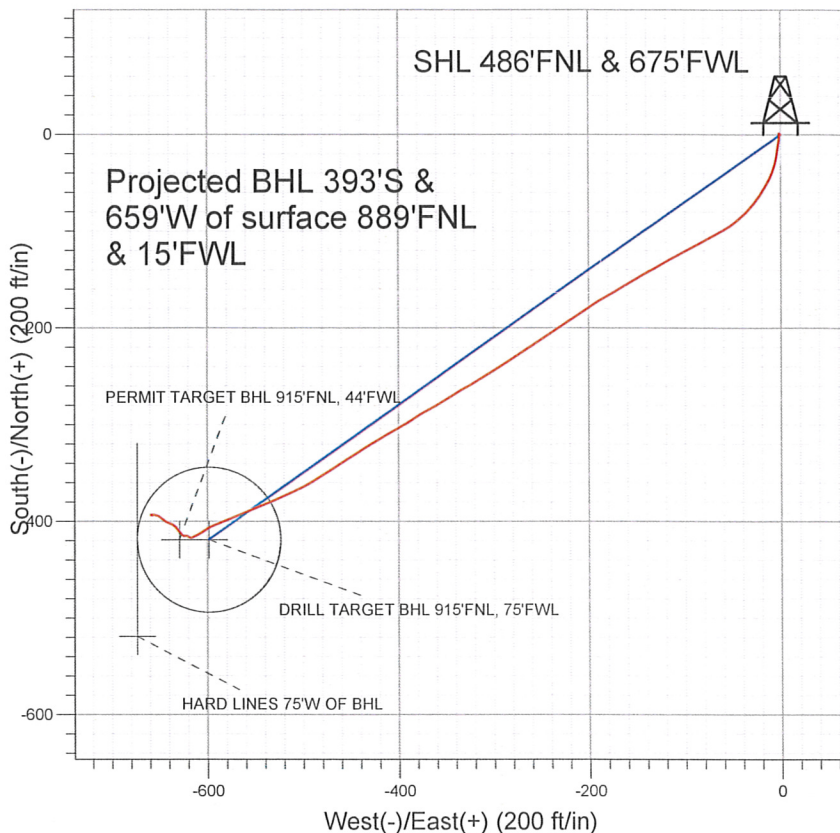
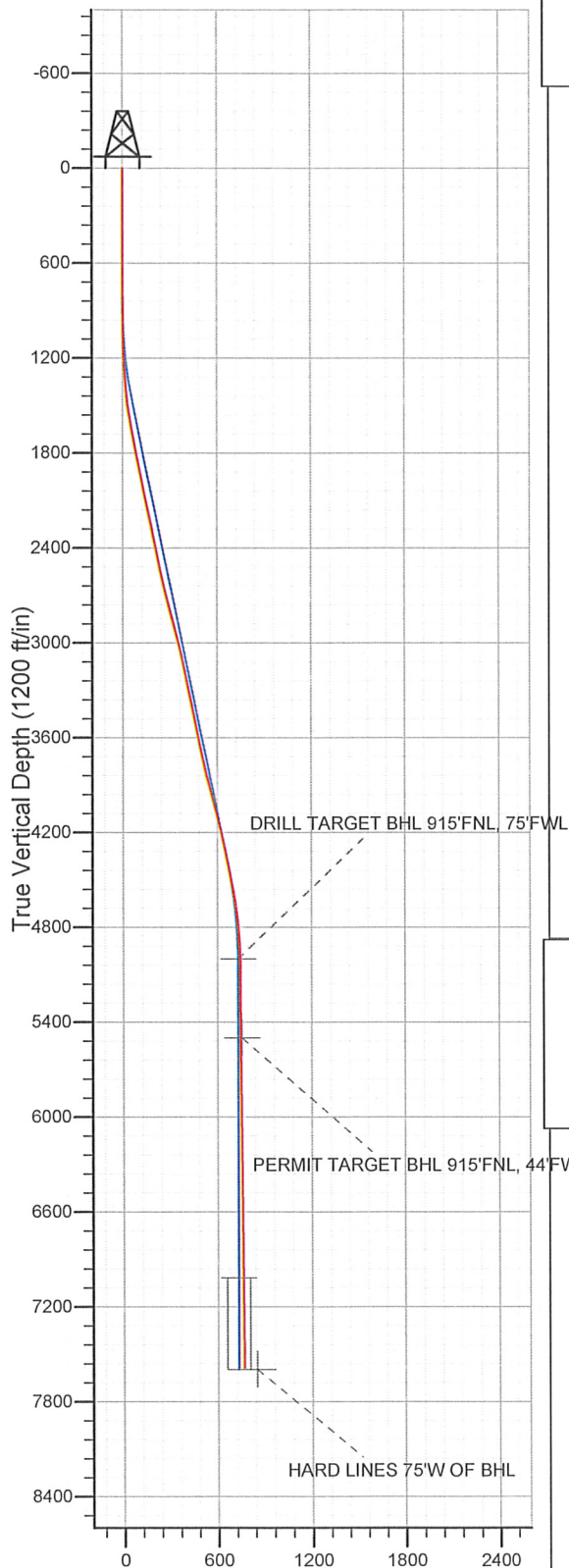


NOBLE ENERGY INC WELD COUNTY CO



LEGEND

- Phillips PC N24-31D, Wellbore #1, Noble Phillips PC N24-31D Plan #2 (4-26-11) V0
- Wellbore #1
- Survey #1

Final Survey Plot

Projected Final Survey -
7675'MD & 7595'TVD @ 765'VS
0.1 deg Inc 346.3 deg AZ

Project: SEC.24-T5N-R67W
Site: Phillips PC N24-29 Pad Sec.24-T5N-R67W
Well: Phillips PC N24-31D
Plan: Wellbore #1

Company: NOBLE ENERGY INC WELD COUNTY CO
Project: SEC.24-T5N-R67W
Site: Phillips PC N24-29 Pad Sec.24-T5N-R67W
Well: Phillips PC N24-31D
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well Phillips PC N24-31D
TVD Reference: WELL @ 4962.0ft (Original Well Elev)
MD Reference: WELL @ 4962.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: Landmark

Project	SEC.24-T5N-R67W, Weld County, Colorado		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		Using Well Reference Point
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site Phillips PC N24-29 Pad Sec.24-T5N-R67W

Site Position:		Northing:	1,385,893.28 ft	Latitude:	40.390850
From:	Lat/Long	Easting:	3,181,411.08 ft	Longitude:	-104.848720
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.42 °

Well	Phillips PC N24-31D				
Well Position	+N/-S	0.0 ft	Northing:	1,385,890.05 ft	Latitude: 40.390840
	+E/-W	0.0 ft	Easting:	3,181,469.60 ft	Longitude: -104.848510
Position Uncertainty	0.0 ft		Wellhead Elevation:	ft	Ground Level: 4,949.0 ft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	4/26/2011	8.93	67.03	53,131

Design Wellbore #1

Audit Notes:

Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
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Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	5,000.0	0.0	0.0	235.02

Survey Program Date 7/1/2011

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
811.0	7,675.0	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
811.0	0.30	310.70	811.0	1.4	-1.6	0.5	0.04	0.04	0.00
981.0	0.70	165.70	981.0	0.7	-1.7	1.0	0.57	0.24	-85.29
1,067.0	2.00	178.80	1,067.0	-1.3	-1.5	2.0	1.54	1.51	15.23
1,153.0	2.90	186.10	1,152.9	-5.0	-1.7	4.3	1.11	1.05	8.49
1,238.0	4.60	186.50	1,237.7	-10.5	-2.3	8.0	2.00	2.00	0.47
1,324.0	5.80	190.10	1,323.3	-18.2	-3.5	13.3	1.45	1.40	4.19
1,409.0	7.40	192.10	1,407.8	-27.8	-5.4	20.4	1.90	1.88	2.35
1,495.0	8.70	200.70	1,492.9	-39.3	-8.9	29.8	2.06	1.51	10.00
1,581.0	9.70	210.80	1,577.8	-51.6	-14.9	41.8	2.20	1.16	11.74
1,666.0	11.20	214.20	1,661.4	-64.6	-23.2	56.0	1.91	1.76	4.00
1,752.0	11.10	221.90	1,745.8	-77.7	-33.4	71.9	1.73	-0.12	8.95
1,837.0	11.60	231.80	1,829.1	-89.1	-45.6	88.4	2.36	0.59	11.65

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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)
1,923.0	12.20	240.90	1,913.3	-98.8	-60.3	106.1	2.29	0.70	10.58
2,009.0	11.80	240.30	1,997.4	-107.6	-75.9	123.9	0.49	-0.47	-0.70
2,094.0	11.90	244.10	2,080.6	-115.7	-91.3	141.2	0.93	0.12	4.47
2,180.0	12.20	240.60	2,164.7	-124.1	-107.2	159.0	0.92	0.35	-4.07
2,265.0	11.70	240.50	2,247.9	-132.7	-122.5	176.5	0.59	-0.59	-0.12
2,351.0	11.10	239.30	2,332.2	-141.2	-137.3	193.4	0.75	-0.70	-1.40
2,437.0	11.80	241.20	2,416.5	-149.7	-152.1	210.4	0.92	0.81	2.21
2,522.0	11.70	237.70	2,499.7	-158.5	-167.0	227.7	0.85	-0.12	-4.12
2,608.0	12.50	240.10	2,583.8	-167.8	-182.4	245.7	1.10	0.93	2.79
2,693.0	13.60	236.90	2,666.6	-177.8	-198.8	264.8	1.55	1.29	-3.76
2,779.0	14.80	236.20	2,750.0	-189.5	-216.4	285.9	1.41	1.40	-0.81
2,865.0	15.30	236.20	2,833.0	-201.9	-234.9	308.2	0.58	0.58	0.00
2,950.0	14.50	236.00	2,915.1	-214.1	-253.1	330.1	0.94	-0.94	-0.24
3,036.0	13.60	239.00	2,998.6	-225.3	-270.7	350.9	1.35	-1.05	3.49
3,121.0	13.00	236.20	3,081.3	-235.8	-287.2	370.5	1.04	-0.71	-3.29
3,207.0	12.20	238.90	3,165.2	-245.8	-303.0	389.2	1.15	-0.93	3.14
3,293.0	11.10	238.10	3,249.5	-254.9	-317.8	406.5	1.29	-1.28	-0.93
3,378.0	11.90	241.40	3,332.7	-263.4	-332.4	423.4	1.22	0.94	3.88
3,464.0	11.40	237.50	3,417.0	-272.2	-347.4	440.7	1.08	-0.58	-4.53
3,549.0	11.60	241.60	3,500.3	-280.8	-362.0	457.6	0.99	0.24	4.82
3,635.0	11.70	238.90	3,584.5	-289.4	-377.1	474.9	0.64	0.12	-3.14
3,721.0	12.30	238.80	3,668.6	-298.7	-392.4	492.7	0.70	0.70	-0.12
3,806.0	12.00	241.40	3,751.7	-307.6	-407.9	510.5	0.73	-0.35	3.06
3,892.0	13.60	238.00	3,835.6	-317.2	-424.3	529.5	2.06	1.86	-3.95
3,977.0	14.60	238.90	3,918.0	-328.1	-441.9	550.2	1.20	1.18	1.06
4,063.0	15.20	236.50	4,001.1	-339.9	-460.6	572.3	1.00	0.70	-2.79
4,149.0	15.60	237.20	4,084.0	-352.4	-479.7	595.1	0.51	0.47	0.81
4,234.0	13.10	242.10	4,166.4	-363.1	-497.9	616.1	3.27	-2.94	5.76
4,320.0	12.10	246.50	4,250.3	-371.2	-514.7	634.6	1.61	-1.16	5.12
4,405.0	12.40	246.70	4,333.4	-378.4	-531.3	652.3	0.36	0.35	0.24
4,491.0	12.20	246.50	4,417.4	-385.7	-548.1	670.2	0.24	-0.23	-0.23
4,577.0	11.50	249.30	4,501.6	-392.3	-564.5	687.4	1.05	-0.81	3.26
4,662.0	10.70	249.50	4,585.0	-398.1	-579.8	703.3	0.94	-0.94	0.24
4,748.0	8.50	243.30	4,669.8	-403.7	-592.9	717.3	2.82	-2.56	7.21
4,833.0	6.30	236.00	4,754.1	-409.2	-602.4	728.2	2.81	-2.59	-8.59
4,919.0	5.10	243.60	4,839.6	-413.5	-609.8	736.7	1.65	-1.40	8.84
5,005.0	2.90	244.00	4,925.4	-416.2	-615.1	742.6	2.56	-2.56	0.47
5,079.1	1.16	276.71	4,999.4	-416.9	-617.6	745.0	2.73	-2.35	44.17
DRILL TARGET BHL 915'FNL, 75'FWL									
5,090.0	1.00	290.10	5,010.4	-416.9	-617.8	745.1	2.73	-1.48	122.34
5,176.0	0.70	328.20	5,096.4	-416.2	-618.8	745.5	0.72	-0.35	44.30
5,347.0	0.80	291.90	5,267.3	-414.8	-620.4	746.1	0.28	0.06	-21.23
5,518.0	1.00	253.00	5,438.3	-414.8	-622.9	748.2	0.37	0.12	-22.75
5,579.8	1.06	276.88	5,500.1	-414.9	-624.0	749.2	0.70	0.10	38.67
PERMIT TARGET BHL 915'FNL, 44'FWL									
5,689.0	1.50	305.40	5,609.3	-413.9	-626.2	750.4	0.70	0.40	26.11
5,861.0	2.00	331.00	5,781.2	-410.0	-629.5	750.8	0.53	0.29	14.88
6,032.0	1.50	309.40	5,952.1	-406.0	-632.7	751.1	0.48	-0.29	-12.63
6,203.0	1.30	310.00	6,123.1	-403.3	-635.9	752.2	0.12	-0.12	0.35
6,375.0	1.10	280.00	6,295.0	-401.8	-639.0	753.9	0.38	-0.12	-17.44
6,546.0	1.80	300.00	6,466.0	-400.2	-642.9	756.2	0.50	0.41	11.70
6,717.0	2.70	311.00	6,636.9	-396.2	-648.3	758.3	0.58	0.53	6.43
6,888.0	2.20	276.70	6,807.7	-393.1	-654.6	761.7	0.89	-0.29	-20.06
6,973.0	0.50	291.90	6,892.7	-392.8	-656.6	763.2	2.03	-2.00	17.88

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7,059.0	0.30	92.70	6,978.7	-392.7	-656.7	763.2	0.92	-0.23	186.98
7,097.7	0.32	116.64	7,017.4	-392.7	-656.5	763.1	0.33	0.05	61.90
TARGET CIRCLE 915'FNL & 75'FWL									
7,145.0	0.40	138.50	7,064.7	-392.9	-656.3	763.0	0.33	0.17	46.20
7,230.0	0.40	278.80	7,149.7	-393.1	-656.4	763.1	0.89	0.00	165.06
7,316.0	0.40	289.50	7,235.7	-393.0	-656.9	763.5	0.09	0.00	12.44
7,401.0	0.50	174.50	7,320.7	-393.2	-657.2	763.9	0.90	0.12	-135.29
7,487.0	0.70	289.10	7,406.7	-393.4	-657.6	764.4	1.18	0.23	133.26
7,573.0	0.40	287.40	7,492.7	-393.2	-658.4	764.9	0.35	-0.35	-1.98
7,625.0	0.10	346.30	7,544.7	-393.1	-658.6	765.0	0.69	-0.58	113.27
7,675.0	0.10	346.30	7,594.7	-393.0	-658.6	764.9	0.00	0.00	0.00
HARD LINES 75'W OF BHL									

Checked By: _____ Approved By: _____ Date: _____