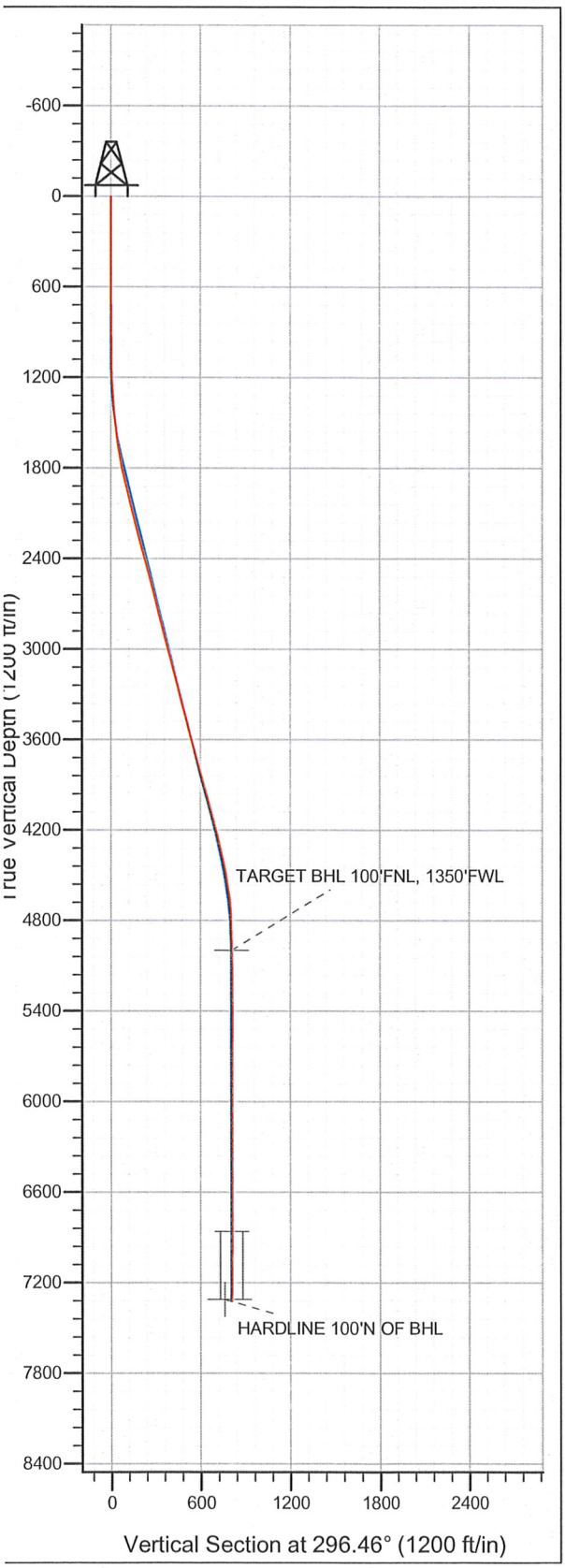
ENSIGN Directional

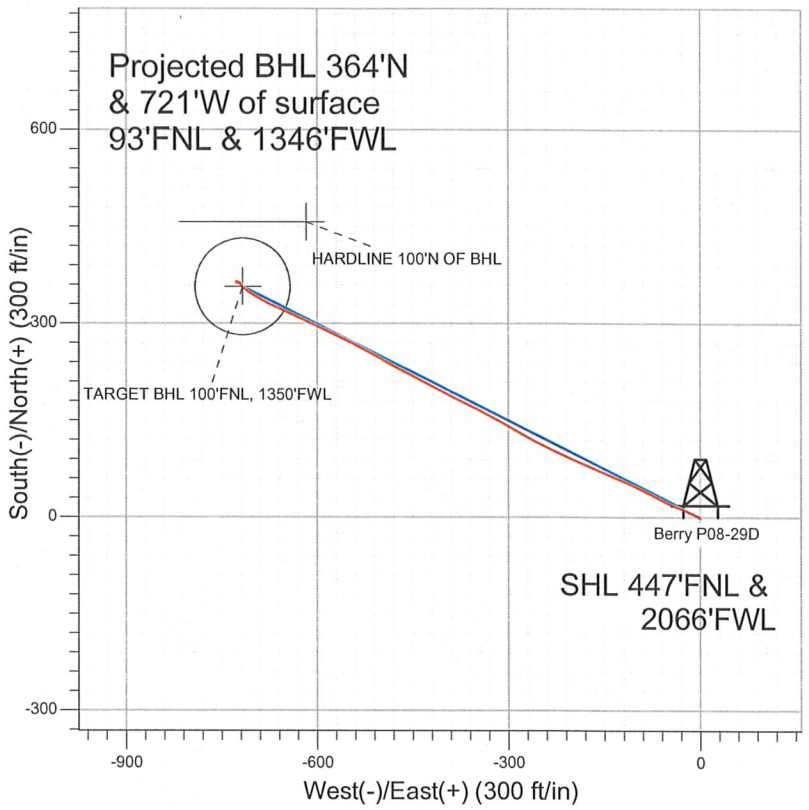
Surface Location: Berry P08-18D Pad Sec.8-T3N-R67W
North American Datum 1983 US State Plane 1983 Colorado Northern Zone
Ground Elevation: 4819.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1333167.80	3163053.50	40.246470	-104.915870	

Original Well Elev WELL @ 4832.0ft (Original Well Elev)



NOBLE ENERGY INC WELD COUNTY CO



LEGEND

- Berry P08-29D, Wellbore #1, Noble Berry P08-29D Plan #3 (9-6-11) V0
- Wellbore #1
- Survey #1

Final Survey Plot

Projected Final Survey -
7416'MD & 7321'TVD @ 808' VS
0.6 deg Inc 102.3 deg AZ

Project: SEC.8-T3N-R67W
Site: Berry P08-18D Pad Sec.8-T3N-R67W
Well: Berry P08-29D
Plan: Wellbore #1

ENSIGN
Directional

NOBLE ENERGY INC WELD COUNTY CO

SEC.8-T3N-R67W
Berry P08-18D Pad Sec.8-T3N-R67W
Berry P08-29D

Wellbore #1

Survey: Survey #1

Standard Survey Report

26 September, 2011

noble energy

Company:	NOBLE ENERGY INC WELD COUNTY CO	**Local Co-ordinate Reference:**	Well Berry P08-29D
Project:	SEC.8-T3N-R67W	**TVD Reference:**	WELL @ 4832.0ft (Original Well Elev)
Site:	Berry P08-18D Pad Sec.8-T3N-R67W	**MD Reference:**	WELL @ 4832.0ft (Original Well Elev)
Well:	Berry P08-29D	**North Reference:**	True
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Wellbore #1	**Database:**	Landmark

Project SEC.8-T3N-R67W, Weld County, Colorado

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site Berry P08-18D Pad Sec.8-T3N-R67W

Site Position:		**Northing:**	1,333,149.59 ft	**Latitude:**	40.246420
From:	Lat/Long	**Easting:**	3,163,053.62 ft	**Longitude:**	-104.915870
Position Uncertainty:	0.0 ft	**Slot Radius:**	"	**Grid Convergence:**	0.38 °

Well Berry P08-29D

Well Position	**+N/-S**	0.0 ft	**Northing:**	1,333,167.80 ft	**Latitude:**	40.246470
	+E/-W	0.0 ft	**Easting:**	3,163,053.50 ft	**Longitude:**	-104.915870
Position Uncertainty		0.0 ft	**Wellhead Elevation:**	ft	**Ground Level:**	4,819.0 ft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	9/7/2011	8.86	66.90	53,034

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 (°)
	5,000.0	0.0	0.0	296.46

Survey Program **Date** 9/26/2011

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
78.0	7,416.0	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
78.0	0.30	98.90	78.0	0.0	0.2	-0.2	0.38	0.38	0.00
199.0	0.20	135.20	199.0	-0.2	0.7	-0.7	0.15	-0.08	30.00
304.0	0.30	251.90	304.0	-0.4	0.5	-0.7	0.41	0.10	111.14
494.0	0.20	307.80	494.0	-0.4	-0.2	0.0	0.13	-0.05	29.42
561.0	0.30	340.10	561.0	-0.2	-0.4	0.2	0.25	0.15	48.21
646.0	0.30	341.10	646.0	0.3	-0.5	0.6	0.01	0.00	1.18
732.0	0.30	315.20	732.0	0.6	-0.7	0.9	0.16	0.00	-30.12
818.0	0.40	322.30	818.0	1.0	-1.1	1.4	0.13	0.12	8.26
903.0	0.40	319.30	903.0	1.5	-1.5	2.0	0.02	0.00	-3.53
989.0	0.50	315.00	989.0	2.0	-1.9	2.6	0.12	0.12	-5.00
1,074.0	0.50	297.30	1,074.0	2.4	-2.5	3.3	0.18	0.00	-20.82
1,160.0	1.60	278.80	1,160.0	2.8	-4.0	4.8	1.32	1.28	-21.51

Company:	NOBLE ENERGY INC WELD COUNTY CO	**Local Co-ordinate Reference:**	Well Berry P08-29D
Project:	SEC.8-T3N-R67W	**TVD Reference:**	WELL @ 4832.0ft (Original Well Elev)
Site:	Berry P08-18D Pad Sec.8-T3N-R67W	**MD Reference:**	WELL @ 4832.0ft (Original Well Elev)
Well:	Berry P08-29D	**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)
1,245.0	2.60	291.40	1,244.9	3.7	-7.0	7.9	1.29	1.18	14.82
1,331.0	4.00	295.70	1,330.8	5.7	-11.5	12.8	1.65	1.63	5.00
1,417.0	5.40	295.10	1,416.5	8.7	-17.9	19.9	1.63	1.63	-0.70
1,502.0	6.50	291.30	1,501.0	12.1	-26.0	28.7	1.37	1.29	-4.47
1,588.0	8.10	291.40	1,586.3	16.1	-36.2	39.6	1.86	1.86	0.12
1,673.0	9.40	294.50	1,670.3	21.2	-48.1	52.5	1.63	1.53	3.65
1,759.0	10.20	299.50	1,755.1	27.8	-61.1	67.1	1.36	0.93	5.81
1,844.0	12.40	297.10	1,838.4	35.7	-75.7	83.7	2.65	2.59	-2.82
1,930.0	13.80	295.10	1,922.2	44.3	-93.3	103.2	1.71	1.63	-2.33
2,015.0	14.30	293.40	2,004.6	52.7	-112.1	123.8	0.76	0.59	-2.00
2,101.0	13.80	293.50	2,088.1	61.0	-131.2	144.7	0.58	-0.58	0.12
2,186.0	14.70	293.40	2,170.4	69.4	-150.4	165.6	1.06	1.06	-0.12
2,272.0	14.20	291.60	2,253.7	77.6	-170.2	187.0	0.78	-0.58	-2.09
2,357.0	15.20	294.20	2,335.9	86.0	-190.1	208.5	1.41	1.18	3.06
2,443.0	15.80	295.00	2,418.8	95.6	-211.0	231.5	0.74	0.70	0.93
2,528.0	15.20	295.40	2,500.7	105.2	-231.5	254.2	0.72	-0.71	0.47
2,614.0	14.50	297.10	2,583.9	115.0	-251.3	276.2	0.96	-0.81	1.98
2,699.0	13.80	298.60	2,666.3	124.7	-269.7	297.0	0.93	-0.82	1.76
2,785.0	14.90	300.50	2,749.6	135.2	-288.2	318.3	1.39	1.28	2.21
2,870.0	15.40	298.70	2,831.6	146.2	-307.5	340.4	0.81	0.59	-2.12
2,956.0	14.50	297.40	2,914.7	156.6	-327.1	362.6	1.12	-1.05	-1.51
3,041.0	14.40	297.70	2,997.0	166.4	-345.9	383.8	0.15	-0.12	0.35
3,127.0	14.50	296.50	3,080.3	176.2	-365.0	405.3	0.37	0.12	-1.40
3,212.0	14.70	296.10	3,162.6	185.7	-384.2	426.7	0.26	0.24	-0.47
3,298.0	14.20	297.00	3,245.8	195.3	-403.4	448.2	0.64	-0.58	1.05
3,383.0	14.50	296.20	3,328.2	204.7	-422.3	469.2	0.42	0.35	-0.94
3,469.0	15.40	297.00	3,411.3	214.6	-442.1	491.4	1.07	1.05	0.93
3,555.0	13.80	298.50	3,494.5	224.7	-461.3	513.1	1.91	-1.86	1.74
3,640.0	15.00	298.90	3,576.8	234.9	-479.8	534.2	1.42	1.41	0.47
3,726.0	15.40	298.80	3,659.8	245.7	-499.6	556.7	0.47	0.47	-0.12
3,811.0	14.70	298.50	3,741.9	256.3	-519.0	578.8	0.83	-0.82	-0.35
3,897.0	16.10	297.40	3,824.8	267.0	-539.1	601.6	1.66	1.63	-1.28
3,982.0	14.90	296.20	3,906.7	277.3	-559.4	624.3	1.46	-1.41	-1.41
4,068.0	14.20	293.40	3,990.0	286.3	-579.0	645.9	1.15	-0.81	-3.26
4,153.0	15.00	295.40	4,072.2	295.2	-598.5	667.3	1.11	0.94	2.35
4,239.0	15.00	296.50	4,155.3	304.9	-618.5	689.6	0.33	0.00	1.28
4,324.0	14.60	293.90	4,237.5	314.2	-638.2	711.3	0.91	-0.47	-3.06
4,410.0	13.60	293.90	4,320.9	322.7	-657.3	732.2	1.16	-1.16	0.00
4,495.0	11.80	296.90	4,403.8	330.7	-674.2	750.9	2.25	-2.12	3.53
4,581.0	10.80	297.70	4,488.1	338.4	-689.2	767.8	1.18	-1.16	0.93
4,666.0	9.00	303.40	4,571.9	345.7	-701.8	782.3	2.41	-2.12	6.71
4,752.0	6.80	306.80	4,657.0	352.5	-711.5	794.0	2.61	-2.56	3.95
4,837.0	3.00	320.80	4,741.7	357.2	-716.9	801.0	4.65	-4.47	16.47
4,923.0	1.90	318.70	4,827.6	360.0	-719.3	804.4	1.28	-1.28	-2.44
5,008.0	1.60	314.80	4,912.6	361.9	-721.0	806.8	0.38	-0.35	-4.59
5,094.0	1.80	298.10	4,998.6	363.4	-723.1	809.3	0.62	0.23	-19.42
5,095.3	1.78	298.01	4,999.8	363.4	-723.1	809.3	1.59	-1.57	-6.94
TARGET BHL 100'FNL, 1350'FWL									
5,179.0	0.50	276.60	5,083.5	364.1	-724.6	811.0	1.59	-1.53	-25.58
5,308.0	0.50	239.00	5,212.5	363.9	-725.7	811.8	0.25	0.00	-29.15
5,436.0	0.30	245.80	5,340.5	363.4	-726.5	812.3	0.16	-0.16	5.31
5,564.0	0.60	10.00	5,468.5	364.0	-726.6	812.7	0.63	0.23	97.03
5,693.0	0.20	18.90	5,597.5	364.8	-726.5	812.9	0.31	-0.31	6.90
5,821.0	0.20	206.40	5,725.5	364.9	-726.5	813.0	0.31	0.00	-134.77

Company:	NOBLE ENERGY INC WELD COUNTY CO	**Local Co-ordinate Reference:**	Well Berry P08-29D
Project:	SEC.8-T3N-R67W	**TVD Reference:**	WELL @ 4832.0ft (Original Well Elev)
Site:	Berry P08-18D Pad Sec.8-T3N-R67W	**MD Reference:**	WELL @ 4832.0ft (Original Well Elev)
Well:	Berry P08-29D	**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)
5,949.0	0.30	155.40	5,853.5	364.4	-726.4	812.7	0.18	0.08	-39.84
6,077.0	0.20	186.90	5,981.5	363.8	-726.3	812.4	0.13	-0.08	24.61
6,206.0	0.20	280.50	6,110.5	363.6	-726.6	812.5	0.23	0.00	72.56
6,334.0	0.10	10.20	6,238.5	363.8	-726.8	812.7	0.17	-0.08	70.08
6,462.0	0.40	23.80	6,366.5	364.3	-726.6	812.8	0.24	0.23	10.63
6,590.0	0.40	56.30	6,494.5	365.0	-726.0	812.6	0.17	0.00	25.39
6,719.0	0.00	77.90	6,623.5	365.2	-725.7	812.4	0.31	-0.31	0.00
6,847.0	0.20	117.10	6,751.5	365.1	-725.5	812.1	0.16	0.16	0.00
6,957.5	0.37	142.27	6,862.1	364.7	-725.1	811.6	0.19	0.15	22.77
TARGET CIRCLE 100'FNL, 1350'FWL									
6,975.0	0.40	144.20	6,879.5	364.7	-725.0	811.5	0.19	0.17	11.03
7,104.0	0.40	93.70	7,008.5	364.3	-724.3	810.7	0.26	0.00	-39.15
7,232.0	0.60	105.80	7,136.5	364.1	-723.2	809.6	0.18	0.16	9.45
7,372.0	0.60	102.30	7,276.5	363.7	-721.8	808.2	0.03	0.00	-2.50
7,408.4	0.60	102.30	7,312.9	363.6	-721.4	807.8	0.00	0.00	0.00
HARDLINE 100'N OF BHL									
7,416.0	0.60	102.30	7,320.5	363.6	-721.3	807.8	0.00	0.00	0.00

Checked By: _____ Approved By: _____ Date: _____