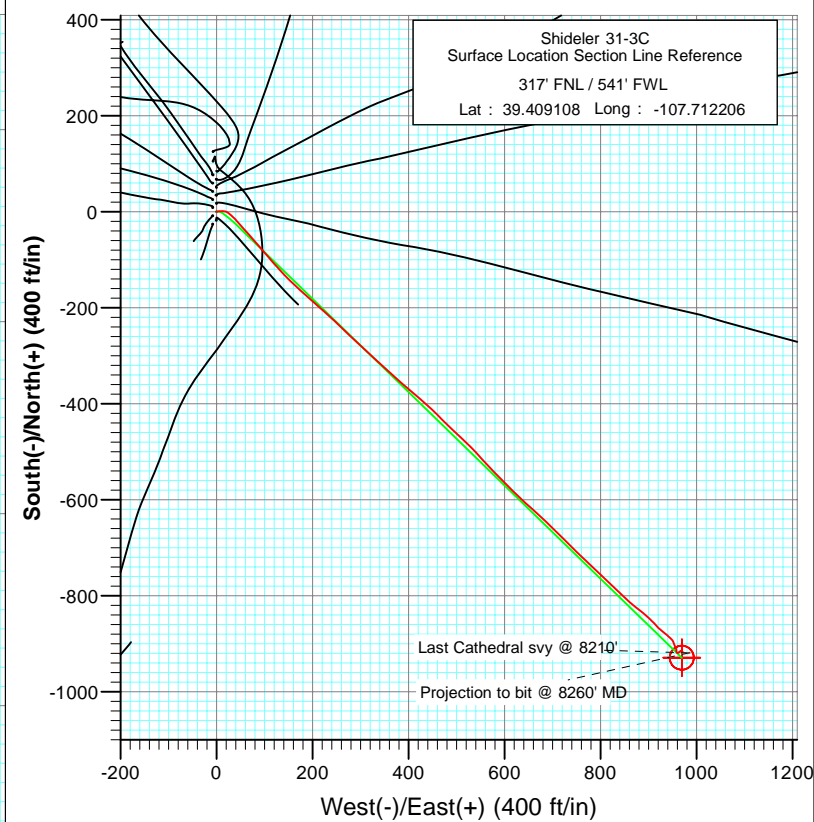
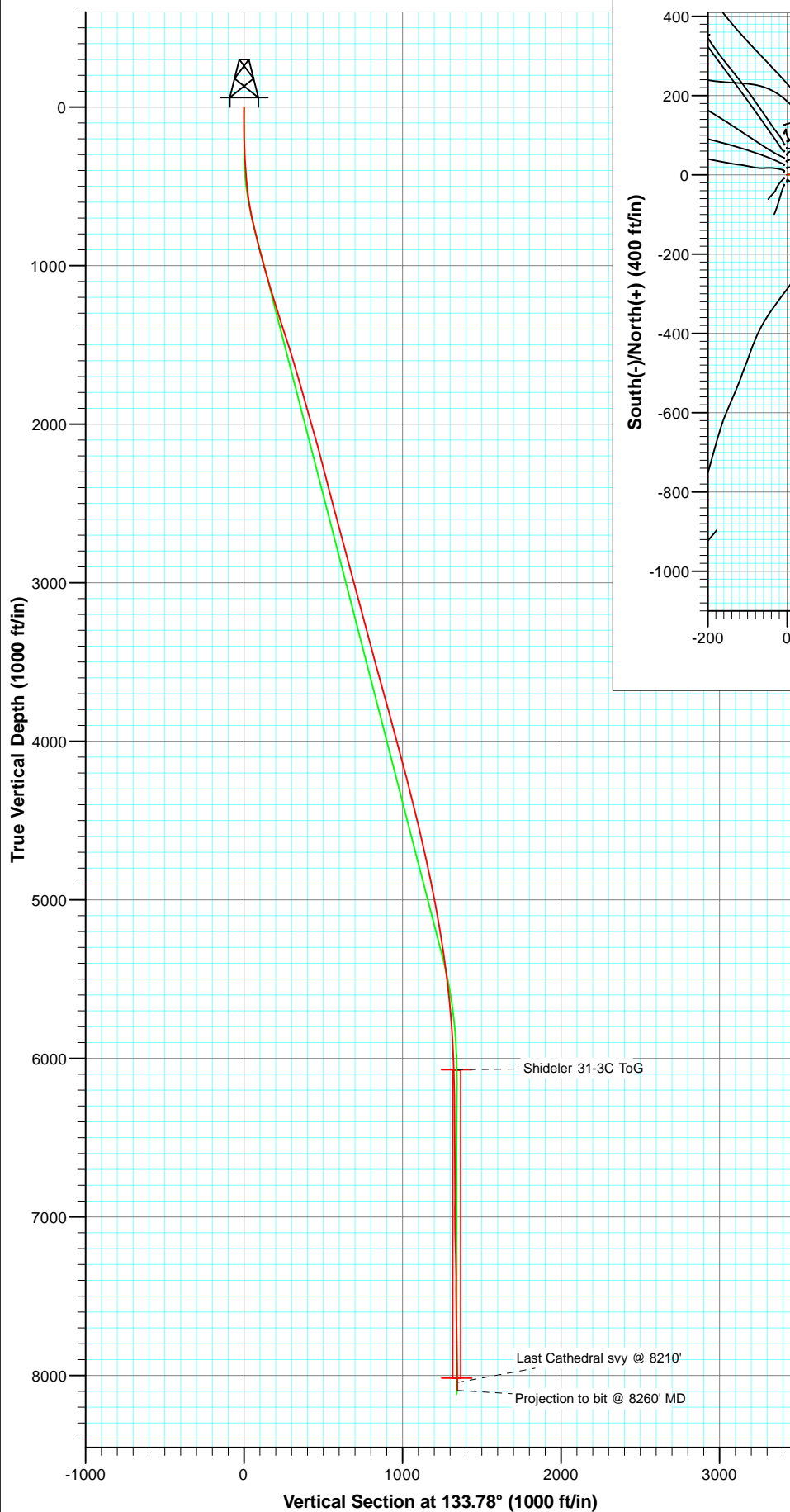




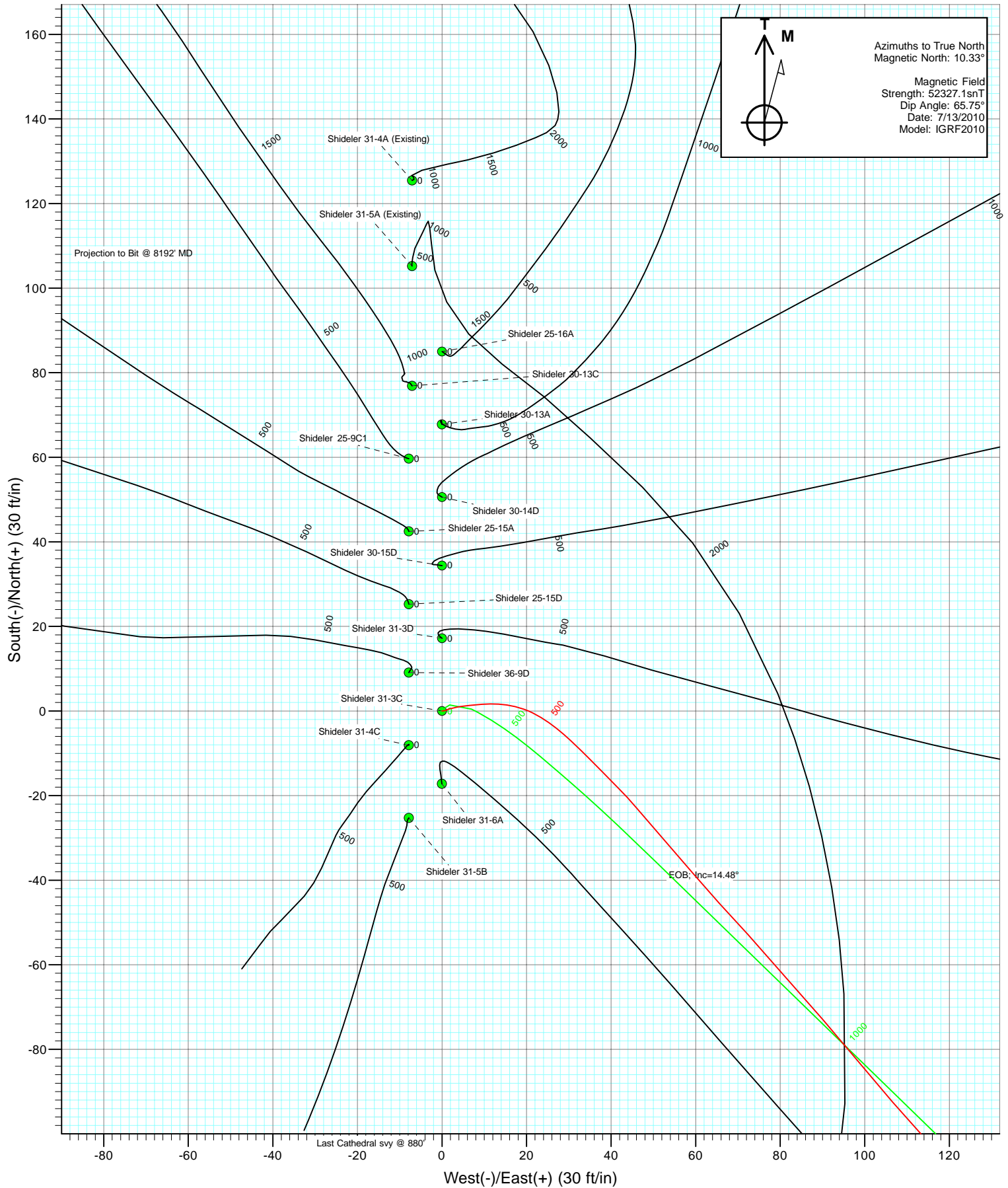
Project: Mamm Creek
 Site: C31E Pad (NENW 31-7S-92W)
 Well: Shideler 31-3C
 Wellbore: Final
 Plan: DD



Azimuths to True North
 Magnetic North: 10.33°

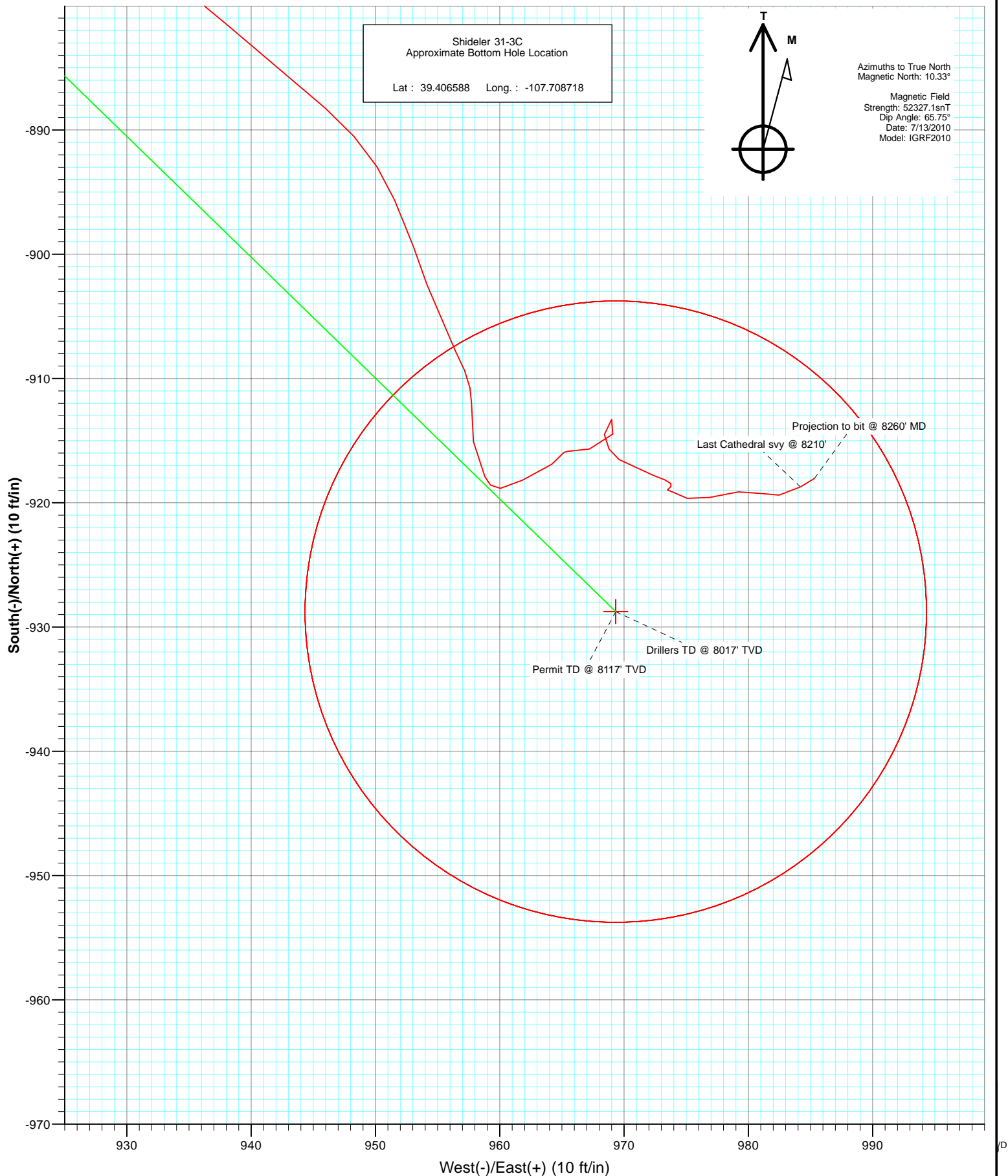
Magnetic Field
 Strength: 52327.1snT
 Dip Angle: 65.75°
 Date: 7/13/2010
 Model: IGRF2010

DD Shideler 31-3C 105144 (SH), 105299 (MH): KR					
KBE @ 6772.0ft (Nabors M15) North American Datum 1983 Well Shideler 31-3C, True North					
Target Shideler 31-3C BHL	Azimuth 133.78	Origin Type Slot	N/S 0.0	E/W 0.0	
Name TVD	+N/-S -928.8	+E/-W 969.3	Latitude 39.406558	Longitude -107.708718	
Approximate BHL	8017.0				





Project: Mamm Creek
Site: C31E Pad (NENW 31-7S-92W)
Well: Shideler 31-3C
Wellbore: Final
Plan: DD



Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 31-3C
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 31-3C	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 31-3C				
Well Position	+N/-S	0.0 ft	Northing:	1,581,511.01 ft	Latitude:	39.409108
	+E/-W	0.0 ft	Easting:	2,375,010.38 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	7/13/2010	10.33	65.75	52,327

Design	DD				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.0	0.0	0.0	133.78	

Survey Program	Date	7/23/2010			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
111.0	8,260.0	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	0.50	83.70	111.0	0.1	0.5	0.3	0.45	0.45		
142.0	0.50	83.00	142.0	0.1	0.8	0.5	0.02	0.00		
172.0	1.10	57.80	172.0	0.3	1.1	0.6	2.27	2.00		
202.0	2.30	77.00	202.0	0.5	2.0	1.0	4.37	4.00		
233.0	3.10	76.60	232.9	0.9	3.4	1.8	2.58	2.58		
264.0	4.10	83.70	263.9	1.2	5.3	3.0	3.53	3.23		
295.0	4.70	86.00	294.8	1.4	7.7	4.6	2.02	1.94		
326.0	5.00	84.20	325.7	1.6	10.3	6.3	1.09	0.97		
357.0	4.70	93.10	356.6	1.7	12.9	8.1	2.61	-0.97		
387.0	4.60	99.60	386.5	1.4	15.3	10.1	1.79	-0.33		
418.0	5.10	104.20	417.4	0.9	17.9	12.3	2.04	1.61		
449.0	4.90	112.20	448.2	0.0	20.4	14.7	2.34	-0.65		

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 31-3C
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 31-3C	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	5.70	122.60	479.1	-1.3	22.9	17.5	4.02	2.58	
511.0	6.10	123.40	509.9	-3.0	25.6	20.6	1.32	1.29	
542.0	7.10	131.60	540.7	-5.2	28.4	24.1	4.43	3.23	
573.0	8.00	133.30	571.5	-8.0	31.4	28.2	2.99	2.90	
603.0	8.60	134.80	601.2	-11.0	34.5	32.5	2.13	2.00	
634.0	9.60	135.60	631.8	-14.4	38.0	37.4	3.25	3.23	
665.0	10.60	135.40	662.3	-18.3	41.8	42.9	3.23	3.23	
696.0	11.70	139.30	692.7	-22.7	45.9	48.8	4.30	3.55	
789.0	13.80	139.20	783.4	-38.3	59.3	69.3	2.26	2.26	
868.0	14.90	136.90	859.9	-52.8	72.3	88.8	1.57	1.39	
972.0	15.00	140.30	960.4	-72.9	90.1	115.5	0.85	0.10	
1,067.0	16.10	139.40	1,051.9	-92.4	106.5	140.8	1.19	1.16	
1,162.0	16.50	137.50	1,143.1	-112.4	124.2	167.4	0.70	0.42	
1,257.0	17.00	137.30	1,234.1	-132.5	142.7	194.7	0.53	0.53	
1,352.0	18.30	132.70	1,324.6	-152.8	163.1	223.5	2.01	1.37	
1,447.0	17.80	130.40	1,414.9	-172.4	185.1	252.9	0.92	-0.53	
1,544.0	17.60	133.70	1,507.4	-192.1	207.0	282.4	1.05	-0.21	
1,639.0	16.80	130.70	1,598.1	-211.0	227.8	310.5	1.26	-0.84	
1,734.0	16.20	132.60	1,689.2	-228.9	248.0	337.4	0.85	-0.63	
1,830.0	15.50	134.60	1,781.6	-247.0	267.0	363.6	0.92	-0.73	
1,925.0	15.80	134.40	1,873.0	-264.9	285.2	389.3	0.32	0.32	
2,019.0	16.00	132.80	1,963.4	-282.7	303.9	415.0	0.51	0.21	
2,115.0	16.40	131.50	2,055.6	-300.7	323.8	441.8	0.56	0.42	
2,210.0	15.30	131.60	2,147.0	-317.9	343.2	467.7	1.16	-1.16	
2,305.0	14.30	133.60	2,238.9	-334.3	361.0	492.0	1.18	-1.05	
2,400.0	14.40	131.40	2,330.9	-350.2	378.4	515.5	0.58	0.11	
2,495.0	14.40	130.40	2,422.9	-365.7	396.3	539.1	0.26	0.00	
2,590.0	14.40	130.20	2,514.9	-380.9	414.3	562.7	0.05	0.00	
2,685.0	15.20	133.60	2,606.8	-397.1	432.3	586.9	1.24	0.84	
2,780.0	15.30	131.20	2,698.4	-414.0	450.8	611.9	0.67	0.11	
2,875.0	15.60	135.90	2,790.0	-431.4	469.1	637.2	1.35	0.32	
2,970.0	15.40	133.50	2,881.5	-449.3	487.1	662.6	0.71	-0.21	
3,064.0	15.00	134.20	2,972.3	-466.3	504.9	687.2	0.47	-0.43	
3,159.0	14.90	132.30	3,064.0	-483.1	522.7	711.7	0.53	-0.11	
3,254.0	14.60	138.40	3,155.9	-500.3	539.7	735.9	1.66	-0.32	
3,349.0	14.80	137.60	3,247.8	-518.2	555.9	759.9	0.30	0.21	
3,444.0	14.30	136.10	3,339.8	-535.6	572.2	783.7	0.66	-0.53	
3,539.0	15.50	135.00	3,431.6	-553.1	589.3	808.1	1.30	1.26	
3,633.0	15.70	135.20	3,522.1	-571.0	607.1	833.4	0.22	0.21	
3,728.0	16.00	134.30	3,613.5	-589.2	625.6	859.4	0.41	0.32	
3,823.0	15.20	132.80	3,705.0	-606.8	644.1	884.9	0.94	-0.84	
3,918.0	15.20	131.30	3,796.7	-623.5	662.6	909.8	0.41	0.00	
4,013.0	14.60	132.90	3,888.5	-639.9	680.7	934.2	0.77	-0.63	
4,108.0	14.90	134.70	3,980.3	-656.6	698.1	958.4	0.58	0.32	
4,204.0	15.30	134.70	4,073.0	-674.2	715.9	983.4	0.42	0.42	
4,299.0	15.20	135.00	4,164.7	-691.9	733.6	1,008.4	0.13	-0.11	
4,394.0	13.90	133.40	4,256.6	-708.5	750.7	1,032.2	1.43	-1.37	
4,489.0	14.00	134.90	4,348.8	-724.5	767.2	1,055.1	0.39	0.11	
4,584.0	14.00	131.70	4,441.0	-740.2	783.9	1,078.1	0.81	0.00	
4,680.0	13.90	133.40	4,534.2	-755.9	800.9	1,101.2	0.44	-0.10	
4,774.0	13.30	134.80	4,625.5	-771.2	816.8	1,123.3	0.73	-0.64	
4,870.0	11.90	135.40	4,719.2	-786.1	831.6	1,144.3	1.46	-1.46	
4,965.0	11.60	131.70	4,812.2	-799.4	845.6	1,163.6	0.85	-0.32	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 31-3C
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 31-3C	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
5,060.0	11.40	132.10	4,905.3	-812.0	859.7	1,182.6	0.23	-0.21	
5,155.0	10.80	127.10	4,998.6	-823.7	873.8	1,200.8	1.19	-0.63	
5,250.0	10.70	129.20	5,091.9	-834.6	887.7	1,218.4	0.43	-0.11	
5,345.0	10.20	134.20	5,185.3	-846.1	900.6	1,235.6	1.09	-0.53	
5,440.0	8.80	136.00	5,279.0	-857.2	911.6	1,251.3	1.51	-1.47	
5,535.0	7.00	135.20	5,373.1	-866.5	920.8	1,264.3	1.90	-1.89	
5,629.0	7.00	129.20	5,466.4	-874.2	929.2	1,275.8	0.78	0.00	
5,725.0	6.70	130.20	5,561.7	-881.5	938.1	1,287.2	0.34	-0.31	
5,818.0	6.10	130.60	5,654.1	-888.2	946.0	1,297.5	0.65	-0.65	
5,913.0	5.40	157.00	5,748.7	-895.6	951.5	1,306.7	2.85	-0.74	
6,007.0	3.50	162.00	5,842.4	-902.4	954.1	1,313.3	2.06	-2.02	
6,102.0	3.50	151.80	5,937.2	-907.7	956.4	1,318.6	0.65	0.00	
6,197.0	2.00	182.00	6,032.1	-912.0	957.7	1,322.5	2.14	-1.58	
6,292.0	1.80	171.70	6,127.1	-915.1	957.9	1,324.7	0.42	-0.21	
6,387.0	1.80	151.90	6,222.0	-917.9	958.8	1,327.3	0.65	0.00	
6,481.0	0.80	58.30	6,316.0	-918.8	960.1	1,328.9	2.14	-1.06	
6,576.0	1.50	75.10	6,411.0	-918.2	961.8	1,329.7	0.81	0.74	
6,671.0	1.80	50.70	6,505.9	-916.9	964.2	1,330.5	0.80	0.32	
6,766.0	0.20	280.30	6,600.9	-915.9	965.2	1,330.6	2.04	-1.68	
6,861.0	0.60	84.30	6,695.9	-915.9	965.5	1,330.8	0.84	0.42	
6,955.0	1.50	83.50	6,789.9	-915.7	967.2	1,331.9	0.96	0.96	
7,050.0	1.50	31.30	6,884.9	-914.5	969.1	1,332.4	1.39	0.00	
7,145.0	0.90	278.00	6,979.9	-913.3	969.0	1,331.5	2.14	-0.63	
7,240.0	1.60	173.30	7,074.8	-914.5	968.4	1,331.9	2.13	0.74	
7,335.0	1.50	123.70	7,169.8	-916.5	969.6	1,334.2	1.37	-0.11	
7,430.0	2.20	109.00	7,264.8	-917.8	972.4	1,337.1	0.88	0.74	
7,524.0	0.50	225.80	7,358.7	-918.7	973.8	1,338.7	2.62	-1.81	
7,619.0	0.00	215.10	7,453.7	-919.0	973.5	1,338.7	0.53	-0.53	
7,714.0	0.60	111.80	7,548.7	-919.1	973.9	1,339.1	0.63	0.63	
7,809.0	0.90	114.00	7,643.7	-919.6	975.1	1,340.3	0.32	0.32	
7,904.0	1.40	71.00	7,738.7	-919.6	976.9	1,341.5	1.01	0.53	
7,999.0	1.50	86.90	7,833.7	-919.1	979.2	1,342.9	0.43	0.11	
8,061.0	1.80	100.30	7,895.7	-919.2	981.0	1,344.3	0.79	0.48	
8,123.0	1.00	85.10	7,957.6	-919.4	982.5	1,345.5	1.41	-1.29	
8,210.0	1.50	58.60	8,044.6	-918.7	984.2	1,346.2	0.86	0.57	
8,260.0	1.50	58.60	8,094.6	-918.0	985.3	1,346.6	0.00	0.00	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 31-3C
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 31-3C	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 31-3C ToG	0.00	0.00	6,072.0	-928.8	969.3	1,580,558.92	2,375,956.82	39.406558	-107.708775
- actual wellpath misses target center by 19.3ft at 6237.4ft MD (6072.5 TVD, -913.3 N, 957.7 E)									
- Point									
Shideler 31-3C BHL	0.00	0.00	8,017.0	-928.8	969.3	1,580,558.92	2,375,956.82	39.406558	-107.708775
- actual wellpath misses target center by 17.3ft at 8182.0ft MD (8016.6 TVD, -919.0 N, 983.6 E)									
- Circle (radius 25.0)									

Design Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)	
8,210.0	8,044.6	-918.7	984.2	Last Cathedral svy @ 8210'
8,260.0	8,094.6	-918.0	985.3	Projection to bit @ 8260' MD

Checked By: _____ Approved By: _____ Date: _____