

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

Well Name: **Christine LC27-765**

Surface Location: Christine LC27-765 Pad Sec.34-T9N-R59W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

Ground Elevation: 4827.0

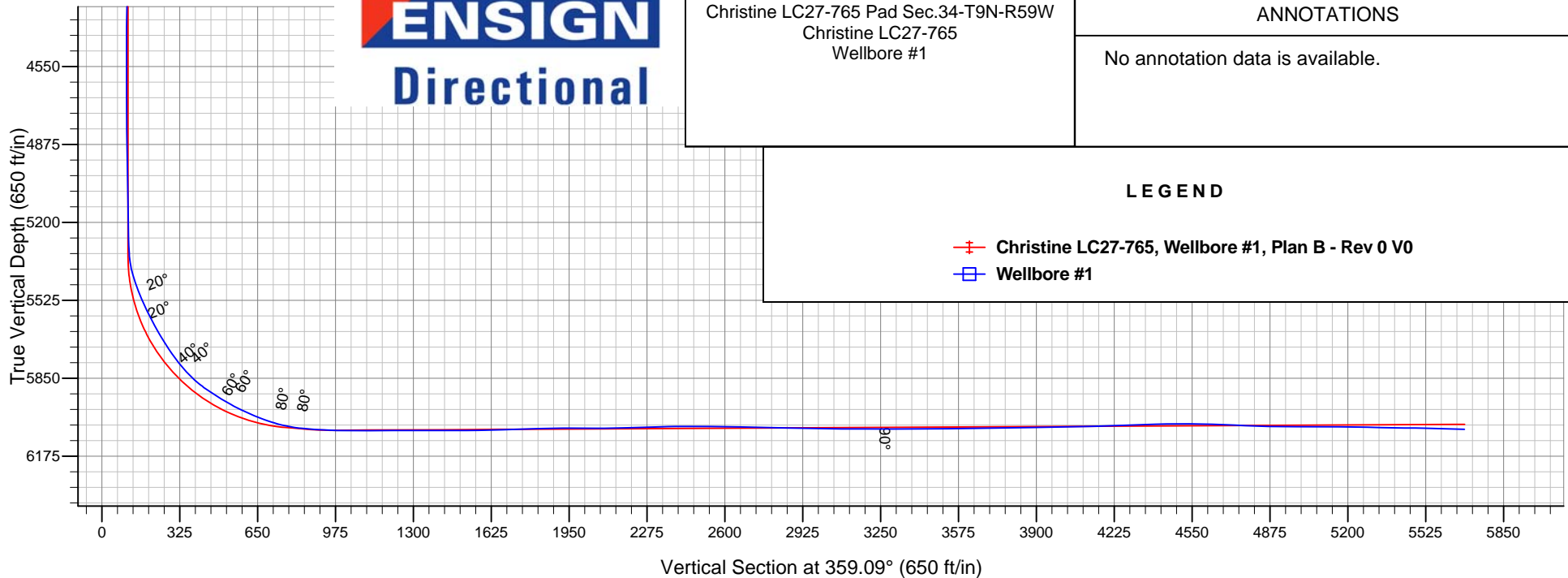
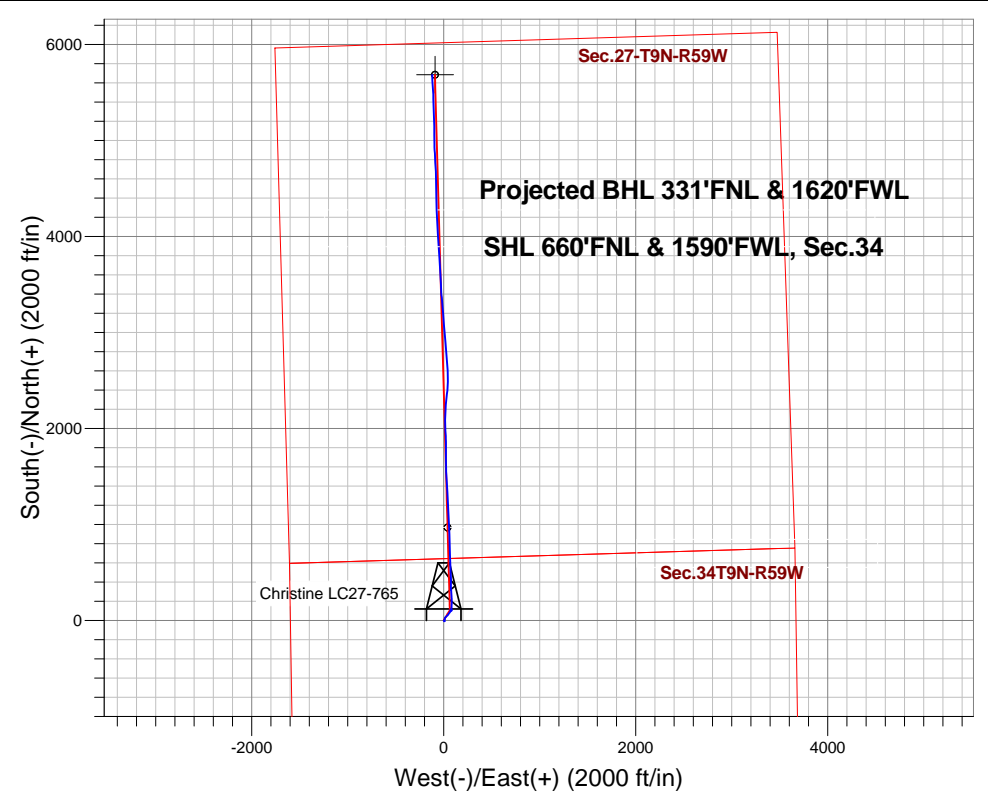
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1506038.58	3424826.36	40.712390	-103.967510	

H&P 326 RKB - 30' WELL @ 4857.0ft (H&P 326 RKB - 30')

FINAL SURVEY

Projected Bottom Hole Location
11297'MD 6063'TVD 5685'N & 120'W of SHL
87.9 degree Incl @ 356.6 degree AZM

05-123-40631



Christine LC27-765 Pad Sec.34-T9N-R59W
Christine LC27-765
Wellbore #1

ANNOTATIONS

No annotation data is available.

LEGEND

- + Christine LC27-765, Wellbore #1, Plan B - Rev 0 V0
- + Wellbore #1



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

SEC.34-T9N-R59W

Christine LC27-765 Pad Sec.34-T9N-R59W

Christine LC27-765

Wellbore #1

Design: Wellbore #1

Standard Survey Report

28 April, 2015

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
308.0	0.30	354.74	308.0	0.8	-0.1	0.8	0.10	0.10	0.00
735.0	0.44	142.38	735.0	0.6	0.8	0.6	0.17	0.03	34.58
827.0	0.53	132.36	827.0	0.1	1.4	0.0	0.13	0.10	-10.89
919.0	0.88	129.90	919.0	-0.7	2.2	-0.7	0.38	0.38	-2.67
1,011.0	0.92	124.71	1,011.0	-1.6	3.4	-1.6	0.10	0.04	-5.64
1,197.0	1.41	139.04	1,196.9	-4.1	6.1	-4.2	0.30	0.26	7.70
1,290.0	1.50	133.15	1,289.9	-5.8	7.7	-6.0	0.19	0.10	-6.33
1,382.0	1.80	53.35	1,381.9	-5.8	9.8	-6.0	2.31	0.33	-86.74
1,475.0	1.67	356.48	1,474.8	-3.6	10.9	-3.7	1.78	-0.14	-61.15

Company:	Noble Energy Inc.- Weld County, CO (Grid North)	Local Co-ordinate Reference:	Well Christine LC27-765
Project:	SEC.34-T9N-R59W	TVD Reference:	WELL @ 4857.0ft (H&P 326 RKB - 30')
Site:	Christine LC27-765 Pad Sec.34-T9N-R59W	MD Reference:	WELL @ 4857.0ft (H&P 326 RKB - 30')
Well:	Christine LC27-765	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)
1,567.0	1.71	0.52	1,566.8	-0.9	10.8	-1.0	0.14	0.04	4.39
1,660.0	1.93	9.05	1,659.8	2.1	11.0	1.9	0.37	0.24	9.17
1,753.0	1.71	6.59	1,752.7	5.0	11.4	4.8	0.25	-0.24	-2.65
1,846.0	1.45	6.33	1,845.7	7.5	11.7	7.4	0.28	-0.28	-0.28
2,031.0	1.45	359.03	2,030.6	12.2	12.0	12.0	0.10	0.00	-3.95
2,124.0	1.41	8.43	2,123.6	14.5	12.1	14.3	0.26	-0.04	10.11
2,216.0	1.27	8.43	2,215.6	16.6	12.4	16.4	0.15	-0.15	0.00
2,311.0	1.23	355.08	2,310.5	18.7	12.5	18.5	0.31	-0.04	-14.05
2,406.0	1.36	358.59	2,405.5	20.8	12.4	20.6	0.16	0.14	3.69
2,500.0	0.92	3.25	2,499.5	22.7	12.4	22.5	0.48	-0.47	4.96
2,595.0	3.08	22.76	2,594.4	25.8	13.4	25.6	2.35	2.27	20.54
2,689.0	4.57	39.02	2,688.2	31.1	16.8	30.8	1.95	1.59	17.30
2,784.0	6.33	47.37	2,782.8	37.6	23.0	37.2	2.03	1.85	8.79
2,879.0	8.18	42.71	2,877.0	46.1	31.4	45.6	2.04	1.95	-4.91
2,973.0	7.82	41.48	2,970.1	55.8	40.2	55.1	0.42	-0.38	-1.31
3,068.0	7.34	39.28	3,064.3	65.3	48.3	64.5	0.59	-0.51	-2.32
3,162.0	6.95	37.26	3,157.5	74.5	55.6	73.6	0.49	-0.41	-2.15
3,257.0	6.73	37.79	3,251.9	83.5	62.5	82.5	0.24	-0.23	0.56
3,352.0	6.07	29.97	3,346.3	92.2	68.4	91.1	1.15	-0.69	-8.23
3,446.0	5.23	14.67	3,439.8	100.7	71.9	99.5	1.83	-0.89	-16.28
3,540.0	3.56	21.62	3,533.6	107.5	74.1	106.3	1.86	-1.78	7.39
3,635.0	2.68	331.87	3,628.4	112.2	74.1	111.0	2.89	-0.93	-52.37
3,729.0	0.62	118.74	3,722.4	113.9	73.6	112.7	3.42	-2.19	156.24
3,824.0	1.28	116.63	3,817.4	113.2	75.0	112.0	0.70	0.69	-2.22
3,919.0	1.19	119.97	3,912.4	112.2	76.8	111.0	0.12	-0.09	3.52
4,013.0	1.63	134.12	4,006.3	110.8	78.6	109.6	0.59	0.47	15.05
4,108.0	1.27	198.45	4,101.3	108.9	79.2	107.6	1.66	-0.38	67.72
4,202.0	0.88	182.55	4,195.3	107.2	78.8	105.9	0.52	-0.41	-16.91
4,296.0	0.88	174.46	4,289.3	105.7	78.9	104.5	0.13	0.00	-8.61
4,390.0	0.75	139.83	4,383.3	104.5	79.3	103.3	0.53	-0.14	-36.84
4,485.0	1.19	87.10	4,478.3	104.1	80.7	102.8	1.00	0.46	-55.51
4,580.0	1.49	80.33	4,573.2	104.4	82.9	103.0	0.36	0.32	-7.13
4,674.0	0.26	113.81	4,667.2	104.5	84.3	103.1	1.36	-1.31	35.62
4,769.0	0.53	80.68	4,762.2	104.5	85.0	103.1	0.36	0.28	-34.87
4,863.0	1.54	11.95	4,856.2	105.8	85.7	104.4	1.53	1.07	-73.12
5,052.0	1.23	301.47	5,045.2	109.3	84.4	108.0	0.86	-0.16	-37.29
5,147.0	0.91	313.54	5,140.1	110.4	83.0	109.0	0.41	-0.34	12.71
5,241.0	1.01	320.53	5,234.1	111.5	82.0	110.2	0.16	0.11	7.44
5,336.0	3.64	355.95	5,329.0	115.2	81.2	113.9	3.03	2.77	37.28
5,430.0	16.22	3.69	5,421.5	131.3	81.9	130.0	13.43	13.38	8.23
5,525.0	23.30	2.72	5,510.8	163.4	83.6	162.0	7.46	7.45	-1.02
5,619.0	27.03	0.86	5,595.9	203.3	84.8	201.9	4.06	3.97	-1.98
5,713.0	31.12	355.25	5,678.0	248.9	83.1	247.6	5.22	4.35	-5.97
5,808.0	35.34	355.60	5,757.5	300.8	79.0	299.5	4.45	4.44	0.37
5,903.0	43.47	0.08	5,830.8	361.0	76.9	359.7	9.06	8.56	4.72
5,998.0	55.16	358.41	5,892.7	432.9	75.9	431.6	12.38	12.31	-1.76
6,092.0	59.16	357.62	5,943.6	511.8	73.1	510.6	4.31	4.26	-0.84
6,186.0	65.01	357.54	5,987.6	594.7	69.6	593.6	6.22	6.22	-0.09
6,281.0	70.10	358.06	6,023.9	682.5	66.2	681.3	5.38	5.36	0.55
6,384.0	79.16	358.59	6,051.1	781.6	63.4	780.5	8.81	8.80	0.51
6,448.0	85.14	358.33	6,059.9	845.0	61.7	843.9	9.35	9.34	-0.41
6,540.0	87.08	358.24	6,066.1	936.7	58.9	935.7	2.11	2.11	-0.10
6,574.4	88.17	358.11	6,067.5	971.1	57.8	970.0	3.18	3.16	-0.38

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Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

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Christine LC27-765 Landing Pt.									
6,633.0	90.02	357.89	6,068.5	1,029.6	55.8	1,028.6	3.18	3.16	-0.38
6,725.0	90.20	357.10	6,068.3	1,121.5	51.7	1,120.6	0.88	0.20	-0.86
6,818.0	90.42	357.18	6,067.8	1,214.4	47.1	1,213.5	0.25	0.24	0.09
6,911.0	89.80	356.13	6,067.6	1,307.3	41.7	1,306.4	1.31	-0.67	-1.13
7,003.0	90.02	355.95	6,067.8	1,399.0	35.3	1,398.3	0.31	0.24	-0.20
7,096.0	90.07	356.66	6,067.7	1,491.8	29.3	1,491.2	0.77	0.05	0.76
7,189.0	91.08	359.12	6,066.7	1,584.8	25.9	1,584.2	2.86	1.09	2.65
7,282.0	91.69	359.47	6,064.5	1,677.7	24.8	1,677.1	0.76	0.66	0.38
7,374.0	92.00	0.09	6,061.5	1,769.7	24.4	1,769.1	0.75	0.34	0.67
7,467.0	91.25	359.47	6,058.9	1,862.6	24.1	1,862.0	1.05	-0.81	-0.67
7,559.0	89.67	357.18	6,058.2	1,954.6	21.4	1,954.0	3.02	-1.72	-2.49
7,654.0	89.93	357.89	6,058.5	2,049.5	17.3	2,049.0	0.80	0.27	0.75
7,843.0	91.87	5.45	6,055.5	2,238.2	22.8	2,237.6	4.13	1.03	4.00
7,937.0	91.78	6.06	6,052.5	2,331.7	32.2	2,330.9	0.66	-0.10	0.65
8,032.0	90.46	3.78	6,050.7	2,426.4	40.3	2,425.4	2.77	-1.39	-2.40
8,126.0	89.40	0.96	6,050.8	2,520.3	44.2	2,519.2	3.20	-1.13	-3.00
8,221.0	89.18	356.21	6,052.0	2,615.2	41.9	2,614.2	5.00	-0.23	-5.00
8,315.0	88.70	355.42	6,053.7	2,708.9	35.0	2,708.0	0.98	-0.51	-0.84
8,410.0	88.94	355.42	6,055.7	2,803.6	27.4	2,802.8	0.25	0.25	0.00
8,505.0	88.30	354.98	6,057.9	2,898.2	19.5	2,897.6	0.82	-0.67	-0.46
8,694.0	89.76	355.51	6,061.1	3,086.6	3.8	3,086.1	0.82	0.77	0.28
8,789.0	89.97	355.42	6,061.4	3,181.3	-3.7	3,180.9	0.24	0.22	-0.09
8,977.0	90.23	354.54	6,061.0	3,368.5	-20.1	3,368.4	0.49	0.14	-0.47
9,071.0	90.13	356.82	6,060.7	3,462.3	-27.2	3,462.3	2.43	-0.11	2.43
9,261.0	90.83	357.22	6,059.2	3,652.0	-37.1	3,652.1	0.42	0.37	0.21
9,355.0	90.96	356.68	6,057.7	3,745.9	-42.1	3,746.1	0.59	0.14	-0.57
9,450.0	91.17	356.63	6,055.9	3,840.7	-47.6	3,840.9	0.23	0.22	-0.05
9,544.0	91.39	356.10	6,053.8	3,934.5	-53.6	3,934.8	0.61	0.23	-0.56
9,638.0	90.77	356.39	6,052.1	4,028.2	-59.7	4,028.7	0.73	-0.66	0.31
9,724.0	90.90	356.22	6,050.8	4,114.1	-65.3	4,114.6	0.25	0.15	-0.20
9,818.0	92.13	357.54	6,048.3	4,207.9	-70.4	4,208.5	1.92	1.31	1.40
9,912.0	92.00	358.42	6,044.9	4,301.8	-73.7	4,302.4	0.95	-0.14	0.94
10,007.0	91.98	359.17	6,041.6	4,396.7	-75.7	4,397.3	0.79	-0.02	0.79
10,101.0	89.87	359.44	6,040.1	4,490.7	-76.8	4,491.3	2.26	-2.24	0.29
10,196.0	89.12	358.44	6,040.9	4,585.6	-78.6	4,586.3	1.32	-0.79	-1.05
10,290.0	87.93	357.59	6,043.4	4,679.5	-81.9	4,680.3	1.56	-1.27	-0.90
10,384.0	87.33	356.48	6,047.3	4,773.3	-86.7	4,774.1	1.34	-0.64	-1.18
10,479.0	88.62	357.28	6,050.6	4,868.1	-91.9	4,869.0	1.60	1.36	0.84
10,573.0	89.83	358.92	6,051.9	4,962.1	-95.0	4,963.0	2.17	1.29	1.74
10,667.0	90.03	359.36	6,052.0	5,056.1	-96.4	5,057.0	0.51	0.21	0.47
10,762.0	89.54	358.87	6,052.4	5,151.0	-97.9	5,151.9	0.73	-0.52	-0.52
10,856.0	88.28	358.21	6,054.1	5,245.0	-100.3	5,245.9	1.51	-1.34	-0.70
10,950.0	89.14	358.22	6,056.3	5,338.9	-103.2	5,339.9	0.91	0.91	0.01
11,045.0	89.84	358.07	6,057.1	5,433.9	-106.3	5,434.9	0.75	0.74	-0.16
11,139.0	88.70	356.68	6,058.3	5,527.8	-110.6	5,528.8	1.91	-1.21	-1.48
11,237.0	87.90	356.60	6,061.2	5,625.5	-116.3	5,626.7	0.82	-0.82	-0.08
11,295.6	87.90	356.60	6,063.4	5,684.0	-119.8	5,685.2	0.00	0.00	0.00
Christine LC27-765 BHL 330'FNL & 1650'FWL									
11,297.0	87.90	356.60	6,063.4	5,685.4	-119.9	5,686.6	0.00	0.00	0.00

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Design:	Wellbore #1	Database:	Landmark

Checked By: _____	Approved By: _____	Date: _____
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