

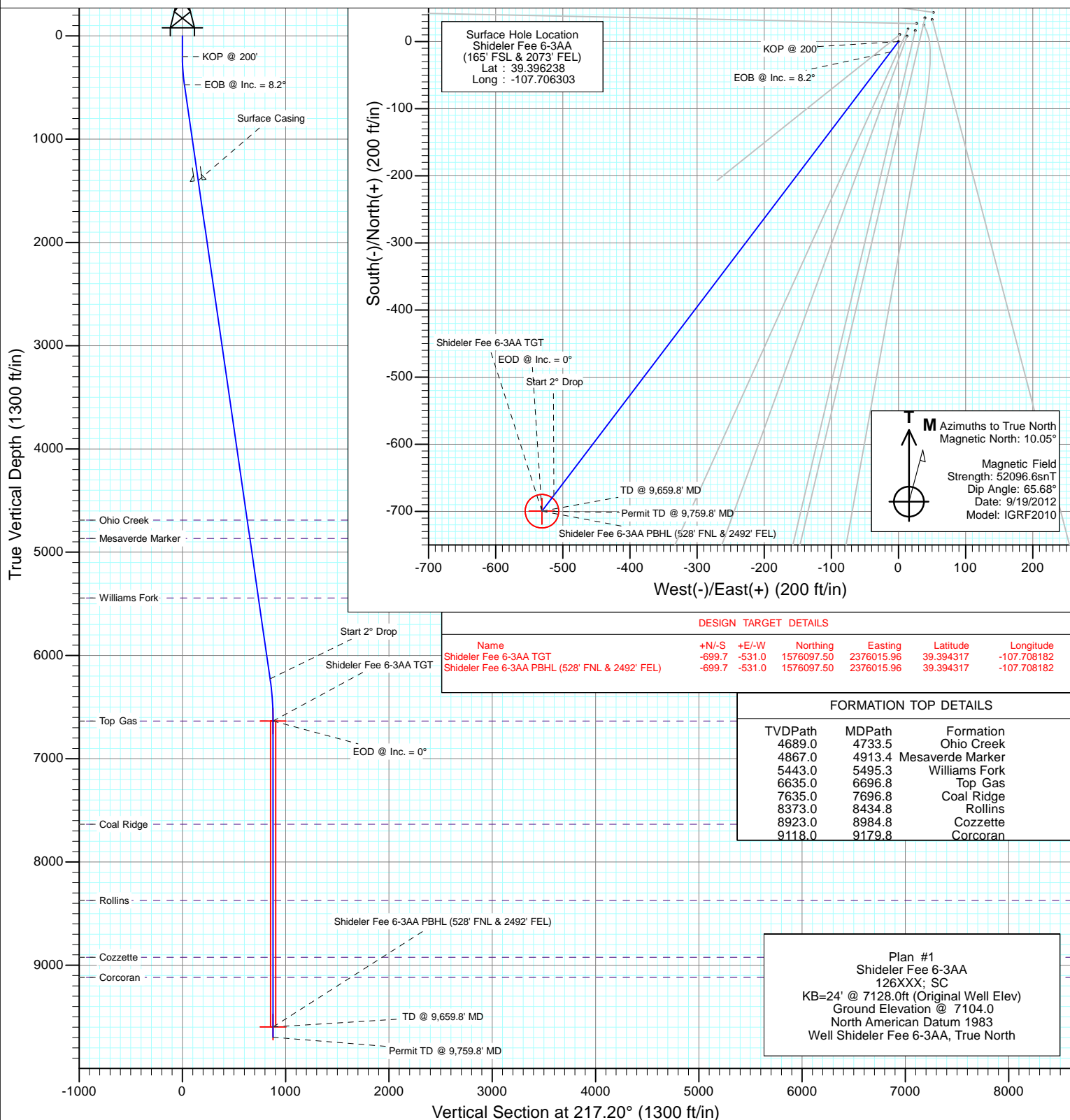


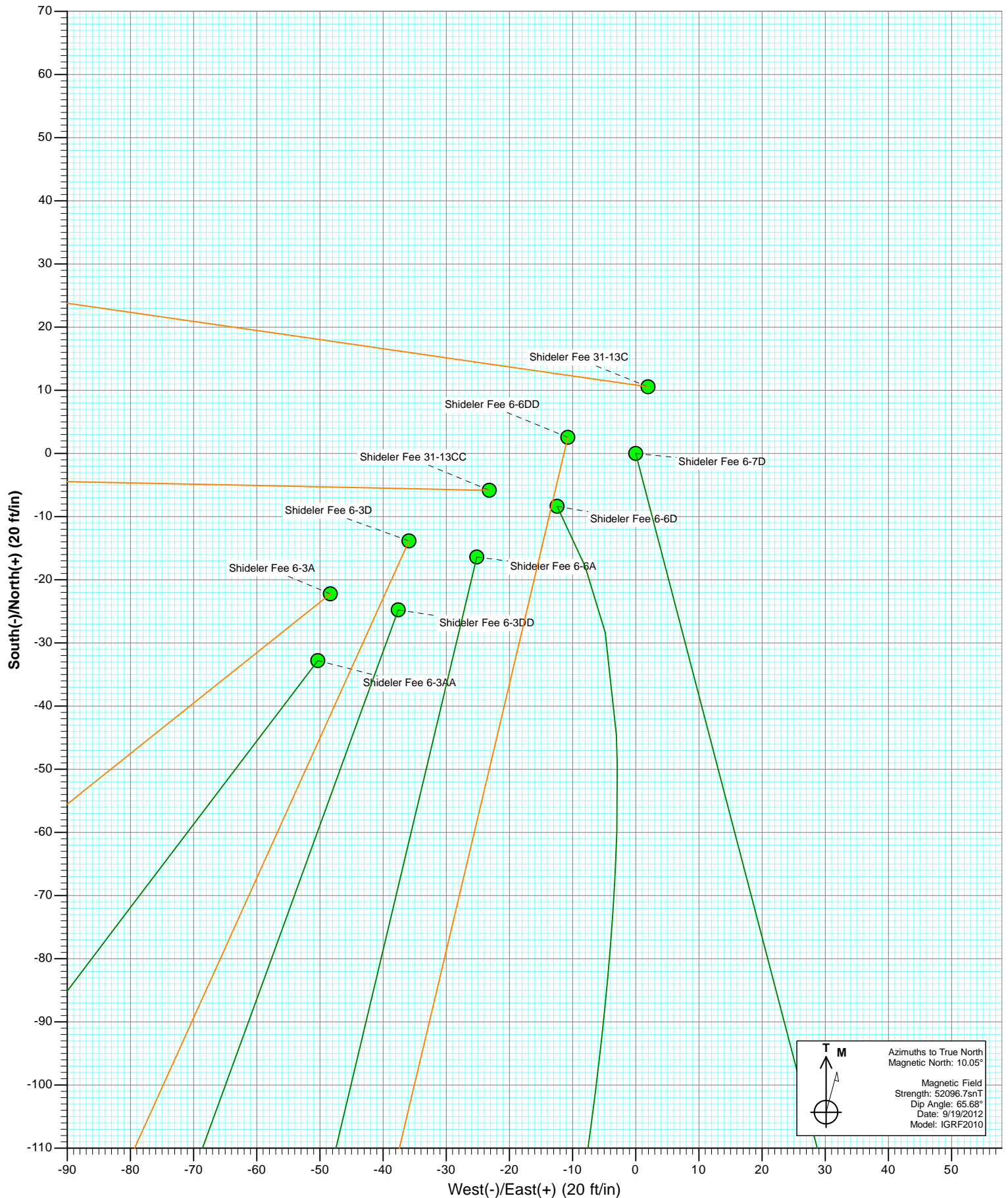
Project: Mamm Creek  
Site: O31E Pad  
Well: Shideler Fee 6-3AA  
Wellbore: DD  
Design: Plan #1

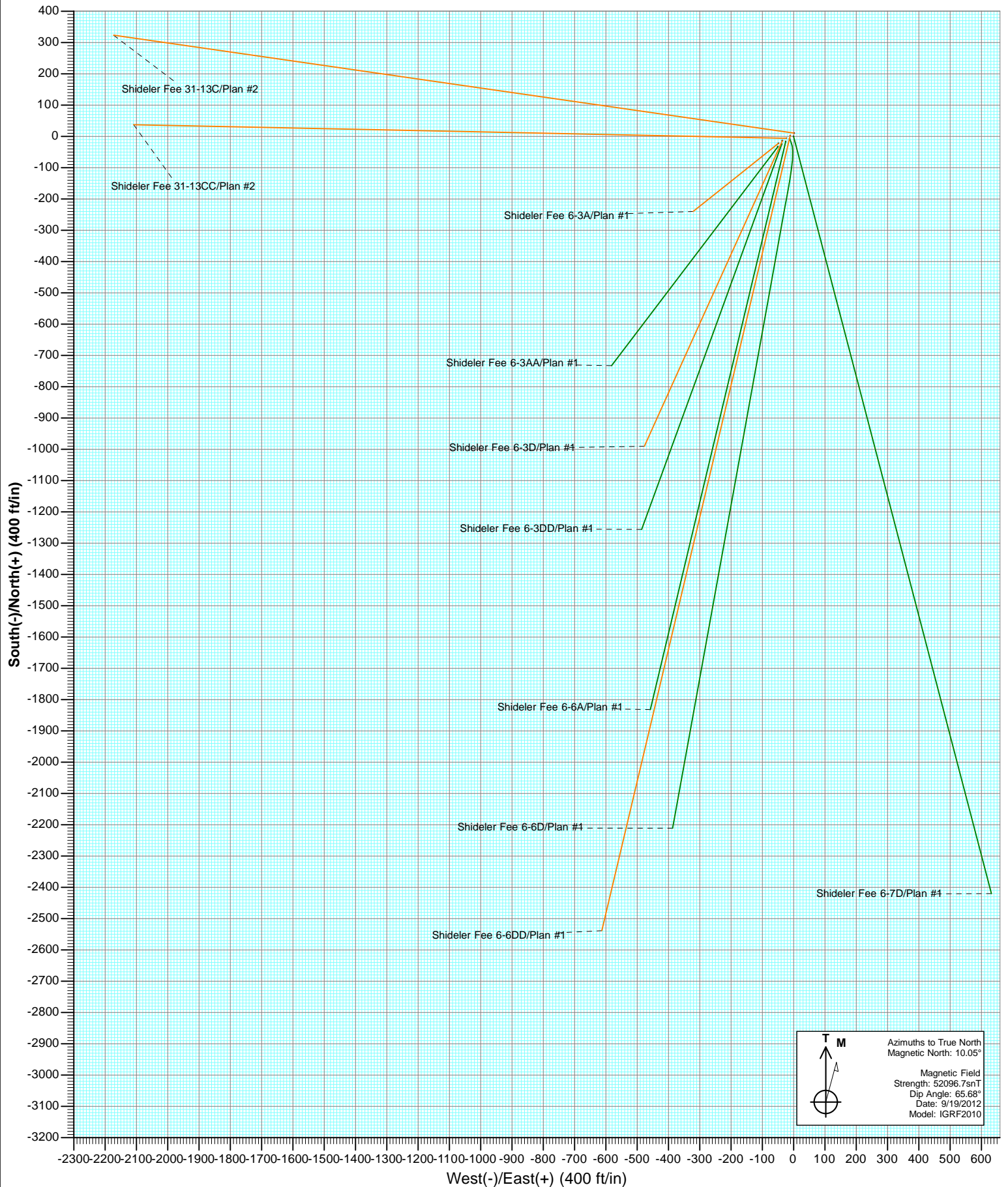


#### SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.0	
3	473.5	8.20	217.20	472.5	-15.6	-11.8	3.00	217.20	19.5	
4	6286.6	8.20	217.20	6226.2	-676.3	-513.3	0.00	0.00	849.0	
5	6696.8	0.00	0.00	6635.0	-699.7	-531.0	2.00	180.00	878.4	Shideler Fee 6-3AA TGT
6	9659.8	0.00	0.00	9598.0	-699.7	-531.0	0.00	0.00	878.4	Shideler Fee 6-3AA PBHL (528' FNL & 2492' FEL)
7	9759.8	0.00	0.00	9698.0	-699.7	-531.0	0.00	0.00	878.4	







# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well Shideler Fee 6-3AA
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	KB=24' @ 7128.0ft (Original Well Elev)
<b>Project:</b>	Mamm Creek	<b>MD Reference:</b>	KB=24' @ 7128.0ft (Original Well Elev)
<b>Site:</b>	O31E Pad	<b>North Reference:</b>	True
<b>Well:</b>	Shideler Fee 6-3AA	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	DD		
<b>Design:</b>	Plan #1		

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		O31E Pad			
Site Position:		Northing:	1,577,012.73 ft	Latitude:	39.396873
From:	Lat/Long	Easting:	2,376,675.10 ft	Longitude:	-107.705929
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.39 °

Well	Shideler Fee 6-3AA					
Well Position	+N/-S	0.0 ft	Northing:	1,576,784.07 ft	Latitude:	39.396238
	+E/-W	0.0 ft	Easting:	2,376,563.82 ft	Longitude:	-107.706303
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	7,104.0 ft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	9/19/2012	10.05	65.68	52,097

Design	Plan #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(ft)	(ft)	(ft)	(°)
	0.0	0.0	0.0	217.20

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.00	0.00	
473.5	8.20	217.20	472.5	-15.6	-11.8	3.00	3.00	0.00	217.20	
6,286.6	8.20	217.20	6,226.2	-676.3	-513.3	0.00	0.00	0.00	0.00	
6,696.8	0.00	0.00	6,635.0	-699.7	-531.0	2.00	-2.00	0.00	180.00	Shideler Fee 6-3AA T
9,659.8	0.00	0.00	9,598.0	-699.7	-531.0	0.00	0.00	0.00	0.00	Shideler Fee 6-3AA P
9,759.8	0.00	0.00	9,698.0	-699.7	-531.0	0.00	0.00	0.00	0.00	

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well Shideler Fee 6-3AA
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	KB=24' @ 7128.0ft (Original Well Elev)
<b>Project:</b>	Mamm Creek	<b>MD Reference:</b>	KB=24' @ 7128.0ft (Original Well Elev)
<b>Site:</b>	O31E Pad	<b>North Reference:</b>	True
<b>Well:</b>	Shideler Fee 6-3AA	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	DD		
<b>Design:</b>	Plan #1		

### Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	KOP @ 200'
300.0	3.00	217.20	300.0	-2.1	-1.6	2.6	3.00	3.00	
400.0	6.00	217.20	399.6	-8.3	-6.3	10.5	3.00	3.00	
473.5	8.20	217.20	472.5	-15.6	-11.8	19.5	3.00	3.00	EOB @ Inc. = 8.2°
500.0	8.20	217.20	498.8	-18.6	-14.1	23.3	0.00	0.00	
600.0	8.20	217.20	597.8	-30.0	-22.7	37.6	0.00	0.00	
700.0	8.20	217.20	696.7	-41.3	-31.4	51.9	0.00	0.00	
800.0	8.20	217.20	795.7	-52.7	-40.0	66.1	0.00	0.00	
900.0	8.20	217.20	894.7	-64.1	-48.6	80.4	0.00	0.00	
1,000.0	8.20	217.20	993.7	-75.4	-57.2	94.7	0.00	0.00	
1,100.0	8.20	217.20	1,092.7	-86.8	-65.9	108.9	0.00	0.00	
1,200.0	8.20	217.20	1,191.6	-98.1	-74.5	123.2	0.00	0.00	
1,300.0	8.20	217.20	1,290.6	-109.5	-83.1	137.5	0.00	0.00	
1,400.0	8.20	217.20	1,389.6	-120.9	-91.7	151.8	0.00	0.00	
1,410.5	8.20	217.20	1,400.0	-122.1	-92.7	153.3	0.00	0.00	Surface Casing
1,500.0	8.20	217.20	1,488.6	-132.2	-100.4	166.0	0.00	0.00	
1,600.0	8.20	217.20	1,587.5	-143.6	-109.0	180.3	0.00	0.00	
1,700.0	8.20	217.20	1,686.5	-155.0	-117.6	194.6	0.00	0.00	
1,800.0	8.20	217.20	1,785.5	-166.3	-126.3	208.8	0.00	0.00	
1,900.0	8.20	217.20	1,884.5	-177.7	-134.9	223.1	0.00	0.00	
2,000.0	8.20	217.20	1,983.4	-189.1	-143.5	237.4	0.00	0.00	
2,100.0	8.20	217.20	2,082.4	-200.4	-152.1	251.6	0.00	0.00	
2,200.0	8.20	217.20	2,181.4	-211.8	-160.8	265.9	0.00	0.00	
2,300.0	8.20	217.20	2,280.4	-223.2	-169.4	280.2	0.00	0.00	
2,400.0	8.20	217.20	2,379.4	-234.5	-178.0	294.4	0.00	0.00	
2,500.0	8.20	217.20	2,478.3	-245.9	-186.6	308.7	0.00	0.00	
2,600.0	8.20	217.20	2,577.3	-257.3	-195.3	323.0	0.00	0.00	
2,700.0	8.20	217.20	2,676.3	-268.6	-203.9	337.3	0.00	0.00	
2,800.0	8.20	217.20	2,775.3	-280.0	-212.5	351.5	0.00	0.00	
2,900.0	8.20	217.20	2,874.2	-291.4	-221.1	365.8	0.00	0.00	
3,000.0	8.20	217.20	2,973.2	-302.7	-229.8	380.1	0.00	0.00	
3,100.0	8.20	217.20	3,072.2	-314.1	-238.4	394.3	0.00	0.00	
3,200.0	8.20	217.20	3,171.2	-325.5	-247.0	408.6	0.00	0.00	
3,300.0	8.20	217.20	3,270.1	-336.8	-255.7	422.9	0.00	0.00	
3,400.0	8.20	217.20	3,369.1	-348.2	-264.3	437.1	0.00	0.00	
3,500.0	8.20	217.20	3,468.1	-359.6	-272.9	451.4	0.00	0.00	
3,600.0	8.20	217.20	3,567.1	-370.9	-281.5	465.7	0.00	0.00	
3,700.0	8.20	217.20	3,666.0	-382.3	-290.2	480.0	0.00	0.00	
3,800.0	8.20	217.20	3,765.0	-393.7	-298.8	494.2	0.00	0.00	
3,900.0	8.20	217.20	3,864.0	-405.0	-307.4	508.5	0.00	0.00	
4,000.0	8.20	217.20	3,963.0	-416.4	-316.0	522.8	0.00	0.00	
4,100.0	8.20	217.20	4,062.0	-427.8	-324.7	537.0	0.00	0.00	
4,200.0	8.20	217.20	4,160.9	-439.1	-333.3	551.3	0.00	0.00	
4,300.0	8.20	217.20	4,259.9	-450.5	-341.9	565.6	0.00	0.00	
4,400.0	8.20	217.20	4,358.9	-461.9	-350.5	579.8	0.00	0.00	
4,500.0	8.20	217.20	4,457.9	-473.2	-359.2	594.1	0.00	0.00	
4,600.0	8.20	217.20	4,556.8	-484.6	-367.8	608.4	0.00	0.00	
4,700.0	8.20	217.20	4,655.8	-496.0	-376.4	622.6	0.00	0.00	
4,733.5	8.20	217.20	4,689.0	-499.8	-379.3	627.4	0.00	0.00	Ohio Creek
4,800.0	8.20	217.20	4,754.8	-507.3	-385.1	636.9	0.00	0.00	

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well Shideler Fee 6-3AA
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	KB=24' @ 7128.0ft (Original Well Elev)
<b>Project:</b>	Mamm Creek	<b>MD Reference:</b>	KB=24' @ 7128.0ft (Original Well Elev)
<b>Site:</b>	O31E Pad	<b>North Reference:</b>	True
<b>Well:</b>	Shideler Fee 6-3AA	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	DD		
<b>Design:</b>	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
4,900.0	8.20	217.20	4,853.8	-518.7	-393.7	651.2	0.00	0.00	
4,913.4	8.20	217.20	4,867.0	-520.2	-394.8	653.1	0.00	0.00	Mesaverde Marker
5,000.0	8.20	217.20	4,952.7	-530.1	-402.3	665.5	0.00	0.00	
5,100.0	8.20	217.20	5,051.7	-541.4	-410.9	679.7	0.00	0.00	
5,200.0	8.20	217.20	5,150.7	-552.8	-419.6	694.0	0.00	0.00	
5,300.0	8.20	217.20	5,249.7	-564.2	-428.2	708.3	0.00	0.00	
5,400.0	8.20	217.20	5,348.7	-575.5	-436.8	722.5	0.00	0.00	
5,495.3	8.20	217.20	5,443.0	-586.4	-445.0	736.1	0.00	0.00	Williams Fork
5,500.0	8.20	217.20	5,447.6	-586.9	-445.4	736.8	0.00	0.00	
5,600.0	8.20	217.20	5,546.6	-598.3	-454.1	751.1	0.00	0.00	
5,700.0	8.20	217.20	5,645.6	-609.6	-462.7	765.3	0.00	0.00	
5,800.0	8.20	217.20	5,744.6	-621.0	-471.3	779.6	0.00	0.00	
5,900.0	8.20	217.20	5,843.5	-632.4	-479.9	793.9	0.00	0.00	
6,000.0	8.20	217.20	5,942.5	-643.7	-488.6	808.1	0.00	0.00	
6,100.0	8.20	217.20	6,041.5	-655.1	-497.2	822.4	0.00	0.00	
6,200.0	8.20	217.20	6,140.5	-666.5	-505.8	836.7	0.00	0.00	
6,286.6	8.20	217.20	6,226.2	-676.3	-513.3	849.0	0.00	0.00	Start 2° Drop
6,300.0	7.94	217.20	6,239.4	-677.8	-514.4	850.9	2.00	-2.00	
6,400.0	5.94	217.20	6,338.7	-687.4	-521.7	863.0	2.00	-2.00	
6,500.0	3.94	217.20	6,438.3	-694.3	-526.9	871.6	2.00	-2.00	
6,600.0	1.94	217.20	6,538.2	-698.4	-530.0	876.7	2.00	-2.00	
6,696.8	0.00	0.00	6,635.0	-699.7	-531.0	878.4	2.00	-2.00	EOD @ Inc. = 0° - Top Gas
6,700.0	0.00	0.00	6,638.2	-699.7	-531.0	878.4	0.00	0.00	
6,800.0	0.00	0.00	6,738.2	-699.7	-531.0	878.4	0.00	0.00	
6,900.0	0.00	0.00	6,838.2	-699.7	-531.0	878.4	0.00	0.00	
7,000.0	0.00	0.00	6,938.2	-699.7	-531.0	878.4	0.00	0.00	
7,100.0	0.00	0.00	7,038.2	-699.7	-531.0	878.4	0.00	0.00	
7,200.0	0.00	0.00	7,138.2	-699.7	-531.0	878.4	0.00	0.00	
7,300.0	0.00	0.00	7,238.2	-699.7	-531.0	878.4	0.00	0.00	
7,400.0	0.00	0.00	7,338.2	-699.7	-531.0	878.4	0.00	0.00	
7,500.0	0.00	0.00	7,438.2	-699.7	-531.0	878.4	0.00	0.00	
7,600.0	0.00	0.00	7,538.2	-699.7	-531.0	878.4	0.00	0.00	
7,696.8	0.00	0.00	7,635.0	-699.7	-531.0	878.4	0.00	0.00	Coal Ridge
7,700.0	0.00	0.00	7,638.2	-699.7	-531.0	878.4	0.00	0.00	
7,800.0	0.00	0.00	7,738.2	-699.7	-531.0	878.4	0.00	0.00	
7,900.0	0.00	0.00	7,838.2	-699.7	-531.0	878.4	0.00	0.00	
8,000.0	0.00	0.00	7,938.2	-699.7	-531.0	878.4	0.00	0.00	
8,100.0	0.00	0.00	8,038.2	-699.7	-531.0	878.4	0.00	0.00	
8,200.0	0.00	0.00	8,138.2	-699.7	-531.0	878.4	0.00	0.00	
8,300.0	0.00	0.00	8,238.2	-699.7	-531.0	878.4	0.00	0.00	
8,400.0	0.00	0.00	8,338.2	-699.7	-531.0	878.4	0.00	0.00	
8,434.8	0.00	0.00	8,373.0	-699.7	-531.0	878.4	0.00	0.00	Rollins
8,500.0	0.00	0.00	8,438.2	-699.7	-531.0	878.4	0.00	0.00	
8,600.0	0.00	0.00	8,538.2	-699.7	-531.0	878.4	0.00	0.00	
8,700.0	0.00	0.00	8,638.2	-699.7	-531.0	878.4	0.00	0.00	
8,800.0	0.00	0.00	8,738.2	-699.7	-531.0	878.4	0.00	0.00	
8,900.0	0.00	0.00	8,838.2	-699.7	-531.0	878.4	0.00	0.00	
8,984.8	0.00	0.00	8,923.0	-699.7	-531.0	878.4	0.00	0.00	Cozzette
9,000.0	0.00	0.00	8,938.2	-699.7	-531.0	878.4	0.00	0.00	
9,100.0	0.00	0.00	9,038.2	-699.7	-531.0	878.4	0.00	0.00	
9,179.8	0.00	0.00	9,118.0	-699.7	-531.0	878.4	0.00	0.00	Corcoran
9,200.0	0.00	0.00	9,138.2	-699.7	-531.0	878.4	0.00	0.00	

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well Shideler Fee 6-3AA
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	KB=24' @ 7128.0ft (Original Well Elev)
<b>Project:</b>	Mamm Creek	<b>MD Reference:</b>	KB=24' @ 7128.0ft (Original Well Elev)
<b>Site:</b>	O31E Pad	<b>North Reference:</b>	True
<b>Well:</b>	Shideler Fee 6-3AA	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	DD		
<b>Design:</b>	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
9,300.0	0.00	0.00	9,238.2	-699.7	-531.0	878.4	0.00	0.00	
9,400.0	0.00	0.00	9,338.2	-699.7	-531.0	878.4	0.00	0.00	
9,500.0	0.00	0.00	9,438.2	-699.7	-531.0	878.4	0.00	0.00	
9,600.0	0.00	0.00	9,538.2	-699.7	-531.0	878.4	0.00	0.00	
9,659.8	0.00	0.00	9,598.0	-699.7	-531.0	878.4	0.00	0.00	TD @ 9,659.8' MD
9,700.0	0.00	0.00	9,638.2	-699.7	-531.0	878.4	0.00	0.00	
9,759.8	0.00	0.00	9,698.0	-699.7	-531.0	878.4	0.00	0.00	Permit TD @ 9,759.8' MD

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 Fee 6-3AA TGT - plan hits target center - Point	0.00	0.00	6,635.0	-699.7	-531.0	1,576,097.50	2,376,015.96	39.394317	-107.708182
Shideler Fee 6-3AA PBI - plan hits target center - Circle (radius 25.0)	0.00	0.00	9,598.0	-699.7	-531.0	1,576,097.50	2,376,015.96	39.394317	-107.708182

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,410.5	1,400.0	Surface Casing			

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
4,733.5	4,689.0	Ohio Creek				
4,913.4	4,867.0	Mesaverde Marker				
5,495.3	5,443.0	Williams Fork				
6,696.8	6,635.0	Top Gas				
7,696.8	7,635.0	Coal Ridge				
8,434.8	8,373.0	Rollins				
8,984.8	8,923.0	Cozzette				
9,179.8	9,118.0	Corcoran				

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well Shideler Fee 6-3AA
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	KB=24' @ 7128.0ft (Original Well Elev)
<b>Project:</b>	Mamm Creek	<b>MD Reference:</b>	KB=24' @ 7128.0ft (Original Well Elev)
<b>Site:</b>	O31E Pad	<b>North Reference:</b>	True
<b>Well:</b>	Shideler Fee 6-3AA	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	DD		
<b>Design:</b>	Plan #1		

### Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
200.0	200.0	0.0	0.0	KOP @ 200'
473.5	472.5	-15.6	-11.8	EOB @ Inc. = 8.2°
6,286.6	6,226.2	-676.3	-513.3	Start 2° Drop
6,696.8	6,635.0	-699.7	-531.0	EOD @ Inc. = 0°
9,659.8	9,598.0	-699.7	-531.0	TD @ 9,659.8' MD
9,759.8	9,698.0	-699.7	-531.0	Permit TD @ 9,759.8' MD