/ft)</u>	<u>Grade</u>	<u>Type</u>	<u>Age</u>	<u>Setting Depth</u>
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	7,670'
	<u>Drift</u> <u>inch</u>	<u>Torque</u> <u>feet-pounds</u>	<u>Burst</u> <u>psi</u>	<u>Collapse</u> <u>psi</u>	<u>Tension</u> <u>1000 psi</u>	<u>Pressure Test</u> <u>psi</u>
Surface	7.972	3070	2950	1370	381	1000
Production	4.653	2020	4810	4040	248	3500

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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 $\geq 75\%$ excess. A stage tool will be set at $\approx 4,775'$ ($\approx 200'$ above the Mancos). Will pressure test to 2,000-psi for 30 minutes.

First stage volume will be $\approx 1,377$ 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 $\approx 1,742$ cubic feet. Second stage will consist of ≈ 900 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

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

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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 $\approx 10'$ from $\approx 200'$ above the Point Lookout to TD.

7. DOWN HOLE CONDITIONS

No abnormal pressures, temperatures, nor hydrogen sulfide are expected. Maximum bottom hole pressure will be $\leq 3,204$ 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.

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Surface Use Plan

1. DIRECTIONS & EXISTING ROADS (See PAGES 10 - 14)

From the equivalent of Mile Post 80.5 on US 550...

Go Northeast 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 bear left and go North and Northeast 1.0 mile on a dirt road

Then turn right and go Southeast $\approx 260'$ on the proposed Bonanza 12 road

Then turn left and go East $\approx 95'$ cross country to the Bonanza 13 pad

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

2. ROAD TO BE BUILT OR UPGRADED (See PAGE & 14)

Upgrades will consist of repairing potholes. The $\approx 355'$ of new road will be built to BLM Gold Book standards. Road will be crowned and ditched, have a $\approx 14'$ wide running surface, and will be rocked where needed. Borrow ditches will be turned out at least once. Turnouts will be feathered out. No cattle guard or culvert is needed. Maximum disturbed width will be 30' (all within 40' pipeline corridor). Maximum cut or fill = 3'. Maximum grade = 4%.

3. EXISTING WELLS (See PAGE 11)

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

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

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

A 79.97' long steel 4-1/2" O. D. natural gas pipeline will be laid west along the new road to Elm Ridge's Bonanza 12/Chacon Amigos 11 pipeline. The pipeline will be buried $\approx$ 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)

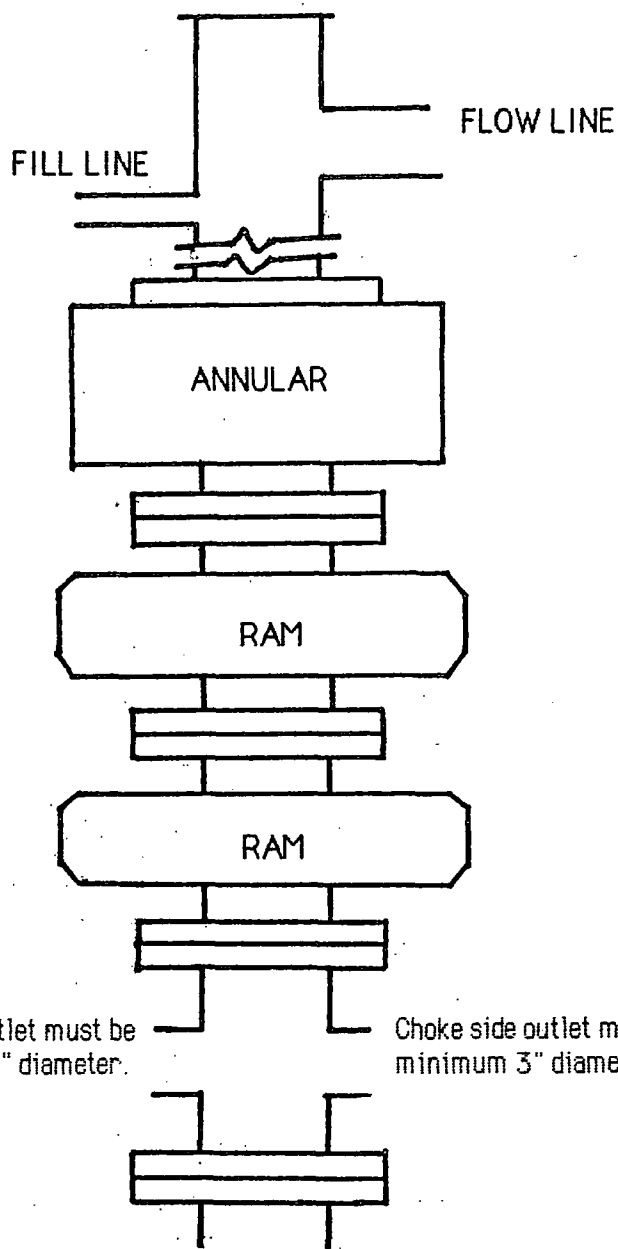
Sagebrush will be brush hogged. The top 6" of soil and will be bladed and piled north of the pad. A diversion ditch will be cut south of the pad.

7. WASTE DISPOSAL

- ✓ A closed loop system will be used instead of a reserve pit. Tank contents will be hauled to a State approved disposal site off the Jicarilla Apache Nation. 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.

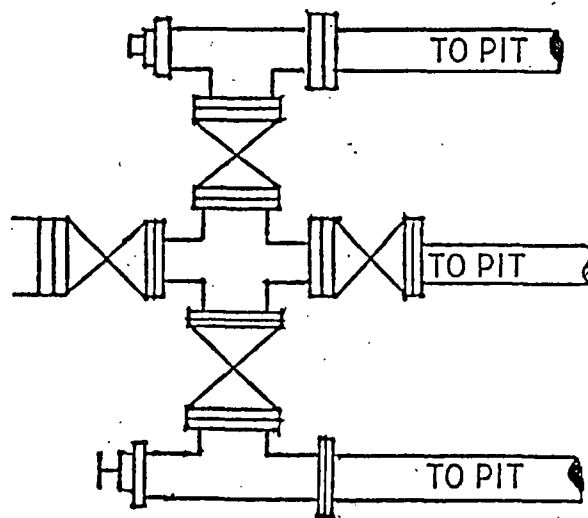
8. ANCILLARY FACILITIES

There will be no airstrip or man camp. Camper trailers will be on location for the company man, tool pusher, and mud logger.



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.



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

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.