

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

Well Name: **Oscar Y10-77HN**

Surface Location: Oscar Y10-77HN Pad Sec.10-T2N-R64W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

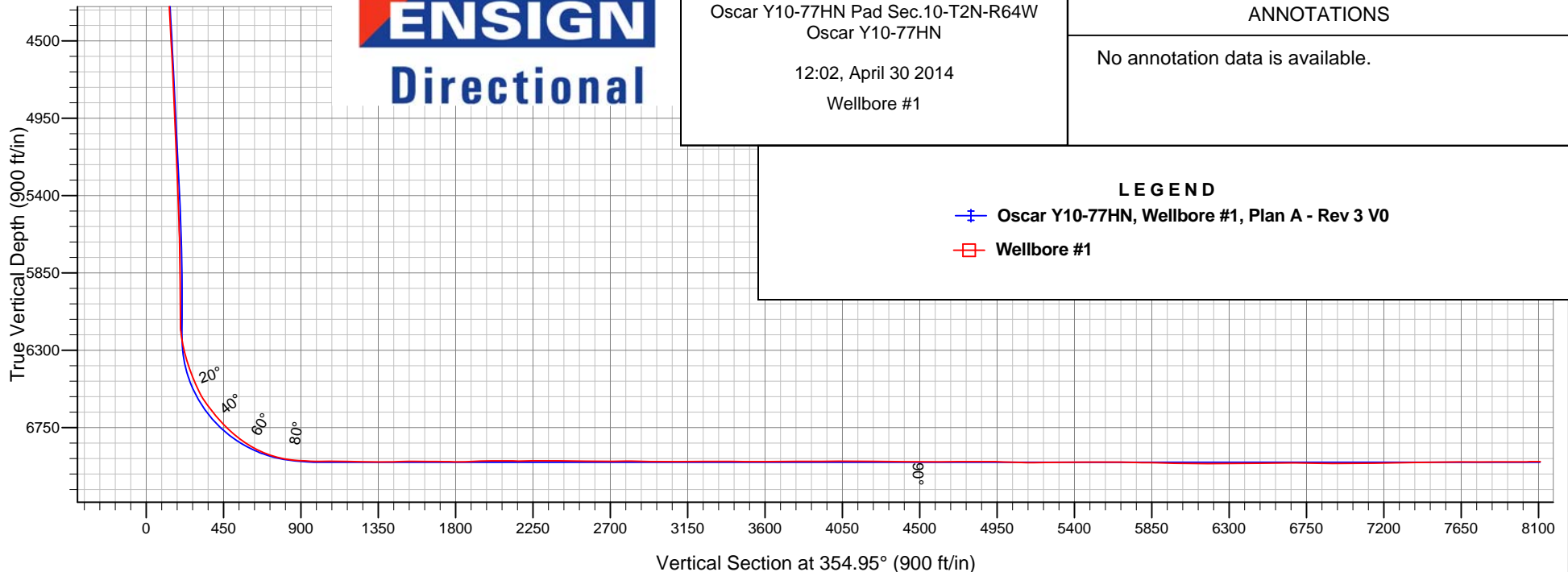
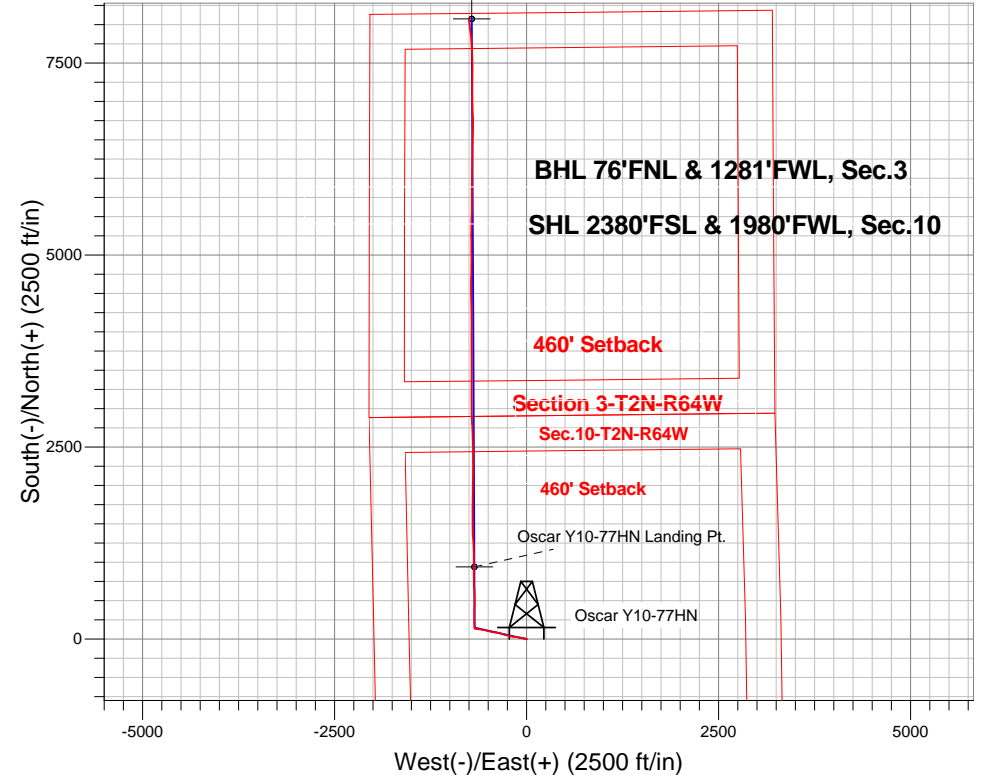
Ground Elevation: 4930.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1299756.94	3268344.61	40.152240	-104.539990	

Precision 828 RKB - 16' WELL @ 4946.0ft (Precision 828 RKB - 16')

FINAL SURVEY

Projected Bottom Hole Location
14600'MD 6948'TVD 8076'N & 752'W of SHL
90.6 degree Incl @ 351.9 degree AZM



Oscar Y10-77HN Pad Sec.10-T2N-R64W
Oscar Y10-77HN

12:02, April 30 2014

Wellbore #1

ANNOTATIONS

No annotation data is available.

LEGEND

- +— Oscar Y10-77HN, Wellbore #1, Plan A - Rev 3 V0
- Wellbore #1



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

Sec.10-T2N-R64W

Oscar Y10-77HN Pad Sec.10-T2N-R64W

Oscar Y10-77HN

Wellbore #1

Design: Wellbore #1

Standard Survey Report

30 April, 2014

Company:	Noble Energy Inc.- Weld County, CO (Grid North)	Local Co-ordinate Reference:	Well Oscar Y10-77HN
Project:	Sec.10-T2N-R64W	TVD Reference:	WELL @ 4946.0ft (Precision 828 RKB - 16')
Site:	Oscar Y10-77HN Pad Sec.10-T2N-R64W	MD Reference:	WELL @ 4946.0ft (Precision 828 RKB - 16')
Well:	Oscar Y10-77HN	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Project	Sec.10-T2N-R64W, 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		Oscar Y10-77HN Pad Sec.10-T2N-R64W			
Site Position:		Northing:	1,299,756.95 ft	Latitude:	40.152240
From:	Lat/Long	Easting:	3,268,344.61 ft	Longitude:	-104.539990
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.62 °

Well	Oscar Y10-77HN					
Well Position	+N-S	0.0 ft	Northing:	1,299,756.94 ft	Latitude:	40.152240
	+E-W	0.0 ft	Easting:	3,268,344.61 ft	Longitude:	-104.539990
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,930.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	4/14/2014	8.34	66.79	52,726

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	354.95	

Survey Program		Date	4/30/2014		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
416.0	1,178.0	Surface (Wellbore #1)	Flexi-Shot	VES Flexi-Shot Tool	
1,188.0	7,293.0	Intermediate - curve (Wellbore #1)	MWD+IFR1+MS_WY	Fixed:v2:Rockies, crustal dec + 3-axis correction	
7,389.0	14,600.0	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)	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
416.0	0.60	77.68	416.0	0.5	2.1	0.3	0.14	0.14	0.00
806.0	0.20	194.08	806.0	0.2	4.0	-0.1	0.18	-0.10	29.85
1,178.0	0.00	340.88	1,178.0	-0.4	3.8	-0.7	0.05	-0.05	0.00
1,188.0	0.40	248.80	1,188.0	-0.4	3.8	-0.7	4.00	4.00	0.00
1,283.0	3.50	295.40	1,282.9	0.7	0.8	0.6	3.41	3.26	49.05
1,377.0	6.50	290.90	1,376.6	3.9	-6.7	4.4	3.22	3.19	-4.79
1,472.0	6.90	293.60	1,470.9	8.1	-17.0	9.5	0.54	0.42	2.84
1,567.0	7.30	282.10	1,565.2	11.6	-28.1	14.0	1.55	0.42	-12.11
1,662.0	7.50	278.20	1,659.4	13.8	-40.1	17.2	0.57	0.21	-4.11

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Well:	Oscar Y10-77HN	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)	Build Rate (°/100ft)	Turn Rate (°/100ft)
1,757.0	7.70	277.50	1,753.6	15.5	-52.6	20.0	0.23	0.21	-0.74
1,852.0	9.10	279.80	1,847.5	17.6	-66.3	23.3	1.52	1.47	2.42
1,947.0	8.10	276.00	1,941.5	19.6	-80.4	26.6	1.21	-1.05	-4.00
2,010.0	9.10	277.80	2,003.8	20.7	-89.7	28.5	1.64	1.59	2.86
2,103.0	10.00	284.50	2,095.5	23.7	-104.8	32.8	1.54	0.97	7.20
2,193.0	8.80	278.10	2,184.3	26.6	-119.2	37.0	1.77	-1.33	-7.11
2,283.0	10.20	277.00	2,273.0	28.6	-133.9	40.3	1.57	1.56	-1.22
2,372.0	9.00	272.10	2,360.8	29.8	-148.7	42.8	1.63	-1.35	-5.51
2,462.0	10.30	272.20	2,449.5	30.4	-163.8	44.7	1.44	1.44	0.11
2,552.0	9.80	277.50	2,538.1	31.7	-179.4	47.3	1.17	-0.56	5.89
2,642.0	9.80	284.20	2,626.8	34.6	-194.4	51.5	1.27	0.00	7.44
2,732.0	9.40	288.60	2,715.6	38.8	-208.8	57.0	0.93	-0.44	4.89
2,822.0	8.80	283.40	2,804.4	42.7	-222.5	62.1	1.13	-0.67	-5.78
2,912.0	9.80	282.20	2,893.2	45.9	-236.7	66.6	1.13	1.11	-1.33
3,002.0	9.60	279.50	2,982.0	48.8	-251.6	70.7	0.55	-0.22	-3.00
3,092.0	8.70	284.90	3,070.8	51.8	-265.5	74.9	1.38	-1.00	6.00
3,182.0	7.70	283.20	3,159.9	54.9	-278.0	79.2	1.14	-1.11	-1.89
3,272.0	8.80	291.20	3,249.0	58.8	-290.3	84.1	1.76	1.22	8.89
3,362.0	9.90	292.30	3,337.8	64.2	-303.9	90.7	1.24	1.22	1.22
3,451.0	9.10	288.30	3,425.5	69.3	-317.6	97.0	1.16	-0.90	-4.49
3,541.0	8.60	282.10	3,514.5	73.0	-331.0	101.8	1.20	-0.56	-6.89
3,631.0	8.90	280.30	3,603.4	75.6	-344.4	105.6	0.45	0.33	-2.00
3,721.0	9.10	282.70	3,692.3	78.4	-358.2	109.6	0.47	0.22	2.67
3,811.0	8.40	281.10	3,781.3	81.3	-371.6	113.6	0.82	-0.78	-1.78
3,901.0	9.50	279.10	3,870.2	83.7	-385.4	117.3	1.27	1.22	-2.22
3,991.0	9.40	279.90	3,958.9	86.1	-399.9	121.0	0.18	-0.11	0.89
4,080.0	9.40	279.40	4,046.8	88.6	-414.3	124.7	0.09	0.00	-0.56
4,170.0	9.30	276.20	4,135.6	90.6	-428.7	127.9	0.59	-0.11	-3.56
4,260.0	9.50	281.10	4,224.4	92.8	-443.3	131.4	0.92	0.22	5.44
4,350.0	9.20	278.50	4,313.2	95.3	-457.7	135.2	0.58	-0.33	-2.89
4,440.0	8.90	286.70	4,402.0	98.3	-471.5	139.4	1.47	-0.33	9.11
4,530.0	8.40	285.00	4,491.0	102.0	-484.5	144.3	0.62	-0.56	-1.89
4,619.0	9.10	287.50	4,579.0	105.8	-497.5	149.2	0.89	0.79	2.81
4,709.0	8.80	284.80	4,667.9	109.7	-510.9	154.3	0.57	-0.33	-3.00
4,799.0	8.00	282.40	4,756.9	112.8	-523.7	158.5	0.97	-0.89	-2.67
4,889.0	8.30	277.50	4,846.0	115.0	-536.2	161.8	0.84	0.33	-5.44
4,979.0	9.10	280.90	4,935.0	117.2	-549.7	165.1	1.06	0.89	3.78
5,069.0	9.00	285.50	5,023.9	120.4	-563.4	169.6	0.81	-0.11	5.11
5,159.0	10.30	280.30	5,112.6	123.8	-578.1	174.2	1.74	1.44	-5.78
5,248.0	10.00	276.80	5,200.2	126.1	-593.6	177.8	0.77	-0.34	-3.93
5,338.0	9.10	274.20	5,288.9	127.5	-608.5	180.6	1.11	-1.00	-2.89
5,428.0	8.90	282.30	5,377.8	129.6	-622.4	183.8	1.42	-0.22	9.00
5,518.0	7.90	281.10	5,466.9	132.2	-635.3	187.6	1.13	-1.11	-1.33
5,608.0	6.70	280.30	5,556.1	134.4	-646.5	190.7	1.34	-1.33	-0.89
5,698.0	5.50	278.80	5,645.6	136.0	-655.9	193.1	1.34	-1.33	-1.67
5,788.0	4.90	271.50	5,735.3	136.7	-664.0	194.6	0.99	-0.67	-8.11
5,878.0	3.40	294.50	5,825.0	137.9	-670.3	196.4	2.46	-1.67	25.56
5,968.0	1.50	282.50	5,914.9	139.3	-673.9	198.0	2.18	-2.11	-13.33
6,058.0	0.40	291.30	6,004.9	139.7	-675.3	198.5	1.23	-1.22	9.78
6,148.0	0.20	3.90	6,094.9	139.9	-675.6	198.8	0.43	-0.22	80.67
6,193.0	0.60	33.60	6,139.9	140.2	-675.5	199.1	0.97	0.89	66.00
6,237.0	4.20	9.00	6,183.9	142.0	-675.1	200.8	8.32	8.18	-55.91
6,282.0	9.20	4.10	6,228.6	147.2	-674.6	206.0	11.17	11.11	-10.89
6,327.0	12.40	0.60	6,272.8	155.6	-674.3	214.3	7.26	7.11	-7.78

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Well:	Oscar Y10-77HN	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)	Build Rate (°/100ft)	Turn Rate (°/100ft)
6,372.0	14.80	356.30	6,316.5	166.2	-674.6	224.9	5.78	5.33	-9.56
6,417.0	16.50	354.50	6,359.8	178.3	-675.6	237.0	3.93	3.78	-4.00
6,462.0	18.80	351.40	6,402.7	191.8	-677.3	250.7	5.52	5.11	-6.89
6,507.0	21.10	355.30	6,445.0	207.1	-679.0	266.0	5.90	5.11	8.67
6,552.0	22.80	357.50	6,486.7	223.8	-680.1	282.8	4.20	3.78	4.89
6,597.0	25.80	359.00	6,527.7	242.4	-680.6	301.3	6.81	6.67	3.33
6,642.0	29.90	359.10	6,567.5	263.4	-681.0	322.3	9.11	9.11	0.22
6,686.0	34.90	358.80	6,604.7	286.9	-681.4	345.8	11.37	11.36	-0.68
6,731.0	38.10	0.50	6,640.8	313.7	-681.6	372.5	7.46	7.11	3.78
6,777.0	40.00	1.00	6,676.6	342.7	-681.2	401.3	4.19	4.13	1.09
6,821.0	42.30	0.90	6,709.7	371.6	-680.7	430.1	5.23	5.23	-0.23
6,866.0	45.20	1.10	6,742.2	402.7	-680.1	461.0	6.45	6.44	0.44
6,911.0	47.10	3.00	6,773.4	435.2	-679.0	493.2	5.21	4.22	4.22
6,956.0	51.60	2.40	6,802.7	469.3	-677.4	527.0	10.05	10.00	-1.33
7,001.0	55.70	0.60	6,829.3	505.5	-676.4	563.0	9.66	9.11	-4.00
7,046.0	59.60	358.90	6,853.4	543.5	-676.6	600.9	9.24	8.67	-3.78
7,091.0	62.50	358.10	6,875.2	582.8	-677.7	640.2	6.63	6.44	-1.78
7,136.0	66.30	356.60	6,894.6	623.4	-679.5	680.7	8.96	8.44	-3.33
7,181.0	71.10	356.10	6,911.0	665.2	-682.2	722.6	10.72	10.67	-1.11
7,226.0	76.40	358.00	6,923.6	708.3	-684.4	765.8	12.46	11.78	4.22
7,271.0	80.30	359.00	6,932.7	752.4	-685.6	809.8	8.94	8.67	2.22
7,293.0	82.80	359.80	6,935.9	774.1	-685.8	831.5	11.92	11.36	3.64
7,389.0	87.40	1.11	6,944.1	869.7	-685.0	926.7	4.98	4.79	1.36
7,460.4	89.07	0.37	6,946.3	941.1	-684.1	997.7	2.55	2.33	-1.03
Oscar Y10-77HN Landing Pt.									
7,479.0	89.50	0.18	6,946.5	959.7	-684.0	1,016.2	2.55	2.33	-1.03
7,569.0	90.90	359.48	6,946.2	1,049.7	-684.3	1,105.8	1.74	1.56	-0.78
7,659.0	88.00	356.63	6,947.1	1,139.6	-687.3	1,195.7	4.52	-3.22	-3.17
7,749.0	89.10	356.24	6,949.3	1,229.4	-692.9	1,285.6	1.30	1.22	-0.43
7,838.0	90.50	357.09	6,949.7	1,318.3	-698.1	1,374.6	1.84	1.57	0.96
7,928.0	91.70	358.97	6,947.9	1,408.2	-701.2	1,464.4	2.48	1.33	2.09
8,018.0	89.70	0.09	6,946.8	1,498.2	-701.9	1,554.1	2.55	-2.22	1.24
8,108.0	90.10	359.72	6,947.0	1,588.2	-702.1	1,643.8	0.61	0.44	-0.41
8,198.0	88.50	0.62	6,948.1	1,678.2	-701.8	1,733.4	2.04	-1.78	1.00
8,288.0	90.70	0.56	6,948.7	1,768.2	-700.9	1,823.0	2.45	2.44	-0.07
8,381.0	91.90	1.36	6,946.6	1,861.1	-699.3	1,915.4	1.55	1.29	0.86
8,475.0	91.20	0.33	6,944.1	1,955.1	-698.0	2,008.9	1.32	-0.74	-1.10
8,569.0	89.20	358.77	6,943.7	2,049.1	-698.7	2,102.6	2.70	-2.13	-1.66
8,663.0	90.20	0.74	6,944.2	2,143.0	-699.1	2,196.2	2.35	1.06	2.10
8,757.0	90.10	1.43	6,944.0	2,237.0	-697.3	2,289.7	0.74	-0.11	0.73
8,852.0	90.00	1.80	6,943.9	2,332.0	-694.6	2,384.1	0.40	-0.11	0.39
8,947.0	89.90	359.14	6,944.0	2,427.0	-693.9	2,478.6	2.80	-0.11	-2.80
9,041.0	88.30	357.38	6,945.5	2,520.9	-696.7	2,572.4	2.53	-1.70	-1.87
9,136.0	90.60	357.49	6,946.4	2,615.8	-701.0	2,667.3	2.42	2.42	0.12
9,230.0	90.70	358.11	6,945.3	2,709.7	-704.6	2,761.2	0.67	0.11	0.66
9,324.0	89.20	356.05	6,945.4	2,803.6	-709.4	2,855.1	2.71	-1.60	-2.19
9,418.0	88.30	357.58	6,947.4	2,897.4	-714.6	2,949.1	1.89	-0.96	1.63
9,512.0	90.30	0.73	6,948.6	2,991.4	-716.0	3,042.8	3.97	2.13	3.35
9,607.0	90.50	0.65	6,947.9	3,086.4	-714.8	3,137.3	0.23	0.21	-0.08
9,701.0	90.50	0.15	6,947.1	3,180.4	-714.2	3,230.9	0.53	0.00	-0.53
9,795.0	90.60	0.20	6,946.2	3,274.4	-713.9	3,324.5	0.12	0.11	0.05
9,890.0	88.10	359.15	6,947.3	3,369.4	-714.4	3,419.2	2.85	-2.63	-1.11
9,984.0	90.20	0.07	6,948.7	3,463.3	-715.1	3,512.8	2.44	2.23	0.98

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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)
10,077.0	90.00	359.32	6,948.5	3,556.3	-715.6	3,605.5	0.83	-0.22	-0.81
10,170.0	90.90	0.45	6,947.8	3,649.3	-715.7	3,698.2	1.55	0.97	1.22
10,264.0	90.80	0.39	6,946.4	3,743.3	-715.1	3,791.7	0.12	-0.11	-0.06
10,357.0	89.20	359.11	6,946.4	3,836.3	-715.5	3,884.4	2.20	-1.72	-1.38
10,451.0	90.40	359.57	6,946.7	3,930.3	-716.5	3,978.1	1.37	1.28	0.49
10,542.0	90.80	1.55	6,945.8	4,021.3	-715.7	4,068.7	2.22	0.44	2.18
10,634.0	89.60	359.73	6,945.4	4,113.3	-714.6	4,160.2	2.37	-1.30	-1.98
10,729.0	89.00	358.24	6,946.6	4,208.3	-716.3	4,255.0	1.69	-0.63	-1.57
10,835.0	89.50	359.15	6,948.0	4,314.2	-718.7	4,360.7	0.98	0.47	0.86
10,924.0	89.70	359.27	6,948.6	4,403.2	-720.0	4,449.5	0.26	0.22	0.13
11,014.0	89.50	358.76	6,949.2	4,493.2	-721.5	4,539.3	0.61	-0.22	-0.57
11,104.0	90.70	0.25	6,949.1	4,583.2	-722.3	4,629.0	2.13	1.33	1.66
11,194.0	90.30	0.98	6,948.3	4,673.2	-721.3	4,718.5	0.92	-0.44	0.81
11,284.0	90.10	1.33	6,948.0	4,763.2	-719.5	4,808.0	0.45	-0.22	0.39
11,374.0	89.80	0.57	6,948.1	4,853.1	-718.0	4,897.5	0.91	-0.33	-0.84
11,464.0	87.90	0.33	6,949.9	4,943.1	-717.3	4,987.1	2.13	-2.11	-0.27
11,554.0	88.60	359.15	6,952.6	5,033.1	-717.7	5,076.7	1.52	0.78	-1.31
11,643.0	90.50	359.19	6,953.3	5,122.1	-719.0	5,165.5	2.14	2.13	0.04
11,733.0	90.50	359.54	6,952.5	5,212.0	-720.0	5,255.2	0.39	0.00	0.39
11,823.0	90.40	0.60	6,951.8	5,302.0	-719.9	5,344.8	1.18	-0.11	1.18
11,913.0	90.30	1.80	6,951.3	5,392.0	-718.0	5,434.3	1.34	-0.11	1.33
12,003.0	90.00	1.71	6,951.0	5,482.0	-715.2	5,523.7	0.35	-0.33	-0.10
12,093.0	90.30	1.81	6,950.8	5,571.9	-712.5	5,613.0	0.35	0.33	0.11
12,183.0	88.20	0.61	6,952.0	5,661.9	-710.6	5,702.5	2.69	-2.33	-1.33
12,272.0	89.90	359.88	6,953.4	5,750.9	-710.2	5,791.1	2.08	1.91	-0.82
12,362.0	88.80	0.28	6,954.5	5,840.9	-710.1	5,880.7	1.30	-1.22	0.44
12,452.0	88.10	0.42	6,956.9	5,930.8	-709.5	5,970.3	0.79	-0.78	0.16
12,542.0	89.60	0.69	6,958.7	6,020.8	-708.6	6,059.8	1.69	1.67	0.30
12,632.0	90.20	359.17	6,958.9	6,110.8	-708.8	6,149.5	1.82	0.67	-1.69
12,722.0	90.10	0.60	6,958.6	6,200.8	-708.9	6,239.1	1.59	-0.11	1.59
12,812.0	90.20	1.20	6,958.4	6,290.8	-707.5	6,328.7	0.68	0.11	0.67
12,902.0	90.30	2.98	6,958.0	6,380.7	-704.2	6,418.0	1.98	0.11	1.98
12,992.0	90.40	1.91	6,957.5	6,470.7	-700.4	6,507.2	1.19	0.11	-1.19
13,082.0	91.40	1.63	6,956.0	6,560.6	-697.6	6,596.5	1.15	1.11	-0.31
13,172.0	88.80	359.74	6,955.9	6,650.6	-696.5	6,686.1	3.57	-2.89	-2.10
13,262.0	89.50	0.12	6,957.2	6,740.6	-696.7	6,775.7	0.88	0.78	0.42
13,351.0	89.90	357.17	6,957.7	6,829.5	-698.8	6,864.5	3.34	0.45	-3.31
13,441.0	89.80	356.84	6,957.9	6,919.4	-703.5	6,954.5	0.38	-0.11	-0.37
13,531.0	90.20	358.29	6,957.9	7,009.3	-707.3	7,044.4	1.67	0.44	1.61
13,621.0	90.60	0.22	6,957.3	7,099.3	-708.5	7,134.1	2.19	0.44	2.14
13,711.0	90.40	1.36	6,956.5	7,189.3	-707.2	7,223.6	1.29	-0.22	1.27
13,801.0	91.70	0.44	6,954.9	7,279.3	-705.8	7,313.1	1.77	1.44	-1.02
13,891.0	91.60	0.68	6,952.3	7,369.2	-704.9	7,402.7	0.29	-0.11	0.27
13,981.0	89.90	359.90	6,951.1	7,459.2	-704.5	7,492.3	2.08	-1.89	-0.87
14,071.0	90.30	358.69	6,950.9	7,549.2	-705.6	7,582.0	1.42	0.44	-1.34
14,161.0	90.50	357.25	6,950.3	7,639.1	-708.8	7,671.9	1.62	0.22	-1.60
14,250.0	90.20	355.90	6,949.8	7,728.0	-714.1	7,760.8	1.55	-0.34	-1.52
14,340.0	90.10	354.84	6,949.5	7,817.7	-721.3	7,850.8	1.18	-0.11	-1.18
14,430.0	90.10	353.56	6,949.4	7,907.2	-730.4	7,940.8	1.42	0.00	-1.42
14,520.0	90.60	352.41	6,948.8	7,996.5	-741.4	8,030.8	1.39	0.56	-1.28
14,538.0	90.60	352.30	6,948.6	8,014.4	-743.8	8,048.7	0.61	0.00	-0.61
14,595.3	90.60	351.95	6,948.0	8,071.2	-751.7	8,106.0	0.61	0.00	-0.61

Oscar Y10-77HN BHL 75'FNL & 1320'FWL

Company:	Noble Energy Inc.- Weld County, CO (Grid North)	Local Co-ordinate Reference:	Well Oscar Y10-77HN
Project:	Sec.10-T2N-R64W	TVD Reference:	WELL @ 4946.0ft (Precision 828 RKB - 16')
Site:	Oscar Y10-77HN Pad Sec.10-T2N-R64W	MD Reference:	WELL @ 4946.0ft (Precision 828 RKB - 16')
Well:	Oscar Y10-77HN	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)	Build Rate (°/100ft)	Turn Rate (°/100ft)
14,600.0	90.60	351.92	6,948.0	8,075.8	-752.3	8,110.7	0.61	0.00	-0.61

Checked By: _____ Approved By: _____ Date: _____