

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	700.0	0.00	0.00	700.0	0.0	0.0	0.00	0.00	0.0	
3	950.0	5.00	340.00	949.7	10.2	-3.7	2.00	340.00	8.1	
4	1514.9	14.41	296.67	1506.4	65.1	-75.2	2.00	-60.68	97.0	
5	4385.8	14.41	296.67	4287.0	385.8	-713.7	0.00	0.00	811.3	
6	65106.4	0.00	0.51	5000.0	426.3	-794.3	2.00	180.00	901.5	Target BHL 2565'FSL & 75'FEL
7	77383.4	0.00	0.51	7277.0	426.3	-794.3	0.00	0.51	901.5	



NOBLE ENERGY INC WELD COUNTY CO

SEC.31-T5N-R65W

Sylvester F31-20D Pad Sec.31-T5N-R65W

Sylvester F31-32D

Wellbore #1

Plan: Noble Sylvester F31-32D Plan #1 (7-13-10)

Standard Planning Report

15 July, 2010

Database: Landmark
Company: NOBLE ENERGY INC WELD COUNTY CO
Project: SEC.31-T5N-R65W
Site: Sylvester F31-20D Pad Sec.31-T5N-R65W
Well: Sylvester F31-32D
Wellbore: Wellbore #1
Design: Noble Sylvester F31-32D Plan #1 (7-13-10)

Local Co-ordinate Reference: Well Sylvester F31-32D
TVD Reference: WELL @ 4672.0ft (Original Well Elev)
MD Reference: WELL @ 4672.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

Project	SEC.31-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	Sylvester F31-20D Pad Sec.31-T5N-R65W				
Site Position:		Northing:	1,372,903.53ft	Latitude:	40° 21' 15.660 N
From:	Lat/Long	Easting:	3,219,321.22ft	Longitude:	104° 42' 46.944 W
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.51 °

Well	Sylvester F31-32D					
Well Position	+N/-S	-7.3 ft	Northing:	1,372,896.03 ft	Latitude:	40° 21' 15.588 N
	+E/-W	-22.3 ft	Easting:	3,219,298.99 ft	Longitude:	104° 42' 47.232 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,659.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	12/31/2009	8.99	67.08	53,287

Design	Noble Sylvester F31-32D Plan #1 (7-13-10)			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	298.22

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
700.0	0.00	0.00	700.0	0.0	0.0	0.00	0.00	0.00	0.00	
950.0	5.00	340.00	949.7	10.2	-3.7	2.00	2.00	0.00	340.00	
1,514.9	14.41	296.67	1,506.4	65.1	-75.2	2.00	1.67	-7.67	-60.68	
4,385.8	14.41	296.67	4,287.0	385.8	-713.7	0.00	0.00	0.00	0.00	
5,106.4	0.00	0.51	5,000.0	426.3	-794.3	2.00	-2.00	0.00	180.00	Target BHL 2565'F!
7,383.4	0.00	0.51	7,277.0	426.3	-794.3	0.00	0.00	0.00	0.51	

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MD Reference: WELL @ 4672.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

Planned 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
40.0	0.00	0.00	40.0	0.0	0.0	0.0	0.00	0.00	0.00
80.0	0.00	0.00	80.0	0.0	0.0	0.0	0.00	0.00	0.00
120.0	0.00	0.00	120.0	0.0	0.0	0.0	0.00	0.00	0.00
160.0	0.00	0.00	160.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
240.0	0.00	0.00	240.0	0.0	0.0	0.0	0.00	0.00	0.00
280.0	0.00	0.00	280.0	0.0	0.0	0.0	0.00	0.00	0.00
320.0	0.00	0.00	320.0	0.0	0.0	0.0	0.00	0.00	0.00
360.0	0.00	0.00	360.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
440.0	0.00	0.00	440.0	0.0	0.0	0.0	0.00	0.00	0.00
480.0	0.00	0.00	480.0	0.0	0.0	0.0	0.00	0.00	0.00
520.0	0.00	0.00	520.0	0.0	0.0	0.0	0.00	0.00	0.00
560.0	0.00	0.00	560.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
8 5/8"									
640.0	0.00	0.00	640.0	0.0	0.0	0.0	0.00	0.00	0.00
680.0	0.00	0.00	680.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
720.0	0.40	340.00	720.0	0.1	0.0	0.1	2.00	2.00	0.00
760.0	1.20	340.00	760.0	0.6	-0.2	0.5	2.00	2.00	0.00
800.0	2.00	340.00	800.0	1.6	-0.6	1.3	2.00	2.00	0.00
840.0	2.80	340.00	839.9	3.2	-1.2	2.6	2.00	2.00	0.00
880.0	3.60	340.00	879.9	5.3	-1.9	4.2	2.00	2.00	0.00
920.0	4.40	340.00	919.8	7.9	-2.9	6.3	2.00	2.00	0.00
950.0	5.00	340.00	949.7	10.2	-3.7	8.1	2.00	2.00	0.00
960.0	5.10	338.04	959.6	11.1	-4.0	8.8	2.00	1.01	-19.62
1,000.0	5.56	330.96	999.5	14.4	-5.6	11.8	2.00	1.14	-17.69
1,040.0	6.09	325.03	1,039.3	17.8	-7.8	15.3	2.00	1.32	-14.82
1,080.0	6.67	320.09	1,079.0	21.4	-10.5	19.4	2.00	1.46	-12.36
1,120.0	7.29	315.96	1,118.7	25.0	-13.8	23.9	2.00	1.56	-10.32
1,160.0	7.95	312.50	1,158.4	28.7	-17.6	29.0	2.00	1.64	-8.66
1,200.0	8.63	309.57	1,198.0	32.4	-21.9	34.7	2.00	1.70	-7.33
1,240.0	9.33	307.07	1,237.5	36.3	-26.8	40.8	2.00	1.75	-6.25
1,280.0	10.04	304.91	1,276.9	40.3	-32.3	47.5	2.00	1.78	-5.38
1,320.0	10.77	303.05	1,316.2	44.3	-38.3	54.7	2.00	1.81	-4.67
1,360.0	11.50	301.41	1,355.5	48.4	-44.8	62.4	2.00	1.84	-4.08
1,400.0	12.24	299.98	1,394.6	52.6	-51.9	70.6	2.00	1.86	-3.59
1,440.0	12.99	298.70	1,433.7	56.9	-59.5	79.3	2.00	1.87	-3.19
1,480.0	13.75	297.56	1,472.6	61.2	-67.6	88.6	2.00	1.89	-2.84
1,514.9	14.41	296.67	1,506.4	65.1	-75.2	97.0	2.00	1.90	-2.57
1,520.0	14.41	296.67	1,511.4	65.7	-76.3	98.3	0.00	0.00	0.00
1,560.0	14.41	296.67	1,550.1	70.1	-85.2	108.3	0.00	0.00	0.00
1,600.0	14.41	296.67	1,588.8	74.6	-94.1	118.2	0.00	0.00	0.00
1,640.0	14.41	296.67	1,627.6	79.1	-103.0	128.2	0.00	0.00	0.00
1,680.0	14.41	296.67	1,666.3	83.5	-111.9	138.1	0.00	0.00	0.00
1,720.0	14.41	296.67	1,705.1	88.0	-120.8	148.1	0.00	0.00	0.00
1,760.0	14.41	296.67	1,743.8	92.5	-129.7	158.0	0.00	0.00	0.00
1,800.0	14.41	296.67	1,782.6	97.0	-138.6	168.0	0.00	0.00	0.00
1,840.0	14.41	296.67	1,821.3	101.4	-147.5	177.9	0.00	0.00	0.00
1,880.0	14.41	296.67	1,860.0	105.9	-156.4	187.9	0.00	0.00	0.00
1,920.0	14.41	296.67	1,898.8	110.4	-165.3	197.8	0.00	0.00	0.00
1,960.0	14.41	296.67	1,937.5	114.8	-174.2	207.8	0.00	0.00	0.00

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Planned 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)
2,000.0	14.41	296.67	1,976.3	119.3	-183.1	217.7	0.00	0.00	0.00
2,040.0	14.41	296.67	2,015.0	123.8	-192.0	227.7	0.00	0.00	0.00
2,080.0	14.41	296.67	2,053.7	128.2	-200.9	237.7	0.00	0.00	0.00
2,120.0	14.41	296.67	2,092.5	132.7	-209.8	247.6	0.00	0.00	0.00
2,160.0	14.41	296.67	2,131.2	137.2	-218.7	257.6	0.00	0.00	0.00
2,200.0	14.41	296.67	2,170.0	141.6	-227.6	267.5	0.00	0.00	0.00
2,240.0	14.41	296.67	2,208.7	146.1	-236.5	277.5	0.00	0.00	0.00
2,280.0	14.41	296.67	2,247.4	150.6	-245.4	287.4	0.00	0.00	0.00
2,320.0	14.41	296.67	2,286.2	155.0	-254.3	297.4	0.00	0.00	0.00
2,360.0	14.41	296.67	2,324.9	159.5	-263.2	307.3	0.00	0.00	0.00
2,400.0	14.41	296.67	2,363.7	164.0	-272.1	317.3	0.00	0.00	0.00
2,440.0	14.41	296.67	2,402.4	168.4	-281.0	327.2	0.00	0.00	0.00
2,480.0	14.41	296.67	2,441.2	172.9	-289.9	337.2	0.00	0.00	0.00
2,520.0	14.41	296.67	2,479.9	177.4	-298.8	347.1	0.00	0.00	0.00
2,560.0	14.41	296.67	2,518.6	181.9	-307.7	357.1	0.00	0.00	0.00
2,600.0	14.41	296.67	2,557.4	186.3	-316.6	367.0	0.00	0.00	0.00
2,640.0	14.41	296.67	2,596.1	190.8	-325.4	377.0	0.00	0.00	0.00
2,680.0	14.41	296.67	2,634.9	195.3	-334.3	386.9	0.00	0.00	0.00
2,720.0	14.41	296.67	2,673.6	199.7	-343.2	396.9	0.00	0.00	0.00
2,760.0	14.41	296.67	2,712.3	204.2	-352.1	406.8	0.00	0.00	0.00
2,800.0	14.41	296.67	2,751.1	208.7	-361.0	416.8	0.00	0.00	0.00
2,840.0	14.41	296.67	2,789.8	213.1	-369.9	426.7	0.00	0.00	0.00
2,880.0	14.41	296.67	2,828.6	217.6	-378.8	436.7	0.00	0.00	0.00
2,920.0	14.41	296.67	2,867.3	222.1	-387.7	446.6	0.00	0.00	0.00
2,960.0	14.41	296.67	2,906.0	226.5	-396.6	456.6	0.00	0.00	0.00
3,000.0	14.41	296.67	2,944.8	231.0	-405.5	466.6	0.00	0.00	0.00
3,040.0	14.41	296.67	2,983.5	235.5	-414.4	476.5	0.00	0.00	0.00
3,080.0	14.41	296.67	3,022.3	239.9	-423.3	486.5	0.00	0.00	0.00
3,120.0	14.41	296.67	3,061.0	244.4	-432.2	496.4	0.00	0.00	0.00
3,160.0	14.41	296.67	3,099.8	248.9	-441.1	506.4	0.00	0.00	0.00
3,200.0	14.41	296.67	3,138.5	253.3	-450.0	516.3	0.00	0.00	0.00
3,240.0	14.41	296.67	3,177.2	257.8	-458.9	526.3	0.00	0.00	0.00
3,280.0	14.41	296.67	3,216.0	262.3	-467.8	536.2	0.00	0.00	0.00
3,320.0	14.41	296.67	3,254.7	266.7	-476.7	546.2	0.00	0.00	0.00
3,360.0	14.41	296.67	3,293.5	271.2	-485.6	556.1	0.00	0.00	0.00
3,400.0	14.41	296.67	3,332.2	275.7	-494.5	566.1	0.00	0.00	0.00
3,440.0	14.41	296.67	3,370.9	280.2	-503.4	576.0	0.00	0.00	0.00
3,480.0	14.41	296.67	3,409.7	284.6	-512.3	586.0	0.00	0.00	0.00
3,520.0	14.41	296.67	3,448.4	289.1	-521.2	595.9	0.00	0.00	0.00
3,560.0	14.41	296.67	3,487.2	293.6	-530.1	605.9	0.00	0.00	0.00
3,600.0	14.41	296.67	3,525.9	298.0	-539.0	615.8	0.00	0.00	0.00
3,640.0	14.41	296.67	3,564.6	302.5	-547.9	625.8	0.00	0.00	0.00
3,680.0	14.41	296.67	3,603.4	307.0	-556.8	635.7	0.00	0.00	0.00
3,720.0	14.41	296.67	3,642.1	311.4	-565.7	645.7	0.00	0.00	0.00
3,760.0	14.41	296.67	3,680.9	315.9	-574.6	655.6	0.00	0.00	0.00
3,800.0	14.41	296.67	3,719.6	320.4	-583.5	665.6	0.00	0.00	0.00
3,840.0	14.41	296.67	3,758.4	324.8	-592.4	675.5	0.00	0.00	0.00
3,880.0	14.41	296.67	3,797.1	329.3	-601.2	685.5	0.00	0.00	0.00
3,920.0	14.41	296.67	3,835.8	333.8	-610.1	695.5	0.00	0.00	0.00
3,960.0	14.41	296.67	3,874.6	338.2	-619.0	705.4	0.00	0.00	0.00
4,000.0	14.41	296.67	3,913.3	342.7	-627.9	715.4	0.00	0.00	0.00
4,040.0	14.41	296.67	3,952.1	347.2	-636.8	725.3	0.00	0.00	0.00
4,080.0	14.41	296.67	3,990.8	351.6	-645.7	735.3	0.00	0.00	0.00
4,120.0	14.41	296.67	4,029.5	356.1	-654.6	745.2	0.00	0.00	0.00

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Planned 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)
4,160.0	14.41	296.67	4,068.3	360.6	-663.5	755.2	0.00	0.00	0.00
4,200.0	14.41	296.67	4,107.0	365.1	-672.4	765.1	0.00	0.00	0.00
4,240.0	14.41	296.67	4,145.8	369.5	-681.3	775.1	0.00	0.00	0.00
4,280.0	14.41	296.67	4,184.5	374.0	-690.2	785.0	0.00	0.00	0.00
4,320.0	14.41	296.67	4,223.2	378.5	-699.1	795.0	0.00	0.00	0.00
4,360.0	14.41	296.67	4,262.0	382.9	-708.0	804.9	0.00	0.00	0.00
4,385.8	14.41	296.67	4,287.0	385.8	-713.7	811.3	0.00	0.00	0.00
4,400.0	14.13	296.67	4,300.7	387.4	-716.9	814.8	2.00	-2.00	0.00
4,440.0	13.33	296.67	4,339.6	391.6	-725.4	824.3	2.00	-2.00	0.00
4,480.0	12.53	296.67	4,378.6	395.7	-733.4	833.3	2.00	-2.00	0.00
4,520.0	11.73	296.67	4,417.7	399.4	-740.9	841.7	2.00	-2.00	0.00
4,560.0	10.93	296.67	4,456.9	403.0	-747.9	849.5	2.00	-2.00	0.00
4,600.0	10.13	296.67	4,496.2	406.2	-754.4	856.8	2.00	-2.00	0.00
4,640.0	9.33	296.67	4,535.7	409.3	-760.5	863.6	2.00	-2.00	0.00
4,680.0	8.53	296.67	4,575.2	412.1	-766.0	869.8	2.00	-2.00	0.00
4,720.0	7.73	296.67	4,614.8	414.6	-771.1	875.5	2.00	-2.00	0.00
4,760.0	6.93	296.67	4,654.4	416.9	-775.6	880.6	2.00	-2.00	0.00
4,800.0	6.13	296.67	4,694.2	418.9	-779.7	885.1	2.00	-2.00	0.00
4,840.0	5.33	296.67	4,734.0	420.7	-783.2	889.1	2.00	-2.00	0.00
4,880.0	4.53	296.67	4,773.8	422.3	-786.3	892.5	2.00	-2.00	0.00
4,920.0	3.73	296.67	4,813.7	423.5	-788.9	895.4	2.00	-2.00	0.00
4,960.0	2.93	296.67	4,853.7	424.6	-791.0	897.7	2.00	-2.00	0.00
5,000.0	2.13	296.67	4,893.6	425.4	-792.5	899.5	2.00	-2.00	0.00
5,040.0	1.33	296.67	4,933.6	425.9	-793.6	900.7	2.00	-2.00	0.00
5,080.0	0.53	296.67	4,973.6	426.2	-794.2	901.3	2.00	-2.00	0.00
5,106.4	0.00	0.51	5,000.0	426.3	-794.3	901.5	2.00	-2.00	0.00
Target BHL 2565'FSL & 75'FEL									
5,120.0	0.00	0.51	5,013.6	426.3	-794.3	901.5	0.00	0.00	0.00
5,160.0	0.00	0.51	5,053.6	426.3	-794.3	901.5	0.00	0.00	0.00
5,200.0	0.00	0.51	5,093.6	426.3	-794.3	901.5	0.00	0.00	0.00
5,240.0	0.00	0.51	5,133.6	426.3	-794.3	901.5	0.00	0.00	0.00
5,280.0	0.00	0.51	5,173.6	426.3	-794.3	901.5	0.00	0.00	0.00
5,320.0	0.00	0.51	5,213.6	426.3	-794.3	901.5	0.00	0.00	0.00
5,360.0	0.00	0.51	5,253.6	426.3	-794.3	901.5	0.00	0.00	0.00
5,400.0	0.00	0.51	5,293.6	426.3	-794.3	901.5	0.00	0.00	0.00
5,440.0	0.00	0.51	5,333.6	426.3	-794.3	901.5	0.00	0.00	0.00
5,480.0	0.00	0.51	5,373.6	426.3	-794.3	901.5	0.00	0.00	0.00
5,520.0	0.00	0.51	5,413.6	426.3	-794.3	901.5	0.00	0.00	0.00
5,560.0	0.00	0.51	5,453.6	426.3	-794.3	901.5	0.00	0.00	0.00
5,600.0	0.00	0.51	5,493.6	426.3	-794.3	901.5	0.00	0.00	0.00
5,640.0	0.00	0.51	5,533.6	426.3	-794.3	901.5	0.00	0.00	0.00
5,680.0	0.00	0.51	5,573.6	426.3	-794.3	901.5	0.00	0.00	0.00
5,720.0	0.00	0.51	5,613.6	426.3	-794.3	901.5	0.00	0.00	0.00
5,760.0	0.00	0.51	5,653.6	426.3	-794.3	901.5	0.00	0.00	0.00
5,800.0	0.00	0.51	5,693.6	426.3	-794.3	901.5	0.00	0.00	0.00
5,840.0	0.00	0.51	5,733.6	426.3	-794.3	901.5	0.00	0.00	0.00
5,880.0	0.00	0.51	5,773.6	426.3	-794.3	901.5	0.00	0.00	0.00
5,920.0	0.00	0.51	5,813.6	426.3	-794.3	901.5	0.00	0.00	0.00
5,960.0	0.00	0.51	5,853.6	426.3	-794.3	901.5	0.00	0.00	0.00
6,000.0	0.00	0.51	5,893.6	426.3	-794.3	901.5	0.00	0.00	0.00
6,040.0	0.00	0.51	5,933.6	426.3	-794.3	901.5	0.00	0.00	0.00
6,080.0	0.00	0.51	5,973.6	426.3	-794.3	901.5	0.00	0.00	0.00
6,120.0	0.00	0.51	6,013.6	426.3	-794.3	901.5	0.00	0.00	0.00
6,160.0	0.00	0.51	6,053.6	426.3	-794.3	901.5	0.00	0.00	0.00

Database: Landmark
Company: NOBLE ENERGY INC WELD COUNTY CO
Project: SEC.31-T5N-R65W
Site: Sylvester F31-20D Pad Sec.31-T5N-R65W
Well: Sylvester F31-32D
Wellbore: Wellbore #1
Design: Noble Sylvester F31-32D Plan #1 (7-13-10)

Local Co-ordinate Reference: Well Sylvester F31-32D
TVD Reference: WELL @ 4672.0ft (Original Well Elev)
MD Reference: WELL @ 4672.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

Planned 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)
6,200.0	0.00	0.51	6,093.6	426.3	-794.3	901.5	0.00	0.00	0.00
6,240.0	0.00	0.51	6,133.6	426.3	-794.3	901.5	0.00	0.00	0.00
6,280.0	0.00	0.51	6,173.6	426.3	-794.3	901.5	0.00	0.00	0.00
6,320.0	0.00	0.51	6,213.6	426.3	-794.3	901.5	0.00	0.00	0.00
6,360.0	0.00	0.51	6,253.6	426.3	-794.3	901.5	0.00	0.00	0.00
6,400.0	0.00	0.51	6,293.6	426.3	-794.3	901.5	0.00	0.00	0.00
6,440.0	0.00	0.51	6,333.6	426.3	-794.3	901.5	0.00	0.00	0.00
6,480.0	0.00	0.51	6,373.6	426.3	-794.3	901.5	0.00	0.00	0.00
6,520.0	0.00	0.51	6,413.6	426.3	-794.3	901.5	0.00	0.00	0.00
6,560.0	0.00	0.51	6,453.6	426.3	-794.3	901.5	0.00	0.00	0.00
6,600.0	0.00	0.51	6,493.6	426.3	-794.3	901.5	0.00	0.00	0.00
6,640.0	0.00	0.51	6,533.6	426.3	-794.3	901.5	0.00	0.00	0.00
6,680.0	0.00	0.51	6,573.6	426.3	-794.3	901.5	0.00	0.00	0.00
6,720.0	0.00	0.51	6,613.6	426.3	-794.3	901.5	0.00	0.00	0.00
6,760.0	0.00	0.51	6,653.6	426.3	-794.3	901.5	0.00	0.00	0.00
6,800.0	0.00	0.51	6,693.6	426.3	-794.3	901.5	0.00	0.00	0.00
6,840.0	0.00	0.51	6,733.6	426.3	-794.3	901.5	0.00	0.00	0.00
6,880.0	0.00	0.51	6,773.6	426.3	-794.3	901.5	0.00	0.00	0.00
6,903.4	0.00	0.51	6,797.0	426.3	-794.3	901.5	0.00	0.00	0.00
Niobrara - Target Circle 2565'FSL, 75'FEL									
6,920.0	0.00	0.51	6,813.6	426.3	-794.3	901.5	0.00	0.00	0.00
6,960.0	0.00	0.51	6,853.6	426.3	-794.3	901.5	0.00	0.00	0.00
7,000.0	0.00	0.51	6,893.6	426.3	-794.3	901.5	0.00	0.00	0.00
7,040.0	0.00	0.51	6,933.6	426.3	-794.3	901.5	0.00	0.00	0.00
7,080.0	0.00	0.51	6,973.6	426.3	-794.3	901.5	0.00	0.00	0.00
7,120.0	0.00	0.51	7,013.6	426.3	-794.3	901.5	0.00	0.00	0.00
7,160.0	0.00	0.51	7,053.6	426.3	-794.3	901.5	0.00	0.00	0.00
7,200.0	0.00	0.51	7,093.6	426.3	-794.3	901.5	0.00	0.00	0.00
7,233.4	0.00	0.51	7,127.0	426.3	-794.3	901.5	0.00	0.00	0.00
Codell									
7,240.0	0.00	0.51	7,133.6	426.3	-794.3	901.5	0.00	0.00	0.00
7,280.0	0.00	0.51	7,173.6	426.3	-794.3	901.5	0.00	0.00	0.00
7,320.0	0.00	0.51	7,213.6	426.3	-794.3	901.5	0.00	0.00	0.00
7,360.0	0.00	0.51	7,253.6	426.3	-794.3	901.5	0.00	0.00	0.00
7,383.4	0.00	0.51	7,277.0	426.3	-794.3	901.5	0.00	0.00	0.00
Hardline 75'N & E of BHL									

Database: Landmark
Company: NOBLE ENERGY INC WELD COUNTY CO
Project: SEC.31-T5N-R65W
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Wellbore: Wellbore #1
Design: Noble Sylvester F31-32D Plan #1 (7-13-10)

Local Co-ordinate Reference: Well Sylvester F31-32D
TVD Reference: WELL @ 4672.0ft (Original Well Elev)
MD Reference: WELL @ 4672.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

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 Circle 2565'FS - plan hits target - Circle (radius 75.0)	0.00	0.00	6,797.0	426.3	-794.3	1,373,315.25	3,218,500.97	40° 21' 19.800 N	104° 42' 57.492 W
Target BHL 2565'FSL - plan hits target - Point	0.00	0.51	5,000.0	426.3	-794.3	1,373,315.22	3,218,500.96	40° 21' 19.800 N	104° 42' 57.492 W
Hardline 75'N & E of E - plan misses by 106.1ft at 7383.4ft MD (7277.0 TVD, 426.3 N, -794.3 E) - Polygon	0.00	0.51	7,277.0	501.3	-719.3	1,373,390.91	3,218,575.30	40° 21' 20.541 N	104° 42' 56.523 W
Point 1			7,277.0	0.0	0.0	1,373,390.91	3,218,575.30		
Point 2			7,277.0	0.0	-200.0	1,373,390.90	3,218,375.31		
Point 3			7,277.0	0.0	0.0	1,373,390.91	3,218,575.30		
Point 4			7,277.0	-200.0	0.0	1,373,190.92	3,218,575.30		

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
600.0	600.0	8 5/8"	8-5/8	12-1/4

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
6,903.4	6,797.0	Niobrara		0.00	
7,233.4	7,127.0	Codell		0.00	