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Phone: (575) 748-1283 Fax: (575) 748-9720

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Phone: (505) 334-6178 Fax: (505) 334-6170

DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, N.M. 87505
Phone: (505) 476-3480 Fax: (505) 476-3482

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION

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

Form C-102

Revised August 1, 2011

Submit one copy to appropriate
District Office

☒ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

30-043- ¹ API Number 21187	39189	LINDRITH GALLUP-DAKOTA, WEST
⁴ 27875	⁵ Property Name BONANZA	⁶ Well Number 15
⁷ OGRM No. 371838	⁸ Operator Name DJR Operating, LLC	⁹ Elevation 7196.0

¹⁰ Surface Location

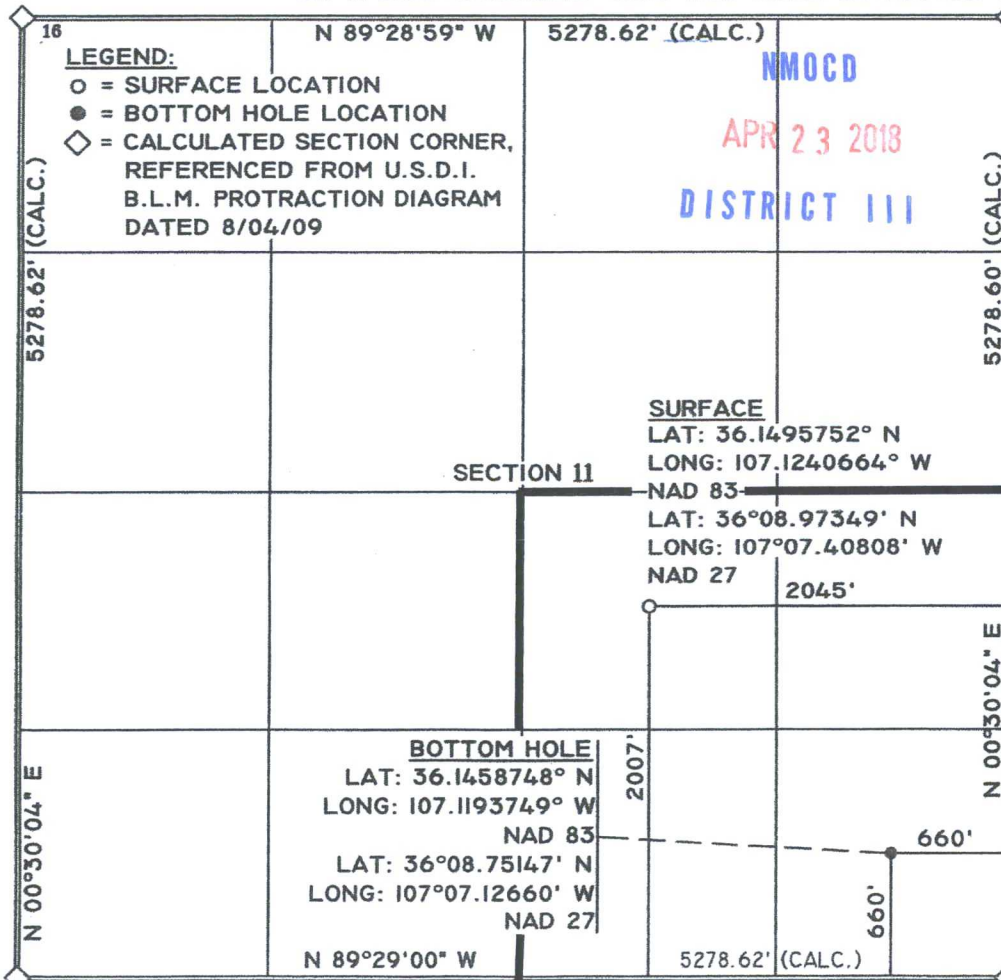
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
J	11	22 N	3 W		2007	SOUTH	2045	EAST	SANDOVAL

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
P	11	22 N	3 W		660	SOUTH	660	EAST	SANDOVAL

¹² Dedicated Acres 160	¹³ Joint or Infill	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



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 for this division.

Signature *Amy Archuleta* Date **4-23-18**

E-mail Address **aarchuleta@djrlc.com**

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.

07/25/13
Date of Survey

Signature and Seal *JOSE A. WURONICH*
Professional Surveyor

14831
Certificate Number

United Field Services, Inc. **9-6-2013**



MESAWEST

DIRECTIONAL

Client: Lim Ridge Exploration
API #: 30-043-21187
Well Name: Bonanza #15
Location: Sec 11, T22N, R3W
Job Number: 1428

Start Date: 7-Dec-14
End Date: 19-Dec-14
Well Type: S-Well

Plan Number: 2

DIRECTIONAL DRILLING REPORT

CONTENTS:

Surveys
Well Plot
EOW Report
Bottom Hole Assemblies
Daily Tower Report
Slide Sheets
Cost Summary

END OF WELL REPORT



Client: Elm Ridge Exploration
Well Name: Bonanza #15
Location: Sec 11, T22N, R3W
Job Number: 1428
Start Date: 7-Dec-14 **End Date:** 19-Dec-14

PERSONAL

Operator Personnel

Company Man:

Dee Giles

Geologist:

Directional Personnel

David Westbrook

Shane Sligar

Survey Personnel

Ron Alexis

Dion Packer

Nick Tulfer

WELL SUMMARY

KOP: 0	TD: 7939	FEET DRLG.: 7939	TOTAL DRLG. HRS.: 108.75	AVG. ROP:
# DAYS: 10	# BITS: 2	# BHA'S: 3	NO. OF MOTORS: 2	73.0

Well Parameters

Surface CP	TOTAL DEPTH	
	MAIN HOLE	LEG 2
HOLE SIZE: 12 1/4	HOLE SIZE: 7 7/8	HOLE SIZE: N/A
Coordinates: MD: 560	Coordinates: MD: 7939	Coordinates: MD:
TVD: 559.5	TVD: 4764.02	TVD:
INC: 4.38°	INC: 0.4°	INC:
DIRECTION: 140.4°	DIRECTION: 244.6°	DIRECTION:
VERTICAL SECTION: 16.63	VERTICAL SECTION: 1936.07	VERTICAL SECTION:
N / S: -14.14	N / S: -134.04	N / S:
E / W: 8.75	E / W: 1383.83	E / W:

RE-ENTRY DATA:

TOP OF WINDOW:

DIRECTION:

BOTTOM OF WINDOW:

RAT HOLE:

DIRECTIONAL COMMENTS

BHA 1- Drilled 529', F/ 31' - 560', 5.75 hrs. Average ROP - 92 ft/hr. Bit #1 = 1-1-BU-A-1-1-NO-TD

Bit 1 - 12 1/4" Reed TMD44HM, 14, 14, 16's for jets. Motor is a NOV 7 7/8" 5/6 lobe, 3.0 stage, set @ 1.83°.

Motor dialed to 1.83° and used to create separation from future wells on location. Motor delivered 3°/100' on surface section of well. Motor drained and sounded good on surface and was flushed with fresh water. Dialed motor to 0.00° setting for the next well.

BHA 2- Drilled 4222', F/ 585' - 4807', 49.5 hrs. Average ROP - 85.29 ft/hr. Bit #2 = 1-1-BT-N-XX-1-RR-BHA

Bit 2 - 7 7/8" NOV type SKH513M, 7x16's for jets. Motor is a Adtech 6 1/2" 7/8 lobe, 2.9 stage, Fixed @ 1.50°.

Trip out of hole due to BHA change, pull out of hole and move HWDP up higher to keep in the tangent. Motor delivered 13°/100' in the build section, 5°/100' in the tangent and 9°/100' in the drop section.

BHA 3- Drilled 3132', F/ 4807' - 7939', 53.5 hrs. Average ROP - 58.54 ft/hr. Bit #2RR = 2-2-BT-N,S-XX-BU-TD

Bit 2 - 7 7/8" NOV type SKH513M, 7x16's for jets. Motor is a Adtech 6 1/2" 7/8 lobe, 2.9 stage, Fixed @ 1.50°.

Motor performed well in the drop section delivering 5°/100' toward the bottom of the drop and delivered 9°/100' in the vertical section.

The HWDP was moved into the tangent section to prevent torque. Although HWDP was moved the torque was still there causing the ROP to slow for the last 800' of the well

RECOMMENDATIONS

Leave HWDP on top of BHA and finish drilling well without the wiper trip.

REPORT PREPARED BY:

David Westbrook

Elm Ridge Exploration Company.

Sandoval County, NM (Nad 83)

Sec 11, T-22-N,R-3-W

Bonanza #15

DD Job # 1428

UWI:

WL:

Survey: Final

Standard Survey Report

06 January, 2015



Elm Ridge Exploration Company.

Project: Sandoval County, NM (Nad 83)
Site: Sec 11, T-22-N,R-3-W
Well: Bonanza #15
Wellbore: DD Job # 1428
Plan: Final

Reference Details

Geodetic System: US State Plane 1983
 Ellipsoid: GRS 1980
 Zone: New Mexico Central Zone
 Northing: 1874871.81
 Easting: 1382369.18
 Latitude: 36° 8' 58.471 N
 Longitude: 107° 7' 26.639 W
 Grid Convergence: 0.52° East
 Ground Elevation: 7196.0
 KB Elevation: RKB @ 7208.0usft (KB 12')

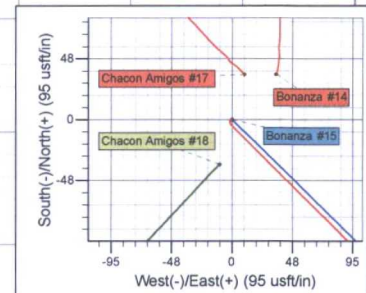
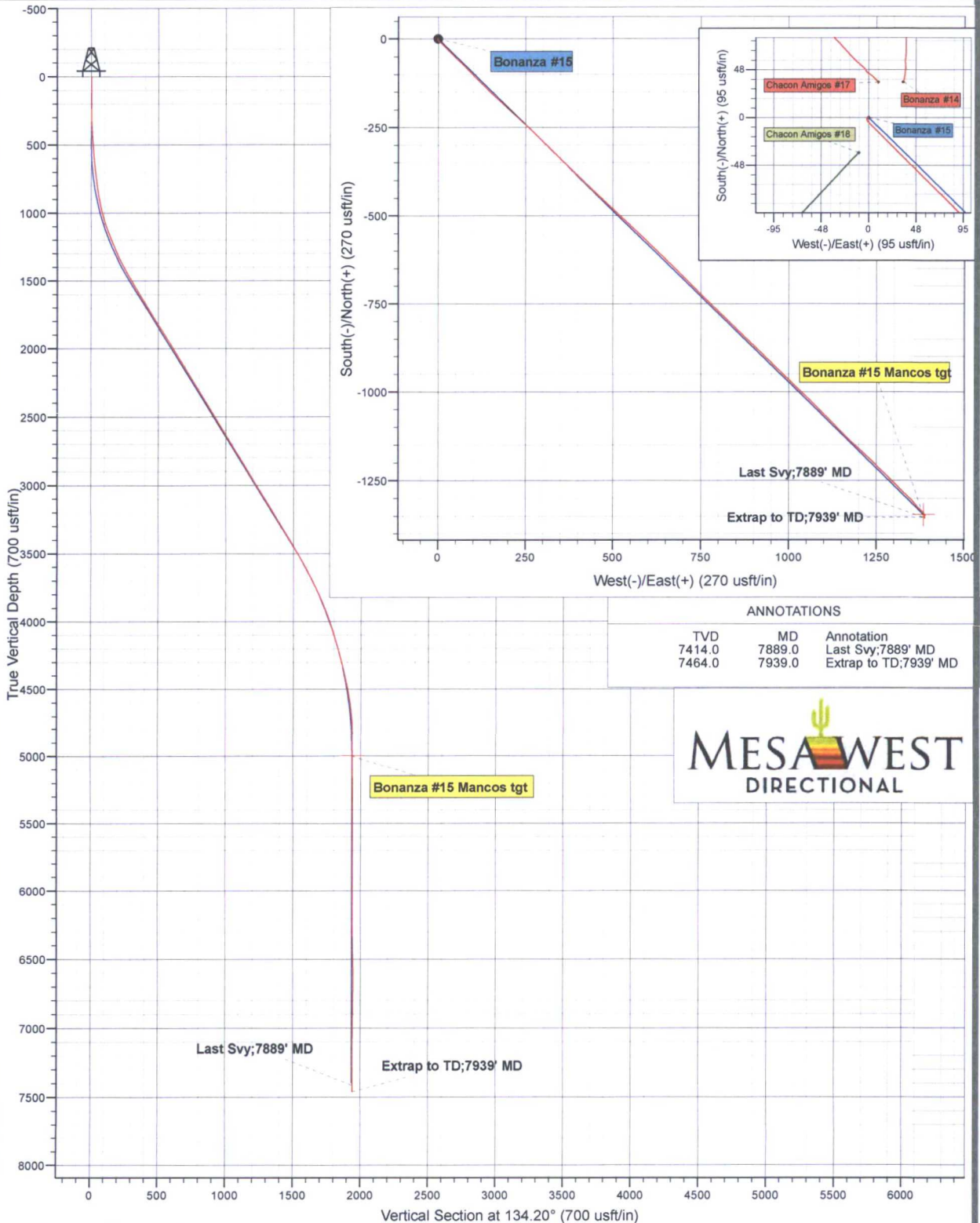


Azimuths to True North
 Magnetic North: 9.27°

Magnetic Field
 Strength: 50249.9snT
 Dip Angle: 63.02°
 Date: 20/09/2013
 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	1562.7	31.88	134.20	1508.7	-200.9	206.5	3.00	134.20	288.1	
4	3857.1	31.88	134.20	3457.0	-1045.7	1075.2	0.00	0.00	1499.9	
5	5451.1	0.00	0.00	4970.0	-1347.0	1385.0	2.00	180.00	1932.0	
6	5481.1	0.00	0.00	5000.0	-1347.0	1385.0	0.00	0.00	1932.0	Bonanza #15 Mancos tgt
7	7881.1	0.00	0.00	7400.0	-1347.0	1385.0	0.00	0.00	1932.0	



ANNOTATIONS

TVD	MD	Annotation
7414.0	7889.0	Last Svy;7889' MD
7464.0	7939.0	Extrap to TD;7939' MD



Vertical Section at 134.20° (700 usft/in)

Mesa West Directional
Survey Report



Company:	Elm Ridge Exploration Company.	Local Co-ordinate Reference:	Well Bonanza #15
Project:	Sandoval County, NM (Nad 83)	TVD Reference:	RKB @ 7208.0usft (KB 12')
Site:	Sec 11, T-22-N,R-3-W	MD Reference:	RKB @ 7208.0usft (KB 12')
Well:	Bonanza #15	North Reference:	True
Wellbore:	DD Job # 1428	Survey Calculation Method:	Minimum Curvature
Design:	Final	Database:	WellPlan Services

Project	Sandoval County, NM (Nad 83)		
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 11, T-22-N,R-3-W			
Site Position:		Northing:	1,874,906.81 usft	Latitude:	36° 8' 58.820 N
From:	Lat/Long	Easting:	1,382,404.22 usft	Longitude:	107° 7' 26.216 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-0.52 °

Well		Bonanza #15				
Well Position	+N/-S	0.0 usft	Northing:	1,874,871.81 usft	Latitude:	36° 8' 58.471 N
	+E/-W	0.0 usft	Easting:	1,382,369.18 usft	Longitude:	107° 7' 26.639 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	7,196.0 usft

Wellbore	DD Job # 1428				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	20/09/2013	9.27	63.02	50,250

Design	Final				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0	134.20	

Survey Program	Date	06/01/2015			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
100.0	7,939.0	Final (DD Job # 1428)	MWD	MWD - Standard	

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	-7,208.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	-7,108.0	0.0	0.0	0.0	0.00	0.00	0.00
132.0	1.90	266.10	132.0	-7,076.0	0.0	-0.5	-0.4	5.94	5.94	0.00
163.0	1.20	259.00	163.0	-7,045.0	-0.1	-1.4	-0.9	2.34	-2.26	-22.90
193.0	1.00	215.80	193.0	-7,015.0	-0.4	-1.8	-1.0	2.77	-0.67	-144.00
224.0	1.70	185.10	224.0	-6,984.0	-1.1	-2.0	-0.7	3.17	2.26	-99.03
255.0	2.10	160.60	255.0	-6,953.0	-2.1	-1.9	0.1	2.89	1.29	-79.03
286.0	1.90	161.00	285.9	-6,922.1	-3.1	-1.5	1.1	0.65	-0.65	1.29
316.0	2.40	144.20	315.9	-6,892.1	-4.1	-1.0	2.1	2.66	1.67	-56.00
345.0	2.50	142.50	344.9	-6,863.1	-5.1	-0.2	3.4	0.43	0.34	-5.86

Mesa West Directional

Survey Report



Company: Elm Ridge Exploration Company.
Project: Sandoval County, NM (Nad 83)
Site: Sec 11, T-22-N,R-3-W
Well: Bonanza #15
Wellbore: DD Job # 1428
Design: Final

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:
Database:

Well Bonanza #15
 RKB @ 7208.0usft (KB 12')
 RKB @ 7208.0usft (KB 12')
 True
 Minimum Curvature
 WellPlan Services

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)
377.0	2.80	132.80	376.9	-6,831.1	-6.2	0.8	4.8	1.68	0.94	-30.31
408.0	3.00	135.90	407.8	-6,800.2	-7.3	1.9	6.4	0.82	0.65	10.00
440.0	3.20	132.50	439.8	-6,768.2	-8.5	3.1	8.1	0.85	0.63	-10.63
472.0	3.70	133.10	471.7	-6,736.3	-9.8	4.5	10.1	1.57	1.56	1.88
503.0	3.80	133.70	502.6	-6,705.4	-11.2	6.0	12.1	0.35	0.32	1.94
562.0	4.40	140.60	561.5	-6,646.5	-14.3	8.8	16.3	1.31	1.02	11.69
593.0	4.40	135.70	592.4	-6,615.6	-16.0	10.4	18.7	1.21	0.00	-15.81
623.0	5.70	133.50	622.3	-6,585.7	-17.9	12.3	21.3	4.38	4.33	-7.33
654.0	6.50	134.40	653.1	-6,554.9	-20.2	14.7	24.6	2.60	2.58	2.90
686.0	6.70	133.20	684.9	-6,523.1	-22.7	17.3	28.3	0.76	0.63	-3.75
716.0	6.80	133.10	714.7	-6,493.3	-25.1	19.9	31.8	0.34	0.33	-0.33
747.0	6.60	132.10	745.5	-6,462.5	-27.6	22.6	35.4	0.75	-0.65	-3.23
778.0	7.60	133.30	776.2	-6,431.8	-30.2	25.4	39.2	3.26	3.23	3.87
809.0	8.20	135.70	806.9	-6,401.1	-33.2	28.4	43.5	2.21	1.94	7.74
839.0	8.70	137.00	836.6	-6,371.4	-36.4	31.5	47.9	1.78	1.67	4.33
870.0	9.80	135.60	867.2	-6,340.8	-40.0	34.9	52.9	3.62	3.55	-4.52
901.0	10.70	133.30	897.7	-6,310.3	-43.8	38.9	58.4	3.19	2.90	-7.42
932.0	11.40	133.40	928.1	-6,279.9	-47.9	43.2	64.3	2.26	2.26	0.32
962.0	12.30	134.70	957.5	-6,250.5	-52.2	47.6	70.5	3.13	3.00	4.33
993.0	13.30	135.50	987.7	-6,220.3	-57.0	52.4	77.4	3.28	3.23	2.58
1,025.0	15.50	134.40	1,018.7	-6,189.3	-62.7	58.1	85.3	6.93	6.88	-3.44
1,056.0	17.40	134.00	1,048.5	-6,159.5	-68.8	64.4	94.1	6.14	6.13	-1.29
1,088.0	18.40	134.90	1,078.9	-6,129.1	-75.7	71.4	103.9	3.24	3.13	2.81
1,120.0	19.50	134.80	1,109.2	-6,098.8	-83.0	78.8	114.3	3.44	3.44	-0.31
1,152.0	20.90	135.60	1,139.2	-6,068.8	-90.8	86.5	125.4	4.46	4.38	2.50
1,183.0	21.20	135.30	1,168.1	-6,039.9	-98.8	94.4	136.5	1.03	0.97	-0.97
1,214.0	22.10	133.30	1,196.9	-6,011.1	-106.8	102.5	147.9	3.75	2.90	-6.45
1,245.0	22.90	134.40	1,225.6	-5,982.4	-115.0	111.1	159.8	2.92	2.58	3.55
1,277.0	23.60	133.30	1,255.0	-5,953.0	-123.7	120.2	172.4	2.57	2.19	-3.44
1,309.0	24.10	134.90	1,284.3	-5,923.7	-132.7	129.5	185.4	2.56	1.56	5.00
1,341.0	24.80	133.80	1,313.4	-5,894.6	-142.0	139.0	198.6	2.61	2.19	-3.44
1,372.0	25.50	134.30	1,341.4	-5,866.6	-151.1	148.4	211.8	2.36	2.26	1.61
1,404.0	26.60	133.70	1,370.2	-5,837.8	-160.9	158.5	225.8	3.53	3.44	-1.88
1,436.0	27.60	132.40	1,398.7	-5,809.3	-170.9	169.2	240.4	3.63	3.13	-4.06
1,467.0	28.60	132.50	1,426.0	-5,782.0	-180.7	180.0	255.0	3.23	3.23	0.32
1,499.0	29.40	132.20	1,454.0	-5,754.0	-191.2	191.4	270.5	2.54	2.50	-0.94
1,530.0	29.70	131.10	1,481.0	-5,727.0	-201.3	202.9	285.8	2.00	0.97	-3.55
1,562.0	29.60	132.80	1,508.8	-5,699.2	-211.9	214.6	301.6	2.65	-0.31	5.31
1,594.0	30.50	131.90	1,536.5	-5,671.5	-222.7	226.5	317.6	3.15	2.81	-2.81
1,625.0	31.60	132.40	1,563.1	-5,644.9	-233.4	238.3	333.6	3.64	3.55	1.61
1,689.0	31.50	133.20	1,617.6	-5,590.4	-256.2	262.9	367.1	0.67	-0.16	1.25
1,720.0	31.30	134.90	1,644.1	-5,563.9	-267.4	274.5	383.2	2.93	-0.65	5.48
1,784.0	31.70	133.10	1,698.6	-5,509.4	-290.6	298.6	416.7	1.60	0.63	-2.81
1,847.0	31.20	134.20	1,752.4	-5,455.6	-313.3	322.4	449.5	1.21	-0.79	1.75

Mesa West Directional

Survey Report



Company: Elm Ridge Exploration Company.
Project: Sandoval County, NM (Nad 83)
Site: Sec 11, T-22-N,R-3-W
Well: Bonanza #15
Wellbore: DD Job # 1428
Design: Final

Local Co-ordinate Reference: Well Bonanza #15
TVD Reference: RKB @ 7208.0usft (KB 12')
MD Reference: RKB @ 7208.0usft (KB 12')
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: WellPlan Services

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)
1,910.0	32.50	134.90	1,805.9	-5,402.1	-336.6	346.0	482.8	2.15	2.06	1.11
1,973.0	33.20	133.40	1,858.8	-5,349.2	-360.4	370.6	516.9	1.70	1.11	-2.38
2,037.0	32.30	133.30	1,912.6	-5,295.4	-384.2	395.7	551.6	1.41	-1.41	-0.16
2,100.0	32.00	133.40	1,966.0	-5,242.0	-407.2	420.1	585.1	0.48	-0.48	0.16
2,163.0	32.00	133.60	2,019.4	-5,188.6	-430.2	444.3	618.5	0.17	0.00	0.32
2,227.0	31.90	132.30	2,073.7	-5,134.3	-453.3	469.1	652.3	1.09	-0.16	-2.03
2,290.0	31.50	133.40	2,127.3	-5,080.7	-475.8	493.4	685.4	1.12	-0.63	1.75
2,354.0	31.30	133.40	2,181.9	-5,026.1	-498.7	517.6	718.8	0.31	-0.31	0.00
2,417.0	31.80	132.90	2,235.6	-4,972.4	-521.2	541.7	751.7	0.90	0.79	-0.79
2,480.0	32.10	133.00	2,289.1	-4,918.9	-544.0	566.1	785.0	0.48	0.48	0.16
2,543.0	32.00	134.10	2,342.5	-4,865.5	-567.0	590.3	818.5	0.94	-0.16	1.75
2,606.0	31.30	134.60	2,396.1	-4,811.9	-590.1	613.9	851.5	1.19	-1.11	0.79
2,669.0	31.50	134.40	2,449.9	-4,758.1	-613.1	637.4	884.4	0.36	0.32	-0.32
2,733.0	31.10	134.30	2,504.6	-4,703.4	-636.3	661.1	917.6	0.63	-0.63	-0.16
2,796.0	31.20	135.10	2,558.5	-4,649.5	-659.3	684.3	950.2	0.68	0.16	1.27
2,859.0	31.70	134.80	2,612.2	-4,595.8	-682.5	707.6	983.1	0.83	0.79	-0.48
2,923.0	31.60	135.10	2,666.7	-4,541.3	-706.2	731.3	1,016.6	0.29	-0.16	0.47
2,986.0	31.70	134.10	2,720.3	-4,487.7	-729.4	754.9	1,049.7	0.85	0.16	-1.59
3,049.0	31.40	134.50	2,774.0	-4,434.0	-752.4	778.5	1,082.7	0.58	-0.48	0.63
3,113.0	31.60	133.90	2,828.6	-4,379.4	-775.8	802.4	1,116.1	0.58	0.31	-0.94
3,176.0	31.10	134.90	2,882.4	-4,325.6	-798.7	825.8	1,148.9	1.15	-0.79	1.59
3,239.0	31.60	133.60	2,936.2	-4,271.8	-821.6	849.3	1,181.6	1.34	0.79	-2.06
3,303.0	31.80	133.90	2,990.7	-4,217.3	-844.8	873.6	1,215.3	0.40	0.31	0.47
3,366.0	32.10	133.50	3,044.1	-4,163.9	-867.8	897.7	1,248.6	0.58	0.48	-0.63
3,429.0	31.70	132.90	3,097.6	-4,110.4	-890.6	922.0	1,281.9	0.81	-0.63	-0.95
3,493.0	31.90	134.90	3,152.0	-4,056.0	-914.0	946.3	1,315.6	1.68	0.31	3.13
3,556.0	31.60	134.30	3,205.6	-4,002.4	-937.3	969.9	1,348.8	0.69	-0.48	-0.95
3,619.0	31.00	135.00	3,259.4	-3,948.6	-960.3	993.2	1,381.5	1.11	-0.95	1.11
3,683.0	31.30	133.90	3,314.2	-3,893.8	-983.5	1,016.8	1,414.6	1.01	0.47	-1.72
3,746.0	32.10	132.80	3,367.8	-3,840.2	-1,006.2	1,040.9	1,447.7	1.57	1.27	-1.75
3,809.0	31.40	134.80	3,421.3	-3,786.7	-1,029.1	1,064.8	1,480.8	2.01	-1.11	3.17
3,872.0	30.30	135.60	3,475.4	-3,732.6	-1,052.1	1,087.6	1,513.1	1.86	-1.75	1.27
3,935.0	30.10	133.10	3,529.9	-3,678.1	-1,074.2	1,110.2	1,544.8	2.02	-0.32	-3.97
3,999.0	28.70	135.80	3,585.6	-3,622.4	-1,096.2	1,132.7	1,576.2	3.01	-2.19	4.22
4,062.0	28.00	135.60	3,641.1	-3,566.9	-1,117.6	1,153.6	1,606.1	1.12	-1.11	-0.32
4,125.0	26.40	134.50	3,697.1	-3,510.9	-1,138.0	1,173.9	1,634.9	2.66	-2.54	-1.75
4,188.0	25.20	131.80	3,753.8	-3,454.2	-1,156.7	1,193.9	1,662.3	2.67	-1.90	-4.29
4,252.0	24.30	132.20	3,811.9	-3,396.1	-1,174.7	1,213.8	1,689.1	1.43	-1.41	0.63
4,315.0	22.80	132.10	3,869.7	-3,338.3	-1,191.6	1,232.5	1,714.3	2.38	-2.38	-0.16
4,378.0	21.20	135.30	3,928.1	-3,279.9	-1,207.8	1,249.5	1,737.9	3.17	-2.54	5.08
4,441.0	19.40	132.80	3,987.2	-3,220.8	-1,223.1	1,265.2	1,759.7	3.17	-2.86	-3.97
4,504.0	18.50	134.90	4,046.8	-3,161.2	-1,237.2	1,280.0	1,780.2	1.79	-1.43	3.33
4,567.0	17.20	134.70	4,106.8	-3,101.2	-1,250.8	1,293.7	1,799.5	2.07	-2.06	-0.32

Mesa West Directional

Survey Report



Company: Elm Ridge Exploration Company.
Project: Sandoval County, NM (Nad 83)
Site: Sec 11, T-22-N,R-3-W
Well: Bonanza #15
Wellbore: DD Job # 1428
Design: Final

Local Co-ordinate Reference: Well Bonanza #15
TVD Reference: RKB @ 7208.0usft (KB 12')
MD Reference: RKB @ 7208.0usft (KB 12')
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: WellPlan Services

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)
4,631.0	16.20	132.80	4,168.1	-3,039.9	-1,263.5	1,307.0	1,817.9	1.78	-1.56	-2.97
4,694.0	14.80	135.60	4,228.8	-2,979.2	-1,275.3	1,319.0	1,834.7	2.52	-2.22	4.44
4,757.0	14.10	134.90	4,289.8	-2,918.2	-1,286.4	1,330.1	1,850.4	1.15	-1.11	-1.11
4,821.0	13.50	132.50	4,351.9	-2,856.1	-1,297.0	1,341.1	1,865.7	1.30	-0.94	-3.75
4,884.0	12.60	136.00	4,413.3	-2,794.7	-1,306.9	1,351.3	1,879.9	1.90	-1.43	5.56
4,915.0	12.40	138.30	4,443.6	-2,764.4	-1,311.8	1,355.9	1,886.6	1.73	-0.65	7.42
4,947.0	11.20	140.90	4,474.9	-2,733.1	-1,316.8	1,360.1	1,893.1	4.10	-3.75	8.13
4,979.0	10.30	142.00	4,506.3	-2,701.7	-1,321.5	1,363.9	1,899.0	2.88	-2.81	3.44
5,010.0	9.30	137.10	4,536.9	-2,671.1	-1,325.5	1,367.3	1,904.3	4.20	-3.23	-15.81
5,042.0	8.80	133.60	4,568.5	-2,639.5	-1,329.1	1,370.8	1,909.3	2.32	-1.56	-10.94
5,073.0	8.40	131.10	4,599.1	-2,608.9	-1,332.2	1,374.2	1,913.9	1.77	-1.29	-8.06
5,105.0	7.20	128.10	4,630.8	-2,577.2	-1,335.0	1,377.6	1,918.3	3.96	-3.75	-9.38
5,137.0	6.70	130.70	4,662.6	-2,545.4	-1,337.4	1,380.6	1,922.1	1.85	-1.56	8.13
5,168.0	5.80	136.60	4,693.4	-2,514.6	-1,339.7	1,383.0	1,925.5	3.56	-2.90	19.03
5,200.0	4.80	148.10	4,725.3	-2,482.7	-1,342.0	1,384.8	1,928.4	4.54	-3.13	35.94
5,232.0	3.40	156.50	4,757.2	-2,450.8	-1,344.0	1,385.9	1,930.6	4.75	-4.38	26.25
5,263.0	1.90	153.30	4,788.2	-2,419.8	-1,345.3	1,386.5	1,931.9	4.86	-4.84	-10.32
5,295.0	1.50	150.10	4,820.1	-2,387.9	-1,346.2	1,386.9	1,932.8	1.28	-1.25	-10.00
5,358.0	1.10	132.70	4,883.1	-2,324.9	-1,347.3	1,387.8	1,934.2	0.89	-0.63	-27.62
5,421.0	0.40	74.10	4,946.1	-2,261.9	-1,347.7	1,388.5	1,934.9	1.52	-1.11	-93.02
5,484.0	0.30	64.50	5,009.1	-2,198.9	-1,347.5	1,388.8	1,935.1	0.18	-0.16	-15.24
5,548.0	0.30	46.10	5,073.1	-2,134.9	-1,347.3	1,389.1	1,935.2	0.15	0.00	-28.75
5,611.0	0.20	62.00	5,136.1	-2,071.9	-1,347.2	1,389.3	1,935.2	0.19	-0.16	25.24
5,674.0	0.30	138.50	5,199.1	-2,008.9	-1,347.2	1,389.5	1,935.4	0.51	0.16	121.43
5,737.0	0.20	166.70	5,262.1	-1,945.9	-1,347.5	1,389.7	1,935.7	0.25	-0.16	44.76
5,800.0	0.30	155.80	5,325.1	-1,882.9	-1,347.7	1,389.7	1,935.9	0.18	0.16	-17.30
5,864.0	0.10	187.60	5,389.1	-1,818.9	-1,347.9	1,389.8	1,936.1	0.35	-0.31	49.69
5,928.0	0.20	166.10	5,453.1	-1,754.9	-1,348.1	1,389.8	1,936.2	0.18	0.16	-33.59
5,991.0	0.30	163.50	5,516.1	-1,691.9	-1,348.4	1,389.9	1,936.5	0.16	0.16	-4.13
6,054.0	0.40	209.40	5,579.1	-1,628.9	-1,348.7	1,389.8	1,936.7	0.46	0.16	72.86
6,117.0	0.30	231.40	5,642.1	-1,565.9	-1,349.0	1,389.6	1,936.7	0.26	-0.16	34.92
6,180.0	0.50	230.90	5,705.1	-1,502.9	-1,349.3	1,389.3	1,936.7	0.32	0.32	-0.79
6,244.0	0.60	222.30	5,769.1	-1,438.9	-1,349.7	1,388.8	1,936.6	0.20	0.16	-13.44
6,307.0	0.30	201.20	5,832.1	-1,375.9	-1,350.1	1,388.5	1,936.7	0.54	-0.48	-33.49
6,370.0	0.60	218.60	5,895.1	-1,312.9	-1,350.5	1,388.3	1,936.8	0.52	0.48	27.62
6,433.0	0.60	200.30	5,958.1	-1,249.9	-1,351.1	1,387.9	1,937.0	0.30	0.00	-29.05
6,497.0	0.60	228.60	6,022.1	-1,185.9	-1,351.6	1,387.6	1,937.1	0.46	0.00	44.22
6,560.0	0.40	202.60	6,085.1	-1,122.9	-1,352.1	1,387.2	1,937.1	0.47	-0.32	-41.27
6,623.0	0.60	203.00	6,148.1	-1,059.9	-1,352.6	1,387.0	1,937.3	0.32	0.32	0.63
6,687.0	0.40	211.60	6,212.1	-995.9	-1,353.1	1,386.8	1,937.5	0.33	-0.31	13.44
6,750.0	0.60	206.00	6,275.1	-932.9	-1,353.5	1,386.5	1,937.7	0.33	0.32	-8.89
6,813.0	0.90	204.40	6,338.1	-869.9	-1,354.3	1,386.2	1,937.9	0.48	0.48	-2.54
6,876.0	0.60	158.70	6,401.1	-806.9	-1,355.0	1,386.1	1,938.4	1.02	-0.48	-72.54

Mesa West Directional

Survey Report



Company: Elm Ridge Exploration Company.
Project: Sandoval County, NM (Nad 83)
Site: Sec 11, T-22-N,R-3-W
Well: Bonanza #15
Wellbore: DD Job # 1428
Design: Final

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:
Database:

Well Bonanza #15
 RKB @ 7208.0usft (KB 12')
 RKB @ 7208.0usft (KB 12')
 True
 Minimum Curvature
 WellPlan Services

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)
6,940.0	1.10	123.30	6,465.1	-742.9	-1,355.7	1,386.7	1,939.3	1.10	0.78	-55.31
7,003.0	1.00	117.50	6,528.1	-679.9	-1,356.3	1,387.7	1,940.4	0.23	-0.16	-9.21
7,066.0	0.90	110.50	6,591.0	-617.0	-1,356.7	1,388.7	1,941.4	0.24	-0.16	-11.11
7,130.0	0.30	340.70	6,655.0	-553.0	-1,356.7	1,389.1	1,941.7	1.74	-0.94	-202.81
7,193.0	0.70	307.00	6,718.0	-490.0	-1,356.3	1,388.7	1,941.2	0.76	0.63	-53.49
7,256.0	0.50	304.40	6,781.0	-427.0	-1,356.0	1,388.2	1,940.5	0.32	-0.32	-4.13
7,319.0	0.70	322.60	6,844.0	-364.0	-1,355.5	1,387.7	1,939.9	0.43	0.32	28.89
7,382.0	0.50	318.20	6,907.0	-301.0	-1,355.0	1,387.3	1,939.2	0.33	-0.32	-6.98
7,446.0	0.60	308.10	6,971.0	-237.0	-1,354.6	1,386.9	1,938.6	0.22	0.16	-15.78
7,509.0	0.50	310.20	7,034.0	-174.0	-1,354.2	1,386.4	1,938.0	0.16	-0.16	3.33
7,572.0	0.30	307.10	7,097.0	-111.0	-1,353.9	1,386.1	1,937.6	0.32	-0.32	-4.92
7,636.0	0.30	291.30	7,161.0	-47.0	-1,353.7	1,385.8	1,937.3	0.13	0.00	-24.69
7,699.0	0.50	264.60	7,224.0	16.0	-1,353.7	1,385.3	1,936.9	0.43	0.32	-42.38
7,762.0	0.40	284.30	7,287.0	79.0	-1,353.7	1,384.8	1,936.6	0.29	-0.16	31.27
7,826.0	0.30	239.80	7,351.0	143.0	-1,353.7	1,384.5	1,936.3	0.44	-0.16	-69.53
Last Svy;7889' MD										
7,889.0	0.40	244.60	7,414.0	206.0	-1,353.9	1,384.1	1,936.2	0.17	0.16	7.62
Extrap to TD;7939' MD										
7,939.0	0.40	244.60	7,464.0	256.0	-1,354.0	1,383.8	1,936.1	0.00	0.00	0.00

Survey Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
7,889.0	7,414.0	-1,353.9	1,384.1	Last Svy;7889' MD
7,939.0	7,464.0	-1,354.0	1,383.8	Extrap to TD;7939' MD

Checked By: _____ Approved By: _____ Date: _____