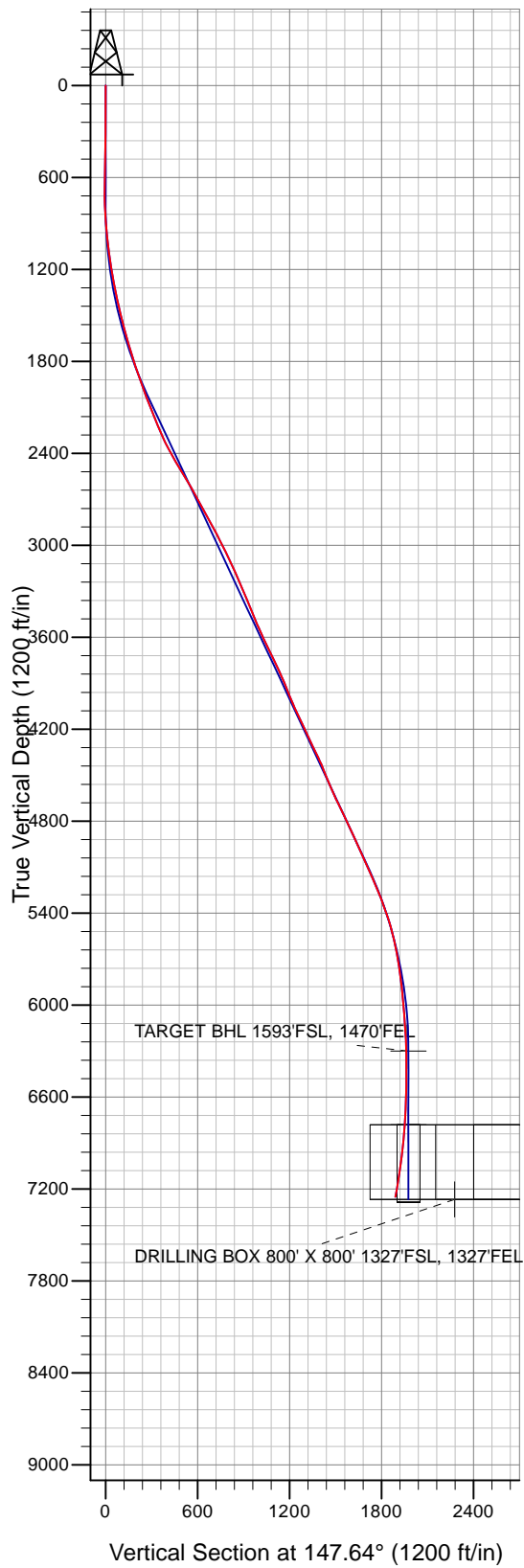


Well Name: **Ehrlich N34-23D**

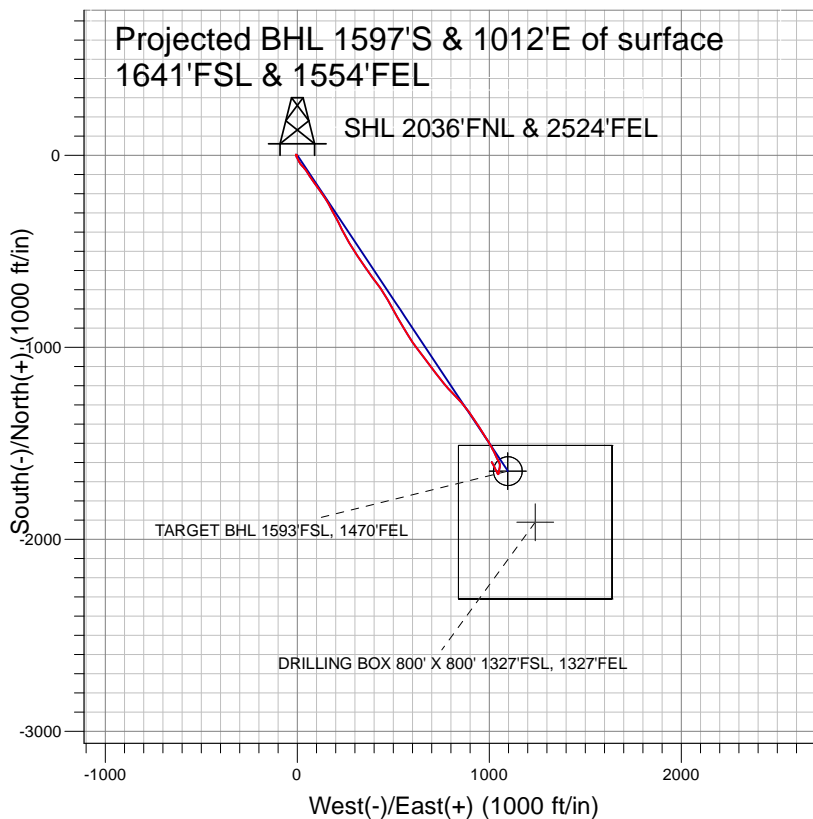
Surface Location: Ehrlich N34-24D Pad Sec.34-T5N-R67W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

Ground Elevation: 4865.0

+N/-S+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1373805.44	3173105.40	40° 21' 28.199 N	104° 52' 43.828 W
Original Well Elev WELL @ 4878.0ft (Original Well Elev)					



NOBLE ENERGY INC WELD COUNTY CO



LEGEND

- △ Ehrlich N34-23D, Wellbore #1, Noble Ehrlich N34-23D Plan #3 (3-22-10) V0
- Wellbore #1
- Survey #1

Final Survey Plot

Projected Final Survey -
7657'MD & 7252'TVD @ 1890' VS
10.10 deg Inc 332.2 deg AZ

Project: SEC.34-T5N-R67W
Site: Ehrlich N34-24D Pad Sec.34-T5N-R67W
Well: Ehrlich N34-23D
Plan: Wellbore #1



NOBLE ENERGY INC WELD COUNTY CO

SEC.34-T5N-R67W

Ehrlich N34-24D Pad Sec.34-T5N-R67W

Ehrlich N34-23D

Wellbore #1

Survey: Survey #1

Standard Survey Report

26 April, 2010



Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Ehrlich N34-23D
Project:	SEC.34-T5N-R67W	TVD Reference:	WELL @ 4878.0ft (Original Well Elev)
Site:	Ehrlich N34-24D Pad Sec.34-T5N-R67W	MD Reference:	WELL @ 4878.0ft (Original Well Elev)
Well:	Ehrlich N34-23D	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM den0-adp01 Server Data

Project	SEC.34-T5N-R67W, 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	Ehrlich N34-24D Pad Sec.34-T5N-R67W		
Site Position:		Northing:	1,373,805.83 ft
From:	Lat/Long	Easting:	3,173,055.51 ft
Position Uncertainty:	0.0 ft	Slot Radius:	"
		Latitude:	40° 21' 28.206 N
		Longitude:	104° 52' 44.472 W
		Grid Convergence:	0.40 °

Well	Ehrlich N34-23D		
Well Position	+N-S	0.0 ft	Northing: 1,373,805.44 ft
	+E-W	0.0 ft	Easting: 3,173,105.40 ft
Position Uncertainty		0.0 ft	Wellhead Elevation: ft
			Latitude: 40° 21' 28.199 N
			Longitude: 104° 52' 43.828 W
			Ground Level: 4,865.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	6/11/2009	9.16	67.07	53,327
	IGRF200510	12/31/2009	9.08	67.06	53,269

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	147.64	

Survey Program	Date 4/26/2010				
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
642.0	7,657.0	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
642.0	1.30	298.80	641.9	3.5	-6.4	-6.4	0.20	0.20	0.00
728.0	1.10	207.00	727.9	3.2	-7.6	-6.8	2.01	-0.23	-106.74
813.0	2.50	160.20	812.9	0.8	-7.4	-4.6	2.26	1.65	-55.06
899.0	4.70	160.20	898.7	-4.3	-5.5	0.7	2.56	2.56	0.00
984.0	5.60	153.80	983.4	-11.3	-2.5	8.2	1.25	1.06	-7.53
1,070.0	7.40	153.60	1,068.8	-20.0	1.8	17.9	2.09	2.09	-0.23
1,155.0	9.00	151.90	1,152.9	-30.8	7.4	30.0	1.90	1.88	-2.00
1,241.0	10.60	144.50	1,237.7	-43.2	15.1	44.6	2.36	1.86	-8.60
1,326.0	11.20	136.10	1,321.2	-55.5	25.4	60.5	2.00	0.71	-9.88
1,412.0	12.30	142.00	1,405.4	-68.7	36.8	77.8	1.89	1.28	6.86
1,497.0	13.90	145.30	1,488.1	-84.3	48.2	97.0	2.08	1.88	3.88

Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Ehrlich N34-23D
Project:	SEC.34-T5N-R67W	TVD Reference:	WELL @ 4878.0ft (Original Well Elev)
Site:	Ehrlich N34-24D Pad Sec.34-T5N-R67W	MD Reference:	WELL @ 4878.0ft (Original Well Elev)
Well:	Ehrlich N34-23D	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM den0-adp01 Server Data

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)
1,583.0	14.40	146.10	1,571.5	-101.6	60.1	118.0	0.62	0.58	0.93
1,668.0	15.70	145.00	1,653.6	-119.8	72.5	140.0	1.57	1.53	-1.29
1,754.0	16.70	146.90	1,736.2	-139.7	86.0	164.0	1.32	1.16	2.21
1,839.0	17.70	145.00	1,817.4	-160.5	100.1	189.1	1.35	1.18	-2.24
1,924.0	19.10	143.60	1,898.1	-182.3	115.7	215.9	1.73	1.65	-1.65
2,010.0	20.60	143.80	1,978.9	-205.8	133.0	245.1	1.75	1.74	0.23
2,095.0	21.20	148.80	2,058.4	-231.0	149.8	275.3	2.21	0.71	5.88
2,181.0	21.30	152.10	2,138.5	-258.2	165.2	306.5	1.40	0.12	3.84
2,266.0	23.10	152.10	2,217.2	-286.5	180.2	338.5	2.12	2.12	0.00
2,352.0	24.80	152.00	2,295.8	-317.4	196.6	373.3	1.98	1.98	-0.12
2,437.0	28.00	152.30	2,371.9	-350.8	214.2	411.0	3.77	3.76	0.35
2,523.0	30.40	153.10	2,447.0	-388.1	233.4	452.7	2.83	2.79	0.93
2,608.0	31.30	152.30	2,520.0	-426.8	253.4	496.2	1.16	1.06	-0.94
2,694.0	30.60	148.30	2,593.7	-465.2	275.3	540.3	2.53	-0.81	-4.65
2,779.0	28.00	146.20	2,667.9	-500.2	297.8	581.9	3.29	-3.06	-2.47
2,865.0	29.50	145.90	2,743.2	-534.5	320.9	623.3	1.75	1.74	-0.35
2,950.0	29.10	146.30	2,817.4	-569.0	344.1	664.8	0.52	-0.47	0.47
3,036.0	28.00	145.60	2,892.9	-603.1	367.1	705.9	1.34	-1.28	-0.81
3,121.0	26.70	144.00	2,968.4	-635.0	389.6	744.9	1.76	-1.53	-1.88
3,207.0	26.60	144.40	3,045.3	-666.3	412.2	783.4	0.24	-0.12	0.47
3,292.0	24.50	144.50	3,122.0	-696.1	433.5	820.0	2.47	-2.47	0.12
3,378.0	24.10	147.00	3,200.3	-725.4	453.4	855.4	1.28	-0.47	2.91
3,463.0	22.80	148.50	3,278.3	-754.0	471.5	889.2	1.68	-1.53	1.76
3,549.0	23.20	151.80	3,357.5	-783.1	488.2	922.8	1.57	0.47	3.84
3,634.0	22.20	153.50	3,435.9	-812.2	503.2	955.4	1.41	-1.18	2.00
3,720.0	22.80	148.70	3,515.4	-841.0	519.2	988.3	2.25	0.70	-5.58
3,805.0	24.90	149.40	3,593.1	-870.5	536.8	1,022.6	2.49	2.47	0.82
3,891.0	25.80	149.00	3,670.8	-902.1	555.7	1,059.4	1.07	1.05	-0.47
3,976.0	26.10	149.30	3,747.3	-934.0	574.7	1,096.6	0.39	0.35	0.35
4,062.0	24.90	146.90	3,824.9	-965.5	594.3	1,133.6	1.84	-1.40	-2.79
4,147.0	22.50	142.60	3,902.7	-993.4	613.9	1,167.7	3.48	-2.82	-5.06
4,233.0	21.70	142.10	3,982.4	-1,019.0	633.7	1,199.9	0.96	-0.93	-0.58
4,318.0	24.40	143.80	4,060.6	-1,045.6	653.7	1,233.1	3.27	3.18	2.00
4,403.0	25.50	143.70	4,137.7	-1,074.5	674.9	1,268.9	1.30	1.29	-0.12
4,489.0	25.10	143.00	4,215.4	-1,104.0	696.9	1,305.5	0.58	-0.47	-0.81
4,575.0	25.90	140.40	4,293.0	-1,133.0	719.8	1,342.4	1.60	0.93	-3.02
4,660.0	25.90	142.30	4,369.5	-1,162.0	743.0	1,379.3	0.98	0.00	2.24
4,746.0	22.90	141.40	4,447.8	-1,190.0	764.9	1,414.6	3.51	-3.49	-1.05
4,831.0	22.00	137.00	4,526.4	-1,214.5	786.1	1,446.7	2.24	-1.06	-5.18
4,917.0	24.10	137.00	4,605.5	-1,239.2	809.1	1,479.8	2.44	2.44	0.00
5,002.0	26.20	136.50	4,682.4	-1,265.5	833.8	1,515.2	2.48	2.47	-0.59
5,087.0	26.80	139.40	4,758.5	-1,293.6	859.2	1,552.6	1.68	0.71	3.41
5,173.0	25.10	142.40	4,835.8	-1,322.8	883.0	1,590.0	2.50	-1.98	3.49
5,258.0	24.30	145.60	4,913.1	-1,351.5	903.9	1,625.4	1.83	-0.94	3.76
5,344.0	23.20	145.80	4,991.8	-1,380.1	923.4	1,660.0	1.28	-1.28	0.23
5,429.0	25.50	147.50	5,069.2	-1,409.4	942.6	1,695.1	2.83	2.71	2.00
5,515.0	23.50	148.00	5,147.5	-1,439.6	961.7	1,730.7	2.34	-2.33	0.58
5,600.0	22.80	147.70	5,225.6	-1,467.9	979.4	1,764.1	0.84	-0.82	-0.35
5,686.0	20.80	148.50	5,305.5	-1,495.0	996.3	1,796.1	2.35	-2.33	0.93
5,771.0	20.10	150.80	5,385.1	-1,520.6	1,011.3	1,825.7	1.25	-0.82	2.71
5,857.0	16.70	153.30	5,466.7	-1,544.5	1,024.1	1,852.8	4.06	-3.95	2.91
5,942.0	14.00	157.80	5,548.7	-1,565.0	1,033.5	1,875.1	3.47	-3.18	5.29
6,028.0	10.90	150.80	5,632.6	-1,581.7	1,041.4	1,893.5	4.00	-3.60	-8.14
6,113.0	9.90	153.10	5,716.2	-1,595.2	1,048.6	1,908.8	1.27	-1.18	2.71

Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Ehrlich N34-23D
Project:	SEC.34-T5N-R67W	TVD Reference:	WELL @ 4878.0ft (Original Well Elev)
Site:	Ehrlich N34-24D Pad Sec.34-T5N-R67W	MD Reference:	WELL @ 4878.0ft (Original Well Elev)
Well:	Ehrlich N34-23D	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM den0-adp01 Server Data

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)
6,199.0	7.90	164.00	5,801.2	-1,607.5	1,053.6	1,921.8	3.03	-2.33	12.67
6,284.0	7.70	186.20	5,885.4	-1,618.8	1,054.6	1,931.8	3.53	-0.24	26.12
6,370.0	6.90	191.40	5,970.7	-1,629.6	1,052.9	1,940.1	1.21	-0.93	6.05
6,455.0	6.00	192.90	6,055.2	-1,638.9	1,050.9	1,946.9	1.08	-1.06	1.76
6,540.0	5.20	183.70	6,139.8	-1,647.1	1,049.7	1,953.1	1.41	-0.94	-10.82
6,625.0	3.90	192.20	6,224.5	-1,653.8	1,048.8	1,958.3	1.72	-1.53	10.00
6,699.2	2.25	200.77	6,298.7	-1,657.6	1,047.8	1,961.0	2.30	-2.22	11.54
TARGET BHL 1593'FSL, 1470'FEL									
6,711.0	2.00	203.40	6,310.4	-1,658.0	1,047.6	1,961.2	2.30	-2.14	22.41
6,796.0	1.50	246.50	6,395.4	-1,659.8	1,046.0	1,961.9	1.61	-0.59	50.71
6,882.0	0.50	209.90	6,481.4	-1,660.6	1,044.8	1,961.9	1.32	-1.16	-42.56
6,967.0	1.40	331.70	6,566.4	-1,660.0	1,044.1	1,961.0	2.02	1.06	143.29
7,053.0	2.80	333.70	6,652.3	-1,657.2	1,042.7	1,957.9	1.63	1.63	2.33
7,138.0	3.20	331.60	6,737.2	-1,653.2	1,040.6	1,953.5	0.49	0.47	-2.47
7,180.6	3.69	333.68	6,779.7	-1,651.0	1,039.5	1,950.9	1.19	1.16	4.89
TARGET CIRCLE 1593'FSL, 1470'FEL									
7,224.0	4.20	335.30	6,823.0	-1,648.3	1,038.2	1,948.0	1.19	1.17	3.73
7,309.0	5.80	333.70	6,907.7	-1,641.6	1,035.0	1,940.6	1.89	1.88	-1.88
7,395.0	7.30	333.90	6,993.1	-1,632.8	1,030.6	1,930.8	1.74	1.74	0.23
7,480.0	8.60	332.60	7,077.3	-1,622.3	1,025.3	1,919.1	1.54	1.53	-1.53
7,566.0	9.10	331.60	7,162.3	-1,610.6	1,019.1	1,906.0	0.61	0.58	-1.16
7,608.8	10.07	332.19	7,204.5	-1,604.3	1,015.8	1,898.8	2.28	2.27	1.37
DRILLING BOX 800' X 800' 1327'FSL, 1327'FEL									
7,610.0	10.10	332.20	7,205.7	-1,604.1	1,015.7	1,898.6	2.28	2.27	1.23
7,657.0	10.10	332.20	7,251.9	-1,596.8	1,011.8	1,890.4	0.00	0.00	0.00

Wellbore Targets
Target Name

- hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
TARGET BHL 1593'F: - survey misses target center by 49.9ft at 6699.5ft MD (6298.9 TVD, -1657.6 N, 1047.8 E) - Point	0.00	0.00	6,300.0	-1,644.6	1,096.0	1,372,168.67	3,174,212.81	40° 21' 11.947 N	104° 52' 29.672 W
TARGET CIRCLE 1593'FSL, 1470'FEL - survey misses target center by 56.9ft at 7180.6ft MD (6779.7 TVD, -1651.0 N, 1039.5 E) - Circle (radius 75.0)	0.00	0.00	6,781.0	-1,644.6	1,096.0	1,372,168.63	3,174,212.85	40° 21' 11.947 N	104° 52' 29.671 W
DRILLING BOX 800' X 800' 1327'FSL, 1327'FEL - survey misses target center by 384.3ft at 7608.8ft MD (7204.5 TVD, -1604.3 N, 1015.8 E) - Rectangle (sides W800.0 H800.0 D0.0)	0.00	0.00	7,268.0	-1,910.6	1,239.0	1,371,903.65	3,174,357.70	40° 21' 9.318 N	104° 52' 27.824 W

Checked By: _____ Approved By: _____ Date: _____