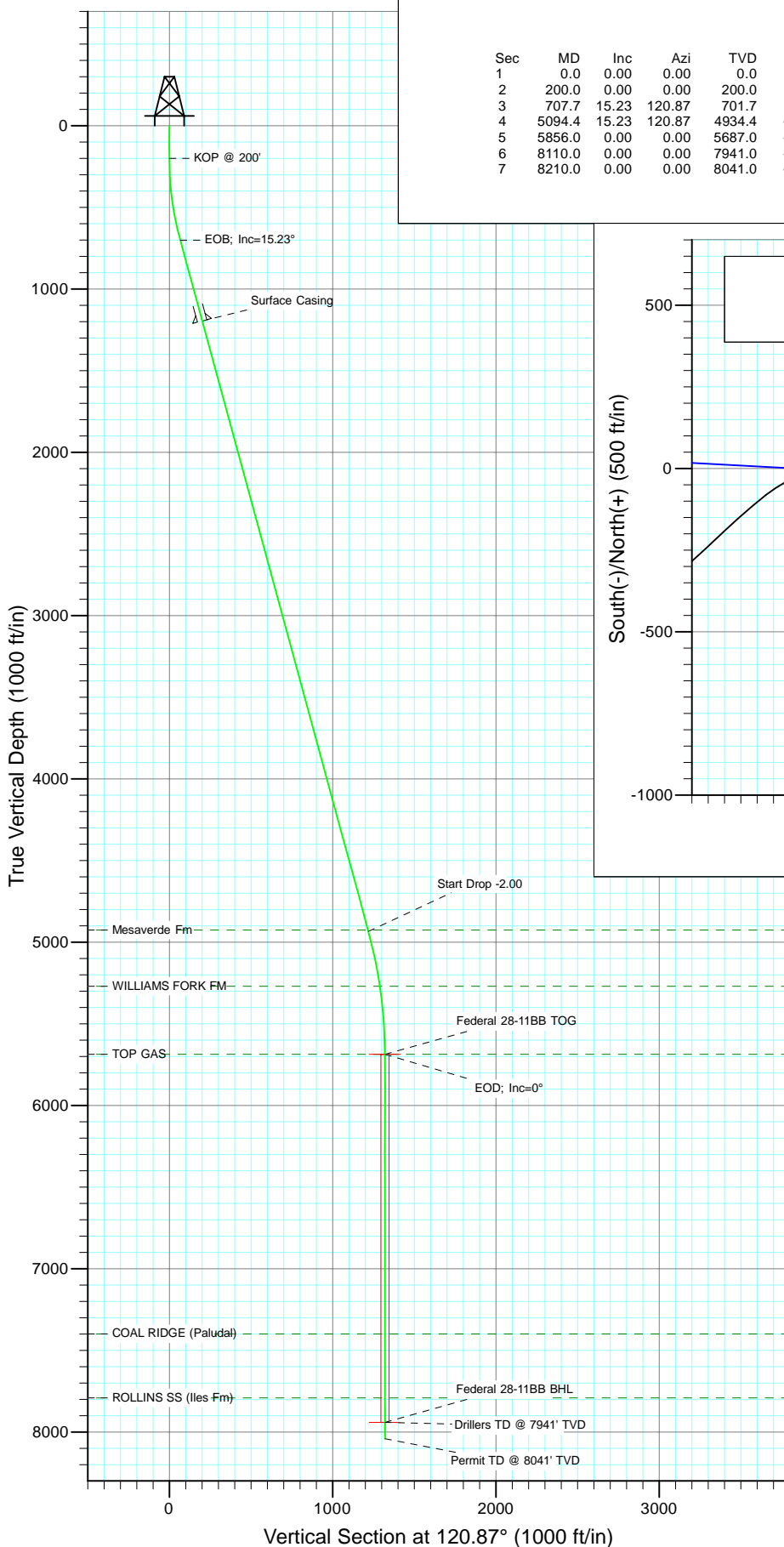


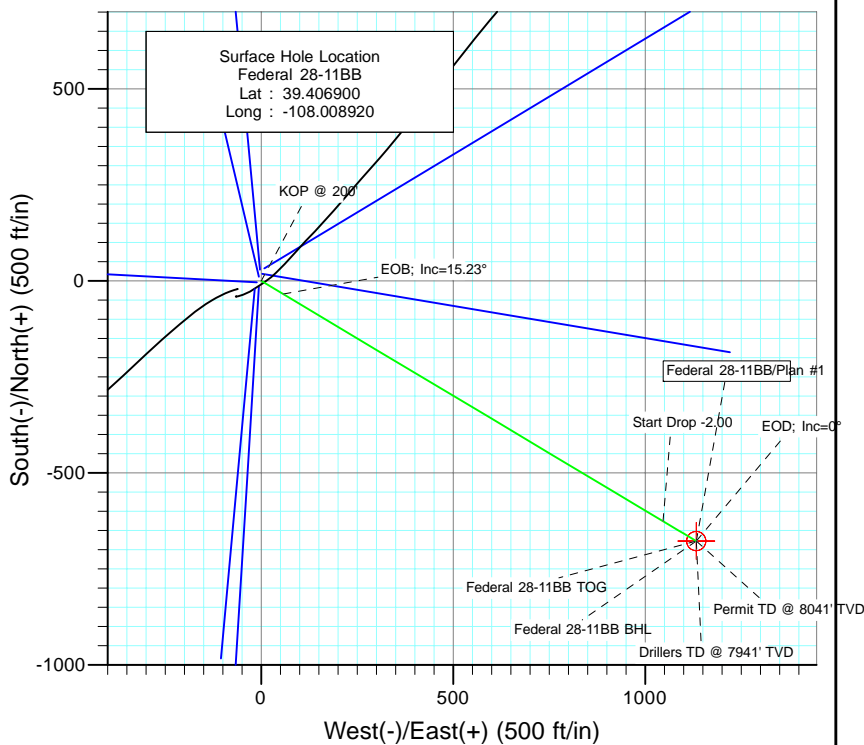


Project: S. Piceance
Site: PL 28 Pad (S28-T7S-R95W)
Well: Federal 28-11BB
Wellbore: DD
Design: Plan #1



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	707.7	15.23	120.87	701.7	-34.4	57.6	3.00	120.87	67.1	
4	5094.4	15.23	120.87	4934.4	-625.8	1046.7	0.00	0.00	1219.5	
5	5856.0	0.00	0.00	5687.0	-677.4	1133.1	2.00	180.00	1320.2	Federal 28-11BB TOG
6	8110.0	0.00	0.00	7941.0	-677.4	1133.1	0.00	0.00	1320.2	Federal 28-11BB BHL
7	8210.0	0.00	0.00	8041.0	-677.4	1133.1	0.00	0.00	1320.2	



FORMATION TOP DETAILS

TVDPath	MDPath	Formation
4926.0	5085.7	Mesaverde Fm
5270.0	5437.5	WILLIAMS FORK FM
5687.0	5856.0	TOP GAS
7399.0	7568.0	COAL RIDGE (Paludal)
7791.0	7960.0	ROLLINS SS (Iles Fm)



Azimuths to True North
Magnetic North: 10.45°

Magnetic Field
Strength: 52321.9snT
Dip Angle: 65.70°
Date: 6/11/2010
Model: IGRF200510

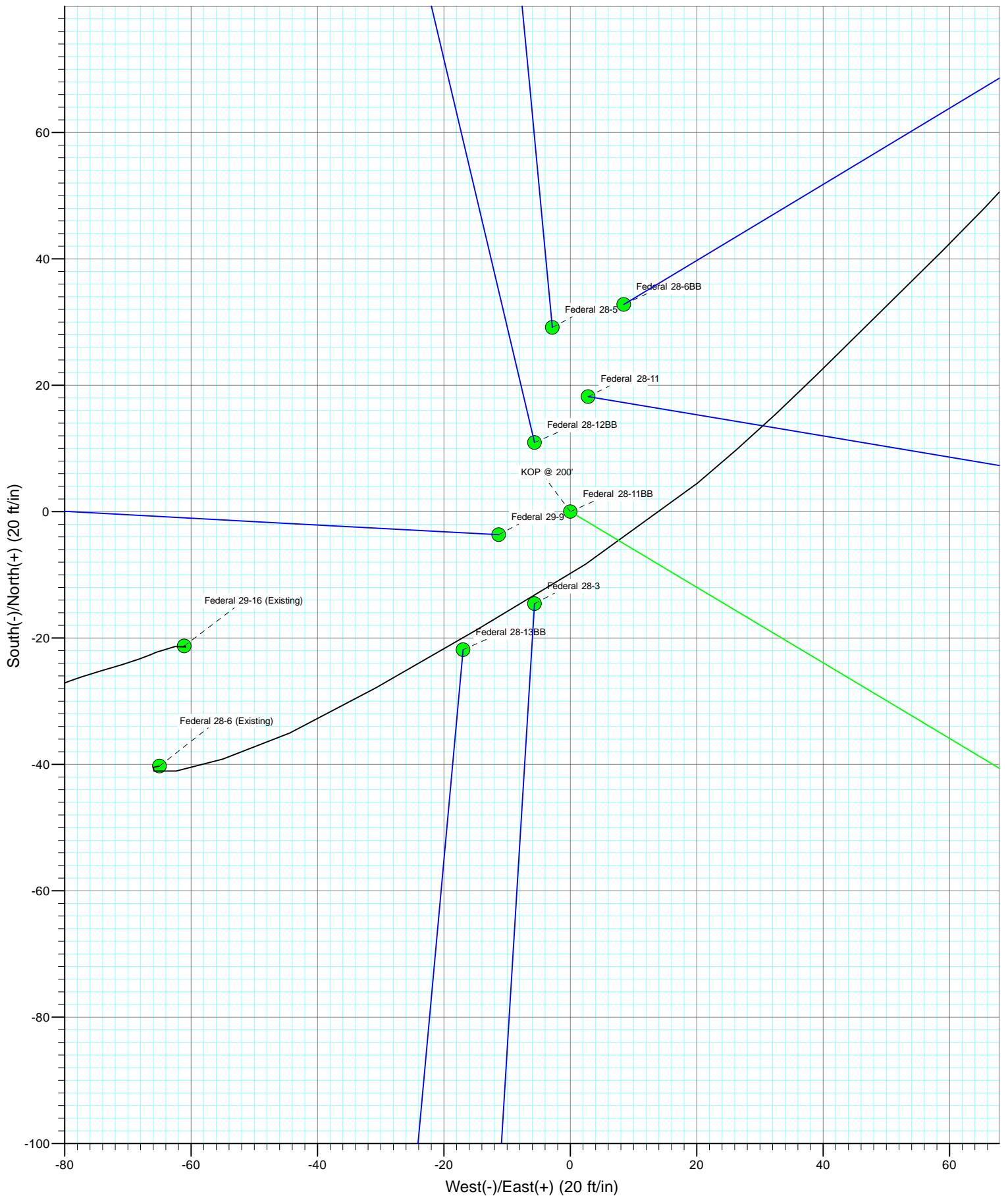
Plan #1
Federal 28-11BB
Job #10xxx: KR

WELL @ 7186.0ft (Original Well Elev)
North American Datum 1983
Well Federal 28-11BB, True North

Type	Target	Azimuth	Origin	Type	N/S	E/W	From	TVD
Target	Federal 28-11BB BHL	120.87	Slot		0.0	0.0		0.0
Name	TVD	+N/-S	+E/-W	Latitude	Longitude			
Federal 28-11BB BHL	7941.0	-677.4	1133.1	39.405040	-108.004910			



Project: S. Piceance
Site: PL 28 Pad (S28-T7S-R95W)
Well: Federal 28-11BB
Wellbore: DD
Design: Plan #1



Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well Federal 28-11BB
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 7186.0ft (Original Well Elev)
Project:	S. Piceance	MD Reference:	WELL @ 7186.0ft (Original Well Elev)
Site:	PL 28 Pad (S28-T7S-R95W)	North Reference:	True
Well:	Federal 28-11BB	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

Project	S. Piceance, Garfield County, CO		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Central Zone		

Site		PL 28 Pad (S28-T7S-R95W)			
Site Position:		Northing:	1,582,914.36 ft	Latitude:	39.406980
From:	Lat/Long	Easting:	2,291,178.00 ft	Longitude:	-108.008930
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.58 °

Well	Federal 28-11BB					
Well Position	+N/-S	0.0 ft	Northing:	1,582,885.15 ft	Latitude:	39.406900
	+E/-W	0.0 ft	Easting:	2,291,180.02 ft	Longitude:	-108.008920
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	7,164.0 ft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	6/11/2010	10.45	65.70	52,322

Design	Plan #1			
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	120.87

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	
707.7	15.23	120.87	701.7	-34.4	57.6	3.00	3.00	0.00	120.87	
5,094.4	15.23	120.87	4,934.4	-625.8	1,046.7	0.00	0.00	0.00	0.00	
5,856.0	0.00	0.00	5,687.0	-677.4	1,133.1	2.00	-2.00	0.00	180.00	Federal 28-11BB TOC
8,110.0	0.00	0.00	7,941.0	-677.4	1,133.1	0.00	0.00	0.00	0.00	Federal 28-11BB BHL
8,210.0	0.00	0.00	8,041.0	-677.4	1,133.1	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 Federal 28-11BB
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 7186.0ft (Original Well Elev)
Project:	S. Piceance	MD Reference:	WELL @ 7186.0ft (Original Well Elev)
Site:	PL 28 Pad (S28-T7S-R95W)	North Reference:	True
Well:	Federal 28-11BB	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	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	120.87	300.0	-1.3	2.2	2.6	3.00	3.00	
400.0	6.00	120.87	399.6	-5.4	9.0	10.5	3.00	3.00	
500.0	9.00	120.87	498.8	-12.1	20.2	23.5	3.00	3.00	
600.0	12.00	120.87	597.1	-21.4	35.8	41.7	3.00	3.00	
700.0	15.00	120.87	694.3	-33.4	55.9	65.1	3.00	3.00	
707.7	15.23	120.87	701.7	-34.4	57.6	67.1	3.00	3.00	EOB; Inc=15.23°
800.0	15.23	120.87	790.8	-46.9	78.4	91.3	0.00	0.00	
900.0	15.23	120.87	887.3	-60.3	100.9	117.6	0.00	0.00	
1,000.0	15.23	120.87	983.8	-73.8	123.5	143.9	0.00	0.00	
1,100.0	15.23	120.87	1,080.3	-87.3	146.0	170.1	0.00	0.00	
1,200.0	15.23	120.87	1,176.7	-100.8	168.6	196.4	0.00	0.00	
1,220.0	15.23	120.87	1,196.0	-103.5	173.1	201.7	0.00	0.00	Surface Casing
1,300.0	15.23	120.87	1,273.2	-114.3	191.1	222.7	0.00	0.00	
1,400.0	15.23	120.87	1,369.7	-127.8	213.7	249.0	0.00	0.00	
1,500.0	15.23	120.87	1,466.2	-141.2	236.2	275.2	0.00	0.00	
1,600.0	15.23	120.87	1,562.7	-154.7	258.8	301.5	0.00	0.00	
1,700.0	15.23	120.87	1,659.2	-168.2	281.3	327.8	0.00	0.00	
1,800.0	15.23	120.87	1,755.7	-181.7	303.9	354.0	0.00	0.00	
1,900.0	15.23	120.87	1,852.2	-195.2	326.4	380.3	0.00	0.00	
2,000.0	15.23	120.87	1,948.6	-208.6	349.0	406.6	0.00	0.00	
2,100.0	15.23	120.87	2,045.1	-222.1	371.5	432.9	0.00	0.00	
2,200.0	15.23	120.87	2,141.6	-235.6	394.1	459.1	0.00	0.00	
2,300.0	15.23	120.87	2,238.1	-249.1	416.6	485.4	0.00	0.00	
2,400.0	15.23	120.87	2,334.6	-262.6	439.2	511.7	0.00	0.00	
2,500.0	15.23	120.87	2,431.1	-276.0	461.7	537.9	0.00	0.00	
2,600.0	15.23	120.87	2,527.6	-289.5	484.3	564.2	0.00	0.00	
2,700.0	15.23	120.87	2,624.1	-303.0	506.8	590.5	0.00	0.00	
2,800.0	15.23	120.87	2,720.5	-316.5	529.4	616.8	0.00	0.00	
2,900.0	15.23	120.87	2,817.0	-330.0	551.9	643.0	0.00	0.00	
3,000.0	15.23	120.87	2,913.5	-343.4	574.5	669.3	0.00	0.00	
3,100.0	15.23	120.87	3,010.0	-356.9	597.0	695.6	0.00	0.00	
3,200.0	15.23	120.87	3,106.5	-370.4	619.6	721.8	0.00	0.00	
3,300.0	15.23	120.87	3,203.0	-383.9	642.1	748.1	0.00	0.00	
3,400.0	15.23	120.87	3,299.5	-397.4	664.7	774.4	0.00	0.00	
3,500.0	15.23	120.87	3,396.0	-410.9	687.2	800.7	0.00	0.00	
3,600.0	15.23	120.87	3,492.4	-424.3	709.7	826.9	0.00	0.00	
3,700.0	15.23	120.87	3,588.9	-437.8	732.3	853.2	0.00	0.00	
3,800.0	15.23	120.87	3,685.4	-451.3	754.8	879.5	0.00	0.00	
3,900.0	15.23	120.87	3,781.9	-464.8	777.4	905.7	0.00	0.00	
4,000.0	15.23	120.87	3,878.4	-478.3	799.9	932.0	0.00	0.00	
4,100.0	15.23	120.87	3,974.9	-491.7	822.5	958.3	0.00	0.00	
4,200.0	15.23	120.87	4,071.4	-505.2	845.0	984.6	0.00	0.00	
4,300.0	15.23	120.87	4,167.9	-518.7	867.6	1,010.8	0.00	0.00	
4,400.0	15.23	120.87	4,264.3	-532.2	890.1	1,037.1	0.00	0.00	
4,500.0	15.23	120.87	4,360.8	-545.7	912.7	1,063.4	0.00	0.00	
4,600.0	15.23	120.87	4,457.3	-559.1	935.2	1,089.6	0.00	0.00	
4,700.0	15.23	120.87	4,553.8	-572.6	957.8	1,115.9	0.00	0.00	
4,800.0	15.23	120.87	4,650.3	-586.1	980.3	1,142.2	0.00	0.00	
4,900.0	15.23	120.87	4,746.8	-599.6	1,002.9	1,168.4	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well Federal 28-11BB
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 7186.0ft (Original Well Elev)
Project:	S. Piceance	MD Reference:	WELL @ 7186.0ft (Original Well Elev)
Site:	PL 28 Pad (S28-T7S-R95W)	North Reference:	True
Well:	Federal 28-11BB	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	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
5,000.0	15.23	120.87	4,843.3	-613.1	1,025.4	1,194.7	0.00	0.00	
5,085.7	15.23	120.87	4,926.0	-624.6	1,044.8	1,217.2	0.00	0.00	Mesaverde Fm
5,094.4	15.23	120.87	4,934.4	-625.8	1,046.7	1,219.5	0.00	0.00	Start Drop -2.00
5,100.0	15.12	120.87	4,939.8	-626.5	1,048.0	1,221.0	2.00	-2.00	
5,200.0	13.12	120.87	5,036.7	-639.1	1,068.9	1,245.4	2.00	-2.00	
5,300.0	11.12	120.87	5,134.5	-649.8	1,086.9	1,266.4	2.00	-2.00	
5,400.0	9.12	120.87	5,232.9	-658.9	1,102.0	1,283.9	2.00	-2.00	
5,437.5	8.37	120.87	5,270.0	-661.8	1,106.9	1,289.6	2.00	-2.00	WILLIAMS FORK FM
5,500.0	7.12	120.87	5,331.9	-666.1	1,114.1	1,298.1	2.00	-2.00	
5,600.0	5.12	120.87	5,431.4	-671.6	1,123.3	1,308.7	2.00	-2.00	
5,700.0	3.12	120.87	5,531.1	-675.3	1,129.4	1,315.9	2.00	-2.00	
5,800.0	1.12	120.87	5,631.0	-677.2	1,132.6	1,319.6	2.00	-2.00	
5,856.0	0.00	0.00	5,687.0	-677.4	1,133.1	1,320.2	2.00	-2.00	EOD; Inc=0° - TOP GAS - Federal 28-11BB TO
5,900.0	0.00	0.00	5,731.0	-677.4	1,133.1	1,320.2	0.00	0.00	
6,000.0	0.00	0.00	5,831.0	-677.4	1,133.1	1,320.2	0.00	0.00	
6,100.0	0.00	0.00	5,931.0	-677.4	1,133.1	1,320.2	0.00	0.00	
6,200.0	0.00	0.00	6,031.0	-677.4	1,133.1	1,320.2	0.00	0.00	
6,300.0	0.00	0.00	6,131.0	-677.4	1,133.1	1,320.2	0.00	0.00	
6,400.0	0.00	0.00	6,231.0	-677.4	1,133.1	1,320.2	0.00	0.00	
6,500.0	0.00	0.00	6,331.0	-677.4	1,133.1	1,320.2	0.00	0.00	
6,600.0	0.00	0.00	6,431.0	-677.4	1,133.1	1,320.2	0.00	0.00	
6,700.0	0.00	0.00	6,531.0	-677.4	1,133.1	1,320.2	0.00	0.00	
6,800.0	0.00	0.00	6,631.0	-677.4	1,133.1	1,320.2	0.00	0.00	
6,900.0	0.00	0.00	6,731.0	-677.4	1,133.1	1,320.2	0.00	0.00	
7,000.0	0.00	0.00	6,831.0	-677.4	1,133.1	1,320.2	0.00	0.00	
7,100.0	0.00	0.00	6,931.0	-677.4	1,133.1	1,320.2	0.00	0.00	
7,200.0	0.00	0.00	7,031.0	-677.4	1,133.1	1,320.2	0.00	0.00	
7,300.0	0.00	0.00	7,131.0	-677.4	1,133.1	1,320.2	0.00	0.00	
7,400.0	0.00	0.00	7,231.0	-677.4	1,133.1	1,320.2	0.00	0.00	
7,500.0	0.00	0.00	7,331.0	-677.4	1,133.1	1,320.2	0.00	0.00	
7,568.0	0.00	0.00	7,399.0	-677.4	1,133.1	1,320.2	0.00	0.00	COAL RIDGE (Paludal)
7,600.0	0.00	0.00	7,431.0	-677.4	1,133.1	1,320.2	0.00	0.00	
7,700.0	0.00	0.00	7,531.0	-677.4	1,133.1	1,320.2	0.00	0.00	
7,800.0	0.00	0.00	7,631.0	-677.4	1,133.1	1,320.2	0.00	0.00	
7,900.0	0.00	0.00	7,731.0	-677.4	1,133.1	1,320.2	0.00	0.00	
7,960.0	0.00	0.00	7,791.0	-677.4	1,133.1	1,320.2	0.00	0.00	ROLLINS SS (Iles Fm)
8,000.0	0.00	0.00	7,831.0	-677.4	1,133.1	1,320.2	0.00	0.00	
8,100.0	0.00	0.00	7,931.0	-677.4	1,133.1	1,320.2	0.00	0.00	
8,110.0	0.00	0.00	7,941.0	-677.4	1,133.1	1,320.2	0.00	0.00	Drillers TD @ 7941' TVD - Federal 28-11BB BH
8,200.0	0.00	0.00	8,031.0	-677.4	1,133.1	1,320.2	0.00	0.00	
8,210.0	0.00	0.00	8,041.0	-677.4	1,133.1	1,320.2	0.00	0.00	Permit TD @ 8041' TVD

Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well Federal 28-11BB
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 7186.0ft (Original Well Elev)
Project:	S. Piceance	MD Reference:	WELL @ 7186.0ft (Original Well Elev)
Site:	PL 28 Pad (S28-T7S-R95W)	North Reference:	True
Well:	Federal 28-11BB	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
Federal 28-11BB TOG	0.00	0.00	5,687.0	-677.4	1,133.1	1,582,176.68	2,292,293.97	39.405040	-108.004910
- plan hits target center									
- Point									
Federal 28-11BB BHL	0.00	0.00	7,941.0	-677.4	1,133.1	1,582,176.68	2,292,293.97	39.405040	-108.004910
- plan hits target center									
- Circle (radius 25.0)									

Casing Points					
Measured Depth	Vertical Depth			Casing Diameter	Hole Diameter
(ft)	(ft)	Name		(in)	(in)
1,220.0	1,196.0	Surface Casing		0.000	0.000

Formations					
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction
(ft)	(ft)			(°)	(°)
5,085.7	4,926.0	Mesaverde Fm			
5,437.5	5,270.0	WILLIAMS FORK FM			
5,856.0	5,687.0	TOP GAS			
7,568.0	7,399.0	COAL RIDGE (Paludal)			
7,960.0	7,791.0	ROLLINS SS (Iles Fm)			

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates			
(ft)	(ft)	+N/-S	+E/-W	Comment	
(ft)	(ft)	(ft)	(ft)		
200.0	200.0	0.0	0.0	KOP @ 200'	
707.7	701.7	-34.4	57.6	EOB; Inc=15.23°	
5,094.4	4,934.4	-625.8	1,046.7	Start Drop -2.00	
5,856.0	5,687.0	-677.4	1,133.1	EOD; Inc=0°	
8,110.0	7,941.0	-677.4	1,133.1	Drillers TD @ 7941' TVD	
8,210.0	8,041.0	-677.4	1,133.1	Permit TD @ 8041' TVD	

EnCana Oil & Gas (USA) Inc

S. Piceance

PL 28 Pad (S28-T7S-R95W)

Federal 28-11BB

DD

Plan #1

Anticollision Report

26 July, 2010

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Federal 28-11BB
Project:	S. Piceance	TVD Reference:	WELL @ 7186.0ft (Original Well Elev)
Reference Site:	PL 28 Pad (S28-T7S-R95W)	MD Reference:	WELL @ 7186.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Federal 28-11BB	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference	Plan #1		
Filter type:	GLOBAL FILTER APPLIED: All wellpaths within 200'+ 100/1000 of reference		
Interpolation Method:	MD Interval 100.0ft	Error Model:	Systematic Ellipse
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 100.0ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program		Date	7/26/2010		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	8,210.0	Plan #1 (DD)	MWD	Geolink MWD	

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
PL 28 Pad (S28-T7S-R95W)						
Federal 28-11 - DD - Plan #1	200.0	200.0	18.4	17.8	29.661	CC, ES
Federal 28-11 - DD - Plan #1	1,300.0	1,296.2	99.6	90.6	11.104	SF
Federal 28-12BB - DD - Plan #1	200.0	200.0	12.3	11.7	19.799	CC, ES
Federal 28-12BB - DD - Plan #1	300.0	299.2	17.1	16.1	17.569	SF
Federal 28-13BB - DD - Plan #1	200.0	200.0	27.7	27.0	44.521	CC, ES
Federal 28-13BB - DD - Plan #1	500.0	498.8	38.4	36.7	21.937	SF
Federal 28-3 - DD - Plan #1	200.0	200.0	15.6	15.0	25.150	CC, ES
Federal 28-3 - DD - Plan #1	400.0	397.9	24.8	23.4	17.872	SF
Federal 28-5 - DD - Plan #1	200.0	200.0	29.3	28.7	47.131	CC, ES
Federal 28-5 - DD - Plan #1	300.0	298.3	33.5	32.5	34.435	SF
Federal 28-6 (Existing) - DD - Schlumberger Surveys	611.8	623.4	65.2	63.0	29.068	CC, ES
Federal 28-6 (Existing) - DD - Schlumberger Surveys	800.0	806.5	82.4	79.2	25.331	SF
Federal 28-6BB - DD - Plan #1	200.0	200.0	33.9	33.2	54.494	CC, ES
Federal 28-6BB - DD - Plan #1	600.0	590.6	75.6	73.1	30.045	SF
Federal 29-16 (Existing) - DD - Schlumberger surveys	172.0	172.0	64.4	63.8	122.922	CC
Federal 29-16 (Existing) - DD - Schlumberger surveys	200.0	199.9	64.4	63.8	103.648	ES
Federal 29-16 (Existing) - DD - Schlumberger surveys	500.0	495.9	86.8	85.1	50.411	SF
Federal 29-9 - DD - Plan #1	200.0	200.0	11.9	11.3	19.114	CC, ES
Federal 29-9 - DD - Plan #1	300.0	299.2	16.3	15.3	16.753	SF

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Federal 28-11BB
Project:	S. Piceance	TVD Reference:	WELL @ 7186.0ft (Original Well Elev)
Reference Site:	PL 28 Pad (S28-T7S-R95W)	MD Reference:	WELL @ 7186.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Federal 28-11BB	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design PL 28 Pad (S28-T7S-R95W) - Federal 28-11 - DD - Plan #1												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	
0.0	0.0	0.0	0.0	0.0	0.0	8.82	18.2	2.8	18.4				
100.0	100.0	100.0	100.0	0.1	0.1	8.82	18.2	2.8	18.4	18.2	0.27	67.688	
200.0	200.0	200.0	200.0	0.3	0.3	8.82	18.2	2.8	18.4	17.8	0.62	29.661	CC, ES
300.0	300.0	300.0	300.0	0.5	0.5	-111.46	17.8	5.4	19.4	18.4	0.99	19.652	
400.0	399.6	399.9	399.6	0.7	0.7	-109.98	16.5	13.1	22.2	20.8	1.42	15.639	
500.0	498.8	499.8	498.6	1.0	1.0	-108.20	14.3	26.0	27.0	25.0	1.98	13.641	
600.0	597.1	599.5	596.5	1.4	1.4	-106.53	11.3	43.9	33.7	31.0	2.70	12.507	
700.0	694.3	699.0	693.4	1.8	1.8	-105.68	7.6	66.3	42.3	38.7	3.56	11.875	
800.0	790.8	798.5	790.1	2.3	2.2	-107.46	3.7	89.7	51.8	47.3	4.45	11.647	
900.0	887.3	898.1	886.8	2.8	2.7	-108.72	-0.2	113.1	61.3	56.0	5.34	11.477	
1,000.0	983.8	997.6	983.5	3.3	3.1	-109.64	-4.2	136.4	70.9	64.6	6.24	11.348	
1,100.0	1,080.3	1,097.1	1,080.1	3.8	3.6	-110.34	-8.1	159.8	80.4	73.3	7.15	11.248	
1,200.0	1,176.7	1,196.7	1,176.8	4.3	4.0	-110.90	-12.0	183.1	90.0	81.9	8.06	11.168	
1,300.0	1,273.2	1,296.2	1,273.5	4.8	4.5	-111.34	-15.9	206.5	99.6	90.6	8.97	11.104	SF

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Federal 28-11BB
Project:	S. Piceance	TVD Reference:	WELL @ 7186.0ft (Original Well Elev)
Reference Site:	PL 28 Pad (S28-T7S-R95W)	MD Reference:	WELL @ 7186.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Federal 28-11BB	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design PL 28 Pad (S28-T7S-R95W) - Federal 28-12BB - DD - Plan #1												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-27.35	10.9	-5.7	12.3				
100.0	100.0	100.0	100.0	0.1	0.1	-27.35	10.9	-5.7	12.3	12.0	0.27	45.182	
200.0	200.0	200.0	200.0	0.3	0.3	-27.35	10.9	-5.7	12.3	11.7	0.62	19.799 CC, ES	
300.0	300.0	299.2	299.1	0.5	0.5	-150.65	13.4	-6.2	17.1	16.1	0.97	17.569 SF	
400.0	399.6	397.4	397.1	0.7	0.7	-153.62	20.6	-7.9	31.1	29.7	1.33	23.417	
500.0	498.8	495.4	494.7	1.0	0.9	-156.66	28.8	-9.9	50.9	49.2	1.69	30.109	
600.0	597.1	592.3	591.2	1.4	1.1	-159.35	36.9	-11.8	75.5	73.5	2.06	36.741	

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Federal 28-11BB
Project:	S. Piceance	TVD Reference:	WELL @ 7186.0ft (Original Well Elev)
Reference Site:	PL 28 Pad (S28-T7S-R95W)	MD Reference:	WELL @ 7186.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Federal 28-11BB	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design PL 28 Pad (S28-T7S-R95W) - Federal 28-13BB - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	-142.20	-21.9	-17.0	27.7					
100.0	100.0	100.0	100.0	0.1	0.1	-142.20	-21.9	-17.0	27.7	27.4	0.27	101.598		
200.0	200.0	200.0	200.0	0.3	0.3	-142.20	-21.9	-17.0	27.7	27.0	0.62	44.521 CC, ES		
300.0	300.0	300.0	300.0	0.5	0.5	102.21	-21.9	-17.0	28.1	27.1	0.98	28.717		
400.0	399.6	399.6	399.6	0.7	0.7	116.55	-21.9	-17.0	30.7	29.4	1.36	22.558		
500.0	498.8	498.8	498.8	1.0	0.8	134.00	-21.9	-17.0	38.4	36.7	1.75	21.937 SF		
600.0	597.1	597.1	597.1	1.4	1.0	148.08	-21.9	-17.0	52.8	50.7	2.11	25.028		
700.0	694.3	694.3	694.3	1.8	1.2	157.43	-21.9	-17.0	73.7	71.3	2.44	30.201		
800.0	790.8	790.8	790.8	2.3	1.3	163.27	-21.9	-17.0	98.6	95.8	2.77	35.642		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Federal 28-11BB
Project:	S. Piceance	TVD Reference:	WELL @ 7186.0ft (Original Well Elev)
Reference Site:	PL 28 Pad (S28-T7S-R95W)	MD Reference:	WELL @ 7186.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Federal 28-11BB	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design PL 28 Pad (S28-T7S-R95W) - Federal 28-3 - DD - Plan #1												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-158.80	-14.6	-5.7	15.6				
100.0	100.0	100.0	100.0	0.1	0.1	-158.80	-14.6	-5.7	15.6	15.4	0.27	57.394	
200.0	200.0	200.0	200.0	0.3	0.3	-158.80	-14.6	-5.7	15.6	15.0	0.62	25.150 CC, ES	
300.0	300.0	299.2	299.1	0.5	0.5	86.01	-17.1	-5.8	17.8	16.8	0.98	18.135	
400.0	399.6	397.9	397.5	0.7	0.7	96.73	-24.8	-6.3	24.8	23.4	1.39	17.872 SF	
500.0	498.8	495.7	494.6	1.0	1.0	105.05	-37.4	-7.0	37.4	35.5	1.89	19.801	
600.0	597.1	592.4	589.6	1.4	1.3	110.05	-54.7	-8.1	55.6	53.1	2.51	22.155	
700.0	694.3	687.4	682.1	1.8	1.7	112.89	-76.3	-9.4	79.1	75.8	3.26	24.260	

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Federal 28-11BB
Project:	S. Piceance	TVD Reference:	WELL @ 7186.0ft (Original Well Elev)
Reference Site:	PL 28 Pad (S28-T7S-R95W)	MD Reference:	WELL @ 7186.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Federal 28-11BB	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design PL 28 Pad (S28-T7S-R95W) - Federal 28-5 - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	-5.54	29.1	-2.8	29.3					
100.0	100.0	100.0	100.0	0.1	0.1	-5.54	29.1	-2.8	29.3	29.0	0.27	107.554		
200.0	200.0	200.0	200.0	0.3	0.3	-5.54	29.1	-2.8	29.3	28.7	0.62	47.131 CC, ES		
300.0	300.0	298.3	298.2	0.5	0.5	-129.85	31.7	-3.1	33.5	32.5	0.97	34.435 SF		
400.0	399.6	395.3	395.0	0.7	0.7	-136.29	39.1	-3.8	46.5	45.1	1.34	34.757		
500.0	498.8	489.9	488.8	1.0	1.0	-141.37	51.0	-4.9	68.6	66.9	1.72	39.859		
600.0	597.1	581.0	578.5	1.4	1.3	-144.49	66.9	-6.4	99.6	97.5	2.13	46.753		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Federal 28-11BB
Project:	S. Piceance	TVD Reference:	WELL @ 7186.0ft (Original Well Elev)
Reference Site:	PL 28 Pad (S28-T7S-R95W)	MD Reference:	WELL @ 7186.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Federal 28-11BB	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 141-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	-121.79	-40.3	-65.0	76.5					
100.0	100.0	99.3	99.3	0.1	0.1	-121.66	-40.4	-65.5	76.9	76.6	0.28	271.844		
200.0	200.0	200.0	200.0	0.3	0.3	-121.61	-40.8	-66.2	77.8	77.2	0.62	125.054		
300.0	300.0	303.5	303.4	0.5	0.5	118.03	-41.2	-63.7	77.1	76.2	0.99	78.316		
400.0	399.6	407.3	406.9	0.7	0.7	121.80	-39.5	-56.1	73.8	72.4	1.38	53.613		
500.0	498.8	510.2	509.0	1.0	1.0	130.26	-34.9	-44.1	69.0	67.2	1.78	38.640		
600.0	597.1	611.8	609.0	1.4	1.3	145.35	-26.4	-28.2	65.3	63.1	2.19	29.781		
611.8	608.6	623.4	620.4	1.4	1.4	147.48	-25.2	-26.1	65.2	63.0	2.24	29.068 CC, ES		
700.0	694.3	710.0	705.1	1.8	1.7	163.88	-16.1	-10.4	69.3	66.6	2.64	26.222		
800.0	790.8	806.5	799.1	2.3	2.1	-179.81	-4.6	8.1	82.4	79.2	3.25	25.331 SF		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Federal 28-11BB
Project:	S. Piceance	TVD Reference:	WELL @ 7186.0ft (Original Well Elev)
Reference Site:	PL 28 Pad (S28-T7S-R95W)	MD Reference:	WELL @ 7186.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Federal 28-11BB	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													PL 28 Pad (S28-T7S-R95W) - Federal 28-6BB - DD - Plan #1		Offset Site Error:		0.0 ft
Survey Program: 0-MWD													Offset Well Error:		0.0 ft		
Reference		Offset		Semi Major Axis			Distance							Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre		Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor					
							+N/-S (ft)	+E/-W (ft)									
0.0	0.0	0.0	0.0	0.0	0.0	14.50	32.8	8.5	33.9								
100.0	100.0	100.0	100.0	0.1	0.1	14.50	32.8	8.5	33.9	33.6	0.27	124.358					
200.0	200.0	200.0	200.0	0.3	0.3	14.50	32.8	8.5	33.9	33.2	0.62	54.494 CC, ES					
300.0	300.0	298.7	298.6	0.5	0.5	-107.39	34.1	10.7	36.4	35.5	0.98	37.188					
400.0	399.6	396.9	396.6	0.7	0.7	-109.70	38.0	17.2	44.3	42.9	1.39	31.791					
500.0	498.8	494.4	493.2	1.0	1.0	-112.06	44.5	27.9	57.3	55.4	1.90	30.235					
600.0	597.1	590.6	587.9	1.4	1.3	-113.88	53.3	42.6	75.6	73.1	2.52	30.045 SF					
700.0	694.3	685.3	680.1	1.8	1.8	-115.08	64.4	61.0	99.0	95.7	3.27	30.267					

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Federal 28-11BB
Project:	S. Piceance	TVD Reference:	WELL @ 7186.0ft (Original Well Elev)
Reference Site:	PL 28 Pad (S28-T7S-R95W)	MD Reference:	WELL @ 7186.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Federal 28-11BB	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													PL 28 Pad (S28-T7S-R95W) - Federal 29-16 (Existing) - DD - Schlumberger surveys		Offset Site Error:		0.0 ft	
Survey Program:		110-MWD												Offset Well Error:		0.0 ft		
Reference		Offset		Semi Major Axis			Distance											
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Total Uncertainty	Separation	Warning					
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	Axis	Factor						
0.0	0.0	0.0	0.0	0.0	0.0	-109.21	-21.3	-61.1	64.7									
100.0	100.0	100.2	100.2	0.1	0.1	-109.35	-21.4	-60.9	64.5	64.2	0.28	233.656						
172.0	172.0	172.0	172.0	0.3	0.3	-109.48	-21.5	-60.7	64.4	63.8	0.52	122.922	CC					
200.0	200.0	199.9	199.9	0.3	0.3	-109.46	-21.5	-60.7	64.4	63.8	0.62	103.648	ES					
300.0	300.0	299.1	299.1	0.5	0.5	131.64	-21.3	-61.4	66.7	65.7	0.97	68.538						
400.0	399.6	397.9	397.8	0.7	0.7	136.32	-21.5	-63.3	74.1	72.7	1.34	55.267						
500.0	498.8	495.9	495.8	1.0	0.8	141.71	-22.5	-65.9	86.8	85.1	1.72	50.411	SF					

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Federal 28-11BB
Project:	S. Piceance	TVD Reference:	WELL @ 7186.0ft (Original Well Elev)
Reference Site:	PL 28 Pad (S28-T7S-R95W)	MD Reference:	WELL @ 7186.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Federal 28-11BB	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design PL 28 Pad (S28-T7S-R95W) - Federal 29-9 - DD - Plan #1												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-107.88	-3.6	-11.3	11.9				
100.0	100.0	100.0	100.0	0.1	0.1	-107.88	-3.6	-11.3	11.9	11.6	0.27	43.619	
200.0	200.0	200.0	200.0	0.3	0.3	-107.88	-3.6	-11.3	11.9	11.3	0.62	19.114 CC, ES	
300.0	300.0	299.2	299.1	0.5	0.5	141.34	-3.5	-13.9	16.3	15.3	0.97	16.753 SF	
400.0	399.6	396.8	396.5	0.7	0.7	152.98	-3.1	-21.4	30.6	29.3	1.32	23.185	
500.0	498.8	491.6	490.4	1.0	1.0	158.53	-2.5	-33.5	55.2	53.5	1.67	33.065	
600.0	597.1	582.2	579.6	1.4	1.3	161.06	-1.6	-49.4	89.2	87.2	2.01	44.325	

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Federal 28-11BB
Project:	S. Piceance	TVD Reference:	WELL @ 7186.0ft (Original Well Elev)
Reference Site:	PL 28 Pad (S28-T7S-R95W)	MD Reference:	WELL @ 7186.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Federal 28-11BB	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 7186.0ft (Original Well Elev)
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: Federal 28-11BB
Coordinate System is US State Plane 1983, Colorado Central Zone
Grid Convergence at Surface is: -1.58°

