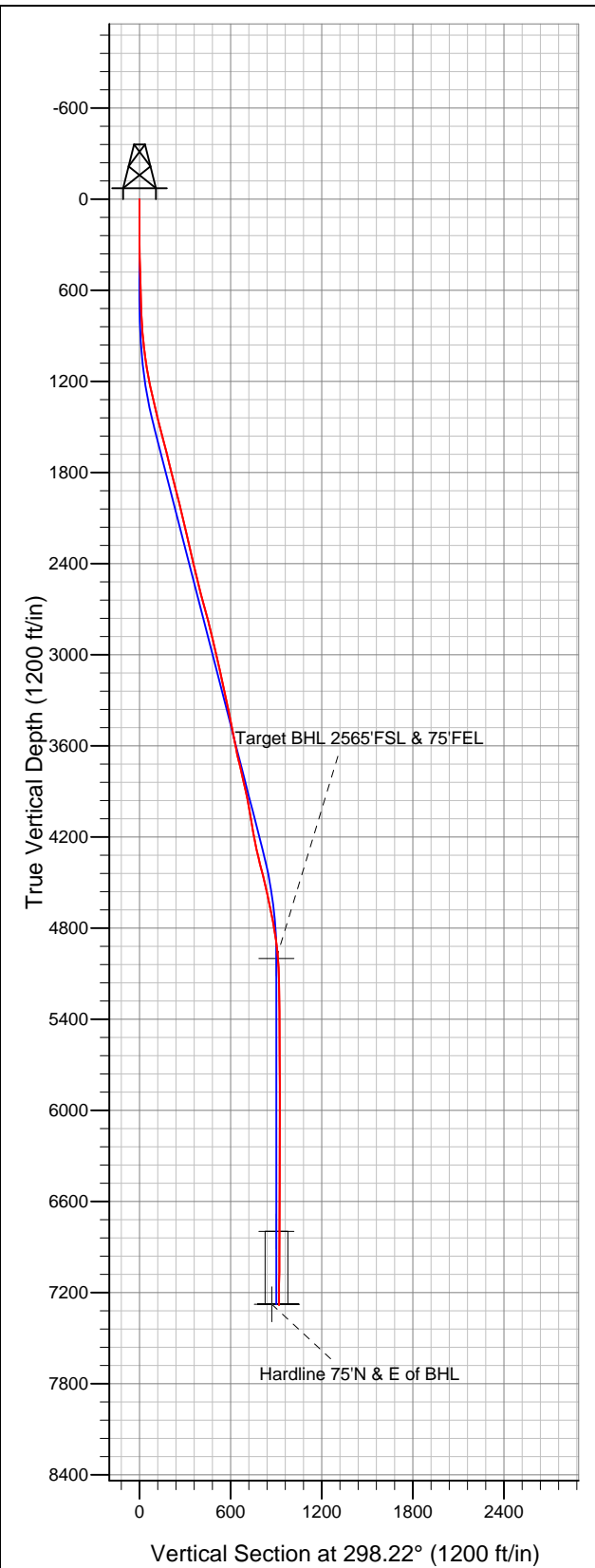


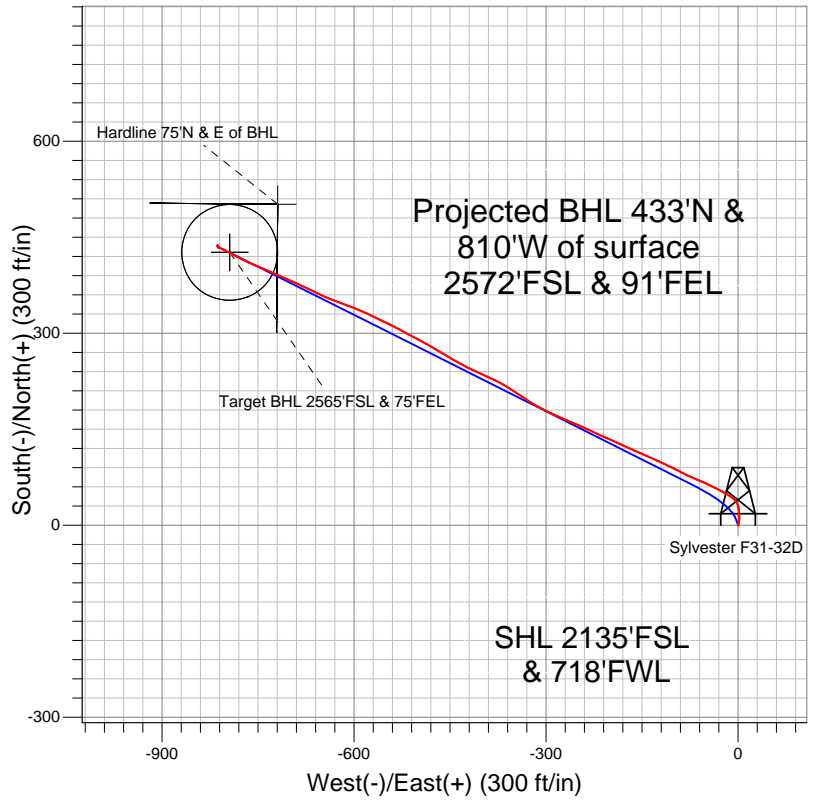
Well Name: Sylvester F31-32D

Surface Location: Sylvester F31-20D Pad Sec.31-T5N-R65W
 North American Datum 1983 US State Plane 1983 Colorado Northern Zone
 Ground Elevation: 4659.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1372896.03	3219298.99	40.354330	-104.713120	
		Original Well Elev	WELL @ 4672.0ft (Original Well Elev)			



NOBLE ENERGY INC WELD COUNTY CO



LEGEND

- Survey #1
- Sylvester F31-32D, Wellbore #1, Noble Sylvester F31-32D Plan #1 (1-28-12) V0
- Wellbore #1

Final Survey Plot

Projected Final Survey -
 7383'MD & 7282'TVD @ 919'VS
 0.40 deg Inc 172.50 deg AZ

Project: SEC.31-T5N-R65W
 Site: Sylvester F31-20D Pad Sec.31-T5N-R65W
 Well: Sylvester F31-32D
 Plan: Wellbore #1



NOBLE ENERGY INC WELD COUNTY CO

SEC.31-T5N-R65W

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

Sylvester F31-32D

Wellbore #1

Survey: Survey #1

Standard Survey Report

01 February, 2012



Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Sylvester F31-32D
Project:	SEC.31-T5N-R65W	TVD Reference:	WELL @ 4672.0ft (Original Well Elev)
Site:	Sylvester F31-20D Pad Sec.31-T5N-R65W	MD Reference:	WELL @ 4672.0ft (Original Well Elev)
Well:	Sylvester F31-32D	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

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
From:	Lat/Long	Easting:	3,219,321.22ft
Position Uncertainty:	0.0 ft	Slot Radius:	"
		Latitude:	40.354350
		Longitude:	-104.713040
		Grid Convergence:	0.51 °

Well	Sylvester F31-32D		
Well Position	+N-S	0.0 ft	Northing: 1,372,896.03 ft
	+E-W	0.0 ft	Easting: 3,219,298.99 ft
Position Uncertainty	0.0 ft	Wellhead Elevation:	ft
		Latitude:	40.354330
		Longitude:	-104.713120
		Ground Level:	4,659.0 ft

Wellbore	Wellbore #1		
Magnetics	Model Name	Sample Date	Declination (°)
	IGRF200510	1/17/2012	8.71
	IGRF2010	1/28/2012	8.75
			Dip Angle (°)
			67.01
			67.00
			Field Strength (nT)
			53,075
			53,049

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)
	0.0	0.0	0.0
			Direction (°)
			298.22

Survey Program	Date 2/1/2012		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name
107.0	7,383.0	Survey #1 (Wellbore #1)	MWD
			Description
			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
107.0	0.30	178.20	107.0	-0.3	0.0	-0.1	0.28	0.28	0.00
198.0	0.80	17.50	198.0	0.1	0.2	-0.1	1.20	0.55	-176.59
291.0	1.40	13.50	291.0	1.8	0.7	0.3	0.65	0.65	-4.30
383.0	2.10	11.00	382.9	4.6	1.3	1.1	0.77	0.76	-2.72
475.0	3.30	4.80	474.8	8.9	1.8	2.6	1.34	1.30	-6.74
566.0	3.80	355.90	565.7	14.5	1.8	5.3	0.82	0.55	-9.78
648.0	3.90	357.70	647.5	20.0	1.5	8.1	0.19	0.12	2.20
706.0	3.80	354.80	705.3	23.9	1.2	10.2	0.38	-0.17	-5.00
788.0	3.90	349.20	787.2	29.3	0.5	13.4	0.47	0.12	-6.83
869.0	4.90	328.50	867.9	35.0	-1.9	18.2	2.30	1.23	-25.56
951.0	6.50	313.50	949.5	41.1	-7.1	25.7	2.65	1.95	-18.29

Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Sylvester F31-32D
Project:	SEC.31-T5N-R65W	TVD Reference:	WELL @ 4672.0ft (Original Well Elev)
Site:	Sylvester F31-20D Pad Sec.31-T5N-R65W	MD Reference:	WELL @ 4672.0ft (Original Well Elev)
Well:	Sylvester F31-32D	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)	
1,033.0	8.00	300.90	1,030.9	47.3	-15.3	35.8	2.66	1.83	-15.37	
1,115.0	9.10	298.60	1,112.0	53.3	-25.9	48.0	1.40	1.34	-2.80	
1,196.0	10.70	294.70	1,191.7	59.5	-38.4	61.9	2.14	1.98	-4.81	
1,278.0	12.70	295.60	1,272.0	66.6	-53.4	78.5	2.45	2.44	1.10	
1,360.0	13.60	292.80	1,351.9	74.2	-70.4	97.1	1.34	1.10	-3.41	
1,442.0	13.80	297.80	1,431.6	82.5	-88.0	116.5	1.46	0.24	6.10	
1,523.0	14.80	295.40	1,510.0	91.5	-105.9	136.5	1.43	1.23	-2.96	
1,605.0	14.30	293.70	1,589.4	100.0	-124.6	157.1	0.80	-0.61	-2.07	
1,687.0	14.40	294.70	1,668.9	108.3	-143.1	177.3	0.33	0.12	1.22	
1,768.0	13.80	293.10	1,747.4	116.3	-161.2	197.0	0.88	-0.74	-1.98	
1,850.0	14.20	295.60	1,827.0	124.5	-179.2	216.8	0.88	0.49	3.05	
1,932.0	13.70	292.60	1,906.6	132.6	-197.3	236.5	1.07	-0.61	-3.66	
2,014.0	14.10	294.50	1,986.2	140.5	-215.3	256.2	0.74	0.49	2.32	
2,095.0	14.00	296.10	2,064.7	148.9	-233.1	275.8	0.50	-0.12	1.98	
2,177.0	13.70	293.10	2,144.4	157.1	-250.9	295.4	0.95	-0.37	-3.66	
2,259.0	13.50	292.80	2,224.1	164.6	-268.7	314.6	0.26	-0.24	-0.37	
2,341.0	12.60	293.50	2,303.9	171.8	-285.7	333.0	1.11	-1.10	0.85	
2,422.0	12.80	297.20	2,383.0	179.5	-301.8	350.8	1.03	0.25	4.57	
2,504.0	13.00	300.10	2,462.9	188.3	-317.9	369.1	0.83	0.24	3.54	
2,586.0	14.20	304.40	2,542.6	198.6	-334.1	388.3	1.91	1.46	5.24	
2,668.0	15.00	303.70	2,621.9	210.1	-351.3	408.9	1.00	0.98	-0.85	
2,749.0	15.70	299.10	2,700.1	221.3	-369.6	430.3	1.73	0.86	-5.68	
2,831.0	14.90	293.70	2,779.2	230.9	-388.9	451.9	1.99	-0.98	-6.59	
2,913.0	12.80	294.70	2,858.8	238.9	-406.8	471.4	2.58	-2.56	1.22	
2,995.0	13.10	295.90	2,938.7	246.8	-423.4	489.8	0.49	0.37	1.46	
3,076.0	13.70	300.50	3,017.5	255.7	-440.0	508.6	1.51	0.74	5.68	
3,158.0	13.40	301.40	3,097.2	265.6	-456.4	527.7	0.45	-0.37	1.10	
3,240.0	12.10	298.40	3,177.2	274.6	-472.1	545.8	1.78	-1.59	-3.66	
3,322.0	11.20	300.50	3,257.5	282.7	-486.5	562.4	1.21	-1.10	2.56	
3,403.0	11.90	298.20	3,336.8	290.7	-500.7	578.6	1.03	0.86	-2.84	
3,485.0	11.80	298.60	3,417.1	298.7	-515.5	595.4	0.16	-0.12	0.49	
3,567.0	11.50	297.20	3,497.4	306.4	-530.1	612.0	0.50	-0.37	-1.71	
3,649.0	10.50	295.90	3,577.9	313.4	-544.1	627.6	1.26	-1.22	-1.59	
3,730.0	12.20	297.30	3,657.3	320.6	-558.3	643.6	2.13	2.10	1.73	
3,812.0	13.30	294.90	3,737.3	328.5	-574.6	661.6	1.49	1.34	-2.93	
3,894.0	13.40	292.20	3,817.1	336.1	-591.9	680.5	0.77	0.12	-3.29	
3,975.0	12.70	290.30	3,896.0	342.7	-609.0	698.7	1.01	-0.86	-2.35	
4,057.0	10.50	291.20	3,976.3	348.5	-624.4	715.0	2.69	-2.68	1.10	
4,139.0	9.20	291.00	4,057.1	353.6	-637.5	728.9	1.59	-1.59	-0.24	
4,221.0	9.90	295.60	4,138.0	359.0	-650.0	742.5	1.26	0.85	5.61	
4,302.0	11.40	295.40	4,217.6	365.4	-663.5	757.4	1.85	1.85	-0.25	
4,384.0	12.80	294.90	4,297.7	372.7	-679.0	774.6	1.71	1.71	-0.61	
4,466.0	14.00	294.40	4,377.5	380.7	-696.3	793.6	1.47	1.46	-0.61	
4,548.0	14.10	294.70	4,457.0	388.9	-714.4	813.4	0.15	0.12	0.37	
4,629.0	12.70	291.40	4,535.8	396.3	-731.7	832.1	1.97	-1.73	-4.07	
4,711.0	12.40	293.50	4,615.9	403.1	-748.1	849.8	0.67	-0.37	2.56	
4,793.0	11.00	294.50	4,696.2	409.9	-763.3	866.4	1.73	-1.71	1.22	
4,875.0	10.50	297.70	4,776.7	416.6	-777.1	881.7	0.95	-0.61	3.90	
4,956.0	8.50	300.50	4,856.6	423.0	-788.8	895.1	2.53	-2.47	3.46	
5,038.0	6.60	293.50	4,937.9	428.0	-798.3	905.8	2.57	-2.32	-8.54	
5,099.5	4.43	294.06	4,999.1	430.4	-803.7	911.7	3.54	-3.54	0.92	
Target BHL 2565'FSL & 75'FEL										
5,120.0	3.70	294.40	5,019.6	431.0	-805.0	913.1	3.54	-3.54	1.64	
5,202.0	2.20	301.00	5,101.5	432.9	-808.8	917.4	1.87	-1.83	8.05	

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Site:	Sylvester F31-20D Pad Sec.31-T5N-R65W	MD Reference:	WELL @ 4672.0ft (Original Well Elev)
Well:	Sylvester F31-32D	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)
5,283.0	0.80	274.00	5,182.4	433.7	-810.7	919.4	1.89	-1.73	-33.33
5,365.0	0.50	270.80	5,264.4	433.8	-811.6	920.3	0.37	-0.37	-3.90
5,447.0	0.30	280.50	5,346.4	433.8	-812.2	920.8	0.26	-0.24	11.83
5,529.0	0.70	1.20	5,428.4	434.3	-812.4	921.2	0.87	0.49	98.41
5,610.0	0.80	345.20	5,509.4	435.4	-812.5	921.8	0.29	0.12	-19.75
5,692.0	0.70	351.30	5,591.4	436.4	-812.8	922.5	0.16	-0.12	7.44
5,774.0	0.40	2.40	5,673.4	437.2	-812.8	922.9	0.39	-0.37	13.54
5,855.0	0.30	330.40	5,754.4	437.7	-812.9	923.2	0.27	-0.12	-39.51
5,937.0	0.40	206.80	5,836.4	437.6	-813.1	923.4	0.75	0.12	-150.73
6,019.0	0.40	240.60	5,918.4	437.2	-813.5	923.6	0.28	0.00	41.22
6,101.0	0.10	231.60	6,000.4	437.0	-813.8	923.8	0.37	-0.37	-10.98
6,182.0	0.40	210.20	6,081.4	436.7	-814.0	923.8	0.38	0.37	-26.42
6,264.0	0.40	133.90	6,163.4	436.3	-814.0	923.5	0.60	0.00	-93.05
6,346.0	0.30	118.20	6,245.4	436.0	-813.6	923.0	0.17	-0.12	-19.15
6,428.0	0.40	144.10	6,327.4	435.7	-813.2	922.6	0.23	0.12	31.59
6,509.0	0.00	230.00	6,408.4	435.4	-813.0	922.3	0.49	-0.49	0.00
6,591.0	0.10	224.40	6,490.4	435.4	-813.1	922.3	0.12	0.12	0.00
6,673.0	0.30	142.10	6,572.4	435.2	-813.0	922.2	0.37	0.24	-100.37
6,755.0	0.40	103.30	6,654.4	434.9	-812.6	921.7	0.31	0.12	-47.32
6,836.0	0.30	169.70	6,735.4	434.7	-812.3	921.3	0.48	-0.12	81.98
6,897.7	0.20	66.10	6,797.0	434.5	-812.2	921.1	0.64	-0.17	-168.02
Target Circle 2565'FSL, 75'FEL									
6,918.0	0.30	47.40	6,817.4	434.6	-812.1	921.1	0.64	0.51	-91.94
7,000.0	0.40	77.30	6,899.4	434.8	-811.7	920.8	0.25	0.12	36.46
7,082.0	0.20	154.30	6,981.4	434.7	-811.3	920.5	0.49	-0.24	93.90
7,163.0	0.60	128.60	7,062.4	434.3	-810.9	919.9	0.53	0.49	-31.73
7,245.0	0.40	138.60	7,144.4	433.9	-810.4	919.2	0.27	-0.24	12.20
7,332.0	0.40	172.50	7,231.4	433.3	-810.2	918.8	0.27	0.00	38.97
7,377.2	0.40	172.50	7,276.6	433.0	-810.1	918.6	0.00	0.00	0.00
Hardline 75'N & E of BHL									
7,383.0	0.40	172.50	7,282.4	433.0	-810.1	918.6	0.00	0.00	0.00

Checked By: _____ Approved By: _____ Date: _____