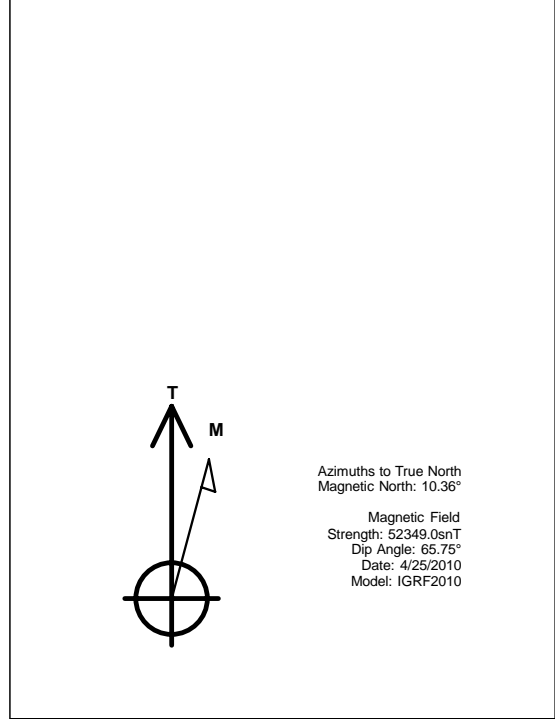
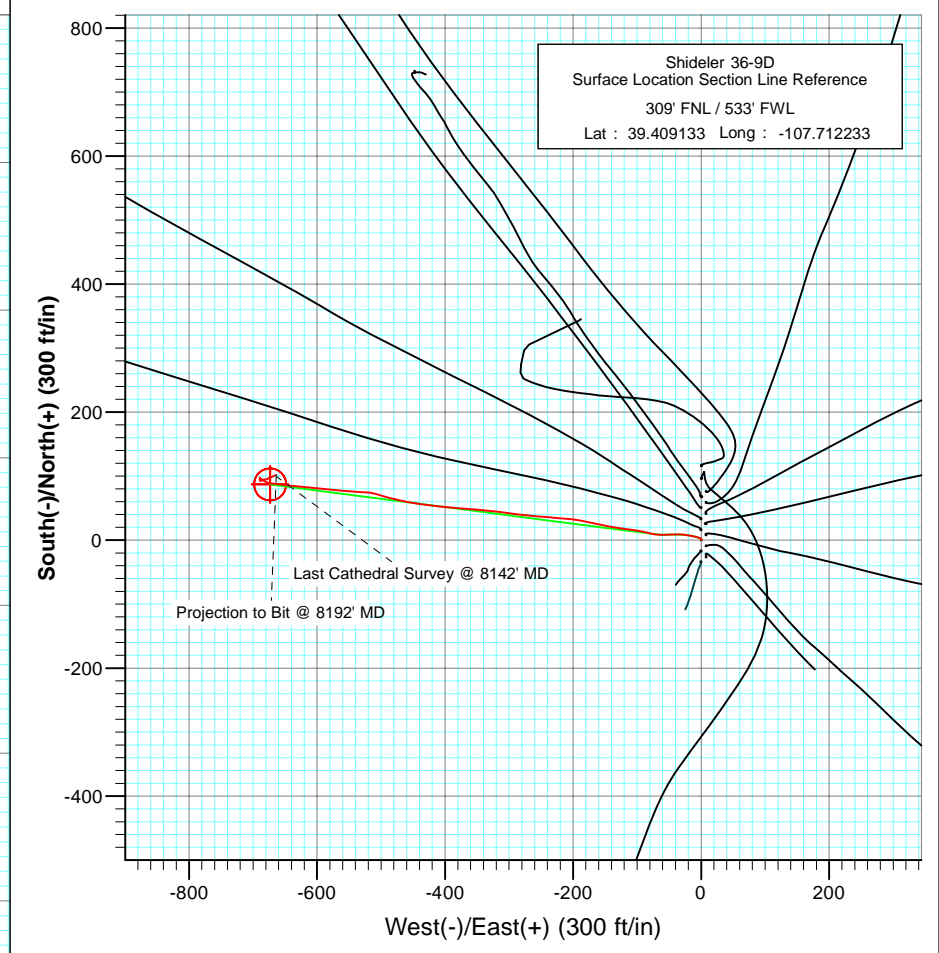
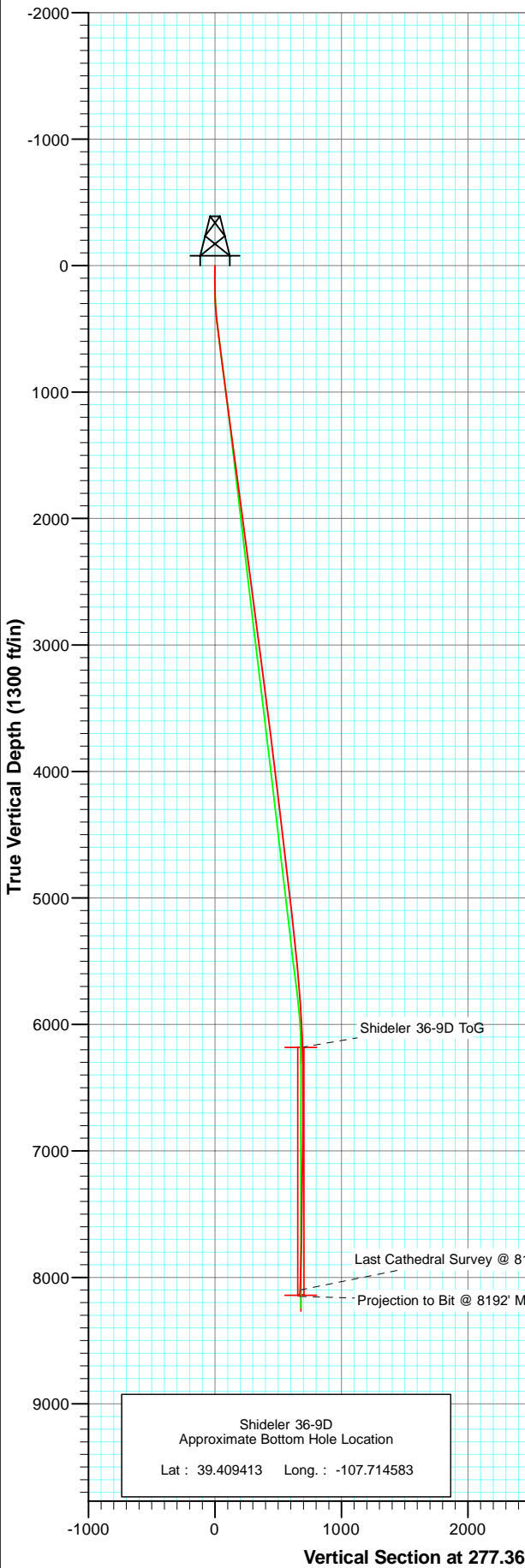




Project: Mamm Creek
 Site: C31E Pad (NENW 31-7S-92W)
 Well: Shideler 36-9D
 Wellbore: Final
 Plan: DD

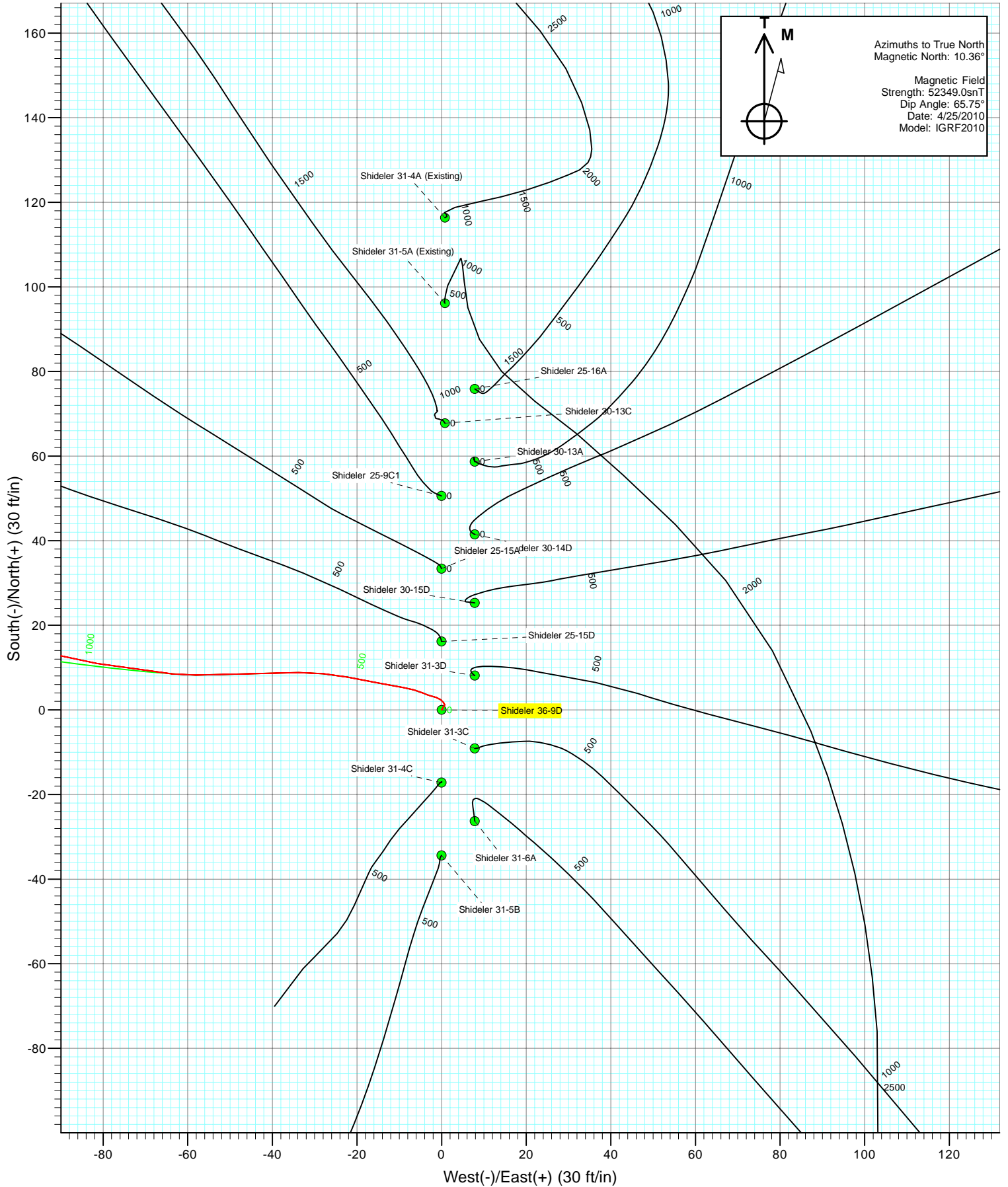


DESIGN DETAILS: DD
 Job# 105145 (SH) 105290 (MH): KR
 KBE @ 6772.0ft (Nabors M15)

Target	Azimuth	Origin Type	N/S	E/W
Shideler 36-9D BHL	277.36	Slot	0.0	0.0

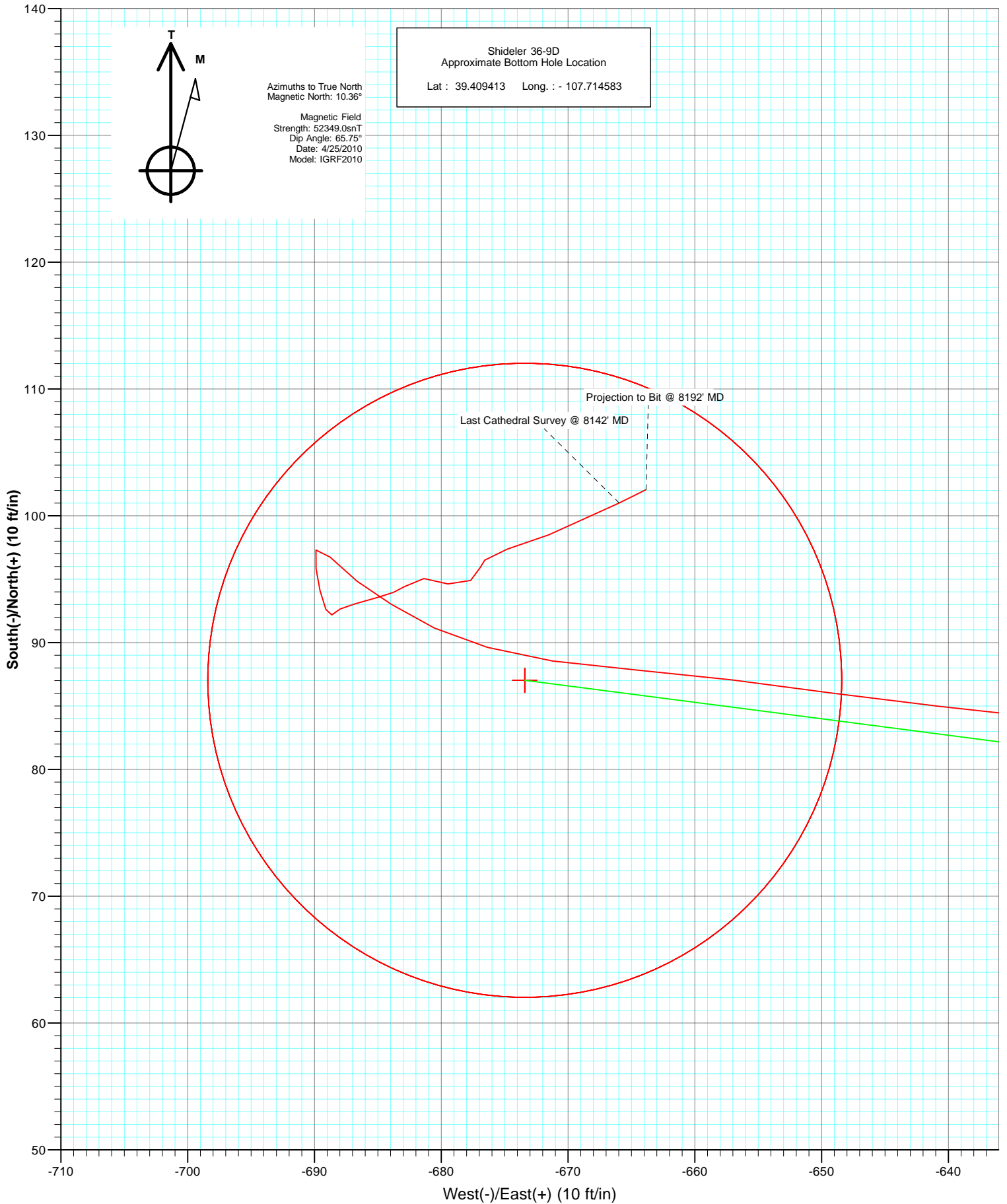


Project: Mamm Creek
Site: C31E Pad (NENW 31-7S-92W)
Well: Shideler 36-9D
Wellbore: Final
Design: DD





Project: Mamm Creek
Site: C31E Pad (NENW 31E S92W) 36-9D/Fi
Well: Shideler 36-9D
Wellbore: Final
Plan: DD



Cathedral Energy Services

Survey Report

Company: EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference: Well Shideler 36-9D
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 36-9D	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 36-9D				
Well Position	+N/-S	0.0 ft	Northing:	1,581,520.30 ft
	+E/-W	0.0 ft	Easting:	2,375,002.76 ft
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft
			Latitude:	39.409133
			Longitude:	-107.712233
			Ground Level:	6,750.0 ft

Wellbore Final					
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	4/25/2010	10.36	65.75	52,349

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	277.36

Survey Program		Date 7/16/2010
From (ft)	To (ft)	Survey (Wellbore)
111.0	8,192.0	Survey #1 (Final)
		Tool Name MWD
		Description Geolink MWD

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	0.80	31.50	111.0	0.7	0.4	-0.3	0.72	0.72	
142.0	0.60	54.40	142.0	0.9	0.6	-0.5	1.10	-0.65	
172.0	1.00	342.90	172.0	1.3	0.7	-0.5	3.30	1.33	
202.0	1.40	321.20	202.0	1.8	0.4	-0.2	2.00	1.33	
233.0	1.80	308.20	233.0	2.4	-0.2	0.5	1.73	1.29	
264.0	2.40	287.40	264.0	2.9	-1.2	1.6	3.10	1.94	
295.0	3.00	285.80	294.9	3.3	-2.6	3.0	1.95	1.94	
326.0	3.90	293.50	325.9	4.0	-4.4	4.8	3.26	2.90	
357.0	4.60	285.30	356.8	4.7	-6.5	7.1	2.98	2.26	
387.0	5.10	281.10	386.7	5.3	-9.0	9.6	2.04	1.67	
418.0	5.70	279.50	417.5	5.8	-11.9	12.5	2.00	1.94	
449.0	6.20	280.90	448.4	6.4	-15.0	15.7	1.68	1.61	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 36-9D
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 36-9D	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
511.0	7.30	280.60	509.9	7.7	-22.2	23.0	1.78	1.77	
603.0	7.30	270.10	601.2	8.8	-33.8	34.6	1.45	0.00	
696.0	7.70	267.10	693.4	8.5	-45.9	46.6	0.60	0.43	
789.0	7.30	270.20	785.6	8.2	-58.1	58.6	0.61	-0.43	
832.0	7.60	275.40	828.2	8.5	-63.6	64.2	1.72	0.70	
973.0	7.10	280.60	968.1	11.0	-81.5	82.2	0.59	-0.35	
1,068.0	6.90	283.20	1,062.4	13.4	-92.8	93.7	0.39	-0.21	
1,163.0	7.70	278.10	1,156.6	15.6	-104.6	105.8	1.08	0.84	
1,258.0	7.90	277.30	1,250.7	17.3	-117.4	118.7	0.24	0.21	
1,353.0	7.60	279.80	1,344.9	19.2	-130.1	131.5	0.47	-0.32	
1,449.0	7.80	279.90	1,440.0	21.4	-142.8	144.3	0.21	0.21	
1,544.0	7.50	281.80	1,534.1	23.8	-155.2	157.0	0.41	-0.32	
1,639.0	7.60	280.40	1,628.3	26.2	-167.4	169.4	0.22	0.11	
1,734.0	7.10	283.50	1,722.5	28.7	-179.3	181.5	0.67	-0.53	
1,829.0	7.50	281.20	1,816.8	31.2	-191.1	193.5	0.52	0.42	
1,925.0	8.00	272.20	1,911.9	32.7	-203.9	206.4	1.37	0.52	
2,020.0	7.40	275.80	2,006.0	33.6	-216.6	219.1	0.81	-0.63	
2,115.0	7.20	276.80	2,100.3	34.9	-228.6	231.2	0.25	-0.21	
2,210.0	7.70	272.80	2,194.5	35.9	-240.9	243.5	0.76	0.53	
2,305.0	7.60	275.40	2,288.6	36.8	-253.5	256.1	0.38	-0.11	
2,400.0	7.40	275.00	2,382.8	38.0	-265.9	268.5	0.22	-0.21	
2,496.0	6.90	276.80	2,478.1	39.2	-277.7	280.5	0.57	-0.52	
2,591.0	7.80	276.50	2,572.3	40.6	-289.8	292.6	0.95	0.95	
2,686.0	7.50	277.50	2,666.4	42.1	-302.4	305.3	0.35	-0.32	
2,781.0	7.30	277.60	2,760.6	43.7	-314.5	317.5	0.21	-0.21	
2,876.0	7.60	275.80	2,854.8	45.2	-326.7	329.8	0.40	0.32	
2,971.0	6.90	276.60	2,949.1	46.5	-338.6	341.8	0.74	-0.74	
3,065.0	7.60	274.50	3,042.3	47.6	-350.4	353.7	0.80	0.74	
3,161.0	7.60	275.40	3,137.5	48.7	-363.1	366.3	0.12	0.00	
3,256.0	7.40	273.20	3,231.7	49.6	-375.5	378.7	0.37	-0.21	
3,351.0	6.90	274.70	3,325.9	50.4	-387.3	390.5	0.56	-0.53	
3,446.0	7.40	275.00	3,420.2	51.4	-399.0	402.3	0.53	0.53	
3,541.0	7.50	276.40	3,514.4	52.7	-411.3	414.6	0.22	0.11	
3,636.0	7.30	277.40	3,608.6	54.1	-423.4	426.9	0.25	-0.21	
3,730.0	7.10	279.00	3,701.9	55.8	-435.1	438.7	0.30	-0.21	
3,825.0	7.10	278.30	3,796.1	57.6	-446.7	450.4	0.09	0.00	
3,920.0	6.80	280.40	3,890.4	59.4	-458.0	461.9	0.41	-0.32	
4,015.0	7.10	282.90	3,984.7	61.8	-469.3	473.3	0.45	0.32	
4,110.0	6.90	282.60	4,079.0	64.3	-480.6	484.9	0.21	-0.21	
4,206.0	6.60	285.40	4,174.4	67.0	-491.5	496.1	0.46	-0.31	
4,301.0	6.20	290.60	4,268.8	70.3	-501.6	506.5	0.74	-0.42	
4,396.0	7.10	278.10	4,363.1	72.9	-512.2	517.3	1.79	0.95	
4,491.0	6.80	277.80	4,457.4	74.5	-523.6	528.8	0.32	-0.32	
4,586.0	6.40	270.00	4,551.8	75.3	-534.5	539.7	1.03	-0.42	
4,682.0	7.20	274.40	4,647.1	75.7	-545.8	551.0	0.99	0.83	
4,776.0	6.90	276.40	4,740.4	76.8	-557.3	562.6	0.41	-0.32	
4,872.0	6.80	275.50	4,835.7	78.0	-568.7	574.0	0.15	-0.10	
4,966.0	6.70	274.70	4,929.1	79.0	-579.7	585.0	0.15	-0.11	
5,062.0	6.00	277.50	5,024.5	80.1	-590.3	595.7	0.80	-0.73	
5,157.0	6.60	274.30	5,118.9	81.2	-600.6	606.1	0.73	0.63	
5,252.0	6.60	274.40	5,213.3	82.0	-611.5	617.0	0.01	0.00	
5,347.0	5.90	276.40	5,307.7	82.9	-621.8	627.3	0.77	-0.74	
5,442.0	5.80	275.70	5,402.2	84.0	-631.4	637.0	0.13	-0.11	

Cathedral Energy Services

Survey Report

Company: EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference: Well Shideler 36-9D
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 36-9D	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
5,537.0	5.50	276.80	5,496.8	85.0	-640.7	646.3	0.34	-0.32	
5,631.0	4.80	277.30	5,590.4	86.0	-649.1	654.8	0.75	-0.74	
5,726.0	4.90	277.70	5,685.1	87.1	-657.1	662.8	0.11	0.11	
5,821.0	4.40	273.90	5,779.7	87.9	-664.7	670.5	0.62	-0.53	
5,916.0	3.50	278.80	5,874.5	88.6	-671.2	677.0	1.01	-0.95	
6,010.0	2.90	285.70	5,968.4	89.6	-676.4	682.3	0.76	-0.64	
6,105.0	2.50	294.80	6,063.3	91.2	-680.5	686.6	0.62	-0.42	
6,200.0	2.20	303.90	6,158.2	93.0	-683.9	690.2	0.50	-0.32	
6,295.0	1.70	304.20	6,253.1	94.8	-686.6	693.1	0.53	-0.53	
6,390.0	1.80	318.40	6,348.1	96.8	-688.8	695.5	0.47	0.11	
6,485.0	0.70	191.10	6,443.1	97.3	-689.9	696.7	2.41	-1.16	
6,580.0	1.10	172.30	6,538.1	95.8	-689.9	696.5	0.52	0.42	
6,675.0	1.00	166.90	6,633.0	94.1	-689.6	695.9	0.15	-0.11	
6,770.0	0.90	158.10	6,728.0	92.6	-689.1	695.3	0.19	-0.11	
6,865.0	0.40	35.80	6,823.0	92.2	-688.6	694.8	1.23	-0.53	
6,960.0	0.60	67.10	6,918.0	92.7	-688.0	694.2	0.35	0.21	
7,056.0	0.90	73.60	7,014.0	93.1	-686.8	693.0	0.32	0.31	
7,151.0	1.30	74.60	7,109.0	93.6	-685.0	691.4	0.42	0.42	
7,246.0	0.30	61.90	7,204.0	94.0	-683.8	690.2	1.06	-1.05	
7,340.0	0.90	62.70	7,298.0	94.4	-682.9	689.4	0.64	0.64	
7,436.0	1.10	71.40	7,394.0	95.1	-681.4	687.9	0.26	0.21	
7,531.0	1.50	124.90	7,488.9	94.6	-679.5	686.0	1.29	0.42	
7,626.0	1.50	38.30	7,583.9	94.9	-677.7	684.3	2.17	0.00	
7,719.0	0.10	5.60	7,676.9	95.9	-676.9	683.6	1.52	-1.51	
7,815.0	0.70	35.40	7,772.9	96.5	-676.6	683.4	0.64	0.62	
7,910.0	1.80	74.60	7,867.9	97.4	-674.8	681.7	1.40	1.16	
8,005.0	2.40	68.20	7,962.8	98.5	-671.5	678.6	0.68	0.63	
8,142.0	2.70	63.50	8,099.7	101.0	-666.0	673.4	0.27	0.22	
8,192.0	2.70	63.50	8,149.6	102.1	-663.8	671.5	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
Shideler 36-9D ToG - hit/miss target - Shape	0.00	0.00	6,182.0	87.0	-673.4	1,581,623.71	2,374,331.67	39.409372	-107.714617
- survey misses target center by 13.0ft at 6223.4ft MD (6181.6 TVD, 93.5 N, -684.7 E)									
- Point									
SShideler 36-9D BHL	0.00	0.00	8,142.0	87.0	-673.4	1,581,623.71	2,374,331.67	39.409372	-107.714617
- survey misses target center by 17.5ft at 8183.7ft MD (8141.3 TVD, 101.9 N, -664.2 E)									
- Circle (radius 25.0)									

Survey Annotations				
Measured Depth (ft)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Comment
8,142.0	8,099.7	101.0	-666.0	Last Cathedral Survey @ 8142' MD
8,192.0	8,149.6	102.1	-663.8	Projection to Bit @ 8192' MD

Checked By: _____ Approved By: _____ Date: _____