

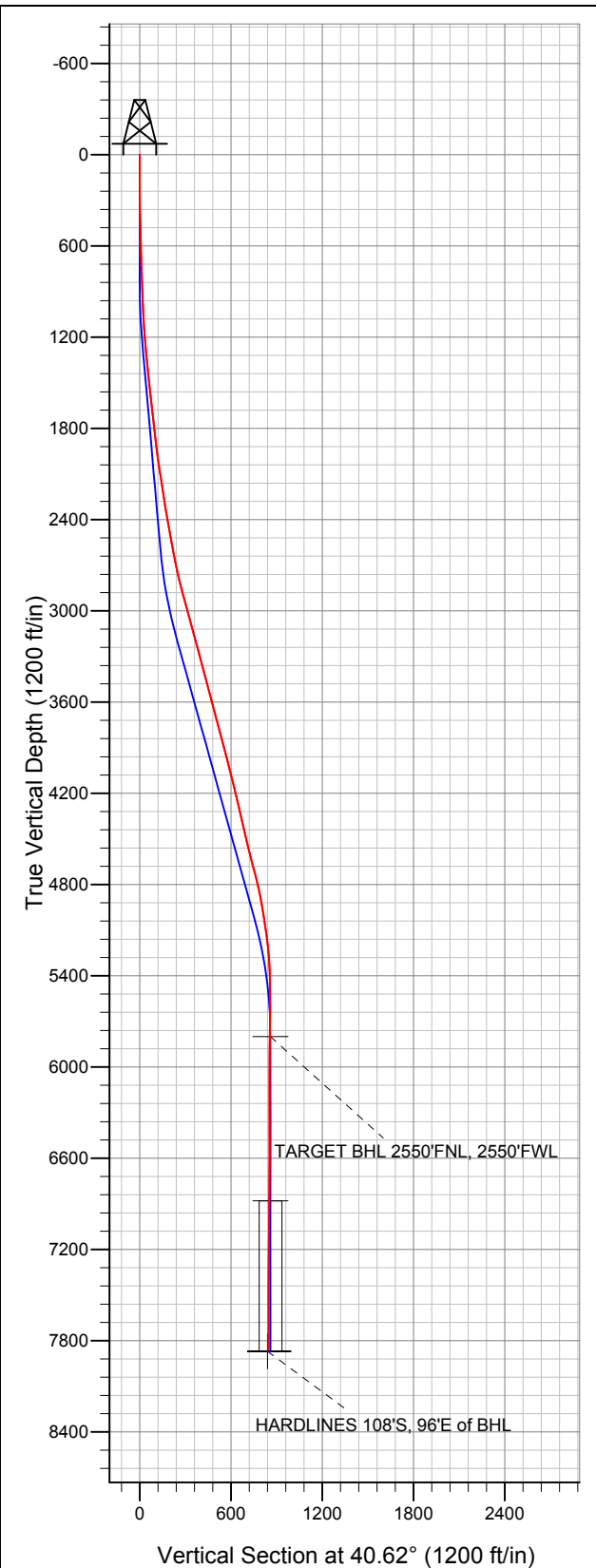


Well Name: Powers X22-21D

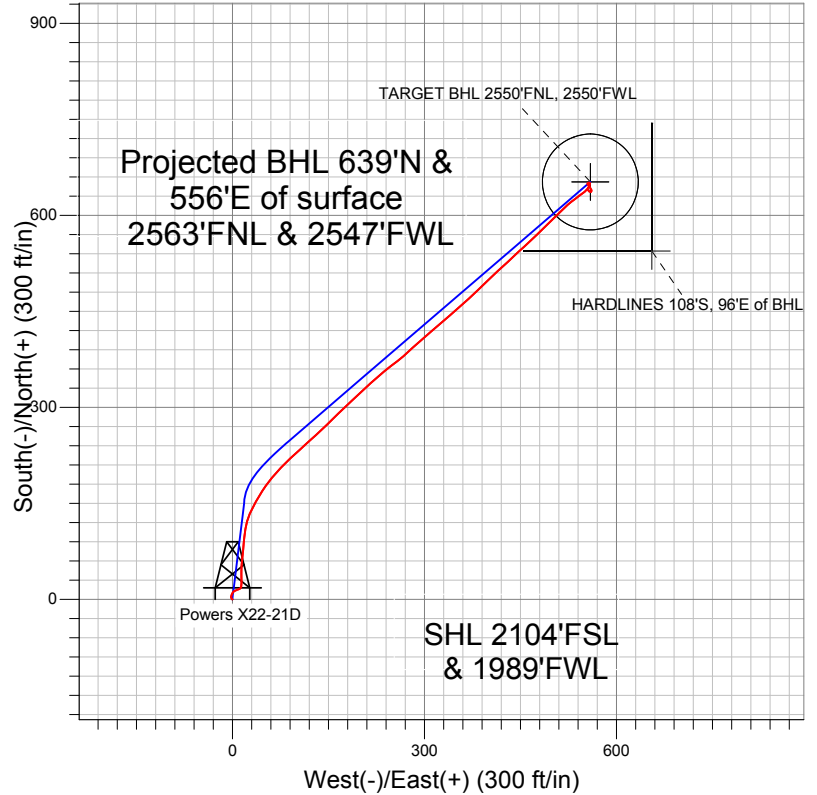
Surface Location: Powers X22-21D Pad Sec.22-T2N-R65W
North American Datum 1983 US State Plane 1983Colorado Northern Zone
Ground Elevation: 4887.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1288639.89	3237024.89	40.122600	-104.652410	

Original Well Elev WELL @ 4900.0ft (Original Well Elev)



NOBLE ENERGY INC WELD COUNTY CO



LEGEND

- Survey #1
- Powers X22-21D, Wellbore #1, Noble Powers X22-21D Plan #1 (9-28-10) V0
- Wellbore #1

Final Survey Plot

Projected Final Survey -
7953'MD & 7859'TVD @ 847°VS
0.60 deg Inc 320 deg AZ

Project: SEC.22-T2N-R65W
Site: Powers X22-21D Pad Sec.22-T2N-R65W
Well: Powers X22-21D
Plan: Wellbore #1



NOBLE ENERGY INC WELD COUNTY CO

SEC.22-T2N-R65W

Powers X22-21D Pad Sec.22-T2N-R65W

Powers X22-21D

Wellbore #1

Survey: Survey #1

Standard Survey Report

09 January, 2012



Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Site Powers X22-21D Pad Sec.22-T2N-R65W
Project:	SEC.22-T2N-R65W	TVD Reference:	WELL @ 4900.0ft (Original Well Elev)
Site:	Powers X22-21D Pad Sec.22-T2N-R65W	MD Reference:	WELL @ 4900.0ft (Original Well Elev)
Well:	Powers X22-21D	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Project	SEC.22-T2N-R65W		
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	Powers X22-21D Pad Sec.22-T2N-R65W				
Site Position:		Northing:	1,288,639.91 ft	Latitude:	40.122600
From:	Lat/Long	Easting:	3,237,024.89 ft	Longitude:	-104.652410
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.55 °

Well	Powers X22-21D					
Well Position	+N-S	0.0 ft	Northing:	1,288,639.89 ft	Latitude:	40.122600
	+E-W	0.0 ft	Easting:	3,237,024.89 ft	Longitude:	-104.652410
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,887.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	12/16/2011	8.71	66.83	52,944

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 (°)	
	0.0	0.0	0.0	40.62	

Survey Program	Date	1/8/2012			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
122.0	7,953.0	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	
122.0	0.50	315.80	122.0	0.4	-0.4	0.0	0.41	0.41	0.00	
238.0	0.80	322.60	238.0	1.4	-1.2	0.3	0.27	0.26	5.86	
362.0	1.30	352.70	362.0	3.5	-1.9	1.4	0.59	0.40	24.27	
485.0	1.70	19.40	484.9	6.6	-1.5	4.0	0.65	0.33	21.71	
608.0	1.30	29.10	607.9	9.5	-0.2	7.1	0.38	-0.33	7.89	
732.0	1.90	48.30	731.8	12.1	2.0	10.5	0.64	0.48	15.48	
869.0	2.50	70.60	868.7	14.6	6.5	15.3	0.76	0.44	16.28	
927.0	2.90	76.00	926.7	15.4	9.1	17.6	0.82	0.69	9.31	
1,021.0	2.50	40.40	1,020.6	17.5	12.8	21.6	1.80	-0.43	-37.87	
1,115.0	4.40	1.00	1,114.4	22.7	14.2	26.5	3.12	2.02	-41.91	
1,208.0	5.90	359.70	1,207.0	31.0	14.2	32.8	1.62	1.61	-1.40	
1,302.0	6.80	359.40	1,300.5	41.4	14.1	40.6	0.96	0.96	-0.32	

Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Site Powers X22-21D Pad Sec.22-T2N-R65W
Project:	SEC.22-T2N-R65W	TVD Reference:	WELL @ 4900.0ft (Original Well Elev)
Site:	Powers X22-21D Pad Sec.22-T2N-R65W	MD Reference:	WELL @ 4900.0ft (Original Well Elev)
Well:	Powers X22-21D	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)	
1,396.0	7.70	5.40	1,393.7	53.3	14.7	50.0	1.25	0.96	6.38	
1,490.0	7.50	4.80	1,486.9	65.6	15.8	60.1	0.23	-0.21	-0.64	
1,584.0	7.70	5.20	1,580.1	78.0	16.8	70.2	0.22	0.21	0.43	
1,678.0	7.50	4.00	1,673.2	90.4	17.8	80.3	0.27	-0.21	-1.28	
1,772.0	7.70	9.20	1,766.4	102.8	19.3	90.6	0.76	0.21	5.53	
1,866.0	7.60	11.00	1,859.6	115.1	21.5	101.3	0.28	-0.11	1.91	
1,960.0	8.10	19.40	1,952.7	127.4	24.9	112.9	1.33	0.53	8.94	
2,054.0	8.50	26.80	2,045.7	139.9	30.2	125.8	1.21	0.43	7.87	
2,148.0	8.80	29.60	2,138.6	152.3	36.9	139.6	0.55	0.32	2.98	
2,242.0	9.20	31.40	2,231.5	165.0	44.3	154.1	0.52	0.43	1.91	
2,336.0	8.90	33.50	2,324.3	177.5	52.3	168.7	0.47	-0.32	2.23	
2,430.0	10.00	41.20	2,417.0	189.7	61.7	184.1	1.78	1.17	8.19	
2,524.0	10.60	43.20	2,509.5	202.1	73.0	200.9	0.74	0.64	2.13	
2,617.0	10.50	43.20	2,601.0	214.5	84.6	217.9	0.11	-0.11	0.00	
2,711.0	12.00	49.50	2,693.1	227.1	97.9	236.1	2.06	1.60	6.70	
2,805.0	13.40	46.70	2,784.8	240.9	113.3	256.6	1.63	1.49	-2.98	
2,899.0	14.80	48.60	2,876.0	256.3	130.2	279.4	1.57	1.49	2.02	
2,993.0	15.30	45.30	2,966.8	273.0	148.0	303.6	1.06	0.53	-3.51	
3,087.0	15.40	45.80	3,057.4	290.4	165.8	328.4	0.18	0.11	0.53	
3,181.0	15.70	46.90	3,148.0	307.8	184.0	353.5	0.45	0.32	1.17	
3,275.0	15.50	46.00	3,238.5	325.2	202.3	378.6	0.33	-0.21	-0.96	
3,369.0	14.60	49.10	3,329.3	341.7	220.3	402.8	1.28	-0.96	3.30	
3,463.0	14.70	50.20	3,420.3	357.1	238.4	426.3	0.31	0.11	1.17	
3,557.0	15.60	53.00	3,511.0	372.4	257.7	450.4	1.23	0.96	2.98	
3,651.0	15.10	48.40	3,601.6	388.1	277.0	474.9	1.40	-0.53	-4.89	
3,745.0	15.20	47.20	3,692.4	404.6	295.2	499.3	0.35	0.11	-1.28	
3,839.0	15.00	48.00	3,783.1	421.1	313.2	523.6	0.31	-0.21	0.85	
3,933.0	14.80	50.20	3,874.0	436.9	331.5	547.5	0.64	-0.21	2.34	
4,026.0	14.20	49.50	3,964.0	451.9	349.3	570.5	0.67	-0.65	-0.75	
4,120.0	14.20	47.70	4,055.1	467.2	366.6	593.3	0.47	0.00	-1.91	
4,214.0	14.20	46.30	4,146.3	482.9	383.5	616.2	0.37	0.00	-1.49	
4,308.0	12.80	45.80	4,237.7	498.1	399.3	638.1	1.49	-1.49	-0.53	
4,402.0	13.50	47.20	4,329.2	512.9	414.8	659.3	0.82	0.74	1.49	
4,496.0	13.00	47.20	4,420.7	527.5	430.6	680.7	0.53	-0.53	0.00	
4,590.0	13.80	47.00	4,512.1	542.3	446.5	702.4	0.85	0.85	-0.21	
4,684.0	14.40	47.20	4,603.3	557.9	463.3	725.1	0.64	0.64	0.21	
4,778.0	14.80	46.20	4,694.3	574.2	480.6	748.7	0.50	0.43	-1.06	
4,872.0	13.20	45.40	4,785.5	590.0	496.9	771.3	1.71	-1.70	-0.85	
4,966.0	11.50	44.70	4,877.3	604.2	511.1	791.4	1.82	-1.81	-0.74	
5,060.0	9.90	48.60	4,969.7	616.2	523.8	808.7	1.87	-1.70	4.15	
5,154.0	8.40	53.90	5,062.5	625.6	535.4	823.4	1.83	-1.60	5.64	
5,248.0	7.50	54.00	5,155.6	633.3	545.9	836.1	0.96	-0.96	0.11	
5,342.0	5.10	40.70	5,249.0	640.0	553.6	846.2	2.97	-2.55	-14.15	
5,436.0	3.40	24.00	5,342.7	645.7	557.4	853.1	2.22	-1.81	-17.77	
5,529.0	1.40	10.50	5,435.6	649.4	558.8	856.7	2.22	-2.15	-14.52	
5,655.0	1.00	272.90	5,561.6	650.9	557.9	857.3	1.45	-0.32	-77.46	
5,780.0	0.90	250.40	5,686.6	650.7	555.9	855.8	0.31	-0.08	-18.00	
5,893.4	0.42	206.26	5,800.0	650.0	554.9	854.7	0.59	-0.43	-38.94	
TARGET BHL 2550'FNL, 2550'FWL										
5,905.0	0.40	197.00	5,811.6	649.9	554.9	854.6	0.59	-0.16	-79.54	
6,030.0	0.40	162.90	5,936.6	649.1	554.9	853.9	0.19	0.00	-27.28	
6,155.0	0.20	188.10	6,061.6	648.5	555.0	853.5	0.19	-0.16	20.16	
6,281.0	0.40	122.40	6,187.6	648.0	555.3	853.4	0.29	0.16	-52.14	
6,406.0	0.50	121.20	6,312.6	647.5	556.1	853.6	0.08	0.08	-0.96	

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Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
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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)
6,531.0	0.60	149.10	6,437.6	646.6	556.9	853.4	0.23	0.08	22.32
6,657.0	0.70	139.10	6,563.6	645.5	557.8	853.1	0.12	0.08	-7.94
6,782.0	1.20	156.70	6,688.6	643.7	558.8	852.4	0.46	0.40	14.08
6,907.0	1.20	149.16	6,813.5	641.4	560.0	851.4	0.13	0.00	-6.03
6,973.3	1.14	154.72	6,879.8	640.2	560.6	850.9	0.19	-0.09	8.39
TARGET CIRCLE 2550'FNL, 2550'FWL									
7,032.0	1.10	160.10	6,938.5	639.1	561.1	850.4	0.19	-0.07	9.16
7,158.0	0.70	220.90	7,064.5	637.4	561.0	849.1	0.77	-0.32	48.25
7,283.0	0.40	235.50	7,189.5	636.6	560.1	847.9	0.26	-0.24	11.68
7,408.0	0.50	310.50	7,314.5	636.7	559.3	847.5	0.44	0.08	60.00
7,533.0	0.30	260.10	7,439.5	637.0	558.6	847.2	0.31	-0.16	-40.32
7,658.0	0.50	281.90	7,564.5	637.1	557.8	846.7	0.20	0.16	17.44
7,785.0	0.70	338.80	7,691.5	637.9	556.9	846.8	0.47	0.16	44.80
7,907.0	0.60	320.00	7,813.5	639.1	556.2	847.2	0.19	-0.08	-15.41
7,953.0	0.60	320.00	7,859.5	639.5	555.9	847.3	0.00	0.00	0.00
HARDLINES 108'S, 96'E of BHL									

Checked By: _____ Approved By: _____ Date: _____