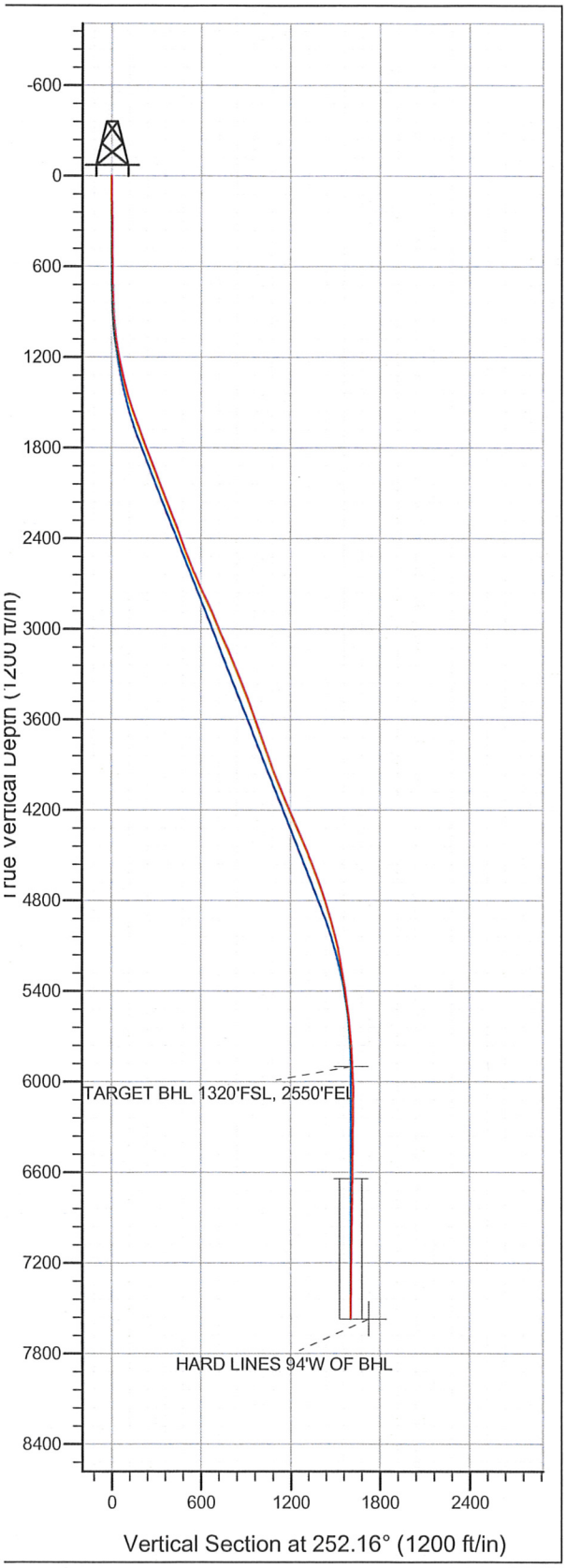
ENSIGN Directional

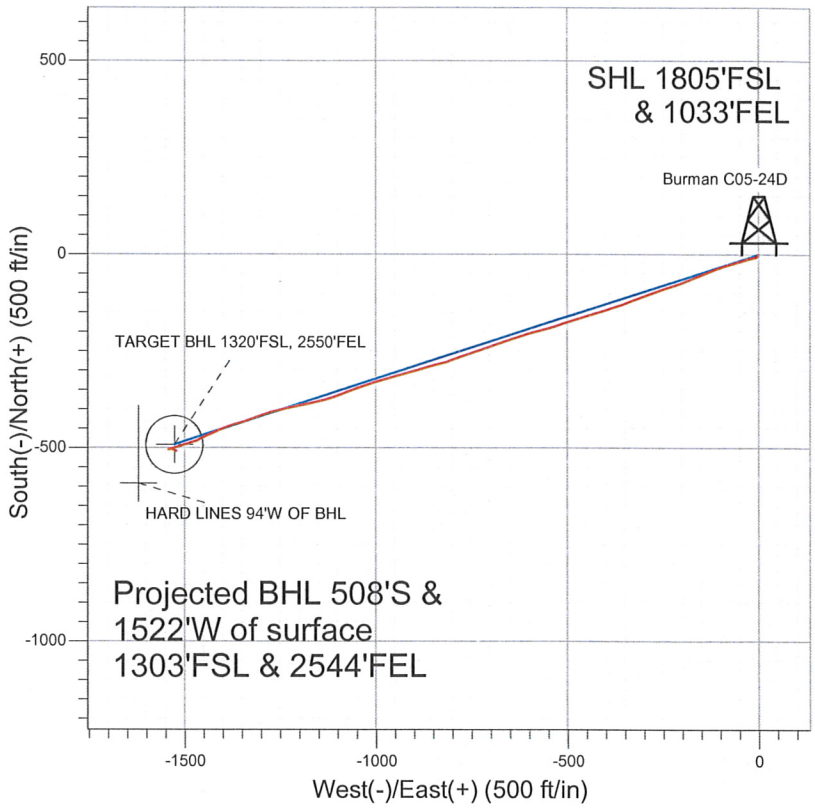
Surface Location: Burman C04-33D Pad Sec.5-T4N-R64W
North American Datum 1983 US State Plane 1983 Colorado Northern Zone
Ground Elevation: 4748.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1367738.48	3259643.95	40.339100	-104.568560	

Original Well Elev WELL @ 4761.0ft (Original Well Elev)



NOBLE ENERGY INC WELD COUNTY CO



LEGEND

- Burman C05-24D, Wellbore #1, Noble Burman C05-24D Plan #1 (6-15-11) V0
- Wellbore #1

Final Survey Plot

Projected Final Survey -
7851'MD & 7568'TVD @ 1604'VS
1.1 deg Inc 112.0 deg AZ

Project: SEC.5-T4N-R64W
Site: Burman C04-33D Pad Sec.5-T4N-R64W
Well: Burman C05-24D
Plan: Wellbore #1

ENSIGN
Directional

NOBLE ENERGY INC WELD COUNTY CO

SEC.5-T4N-R64W
Burman C04-33D Pad Sec.5-T4N-R64W
Burman C05-24D

Wellbore #1

Design: Wellbore #1

Standard Survey Report

03 November, 2011

noble energy

Company:	NOBLE ENERGY INC WELD COUNTY CO	**Local Co-ordinate Reference:**	Well Burman C05-24D
Project:	SEC.5-T4N-R64W	**TVD Reference:**	WELL @ 4761.0ft (Original Well Elev)
Site:	Burman C04-33D Pad Sec.5-T4N-R64W	**MD Reference:**	WELL @ 4761.0ft (Original Well Elev)
Well:	Burman C05-24D	**North Reference:**	True
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Wellbore #1	**Database:**	Landmark

Project	SEC.5-T4N-R64W, 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	Burman C04-33D Pad Sec.5-T4N-R64W				
Site Position:		**Northing:**	1,367,739.92 ft	**Latitude:**	40.339100
From:	Lat/Long	**Easting:**	3,259,777.75 ft	**Longitude:**	-104.568080
Position Uncertainty:	0.0 ft	**Slot Radius:**	"	**Grid Convergence:**	0.60 °

Well	Burman C05-24D				
Well Position	**+N/-S**	0.0 ft	**Northing:**	1,367,738.48 ft	**Latitude:**	40.339100
	+E/-W	0.0 ft	**Easting:**	3,259,643.95 ft	**Longitude:**	-104.568560
Position Uncertainty		0.0 ft	**Wellhead Elevation:**	ft	**Ground Level:**	4,748.0 ft

Wellbore Wellbore #1

Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	IGRF2010	6/23/2011	8.75	67.03	53,119

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	252.16

Survey Program **Date** 11/3/2011

From (ft)	**To (ft)**	**Survey (Wellbore)**	**Tool Name**	**Description**
74.0	7,851.0	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
74.0	0.60	217.10	74.0	-0.3	-0.2	0.3	0.81	0.81	0.00
167.0	0.40	230.20	167.0	-0.9	-0.8	1.0	0.25	-0.22	14.09
260.0	0.80	223.00	260.0	-1.6	-1.5	1.9	0.44	0.43	-7.74
362.0	1.10	209.70	362.0	-3.0	-2.4	3.2	0.36	0.29	-13.04
444.0	1.10	219.70	444.0	-4.2	-3.3	4.5	0.23	0.00	12.20
526.0	0.90	179.60	525.9	-5.5	-3.8	5.3	0.87	-0.24	-48.90
607.0	1.00	259.10	606.9	-6.3	-4.5	6.2	1.50	0.12	98.15
649.0	0.90	245.00	648.9	-6.5	-5.2	6.9	0.60	-0.24	-33.57
751.0	1.00	254.70	750.9	-7.0	-6.8	8.6	0.19	0.10	9.51
833.0	1.80	259.80	832.9	-7.5	-8.7	10.6	0.99	0.98	6.22
915.0	3.20	263.30	914.8	-8.0	-12.3	14.1	1.72	1.71	4.27
997.0	5.50	253.10	996.6	-9.4	-18.3	20.3	2.95	2.80	-12.44

Company:	NOBLE ENERGY INC WELD COUNTY CO	**Local Co-ordinate Reference:**	Well Burman C05-24D
Project:	SEC.5-T4N-R64W	**TVD Reference:**	WELL @ 4761.0ft (Original Well Elev)
Site:	Burman C04-33D Pad Sec.5-T4N-R64W	**MD Reference:**	WELL @ 4761.0ft (Original Well Elev)
Well:	Burman C05-24D	**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)
1,078.0	7.70	255.70	1,077.0	-11.8	-27.3	29.6	2.74	2.72	3.21
1,160.0	9.80	254.30	1,158.1	-15.1	-39.3	42.0	2.57	2.56	-1.71
1,242.0	11.00	252.40	1,238.7	-19.3	-53.5	56.8	1.52	1.46	-2.32
1,324.0	12.70	254.30	1,319.0	-24.1	-69.6	73.7	2.13	2.07	2.32
1,405.0	15.30	253.40	1,397.6	-29.6	-88.4	93.3	3.22	3.21	-1.11
1,487.0	18.10	247.20	1,476.1	-37.6	-110.6	116.8	4.04	3.41	-7.56
1,569.0	19.30	249.40	1,553.8	-47.3	-135.0	143.0	1.70	1.46	2.68
1,651.0	19.80	246.90	1,631.0	-57.6	-160.4	170.4	1.19	0.61	-3.05
1,732.0	21.00	250.10	1,707.0	-67.9	-186.7	198.5	2.02	1.48	3.95
1,814.0	21.40	252.00	1,783.4	-77.5	-214.8	228.2	0.97	0.49	2.32
1,896.0	20.80	250.60	1,859.9	-87.0	-242.7	257.7	0.96	-0.73	-1.71
1,977.0	21.10	249.40	1,935.6	-96.9	-269.9	286.6	0.65	0.37	-1.48
2,059.0	21.00	250.10	2,012.1	-107.1	-297.6	316.1	0.33	-0.12	0.85
2,141.0	21.00	248.90	2,088.7	-117.4	-325.1	345.4	0.52	0.00	-1.46
2,223.0	21.60	248.90	2,165.0	-128.1	-352.9	375.1	0.73	0.73	0.00
2,304.0	21.30	253.30	2,240.4	-137.7	-380.9	404.7	2.02	-0.37	5.43
2,386.0	20.00	251.30	2,317.2	-146.5	-408.4	433.7	1.80	-1.59	-2.44
2,468.0	20.30	252.90	2,394.2	-155.1	-435.3	461.9	0.77	0.37	1.95
2,550.0	21.20	254.70	2,470.8	-163.2	-463.2	490.9	1.35	1.10	2.20
2,631.0	21.90	251.20	2,546.2	-172.0	-491.6	520.7	1.81	0.86	-4.32
2,713.0	22.90	249.90	2,622.0	-182.4	-521.1	551.9	1.36	1.22	-1.59
2,795.0	24.90	255.50	2,697.0	-192.2	-552.8	585.1	3.69	2.44	6.83
2,877.0	24.80	254.80	2,771.4	-201.0	-586.1	619.5	0.38	-0.12	-0.85
2,958.0	24.90	253.10	2,844.9	-210.4	-618.8	653.5	0.89	0.12	-2.10
3,040.0	23.50	252.00	2,919.7	-220.5	-650.9	687.1	1.79	-1.71	-1.34
3,122.0	22.40	248.30	2,995.2	-231.3	-680.9	719.1	2.21	-1.34	-4.51
3,204.0	24.80	251.90	3,070.3	-242.4	-711.8	751.9	3.41	2.93	4.39
3,285.0	23.90	252.00	3,144.1	-252.8	-743.6	785.3	1.11	-1.11	0.12
3,367.0	22.60	250.40	3,219.5	-263.2	-774.2	817.6	1.76	-1.59	-1.95
3,449.0	21.50	250.10	3,295.5	-273.6	-803.2	848.4	1.35	-1.34	-0.37
3,531.0	21.30	255.70	3,371.8	-282.4	-831.7	878.3	2.50	-0.24	6.83
3,612.0	21.20	252.90	3,447.3	-290.3	-860.0	907.6	1.26	-0.12	-3.46
3,694.0	20.80	253.80	3,523.9	-298.8	-888.2	937.0	0.63	-0.49	1.10
3,776.0	20.00	256.10	3,600.7	-306.2	-915.8	965.5	1.38	-0.98	2.80
3,857.0	19.40	256.10	3,677.0	-312.8	-942.3	992.8	0.74	-0.74	0.00
3,939.0	18.50	251.90	3,754.5	-320.1	-967.8	1,019.4	1.99	-1.10	-5.12
4,021.0	20.30	253.60	3,831.9	-328.1	-993.9	1,046.6	2.30	2.20	2.07
4,103.0	20.80	250.80	3,908.7	-336.9	-1,021.3	1,075.4	1.34	0.61	-3.41
4,184.0	20.80	251.30	3,984.4	-346.3	-1,048.5	1,104.1	0.22	0.00	0.62
4,266.0	21.50	249.40	4,060.9	-356.2	-1,076.3	1,133.7	1.19	0.85	-2.32
4,348.0	22.90	251.70	4,136.8	-366.5	-1,105.5	1,164.7	2.01	1.71	2.80
4,430.0	23.70	253.80	4,212.1	-376.1	-1,136.5	1,197.1	1.41	0.98	2.56
4,511.0	24.20	257.10	4,286.1	-384.4	-1,168.3	1,229.9	1.77	0.62	4.07
4,593.0	23.10	259.80	4,361.2	-391.0	-1,200.5	1,262.6	1.88	-1.34	3.29
4,675.0	23.50	257.80	4,436.5	-397.3	-1,232.3	1,294.8	1.08	0.49	-2.44
4,757.0	21.80	255.00	4,512.2	-404.7	-1,263.0	1,326.3	2.45	-2.07	-3.41
4,838.0	20.70	249.40	4,587.7	-413.6	-1,291.0	1,355.6	2.85	-1.36	-6.91
4,920.0	20.90	251.50	4,664.4	-423.4	-1,318.4	1,384.7	0.94	0.24	2.56
5,002.0	18.20	251.30	4,741.6	-432.1	-1,344.4	1,412.1	3.29	-3.29	-0.24
5,084.0	17.20	255.40	4,819.8	-439.3	-1,368.3	1,437.1	1.95	-1.22	5.00
5,165.0	17.30	249.60	4,897.1	-446.5	-1,391.2	1,461.0	2.13	0.12	-7.16
5,247.0	16.40	245.00	4,975.6	-455.6	-1,413.1	1,484.7	1.96	-1.10	-5.61
5,329.0	14.30	246.40	5,054.7	-464.6	-1,432.9	1,506.3	2.60	-2.56	1.71
5,411.0	10.90	243.60	5,134.7	-472.1	-1,449.1	1,524.0	4.21	-4.15	-3.41

Company:	NOBLE ENERGY INC WELD COUNTY CO	**Local Co-ordinate Reference:**	Well Burman C05-24D
Project:	SEC.5-T4N-R64W	**TVD Reference:**	WELL @ 4761.0ft (Original Well Elev)
Site:	Burman C04-33D Pad Sec.5-T4N-R64W	**MD Reference:**	WELL @ 4761.0ft (Original Well Elev)
Well:	Burman C05-24D	**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)
5,492.0	9.60	242.70	5,214.4	-478.6	-1,461.9	1,538.3	1.62	-1.60	-1.11
5,574.0	8.90	251.00	5,295.3	-483.8	-1,474.0	1,551.4	1.84	-0.85	10.12
5,656.0	9.40	252.90	5,376.3	-487.8	-1,486.4	1,564.4	0.71	0.61	2.32
5,738.0	8.50	256.30	5,457.3	-491.2	-1,498.7	1,577.1	1.27	-1.10	4.15
5,819.0	7.10	248.00	5,537.5	-494.5	-1,509.2	1,588.1	2.21	-1.73	-10.25
5,901.0	5.60	254.70	5,619.0	-497.5	-1,517.7	1,597.1	2.04	-1.83	8.17
5,983.0	5.00	255.50	5,700.7	-499.4	-1,525.0	1,604.7	0.74	-0.73	0.98
6,064.0	3.80	250.60	5,781.4	-501.2	-1,531.0	1,610.9	1.55	-1.48	-6.05
6,146.0	2.90	256.80	5,863.3	-502.6	-1,535.6	1,615.7	1.18	-1.10	7.56
6,182.2	2.67	253.52	5,899.4	-503.0	-1,537.3	1,617.5	0.77	-0.63	-9.06
TARGET BHL 1320'FSL, 2550'FEL									
6,228.0	2.40	248.50	5,945.2	-503.7	-1,539.2	1,619.5	0.77	-0.60	-10.96
6,310.0	0.90	284.70	6,027.2	-504.1	-1,541.4	1,621.7	2.14	-1.83	44.15
6,391.0	0.30	304.80	6,108.2	-503.9	-1,542.2	1,622.4	0.77	-0.74	24.81
6,473.0	0.20	150.30	6,190.2	-503.9	-1,542.3	1,622.5	0.60	-0.12	-188.42
6,555.0	0.40	88.00	6,272.2	-504.0	-1,541.9	1,622.2	0.43	0.24	-75.98
6,637.0	0.60	57.60	6,354.2	-503.7	-1,541.3	1,621.5	0.40	0.24	-37.07
6,718.0	0.80	65.50	6,435.2	-503.3	-1,540.4	1,620.5	0.27	0.25	9.75
6,800.0	1.00	79.90	6,517.2	-502.9	-1,539.2	1,619.3	0.37	0.24	17.56
6,882.0	0.90	91.00	6,599.1	-502.8	-1,537.8	1,617.9	0.25	-0.12	13.54
6,924.0	0.85	89.21	6,641.1	-502.8	-1,537.2	1,617.3	0.14	-0.12	-4.25
TARGET CIRCLE 1320'FSL & 2550'FEL									
6,964.0	0.80	87.30	6,681.1	-502.8	-1,536.6	1,616.8	0.14	-0.12	-4.78
7,045.0	0.80	110.40	6,762.1	-502.9	-1,535.5	1,615.8	0.40	0.00	28.52
7,127.0	0.80	94.20	6,844.1	-503.2	-1,534.4	1,614.8	0.27	0.00	-19.76
7,209.0	0.90	116.30	6,926.1	-503.5	-1,533.3	1,613.8	0.41	0.12	26.95
7,291.0	1.10	113.70	7,008.1	-504.1	-1,532.0	1,612.8	0.25	0.24	-3.17
7,373.0	1.20	107.70	7,090.1	-504.7	-1,530.4	1,611.5	0.19	0.12	-7.32
7,454.0	1.20	122.70	7,171.1	-505.4	-1,528.9	1,610.2	0.39	0.00	18.52
7,536.0	1.30	110.00	7,253.1	-506.2	-1,527.3	1,609.0	0.36	0.12	-15.49
7,618.0	1.10	115.10	7,335.0	-506.8	-1,525.7	1,607.7	0.28	-0.24	6.22
7,699.0	1.10	110.50	7,416.0	-507.4	-1,524.3	1,606.5	0.11	0.00	-5.68
7,781.0	0.90	110.00	7,498.0	-507.9	-1,523.0	1,605.4	0.24	-0.24	-0.61
7,800.0	1.10	111.90	7,517.0	-508.1	-1,522.7	1,605.1	1.07	1.05	10.00
7,851.0	1.10	112.00	7,568.0	-508.4	-1,521.7	1,604.3	0.00	0.00	0.20
HARD LINES 94'W OF BHL									

Checked By: _____ Approved By: _____ Date: _____