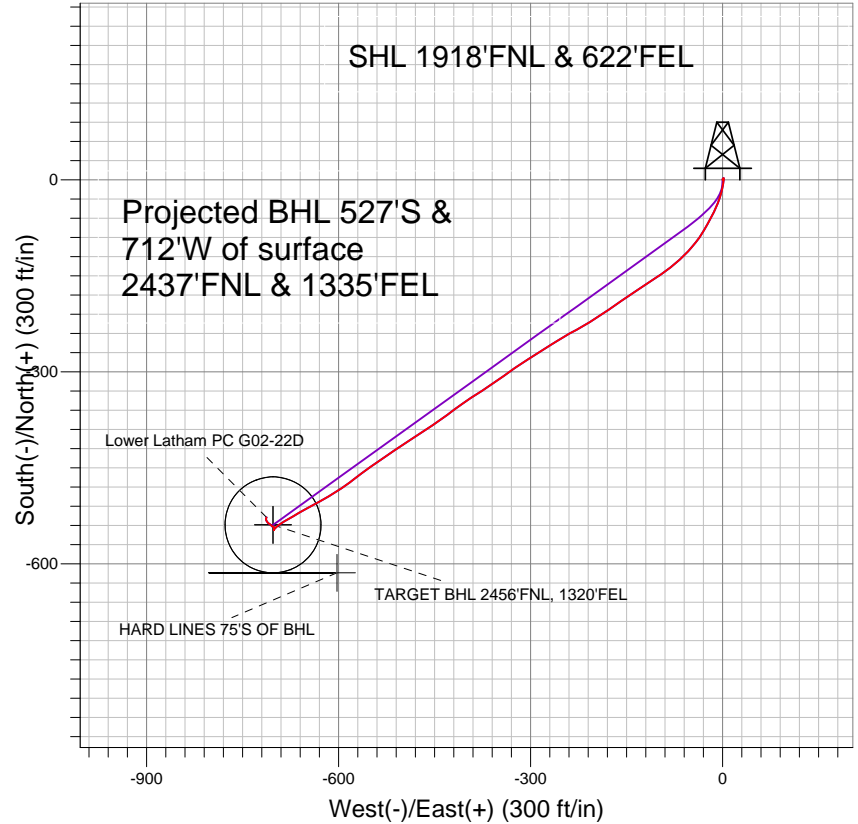
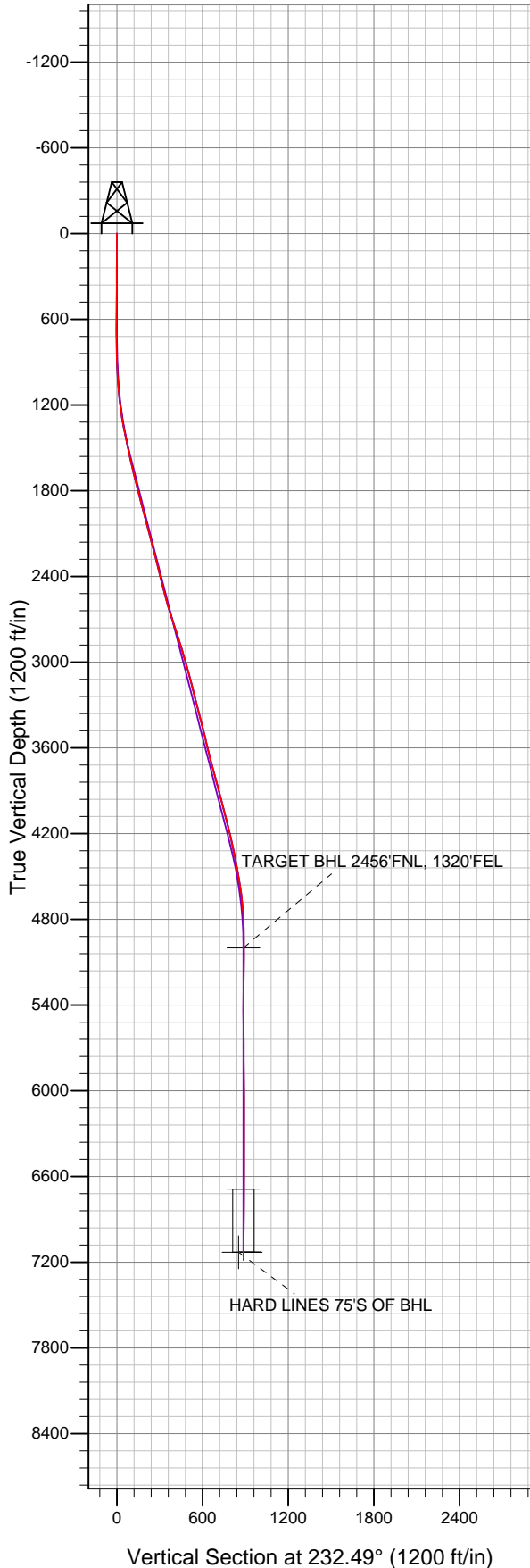


Well Name: **Lower Latham PC G02-22D**
 Surface Location: Lower Latham PC G02-22D Pad Sec.2-T4N-R65W
 North American Datum 1983 US State Plane 1983 Colorado Northern Zone
 Ground Elevation: 4692.0
 +N/-S +E/-W Northing Easting Latitude Longitude
 0.0 0.0 1369073.28 3244418.04 40.343190 -104.623130
 Original Well Elev WELL @ 4705.0ft (Original Well Elev)

Slot

NOBLE ENERGY INC WELD COUNTY CO



LEGEND

- + Lower Latham PC G02-22D, Wellbore #1, Noble Lower Latham PC G02-22D Plan #2 (8-7-12) V
- + Wellbore #1
- Survey #1

Final Survey Plot

Projected Final Survey -
 7294'MD & 7183'TVD @ 886'VS
 0.4 deg Inc 41.1 deg AZ

Project: SEC.2-T4N-R65W (Grid North)
 Site: Lower Latham PC G02-22D Pad Sec.2-T4N-R65W
 Well: Lower Latham PC G02-22D
 Plan: Wellbore #1



Directional

NOBLE ENERGY INC WELD COUNTY CO

SEC.2-T4N-R65W (Grid North)

Lower Latham PC G02-22D Pad Sec.2-T4N-R65W

Lower Latham PC G02-22D

Wellbore #1

Survey: Survey #1

Standard Survey Report

23 August, 2012



Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Lower Latham PC G02-22D
Project:	SEC.2-T4N-R65W (Grid North)	TVD Reference:	WELL @ 4705.0ft (Original Well Elev)
Site:	Lower Latham PC G02-22D Pad Sec.2-T4N-R65W	MD Reference:	WELL @ 4705.0ft (Original Well Elev)
Well:	Lower Latham PC G02-22D	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Project	SEC.2-T4N-R65W (Grid North)		
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	Lower Latham PC G02-22D Pad Sec.2-T4N-R65W				
Site Position:		Northing:	1,369,073.30ft	Latitude:	40.343190
From:	Lat/Long	Easting:	3,244,418.04ft	Longitude:	-104.623130
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.57 °

Well	Lower Latham PC G02-22D					
Well Position	+N-S	0.0 ft	Northing:	1,369,073.28 ft	Latitude:	40.343190
	+E-W	0.0 ft	Easting:	3,244,418.04 ft	Longitude:	-104.623130
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,692.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	8/7/2012	8.63	66.99	52,997

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	232.49	

Survey Program	Date	8/23/2012			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
77.0	7,294.0	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	
77.0	0.40	11.40	77.0	0.3	0.1	-0.2	0.52	0.52	0.00	
166.0	0.30	359.10	166.0	0.8	0.1	-0.6	0.14	-0.11	-13.82	
256.0	0.30	354.30	256.0	1.3	0.1	-0.8	0.03	0.00	-5.33	
360.0	0.40	43.60	360.0	1.8	0.3	-1.3	0.29	0.10	47.40	
487.0	0.40	53.60	487.0	2.4	1.0	-2.2	0.05	0.00	7.87	
614.0	0.10	42.20	614.0	2.7	1.4	-2.8	0.24	-0.24	-8.98	
684.0	0.30	91.40	684.0	2.8	1.6	-3.0	0.35	0.29	70.29	
769.0	0.40	159.20	769.0	2.5	2.0	-3.1	0.47	0.12	79.76	
897.0	3.10	190.90	896.9	-1.3	1.5	-0.3	2.16	2.11	24.77	
1,026.0	5.30	188.10	1,025.6	-10.6	0.0	6.5	1.71	1.71	-2.17	
1,154.0	7.30	196.30	1,152.8	-24.3	-3.2	17.3	1.71	1.56	6.41	

Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Lower Latham PC G02-22D
Project:	SEC.2-T4N-R65W (Grid North)	TVD Reference:	WELL @ 4705.0ft (Original Well Elev)
Site:	Lower Latham PC G02-22D Pad Sec.2-T4N-R65W	MD Reference:	WELL @ 4705.0ft (Original Well Elev)
Well:	Lower Latham PC G02-22D	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)
1,283.0	10.30	204.10	1,280.3	-42.7	-10.2	34.1	2.50	2.33	6.05
1,411.0	13.10	208.10	1,405.6	-66.0	-21.7	57.4	2.28	2.19	3.13
1,539.0	12.50	214.40	1,530.4	-90.2	-36.3	83.7	1.19	-0.47	4.92
1,668.0	13.80	223.70	1,656.0	-112.8	-54.9	112.2	1.92	1.01	7.21
1,796.0	14.20	231.00	1,780.2	-133.7	-77.6	143.0	1.41	0.31	5.70
1,925.0	14.50	237.10	1,905.2	-152.5	-103.5	174.9	1.19	0.23	4.73
2,053.0	14.90	235.70	2,029.0	-170.5	-130.5	207.3	0.42	0.31	-1.09
2,181.0	15.10	236.00	2,152.7	-189.1	-157.9	240.4	0.17	0.16	0.23
2,310.0	14.10	234.60	2,277.5	-207.5	-184.7	272.9	0.82	-0.78	-1.09
2,438.0	14.10	240.60	2,401.7	-224.2	-211.0	303.9	1.14	0.00	4.69
2,567.0	14.70	240.40	2,526.6	-240.0	-238.9	335.6	0.47	0.47	-0.16
2,695.0	17.30	237.50	2,649.6	-258.3	-269.1	370.7	2.12	2.03	-2.27
2,823.0	18.90	237.50	2,771.3	-279.7	-302.6	410.3	1.25	1.25	0.00
2,952.0	16.80	234.50	2,894.1	-301.7	-335.4	449.8	1.78	-1.63	-2.33
3,080.0	15.80	235.90	3,016.9	-322.2	-364.9	485.6	0.84	-0.78	1.09
3,209.0	14.30	237.60	3,141.5	-340.6	-392.9	519.0	1.21	-1.16	1.32
3,337.0	14.50	232.40	3,265.5	-358.8	-418.9	550.8	1.02	0.16	-4.06
3,465.0	14.50	236.00	3,389.4	-377.6	-444.9	582.8	0.70	0.00	2.81
3,594.0	14.20	236.20	3,514.4	-395.4	-471.4	614.7	0.24	-0.23	0.16
3,722.0	13.00	236.80	3,638.8	-412.0	-496.5	644.8	0.94	-0.94	0.47
3,851.0	15.10	235.50	3,763.9	-429.5	-522.5	676.0	1.65	1.63	-1.01
3,979.0	15.70	235.30	3,887.3	-448.8	-550.5	710.0	0.47	0.47	-0.16
4,107.0	14.40	231.50	4,011.0	-468.6	-577.2	743.2	1.27	-1.02	-2.97
4,236.0	14.20	237.80	4,136.0	-487.0	-603.2	775.0	1.22	-0.16	4.88
4,364.0	12.20	241.50	4,260.6	-501.8	-628.3	804.0	1.70	-1.56	2.89
4,493.0	11.50	240.80	4,386.8	-514.6	-651.5	830.2	0.55	-0.54	-0.54
4,621.0	9.60	239.40	4,512.7	-526.2	-671.9	853.4	1.50	-1.48	-1.09
4,749.0	7.10	239.30	4,639.3	-535.7	-687.8	871.8	1.95	-1.95	-0.08
4,878.0	3.60	223.70	4,767.7	-542.7	-697.5	883.8	2.91	-2.71	-12.09
5,006.0	1.10	213.40	4,895.6	-546.7	-701.0	888.9	1.97	-1.95	-8.05
5,110.4	0.28	17.66	5,000.0	-547.2	-701.4	889.6	1.31	-0.79	157.37
TARGET BHL 2456'FNL, 1320'FEL									
5,135.0	0.60	24.40	5,024.6	-547.1	-701.4	889.5	1.31	1.30	27.36
5,263.0	0.70	21.20	5,152.6	-545.7	-700.8	888.2	0.08	0.08	-2.50
5,391.0	0.80	2.40	5,280.6	-544.1	-700.5	887.0	0.21	0.08	-14.69
5,520.0	0.90	330.40	5,409.6	-542.3	-700.9	886.2	0.37	0.08	-24.81
5,648.0	0.70	230.40	5,537.6	-542.0	-702.0	886.9	0.96	-0.16	-78.13
5,777.0	0.80	305.80	5,666.6	-541.9	-703.4	887.9	0.71	0.08	58.45
5,905.0	1.20	322.00	5,794.5	-540.4	-704.9	888.2	0.38	0.31	12.66
6,033.0	1.00	306.20	5,922.5	-538.6	-706.7	888.5	0.28	-0.16	-12.34
6,162.0	0.60	293.00	6,051.5	-537.7	-708.2	889.2	0.34	-0.31	-10.23
6,290.0	0.90	311.80	6,179.5	-536.8	-709.6	889.7	0.30	0.23	14.69
6,419.0	0.90	317.10	6,308.5	-535.4	-711.0	890.0	0.06	0.00	4.11
6,547.0	0.80	330.40	6,436.5	-533.8	-712.1	889.9	0.17	-0.08	10.39
6,675.0	0.90	341.20	6,564.4	-532.1	-712.9	889.5	0.15	0.08	8.44
6,797.4	0.52	341.93	6,686.9	-530.7	-713.4	889.0	0.31	-0.31	0.60
TARGET CIRCLE 2456'FNL & 1320'FEL									
6,804.0	0.50	342.00	6,693.4	-530.6	-713.4	889.0	0.31	-0.31	1.07
6,932.0	0.50	3.80	6,821.4	-529.5	-713.5	888.4	0.15	0.00	17.03
7,061.0	0.40	43.00	6,950.4	-528.6	-713.2	887.6	0.25	-0.08	30.39
7,189.0	0.40	16.00	7,078.4	-527.9	-712.8	886.8	0.15	0.00	-21.09
7,240.4	0.40	37.58	7,129.8	-527.6	-712.6	886.5	0.29	-0.01	41.97
HARD LINES 75'S OF BHL									

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Survey									
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7,249.0	0.40	41.10	7,138.4	-527.5	-712.6	886.4	0.29	0.05	41.01
7,294.0	0.40	41.10	7,183.4	-527.3	-712.4	886.1	0.00	0.00	0.00

Checked By: _____ Approved By: _____ Date: _____