

Well Name: **Marley C01-30D**

Surface Location: Marley C01-30D Pad Sec.1-T4N-R64W  
 North American Datum 1983 US State Plane 1983 Colorado Northern Zone

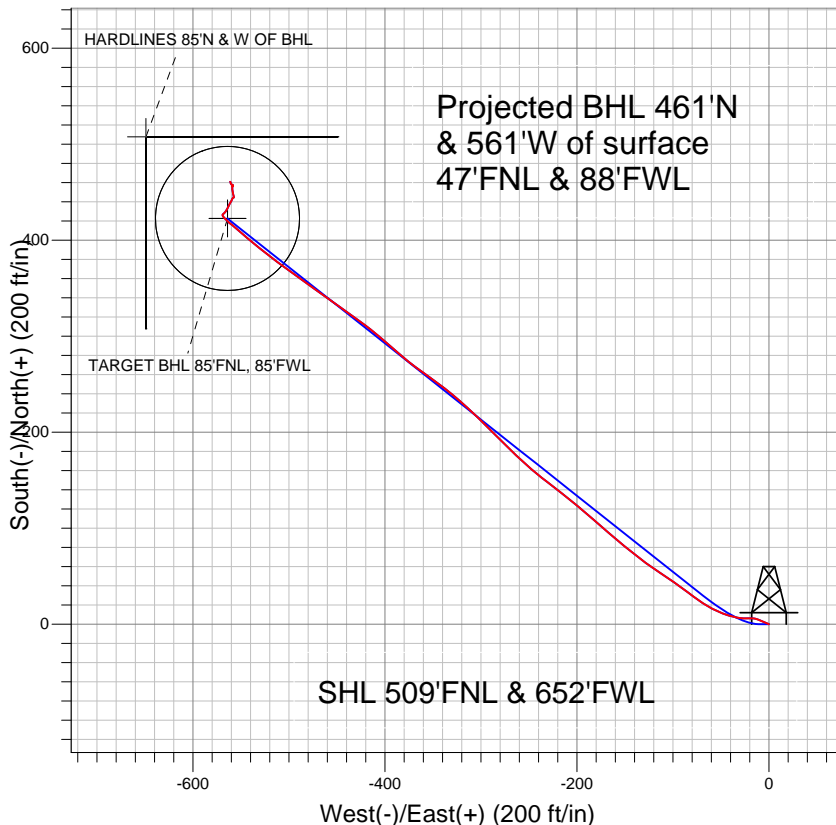
Ground Elevation: 4607.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	1370900.87	3277101.81	40.347260	-104.505810

Original Well Elev WELL @ 4620.0ft (Original Well Elev)

Slot

## NOBLE ENERGY INC WELD COUNTY CO



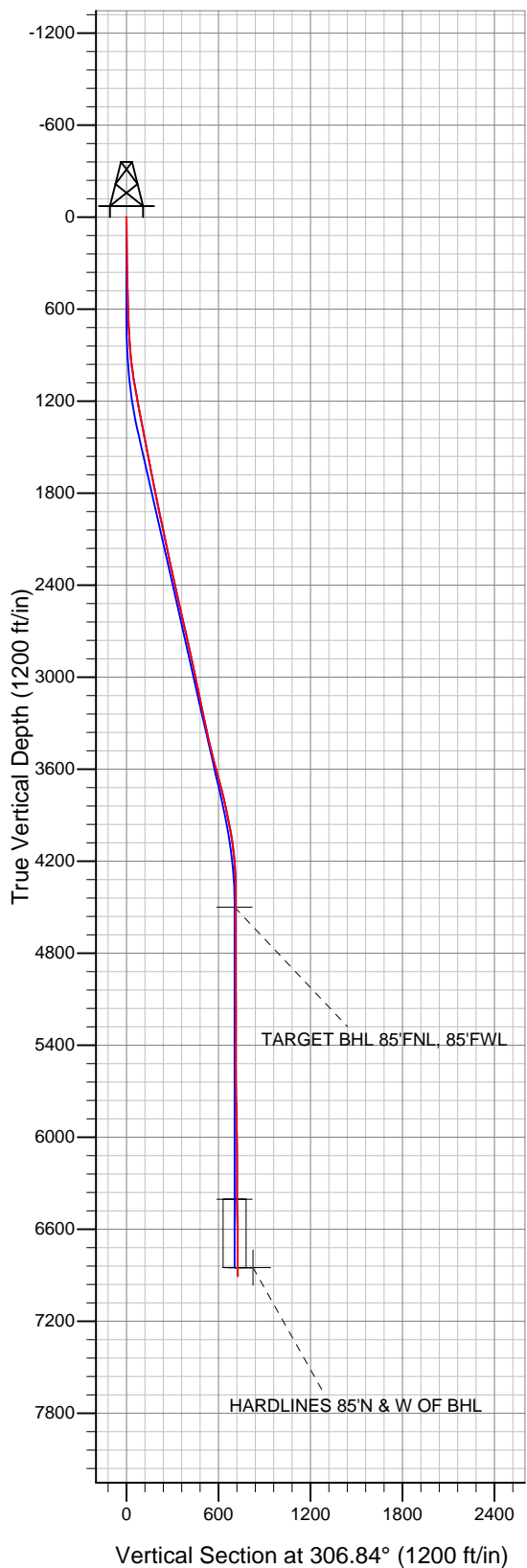
### LEGEND

- △ Marley C01-30D, Wellbore #1, Noble Marley C01-30D Plan #2 (4-4-11) V0
- Wellbore #1
- Survey #1

## Final Survey Plot

Projected Final Survey -  
 6978'MD & 6905'TVD @ 726'VS  
 0.4 deg Inc 314.0 deg AZ

Project: SEC.1-T4N-R64W  
 Site: Marley C01-30D Pad Sec.1-T4N-R64W  
 Well: Marley C01-30D  
 Plan: Wellbore #1





## **Directional**

# **NOBLE ENERGY INC WELD COUNTY CO**

**SEC.1-T4N-R64W**

**Marley C01-30D Pad Sec.1-T4N-R64W**

**Marley C01-30D**

**Wellbore #1**

**Survey: Survey #1**

## **Standard Survey Report**

**13 April, 2011**



<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>Local Co-ordinate Reference:</b>	Well Marley C01-30D
<b>Project:</b>	SEC.1-T4N-R64W	<b>TVD Reference:</b>	WELL @ 4620.0ft (Original Well Elev)
<b>Site:</b>	Marley C01-30D Pad Sec.1-T4N-R64W	<b>MD Reference:</b>	WELL @ 4620.0ft (Original Well Elev)
<b>Well:</b>	Marley C01-30D	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	Landmark

<b>Project</b>	SEC.1-T4N-R64W, Weld County, Colorado		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		Using Well Reference Point
<b>Map Zone:</b>	Colorado Northern Zone		Using geodetic scale factor

<b>Site</b>	Marley C01-30D Pad Sec.1-T4N-R64W		
<b>Site Position:</b>		<b>Northing:</b>	1,370,900.88 ft
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,277,101.81 ft
<b>Position Uncertainty:</b>	0.0 ft	<b>Slot Radius:</b>	"
		<b>Latitude:</b>	40.347260
		<b>Longitude:</b>	-104.505810
		<b>Grid Convergence:</b>	0.64 °

<b>Well</b>	Marley C01-30D		
<b>Well Position</b>	<b>+N/-S</b>	0.0 ft	<b>Northing:</b> 1,370,900.87 ft
	<b>+E/-W</b>	0.0 ft	<b>Easting:</b> 3,277,101.81 ft
<b>Position Uncertainty</b>	0.0 ft	<b>Wellhead Elevation:</b>	ft
		<b>Latitude:</b>	40.347260
		<b>Longitude:</b>	-104.505810
		<b>Ground Level:</b>	4,607.0 ft

<b>Wellbore</b>	Wellbore #1		
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>
	IGRF200510	4/4/2011	8.70
			<b>Dip Angle (°)</b> 67.07
			<b>Field Strength (nT)</b> 53,175

<b>Design</b>	Wellbore #1		
<b>Audit Notes:</b>			
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL
		<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>
	0.0	0.0	0.0
			<b>Direction (°)</b> 306.84

<b>Survey Program</b>	<b>Date</b> 4/13/2011		
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>
632.0	6,978.0	Survey #1 (Wellbore #1)	MWD
			<b>Description</b> MWD - Standard

<b>Survey</b>									
<b>Measured Depth (ft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Vertical Section (ft)</b>	<b>Dogleg Rate (°/100ft)</b>	<b>Build Rate (°/100ft)</b>	<b>Turn Rate (°/100ft)</b>
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
632.0	2.00	292.70	631.9	4.3	-10.2	10.7	0.32	0.32	0.00
726.0	3.00	287.20	725.8	5.6	-14.0	14.6	1.09	1.06	-5.85
820.0	5.00	265.90	819.6	6.1	-20.5	20.0	2.62	2.13	-22.66
914.0	6.70	277.20	913.1	6.4	-30.0	27.9	2.18	1.81	12.02
1,007.0	8.40	286.90	1,005.3	9.1	-41.9	39.0	2.28	1.83	10.43
1,102.0	9.50	294.50	1,099.1	14.4	-55.7	53.2	1.70	1.16	8.00
1,196.0	10.40	305.00	1,191.7	22.5	-69.7	69.2	2.15	0.96	11.17
1,290.0	11.30	306.80	1,284.0	32.8	-84.0	86.9	1.02	0.96	1.91
1,383.0	11.20	304.90	1,375.2	43.5	-98.7	105.0	0.41	-0.11	-2.04
1,477.0	10.90	303.30	1,467.5	53.6	-113.6	123.0	0.46	-0.32	-1.70
1,571.0	10.80	306.20	1,559.8	63.6	-128.1	140.7	0.59	-0.11	3.09
1,665.0	10.70	308.80	1,652.2	74.3	-142.1	158.2	0.53	-0.11	2.77

<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>Local Co-ordinate Reference:</b>	Well Marley C01-30D
<b>Project:</b>	SEC.1-T4N-R64W	<b>TVD Reference:</b>	WELL @ 4620.0ft (Original Well Elev)
<b>Site:</b>	Marley C01-30D Pad Sec.1-T4N-R64W	<b>MD Reference:</b>	WELL @ 4620.0ft (Original Well Elev)
<b>Well:</b>	Marley C01-30D	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	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)
1,759.0	11.30	309.10	1,744.4	85.6	-156.0	176.2	0.64	0.64	0.32
1,853.0	11.70	312.90	1,836.5	97.9	-170.1	194.9	0.91	0.43	4.04
1,947.0	12.50	309.20	1,928.5	110.8	-185.0	214.5	1.18	0.85	-3.94
2,041.0	12.40	310.30	2,020.2	123.8	-200.6	234.7	0.27	-0.11	1.17
2,138.0	11.30	307.80	2,115.2	136.3	-216.0	254.6	1.25	-1.13	-2.58
2,232.0	12.40	308.10	2,207.2	148.2	-231.3	273.9	1.17	1.17	0.32
2,326.0	12.30	309.80	2,299.0	160.8	-246.9	294.0	0.40	-0.11	1.81
2,420.0	12.70	314.80	2,390.8	174.5	-261.9	314.3	1.23	0.43	5.32
2,514.0	11.80	313.90	2,482.6	188.5	-276.2	334.0	0.98	-0.96	-0.96
2,607.0	13.00	314.50	2,573.5	202.4	-290.5	353.8	1.30	1.29	0.65
2,701.0	14.00	314.00	2,664.9	217.7	-306.2	375.6	1.07	1.06	-0.53
2,795.0	12.80	311.80	2,756.3	232.5	-322.1	397.2	1.39	-1.28	-2.34
2,889.0	12.00	307.40	2,848.1	245.4	-337.7	417.4	1.32	-0.85	-4.68
2,983.0	11.80	305.60	2,940.1	257.0	-353.2	436.8	0.45	-0.21	-1.91
3,077.0	11.70	306.20	3,032.1	268.2	-368.8	455.9	0.17	-0.11	0.64
3,171.0	11.50	311.80	3,124.2	280.0	-383.4	474.8	1.22	-0.21	5.96
3,265.0	12.60	310.50	3,216.1	293.0	-398.2	494.3	1.21	1.17	-1.38
3,359.0	11.60	309.10	3,308.0	305.6	-413.3	514.0	1.11	-1.06	-1.49
3,453.0	12.50	305.80	3,400.0	317.5	-428.9	533.6	1.21	0.96	-3.51
3,547.0	14.00	305.30	3,491.5	330.0	-446.5	555.2	1.60	1.60	-0.53
3,640.0	15.40	306.20	3,581.4	343.8	-465.6	578.8	1.53	1.51	0.97
3,734.0	14.90	304.50	3,672.2	358.0	-485.6	603.3	0.71	-0.53	-1.81
3,828.0	14.10	307.40	3,763.2	371.8	-504.7	626.8	1.15	-0.85	3.09
3,922.0	12.20	306.70	3,854.7	384.7	-521.8	648.2	2.03	-2.02	-0.74
4,016.0	11.60	310.40	3,946.7	396.8	-536.9	667.6	1.03	-0.64	3.94
4,110.0	8.90	310.40	4,039.2	407.6	-549.7	684.3	2.87	-2.87	0.00
4,204.0	6.50	309.60	4,132.3	415.7	-559.3	696.9	2.56	-2.55	-0.85
4,298.0	4.50	315.60	4,225.9	421.7	-566.0	705.8	2.21	-2.13	6.38
4,392.0	1.30	335.10	4,319.7	425.3	-569.0	710.4	3.51	-3.40	20.74
4,486.0	0.80	49.20	4,413.7	426.7	-569.0	711.2	1.41	-0.53	78.83
4,572.3	1.08	52.58	4,500.0	427.6	-567.9	710.9	0.33	0.32	3.92
<b>TARGET BHL 85'FNL, 85'FWL</b>									
4,580.0	1.10	52.80	4,507.7	427.7	-567.7	710.8	0.33	0.32	2.85
4,674.0	0.90	27.30	4,601.7	428.9	-566.7	710.7	0.51	-0.21	-27.13
4,768.0	1.40	36.90	4,695.7	430.5	-565.7	710.8	0.57	0.53	10.21
4,862.0	1.50	31.90	4,789.6	432.5	-564.3	710.9	0.17	0.11	-5.32
4,956.0	0.90	20.40	4,883.6	434.2	-563.4	711.2	0.68	-0.64	-12.23
5,050.0	1.20	16.80	4,977.6	435.8	-562.9	711.8	0.33	0.32	-3.83
5,144.0	1.10	38.20	5,071.6	437.5	-562.0	712.1	0.47	-0.11	22.77
5,238.0	1.30	31.40	5,165.6	439.1	-560.9	712.2	0.26	0.21	-7.23
5,332.0	1.10	19.40	5,259.6	440.9	-560.1	712.5	0.34	-0.21	-12.77
5,426.0	1.50	27.70	5,353.5	442.8	-559.2	713.0	0.47	0.43	8.83
5,520.0	0.60	62.40	5,447.5	444.1	-558.2	713.0	1.13	-0.96	36.91
5,614.0	0.30	79.10	5,541.5	444.4	-557.5	712.6	0.35	-0.32	17.77
5,708.0	0.80	346.10	5,635.5	445.1	-557.4	713.0	0.92	0.53	-98.94
5,802.0	1.00	344.10	5,729.5	446.5	-557.8	714.1	0.22	0.21	-2.13
5,896.0	1.40	347.60	5,823.5	448.4	-558.3	715.6	0.43	0.43	3.72
5,989.0	2.20	353.00	5,916.4	451.3	-558.7	717.7	0.88	0.86	5.81
6,083.0	2.20	359.70	6,010.4	454.9	-559.0	720.1	0.27	0.00	7.13
6,177.0	0.40	186.90	6,104.3	456.4	-559.0	721.0	2.76	-1.91	-183.83
6,271.0	0.40	96.10	6,198.3	456.0	-558.7	720.6	0.61	0.00	-96.60
6,364.0	1.10	4.10	6,291.3	456.9	-558.3	720.8	1.27	0.75	-98.92
6,458.0	0.50	250.70	6,385.3	457.6	-558.7	721.5	1.47	-0.64	-120.64
6,476.6	0.56	268.35	6,403.9	457.6	-558.8	721.6	0.94	0.34	94.86

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<b>Site:</b>	Marley C01-30D Pad Sec.1-T4N-R64W	<b>MD Reference:</b>	WELL @ 4620.0ft (Original Well Elev)
<b>Well:</b>	Marley C01-30D	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	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)
<b>TARGET CIRCLE 85'FNL, 85'FWL</b>									
6,552.0	1.10	302.30	6,479.3	458.0	-559.8	722.6	0.94	0.71	45.03
6,646.0	0.60	4.70	6,573.3	458.9	-560.5	723.8	1.04	-0.53	66.38
6,740.0	0.40	327.80	6,667.3	459.7	-560.7	724.3	0.39	-0.21	-39.26
6,834.0	0.20	1.50	6,761.3	460.2	-560.8	724.7	0.28	-0.21	35.85
6,923.1	0.39	315.14	6,850.4	460.5	-561.0	725.1	0.32	0.21	-52.03
<b>HARDLINES 85'N &amp; W OF BHL</b>									
6,928.0	0.40	314.00	6,855.3	460.5	-561.1	725.2	0.32	0.28	-23.27
6,978.0	0.40	314.00	6,905.3	460.8	-561.3	725.5	0.00	0.00	0.00

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_