



Noble Energy Inc.

Weld County, CO

Sec 29, T9N, R59W, 6th PM

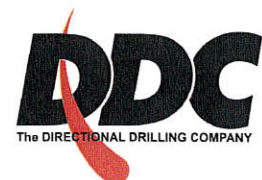
Trisha LC29-73HNB

Wellbore #1

Design: Wellbore #1 **FINAL**

DDC Survey Report

11 July, 2014



Company:	Noble Energy Inc.	Local Co-ordinate Reference:	Well Trisha LC29-73HNB
Project:	Weld County, CO	TVD Reference:	WELL @ 4897.0usft (H&P #326)
Site:	Sec 29, T9N, R59W, 6th PM	MD Reference:	WELL @ 4897.0usft (H&P #326)
Well:	Trisha LC29-73HNB	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 29, T9N, R59W, 6th PM				
Site Position:		Northing:	1,506,859.55 usft	Latitude:	40° 42' 53.970 N
From:	Map	Easting:	3,417,411.39 usft	Longitude:	103° 59' 39.130 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.97 °

Well	Trisha LC29-73HNB					
Well Position	+N/-S	0.0 usft	Northing:	1,506,937.39 usft	Latitude:	40° 42' 54.828 N
	+E/-W	0.0 usft	Easting:	3,416,881.28 usft	Longitude:	103° 59' 45.996 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	0.0 usft	Ground Level:	4,867.0 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/20/2014	8.07	67.32	53,064

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	356.81	

Survey Program		Date	7/11/2014		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
287.0	639.0	FLEXI TOOL (Wellbore #1)	Flexi-Shot	VES Flexi-Shot Tool	
726.0	6,359.0	MWD Surveys - Vert/Build (Wellbore #1)	MWD default	MWD - Standard	
6,454.0	15,628.0	Raw Surveys - Lateral (Wellbore #1)	MWD+IFR1+MS_WY	Fixed:v2:Rockies, crustal dec + 3-axis correction	

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)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
287.0	0.00	302.85	287.0	0.0	0.0	0.0	0.00	0.00	0.00
TIE IN @ 639' MD / 639' TVD END OF SUR HOLE / BEGIN INT HOLE									
639.0	0.40	155.45	639.0	-1.1	0.5	-1.1	0.11	0.11	0.00
726.0	0.88	297.72	726.0	-1.1	0.0	-1.1	1.40	0.55	163.53
818.0	0.79	291.21	818.0	-0.5	-1.2	-0.5	0.14	-0.10	-7.08
909.0	0.88	295.34	909.0	0.0	-2.4	0.1	0.12	0.10	4.54
1,002.0	0.88	290.86	1,002.0	0.6	-3.7	0.8	0.07	0.00	-4.82
1,095.0	0.97	297.72	1,095.0	1.2	-5.1	1.5	0.15	0.10	7.38

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Well: Trisha LC29-73HNB
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well Trisha LC29-73HNB
TVD Reference: WELL @ 4897.0usft (H&P #326)
MD Reference: WELL @ 4897.0usft (H&P #326)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
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)
1,188.0	1.14	308.26	1,187.9	2.1	-6.5	2.5	0.28	0.18	11.33
1,281.0	1.06	312.13	1,280.9	3.3	-7.9	3.7	0.12	-0.09	4.16
1,375.0	0.88	320.92	1,374.9	4.4	-9.0	4.9	0.25	-0.19	9.35
1,467.0	3.25	261.24	1,466.8	4.6	-12.0	5.2	3.16	2.58	-64.87
1,560.0	5.10	251.40	1,559.6	2.8	-18.5	3.9	2.13	1.99	-10.58
1,653.0	7.83	246.74	1,652.0	-1.0	-28.2	0.6	2.99	2.94	-5.01
1,745.0	8.88	233.91	1,743.0	-7.6	-39.7	-5.4	2.32	1.14	-13.95
1,838.0	9.15	235.58	1,834.9	-16.0	-51.6	-13.1	0.40	0.29	1.80
1,933.0	10.02	226.35	1,928.6	-26.0	-63.8	-22.4	1.86	0.92	-9.72
2,025.0	10.20	224.50	2,019.1	-37.4	-75.3	-33.1	0.40	0.20	-2.01
2,120.0	11.26	222.31	2,112.5	-50.2	-87.5	-45.3	1.20	1.12	-2.31
2,214.0	12.66	231.27	2,204.4	-63.4	-101.7	-57.7	2.47	1.49	9.53
2,309.0	13.81	233.64	2,296.9	-76.7	-119.0	-69.9	1.34	1.21	2.49
2,403.0	13.63	231.01	2,388.2	-90.3	-136.6	-82.6	0.69	-0.19	-2.80
2,497.0	13.28	228.90	2,479.6	-104.4	-153.3	-95.7	0.64	-0.37	-2.24
2,592.0	12.75	227.23	2,572.2	-118.7	-169.3	-109.1	0.68	-0.56	-1.76
2,686.0	12.66	225.91	2,663.9	-132.9	-184.3	-122.4	0.32	-0.10	-1.40
2,781.0	12.66	225.03	2,756.6	-147.5	-199.1	-136.2	0.20	0.00	-0.93
2,875.0	12.40	225.03	2,848.4	-161.9	-213.5	-149.8	0.28	-0.28	0.00
2,970.0	10.55	224.94	2,941.5	-175.2	-226.9	-162.4	1.95	-1.95	-0.09
3,064.0	10.20	224.94	3,033.9	-187.2	-238.9	-173.7	0.37	-0.37	0.00
3,159.0	8.53	233.47	3,127.7	-197.4	-250.5	-183.1	2.28	-1.76	8.98
3,253.0	7.39	232.15	3,220.7	-205.2	-260.8	-190.4	1.23	-1.21	-1.40
3,348.0	6.60	227.14	3,315.0	-212.7	-269.7	-197.4	1.05	-0.83	-5.27
3,442.0	5.19	211.23	3,408.5	-220.0	-275.8	-204.3	2.28	-1.50	-16.93
3,537.0	3.08	187.77	3,503.3	-226.2	-278.4	-210.4	2.80	-2.22	-24.69
3,631.0	1.58	152.96	3,597.2	-229.9	-278.2	-214.0	2.13	-1.60	-37.03
3,726.0	1.67	60.32	3,692.2	-230.4	-276.4	-214.6	2.47	0.09	-97.52
3,820.0	1.85	58.30	3,786.2	-228.9	-273.9	-213.3	0.20	0.19	-2.15
3,915.0	1.93	59.53	3,881.1	-227.3	-271.2	-211.8	0.09	0.08	1.29
4,010.0	1.67	61.29	3,976.1	-225.8	-268.6	-210.5	0.28	-0.27	1.85
4,104.0	1.93	21.48	4,070.0	-223.7	-266.8	-208.5	1.33	0.28	-42.35
4,198.0	1.93	29.56	4,164.0	-220.8	-265.5	-205.7	0.29	0.00	8.60
4,293.0	1.76	40.81	4,258.9	-218.3	-263.7	-203.3	0.42	-0.18	11.84
4,387.0	1.32	56.54	4,352.9	-216.6	-261.9	-201.7	0.64	-0.47	16.73
4,482.0	1.41	300.18	4,447.9	-215.4	-262.0	-200.5	2.44	0.09	-122.48
4,576.0	1.41	289.54	4,541.8	-214.5	-264.1	-199.4	0.28	0.00	-11.32
4,671.0	0.97	255.44	4,636.8	-214.3	-265.9	-199.1	0.86	-0.46	-35.89
4,765.0	1.32	260.80	4,730.8	-214.6	-267.8	-199.4	0.39	0.37	5.70
4,860.0	1.32	276.89	4,825.8	-214.7	-269.9	-199.3	0.39	0.00	16.94
4,955.0	1.41	262.38	4,920.7	-214.7	-272.2	-199.2	0.37	0.09	-15.27
5,050.0	1.32	243.93	5,015.7	-215.3	-274.3	-199.8	0.47	-0.09	-19.42
5,145.0	1.32	251.49	5,110.7	-216.2	-276.4	-200.5	0.18	0.00	7.96

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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)
5,240.0	1.06	261.94	5,205.7	-216.6	-278.3	-200.8	0.36	-0.27	11.00
5,335.0	1.14	264.05	5,300.7	-216.9	-280.1	-201.0	0.09	0.08	2.22
5,419.0	1.14	274.43	5,384.6	-216.9	-281.7	-200.9	0.25	0.00	12.36
5,513.0	6.60	356.78	5,478.4	-211.4	-283.0	-195.4	6.96	5.81	87.61
5,608.0	15.92	359.68	5,571.5	-192.9	-283.4	-176.8	9.83	9.81	3.05
5,703.0	19.17	1.00	5,662.1	-164.3	-283.2	-148.3	3.45	3.42	1.39
5,798.0	18.91	14.09	5,751.9	-133.7	-279.1	-118.0	4.49	-0.27	13.78
5,892.0	24.01	0.47	5,839.4	-99.8	-275.3	-84.3	7.55	5.43	-14.49
5,988.0	34.47	357.75	5,923.1	-53.0	-276.2	-37.5	10.98	10.90	-2.83
6,082.0	42.12	1.35	5,996.8	5.2	-276.5	20.6	8.47	8.14	3.83
CROSSED 460' HARD LINE @ 6094.4' MD / 6005.9' TVD									
6,094.4	43.06	1.07	6,005.9	13.6	-276.3	28.9	7.73	7.57	-2.26
6,177.0	49.33	359.42	6,063.1	73.2	-276.1	88.4	7.73	7.59	-2.00
6,272.0	61.91	358.54	6,116.6	151.4	-277.5	166.6	13.26	13.24	-0.93
LAST DDC SURVEY @ 6359' MD / 6148.4' TVD									
6,359.0	75.18	356.34	6,148.4	232.1	-281.2	247.4	15.43	15.25	-2.53
7" CASING POINT @ 6416' MD / 6159.7 TVD END OF INT HOLE / BEGIN LATERAL									
6,416.0	81.94	356.14	6,159.7	287.8	-284.9	303.2	11.86	11.85	-0.35
FIRST RAW DATE SURVEY @ 6454' MD / 6163.5' TVD									
6,454.0	86.44	356.01	6,163.5	325.5	-287.5	341.0	11.86	11.85	-0.34
6,548.0	90.91	356.22	6,165.7	419.3	-293.8	435.0	4.76	4.76	0.22
6,643.0	92.34	356.42	6,163.0	514.0	-299.9	529.9	1.52	1.51	0.21
6,737.0	92.44	354.70	6,159.1	607.7	-307.2	623.8	1.83	0.11	-1.83
6,832.0	91.75	357.68	6,155.6	702.4	-313.5	718.7	3.22	-0.73	3.14
6,927.0	91.67	1.69	6,152.8	797.3	-314.0	813.5	4.22	-0.08	4.22
7,022.0	91.44	1.36	6,150.2	892.2	-311.5	908.2	0.42	-0.24	-0.35
7,116.0	91.44	1.09	6,147.8	986.2	-309.5	1,001.9	0.29	0.00	-0.29
7,211.0	91.42	1.09	6,145.4	1,081.1	-307.7	1,096.6	0.02	-0.02	0.00
7,306.0	91.23	1.09	6,143.3	1,176.1	-305.9	1,191.3	0.20	-0.20	0.00
7,401.0	91.26	0.74	6,141.2	1,271.1	-304.3	1,286.0	0.37	0.03	-0.37
7,496.0	91.23	359.75	6,139.1	1,366.0	-303.9	1,380.8	1.04	-0.03	-1.04
7,591.0	91.00	359.54	6,137.3	1,461.0	-304.5	1,475.7	0.33	-0.24	-0.22
7,685.0	90.61	358.33	6,136.0	1,555.0	-306.3	1,569.6	1.35	-0.41	-1.29
7,780.0	90.41	358.07	6,135.1	1,649.9	-309.3	1,664.6	0.35	-0.21	-0.27
7,874.0	91.28	357.49	6,133.7	1,743.9	-312.9	1,758.6	1.11	0.93	-0.62
7,969.0	90.66	358.99	6,132.1	1,838.8	-315.8	1,853.5	1.71	-0.65	1.58
8,064.0	92.08	0.61	6,129.8	1,933.8	-316.2	1,948.4	2.27	1.49	1.71
8,159.0	92.61	359.66	6,126.0	2,028.7	-315.9	2,043.1	1.14	0.56	-1.00
8,253.0	91.11	359.90	6,122.9	2,122.6	-316.3	2,136.9	1.62	-1.60	0.26
8,347.0	90.06	0.92	6,121.9	2,216.6	-315.6	2,230.8	1.56	-1.12	1.09
8,442.0	90.01	0.01	6,121.9	2,311.6	-314.8	2,325.6	0.96	-0.05	-0.96
8,536.0	89.37	359.52	6,122.4	2,405.6	-315.2	2,419.4	0.86	-0.68	-0.52
8,631.0	89.33	358.92	6,123.5	2,500.6	-316.5	2,514.3	0.63	-0.04	-0.63
8,725.0	89.09	358.00	6,124.8	2,594.6	-319.0	2,608.3	1.01	-0.26	-0.98

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8,819.0	89.23	357.35	6,126.1	2,688.5	-322.9	2,702.3	0.71	0.15	-0.69
8,914.0	88.95	357.26	6,127.7	2,783.4	-327.3	2,797.3	0.31	-0.29	-0.09
9,008.0	88.60	358.34	6,129.7	2,877.3	-330.9	2,891.2	1.21	-0.37	1.15
9,103.0	89.89	0.26	6,130.9	2,972.2	-332.1	2,986.1	2.43	1.36	2.02
9,198.0	90.37	1.34	6,130.7	3,067.2	-330.8	3,080.9	1.24	0.51	1.14
9,292.0	89.92	359.94	6,130.5	3,161.2	-329.7	3,174.7	1.56	-0.48	-1.49
9,387.0	90.00	359.68	6,130.5	3,256.2	-330.0	3,269.5	0.29	0.08	-0.27
9,482.0	89.32	357.54	6,131.1	3,351.2	-332.3	3,364.5	2.36	-0.72	-2.25
9,576.0	88.82	357.45	6,132.6	3,445.1	-336.4	3,458.5	0.54	-0.53	-0.10
9,670.0	89.91	358.82	6,133.7	3,539.0	-339.5	3,552.4	1.86	1.16	1.46
9,765.0	89.97	356.80	6,133.8	3,634.0	-343.1	3,647.4	2.13	0.06	-2.13
9,860.0	89.30	354.58	6,134.4	3,728.7	-350.3	3,742.4	2.44	-0.71	-2.34
9,954.0	91.99	357.57	6,133.3	3,822.4	-356.7	3,836.4	4.28	2.86	3.18
10,049.0	91.58	359.44	6,130.3	3,917.3	-359.2	3,931.3	2.01	-0.43	1.97
10,144.0	90.19	0.54	6,128.9	4,012.3	-359.2	4,026.1	1.87	-1.46	1.16
10,236.0	90.49	0.60	6,128.3	4,104.3	-358.3	4,117.9	0.33	0.33	0.07
10,329.0	90.11	0.22	6,127.8	4,197.3	-357.6	4,210.7	0.58	-0.41	-0.41
10,421.0	90.66	0.91	6,127.2	4,289.3	-356.7	4,302.5	0.96	0.60	0.75
10,513.0	88.83	0.05	6,127.6	4,381.3	-355.9	4,394.3	2.20	-1.99	-0.93
CROSSED 460' HARD LINE @ 10536.7' MD / 6128.1' TVD									
10,536.7	89.07	0.25	6,128.1	4,405.0	-355.9	4,418.0	1.32	1.01	0.85
10,604.0	89.75	0.82	6,128.8	4,472.3	-355.3	4,485.1	1.32	1.01	0.85
10,697.0	89.89	0.28	6,129.1	4,565.3	-354.4	4,577.9	0.60	0.15	-0.58
10,790.0	90.17	359.77	6,129.0	4,658.3	-354.3	4,670.8	0.63	0.30	-0.55
10,883.0	90.73	359.68	6,128.3	4,751.3	-354.8	4,763.7	0.61	0.60	-0.10
10,976.0	90.31	357.78	6,127.4	4,844.3	-356.8	4,856.6	2.09	-0.45	-2.04
CROSSED LEASE LINE @ 10996.9' MD / 6127.3' TVD									
10,996.9	90.35	357.69	6,127.3	4,865.1	-357.7	4,877.5	0.49	0.21	-0.45
11,070.0	90.51	357.36	6,126.8	4,938.2	-360.8	4,950.6	0.49	0.21	-0.45
11,162.0	90.15	358.13	6,126.2	5,030.1	-364.4	5,042.6	0.92	-0.39	0.84
11,255.0	89.27	356.74	6,126.7	5,123.0	-368.6	5,135.6	1.77	-0.95	-1.49
11,348.0	88.89	355.35	6,128.2	5,215.8	-375.0	5,228.5	1.55	-0.41	-1.49
11,440.0	88.90	355.26	6,130.0	5,307.4	-382.5	5,320.5	0.10	0.01	-0.10
CROSSED 460' HARD LINE @ 11457.2' MD / 6130.3 TVD									
11,457.2	88.90	355.84	6,130.3	5,324.6	-383.9	5,337.7	3.39	-0.02	3.39
11,534.0	88.88	358.45	6,131.8	5,401.3	-387.7	5,414.5	3.39	-0.02	3.39
11,626.0	89.83	359.50	6,132.8	5,493.2	-389.3	5,506.4	1.54	1.03	1.14
11,718.0	89.35	358.82	6,133.5	5,585.2	-390.7	5,598.3	0.90	-0.52	-0.74
11,811.0	90.17	359.75	6,133.9	5,678.2	-391.8	5,691.2	1.33	0.88	1.00
11,906.0	90.25	0.19	6,133.5	5,773.2	-391.9	5,786.1	0.47	0.08	0.46
11,998.0	90.76	359.38	6,132.7	5,865.2	-392.2	5,877.9	1.04	0.55	-0.88
12,093.0	90.87	358.59	6,131.4	5,960.2	-393.9	5,972.9	0.84	0.12	-0.83
12,187.0	91.42	357.63	6,129.5	6,054.1	-397.0	6,066.8	1.18	0.59	-1.02
12,282.0	91.12	358.46	6,127.4	6,149.0	-400.3	6,161.8	0.93	-0.32	0.87

Company:	Noble Energy Inc.	Local Co-ordinate Reference:	Well Trisha LC29-73HNB
Project:	Weld County, CO	TVD Reference:	WELL @ 4897.0usft (H&P #326)
Site:	Sec 29, T9N, R59W, 6th PM	MD Reference:	WELL @ 4897.0usft (H&P #326)
Well:	Trisha LC29-73HNB	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)	
12,377.0	88.72	358.30	6,127.5	6,244.0	-402.9	6,256.7	2.53	-2.53	-0.17	
12,471.0	89.13	357.98	6,129.3	6,337.9	-406.0	6,350.7	0.55	0.44	-0.34	
12,566.0	89.57	357.64	6,130.4	6,432.8	-409.6	6,445.7	0.59	0.46	-0.36	
12,660.0	90.12	357.14	6,130.6	6,526.7	-413.9	6,539.7	0.79	0.59	-0.53	
12,755.0	90.75	356.81	6,129.9	6,621.6	-418.9	6,634.7	0.75	0.66	-0.35	
12,849.0	89.81	358.97	6,129.4	6,715.5	-422.4	6,728.6	2.51	-1.00	2.30	
12,944.0	89.75	359.68	6,129.8	6,810.5	-423.5	6,823.5	0.75	-0.06	0.75	
13,039.0	90.61	359.37	6,129.5	6,905.5	-424.3	6,918.4	0.96	0.91	-0.33	
13,133.0	91.33	359.03	6,127.9	6,999.5	-425.6	7,012.3	0.85	0.77	-0.36	
13,228.0	90.53	359.48	6,126.4	7,094.5	-426.8	7,107.2	0.97	-0.84	0.47	
13,322.0	91.39	358.88	6,124.8	7,188.5	-428.2	7,201.1	1.12	0.91	-0.64	
13,417.0	89.76	0.63	6,123.8	7,283.4	-428.6	7,296.0	2.52	-1.72	1.84	
13,511.0	90.03	1.24	6,124.0	7,377.4	-427.1	7,389.8	0.71	0.29	0.65	
13,605.0	90.43	0.61	6,123.6	7,471.4	-425.5	7,483.5	0.79	0.43	-0.67	
13,700.0	88.27	359.71	6,124.7	7,566.4	-425.3	7,578.3	2.46	-2.27	-0.95	
13,795.0	87.99	359.40	6,127.8	7,661.4	-426.0	7,673.2	0.44	-0.29	-0.33	
13,890.0	87.16	358.96	6,131.8	7,756.3	-427.4	7,768.0	0.99	-0.87	-0.46	
13,985.0	88.99	359.11	6,135.0	7,851.2	-429.0	7,862.9	1.93	1.93	0.16	
14,080.0	88.65	358.47	6,137.0	7,946.1	-431.0	7,957.8	0.76	-0.36	-0.67	
14,175.0	90.47	357.49	6,137.7	8,041.1	-434.3	8,052.8	2.18	1.92	-1.03	
14,269.0	89.90	356.38	6,137.4	8,134.9	-439.3	8,146.8	1.33	-0.61	-1.18	
14,364.0	89.69	355.62	6,137.7	8,229.7	-446.0	8,241.8	0.83	-0.22	-0.80	
14,459.0	91.93	358.38	6,136.4	8,324.5	-450.9	8,336.7	3.74	2.36	2.91	
14,554.0	92.91	358.44	6,132.4	8,419.4	-453.6	8,431.6	1.03	1.03	0.06	
14,649.0	91.05	358.36	6,129.1	8,514.3	-456.2	8,526.5	1.96	-1.96	-0.08	
14,744.0	90.97	356.29	6,127.4	8,609.2	-460.7	8,621.5	2.18	-0.08	-2.18	
14,838.0	91.17	355.00	6,125.7	8,702.9	-467.8	8,715.5	1.39	0.21	-1.37	
14,933.0	91.77	355.12	6,123.2	8,797.5	-476.0	8,810.4	0.64	0.63	0.13	
15,028.0	89.95	355.18	6,121.8	8,892.2	-484.0	8,905.3	1.92	-1.92	0.06	
15,123.0	89.75	356.01	6,122.1	8,986.9	-491.3	9,000.3	0.90	-0.21	0.87	
15,218.0	90.96	355.84	6,121.5	9,081.7	-498.1	9,095.3	1.29	1.27	-0.18	
15,313.0	89.52	356.44	6,121.1	9,176.4	-504.4	9,190.3	1.64	-1.52	0.63	
15,408.0	89.43	355.75	6,121.9	9,271.2	-510.9	9,285.3	0.73	-0.09	-0.73	
15,503.0	90.30	355.40	6,122.2	9,365.9	-518.2	9,380.2	0.99	0.92	-0.37	
15,558.0	90.80	355.10	6,121.6	9,420.7	-522.8	9,435.2	1.06	0.91	-0.55	
TD @ 15628' / 6120.7' TVD										
15,628.0	90.80	355.20	6,120.7	9,490.5	-528.7	9,505.2	0.14	0.00	0.14	

Company: Noble Energy Inc.
Project: Weld County, CO
Site: Sec 29, T9N, R59W, 6th PM
Well: Trisha LC29-73HNB
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well Trisha LC29-73HNB
TVD Reference: WELL @ 4897.0usft (H&P #326)
MD Reference: WELL @ 4897.0usft (H&P #326)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

Design Annotations

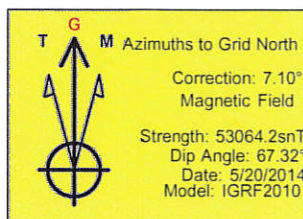
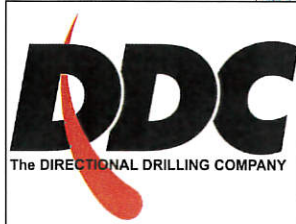
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
639.0	639.0	-1.1	0.5	TIE IN @ 639' MD / 639' TVD END OF SUR HOLE / BEGIN INT HOLE
6,094.4	6,005.9	13.6	-276.3	CROSSED 460' HARD LINE @ 6094.4' MD / 6005.9' TVD
6,359.0	6,148.4	232.1	-281.2	LAST DDC SURVEY @ 6359' MD / 6148.4' TVD
6,416.0	6,159.7	287.8	-284.9	7" CASING POINT @ 6416' MD / 6159.7 TVD END OF INT HOLE / BEGIN LAT
6,454.0	6,163.5	325.5	-287.5	FIRST RAW DATE SURVEY @ 6454' MD /6163.5' TVD
10,536.7	6,128.1	4,405.0	-355.9	CROSSED 460' HARD LINE @ 10536.7' MD / 6128.1' TVD
10,996.9	6,127.3	4,865.1	-357.7	CROSSED LEASE LINE @ 10996.9' MD / 6127.3' TVD
11,457.2	6,130.3	5,324.6	-383.9	CROSSED 460' HARD LINE @ 11457.2' MD / 6130.3 TVD
15,628.0	6,120.7	9,490.5	-528.7	TD @ 15628' / 6120.7' TVD

Checked By: _____ Approved By: _____ Date: _____

Company Name: Noble Energy Inc.
Trisha LC29-73HNB
Weld County, CO
Rig: H&P #026
Created By: Kris Ray
Date: 7/11/2014

Trisha LC29-73HNB
Weld County, CO
Q140460 & RM-140476
Design #1

noble energy



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: Trisha LC29-73HNB						
MD	Inc	API	TVD	+N-S	+E-W	Vertical Displacement
633.9	9.40	155.45	633.9	-1.1	8.5	-1.1
6084.4	43.08	1.07	6085.9	13.4	-276.3	26.9
6338.0	75.18	336.34	6161.4	232.1	-281.2	241.4
6416.0	81.04	336.14	6161.7	297.8	-284.9	363.2
6454.0	86.44	336.21	6161.5	375.5	-282.5	341.0
10998.9	89.07	337.03	6127.3	488.1	-357.7	487.5
11457.2	90.35	337.03	6127.3	488.1	-357.7	487.5
15426.0	90.80	355.29	6120.7	490.5	-528.7	955.2

DESIGN TARGET DETAILS						
Name	TVD	+N-S	+E-W	Northings	Eastings	Latitude
FBH: Trisha LC29-73HNB	6125.7	5499.9	-501.9	1616428.31	3416379.41	40° 44' 28.60 N
- plan hole target center						107° 50' 50.424 W

