

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

Well Name: **Christine LC27-755**

Surface Location: Christine LC27-765 Pad Sec.34-T9N-R59W

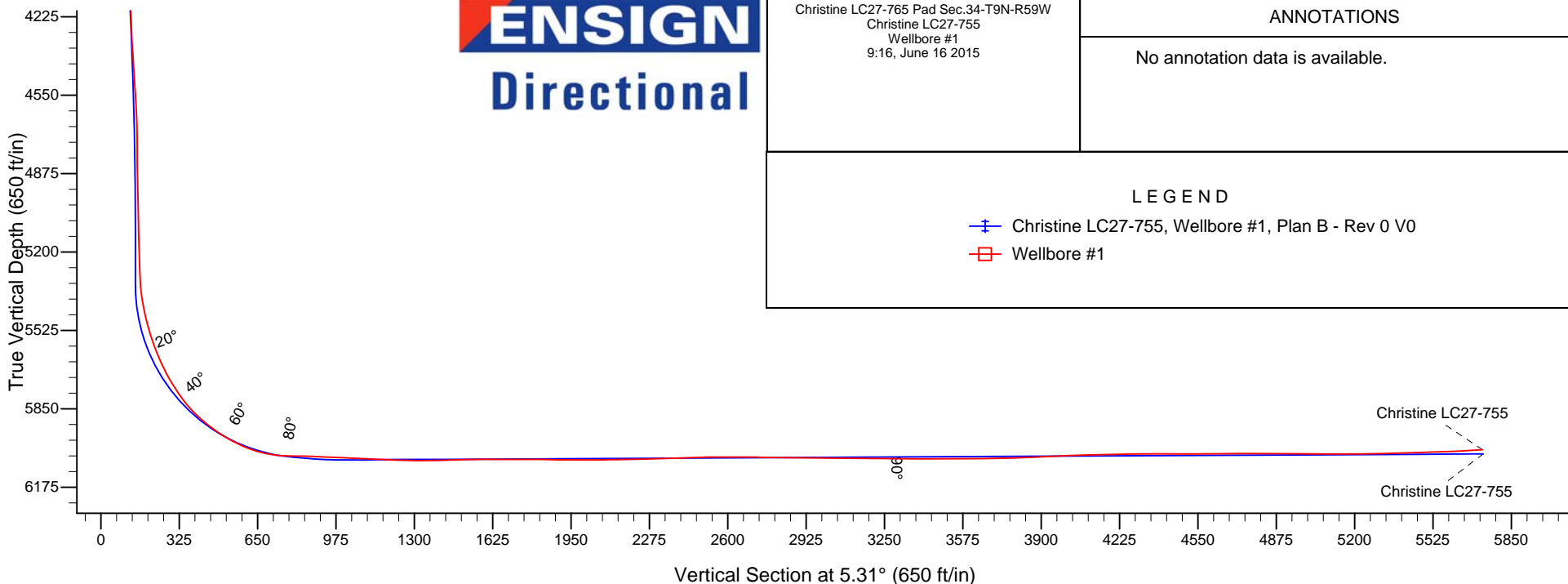
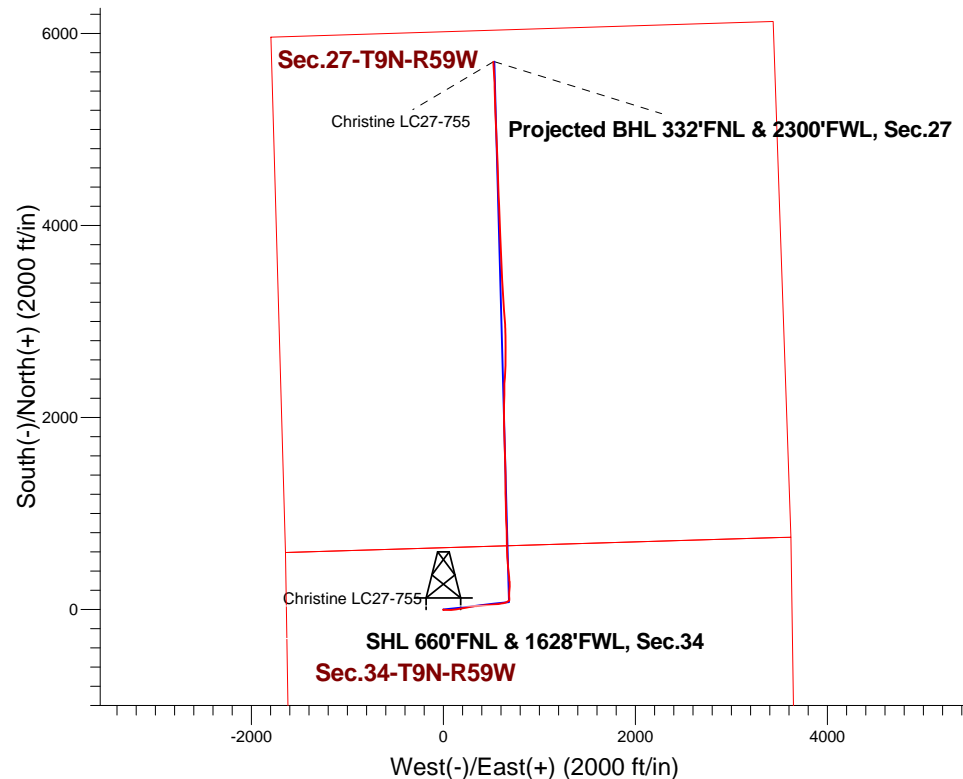
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

Ground Elevation: 4827.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1506039.25	3424865.16	40.712390	-103.967370	
H&P 326 RKB - 30' WELL @ 4857.0ft (H&P 326 RKB - 30')						

FINAL SURVEY

Projected Bottom Hole Location
11425'MD 6020'TVD 5707'N & 521'E of SHL
93.3 degree Incl @ 356.5 degree AZM



Christine LC27-765 Pad Sec.34-T9N-R59W
Christine LC27-755
Wellbore #1
9:16, June 16 2015

ANNOTATIONS

No annotation data is available.

LEGEND

- Christine LC27-755, Wellbore #1, Plan B - Rev 0 V0
- Wellbore #1

Christine LC27-755

Christine LC27-755



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

SEC.34-T9N-R59W

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

Christine LC27-755

Wellbore #1

Design: Wellbore #1

05-123-40641

Standard Survey Report

16 June, 2015

Company:	Noble Energy Inc.- Weld County, CO (Grid North)	Local Co-ordinate Reference:	Well Christine LC27-755
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 LC27-755	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 2003.21 Single User Db

Project	SEC.34-T9N-R59W, 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		Christine LC27-765 Pad Sec.34-T9N-R59W			
Site Position:		Northing:	1,506,040.56ft	Latitude:	40.712390
From:	Lat/Long	Easting:	3,424,940.00ft	Longitude:	-103.967100
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.99 °

Well	Christine LC27-755					
Well Position	+N-S	0.0 ft	Northing:	1,506,039.25 ft	Latitude:	40.712390
	+E-W	0.0 ft	Easting:	3,424,865.16 ft	Longitude:	-103.967370
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,827.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	4/24/2015	7.93	67.29	52.967

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	5.31

Survey Program		Date	6/16/2015		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
379.0	379.0	Survey #1 (Wellbore #1)	MWD	MWD - Standard	
827.0	6,429.0	Survey #2 (Wellbore #1)	MWD	MWD - Standard	
6,552.0	11,425.0	Survey #3 (Wellbore #1)	MWD	MWD - Standard	

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
	379.0	0.60	211.14	379.0	-1.7	-1.0	-1.8	0.16	0.16	0.00
	827.0	1.23	69.78	827.0	-2.0	2.3	-1.8	0.39	0.14	-31.55
	919.0	0.92	78.57	918.9	-1.6	3.9	-1.2	0.38	-0.34	9.55
	1,011.0	3.16	94.74	1,010.9	-1.6	7.2	-0.9	2.49	2.43	17.58
	1,104.0	4.87	91.05	1,103.7	-1.9	13.7	-0.6	1.86	1.84	-3.97
	1,197.0	6.37	88.59	1,196.2	-1.8	22.8	0.3	1.63	1.61	-2.65
	1,290.0	8.50	92.40	1,288.4	-2.0	34.8	1.2	2.35	2.29	4.10
	1,474.0	10.02	89.38	1,470.0	-2.4	64.4	3.6	0.87	0.83	-1.64
	1,567.0	12.40	90.61	1,561.2	-2.4	82.5	5.2	2.57	2.56	1.32

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Site:	Christine LC27-765 Pad Sec.34-T9N-R59W	MD Reference:	WELL @ 4857.0ft (H&P 326 RKB - 30')
Well:	Christine LC27-755	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 2003.21 Single User Db

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)
1,659.0	12.80	83.80	1,651.0	-1.4	102.5	8.1	1.67	0.43	-7.40
1,752.0	12.35	82.00	1,741.8	1.1	122.6	12.4	0.64	-0.48	-1.94
1,845.0	12.00	81.20	1,832.7	3.9	142.0	17.1	0.42	-0.38	-0.86
1,939.0	11.80	79.90	1,924.7	7.1	161.1	22.0	0.36	-0.21	-1.38
2,031.0	11.60	79.62	2,014.8	10.4	179.5	27.0	0.23	-0.22	-0.30
2,124.0	11.29	79.36	2,105.9	13.8	197.6	32.0	0.34	-0.33	-0.28
2,216.0	12.39	80.85	2,196.0	17.0	216.2	37.0	1.24	1.20	1.62
2,405.0	11.78	80.85	2,380.8	23.3	255.3	46.8	0.32	-0.32	0.00
2,500.0	11.51	79.53	2,473.8	26.6	274.2	51.8	0.40	-0.28	-1.39
2,594.0	11.30	78.48	2,566.0	30.1	292.4	57.1	0.31	-0.22	-1.12
2,689.0	11.21	78.57	2,659.1	33.8	310.6	62.4	0.10	-0.09	0.09
2,783.0	12.13	85.87	2,751.2	36.3	329.4	66.7	1.85	0.98	7.77
2,878.0	11.52	85.60	2,844.2	37.8	348.8	69.9	0.64	-0.64	-0.28
2,973.0	11.08	84.90	2,937.3	39.3	367.4	73.1	0.49	-0.46	-0.74
3,067.0	12.40	84.20	3,029.4	41.1	386.4	76.7	1.41	1.40	-0.74
3,161.0	11.30	83.41	3,121.4	43.2	405.6	80.6	1.18	-1.17	-0.84
3,256.0	10.46	83.41	3,214.7	45.3	423.4	84.3	0.88	-0.88	0.00
3,351.0	11.39	86.83	3,307.9	46.8	441.3	87.4	1.19	0.98	3.60
3,445.0	11.91	87.71	3,400.0	47.7	460.3	90.1	0.58	0.55	0.94
3,539.0	11.78	85.87	3,492.0	48.8	479.5	92.9	0.42	-0.14	-1.96
3,634.0	11.74	84.28	3,585.0	50.4	498.8	96.4	0.34	-0.04	-1.67
3,729.0	11.96	84.11	3,678.0	52.4	518.2	100.1	0.23	0.23	-0.18
3,824.0	11.74	84.20	3,771.0	54.4	537.7	103.9	0.23	-0.23	0.09
3,918.0	11.60	82.44	3,863.0	56.6	556.5	107.9	0.41	-0.15	-1.87
4,013.0	11.03	82.88	3,956.2	59.0	575.0	111.9	0.61	-0.60	0.46
4,201.0	9.93	79.10	4,141.0	64.3	608.8	120.3	0.69	-0.59	-2.01
4,296.0	9.58	78.22	4,234.7	67.4	624.6	125.0	0.40	-0.37	-0.93
4,390.0	9.14	78.48	4,327.4	70.5	639.5	129.4	0.47	-0.47	0.28
4,484.0	7.69	64.25	4,420.4	74.8	652.5	134.8	2.69	-1.54	-15.14
4,579.0	6.33	62.57	4,514.7	79.9	662.9	140.9	1.45	-1.43	-1.77
4,674.0	4.22	42.98	4,609.3	84.9	669.9	146.5	2.89	-2.22	-20.62
4,768.0	2.11	68.82	4,703.1	88.1	673.9	150.0	2.66	-2.24	27.49
4,863.0	2.64	98.70	4,798.1	88.4	677.7	150.7	1.40	0.56	31.45
4,957.0	1.63	44.12	4,892.0	89.0	680.8	151.6	2.29	-1.07	-58.06
5,052.0	1.63	37.88	4,987.0	91.0	682.5	153.8	0.19	0.00	-6.57
5,146.0	1.58	44.21	5,080.9	93.0	684.3	155.9	0.20	-0.05	6.73
5,241.0	1.67	39.64	5,175.9	95.0	686.1	158.1	0.17	0.09	-4.81
5,336.0	1.80	32.96	5,270.8	97.3	687.8	160.6	0.25	0.14	-7.03
5,430.0	6.24	359.03	5,364.6	103.7	688.5	166.9	5.16	4.72	-36.10
5,524.0	13.10	355.08	5,457.2	119.4	687.5	182.5	7.33	7.30	-4.20
5,619.0	17.67	357.80	5,548.8	144.6	686.0	207.4	4.87	4.81	2.86
5,713.0	22.98	4.13	5,636.9	177.2	686.8	239.9	6.11	5.65	6.73
5,808.0	29.41	3.95	5,722.1	219.0	689.7	281.9	6.77	6.77	-0.19
5,903.0	36.00	357.97	5,802.0	270.2	690.3	332.9	7.72	6.94	-6.29
5,997.0	46.19	354.28	5,872.8	331.7	686.0	393.8	11.14	10.84	-3.93
6,092.0	54.42	353.67	5,933.4	404.4	678.3	465.4	8.68	8.66	-0.64
6,186.0	61.89	355.25	5,983.0	483.8	670.6	543.8	8.07	7.95	1.68
6,281.0	71.38	358.06	6,020.6	570.7	665.6	629.9	10.35	9.99	2.96
6,375.0	82.59	358.33	6,041.7	662.1	662.7	720.6	11.93	11.93	0.29
6,429.0	89.76	359.29	6,045.3	716.0	661.6	774.1	13.40	13.28	1.78
6,552.0	87.60	357.62	6,048.2	838.9	658.3	896.2	2.22	-1.76	-1.36
6,647.0	87.47	358.24	6,052.3	933.7	654.9	990.3	0.67	-0.14	0.65
6,654.1	87.46	358.26	6,052.6	940.8	654.7	997.3	0.29	-0.16	0.24

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Survey									
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Christine LC27-755 Landing Pt.									
6,832.0	87.17	358.68	6,060.9	1,118.5	649.9	1,173.8	0.29	-0.16	0.24
6,924.0	88.84	359.03	6,064.1	1,210.4	648.1	1,265.2	1.85	1.82	0.38
7,017.0	90.95	0.17	6,064.3	1,303.4	647.4	1,357.7	2.58	2.27	1.23
7,110.0	91.60	0.70	6,062.2	1,396.3	648.1	1,450.3	0.90	0.70	0.57
7,203.0	90.46	358.42	6,060.5	1,489.3	647.4	1,542.8	2.74	-1.23	-2.45
7,296.0	90.33	357.45	6,059.9	1,582.3	644.1	1,635.1	1.05	-0.14	-1.04
7,388.0	89.93	356.57	6,059.7	1,674.1	639.3	1,726.1	1.05	-0.43	-0.96
7,481.0	89.71	359.11	6,060.0	1,767.1	635.8	1,818.3	2.74	-0.24	2.73
7,573.0	89.09	358.59	6,061.0	1,859.0	633.9	1,909.7	0.88	-0.67	-0.57
7,668.0	90.20	0.00	6,061.5	1,954.0	632.7	2,004.2	1.89	1.17	1.48
7,762.0	89.93	0.70	6,061.4	2,048.0	633.3	2,097.8	0.80	-0.29	0.74
7,857.0	91.34	0.70	6,060.4	2,143.0	634.5	2,192.5	1.48	1.48	0.00
7,951.0	92.17	0.44	6,057.5	2,236.9	635.4	2,286.1	0.93	0.88	-0.28
8,046.0	91.74	0.61	6,054.3	2,331.9	636.3	2,380.8	0.49	-0.45	0.18
8,140.0	91.56	4.56	6,051.6	2,425.7	640.5	2,474.6	4.20	-0.19	4.20
8,235.0	90.39	3.48	6,049.9	2,520.5	647.2	2,569.6	1.68	-1.23	-1.14
8,329.0	89.62	358.73	6,049.9	2,614.4	649.0	2,663.3	5.12	-0.82	-5.05
8,424.0	88.17	359.99	6,051.8	2,709.4	647.9	2,757.7	2.02	-1.53	1.33
8,519.0	89.54	0.00	6,053.7	2,804.4	647.9	2,852.3	1.44	1.44	0.01
8,613.0	90.33	358.50	6,053.8	2,898.4	646.7	2,945.8	1.80	0.84	-1.60
8,708.0	88.61	355.95	6,054.6	2,993.2	642.1	3,039.8	3.24	-1.81	-2.68
8,803.0	90.11	356.31	6,055.7	3,088.0	635.7	3,133.6	1.62	1.58	0.38
8,897.0	88.92	355.33	6,056.5	3,181.8	628.8	3,226.3	1.64	-1.27	-1.04
8,991.0	89.98	356.04	6,057.4	3,275.5	621.8	3,319.0	1.36	1.13	0.76
9,085.0	90.07	357.10	6,057.4	3,369.3	616.1	3,411.9	1.13	0.10	1.13
9,180.0	90.46	357.62	6,056.9	3,464.2	611.8	3,506.0	0.68	0.41	0.55
9,274.0	89.36	356.83	6,057.1	3,558.1	607.2	3,599.0	1.44	-1.17	-0.84
9,369.0	91.17	357.71	6,056.6	3,653.0	602.7	3,693.1	2.12	1.91	0.93
9,463.0	92.09	357.74	6,054.0	3,746.9	598.9	3,786.2	0.98	0.98	0.03
9,558.0	92.48	358.24	6,050.2	3,841.7	595.6	3,880.4	0.67	0.41	0.53
9,652.0	93.06	357.89	6,045.6	3,935.6	592.4	3,973.5	0.72	0.62	-0.37
9,746.0	90.86	356.92	6,042.4	4,029.4	588.2	4,066.6	2.56	-2.34	-1.03
9,841.0	92.13	357.27	6,039.9	4,124.3	583.4	4,160.6	1.39	1.34	0.37
9,935.0	90.51	358.06	6,037.8	4,218.2	579.6	4,253.7	1.92	-1.72	0.84
10,029.0	89.89	357.62	6,037.4	4,312.1	576.0	4,346.9	0.81	-0.66	-0.47
10,124.0	90.20	357.80	6,037.4	4,407.0	572.2	4,441.1	0.38	0.33	0.19
10,218.0	90.15	358.33	6,037.1	4,501.0	569.0	4,534.3	0.57	-0.05	0.56
10,313.0	90.42	359.45	6,036.6	4,595.9	567.2	4,628.7	1.21	0.28	1.18
10,407.0	90.64	357.36	6,035.7	4,689.9	564.6	4,722.0	2.24	0.23	-2.22
10,501.0	90.11	356.48	6,035.1	4,783.8	559.5	4,815.0	1.09	-0.56	-0.94
10,596.0	89.41	356.57	6,035.5	4,878.6	553.8	4,908.9	0.74	-0.74	0.09
10,690.0	88.70	358.00	6,037.1	4,972.5	549.3	5,002.0	1.70	-0.76	1.52
10,784.0	90.33	358.33	6,037.9	5,066.4	546.3	5,095.2	1.77	1.73	0.35
10,878.0	90.70	358.40	6,037.0	5,160.4	543.6	5,188.5	0.40	0.39	0.07
10,973.0	90.95	358.33	6,035.7	5,255.3	540.9	5,282.8	0.27	0.26	-0.07
11,067.0	91.38	358.24	6,033.7	5,349.3	538.1	5,376.1	0.47	0.46	-0.10
11,162.0	91.78	358.06	6,031.1	5,444.2	535.0	5,470.3	0.46	0.42	-0.19
11,256.0	91.96	356.75	6,028.1	5,538.0	530.8	5,563.4	1.41	0.19	-1.39
11,365.0	93.32	356.48	6,023.0	5,646.7	524.4	5,671.0	1.27	1.25	-0.25
11,425.0	93.32	356.48	6,019.6	5,706.5	520.7	5,730.2	0.00	0.00	0.00
Christine LC27-755 BHL 330°FNL & 2310°FWL									

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Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 2003.21 Single User Db

Checked By: _____	Approved By: _____	Date: _____
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