

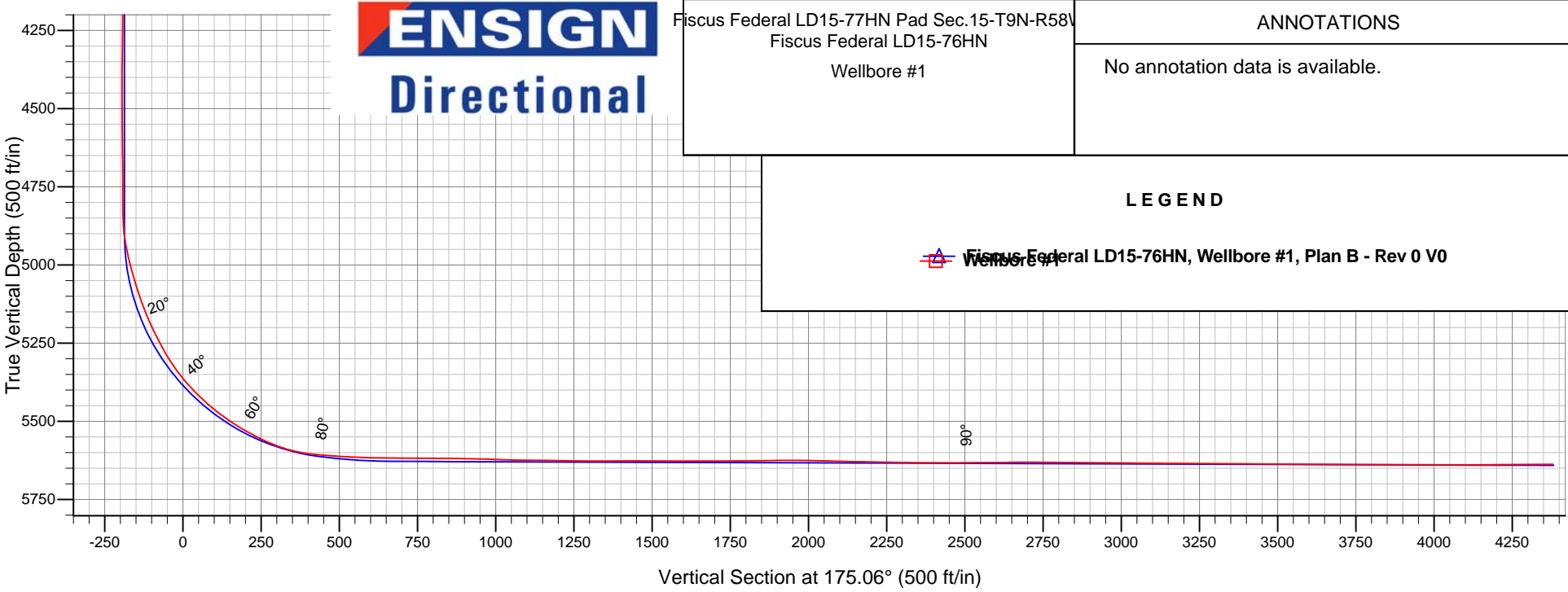
Noble Energy Inc.- Weld County, CO (Grid North)

Well Name: **Fiscus Federal LD15-76HN**

Surface Location: Fiscus Federal LD15-77HN Pad Sec.15-T9N-R58W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
Ground Elevation: 4700.0
+N/-S +E/-W Northing Easting Latitude Longitude Slot
0.0 0.0 1523168.32 3456120.34 40.757860 -103.853500
Precision 828 RKB - 16' WELL @ 4716.0ft (Precision 828 RKB - 16')

FINAL SURVEY

Projected Bottom Hole Location
9886'MD 5638'TVD 4364'S & 382'E of SHL
90.2 degree Incl @ 176.9 degree AZM



Fiscus Federal LD15-77HN Pad Sec.15-T9N-R58W
Fiscus Federal LD15-76HN
Wellbore #1

ANNOTATIONS

No annotation data is available.

LEGEND

Fiscus Federal LD15-76HN, Wellbore #1, Plan B - Rev 0 V0



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

Sec.15-T9N-R58W

Fiscus Federal LD15-77HN Pad Sec.15-T9N-R58W

Fiscus Federal LD15-76HN

Wellbore #1

Design: Wellbore #1

Final Survey

20 November, 2014

Company:	Noble Energy Inc.- Weld County, CO (Grid North)	Local Co-ordinate Reference:	Well Fiscus Federal LD15-76HN
Project:	Sec.15-T9N-R58W	TVD Reference:	WELL @ 4716.0ft (Precision 828 RKB - 16")
Site:	Fiscus Federal LD15-77HN Pad Sec.15-T9N-R58W	MD Reference:	WELL @ 4716.0ft (Precision 828 RKB - 16")
Well:	Fiscus Federal LD15-76HN	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Project	Sec.15-T9N-R58W, 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		Fiscus Federal LD15-77HN Pad Sec.15-T9N-R58W			
Site Position:		Northing:	1,523,163.30 ft	Latitude:	40.757850
From:	Lat/Long	Easting:	3,456,045.62 ft	Longitude:	-103.853770
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	1.06 °

Well	Fiscus Federal LD15-76HN					
Well Position	+N/-S	0.0 ft	Northing:	1,523,168.32 ft	Latitude:	40.757860
	+E/-W	0.0 ft	Easting:	3,456,120.34 ft	Longitude:	-103.853500
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,700.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	11/7/2014	7.93	67.36	53,052

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	175.06	

Survey Program		Date	11/20/2014		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
301.0	1,135.0	Surface (Wellbore #1)	MWD	MWD - Standard	
1,224.0	5,934.0	Intermediate/Curve (Wellbore #1)	MWD	MWD - Standard	
6,007.0	9,886.0	Lateral (Wellbore #1)	MWD	MWD - Standard	

Survey		Wellbore Data					
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	0.00
301.0	0.40	288.80	301.0	0.3	-1.0	-0.4	0.13
586.0	0.20	348.00	586.0	1.1	-2.0	-1.3	0.12
902.0	1.80	69.00	901.9	3.5	2.5	-3.2	0.56
1,135.0	3.60	79.20	1,134.7	6.1	13.1	-5.0	0.80
1,224.0	3.80	79.00	1,223.5	7.2	18.7	-5.6	0.23
1,318.0	4.40	86.70	1,317.2	8.0	25.4	-5.8	0.86
1,413.0	6.50	83.90	1,411.8	8.8	34.4	-5.8	2.23
1,507.0	8.40	70.80	1,505.0	11.6	46.1	-7.6	2.70
1,600.0	8.10	54.70	1,597.1	17.7	57.9	-12.6	2.50

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Site:	Fiscus Federal LD15-77HN Pad Sec.15-T9N-R58W	MD Reference:	WELL @ 4716.0ft (Precision 828 RKB - 16')
Well:	Fiscus Federal LD15-76HN	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)
1,695.0	9.10	38.10	1,691.0	27.4	68.0	-21.5	2.80
1,790.0	9.50	35.80	1,784.8	39.7	77.2	-32.9	0.57
1,885.0	8.70	33.30	1,878.6	52.1	85.8	-44.5	0.94
1,980.0	8.50	29.70	1,972.5	64.2	93.2	-55.9	0.60
2,059.0	7.10	34.20	2,050.8	73.3	98.8	-64.5	1.93
2,149.0	6.80	33.70	2,140.1	82.3	104.9	-73.0	0.34
2,239.0	7.00	31.10	2,229.5	91.5	110.7	-81.6	0.41
2,329.0	7.00	37.80	2,318.8	100.5	116.9	-90.0	0.91
2,419.0	7.10	38.80	2,408.1	109.1	123.7	-98.1	0.18
2,508.0	6.80	38.70	2,496.5	117.5	130.5	-105.9	0.34
2,598.0	6.50	38.30	2,585.9	125.7	137.0	-113.4	0.34
2,688.0	6.40	39.50	2,675.3	133.6	143.3	-120.7	0.19
2,778.0	6.10	38.10	2,764.7	141.2	149.4	-127.8	0.37
2,868.0	5.90	39.70	2,854.3	148.5	155.4	-134.6	0.29
2,957.0	5.40	33.50	2,942.8	155.5	160.6	-141.1	0.89
3,047.0	6.20	38.40	3,032.4	162.9	165.9	-148.0	1.04
3,137.0	6.20	39.70	3,121.8	170.4	172.1	-155.0	0.16
3,227.0	6.20	35.90	3,211.3	178.1	178.0	-162.1	0.46
3,317.0	5.30	42.70	3,300.9	185.1	183.7	-168.6	1.25
3,407.0	5.20	41.70	3,390.5	191.2	189.2	-174.2	0.15
3,496.0	5.10	42.20	3,479.1	197.1	194.6	-179.6	0.12
3,586.0	4.20	32.70	3,568.8	202.9	199.0	-185.0	1.31
3,676.0	2.50	39.30	3,658.7	207.2	202.1	-189.0	1.93
3,766.0	1.70	64.40	3,748.6	209.3	204.5	-190.9	1.33
3,855.0	0.70	103.80	3,837.6	209.7	206.2	-191.2	1.39
3,945.0	0.90	85.40	3,927.6	209.6	207.5	-191.0	0.36
4,035.0	0.40	262.10	4,017.6	209.6	207.9	-191.0	1.44
4,125.0	0.70	305.10	4,107.6	209.9	207.1	-191.3	0.54
4,215.0	1.10	299.70	4,197.6	210.7	205.9	-192.1	0.45
4,305.0	1.20	40.60	4,287.5	211.8	205.8	-193.3	1.97
4,395.0	1.10	269.80	4,377.5	212.5	205.5	-194.0	2.32
4,485.0	1.50	272.20	4,467.5	212.6	203.5	-194.2	0.45
4,575.0	1.30	242.70	4,557.5	212.1	201.4	-194.0	0.82
4,665.0	0.70	121.50	4,647.5	211.4	200.9	-193.3	1.96
4,754.0	1.00	124.80	4,736.5	210.7	202.0	-192.5	0.34
4,799.0	1.10	114.80	4,781.5	210.2	202.8	-192.0	0.46
4,844.0	0.70	119.10	4,826.5	209.9	203.4	-191.6	0.90
4,889.0	3.60	175.20	4,871.4	208.4	203.7	-190.1	7.25
4,934.0	8.30	174.20	4,916.2	203.7	204.2	-185.4	10.45
4,979.0	12.10	176.50	4,960.5	195.8	204.8	-177.4	8.49
5,024.0	14.70	179.10	5,004.2	185.4	205.2	-167.0	5.93
5,069.0	16.50	180.90	5,047.6	173.3	205.2	-155.0	4.14
5,114.0	18.20	179.60	5,090.5	159.9	205.1	-141.6	3.87
5,158.0	20.80	181.50	5,132.0	145.2	205.0	-127.0	6.08
5,203.0	23.30	179.00	5,173.7	128.3	204.9	-110.2	5.93

Company:	Noble Energy Inc.- Weld County, CO (Grid North)	Local Co-ordinate Reference:	Well Fiscus Federal LD15-76HN
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Site:	Fiscus Federal LD15-77HN Pad Sec.15-T9N-R58W	MD Reference:	WELL @ 4716.0ft (Precision 828 RKB - 16')
Well:	Fiscus Federal LD15-76HN	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)
5,248.0	26.10	177.90	5,214.6	109.5	205.4	-91.4	6.31
5,293.0	28.20	177.10	5,254.6	89.0	206.3	-70.9	4.74
5,338.0	30.90	176.90	5,293.8	66.8	207.5	-48.7	6.00
5,383.0	34.90	175.30	5,331.5	42.5	209.2	-24.3	9.10
5,428.0	40.30	175.30	5,367.2	15.1	211.4	3.2	12.00
5,473.0	44.40	178.20	5,400.4	-15.2	213.1	33.5	10.09
5,517.0	46.70	179.60	5,431.2	-46.6	213.7	64.8	5.70
5,562.0	50.50	179.00	5,461.0	-80.3	214.1	98.5	8.50
5,607.0	54.70	178.20	5,488.3	-116.0	215.0	134.1	9.44
5,652.0	58.00	175.40	5,513.3	-153.4	217.1	171.6	8.98
5,697.0	61.00	175.00	5,536.1	-192.1	220.4	210.3	6.71
5,742.0	64.00	177.30	5,556.9	-231.9	223.0	250.2	8.06
5,787.0	68.40	179.10	5,575.0	-273.0	224.3	291.3	10.44
5,832.0	73.60	179.30	5,589.7	-315.5	224.9	333.7	11.56
5,877.0	79.90	178.80	5,600.0	-359.3	225.6	377.4	14.04
5,934.0	85.20	178.10	5,607.4	-415.8	227.2	433.8	9.38
6,007.0	86.50	177.90	5,612.6	-488.6	229.7	506.5	1.80
6,101.0	88.40	177.10	5,616.8	-582.4	233.8	600.3	2.19
6,161.6	89.43	176.65	5,618.0	-642.8	237.1	660.9	1.86
Fiscus Federal LD15-76HN Landing Pt.							
6,195.0	90.00	176.40	5,618.1	-676.2	239.1	694.3	1.86
6,288.0	90.10	178.10	5,618.1	-769.1	243.6	787.2	1.83
6,381.0	88.60	177.90	5,619.1	-862.0	246.8	880.1	1.63
6,475.0	87.90	177.60	5,622.0	-955.9	250.5	973.9	0.81
6,568.0	89.10	177.60	5,624.4	-1,048.8	254.4	1,066.8	1.29
6,660.0	89.60	177.60	5,625.5	-1,140.7	258.3	1,158.7	0.54
6,754.0	88.80	177.40	5,626.8	-1,234.6	262.4	1,252.6	0.88
6,848.0	90.50	177.60	5,627.4	-1,328.5	266.5	1,346.5	1.82
6,943.0	90.00	177.00	5,626.9	-1,423.4	270.9	1,441.5	0.82
7,037.0	90.10	178.00	5,626.9	-1,517.3	275.0	1,535.4	1.07
7,131.0	89.20	177.30	5,627.4	-1,611.2	278.9	1,629.3	1.21
7,225.0	90.60	177.90	5,627.6	-1,705.1	282.8	1,723.2	1.62
7,318.0	90.80	176.70	5,626.5	-1,798.0	287.2	1,816.1	1.31
7,412.0	90.60	178.50	5,625.3	-1,891.9	291.2	1,910.0	1.93
7,502.0	88.80	178.60	5,625.8	-1,981.9	293.4	1,999.8	2.00
7,592.0	88.80	177.80	5,627.7	-2,071.8	296.3	2,089.7	0.89
7,682.0	88.80	177.10	5,629.6	-2,161.7	300.3	2,179.6	0.78
7,772.0	88.60	176.70	5,631.6	-2,251.6	305.1	2,269.5	0.50
7,862.0	89.90	177.90	5,632.8	-2,341.5	309.4	2,359.4	1.97
7,951.0	90.30	178.00	5,632.6	-2,430.4	312.5	2,448.3	0.46
8,041.0	90.10	177.40	5,632.3	-2,520.3	316.2	2,538.2	0.70
8,131.0	90.90	177.80	5,631.5	-2,610.3	319.9	2,628.1	0.99
8,221.0	89.50	178.70	5,631.2	-2,700.2	322.7	2,718.0	1.85
8,311.0	89.30	178.40	5,632.1	-2,790.2	325.0	2,807.8	0.40

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Site:	Fiscus Federal LD15-77HN Pad Sec.15-T9N-R58	MD Reference:	WELL @ 4716.0ft (Precision 828 RKB - 16')
Well:	Fiscus Federal LD15-76HN	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)
8,401.0	89.80	178.60	5,632.9	-2,880.1	327.3	2,897.6	0.60
8,491.0	89.80	177.90	5,633.2	-2,970.1	330.1	2,987.5	0.78
8,581.0	89.30	177.40	5,633.9	-3,060.0	333.7	3,077.4	0.79
8,670.0	89.70	177.40	5,634.6	-3,148.9	337.8	3,166.3	0.45
8,760.0	89.50	177.40	5,635.3	-3,238.8	341.9	3,256.2	0.22
8,850.0	89.20	176.50	5,636.3	-3,328.7	346.7	3,346.2	1.05
8,940.0	90.10	180.10	5,636.8	-3,418.6	349.3	3,436.0	4.12
9,030.0	88.90	179.80	5,637.6	-3,508.6	349.4	3,525.7	1.37
9,120.0	90.50	178.60	5,638.1	-3,598.6	350.7	3,615.5	2.22
9,209.0	89.80	178.30	5,637.9	-3,687.6	353.1	3,704.3	0.86
9,299.0	89.90	178.10	5,638.1	-3,777.5	355.9	3,794.2	0.25
9,389.0	89.60	177.80	5,638.5	-3,867.5	359.1	3,884.0	0.47
9,478.0	90.10	177.80	5,638.7	-3,956.4	362.5	3,972.9	0.56
9,568.0	89.50	177.20	5,639.0	-4,046.3	366.5	4,062.9	0.94
9,658.0	90.20	177.20	5,639.3	-4,136.2	370.9	4,152.8	0.78
9,748.0	90.60	177.40	5,638.7	-4,226.1	375.1	4,242.7	0.50
9,828.0	90.20	176.90	5,638.1	-4,306.0	379.1	4,322.7	0.80
9,886.0	90.20	176.90	5,637.9	-4,363.9	382.2	4,380.6	0.00
Fiscus Federal LD15-76HN BHL 660'FSL & 1980'FWL							

Checked By: _____	Approved By: _____	Date: _____
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