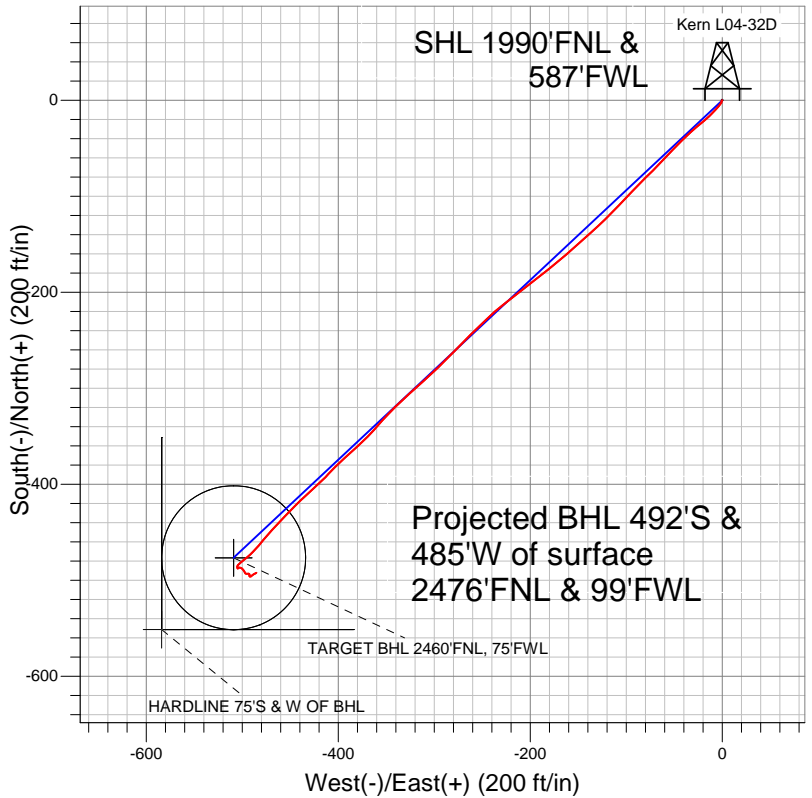


Well Name: Kern L04-32D

Surface Location: Kern L04-20D Pad Sec.4-T3N-R66W
 North American Datum 1983 US State Plane 1983Colorado Northern Zone
 Ground Elevation: 4794.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1336695.86	3198223.26	40.255450	-104.789780	
		Original Well Elev	WELL @ 4807.0ft (Original Well Elev)			

NOBLE ENERGY INC WELD COUNTY CO

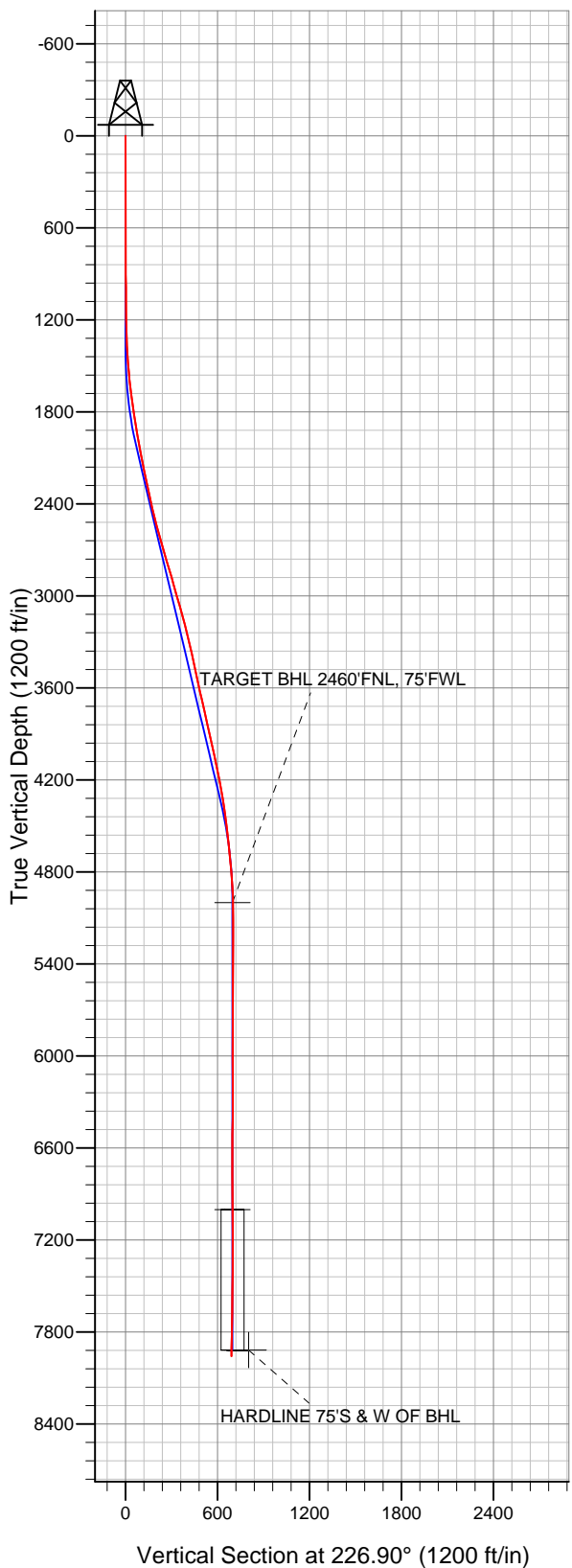


- LEGEND
- Survey #1
 - Kern L04-32D, Wellbore #1, Noble Kern L04-32D Plan #1 (3-6-12) R V0
 - Wellbore #1

Final Survey Plot

Projected Final Survey -
 8032'MD & 7958'TVD @ 691'VS
 0.90 deg Inc 66.60 deg AZ

Project: SEC.4-T3N-R66W
 Site: Kern L04-20D Pad Sec.4-T3N-R66W
 Well: Kern L04-32D
 Plan: Wellbore #1





NOBLE ENERGY INC WELD COUNTY CO

SEC.4-T3N-R66W

Kern L04-20D Pad Sec.4-T3N-R66W

Kern L04-32D

Wellbore #1

Survey: Survey #1

Standard Survey Report

12 March, 2012



Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Kern L04-32D
Project:	SEC.4-T3N-R66W	TVD Reference:	WELL @ 4807.0ft (Original Well Elev)
Site:	Kern L04-20D Pad Sec.4-T3N-R66W	MD Reference:	WELL @ 4807.0ft (Original Well Elev)
Well:	Kern L04-32D	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Project	SEC.4-T3N-R66W, Weld County, CO		
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	Kern L04-20D Pad Sec.4-T3N-R66W		
Site Position:		Northing:	1,336,696.07 ft
From:	Lat/Long	Easting:	3,198,248.38 ft
Position Uncertainty:	0.0 ft	Slot Radius:	"
		Latitude:	40.255450
		Longitude:	-104.789690
		Grid Convergence:	0.46 °

Well	Kern L04-32D		
Well Position	+N/-S	0.0 ft	Northing: 1,336,695.86 ft
	+E/-W	0.0 ft	Easting: 3,198,223.26 ft
Position Uncertainty	0.0 ft	Wellhead Elevation:	ft
		Latitude:	40.255450
		Longitude:	-104.789780
		Ground Level:	4,794.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	3/6/2012	8.72	66.91	53,001

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	226.90	

Survey Program	Date	3/12/2012			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
817.0	8,032.0	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	
817.0	0.10	228.30	817.0	-0.5	-0.5	0.7	0.01	0.01	0.00	
903.0	0.60	199.30	903.0	-0.9	-0.7	1.2	0.60	0.58	-33.72	
988.0	0.60	180.80	988.0	-1.8	-0.9	1.9	0.23	0.00	-21.76	
1,074.0	0.60	199.30	1,074.0	-2.7	-1.0	2.6	0.22	0.00	21.51	
1,159.0	0.50	238.10	1,159.0	-3.3	-1.5	3.4	0.44	-0.12	45.65	
1,245.0	1.00	209.40	1,245.0	-4.2	-2.2	4.4	0.71	0.58	-33.37	
1,330.0	2.60	222.20	1,329.9	-6.2	-3.9	7.1	1.93	1.88	15.06	
1,416.0	3.50	222.90	1,415.8	-9.6	-7.0	11.6	1.05	1.05	0.81	
1,501.0	4.50	223.00	1,500.6	-13.9	-11.0	17.6	1.18	1.18	0.12	
1,587.0	5.80	227.80	1,586.3	-19.3	-16.5	25.3	1.59	1.51	5.58	
1,672.0	7.50	232.60	1,670.7	-25.6	-24.1	35.1	2.10	2.00	5.65	
1,758.0	7.90	226.60	1,755.9	-33.1	-32.9	46.6	1.04	0.47	-6.98	

Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Kern L04-32D
Project:	SEC.4-T3N-R66W	TVD Reference:	WELL @ 4807.0ft (Original Well Elev)
Site:	Kern L04-20D Pad Sec.4-T3N-R66W	MD Reference:	WELL @ 4807.0ft (Original Well Elev)
Well:	Kern L04-32D	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)
1,843.0	9.00	226.60	1,840.0	-41.6	-41.9	59.1	1.29	1.29	0.00
1,929.0	9.60	222.20	1,924.9	-51.6	-51.6	72.9	1.08	0.70	-5.12
2,014.0	10.00	223.80	2,008.6	-62.1	-61.5	87.4	0.57	0.47	1.88
2,100.0	10.90	224.80	2,093.2	-73.3	-72.4	103.0	1.07	1.05	1.16
2,185.0	12.20	225.30	2,176.5	-85.3	-84.4	120.0	1.53	1.53	0.59
2,271.0	11.80	224.70	2,260.6	-98.0	-97.1	137.8	0.49	-0.47	-0.70
2,356.0	12.30	222.30	2,343.7	-110.8	-109.3	155.5	0.83	0.59	-2.82
2,442.0	12.80	225.80	2,427.7	-124.3	-122.3	174.2	1.06	0.58	4.07
2,527.0	14.40	228.40	2,510.3	-137.8	-136.9	194.2	2.01	1.88	3.06
2,613.0	15.70	228.10	2,593.3	-152.7	-153.6	216.5	1.51	1.51	-0.35
2,698.0	16.00	230.70	2,675.1	-167.8	-171.2	239.7	0.91	0.35	3.06
2,784.0	16.70	231.20	2,757.6	-183.1	-190.0	263.8	0.83	0.81	0.58
2,869.0	17.00	232.80	2,839.0	-198.2	-209.5	288.4	0.65	0.35	1.88
2,955.0	15.30	231.10	2,921.6	-213.0	-228.3	312.2	2.05	-1.98	-1.98
3,040.0	15.60	226.60	3,003.5	-227.9	-245.3	334.8	1.45	0.35	-5.29
3,126.0	15.90	225.30	3,086.3	-244.1	-262.1	358.2	0.54	0.35	-1.51
3,211.0	15.60	224.10	3,168.1	-260.5	-278.3	381.2	0.52	-0.35	-1.41
3,297.0	13.50	225.60	3,251.3	-275.8	-293.6	402.8	2.48	-2.44	1.74
3,382.0	12.80	227.60	3,334.1	-289.1	-307.6	422.1	0.98	-0.82	2.35
3,468.0	12.00	228.50	3,418.1	-301.4	-321.3	440.6	0.96	-0.93	1.05
3,553.0	11.90	226.60	3,501.2	-313.3	-334.3	458.2	0.48	-0.12	-2.24
3,639.0	12.40	224.00	3,585.3	-326.1	-347.2	476.3	0.86	0.58	-3.02
3,724.0	13.50	220.50	3,668.1	-340.2	-360.0	495.3	1.59	1.29	-4.12
3,810.0	12.70	227.40	3,751.9	-354.2	-373.4	514.7	2.04	-0.93	8.02
3,895.0	12.20	228.40	3,834.9	-366.5	-387.0	533.0	0.64	-0.59	1.18
3,981.0	12.70	224.70	3,918.9	-379.2	-400.5	551.5	1.09	0.58	-4.30
4,066.0	12.40	224.10	4,001.9	-392.4	-413.4	570.0	0.38	-0.35	-0.71
4,152.0	12.70	228.00	4,085.8	-405.4	-426.8	588.7	1.05	0.35	4.53
4,237.0	11.20	226.30	4,169.0	-417.3	-439.8	606.3	1.81	-1.76	-2.00
4,323.0	9.90	223.90	4,253.5	-428.4	-450.9	622.0	1.60	-1.51	-2.79
4,408.0	9.00	223.10	4,337.4	-438.6	-460.5	635.9	1.07	-1.06	-0.94
4,494.0	7.80	223.40	4,422.4	-447.7	-469.1	648.5	1.40	-1.40	0.35
4,579.0	6.90	220.20	4,506.7	-455.8	-476.4	659.3	1.16	-1.06	-3.76
4,665.0	6.40	218.20	4,592.2	-463.5	-482.7	669.2	0.64	-0.58	-2.33
4,750.0	6.00	225.30	4,676.7	-470.4	-488.8	678.3	1.02	-0.47	8.35
4,836.0	4.90	231.50	4,762.3	-475.8	-494.9	686.4	1.45	-1.28	7.21
4,921.0	4.00	229.70	4,847.0	-480.0	-500.0	693.0	1.07	-1.06	-2.12
5,007.0	2.80	224.90	4,932.9	-483.4	-503.7	698.1	1.43	-1.40	-5.58
5,074.0	1.39	203.27	4,999.8	-485.3	-505.2	700.5	2.38	-2.10	-32.27
TARGET BHL 2460'FNL, 75'FWL									
5,092.0	1.10	188.70	5,017.8	-485.7	-505.3	700.8	2.38	-1.61	-81.06
5,178.0	0.50	143.60	5,103.8	-486.8	-505.2	701.5	0.96	-0.70	-52.44
5,306.0	0.40	138.30	5,231.8	-487.6	-504.6	701.6	0.08	-0.08	-4.14
5,434.0	0.50	334.80	5,359.8	-487.4	-504.5	701.4	0.70	0.08	-127.73
5,562.0	0.40	76.10	5,487.8	-486.8	-504.3	700.9	0.55	-0.08	79.14
5,691.0	1.10	85.40	5,616.8	-486.6	-502.7	699.5	0.55	0.54	7.21
5,819.0	0.90	136.30	5,744.8	-487.2	-500.7	698.5	0.69	-0.16	39.77
5,947.0	1.10	136.30	5,872.7	-488.9	-499.2	698.5	0.16	0.16	0.00
6,075.0	0.80	153.70	6,000.7	-490.5	-498.0	698.8	0.32	-0.23	13.59
6,204.0	0.40	150.10	6,129.7	-491.7	-497.3	699.1	0.31	-0.31	-2.79
6,332.0	0.60	157.00	6,257.7	-492.7	-496.8	699.5	0.16	0.16	5.39
6,460.0	0.90	87.50	6,385.7	-493.3	-495.6	698.9	0.70	0.23	-54.30
6,588.0	0.60	72.60	6,513.7	-493.1	-493.9	697.6	0.28	-0.23	-11.64
6,717.0	0.20	127.00	6,642.7	-493.0	-493.1	696.9	0.40	-0.31	42.17

Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Kern L04-32D
Project:	SEC.4-T3N-R66W	TVD Reference:	WELL @ 4807.0ft (Original Well Elev)
Site:	Kern L04-20D Pad Sec.4-T3N-R66W	MD Reference:	WELL @ 4807.0ft (Original Well Elev)
Well:	Kern L04-32D	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)
6,845.0	0.40	145.80	6,770.7	-493.5	-492.7	696.9	0.17	0.16	14.69
6,973.0	0.20	190.50	6,898.7	-494.1	-492.5	697.2	0.23	-0.16	34.92
7,076.3	0.28	196.71	7,001.9	-494.5	-492.6	697.6	0.08	0.08	6.01
TARGET CIRCLE 2460'FNL, 75'FWL									
7,101.0	0.30	197.70	7,026.7	-494.6	-492.6	697.7	0.08	0.08	4.00
7,230.0	0.40	166.00	7,155.7	-495.4	-492.6	698.2	0.17	0.08	-24.57
7,358.0	0.10	132.40	7,283.7	-495.9	-492.4	698.4	0.25	-0.23	-26.25
7,486.0	0.40	103.40	7,411.7	-496.1	-491.9	698.1	0.25	0.23	-22.66
7,614.0	0.60	56.60	7,539.7	-495.8	-490.9	697.2	0.34	0.16	-36.56
7,743.0	0.80	44.10	7,668.7	-494.8	-489.7	695.7	0.19	0.16	-9.69
7,871.0	1.20	58.90	7,796.6	-493.5	-487.9	693.5	0.37	0.31	11.56
7,987.0	0.90	66.60	7,912.6	-492.5	-486.1	691.4	0.29	-0.26	6.64
HARDLINE 75'S & W OF BHL									
8,032.0	0.90	66.60	7,957.6	-492.2	-485.4	690.7	0.00	0.00	0.00

Checked By: _____ Approved By: _____ Date: _____