

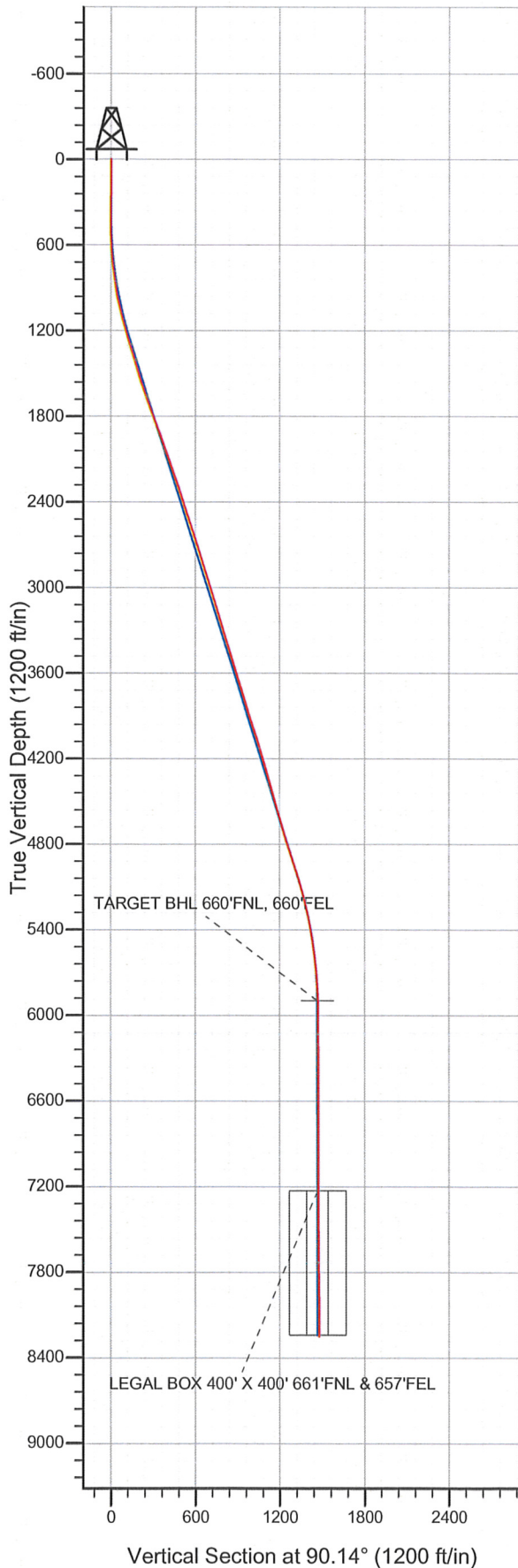
Well Name: **Stewardson USX WW33-01D**

Surface Location: Stewardson USX WW33-01D Pad Sec.33-T1N-R66W
North American Datum 1983 US State Plane 1983 Colorado Northern Zone

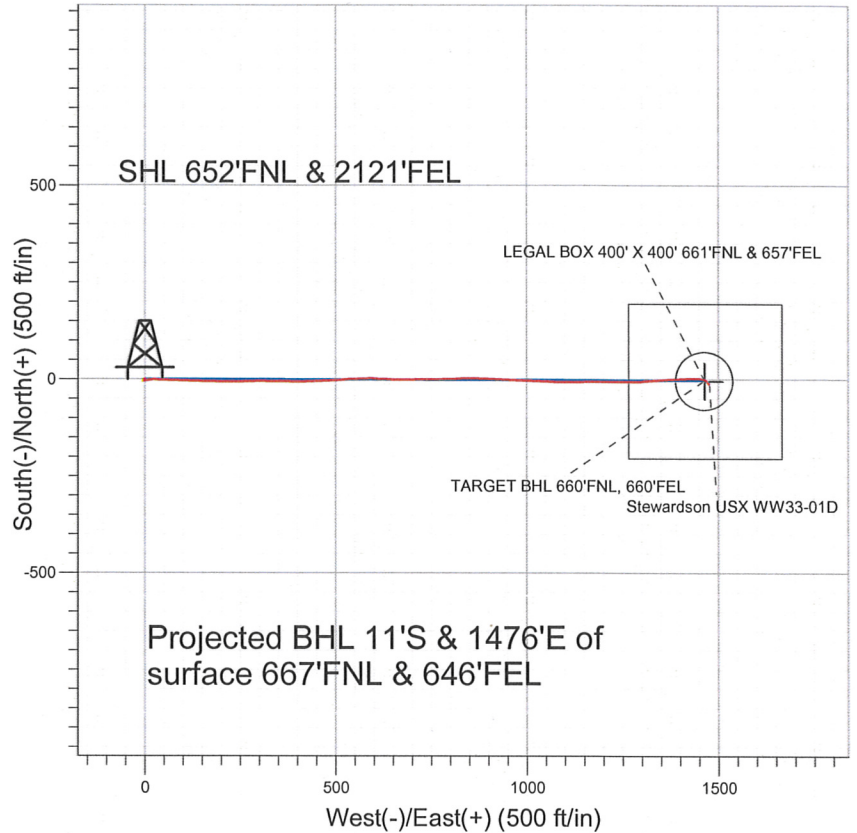
Ground Elevation: 5072.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1248458.79	3201593.82	40.013160	-104.780270	

Original Well Elev WELL @ 5085.0ft (Original Well Elev)



NOBLE ENERGY INC WELD COUNTY CO



LEGEND

- Stewardson USX WW33-01D, Wellbore #1, Noble Stewardson USX WW33-01D Plan #1 (6-15-
- Wellbore #1
- Survey #1

Final Survey Plot

Projected Final Survey -
8467'MD & 8251'TVD @ 1476'VS
0.3 deg Inc 156.0 deg AZ

Project: SEC.33-T1N-R66W
Site: Stewardson USX WW33-01D Pad Sec.33-T1N-R66W
Well: Stewardson USX WW33-01D
Plan: Wellbore #1



Directional

**NOBLE ENERGY INC WELD
COUNTY CO**

SEC.33-T1N-R66W

Stewardson USX WW33-01D Pad Sec.33-T1N-R66W

Stewardson USX WW33-01D

Wellbore #1

Survey: Survey #1

Standard Survey Report

06 September, 2011



Company: NOBLE ENERGY INC WELD COUNTY CO
Project: SEC.33-T1N-R66W
Site: Stewardson USX WW33-01D Pad
 Sec.33-T1N-R66W
Well: Stewardson USX WW33-01D
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well Stewardson USX WW33-01D
TVD Reference: WELL @ 5085.0ft (Original Well Elev)
MD Reference: WELL @ 5085.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: Landmark

Project	SEC.33-T1N-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	Stewardson USX WW33-01D Pad Sec.33-T1N-R66W				
Site Position:		Northing:	1,248,458.80 ft	Latitude:	40.013160
From:	Lat/Long	Easting:	3,201,593.82 ft	Longitude:	-104.780270
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.47 °

Well	Stewardson USX WW33-01D					
Well Position	+N/-S	0.0 ft	Northing:	1,248,458.79 ft	Latitude:	40.013160
	+E/-W	0.0 ft	Easting:	3,201,593.82 ft	Longitude:	-104.780270
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	5,072.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	6/22/2011	8.84	66.73	52,922

Design	Wellbore #1				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(ft)	(ft)	(ft)	(°)	
	0.0	0.0	0.0	90.14	

Survey Program	Date 9/6/2011				
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
259.0	8,467.0	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
259.0	0.90	221.80	259.0	-1.5	-1.4	-1.4	0.35	0.35	0.00
351.0	1.10	219.20	351.0	-2.7	-2.4	-2.4	0.22	0.22	-2.83
443.0	1.20	159.80	443.0	-4.3	-2.6	-2.6	1.24	0.11	-64.57
536.0	1.00	57.50	535.9	-4.8	-1.6	-1.6	1.85	-0.22	-110.00
628.0	4.00	81.80	627.9	-3.9	2.3	2.3	3.39	3.26	26.41
720.0	5.90	79.50	719.5	-2.6	10.1	10.1	2.08	2.07	-2.50
823.0	7.70	87.60	821.8	-1.3	22.2	22.2	1.98	1.75	7.86
904.0	9.20	92.50	901.9	-1.4	34.1	34.1	2.05	1.85	6.05
986.0	11.50	92.90	982.6	-2.1	48.8	48.8	2.81	2.80	0.49
1,068.0	13.60	91.90	1,062.6	-2.8	66.6	66.6	2.57	2.56	-1.22
1,149.0	15.60	91.40	1,141.0	-3.4	87.0	87.0	2.47	2.47	-0.62

Company: NOBLE ENERGY INC WELD COUNTY CO
Project: SEC.33-T1N-R66W
Site: Stewardson USX WW33-01D Pad
 Sec.33-T1N-R66W
Well: Stewardson USX WW33-01D
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well Stewardson USX WW33-01D
TVD Reference: WELL @ 5085.0ft (Original Well Elev)
MD Reference: WELL @ 5085.0ft (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)
1,231.0	17.40	91.10	1,219.6	-3.9	110.3	110.3	2.20	2.20	-0.37
1,313.0	17.40	91.50	1,297.8	-4.5	134.8	134.8	0.15	0.00	0.49
1,395.0	16.90	92.00	1,376.2	-5.2	159.0	159.0	0.64	-0.61	0.61
1,481.0	16.40	90.70	1,458.6	-5.8	183.6	183.6	0.72	-0.58	-1.51
1,563.0	17.40	91.80	1,537.0	-6.3	207.4	207.4	1.28	1.22	1.34
1,645.0	19.30	89.70	1,614.9	-6.6	233.2	233.2	2.45	2.32	-2.56
1,726.0	20.00	88.60	1,691.2	-6.2	260.5	260.5	0.98	0.86	-1.36
1,808.0	20.10	89.50	1,768.2	-5.8	288.6	288.6	0.40	0.12	1.10
1,890.0	20.30	90.20	1,845.1	-5.7	316.9	316.9	0.38	0.24	0.85
1,972.0	20.90	90.90	1,921.9	-6.0	345.7	345.8	0.79	0.73	0.85
2,053.0	20.50	91.10	1,997.7	-6.5	374.4	374.4	0.50	-0.49	0.25
2,135.0	19.60	89.30	2,074.7	-6.6	402.5	402.5	1.33	-1.10	-2.20
2,217.0	19.30	88.50	2,152.0	-6.1	429.8	429.8	0.49	-0.37	-0.98
2,298.0	18.50	88.10	2,228.7	-5.3	456.0	456.0	1.00	-0.99	-0.49
2,380.0	17.50	87.60	2,306.6	-4.3	481.3	481.3	1.23	-1.22	-0.61
2,462.0	19.00	84.60	2,384.5	-2.6	506.9	506.9	2.16	1.83	-3.66
2,544.0	18.40	86.20	2,462.2	-0.4	533.1	533.1	0.96	-0.73	1.95
2,625.0	18.60	88.80	2,539.0	0.7	558.8	558.8	1.05	0.25	3.21
2,707.0	18.00	88.50	2,616.9	1.3	584.5	584.5	0.74	-0.73	-0.37
2,789.0	17.40	93.60	2,695.0	0.8	609.4	609.4	2.03	-0.73	6.22
2,871.0	17.20	92.90	2,773.3	-0.5	633.8	633.8	0.35	-0.24	-0.85
2,952.0	17.30	91.10	2,850.6	-1.4	657.8	657.8	0.67	0.12	-2.22
3,034.0	16.90	89.50	2,929.0	-1.5	681.9	681.9	0.75	-0.49	-1.95
3,116.0	17.90	89.70	3,007.2	-1.3	706.4	706.4	1.22	1.22	0.24
3,197.0	17.40	89.30	3,084.4	-1.1	731.0	731.0	0.64	-0.62	-0.49
3,279.0	17.10	90.40	3,162.7	-1.1	755.3	755.3	0.54	-0.37	1.34
3,361.0	17.10	87.80	3,241.1	-0.7	779.4	779.4	0.93	0.00	-3.17
3,443.0	16.80	87.40	3,319.6	0.3	803.3	803.3	0.39	-0.37	-0.49
3,524.0	17.30	88.50	3,397.0	1.2	827.0	827.0	0.73	0.62	1.36
3,606.0	17.10	90.60	3,475.3	1.4	851.3	851.3	0.80	-0.24	2.56
3,688.0	16.90	90.20	3,553.8	1.2	875.2	875.2	0.28	-0.24	-0.49
3,769.0	17.90	92.00	3,631.0	0.7	899.4	899.4	1.40	1.23	2.22
3,851.0	17.70	92.50	3,709.1	-0.3	924.5	924.5	0.31	-0.24	0.61
3,933.0	16.90	94.40	3,787.4	-1.7	948.8	948.8	1.19	-0.98	2.32
4,015.0	17.20	91.30	3,865.8	-2.9	972.8	972.8	1.17	0.37	-3.78
4,096.0	18.60	92.70	3,942.9	-3.8	997.7	997.7	1.81	1.73	1.73
4,178.0	17.50	93.60	4,020.8	-5.2	1,023.1	1,023.1	1.38	-1.34	1.10
4,260.0	16.70	89.50	4,099.2	-5.9	1,047.2	1,047.2	1.76	-0.98	-5.00
4,341.0	16.00	94.10	4,177.0	-6.6	1,069.9	1,070.0	1.82	-0.86	5.68
4,423.0	16.50	91.40	4,255.7	-7.6	1,092.9	1,092.9	1.10	0.61	-3.29
4,505.0	16.90	88.50	4,334.2	-7.6	1,116.4	1,116.4	1.13	0.49	-3.54
4,587.0	16.00	88.00	4,412.9	-6.9	1,139.6	1,139.6	1.11	-1.10	-0.61
4,668.0	15.20	89.00	4,490.9	-6.3	1,161.4	1,161.4	1.04	-0.99	1.23
4,750.0	17.50	89.20	4,569.6	-6.0	1,184.5	1,184.5	2.81	2.80	0.24
4,832.0	15.90	92.50	4,648.1	-6.3	1,208.0	1,208.0	2.27	-1.95	4.02
4,914.0	16.30	92.00	4,726.9	-7.2	1,230.8	1,230.8	0.52	0.49	-0.61
4,995.0	17.40	89.50	4,804.4	-7.5	1,254.2	1,254.2	1.63	1.36	-3.09
5,077.0	17.00	88.60	4,882.7	-7.1	1,278.5	1,278.5	0.59	-0.49	-1.10
5,159.0	19.20	85.60	4,960.7	-5.8	1,303.9	1,303.9	2.91	2.68	-3.66
5,240.0	17.60	84.90	5,037.5	-3.6	1,329.4	1,329.4	1.99	-1.98	-0.86
5,322.0	15.90	87.10	5,116.1	-2.0	1,352.9	1,352.9	2.21	-2.07	2.68
5,404.0	13.20	84.40	5,195.4	-0.5	1,373.5	1,373.5	3.39	-3.29	-3.29
5,486.0	12.60	88.60	5,275.3	0.6	1,391.7	1,391.7	1.36	-0.73	5.12

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Survey

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5,567.0	11.10	87.40	5,354.6	1.2	1,408.4	1,408.4	1.88	-1.85	-1.48
5,649.0	9.50	89.70	5,435.3	1.6	1,423.0	1,423.0	2.01	-1.95	2.80
5,731.0	8.20	87.80	5,516.3	1.9	1,435.6	1,435.6	1.62	-1.59	-2.32
5,812.0	6.50	92.00	5,596.7	1.9	1,446.0	1,446.0	2.20	-2.10	5.19
5,894.0	5.40	96.90	5,678.2	1.3	1,454.5	1,454.4	1.48	-1.34	5.98
5,976.0	3.50	98.00	5,760.0	0.5	1,460.8	1,460.8	2.32	-2.32	1.34
6,058.0	2.20	110.10	5,841.9	-0.4	1,464.7	1,464.7	1.74	-1.59	14.76
6,116.1	1.38	123.09	5,899.9	-1.2	1,466.4	1,466.4	1.56	-1.41	22.36
TARGET BHL 660'FNL, 660'FEL									
6,139.0	1.10	133.30	5,922.8	-1.5	1,466.7	1,466.7	1.56	-1.23	44.57
6,221.0	0.50	140.50	6,004.8	-2.3	1,467.5	1,467.6	0.74	-0.73	8.78
6,384.0	0.50	97.80	6,167.8	-2.9	1,468.7	1,468.7	0.22	0.00	-26.20
6,548.0	0.10	215.00	6,331.8	-3.1	1,469.3	1,469.3	0.34	-0.24	71.46
6,711.0	0.40	166.00	6,494.8	-3.8	1,469.4	1,469.4	0.21	0.18	-30.06
6,875.0	0.50	134.50	6,658.8	-4.9	1,470.0	1,470.0	0.16	0.06	-19.21
7,038.0	0.20	124.50	6,821.8	-5.5	1,470.8	1,470.8	0.19	-0.18	-6.13
7,202.0	0.20	341.60	6,985.8	-5.4	1,470.9	1,470.9	0.23	0.00	-87.13
7,365.0	0.50	291.70	7,148.8	-4.9	1,470.2	1,470.2	0.25	0.18	-30.61
7,447.2	0.16	301.77	7,231.0	-4.7	1,469.7	1,469.8	0.42	-0.42	12.25
LEGAL BOX 400' X 400' 661'FNL & 657'FEL - TARGET CIRCLE 660'FNL & 660'FEL									
7,529.0	0.20	96.00	7,312.8	-4.6	1,469.8	1,469.8	0.42	0.05	188.59
7,692.0	1.30	149.60	7,475.8	-6.3	1,471.0	1,471.0	0.73	0.67	32.88
7,855.0	0.50	117.10	7,638.8	-8.2	1,472.6	1,472.6	0.56	-0.49	-19.94
8,019.0	0.50	105.00	7,802.7	-8.7	1,473.9	1,473.9	0.06	0.00	-7.38
8,183.0	0.50	157.40	7,966.7	-9.5	1,474.9	1,474.9	0.27	0.00	31.95
8,347.0	0.50	108.00	8,130.7	-10.4	1,475.8	1,475.9	0.25	0.00	-30.12
8,417.0	0.30	156.00	8,200.7	-10.7	1,476.2	1,476.2	0.53	-0.29	68.57
8,467.0	0.30	156.00	8,250.7	-10.9	1,476.3	1,476.3	0.00	0.00	0.00

Checked By: _____ Approved By: _____ Date: _____