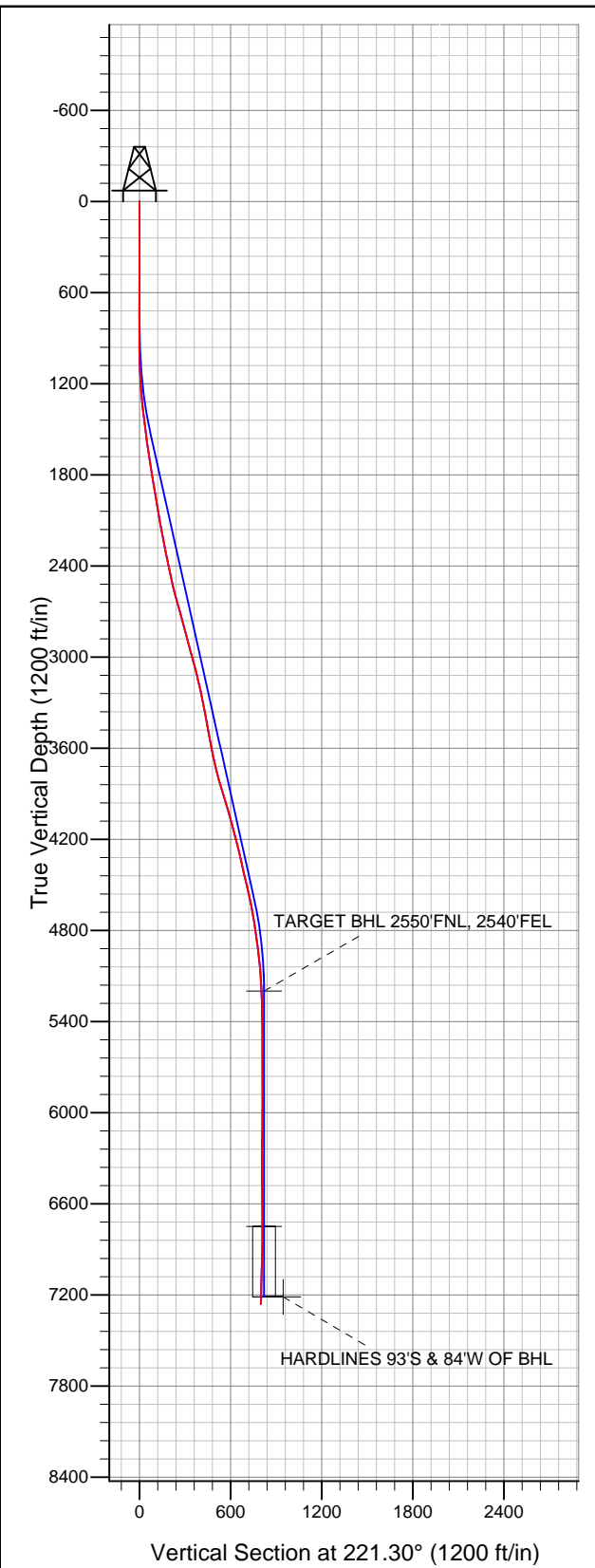


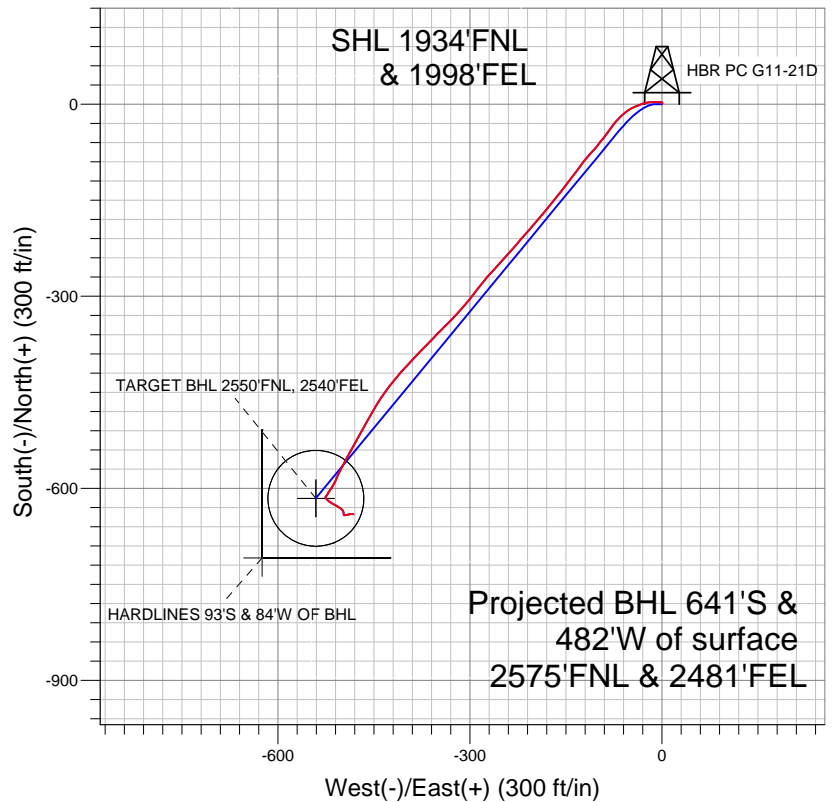


Well Name: HBR PC G11-21D

Surface Location: HBR PC G11-21D Pad Sec.11-T4N-R65W
North American Datum 1983 US State Plane 1983 Colorado Northern Zone
Ground Elevation: 4691.0
+N/-S +E/-W Northing Easting Latitude Longitude Slot
0.0 0.0 1363868.74 3243086.58 40.328940 -104.628090
Original Well Elev WELL @ 4704.0ft (Original Well Elev)



NOBLE ENERGY INC WELD COUNTY CO



LEGEND

- HBR PC G11-21D, Wellbore #1, Noble HBR PC G11-21D Plan #2 (6-16-11) V0
- Wellbore #1
- Survey #1

Final Survey Plot

Projected Final Survey -
7350'MD & 7261TVD @ 799'VS
2.0 deg Inc 103.2 deg AZ

Project: SEC.11-T4N-R65W
Site: HBR PC G11-21D Pad Sec.11-T4N-R65W
Well: HBR PC G11-21D
Plan: Wellbore #1



NOBLE ENERGY INC WELD COUNTY CO

SEC.11-T4N-R65W

HBR PC G11-21D Pad Sec.11-T4N-R65W

HBR PC G11-21D

Wellbore #1

Survey: Survey #1

Standard Survey Report

21 November, 2011



Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well HBR PC G11-21D
Project:	SEC.11-T4N-R65W	TVD Reference:	WELL @ 4704.0ft (Original Well Elev)
Site:	HBR PC G11-21D Pad Sec.11-T4N-R65W	MD Reference:	WELL @ 4704.0ft (Original Well Elev)
Well:	HBR PC G11-21D	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Project	SEC.11-T4N-R65W, 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	HBR PC G11-21D Pad Sec.11-T4N-R65W		
Site Position:		Northing:	1,363,868.75 ft
From:	Lat/Long	Easting:	3,243,086.58 ft
Position Uncertainty:	0.0 ft	Slot Radius:	"
		Latitude:	40.328940
		Longitude:	-104.628090
		Grid Convergence:	0.56 °

Well	HBR PC G11-21D		
Well Position	+N/-S	0.0 ft	Northing: 1,363,868.74 ft
	+E/-W	0.0 ft	Easting: 3,243,086.58 ft
Position Uncertainty	0.0 ft	Wellhead Elevation:	ft
		Latitude:	40.328940
		Longitude:	-104.628090
		Ground Level:	4,691.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	11/15/2011	8.73	67.00	53,065

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 (°)	
	5,200.0	0.0	0.0	221.30	

Survey Program	Date	11/21/2011			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
735.0	7,350.0	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	
735.0	0.20	14.40	735.0	1.2	0.3	-1.1	0.03	0.03	0.00	
821.0	0.60	7.10	821.0	1.8	0.4	-1.7	0.47	0.47	-8.49	
906.0	1.10	308.40	906.0	2.8	-0.2	-2.0	1.11	0.59	-69.06	
991.0	1.90	271.30	991.0	3.3	-2.2	-1.0	1.43	0.94	-43.65	
1,077.0	3.10	272.10	1,076.9	3.4	-6.0	1.4	1.40	1.40	0.93	
1,162.0	4.30	269.60	1,161.7	3.5	-11.5	4.9	1.42	1.41	-2.94	
1,248.0	6.00	265.90	1,247.3	3.2	-19.2	10.3	2.01	1.98	-4.30	
1,333.0	6.90	252.30	1,331.8	1.3	-28.5	17.8	2.08	1.06	-16.00	
1,418.0	8.00	249.60	1,416.1	-2.3	-38.9	27.4	1.36	1.29	-3.18	
1,504.0	7.60	240.80	1,501.3	-7.2	-49.4	38.0	1.46	-0.47	-10.23	
1,589.0	7.90	228.30	1,585.5	-13.8	-58.7	49.1	2.01	0.35	-14.71	
1,675.0	8.90	224.10	1,670.6	-22.5	-67.8	61.6	1.36	1.16	-4.88	

Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well HBR PC G11-21D
Project:	SEC.11-T4N-R65W	TVD Reference:	WELL @ 4704.0ft (Original Well Elev)
Site:	HBR PC G11-21D Pad Sec.11-T4N-R65W	MD Reference:	WELL @ 4704.0ft (Original Well Elev)
Well:	HBR PC G11-21D	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)	
1,760.0	8.90	219.50	1,754.6	-32.3	-76.5	74.8	0.84	0.00	-5.41	
1,845.0	9.20	212.60	1,838.5	-43.1	-84.4	88.1	1.32	0.35	-8.12	
1,931.0	8.80	220.60	1,923.5	-53.9	-92.3	101.4	1.53	-0.47	9.30	
2,016.0	9.80	217.90	2,007.4	-64.6	-101.0	115.2	1.28	1.18	-3.18	
2,102.0	10.80	223.40	2,092.0	-76.2	-111.0	130.5	1.63	1.16	6.40	
2,187.0	11.10	218.40	2,175.4	-88.4	-121.6	146.7	1.17	0.35	-5.88	
2,272.0	10.80	215.30	2,258.9	-101.3	-131.3	162.7	0.78	-0.35	-3.65	
2,358.0	11.30	216.90	2,343.3	-114.6	-141.0	179.2	0.68	0.58	1.86	
2,443.0	11.90	218.90	2,426.5	-128.1	-151.5	196.2	0.85	0.71	2.35	
2,529.0	12.80	218.30	2,510.6	-142.5	-163.0	214.6	1.06	1.05	-0.70	
2,614.0	14.90	218.40	2,593.1	-158.4	-175.6	234.9	2.47	2.47	0.12	
2,699.0	15.90	221.20	2,675.0	-175.7	-190.1	257.5	1.47	1.18	3.29	
2,785.0	15.40	221.30	2,757.8	-193.2	-205.4	280.7	0.58	-0.58	0.12	
2,870.0	15.70	220.30	2,839.7	-210.4	-220.2	303.5	0.47	0.35	-1.18	
2,956.0	14.10	221.30	2,922.8	-227.2	-234.7	325.6	1.88	-1.86	1.16	
3,041.0	15.30	221.70	3,005.1	-243.3	-249.0	347.1	1.42	1.41	0.47	
3,126.0	14.70	222.70	3,087.2	-259.6	-263.8	369.1	0.77	-0.71	1.18	
3,212.0	12.70	219.90	3,170.7	-274.9	-277.2	389.5	2.45	-2.33	-3.26	
3,297.0	12.00	217.40	3,253.7	-289.1	-288.6	407.6	1.04	-0.82	-2.94	
3,383.0	11.20	218.70	3,338.0	-302.7	-299.2	424.9	0.98	-0.93	1.51	
3,468.0	10.50	220.60	3,421.5	-315.0	-309.4	440.9	0.92	-0.82	2.24	
3,553.0	10.40	221.30	3,505.1	-326.7	-319.5	456.3	0.19	-0.12	0.82	
3,639.0	10.50	225.30	3,589.6	-338.0	-330.2	471.9	0.85	0.12	4.65	
3,724.0	12.00	225.80	3,673.0	-349.6	-342.1	488.4	1.77	1.76	0.59	
3,810.0	14.40	223.50	3,756.7	-363.6	-355.8	508.0	2.86	2.79	-2.67	
3,895.0	16.50	224.70	3,838.6	-379.9	-371.6	530.6	2.50	2.47	1.41	
3,980.0	17.20	223.00	3,920.0	-397.6	-388.7	555.3	1.01	0.82	-2.00	
4,066.0	16.60	222.00	4,002.3	-416.1	-405.6	580.3	0.78	-0.70	-1.16	
4,151.0	14.70	218.80	4,084.1	-433.5	-420.4	603.2	2.45	-2.24	-3.76	
4,237.0	15.40	216.00	4,167.2	-451.2	-434.0	625.4	1.17	0.81	-3.26	
4,322.0	14.30	210.60	4,249.3	-469.4	-446.0	647.0	2.08	-1.29	-6.35	
4,407.0	12.70	210.40	4,332.0	-486.5	-456.0	666.5	1.88	-1.88	-0.24	
4,493.0	13.20	208.00	4,415.8	-503.3	-465.4	685.3	0.85	0.58	-2.79	
4,578.0	13.40	208.40	4,498.5	-520.6	-474.7	704.4	0.26	0.24	0.47	
4,664.0	13.10	209.40	4,582.2	-537.8	-484.2	723.6	0.44	-0.35	1.16	
4,749.0	10.60	209.40	4,665.4	-553.0	-492.8	740.7	2.94	-2.94	0.00	
4,834.0	9.40	208.00	4,749.1	-566.0	-499.9	755.1	1.44	-1.41	-1.65	
4,920.0	8.10	203.50	4,834.1	-577.7	-505.6	767.7	1.71	-1.51	-5.23	
5,005.0	7.20	204.00	4,918.4	-588.1	-510.1	778.5	1.06	-1.06	0.59	
5,091.0	6.30	212.50	5,003.8	-597.0	-514.9	788.3	1.56	-1.05	9.88	
5,176.0	4.30	213.60	5,088.4	-603.6	-519.1	796.1	2.36	-2.35	1.29	
5,261.0	3.20	211.90	5,173.2	-608.2	-522.2	801.6	1.30	-1.29	-2.00	
5,288.5	2.75	213.76	5,200.7	-609.4	-522.9	803.0	1.68	-1.65	6.76	
TARGET BHL 2550'FNL, 2540'FEL										
5,347.0	1.80	220.80	5,259.1	-611.3	-524.3	805.3	1.68	-1.62	12.04	
5,432.0	0.90	213.60	5,344.1	-612.9	-525.5	807.3	1.08	-1.06	-8.47	
5,518.0	0.40	179.60	5,430.1	-613.7	-525.9	808.2	0.71	-0.58	-39.53	
5,603.0	0.40	148.50	5,515.1	-614.3	-525.8	808.5	0.25	0.00	-36.59	
5,688.0	0.80	149.70	5,600.1	-615.1	-525.3	808.8	0.47	0.47	1.41	
5,774.0	1.30	146.10	5,686.1	-616.4	-524.5	809.2	0.59	0.58	-4.19	
5,859.0	1.50	137.50	5,771.1	-618.0	-523.2	809.6	0.34	0.24	-10.12	
5,945.0	1.80	129.40	5,857.0	-619.7	-521.4	809.6	0.44	0.35	-9.42	
6,030.0	2.20	123.20	5,942.0	-621.4	-519.0	809.4	0.53	0.47	-7.29	
6,115.0	2.60	121.10	6,026.9	-623.3	-516.0	808.8	0.48	0.47	-2.47	

Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well HBR PC G11-21D
Project:	SEC.11-T4N-R65W	TVD Reference:	WELL @ 4704.0ft (Original Well Elev)
Site:	HBR PC G11-21D Pad Sec.11-T4N-R65W	MD Reference:	WELL @ 4704.0ft (Original Well Elev)
Well:	HBR PC G11-21D	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)
6,201.0	2.50	119.50	6,112.8	-625.2	-512.6	808.1	0.14	-0.12	-1.86
6,286.0	2.40	118.00	6,197.7	-627.0	-509.5	807.3	0.14	-0.12	-1.76
6,372.0	2.40	122.90	6,283.7	-628.8	-506.4	806.6	0.24	0.00	5.70
6,457.0	2.30	126.50	6,368.6	-630.8	-503.5	806.2	0.21	-0.12	4.24
6,542.0	2.00	126.10	6,453.5	-632.7	-500.9	805.9	0.35	-0.35	-0.47
6,628.0	1.90	145.60	6,539.5	-634.8	-498.9	806.1	0.78	-0.12	22.67
6,713.0	2.30	168.70	6,624.4	-637.6	-497.8	807.5	1.09	0.47	27.18
6,799.0	2.00	183.40	6,710.4	-640.8	-497.5	809.8	0.73	-0.35	17.09
6,836.8	1.20	154.75	6,748.1	-641.8	-497.4	810.4	2.94	-2.12	-75.85
TARGET CIRCLE 2550'FNL, 2540'FEL									
6,884.0	1.30	87.50	6,795.3	-642.2	-496.7	810.3	2.94	0.21	-142.39
6,969.0	2.00	75.90	6,880.3	-641.8	-494.3	808.4	0.91	0.82	-13.65
7,055.0	1.90	79.00	6,966.2	-641.2	-491.4	806.0	0.17	-0.12	3.60
7,140.0	1.80	81.90	7,051.2	-640.7	-488.7	803.9	0.16	-0.12	3.41
7,226.0	1.70	88.80	7,137.2	-640.5	-486.1	802.0	0.27	-0.12	8.02
7,298.4	1.87	89.42	7,209.5	-640.5	-483.8	800.5	0.24	0.24	0.85
HARDLINES 93'S & 84'W OF BHL									
7,309.0	1.90	89.50	7,220.1	-640.5	-483.5	800.2	0.24	0.24	0.76
7,350.0	2.00	103.20	7,261.1	-640.6	-482.1	799.5	1.16	0.24	33.41

Checked By: _____ Approved By: _____ Date: _____