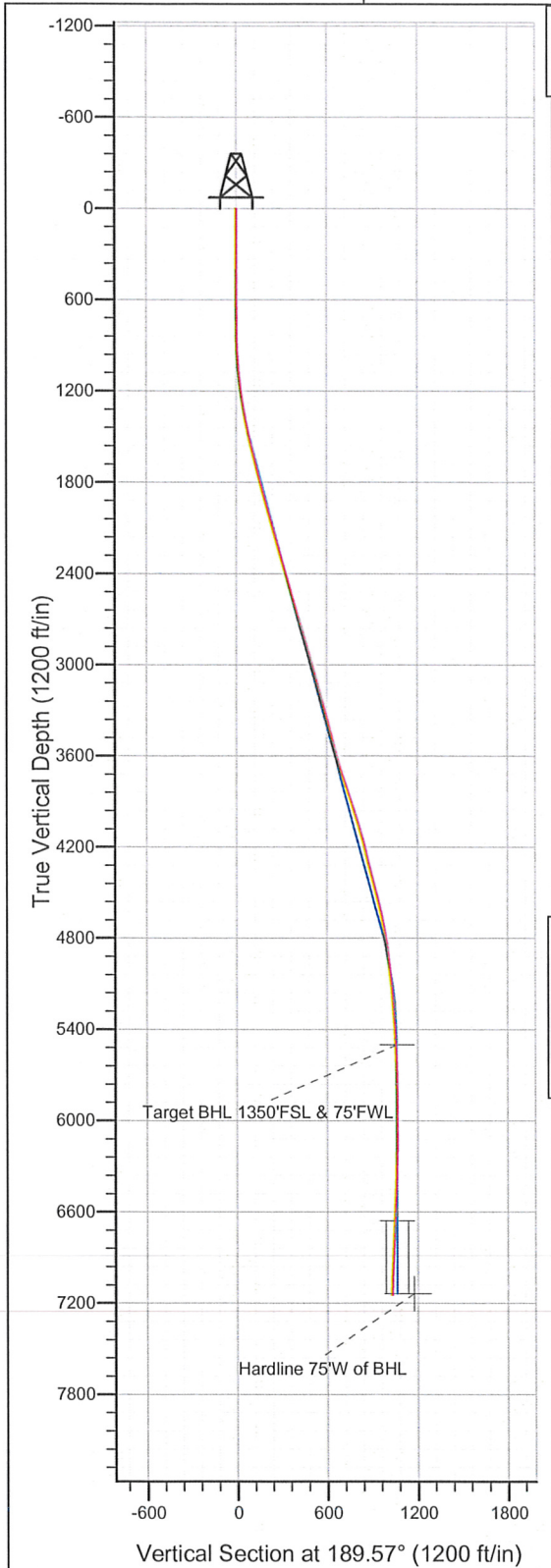


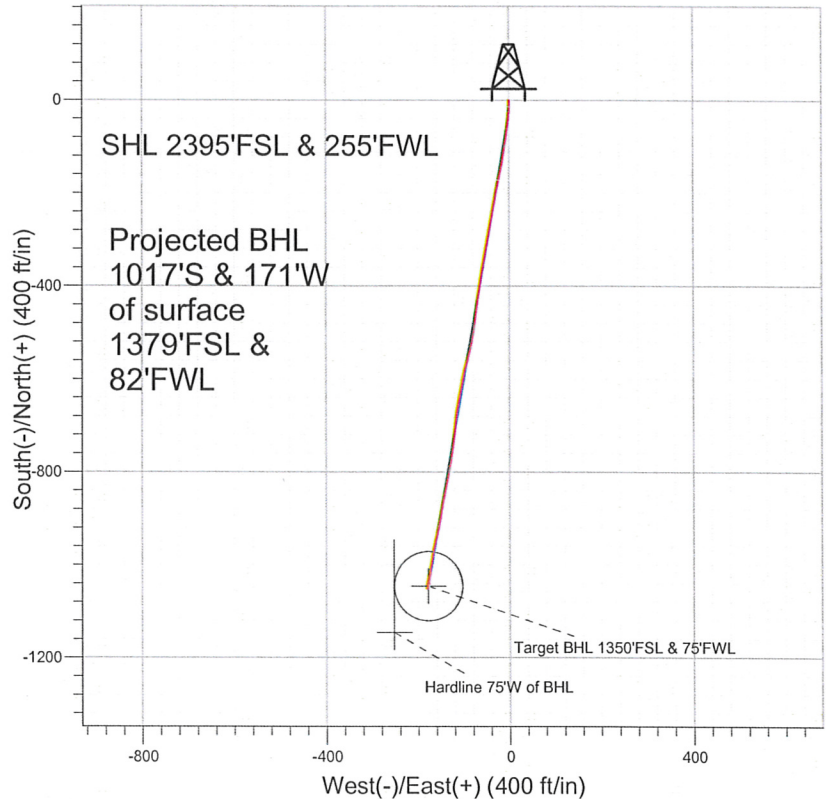
Well Name: **LDS E25-33D**

Surface Location: LDS E25-33 Pad Sec.25-T6N-R65W
North American Datum 1983 US State Plane 1983 Colorado Northern Zone
Ground Elevation: 4684.0
+N/-S +E/-W Northing Easting Latitude Longitude
0.0 0.0 1410271.37 3244923.44 40° 27' 22.536 N 104° 37' 11.460 W
Original Well Elev WELL @ 4697.0ft (Original Well Elev)

Slot



NOBLE ENERGY INC WELD COUNTY CO



LEGEND

- ✕ LDS E25-33D, Wellbore #1, Noble LDS E25-33D Plan #1 (07-02-10) V0
- Wellbore #1
- Survey #1

Final Survey Plot

Projected Final Survey -
7280'MD & 7146'TVD @ 1031' VS
1.5 deg Inc 30.3 deg AZ

Project: SEC.25-T6N-R65W
Site: LDS E25-33 Pad Sec.25-T6N-R65W
Well: LDS E25-33D
Plan: Wellbore #1



Directional

**NOBLE ENERGY INC WELD
COUNTY CO**

SEC.25-T6N-R65W

LDS E25-33 Pad Sec.25-T6N-R65W

LDS E25-33D

Wellbore #1

Survey: Survey #1

Standard Survey Report

02 December, 2010



Company: NOBLE ENERGY INC WELD COUNTY CO
Project: SEC.25-T6N-R65W
Site: LDS E25-33 Pad Sec.25-T6N-R65W
Well: LDS E25-33D
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well LDS E25-33D
TVD Reference: WELL @ 4697.0ft (Original Well Elev)
MD Reference: WELL @ 4697.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: Landmark

Project	SEC.25-T6N-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	LDS E25-33 Pad Sec.25-T6N-R65W				
Site Position:		Northing:	1,410,271.38 ft	Latitude:	40° 27' 22.536 N
From:	Lat/Long	Easting:	3,244,923.44 ft	Longitude:	104° 37' 11.460 W
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.57 °

Well	LDS E25-33D					
Well Position	+N/-S	0.0 ft	Northing:	1,410,271.37 ft	Latitude:	40° 27' 22.536 N
	+E/-W	0.0 ft	Easting:	3,244,923.44 ft	Longitude:	104° 37' 11.460 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,684.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	11/23/2010	8.87	67.14	53,237

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	189.57	

Survey Program	Date 12/2/2010			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
647.0	7,280.0	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
647.0	0.10	149.60	647.0	-0.5	0.3	0.4	0.02	0.02	0.00
733.0	0.10	166.50	733.0	-0.6	0.3	0.6	0.03	0.00	19.65
819.0	1.00	198.50	819.0	-1.4	0.1	1.4	1.07	1.05	37.21
904.0	2.50	172.90	904.0	-4.0	0.1	3.9	1.95	1.76	-30.12
990.0	4.40	172.40	989.8	-9.1	0.8	8.8	2.21	2.21	-0.58
1,075.0	5.70	183.90	1,074.5	-16.5	0.9	16.1	1.93	1.53	13.53
1,161.0	7.10	188.70	1,159.9	-26.0	-0.2	25.7	1.74	1.63	5.58
1,246.0	8.20	185.30	1,244.2	-37.3	-1.5	37.0	1.40	1.29	-4.00
1,332.0	9.90	185.80	1,329.1	-50.7	-2.8	50.5	1.98	1.98	0.58
1,417.0	11.50	189.30	1,412.6	-66.4	-4.9	66.3	2.03	1.88	4.12
1,503.0	12.80	187.50	1,496.7	-84.3	-7.6	84.4	1.57	1.51	-2.09
1,588.0	13.50	187.90	1,579.5	-103.4	-10.2	103.7	0.83	0.82	0.47

Company: NOBLE ENERGY INC WELD COUNTY CO
Project: SEC.25-T6N-R65W
Site: LDS E25-33 Pad Sec.25-T6N-R65W
Well: LDS E25-33D
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well LDS E25-33D
TVD Reference: WELL @ 4697.0ft (Original Well Elev)
MD Reference: WELL @ 4697.0ft (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)
1,674.0	13.90	189.80	1,663.0	-123.6	-13.3	124.1	0.70	0.47	2.21
1,759.0	15.10	192.40	1,745.3	-144.4	-17.4	145.3	1.61	1.41	3.06
1,845.0	15.70	192.20	1,828.2	-166.7	-22.3	168.1	0.70	0.70	-0.23
1,930.0	15.40	192.20	1,910.1	-189.0	-27.1	190.9	0.35	-0.35	0.00
2,016.0	15.30	189.40	1,993.0	-211.4	-31.4	213.6	0.87	-0.12	-3.26
2,101.0	15.60	188.90	2,075.0	-233.7	-35.0	236.3	0.39	0.35	-0.59
2,186.0	16.40	190.50	2,156.7	-256.8	-38.9	259.7	1.07	0.94	1.88
2,272.0	16.20	192.00	2,239.2	-280.5	-43.6	283.8	0.54	-0.23	1.74
2,357.0	15.80	189.40	2,320.9	-303.5	-48.0	307.3	0.97	-0.47	-3.06
2,443.0	16.10	188.40	2,403.6	-326.9	-51.6	330.9	0.47	0.35	-1.16
2,528.0	16.10	191.30	2,485.3	-350.1	-55.7	354.5	0.95	0.00	3.41
2,614.0	16.00	190.10	2,567.9	-373.4	-60.1	378.2	0.40	-0.12	-1.40
2,700.0	15.60	189.50	2,650.7	-396.5	-64.1	401.6	0.50	-0.47	-0.70
2,785.0	17.00	188.40	2,732.3	-420.1	-67.8	425.5	1.69	1.65	-1.29
2,871.0	17.10	187.20	2,814.5	-445.1	-71.2	450.7	0.43	0.12	-1.40
2,956.0	15.80	186.80	2,896.0	-468.9	-74.1	474.7	1.54	-1.53	-0.47
3,042.0	16.70	189.30	2,978.6	-492.8	-77.5	498.8	1.33	1.05	2.91
3,128.0	16.10	191.60	3,061.1	-516.6	-81.9	523.1	1.03	-0.70	2.67
3,213.0	15.30	192.60	3,142.9	-539.1	-86.7	546.0	0.99	-0.94	1.18
3,299.0	14.80	196.20	3,225.9	-560.8	-92.3	568.3	1.23	-0.58	4.19
3,384.0	14.70	193.30	3,308.1	-581.7	-97.8	589.8	0.88	-0.12	-3.41
3,470.0	14.50	190.00	3,391.4	-602.9	-102.2	611.5	0.99	-0.23	-3.84
3,556.0	14.30	190.70	3,474.7	-623.9	-106.0	632.9	0.31	-0.23	0.81
3,641.0	14.90	191.20	3,556.9	-645.0	-110.1	654.3	0.72	0.71	0.59
3,727.0	16.70	188.70	3,639.7	-668.0	-114.1	677.7	2.24	2.09	-2.91
3,812.0	17.70	185.70	3,720.9	-693.0	-117.2	702.8	1.57	1.18	-3.53
3,898.0	18.30	186.30	3,802.7	-719.4	-120.0	729.3	0.73	0.70	0.70
3,984.0	18.60	187.60	3,884.2	-746.4	-123.3	756.5	0.59	0.35	1.51
4,069.0	18.30	189.50	3,964.9	-773.0	-127.3	783.4	0.79	-0.35	2.24
4,155.0	16.50	190.70	4,046.9	-798.3	-131.8	809.1	2.13	-2.09	1.40
4,240.0	15.30	192.10	4,128.7	-821.2	-136.4	832.4	1.48	-1.41	1.65
4,326.0	14.00	192.60	4,211.9	-842.4	-141.0	854.1	1.52	-1.51	0.58
4,412.0	13.90	190.40	4,295.3	-862.7	-145.2	874.8	0.63	-0.12	-2.56
4,497.0	14.10	190.00	4,377.8	-883.0	-148.8	895.4	0.26	0.24	-0.47
4,583.0	14.50	189.70	4,461.2	-903.9	-152.4	916.6	0.47	0.47	-0.35
4,668.0	14.20	190.50	4,543.5	-924.6	-156.1	937.7	0.42	-0.35	0.94
4,754.0	12.50	193.30	4,627.2	-944.1	-160.2	957.5	2.11	-1.98	3.26
4,840.0	11.10	192.40	4,711.4	-961.2	-164.1	975.1	1.64	-1.63	-1.05
4,925.0	9.20	188.60	4,795.0	-975.9	-166.9	990.1	2.37	-2.24	-4.47
5,011.0	7.70	189.50	4,880.1	-988.4	-168.9	1,002.7	1.75	-1.74	1.05
5,096.0	7.10	189.90	4,964.4	-999.2	-170.7	1,013.7	0.71	-0.71	0.47
5,182.0	6.30	190.70	5,049.8	-1,009.1	-172.5	1,023.7	0.94	-0.93	0.93
5,268.0	5.30	192.80	5,135.4	-1,017.6	-174.2	1,032.4	1.19	-1.16	2.44
5,353.0	4.50	190.80	5,220.0	-1,024.7	-175.7	1,039.6	0.96	-0.94	-2.35
5,439.0	4.10	195.20	5,305.8	-1,030.9	-177.2	1,046.1	0.60	-0.47	5.12
5,525.0	3.40	193.40	5,391.6	-1,036.4	-178.6	1,051.7	0.83	-0.81	-2.09
5,610.0	2.70	191.30	5,476.5	-1,040.8	-179.6	1,056.2	0.83	-0.82	-2.47
5,633.7	2.56	190.38	5,500.1	-1,041.9	-179.8	1,057.3	0.61	-0.59	-3.89
Target BHL 1350'FSL & 75'FWL									
5,696.0	2.20	187.40	5,562.4	-1,044.4	-180.2	1,059.8	0.61	-0.58	-4.78
5,781.0	2.00	176.20	5,647.4	-1,047.5	-180.3	1,062.9	0.54	-0.24	-13.18
5,867.0	0.80	169.60	5,733.3	-1,049.6	-180.1	1,064.9	1.41	-1.40	-7.67
5,953.0	0.60	172.50	5,819.3	-1,050.7	-179.9	1,065.9	0.24	-0.23	3.37
6,038.0	0.20	115.90	5,904.3	-1,051.2	-179.7	1,066.4	0.61	-0.47	-66.59

Company: NOBLE ENERGY INC WELD COUNTY CO
Project: SEC.25-T6N-R65W
Site: LDS E25-33 Pad Sec.25-T6N-R65W
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Design: Wellbore #1

Local Co-ordinate Reference: Well LDS E25-33D
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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)
6,124.0	0.40	91.00	5,990.3	-1,051.2	-179.3	1,066.4	0.27	0.23	-28.95
6,295.0	0.60	20.60	6,161.3	-1,050.4	-178.4	1,065.4	0.35	0.12	-41.17
6,466.0	1.20	18.60	6,332.3	-1,047.9	-177.5	1,062.8	0.35	0.35	-1.17
6,638.0	2.10	5.70	6,504.2	-1,043.0	-176.6	1,057.9	0.56	0.52	-7.50
6,790.5	2.81	11.10	6,656.6	-1,036.6	-175.6	1,051.3	0.49	0.46	3.54
Target Circle 1350°FSL & 75°FSL									
6,810.0	2.90	11.60	6,676.1	-1,035.6	-175.4	1,050.4	0.49	0.47	2.56
6,981.0	3.10	5.70	6,846.8	-1,026.8	-174.1	1,041.4	0.21	0.12	-3.45
7,152.0	1.70	16.70	7,017.7	-1,019.8	-172.9	1,034.3	0.86	-0.82	6.43
7,233.0	1.50	30.30	7,098.6	-1,017.7	-172.0	1,032.1	0.53	-0.25	16.79
7,267.4	1.50	30.30	7,133.0	-1,016.9	-171.5	1,031.3	0.00	0.00	0.00
Hardline 75°W of BHL									
7,280.0	1.50	30.30	7,145.6	-1,016.6	-171.4	1,031.0	0.00	0.00	0.00

Checked By: _____ Approved By: _____ Date: _____