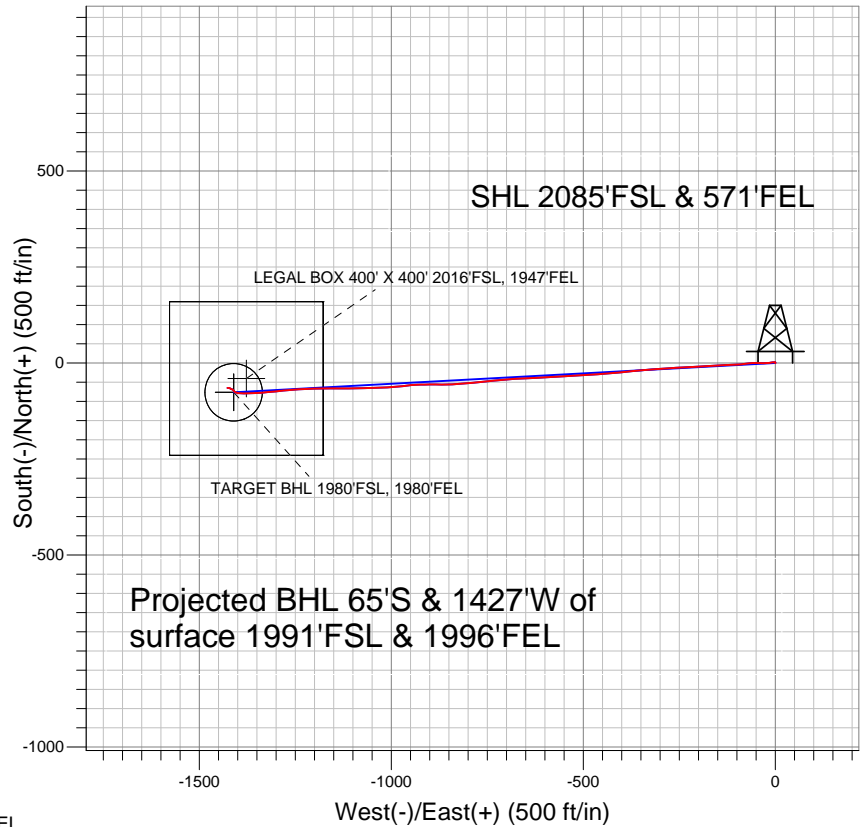
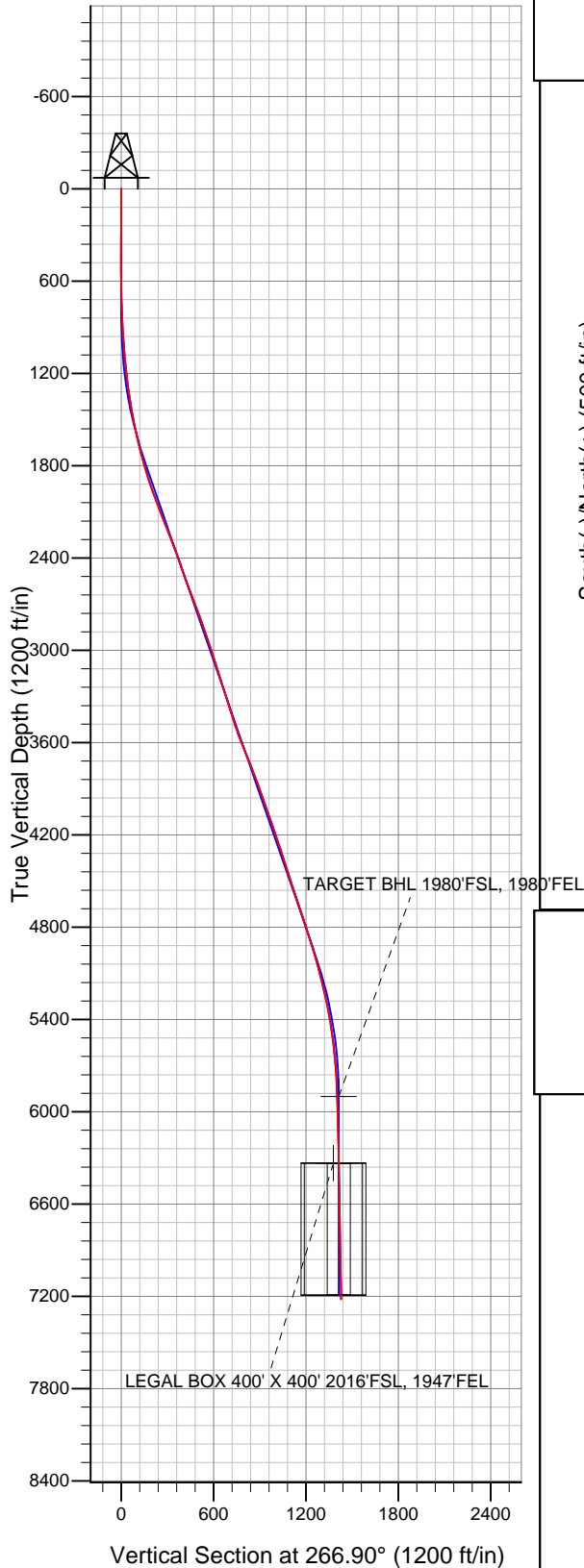


## NOBLE ENERGY INC WELD COUNTY CO



### LEGEND

- ✕ Carmin USX CC05-10D, Wellbore #1, Noble Carmin USX CC05-10D Plan #3 (5-13-11) V0
- Wellbore #1
- Survey #1

## Final Survey Plot

Projected Final Survey -  
 7435'MD & 7219'TVD @ 1428'VS  
 1.0 deg Inc 265.5 deg AZ

Project: SEC.5-T4N-R63W  
 Site: Carmin USX CC05-23D Pad Sec.5-T4N-R63W  
 Well: Carmin USX CC05-10D  
 Plan: Wellbore #1



## **Directional**

# **NOBLE ENERGY INC WELD COUNTY CO**

**SEC.5-T4N-R63W**

**Carmin USX CC05-23D Pad Sec.5-T4N-R63W**

**Carmin USX CC05-10D**

**Wellbore #1**

**Survey: Survey #1**

## **Standard Survey Report**

**05 July, 2011**



<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>Local Co-ordinate Reference:</b>	Well Carmin USX CC05-10D
<b>Project:</b>	SEC.5-T4N-R63W	<b>TVD Reference:</b>	WELL @ 4666.0ft (Original Well Elev)
<b>Site:</b>	Carmin USX CC05-23D Pad Sec.5-T4N-R63W	<b>MD Reference:</b>	WELL @ 4666.0ft (Original Well Elev)
<b>Well:</b>	Carmin USX CC05-10D	<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.5-T4N-R63W, 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

Site	Carmin USX CC05-23D Pad Sec.5-T4N-R63W				
Site Position:		Northing:	1,368,246.09ft	Latitude:	40.339520
From:	Lat/Long	Easting:	3,291,449.53ft	Longitude:	-104.454450
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.68 °

Well	Carmin USX CC05-10D					
Well Position	+N/-S	0.0 ft	Northing:	1,368,245.84 ft	Latitude:	40.339520
	+E/-W	0.0 ft	Easting:	3,291,430.02 ft	Longitude:	-104.454520
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,653.0 ft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	6/22/2011	8.69	67.05	53,132

<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>	<b>Direction (°)</b>	
	0.0	0.0	0.0	266.90	

<b>Survey Program</b>	<b>Date</b>	7/5/2011			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
48.0	7,435.0	Survey #1 (Wellbore #1)	MWD	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	
48.0	0.00	272.60	48.0	0.0	0.0	0.0	0.00	0.00	0.00	
139.0	0.10	229.50	139.0	-0.1	-0.1	0.1	0.11	0.11	0.00	
231.0	0.10	263.00	231.0	-0.1	-0.2	0.2	0.06	0.00	36.41	
323.0	0.20	38.50	323.0	0.0	-0.2	0.2	0.30	0.11	147.28	
415.0	0.30	5.60	415.0	0.4	-0.1	0.0	0.19	0.11	-35.76	
506.0	0.40	34.70	506.0	0.9	0.1	-0.2	0.22	0.11	31.98	
598.0	0.50	5.00	598.0	1.5	0.4	-0.4	0.27	0.11	-32.28	
689.0	0.30	301.30	689.0	2.0	0.2	-0.3	0.50	-0.22	-70.00	
782.0	3.20	269.70	781.9	2.2	-2.6	2.5	3.17	3.12	-33.98	
875.0	3.20	258.90	874.8	1.6	-7.8	7.7	0.65	0.00	-11.61	
969.0	3.40	261.40	968.6	0.7	-13.1	13.0	0.26	0.21	2.66	
1,063.0	4.30	263.10	1,062.4	-0.1	-19.3	19.3	0.97	0.96	1.81	

<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>Local Co-ordinate Reference:</b>	Well Carmin USX CC05-10D
<b>Project:</b>	SEC.5-T4N-R63W	<b>TVD Reference:</b>	WELL @ 4666.0ft (Original Well Elev)
<b>Site:</b>	Carmin USX CC05-23D Pad Sec.5-T4N-R63W	<b>MD Reference:</b>	WELL @ 4666.0ft (Original Well Elev)
<b>Well:</b>	Carmin USX CC05-10D	<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)	
1,158.0	6.00	271.00	1,157.0	-0.5	-27.8	27.8	1.93	1.79	8.32	
1,251.0	7.30	271.70	1,249.4	-0.2	-38.6	38.6	1.40	1.40	0.75	
1,346.0	8.80	270.60	1,343.5	0.1	-51.9	51.8	1.59	1.58	-1.16	
1,440.0	10.10	262.90	1,436.2	-0.9	-67.3	67.2	1.93	1.38	-8.19	
1,535.0	11.10	262.70	1,529.6	-3.1	-84.6	84.7	1.05	1.05	-0.21	
1,628.0	13.10	268.50	1,620.5	-4.5	-104.0	104.1	2.51	2.15	6.24	
1,721.0	14.60	267.90	1,710.8	-5.2	-126.3	126.4	1.62	1.61	-0.65	
1,815.0	15.80	265.60	1,801.5	-6.6	-150.9	151.0	1.43	1.28	-2.45	
1,908.0	17.40	266.70	1,890.6	-8.4	-177.4	177.6	1.75	1.72	1.18	
2,001.0	20.00	267.30	1,978.7	-9.9	-207.2	207.4	2.80	2.80	0.65	
2,095.0	22.40	267.40	2,066.4	-11.5	-241.1	241.4	2.55	2.55	0.11	
2,189.0	20.80	265.20	2,153.7	-13.7	-275.6	276.0	1.91	-1.70	-2.34	
2,282.0	20.60	266.40	2,240.7	-16.1	-308.4	308.8	0.50	-0.22	1.29	
2,375.0	20.50	264.90	2,327.8	-18.6	-341.0	341.5	0.58	-0.11	-1.61	
2,469.0	20.20	264.80	2,416.0	-21.5	-373.5	374.1	0.32	-0.32	-0.11	
2,563.0	19.40	263.60	2,504.4	-24.7	-405.2	406.0	0.95	-0.85	-1.28	
2,657.0	20.30	266.70	2,592.8	-27.4	-437.0	437.8	1.47	0.96	3.30	
2,750.0	20.60	265.50	2,680.0	-29.6	-469.4	470.3	0.55	0.32	-1.29	
2,844.0	20.30	266.10	2,768.0	-32.0	-502.2	503.2	0.39	-0.32	0.64	
2,937.0	19.00	267.60	2,855.6	-33.8	-533.4	534.4	1.50	-1.40	1.61	
3,031.0	19.90	266.90	2,944.3	-35.3	-564.7	565.7	0.99	0.96	-0.74	
3,125.0	18.10	265.90	3,033.1	-37.2	-595.2	596.3	1.95	-1.91	-1.06	
3,218.0	17.10	267.90	3,121.8	-38.7	-623.3	624.5	1.26	-1.08	2.15	
3,311.0	16.80	267.80	3,210.7	-39.7	-650.4	651.6	0.32	-0.32	-0.11	
3,404.0	17.70	266.00	3,299.6	-41.2	-677.9	679.1	1.13	0.97	-1.94	
3,497.0	18.10	264.20	3,388.1	-43.7	-706.4	707.7	0.73	0.43	-1.94	
3,591.0	17.90	264.60	3,477.4	-46.5	-735.3	736.7	0.25	-0.21	0.43	
3,685.0	21.10	265.40	3,566.0	-49.2	-766.5	768.1	3.42	3.40	0.85	
3,778.0	21.70	264.50	3,652.6	-52.2	-800.3	802.0	0.74	0.65	-0.97	
3,872.0	21.80	265.80	3,739.9	-55.2	-835.0	836.8	0.52	0.11	1.38	
3,966.0	19.90	271.00	3,827.8	-56.2	-868.5	870.2	2.82	-2.02	5.53	
4,059.0	21.20	269.40	3,914.9	-56.1	-901.1	902.8	1.52	1.40	-1.72	
4,153.0	18.90	268.30	4,003.2	-56.7	-933.3	935.0	2.48	-2.45	-1.17	
4,246.0	18.50	262.30	4,091.3	-59.1	-963.0	964.8	2.11	-0.43	-6.45	
4,339.0	19.00	265.20	4,179.3	-62.4	-992.7	994.6	1.14	0.54	3.12	
4,432.0	18.90	267.40	4,267.3	-64.3	-1,022.8	1,024.8	0.78	-0.11	2.37	
4,526.0	17.00	270.40	4,356.7	-64.9	-1,051.8	1,053.8	2.25	-2.02	3.19	
4,620.0	18.90	268.50	4,446.1	-65.2	-1,080.8	1,082.7	2.11	2.02	-2.02	
4,713.0	18.50	267.60	4,534.2	-66.2	-1,110.6	1,112.5	0.53	-0.43	-0.97	
4,807.0	17.70	271.50	4,623.6	-66.5	-1,139.7	1,141.7	1.54	-0.85	4.15	
4,900.0	18.20	268.90	4,712.1	-66.4	-1,168.4	1,170.3	1.02	0.54	-2.80	
4,994.0	19.10	269.30	4,801.1	-66.9	-1,198.4	1,200.3	0.97	0.96	0.43	
5,088.0	17.30	267.20	4,890.4	-67.7	-1,227.8	1,229.7	2.04	-1.91	-2.23	
5,181.0	15.60	265.50	4,979.6	-69.4	-1,254.1	1,256.0	1.90	-1.83	-1.83	
5,275.0	15.10	262.00	5,070.3	-72.1	-1,278.8	1,280.8	1.12	-0.53	-3.72	
5,368.0	14.00	267.50	5,160.3	-74.3	-1,302.0	1,304.1	1.90	-1.18	5.91	
5,461.0	12.90	262.40	5,250.7	-76.1	-1,323.6	1,325.7	1.74	-1.18	-5.48	
5,554.0	11.00	268.00	5,341.7	-77.8	-1,342.7	1,345.0	2.39	-2.04	6.02	
5,648.0	8.70	266.60	5,434.3	-78.5	-1,358.8	1,361.0	2.46	-2.45	-1.49	
5,741.0	7.30	267.50	5,526.4	-79.2	-1,371.7	1,374.0	1.51	-1.51	0.97	
5,835.0	5.80	272.30	5,619.8	-79.3	-1,382.4	1,384.7	1.70	-1.60	5.11	
5,929.0	4.30	273.00	5,713.4	-78.9	-1,390.7	1,392.9	1.60	-1.60	0.74	
6,024.0	3.20	273.80	5,808.2	-78.5	-1,396.9	1,399.1	1.16	-1.16	0.84	
6,116.3	2.41	289.82	5,900.5	-77.7	-1,401.3	1,403.4	1.20	-0.85	17.35	

<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>Local Co-ordinate Reference:</b>	Well Carmin USX CC05-10D
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<b>Site:</b>	Carmin USX CC05-23D Pad Sec.5-T4N-R63W	<b>MD Reference:</b>	WELL @ 4666.0ft (Original Well Elev)
<b>Well:</b>	Carmin USX CC05-10D	<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 BHL 1980'FSL, 1980'FEL</b>									
6,118.0	2.40	290.20	5,902.1	-77.7	-1,401.4	1,403.5	1.20	-0.72	22.83
6,211.0	1.60	283.70	5,995.1	-76.7	-1,404.4	1,406.5	0.89	-0.86	-6.99
6,305.0	1.10	290.40	6,089.0	-76.1	-1,406.6	1,408.6	0.56	-0.53	7.13
6,398.0	1.10	313.20	6,182.0	-75.2	-1,408.0	1,410.1	0.47	0.00	24.52
6,492.0	1.10	323.60	6,276.0	-73.8	-1,409.2	1,411.2	0.21	0.00	11.06
6,549.0	1.40	327.64	6,332.9	-72.8	-1,409.9	1,411.8	0.56	0.53	7.10
<b>TARGET CIRCLE 1980'FSL &amp; 1980'FEL</b>									
6,549.2	1.41	327.66	6,333.2	-72.8	-1,409.9	1,411.8	0.56	0.54	5.55
<b>LEGAL BOX 400' X 400' 2016'FSL, 1947'FEL</b>									
6,585.0	1.60	329.40	6,369.0	-72.0	-1,410.4	1,412.3	0.56	0.54	4.87
6,679.0	1.70	305.30	6,462.9	-70.0	-1,412.2	1,414.0	0.74	0.11	-25.64
6,773.0	2.20	291.50	6,556.9	-68.6	-1,415.1	1,416.7	0.73	0.53	-14.68
6,866.0	1.60	299.20	6,649.8	-67.3	-1,417.8	1,419.4	0.70	-0.65	8.28
6,959.0	0.70	314.10	6,742.8	-66.3	-1,419.4	1,420.9	1.01	-0.97	16.02
7,052.0	0.70	289.40	6,835.8	-65.7	-1,420.3	1,421.8	0.32	0.00	-26.56
7,145.0	0.90	280.50	6,928.8	-65.4	-1,421.6	1,423.0	0.25	0.22	-9.57
7,239.0	1.10	278.50	7,022.8	-65.1	-1,423.2	1,424.6	0.22	0.21	-2.13
7,332.0	0.90	271.40	7,115.8	-64.9	-1,424.8	1,426.2	0.25	-0.22	-7.63
7,390.0	1.00	265.50	7,173.7	-65.0	-1,425.8	1,427.2	0.24	0.17	-10.17
7,435.0	1.00	265.50	7,218.7	-65.0	-1,426.6	1,428.0	0.00	0.00	0.00

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