



Final Survey Plot

Projected Final Survey -
7425'MD & 7325'TVD @ 959' VS
0.7 deg Inc 119.0 deg AZ

Project: SEC.3-T5N-R67W
Site: Shurview Pad Sec.3-T5N-R67W
Well: Shurview USX N03-17D
Plan: Shurview USX N03-17D



NOBLE ENERGY INC WELD COUNTY CO

SEC.3-T5N-R67W

Shurview Pad Sec.3-T5N-R67W

Shurview USX N03-17D

Shurview USX N03-17D

Design: Shurview USX N03-17D

Standard Survey Report

01 July, 2010



Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Shurview USX N03-17D
Project:	SEC.3-T5N-R67W	TVD Reference:	WELL @ 4888.0ft (Original Well Elev)
Site:	Shurview Pad Sec.3-T5N-R67W	MD Reference:	WELL @ 4888.0ft (Original Well Elev)
Well:	Shurview USX N03-17D	North Reference:	True
Wellbore:	Shurview USX N03-17D	Survey Calculation Method:	Minimum Curvature
Design:	Shurview USX N03-17D	Database:	EDM den0-adp01 Server Data

Project	SEC.3-T5N-R67W, 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	Shurview Pad Sec.3-T5N-R67W		
Site Position:		Northing:	1,400,547.82 ft
From:	Lat/Long	Easting:	3,174,112.64 ft
Position Uncertainty:	0.0 ft	Slot Radius:	"
		Latitude:	40° 25' 52.392 N
		Longitude:	104° 52' 28.380 W
		Grid Convergence:	0.40 °

Well	Shurview USX N03-17D		
Well Position	+N/-S	0.0 ft	Northing: 1,400,547.81 ft
	+E/-W	0.0 ft	Easting: 3,174,112.64 ft
Position Uncertainty	0.0 ft	Wellhead Elevation:	ft
		Latitude:	40° 25' 52.392 N
		Longitude:	104° 52' 28.380 W
		Ground Level:	4,875.0 ft

Wellbore	Shurview USX N03-17D		
Magnetics	Model Name	Sample Date	Declination (°)
	IGRF2010	5/5/2010	9.08
			Dip Angle (°) 67.10
			Field Strength (nT) 53,253

Design	Shurview USX N03-17D		
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 (°) 50.30

Survey Program	Date	7/1/2010		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
343.0	7,425.0	Survey #1 (Shurview USX N03-17D)	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
343.0	1.10	238.80	343.0	-1.7	-2.8	-3.3	0.32	0.32	0.00
428.0	0.80	253.80	428.0	-2.3	-4.1	-4.6	0.46	-0.35	17.65
513.0	1.50	345.60	513.0	-1.4	-4.9	-4.7	2.03	0.82	108.00
598.0	3.50	14.80	597.9	2.2	-4.5	-2.1	2.72	2.35	34.35
683.0	5.90	17.70	682.6	8.9	-2.6	3.7	2.84	2.82	3.41
768.0	8.20	17.70	766.9	18.8	0.6	12.5	2.71	2.71	0.00
853.0	10.20	18.50	850.8	31.7	4.8	24.0	2.36	2.35	0.94
939.0	12.00	21.50	935.2	47.3	10.5	38.3	2.20	2.09	3.49
1,024.0	12.60	24.40	1,018.3	63.9	17.6	54.4	1.01	0.71	3.41
1,109.0	12.30	31.90	1,101.3	80.1	26.2	71.3	1.93	-0.35	8.82
1,195.0	12.60	37.50	1,185.3	95.3	36.8	89.2	1.45	0.35	6.51
1,238.0	12.40	43.80	1,227.2	102.3	42.8	98.3	3.20	-0.47	14.65

Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Shurview USX N03-17D
Project:	SEC.3-T5N-R67W	TVD Reference:	WELL @ 4888.0ft (Original Well Elev)
Site:	Shurview Pad Sec.3-T5N-R67W	MD Reference:	WELL @ 4888.0ft (Original Well Elev)
Well:	Shurview USX N03-17D	North Reference:	True
Wellbore:	Shurview USX N03-17D	Survey Calculation Method:	Minimum Curvature
Design:	Shurview USX N03-17D	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)	
1,325.0	11.90	48.20	1,312.3	115.1	56.0	116.6	1.21	-0.57	5.06	
1,411.0	12.30	54.90	1,396.4	126.2	70.1	134.6	1.70	0.47	7.79	
1,496.0	12.40	52.50	1,479.4	137.0	84.7	152.7	0.62	0.12	-2.82	
1,582.0	12.50	51.70	1,563.4	148.4	99.4	171.2	0.23	0.12	-0.93	
1,667.0	11.60	53.20	1,646.5	159.2	113.4	189.0	1.12	-1.06	1.76	
1,753.0	12.30	54.30	1,730.7	169.7	127.8	206.7	0.86	0.81	1.28	
1,838.0	12.10	52.70	1,813.7	180.4	142.2	224.7	0.46	-0.24	-1.88	
1,924.0	12.00	55.40	1,897.8	191.0	156.8	242.6	0.67	-0.12	3.14	
2,009.0	12.20	51.10	1,981.0	201.6	171.0	260.4	1.09	0.24	-5.06	
2,095.0	11.40	55.00	2,065.1	212.2	185.1	277.9	1.31	-0.93	4.53	
2,180.0	11.30	54.40	2,148.5	221.9	198.7	294.6	0.18	-0.12	-0.71	
2,266.0	12.10	50.50	2,232.7	232.5	212.5	312.0	1.31	0.93	-4.53	
2,351.0	12.30	52.60	2,315.8	243.7	226.6	330.0	0.57	0.24	2.47	
2,437.0	11.90	51.10	2,399.9	254.8	240.8	348.0	0.59	-0.47	-1.74	
2,522.0	13.20	51.40	2,482.8	266.4	255.2	366.5	1.53	1.53	0.35	
2,608.0	13.30	49.20	2,566.5	278.9	270.3	386.2	0.60	0.12	-2.56	
2,693.0	11.70	50.00	2,649.5	290.9	284.3	404.6	1.89	-1.88	0.94	
2,779.0	12.00	49.50	2,733.7	302.3	297.8	422.2	0.37	0.35	-0.58	
2,864.0	12.60	50.70	2,816.7	313.9	311.7	440.3	0.77	0.71	1.41	
2,950.0	11.90	48.20	2,900.8	325.7	325.6	458.6	1.02	-0.81	-2.91	
3,035.0	11.10	47.50	2,984.1	337.1	338.1	475.5	0.96	-0.94	-0.82	
3,121.0	10.90	46.30	3,068.5	348.3	350.1	491.9	0.35	-0.23	-1.40	
3,206.0	10.40	47.20	3,152.0	359.1	361.6	507.6	0.62	-0.59	1.06	
3,292.0	10.60	49.80	3,236.6	369.5	373.3	523.2	0.60	0.23	3.02	
3,377.0	10.60	49.50	3,320.1	379.6	385.2	538.9	0.06	0.00	-0.35	
3,463.0	10.90	50.30	3,404.6	389.9	397.5	554.9	0.39	0.35	0.93	
3,548.0	10.90	53.60	3,488.1	399.8	410.1	571.0	0.73	0.00	3.88	
3,633.0	11.60	52.90	3,571.5	409.8	423.4	587.5	0.84	0.82	-0.82	
3,719.0	11.60	52.00	3,655.7	420.3	437.1	604.8	0.21	0.00	-1.05	
3,804.0	11.70	50.90	3,739.0	431.0	450.6	622.0	0.29	0.12	-1.29	
3,890.0	11.60	49.60	3,823.2	442.1	463.9	639.3	0.33	-0.12	-1.51	
3,975.0	10.50	50.10	3,906.6	452.6	476.4	655.6	1.30	-1.29	0.59	
4,061.0	10.10	54.20	3,991.2	462.0	488.5	671.0	0.97	-0.47	4.77	
4,146.0	11.00	52.60	4,074.8	471.3	501.0	686.5	1.11	1.06	-1.88	
4,232.0	11.60	50.20	4,159.1	481.8	514.1	703.4	0.89	0.70	-2.79	
4,317.0	11.80	48.70	4,242.4	493.0	527.2	720.6	0.43	0.24	-1.76	
4,403.0	12.90	52.80	4,326.4	504.7	541.5	739.0	1.64	1.28	4.77	
4,488.0	13.20	52.90	4,409.2	516.2	556.8	758.1	0.35	0.35	0.12	
4,574.0	12.50	56.30	4,493.0	527.3	572.4	777.2	1.20	-0.81	3.95	
4,659.0	13.20	53.60	4,575.9	538.2	587.8	796.0	1.08	0.82	-3.18	
4,745.0	13.70	54.30	4,659.5	550.0	604.0	816.0	0.61	0.58	0.81	
4,830.0	13.90	53.30	4,742.1	561.9	620.3	836.2	0.37	0.24	-1.18	
4,916.0	13.80	52.70	4,825.6	574.3	636.8	856.8	0.20	-0.12	-0.70	
5,001.0	13.10	54.40	4,908.2	586.1	652.7	876.5	0.95	-0.82	2.00	
5,087.0	12.20	57.10	4,992.2	596.7	668.2	895.3	1.25	-1.05	3.14	
5,172.0	11.50	59.50	5,075.3	605.9	683.1	912.6	1.01	-0.82	2.82	
5,258.0	9.50	62.00	5,159.9	613.6	696.7	928.0	2.38	-2.33	2.91	
5,343.0	7.60	62.20	5,244.0	619.5	707.9	940.4	2.24	-2.24	0.24	
5,429.0	5.50	58.30	5,329.4	624.3	716.4	950.0	2.49	-2.44	-4.53	
5,514.0	4.30	67.00	5,414.1	627.7	722.8	957.1	1.66	-1.41	10.24	
5,600.0	2.50	66.60	5,499.9	629.7	727.5	962.0	2.09	-2.09	-0.47	
5,685.0	1.20	81.50	5,584.9	630.5	730.1	964.5	1.62	-1.53	17.53	
5,771.0	0.50	188.80	5,670.9	630.3	730.9	965.0	1.66	-0.81	124.77	
5,900.1	0.50	174.65	5,799.9	629.2	730.9	964.3	0.10	0.00	-10.96	

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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)
TARGET BHL 1525'FNL, 1320'FEL									
5,942.0	0.50	170.10	5,841.9	628.8	731.0	964.1	0.10	0.01	-10.86
6,113.0	0.70	189.60	6,012.9	627.1	730.9	962.9	0.17	0.12	11.40
6,284.0	0.90	193.70	6,183.8	624.7	730.4	961.0	0.12	0.12	2.40
6,454.0	0.80	174.40	6,353.8	622.3	730.2	959.3	0.18	-0.06	-11.35
6,625.0	1.10	150.70	6,524.8	619.6	731.1	958.3	0.29	0.18	-13.86
6,796.0	0.80	137.70	6,695.8	617.3	732.7	958.1	0.21	-0.18	-7.60
6,918.3	0.66	134.96	6,818.1	616.2	733.8	958.2	0.12	-0.12	-2.24
LEGAL WINDOW 800' X 800' 1425'FNL, 1417'FEL									
6,951.0	0.62	134.01	6,850.8	615.9	734.1	958.2	0.12	-0.12	-2.90
TARGET CIRCLE 1525'FNL, 1320'FEL									
6,967.0	0.60	133.50	6,866.8	615.8	734.2	958.3	0.12	-0.12	-3.17
7,138.0	0.50	129.00	7,037.8	614.7	735.4	958.5	0.06	-0.06	-2.63
7,309.0	0.80	119.70	7,208.7	613.7	737.0	959.1	0.19	0.18	-5.44
7,377.0	0.70	119.00	7,276.7	613.2	737.8	959.4	0.15	-0.15	-1.03
7,425.0	0.70	119.00	7,324.7	613.0	738.3	959.6	0.00	0.00	0.00

Wellbore Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
TARGET BHL 1525'F	0.00	0.00	5,800.0	636.9	727.3	1,401,189.84	3,174,835.42	40° 25' 58.686 N	104° 52' 18.975 W
- actual wellpath misses target center by 8.5ft at 5900.1ft MD (5799.9 TVD, 629.2 N, 730.9 E)									
- Point									
LEGAL WINDOW 800	0.00	0.00	6,820.0	736.9	630.3	1,401,289.11	3,174,737.70	40° 25' 59.674 N	104° 52' 20.229 W
- actual wellpath misses target center by 159.0ft at 6918.5ft MD (6818.2 TVD, 616.2 N, 733.8 E)									
- Rectangle (sides W800.0 H800.0 D944.0)									
TARGET CIRCLE 152	0.00	0.00	6,851.0	636.9	727.3	1,401,189.80	3,174,835.40	40° 25' 58.685 N	104° 52' 18.975 W
- actual wellpath misses target center by 22.0ft at 6951.0ft MD (6850.8 TVD, 615.9 N, 734.1 E)									
- Circle (radius 75.0)									

Checked By: _____ Approved By: _____ Date: _____