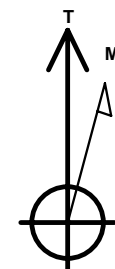
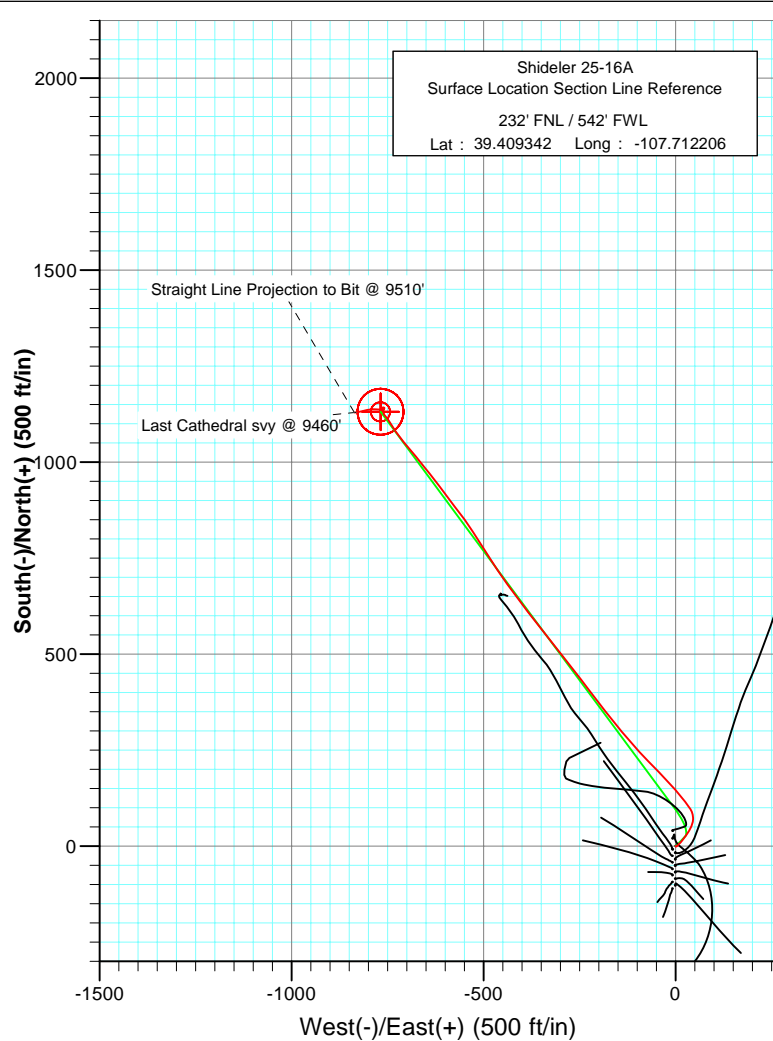
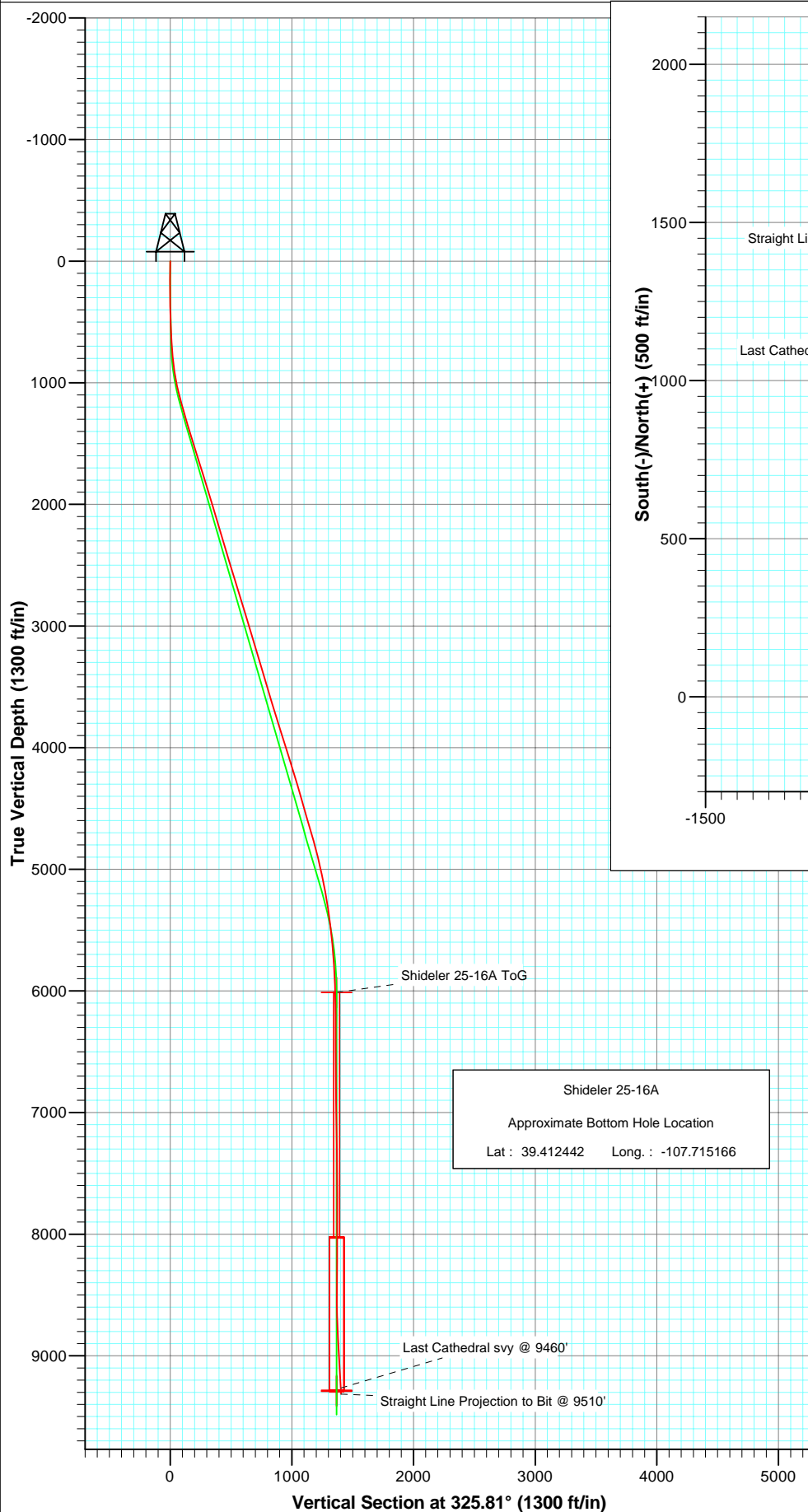




Project: Mamm Creek
Site: C31E Pad (NENW 31-7S-92W)
Well: Shideler 25-16A
Wellbore: Final
Plan: DD



Azimuths to True North
Magnetic North: 10.36°

Magnetic Field
Strength: 52346.6nT
Dip Angle: 65.75°
Date: 5/4/2010
Model: IGRF2010

DESIGN DETAILS: DD

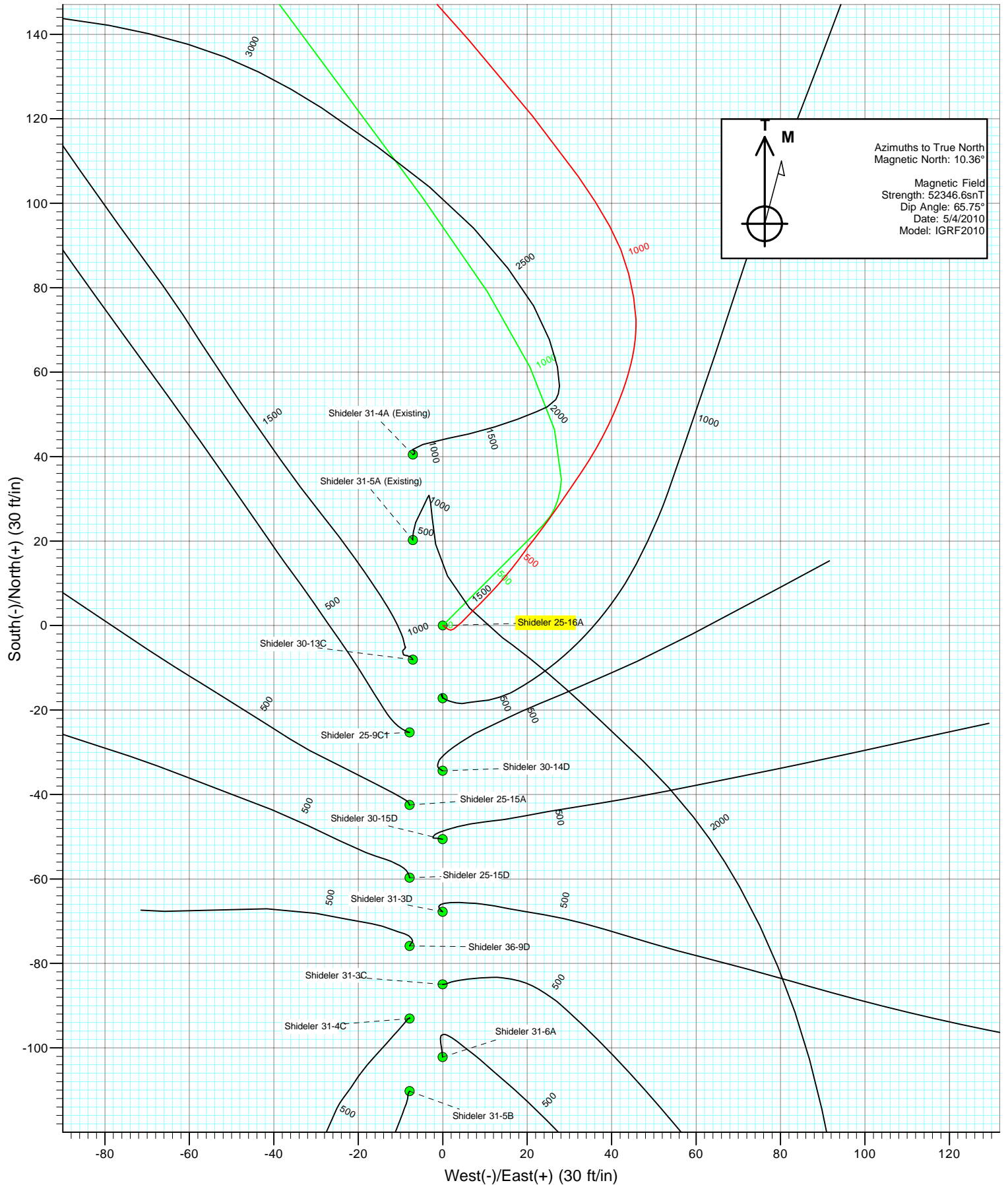
Job# 105154: KR

KBE @ 6772.0ft (Nabors M15)

Target	Azimuth	Origin	Type	N/S	E/W	From	TVD
Shideler 25-16A BHL	325.81	Slot	0.0	0.0	0.0	0.0	0.0

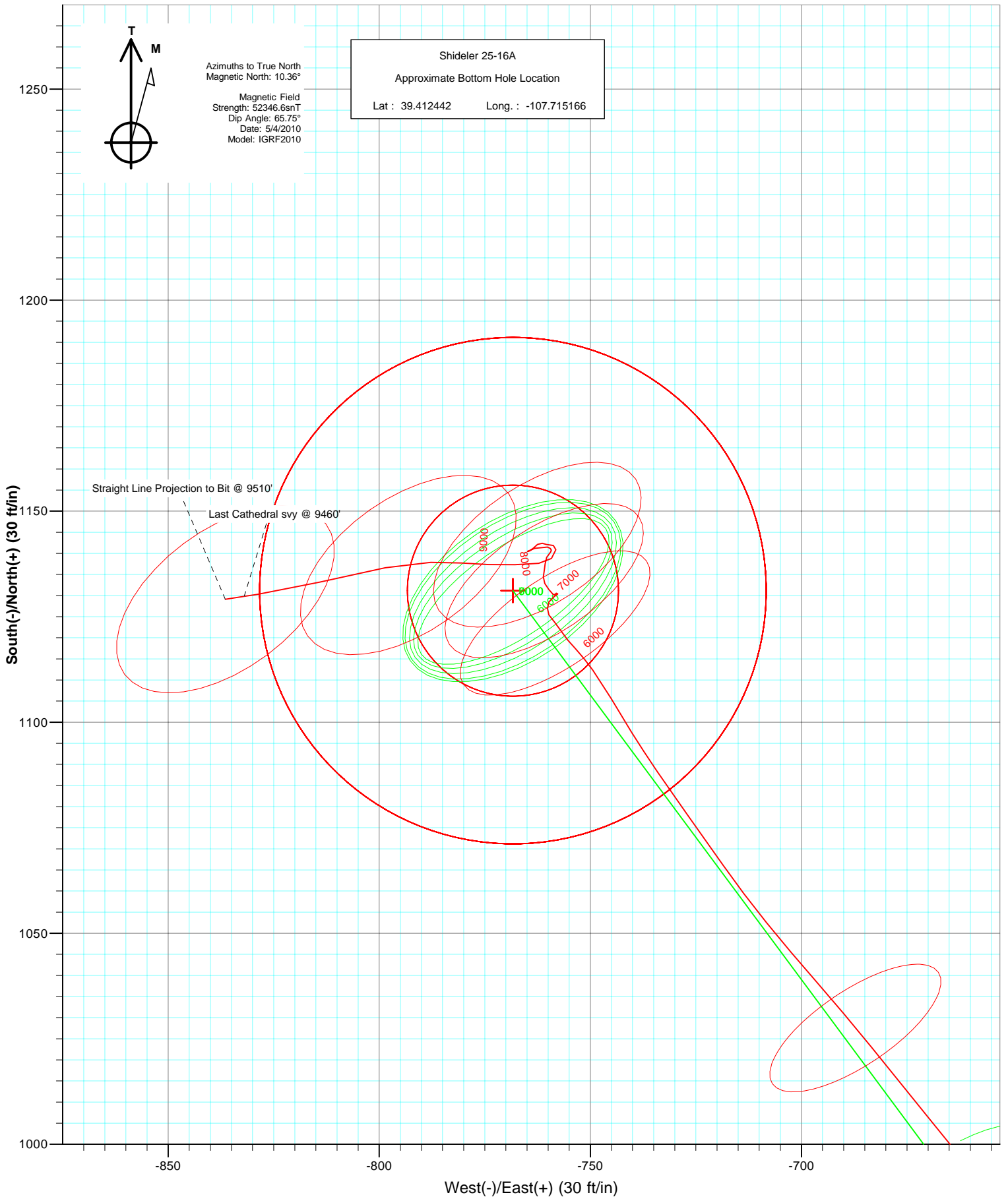


Project: Mamm Creek
Site: C31E Pad (NENW 31-7S-92W)
Well: Shideler 25-16A
Wellbore: Final
Design: DD





Project: Mamm Creek
Site: C31E Pad (NENW 31-7S-92W)
Well: Shideler 25-16A
Wellbore: Final
Plan: DD



Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 25-16A
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 25-16A	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 25-16A					
Well Position	+N/-S	0.0 ft	Northing:	1,581,595.97 ft	Latitude:	39.409342
	+E/-W	0.0 ft	Easting:	2,375,012.45 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	5/4/2010	10.36	65.75	52,347

Design	DD				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(ft)	(ft)	(ft)	(°)	
	0.0	0.0	0.0	325.81	

Survey Program	Date	5/14/2010			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
111.0	9,510.0	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	1.10	124.30	111.0	-0.6	0.9	-1.0	0.99	0.99		
142.0	1.00	120.40	142.0	-0.9	1.4	-1.5	0.40	-0.32		
172.0	1.30	92.70	172.0	-1.1	1.9	-2.0	2.08	1.00		
202.0	1.70	53.60	202.0	-0.8	2.6	-2.1	3.57	1.33		
233.0	2.20	48.50	233.0	-0.1	3.4	-2.0	1.71	1.61		
264.0	2.90	48.80	263.9	0.8	4.5	-1.9	2.26	2.26		
295.0	3.50	40.40	294.9	2.0	5.7	-1.5	2.45	1.94		
326.0	4.30	47.30	325.8	3.5	7.1	-1.1	2.99	2.58		
357.0	5.00	45.10	356.7	5.3	9.0	-0.7	2.33	2.26		
387.0	5.80	42.90	386.6	7.3	10.9	-0.1	2.75	2.67		
418.0	6.30	42.70	417.4	9.7	13.1	0.6	1.61	1.61		
449.0	6.60	39.70	448.2	12.3	15.4	1.5	1.46	0.97		

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 25-16A
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 25-16A	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	7.10	36.30	479.0	15.2	17.7	2.7	2.08	1.61	
511.0	7.20	36.00	509.7	18.3	20.0	3.9	0.34	0.32	
542.0	7.40	39.30	540.5	21.5	22.4	5.2	1.50	0.65	
573.0	7.60	34.90	571.2	24.7	24.8	6.5	1.96	0.65	
603.0	8.30	34.70	600.9	28.1	27.2	8.0	2.34	2.33	
634.0	8.10	35.50	631.6	31.7	29.7	9.5	0.74	-0.65	
665.0	8.30	32.60	662.3	35.4	32.2	11.2	1.48	0.65	
696.0	8.60	33.10	693.0	39.2	34.7	12.9	1.00	0.97	
727.0	9.40	28.90	723.6	43.4	37.2	15.0	3.34	2.58	
758.0	9.30	24.90	754.2	47.8	39.4	17.4	2.12	-0.32	
789.0	9.70	22.30	784.7	52.5	41.5	20.1	1.89	1.29	
819.0	9.80	18.00	814.3	57.3	43.2	23.1	2.45	0.33	
850.0	9.70	13.50	844.9	62.3	44.7	26.5	2.48	-0.32	
881.0	9.40	6.50	875.4	67.4	45.6	30.2	3.87	-0.97	
912.0	9.50	358.10	906.0	72.5	45.8	34.2	4.46	0.32	
943.0	10.00	350.60	936.6	77.7	45.2	38.9	4.40	1.61	
974.0	11.20	345.80	967.0	83.3	44.1	44.1	4.80	3.87	
1,005.0	11.50	337.90	997.4	89.0	42.2	50.0	5.10	0.97	
1,035.0	12.00	331.70	1,026.8	94.6	39.5	56.0	4.52	1.67	
1,066.0	13.10	327.70	1,057.1	100.4	36.1	62.7	4.52	3.55	
1,097.0	14.20	324.60	1,087.2	106.4	32.1	70.0	4.26	3.55	
1,167.0	15.40	321.10	1,154.9	120.7	21.3	87.9	2.14	1.71	
1,254.0	16.10	318.90	1,238.6	138.8	6.1	111.4	1.06	0.80	
1,349.0	16.70	317.80	1,329.7	158.8	-11.8	138.0	0.71	0.63	
1,444.0	17.00	316.70	1,420.7	179.0	-30.5	165.2	0.46	0.32	
1,538.0	17.60	316.10	1,510.4	199.3	-49.7	192.8	0.67	0.64	
1,633.0	18.10	315.40	1,600.8	220.1	-70.1	221.4	0.57	0.53	
1,729.0	17.40	318.40	1,692.3	241.5	-90.1	250.3	1.20	-0.73	
1,824.0	17.60	317.00	1,782.9	262.6	-109.3	278.6	0.49	0.21	
1,919.0	16.80	320.30	1,873.6	283.7	-127.8	306.5	1.33	-0.84	
2,014.0	16.90	320.40	1,964.5	304.9	-145.4	333.9	0.11	0.11	
2,109.0	16.90	320.30	2,055.4	326.1	-163.0	361.4	0.03	0.00	
2,205.0	16.10	322.90	2,147.5	347.5	-180.0	388.6	1.13	-0.83	
2,299.0	16.70	322.00	2,237.7	368.5	-196.2	415.1	0.69	0.64	
2,395.0	17.30	322.90	2,329.5	390.8	-213.3	443.1	0.68	0.62	
2,490.0	16.50	322.80	2,420.4	412.8	-229.9	470.7	0.84	-0.84	
2,585.0	16.80	322.70	2,511.4	434.4	-246.4	497.8	0.32	0.32	
2,680.0	17.00	321.90	2,602.3	456.3	-263.3	525.4	0.32	0.21	
2,776.0	17.50	321.80	2,694.0	478.7	-280.9	553.8	0.52	0.52	
2,871.0	16.90	321.20	2,784.7	500.7	-298.4	581.8	0.66	-0.63	
2,966.0	17.30	320.90	2,875.5	522.4	-315.9	609.7	0.43	0.42	
3,061.0	16.50	321.00	2,966.4	543.8	-333.3	637.2	0.84	-0.84	
3,157.0	16.80	323.40	3,058.4	565.6	-350.2	664.6	0.78	0.31	
3,252.0	16.90	321.90	3,149.3	587.5	-366.9	692.1	0.47	0.11	
3,347.0	16.90	321.60	3,240.2	609.1	-384.0	719.7	0.09	0.00	
3,442.0	16.40	324.40	3,331.2	630.9	-400.4	746.8	0.99	-0.53	
3,537.0	16.30	323.30	3,422.4	652.5	-416.1	773.6	0.34	-0.11	
3,633.0	16.70	325.80	3,514.4	674.7	-432.0	800.8	0.85	0.42	
3,728.0	16.80	323.40	3,605.4	697.0	-447.8	828.2	0.74	0.11	
3,823.0	16.80	326.80	3,696.3	719.5	-463.5	855.6	1.03	0.00	
3,918.0	17.30	327.20	3,787.2	742.9	-478.7	883.5	0.54	0.53	
4,013.0	17.50	327.40	3,877.8	766.8	-494.0	911.9	0.22	0.21	
4,108.0	17.40	326.30	3,968.5	790.6	-509.6	940.4	0.36	-0.11	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 25-16A
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 25-16A	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
4,203.0	17.80	326.90	4,059.0	814.6	-525.4	969.1	0.46	0.42	
4,299.0	17.50	326.90	4,150.5	839.0	-541.3	998.2	0.31	-0.31	
4,394.0	16.50	321.70	4,241.3	861.5	-557.5	1,025.9	1.91	-1.05	
4,488.0	16.20	322.50	4,331.5	882.4	-573.7	1,052.3	0.40	-0.32	
4,584.0	16.40	323.80	4,423.7	904.0	-589.9	1,079.2	0.43	0.21	
4,679.0	15.70	322.30	4,515.0	925.0	-605.7	1,105.5	0.86	-0.74	
4,774.0	16.10	323.70	4,606.3	945.8	-621.3	1,131.5	0.58	0.42	
4,869.0	16.20	321.90	4,697.6	966.8	-637.3	1,157.8	0.54	0.11	
4,965.0	16.00	319.40	4,789.8	987.4	-654.2	1,184.4	0.75	-0.21	
5,059.0	13.90	321.10	4,880.6	1,006.0	-669.7	1,208.5	2.28	-2.23	
5,154.0	12.80	321.10	4,973.1	1,023.1	-683.5	1,230.3	1.16	-1.16	
5,249.0	11.70	318.70	5,065.9	1,038.5	-696.4	1,250.4	1.28	-1.16	
5,344.0	10.70	321.00	5,159.1	1,052.6	-708.3	1,268.7	1.15	-1.05	
5,440.0	9.70	325.10	5,253.6	1,066.2	-718.6	1,285.7	1.29	-1.04	
5,534.0	8.00	324.40	5,346.5	1,078.0	-726.9	1,300.2	1.81	-1.81	
5,629.0	7.30	325.70	5,440.6	1,088.3	-734.2	1,312.8	0.76	-0.74	
5,725.0	6.00	328.10	5,536.0	1,097.6	-740.3	1,323.9	1.38	-1.35	
5,820.0	5.30	329.80	5,630.5	1,105.6	-745.1	1,333.3	0.76	-0.74	
5,914.0	4.50	324.10	5,724.2	1,112.4	-749.4	1,341.3	1.00	-0.85	
6,010.0	3.40	316.30	5,819.9	1,117.5	-753.6	1,347.8	1.27	-1.15	
6,105.0	2.40	327.60	5,914.8	1,121.2	-756.6	1,352.6	1.21	-1.05	
6,200.0	1.50	317.00	6,009.8	1,123.8	-758.5	1,355.8	1.02	-0.95	
6,295.0	1.00	329.70	6,104.7	1,125.4	-759.8	1,357.9	0.60	-0.53	
6,390.0	1.00	3.40	6,199.7	1,127.0	-760.2	1,359.4	0.61	0.00	
6,485.0	1.00	24.70	6,294.7	1,128.5	-759.8	1,360.5	0.39	0.00	
6,581.0	1.10	61.20	6,390.7	1,129.7	-758.6	1,360.8	0.69	0.10	
6,676.0	0.30	27.20	6,485.7	1,130.4	-757.7	1,360.8	0.91	-0.84	
6,771.0	0.60	262.20	6,580.7	1,130.6	-758.1	1,361.2	0.85	0.32	
6,866.0	0.40	162.90	6,675.7	1,130.2	-758.5	1,361.1	0.81	-0.21	
6,961.0	0.70	313.50	6,770.7	1,130.3	-758.8	1,361.3	1.12	0.32	
7,056.0	1.20	322.00	6,865.7	1,131.4	-759.8	1,362.9	0.55	0.53	
7,151.0	0.90	332.00	6,960.6	1,132.9	-760.8	1,364.6	0.37	-0.32	
7,246.0	1.10	1.70	7,055.6	1,134.5	-761.1	1,366.1	0.58	0.21	
7,341.0	0.70	16.70	7,150.6	1,135.9	-760.9	1,367.2	0.49	-0.42	
7,436.0	1.20	3.50	7,245.6	1,137.5	-760.7	1,368.4	0.57	0.53	
7,531.0	0.80	27.40	7,340.6	1,139.1	-760.3	1,369.5	0.60	-0.42	
7,626.0	1.10	41.00	7,435.6	1,140.3	-759.4	1,370.0	0.39	0.32	
7,722.0	1.70	289.30	7,531.6	1,141.5	-760.2	1,371.4	2.44	0.62	
7,817.0	2.20	245.10	7,626.5	1,141.2	-763.2	1,372.8	1.62	0.53	
7,912.0	0.10	294.10	7,721.5	1,140.5	-764.9	1,373.2	2.25	-2.21	
8,007.0	0.70	81.90	7,816.5	1,140.6	-764.4	1,373.0	0.83	0.63	
8,102.0	0.80	28.20	7,911.5	1,141.2	-763.5	1,373.1	0.72	0.11	
8,197.0	0.90	66.30	8,006.5	1,142.1	-762.5	1,373.2	0.59	0.11	
8,293.0	0.50	95.60	8,102.5	1,142.4	-761.4	1,372.8	0.55	-0.42	
8,386.0	0.70	112.10	8,195.5	1,142.1	-760.5	1,372.1	0.28	0.22	
8,482.0	1.40	91.30	8,291.4	1,141.9	-758.8	1,370.9	0.82	0.73	
8,577.0	1.40	210.00	8,386.4	1,140.9	-758.2	1,369.7	2.54	0.00	
8,672.0	1.40	202.80	8,481.4	1,138.8	-759.2	1,368.6	0.19	0.00	
8,767.0	3.10	268.70	8,576.3	1,137.7	-762.2	1,369.4	2.98	1.79	
8,861.0	3.80	265.20	8,670.2	1,137.3	-767.9	1,372.3	0.78	0.74	
8,956.0	3.80	275.40	8,765.0	1,137.4	-774.1	1,375.8	0.71	0.00	
9,050.0	4.00	270.70	8,858.7	1,137.7	-780.5	1,379.7	0.40	0.21	
9,145.0	4.80	271.70	8,953.5	1,137.9	-787.8	1,383.9	0.85	0.84	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 25-16A
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 25-16A	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
9,240.0	8.40	258.70	9,047.8	1,136.6	-798.6	1,388.9	4.08	3.79	
9,335.0	11.00	256.80	9,141.4	1,133.2	-814.2	1,394.9	2.76	2.74	
9,431.0	7.00	262.00	9,236.2	1,130.3	-828.9	1,400.8	4.25	-4.17	
9,460.0	5.20	261.20	9,265.1	1,129.8	-832.0	1,402.1	6.21	-6.21	
9,510.0	5.20	261.20	9,314.9	1,129.1	-836.5	1,404.0	0.00	0.00	

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
Shideler 25-16A ToG - actual wellpath misses target center by 12.2ft at 6203.5ft MD (6013.3 TVD, 1123.9 N, -758.6 E) - Circle (radius 25.0)	0.00	0.00	6,013.0	1,131.2	-768.3	1,582,745.51	2,374,271.88	39.412447	-107.714925
Shideler 25-16A BHL - actual wellpath misses target center by 66.1ft at 9460.0ft MD (9265.1 TVD, 1129.8 N, -832.0 E) - Circle (radius 60.0)	0.00	0.00	9,283.0	1,131.2	-768.3	1,582,745.51	2,374,271.88	39.412447	-107.714925
Shideler 25-16A tgt - actual wellpath misses target center by 69.1ft at 9460.0ft MD (9265.1 TVD, 1129.8 N, -832.0 E) - Circle (radius 60.0)	0.00	0.00	9,292.0	1,131.2	-768.3	1,582,745.51	2,374,271.88	39.412447	-107.714925

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
9,460.0	9,265.1	1,129.8	-832.0	Last Cathedral svy @ 9460'
9,510.0	9,314.9	1,129.1	-836.5	Straight Line Projection to Bit @ 9510'

Checked By: _____ Approved By: _____ Date: _____