Company Name: Noble Energy Inc.
Oredigger C10-69HN
Weld County, CO
Rig: Original Well Elev
Created By: Shelly C. Peterkin
Date: 11/2/2011

Oredigger C10-69HN
Weld County, CO
Q110697 & RM-11594

PROJECT DETAILS: Weld County, CO

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: Colorado Northern Zone
System Datum: Mean Sea Level

WELL DETAILS: Oredigger C10-69HN

Ground Level: 4680.0

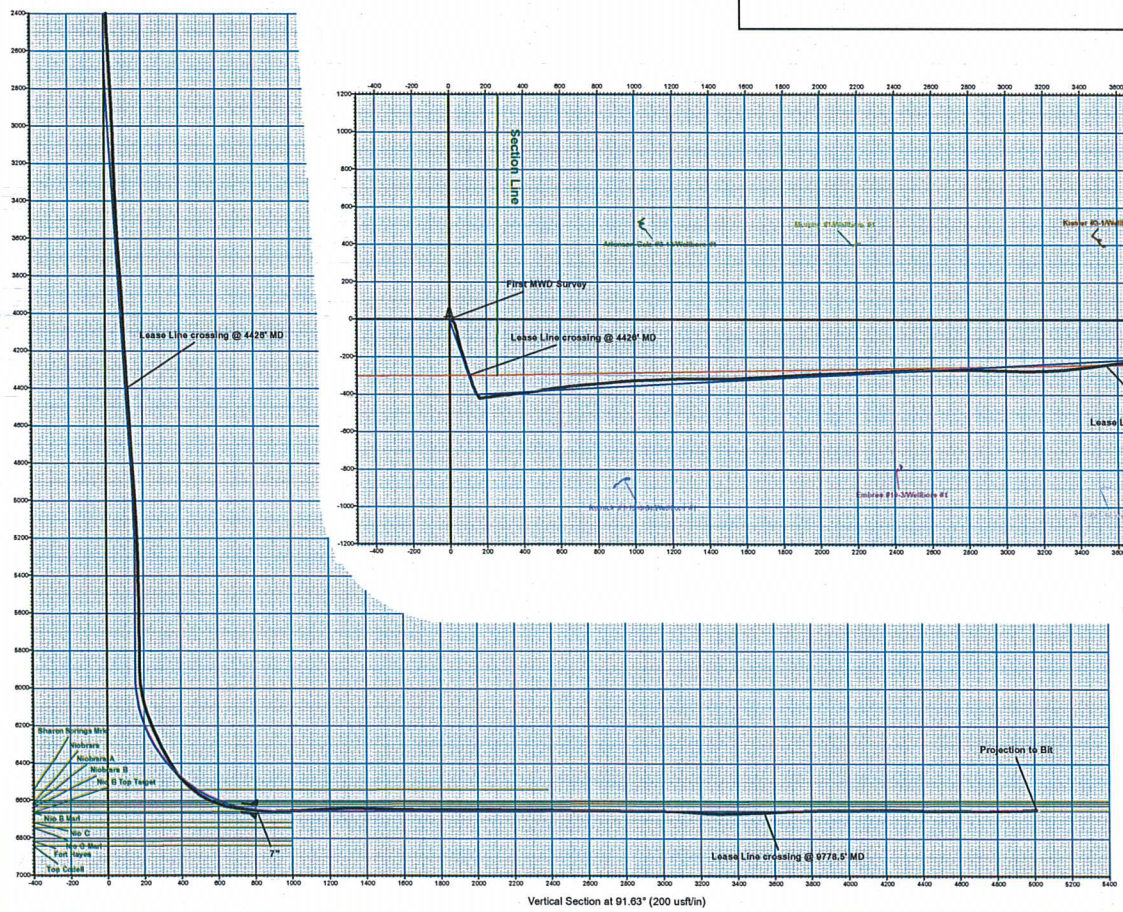
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	1306276.23	3265684.03	40° 20' 5.676 N	104° 32' 49.020 W

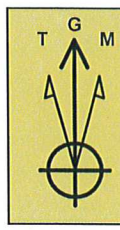
DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
PBHL-Oredigger C10-69HN Design #2	6651.3	-142.7	5007.2	1306133.56	3270691.27	40° 20' 3.729 N	104° 31' 44.383 W

ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSect	Departure	Annotation
690.0	0.40	182.10	690.0	-0.1	0.0	0.0	0.1	First MWD Survey
4426.0	9.84	158.49	4390.9	-299.4	107.2	115.7	332.9	Lease Line crossing @ 4426' MD
9778.5	92.02	82.33	6664.6	-242.6	3536.6	3542.0	3553.2	Lease Line crossing @ 9778.5' MD
11253.0	92.30	85.10	6648.6	-153.3	5007.2	5009.5	5327.3	Projection to Bit





Azimuths to Grid North

Magnetic North: 8.09°

Magnetic Field
Strength: 53093.3snT
Dip Angle: 67.02°
Date: 9/22/2011
Model: IGRF2010

noble energy

Noble Energy Inc.

Weld County, CO
Sec. 4, T4N, R64W
Oredigger C10-69HN

Wellbore #1

Survey: Survey #1

DDC Survey Report

02 November, 2011

DDC
The DIRECTIONAL DRILLING COMPANY

DDC
The DIRECTIONAL DRILLING COMPANY

Survey Certification Sheet

Noble Energy, Inc.	RM-11594	11/2/11
Company	Job Number	Date

Sec. 4, T4N, R64W, 6thPM	Oredigger C10-69HN	Weld, CO
Lease	Well Name	County & State

Surveyed from a depth of: 690 feet to 11253 feet MD

Type of Survey: MWD

Directional Supervisor/Surveyor: Boyd Wolff

The data and calculations for this survey have been checked by me and conform to the standards and procedures set forth by **The Directional Drilling Company (DDC)**. This report represents a true and correct Directional survey of this well based on the original data obtained at the well site. Wellbore Coordinates are calculated using minimum curvature.

Larry Wright
MWD General Manager

• 11390 FM 830 • Willis, Texas 77318 •
• PH 936-856-4332 • FAX 936-856-8678 •

Company:	Noble Energy Inc.	**Local Co-ordinate Reference:**	Well Oredigger C10-69HN
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4686.0usft (Original Well Elev)
Site:	Sec. 4, T4N, R64W	**MD Reference:**	WELL @ 4686.0usft (Original Well Elev)
Well:	Oredigger C10-69HN	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Wellbore #1	**Database:**	EDM 5000.1 Single User Db

Project Weld County, CO

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site Sec. 4, T4N, R64W

Site Position:		**Northing:**	1,366,276.23 usft	**Latitude:**	40° 20' 5.676 N
From:	Lat/Long	**Easting:**	3,265,684.03 usft	**Longitude:**	104° 32' 49.020 W
Position Uncertainty:	0.0 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.62 °

Well Oredigger C10-69HN

Well Position	**+N/-S**	0.0 usft	**Northing:**	1,366,276.23 usft	**Latitude:**	40° 20' 5.676 N
	+E/-W	0.0 usft	**Easting:**	3,265,684.03 usft	**Longitude:**	104° 32' 49.020 W
Position Uncertainty		0.0 usft	**Wellhead Elevation:**	usft	**Ground Level:**	4,686.0 usft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	9/22/2011	8.71	67.02	53,093

Design Wellbore #1

Audit Notes:

Version:	1.0	**Phase:**	ACTUAL	**Tie On Depth:**	0.0

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	91.63

Survey Program **Date** 11/2/2011

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
690.0	11,253.0	Survey #1 (Wellbore #1)	MWD default	MWD - Standard

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
668.0	0.00	0.00	668.0	0.0	0.0	0.0	0.00	0.00	0.00
First MWD Survey									
690.0	0.40	182.10	690.0	-0.1	0.0	0.0	1.82	1.82	0.00
965.0	0.60	167.00	965.0	-2.4	0.3	0.4	0.09	0.07	-5.49
1,249.0	0.50	159.80	1,249.0	-5.1	1.0	1.2	0.04	-0.04	-2.54
1,532.0	0.60	156.60	1,532.0	-7.6	2.1	2.3	0.04	0.04	-1.13
1,816.0	0.30	133.80	1,816.0	-9.4	3.2	3.5	0.12	-0.11	-8.03
2,100.0	1.10	43.60	2,099.9	-8.0	5.6	5.8	0.40	0.28	-31.76
2,389.0	1.40	83.00	2,388.9	-5.6	11.0	11.2	0.31	0.10	13.63
2,484.0	2.70	118.80	2,483.8	-6.5	14.1	14.3	1.86	1.37	37.68
2,516.0	3.70	117.90	2,515.8	-7.3	15.7	15.9	3.13	3.13	-2.81

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Well:	Oredigger C10-69HN	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Wellbore #1	**Database:**	EDM 5000.1 Single User Db

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
2,548.0	4.50	133.90	2,547.7	-8.7	17.5	17.8	4.34	2.50	50.00
2,579.0	5.00	141.50	2,578.6	-10.6	19.2	19.5	2.59	1.61	24.52
2,611.0	5.50	143.80	2,610.4	-12.9	21.0	21.4	1.69	1.56	7.19
2,675.0	6.50	149.40	2,674.1	-18.5	24.7	25.2	1.81	1.56	8.75
2,706.0	6.90	155.20	2,704.9	-21.7	26.3	27.0	2.53	1.29	18.71
2,738.0	7.60	157.70	2,736.6	-25.4	28.0	28.7	2.40	2.19	7.81
2,769.0	8.40	159.40	2,767.3	-29.4	29.5	30.4	2.69	2.58	5.48
2,801.0	9.50	161.50	2,798.9	-34.1	31.2	32.2	3.59	3.44	6.56
2,833.0	9.90	165.20	2,830.5	-39.3	32.7	33.8	2.31	1.25	11.56
2,864.0	9.60	165.90	2,861.0	-44.4	34.0	35.3	1.04	-0.97	2.26
2,928.0	8.40	162.60	2,924.2	-54.0	36.7	38.3	2.04	-1.88	-5.16
2,960.0	8.30	162.90	2,955.9	-58.4	38.1	39.8	0.34	-0.31	0.94
3,054.0	8.40	168.70	3,048.9	-71.7	41.5	43.5	0.90	0.11	6.17
3,150.0	7.80	170.90	3,143.9	-85.0	43.9	46.3	0.70	-0.63	2.29
3,244.0	8.10	163.50	3,237.0	-97.6	46.8	49.5	1.13	0.32	-7.87
3,339.0	10.20	169.30	3,330.8	-112.3	50.2	53.4	2.41	2.21	6.11
3,434.0	9.20	164.90	3,424.5	-127.9	53.8	57.4	1.31	-1.05	-4.63
3,529.0	10.80	168.00	3,518.0	-143.9	57.6	61.7	1.78	1.68	3.26
3,624.0	10.00	162.60	3,611.5	-160.5	61.9	66.4	1.33	-0.84	-5.68
3,718.0	11.90	161.20	3,703.8	-177.5	67.5	72.5	2.04	2.02	-1.49
3,813.0	12.50	161.90	3,796.6	-196.5	73.8	79.4	0.65	0.63	0.74
3,908.0	12.00	162.90	3,889.4	-215.7	79.9	86.0	0.57	-0.53	1.05
4,003.0	9.60	164.40	3,982.8	-232.8	85.0	91.5	2.54	-2.53	1.58
4,098.0	9.20	163.80	4,076.5	-247.7	89.2	96.2	0.43	-0.42	-0.63
4,193.0	9.60	162.60	4,170.2	-262.6	93.7	101.1	0.47	0.42	-1.26
4,288.0	9.60	159.40	4,263.9	-277.6	98.8	106.7	0.56	0.00	-3.37
4,383.0	9.80	158.90	4,357.5	-292.5	104.5	112.8	0.23	0.21	-0.53
Lease Line crossing @ 4426' MD									
4,426.0	9.84	158.49	4,399.9	-299.4	107.2	115.7	0.19	0.10	-0.95
4,478.0	9.90	158.00	4,451.1	-307.6	110.5	119.2	0.19	0.11	-0.94
4,573.0	10.10	163.30	4,544.7	-323.2	116.0	125.1	0.99	0.21	5.58
4,669.0	9.40	165.20	4,639.3	-338.8	120.4	130.0	0.80	-0.73	1.98
4,764.0	9.60	161.50	4,733.0	-353.8	124.9	134.9	0.68	0.21	-3.89
4,859.0	9.50	154.50	4,826.7	-368.4	130.8	141.2	1.23	-0.11	-7.37
4,954.0	8.40	152.80	4,920.5	-381.7	137.3	148.1	1.19	-1.16	-1.79
5,049.0	7.40	151.70	5,014.6	-393.2	143.4	154.5	1.06	-1.05	-1.16
5,144.0	5.30	147.60	5,109.0	-402.3	148.6	160.0	2.26	-2.21	-4.32
5,239.0	3.90	141.10	5,203.7	-408.5	153.0	164.6	1.57	-1.47	-6.84
5,334.0	2.90	150.30	5,298.5	-413.1	156.2	167.9	1.20	-1.05	9.68
5,429.0	1.60	153.60	5,393.5	-416.4	158.0	169.8	1.37	-1.37	3.47
5,524.0	1.80	123.00	5,488.4	-418.4	159.9	171.7	0.97	0.21	-32.21
5,619.0	0.30	185.60	5,583.4	-419.5	161.1	173.0	1.77	-1.58	65.89
5,714.0	0.70	151.00	5,678.4	-420.2	161.3	173.2	0.51	0.42	-36.42

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Well:	Oredigger C10-69HN	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Wellbore #1	**Database:**	EDM 5000.1 Single User Db

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,809.0	0.80	145.90	5,773.4	-421.3	162.0	173.9	0.13	0.11	-5.37
5,864.0	0.90	156.10	5,828.4	-422.0	162.4	174.3	0.33	0.18	18.55
5,937.0	1.10	160.80	5,901.4	-423.2	162.9	174.8	0.30	0.27	6.44
6,000.0	4.30	83.00	5,964.3	-423.5	165.4	177.4	6.68	5.08	-123.49
6,032.0	6.90	79.10	5,996.2	-423.0	168.5	180.5	8.21	8.13	-12.19
6,064.0	10.60	76.50	6,027.8	-421.9	173.2	185.2	11.63	11.56	-8.13
6,095.0	13.60	78.20	6,058.1	-420.5	179.6	191.5	9.74	9.68	5.48
6,127.0	15.90	82.40	6,089.0	-419.2	187.6	199.5	7.92	7.19	13.13
6,159.0	18.30	83.80	6,119.6	-418.0	196.9	208.8	7.61	7.50	4.38
6,190.0	20.00	84.40	6,148.9	-417.0	207.1	218.8	5.52	5.48	1.94
6,222.0	21.10	84.40	6,178.9	-415.9	218.2	230.0	3.44	3.44	0.00
6,254.0	22.40	83.10	6,208.6	-414.6	230.0	241.7	4.33	4.06	-4.06
6,285.0	24.40	82.40	6,237.0	-413.0	242.2	253.9	6.51	6.45	-2.26
6,317.0	25.00	81.20	6,266.1	-411.1	255.5	267.1	2.44	1.88	-3.75
6,349.0	25.60	81.60	6,295.0	-409.1	269.0	280.5	1.95	1.88	1.25
6,380.0	27.10	83.50	6,322.8	-407.3	282.6	294.1	5.55	4.84	6.13
6,412.0	28.80	86.10	6,351.1	-406.0	297.6	309.0	6.54	5.31	8.13
6,444.0	30.60	86.30	6,378.9	-404.9	313.4	324.8	5.63	5.63	0.63
6,475.0	32.10	84.00	6,405.4	-403.5	329.4	340.8	6.19	4.84	-7.42
6,507.0	34.00	81.60	6,432.2	-401.3	346.8	358.0	7.21	5.94	-7.50
6,538.0	37.20	81.60	6,457.4	-398.7	364.6	375.8	10.32	10.32	0.00
6,570.0	41.20	82.40	6,482.2	-395.9	384.6	395.7	12.60	12.50	2.50
6,602.0	44.90	82.40	6,505.6	-393.0	406.3	417.3	11.56	11.56	0.00
6,633.0	49.30	82.60	6,526.7	-390.1	428.8	439.7	14.20	14.19	0.65
6,665.0	53.00	82.10	6,546.7	-386.7	453.5	464.3	11.63	11.56	-1.56
6,697.0	55.90	81.20	6,565.3	-382.9	479.2	489.9	9.35	9.06	-2.81
6,728.0	59.60	80.70	6,581.9	-378.8	505.1	515.7	12.01	11.94	-1.61
6,760.0	63.80	80.70	6,597.0	-374.3	532.9	543.4	13.13	13.13	0.00
6,792.0	67.10	81.70	6,610.3	-369.8	561.7	572.0	10.70	10.31	3.13
6,823.0	71.40	82.60	6,621.3	-365.9	590.4	600.6	14.13	13.87	2.90
6,855.0	75.40	83.00	6,630.4	-362.0	620.8	630.9	12.56	12.50	1.25
6,887.0	79.50	83.70	6,637.4	-358.4	651.8	661.8	12.99	12.81	2.19
6,914.0	82.80	84.00	6,641.6	-355.6	678.4	688.2	12.27	12.22	1.11
6,978.0	83.40	85.60	6,649.2	-349.8	741.6	751.3	2.65	0.94	2.50
7,010.0	83.50	84.70	6,652.9	-347.1	773.3	782.9	2.81	0.31	-2.81
7,041.0	85.30	85.10	6,655.9	-344.4	804.0	813.5	5.95	5.81	1.29
7,073.0	87.30	84.50	6,658.0	-341.5	835.8	845.2	6.52	6.25	-1.88
7,105.0	89.40	83.80	6,658.9	-338.2	867.7	876.9	6.92	6.56	-2.19
7,168.0	91.20	85.40	6,658.6	-332.3	930.4	939.5	3.82	2.86	2.54
7,263.0	92.30	87.70	6,655.7	-326.6	1,025.1	1,034.0	2.68	1.16	2.42
7,358.0	93.60	87.50	6,650.8	-322.6	1,119.9	1,128.7	1.38	1.37	-0.21
7,422.0	93.50	88.10	6,646.8	-320.1	1,183.8	1,192.4	0.95	-0.16	0.94
7,453.0	93.10	88.40	6,645.0	-319.2	1,214.7	1,223.3	1.61	-1.29	0.97

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Design:	Wellbore #1	**Database:**	EDM 5000.1 Single User Db

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
7,485.0	92.30	88.80	6,643.5	-318.4	1,246.6	1,255.2	2.79	-2.50	1.25
7,517.0	90.90	89.80	6,642.6	-318.0	1,278.6	1,287.2	5.38	-4.38	3.13
7,548.0	89.80	90.30	6,642.4	-318.1	1,309.6	1,318.2	3.90	-3.55	1.61
7,580.0	89.10	90.50	6,642.8	-318.3	1,341.6	1,350.1	2.28	-2.19	0.63
7,644.0	88.50	89.60	6,644.1	-318.3	1,405.6	1,414.1	1.69	-0.94	-1.41
7,707.0	88.10	89.50	6,646.0	-317.8	1,468.6	1,477.0	0.65	-0.63	-0.16
7,739.0	87.80	89.50	6,647.1	-317.6	1,500.6	1,509.0	0.94	-0.94	0.00
7,802.0	88.70	88.10	6,649.0	-316.2	1,563.5	1,571.9	2.64	1.43	-2.22
7,834.0	89.60	87.20	6,649.5	-314.9	1,595.5	1,603.8	3.98	2.81	-2.81
7,929.0	89.80	87.00	6,650.0	-310.1	1,690.4	1,698.5	0.30	0.21	-0.21
8,024.0	90.30	86.50	6,649.9	-304.7	1,785.2	1,793.2	0.74	0.53	-0.53
8,119.0	90.60	86.50	6,649.2	-298.9	1,880.0	1,887.8	0.32	0.32	0.00
8,214.0	90.20	87.50	6,648.5	-294.0	1,974.9	1,982.5	1.13	-0.42	1.05
8,309.0	89.10	88.10	6,649.1	-290.3	2,069.8	2,077.2	1.32	-1.16	0.63
8,404.0	89.40	87.40	6,650.3	-286.6	2,164.7	2,172.0	0.80	0.32	-0.74
8,499.0	90.00	86.80	6,650.8	-281.8	2,259.6	2,266.7	0.89	0.63	-0.63
8,594.0	89.00	88.60	6,651.7	-278.0	2,354.5	2,361.5	2.17	-1.05	1.89
8,689.0	89.30	88.10	6,653.1	-275.2	2,449.5	2,456.3	0.61	0.32	-0.53
8,784.0	90.10	87.50	6,653.6	-271.6	2,544.4	2,551.1	1.05	0.84	-0.63
8,879.0	89.70	89.80	6,653.7	-269.3	2,639.4	2,646.0	2.46	-0.42	2.42
8,974.0	88.70	90.30	6,655.1	-269.4	2,734.4	2,740.9	1.18	-1.05	0.53
9,069.0	89.70	90.90	6,656.4	-270.4	2,829.3	2,835.9	1.23	1.05	0.63
9,164.0	90.70	91.20	6,656.1	-272.2	2,924.3	2,930.9	1.10	1.05	0.32
9,259.0	88.00	91.90	6,657.1	-274.7	3,019.3	3,025.9	2.94	-2.84	0.74
9,353.0	86.20	90.30	6,661.9	-276.5	3,113.1	3,119.7	2.56	-1.91	-1.70
9,448.0	87.10	88.10	6,667.4	-275.2	3,208.0	3,214.5	2.50	0.95	-2.32
9,480.0	87.10	87.40	6,669.1	-274.0	3,239.9	3,246.4	2.18	0.00	-2.19
9,512.0	87.90	86.70	6,670.5	-272.3	3,271.8	3,278.2	3.32	2.50	-2.19
9,544.0	90.30	85.30	6,671.0	-270.1	3,303.7	3,310.1	8.68	7.50	-4.38
9,575.0	91.20	84.20	6,670.6	-267.2	3,334.6	3,340.9	4.58	2.90	-3.55
9,607.0	91.80	83.70	6,669.7	-263.9	3,366.4	3,372.6	2.44	1.88	-1.56
9,638.0	91.30	83.30	6,668.9	-260.4	3,397.2	3,403.2	2.07	-1.61	-1.29
9,670.0	91.70	83.10	6,668.0	-256.6	3,429.0	3,434.9	1.40	1.25	-0.63
9,733.0	91.80	82.40	6,666.1	-248.6	3,491.4	3,497.1	1.12	0.16	-1.11
Lease Line crossing @ 9778.5' MD									
9,778.5	92.02	82.33	6,664.6	-242.6	3,536.5	3,542.0	0.50	0.48	-0.16
9,796.0	92.10	82.30	6,664.0	-240.3	3,553.8	3,559.2	0.50	0.48	-0.16
9,828.0	92.20	81.90	6,662.8	-235.9	3,585.5	3,590.8	1.29	0.31	-1.25
9,891.0	93.10	84.20	6,659.9	-228.2	3,648.0	3,653.0	3.92	1.43	3.65
9,923.0	93.20	84.50	6,658.1	-225.1	3,679.8	3,684.7	0.99	0.31	0.94
10,018.0	91.60	85.30	6,654.1	-216.7	3,774.3	3,778.9	1.88	-1.68	0.84
10,113.0	89.60	86.70	6,653.1	-210.0	3,869.1	3,873.5	2.57	-2.11	1.47
10,208.0	90.90	85.90	6,652.7	-203.9	3,963.9	3,968.1	1.61	1.37	-0.84
10,271.0	90.00	86.10	6,652.2	-199.5	4,026.7	4,030.8	1.46	-1.43	0.32

Company:	Noble Energy Inc.	**Local Co-ordinate Reference:**	Well Oredigger C10-69HN
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4686.0usft (Original Well Elev)
Site:	Sec. 4, T4N, R64W	**MD Reference:**	WELL @ 4686.0usft (Original Well Elev)
Well:	Oredigger C10-69HN	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Wellbore #1	**Database:**	EDM 5000.1 Single User Db

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,303.0	90.10	87.20	6,652.2	-197.6	4,058.6	4,062.6	3.45	0.31	3.44
10,366.0	91.00	87.20	6,651.6	-194.6	4,121.6	4,125.4	1.43	1.43	0.00
10,398.0	90.90	87.40	6,651.1	-193.1	4,153.5	4,157.3	0.70	-0.31	0.63
10,461.0	90.00	88.60	6,650.6	-190.9	4,216.5	4,220.2	2.38	-1.43	1.90
10,493.0	90.50	88.90	6,650.4	-190.2	4,248.5	4,252.2	1.82	1.56	0.94
10,556.0	88.00	88.80	6,651.2	-188.9	4,311.5	4,315.1	3.97	-3.97	-0.16
10,588.0	88.20	88.80	6,652.3	-188.2	4,343.4	4,347.0	0.63	0.63	0.00
10,683.0	88.80	88.80	6,654.8	-186.2	4,438.4	4,441.9	0.63	0.63	0.00
10,778.0	90.80	88.90	6,655.1	-184.3	4,533.4	4,536.8	2.11	2.11	0.11
10,842.0	90.70	87.50	6,654.3	-182.3	4,597.3	4,600.6	2.19	-0.16	-2.19
10,873.0	89.70	87.50	6,654.2	-181.0	4,628.3	4,631.6	3.23	-3.23	0.00
10,937.0	89.90	86.50	6,654.4	-177.6	4,692.2	4,695.4	1.59	0.31	-1.56
10,968.0	89.50	86.10	6,654.6	-175.6	4,723.1	4,726.2	1.82	-1.29	-1.29
11,063.0	90.70	85.60	6,654.4	-168.7	4,817.9	4,820.7	1.37	1.26	-0.53
11,158.0	91.90	85.40	6,652.2	-161.3	4,912.6	4,915.2	1.28	1.26	-0.21
11,198.0	92.30	85.10	6,650.8	-158.0	4,952.4	4,954.9	1.25	1.00	-0.75
Projection to Bit									
11,253.0	92.30	85.10	6,648.6	-153.3	5,007.2	5,009.5	0.00	0.00	0.00

Survey Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
690.0	690.0	-0.1	0.0	First MWD Survey
4,426.0	4,399.9	-299.4	107.2	Lease Line crossing @ 4426' MD
9,778.5	6,664.6	-242.6	3,536.5	Lease Line crossing @ 9778.5' MD
11,253.0	6,648.6	-153.3	5,007.2	Projection to Bit

Checked By: _____ Approved By: _____ Date: _____