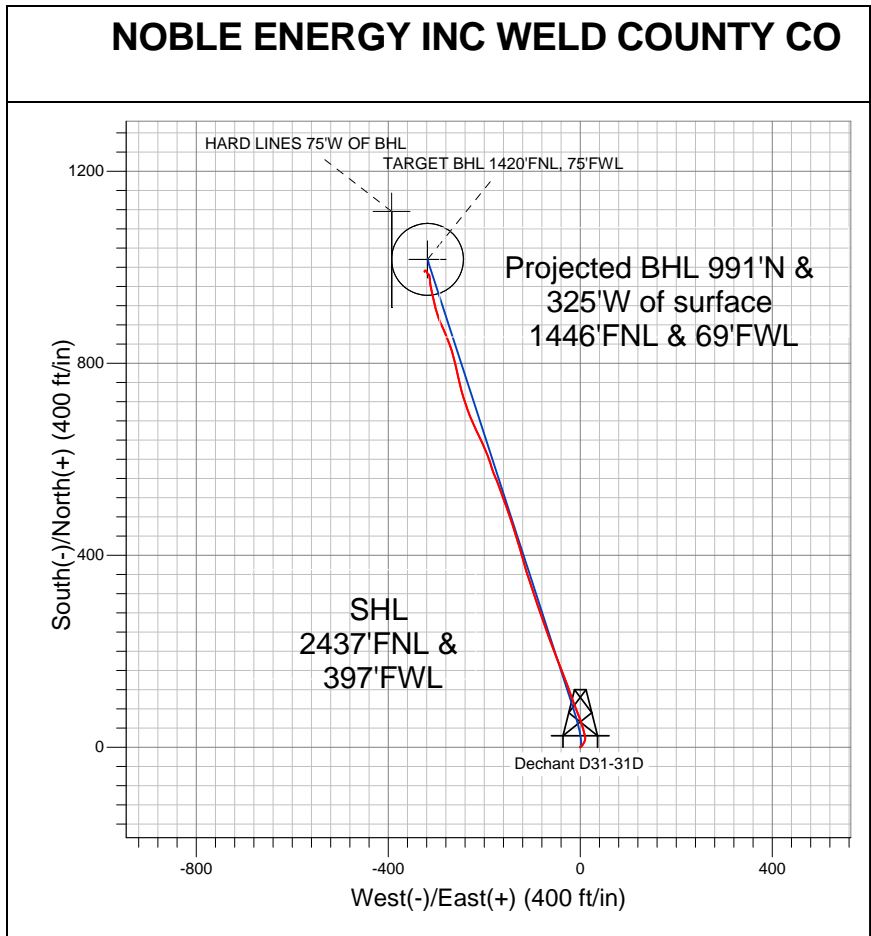
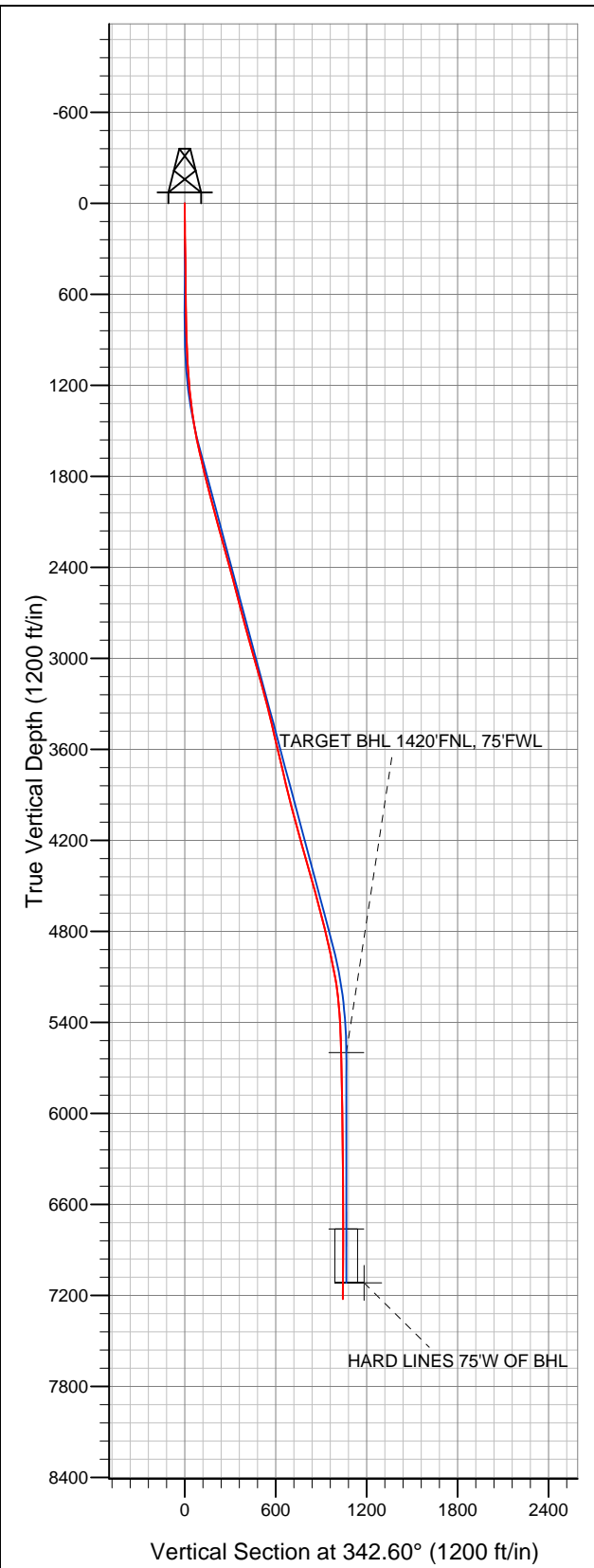




Well Name: Dechant D31-31D

Surface Location: Dechant D31-31D Pad Sec.31-T3N-R64W
 North American Datum 1983 US State Plane 1983Colorado Northern Zone
 Ground Elevation: 4814.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1310486.63	3251060.79	40.182190	-104.601430	
		Original Well Elev	WELL @ 4827.0ft (Original Well Elev)			



LEGEND

- Survey #1
- + Dechant D31-31D, Wellbore #1, Noble Dechant D31-31D Plan #1 (7-15-11) V0
- Wellbore #1

Final Survey Plot

Projected Final Survey -
 7348'MD & 7224'TVD @ 1043'VS
 0.40 deg Inc 191.00 deg AZ

Project: SEC.31-T3N-R64W
 Site: Dechant D31-31D Pad Sec.31-T3N-R64W
 Well: Dechant D31-31D
 Plan: Wellbore #1



NOBLE ENERGY INC WELD COUNTY CO

SEC.31-T3N-R64W

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

Dechant D31-31D

Wellbore #1

Survey: Survey #1

Standard Survey Report

09 April, 2012



Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Dechant D31-31D
Project:	SEC.31-T3N-R64W	TVD Reference:	WELL @ 4827.0ft (Original Well Elev)
Site:	Dechant D31-31D Pad Sec.31-T3N-R64W	MD Reference:	WELL @ 4827.0ft (Original Well Elev)
Well:	Dechant D31-31D	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

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 D31-31D Pad Sec.31-T3N-R64W				
Site Position:		Northing:	1,310,486.64ft	Latitude:	40.182190
From:	Lat/Long	Easting:	3,251,060.79ft	Longitude:	-104.601430
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.58 °

Well	Dechant D31-31D					
Well Position	+N/-S	0.0 ft	Northing:	1,310,486.63 ft	Latitude:	40.182190
	+E/-W	0.0 ft	Easting:	3,251,060.79 ft	Longitude:	-104.601430
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,814.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	3/29/2012	8.65	66.87	52,951

Design	Wellbore #1				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	5,600.0	0.0	0.0	342.60	

Survey Program	Date	4/9/2012			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
79.0	7,348.0	Survey #1 (Wellbore #1)	MWD	MWD - Standard	

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	
79.0	0.30	353.10	79.0	0.2	0.0	0.2	0.38	0.38	0.00	
206.0	1.40	54.50	206.0	1.4	1.2	1.0	1.01	0.87	48.35	
333.0	1.10	50.00	333.0	3.1	3.4	2.0	0.25	-0.24	-3.54	
459.0	1.50	26.10	458.9	5.4	5.0	3.6	0.53	0.32	-18.97	
585.0	1.50	33.20	584.9	8.2	6.7	5.9	0.15	0.00	5.63	
738.0	1.50	23.90	737.8	11.7	8.6	8.6	0.16	0.00	-6.08	
804.0	1.50	18.10	803.8	13.4	9.2	10.0	0.23	0.00	-8.79	
885.0	1.50	20.00	884.8	15.4	9.9	11.7	0.06	0.00	2.35	
967.0	2.30	2.30	966.7	18.0	10.3	14.1	1.20	0.98	-21.59	
1,049.0	3.00	349.60	1,048.6	21.8	10.0	17.8	1.11	0.85	-15.49	
1,130.0	4.10	341.40	1,129.5	26.6	8.7	22.8	1.49	1.36	-10.12	
1,212.0	5.10	345.40	1,211.2	32.9	6.8	29.4	1.28	1.22	4.88	

Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Dechant D31-31D
Project:	SEC.31-T3N-R64W	TVD Reference:	WELL @ 4827.0ft (Original Well Elev)
Site:	Dechant D31-31D Pad Sec.31-T3N-R64W	MD Reference:	WELL @ 4827.0ft (Original Well Elev)
Well:	Dechant D31-31D	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

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)	
1,294.0	6.50	346.30	1,292.8	40.9	4.8	37.6	1.71	1.71	1.10	
1,376.0	8.00	341.30	1,374.1	50.9	1.9	48.0	1.98	1.83	-6.10	
1,457.0	9.90	339.50	1,454.2	62.7	-2.3	60.5	2.37	2.35	-2.22	
1,539.0	11.20	338.00	1,534.8	76.7	-7.8	75.5	1.62	1.59	-1.83	
1,621.0	12.10	339.00	1,615.1	92.1	-13.9	92.0	1.12	1.10	1.22	
1,703.0	13.00	341.60	1,695.1	108.9	-19.9	109.8	1.30	1.10	3.17	
1,785.0	13.60	339.10	1,774.9	126.6	-26.2	128.7	1.01	0.73	-3.05	
1,867.0	14.50	339.00	1,854.5	145.2	-33.3	148.6	1.10	1.10	-0.12	
1,948.0	14.90	339.10	1,932.8	164.4	-40.7	169.1	0.49	0.49	0.12	
2,030.0	14.90	338.30	2,012.1	184.1	-48.3	190.1	0.25	0.00	-0.98	
2,112.0	15.00	339.70	2,091.3	203.8	-55.9	211.2	0.46	0.12	1.71	
2,194.0	15.40	337.60	2,170.4	223.8	-63.7	232.7	0.83	0.49	-2.56	
2,275.0	15.50	339.90	2,248.5	244.0	-71.6	254.2	0.77	0.12	2.84	
2,357.0	15.80	342.20	2,327.4	264.9	-78.7	276.3	0.84	0.37	2.80	
2,439.0	15.10	341.40	2,406.5	285.6	-85.6	298.1	0.89	-0.85	-0.98	
2,521.0	14.80	342.10	2,485.7	305.7	-92.2	319.3	0.43	-0.37	0.85	
2,602.0	14.70	340.10	2,564.0	325.2	-98.9	339.9	0.64	-0.12	-2.47	
2,684.0	14.50	341.90	2,643.4	344.8	-105.6	360.6	0.60	-0.24	2.20	
2,766.0	14.70	342.20	2,722.7	364.4	-112.0	381.2	0.26	0.24	0.37	
2,848.0	15.60	345.80	2,801.9	385.0	-117.8	402.6	1.59	1.10	4.39	
2,929.0	15.30	342.70	2,880.0	405.8	-123.7	424.2	1.08	-0.37	-3.83	
3,011.0	15.40	343.30	2,959.0	426.5	-130.0	445.9	0.23	0.12	0.73	
3,093.0	16.10	344.40	3,038.0	447.9	-136.2	468.2	0.93	0.85	1.34	
3,175.0	16.20	339.90	3,116.7	469.6	-143.2	491.0	1.53	0.12	-5.49	
3,257.0	14.80	338.70	3,195.7	490.1	-151.0	512.8	1.75	-1.71	-1.46	
3,338.0	15.10	342.10	3,274.0	509.8	-158.0	533.7	1.14	0.37	4.20	
3,420.0	14.20	340.00	3,353.3	529.4	-164.7	554.4	1.27	-1.10	-2.56	
3,502.0	12.50	340.20	3,433.1	547.2	-171.1	573.3	2.07	-2.07	0.24	
3,584.0	12.90	335.80	3,513.1	563.9	-177.9	591.3	1.28	0.49	-5.37	
3,665.0	13.90	341.10	3,591.9	581.4	-184.7	610.0	1.95	1.23	6.54	
3,747.0	13.60	343.40	3,671.6	599.9	-190.7	629.5	0.76	-0.37	2.80	
3,829.0	13.90	336.80	3,751.2	618.2	-197.3	648.9	1.95	0.37	-8.05	
3,911.0	13.20	334.60	3,830.9	635.7	-205.2	668.0	1.06	-0.85	-2.68	
3,993.0	13.50	333.60	3,910.7	652.8	-213.5	686.7	0.46	0.37	-1.22	
4,074.0	15.10	337.10	3,989.2	670.9	-221.8	706.6	2.24	1.98	4.32	
4,156.0	15.80	338.60	4,068.2	691.2	-230.0	728.3	0.98	0.85	1.83	
4,238.0	15.20	339.00	4,147.3	711.6	-238.0	750.2	0.74	-0.73	0.49	
4,320.0	14.60	343.90	4,226.5	731.6	-244.7	771.3	1.70	-0.73	5.98	
4,401.0	16.70	347.00	4,304.5	752.7	-250.1	793.1	2.79	2.59	3.83	
4,483.0	15.30	346.90	4,383.3	774.7	-255.2	815.6	1.71	-1.71	-0.12	
4,565.0	15.00	345.50	4,462.5	795.6	-260.3	837.0	0.58	-0.37	-1.71	
4,647.0	15.40	347.00	4,541.6	816.4	-265.4	858.5	0.68	0.49	1.83	
4,729.0	16.00	339.60	4,620.6	837.6	-271.8	880.6	2.55	0.73	-9.02	
4,810.0	15.10	338.00	4,698.6	857.9	-279.7	902.3	1.23	-1.11	-1.98	
4,892.0	13.70	334.50	4,778.0	876.6	-287.9	922.5	2.01	-1.71	-4.27	
4,974.0	12.40	339.90	4,857.9	893.6	-295.1	940.9	2.17	-1.59	6.59	
5,056.0	11.60	343.10	4,938.1	909.7	-300.5	958.0	1.27	-0.98	3.90	
5,137.0	12.00	348.20	5,017.4	925.8	-304.6	974.5	1.38	0.49	6.30	
5,219.0	10.90	347.90	5,097.8	941.7	-307.9	990.7	1.34	-1.34	-0.37	
5,301.0	7.40	347.80	5,178.7	954.4	-310.7	1,003.7	4.27	-4.27	-0.12	
5,383.0	5.80	350.20	5,260.2	963.7	-312.5	1,013.0	1.98	-1.95	2.93	
5,465.0	4.40	357.00	5,341.8	970.9	-313.4	1,020.2	1.86	-1.71	8.29	
5,546.0	3.00	352.40	5,422.7	976.1	-313.8	1,025.3	1.77	-1.73	-5.68	
5,628.0	1.80	359.00	5,504.6	979.5	-314.1	1,028.6	1.50	-1.46	8.05	

Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Dechant D31-31D
Project:	SEC.31-T3N-R64W	TVD Reference:	WELL @ 4827.0ft (Original Well Elev)
Site:	Dechant D31-31D Pad Sec.31-T3N-R64W	MD Reference:	WELL @ 4827.0ft (Original Well Elev)
Well:	Dechant D31-31D	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

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)	
5,710.0	1.60	343.00	5,586.6	981.9	-314.5	1,031.0	0.63	-0.24	-19.51	
5,724.2	1.52	340.66	5,600.8	982.3	-314.6	1,031.4	0.71	-0.55	-16.41	
TARGET BHL 1420'FNL, 75'FWL										
5,791.0	1.20	325.90	5,667.5	983.7	-315.3	1,033.0	0.71	-0.48	-22.11	
5,873.0	1.10	314.70	5,749.5	985.0	-316.3	1,034.5	0.30	-0.12	-13.66	
5,955.0	1.20	305.60	5,831.5	986.0	-317.6	1,035.9	0.25	0.12	-11.10	
6,037.0	1.10	348.90	5,913.5	987.3	-318.4	1,037.3	1.04	-0.12	52.80	
6,200.0	1.00	317.30	6,076.5	989.9	-319.7	1,040.2	0.36	-0.06	-19.39	
6,364.0	0.40	4.80	6,240.4	991.5	-320.6	1,042.0	0.48	-0.37	28.96	
6,527.0	0.40	297.30	6,403.4	992.3	-321.1	1,042.9	0.27	0.00	-41.41	
6,691.0	0.70	292.50	6,567.4	993.0	-322.5	1,044.0	0.18	0.18	-2.93	
6,854.0	0.50	242.30	6,730.4	993.0	-324.1	1,044.5	0.33	-0.12	-30.80	
6,885.6	0.35	244.07	6,762.0	992.9	-324.3	1,044.5	0.49	-0.48	5.60	
TARGET CIRCLE 1420'FNL & 75'FWL										
7,018.0	0.30	51.60	6,894.4	993.0	-324.4	1,044.5	0.49	-0.04	126.49	
7,181.0	0.70	193.30	7,057.4	992.3	-324.3	1,043.8	0.59	0.25	86.93	
7,239.6	0.55	192.50	7,116.0	991.6	-324.4	1,043.3	0.25	-0.25	-1.37	
HARD LINES 75'W OF BHL										
7,302.0	0.40	191.00	7,178.4	991.1	-324.5	1,042.8	0.25	-0.25	-2.40	
7,348.0	0.40	191.00	7,224.4	990.8	-324.6	1,042.5	0.00	0.00	0.00	

Checked By: _____ Approved By: _____ Date: _____