

Noble Energy Inc.- Weld County, CO (Grid North)

Well Name: **Eagle E14-62-1HN**

Surface Location: Eagle E14-62-1HN Pad Sec.14-T6N-R65W
 North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

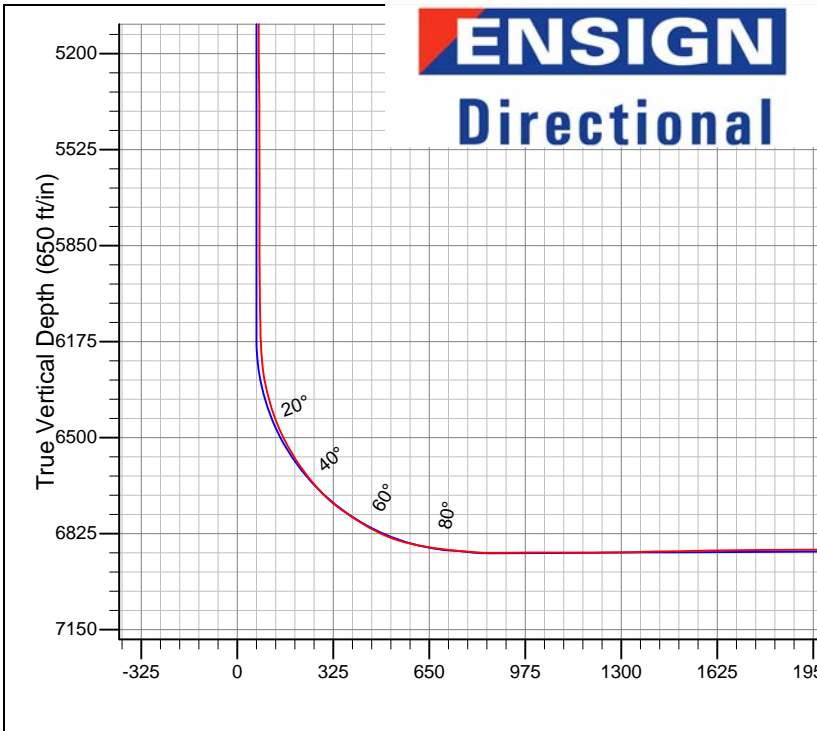
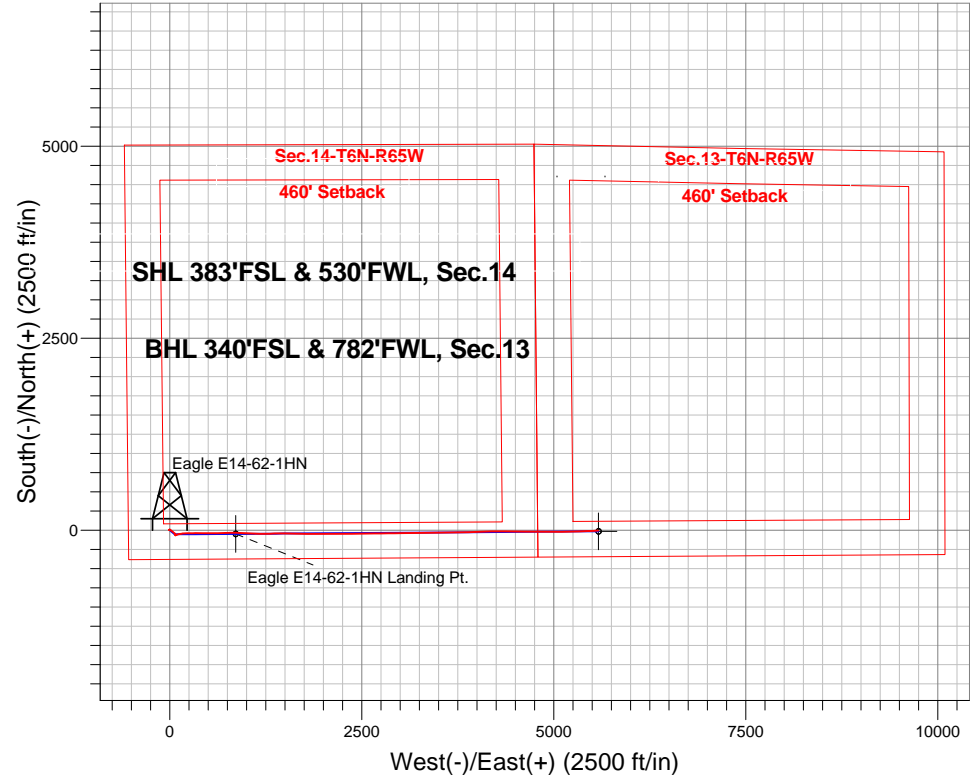
Ground Elevation: 4736.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1418814.81	3239744.87	40.479850	-104.638160	

Precision 829 RKB - 16' WELL @ 4752.0ft (Precision 829 RKB - 16')

FINAL SURVEY

Projected Bottom Hole Location
 12095'MD 6876'TVD 4'S & 5581'E of SHL 88.4
 degree Incl @ 87.0 degree AZM



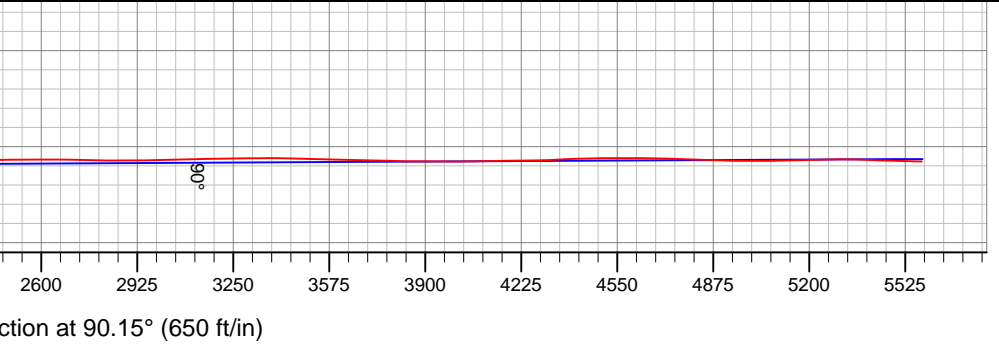
Eagle E14-62-1HN Pad Sec.14-T6N-R65W
 Eagle E14-62-1HN
 Wellbore #1

ANNOTATIONS

No annotation data is available.

LEGEND

- Eagle E14-62-1HN, Wellbore #1, Plan A - Rev 0 V0
- ◇ Wellbore #1





Noble Energy Inc.- Weld County, CO (Grid North)

Sec.14-T6N-R65W

Eagle E14-62-1HN Pad Sec.14-T6N-R65W

Eagle E14-62-1HN

Wellbore #1

Design: Wellbore #1

Final Survey

16 July, 2014

Company:	Noble Energy Inc.- Weld County, CO (Grid North)	Local Co-ordinate Reference:	Well Eagle E14-62-1HN
Project:	Sec.14-T6N-R65W	TVD Reference:	WELL @ 4752.0ft (Precision 829 RKB - 16')
Site:	Eagle E14-62-1HN Pad Sec.14-T6N-R65W	MD Reference:	WELL @ 4752.0ft (Precision 829 RKB - 16')
Well:	Eagle E14-62-1HN	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Project	Sec.14-T6N-R65W, 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	Eagle E14-62-1HN Pad Sec.14-T6N-R65W				
Site Position:		Northing:	1,418,814.82 ft	Latitude:	40.479850
From:	Lat/Long	Easting:	3,239,744.87 ft	Longitude:	-104.638160
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.56 °

Well	Eagle E14-62-1HN					
Well Position	+N/-S	0.0 ft	Northing:	1,418,814.81 ft	Latitude:	40.479850
	+E/-W	0.0 ft	Easting:	3,239,744.87 ft	Longitude:	-104.638160
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,736.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	7/2/2014	8.39	67.03	52,866

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	90.15	

Survey Program	Date	7/14/2014			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
318.0	671.0	Surface (Wellbore #1)	Flexi-Shot	VES Flexi-Shot Tool	
708.0	7,170.0	Intermediate-Curve (Wellbore #1)	MWD	MWD - Standard	
7,233.0	12,095.0	Lateral (Wellbore #1)	MWD+IFR1+MS_WY	Fixed:v2:Rockies, crustal dec + 3-axis correction	

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)		
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.00
318.0	0.30	9.67	318.0	0.8	0.1	0.1	0.1	0.09	
671.0	0.20	9.47	671.0	2.3	0.4	0.4	0.4	0.03	
708.0	0.90	313.40	708.0	2.6	0.2	0.2	0.2	2.18	
798.0	1.10	324.30	798.0	3.8	-0.8	-0.8	-0.8	0.31	
887.0	1.10	332.40	887.0	5.2	-1.7	-1.7	-1.7	0.17	
977.0	1.00	337.60	976.9	6.7	-2.4	-2.4	-2.4	0.15	
1,067.0	0.90	59.40	1,066.9	7.8	-2.1	-2.1	-2.1	1.38	
1,175.0	0.90	63.90	1,174.9	8.6	-0.6	-0.6	-0.6	0.07	
1,270.0	1.50	106.20	1,269.9	8.6	1.2	1.2	1.2	1.09	

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Site:	Eagle E14-62-1HN Pad Sec.14-T6N-R65W	MD Reference:	WELL @ 4752.0ft (Precision 829 RKB - 16')
Well:	Eagle E14-62-1HN	North Reference:	Grid
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)		
1,368.0	0.10	104.10	1,367.9	8.2	2.6	2.5	1.43		
1,463.0	0.90	241.60	1,462.9	7.9	2.0	2.0	1.03		
1,556.0	0.90	218.40	1,555.9	6.9	0.9	0.9	0.39		
1,650.0	1.00	231.00	1,649.9	5.8	-0.2	-0.2	0.25		
1,742.0	1.20	226.90	1,741.8	4.7	-1.5	-1.5	0.23		
1,836.0	1.10	226.90	1,835.8	3.4	-2.9	-2.9	0.11		
1,928.0	0.50	213.70	1,927.8	2.4	-3.8	-3.8	0.68		
2,022.0	0.40	101.50	2,021.8	2.0	-3.7	-3.7	0.80		
2,117.0	0.50	86.70	2,116.8	2.0	-2.9	-2.9	0.16		
2,210.0	0.80	70.70	2,209.8	2.2	-1.9	-1.9	0.37		
2,303.0	0.70	69.10	2,302.8	2.7	-0.8	-0.8	0.11		
2,397.0	0.50	68.30	2,396.8	3.0	0.1	0.1	0.21		
2,491.0	1.00	76.20	2,490.8	3.4	1.3	1.3	0.54		
2,598.0	2.40	91.80	2,597.7	3.5	4.5	4.5	1.37		
2,688.0	3.50	117.70	2,687.6	2.2	8.8	8.8	1.89		
2,778.0	5.40	118.00	2,777.3	-1.1	14.9	15.0	2.11		
2,867.0	6.60	127.10	2,865.9	-6.1	22.7	22.7	1.72		
2,957.0	7.10	131.80	2,955.2	-13.0	31.0	31.0	0.83		
3,046.0	6.60	131.70	3,043.6	-20.0	38.9	39.0	0.56		
3,136.0	6.20	130.60	3,133.0	-26.6	46.5	46.5	0.46		
3,225.0	5.60	124.00	3,221.6	-32.2	53.7	53.8	1.02		
3,315.0	4.70	136.60	3,311.2	-37.3	59.9	60.0	1.60		
3,405.0	3.80	143.80	3,400.9	-42.4	64.2	64.3	1.16		
3,494.0	3.10	136.80	3,489.8	-46.6	67.6	67.7	0.92		
3,584.0	2.60	150.70	3,579.7	-50.1	70.2	70.4	0.94		
3,674.0	0.70	141.70	3,669.6	-52.3	71.6	71.7	2.12		
3,763.0	0.40	144.40	3,758.6	-53.0	72.1	72.2	0.34		
3,853.0	0.70	130.00	3,848.6	-53.6	72.7	72.8	0.36		
3,942.0	0.80	106.40	3,937.6	-54.1	73.7	73.9	0.36		
4,032.0	1.10	108.30	4,027.6	-54.6	75.1	75.3	0.34		
4,122.0	1.00	178.20	4,117.6	-55.6	76.0	76.1	1.34		
4,211.0	1.40	176.40	4,206.6	-57.5	76.1	76.2	0.45		
4,301.0	1.40	150.00	4,296.5	-59.5	76.7	76.8	0.71		
4,391.0	1.80	140.30	4,386.5	-61.6	78.1	78.3	0.54		
4,480.0	0.90	237.00	4,475.5	-63.0	78.5	78.6	2.36		
4,570.0	0.40	304.40	4,565.5	-63.3	77.6	77.8	0.93		
4,660.0	0.20	310.20	4,655.5	-63.0	77.2	77.4	0.22		
4,749.0	0.70	236.20	4,744.5	-63.2	76.7	76.8	0.76		
4,839.0	0.50	236.20	4,834.5	-63.7	75.9	76.0	0.22		
4,929.0	1.00	290.60	4,924.5	-63.6	74.8	75.0	0.91		
5,018.0	0.70	287.90	5,013.5	-63.2	73.6	73.7	0.34		
5,108.0	0.40	255.90	5,103.5	-63.1	72.7	72.9	0.46		
5,198.0	0.90	157.30	5,193.5	-63.8	72.7	72.9	1.15		
5,287.0	1.30	143.40	5,282.4	-65.3	73.6	73.7	0.54		
5,377.0	0.70	140.90	5,372.4	-66.5	74.5	74.7	0.67		

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Well:	Eagle E14-62-1HN	North Reference:	Grid
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)
5,466.0	0.80	187.60	5,461.4	-67.6	74.8	75.0	0.68
5,556.0	0.10	255.30	5,551.4	-68.2	74.6	74.8	0.85
5,646.0	0.70	125.30	5,641.4	-68.6	75.0	75.2	0.85
5,735.0	1.40	350.00	5,730.4	-67.8	75.3	75.4	2.20
5,825.0	1.10	355.70	5,820.4	-65.9	75.0	75.2	0.36
5,914.0	0.90	7.70	5,909.4	-64.3	75.0	75.2	0.32
6,004.0	0.80	80.20	5,999.4	-63.5	75.7	75.9	1.12
6,093.0	1.20	98.60	6,088.3	-63.5	77.3	77.4	0.57
6,138.0	1.30	104.90	6,133.3	-63.7	78.2	78.4	0.38
6,183.0	2.40	76.70	6,178.3	-63.7	79.6	79.8	3.10
6,228.0	4.80	65.80	6,223.2	-62.7	82.3	82.4	5.52
6,273.0	7.10	67.50	6,268.0	-60.8	86.6	86.7	5.13
6,317.0	11.50	73.40	6,311.4	-58.5	93.3	93.4	10.22
6,362.0	15.20	73.90	6,355.2	-55.6	103.3	103.4	8.23
6,407.0	17.80	75.00	6,398.3	-52.2	115.6	115.7	5.82
6,452.0	21.10	79.50	6,440.7	-48.9	130.2	130.3	8.05
6,497.0	25.30	81.60	6,482.1	-46.1	147.7	147.8	9.51
6,541.0	28.20	83.00	6,521.4	-43.4	167.3	167.4	6.74
6,586.0	31.20	85.50	6,560.5	-41.2	189.5	189.6	7.21
6,631.0	35.00	90.50	6,598.2	-40.4	214.0	214.1	10.39
6,676.0	38.00	90.80	6,634.3	-40.7	240.8	240.9	6.68
6,721.0	41.80	89.80	6,668.8	-40.9	269.6	269.7	8.56
6,766.0	46.10	87.00	6,701.2	-40.0	300.8	300.9	10.48
6,811.0	51.80	87.20	6,730.8	-38.2	334.7	334.8	12.67
6,856.0	56.70	90.40	6,757.1	-37.5	371.2	371.3	12.32
6,900.0	57.10	91.90	6,781.1	-38.2	408.1	408.2	3.00
6,945.0	60.40	91.60	6,804.4	-39.4	446.5	446.6	7.36
6,990.0	64.90	91.20	6,825.1	-40.4	486.5	486.6	10.03
7,035.0	70.10	89.30	6,842.3	-40.6	528.0	528.1	12.20
7,080.0	76.00	87.50	6,855.4	-39.3	571.0	571.1	13.66
7,125.0	79.10	88.50	6,865.1	-37.8	614.9	615.0	7.22
7,170.0	81.30	89.40	6,872.8	-37.0	659.3	659.4	5.27
7,233.0	84.00	87.50	6,880.9	-35.3	721.7	721.8	5.23
7,263.0	84.10	88.50	6,884.0	-34.3	751.5	751.6	3.33
7,294.0	85.90	89.00	6,886.7	-33.6	782.4	782.5	6.02
7,325.0	86.70	89.20	6,888.7	-33.1	813.3	813.4	2.66
7,355.0	89.60	90.10	6,889.6	-32.9	843.3	843.4	10.12
7,371.5	90.32	90.82	6,889.6	-33.1	859.8	859.9	6.19
Eagle E14-62-1HN Landing Pt.							
7,387.0	91.00	91.50	6,889.5	-33.4	875.3	875.4	6.19
7,481.0	89.80	92.70	6,888.8	-36.8	969.2	969.3	1.81
7,573.0	89.50	94.00	6,889.4	-42.2	1,061.1	1,061.2	1.45
7,667.0	89.80	90.60	6,889.9	-46.0	1,155.0	1,155.1	3.63
7,743.0	91.00	89.10	6,889.4	-45.8	1,231.0	1,231.1	2.53

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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)	
7,832.0	91.60	88.60	6,887.4	-44.0	1,319.9	1,320.1	0.88	
7,922.0	90.70	90.00	6,885.6	-42.9	1,409.9	1,410.0	1.85	
8,012.0	90.90	90.60	6,884.3	-43.4	1,499.9	1,500.0	0.70	
8,101.0	91.50	90.50	6,882.5	-44.2	1,588.9	1,589.0	0.68	
8,191.0	90.50	90.30	6,880.9	-44.8	1,678.9	1,679.0	1.13	
8,281.0	90.20	90.90	6,880.3	-45.8	1,768.9	1,769.0	0.75	
8,370.0	90.20	91.00	6,880.0	-47.3	1,857.8	1,858.0	0.11	
8,460.0	90.00	90.40	6,879.9	-48.4	1,947.8	1,948.0	0.70	
8,549.0	90.50	89.70	6,879.5	-48.4	2,036.8	2,037.0	0.97	
8,639.0	90.90	88.90	6,878.4	-47.3	2,126.8	2,126.9	0.99	
8,729.0	91.80	89.00	6,876.3	-45.7	2,216.8	2,216.9	1.01	
8,818.0	91.20	89.50	6,873.9	-44.5	2,305.7	2,305.9	0.88	
8,908.0	91.50	90.50	6,871.8	-44.5	2,395.7	2,395.8	1.16	
8,998.0	90.90	90.20	6,869.9	-45.1	2,485.7	2,485.8	0.75	
9,087.0	90.20	89.40	6,869.1	-44.8	2,574.7	2,574.8	1.19	
9,177.0	89.70	89.10	6,869.2	-43.6	2,664.7	2,664.8	0.65	
9,267.0	88.70	89.20	6,870.4	-42.2	2,754.7	2,754.8	1.12	
9,357.0	89.60	89.10	6,871.8	-40.9	2,844.6	2,844.7	1.01	
9,446.0	90.40	88.70	6,871.8	-39.2	2,933.6	2,933.7	1.00	
9,536.0	91.50	88.20	6,870.3	-36.8	3,023.6	3,023.7	1.34	
9,626.0	91.70	88.90	6,867.7	-34.5	3,113.5	3,113.6	0.81	
9,715.0	91.30	89.30	6,865.4	-33.1	3,202.5	3,202.5	0.64	
9,805.0	90.20	90.20	6,864.2	-32.7	3,292.5	3,292.5	1.58	
9,894.0	90.10	90.60	6,864.0	-33.3	3,381.5	3,381.5	0.46	
9,984.0	88.80	89.60	6,864.9	-33.5	3,471.4	3,471.5	1.82	
10,074.0	88.00	89.30	6,867.4	-32.6	3,561.4	3,561.5	0.95	
10,163.0	88.20	88.70	6,870.3	-31.1	3,650.3	3,650.4	0.71	
10,253.0	88.70	88.40	6,872.8	-28.8	3,740.3	3,740.3	0.65	
10,342.0	89.10	88.40	6,874.5	-26.3	3,829.2	3,829.3	0.45	
10,432.0	89.80	87.80	6,875.3	-23.3	3,919.2	3,919.2	1.02	
10,521.0	90.50	87.80	6,875.1	-19.9	4,008.1	4,008.1	0.79	
10,611.0	90.70	88.20	6,874.2	-16.8	4,098.1	4,098.1	0.50	
10,700.0	90.60	89.10	6,873.2	-14.7	4,187.0	4,187.0	1.02	
10,790.0	91.50	89.70	6,871.5	-13.7	4,277.0	4,277.0	1.20	
10,880.0	93.10	90.30	6,867.9	-13.7	4,366.9	4,366.9	1.90	
10,969.0	90.40	90.70	6,865.2	-14.5	4,455.9	4,455.9	3.07	
11,059.0	91.00	91.30	6,864.1	-16.1	4,545.8	4,545.9	0.94	
11,148.0	89.60	91.20	6,863.6	-18.0	4,634.8	4,634.9	1.58	
11,238.0	88.00	90.70	6,865.5	-19.5	4,724.8	4,724.8	1.86	
11,328.0	87.90	90.30	6,868.7	-20.3	4,814.7	4,814.8	0.46	
11,417.0	88.10	90.10	6,871.8	-20.6	4,903.7	4,903.7	0.32	
11,507.0	90.00	89.40	6,873.3	-20.2	4,993.7	4,993.7	2.25	
11,597.0	90.40	89.30	6,873.0	-19.2	5,083.6	5,083.7	0.46	
11,686.0	92.10	89.20	6,871.1	-18.0	5,172.6	5,172.6	1.91	

Company:	Noble Energy Inc.- Weld County, CO (Grid North)	Local Co-ordinate Reference:	Well Eagle E14-62-1HN
Project:	Sec.14-T6N-R65W	TVD Reference:	WELL @ 4752.0ft (Precision 829 RKB - 16')
Site:	Eagle E14-62-1HN Pad Sec.14-T6N-R65W	MD Reference:	WELL @ 4752.0ft (Precision 829 RKB - 16')
Well:	Eagle E14-62-1HN	North Reference:	Grid
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)	
11,776.0	91.30	88.90	6,868.4	-16.5	5,262.6	5,262.6	0.95	
11,866.0	88.40	87.90	6,868.6	-14.0	5,352.5	5,352.5	3.41	
11,955.0	88.10	88.00	6,871.3	-10.8	5,441.4	5,441.4	0.36	
12,033.0	88.40	87.00	6,873.7	-7.4	5,519.3	5,519.3	1.34	
12,095.0	88.40	87.00	6,875.5	-4.2	5,581.2	5,581.2	0.00	
Eagle E14-62-1HN BHL 330'FSL & 785'FWL								

Checked By: _____ Approved By: _____ Date: _____