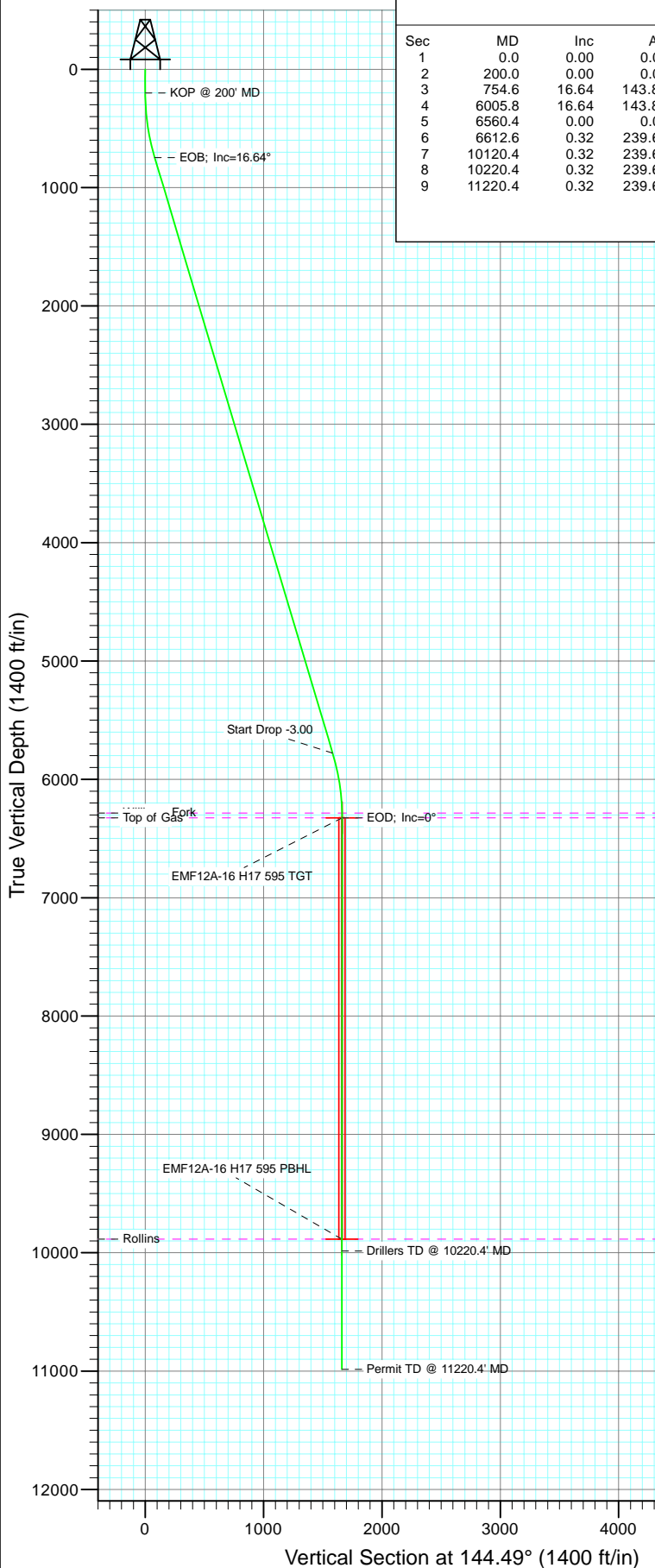


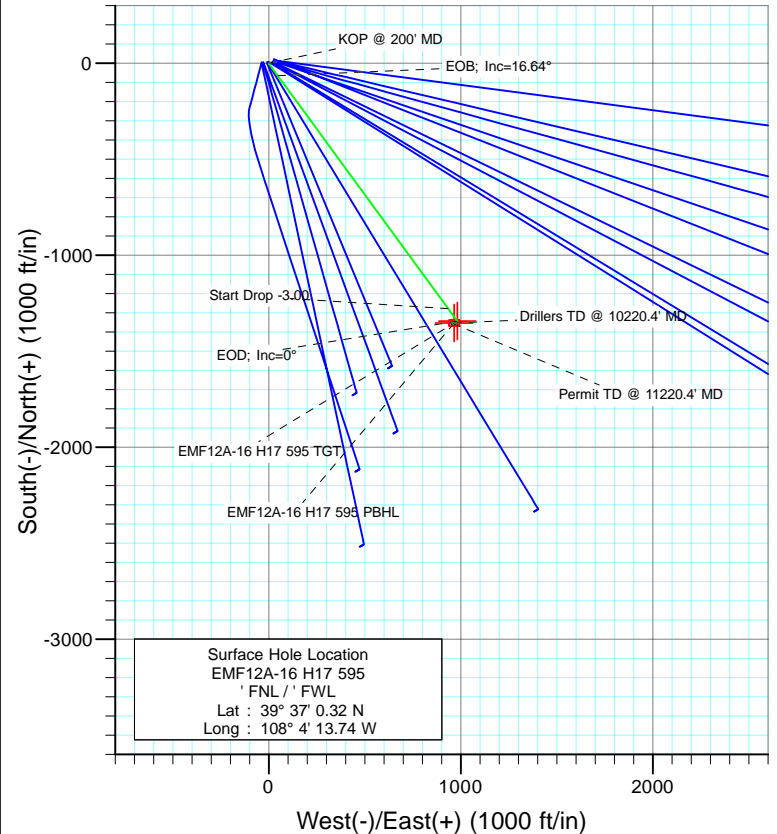


Project: North Piceance
Site: H17 595
Well: EMF12A-16 H17 595
Wellbore: DD
Design: Plan #4



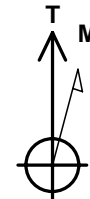
SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	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	754.6	16.64	143.81	746.8	-64.5	47.2	3.00	143.81	79.9	
4	6005.8	16.64	143.81	5778.2	-1278.0	934.9	0.00	0.00	1583.3	
5	6560.4	0.00	0.00	6325.0	-1342.5	982.1	3.00	180.00	1663.3	EMF12A-16 H17 595 TGT
6	6612.6	0.32	239.61	6377.3	-1342.6	982.0	0.61	239.61	1663.2	
7	10120.4	0.32	239.61	9885.0	-1352.5	965.1	0.00	0.00	1661.5	EMF12A-16 H17 595 PBHL
8	10220.4	0.32	239.61	9985.0	-1352.7	964.6	0.00	0.00	1661.5	
9	11220.4	0.32	239.61	10985.0	-1355.5	959.8	0.00	0.00	1661.0	



FORMATION TOP DETAILS

TVDPath	MDPath	Formation
6285.0	6520.3	Williams Fork
6325.0	6560.4	Top of Gas
9885.0	10120.4	Rollins



Azimuths to True North
Magnetic North: 10.48°

Magnetic Field
Strength: 52412.5nT
Dip Angle: 65.86°
Date: 8/31/2010
Model: IGRF200510

Plan #4
EMF12A-16 H17 595
1053xx; LR

Well @ 6452.0ft
North American Datum 1983
Well EMF12A-16 H17 595, True North

Type	Target	Azimuth	Origin Type	N/S	E/W	From TVD
Target	EMF12A-16 H17 595 TGT	144.49	Slot	0.0	0.0	0.0
Name	EMF12A-16 H17 595 TGT	TVD 6325.0	+N/-S	-1342.5	982.139° 36' 47.05 N	108° 4' 1.19 W
	EMF12A-16 H17 595 PBHL	9885.0	-1352.5	965.139° 36' 46.95 N	108° 4' 1.41 W	

Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well EMF12A-16 H17 595
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	Well @ 6452.0ft
Project:	North Piceance	MD Reference:	Well @ 6452.0ft
Site:	H17 595	North Reference:	True
Well:	EMF12A-16 H17 595	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #4		

Project	North Piceance		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Central Zone		

Site		H17 595			
Site Position:		Northing:	1,659,667.53 ft	Latitude:	39° 37' 0.35 N
From:	Lat/Long	Easting:	2,280,026.91 ft	Longitude:	108° 3' 21.67 W
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.61 °

Well	EMF12A-16 H17 595					
Well Position	+N/-S	0.0 ft	Northing:	1,659,778.75 ft	Latitude:	39° 37' 0.32 N
	+E/-W	0.0 ft	Easting:	2,275,954.03 ft	Longitude:	108° 4' 13.74 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	6,430.0 ft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	8/31/2010	10.48	65.86	52,412

Design	Plan #4			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	144.49

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	
754.6	16.64	143.81	746.8	-64.5	47.2	3.00	3.00	0.00	143.81	
6,005.8	16.64	143.81	5,778.2	-1,278.0	934.9	0.00	0.00	0.00	0.00	
6,560.4	0.00	0.00	6,325.0	-1,342.5	982.1	3.00	-3.00	0.00	180.00	EMF12A-16 H17 595
6,612.6	0.32	239.61	6,377.3	-1,342.6	982.0	0.61	0.61	-230.34	239.61	
10,120.4	0.32	239.61	9,885.0	-1,352.5	965.1	0.00	0.00	0.00	0.00	EMF12A-16 H17 595
10,220.4	0.32	239.61	9,985.0	-1,352.7	964.6	0.00	0.00	0.00	0.00	
11,220.4	0.32	239.61	10,985.0	-1,355.5	959.8	0.00	0.00	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well EMF12A-16 H17 595
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	Well @ 6452.0ft
Project:	North Piceance	MD Reference:	Well @ 6452.0ft
Site:	H17 595	North Reference:	True
Well:	EMF12A-16 H17 595	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #4		

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' MD
300.0	3.00	143.81	300.0	-2.1	1.5	2.6	3.00	3.00	
400.0	6.00	143.81	399.6	-8.4	6.2	10.5	3.00	3.00	
500.0	9.00	143.81	498.8	-19.0	13.9	23.5	3.00	3.00	
600.0	12.00	143.81	597.1	-33.7	24.6	41.7	3.00	3.00	
700.0	15.00	143.81	694.3	-52.5	38.4	65.1	3.00	3.00	
754.6	16.64	143.81	746.8	-64.5	47.2	79.9	3.00	3.00	EOB; Inc=16.64°
800.0	16.64	143.81	790.3	-75.0	54.9	93.0	0.00	0.00	
900.0	16.64	143.81	886.2	-98.1	71.8	121.6	0.00	0.00	
1,000.0	16.64	143.81	982.0	-121.2	88.7	150.2	0.00	0.00	
1,100.0	16.64	143.81	1,077.8	-144.3	105.6	178.8	0.00	0.00	
1,200.0	16.64	143.81	1,173.6	-167.5	122.5	207.5	0.00	0.00	
1,300.0	16.64	143.81	1,269.4	-190.6	139.4	236.1	0.00	0.00	
1,400.0	16.64	143.81	1,365.2	-213.7	156.3	264.7	0.00	0.00	
1,500.0	16.64	143.81	1,461.0	-236.8	173.2	293.4	0.00	0.00	
1,600.0	16.64	143.81	1,556.8	-259.9	190.1	322.0	0.00	0.00	
1,700.0	16.64	143.81	1,652.7	-283.0	207.0	350.6	0.00	0.00	
1,800.0	16.64	143.81	1,748.5	-306.1	223.9	379.2	0.00	0.00	
1,900.0	16.64	143.81	1,844.3	-329.2	240.8	407.9	0.00	0.00	
2,000.0	16.64	143.81	1,940.1	-352.3	257.7	436.5	0.00	0.00	
2,100.0	16.64	143.81	2,035.9	-375.4	274.6	465.1	0.00	0.00	
2,200.0	16.64	143.81	2,131.7	-398.5	291.5	493.8	0.00	0.00	
2,300.0	16.64	143.81	2,227.5	-421.6	308.5	522.4	0.00	0.00	
2,400.0	16.64	143.81	2,323.4	-444.8	325.4	551.0	0.00	0.00	
2,500.0	16.64	143.81	2,419.2	-467.9	342.3	579.6	0.00	0.00	
2,600.0	16.64	143.81	2,515.0	-491.0	359.2	608.3	0.00	0.00	
2,700.0	16.64	143.81	2,610.8	-514.1	376.1	636.9	0.00	0.00	
2,800.0	16.64	143.81	2,706.6	-537.2	393.0	665.5	0.00	0.00	
2,900.0	16.64	143.81	2,802.4	-560.3	409.9	694.2	0.00	0.00	
3,000.0	16.64	143.81	2,898.2	-583.4	426.8	722.8	0.00	0.00	
3,100.0	16.64	143.81	2,994.1	-606.5	443.7	751.4	0.00	0.00	
3,200.0	16.64	143.81	3,089.9	-629.6	460.6	780.0	0.00	0.00	
3,300.0	16.64	143.81	3,185.7	-652.7	477.5	808.7	0.00	0.00	
3,400.0	16.64	143.81	3,281.5	-675.8	494.4	837.3	0.00	0.00	
3,500.0	16.64	143.81	3,377.3	-698.9	511.3	865.9	0.00	0.00	
3,600.0	16.64	143.81	3,473.1	-722.0	528.2	894.6	0.00	0.00	
3,700.0	16.64	143.81	3,568.9	-745.2	545.1	923.2	0.00	0.00	
3,800.0	16.64	143.81	3,664.7	-768.3	562.0	951.8	0.00	0.00	
3,900.0	16.64	143.81	3,760.6	-791.4	578.9	980.5	0.00	0.00	
4,000.0	16.64	143.81	3,856.4	-814.5	595.8	1,009.1	0.00	0.00	
4,100.0	16.64	143.81	3,952.2	-837.6	612.7	1,037.7	0.00	0.00	
4,200.0	16.64	143.81	4,048.0	-860.7	629.6	1,066.3	0.00	0.00	
4,300.0	16.64	143.81	4,143.8	-883.8	646.5	1,095.0	0.00	0.00	
4,400.0	16.64	143.81	4,239.6	-906.9	663.4	1,123.6	0.00	0.00	
4,500.0	16.64	143.81	4,335.4	-930.0	680.4	1,152.2	0.00	0.00	
4,600.0	16.64	143.81	4,431.3	-953.1	697.3	1,180.9	0.00	0.00	
4,700.0	16.64	143.81	4,527.1	-976.2	714.2	1,209.5	0.00	0.00	
4,800.0	16.64	143.81	4,622.9	-999.3	731.1	1,238.1	0.00	0.00	
4,900.0	16.64	143.81	4,718.7	-1,022.4	748.0	1,266.7	0.00	0.00	
5,000.0	16.64	143.81	4,814.5	-1,045.6	764.9	1,295.4	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well EMF12A-16 H17 595
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	Well @ 6452.0ft
Project:	North Piceance	MD Reference:	Well @ 6452.0ft
Site:	H17 595	North Reference:	True
Well:	EMF12A-16 H17 595	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #4		

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
5,100.0	16.64	143.81	4,910.3	-1,068.7	781.8	1,324.0	0.00	0.00	
5,200.0	16.64	143.81	5,006.1	-1,091.8	798.7	1,352.6	0.00	0.00	
5,300.0	16.64	143.81	5,102.0	-1,114.9	815.6	1,381.3	0.00	0.00	
5,400.0	16.64	143.81	5,197.8	-1,138.0	832.5	1,409.9	0.00	0.00	
5,500.0	16.64	143.81	5,293.6	-1,161.1	849.4	1,438.5	0.00	0.00	
5,600.0	16.64	143.81	5,389.4	-1,184.2	866.3	1,467.1	0.00	0.00	
5,700.0	16.64	143.81	5,485.2	-1,207.3	883.2	1,495.8	0.00	0.00	
5,800.0	16.64	143.81	5,581.0	-1,230.4	900.1	1,524.4	0.00	0.00	
5,900.0	16.64	143.81	5,676.8	-1,253.5	917.0	1,553.0	0.00	0.00	
6,000.0	16.64	143.81	5,772.7	-1,276.6	933.9	1,581.7	0.00	0.00	
6,005.8	16.64	143.81	5,778.2	-1,278.0	934.9	1,583.3	0.00	0.00	Start Drop -3.00
6,100.0	13.81	143.81	5,869.1	-1,297.9	949.5	1,608.1	3.00	-3.00	
6,200.0	10.81	143.81	5,966.8	-1,315.1	962.1	1,629.4	3.00	-3.00	
6,300.0	7.81	143.81	6,065.5	-1,328.2	971.6	1,645.5	3.00	-3.00	
6,400.0	4.81	143.81	6,164.8	-1,337.1	978.1	1,656.5	3.00	-3.00	
6,500.0	1.81	143.81	6,264.7	-1,341.7	981.5	1,662.3	3.00	-3.00	
6,520.3	1.20	143.81	6,285.0	-1,342.2	981.9	1,662.8	3.00	-3.00	Williams Fork
6,560.4	0.00	0.00	6,325.0	-1,342.5	982.1	1,663.3	3.00	-3.00	EOD; Inc=0° - Top of Gas - EMF12A-16 H17 595
6,600.0	0.24	239.61	6,364.6	-1,342.5	982.0	1,663.3	0.61	0.61	
6,612.6	0.32	239.61	6,377.3	-1,342.6	982.0	1,663.2	0.61	0.61	
6,700.0	0.32	239.61	6,464.6	-1,342.8	981.6	1,663.2	0.00	0.00	
6,800.0	0.32	239.61	6,564.6	-1,343.1	981.1	1,663.2	0.00	0.00	
6,900.0	0.32	239.61	6,664.6	-1,343.4	980.6	1,663.1	0.00	0.00	
7,000.0	0.32	239.61	6,764.6	-1,343.7	980.1	1,663.1	0.00	0.00	
7,100.0	0.32	239.61	6,864.6	-1,343.9	979.6	1,663.0	0.00	0.00	
7,200.0	0.32	239.61	6,964.6	-1,344.2	979.2	1,663.0	0.00	0.00	
7,300.0	0.32	239.61	7,064.6	-1,344.5	978.7	1,662.9	0.00	0.00	
7,400.0	0.32	239.61	7,164.6	-1,344.8	978.2	1,662.9	0.00	0.00	
7,500.0	0.32	239.61	7,264.6	-1,345.1	977.7	1,662.8	0.00	0.00	
7,600.0	0.32	239.61	7,364.6	-1,345.4	977.2	1,662.8	0.00	0.00	
7,700.0	0.32	239.61	7,464.6	-1,345.6	976.8	1,662.7	0.00	0.00	
7,800.0	0.32	239.61	7,564.6	-1,345.9	976.3	1,662.7	0.00	0.00	
7,900.0	0.32	239.61	7,664.6	-1,346.2	975.8	1,662.6	0.00	0.00	
8,000.0	0.32	239.61	7,764.6	-1,346.5	975.3	1,662.6	0.00	0.00	
8,100.0	0.32	239.61	7,864.6	-1,346.8	974.8	1,662.5	0.00	0.00	
8,200.0	0.32	239.61	7,964.6	-1,347.0	974.4	1,662.5	0.00	0.00	
8,300.0	0.32	239.61	8,064.6	-1,347.3	973.9	1,662.4	0.00	0.00	
8,400.0	0.32	239.61	8,164.6	-1,347.6	973.4	1,662.4	0.00	0.00	
8,500.0	0.32	239.61	8,264.6	-1,347.9	972.9	1,662.3	0.00	0.00	
8,600.0	0.32	239.61	8,364.6	-1,348.2	972.4	1,662.3	0.00	0.00	
8,700.0	0.32	239.61	8,464.6	-1,348.5	971.9	1,662.2	0.00	0.00	
8,800.0	0.32	239.61	8,564.6	-1,348.7	971.5	1,662.2	0.00	0.00	
8,900.0	0.32	239.61	8,664.6	-1,349.0	971.0	1,662.1	0.00	0.00	
9,000.0	0.32	239.61	8,764.6	-1,349.3	970.5	1,662.1	0.00	0.00	
9,100.0	0.32	239.61	8,864.6	-1,349.6	970.0	1,662.0	0.00	0.00	
9,200.0	0.32	239.61	8,964.6	-1,349.9	969.5	1,662.0	0.00	0.00	
9,300.0	0.32	239.61	9,064.6	-1,350.1	969.1	1,661.9	0.00	0.00	
9,400.0	0.32	239.61	9,164.6	-1,350.4	968.6	1,661.9	0.00	0.00	
9,500.0	0.32	239.61	9,264.6	-1,350.7	968.1	1,661.8	0.00	0.00	
9,600.0	0.32	239.61	9,364.6	-1,351.0	967.6	1,661.8	0.00	0.00	
9,700.0	0.32	239.61	9,464.6	-1,351.3	967.1	1,661.7	0.00	0.00	
9,800.0	0.32	239.61	9,564.6	-1,351.5	966.7	1,661.7	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well EMF12A-16 H17 595
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	Well @ 6452.0ft
Project:	North Piceance	MD Reference:	Well @ 6452.0ft
Site:	H17 595	North Reference:	True
Well:	EMF12A-16 H17 595	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #4		

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
9,900.0	0.32	239.61	9,664.6	-1,351.8	966.2	1,661.6	0.00	0.00	
10,000.0	0.32	239.61	9,764.6	-1,352.1	965.7	1,661.6	0.00	0.00	
10,100.0	0.32	239.61	9,864.6	-1,352.4	965.2	1,661.5	0.00	0.00	
10,120.4	0.32	239.61	9,885.0	-1,352.5	965.1	1,661.5	0.00	0.00	Rollins - EMF12A-16 H17 595 PBHL
10,200.0	0.32	239.61	9,964.6	-1,352.7	964.7	1,661.5	0.00	0.00	
10,220.4	0.32	239.61	9,985.0	-1,352.7	964.6	1,661.5	0.00	0.00	Drillers TD @ 10220.4' MD
10,300.0	0.32	239.61	10,064.6	-1,353.0	964.3	1,661.4	0.00	0.00	
10,400.0	0.32	239.61	10,164.6	-1,353.2	963.8	1,661.4	0.00	0.00	
10,500.0	0.32	239.61	10,264.6	-1,353.5	963.3	1,661.3	0.00	0.00	
10,600.0	0.32	239.61	10,364.6	-1,353.8	962.8	1,661.3	0.00	0.00	
10,700.0	0.32	239.61	10,464.6	-1,354.1	962.3	1,661.2	0.00	0.00	
10,800.0	0.32	239.61	10,564.6	-1,354.4	961.9	1,661.2	0.00	0.00	
10,900.0	0.32	239.61	10,664.6	-1,354.6	961.4	1,661.1	0.00	0.00	
11,000.0	0.32	239.61	10,764.6	-1,354.9	960.9	1,661.1	0.00	0.00	
11,100.0	0.32	239.61	10,864.6	-1,355.2	960.4	1,661.0	0.00	0.00	
11,200.0	0.32	239.61	10,964.6	-1,355.5	959.9	1,661.0	0.00	0.00	
11,220.4	0.32	239.61	10,985.0	-1,355.5	959.8	1,661.0	0.00	0.00	Permit TD @ 11220.4' MD

Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
EMF12A-16 H17 595 PE	0.00	0.00	9,885.0	-1,352.5	965.1	1,658,399.53	2,276,880.51	39° 36' 46.95 N	108° 4' 1.41 W
- plan hits target center									
- Rectangle (sides W30.0 H50.0 D0.0)									
EMF12A-16 H17 595 TC	0.00	0.00	6,325.0	-1,342.5	982.1	1,658,409.00	2,276,897.75	39° 36' 47.05 N	108° 4' 1.19 W
- plan hits target center									
- Point									

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
6,520.3	6,285.0	Williams Fork			
6,560.4	6,325.0	Top of Gas			
10,120.4	9,885.0	Rollins			

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' MD
754.6	746.8	-64.5	47.2	EOB; Inc=16.64°
6,005.8	5,778.2	-1,278.0	934.9	Start Drop -3.00
6,560.4	6,325.0	-1,342.5	982.1	EOD; Inc=0°
10,220.4	9,985.0	-1,352.7	964.6	Drillers TD @ 10220.4' MD
11,220.4	10,985.0	-1,355.5	959.8	Permit TD @ 11220.4' MD