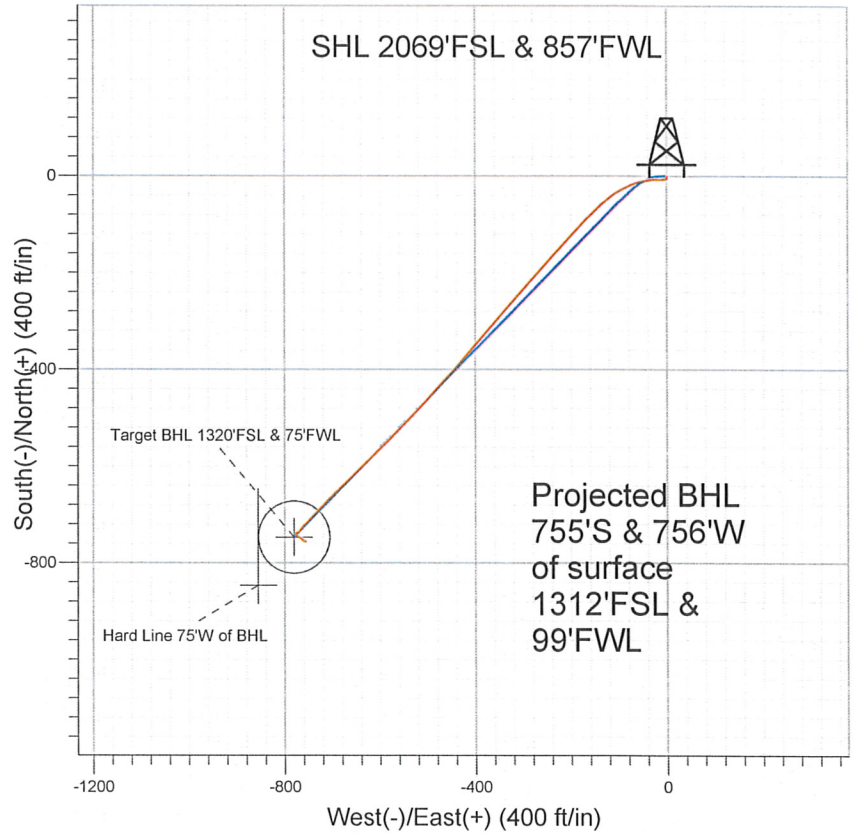
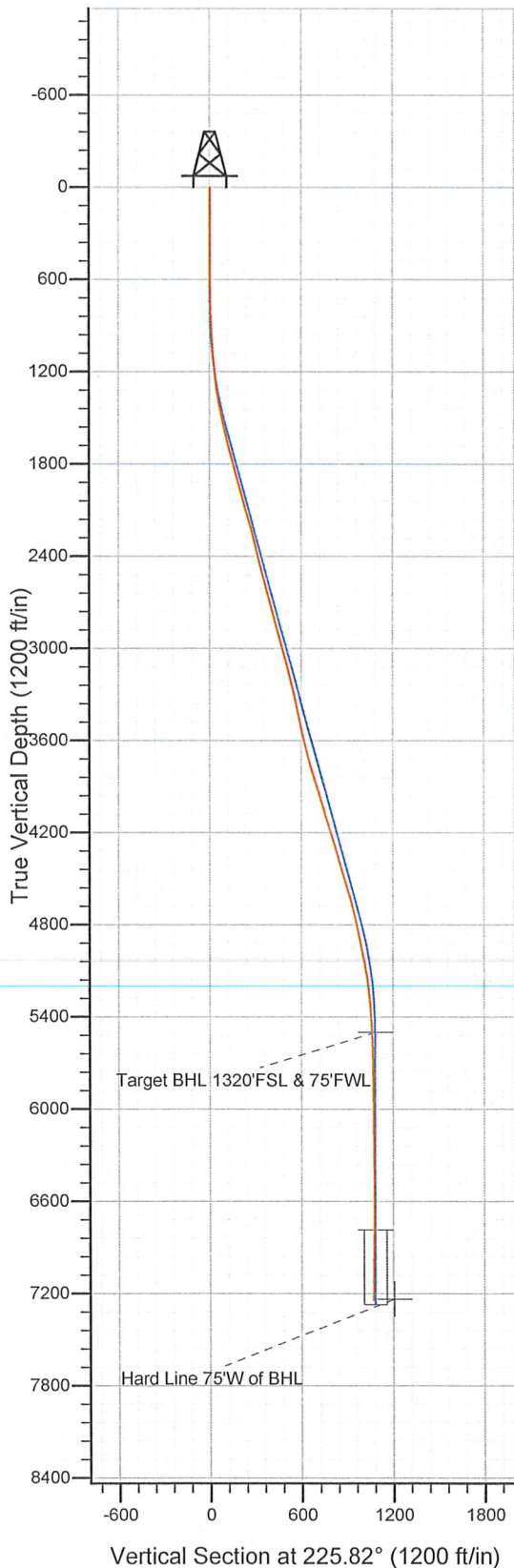


NOBLE ENERGY INC WELD COUNTY CO



LEGEND

- ✕ Ehrlich State PC F36-33D, Wellbore #1, Noble Ehrlich State PC F36-33D Plan #1 (8-10-10)
- Wellbore #1
- Survey #1

Final Survey Plot

Projected Final Survey -
7374'MD & 7241'TVD @ 1069' VS
3.1 deg Inc 122.2 deg AZ

Project: SEC.36-T5N-R65W
Site: Ehrlich State PC F36-33D Pad Sec.36-T5N-R65W
Well: Ehrlich State PC F36-33D
Plan: Wellbore #1



Directional

NOBLE ENERGY INC WELD COUNTY CO

SEC.36-T5N-R65W

Ehrlich State PC F36-33D Pad Sec.36-T5N-R65W

Ehrlich State PC F36-33D

Wellbore #1

Survey: Survey #1

Standard Survey Report

04 January, 2011



Company: NOBLE ENERGY INC WELD COUNTY CO
Project: SEC.36-T5N-R65W
Site: Ehrlich State PC F36-33D Pad
 Sec.36-T5N-R65W
Well: Ehrlich State PC F36-33D
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Site Ehrlich State PC F36-33D Pad
 Sec.36-T5N-R65W
TVD Reference: WELL @ 4741.0ft (Original Well Elev)
MD Reference: WELL @ 4741.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: Landmark

Project SEC.36-T5N-R65W, 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 Ehrlich State PC F36-33D Pad Sec.36-T5N-R65W

Site Position:	Northing: 1,373,069.39 ft	Latitude: 40° 21' 14.832 N
From: Lat/Long	Easting: 3,245,847.34 ft	Longitude: 104° 37' 4.296 W
Position Uncertainty: 0.0 ft	Slot Radius: "	Grid Convergence: 0.57 °

Well Ehrlich State PC F36-33D

Well Position	+N/-S 0.0 ft	Northing: 1,373,069.37 ft	Latitude: 40° 21' 14.832 N
	+E/-W 0.0 ft	Easting: 3,245,847.34 ft	Longitude: 104° 37' 4.296 W
Position Uncertainty	0.0 ft	Wellhead Elevation: ft	Ground Level: 4,728.0 ft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	12/7/2010	8.85	67.06	53,179

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	225.82

Survey Program Date 1/4/2011

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
647.0	7,374.0	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
647.0	0.60	166.80	647.0	-3.3	0.8	1.7	0.09	0.09	0.00
733.0	1.50	241.20	733.0	-4.3	-0.1	3.1	1.70	1.05	86.51
819.0	2.20	238.90	818.9	-5.7	-2.5	5.8	0.82	0.81	-2.67
904.0	3.30	268.00	903.8	-6.6	-6.4	9.2	2.05	1.29	34.24
990.0	4.70	273.60	989.6	-6.5	-12.3	13.4	1.69	1.63	6.51
1,076.0	6.30	271.00	1,075.2	-6.2	-20.6	19.1	1.88	1.86	-3.02
1,161.0	7.60	262.70	1,159.6	-6.8	-30.8	26.8	1.93	1.53	-9.76
1,246.0	8.90	260.40	1,243.7	-8.6	-42.9	36.7	1.58	1.53	-2.71
1,332.0	9.80	256.70	1,328.6	-11.4	-56.6	48.5	1.26	1.05	-4.30
1,418.0	11.40	248.00	1,413.1	-16.3	-71.6	62.7	2.63	1.86	-10.12

Company: NOBLE ENERGY INC WELD COUNTY CO
 Project: SEC.36-T5N-R65W
 Site: Ehrlich State PC F36-33D Pad
 Sec.36-T5N-R65W
 Well: Ehrlich State PC F36-33D
 Wellbore: Wellbore #1
 Design: Wellbore #1

Local Co-ordinate Reference: Site Ehrlich State PC F36-33D Pad
 Sec.36-T5N-R65W
 TVD Reference: WELL @ 4741.0ft (Original Well Elev)
 MD Reference: WELL @ 4741.0ft (Original Well Elev)
 North Reference: True
 Survey Calculation Method: Minimum Curvature
 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)
1,504.0	12.00	243.20	1,497.3	-23.5	-87.4	79.1	1.33	0.70	-5.58
1,588.0	13.10	236.80	1,579.3	-32.7	-103.2	96.7	2.11	1.31	-7.62
1,674.0	14.20	232.60	1,662.9	-44.4	-119.7	116.8	1.72	1.28	-4.88
1,759.0	15.40	227.40	1,745.1	-58.4	-136.3	138.4	2.10	1.41	-6.12
1,845.0	15.30	226.20	1,828.0	-73.9	-152.9	161.2	0.39	-0.12	-1.40
1,930.0	15.40	224.60	1,910.0	-89.7	-168.9	183.7	0.51	0.12	-1.88
2,016.0	14.90	223.04	1,993.0	-106.0	-184.5	206.1	0.75	-0.58	-1.81
2,101.0	15.30	221.90	2,075.1	-122.3	-199.4	228.2	0.59	0.47	-1.34
2,186.0	16.00	223.00	2,156.9	-139.2	-214.9	251.1	0.89	0.82	1.29
2,272.0	15.20	223.50	2,239.7	-156.1	-230.8	274.2	0.94	-0.93	0.58
2,358.0	14.00	221.80	2,323.0	-172.0	-245.5	295.9	1.48	-1.40	-1.98
2,443.0	14.20	220.60	2,405.4	-187.6	-259.1	316.5	0.42	0.24	-1.41
2,528.0	14.00	223.00	2,487.8	-203.0	-272.9	337.2	0.73	-0.24	2.82
2,656.0	15.00	221.30	2,611.8	-226.8	-294.4	369.1	0.85	0.78	-1.33
2,741.0	15.80	220.50	2,693.7	-243.8	-309.2	391.6	0.97	0.94	-0.94
2,827.0	15.60	220.80	2,776.5	-261.5	-324.3	414.8	0.25	-0.23	0.35
2,912.0	15.70	221.80	2,858.3	-278.7	-339.5	437.7	0.34	0.12	1.18
2,998.0	14.00	220.10	2,941.5	-295.4	-353.9	459.6	2.04	-1.98	-1.98
3,084.0	14.70	220.60	3,024.8	-311.6	-367.7	480.8	0.83	0.81	0.58
3,168.0	15.00	223.60	3,106.0	-327.6	-382.1	502.3	0.98	0.36	3.57
3,254.0	13.50	217.70	3,189.3	-343.6	-396.0	523.4	2.43	-1.74	-6.86
3,339.0	13.50	223.70	3,272.0	-358.6	-408.9	543.1	1.65	0.00	7.06
3,425.0	12.40	219.30	3,355.8	-373.0	-421.7	562.3	1.72	-1.28	-5.12
3,511.0	12.40	219.20	3,439.8	-387.3	-433.3	580.7	0.02	0.00	-0.12
3,596.0	12.90	221.40	3,522.7	-401.5	-445.4	599.2	0.82	0.59	2.59
3,682.0	12.70	223.40	3,606.6	-415.5	-458.2	618.2	0.57	-0.23	2.33
3,775.0	15.20	224.10	3,696.8	-431.7	-473.7	640.6	2.69	2.69	0.75
3,853.0	15.60	222.20	3,772.0	-446.8	-487.9	661.3	0.83	0.51	-2.44
3,939.0	17.40	221.50	3,854.5	-465.0	-504.2	685.7	2.11	2.09	-0.81
4,024.0	17.80	222.90	3,935.5	-484.1	-521.5	711.3	0.69	0.47	1.65
4,109.0	16.10	226.70	4,016.8	-501.7	-538.9	736.1	2.39	-2.00	4.47
4,195.0	16.00	225.20	4,099.5	-518.2	-556.0	759.9	0.50	-0.12	-1.74
4,281.0	18.30	223.10	4,181.7	-536.4	-573.6	785.2	2.77	2.67	-2.44
4,367.0	16.30	224.10	4,263.8	-555.0	-591.2	810.8	2.35	-2.33	1.16
4,453.0	16.00	228.40	4,346.4	-571.5	-608.5	834.7	1.43	-0.35	5.00
4,539.0	17.10	223.90	4,428.8	-588.5	-626.1	859.1	1.96	1.28	-5.23
4,624.0	17.80	225.10	4,509.9	-606.6	-644.0	884.6	0.93	0.82	1.41
4,710.0	15.60	226.30	4,592.3	-623.9	-661.7	909.3	2.59	-2.56	1.40
4,796.0	14.30	227.40	4,675.3	-639.1	-677.9	931.5	1.55	-1.51	1.28
4,881.0	13.50	225.80	4,757.9	-653.1	-692.7	951.9	1.04	-0.94	-1.88
4,967.0	12.20	224.50	4,841.7	-666.6	-706.3	971.0	1.55	-1.51	-1.51
5,052.0	10.70	220.20	4,925.0	-679.0	-717.6	987.9	2.03	-1.76	-5.06
5,137.0	11.40	224.50	5,008.4	-691.1	-728.6	1,004.1	1.27	0.82	5.06
5,223.0	9.90	225.30	5,093.0	-702.3	-739.8	1,020.0	1.75	-1.74	0.93
5,308.0	7.60	224.20	5,177.0	-711.5	-749.0	1,032.9	2.71	-2.71	-1.29
5,394.0	5.40	223.00	5,262.4	-718.5	-755.7	1,042.7	2.56	-2.56	-1.40
5,479.0	4.30	221.90	5,347.1	-723.8	-760.5	1,049.9	1.30	-1.29	-1.29
5,565.0	3.50	218.10	5,432.9	-728.3	-764.3	1,055.7	0.98	-0.93	-4.42
5,633.4	3.02	218.18	5,501.2	-731.3	-766.7	1,059.5	0.71	-0.71	0.11
Target BHL 1320'FSL & 75'FWL									
5,650.0	2.90	218.20	5,517.8	-732.0	-767.2	1,060.4	0.71	-0.71	0.14
5,736.0	2.10	222.10	5,603.7	-734.9	-769.6	1,064.1	0.95	-0.93	4.53

Company: NOBLE ENERGY INC WELD COUNTY CO
 Project: SEC.36-T5N-R65W
 Site: Ehrlich State PC F36-33D Pad
 Sec.36-T5N-R65W
 Well: Ehrlich State PC F36-33D
 Wellbore: Wellbore #1
 Design: Wellbore #1

Local Co-ordinate Reference: Site Ehrlich State PC F36-33D Pad
 Sec.36-T5N-R65W
 TVD Reference: WELL @ 4741.0ft (Original Well Elev)
 MD Reference: WELL @ 4741.0ft (Original Well Elev)
 North Reference: True
 Survey Calculation Method: Minimum Curvature
 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)
5,821.0	1.30	235.20	5,688.6	-736.6	-771.5	1,066.6	1.04	-0.94	15.41
5,907.0	0.80	266.70	5,774.6	-737.2	-772.9	1,068.0	0.87	-0.58	36.63
5,993.0	0.20	269.00	5,860.6	-737.2	-773.6	1,068.6	0.70	-0.70	2.67
6,078.0	0.50	252.70	5,945.6	-737.3	-774.1	1,069.0	0.37	0.35	-19.18
6,164.0	0.50	290.00	6,031.6	-737.3	-774.8	1,069.5	0.37	0.00	43.37
6,249.0	0.60	233.80	6,116.6	-737.5	-775.6	1,070.1	0.62	0.12	-66.12
6,335.0	0.70	212.40	6,202.6	-738.2	-776.2	1,071.1	0.30	0.12	-24.88
6,420.0	0.80	198.10	6,287.6	-739.2	-776.7	1,072.1	0.25	0.12	-16.82
6,506.0	1.60	179.10	6,373.6	-740.9	-776.8	1,073.5	1.03	0.93	-22.09
6,676.0	0.70	122.50	6,543.6	-743.9	-775.9	1,074.9	0.79	-0.53	-33.29
6,762.0	0.60	106.20	6,629.5	-744.3	-775.0	1,074.5	0.24	-0.12	-18.95
6,848.0	0.60	68.90	6,715.5	-744.2	-774.2	1,073.9	0.45	0.00	-43.37
6,918.3	1.07	108.19	6,785.9	-744.3	-773.2	1,073.2	1.02	0.67	55.85
Target Circle 1320'FSL & 75'FWL									
7,018.0	2.00	123.80	6,885.5	-745.6	-770.9	1,072.4	1.02	0.93	15.67
7,190.0	3.00	125.20	7,057.3	-749.8	-764.7	1,071.0	0.58	0.58	0.81
7,300.0	3.30	118.10	7,167.2	-753.0	-759.6	1,069.5	0.45	0.27	-6.45
7,329.0	3.10	122.20	7,196.1	-753.8	-758.2	1,069.1	1.05	-0.69	14.14
7,367.1	3.10	122.20	7,234.1	-754.9	-756.4	1,068.6	0.00	0.00	0.00
Hard Line 75'W of BHL									
7,374.0	3.10	122.20	7,241.1	-755.1	-756.1	1,068.5	0.00	0.00	0.00

Checked By: _____ Approved By: _____ Date: _____