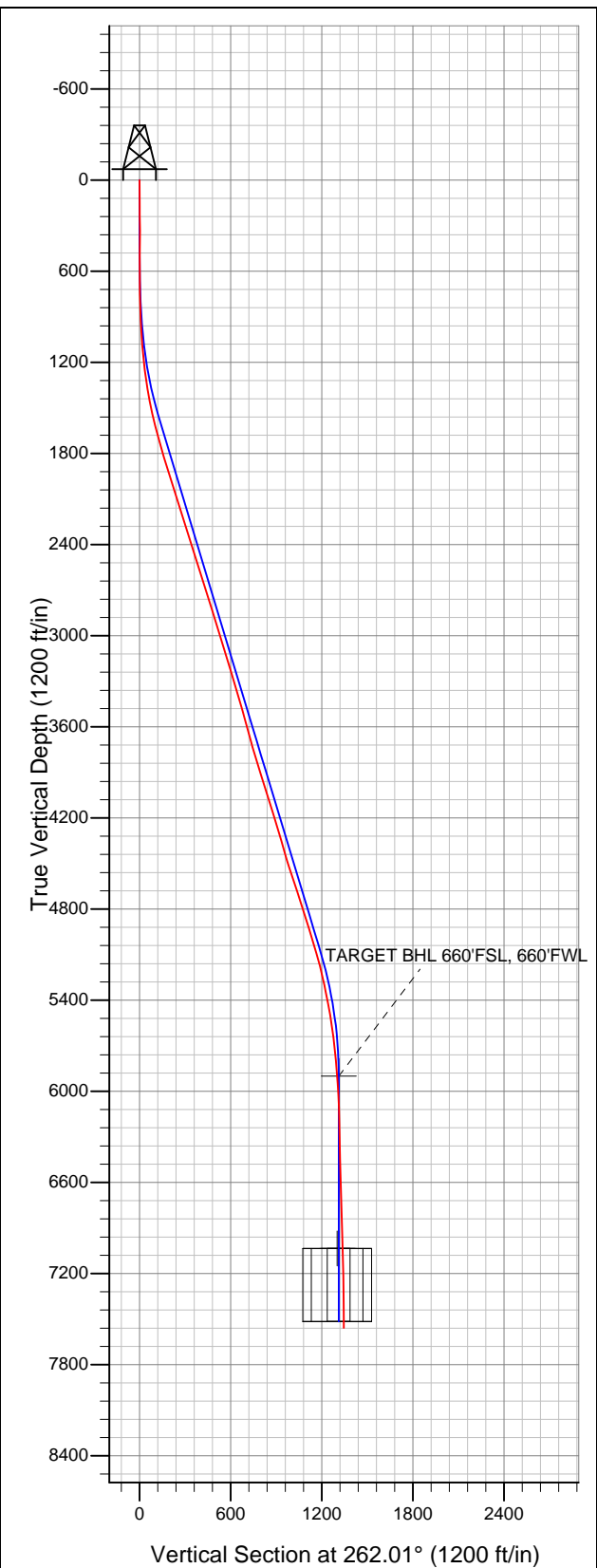




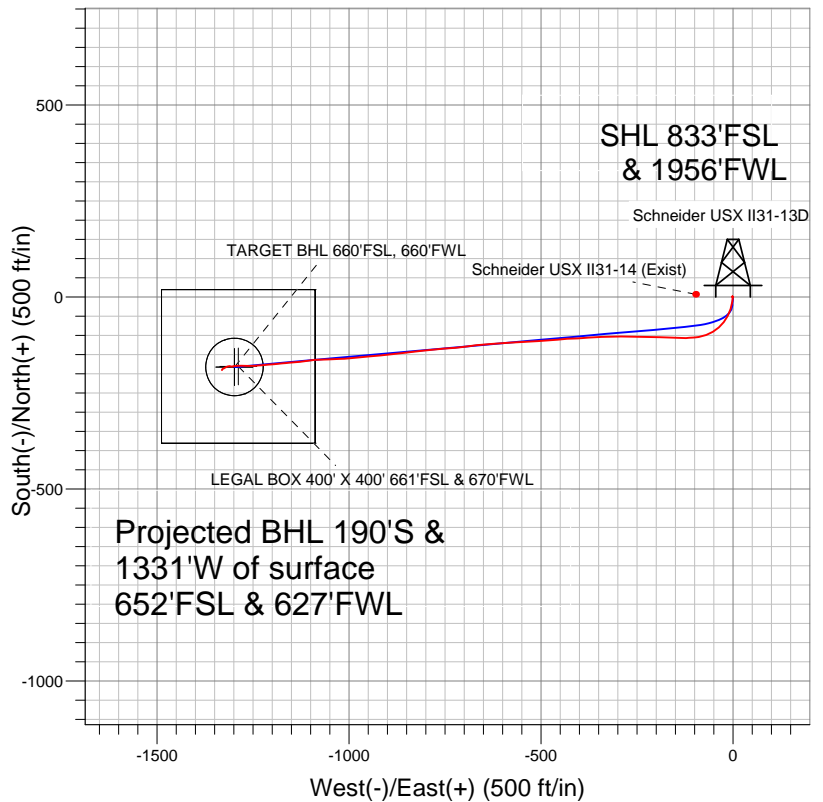
Well Name: Schneider USX II31-13D

Surface Location: Schneider USX II31-13D Pad Sec.31-T7N-R66W
North American Datum 1983 US State Plane 1983 Colorado Northern Zone
Ground Elevation: 4906.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1435107.11	3187602.10	40.525810	-104.825150	
Original Well Elev WELL @ 4919.0ft (Original Well Elev)						



NOBLE ENERGY INC WELD COUNTY CO



LEGEND

- △ Schneider USX II31-14 (Exist), Wellbore #1, Design #1 V0
- + Schneider USX II31-13D, Wellbore #1, Noble Schneider USX II31-13D Plan #1 (8-10-11) V0
- Wellbore #1

Final Survey Plot

Projected Final Survey -
7745'MD & 7558'TVD @ 1345'VS
0.4 deg Inc 200.0 deg AZ

Project: SEC.31-T7N-R66W
Site: Schneider USX II31-13D Pad Sec.31-T7N-R66W
Well: Schneider USX II31-13D
Plan: Wellbore #1



NOBLE ENERGY INC WELD COUNTY CO

SEC.31-T7N-R66W

Schneider USX II31-13D Pad Sec.31-T7N-R66W

Schneider USX II31-13D

Wellbore #1

Design: Wellbore #1

Standard Survey Report

20 December, 2011



Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Schneider USX II31-13D
Project:	SEC.31-T7N-R66W	TVD Reference:	WELL @ 4919.0ft (Original Well Elev)
Site:	Schneider USX II31-13D Pad Sec.31-T7N-R66W	MD Reference:	WELL @ 4919.0ft (Original Well Elev)
Well:	Schneider USX II31-13D	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Project	SEC.31-T7N-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		Schneider USX II31-13D Pad Sec.31-T7N-R66W			
Site Position:		Northing:	1,435,107.12 ft	Latitude:	40.525810
From:	Lat/Long	Easting:	3,187,602.10 ft	Longitude:	-104.825150
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.44 °

Well	Schneider USX II31-13D					
Well Position	+N-S	0.0 ft	Northing:	1,435,107.11 ft	Latitude:	40.525810
	+E-W	0.0 ft	Easting:	3,187,602.10 ft	Longitude:	-104.825150
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,906.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	8/10/2011	8.89	67.14	53,174

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	262.01	

Survey Program	Date	12/19/2011			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
169.0	7,745.0	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	
169.0	0.40	216.70	169.0	-0.5	-0.4	0.4	0.24	0.24	0.00	
229.0	0.50	260.50	229.0	-0.7	-0.7	0.8	0.58	0.17	73.00	
334.0	0.70	319.40	334.0	-0.3	-1.6	1.6	0.59	0.19	56.10	
419.0	0.70	15.30	419.0	0.6	-1.8	1.7	0.77	0.00	65.76	
504.0	0.40	23.00	504.0	1.4	-1.6	1.3	0.36	-0.35	9.06	
589.0	0.90	159.50	589.0	1.0	-1.2	1.0	1.44	0.59	160.59	
674.0	2.60	174.10	673.9	-1.5	-0.8	1.0	2.05	2.00	17.18	
759.0	4.60	184.40	758.8	-6.8	-0.8	1.8	2.46	2.35	12.12	
830.0	6.40	195.20	829.4	-13.5	-2.1	3.9	2.91	2.54	15.21	
904.0	7.40	195.90	902.9	-22.0	-4.5	7.5	1.36	1.35	0.95	
989.0	7.60	195.40	987.2	-32.7	-7.5	11.9	0.25	0.24	-0.59	

Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Schneider USX II31-13D
Project:	SEC.31-T7N-R66W	TVD Reference:	WELL @ 4919.0ft (Original Well Elev)
Site:	Schneider USX II31-13D Pad Sec.31-T7N-R66W	MD Reference:	WELL @ 4919.0ft (Original Well Elev)
Well:	Schneider USX II31-13D	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)
1,075.0	7.90	202.60	1,072.4	-43.7	-11.3	17.2	1.18	0.35	8.37
1,160.0	8.70	210.70	1,156.5	-54.6	-16.8	24.2	1.66	0.94	9.53
1,246.0	9.10	215.40	1,241.5	-65.7	-24.0	32.9	0.96	0.47	5.47
1,331.0	10.00	226.50	1,325.3	-76.3	-33.3	43.6	2.41	1.06	13.06
1,417.0	11.50	236.10	1,409.8	-86.2	-45.8	57.4	2.71	1.74	11.16
1,502.0	12.80	245.50	1,492.9	-94.8	-61.4	74.0	2.78	1.53	11.06
1,588.0	13.50	254.90	1,576.6	-101.4	-79.8	93.1	2.61	0.81	10.93
1,673.0	14.70	262.90	1,659.1	-105.3	-100.1	113.7	2.69	1.41	9.41
1,759.0	15.50	270.10	1,742.1	-106.6	-122.4	136.0	2.37	0.93	8.37
1,844.0	16.30	271.10	1,823.9	-106.4	-145.7	159.0	0.99	0.94	1.18
1,930.0	17.80	271.00	1,906.1	-105.9	-170.9	183.9	1.74	1.74	-0.12
2,015.0	17.90	274.10	1,987.0	-104.8	-196.9	209.6	1.12	0.12	3.65
2,101.0	18.10	272.10	2,068.8	-103.3	-223.4	235.6	0.76	0.23	-2.33
2,187.0	17.80	270.20	2,150.6	-102.8	-249.9	261.8	0.76	-0.35	-2.21
2,272.0	18.60	269.40	2,231.4	-102.9	-276.5	288.1	0.99	0.94	-0.94
2,358.0	17.80	268.30	2,313.1	-103.4	-303.3	314.8	1.01	-0.93	-1.28
2,443.0	17.30	270.20	2,394.1	-103.8	-329.0	340.2	0.89	-0.59	2.24
2,529.0	17.10	267.50	2,476.3	-104.3	-354.4	365.4	0.96	-0.23	-3.14
2,614.0	18.20	265.20	2,557.3	-105.9	-380.1	391.1	1.53	1.29	-2.71
2,700.0	17.00	267.30	2,639.2	-107.7	-406.0	417.1	1.58	-1.40	2.44
2,785.0	17.60	268.40	2,720.4	-108.6	-431.3	442.2	0.80	0.71	1.29
2,871.0	18.50	262.80	2,802.2	-110.7	-457.8	468.8	2.27	1.05	-6.51
2,956.0	16.70	265.80	2,883.2	-113.3	-483.4	494.4	2.37	-2.12	3.53
3,042.0	16.20	265.20	2,965.7	-115.2	-507.7	518.7	0.61	-0.58	-0.70
3,127.0	16.40	268.00	3,047.2	-116.6	-531.5	542.5	0.95	0.24	3.29
3,213.0	17.80	268.00	3,129.4	-117.5	-556.7	567.7	1.63	1.63	0.00
3,298.0	17.50	265.90	3,210.4	-118.8	-582.5	593.3	0.83	-0.35	-2.47
3,384.0	17.20	265.10	3,292.5	-120.8	-608.0	618.9	0.45	-0.35	-0.93
3,469.0	16.00	267.00	3,374.0	-122.5	-632.3	643.2	1.55	-1.41	2.24
3,555.0	16.40	265.20	3,456.6	-124.2	-656.2	667.1	0.75	0.47	-2.09
3,640.0	15.30	262.40	3,538.3	-126.6	-679.3	690.3	1.58	-1.29	-3.29
3,726.0	15.50	261.50	3,621.2	-129.8	-701.9	713.1	0.36	0.23	-1.05
3,811.0	14.90	265.10	3,703.3	-132.5	-724.0	735.4	1.32	-0.71	4.24
3,897.0	16.90	266.20	3,786.0	-134.2	-747.5	758.9	2.35	2.33	1.28
3,982.0	17.50	265.10	3,867.2	-136.1	-772.6	784.0	0.80	0.71	-1.29
4,068.0	17.50	264.30	3,949.2	-138.5	-798.3	809.8	0.28	0.00	-0.93
4,153.0	17.30	262.40	4,030.3	-141.5	-823.6	835.2	0.71	-0.24	-2.24
4,239.0	17.80	262.10	4,112.3	-145.0	-849.3	861.2	0.59	0.58	-0.35
4,325.0	16.40	265.10	4,194.5	-147.8	-874.4	886.4	1.92	-1.63	3.49
4,410.0	16.30	265.50	4,276.1	-149.8	-898.2	910.3	0.18	-0.12	0.47
4,496.0	16.30	264.30	4,358.6	-151.9	-922.3	934.4	0.39	0.00	-1.40
4,581.0	16.50	264.40	4,440.2	-154.3	-946.1	958.4	0.24	0.24	0.12
4,667.0	17.80	264.10	4,522.3	-156.8	-971.4	983.7	1.52	1.51	-0.35
4,752.0	19.20	264.50	4,602.9	-159.5	-998.2	1,010.7	1.65	1.65	0.47
4,838.0	18.30	267.50	4,684.4	-161.4	-1,025.8	1,038.3	1.53	-1.05	3.49
4,923.0	17.60	268.10	4,765.2	-162.5	-1,052.0	1,064.3	0.85	-0.82	0.71
5,009.0	16.90	268.00	4,847.4	-163.3	-1,077.4	1,089.7	0.81	-0.81	-0.12
5,094.0	16.70	262.20	4,928.7	-165.4	-1,101.9	1,114.2	1.99	-0.24	-6.82
5,180.0	17.50	263.20	5,010.9	-168.6	-1,127.0	1,139.5	0.99	0.93	1.16
5,265.0	17.10	265.80	5,092.1	-171.0	-1,152.1	1,164.7	1.02	-0.47	3.06
5,351.0	13.80	264.60	5,175.0	-172.9	-1,175.0	1,187.6	3.85	-3.84	-1.40
5,436.0	12.80	264.40	5,257.7	-174.8	-1,194.4	1,207.1	1.18	-1.18	-0.24
5,522.0	11.60	265.10	5,341.7	-176.5	-1,212.5	1,225.3	1.41	-1.40	0.81

Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Schneider USX II31-13D
Project:	SEC.31-T7N-R66W	TVD Reference:	WELL @ 4919.0ft (Original Well Elev)
Site:	Schneider USX II31-13D Pad Sec.31-T7N-R66W	MD Reference:	WELL @ 4919.0ft (Original Well Elev)
Well:	Schneider USX II31-13D	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)
5,607.0	10.60	265.00	5,425.2	-177.9	-1,228.8	1,241.6	1.18	-1.18	-0.12
5,693.0	9.30	267.10	5,509.9	-178.9	-1,243.6	1,256.4	1.57	-1.51	2.44
5,778.0	7.80	268.80	5,593.9	-179.4	-1,256.3	1,269.0	1.79	-1.76	2.00
5,864.0	6.90	272.50	5,679.2	-179.3	-1,267.3	1,279.9	1.18	-1.05	4.30
5,949.0	5.70	271.30	5,763.7	-179.0	-1,276.6	1,289.1	1.42	-1.41	-1.41
6,035.0	4.90	267.10	5,849.3	-179.1	-1,284.5	1,296.9	1.03	-0.93	-4.88
6,086.6	4.29	267.71	5,900.8	-179.3	-1,288.6	1,301.1	1.18	-1.18	1.18
TARGET BHL 660'FSL, 660'FWL									
6,120.0	3.90	268.20	5,934.1	-179.3	-1,291.0	1,303.4	1.18	-1.18	1.48
6,206.0	2.80	266.80	6,019.9	-179.6	-1,296.1	1,308.4	1.28	-1.28	-1.63
6,291.0	2.50	257.90	6,104.8	-180.1	-1,299.9	1,312.3	0.60	-0.35	-10.47
6,377.0	1.60	250.10	6,190.8	-180.9	-1,302.9	1,315.4	1.09	-1.05	-9.07
6,463.0	1.20	258.20	6,276.8	-181.5	-1,304.9	1,317.5	0.52	-0.47	9.42
6,548.0	1.00	280.40	6,361.7	-181.5	-1,306.5	1,319.1	0.55	-0.24	26.12
6,634.0	1.10	297.10	6,447.7	-181.0	-1,308.0	1,320.4	0.37	0.12	19.42
6,719.0	1.00	307.40	6,532.7	-180.2	-1,309.3	1,321.6	0.25	-0.12	12.12
6,805.0	1.40	264.90	6,618.7	-179.8	-1,310.9	1,323.2	1.10	0.47	-49.42
6,890.0	2.10	257.30	6,703.7	-180.2	-1,313.5	1,325.8	0.87	0.82	-8.94
6,976.0	2.30	250.90	6,789.6	-181.1	-1,316.7	1,329.1	0.37	0.23	-7.44
7,061.0	2.10	241.20	6,874.5	-182.5	-1,319.6	1,332.2	0.50	-0.24	-11.41
7,147.0	1.90	241.80	6,960.5	-183.9	-1,322.3	1,335.0	0.23	-0.23	0.70
7,220.5	1.90	241.28	7,033.9	-185.1	-1,324.4	1,337.3	0.02	0.00	-0.71
LEGAL BOX 400' X 400' 661'FSL & 670'FWL									
7,220.8	1.90	241.28	7,034.2	-185.1	-1,324.4	1,337.3	0.00	0.00	0.00
TARGET CIRCLE 660'FSL & 660'FWL									
7,232.0	1.90	241.20	7,045.4	-185.2	-1,324.8	1,337.6	0.02	0.00	-0.73
7,318.0	1.50	244.20	7,131.4	-186.4	-1,327.0	1,340.0	0.48	-0.47	3.49
7,403.0	1.10	233.60	7,216.4	-187.4	-1,328.7	1,341.8	0.55	-0.47	-12.47
7,489.0	0.70	224.00	7,302.4	-188.2	-1,329.7	1,343.0	0.50	-0.47	-11.16
7,574.0	0.60	220.80	7,387.4	-189.0	-1,330.4	1,343.7	0.13	-0.12	-3.76
7,702.0	0.40	201.40	7,515.3	-189.9	-1,331.0	1,344.4	0.20	-0.16	-15.16
7,745.0	0.40	200.00	7,558.3	-190.2	-1,331.1	1,344.6	0.02	0.00	-3.26

Checked By: _____	Approved By: _____	Date: _____
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