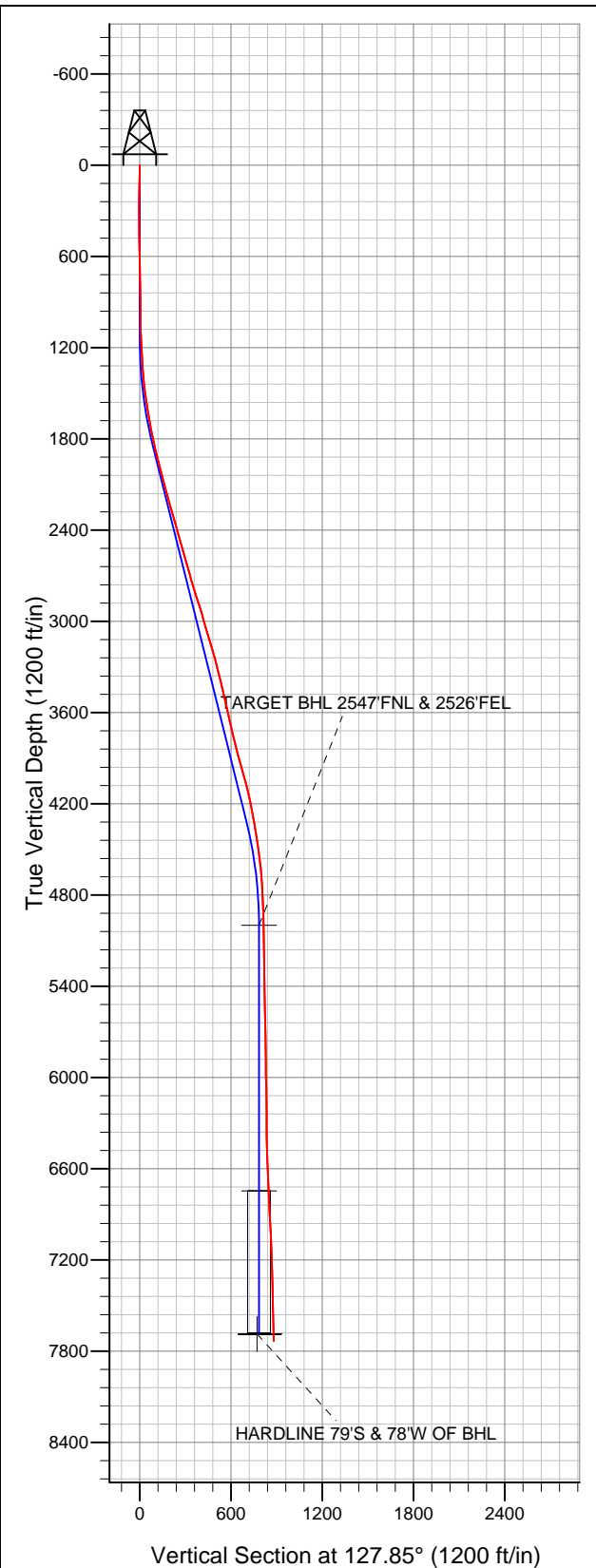


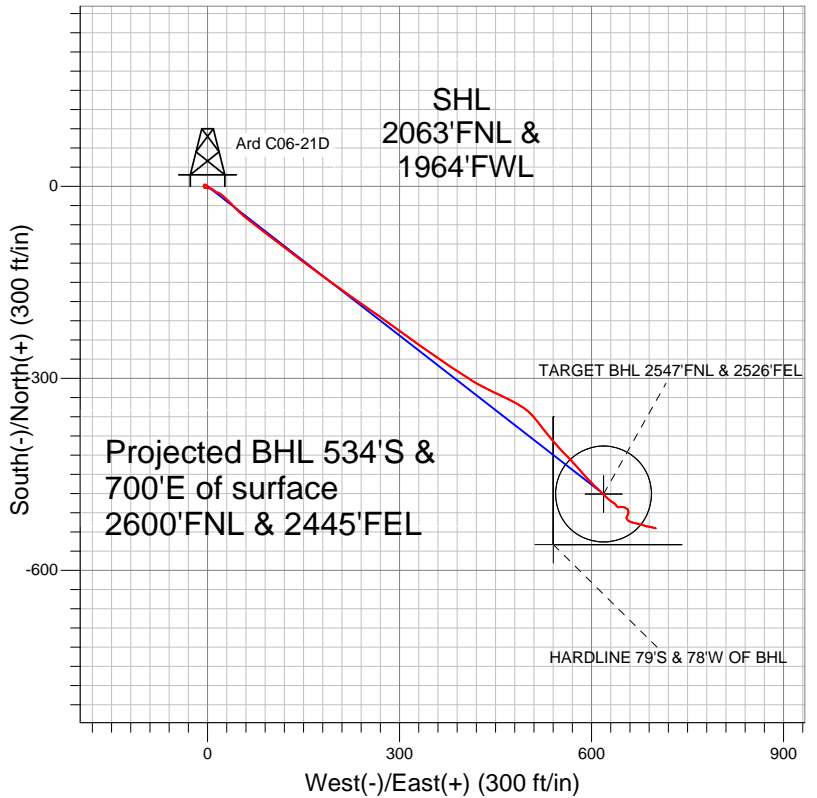
Well Name: Ard C06-21D

Surface Location: Ard C06-18D Pad Sec.6-T4N-R64W
North American Datum 1983 US State Plane 1983Colorado Northern Zone
Ground Elevation: 4814.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1369002.73	3252263.02	40.342780	-104.594990	
		Original Well Elev	WELL @ 4827.0ft (Original Well Elev)			



NOBLE ENERGY INC WELD COUNTY CO



LEGEND

- Survey #1
- × Ard C06-21D, Wellbore #1, Noble Ard C06-21D Plan #2 (8-29-11) V0
- Wellbore #1

Final Survey Plot

Projected Final Survey -
7833'MD & 7734'TVD @ 881'VS
1.40 deg Inc 98.70 deg AZ

Project: SEC.6-T4N-R64W
Site: Ard C06-18D Pad Sec.6-T4N-R64W
Well: Ard C06-21D
Plan: Wellbore #1



NOBLE ENERGY INC WELD COUNTY CO

SEC.6-T4N-R64W

Ard C06-18D Pad Sec.6-T4N-R64W

Ard C06-21D

Wellbore #1

Survey: Survey #1

Standard Survey Report

22 February, 2012



Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Ard C06-21D
Project:	SEC.6-T4N-R64W	TVD Reference:	WELL @ 4827.0ft (Original Well Elev)
Site:	Ard C06-18D Pad Sec.6-T4N-R64W	MD Reference:	WELL @ 4827.0ft (Original Well Elev)
Well:	Ard C06-21D	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Project	SEC.6-T4N-R64W, 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	Ard C06-18D Pad Sec.6-T4N-R64W		
Site Position:		Northing:	1,369,024.61 ft
From:	Lat/Long	Easting:	3,252,262.80 ft
Position Uncertainty:	0.0 ft	Slot Radius:	"
		Latitude:	40.342840
		Longitude:	-104.594990
		Grid Convergence:	0.58 °

Well	Ard C06-21D		
Well Position	+N/-S	0.0 ft	Northing: 1,369,002.73 ft
	+E/-W	0.0 ft	Easting: 3,252,263.02 ft
Position Uncertainty	0.0 ft	Wellhead Elevation:	ft
		Latitude:	40.342780
		Longitude:	-104.594990
		Ground Level:	4,814.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	8/29/2011	8.70	67.03	53,120

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	127.85	

Survey Program	Date	2/21/2012			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
111.0	7,833.0	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	
111.0	2.10	314.70	111.0	1.4	-1.4	-2.0	1.89	1.89	0.00	
206.0	1.00	285.80	205.9	2.9	-3.5	-4.5	1.39	-1.16	-30.42	
301.0	1.50	225.00	300.9	2.2	-5.2	-5.4	1.41	0.53	-64.00	
396.0	1.00	181.00	395.9	0.5	-6.1	-5.1	1.10	-0.53	-46.32	
491.0	1.60	140.50	490.9	-1.3	-5.2	-3.3	1.12	0.63	-42.63	
608.0	1.50	97.90	607.8	-2.8	-2.7	-0.4	0.97	-0.09	-36.41	
761.0	0.60	77.00	760.8	-2.9	0.1	1.9	0.63	-0.59	-13.66	
843.0	0.60	91.70	842.8	-2.8	0.9	2.5	0.19	0.00	17.93	
925.0	0.70	99.70	924.8	-2.9	1.9	3.3	0.16	0.12	9.76	
1,006.0	0.70	83.90	1,005.8	-2.9	2.8	4.1	0.24	0.00	-19.51	
1,088.0	2.10	103.20	1,087.8	-3.2	4.8	5.8	1.78	1.71	23.54	
1,170.0	3.60	127.30	1,169.7	-5.1	8.3	9.7	2.30	1.83	29.39	

Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Ard C06-21D
Project:	SEC.6-T4N-R64W	TVD Reference:	WELL @ 4827.0ft (Original Well Elev)
Site:	Ard C06-18D Pad Sec.6-T4N-R64W	MD Reference:	WELL @ 4827.0ft (Original Well Elev)
Well:	Ard C06-21D	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)
1,251.0	2.90	129.10	1,250.5	-8.0	11.9	14.3	0.87	-0.86	2.22
1,333.0	3.50	106.60	1,332.4	-10.0	15.9	18.7	1.68	0.73	-27.44
1,415.0	6.00	127.20	1,414.1	-13.3	21.8	25.3	3.64	3.05	25.12
1,497.0	7.50	133.40	1,495.6	-19.6	29.1	35.0	2.03	1.83	7.56
1,579.0	8.70	136.00	1,576.7	-27.7	37.3	46.4	1.53	1.46	3.17
1,661.0	9.80	134.30	1,657.7	-37.0	46.6	59.5	1.38	1.34	-2.07
1,743.0	10.60	131.50	1,738.4	-46.9	57.2	74.0	1.15	0.98	-3.41
1,824.0	12.20	127.20	1,817.8	-57.0	69.6	89.9	2.24	1.98	-5.31
1,906.0	13.60	126.10	1,897.7	-67.9	84.3	108.2	1.73	1.71	-1.34
1,988.0	14.50	127.90	1,977.3	-79.9	100.2	128.2	1.22	1.10	2.20
2,070.0	15.40	128.70	2,056.5	-93.0	116.8	149.3	1.13	1.10	0.98
2,151.0	15.00	126.40	2,134.6	-106.0	133.6	170.5	0.89	-0.49	-2.84
2,233.0	15.90	127.10	2,213.7	-119.1	151.1	192.4	1.12	1.10	0.85
2,315.0	16.10	126.60	2,292.5	-132.6	169.2	215.0	0.30	0.24	-0.61
2,397.0	15.70	125.80	2,371.4	-145.9	187.3	237.4	0.56	-0.49	-0.98
2,478.0	15.80	125.70	2,449.3	-158.7	205.2	259.4	0.13	0.12	-0.12
2,560.0	15.80	125.10	2,528.2	-171.7	223.4	281.7	0.20	0.00	-0.73
2,642.0	15.70	123.40	2,607.1	-184.2	241.8	303.9	0.58	-0.12	-2.07
2,723.0	16.00	126.00	2,685.1	-196.8	259.9	326.0	0.95	0.37	3.21
2,805.0	17.20	127.10	2,763.7	-210.7	278.8	349.4	1.51	1.46	1.34
2,887.0	17.10	125.20	2,842.0	-225.0	298.3	373.6	0.69	-0.12	-2.32
2,969.0	17.20	125.80	2,920.4	-239.0	318.0	397.7	0.25	0.12	0.73
3,051.0	16.20	123.90	2,998.9	-252.5	337.3	421.3	1.39	-1.22	-2.32
3,132.0	16.50	124.40	3,076.6	-265.3	356.2	444.0	0.41	0.37	0.62
3,214.0	16.60	124.20	3,155.2	-278.5	375.5	467.3	0.14	0.12	-0.24
3,296.0	16.30	123.80	3,233.9	-291.5	394.7	490.5	0.39	-0.37	-0.49
3,378.0	13.50	122.40	3,313.1	-303.0	412.4	511.5	3.44	-3.41	-1.71
3,459.0	14.00	117.20	3,391.8	-312.5	429.1	530.6	1.65	0.62	-6.42
3,541.0	13.50	115.10	3,471.4	-321.1	446.5	549.6	0.86	-0.61	-2.56
3,623.0	12.80	116.20	3,551.3	-329.2	463.4	567.9	0.91	-0.85	1.34
3,705.0	12.80	118.70	3,631.3	-337.6	479.5	585.7	0.68	0.00	3.05
3,787.0	13.50	124.00	3,711.1	-347.3	495.4	604.3	1.70	0.85	6.46
3,868.0	13.20	140.80	3,789.9	-359.8	509.1	622.7	4.79	-0.37	20.74
3,950.0	15.60	142.10	3,869.4	-375.7	521.8	642.5	2.95	2.93	1.59
4,032.0	15.70	139.50	3,948.3	-392.9	535.7	664.1	0.86	0.12	-3.17
4,114.0	15.90	138.90	4,027.2	-409.8	550.3	686.0	0.31	0.24	-0.73
4,195.0	14.90	134.80	4,105.3	-425.5	565.0	707.2	1.82	-1.23	-5.06
4,277.0	11.10	136.40	4,185.2	-438.6	577.9	725.5	4.65	-4.63	1.95
4,359.0	10.90	141.20	4,265.7	-450.4	588.2	740.8	1.14	-0.24	5.85
4,441.0	10.10	137.80	4,346.3	-461.7	597.9	755.5	1.23	-0.98	-4.15
4,523.0	8.70	129.10	4,427.2	-471.0	607.6	768.7	2.43	-1.71	-10.61
4,604.0	8.10	136.20	4,507.4	-479.0	616.3	780.5	1.48	-0.74	8.77
4,686.0	6.40	131.90	4,588.7	-486.2	623.7	790.8	2.17	-2.07	-5.24
4,768.0	4.50	131.30	4,670.3	-491.3	629.5	798.6	2.32	-2.32	-0.73
4,850.0	3.50	117.30	4,752.1	-494.6	634.1	804.2	1.70	-1.22	-17.07
4,932.0	2.80	146.70	4,834.0	-497.4	637.5	808.6	2.12	-0.85	35.85
5,013.0	2.00	133.10	4,914.9	-500.1	639.6	811.9	1.21	-0.99	-16.79
5,097.5	1.18	114.03	4,999.4	-501.4	641.5	814.2	1.14	-0.97	-22.57
TARGET BHL 2547'FNL & 2526'FEL									
5,177.0	0.80	63.80	5,078.9	-501.5	642.7	815.2	1.14	-0.48	-63.17
5,340.0	1.00	81.50	5,241.9	-500.8	645.1	816.7	0.21	0.12	10.86
5,504.0	1.10	102.70	5,405.8	-500.9	648.1	819.1	0.24	0.06	12.93
5,667.0	1.40	109.60	5,568.8	-501.9	651.5	822.4	0.21	0.18	4.23
5,831.0	1.20	119.60	5,732.8	-503.5	654.9	826.0	0.18	-0.12	6.10

Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Ard C06-21D
Project:	SEC.6-T4N-R64W	TVD Reference:	WELL @ 4827.0ft (Original Well Elev)
Site:	Ard C06-18D Pad Sec.6-T4N-R64W	MD Reference:	WELL @ 4827.0ft (Original Well Elev)
Well:	Ard C06-21D	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)	
5,994.0	0.60	155.30	5,895.7	-505.1	656.7	828.5	0.49	-0.37	21.90	
6,158.0	1.60	167.20	6,059.7	-508.1	657.6	831.0	0.62	0.61	7.26	
6,321.0	1.80	207.50	6,222.6	-512.6	656.9	833.2	0.73	0.12	24.72	
6,485.0	1.70	200.80	6,386.6	-517.1	654.8	834.4	0.14	-0.06	-4.09	
6,648.0	2.30	133.30	6,549.5	-521.6	656.4	838.4	1.40	0.37	-41.41	
6,812.0	2.90	104.20	6,713.3	-524.9	662.8	845.4	0.87	0.37	-17.74	
6,842.9	2.90	103.97	6,744.2	-525.3	664.3	846.9	0.04	0.00	-0.74	
TARGET CIRCLE 2547'FNL & 2526'FEL										
6,975.0	2.90	103.00	6,876.1	-526.9	670.8	853.0	0.04	0.00	-0.74	
7,139.0	3.10	108.20	7,039.9	-529.2	679.0	860.9	0.21	0.12	3.17	
7,302.0	2.20	100.70	7,202.7	-531.1	686.3	867.8	0.59	-0.55	-4.60	
7,466.0	1.40	100.55	7,366.6	-532.1	691.4	872.4	0.49	-0.49	-0.09	
7,629.0	1.40	107.90	7,529.6	-533.1	695.2	876.0	0.11	0.00	4.51	
7,782.8	1.40	98.94	7,683.4	-533.9	698.9	879.5	0.14	0.00	-5.82	
HARDLINE 79'S & 78'W OF BHL										
7,787.0	1.40	98.70	7,687.5	-534.0	699.0	879.5	0.14	0.01	-5.80	
7,833.0	1.40	98.70	7,733.5	-534.1	700.1	880.5	0.00	0.00	0.00	

Checked By: _____ Approved By: _____ Date: _____