

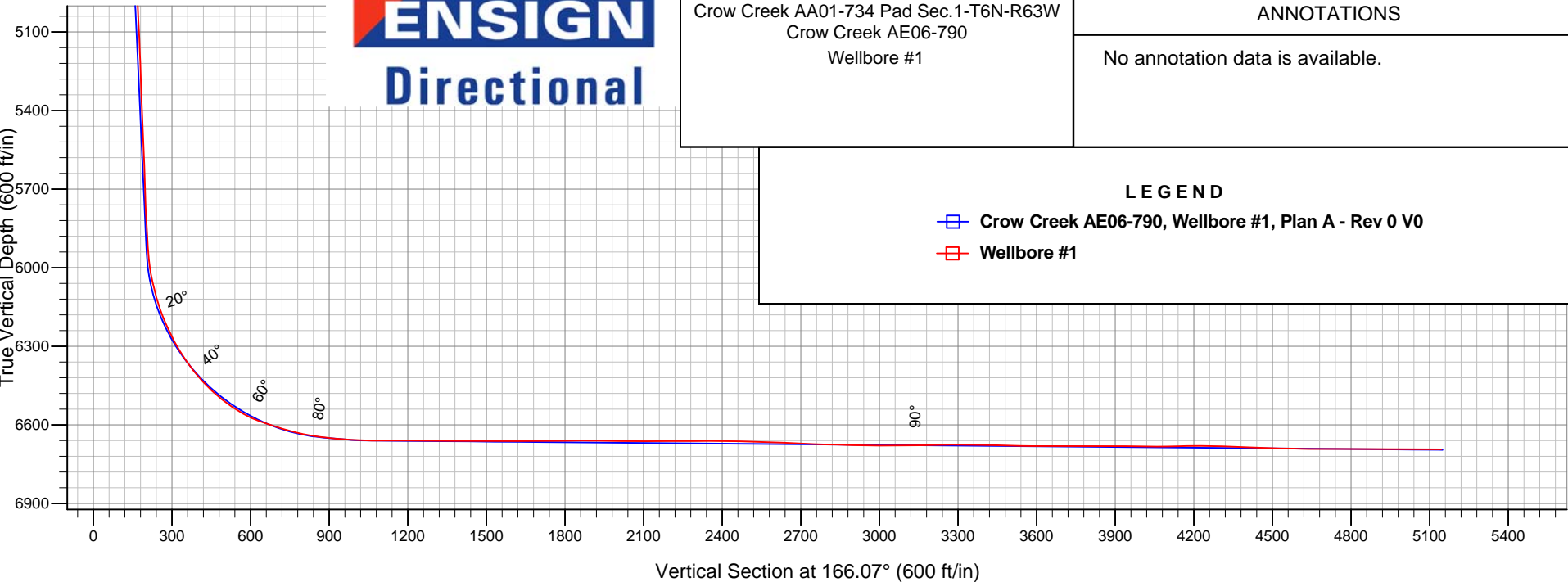
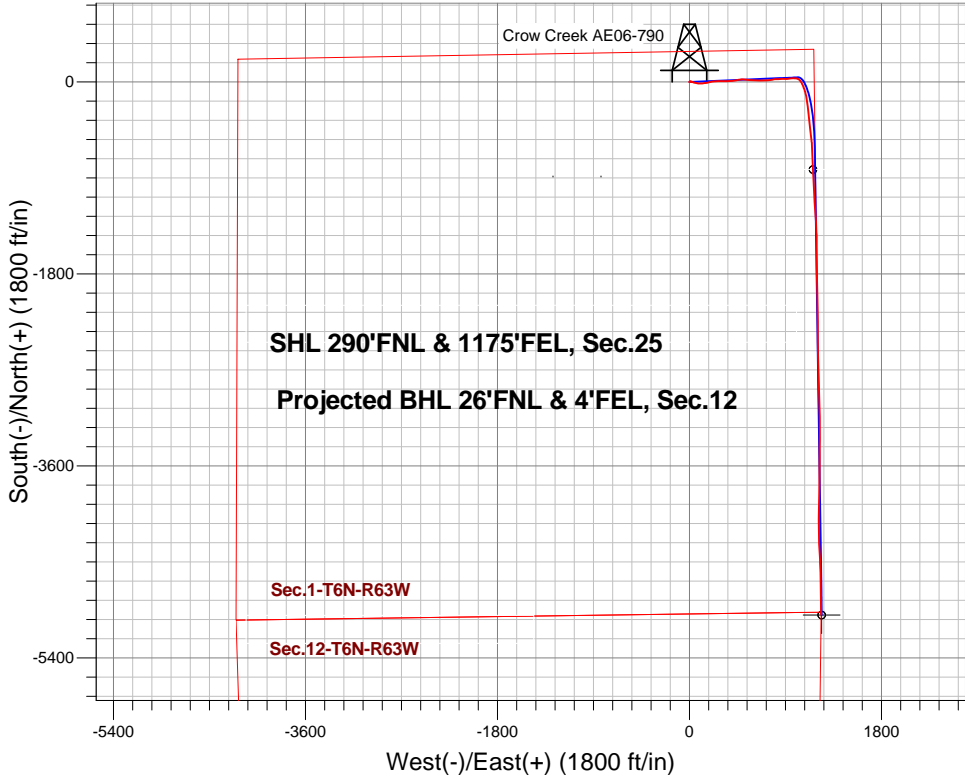
Noble Energy Inc.- Weld County, CO (Grid North)

Well Name: Crow Creek AE06-790

Surface Location: Crow Creek AA01-734 Pad Sec.1-T6N-R63W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
Ground Elevation: 4857.0
+N/-S +E/-W Northing Easting Latitude Longitude Slot
0.0 0.0 1435003.97 3311620.12 40.522080 -104.379070
PD 829 RKB -16' WELL @ 4873.0ft (PD 829 RKB -16')

FINAL SURVEY

Projected Bottom Hole Location
11500'MD 6693'TVD 4993'S & 1236'E of SHL
89.7 degree Incl @ 178.7 degree AZM



Crow Creek AA01-734 Pad Sec.1-T6N-R63W
Crow Creek AE06-790
Wellbore #1

ANNOTATIONS

No annotation data is available.

LEGEND

- Crow Creek AE06-790, Wellbore #1, Plan A - Rev 0 V0
- Wellbore #1



Noble Energy Inc.- Weld County, CO (Grid North)

Sec.1-T6N-R63W

Crow Creek AA01-734 Pad Sec.1-T6N-R63W

Crow Creek AE06-790

Wellbore #1

Design: Wellbore #1

Final Survey

12 December, 2014

Survey		Wellbore Data					
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00
319.0	0.10	158.31	319.0	-0.3	0.1	0.3	0.03
668.0	0.00	26.91	668.0	-0.5	0.2	0.6	0.03
743.0	0.70	34.50	743.0	-0.2	0.5	0.3	0.93
833.0	0.90	45.90	833.0	0.8	1.3	-0.4	0.28
922.0	1.30	32.40	922.0	2.1	2.3	-1.5	0.53
1,011.0	1.30	23.00	1,010.9	3.9	3.3	-3.0	0.24
1,133.0	1.50	2.70	1,132.9	6.8	3.9	-5.6	0.44
1,228.0	1.80	95.60	1,227.9	7.9	5.4	-6.3	2.53
1,323.0	3.40	118.40	1,322.8	6.4	9.4	-3.9	1.97

Company:	Noble Energy Inc.- Weld County, CO (Grid North)	Local Co-ordinate Reference:	Well Crow Creek AE06-790
Project:	Sec.1-T6N-R63W	TVD Reference:	WELL @ 4873.0ft (PD 829 RKB -16')
Site:	Crow Creek AA01-734 Pad Sec.1-T6N-R63W	MD Reference:	WELL @ 4873.0ft (PD 829 RKB -16')
Well:	Crow Creek AE06-790	North Reference:	Grid
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)
1,418.0	5.30	107.20	1,417.5	3.7	16.1	0.2	2.18
1,513.0	7.80	108.80	1,511.9	0.4	26.4	6.0	2.64
1,608.0	9.10	109.00	1,605.9	-4.2	39.6	13.6	1.37
1,703.0	10.80	105.50	1,699.4	-9.0	55.2	22.0	1.90
1,797.0	11.70	96.50	1,791.6	-12.4	73.2	29.7	2.10
1,892.0	13.60	91.30	1,884.3	-13.8	93.9	36.0	2.33
1,987.0	14.40	85.80	1,976.5	-13.1	116.9	40.9	1.63
2,082.0	13.50	84.40	2,068.7	-11.2	139.7	44.5	1.01
2,172.0	13.00	78.40	2,156.3	-8.1	160.1	46.4	1.62
2,261.0	12.30	73.10	2,243.1	-3.4	179.0	46.3	1.52
2,351.0	12.10	80.30	2,331.1	1.0	197.4	46.5	1.70
2,441.0	12.00	80.30	2,419.1	4.2	216.0	47.9	0.11
2,530.0	12.30	86.70	2,506.1	6.3	234.5	50.4	1.55
2,620.0	13.00	93.30	2,594.0	6.2	254.2	55.1	1.78
2,710.0	14.40	90.90	2,681.4	5.5	275.5	61.0	1.68
2,799.0	14.00	90.70	2,767.7	5.2	297.3	66.5	0.45
2,889.0	13.70	89.30	2,855.1	5.2	318.9	71.7	0.50
2,978.0	13.30	87.40	2,941.6	5.8	339.7	76.2	0.67
3,067.0	13.10	86.00	3,028.3	6.9	359.9	79.9	0.42
3,157.0	13.00	84.40	3,115.9	8.6	380.2	83.1	0.42
3,246.0	12.80	83.40	3,202.7	10.8	399.9	85.8	0.34
3,336.0	12.40	80.50	3,290.5	13.5	419.4	87.9	0.83
3,426.0	11.80	80.40	3,378.5	16.6	438.0	89.3	0.67
3,515.0	12.80	81.10	3,465.5	19.7	456.7	90.9	1.14
3,605.0	12.30	82.20	3,553.3	22.5	476.0	92.7	0.62
3,695.0	10.90	85.70	3,641.5	24.4	494.0	95.2	1.74
3,784.0	9.70	96.90	3,729.1	24.2	509.9	99.3	2.62
3,873.0	10.90	98.20	3,816.6	22.1	525.6	105.1	1.37
3,963.0	12.50	98.50	3,904.7	19.4	543.7	112.0	1.78
4,053.0	14.40	96.50	3,992.3	16.7	564.4	119.7	2.17
4,143.0	15.40	92.10	4,079.3	15.0	587.5	126.9	1.68
4,232.0	15.50	90.50	4,165.0	14.5	611.2	133.1	0.49
4,322.0	14.90	89.80	4,251.9	14.4	634.8	138.8	0.70
4,412.0	14.80	89.60	4,338.9	14.5	657.9	144.3	0.12
4,501.0	14.50	91.20	4,425.0	14.4	680.4	149.8	0.57
4,591.0	14.00	91.30	4,512.2	13.9	702.5	155.6	0.56
4,681.0	13.30	85.00	4,599.7	14.5	723.7	160.1	1.82
4,770.0	12.50	82.30	4,686.4	16.7	743.5	162.7	1.13
4,860.0	11.90	81.80	4,774.4	19.4	762.3	164.7	0.68
4,949.0	11.60	78.30	4,861.5	22.5	780.2	166.0	0.87
5,039.0	10.90	84.60	4,949.8	25.1	797.5	167.6	1.57
5,129.0	11.80	88.40	5,038.1	26.2	815.2	170.8	1.30
5,218.0	12.30	89.50	5,125.1	26.5	833.7	175.0	0.62
5,308.0	10.20	86.20	5,213.4	27.1	851.3	178.6	2.44
5,397.0	10.70	84.70	5,300.9	28.4	867.4	181.2	0.64

Company:	Noble Energy Inc.- Weld County, CO (Grid North)	Local Co-ordinate Reference:	Well Crow Creek AE06-790
Project:	Sec.1-T6N-R63W	TVD Reference:	WELL @ 4873.0ft (PD 829 RKB -16')
Site:	Crow Creek AA01-734 Pad Sec.1-T6N-R63W	MD Reference:	WELL @ 4873.0ft (PD 829 RKB -16')
Well:	Crow Creek AE06-790	North Reference:	Grid
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)
5,487.0	10.60	92.30	5,389.3	28.9	884.0	184.8	1.56
5,576.0	11.80	88.00	5,476.6	28.8	901.2	189.0	1.64
5,666.0	12.70	86.00	5,564.6	29.9	920.3	192.6	1.11
5,756.0	12.70	83.30	5,652.4	31.7	940.0	195.5	0.66
5,846.0	13.00	84.40	5,740.1	33.8	959.9	198.2	0.43
5,935.0	11.70	93.40	5,827.1	34.3	978.9	202.4	2.61
5,980.0	11.10	93.30	5,871.2	33.8	987.7	205.0	1.33
6,025.0	12.00	94.60	5,915.3	33.1	996.7	207.8	2.08
6,070.0	12.00	96.00	5,959.3	32.3	1,006.0	210.9	0.65
6,114.0	13.90	116.40	6,002.2	29.4	1,015.3	215.8	11.18
6,159.0	15.40	128.00	6,045.7	23.4	1,024.9	224.0	7.31
6,204.0	16.80	131.40	6,089.0	15.4	1,034.5	234.1	3.75
6,249.0	17.90	143.70	6,131.9	5.5	1,043.4	245.8	8.49
6,294.0	21.50	153.60	6,174.3	-7.5	1,051.2	260.3	10.88
6,339.0	24.10	157.30	6,215.8	-23.3	1,058.4	277.4	6.60
6,383.0	26.50	157.90	6,255.6	-40.7	1,065.6	296.0	5.49
6,428.0	29.10	158.00	6,295.4	-60.2	1,073.5	316.8	5.78
6,473.0	32.50	163.00	6,334.0	-81.9	1,081.1	339.7	9.45
6,518.0	36.70	166.20	6,371.1	-106.5	1,087.8	365.3	10.17
6,563.0	39.70	169.80	6,406.4	-133.7	1,093.6	393.1	8.30
6,607.0	44.30	170.20	6,439.1	-162.7	1,098.7	422.4	10.47
6,652.0	46.50	171.30	6,470.7	-194.3	1,103.9	454.4	5.19
6,697.0	50.90	172.00	6,500.4	-227.8	1,108.8	488.0	9.85
6,742.0	54.70	173.50	6,527.6	-263.3	1,113.3	523.6	8.85
6,786.0	60.20	175.40	6,551.3	-300.2	1,116.8	560.3	13.02
6,831.0	66.20	175.20	6,571.6	-340.2	1,120.1	599.9	13.34
6,876.0	70.90	173.20	6,588.0	-381.9	1,124.4	641.3	11.23
6,921.0	71.80	172.40	6,602.4	-424.2	1,129.7	683.7	2.61
6,966.0	73.30	171.80	6,615.9	-466.7	1,135.6	726.4	3.57
7,010.0	76.00	173.50	6,627.5	-508.8	1,141.0	768.5	7.18
7,055.0	79.30	175.10	6,637.2	-552.5	1,145.4	812.0	8.11
7,090.0	81.80	177.30	6,642.9	-587.0	1,147.7	846.0	9.46
7,169.0	84.90	177.60	6,652.1	-665.4	1,151.2	922.9	3.94
7,214.0	86.00	177.00	6,655.6	-710.2	1,153.3	966.9	2.78
7,259.0	87.50	177.30	6,658.2	-755.0	1,155.5	1,011.0	3.40
7,325.0	89.58	178.09	6,659.9	-821.0	1,158.2	1,075.6	3.37
Crow Creek AE06-790 Landing Pt.							
7,351.0	90.40	178.40	6,659.9	-846.9	1,159.0	1,101.0	3.37
7,445.0	89.40	177.30	6,660.0	-940.9	1,162.5	1,193.0	1.58
7,540.0	89.40	176.60	6,661.0	-1,035.7	1,167.5	1,286.3	0.74
7,633.0	90.30	175.80	6,661.3	-1,128.5	1,173.7	1,377.9	1.29
7,725.0	90.10	175.70	6,661.0	-1,220.3	1,180.5	1,468.6	0.24
7,820.0	89.50	176.90	6,661.3	-1,315.1	1,186.7	1,562.1	1.41
7,914.0	89.80	177.80	6,661.9	-1,409.0	1,191.0	1,654.2	1.01

Company:	Noble Energy Inc.- Weld County, CO (Grid North)	Local Co-ordinate Reference:	Well Crow Creek AE06-790
Project:	Sec.1-T6N-R63W	TVD Reference:	WELL @ 4873.0ft (PD 829 RKB -16')
Site:	Crow Creek AA01-734 Pad Sec.1-T6N-R63W	MD Reference:	WELL @ 4873.0ft (PD 829 RKB -16')
Well:	Crow Creek AE06-790	North Reference:	Grid
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)
8,008.0	90.60	179.80	6,661.5	-1,502.9	1,193.0	1,745.9	2.29
8,101.0	90.80	180.50	6,660.4	-1,595.9	1,192.7	1,836.1	0.78
8,194.0	88.80	179.80	6,660.7	-1,688.9	1,192.5	1,926.3	2.28
8,287.0	89.70	179.40	6,661.9	-1,781.9	1,193.1	2,016.7	1.06
8,381.0	90.10	178.60	6,662.1	-1,875.9	1,194.8	2,108.3	0.95
8,474.0	90.30	177.80	6,661.8	-1,968.9	1,197.7	2,199.3	0.89
8,569.0	89.70	178.30	6,661.8	-2,063.8	1,200.9	2,292.2	0.82
8,662.0	90.50	180.30	6,661.6	-2,156.8	1,202.1	2,382.7	2.32
8,757.0	88.20	179.10	6,662.7	-2,251.8	1,202.6	2,475.0	2.73
8,851.0	88.00	180.40	6,665.8	-2,345.7	1,203.0	2,566.3	1.40
8,943.0	87.90	179.70	6,669.1	-2,437.7	1,202.9	2,655.5	0.77
9,038.0	87.50	179.10	6,672.9	-2,532.6	1,203.9	2,747.9	0.76
9,131.0	89.00	178.10	6,675.7	-2,625.5	1,206.2	2,838.6	1.94
9,221.0	88.90	177.40	6,677.4	-2,715.4	1,209.7	2,926.8	0.79
9,311.0	89.30	178.10	6,678.8	-2,805.3	1,213.2	3,014.9	0.90
9,400.0	90.90	179.70	6,678.7	-2,894.3	1,214.9	3,101.7	2.54
9,490.0	91.50	178.10	6,676.8	-2,984.3	1,216.7	3,189.4	1.90
9,580.0	90.00	177.80	6,675.6	-3,074.2	1,219.9	3,277.5	1.70
9,669.0	89.20	179.00	6,676.2	-3,163.2	1,222.4	3,364.4	1.62
9,759.0	88.60	180.20	6,677.9	-3,253.1	1,223.0	3,451.9	1.49
9,849.0	88.50	180.80	6,680.2	-3,343.1	1,222.2	3,539.0	0.68
9,938.0	89.70	180.60	6,681.6	-3,432.1	1,221.1	3,625.1	1.37
10,028.0	90.90	179.90	6,681.1	-3,522.1	1,220.7	3,712.4	1.54
10,118.0	89.90	180.40	6,680.5	-3,612.1	1,220.5	3,799.7	1.24
10,207.0	89.50	180.90	6,681.0	-3,701.1	1,219.5	3,885.8	0.72
10,297.0	89.20	181.90	6,682.0	-3,791.0	1,217.3	3,972.6	1.16
10,387.0	90.00	181.10	6,682.6	-3,881.0	1,214.9	4,059.3	1.26
10,476.0	91.40	181.00	6,681.5	-3,970.0	1,213.3	4,145.3	1.58
10,566.0	90.10	180.90	6,680.4	-4,060.0	1,211.8	4,232.3	1.45
10,656.0	87.70	179.20	6,682.1	-4,149.9	1,211.7	4,319.6	3.27
10,745.0	88.00	178.20	6,685.4	-4,238.8	1,213.7	4,406.4	1.17
10,835.0	88.30	177.70	6,688.3	-4,328.7	1,217.0	4,494.4	0.65
10,924.0	88.60	176.90	6,690.7	-4,417.6	1,221.2	4,581.7	0.96
11,014.0	90.40	178.30	6,691.5	-4,507.5	1,224.9	4,669.8	2.53
11,104.0	89.70	178.70	6,691.5	-4,597.5	1,227.3	4,757.7	0.90
11,500.0	89.70	178.70	6,693.5	-4,993.4	1,236.3	5,144.1	0.00
Crow Creek AE06-790 BHL 30'FNL & 1'FEL, Sec.12							

Checked By: _____ Approved By: _____ Date: _____