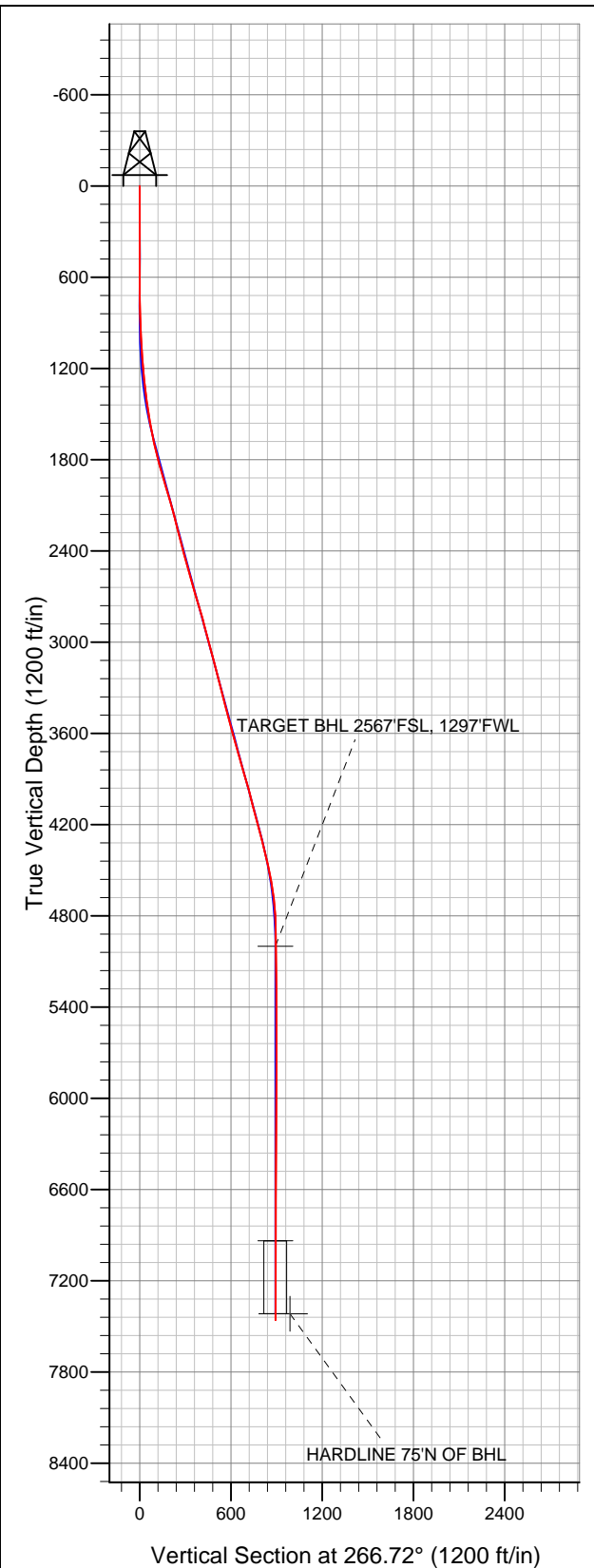


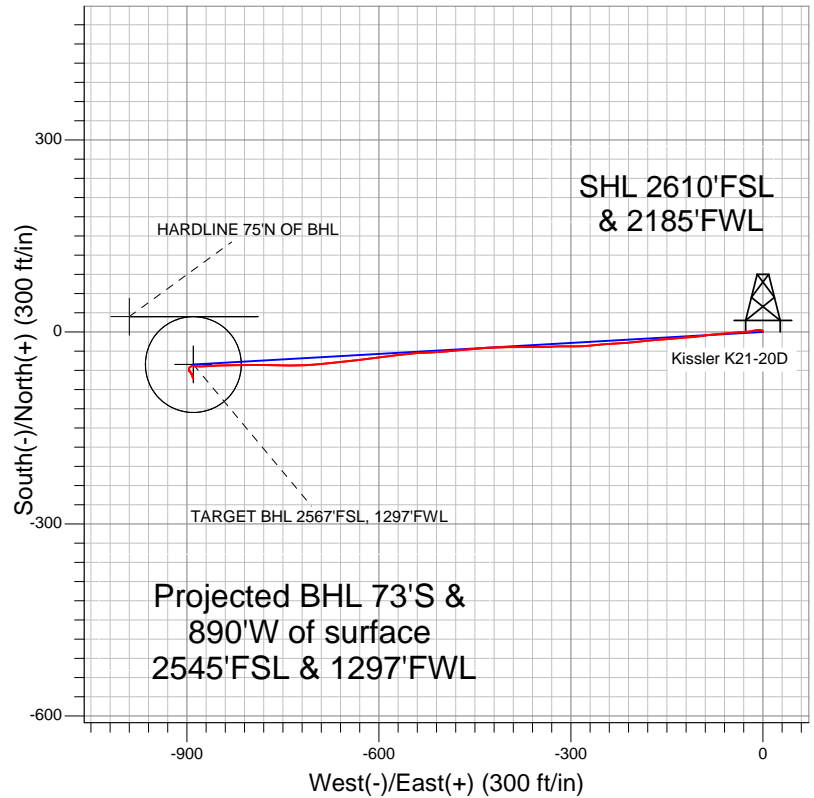
Well Name: Kissler K21-20D

Surface Location: Kissler K21-21D Pad Sec.21-T4N-R66W
North American Datum 1983 US State Plane 1983Colorado Northern Zone
Ground Elevation: 4756.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1351862.60	3199700.12	40.297050	-104.784050	
		Original Well Elev	WELL @ 4769.0ft (Original Well Elev)			



NOBLE ENERGY INC WELD COUNTY CO



LEGEND

- Survey #1
- ✕ Kissler K21-20D, Wellbore #1, Noble Kissler K21-20D Plan #4 (1-10-12) R V0
- Wellbore #1

Final Survey Plot

Projected Final Survey -
7569'MD & 7459'TVD @ 893'VS
1.20 deg Inc 149.40 deg AZ

Project: SEC.21-T4N-R66W
Site: Kissler K21-21D Pad Sec.21-T4N-R66W
Well: Kissler K21-20D
Plan: Wellbore #1



NOBLE ENERGY INC WELD COUNTY CO

SEC.21-T4N-R66W

Kissler K21-21D Pad Sec.21-T4N-R66W

Kissler K21-20D

Wellbore #1

Survey: Survey #1

Standard Survey Report

16 January, 2012



Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Kissler K21-20D
Project:	SEC.21-T4N-R66W	TVD Reference:	WELL @ 4769.0ft (Original Well Elev)
Site:	Kissler K21-21D Pad Sec.21-T4N-R66W	MD Reference:	WELL @ 4769.0ft (Original Well Elev)
Well:	Kissler K21-20D	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Project	SEC.21-T4N-R66W, 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	Kissler K21-21D Pad Sec.21-T4N-R66W		
Site Position:		Northing:	1,351,840.75 ft
From:	Lat/Long	Easting:	3,199,700.30 ft
Position Uncertainty:	0.0 ft	Slot Radius:	"
		Latitude:	40.296990
		Longitude:	-104.784050
		Grid Convergence:	0.46 °

Well	Kissler K21-20D		
Well Position	+N/-S	0.0 ft	Northing: 1,351,862.60 ft
	+E/-W	0.0 ft	Easting: 3,199,700.12 ft
Position Uncertainty	0.0 ft	Wellhead Elevation:	ft
		Latitude:	40.297050
		Longitude:	-104.784050
		Ground Level:	4,756.0 ft

Wellbore	Wellbore #1		
Magnetics	Model Name	Sample Date	Declination (°)
	IGRF200510	12/15/2011	8.76
			Dip Angle (°) 66.96
			Field Strength (nT) 53,047

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)
	0.0	0.0	0.0
			Direction (°) 266.72

Survey Program	Date 1/16/2012		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name
690.0	7,569.0	Survey #1 (Wellbore #1)	MWD
			Description 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	
690.0	0.30	354.20	690.0	1.8	-0.2	0.1	0.04	0.04	0.00	
783.0	1.30	287.40	783.0	2.4	-1.2	1.1	1.30	1.08	-71.83	
876.0	2.10	278.60	875.9	2.9	-3.9	3.7	0.90	0.86	-9.46	
969.0	2.30	264.90	968.9	3.0	-7.4	7.3	0.60	0.22	-14.73	
1,064.0	3.30	257.00	1,063.8	2.2	-12.0	11.9	1.13	1.05	-8.32	
1,157.0	4.50	260.70	1,156.5	1.0	-18.2	18.1	1.32	1.29	3.98	
1,252.0	5.60	267.50	1,251.2	0.2	-26.5	26.5	1.32	1.16	7.16	
1,346.0	6.90	264.40	1,344.6	-0.5	-36.7	36.7	1.43	1.38	-3.30	
1,440.0	8.00	265.10	1,437.8	-1.6	-48.9	48.9	1.17	1.17	0.74	
1,534.0	9.10	266.30	1,530.8	-2.7	-62.8	62.9	1.19	1.17	1.28	
1,627.0	11.40	262.50	1,622.3	-4.3	-79.3	79.4	2.58	2.47	-4.09	
1,721.0	13.20	263.20	1,714.1	-6.8	-99.1	99.4	1.92	1.91	0.74	

Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Kissler K21-20D
Project:	SEC.21-T4N-R66W	TVD Reference:	WELL @ 4769.0ft (Original Well Elev)
Site:	Kissler K21-21D Pad Sec.21-T4N-R66W	MD Reference:	WELL @ 4769.0ft (Original Well Elev)
Well:	Kissler K21-20D	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)
1,815.0	14.90	266.00	1,805.3	-8.9	-121.8	122.2	1.95	1.81	2.98
1,909.0	16.30	265.30	1,895.8	-10.9	-147.0	147.4	1.50	1.49	-0.74
2,003.0	16.30	265.80	1,986.1	-12.9	-173.3	173.8	0.15	0.00	0.53
2,097.0	16.30	262.50	2,076.3	-15.6	-199.6	200.1	0.99	0.00	-3.51
2,190.0	15.40	267.00	2,165.8	-17.9	-224.9	225.5	1.64	-0.97	4.84
2,284.0	14.10	266.30	2,256.7	-19.3	-248.7	249.4	1.40	-1.38	-0.74
2,379.0	13.70	263.50	2,348.9	-21.4	-271.5	272.2	0.82	-0.42	-2.95
2,472.0	14.70	270.50	2,439.0	-22.5	-294.2	295.0	2.13	1.08	7.53
2,566.0	16.40	268.80	2,529.6	-22.7	-319.4	320.2	1.87	1.81	-1.81
2,659.0	16.40	268.40	2,618.8	-23.3	-345.7	346.4	0.12	0.00	-0.43
2,753.0	16.90	270.00	2,708.9	-23.7	-372.6	373.3	0.72	0.53	1.70
2,847.0	15.90	269.50	2,799.0	-23.8	-399.1	399.8	1.07	-1.06	-0.53
2,940.0	14.20	267.70	2,888.9	-24.4	-423.3	424.0	1.90	-1.83	-1.94
3,033.0	15.50	264.00	2,978.7	-26.1	-447.0	447.8	1.73	1.40	-3.98
3,127.0	15.10	265.60	3,069.4	-28.4	-471.7	472.6	0.62	-0.43	1.70
3,220.0	14.30	264.20	3,159.4	-30.5	-495.2	496.2	0.94	-0.86	-1.51
3,314.0	13.50	268.60	3,250.6	-31.9	-517.7	518.7	1.41	-0.85	4.68
3,407.0	14.80	264.70	3,340.8	-33.3	-540.4	541.4	1.73	1.40	-4.19
3,500.0	15.30	264.20	3,430.6	-35.6	-564.5	565.6	0.56	0.54	-0.54
3,594.0	15.70	262.10	3,521.2	-38.6	-589.4	590.6	0.73	0.43	-2.23
3,688.0	15.20	263.90	3,611.8	-41.7	-614.3	615.6	0.74	-0.53	1.91
3,781.0	14.60	262.30	3,701.7	-44.5	-638.0	639.5	0.78	-0.65	-1.72
3,875.0	16.60	264.70	3,792.2	-47.4	-663.1	664.7	2.24	2.13	2.55
3,968.0	15.70	263.50	3,881.5	-50.0	-688.8	690.6	1.03	-0.97	-1.29
4,061.0	15.80	267.90	3,971.0	-51.9	-714.0	715.8	1.29	0.11	4.73
4,155.0	14.30	269.50	4,061.8	-52.5	-738.4	740.2	1.66	-1.60	1.70
4,248.0	14.30	271.90	4,151.9	-52.2	-761.4	763.1	0.64	0.00	2.58
4,341.0	15.70	271.40	4,241.8	-51.5	-785.4	787.1	1.51	1.51	-0.54
4,435.0	13.90	267.90	4,332.6	-51.6	-809.4	811.0	2.14	-1.91	-3.72
4,528.0	13.40	269.30	4,423.0	-52.1	-831.4	833.0	0.64	-0.54	1.51
4,622.0	11.80	267.40	4,514.8	-52.7	-851.8	853.5	1.76	-1.70	-2.02
4,716.0	8.60	266.80	4,607.3	-53.5	-868.5	870.1	3.41	-3.40	-0.64
4,809.0	6.20	270.40	4,699.5	-53.9	-880.4	882.1	2.63	-2.58	3.87
4,903.0	3.30	278.60	4,793.1	-53.5	-888.2	889.8	3.16	-3.09	8.72
4,996.0	1.40	258.40	4,886.1	-53.3	-891.9	893.5	2.20	-2.04	-21.72
5,090.0	1.10	238.40	4,980.0	-54.0	-893.8	895.5	0.56	-0.32	-21.28
5,109.9	0.95	237.75	4,999.9	-54.2	-894.1	895.8	0.76	-0.76	-3.25
TARGET BHL 2567'FSL, 1297'FWL									
5,183.0	0.40	231.20	5,073.0	-54.7	-894.9	896.5	0.76	-0.75	-8.96
5,277.0	0.40	233.80	5,167.0	-55.1	-895.4	897.1	0.02	0.00	2.77
5,370.0	0.80	216.40	5,260.0	-55.8	-896.0	897.7	0.47	0.43	-18.71
5,464.0	0.50	186.50	5,354.0	-56.7	-896.5	898.2	0.47	-0.32	-31.81
5,557.0	1.10	174.90	5,447.0	-58.0	-896.4	898.3	0.66	0.65	-12.47
5,651.0	0.40	167.00	5,541.0	-59.2	-896.3	898.2	0.75	-0.74	-8.40
5,744.0	0.70	185.10	5,634.0	-60.1	-896.2	898.2	0.37	0.32	19.46
5,837.0	0.40	230.30	5,727.0	-60.9	-896.5	898.6	0.54	-0.32	48.60
5,930.0	0.40	167.00	5,820.0	-61.4	-896.7	898.8	0.45	0.00	-68.06
6,024.0	0.50	85.60	5,914.0	-61.7	-896.2	898.3	0.63	0.11	-86.60
6,118.0	0.50	101.80	6,008.0	-61.7	-895.4	897.5	0.15	0.00	17.23
6,211.0	0.40	141.20	6,101.0	-62.1	-894.8	896.9	0.34	-0.11	42.37
6,304.0	0.40	153.60	6,194.0	-62.6	-894.5	896.6	0.09	0.00	13.33
6,397.0	0.40	145.90	6,287.0	-63.2	-894.2	896.3	0.06	0.00	-8.28
6,492.0	0.60	164.20	6,382.0	-63.9	-893.8	896.0	0.27	0.21	19.26
6,587.0	0.70	156.60	6,477.0	-64.9	-893.5	895.7	0.14	0.11	-8.00

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Well:	Kissler K21-20D	North Reference:	True
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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)
6,680.0	0.40	155.20	6,570.0	-65.8	-893.1	895.4	0.32	-0.32	-1.51
6,774.0	0.40	103.00	6,664.0	-66.1	-892.6	895.0	0.37	0.00	-55.53
6,868.0	0.10	110.40	6,758.0	-66.2	-892.3	894.6	0.32	-0.32	7.87
6,961.0	0.60	39.00	6,851.0	-65.9	-891.9	894.2	0.62	0.54	-76.77
7,047.1	0.23	61.08	6,937.1	-65.5	-891.4	893.7	0.46	-0.43	25.64
TARGET CIRCLE 2567'FSL & 1297'FWL									
7,055.0	0.20	67.00	6,945.0	-65.4	-891.4	893.7	0.46	-0.37	75.16
7,148.0	0.70	201.50	7,038.0	-65.9	-891.5	893.8	0.92	0.54	144.62
7,242.0	0.80	190.40	7,131.9	-67.1	-891.8	894.2	0.19	0.11	-11.81
7,335.0	1.10	160.00	7,224.9	-68.6	-891.6	894.1	0.62	0.32	-32.69
7,429.0	0.90	165.20	7,318.9	-70.1	-891.1	893.7	0.23	-0.21	5.53
7,524.0	1.20	149.40	7,413.9	-71.7	-890.4	893.1	0.44	0.32	-16.63
HARDLINE 75'N OF BHL									
7,569.0	1.20	149.40	7,458.9	-72.5	-889.9	892.6	0.00	0.00	0.00

Checked By: _____	Approved By: _____	Date: _____
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