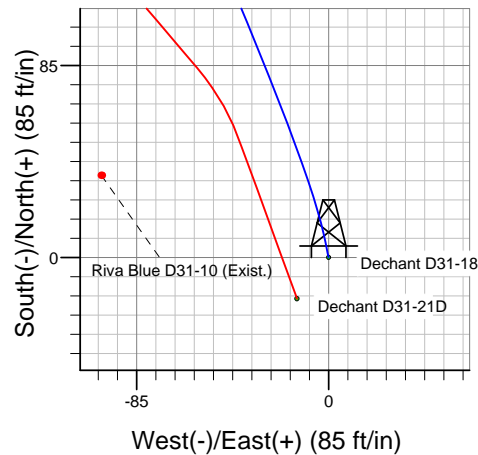
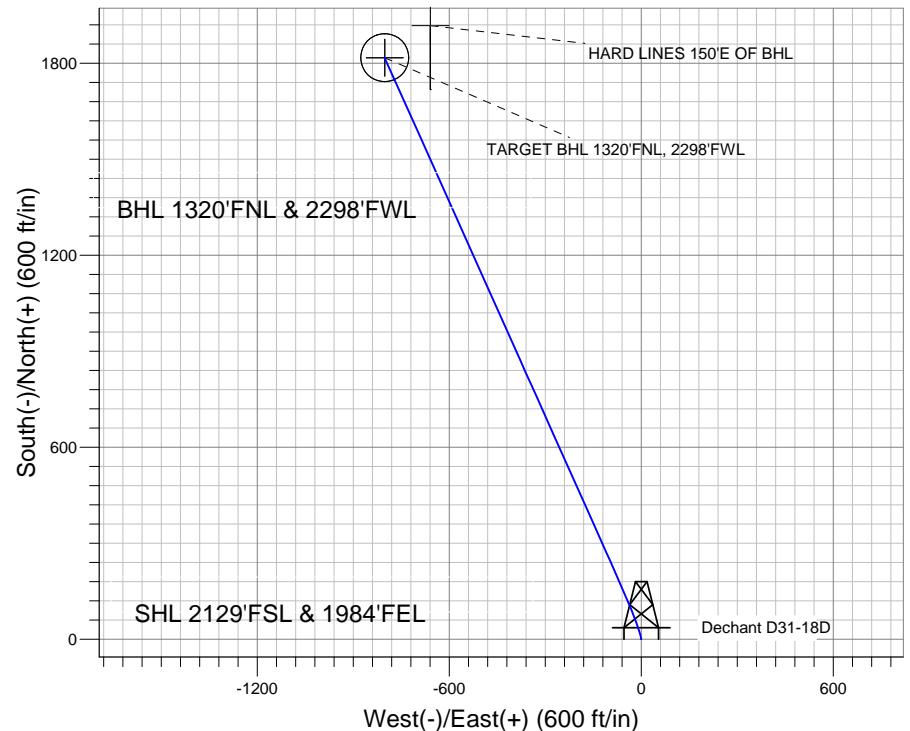
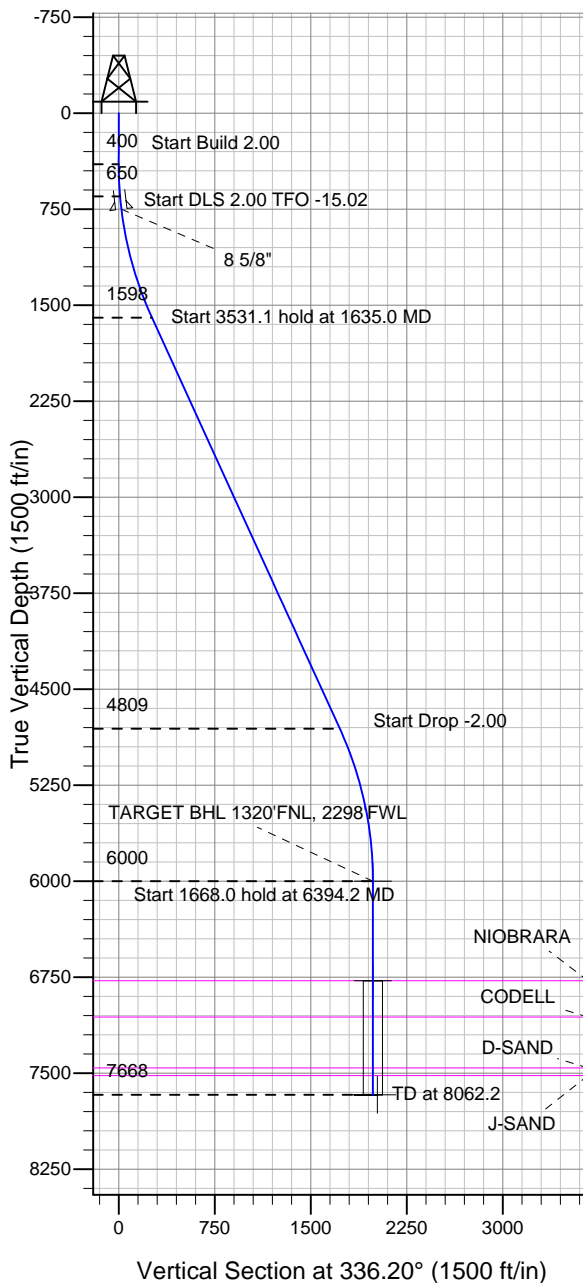


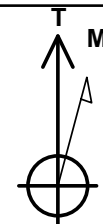
Well Name: Dechant D31-18D

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 1309814.82 3253775.25 40.180270 -104.591740
 Original Well Elev WELL @ 4824.0ft (Original Well Elev)

NOBLE ENERGY INC WELD COUNTY CO



Dechant D31-21D Pad Sec.31-T3N-R64W
 Dechant D31-18D
 Noble Dechant D31-18D Plan #1 (4-29-11)
 14:42, 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 1320'FNL, 2298'FWL	6000.0	1817.9	-801.9	40.185260	-104.594610	Point
TARGET CIRCLE 1320'FNL & 2298'FWL	6777.0	1817.9	-801.9	40.185260	-104.594610	Circle (Radius: 75.0)
HARD LINES 150'E OF BHL	7668.0	1917.9	-659.1	40.185535	-104.594099	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	650.0	5.00	348.00	649.7	10.7	-2.3	2.00	348.00	10.7	
4	1635.0	24.56	335.87	1597.6	241.8	-95.8	2.00	-15.02	259.9	
5	5166.1	24.56	335.87	4809.2	1581.3	-695.9	0.00	0.00	1727.6	
6	6394.2	0.00	0.00	6000.0	1817.9	-801.9	2.00	180.00	1986.9	TARGET BHL 1320'FNL, 2298'FWL
7	8062.2	0.00	0.00	7668.0	1817.9	-801.9	0.00	0.00	1986.9	



Directional

NOBLE ENERGY INC WELD COUNTY CO

SEC.31-T3N-R64W

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

Dechant D31-18D

Wellbore #1

Plan: Noble Dechant D31-18D Plan #1 (4-29-11)

Standard Planning Report

05 May, 2011



Database:	Landmark	Local Co-ordinate Reference:	Well Dechant D31-18D
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 D31-18D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Dechant D31-18D Plan #1 (4-29-11)		

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 D31-18D					
Well Position	+N-S	18.2 ft	Northing:	1,309,814.82 ft	Latitude:	40.180270
	+E-W	14.0 ft	Easting:	3,253,775.25 ft	Longitude:	-104.591740
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 D31-18D Plan #1 (4-29-11)			
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	336.20

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	
650.0	5.00	348.00	649.7	10.7	-2.3	2.00	2.00	0.00	348.00	
1,635.0	24.56	335.87	1,597.6	241.8	-95.8	2.00	1.99	-1.23	-15.02	
5,166.1	24.56	335.87	4,809.2	1,581.3	-695.9	0.00	0.00	0.00	0.00	
6,394.2	0.00	0.00	6,000.0	1,817.9	-801.9	2.00	-2.00	0.00	180.00	TARGET BHL 1320
8,062.2	0.00	0.00	7,668.0	1,817.9	-801.9	0.00	0.00	0.00	0.00	

Database:	Landmark	Local Co-ordinate Reference:	Well Dechant D31-18D
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 D31-18D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Dechant D31-18D Plan #1 (4-29-11)		

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	348.00	440.0	0.3	-0.1	0.3	2.00	2.00	0.00
480.0	1.60	348.00	480.0	1.1	-0.2	1.1	2.00	2.00	0.00
520.0	2.40	348.00	520.0	2.5	-0.5	2.5	2.00	2.00	0.00
560.0	3.20	348.00	559.9	4.4	-0.9	4.4	2.00	2.00	0.00
600.0	4.00	348.00	599.8	6.8	-1.5	6.8	2.00	2.00	0.00
640.0	4.80	348.00	639.7	9.8	-2.1	9.8	2.00	2.00	0.00
650.0	5.00	348.00	649.7	10.7	-2.3	10.7	2.00	2.00	0.00
680.0	5.58	346.40	679.6	13.4	-2.9	13.4	2.00	1.94	-5.33
720.0	6.36	344.72	719.3	17.4	-3.9	17.5	2.00	1.95	-4.19
750.9	6.97	343.69	750.0	20.8	-4.9	21.0	2.00	1.96	-3.36
8 5/8"									
760.0	7.15	343.41	759.1	21.9	-5.2	22.2	2.00	1.97	-2.99
800.0	7.94	342.36	798.7	26.9	-6.8	27.4	2.00	1.97	-2.63
840.0	8.73	341.50	838.3	32.4	-8.6	33.1	2.00	1.98	-2.16
880.0	9.52	340.78	877.8	38.4	-10.6	39.5	2.00	1.98	-1.80
920.0	10.31	340.17	917.2	44.9	-12.9	46.3	2.00	1.98	-1.53
960.0	11.10	339.64	956.5	51.9	-15.5	53.7	2.00	1.99	-1.31
1,000.0	11.90	339.19	995.7	59.4	-18.3	61.7	2.00	1.99	-1.14
1,040.0	12.70	338.79	1,034.8	67.3	-21.3	70.2	2.00	1.99	-1.00
1,080.0	13.49	338.44	1,073.7	75.8	-24.6	79.3	2.00	1.99	-0.88
1,120.0	14.29	338.12	1,112.6	84.7	-28.2	88.9	2.00	1.99	-0.78
1,160.0	15.08	337.84	1,151.3	94.1	-32.0	99.0	2.00	1.99	-0.70
1,200.0	15.88	337.59	1,189.8	104.0	-36.0	109.7	2.00	1.99	-0.63
1,240.0	16.68	337.36	1,228.2	114.3	-40.3	120.9	2.00	1.99	-0.58
1,280.0	17.48	337.15	1,266.4	125.2	-44.9	132.6	2.00	1.99	-0.52
1,320.0	18.27	336.96	1,304.5	136.5	-49.7	144.9	2.00	1.99	-0.48
1,360.0	19.07	336.78	1,342.4	148.2	-54.7	157.7	2.00	2.00	-0.44
1,400.0	19.87	336.62	1,380.1	160.5	-60.0	171.0	2.00	2.00	-0.41
1,440.0	20.67	336.47	1,417.6	173.2	-65.5	184.9	2.00	2.00	-0.38
1,480.0	21.47	336.33	1,455.0	186.4	-71.2	199.3	2.00	2.00	-0.35
1,520.0	22.27	336.20	1,492.1	200.0	-77.2	214.2	2.00	2.00	-0.33
1,560.0	23.06	336.08	1,529.0	214.1	-83.5	229.6	2.00	2.00	-0.30
1,600.0	23.86	335.96	1,565.7	228.7	-90.0	245.5	2.00	2.00	-0.29
1,635.0	24.56	335.87	1,597.6	241.8	-95.8	259.9	2.00	2.00	-0.27
1,640.0	24.56	335.87	1,602.1	243.7	-96.7	261.9	0.00	0.00	0.00
1,680.0	24.56	335.87	1,638.5	258.8	-103.5	278.6	0.00	0.00	0.00
1,720.0	24.56	335.87	1,674.9	274.0	-110.3	295.2	0.00	0.00	0.00
1,760.0	24.56	335.87	1,711.3	289.2	-117.1	311.8	0.00	0.00	0.00
1,800.0	24.56	335.87	1,747.7	304.4	-123.9	328.5	0.00	0.00	0.00
1,840.0	24.56	335.87	1,784.0	319.5	-130.7	345.1	0.00	0.00	0.00
1,880.0	24.56	335.87	1,820.4	334.7	-137.4	361.7	0.00	0.00	0.00
1,920.0	24.56	335.87	1,856.8	349.9	-144.2	378.3	0.00	0.00	0.00
1,960.0	24.56	335.87	1,893.2	365.1	-151.0	395.0	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Dechant D31-18D
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 D31-18D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Dechant D31-18D Plan #1 (4-29-11)		

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)
2,000.0	24.56	335.87	1,929.6	380.2	-157.8	411.6	0.00	0.00	0.00
2,040.0	24.56	335.87	1,966.0	395.4	-164.6	428.2	0.00	0.00	0.00
2,080.0	24.56	335.87	2,002.3	410.6	-171.4	444.8	0.00	0.00	0.00
2,120.0	24.56	335.87	2,038.7	425.7	-178.2	461.5	0.00	0.00	0.00
2,160.0	24.56	335.87	2,075.1	440.9	-185.0	478.1	0.00	0.00	0.00
2,200.0	24.56	335.87	2,111.5	456.1	-191.8	494.7	0.00	0.00	0.00
2,240.0	24.56	335.87	2,147.9	471.3	-198.6	511.3	0.00	0.00	0.00
2,280.0	24.56	335.87	2,184.2	486.4	-205.4	528.0	0.00	0.00	0.00
2,320.0	24.56	335.87	2,220.6	501.6	-212.2	544.6	0.00	0.00	0.00
2,360.0	24.56	335.87	2,257.0	516.8	-219.0	561.2	0.00	0.00	0.00
2,400.0	24.56	335.87	2,293.4	532.0	-225.8	577.9	0.00	0.00	0.00
2,440.0	24.56	335.87	2,329.8	547.1	-232.6	594.5	0.00	0.00	0.00
2,480.0	24.56	335.87	2,366.1	562.3	-239.4	611.1	0.00	0.00	0.00
2,520.0	24.56	335.87	2,402.5	577.5	-246.2	627.7	0.00	0.00	0.00
2,560.0	24.56	335.87	2,438.9	592.7	-253.0	644.4	0.00	0.00	0.00
2,600.0	24.56	335.87	2,475.3	607.8	-259.8	661.0	0.00	0.00	0.00
2,640.0	24.56	335.87	2,511.7	623.0	-266.6	677.6	0.00	0.00	0.00
2,680.0	24.56	335.87	2,548.0	638.2	-273.4	694.2	0.00	0.00	0.00
2,720.0	24.56	335.87	2,584.4	653.4	-280.2	710.9	0.00	0.00	0.00
2,760.0	24.56	335.87	2,620.8	668.5	-287.0	727.5	0.00	0.00	0.00
2,800.0	24.56	335.87	2,657.2	683.7	-293.8	744.1	0.00	0.00	0.00
2,840.0	24.56	335.87	2,693.6	698.9	-300.6	760.8	0.00	0.00	0.00
2,880.0	24.56	335.87	2,729.9	714.1	-307.4	777.4	0.00	0.00	0.00
2,920.0	24.56	335.87	2,766.3	729.2	-314.2	794.0	0.00	0.00	0.00
2,960.0	24.56	335.87	2,802.7	744.4	-321.0	810.6	0.00	0.00	0.00
3,000.0	24.56	335.87	2,839.1	759.6	-327.8	827.3	0.00	0.00	0.00
3,040.0	24.56	335.87	2,875.5	774.8	-334.6	843.9	0.00	0.00	0.00
3,080.0	24.56	335.87	2,911.8	789.9	-341.4	860.5	0.00	0.00	0.00
3,120.0	24.56	335.87	2,948.2	805.1	-348.2	877.1	0.00	0.00	0.00
3,160.0	24.56	335.87	2,984.6	820.3	-355.0	893.8	0.00	0.00	0.00
3,200.0	24.56	335.87	3,021.0	835.5	-361.8	910.4	0.00	0.00	0.00
3,240.0	24.56	335.87	3,057.4	850.6	-368.6	927.0	0.00	0.00	0.00
3,280.0	24.56	335.87	3,093.7	865.8	-375.4	943.7	0.00	0.00	0.00
3,320.0	24.56	335.87	3,130.1	881.0	-382.2	960.3	0.00	0.00	0.00
3,360.0	24.56	335.87	3,166.5	896.1	-389.0	976.9	0.00	0.00	0.00
3,400.0	24.56	335.87	3,202.9	911.3	-395.8	993.5	0.00	0.00	0.00
3,440.0	24.56	335.87	3,239.3	926.5	-402.6	1,010.2	0.00	0.00	0.00
3,480.0	24.56	335.87	3,275.6	941.7	-409.4	1,026.8	0.00	0.00	0.00
3,520.0	24.56	335.87	3,312.0	956.8	-416.2	1,043.4	0.00	0.00	0.00
3,560.0	24.56	335.87	3,348.4	972.0	-423.0	1,060.0	0.00	0.00	0.00
3,600.0	24.56	335.87	3,384.8	987.2	-429.8	1,076.7	0.00	0.00	0.00
3,640.0	24.56	335.87	3,421.2	1,002.4	-436.6	1,093.3	0.00	0.00	0.00
3,680.0	24.56	335.87	3,457.5	1,017.5	-443.4	1,109.9	0.00	0.00	0.00
3,720.0	24.56	335.87	3,493.9	1,032.7	-450.2	1,126.5	0.00	0.00	0.00
3,760.0	24.56	335.87	3,530.3	1,047.9	-456.9	1,143.2	0.00	0.00	0.00
3,800.0	24.56	335.87	3,566.7	1,063.1	-463.7	1,159.8	0.00	0.00	0.00
3,840.0	24.56	335.87	3,603.1	1,078.2	-470.5	1,176.4	0.00	0.00	0.00
3,880.0	24.56	335.87	3,639.4	1,093.4	-477.3	1,193.1	0.00	0.00	0.00
3,920.0	24.56	335.87	3,675.8	1,108.6	-484.1	1,209.7	0.00	0.00	0.00
3,960.0	24.56	335.87	3,712.2	1,123.8	-490.9	1,226.3	0.00	0.00	0.00
4,000.0	24.56	335.87	3,748.6	1,138.9	-497.7	1,242.9	0.00	0.00	0.00
4,040.0	24.56	335.87	3,785.0	1,154.1	-504.5	1,259.6	0.00	0.00	0.00
4,080.0	24.56	335.87	3,821.4	1,169.3	-511.3	1,276.2	0.00	0.00	0.00
4,120.0	24.56	335.87	3,857.7	1,184.5	-518.1	1,292.8	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Dechant D31-18D
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 D31-18D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Dechant D31-18D Plan #1 (4-29-11)		

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)
4,160.0	24.56	335.87	3,894.1	1,199.6	-524.9	1,309.4	0.00	0.00	0.00
4,200.0	24.56	335.87	3,930.5	1,214.8	-531.7	1,326.1	0.00	0.00	0.00
4,240.0	24.56	335.87	3,966.9	1,230.0	-538.5	1,342.7	0.00	0.00	0.00
4,280.0	24.56	335.87	4,003.3	1,245.2	-545.3	1,359.3	0.00	0.00	0.00
4,320.0	24.56	335.87	4,039.6	1,260.3	-552.1	1,376.0	0.00	0.00	0.00
4,360.0	24.56	335.87	4,076.0	1,275.5	-558.9	1,392.6	0.00	0.00	0.00
4,400.0	24.56	335.87	4,112.4	1,290.7	-565.7	1,409.2	0.00	0.00	0.00
4,440.0	24.56	335.87	4,148.8	1,305.9	-572.5	1,425.8	0.00	0.00	0.00
4,480.0	24.56	335.87	4,185.2	1,321.0	-579.3	1,442.5	0.00	0.00	0.00
4,520.0	24.56	335.87	4,221.5	1,336.2	-586.1	1,459.1	0.00	0.00	0.00
4,560.0	24.56	335.87	4,257.9	1,351.4	-592.9	1,475.7	0.00	0.00	0.00
4,600.0	24.56	335.87	4,294.3	1,366.5	-599.7	1,492.3	0.00	0.00	0.00
4,640.0	24.56	335.87	4,330.7	1,381.7	-606.5	1,509.0	0.00	0.00	0.00
4,680.0	24.56	335.87	4,367.1	1,396.9	-613.3	1,525.6	0.00	0.00	0.00
4,720.0	24.56	335.87	4,403.4	1,412.1	-620.1	1,542.2	0.00	0.00	0.00
4,760.0	24.56	335.87	4,439.8	1,427.2	-626.9	1,558.9	0.00	0.00	0.00
4,800.0	24.56	335.87	4,476.2	1,442.4	-633.7	1,575.5	0.00	0.00	0.00
4,840.0	24.56	335.87	4,512.6	1,457.6	-640.5	1,592.1	0.00	0.00	0.00
4,880.0	24.56	335.87	4,549.0	1,472.8	-647.3	1,608.7	0.00	0.00	0.00
4,920.0	24.56	335.87	4,585.3	1,487.9	-654.1	1,625.4	0.00	0.00	0.00
4,960.0	24.56	335.87	4,621.7	1,503.1	-660.9	1,642.0	0.00	0.00	0.00
5,000.0	24.56	335.87	4,658.1	1,518.3	-667.7	1,658.6	0.00	0.00	0.00
5,040.0	24.56	335.87	4,694.5	1,533.5	-674.5	1,675.2	0.00	0.00	0.00
5,080.0	24.56	335.87	4,730.9	1,548.6	-681.3	1,691.9	0.00	0.00	0.00
5,120.0	24.56	335.87	4,767.2	1,563.8	-688.1	1,708.5	0.00	0.00	0.00
5,160.0	24.56	335.87	4,803.6	1,579.0	-694.9	1,725.1	0.00	0.00	0.00
5,166.1	24.56	335.87	4,809.2	1,581.3	-695.9	1,727.6	0.00	0.00	0.00
5,200.0	23.88	335.87	4,840.1	1,594.0	-701.6	1,741.6	2.00	-2.00	0.00
5,240.0	23.08	335.87	4,876.8	1,608.5	-708.1	1,757.5	2.00	-2.00	0.00
5,280.0	22.28	335.87	4,913.7	1,622.6	-714.4	1,772.9	2.00	-2.00	0.00
5,320.0	21.48	335.87	4,950.8	1,636.2	-720.5	1,787.8	2.00	-2.00	0.00
5,360.0	20.68	335.87	4,988.1	1,649.4	-726.4	1,802.2	2.00	-2.00	0.00
5,400.0	19.88	335.87	5,025.6	1,662.0	-732.1	1,816.1	2.00	-2.00	0.00
5,440.0	19.08	335.87	5,063.3	1,674.2	-737.5	1,829.4	2.00	-2.00	0.00
5,480.0	18.28	335.87	5,101.2	1,685.9	-742.8	1,842.2	2.00	-2.00	0.00
5,520.0	17.48	335.87	5,139.3	1,697.1	-747.8	1,854.5	2.00	-2.00	0.00
5,560.0	16.68	335.87	5,177.5	1,707.8	-752.6	1,866.3	2.00	-2.00	0.00
5,600.0	15.88	335.87	5,215.9	1,718.0	-757.2	1,877.5	2.00	-2.00	0.00
5,640.0	15.08	335.87	5,254.5	1,727.8	-761.5	1,888.2	2.00	-2.00	0.00
5,680.0	14.28	335.87	5,293.2	1,737.0	-765.7	1,898.3	2.00	-2.00	0.00
5,720.0	13.48	335.87	5,332.0	1,745.8	-769.6	1,907.9	2.00	-2.00	0.00
5,760.0	12.68	335.87	5,371.0	1,754.1	-773.3	1,917.0	2.00	-2.00	0.00
5,800.0	11.88	335.87	5,410.1	1,761.8	-776.8	1,925.5	2.00	-2.00	0.00
5,840.0	11.08	335.87	5,449.2	1,769.1	-780.0	1,933.4	2.00	-2.00	0.00
5,880.0	10.28	335.87	5,488.6	1,775.9	-783.1	1,940.9	2.00	-2.00	0.00
5,920.0	9.48	335.87	5,528.0	1,782.1	-785.9	1,947.7	2.00	-2.00	0.00
5,960.0	8.68	335.87	5,567.5	1,787.9	-788.5	1,954.0	2.00	-2.00	0.00
6,000.0	7.88	335.87	5,607.0	1,793.2	-790.8	1,959.8	2.00	-2.00	0.00
6,040.0	7.08	335.87	5,646.7	1,797.9	-793.0	1,965.0	2.00	-2.00	0.00
6,080.0	6.28	335.87	5,686.4	1,802.2	-794.9	1,969.7	2.00	-2.00	0.00
6,120.0	5.48	335.87	5,726.2	1,805.9	-796.5	1,973.8	2.00	-2.00	0.00
6,160.0	4.68	335.87	5,766.1	1,809.1	-798.0	1,977.3	2.00	-2.00	0.00
6,200.0	3.88	335.87	5,805.9	1,811.9	-799.2	1,980.3	2.00	-2.00	0.00
6,240.0	3.08	335.87	5,845.9	1,814.1	-800.2	1,982.7	2.00	-2.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Dechant D31-18D
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 D31-18D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Dechant D31-18D Plan #1 (4-29-11)		

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)
6,280.0	2.28	335.87	5,885.8	1,815.8	-801.0	1,984.6	2.00	-2.00	0.00
6,320.0	1.48	335.87	5,925.8	1,817.0	-801.5	1,985.9	2.00	-2.00	0.00
6,360.0	0.68	335.87	5,965.8	1,817.7	-801.8	1,986.7	2.00	-2.00	0.00
6,394.2	0.00	0.00	6,000.0	1,817.9	-801.9	1,986.9	2.00	-2.00	0.00
TARGET BHL 1320'FNL, 2298'FWL									
6,400.0	0.00	0.00	6,005.8	1,817.9	-801.9	1,986.9	0.00	0.00	0.00
6,440.0	0.00	0.00	6,045.8	1,817.9	-801.9	1,986.9	0.00	0.00	0.00
6,480.0	0.00	0.00	6,085.8	1,817.9	-801.9	1,986.9	0.00	0.00	0.00
6,520.0	0.00	0.00	6,125.8	1,817.9	-801.9	1,986.9	0.00	0.00	0.00
6,560.0	0.00	0.00	6,165.8	1,817.9	-801.9	1,986.9	0.00	0.00	0.00
6,600.0	0.00	0.00	6,205.8	1,817.9	-801.9	1,986.9	0.00	0.00	0.00
6,640.0	0.00	0.00	6,245.8	1,817.9	-801.9	1,986.9	0.00	0.00	0.00
6,680.0	0.00	0.00	6,285.8	1,817.9	-801.9	1,986.9	0.00	0.00	0.00
6,720.0	0.00	0.00	6,325.8	1,817.9	-801.9	1,986.9	0.00	0.00	0.00
6,760.0	0.00	0.00	6,365.8	1,817.9	-801.9	1,986.9	0.00	0.00	0.00
6,800.0	0.00	0.00	6,405.8	1,817.9	-801.9	1,986.9	0.00	0.00	0.00
6,840.0	0.00	0.00	6,445.8	1,817.9	-801.9	1,986.9	0.00	0.00	0.00
6,880.0	0.00	0.00	6,485.8	1,817.9	-801.9	1,986.9	0.00	0.00	0.00
6,920.0	0.00	0.00	6,525.8	1,817.9	-801.9	1,986.9	0.00	0.00	0.00
6,960.0	0.00	0.00	6,565.8	1,817.9	-801.9	1,986.9	0.00	0.00	0.00
7,000.0	0.00	0.00	6,605.8	1,817.9	-801.9	1,986.9	0.00	0.00	0.00
7,040.0	0.00	0.00	6,645.8	1,817.9	-801.9	1,986.9	0.00	0.00	0.00
7,080.0	0.00	0.00	6,685.8	1,817.9	-801.9	1,986.9	0.00	0.00	0.00
7,120.0	0.00	0.00	6,725.8	1,817.9	-801.9	1,986.9	0.00	0.00	0.00
7,160.0	0.00	0.00	6,765.8	1,817.9	-801.9	1,986.9	0.00	0.00	0.00
7,171.2	0.00	0.00	6,777.0	1,817.9	-801.9	1,986.9	0.00	0.00	0.00
NIOBRARA - TARGET CIRCLE 1320'FNL & 2298'FWL									
7,200.0	0.00	0.00	6,805.8	1,817.9	-801.9	1,986.9	0.00	0.00	0.00
7,240.0	0.00	0.00	6,845.8	1,817.9	-801.9	1,986.9	0.00	0.00	0.00
7,280.0	0.00	0.00	6,885.8	1,817.9	-801.9	1,986.9	0.00	0.00	0.00
7,320.0	0.00	0.00	6,925.8	1,817.9	-801.9	1,986.9	0.00	0.00	0.00
7,360.0	0.00	0.00	6,965.8	1,817.9	-801.9	1,986.9	0.00	0.00	0.00
7,400.0	0.00	0.00	7,005.8	1,817.9	-801.9	1,986.9	0.00	0.00	0.00
7,440.0	0.00	0.00	7,045.8	1,817.9	-801.9	1,986.9	0.00	0.00	0.00
7,455.2	0.00	0.00	7,061.0	1,817.9	-801.9	1,986.9	0.00	0.00	0.00
CODELL									
7,480.0	0.00	0.00	7,085.8	1,817.9	-801.9	1,986.9	0.00	0.00	0.00
7,520.0	0.00	0.00	7,125.8	1,817.9	-801.9	1,986.9	0.00	0.00	0.00
7,560.0	0.00	0.00	7,165.8	1,817.9	-801.9	1,986.9	0.00	0.00	0.00
7,600.0	0.00	0.00	7,205.8	1,817.9	-801.9	1,986.9	0.00	0.00	0.00
7,640.0	0.00	0.00	7,245.8	1,817.9	-801.9	1,986.9	0.00	0.00	0.00
7,680.0	0.00	0.00	7,285.8	1,817.9	-801.9	1,986.9	0.00	0.00	0.00
7,720.0	0.00	0.00	7,325.8	1,817.9	-801.9	1,986.9	0.00	0.00	0.00
7,760.0	0.00	0.00	7,365.8	1,817.9	-801.9	1,986.9	0.00	0.00	0.00
7,800.0	0.00	0.00	7,405.8	1,817.9	-801.9	1,986.9	0.00	0.00	0.00
7,840.0	0.00	0.00	7,445.8	1,817.9	-801.9	1,986.9	0.00	0.00	0.00
7,853.2	0.00	0.00	7,459.0	1,817.9	-801.9	1,986.9	0.00	0.00	0.00
D-SAND									
7,880.0	0.00	0.00	7,485.8	1,817.9	-801.9	1,986.9	0.00	0.00	0.00
7,912.2	0.00	0.00	7,518.0	1,817.9	-801.9	1,986.9	0.00	0.00	0.00
J-SAND									
7,920.0	0.00	0.00	7,525.8	1,817.9	-801.9	1,986.9	0.00	0.00	0.00
7,960.0	0.00	0.00	7,565.8	1,817.9	-801.9	1,986.9	0.00	0.00	0.00
8,000.0	0.00	0.00	7,605.8	1,817.9	-801.9	1,986.9	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Dechant D31-18D
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 D31-18D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Dechant D31-18D Plan #1 (4-29-11)		

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)
8,040.0	0.00	0.00	7,645.8	1,817.9	-801.9	1,986.9	0.00	0.00	0.00
8,062.2	0.00	0.00	7,668.0	1,817.9	-801.9	1,986.9	0.00	0.00	0.00
HARD LINES 150'E OF BHL									

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
TARGET BHL 1320'F	0.00	0.00	6,000.0	1,817.9	-801.9	1,311,624.31	3,252,954.82	40.185260	-104.594610
- plan hits target center									
- Point									
TARGET CIRCLE 132	0.00	0.00	6,777.0	1,817.9	-801.9	1,311,624.31	3,252,954.82	40.185260	-104.594610
- plan hits target center									
- Circle (radius 75.0)									
HARD LINES 150'E C	0.00	0.00	7,668.0	1,917.9	-659.1	1,311,725.79	3,253,096.57	40.185535	-104.594099
- plan misses target center by 174.3ft at 8062.2ft MD (7668.0 TVD, 1817.9 N, -801.9 E)									
- Polygon									
Point 1			7,668.0	0.0	0.0	1,311,725.79	3,253,096.57		
Point 2			7,668.0	-200.0	0.0	1,311,525.81	3,253,098.62		

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 (°)	
7,171.2	6,777.0	NIOBRARA		0.00		
7,455.2	7,061.0	CODELL		0.00		
7,853.2	7,459.0	D-SAND		0.00		
7,912.2	7,518.0	J-SAND		0.00		