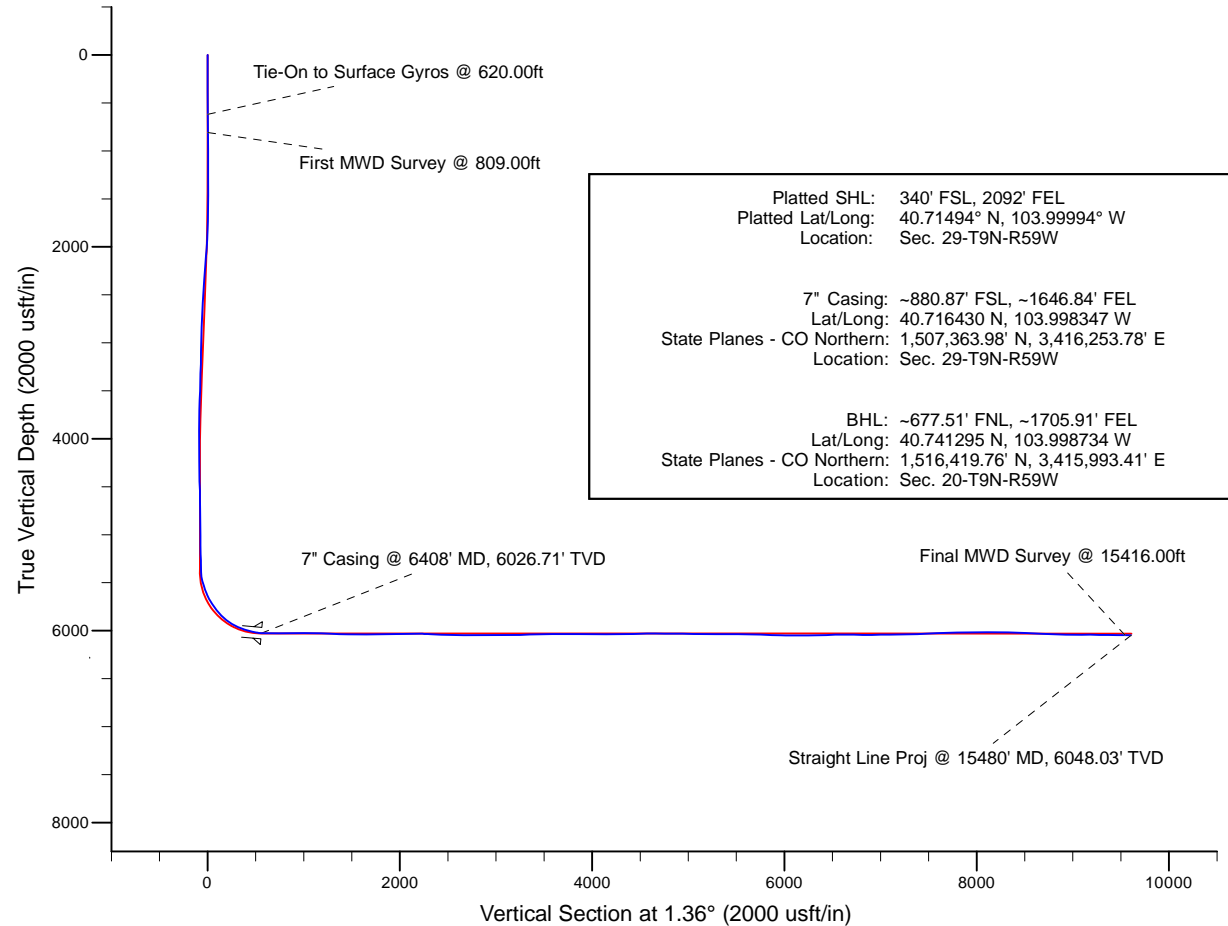
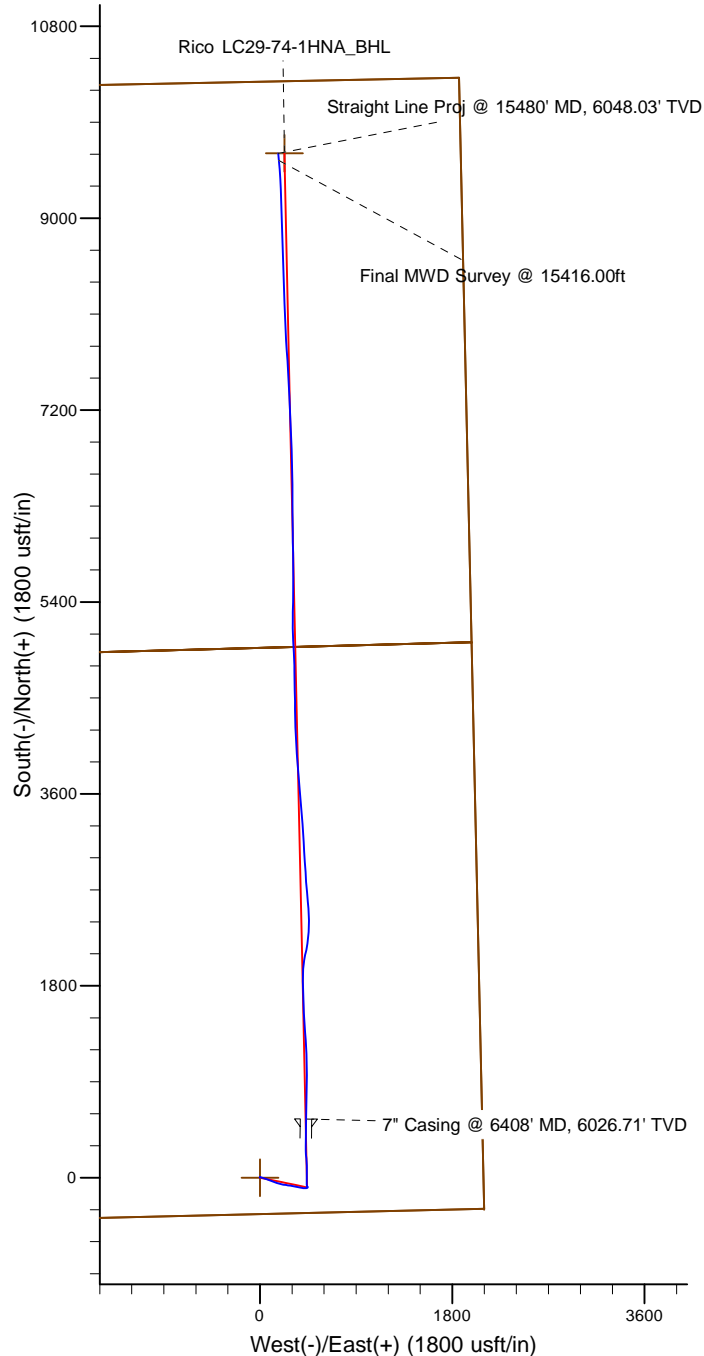


Project: Weld County, CO (NAD 83)
Site: Sec. 29-T9N-R59W (LC29-15-A)
Well: Rico LC29-74-1HNA
Wellbore: Plan A
Design: Final Surveys

Noble Energy

HALLIBURTON
Sperry Drilling



LEGEND

- ✗ Rico LC29-74-1HNA, Plan A, Rev A0 - PROPOSAL V0
- Final Surveys

Platted SHL: 340' FSL, 2092' FEL
Platted Lat/Long: 40.71494° N, 103.99994° W
Location: Sec. 29-T9N-R59W

7" Casing: ~880.87' FSL, ~1646.84' FEL
Lat/Long: 40.716430 N, 103.998347 W
State Planes - CO Northern: 1,507,363.98' N, 3,416,253.78' E
Location: Sec. 29-T9N-R59W

BHL: ~677.51' FNL, ~1705.91' FEL
Lat/Long: 40.741295 N, 103.998734 W
State Planes - CO Northern: 1,516,419.76' N, 3,415,993.41' E
Location: Sec. 20-T9N-R59W

WELL DETAILS: Rico LC29-74-1HNA

Ground Level: 4871.00
RKB=24ft @ 4895.00usft (H&P 273)

Created By: Fred Hartmann
Created On: 05/19/2014

Noble Energy

Weld County, CO (NAD 83)
Sec. 29-T9N-R59W (LC29-15-A)
Rico LC29-74-1HNA

Design: Final Surveys

Sperry Drilling Services

Final Survey Report

19 May, 2014

Well Coordinates: 1,506,813.77 N, 3,415,821.49 E (40° 42' 53.78" N, 103° 59' 59.78" W)
Ground Level: 4,871.00 usft

Local Coordinate Origin:

Viewing Datum:

TVDs to System:

North Reference:

Unit System:

Geodetic Scale Factor Applied

Version: 5000.1 Build: 70

Centered on Well Rico LC29-74-1HNA

RKB=24ft @ 4895.00usft (H&P 273)

N

Grid

Dec-Deg - API - US Survey Feet - Custom

HALLIBURTON

Design Report for Rico LC29-74-1HNA - Final Surveys

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
370.00	0.50	351.35	370.00	1.60	-0.24	1.59	0.14
620.00	0.60	324.05	619.98	3.73	-1.18	3.71	0.11
Tie-On to Surface Gyros @ 620.00ft							
809.00	0.32	4.40	808.98	5.06	-1.72	5.02	0.22
First MWD Survey @ 809.00ft							
994.00	0.47	4.20	993.97	6.33	-1.62	6.29	0.08
1,273.00	0.09	155.14	1,272.97	7.28	-1.44	7.24	0.20
1,366.00	0.00	119.56	1,365.97	7.21	-1.41	7.17	0.10
1,459.00	0.14	22.97	1,458.97	7.31	-1.37	7.28	0.15
1,554.00	0.17	62.32	1,553.97	7.49	-1.20	7.46	0.11
1,645.00	3.16	111.06	1,644.92	6.65	1.26	6.68	3.35
1,738.00	5.69	108.57	1,737.64	4.26	8.02	4.45	2.73
1,833.00	8.07	108.37	1,831.95	0.66	18.82	1.10	2.51
1,927.00	10.54	109.97	1,924.70	-4.36	33.16	-3.57	2.64
2,022.00	13.01	109.59	2,017.70	-10.91	51.41	-9.69	2.60
2,117.00	12.98	109.82	2,110.26	-18.12	71.52	-16.41	0.06
2,212.00	12.94	109.10	2,202.84	-25.21	91.61	-23.03	0.18
2,307.00	13.07	108.89	2,295.41	-32.17	111.82	-29.51	0.15
2,402.00	12.44	109.53	2,388.06	-39.07	131.63	-35.94	0.68
2,497.00	12.21	109.81	2,480.87	-45.90	150.72	-42.31	0.25
2,591.00	11.83	108.77	2,572.81	-52.37	169.20	-48.33	0.47
2,687.00	11.82	108.97	2,666.77	-58.73	187.81	-54.25	0.04
2,781.00	11.81	99.32	2,758.79	-63.42	206.41	-58.50	2.10
2,876.00	11.85	98.21	2,851.77	-66.38	225.66	-61.01	0.24
2,971.00	11.85	97.88	2,944.75	-69.11	244.98	-63.28	0.07
3,066.00	11.46	97.96	3,037.79	-71.76	263.98	-65.47	0.41
3,161.00	10.96	98.44	3,130.98	-74.39	282.26	-67.67	0.54
3,256.00	9.65	98.59	3,224.44	-76.91	299.07	-69.78	1.38
3,351.00	9.52	100.87	3,318.12	-79.58	314.66	-72.08	0.42
3,446.00	9.74	100.90	3,411.78	-82.58	330.27	-74.71	0.23
3,540.00	10.11	101.88	3,504.37	-85.78	346.15	-77.54	0.43
3,635.00	10.50	102.82	3,597.84	-89.42	362.75	-80.78	0.45
3,730.00	10.83	102.11	3,691.20	-93.21	379.91	-84.16	0.37
3,825.00	9.65	99.09	3,784.68	-96.34	396.50	-86.90	1.36
3,920.00	8.46	90.12	3,878.50	-97.61	411.35	-87.82	1.94
4,014.00	5.99	90.18	3,971.75	-97.64	423.18	-87.57	2.63
4,109.00	4.25	84.03	4,066.37	-97.29	431.63	-87.02	1.92
4,204.00	1.84	79.81	4,161.23	-96.66	436.64	-86.26	2.55
4,299.00	1.72	78.86	4,256.18	-96.11	439.54	-85.65	0.13
4,394.00	1.93	63.85	4,351.13	-95.13	442.37	-84.60	0.55
4,488.00	2.09	44.67	4,445.08	-93.21	445.00	-82.62	0.73
4,583.00	2.25	33.40	4,540.01	-90.42	447.24	-79.78	0.48
4,678.00	0.37	57.47	4,634.98	-88.70	448.53	-78.03	2.02
4,773.00	0.65	304.44	4,729.98	-88.23	448.34	-77.56	0.91
5,057.00	1.39	325.36	5,013.93	-84.49	445.06	-73.90	0.29
5,152.00	1.51	316.03	5,108.90	-82.64	443.53	-72.09	0.28
5,247.00	1.40	312.40	5,203.87	-80.96	441.81	-70.44	0.15
5,310.00	1.20	321.28	5,266.86	-79.92	440.82	-69.43	0.45
5,340.00	1.27	317.71	5,296.85	-79.43	440.40	-68.95	0.35

Design Report for Rico LC29-74-1HNA - Final Surveys

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)
5,434.00	1.61	344.11	5,390.82	-77.39	439.34	-66.94	0.78
5,482.00	8.37	353.64	5,438.61	-73.27	438.77	-62.83	14.14
5,529.00	14.97	357.34	5,484.61	-63.79	438.11	-53.37	14.13
5,577.00	18.00	358.61	5,530.64	-50.18	437.64	-39.78	6.36
5,624.00	19.84	359.44	5,575.09	-34.94	437.39	-24.55	3.96
5,672.00	22.86	0.90	5,619.80	-17.47	437.45	-7.08	6.39
5,719.00	27.61	2.95	5,662.30	2.54	438.16	12.95	10.27
5,767.00	31.38	2.90	5,704.07	26.14	439.36	36.57	7.85
5,813.00	34.91	1.51	5,742.58	51.27	440.32	61.71	7.85
5,861.00	37.29	358.59	5,781.36	79.54	440.32	89.97	6.12
5,908.00	42.27	356.32	5,817.47	109.57	438.95	119.96	11.04
5,956.00	46.98	355.59	5,851.63	143.19	436.57	153.52	9.87
6,003.00	49.38	354.25	5,882.96	178.08	433.46	188.32	5.53
6,051.00	54.77	356.49	5,912.46	215.80	430.43	225.96	11.82
6,098.00	60.76	358.51	5,937.52	255.50	428.72	265.61	13.25
6,146.00	65.12	0.85	5,959.35	298.23	428.50	308.32	10.07
6,193.00	69.62	1.20	5,977.43	341.59	429.28	351.69	9.60
6,241.00	73.18	0.82	5,992.74	387.07	430.08	397.17	7.45
6,288.00	75.45	0.62	6,005.45	432.31	430.65	442.42	4.85
6,336.00	77.64	0.95	6,016.61	478.99	431.29	489.09	4.61
6,361.00	81.31	0.78	6,021.18	503.56	431.66	513.67	14.70
6,408.00	85.18	0.80	6,026.71	550.22	432.30	560.33	8.23
7" Casing @ 6408' MD, 6026.71' TVD							
6,459.00	89.38	0.83	6,029.13	601.15	433.03	611.26	8.23
6,553.00	91.42	1.36	6,028.47	695.12	434.82	705.25	2.24
6,648.00	90.43	1.10	6,026.94	790.09	436.86	800.24	1.08
6,743.00	91.97	1.76	6,024.95	885.03	439.23	895.21	1.76
6,838.00	88.71	358.62	6,024.38	980.01	439.55	990.17	4.76
6,933.00	88.37	358.31	6,026.80	1,074.94	437.00	1,085.01	0.48
7,028.00	87.60	357.55	6,030.14	1,169.82	433.57	1,179.78	1.14
7,122.00	88.00	357.17	6,033.75	1,263.65	429.25	1,273.49	0.59
7,217.00	88.86	355.91	6,036.35	1,358.44	423.52	1,368.11	1.61
7,311.00	89.01	355.93	6,038.10	1,452.18	416.83	1,461.67	0.16
7,406.00	89.35	355.62	6,039.46	1,546.92	409.83	1,556.21	0.48
7,501.00	90.52	0.20	6,039.57	1,641.83	406.37	1,651.01	4.98
7,596.00	90.18	359.48	6,038.99	1,736.82	406.10	1,745.98	0.84
7,690.00	89.41	357.96	6,039.33	1,830.80	404.00	1,839.87	1.81
7,785.00	91.32	0.91	6,038.72	1,925.77	403.07	1,934.80	3.70
7,880.00	92.74	9.32	6,035.35	2,020.25	411.52	2,029.45	8.97
7,975.00	90.74	11.64	6,032.46	2,113.61	428.79	2,123.20	3.22
8,070.00	88.68	8.35	6,032.95	2,207.15	445.28	2,217.10	4.09
8,164.00	87.04	4.21	6,036.46	2,300.50	455.55	2,310.66	4.73
8,259.00	87.10	359.40	6,041.32	2,395.30	458.54	2,405.51	5.06
8,354.00	87.97	356.28	6,045.40	2,490.13	454.96	2,500.23	3.41
8,449.00	89.32	355.84	6,047.65	2,584.88	448.43	2,594.79	1.49
8,544.00	89.75	354.64	6,048.42	2,679.54	440.55	2,689.25	1.34
8,638.00	91.57	356.15	6,047.34	2,773.23	433.00	2,782.73	2.52
8,733.00	90.12	355.40	6,045.94	2,867.95	426.01	2,877.26	1.72
8,828.00	89.51	357.24	6,046.24	2,962.75	419.91	2,971.89	2.04
8,923.00	88.80	356.06	6,047.64	3,057.58	414.36	3,066.55	1.45
9,018.00	90.80	356.55	6,047.98	3,152.38	408.24	3,161.18	2.17

Design Report for Rico LC29-74-1HNA - Final Surveys

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)
9,113.00	92.50	356.00	6,045.24	3,247.13	402.07	3,255.76	1.88
9,208.00	91.42	355.68	6,041.99	3,341.82	395.18	3,350.27	1.19
9,303.00	91.88	356.25	6,039.26	3,436.55	388.50	3,444.80	0.77
9,398.00	90.86	355.45	6,036.98	3,531.27	381.63	3,539.34	1.36
9,492.00	90.65	354.58	6,035.75	3,624.91	373.46	3,632.75	0.95
9,587.00	89.54	355.29	6,035.59	3,719.53	365.07	3,727.15	1.39
9,682.00	89.29	354.87	6,036.56	3,814.18	356.92	3,821.58	0.51
9,777.00	90.00	356.33	6,037.15	3,908.89	349.64	3,916.09	1.71
9,872.00	89.88	356.82	6,037.25	4,003.72	343.96	4,010.76	0.53
9,966.00	89.32	355.96	6,037.90	4,097.53	338.04	4,104.40	1.09
10,061.00	89.57	357.06	6,038.82	4,192.35	332.26	4,199.06	1.19
10,154.00	91.29	359.41	6,038.12	4,285.29	329.40	4,291.91	3.13
10,247.00	91.63	359.58	6,035.75	4,378.26	328.58	4,384.83	0.41
10,340.00	91.97	358.94	6,032.83	4,471.21	327.38	4,477.72	0.78
10,433.00	89.66	359.45	6,031.51	4,564.18	326.07	4,570.64	2.54
10,526.00	89.85	359.15	6,031.91	4,657.17	324.93	4,663.57	0.38
10,618.00	89.78	358.76	6,032.21	4,749.16	323.26	4,755.49	0.43
10,711.00	90.18	358.34	6,032.24	4,842.13	320.90	4,848.38	0.62
10,804.00	88.89	356.44	6,032.99	4,935.02	316.67	4,941.15	2.47
10,897.00	88.77	357.61	6,034.89	5,027.87	311.84	5,033.86	1.26
10,989.00	89.78	358.67	6,036.06	5,119.82	308.86	5,125.71	1.59
11,082.00	90.22	0.50	6,036.06	5,212.81	308.18	5,218.66	2.02
11,175.00	89.85	0.23	6,036.00	5,305.81	308.78	5,311.64	0.49
11,267.00	90.06	0.66	6,036.07	5,397.80	309.49	5,403.63	0.52
11,360.00	89.29	0.49	6,036.60	5,490.80	310.42	5,496.62	0.85
11,453.00	88.55	359.99	6,038.35	5,583.78	310.81	5,589.58	0.96
11,546.00	88.61	0.10	6,040.66	5,676.75	310.89	5,682.53	0.13
11,639.00	88.28	359.34	6,043.18	5,769.71	310.43	5,775.46	0.89
11,732.00	88.03	359.50	6,046.17	5,862.66	309.49	5,868.36	0.32
11,827.00	88.43	359.46	6,049.11	5,957.61	308.63	5,963.26	0.42
11,922.00	89.44	359.22	6,050.87	6,052.59	307.53	6,058.18	1.09
12,016.00	89.82	359.00	6,051.48	6,146.57	306.07	6,152.11	0.47
12,111.00	90.80	359.35	6,050.97	6,241.56	304.71	6,247.04	1.10
12,206.00	91.05	359.43	6,049.43	6,336.54	303.70	6,341.97	0.28
12,301.00	92.47	0.08	6,046.52	6,431.49	303.29	6,436.88	1.64
12,396.00	90.74	359.45	6,043.86	6,526.45	302.90	6,531.80	1.94
12,491.00	89.94	359.36	6,043.29	6,621.45	301.91	6,626.75	0.85
12,585.00	89.91	358.93	6,043.41	6,715.43	300.51	6,720.68	0.46
12,680.00	89.38	358.07	6,044.00	6,810.40	298.02	6,815.55	1.06
12,775.00	89.91	357.14	6,044.59	6,905.31	294.05	6,910.35	1.13
12,870.00	91.17	357.73	6,043.70	7,000.21	289.80	7,005.12	1.46
12,965.00	90.71	356.39	6,042.14	7,095.07	284.93	7,099.84	1.49
13,060.00	91.05	358.73	6,040.68	7,189.97	280.89	7,194.61	2.49
13,155.00	91.29	357.81	6,038.74	7,284.90	278.02	7,289.45	1.00
13,250.00	91.51	356.69	6,036.42	7,379.76	273.46	7,384.18	1.20
13,344.00	91.76	357.25	6,033.74	7,473.59	268.50	7,477.86	0.65
13,439.00	93.08	356.58	6,029.72	7,568.37	263.39	7,572.49	1.56
13,534.00	92.69	356.03	6,024.94	7,663.05	257.27	7,667.00	0.71
13,629.00	92.28	356.53	6,020.82	7,757.76	251.12	7,761.54	0.68
13,723.00	91.02	356.79	6,018.12	7,851.56	245.64	7,855.18	1.37
13,818.00	89.94	356.01	6,017.32	7,946.37	239.68	7,949.82	1.40

Design Report for Rico LC29-74-1HNA - Final Surveys

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)
13,913.00	89.57	357.34	6,017.73	8,041.20	234.17	8,044.50	1.45
14,008.00	89.32	358.24	6,018.65	8,136.13	230.50	8,139.31	0.98
14,103.00	90.89	359.34	6,018.47	8,231.10	228.50	8,234.21	2.02
14,198.00	88.00	358.06	6,019.39	8,326.06	226.34	8,329.09	3.33
14,292.00	88.64	357.38	6,022.15	8,419.94	222.61	8,422.86	0.99
14,387.00	88.21	358.33	6,024.76	8,514.84	219.05	8,517.64	1.10
14,482.00	87.10	357.57	6,028.65	8,609.70	215.66	8,612.39	1.42
14,577.00	86.02	358.15	6,034.35	8,704.46	212.12	8,707.04	1.29
14,672.00	87.16	357.92	6,040.00	8,799.23	208.86	8,801.71	1.22
14,766.00	89.29	358.70	6,042.91	8,893.14	206.09	8,895.53	2.41
14,861.00	90.52	358.69	6,043.07	8,988.12	203.93	8,990.42	1.29
14,956.00	89.45	358.63	6,043.09	9,083.09	201.71	9,085.32	1.13
15,051.00	89.48	358.03	6,043.98	9,178.04	198.94	9,180.18	0.63
15,146.00	89.66	357.85	6,044.69	9,272.98	195.52	9,275.01	0.27
15,240.00	88.98	355.98	6,045.81	9,366.83	190.47	9,368.71	2.12
15,335.00	89.51	355.90	6,047.06	9,461.58	183.74	9,463.28	0.56
15,416.00	89.66	355.10	6,047.65	9,542.33	177.39	9,543.85	1.00
Final MWD Survey @ 15416.00ft							
15,480.00	89.66	355.10	6,048.03	9,606.10	171.92	9,607.47	0.00
Straight Line Proj @ 15480' MD, 6048.03' TVD							

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
620.00	619.98	3.73	-1.18	Tie-On to Surface Gyros @ 620.00ft
809.00	808.98	5.06	-1.72	First MWD Survey @ 809.00ft
15,416.00	6,047.65	9,542.33	177.39	Final MWD Survey @ 15416.00ft
15,480.00	6,048.03	9,606.10	171.92	Straight Line Proj @ 15480' MD, 6048.03' TVD

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin		Start TVD (usft)
				+N/_S (usft)	+E/-W (usft)	
Target	Rico LC29-74-1HNA_BHL	1.36	Slot	0.00	0.00	0.00

Survey tool program

From (usft)	To (usft)	Survey/Plan	Survey Tool
370.00	620.00	Surface Gyros	Flexi-Shot
809.00	6,361.00	MWD Surveys - Intermediate	MWD+IFR1+MS_WY
6,459.00	15,416.00	MWD Surveys - Production	MWD+IFR1+MS_WY

Casing Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
6,408.00	6,026.71	7" Casing @ 6408' MD, 6026.71' TVD	7	8-3/4

Design Report for Rico LC29-74-1HNA - Final Surveys

Wellbore Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Rico LC29-74-1HNA_ξ	0.00	0.00	0.00	0.01	0.00	1,506,813.77	3,415,821.49	40.714940	-103.999940
- actual wellpath misses target center by 0.01usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Polygon									
Point 1			0.00	10,211.50	-3,373.76	1,517,025.17	3,412,447.76		
Point 2			0.00	4,885.79	-3,278.81	1,511,699.51	3,412,542.71		
Point 3			0.00	5,022.01	1,980.20	1,511,835.73	3,417,801.67		
Point 4			0.00	4,885.79	-3,278.81	1,511,699.51	3,412,542.71		
Point 5			0.00	-413.99	-3,159.34	1,506,399.79	3,412,662.18		
Point 6			0.00	-292.36	2,098.28	1,506,521.42	3,417,919.75		
Point 7			0.00	5,022.01	1,980.20	1,511,835.73	3,417,801.67		
Point 8			0.00	10,318.18	1,862.44	1,517,131.85	3,417,683.91		
Point 9			0.00	10,211.50	-3,373.76	1,517,025.17	3,412,447.76		
Rico LC29-74-1HNA_ξ	0.00	0.00	0.00	0.01	0.00	1,506,813.77	3,415,821.49	40.714940	-103.999940
- actual wellpath misses target center by 0.01usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Point									
Rico LC29-74-1HNA_ξ	0.00	0.00	0.00	0.01	0.00	1,506,813.77	3,415,821.49	40.714940	-103.999940
- actual wellpath misses target center by 0.01usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Polygon									
Point 1			0.00	9,611.50	-2,773.76	1,516,425.17	3,413,047.76		
Point 2			0.00	4,885.79	-2,678.81	1,511,699.51	3,413,142.71		
Point 3			0.00	186.02	-2,559.33	1,506,999.79	3,413,262.18		
Point 4			0.00	307.65	1,498.28	1,507,121.42	3,417,319.75		
Point 5			0.00	5,022.01	1,380.20	1,511,835.73	3,417,201.67		
Point 6			0.00	9,718.18	1,262.44	1,516,531.85	3,417,083.91		
Point 7			0.00	9,611.50	-2,773.76	1,516,425.17	3,413,047.76		
Rico LC29-74-1HNA_ℓ	0.00	0.00	5,393.15	-90.16	442.09	1,506,723.60	3,416,263.57	40.714672	-103.998351
- actual wellpath misses target center by 13.15usft at 5435.19usft MD (5392.01 TVD, -77.36 N, 439.33 E)									
- Circle (radius 35.00)									
Rico LC29-74-1HNA_L	0.00	0.00	6,032.00	0.01	0.00	1,506,813.77	3,415,821.49	40.714940	-103.999940
- actual wellpath misses target center by 491.72usft at 5998.87usft MD (5880.27 TVD, 174.97 N, 433.77 E)									
- Polygon									
Point 1			6,032.00	524.24	378.46	1,507,338.01	3,416,199.94		
Point 2			6,032.00	524.24	478.46	1,507,338.01	3,416,299.94		
Point 3			6,032.00	9,609.05	278.22	1,516,422.72	3,416,099.70		
Point 4			6,032.00	9,609.05	178.21	1,516,422.72	3,415,999.70		
Point 5			6,032.00	524.24	378.46	1,507,338.01	3,416,199.94		
Rico LC29-74-1HNA_E	0.00	0.00	6,032.00	9,609.06	228.22	1,516,422.73	3,416,049.70	40.741300	-103.998530
- actual wellpath misses target center by 58.58usft at 15478.05usft MD (6048.02 TVD, 9604.15 N, 172.09 E)									
- Point									

Directional Difficulty Index

Average Dogleg over Survey:	1.74 °/100usft	Maximum Dogleg over Survey:	14.70 °/100usft at 6,361.00 usft
Net Tortousity applicable to Plans:	1.00 °/100usft	Directional Difficulty Index:	6.847

Audit Info

North Reference Sheet for Sec. 29-T9N-R59W (LC29-15-A) - Rico LC29-74-1HNA -

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to Grid North Reference.

Vertical Depths are relative to RKB=24ft @ 4895.00usft (H&P 273). Northing and Easting are relative to Rico LC29-74-1HNA

Coordinate System is US State Plane 1983, Colorado Northern Zone using datum North American Datum 1983, ellipsoid GRS 1980

Projection method is Lambert Conformal Conic (2 parallel)

Central Meridian is -105.500000°, Longitude Origin:0.000000°, Latitude Origin:40.783333°

False Easting: 3,000,000.00usft, False Northing: 1,000,000.00usft, Scale Reduction: 0.99998962

Grid Coordinates of Well: 1,506,813.77 usft N, 3,415,821.49 usft E

Geographical Coordinates of Well: 40° 42' 53.78" N, 103° 59' 59.78" W

Grid Convergence at Surface is: 0.97°

Based upon Minimum Curvature type calculations, at a Measured Depth of 15,480.00usft
the Bottom Hole Displacement is 9,607.63usft in the Direction of 1.03° (Grid).

Magnetic Convergence at surface is: -7.15° (3 May 2014, , BGGM2013)

