

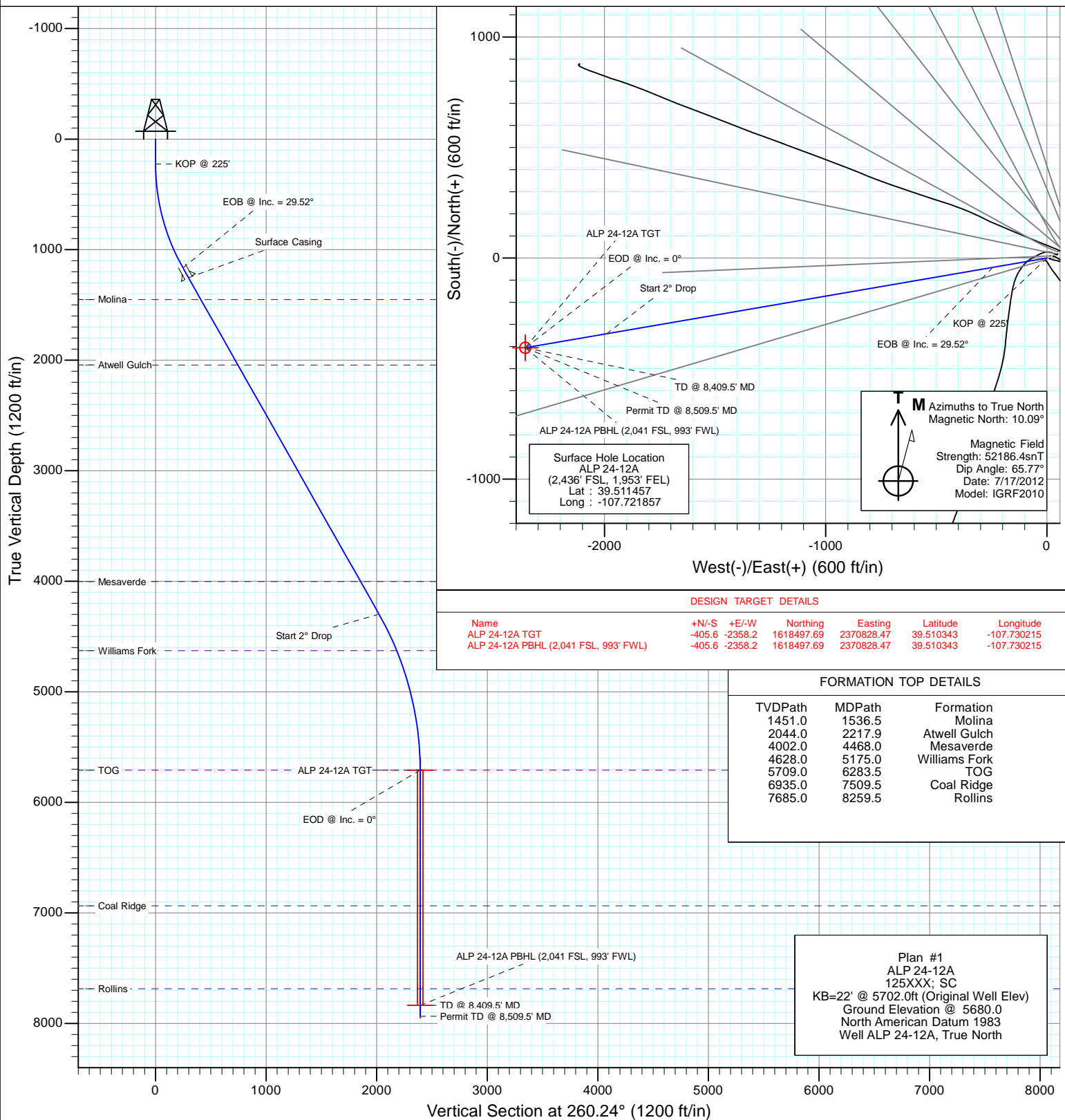


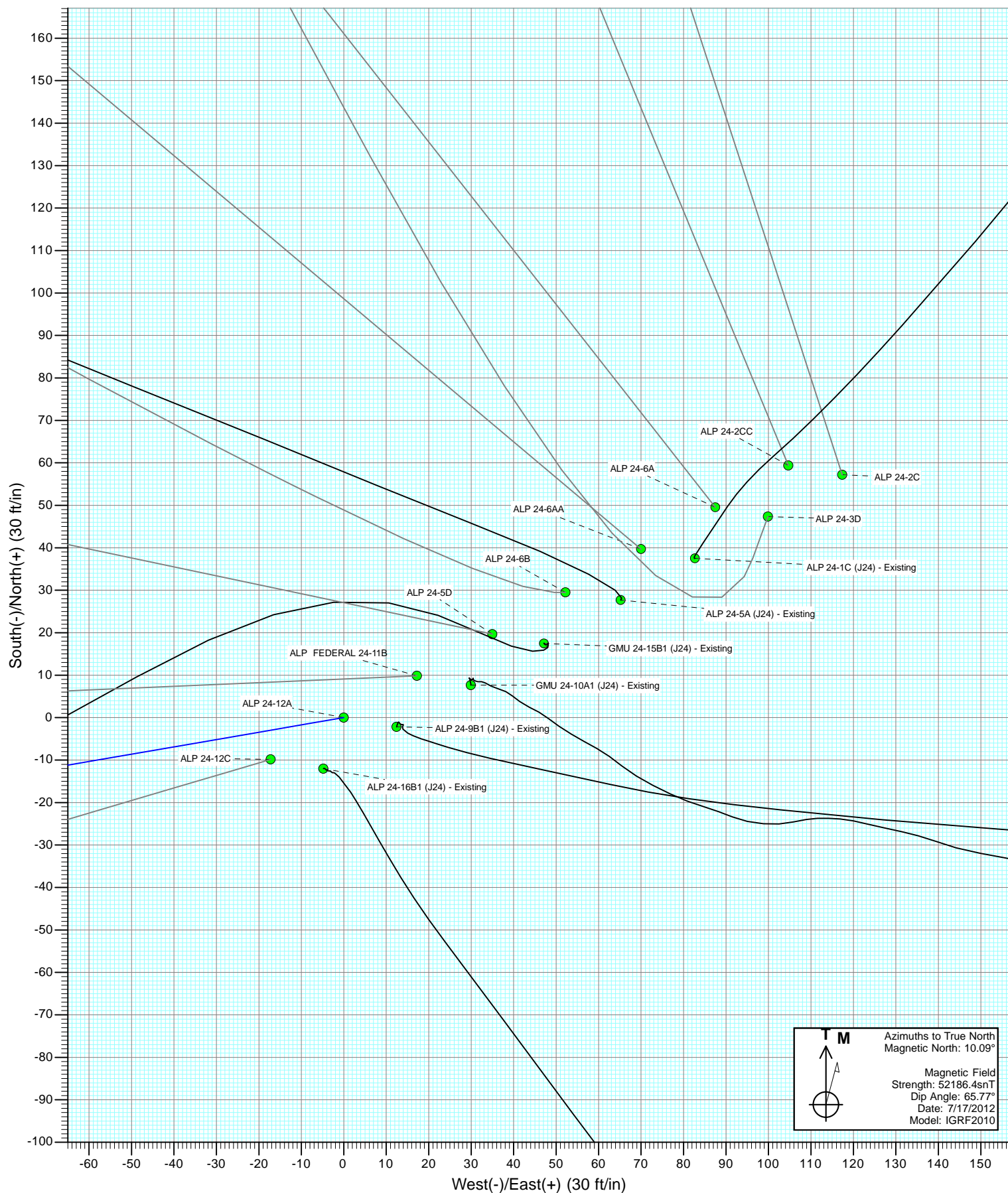
Project: Mamm Creek  
Site: J24 Pad  
Well: ALP 24-12A  
Wellbore: OH  
Design: Plan #1

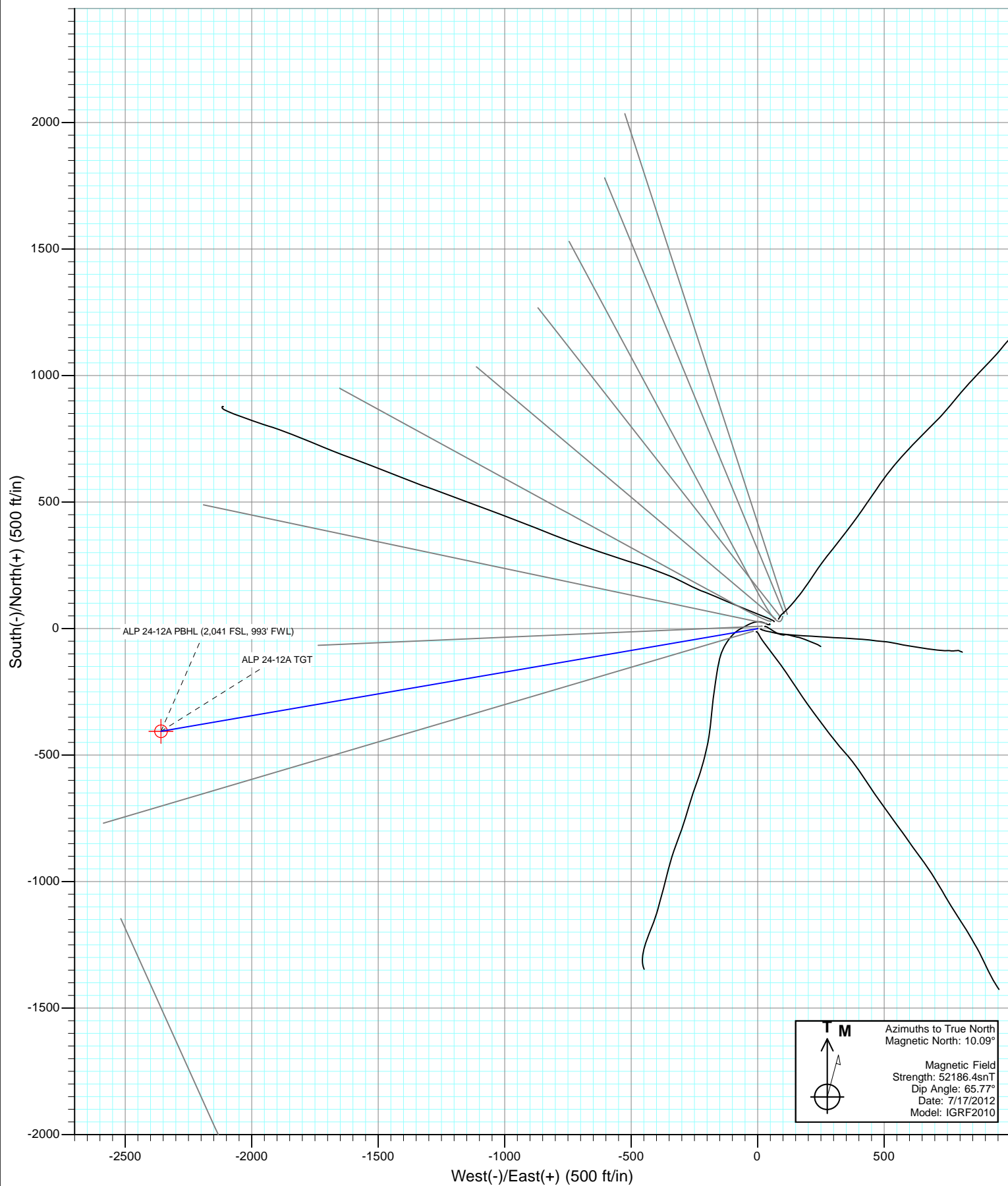


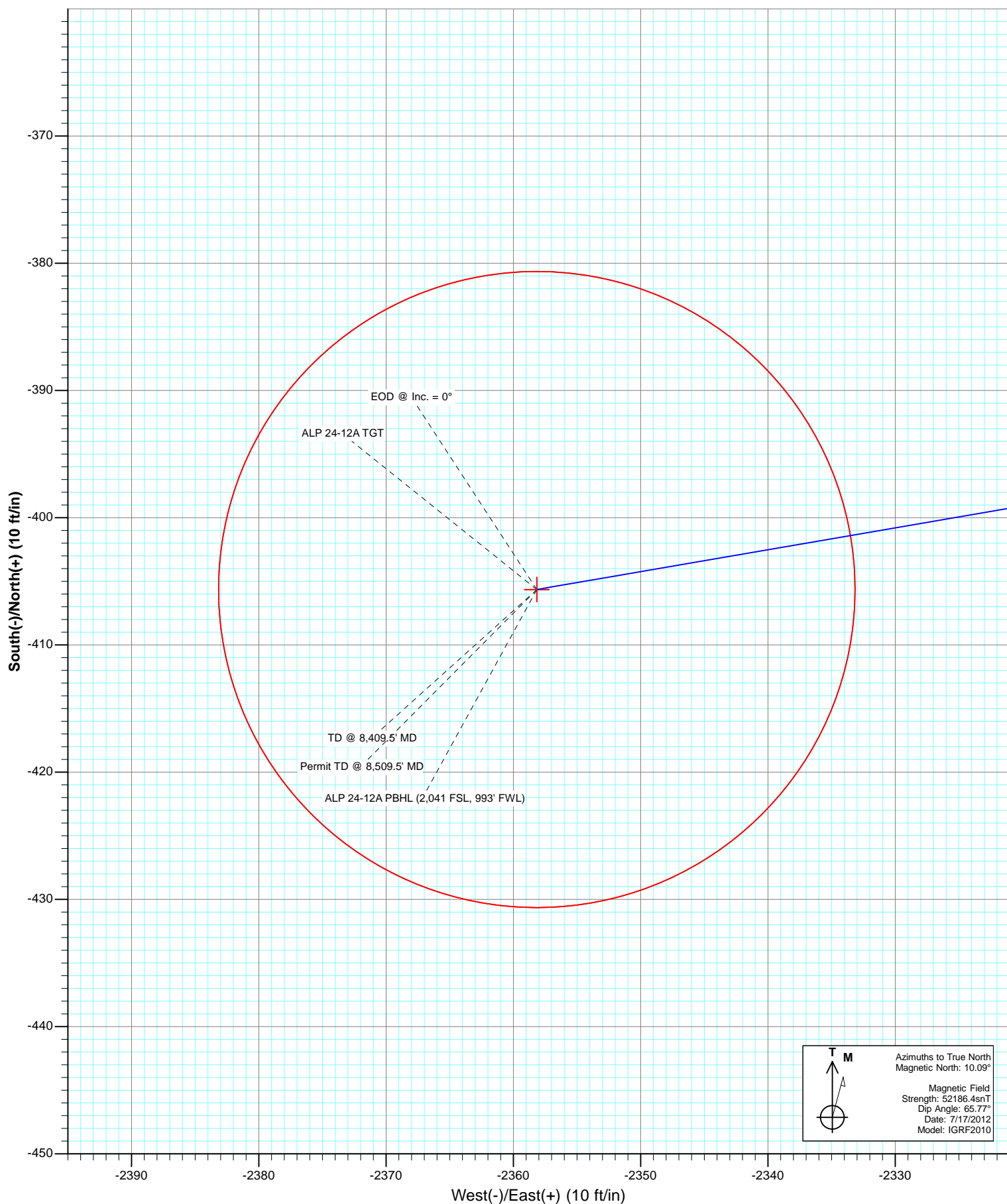
#### SECTION DETAILS

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	225.0	0.00	0.00	225.0	0.0	0.0	0.00	0.00	0.0	
3	1208.9	29.52	260.24	1166.0	-42.0	-244.3	3.00	260.24	247.9	
4	4807.6	29.52	260.24	4297.5	-342.6	-1991.7	0.00	0.00	2020.9	
5	6283.5	0.00	0.00	5709.0	-405.6	-2358.2	2.00	180.00	2392.8	ALP 24-12A TGT
6	8409.5	0.00	0.00	7835.0	-405.6	-2358.2	0.00	0.00	2392.8	ALP 24-12A PBHL (2,041 FSL, 993' FWL)
7	8509.5	0.00	0.00	7935.0	-405.6	-2358.2	0.00	0.00	2392.8	









# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well ALP 24-12A
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	KB=22' @ 5702.0ft (Original Well Elev)
<b>Project:</b>	Mamm Creek	<b>MD Reference:</b>	KB=22' @ 5702.0ft (Original Well Elev)
<b>Site:</b>	J24 Pad	<b>North Reference:</b>	True
<b>Well:</b>	ALP 24-12A	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<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		J24 Pad			
Site Position:		Northing:	1,618,899.86 ft	Latitude:	39.511614
From:	Lat/Long	Easting:	2,373,314.58 ft	Longitude:	-107.721441
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.40 °

Well	ALP 24-12A					
Well Position	+N/-S	0.0 ft	Northing:	1,618,845.55 ft	Latitude:	39.511457
	+E/-W	0.0 ft	Easting:	2,373,195.84 ft	Longitude:	-107.721857
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	5,680.0 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	7/17/2012	10.09	65.77	52,186

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	260.24

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	
225.0	0.00	0.00	225.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,208.9	29.52	260.24	1,166.0	-42.0	-244.3	3.00	3.00	0.00	260.24	
4,807.6	29.52	260.24	4,297.5	-342.6	-1,991.7	0.00	0.00	0.00	0.00	
6,283.5	0.00	0.00	5,709.0	-405.6	-2,358.2	2.00	-2.00	0.00	180.00	ALP 24-12A TGT
8,409.5	0.00	0.00	7,835.0	-405.6	-2,358.2	0.00	0.00	0.00	0.00	ALP 24-12A PBHL (2,
8,509.5	0.00	0.00	7,935.0	-405.6	-2,358.2	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 ALP 24-12A
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	KB=22' @ 5702.0ft (Original Well Elev)
<b>Project:</b>	Mamm Creek	<b>MD Reference:</b>	KB=22' @ 5702.0ft (Original Well Elev)
<b>Site:</b>	J24 Pad	<b>North Reference:</b>	True
<b>Well:</b>	ALP 24-12A	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<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	
225.0	0.00	0.00	225.0	0.0	0.0	0.0	0.00	0.00	KOP @ 225'
300.0	2.25	260.24	300.0	-0.2	-1.5	1.5	3.00	3.00	
400.0	5.25	260.24	399.8	-1.4	-7.9	8.0	3.00	3.00	
500.0	8.25	260.24	499.1	-3.4	-19.5	19.8	3.00	3.00	
600.0	11.25	260.24	597.6	-6.2	-36.2	36.7	3.00	3.00	
700.0	14.25	260.24	695.1	-10.0	-57.9	58.8	3.00	3.00	
800.0	17.25	260.24	791.4	-14.6	-84.7	85.9	3.00	3.00	
900.0	20.25	260.24	886.0	-20.0	-116.3	118.0	3.00	3.00	
1,000.0	23.25	260.24	978.9	-26.3	-152.9	155.1	3.00	3.00	
1,100.0	26.25	260.24	1,069.7	-33.4	-194.1	197.0	3.00	3.00	
1,208.9	29.52	260.24	1,166.0	-42.0	-244.3	247.9	3.00	3.00	EOB @ Inc. = 29.52°
1,300.0	29.52	260.24	1,245.2	-49.6	-288.5	292.8	0.00	0.00	
1,310.0	29.52	260.24	1,253.9	-50.5	-293.4	297.7	0.00	0.00	Surface Casing
1,400.0	29.52	260.24	1,332.2	-58.0	-337.1	342.0	0.00	0.00	
1,500.0	29.52	260.24	1,419.3	-66.3	-385.6	391.3	0.00	0.00	
1,536.5	29.52	260.24	1,451.0	-69.4	-403.3	409.3	0.00	0.00	Molina
1,600.0	29.52	260.24	1,506.3	-74.7	-434.2	440.6	0.00	0.00	
1,700.0	29.52	260.24	1,593.3	-83.0	-482.8	489.8	0.00	0.00	
1,800.0	29.52	260.24	1,680.3	-91.4	-531.3	539.1	0.00	0.00	
1,900.0	29.52	260.24	1,767.3	-99.7	-579.9	588.4	0.00	0.00	
2,000.0	29.52	260.24	1,854.4	-108.1	-628.4	637.7	0.00	0.00	
2,100.0	29.52	260.24	1,941.4	-116.5	-677.0	686.9	0.00	0.00	
2,200.0	29.52	260.24	2,028.4	-124.8	-725.5	736.2	0.00	0.00	
2,217.9	29.52	260.24	2,044.0	-126.3	-734.2	745.0	0.00	0.00	Atwell Gulch
2,300.0	29.52	260.24	2,115.4	-133.2	-774.1	785.5	0.00	0.00	
2,400.0	29.52	260.24	2,202.4	-141.5	-822.7	834.7	0.00	0.00	
2,500.0	29.52	260.24	2,289.5	-149.9	-871.2	884.0	0.00	0.00	
2,600.0	29.52	260.24	2,376.5	-158.2	-919.8	933.3	0.00	0.00	
2,700.0	29.52	260.24	2,463.5	-166.6	-968.3	982.5	0.00	0.00	
2,800.0	29.52	260.24	2,550.5	-174.9	-1,016.9	1,031.8	0.00	0.00	
2,900.0	29.52	260.24	2,637.5	-183.3	-1,065.4	1,081.1	0.00	0.00	
3,000.0	29.52	260.24	2,724.6	-191.6	-1,114.0	1,130.4	0.00	0.00	
3,100.0	29.52	260.24	2,811.6	-200.0	-1,162.5	1,179.6	0.00	0.00	
3,200.0	29.52	260.24	2,898.6	-208.3	-1,211.1	1,228.9	0.00	0.00	
3,300.0	29.52	260.24	2,985.6	-216.7	-1,259.7	1,278.2	0.00	0.00	
3,400.0	29.52	260.24	3,072.6	-225.0	-1,308.2	1,327.4	0.00	0.00	
3,500.0	29.52	260.24	3,159.7	-233.4	-1,356.8	1,376.7	0.00	0.00	
3,600.0	29.52	260.24	3,246.7	-241.7	-1,405.3	1,426.0	0.00	0.00	
3,700.0	29.52	260.24	3,333.7	-250.1	-1,453.9	1,475.2	0.00	0.00	
3,800.0	29.52	260.24	3,420.7	-258.4	-1,502.4	1,524.5	0.00	0.00	
3,900.0	29.52	260.24	3,507.7	-266.8	-1,551.0	1,573.8	0.00	0.00	
4,000.0	29.52	260.24	3,594.8	-275.2	-1,599.6	1,623.0	0.00	0.00	
4,100.0	29.52	260.24	3,681.8	-283.5	-1,648.1	1,672.3	0.00	0.00	
4,200.0	29.52	260.24	3,768.8	-291.9	-1,696.7	1,721.6	0.00	0.00	
4,300.0	29.52	260.24	3,855.8	-300.2	-1,745.2	1,770.9	0.00	0.00	
4,400.0	29.52	260.24	3,942.8	-308.6	-1,793.8	1,820.1	0.00	0.00	
4,468.0	29.52	260.24	4,002.0	-314.2	-1,826.8	1,853.6	0.00	0.00	Mesaverde
4,500.0	29.52	260.24	4,029.9	-316.9	-1,842.3	1,869.4	0.00	0.00	
4,600.0	29.52	260.24	4,116.9	-325.3	-1,890.9	1,918.7	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 ALP 24-12A
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	KB=22' @ 5702.0ft (Original Well Elev)
<b>Project:</b>	Mamm Creek	<b>MD Reference:</b>	KB=22' @ 5702.0ft (Original Well Elev)
<b>Site:</b>	J24 Pad	<b>North Reference:</b>	True
<b>Well:</b>	ALP 24-12A	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<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
4,700.0	29.52	260.24	4,203.9	-333.6	-1,939.5	1,967.9	0.00	0.00	
4,807.6	29.52	260.24	4,297.5	-342.6	-1,991.7	2,020.9	0.00	0.00	Start 2° Drop
4,900.0	27.67	260.24	4,378.7	-350.1	-2,035.3	2,065.2	2.00	-2.00	
5,000.0	25.67	260.24	4,468.0	-357.7	-2,079.5	2,110.1	2.00	-2.00	
5,100.0	23.67	260.24	4,558.9	-364.8	-2,120.6	2,151.8	2.00	-2.00	
5,175.0	22.17	260.24	4,628.0	-369.7	-2,149.4	2,181.0	2.00	-2.00	Williams Fork
5,200.0	21.67	260.24	4,651.2	-371.3	-2,158.6	2,190.3	2.00	-2.00	
5,300.0	19.67	260.24	4,744.7	-377.3	-2,193.4	2,225.6	2.00	-2.00	
5,400.0	17.67	260.24	4,839.5	-382.7	-2,225.0	2,257.6	2.00	-2.00	
5,500.0	15.67	260.24	4,935.2	-387.6	-2,253.2	2,286.3	2.00	-2.00	
5,600.0	13.67	260.24	5,032.0	-391.9	-2,278.2	2,311.6	2.00	-2.00	
5,700.0	11.67	260.24	5,129.5	-395.6	-2,299.8	2,333.6	2.00	-2.00	
5,800.0	9.67	260.24	5,227.8	-398.7	-2,318.0	2,352.1	2.00	-2.00	
5,900.0	7.67	260.24	5,326.7	-401.3	-2,332.9	2,367.2	2.00	-2.00	
6,000.0	5.67	260.24	5,426.0	-403.3	-2,344.3	2,378.8	2.00	-2.00	
6,100.0	3.67	260.24	5,525.6	-404.6	-2,352.4	2,386.9	2.00	-2.00	
6,200.0	1.67	260.24	5,625.5	-405.4	-2,357.0	2,391.6	2.00	-2.00	
6,283.5	0.00	0.00	5,709.0	-405.6	-2,358.2	2,392.8	2.00	-2.00	EOD @ Inc. = 0° - TOG
6,300.0	0.00	0.00	5,725.5	-405.6	-2,358.2	2,392.8	0.00	0.00	
6,400.0	0.00	0.00	5,825.5	-405.6	-2,358.2	2,392.8	0.00	0.00	
6,500.0	0.00	0.00	5,925.5	-405.6	-2,358.2	2,392.8	0.00	0.00	
6,600.0	0.00	0.00	6,025.5	-405.6	-2,358.2	2,392.8	0.00	0.00	
6,700.0	0.00	0.00	6,125.5	-405.6	-2,358.2	2,392.8	0.00	0.00	
6,800.0	0.00	0.00	6,225.5	-405.6	-2,358.2	2,392.8	0.00	0.00	
6,900.0	0.00	0.00	6,325.5	-405.6	-2,358.2	2,392.8	0.00	0.00	
7,000.0	0.00	0.00	6,425.5	-405.6	-2,358.2	2,392.8	0.00	0.00	
7,100.0	0.00	0.00	6,525.5	-405.6	-2,358.2	2,392.8	0.00	0.00	
7,200.0	0.00	0.00	6,625.5	-405.6	-2,358.2	2,392.8	0.00	0.00	
7,300.0	0.00	0.00	6,725.5	-405.6	-2,358.2	2,392.8	0.00	0.00	
7,400.0	0.00	0.00	6,825.5	-405.6	-2,358.2	2,392.8	0.00	0.00	
7,500.0	0.00	0.00	6,925.5	-405.6	-2,358.2	2,392.8	0.00	0.00	
7,509.5	0.00	0.00	6,935.0	-405.6	-2,358.2	2,392.8	0.00	0.00	Coal Ridge
7,600.0	0.00	0.00	7,025.5	-405.6	-2,358.2	2,392.8	0.00	0.00	
7,700.0	0.00	0.00	7,125.5	-405.6	-2,358.2	2,392.8	0.00	0.00	
7,800.0	0.00	0.00	7,225.5	-405.6	-2,358.2	2,392.8	0.00	0.00	
7,900.0	0.00	0.00	7,325.5	-405.6	-2,358.2	2,392.8	0.00	0.00	
8,000.0	0.00	0.00	7,425.5	-405.6	-2,358.2	2,392.8	0.00	0.00	
8,100.0	0.00	0.00	7,525.5	-405.6	-2,358.2	2,392.8	0.00	0.00	
8,200.0	0.00	0.00	7,625.5	-405.6	-2,358.2	2,392.8	0.00	0.00	
8,259.5	0.00	0.00	7,685.0	-405.6	-2,358.2	2,392.8	0.00	0.00	Rollins
8,300.0	0.00	0.00	7,725.5	-405.6	-2,358.2	2,392.8	0.00	0.00	
8,409.5	0.00	0.00	7,835.0	-405.6	-2,358.2	2,392.8	0.00	0.00	TD @ 8,409.5' MD
8,509.5	0.00	0.00	7,935.0	-405.6	-2,358.2	2,392.8	0.00	0.00	Permit TD @ 8,509.5' MD

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well ALP 24-12A
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	KB=22' @ 5702.0ft (Original Well Elev)
<b>Project:</b>	Mamm Creek	<b>MD Reference:</b>	KB=22' @ 5702.0ft (Original Well Elev)
<b>Site:</b>	J24 Pad	<b>North Reference:</b>	True
<b>Well:</b>	ALP 24-12A	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #1		

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									
ALP 24-12A PBHL (2,04 - plan hits target center - Circle (radius 25.0)	0.00	0.00	7,835.0	-405.6	-2,358.2	1,618,497.69	2,370,828.47	39.510343	-107.730215
ALP 24-12A TGT - plan hits target center - Point	0.00	0.00	5,709.0	-405.6	-2,358.2	1,618,497.69	2,370,828.47	39.510343	-107.730215

Casing Points				
Measured Depth	Vertical Depth	Name	Casing Diameter	Hole Diameter
(ft)	(ft)		(in)	(in)
1,310.0	1,253.9	Surface Casing		

Formations						
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction	
(ft)	(ft)			(°)	(°)	
1,536.5	1,451.0	Molina				
2,217.9	2,044.0	Atwell Gulch				
4,468.0	4,002.0	Mesaverde				
5,175.0	4,628.0	Williams Fork				
6,283.5	5,709.0	TOG				
7,509.5	6,935.0	Coal Ridge				
8,259.5	7,685.0	Rollins				

Plan Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)	
225.0	225.0	0.0	0.0	KOP @ 225'
1,208.9	1,166.0	-42.0	-244.3	EOB @ Inc. = 29.52°
4,807.6	4,297.5	-342.6	-1,991.7	Start 2° Drop
6,283.5	5,709.0	-405.6	-2,358.2	EOD @ Inc. = 0°
8,409.5	7,835.0	-405.6	-2,358.2	TD @ 8,409.5' MD
8,509.5	7,935.0	-405.6	-2,358.2	Permit TD @ 8,509.5' MD