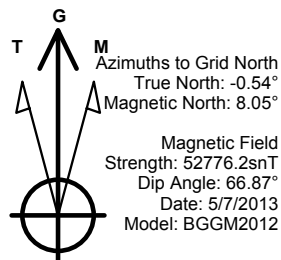


Project: Weld County, CO (NAD 83)  
 Site: Sec. 34-T4N-R65W  
 Well: Moser PC G34-65HN

# Noble Energy

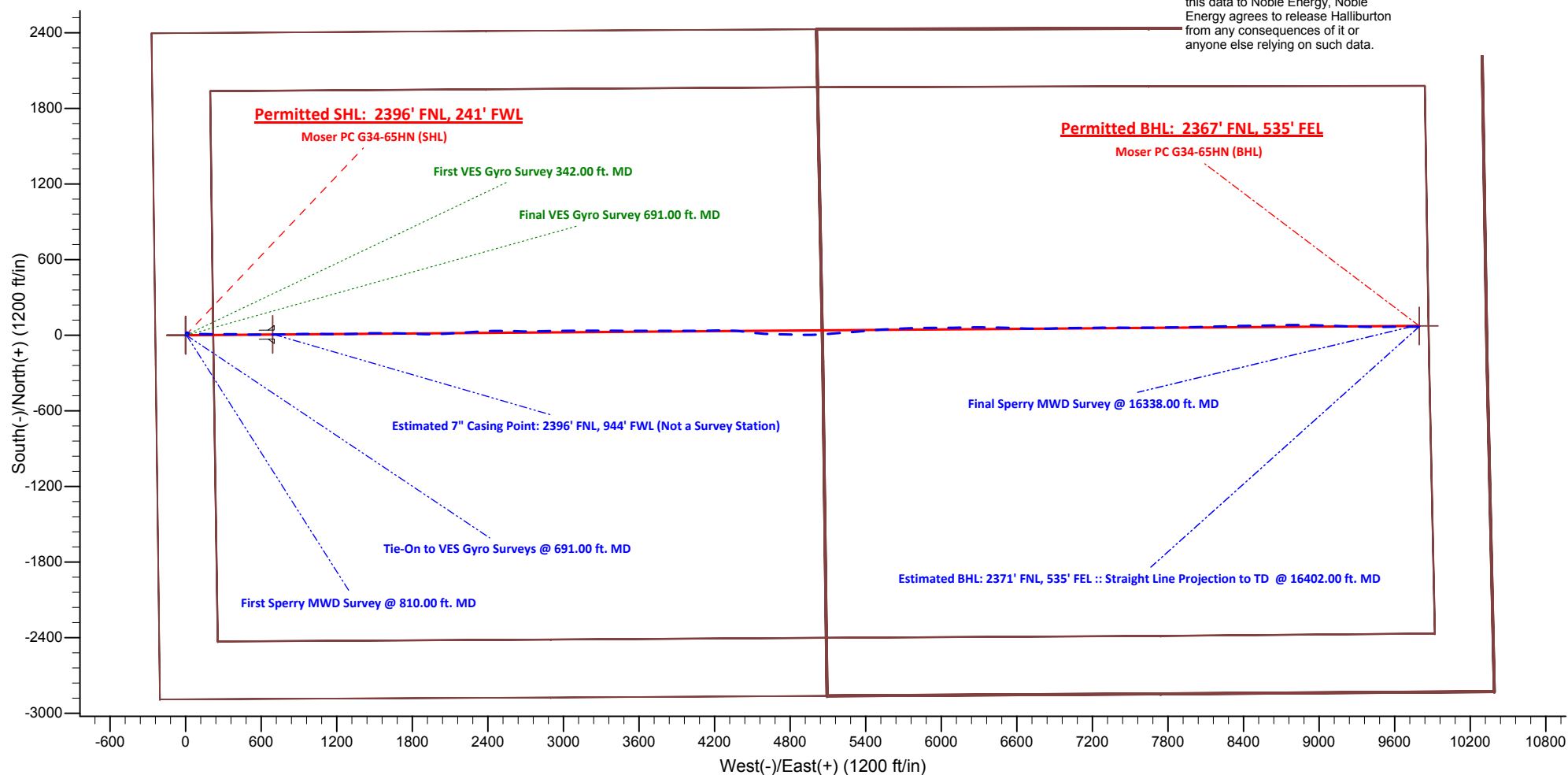
**HALLIBURTON**  
 Sperry Drilling



## LEGEND

- Moser PC G34-65HN, Plan A Rev 0 Proposal
- - Vaughn ESS and Sperry MWD Survey

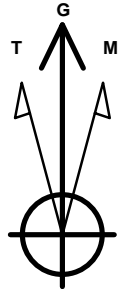
Halliburton Energy Services, Inc. ("Halliburton") recently completed directional drilling and MWD operations at the "Moser PC G34-65HN" well located at Weld County, CO. At the conclusion of the job Halliburton performed a final survey on the well. Noble Energy has requested that Halliburton provide them the distances from BHL to section lines from that final survey to allow Noble Energy to meet its requirements under Colorado law. These distances are generated by a mathematical algorithm based on rough data collected after the well is drilled. Halliburton considers it to be a rough estimate only and it is not to be relied upon in any application where accurate data is required. In consideration for Halliburton releasing this data to Noble Energy, Noble Energy agrees to release Halliburton from any consequences of it or anyone else relying on such data.



Project: Weld County, CO (NAD 83)  
Site: Sec. 34-T4N-R65W  
Well: Moser PC G34-65HN



# Noble Energy



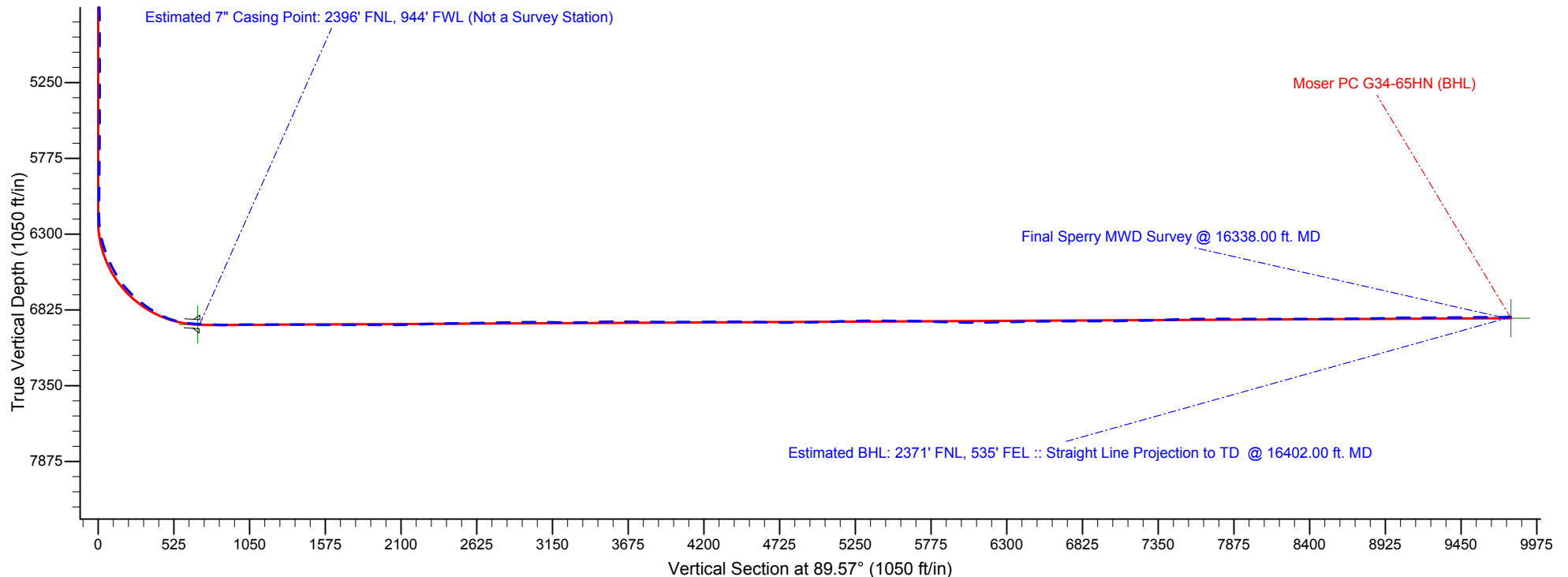
Azimuths to Grid North  
True North:  $-0.54^\circ$   
Magnetic North:  $8.05^\circ$

Magnetic Field  
Strength: 52776.2snT  
Dip Angle:  $66.87^\circ$   
Date: 5/7/2013  
Model: BGGM2012

## LEGEND

- Moser PC G34-65HN, Plan A Rev 0 Proposal
- Vaughn ESS and Sperry MWD Survey

Halliburton Energy Services, Inc. ("Halliburton") recently completed directional drilling and MWD operations at the "Moser PC G34-65HN" well located at Weld County, CO. At the conclusion of the job Halliburton performed a final survey on the well. Noble Energy has requested that Halliburton provide them the distances from BHL to section lines from that final survey to allow Noble Energy to meet its requirements under Colorado law. These distances are generated by a mathematical algorithm based on rough data collected after the well is drilled. Halliburton considers it to be a rough estimate only and it is not to be relied upon in any application where accurate data is required. In consideration for Halliburton releasing this data to Noble Energy, Noble Energy agrees to release Halliburton from any consequences of it or anyone else relying on such data.



# Noble Energy

Weld County, CO (NAD 83)  
Sec. 34-T4N-R65W  
Moser PC G34-65HN

Design: Vaughn ESS and Sperry MWD Survey

## Sperry Drilling Services

### Final Survey Report

17 June, 2013

Well Coordinates: 1,342,153.84 N, 3,234,939.48 E (40° 16' 10.38" N, 104° 39' 28.98" W)  
Ground Level: 4,767.00 ft

Local Coordinate Origin:	Centered on Well Moser PC G34-65HN
Viewing Datum:	RKB 24 ft. @ 4791.00ft (H&P 315)
TVDs to System:	N
North Reference:	Grid
Unit System:	API - US Survey Feet - Custom

Geodetic Scale Factor Applied  
Version: 2003.16 Build: 431

**HALLIBURTON**

**Design Report for Moser PC G34-65HN - Vaughn ESS and Sperry MWD Survey**

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
342.00	0.50	121.95	342.00	-0.79	1.27	1.26	0.15
<b>First VES Gyro Survey 342.00 ft. MD</b>							
691.00	0.90	72.65	690.97	-0.78	5.17	5.17	0.20
<b>Final VES Gyro Survey 691.00 ft. MD - Tie-On to VES Gyro Surveys @ 691.00 ft. MD</b>							
810.00	0.50	63.63	809.96	-0.27	6.53	6.53	0.35
<b>First Sperry MWD Survey @ 810.00 ft. MD</b>							
902.00	0.62	57.51	901.96	0.18	7.31	7.31	0.15
995.00	0.65	21.91	994.95	0.94	7.93	7.94	0.42
1,088.00	0.78	32.09	1,087.95	1.96	8.47	8.48	0.19
1,180.00	0.48	39.01	1,179.94	2.79	9.04	9.06	0.34
1,273.00	0.70	26.59	1,272.94	3.60	9.54	9.57	0.27
1,366.00	0.60	44.79	1,365.93	4.46	10.14	10.17	0.25
1,461.00	0.11	307.47	1,460.93	4.87	10.42	10.45	0.66
1,556.00	0.45	74.26	1,555.93	5.02	10.70	10.74	0.55
1,651.00	0.71	35.36	1,650.92	5.60	11.40	11.44	0.48
1,746.00	0.44	27.43	1,745.92	6.41	11.91	11.96	0.30
1,841.00	0.33	74.59	1,840.92	6.80	12.34	12.39	0.34
1,935.00	0.74	36.46	1,934.91	7.36	12.96	13.02	0.56
2,030.00	0.49	65.77	2,029.91	8.02	13.70	13.76	0.41
2,125.00	0.53	37.00	2,124.90	8.54	14.33	14.40	0.27
2,220.00	1.03	61.41	2,219.89	9.30	15.35	15.42	0.62
2,315.00	1.17	51.83	2,314.88	10.31	16.86	16.94	0.24
2,410.00	1.36	77.72	2,409.85	11.15	18.72	18.81	0.63
2,505.00	1.21	83.76	2,504.83	11.50	20.82	20.91	0.21
2,599.00	1.54	90.65	2,598.80	11.59	23.07	23.16	0.39
2,694.00	0.59	29.44	2,693.79	12.00	24.59	24.68	1.43
2,789.00	0.81	12.01	2,788.78	13.08	24.97	25.07	0.32
2,884.00	0.89	266.52	2,883.77	13.70	24.37	24.47	1.43
2,979.00	1.30	262.80	2,978.76	13.52	22.57	22.67	0.44
3,074.00	0.65	215.86	3,073.74	12.94	21.18	21.28	1.03
3,169.00	1.14	172.66	3,168.73	11.57	20.99	21.07	0.84
3,263.00	2.05	181.92	3,262.70	8.96	21.05	21.12	1.00
3,358.00	0.41	182.67	3,357.67	6.93	20.98	21.03	1.73
3,643.00	0.75	283.05	3,642.66	6.33	19.11	19.16	0.32
3,928.00	1.35	301.63	3,927.61	8.51	14.44	14.50	0.24
4,212.00	0.86	306.14	4,211.56	11.52	9.87	9.95	0.18
4,497.00	1.12	357.54	4,496.52	15.57	8.02	8.14	0.31
4,782.00	0.91	31.32	4,781.48	20.28	9.08	9.23	0.22
5,067.00	0.25	162.73	5,066.47	21.62	10.44	10.60	0.38
5,352.00	0.38	208.54	5,351.46	20.20	10.17	10.32	0.10
5,637.00	0.46	194.23	5,636.46	18.26	9.44	9.58	0.05
5,921.00	1.11	230.86	5,920.43	15.42	7.03	7.14	0.28
6,016.00	0.72	282.13	6,015.42	14.96	5.73	5.84	0.91
6,111.00	0.51	249.21	6,110.41	14.94	4.75	4.86	0.42
6,156.00	1.32	170.94	6,155.41	14.35	4.64	4.75	2.92
6,252.00	5.48	92.61	6,251.25	13.05	9.40	9.50	5.59
6,297.00	10.29	89.14	6,295.81	13.01	15.57	15.67	10.74
6,345.00	15.62	92.60	6,342.57	12.79	26.32	26.41	11.22
6,392.00	17.25	94.00	6,387.65	12.01	39.59	39.68	3.57

## Design Report for Moser PC G34-65HN - Vaughn ESS and Sperry MWD Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
6,440.00	19.73	94.47	6,433.17	10.88	54.77	54.85	5.18
6,487.00	23.08	92.27	6,476.92	9.90	71.89	71.96	7.33
6,535.00	27.15	91.77	6,520.37	9.19	92.25	92.31	8.49
6,582.00	29.47	90.93	6,561.75	8.67	114.53	114.59	5.01
6,630.00	32.87	90.65	6,602.81	8.33	139.37	139.43	7.09
6,677.00	36.73	91.07	6,641.40	7.92	166.18	166.24	8.23
6,725.00	41.77	91.62	6,678.56	7.20	196.53	196.58	10.52
6,772.00	45.55	91.40	6,712.55	6.35	228.96	229.01	8.05
6,820.00	48.79	89.77	6,745.18	6.00	264.16	264.20	7.19
6,867.00	51.81	89.31	6,775.20	6.30	300.31	300.35	6.47
6,915.00	55.11	90.45	6,803.78	6.37	338.87	338.91	7.13
6,962.00	57.85	89.24	6,829.73	6.48	378.05	378.09	6.21
7,010.00	61.97	90.77	6,853.79	6.47	419.57	419.61	9.02
7,057.00	66.45	91.77	6,874.23	5.52	461.87	461.90	9.72
7,105.00	71.62	90.19	6,891.40	4.77	506.67	506.69	11.20
7,151.00	77.15	90.02	6,903.78	4.69	550.95	550.97	12.03
7,199.00	80.95	90.15	6,912.90	4.62	598.07	598.09	7.92
7,257.00	85.15	90.00	6,919.91	4.54	655.63	655.65	7.25
7,305.00	86.62	89.22	6,923.36	4.87	703.50	703.52	3.46
<b>Estimated 7" Casing Point: 2396' FNL, 944' FWL (Not a Survey Station)</b>							
7,339.00	87.66	88.67	6,925.06	5.49	737.46	737.48	3.46
7,434.00	89.11	89.47	6,927.73	7.03	832.40	832.43	1.74
7,529.00	90.92	88.74	6,927.71	8.52	927.39	927.42	2.05
7,624.00	90.92	89.91	6,926.18	9.64	1,022.37	1,022.41	1.23
7,719.00	89.44	91.59	6,925.88	8.39	1,117.35	1,117.38	2.36
7,814.00	90.46	89.69	6,925.97	7.33	1,212.34	1,212.36	2.27
7,909.00	89.48	88.17	6,926.02	9.11	1,307.32	1,307.35	1.90
8,004.00	89.69	86.85	6,926.70	13.23	1,402.22	1,402.28	1.41
8,099.00	89.75	90.34	6,927.17	15.56	1,497.18	1,497.25	3.67
8,193.00	90.15	90.07	6,927.25	15.23	1,591.18	1,591.25	0.51
8,288.00	90.09	91.17	6,927.05	14.20	1,686.17	1,686.23	1.16
8,383.00	89.88	92.59	6,927.08	11.08	1,781.12	1,781.15	1.51
8,478.00	90.25	91.71	6,926.97	7.52	1,876.05	1,876.05	1.00
8,573.00	89.85	88.69	6,926.89	7.19	1,971.04	1,971.04	3.21
8,668.00	89.85	86.73	6,927.14	10.98	2,065.96	2,065.98	2.06
8,763.00	91.42	85.78	6,926.08	17.19	2,160.74	2,160.81	1.93
8,858.00	91.76	86.56	6,923.45	23.53	2,255.50	2,255.61	0.90
8,953.00	91.73	86.70	6,920.55	29.11	2,350.29	2,350.44	0.15
9,047.00	91.05	88.69	6,918.27	32.89	2,444.18	2,444.36	2.24
9,142.00	90.80	91.37	6,916.74	32.84	2,539.16	2,539.33	2.83
9,237.00	90.92	91.35	6,915.31	30.59	2,634.12	2,634.27	0.13
9,332.00	91.39	89.74	6,913.40	29.68	2,729.09	2,729.24	1.77
9,427.00	90.62	88.71	6,911.73	30.97	2,824.07	2,824.22	1.35
9,522.00	90.77	89.26	6,910.58	32.65	2,919.04	2,919.21	0.60
9,617.00	90.74	89.02	6,909.33	34.08	3,014.03	3,014.20	0.25
9,712.00	89.07	89.54	6,909.49	35.27	3,109.01	3,109.19	1.84
9,807.00	88.55	89.72	6,911.46	35.88	3,203.99	3,204.17	0.58
9,902.00	90.46	90.73	6,912.28	35.51	3,298.98	3,299.15	2.27
9,996.00	92.07	89.94	6,910.20	34.96	3,392.95	3,393.12	1.91
10,091.00	91.54	90.33	6,907.21	34.74	3,487.91	3,488.07	0.69
10,186.00	90.25	89.79	6,905.73	34.64	3,582.89	3,583.05	1.47

## Design Report for Moser PC G34-65HN - Vaughn ESS and Sperry MWD Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
10,279.00	88.83	90.27	6,906.47	34.59	3,675.89	3,676.04	1.61
10,373.00	89.94	89.89	6,907.48	34.46	3,769.88	3,770.03	1.25
10,465.00	89.44	90.34	6,907.98	34.27	3,861.88	3,862.02	0.73
10,558.00	90.28	90.00	6,908.21	34.00	3,954.87	3,955.02	0.97
10,651.00	89.75	89.50	6,908.18	34.40	4,047.87	4,048.02	0.78
10,742.00	90.46	89.59	6,908.02	35.12	4,138.87	4,139.02	0.79
10,834.00	90.31	89.16	6,907.40	36.13	4,230.86	4,231.01	0.50
10,927.00	90.15	91.49	6,907.03	35.60	4,323.85	4,324.00	2.51
11,019.00	90.15	95.66	6,906.78	29.87	4,415.65	4,415.75	4.53
11,112.00	89.14	97.54	6,907.36	19.18	4,508.03	4,508.05	2.29
11,205.00	88.21	93.18	6,909.51	10.49	4,600.58	4,600.53	4.79
11,297.00	89.38	91.09	6,911.45	7.07	4,692.48	4,692.41	2.60
11,390.00	90.25	91.03	6,911.75	5.35	4,785.47	4,785.37	0.94
11,483.00	90.22	92.31	6,911.37	2.64	4,878.43	4,878.31	1.38
11,575.00	91.48	87.88	6,910.00	2.48	4,970.39	4,970.27	5.01
11,668.00	92.16	86.47	6,907.05	7.06	5,063.23	5,063.14	1.68
11,761.00	92.22	85.23	6,903.49	13.79	5,155.91	5,155.87	1.33
11,855.00	91.02	85.62	6,900.84	21.28	5,249.57	5,249.59	1.34
11,946.00	90.31	85.03	6,899.78	28.70	5,340.27	5,340.33	1.01
12,039.00	89.35	85.61	6,900.06	36.29	5,432.95	5,433.07	1.21
12,134.00	89.97	85.89	6,900.62	43.33	5,527.69	5,527.86	0.72
12,229.00	88.80	87.26	6,901.64	49.00	5,622.51	5,622.72	1.90
12,324.00	88.95	87.66	6,903.50	53.21	5,717.40	5,717.64	0.45
12,419.00	87.69	88.67	6,906.29	56.25	5,812.31	5,812.56	1.70
12,513.00	88.21	89.61	6,909.65	57.66	5,906.23	5,906.50	1.14
12,608.00	89.51	89.91	6,911.54	58.06	6,001.21	6,001.48	1.40
12,703.00	89.97	89.21	6,911.97	58.79	6,096.21	6,096.48	0.88
12,798.00	91.48	88.97	6,910.77	60.30	6,191.19	6,191.46	1.61
12,893.00	91.11	89.77	6,908.62	61.34	6,286.15	6,286.44	0.93
12,988.00	91.66	90.53	6,906.33	61.09	6,381.13	6,381.40	0.99
13,083.00	90.65	91.29	6,904.41	59.59	6,476.09	6,476.36	1.33
13,178.00	90.71	92.75	6,903.29	56.24	6,571.02	6,571.26	1.54
13,273.00	90.52	92.00	6,902.27	52.30	6,665.94	6,666.14	0.81
13,367.00	89.94	90.05	6,901.89	50.62	6,759.92	6,760.10	2.16
13,462.00	90.12	88.67	6,901.84	51.68	6,854.91	6,855.10	1.46
13,557.00	90.40	88.07	6,901.41	54.38	6,949.87	6,950.08	0.70
13,652.00	90.40	90.05	6,900.74	55.94	7,044.85	7,045.07	2.08
13,747.00	90.65	89.22	6,899.87	56.55	7,139.84	7,140.06	0.91
13,842.00	91.17	88.26	6,898.36	58.64	7,234.80	7,235.04	1.15
13,936.00	91.42	90.08	6,896.24	60.00	7,328.77	7,329.01	1.95
14,031.00	92.44	90.58	6,893.04	59.45	7,423.71	7,423.95	1.20
14,126.00	91.97	90.09	6,889.39	58.90	7,518.64	7,518.87	0.71
14,221.00	90.52	89.81	6,887.32	58.98	7,613.61	7,613.84	1.55
14,316.00	90.93	89.47	6,886.12	59.58	7,708.60	7,708.83	0.56
14,411.00	89.07	89.51	6,886.12	60.42	7,803.59	7,803.83	1.96
14,506.00	89.75	89.01	6,887.10	61.65	7,898.58	7,898.82	0.89
14,601.00	90.22	88.54	6,887.12	63.68	7,993.56	7,993.81	0.70
14,696.00	89.35	88.80	6,887.48	65.88	8,088.53	8,088.80	0.96
14,791.00	89.75	88.75	6,888.22	67.91	8,183.51	8,183.78	0.42
14,886.00	90.56	88.42	6,887.97	70.26	8,278.48	8,278.77	0.92
14,981.00	89.41	89.11	6,887.99	72.31	8,373.45	8,373.76	1.41

**Design Report for Moser PC G34-65HN - Vaughn ESS and Sperry MWD Survey**

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
15,076.00	90.15	88.98	6,888.36	73.89	8,468.44	8,468.75	0.79
15,171.00	91.42	89.03	6,887.06	75.54	8,563.41	8,563.74	1.34
15,266.00	90.22	88.48	6,885.70	77.60	8,658.38	8,658.71	1.39
15,361.00	90.03	88.89	6,885.49	79.78	8,753.35	8,753.70	0.48
15,456.00	91.79	90.96	6,883.98	79.91	8,848.33	8,848.68	2.86
15,551.00	91.23	90.69	6,881.48	78.54	8,943.29	8,943.62	0.65
15,646.00	91.11	92.33	6,879.54	76.04	9,038.23	9,038.55	1.73
15,741.00	89.82	92.02	6,878.77	72.43	9,133.16	9,133.44	1.40
15,836.00	90.25	91.89	6,878.71	69.19	9,228.10	9,228.36	0.47
15,931.00	90.59	90.82	6,878.01	66.95	9,323.07	9,323.31	1.18
16,026.00	90.62	90.50	6,877.01	65.85	9,418.06	9,418.29	0.34
16,121.00	90.80	89.60	6,875.83	65.77	9,513.05	9,513.28	0.97
16,216.00	90.12	89.73	6,875.07	66.33	9,608.05	9,608.27	0.73
16,311.00	90.43	89.95	6,874.61	66.59	9,703.04	9,703.27	0.40
16,338.00	90.49	89.94	6,874.40	66.62	9,730.04	9,730.27	0.23
<b>Final Sperry MWD Survey @ 16338.00 ft. MD</b>							
16,402.00	90.49	89.94	6,873.85	66.68	9,794.04	9,794.27	0.00
<b>Estimated BHL: 2371' FNL, 535' FEL :: Straight Line Projection to TD @ 16402.00 ft. MD</b>							

**Design Annotations**

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
342.00	342.00	-0.79	1.27	First VES Gyro Survey 342.00 ft. MD
691.00	690.97	-0.78	5.17	Final VES Gyro Survey 691.00 ft. MD
691.00	690.97	-0.78	5.17	Tie-On to VES Gyro Surveys @ 691.00 ft. MD
810.00	809.96	-0.27	6.53	First Sperry MWD Survey @ 810.00 ft. MD
7,305.00	6,923.36	4.87	703.50	Estimated 7" Casing Point: 2396' FNL, 944' FWL (Not a Survey Station)
16,338.00	6,874.40	66.62	9,730.04	Final Sperry MWD Survey @ 16338.00 ft. MD
16,402.00	6,873.85	66.68	9,794.04	Estimated BHL: 2371' FNL, 535' FEL :: Straight Line Projection to TD @ 16402.00 ft. MD

**Vertical Section Information**

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/-S (ft)	Origin +E/-W (ft)	Start TVD (ft)
Target	Moser PC G34-65HN (BHL)	89.57	Slot	0.00	0.00	0.00

**Survey tool program**

From (ft)	To (ft)	Survey/Plan	Survey Tool
342.00	691.00	Vaughn ESS Surveys	Flexi-Shot
810.00	7,305.00	Sperry MWD Surveys	MWD
7,305.00	16,402.00	Sperry MWD Surveys	MWD

**Casing Details**

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,305.00	6,923.36	7" Casing PT	7	8-3/4

**Design Report for Moser PC G34-65HN - Vaughn ESS and Sperry MWD Survey****Targets**

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
Moser G34-65HN - actual wellpath misses target center by 3.93ft at 7292.94ft MD (6922.61 TVD, 4.72 N, 691.47 E) - Point		0.00	6,926.51	5.14	691.18	1,342,158.98	3,235,630.63	40.269546	-104.655573
Moser PC G34-65HN - actual wellpath hits target center - Point	0.00	0.00	0.00	0.01	0.00	1,342,153.85	3,234,939.48	40.269550	-104.658050
SL (Sec. - actual wellpath hits target center - Polygon	0.00	0.00	0.00	0.01	0.00	1,342,153.85	3,234,939.48	40.269550	-104.658050
Point 1			5,092.91	-2,862.02		1,339,291.95	3,240,032.17		
Point 2			7,741.46	-2,847.12		1,339,306.84	3,242,680.60		
Point 3			10,389.98	-2,828.29		1,339,325.67	3,245,329.01		
Point 4			10,333.18	-194.81		1,341,959.04	3,245,272.21		
Point 5			10,290.33	2,438.80		1,344,592.54	3,245,229.36		
Point 6			7,647.81	2,434.61		1,344,588.35	3,242,586.96		
Point 7			5,008.12	2,427.09		1,344,580.83	3,239,947.38		
Point 8			5,058.78	-206.46		1,341,947.39	3,239,998.04		
Point 9			5,092.91	-2,862.02		1,339,291.95	3,240,032.17		
SL (Sec. - actual wellpath hits target center - Polygon	0.00	0.00	0.00	0.01	0.00	1,342,153.85	3,234,939.48	40.269550	-104.658050
Point 1			-204.21	-2,890.98		1,339,262.99	3,234,735.27		
Point 2			2,899.28	-2,875.92		1,339,278.05	3,237,838.63		
Point 3			5,092.91	-2,862.02		1,339,291.95	3,240,032.17		
Point 4			5,058.78	-206.46		1,341,947.39	3,239,998.04		
Point 5			5,008.12	2,427.09		1,344,580.83	3,239,947.38		
Point 6			2,385.24	2,412.72		1,344,566.46	3,237,324.61		
Point 7			-271.09	2,394.67		1,344,548.41	3,234,668.40		
Point 8			-237.80	-231.76		1,341,922.09	3,234,701.69		
Point 9			-204.21	-2,890.98		1,339,262.99	3,234,735.27		
Moser PC G34-65HN - actual wellpath misses target center by 10.17ft at 16402.00ft MD (6873.85 TVD, 66.68 N, 9794.04 E) - Point	0.00	0.00	6,881.71	73.09	9,794.70	1,342,226.93	3,244,733.76	40.269490	-104.622950
SB (Sec. - actual wellpath hits target center - Polygon	0.00	0.00	0.00	0.01	0.00	1,342,153.85	3,234,939.48	40.269550	-104.658050
Point 1			255.79	-2,430.98		1,339,722.97	3,235,195.25		
Point 2			2,899.28	-2,415.92		1,339,738.03	3,237,838.63		
Point 3			5,092.91	-2,402.02		1,339,751.93	3,240,032.17		
Point 4			7,741.46	-2,387.12		1,339,766.82	3,242,680.60		
Point 5			9,918.48	-2,368.29		1,339,785.65	3,244,857.53		
Point 6			9,873.18	-194.81		1,341,959.04	3,244,812.23		
Point 7			9,838.33	1,978.80		1,344,132.56	3,244,777.38		
Point 8			7,647.81	1,974.61		1,344,128.37	3,242,586.96		
Point 9			5,008.12	1,967.09		1,344,120.85	3,239,947.38		
Point 10			2,385.24	1,951.22		1,344,104.98	3,237,324.61		
Point 11			194.91	1,936.67		1,344,090.43	3,235,134.38		
Point 12			222.20	-231.76		1,341,922.09	3,235,161.67		
Point 13			255.79	-2,430.98		1,339,722.97	3,235,195.25		



# North Reference Sheet for Sec. 34-T4N-R65W - Moser PC G34-65HN

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to Grid North Reference.  
 Vertical Depths are relative to RKB 24 ft. @ 4791.00ft (H&P 315). Northing and Easting are relative to Moser PC G34-65HN  
 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: 3,000,000.00ft, False Northing: 1,000,000.00ft, Scale Reduction: 0.99995690

Grid Coordinates of Well: 1,342,153.84 ft N, 3,234,939.48 ft E  
 Geographical Coordinates of Well: 40° 16' 10.38" N, 104° 39' 28.98" W  
 Grid Convergence at Surface is: 0.54°

Based upon Minimum Curvature type calculations, at a Measured Depth of 16,402.00ft  
 the Bottom Hole Displacement is 9,794.27ft in the Direction of 89.61° (Grid).

Magnetic Convergence at surface is: -8.05° ( 7 May 2013, , BGGM2012)

