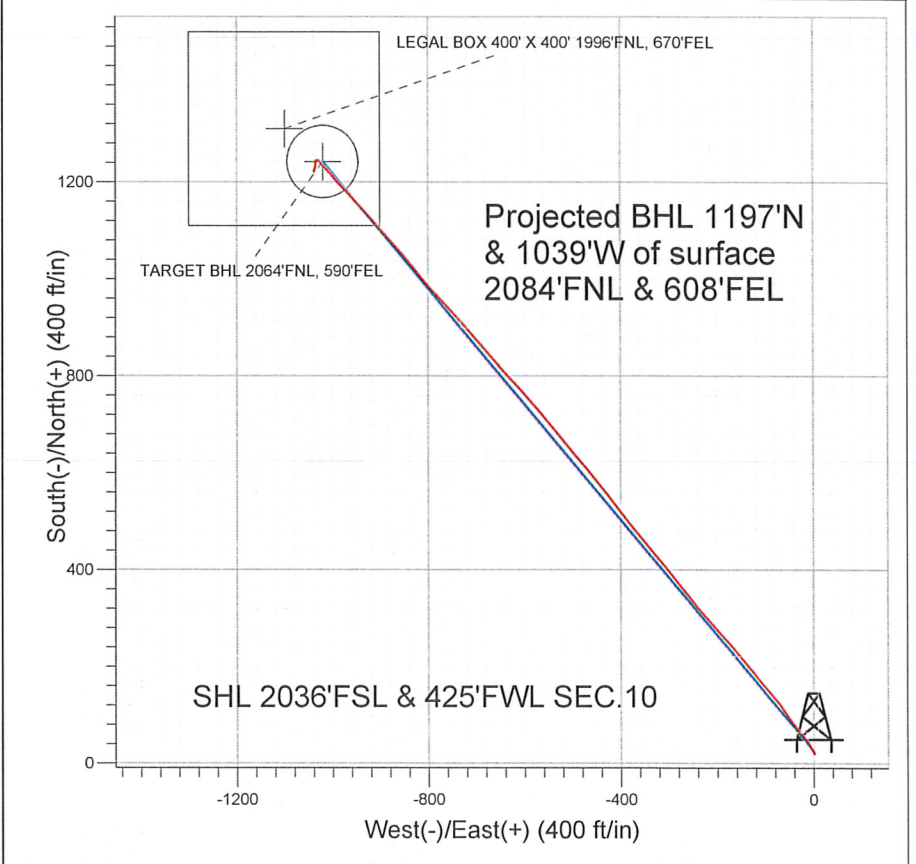


## NOBLE ENERGY INC WELD COUNTY CO



- LEGEND**
- Five Rivers K09-08D, Wellbore #1, Noble Five Rivers K09-08D Plan #1 (06-27-10) V0
  - Wellbore #1
  - Survey #1

## Final Survey Plot

Projected Final Survey -  
 7696'MD & 7410'TVD @ 1585'VS  
 1.8 deg Inc 202.4 deg AZ

Project: SEC.10-T4N-R66W  
 Site: Five Rivers K09-22D Pad Sec.10-T4N-R66W  
 Well: Five Rivers K09-08D  
 Plan: Wellbore #1

**Company:** NOBLE ENERGY INC WELD COUNTY CO  
**Project:** SEC.10-T4N-R66W  
**Site:** Five Rivers K09-22D Pad Sec.10-T4N-R66W  
**Well:** Five Rivers K09-08D  
**Wellbore:** Wellbore #1  
**Design:** Wellbore #1

**Local Co-ordinate Reference:** Site Five Rivers K09-22D Pad  
 Sec.10-T4N-R66W  
**TVD Reference:** WELL @ 4739.0ft (Original Well Elev)  
**MD Reference:** WELL @ 4739.0ft (Original Well Elev)  
**North Reference:** True  
**Survey Calculation Method:** Minimum Curvature  
**Database:** Landmark

<b>Project</b>	SEC.10-T4N-R66W, 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** Five Rivers K09-22D Pad Sec.10-T4N-R66W

<b>Site Position:</b>		<b>Northing:</b>	1,361,875.38 ft	<b>Latitude:</b>	40° 19' 28.056 N
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,203,046.10 ft	<b>Longitude:</b>	104° 46' 18.336 W
<b>Position Uncertainty:</b>	0.0 ft	<b>Slot Radius:</b>	"	<b>Grid Convergence:</b>	0.47 °

<b>Well</b>	Five Rivers K09-08D				
<b>Well Position</b>	<b>+N/-S</b>	25.5 ft	<b>Northing:</b>	1,361,900.88 ft	<b>Latitude:</b> 40° 19' 28.308 N
	<b>+E/-W</b>	0.0 ft	<b>Easting:</b>	3,203,045.89 ft	<b>Longitude:</b> 104° 46' 18.336 W
<b>Position Uncertainty</b>		0.0 ft	<b>Wellhead Elevation:</b>	ft	<b>Ground Level:</b> 4,726.0 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	6/18/2010	9.00	67.02	53,197

<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	25.5	0.0	320.02	

<b>Survey Program</b>	Date 4/6/2011				
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
600.0	7,696.0	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	25.5	0.0	0.0	0.00	0.00	0.00
600.0	0.80	149.10	600.0	21.9	2.2	-4.1	0.13	0.13	0.00
694.0	0.30	243.70	694.0	21.2	2.3	-4.7	0.93	-0.53	100.64
788.0	1.10	332.70	788.0	21.9	1.6	-3.8	1.21	0.85	94.68
881.0	1.10	333.70	881.0	23.5	0.8	-2.0	0.02	0.00	1.08
975.0	1.80	323.10	974.9	25.5	-0.5	0.3	0.79	0.74	-11.28
1,069.0	3.10	330.10	1,068.8	28.9	-2.6	4.3	1.42	1.38	7.45
1,162.0	5.30	331.30	1,161.6	34.8	-5.9	11.0	2.37	2.37	1.29
1,256.0	7.90	328.30	1,254.9	44.1	-11.4	21.6	2.79	2.77	-3.19
1,349.0	8.80	319.10	1,347.0	55.0	-19.4	35.1	1.73	0.97	-9.89
1,443.0	9.50	319.40	1,439.8	66.3	-29.2	50.0	0.75	0.74	0.32
1,536.0	11.70	322.90	1,531.2	79.6	-39.9	67.1	2.46	2.37	3.76

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 Survey Calculation Method: Minimum Curvature  
 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)
1,630.0	13.20	326.90	1,623.0	96.2	-51.5	87.3	1.84	1.60	4.26
1,724.0	14.20	325.10	1,714.3	114.7	-63.9	109.4	1.16	1.06	-1.91
1,817.0	15.20	319.60	1,804.3	133.3	-78.4	133.0	1.85	1.08	-5.91
1,911.0	16.30	318.80	1,894.7	152.6	-95.0	158.5	1.19	1.17	-0.85
2,004.0	18.30	319.90	1,983.5	173.6	-113.0	186.1	2.18	2.15	1.18
2,098.0	20.90	321.50	2,072.1	198.0	-133.0	217.7	2.82	2.77	1.70
2,191.0	21.10	320.90	2,158.9	224.0	-153.9	251.0	0.32	0.22	-0.65
2,285.0	21.70	317.50	2,246.4	249.9	-176.3	285.3	1.47	0.64	-3.62
2,378.0	22.50	318.80	2,332.6	276.0	-199.6	320.2	1.01	0.86	1.40
2,472.0	23.80	319.50	2,419.0	304.0	-223.8	357.2	1.41	1.38	0.74
2,566.0	25.70	321.10	2,504.4	334.3	-248.9	396.5	2.14	2.02	1.70
2,659.0	26.40	321.30	2,587.9	366.1	-274.5	437.4	0.76	0.75	0.22
2,753.0	26.70	320.80	2,672.0	398.8	-300.9	479.4	0.40	0.32	-0.53
2,847.0	26.50	321.70	2,756.0	431.6	-327.3	521.4	0.48	-0.21	0.96
2,940.0	23.70	319.20	2,840.3	462.0	-352.3	560.9	3.22	-3.01	-2.69
3,034.0	25.60	321.20	2,925.7	492.2	-377.4	600.1	2.21	2.02	2.13
3,128.0	25.50	322.80	3,010.5	524.1	-402.4	640.6	0.74	-0.11	1.70
3,221.0	23.60	321.80	3,095.1	554.7	-426.0	679.2	2.09	-2.04	-1.08
3,315.0	21.80	321.20	3,181.8	583.1	-448.6	715.5	1.93	-1.91	-0.64
3,408.0	21.30	319.90	3,268.3	609.4	-470.3	749.6	0.74	-0.54	-1.40
3,502.0	20.00	319.70	3,356.3	634.8	-491.7	782.8	1.39	-1.38	-0.21
3,596.0	20.40	321.90	3,444.5	659.9	-512.2	815.2	0.91	0.43	2.34
3,689.0	20.50	318.30	3,531.6	684.8	-533.0	847.7	1.36	0.11	-3.87
3,783.0	20.80	321.10	3,619.6	710.1	-554.4	880.8	1.10	0.32	2.98
3,876.0	21.80	320.20	3,706.2	736.2	-575.9	914.6	1.13	1.08	-0.97
3,970.0	22.00	317.80	3,793.5	762.7	-598.9	949.7	0.98	0.21	-2.55
4,064.0	21.80	317.00	3,880.7	788.5	-622.6	984.7	0.38	-0.21	-0.85
4,157.0	21.60	318.40	3,967.1	813.9	-645.7	1,019.0	0.60	-0.22	1.51
4,251.0	20.90	320.90	4,054.7	839.9	-667.8	1,053.1	1.22	-0.74	2.66
4,344.0	20.10	316.70	4,141.8	864.4	-689.2	1,085.6	1.80	-0.86	-4.52
4,438.0	21.60	319.70	4,229.6	889.3	-711.5	1,119.1	1.96	1.60	3.19
4,531.0	21.90	318.50	4,316.0	915.4	-734.0	1,153.5	0.58	0.32	-1.29
4,625.0	22.60	315.90	4,403.0	941.5	-758.2	1,189.1	1.28	0.74	-2.77
4,719.0	22.70	317.00	4,489.8	967.7	-783.2	1,225.2	0.46	0.11	1.17
4,812.0	22.10	320.00	4,575.8	994.2	-806.7	1,260.6	1.39	-0.65	3.23
4,906.0	21.20	320.80	4,663.1	1,021.0	-828.8	1,295.3	1.01	-0.96	0.85
4,999.0	20.80	319.20	4,750.0	1,046.5	-850.2	1,328.6	0.75	-0.43	-1.72
5,093.0	21.80	318.50	4,837.5	1,072.2	-872.7	1,362.8	1.10	1.06	-0.74
5,187.0	21.10	318.20	4,925.0	1,097.9	-895.5	1,397.1	0.75	-0.74	-0.32
5,280.0	19.10	318.40	5,012.4	1,121.7	-916.8	1,429.1	2.15	-2.15	0.22
5,374.0	17.00	317.40	5,101.7	1,143.4	-936.3	1,458.2	2.26	-2.23	-1.06
5,467.0	15.50	317.40	5,191.0	1,162.5	-953.9	1,484.2	1.61	-1.61	0.00
5,561.0	13.40	317.20	5,282.0	1,179.8	-969.8	1,507.6	2.23	-2.23	-0.21
5,655.0	11.30	315.30	5,373.8	1,194.3	-983.7	1,527.6	2.28	-2.23	-2.02
5,749.0	11.00	321.60	5,466.1	1,207.9	-995.7	1,545.8	1.33	-0.32	6.70
5,842.0	8.70	315.00	5,557.7	1,219.8	-1,006.2	1,561.7	2.75	-2.47	-7.10
5,935.0	7.50	314.20	5,649.8	1,229.0	-1,015.5	1,574.7	1.30	-1.29	-0.86
6,029.0	5.10	325.10	5,743.2	1,236.7	-1,022.3	1,585.0	2.84	-2.55	11.60
6,122.0	3.60	318.50	5,835.9	1,242.3	-1,026.6	1,592.0	1.70	-1.61	-7.10
6,216.0	1.70	281.50	5,929.8	1,244.8	-1,029.9	1,596.1	2.62	-2.02	-39.36
6,285.9	1.25	276.21	5,999.7	1,245.1	-1,031.7	1,597.4	0.67	-0.64	-7.56
TARGET BHL 2064°FNL, 590°FEL									
6,310.0	1.10	273.40	6,023.8	1,245.1	-1,032.2	1,597.8	0.67	-0.63	-11.68

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6,403.0	0.80	248.90	6,116.8	1,244.9	-1,033.7	1,598.6	0.54	-0.32	-26.34
6,497.0	0.60	220.60	6,210.8	1,244.3	-1,034.6	1,598.7	0.42	-0.21	-30.11
6,591.0	0.70	208.20	6,304.8	1,243.4	-1,035.2	1,598.4	0.18	0.11	-13.19
6,684.0	0.70	199.80	6,397.8	1,242.4	-1,035.7	1,597.9	0.11	0.00	-9.03
6,778.0	0.90	185.80	6,491.8	1,241.1	-1,036.0	1,597.1	0.30	0.21	-14.89
6,871.0	0.80	183.70	6,584.8	1,239.8	-1,036.1	1,596.2	0.11	-0.11	-2.26
6,965.0	0.80	176.90	6,678.7	1,238.4	-1,036.1	1,595.2	0.10	0.00	-7.23
7,058.0	1.00	180.00	6,771.7	1,237.0	-1,036.0	1,594.0	0.22	0.22	3.33
7,152.0	1.00	179.10	6,865.7	1,235.3	-1,036.0	1,592.7	0.02	0.00	-0.96
7,184.0	1.00	181.24	6,897.7	1,234.8	-1,036.0	1,592.3	0.12	0.00	6.70
LEGAL BOX 400' X 400' 1996'FNL, 670'FEL									
7,185.1	1.00	181.32	6,898.9	1,234.8	-1,036.0	1,592.3	0.12	0.00	6.71
TARGET CIRCLE 2064'FNL, 590'FEL									
7,246.0	1.00	185.40	6,959.7	1,233.7	-1,036.1	1,591.5	0.12	0.00	6.70
7,339.0	1.20	183.30	7,052.7	1,231.9	-1,036.2	1,590.3	0.22	0.22	-2.26
7,433.0	1.40	194.40	7,146.7	1,229.8	-1,036.6	1,588.9	0.34	0.21	11.81
7,526.0	1.80	193.10	7,239.6	1,227.3	-1,037.2	1,587.3	0.43	0.43	-1.40
7,651.0	1.80	202.40	7,364.6	1,223.6	-1,038.4	1,585.2	0.23	0.00	7.44
7,696.0	1.80	202.40	7,409.5	1,222.3	-1,038.9	1,584.6	0.00	0.00	0.00

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