

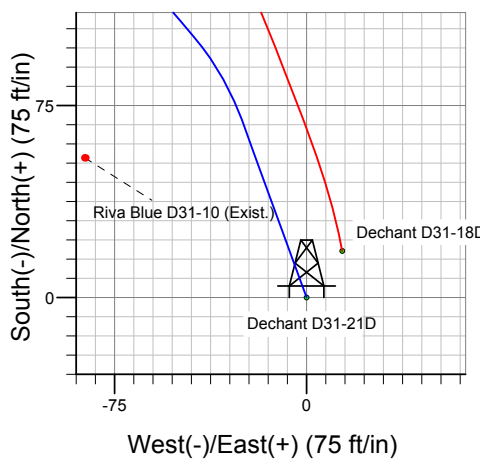
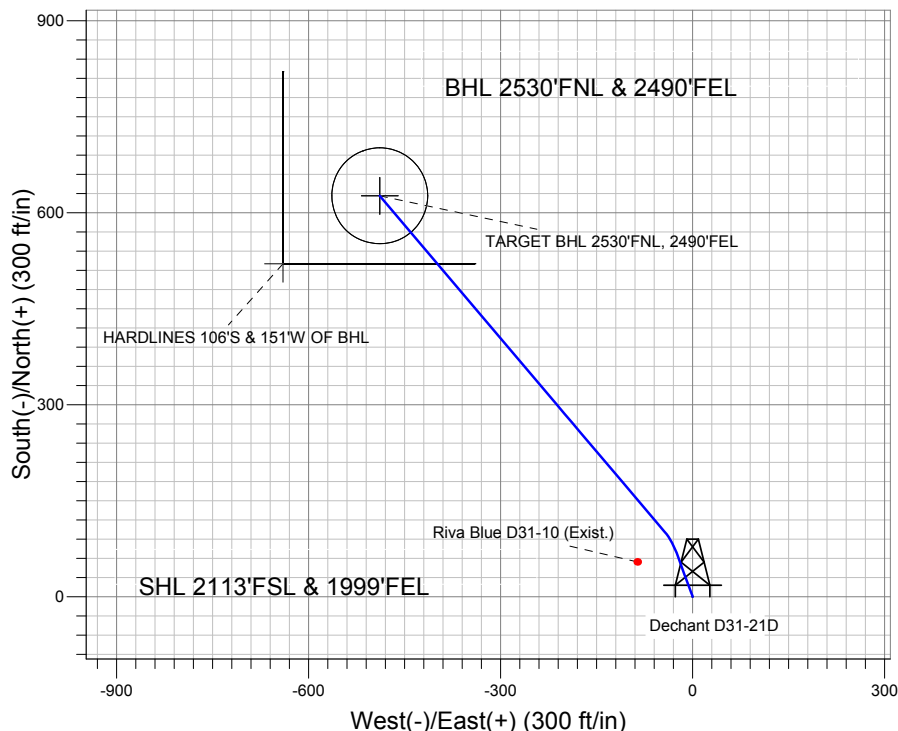
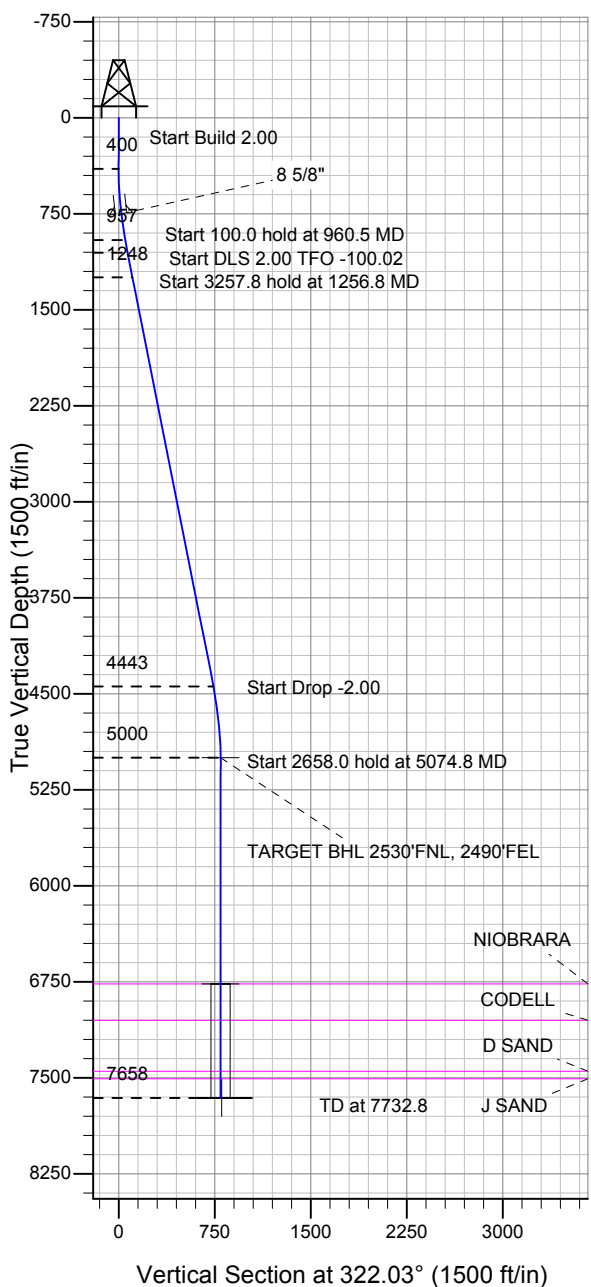
ENSIGN

Directional

Well Name: Dechant D31-21D

Surface Location: Dechant D31-21D Pad Sec.31-T3N-R64W
 North American Datum 1983 US State Plane 1983 Colorado Northern Zone
 Ground Elevation: 4811.0
 +N/-S +E/-W Northing Easting Latitude Longitude Slot
 0.0 0.0 1309796.46 3253761.47 40.180220 -104.591790
 Original Well Elev WELL @ 4824.0ft (Original Well Elev)

NOBLE ENERGY INC WELD COUNTY CO



Dechant D31-21D Pad Sec.31-T3N-R64W
 Dechant D31-21D
 Noble Dechant D31-21D Plan #1 (4-27-11)
 14:50, May 05 2011



Azimuths to True North
 Magnetic North: 8.77°

Magnetic Field
 Strength: 53046.6snT
 Dip Angle: 66.91°
 Date: 5/5/2011
 Model: IGRF2010

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
TARGET BHL 2530'FNL, 2490'FEL	5000.0	626.6	-489.0	40.181940	-104.593540	Point
TARGET CIRCLE 2530'FNL, 2490'FEL	6767.0	626.6	-489.0	40.181940	-104.593540	Circle (Radius: 75.0)
HARDLINES 106'S & 151'W OF BHL	7658.0	520.2	-640.0	40.181648	-104.594080	Polygon

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	400.0	0.00	0.00	400.0	0.0	0.0	0.00	0.00	0.0	
3	960.5	11.21	340.00	956.9	51.4	-18.7	2.00	340.00	52.0	
4	1060.5	11.21	340.00	1055.0	69.6	-25.3	0.00	0.00	70.5	
5	1256.8	11.21	319.70	1247.6	102.1	-44.2	2.00	-100.02	107.7	
6	4514.5	11.21	319.70	4443.3	585.0	-453.7	0.00	0.00	740.3	
7	5074.8	0.00	0.00	5000.0	626.6	-489.0	2.00	180.00	794.8	TARGET BHL 2530'FNL, 2490'FEL
8	7732.8	0.00	0.00	7658.0	626.6	-489.0	0.00	0.00	794.8	



Directional

NOBLE ENERGY INC WELD COUNTY CO

SEC.31-T3N-R64W

Dechant D31-21D Pad Sec.31-T3N-R64W

Dechant D31-21D

Wellbore #1

Plan: Noble Dechant D31-21D Plan #1 (4-27-11)

Standard Planning Report

05 May, 2011



Database:	Landmark	Local Co-ordinate Reference:	Well Dechant D31-21D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4824.0ft (Original Well Elev)
Project:	SEC.31-T3N-R64W	MD Reference:	WELL @ 4824.0ft (Original Well Elev)
Site:	Dechant D31-21D Pad Sec.31-T3N-R64W	North Reference:	True
Well:	Dechant D31-21D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Dechant D31-21D Plan #1 (4-27-11)		

Project	SEC.31-T3N-R64W, Weld County, Colorado		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		Using Well Reference Point
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site						Dechant D31-21D Pad Sec.31-T3N-R64W											
Site Position:						Northing:			1,309,796.48 ft			Latitude:			40.180220		
From:			Lat/Long			Easting:			3,253,761.47 ft			Longitude:			-104.591790		
Position Uncertainty:			0.0 ft			Slot Radius:			"			Grid Convergence:			0.59 °		

Well	Dechant D31-21D					
Well Position	+N/-S	0.0 ft	Northing:	1,309,796.46 ft	Latitude:	40.180220
	+E/-W	0.0 ft	Easting:	3,253,761.47 ft	Longitude:	-104.591790
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,811.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/5/2011	8.77	66.91	53,047

Design	Noble Dechant D31-21D Plan #1 (4-27-11)			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	322.03

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.00	0.00	0.00	0.00	
960.5	11.21	340.00	956.9	51.4	-18.7	2.00	2.00	0.00	340.00	
1,060.5	11.21	340.00	1,055.0	69.6	-25.3	0.00	0.00	0.00	0.00	
1,256.8	11.21	319.70	1,247.6	102.1	-44.2	2.00	0.00	-10.34	-100.02	
4,514.5	11.21	319.70	4,443.3	585.0	-453.7	0.00	0.00	0.00	0.00	
5,074.8	0.00	0.00	5,000.0	626.6	-489.0	2.00	-2.00	0.00	180.00	TARGET BHL 253C
7,732.8	0.00	0.00	7,658.0	626.6	-489.0	0.00	0.00	0.00	0.00	

Database:	Landmark	Local Co-ordinate Reference:	Well Dechant D31-21D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4824.0ft (Original Well Elev)
Project:	SEC.31-T3N-R64W	MD Reference:	WELL @ 4824.0ft (Original Well Elev)
Site:	Dechant D31-21D Pad Sec.31-T3N-R64W	North Reference:	True
Well:	Dechant D31-21D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Dechant D31-21D Plan #1 (4-27-11)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
40.0	0.00	0.00	40.0	0.0	0.0	0.0	0.00	0.00	0.00
80.0	0.00	0.00	80.0	0.0	0.0	0.0	0.00	0.00	0.00
120.0	0.00	0.00	120.0	0.0	0.0	0.0	0.00	0.00	0.00
160.0	0.00	0.00	160.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
240.0	0.00	0.00	240.0	0.0	0.0	0.0	0.00	0.00	0.00
280.0	0.00	0.00	280.0	0.0	0.0	0.0	0.00	0.00	0.00
320.0	0.00	0.00	320.0	0.0	0.0	0.0	0.00	0.00	0.00
360.0	0.00	0.00	360.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
440.0	0.80	340.00	440.0	0.3	-0.1	0.3	2.00	2.00	0.00
480.0	1.60	340.00	480.0	1.0	-0.4	1.1	2.00	2.00	0.00
520.0	2.40	340.00	520.0	2.4	-0.9	2.4	2.00	2.00	0.00
560.0	3.20	340.00	559.9	4.2	-1.5	4.2	2.00	2.00	0.00
600.0	4.00	340.00	599.8	6.6	-2.4	6.6	2.00	2.00	0.00
640.0	4.80	340.00	639.7	9.4	-3.4	9.6	2.00	2.00	0.00
680.0	5.60	340.00	679.6	12.8	-4.7	13.0	2.00	2.00	0.00
720.0	6.40	340.00	719.3	16.8	-6.1	17.0	2.00	2.00	0.00
750.9	7.02	340.00	750.0	20.2	-7.3	20.4	2.00	2.00	0.00
8 5/8"									
760.0	7.20	340.00	759.1	21.2	-7.7	21.5	2.00	2.00	0.00
800.0	8.00	340.00	798.7	26.2	-9.5	26.5	2.00	2.00	0.00
840.0	8.80	340.00	838.3	31.7	-11.5	32.1	2.00	2.00	0.00
880.0	9.60	340.00	877.8	37.7	-13.7	38.2	2.00	2.00	0.00
920.0	10.40	340.00	917.1	44.2	-16.1	44.8	2.00	2.00	0.00
960.0	11.20	340.00	956.4	51.3	-18.7	51.9	2.00	2.00	0.00
960.5	11.21	340.00	956.9	51.4	-18.7	52.0	2.00	2.00	0.00
1,000.0	11.21	340.00	995.7	58.6	-21.3	59.3	0.00	0.00	0.00
1,040.0	11.21	340.00	1,034.9	65.9	-24.0	66.7	0.00	0.00	0.00
1,060.5	11.21	340.00	1,055.0	69.6	-25.3	70.5	0.00	0.00	0.00
1,080.0	11.15	338.01	1,074.2	73.2	-26.7	74.1	2.00	-0.31	-10.19
1,120.0	11.06	333.88	1,113.4	80.2	-29.8	81.6	2.00	-0.21	-10.33
1,160.0	11.04	329.71	1,152.7	86.9	-33.5	89.1	2.00	-0.07	-10.43
1,200.0	11.07	325.54	1,191.9	93.4	-37.6	96.8	2.00	0.07	-10.43
1,240.0	11.15	321.41	1,231.2	99.6	-42.1	104.5	2.00	0.22	-10.32
1,256.8	11.21	319.70	1,247.6	102.1	-44.2	107.7	2.00	0.31	-10.19
1,280.0	11.21	319.70	1,270.4	105.6	-47.1	112.2	0.00	0.00	0.00
1,320.0	11.21	319.70	1,309.6	111.5	-52.2	120.0	0.00	0.00	0.00
1,360.0	11.21	319.70	1,348.9	117.4	-57.2	127.7	0.00	0.00	0.00
1,400.0	11.21	319.70	1,388.1	123.3	-62.2	135.5	0.00	0.00	0.00
1,440.0	11.21	319.70	1,427.4	129.3	-67.2	143.3	0.00	0.00	0.00
1,480.0	11.21	319.70	1,466.6	135.2	-72.3	151.0	0.00	0.00	0.00
1,520.0	11.21	319.70	1,505.8	141.1	-77.3	158.8	0.00	0.00	0.00
1,560.0	11.21	319.70	1,545.1	147.1	-82.3	166.6	0.00	0.00	0.00
1,600.0	11.21	319.70	1,584.3	153.0	-87.3	174.3	0.00	0.00	0.00
1,640.0	11.21	319.70	1,623.5	158.9	-92.4	182.1	0.00	0.00	0.00
1,680.0	11.21	319.70	1,662.8	164.8	-97.4	189.9	0.00	0.00	0.00
1,720.0	11.21	319.70	1,702.0	170.8	-102.4	197.6	0.00	0.00	0.00
1,760.0	11.21	319.70	1,741.3	176.7	-107.5	205.4	0.00	0.00	0.00
1,800.0	11.21	319.70	1,780.5	182.6	-112.5	213.2	0.00	0.00	0.00
1,840.0	11.21	319.70	1,819.7	188.6	-117.5	220.9	0.00	0.00	0.00
1,880.0	11.21	319.70	1,859.0	194.5	-122.5	228.7	0.00	0.00	0.00
1,920.0	11.21	319.70	1,898.2	200.4	-127.6	236.5	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Dechant D31-21D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4824.0ft (Original Well Elev)
Project:	SEC.31-T3N-R64W	MD Reference:	WELL @ 4824.0ft (Original Well Elev)
Site:	Dechant D31-21D Pad Sec.31-T3N-R64W	North Reference:	True
Well:	Dechant D31-21D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Dechant D31-21D Plan #1 (4-27-11)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
1,960.0	11.21	319.70	1,937.4	206.3	-132.6	244.2	0.00	0.00	0.00
2,000.0	11.21	319.70	1,976.7	212.3	-137.6	252.0	0.00	0.00	0.00
2,040.0	11.21	319.70	2,015.9	218.2	-142.6	259.8	0.00	0.00	0.00
2,080.0	11.21	319.70	2,055.2	224.1	-147.7	267.5	0.00	0.00	0.00
2,120.0	11.21	319.70	2,094.4	230.1	-152.7	275.3	0.00	0.00	0.00
2,160.0	11.21	319.70	2,133.6	236.0	-157.7	283.1	0.00	0.00	0.00
2,200.0	11.21	319.70	2,172.9	241.9	-162.8	290.8	0.00	0.00	0.00
2,240.0	11.21	319.70	2,212.1	247.8	-167.8	298.6	0.00	0.00	0.00
2,280.0	11.21	319.70	2,251.3	253.8	-172.8	306.4	0.00	0.00	0.00
2,320.0	11.21	319.70	2,290.6	259.7	-177.8	314.1	0.00	0.00	0.00
2,360.0	11.21	319.70	2,329.8	265.6	-182.9	321.9	0.00	0.00	0.00
2,400.0	11.21	319.70	2,369.1	271.6	-187.9	329.7	0.00	0.00	0.00
2,440.0	11.21	319.70	2,408.3	277.5	-192.9	337.4	0.00	0.00	0.00
2,480.0	11.21	319.70	2,447.5	283.4	-198.0	345.2	0.00	0.00	0.00
2,520.0	11.21	319.70	2,486.8	289.3	-203.0	353.0	0.00	0.00	0.00
2,560.0	11.21	319.70	2,526.0	295.3	-208.0	360.7	0.00	0.00	0.00
2,600.0	11.21	319.70	2,565.2	301.2	-213.0	368.5	0.00	0.00	0.00
2,640.0	11.21	319.70	2,604.5	307.1	-218.1	376.3	0.00	0.00	0.00
2,680.0	11.21	319.70	2,643.7	313.1	-223.1	384.0	0.00	0.00	0.00
2,720.0	11.21	319.70	2,683.0	319.0	-228.1	391.8	0.00	0.00	0.00
2,760.0	11.21	319.70	2,722.2	324.9	-233.1	399.6	0.00	0.00	0.00
2,800.0	11.21	319.70	2,761.4	330.8	-238.2	407.3	0.00	0.00	0.00
2,840.0	11.21	319.70	2,800.7	336.8	-243.2	415.1	0.00	0.00	0.00
2,880.0	11.21	319.70	2,839.9	342.7	-248.2	422.9	0.00	0.00	0.00
2,920.0	11.21	319.70	2,879.1	348.6	-253.3	430.7	0.00	0.00	0.00
2,960.0	11.21	319.70	2,918.4	354.6	-258.3	438.4	0.00	0.00	0.00
3,000.0	11.21	319.70	2,957.6	360.5	-263.3	446.2	0.00	0.00	0.00
3,040.0	11.21	319.70	2,996.9	366.4	-268.3	454.0	0.00	0.00	0.00
3,080.0	11.21	319.70	3,036.1	372.3	-273.4	461.7	0.00	0.00	0.00
3,120.0	11.21	319.70	3,075.3	378.3	-278.4	469.5	0.00	0.00	0.00
3,160.0	11.21	319.70	3,114.6	384.2	-283.4	477.3	0.00	0.00	0.00
3,200.0	11.21	319.70	3,153.8	390.1	-288.4	485.0	0.00	0.00	0.00
3,240.0	11.21	319.70	3,193.0	396.1	-293.5	492.8	0.00	0.00	0.00
3,280.0	11.21	319.70	3,232.3	402.0	-298.5	500.6	0.00	0.00	0.00
3,320.0	11.21	319.70	3,271.5	407.9	-303.5	508.3	0.00	0.00	0.00
3,360.0	11.21	319.70	3,310.8	413.8	-308.6	516.1	0.00	0.00	0.00
3,400.0	11.21	319.70	3,350.0	419.8	-313.6	523.9	0.00	0.00	0.00
3,440.0	11.21	319.70	3,389.2	425.7	-318.6	531.6	0.00	0.00	0.00
3,480.0	11.21	319.70	3,428.5	431.6	-323.6	539.4	0.00	0.00	0.00
3,520.0	11.21	319.70	3,467.7	437.6	-328.7	547.2	0.00	0.00	0.00
3,560.0	11.21	319.70	3,506.9	443.5	-333.7	554.9	0.00	0.00	0.00
3,600.0	11.21	319.70	3,546.2	449.4	-338.7	562.7	0.00	0.00	0.00
3,640.0	11.21	319.70	3,585.4	455.3	-343.7	570.5	0.00	0.00	0.00
3,680.0	11.21	319.70	3,624.7	461.3	-348.8	578.2	0.00	0.00	0.00
3,720.0	11.21	319.70	3,663.9	467.2	-353.8	586.0	0.00	0.00	0.00
3,760.0	11.21	319.70	3,703.1	473.1	-358.8	593.8	0.00	0.00	0.00
3,800.0	11.21	319.70	3,742.4	479.1	-363.9	601.5	0.00	0.00	0.00
3,840.0	11.21	319.70	3,781.6	485.0	-368.9	609.3	0.00	0.00	0.00
3,880.0	11.21	319.70	3,820.8	490.9	-373.9	617.1	0.00	0.00	0.00
3,920.0	11.21	319.70	3,860.1	496.8	-378.9	624.8	0.00	0.00	0.00
3,960.0	11.21	319.70	3,899.3	502.8	-384.0	632.6	0.00	0.00	0.00
4,000.0	11.21	319.70	3,938.6	508.7	-389.0	640.4	0.00	0.00	0.00
4,040.0	11.21	319.70	3,977.8	514.6	-394.0	648.1	0.00	0.00	0.00
4,080.0	11.21	319.70	4,017.0	520.6	-399.0	655.9	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Dechant D31-21D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4824.0ft (Original Well Elev)
Project:	SEC.31-T3N-R64W	MD Reference:	WELL @ 4824.0ft (Original Well Elev)
Site:	Dechant D31-21D Pad Sec.31-T3N-R64W	North Reference:	True
Well:	Dechant D31-21D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Dechant D31-21D Plan #1 (4-27-11)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,120.0	11.21	319.70	4,056.3	526.5	-404.1	663.7	0.00	0.00	0.00
4,160.0	11.21	319.70	4,095.5	532.4	-409.1	671.4	0.00	0.00	0.00
4,200.0	11.21	319.70	4,134.7	538.3	-414.1	679.2	0.00	0.00	0.00
4,240.0	11.21	319.70	4,174.0	544.3	-419.2	687.0	0.00	0.00	0.00
4,280.0	11.21	319.70	4,213.2	550.2	-424.2	694.7	0.00	0.00	0.00
4,320.0	11.21	319.70	4,252.5	556.1	-429.2	702.5	0.00	0.00	0.00
4,360.0	11.21	319.70	4,291.7	562.1	-434.2	710.3	0.00	0.00	0.00
4,400.0	11.21	319.70	4,330.9	568.0	-439.3	718.0	0.00	0.00	0.00
4,440.0	11.21	319.70	4,370.2	573.9	-444.3	725.8	0.00	0.00	0.00
4,480.0	11.21	319.70	4,409.4	579.8	-449.3	733.6	0.00	0.00	0.00
4,514.5	11.21	319.70	4,443.3	585.0	-453.7	740.3	0.00	0.00	0.00
4,520.0	11.10	319.70	4,448.6	585.8	-454.3	741.3	2.00	-2.00	0.00
4,560.0	10.30	319.70	4,488.0	591.4	-459.1	748.7	2.00	-2.00	0.00
4,600.0	9.50	319.70	4,527.4	596.7	-463.6	755.6	2.00	-2.00	0.00
4,640.0	8.70	319.70	4,566.9	601.5	-467.7	761.9	2.00	-2.00	0.00
4,680.0	7.90	319.70	4,606.4	605.9	-471.4	767.7	2.00	-2.00	0.00
4,720.0	7.10	319.70	4,646.1	609.9	-474.8	772.9	2.00	-2.00	0.00
4,760.0	6.30	319.70	4,685.8	613.4	-477.8	777.6	2.00	-2.00	0.00
4,800.0	5.50	319.70	4,725.6	616.6	-480.5	781.7	2.00	-2.00	0.00
4,840.0	4.70	319.70	4,765.4	619.3	-482.8	785.2	2.00	-2.00	0.00
4,880.0	3.90	319.70	4,805.3	621.6	-484.7	788.2	2.00	-2.00	0.00
4,920.0	3.10	319.70	4,845.3	623.4	-486.3	790.7	2.00	-2.00	0.00
4,960.0	2.30	319.70	4,885.2	624.9	-487.5	792.5	2.00	-2.00	0.00
5,000.0	1.50	319.70	4,925.2	625.9	-488.4	793.9	2.00	-2.00	0.00
5,040.0	0.70	319.70	4,965.2	626.5	-488.8	794.6	2.00	-2.00	0.00
5,074.8	0.00	0.00	5,000.0	626.6	-489.0	794.8	2.00	-2.00	0.00
TARGET BHL 2530'FNL, 2490'FEL									
5,080.0	0.00	0.00	5,005.2	626.6	-489.0	794.8	0.00	0.00	0.00
5,120.0	0.00	0.00	5,045.2	626.6	-489.0	794.8	0.00	0.00	0.00
5,160.0	0.00	0.00	5,085.2	626.6	-489.0	794.8	0.00	0.00	0.00
5,200.0	0.00	0.00	5,125.2	626.6	-489.0	794.8	0.00	0.00	0.00
5,240.0	0.00	0.00	5,165.2	626.6	-489.0	794.8	0.00	0.00	0.00
5,280.0	0.00	0.00	5,205.2	626.6	-489.0	794.8	0.00	0.00	0.00
5,320.0	0.00	0.00	5,245.2	626.6	-489.0	794.8	0.00	0.00	0.00
5,360.0	0.00	0.00	5,285.2	626.6	-489.0	794.8	0.00	0.00	0.00
5,400.0	0.00	0.00	5,325.2	626.6	-489.0	794.8	0.00	0.00	0.00
5,440.0	0.00	0.00	5,365.2	626.6	-489.0	794.8	0.00	0.00	0.00
5,480.0	0.00	0.00	5,405.2	626.6	-489.0	794.8	0.00	0.00	0.00
5,520.0	0.00	0.00	5,445.2	626.6	-489.0	794.8	0.00	0.00	0.00
5,560.0	0.00	0.00	5,485.2	626.6	-489.0	794.8	0.00	0.00	0.00
5,600.0	0.00	0.00	5,525.2	626.6	-489.0	794.8	0.00	0.00	0.00
5,640.0	0.00	0.00	5,565.2	626.6	-489.0	794.8	0.00	0.00	0.00
5,680.0	0.00	0.00	5,605.2	626.6	-489.0	794.8	0.00	0.00	0.00
5,720.0	0.00	0.00	5,645.2	626.6	-489.0	794.8	0.00	0.00	0.00
5,760.0	0.00	0.00	5,685.2	626.6	-489.0	794.8	0.00	0.00	0.00
5,800.0	0.00	0.00	5,725.2	626.6	-489.0	794.8	0.00	0.00	0.00
5,840.0	0.00	0.00	5,765.2	626.6	-489.0	794.8	0.00	0.00	0.00
5,880.0	0.00	0.00	5,805.2	626.6	-489.0	794.8	0.00	0.00	0.00
5,920.0	0.00	0.00	5,845.2	626.6	-489.0	794.8	0.00	0.00	0.00
5,960.0	0.00	0.00	5,885.2	626.6	-489.0	794.8	0.00	0.00	0.00
6,000.0	0.00	0.00	5,925.2	626.6	-489.0	794.8	0.00	0.00	0.00
6,040.0	0.00	0.00	5,965.2	626.6	-489.0	794.8	0.00	0.00	0.00
6,080.0	0.00	0.00	6,005.2	626.6	-489.0	794.8	0.00	0.00	0.00
6,120.0	0.00	0.00	6,045.2	626.6	-489.0	794.8	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Dechant D31-21D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4824.0ft (Original Well Elev)
Project:	SEC.31-T3N-R64W	MD Reference:	WELL @ 4824.0ft (Original Well Elev)
Site:	Dechant D31-21D Pad Sec.31-T3N-R64W	North Reference:	True
Well:	Dechant D31-21D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Dechant D31-21D Plan #1 (4-27-11)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
6,160.0	0.00	0.00	6,085.2	626.6	-489.0	794.8	0.00	0.00	0.00
6,200.0	0.00	0.00	6,125.2	626.6	-489.0	794.8	0.00	0.00	0.00
6,240.0	0.00	0.00	6,165.2	626.6	-489.0	794.8	0.00	0.00	0.00
6,280.0	0.00	0.00	6,205.2	626.6	-489.0	794.8	0.00	0.00	0.00
6,320.0	0.00	0.00	6,245.2	626.6	-489.0	794.8	0.00	0.00	0.00
6,360.0	0.00	0.00	6,285.2	626.6	-489.0	794.8	0.00	0.00	0.00
6,400.0	0.00	0.00	6,325.2	626.6	-489.0	794.8	0.00	0.00	0.00
6,440.0	0.00	0.00	6,365.2	626.6	-489.0	794.8	0.00	0.00	0.00
6,480.0	0.00	0.00	6,405.2	626.6	-489.0	794.8	0.00	0.00	0.00
6,520.0	0.00	0.00	6,445.2	626.6	-489.0	794.8	0.00	0.00	0.00
6,560.0	0.00	0.00	6,485.2	626.6	-489.0	794.8	0.00	0.00	0.00
6,600.0	0.00	0.00	6,525.2	626.6	-489.0	794.8	0.00	0.00	0.00
6,640.0	0.00	0.00	6,565.2	626.6	-489.0	794.8	0.00	0.00	0.00
6,680.0	0.00	0.00	6,605.2	626.6	-489.0	794.8	0.00	0.00	0.00
6,720.0	0.00	0.00	6,645.2	626.6	-489.0	794.8	0.00	0.00	0.00
6,760.0	0.00	0.00	6,685.2	626.6	-489.0	794.8	0.00	0.00	0.00
6,800.0	0.00	0.00	6,725.2	626.6	-489.0	794.8	0.00	0.00	0.00
6,840.0	0.00	0.00	6,765.2	626.6	-489.0	794.8	0.00	0.00	0.00
6,841.8	0.00	0.00	6,767.0	626.6	-489.0	794.8	0.00	0.00	0.00
NIORARA - TARGET CIRCLE 2530'FNL, 2490'FEL									
6,880.0	0.00	0.00	6,805.2	626.6	-489.0	794.8	0.00	0.00	0.00
6,920.0	0.00	0.00	6,845.2	626.6	-489.0	794.8	0.00	0.00	0.00
6,960.0	0.00	0.00	6,885.2	626.6	-489.0	794.8	0.00	0.00	0.00
7,000.0	0.00	0.00	6,925.2	626.6	-489.0	794.8	0.00	0.00	0.00
7,040.0	0.00	0.00	6,965.2	626.6	-489.0	794.8	0.00	0.00	0.00
7,080.0	0.00	0.00	7,005.2	626.6	-489.0	794.8	0.00	0.00	0.00
7,120.0	0.00	0.00	7,045.2	626.6	-489.0	794.8	0.00	0.00	0.00
7,125.8	0.00	0.00	7,051.0	626.6	-489.0	794.8	0.00	0.00	0.00
CODELL									
7,160.0	0.00	0.00	7,085.2	626.6	-489.0	794.8	0.00	0.00	0.00
7,200.0	0.00	0.00	7,125.2	626.6	-489.0	794.8	0.00	0.00	0.00
7,240.0	0.00	0.00	7,165.2	626.6	-489.0	794.8	0.00	0.00	0.00
7,280.0	0.00	0.00	7,205.2	626.6	-489.0	794.8	0.00	0.00	0.00
7,320.0	0.00	0.00	7,245.2	626.6	-489.0	794.8	0.00	0.00	0.00
7,360.0	0.00	0.00	7,285.2	626.6	-489.0	794.8	0.00	0.00	0.00
7,400.0	0.00	0.00	7,325.2	626.6	-489.0	794.8	0.00	0.00	0.00
7,440.0	0.00	0.00	7,365.2	626.6	-489.0	794.8	0.00	0.00	0.00
7,480.0	0.00	0.00	7,405.2	626.6	-489.0	794.8	0.00	0.00	0.00
7,520.0	0.00	0.00	7,445.2	626.6	-489.0	794.8	0.00	0.00	0.00
7,523.8	0.00	0.00	7,449.0	626.6	-489.0	794.8	0.00	0.00	0.00
D SAND									
7,560.0	0.00	0.00	7,485.2	626.6	-489.0	794.8	0.00	0.00	0.00
7,582.8	0.00	0.00	7,508.0	626.6	-489.0	794.8	0.00	0.00	0.00
J SAND									
7,600.0	0.00	0.00	7,525.2	626.6	-489.0	794.8	0.00	0.00	0.00
7,640.0	0.00	0.00	7,565.2	626.6	-489.0	794.8	0.00	0.00	0.00
7,680.0	0.00	0.00	7,605.2	626.6	-489.0	794.8	0.00	0.00	0.00
7,720.0	0.00	0.00	7,645.2	626.6	-489.0	794.8	0.00	0.00	0.00
7,732.8	0.00	0.00	7,658.0	626.6	-489.0	794.8	0.00	0.00	0.00
HARDLINES 106'S & 151'W OF BHL									

Database:	Landmark	Local Co-ordinate Reference:	Well Dechant D31-21D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4824.0ft (Original Well Elev)
Project:	SEC.31-T3N-R64W	MD Reference:	WELL @ 4824.0ft (Original Well Elev)
Site:	Dechant D31-21D Pad Sec.31-T3N-R64W	North Reference:	True
Well:	Dechant D31-21D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Dechant D31-21D Plan #1 (4-27-11)		

Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
HARDLINES 106'S & - plan misses target center by 184.7ft at 7732.8ft MD (7658.0 TVD, 626.6 N, -489.0 E)	0.00	0.00	7,658.0	520.2	-640.0	1,310,310.06	3,253,116.20	40.181648	-104.594080
- Polygon									
Point 1			7,658.0	0.0	0.0	1,310,310.06	3,253,116.20		
Point 2			7,658.0	0.0	300.0	1,310,313.14	3,253,416.17		
Point 3			7,658.0	0.0	0.0	1,310,310.06	3,253,116.20		
Point 4			7,658.0	300.0	0.0	1,310,610.04	3,253,113.13		
TARGET BHL 2530'F - plan hits target center	0.00	0.00	5,000.0	626.6	-489.0	1,310,418.01	3,253,266.11	40.181940	-104.593540
- Point									
TARGET CIRCLE 2530'F - plan hits target center	0.00	0.00	6,767.0	626.6	-489.0	1,310,418.01	3,253,266.11	40.181940	-104.593540
- Circle (radius 75.0)									

Casing Points					
	Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
	750.9	750.0	8 5/8"	8-5/8	12-1/4

Formations						
	Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
	6,841.8	6,767.0	NIOBRARA		0.00	
	7,125.8	7,051.0	CODELL		0.00	
	7,523.8	7,449.0	D SAND		0.00	
	7,582.8	7,508.0	J SAND		0.00	