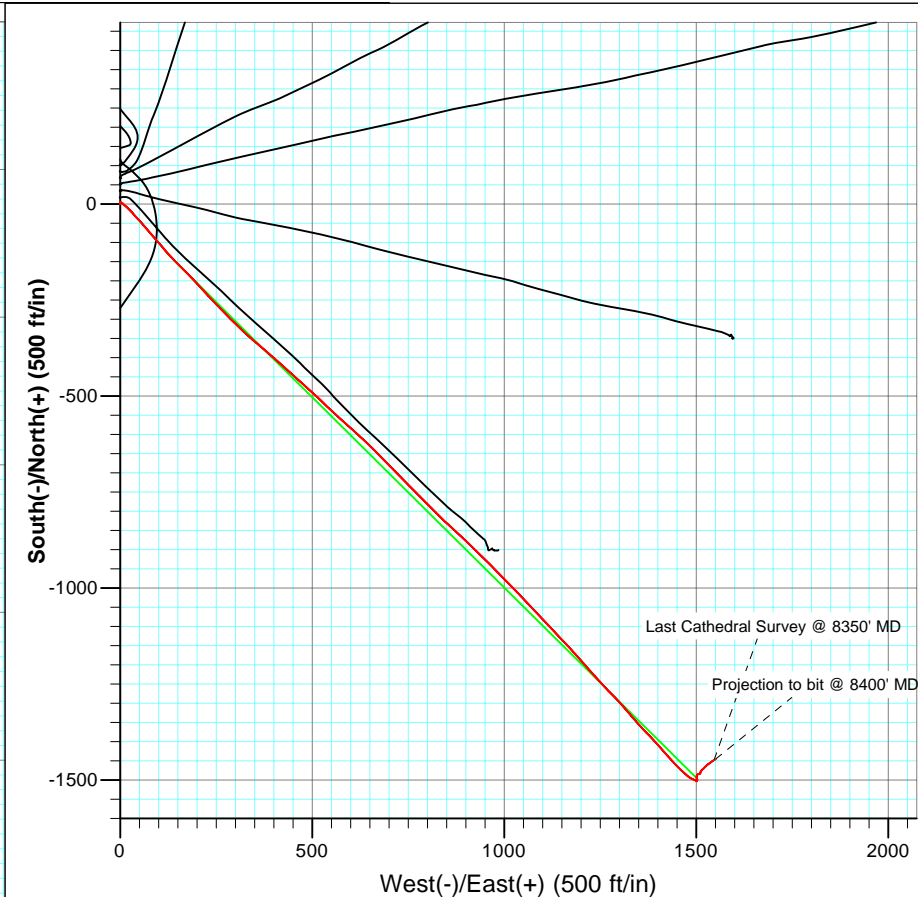
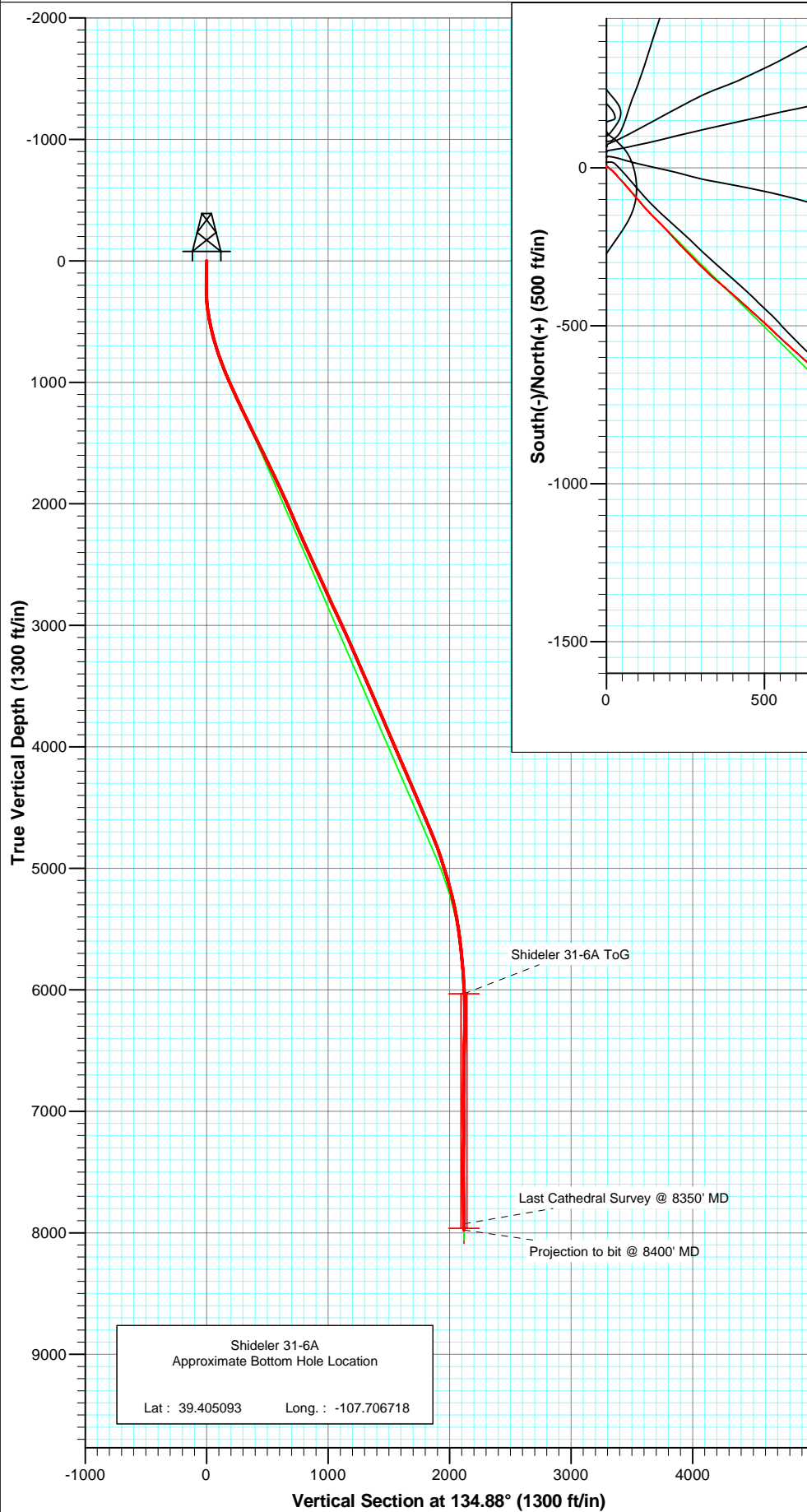




Project: Mamm Creek
 Site: C31E Pad (NENW 31-7S-92W)
 Well: Shideler 31-6A
 Wellbore: Final
 Plan: DD

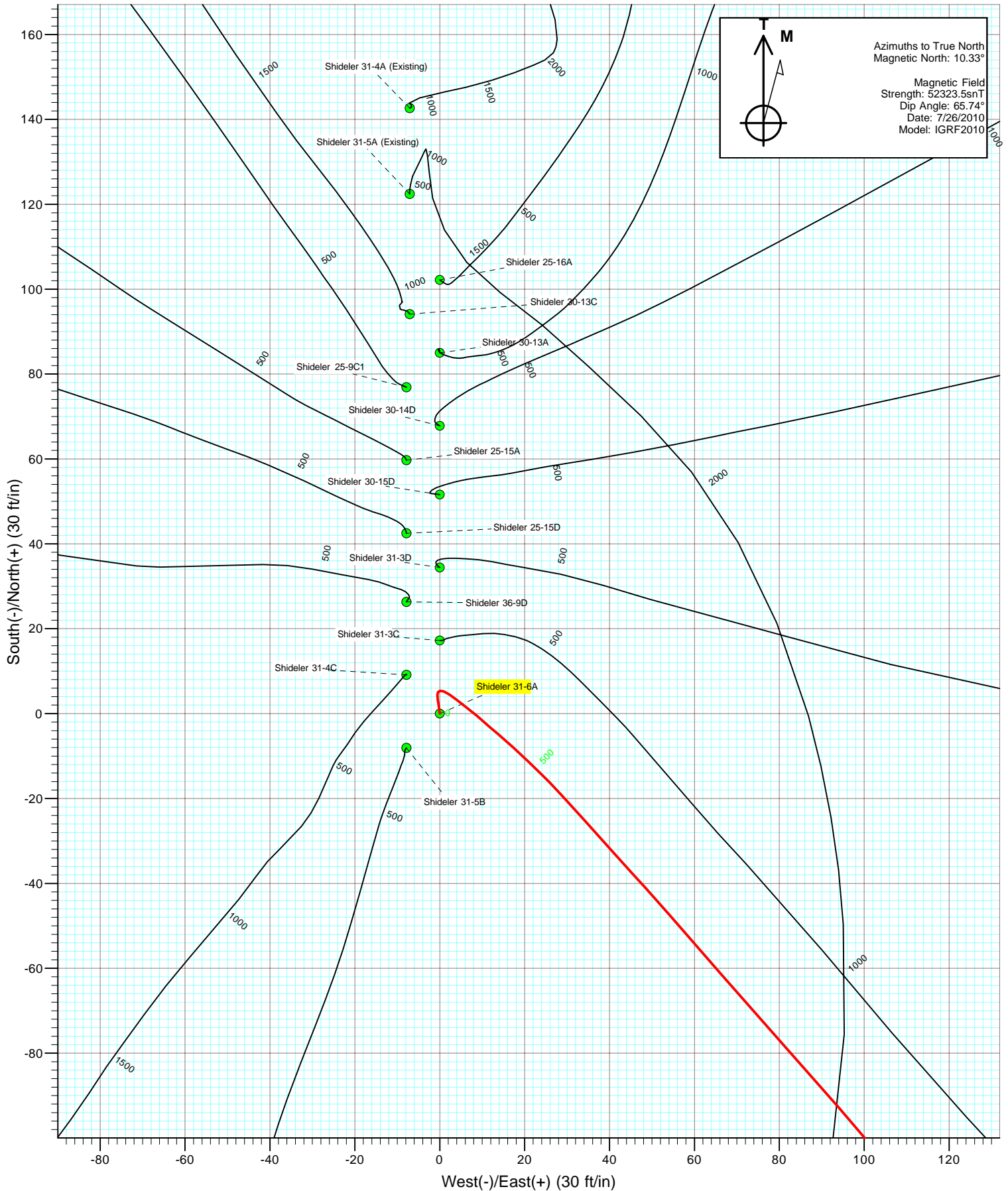


Azimuths to True North
 Magnetic North: 10.33°
 Magnetic Field
 Strength: 52323.5snT
 Dip Angle: 65.74°
 Date: 7/26/2010
 Model: IGRF2010

DESIGN DETAILS: DD					
Job# 105142 (SH) 105312 (MH): KR					
KBE @ 6772.0ft (Nabors M15)					
Target	Azimuth	Origin Type	N/S	E/W	
Shideler 31-6A BHL	134.88	Slot	0.0	0.0	0.0

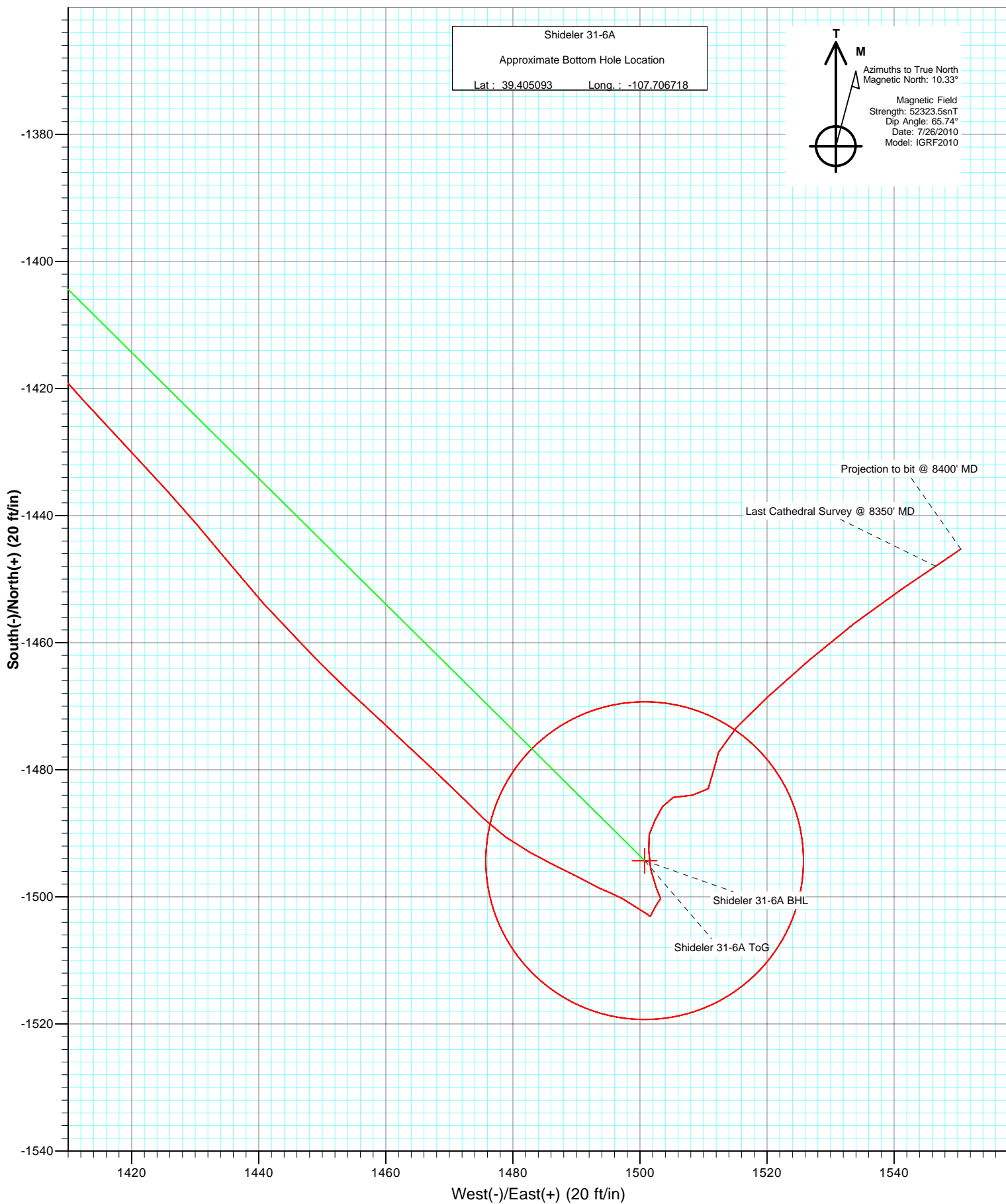


Project: Mamm Creek
Site: C31E Pad (NENW 31-7S-92W)
Well: Shideler 31-6A
Wellbore: Final
Design: DD





Project: Mamm Creek
Site: C31E Pad (NENW 31-7S-92W)
Well: Shideler 31-6A
Wellbore: Final
Plan: DD



Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 31-6A
Project:	Mamm Creek	TVD Reference:	KBE @ 6772.0ft (Nabors M15)
Site:	C31E Pad (NENW 31-7S-92W)	MD Reference:	KBE @ 6772.0ft (Nabors M15)
Well:	Shideler 31-6A	North Reference:	True
Wellbore:	Final	Survey Calculation Method:	Minimum Curvature
Design:	DD	Database:	EDM 5000.1 US Multi Users DB

Project	Mamm Creek		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Central Zone		

Site		C31E Pad (NENW 31-7S-92W)			
Site Position:		Northing:	1,581,611.55 ft	Latitude:	39.409394
From:	Lat/Long	Easting:	2,375,162.79 ft	Longitude:	-107.711675
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.39 °

Well	Shideler 31-6A					
Well Position	+N/-S	0.0 ft	Northing:	1,581,493.80 ft	Latitude:	39.409061
	+E/-W	0.0 ft	Easting:	2,375,009.97 ft	Longitude:	-107.712206
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	6,750.0 ft

Wellbore	Final				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	7/26/2010	10.33	65.74	52,323

Design	DD			
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	134.88

Survey Program	Date	8/16/2010			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
111.0	8,400.0	Survey #1 (Final)	MWD	Geolink MWD	

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Formations / Comments
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
111.0	2.20	352.70	111.0	2.1	-0.3	-1.7	1.98	1.98	
142.0	2.40	350.00	141.9	3.3	-0.5	-2.7	0.73	0.65	
172.0	1.70	1.30	171.9	4.4	-0.6	-3.5	2.68	-2.33	
203.0	1.00	35.60	202.9	5.1	-0.4	-3.9	3.35	-2.26	
233.0	1.40	77.20	232.9	5.4	0.1	-3.7	3.10	1.33	
264.0	2.20	116.70	263.9	5.2	1.0	-2.9	4.61	2.58	
295.0	3.20	121.20	294.9	4.5	2.3	-1.5	3.30	3.23	
326.0	4.40	129.80	325.8	3.3	3.9	0.5	4.27	3.87	
357.0	5.90	126.40	356.7	1.6	6.1	3.2	4.94	4.84	
387.0	7.00	131.00	386.5	-0.5	8.8	6.6	4.05	3.67	
418.0	8.50	131.00	417.2	-3.3	11.9	10.8	4.84	4.84	
449.0	9.50	130.40	447.8	-6.5	15.6	15.6	3.24	3.23	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 31-6A
Project:	Mamm Creek	TVD Reference:	KBE @ 6772.0ft (Nabors M15)
Site:	C31E Pad (NENW 31-7S-92W)	MD Reference:	KBE @ 6772.0ft (Nabors M15)
Well:	Shideler 31-6A	North Reference:	True
Wellbore:	Final	Survey Calculation Method:	Minimum Curvature
Design:	DD	Database:	EDM 5000.1 US Multi Users 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)	Formations / Comments
480.0	10.30	134.40	478.4	-10.1	19.5	20.9	3.40	2.58	
511.0	11.10	133.40	508.8	-14.0	23.7	26.7	2.65	2.58	
542.0	12.20	137.30	539.2	-18.5	28.1	32.9	4.36	3.55	
573.0	13.40	138.20	569.4	-23.6	32.7	39.8	3.92	3.87	
603.0	14.30	137.80	598.5	-28.9	37.5	47.0	3.02	3.00	
634.0	15.30	137.70	628.5	-34.8	42.8	54.9	3.23	3.23	
665.0	16.00	138.00	658.4	-41.0	48.4	63.2	2.27	2.26	
696.0	16.30	138.80	688.1	-47.4	54.1	71.8	1.20	0.97	
758.0	18.40	139.10	747.3	-61.4	66.3	90.3	3.39	3.39	
819.0	19.80	138.20	804.9	-76.4	79.5	110.2	2.35	2.30	
881.0	21.50	138.90	863.0	-92.7	93.9	132.0	2.77	2.74	
943.0	22.10	140.40	920.5	-110.3	108.8	155.0	1.32	0.97	
974.0	22.50	139.50	949.2	-119.3	116.4	166.7	1.70	1.29	
1,066.0	24.10	136.30	1,033.7	-146.3	140.8	203.0	2.22	1.74	
1,166.0	25.10	134.70	1,124.6	-175.9	170.0	244.6	1.20	1.00	
1,256.0	25.20	136.80	1,206.1	-203.3	196.7	282.9	1.00	0.11	
1,351.0	26.10	137.10	1,291.7	-233.4	224.8	324.0	0.96	0.95	
1,446.0	26.70	137.20	1,376.8	-264.4	253.5	366.2	0.63	0.63	
1,542.0	26.40	134.00	1,462.7	-295.0	283.5	409.0	1.52	-0.31	
1,636.0	25.80	134.50	1,547.1	-323.9	313.1	450.4	0.68	-0.64	
1,732.0	25.80	130.70	1,633.6	-352.1	343.9	492.1	1.72	0.00	
1,827.0	24.80	131.30	1,719.4	-378.8	374.5	532.6	1.09	-1.05	
1,922.0	25.30	129.80	1,805.5	-404.9	405.1	572.7	0.85	0.53	
2,017.0	24.10	132.90	1,891.8	-431.1	434.9	612.3	1.86	-1.26	
2,112.0	24.70	132.00	1,978.3	-457.6	463.8	651.6	0.74	0.63	
2,207.0	23.40	132.20	2,065.1	-483.5	492.6	690.2	1.37	-1.37	
2,302.0	23.30	132.80	2,152.3	-509.0	520.3	727.8	0.27	-0.11	
2,397.0	24.20	133.40	2,239.3	-535.1	548.3	766.1	0.98	0.95	
2,492.0	24.40	133.50	2,325.8	-562.0	576.6	805.2	0.21	0.21	
2,586.0	24.70	131.00	2,411.3	-588.3	605.5	844.2	1.15	0.32	
2,682.0	24.60	132.30	2,498.6	-614.9	635.5	884.1	0.57	-0.10	
2,777.0	23.90	135.90	2,585.2	-642.0	663.5	923.1	1.72	-0.74	
2,872.0	24.30	135.90	2,671.9	-669.9	690.5	961.9	0.42	0.42	
2,967.0	24.30	135.80	2,758.5	-697.9	717.7	1,001.0	0.04	0.00	
3,062.0	24.70	135.40	2,845.0	-726.1	745.3	1,040.4	0.46	0.42	
3,157.0	24.90	134.90	2,931.2	-754.3	773.4	1,080.3	0.31	0.21	
3,252.0	25.00	134.30	3,017.3	-782.4	801.9	1,120.3	0.29	0.11	
3,347.0	24.10	136.10	3,103.8	-810.4	829.7	1,159.8	1.23	-0.95	
3,442.0	24.30	133.40	3,190.4	-837.8	857.4	1,198.7	1.18	0.21	
3,537.0	23.80	131.60	3,277.2	-864.0	885.9	1,237.4	0.93	-0.53	
3,632.0	23.00	134.10	3,364.4	-889.6	913.6	1,275.1	1.34	-0.84	
3,727.0	22.90	133.80	3,451.8	-915.4	940.2	1,312.1	0.16	-0.11	
3,822.0	23.90	136.60	3,539.0	-942.1	966.8	1,349.9	1.57	1.05	
3,917.0	23.60	134.40	3,626.0	-969.4	993.6	1,388.1	0.98	-0.32	
4,011.0	23.30	136.50	3,712.2	-996.1	1,019.9	1,425.5	0.94	-0.32	
4,106.0	23.30	135.80	3,799.5	-1,023.2	1,045.9	1,463.1	0.29	0.00	
4,201.0	23.20	136.70	3,886.8	-1,050.3	1,071.8	1,500.6	0.39	-0.11	
4,296.0	23.60	137.70	3,973.9	-1,077.9	1,097.5	1,538.3	0.59	0.42	
4,392.0	23.60	137.20	4,061.9	-1,106.3	1,123.4	1,576.7	0.21	0.00	
4,486.0	23.00	135.40	4,148.2	-1,133.1	1,149.1	1,613.8	0.99	-0.64	
4,581.0	22.90	137.20	4,235.7	-1,159.9	1,174.7	1,650.9	0.75	-0.11	
4,677.0	23.40	139.10	4,324.0	-1,188.0	1,199.9	1,688.5	0.94	0.52	
4,772.0	22.20	138.80	4,411.6	-1,215.8	1,224.1	1,725.2	1.27	-1.26	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 31-6A
Project:	Mamm Creek	TVD Reference:	KBE @ 6772.0ft (Nabors M15)
Site:	C31E Pad (NENW 31-7S-92W)	MD Reference:	KBE @ 6772.0ft (Nabors M15)
Well:	Shideler 31-6A	North Reference:	True
Wellbore:	Final	Survey Calculation Method:	Minimum Curvature
Design:	DD	Database:	EDM 5000.1 US Multi Users 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)	Formations / Comments
4,867.0	23.20	137.10	4,499.2	-1,243.0	1,248.6	1,761.9	1.26	1.05	
4,962.0	24.00	135.80	4,586.3	-1,270.6	1,274.8	1,799.9	1.00	0.84	
5,057.0	22.70	137.90	4,673.5	-1,298.0	1,300.6	1,837.5	1.62	-1.37	
5,152.0	21.30	138.90	4,761.6	-1,324.6	1,324.2	1,873.0	1.53	-1.47	
5,247.0	19.30	139.40	4,850.7	-1,349.5	1,345.8	1,905.9	2.11	-2.11	
5,343.0	17.50	136.50	4,941.8	-1,372.1	1,366.0	1,936.1	2.10	-1.87	
5,438.0	16.80	136.10	5,032.5	-1,392.3	1,385.4	1,964.1	0.75	-0.74	
5,532.0	16.20	138.50	5,122.7	-1,411.9	1,403.5	1,990.8	0.97	-0.64	
5,628.0	14.30	136.70	5,215.3	-1,430.6	1,420.5	2,016.0	2.04	-1.98	
5,723.0	11.70	141.00	5,307.8	-1,446.6	1,434.6	2,037.3	2.92	-2.74	
5,818.0	10.40	135.00	5,401.1	-1,460.2	1,446.8	2,055.5	1.83	-1.37	
5,831.0	10.30	136.90	5,413.9	-1,461.8	1,448.4	2,057.8	2.74	-0.77	
5,841.0	10.20	135.20	5,423.7	-1,463.1	1,449.6	2,059.6	3.19	-1.00	
5,913.0	9.00	132.10	5,494.7	-1,471.4	1,458.3	2,071.6	1.81	-1.67	
6,008.0	7.00	134.30	5,588.8	-1,480.5	1,467.9	2,084.8	2.13	-2.11	
6,101.0	5.60	133.90	5,681.2	-1,487.6	1,475.3	2,095.0	1.51	-1.51	
6,197.0	5.50	118.40	5,776.8	-1,493.0	1,482.7	2,104.1	1.56	-0.10	
6,292.0	4.20	115.50	5,871.4	-1,496.7	1,489.8	2,111.7	1.39	-1.37	
6,323.0	3.90	119.30	5,902.3	-1,497.7	1,491.8	2,113.8	1.30	-0.97	
6,355.0	3.50	115.10	5,934.3	-1,498.6	1,493.6	2,115.8	1.51	-1.25	
6,387.0	3.50	112.10	5,966.2	-1,499.4	1,495.4	2,117.6	0.57	0.00	
6,418.0	3.80	118.50	5,997.1	-1,500.2	1,497.2	2,119.5	1.63	0.97	
6,449.0	3.10	124.90	6,028.1	-1,501.2	1,498.8	2,121.3	2.57	-2.26	
6,481.0	2.50	121.00	6,060.1	-1,502.1	1,500.1	2,122.8	1.97	-1.87	
6,512.0	1.80	123.80	6,091.0	-1,502.7	1,501.1	2,124.0	2.28	-2.26	
6,543.0	0.50	132.60	6,122.0	-1,503.0	1,501.6	2,124.6	4.22	-4.19	
6,576.0	0.70	8.40	6,155.0	-1,502.9	1,501.7	2,124.6	3.23	0.61	
6,671.0	1.40	36.00	6,250.0	-1,501.4	1,502.5	2,124.1	0.89	0.74	
6,766.0	0.30	21.90	6,345.0	-1,500.3	1,503.2	2,123.8	1.17	-1.16	
6,861.0	1.90	331.60	6,440.0	-1,498.6	1,502.6	2,122.2	1.81	1.68	
6,956.0	1.90	355.40	6,534.9	-1,495.7	1,501.7	2,119.5	0.82	0.00	
7,051.0	1.70	352.00	6,629.9	-1,492.7	1,501.4	2,117.2	0.24	-0.21	
7,146.0	1.40	12.40	6,724.8	-1,490.2	1,501.4	2,115.4	0.66	-0.32	
7,241.0	1.60	31.20	6,819.8	-1,487.9	1,502.4	2,114.5	0.56	0.21	
7,336.0	1.40	25.50	6,914.8	-1,485.7	1,503.6	2,113.8	0.26	-0.21	
7,431.0	1.50	72.80	7,009.8	-1,484.3	1,505.3	2,114.0	1.23	0.11	
7,526.0	2.20	91.10	7,104.7	-1,484.0	1,508.3	2,115.9	0.96	0.74	
7,621.0	1.50	31.70	7,199.7	-1,483.0	1,510.7	2,116.9	2.03	-0.74	
7,716.0	1.80	4.10	7,294.6	-1,480.4	1,511.5	2,115.7	0.88	0.32	
7,812.0	2.20	24.80	7,390.6	-1,477.2	1,512.4	2,114.0	0.85	0.42	
7,907.0	3.60	42.50	7,485.4	-1,473.4	1,515.2	2,113.3	1.73	1.47	
8,002.0	4.80	47.80	7,580.2	-1,468.5	1,520.1	2,113.4	1.33	1.26	
8,097.0	5.50	48.90	7,674.8	-1,462.9	1,526.5	2,113.9	0.74	0.74	
8,192.0	5.80	52.60	7,769.3	-1,457.0	1,533.7	2,114.8	0.50	0.32	
8,287.0	5.70	55.90	7,863.9	-1,451.4	1,541.5	2,116.4	0.36	-0.11	
8,350.0	5.50	55.90	7,926.6	-1,447.9	1,546.5	2,117.6	0.32	-0.32	
8,400.0	5.50	55.90	7,976.3	-1,445.3	1,550.5	2,118.5	0.00	0.00	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 31-6A
Project:	Mamm Creek	TVD Reference:	KBE @ 6772.0ft (Nabors M15)
Site:	C31E Pad (NENW 31-7S-92W)	MD Reference:	KBE @ 6772.0ft (Nabors M15)
Well:	Shideler 31-6A	North Reference:	True
Wellbore:	Final	Survey Calculation Method:	Minimum Curvature
Design:	DD	Database:	EDM 5000.1 US Multi Users DB

Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
- Shape									
Shideler 31-6A BHL	0.00	0.00	7,962.0	-1,494.3	1,500.7	1,579,963.41	2,376,473.88	39.404958	-107.706894
- actual wellpath misses target center by 68.2ft at 8379.1ft MD (7955.6 TVD, -1446.4 N, 1548.9 E)									
- Circle (radius 25.0)									
Shideler 31-6A ToG	0.00	0.00	6,032.0	-1,494.3	1,500.7	1,579,963.41	2,376,473.88	39.404958	-107.706894
- actual wellpath misses target center by 7.3ft at 6452.8ft MD (6031.9 TVD, -1501.3 N, 1498.9 E)									
- Point									

Design Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)	
8,350.0	7,926.6	-1,447.9	1,546.5	Last Cathedral Survey @ 8350' MD
8,400.0	7,976.3	-1,445.3	1,550.5	Projection to bit @ 8400' MD

Checked By: _____ Approved By: _____ Date: _____