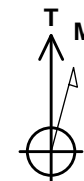
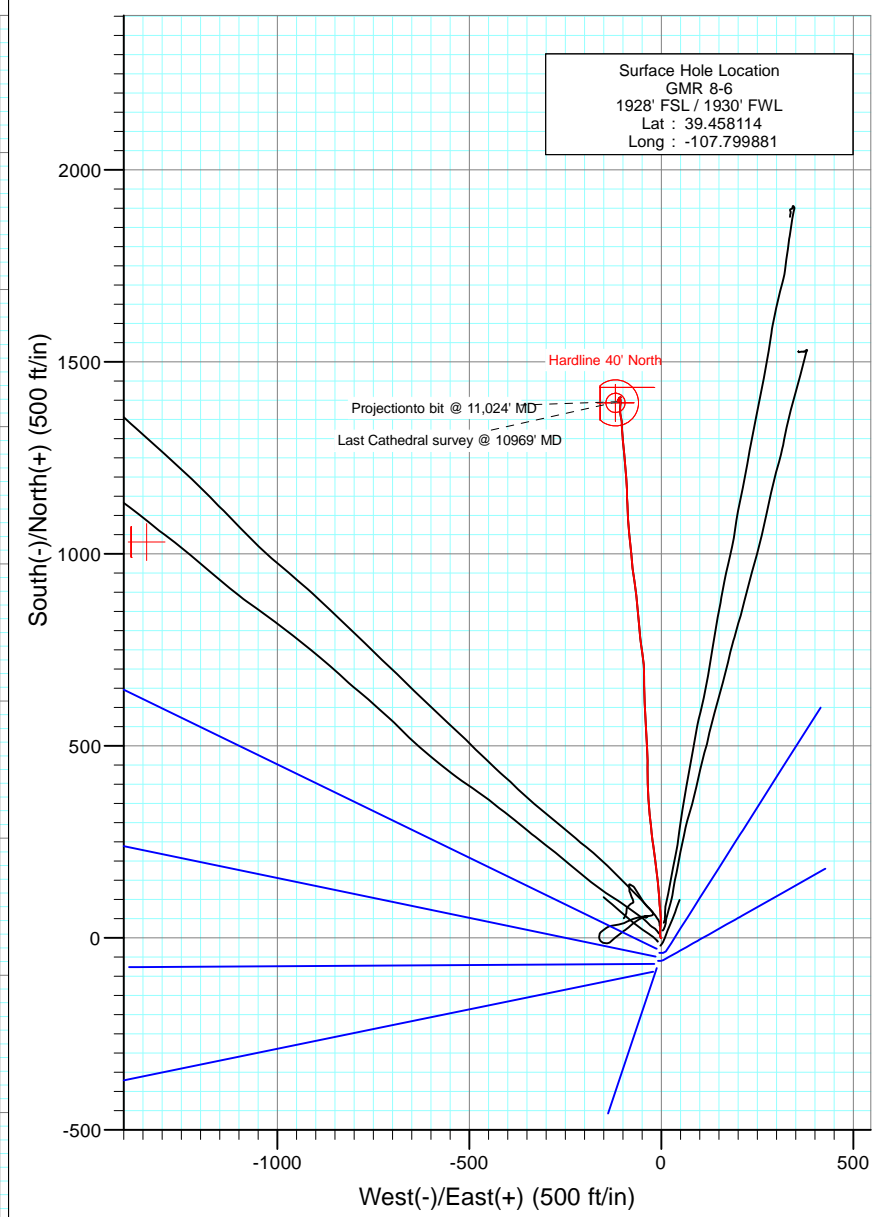
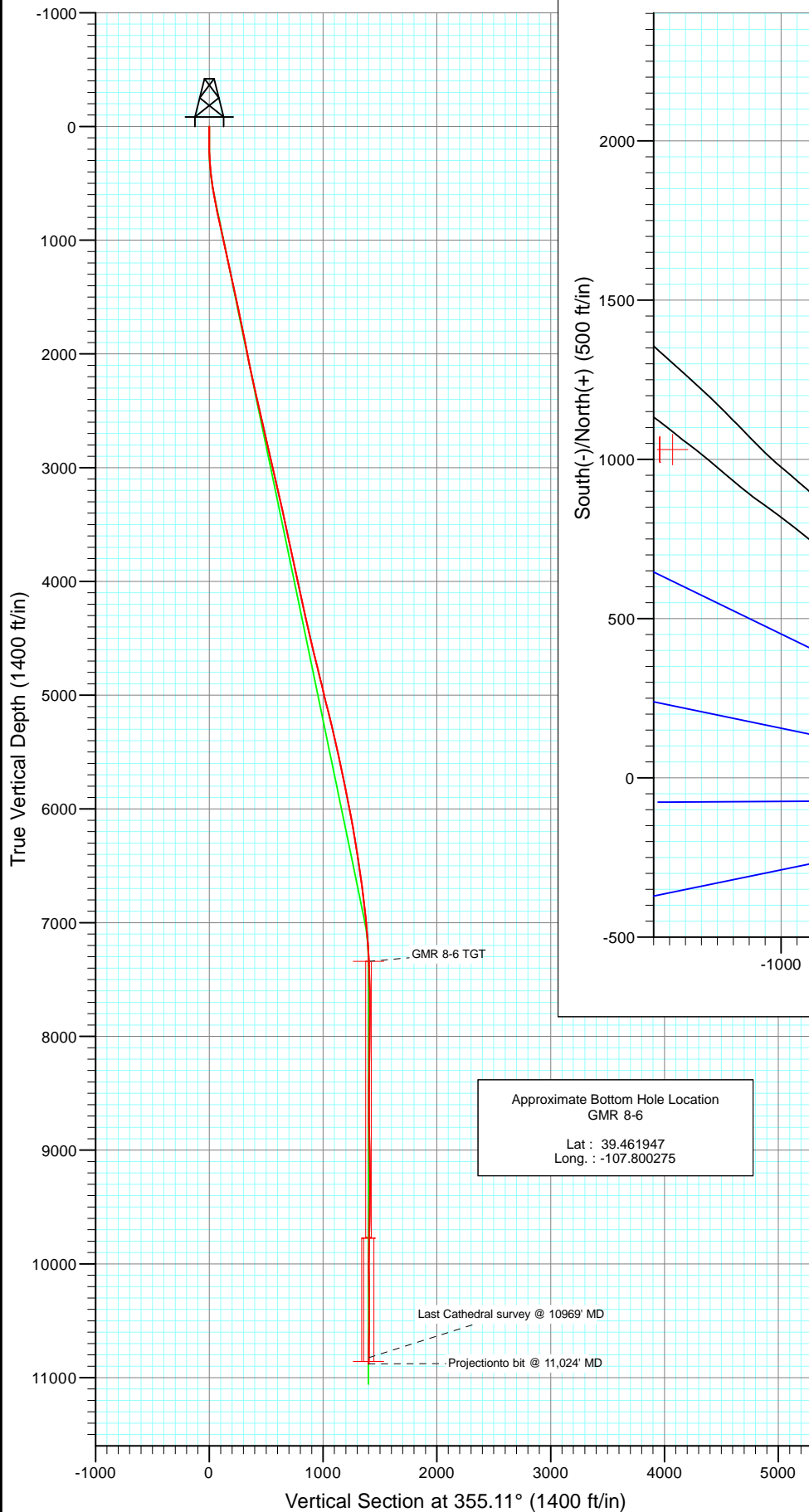




Project: Mamm Creek  
 Site: NESW S8 T7S R93W (K8W Pad)  
 Well: GMR 8-6  
 Wellbore: Final  
 Design: DD



Azimuths to True North  
 Magnetic North: 10.34°

Magnetic Field  
 Strength: 52355.6snT  
 Dip Angle: 65.78°  
 Date: 8/10/2010  
 Model: IGRF200510

DESIGN DETAILS: DD

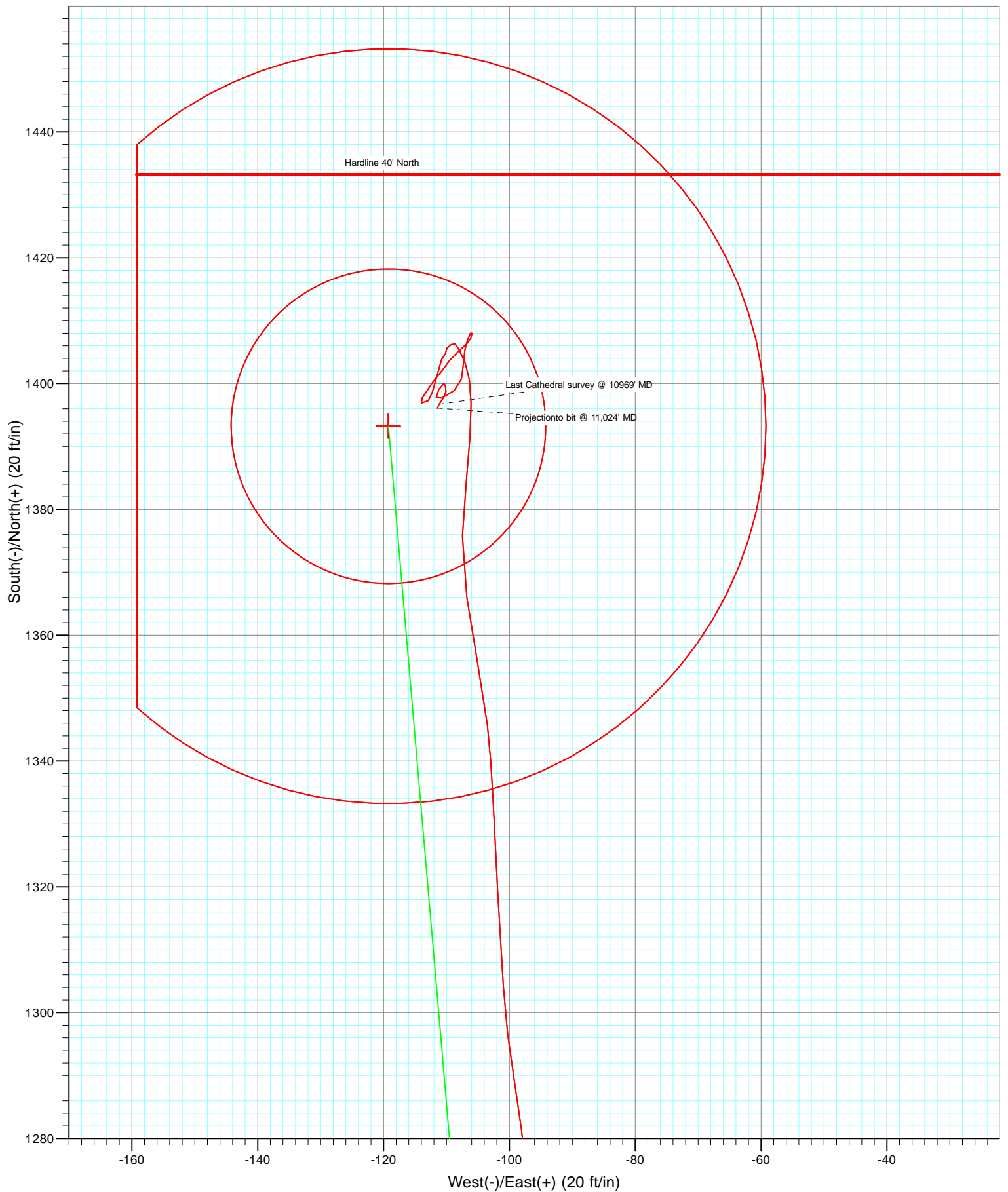
Job #105285 (SH), 105329 (MH): KR

KBE @ 7848.0ft (Nabors M13)

Target	Azimuth	Origin	N/S	E/W	From TVD
GMR 8-6 BHL	355.11	Slot	N/S	0.0	0.0

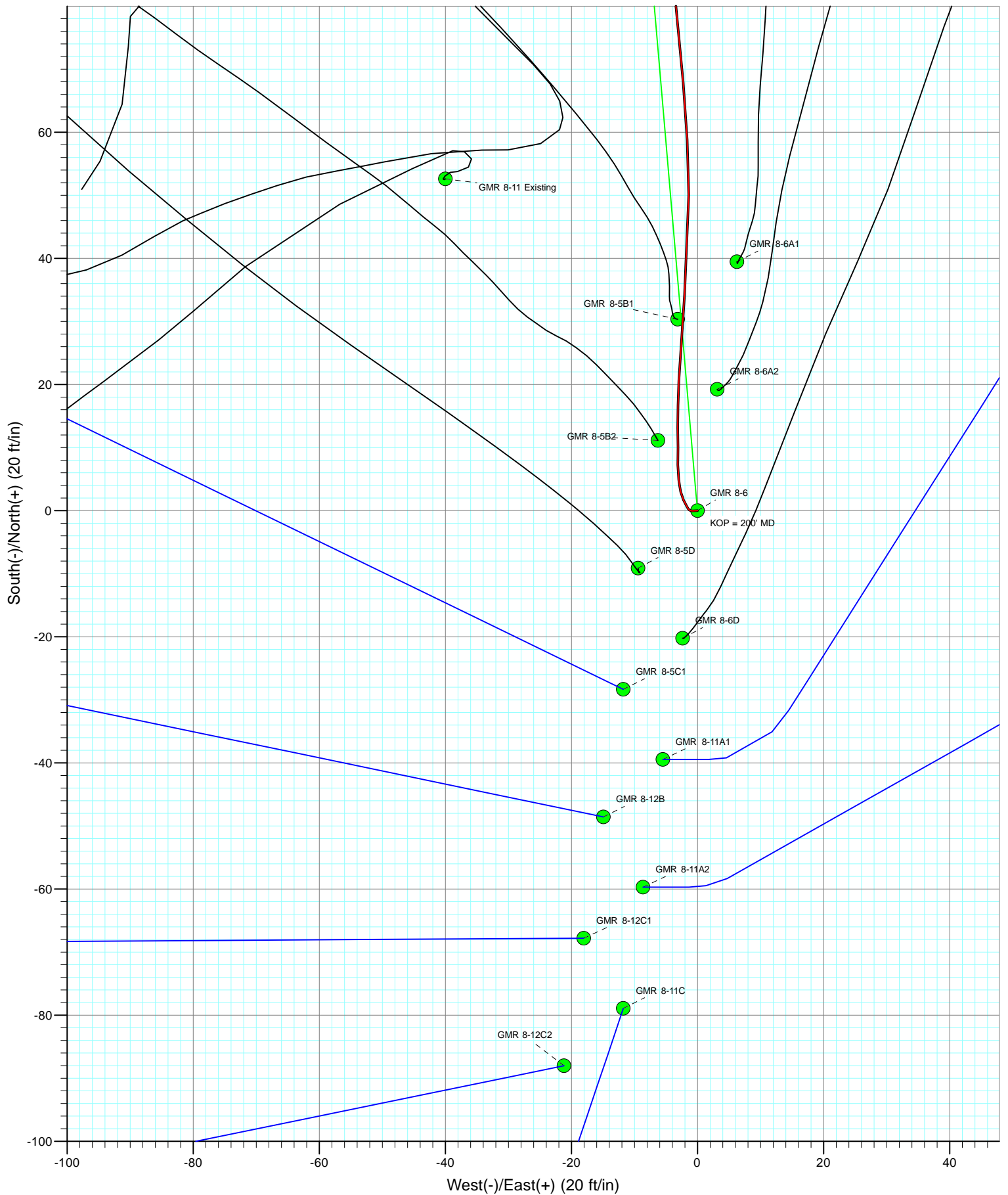


Project: Mamm Creek  
Site: NESW S8 T7S R93W (K8W Pad)  
Well: GMR 8-6  
Wellbore: Final  
Design: DD





Project: Mamm Creek  
Site: NESW S8 T7S R93W (K8W Pad)  
Well: GMR 8-6  
Wellbore: Final  
Design: DD



# Cathedral Energy Services

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well GMR 8-6
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	KBE @ 7848.0ft (Nabors M13)
<b>Site:</b>	NESW S8 T7S R93W (K8W Pad)	<b>MD Reference:</b>	KBE @ 7848.0ft (Nabors M13)
<b>Well:</b>	GMR 8-6	<b>North Reference:</b>	True
<b>Wellbore:</b>	Final	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	DD	<b>Database:</b>	EDM 5000.1 US Multi Users DB

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

Site		NESW S8 T7S R93W (K8W Pad)			
Site Position:		Northing:	1,599,999.23 ft	Latitude:	39.458194
From:	Lat/Long	Easting:	2,350,698.86 ft	Longitude:	-107.799878
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.45 °

Well	GMR 8-6					
Well Position	+N/-S	0.0 ft	Northing:	1,599,969.91 ft	Latitude:	39.458114
	+E/-W	0.0 ft	Easting:	2,350,697.34 ft	Longitude:	-107.799881
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	7,826.0 ft

<b>Wellbore</b>	Final				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF200510	8/10/2010	10.34	65.78	52,356

<b>Design</b>	DD				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD)</b>	<b>+N/-S</b>	<b>+E/-W</b>	<b>Direction</b>	
	(ft)	(ft)	(ft)	(°)	
	0.0	0.0	0.0	355.11	

<b>Survey Program</b>	<b>Date</b>	8/28/2010			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
165.0	11,024.0	Survey #1 (Final)	MWD	Geolink MWD	

<b>Survey</b>										
<b>Measured Depth (ft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Vertical Section (ft)</b>	<b>Dogleg Rate (°/100ft)</b>	<b>Build Rate (°/100ft)</b>	<b>Formations / Comments</b>	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00		
165.0	0.60	266.70	165.0	0.0	-0.9	0.0	0.36	0.36		
195.0	1.00	301.70	195.0	0.1	-1.2	0.2	2.05	1.33		
226.0	1.80	333.90	226.0	0.7	-1.7	0.8	3.52	2.58		
257.0	2.50	332.20	257.0	1.7	-2.2	1.9	2.27	2.26		
287.0	2.90	349.20	286.9	3.0	-2.7	3.2	2.97	1.33		
318.0	4.10	351.30	317.9	4.9	-3.0	5.1	3.89	3.87		
349.0	4.70	1.20	348.8	7.2	-3.1	7.5	3.12	1.94		
379.0	5.80	0.10	378.7	10.0	-3.1	10.2	3.68	3.67		
409.0	6.20	358.70	408.5	13.1	-3.1	13.3	1.42	1.33		
440.0	7.00	2.20	439.3	16.7	-3.1	16.9	2.89	2.58		
471.0	7.70	1.90	470.0	20.7	-2.9	20.8	2.26	2.26		
563.0	9.30	5.40	561.0	34.2	-2.0	34.3	1.83	1.74		

# Cathedral Energy Services

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well GMR 8-6
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	KBE @ 7848.0ft (Nabors M13)
<b>Site:</b>	NESW S8 T7S R93W (K8W Pad)	<b>MD Reference:</b>	KBE @ 7848.0ft (Nabors M13)
<b>Well:</b>	GMR 8-6	<b>North Reference:</b>	True
<b>Wellbore:</b>	Final	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	DD	<b>Database:</b>	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
655.0	10.60	359.70	651.6	50.1	-1.4	50.0	1.77	1.41	
747.0	11.80	354.90	741.9	67.9	-2.3	67.9	1.65	1.30	
839.0	12.10	354.40	831.9	86.9	-4.0	86.9	0.34	0.33	
931.0	12.60	355.10	921.8	106.5	-5.8	106.6	0.57	0.54	
1,025.0	12.80	357.00	1,013.5	127.1	-7.3	127.2	0.49	0.21	
1,120.0	12.20	352.90	1,106.2	147.6	-9.1	147.8	1.13	-0.63	
1,225.0	11.90	353.20	1,208.9	169.3	-11.7	169.7	0.29	-0.29	
1,344.0	12.20	352.30	1,325.3	194.0	-14.8	194.5	0.30	0.25	
1,440.0	12.00	353.70	1,419.1	213.9	-17.3	214.6	0.37	-0.21	
1,535.0	11.20	350.20	1,512.2	232.8	-20.0	233.7	1.12	-0.84	
1,630.0	12.80	353.50	1,605.1	252.4	-22.7	253.4	1.83	1.68	
1,726.0	12.30	353.80	1,698.8	273.1	-25.0	274.3	0.53	-0.52	
1,821.0	11.80	354.80	1,791.7	292.9	-27.0	294.1	0.57	-0.53	
1,917.0	10.70	351.30	1,885.9	311.4	-29.2	312.8	1.35	-1.15	
2,012.0	11.00	355.30	1,979.2	329.2	-31.3	330.7	0.85	0.32	
2,108.0	11.50	357.20	2,073.3	347.9	-32.5	349.4	0.65	0.52	
2,204.0	11.90	357.50	2,167.4	367.3	-33.4	368.8	0.42	0.42	
2,299.0	12.20	355.30	2,260.3	387.1	-34.7	388.7	0.58	0.32	
2,394.0	12.60	359.10	2,353.0	407.5	-35.7	409.0	0.96	0.42	
2,490.0	13.80	0.10	2,446.5	429.4	-35.8	430.9	1.27	1.25	
2,585.0	12.80	0.40	2,539.0	451.3	-35.7	452.7	1.06	-1.05	
2,679.0	11.90	357.30	2,630.8	471.3	-36.1	472.7	1.19	-0.96	
2,775.0	13.50	358.20	2,724.4	492.4	-36.9	493.8	1.68	1.67	
2,870.0	13.10	356.70	2,816.9	514.3	-37.9	515.6	0.56	-0.42	
2,965.0	11.80	356.60	2,909.6	534.7	-39.1	536.1	1.37	-1.37	
3,061.0	13.40	356.70	3,003.3	555.6	-40.3	557.0	1.67	1.67	
3,156.0	13.00	355.90	3,095.8	577.3	-41.7	578.7	0.46	-0.42	
3,251.0	12.60	358.10	3,188.5	598.3	-42.8	599.7	0.66	-0.42	
3,346.0	13.40	358.90	3,281.0	619.6	-43.4	621.1	0.86	0.84	
3,442.0	12.70	357.50	3,374.5	641.3	-44.0	642.7	0.80	-0.73	
3,537.0	11.70	358.90	3,467.4	661.4	-44.7	662.8	1.10	-1.05	
3,633.0	12.40	359.70	3,561.3	681.4	-44.9	682.8	0.75	0.73	
3,728.0	12.10	358.90	3,654.1	701.6	-45.2	702.9	0.36	-0.32	
3,823.0	12.10	352.90	3,747.0	721.4	-46.6	722.7	1.32	0.00	
3,921.0	11.90	351.80	3,842.9	741.6	-49.3	743.1	0.31	-0.20	
4,017.0	11.80	352.10	3,936.8	761.1	-52.1	762.8	0.12	-0.10	
4,112.0	12.00	352.40	4,029.8	780.5	-54.7	782.3	0.22	0.21	
4,207.0	12.60	356.90	4,122.6	800.7	-56.6	802.6	1.19	0.63	
4,302.0	12.40	353.90	4,215.4	821.1	-58.2	823.1	0.72	-0.21	
4,397.0	13.50	355.30	4,307.9	842.3	-60.2	844.4	1.20	1.16	
4,493.0	12.20	353.40	4,401.5	863.6	-62.3	865.8	1.42	-1.35	
4,588.0	13.00	354.60	4,494.2	884.2	-64.4	886.5	0.89	0.84	
4,684.0	13.30	352.50	4,587.7	905.9	-66.9	908.3	0.59	0.31	
4,779.0	14.00	352.40	4,680.0	928.1	-69.9	930.7	0.74	0.74	
4,875.0	13.70	350.40	4,773.3	950.8	-73.3	953.6	0.59	-0.31	
4,970.0	14.50	355.80	4,865.4	973.8	-76.0	976.7	1.62	0.84	
5,066.0	12.70	354.90	4,958.7	996.3	-77.8	999.3	1.89	-1.87	
5,161.0	13.80	353.20	5,051.2	1,017.9	-80.1	1,021.1	1.23	1.16	
5,256.0	14.30	355.80	5,143.3	1,040.9	-82.3	1,044.1	0.85	0.53	
5,351.0	13.80	352.10	5,235.5	1,063.8	-84.7	1,067.2	1.08	-0.53	
5,447.0	13.00	359.00	5,328.9	1,086.0	-86.5	1,089.4	1.86	-0.83	
5,542.0	13.30	356.70	5,421.4	1,107.6	-87.3	1,111.0	0.63	0.32	
5,637.0	12.80	357.80	5,513.9	1,129.0	-88.3	1,132.4	0.59	-0.53	

# Cathedral Energy Services

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well GMR 8-6
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	KBE @ 7848.0ft (Nabors M13)
<b>Site:</b>	NESW S8 T7S R93W (K8W Pad)	<b>MD Reference:</b>	KBE @ 7848.0ft (Nabors M13)
<b>Well:</b>	GMR 8-6	<b>North Reference:</b>	True
<b>Wellbore:</b>	Final	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	DD	<b>Database:</b>	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
5,732.0	11.80	358.40	5,606.8	1,149.2	-89.0	1,152.6	1.06	-1.05	
5,828.0	10.70	359.60	5,700.9	1,167.9	-89.4	1,171.3	1.17	-1.15	
5,923.0	12.00	356.70	5,794.0	1,186.6	-90.0	1,190.0	1.49	1.37	
6,019.0	11.40	353.60	5,888.1	1,206.0	-91.6	1,209.4	0.91	-0.62	
6,114.0	11.60	352.70	5,981.2	1,224.8	-93.9	1,228.4	0.28	0.21	
6,208.0	10.10	357.50	6,073.5	1,242.4	-95.4	1,246.0	1.86	-1.60	
6,303.0	9.90	356.50	6,167.0	1,258.9	-96.3	1,262.5	0.28	-0.21	
6,399.0	8.50	355.70	6,261.8	1,274.2	-97.3	1,277.9	1.46	-1.46	
6,494.0	9.50	350.40	6,355.6	1,288.9	-99.2	1,292.7	1.37	1.05	
6,589.0	9.20	356.40	6,449.4	1,304.2	-101.0	1,308.1	1.07	-0.32	
6,685.0	8.90	356.80	6,544.2	1,319.3	-101.9	1,323.2	0.32	-0.31	
6,781.0	8.10	357.50	6,639.1	1,333.5	-102.6	1,337.4	0.84	-0.83	
6,876.0	6.70	353.40	6,733.3	1,345.7	-103.5	1,349.6	1.57	-1.47	
6,971.0	6.00	348.60	6,827.7	1,356.1	-105.1	1,360.1	0.92	-0.74	
7,066.0	6.20	352.70	6,922.2	1,366.0	-106.7	1,370.1	0.50	0.21	
7,162.0	5.50	359.40	7,017.7	1,375.8	-107.5	1,379.9	1.02	-0.73	
7,257.0	4.80	9.50	7,112.3	1,384.2	-106.8	1,388.3	1.20	-0.74	
7,353.0	4.10	358.90	7,208.0	1,391.6	-106.2	1,395.6	1.12	-0.73	
7,448.0	2.20	6.70	7,302.9	1,396.8	-106.1	1,400.8	2.05	-2.00	
7,544.0	2.40	346.30	7,398.8	1,400.6	-106.4	1,404.6	0.87	0.21	
7,639.0	1.10	344.70	7,493.8	1,403.4	-107.1	1,407.4	1.37	-1.37	
7,734.0	1.60	328.00	7,588.7	1,405.4	-108.0	1,409.5	0.66	0.53	
7,830.0	0.30	170.70	7,684.7	1,406.3	-108.7	1,410.5	1.96	-1.35	
7,925.0	0.70	284.90	7,779.7	1,406.2	-109.2	1,410.4	0.91	0.42	
8,021.0	0.90	190.80	7,875.7	1,405.6	-109.9	1,409.9	1.23	0.21	
8,116.0	0.30	216.40	7,970.7	1,404.7	-110.2	1,409.0	0.68	-0.63	
8,211.0	0.90	213.50	8,065.7	1,403.9	-110.8	1,408.2	0.63	0.63	
8,306.0	0.80	174.20	8,160.7	1,402.6	-111.1	1,407.0	0.61	-0.11	
8,402.0	1.40	208.30	8,256.7	1,400.9	-111.6	1,405.3	0.90	0.62	
8,497.0	1.60	185.80	8,351.6	1,398.5	-112.3	1,403.0	0.65	0.21	
8,590.0	0.60	274.30	8,444.6	1,397.3	-112.9	1,401.8	1.82	-1.08	
8,685.0	0.90	234.00	8,539.6	1,396.9	-114.0	1,401.5	0.62	0.32	
8,780.0	1.80	30.90	8,634.6	1,397.7	-113.8	1,402.4	2.79	0.95	
8,876.0	1.80	36.70	8,730.6	1,400.2	-112.2	1,404.7	0.19	0.00	
8,971.0	1.10	42.20	8,825.5	1,402.1	-110.7	1,406.4	0.75	-0.74	
9,066.0	1.20	31.60	8,920.5	1,403.6	-109.5	1,407.9	0.25	0.11	
9,161.0	1.20	55.20	9,015.5	1,405.0	-108.2	1,409.2	0.52	0.00	
9,257.0	1.00	40.80	9,111.5	1,406.3	-106.8	1,410.2	0.35	-0.21	
9,352.0	0.40	23.80	9,206.5	1,407.2	-106.1	1,411.1	0.66	-0.63	
9,448.0	0.60	6.90	9,302.5	1,408.0	-105.9	1,411.9	0.26	0.21	
9,543.0	0.70	213.40	9,397.5	1,408.0	-106.2	1,411.9	1.33	0.11	
9,638.0	0.90	194.20	9,492.4	1,406.8	-106.7	1,410.8	0.35	0.21	
9,726.0	1.10	193.50	9,580.4	1,405.3	-107.1	1,409.3	0.23	0.23	
9,827.0	1.30	179.80	9,681.4	1,403.2	-107.3	1,407.3	0.34	0.20	
9,922.0	1.80	192.80	9,776.4	1,400.7	-107.6	1,404.8	0.64	0.53	
10,018.0	1.10	247.80	9,872.3	1,398.9	-108.8	1,403.0	1.54	-0.73	
10,113.0	1.60	232.80	9,967.3	1,397.7	-110.7	1,402.1	0.64	0.53	
10,208.0	1.10	9.60	10,062.3	1,397.8	-111.6	1,402.2	2.65	-0.53	
10,302.0	0.50	36.50	10,156.3	1,399.0	-111.2	1,403.4	0.74	-0.64	
10,397.0	0.40	42.20	10,251.3	1,399.6	-110.7	1,404.0	0.12	-0.11	
10,492.0	0.20	10.20	10,346.3	1,400.0	-110.5	1,404.3	0.27	-0.21	
10,588.0	0.30	151.10	10,442.3	1,400.0	-110.3	1,404.3	0.49	0.10	
10,683.0	0.30	160.60	10,537.3	1,399.5	-110.1	1,403.8	0.05	0.00	

# Cathedral Energy Services

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well GMR 8-6
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	KBE @ 7848.0ft (Nabors M13)
<b>Site:</b>	NESW S8 T7S R93W (K8W Pad)	<b>MD Reference:</b>	KBE @ 7848.0ft (Nabors M13)
<b>Well:</b>	GMR 8-6	<b>North Reference:</b>	True
<b>Wellbore:</b>	Final	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	DD	<b>Database:</b>	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
10,778.0	0.70	184.40	10,632.3	1,398.7	-110.1	1,403.0	0.47	0.42	
10,873.0	0.70	220.10	10,727.3	1,397.7	-110.5	1,402.0	0.45	0.00	
10,969.0	0.70	206.50	10,823.3	1,396.7	-111.2	1,401.1	0.17	0.00	
11,024.0	0.70	206.50	10,878.3	1,396.1	-111.5	1,400.5	0.00	0.00	

### Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
GMR 8-6 BHL	0.00	0.00	10,857.0	1,393.2	-119.2	1,601,365.70	2,350,613.43	39.461939	-107.800303
- actual wellpath misses target center by 8.5ft at 11002.8ft MD (10857.1 TVD, 1396.3 N, -111.3 E)									
- Circle (radius 60.0)									
Hardline 40' West	0.00	0.00	-10,857.0	1,030.9	-1,340.4	1,601,034.38	2,349,383.46	39.460944	-107.804628
- actual wellpath misses target center by 10987.9ft at 0.0ft MD (0.0 TVD, 0.0 N, 0.0 E)									
- Polygon									
Point 1			-10,857.0	40.0	-40.0	1,601,075.38	2,349,344.49		
Point 2			-10,857.0	-40.0	-40.0	1,600,995.41	2,349,342.46		
Hardline 40' North	0.00	0.00	-9,954.0	1,393.3	-119.3	1,601,365.73	2,350,613.37	39.461939	-107.800303
- actual wellpath misses target center by 10051.7ft at 0.0ft MD (0.0 TVD, 0.0 N, 0.0 E)									
- Polygon									
Point 1			-9,954.0	40.0	-40.0	1,601,406.73	2,350,574.40		
Point 2			-9,954.0	40.0	100.0	1,601,403.19	2,350,714.35		
GMR 8-6 TGT	0.00	0.00	7,340.0	1,393.2	-119.2	1,601,365.70	2,350,613.43	39.461939	-107.800303
- actual wellpath misses target center by 14.1ft at 7485.0ft MD (7339.8 TVD, 1398.3 N, -106.0 E)									
- Circle (radius 25.0)									

### Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Comment
10,969.0	10,823.3	1,396.7	-111.2	Last Cathedral survey @ 10969' MD
11,024.0	10,878.3	1,396.1	-111.5	Projection to bit @ 11,024' MD

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_