

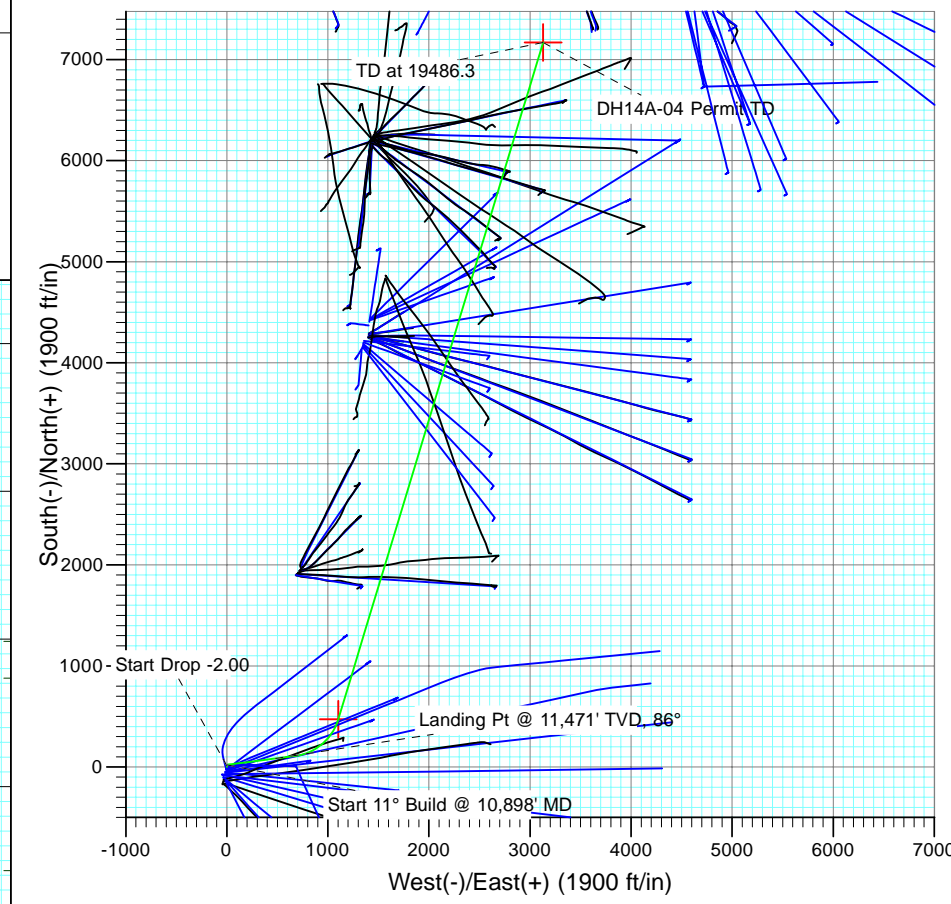
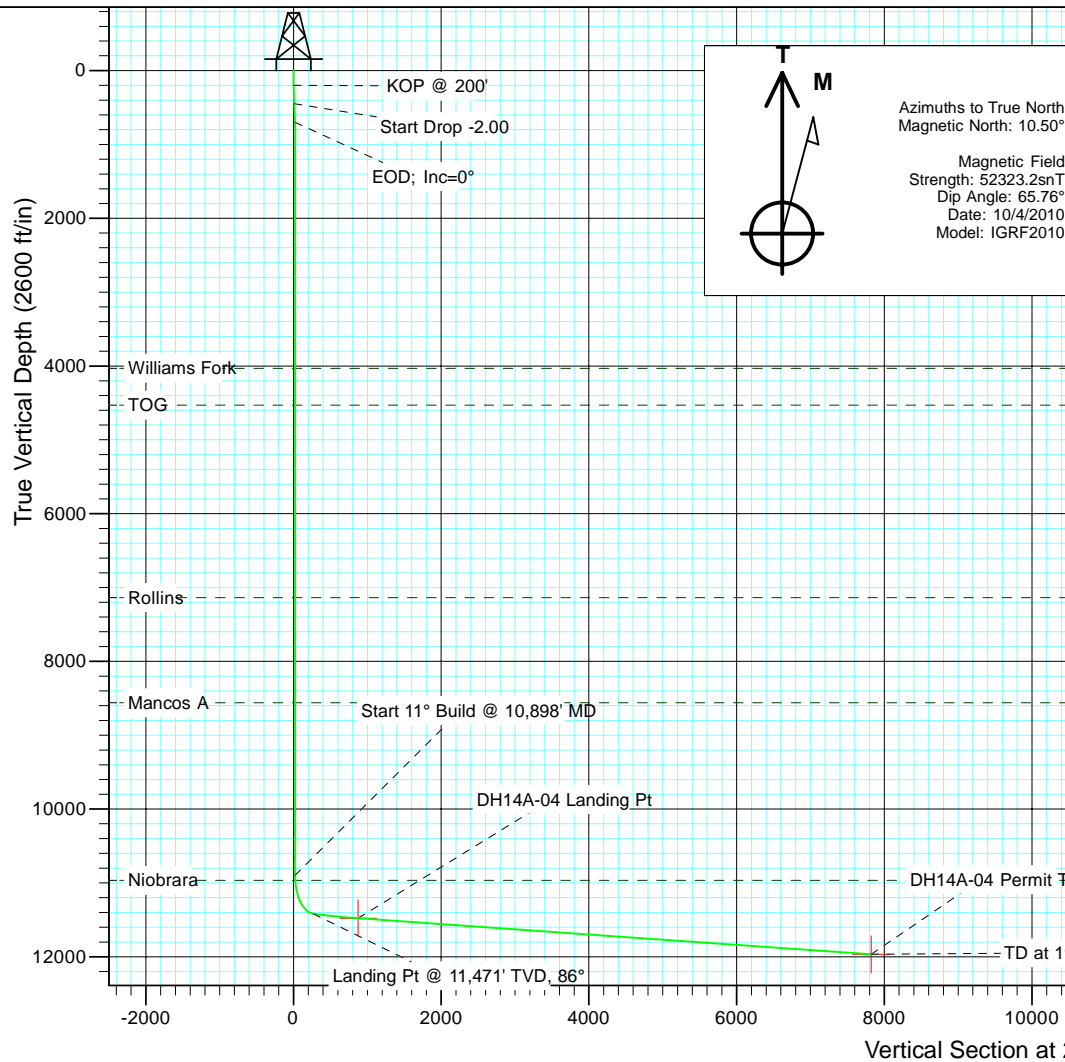


Project: North Piceance  
 Site: H17 696 (S17-T6S-R96W)  
 Well: DH 14A-04 H17 696  
 Wellbore: Hz  
 Design: Plan #3



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	450.0	5.00	0.00	449.7	10.9	0.0	2.00	0.00	10.0	
4	700.0	0.00	0.00	699.4	21.8	0.0	2.00	180.00	20.0	
5	10898.4	0.00	0.00	10897.8	21.8	0.0	0.00	0.00	20.0	
6	11680.2	85.99	82.67	11417.4	83.6	480.5	11.00	82.67	268.8	
7	11874.9	85.99	82.67	11431.0	108.4	673.2	0.00	0.00	368.6	
8	12471.8	85.99	16.83	11478.0	472.0	1102.8	11.00	-92.59	873.7	DH14A-04 Landing Pt
9	19486.3	85.99	16.83	11968.0	7169.5	3129.0	0.00	0.00	7822.6	DH14A-04 Permit TD



Plan #3  
 DH 14A-04 H17 696  
 1054xx; LR  
 WELL @ 5687.0ft (Original Well Elev)  
 North American Datum 1983  
 Well DH 14A-04 H17 696, True North

Type	Target	Azimuth	Origin	Type	N/S	E/W	From
TD	No Target (Freehand)	23.58	Slot	0.0	0.0	0.0	0.0
Name	TVD	+N/-S	+E/-W	Latitude	Longitude		
DH14A-04 Landing Pt	11478.0	472.0	1102.839° 31'	44.09 N	108° 7' 10.46 W		
DH14A-04 Permit TD	11968.0	7169.5	3129.039° 32'	50.28 N	108° 6' 44.59 W		

# Cathedral Energy Services

## Planning Report

<b>Database:</b> EDM 5000.1 US Multi Users DB	<b>Local Co-ordinate Reference:</b> Well DH 14A-04 H17 696
<b>Company:</b> EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b> WELL @ 5687.0ft (Original Well Elev)
<b>Project:</b> North Piceance	<b>MD Reference:</b> WELL @ 5687.0ft (Original Well Elev)
<b>Site:</b> H17 696 (S17-T6S-R96W)	<b>North Reference:</b> True
<b>Well:</b> DH 14A-04 H17 696	<b>Survey Calculation Method:</b> Minimum Curvature
<b>Wellbore:</b> Hz	
<b>Design:</b> Plan #3	

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

<b>Site</b> H17 696 (S17-T6S-R96W)					
<b>Site Position:</b>		<b>Northing:</b>	1,627,645.46 ft	<b>Latitude:</b>	39° 31' 38.37 N
<b>From:</b>	Lat/Long	<b>Easting:</b>	2,260,053.39 ft	<b>Longitude:</b>	108° 7' 24.99 W
<b>Position Uncertainty:</b>	0.0 ft	<b>Slot Radius:</b>	13.200 in	<b>Grid Convergence:</b>	-1.65 °

<b>Well</b> DH 14A-04 H17 696					
<b>Well Position</b>	<b>+N/-S</b>	0.0 ft	<b>Northing:</b>	1,627,750.97 ft	<b>Latitude:</b> 39° 31' 39.42 N
	<b>+E/-W</b>	0.0 ft	<b>Easting:</b>	2,260,091.80 ft	<b>Longitude:</b> 108° 7' 24.54 W
<b>Position Uncertainty</b>		0.0 ft	<b>Wellhead Elevation:</b>	ft	<b>Ground Level:</b> 5,654.0 ft

<b>Wellbore</b> Hz					
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination</b>	<b>Dip Angle</b>	<b>Field Strength</b>
	IGRF2010	10/4/2010	(°) 10.50	(°) 65.76	(nT) 52,323

<b>Design</b> Plan #3				
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD)</b>	<b>+N/-S</b>	<b>+E/-W</b>	<b>Direction</b>
	(ft)	(ft)	(ft)	(°)
	0.0	0.0	0.0	23.58

<b>Plan Sections</b>										
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	
450.0	5.00	0.00	449.7	10.9	0.0	2.00	2.00	0.00	0.00	
700.0	0.00	0.00	699.4	21.8	0.0	2.00	-2.00	0.00	180.00	
10,898.4	0.00	0.00	10,897.8	21.8	0.0	0.00	0.00	0.00	0.00	
11,680.2	85.99	82.67	11,417.4	83.6	480.5	11.00	11.00	0.00	82.67	
11,874.9	85.99	82.67	11,431.0	108.4	673.2	0.00	0.00	0.00	0.00	
12,471.8	85.99	16.83	11,478.0	472.0	1,102.8	11.00	0.00	-11.03	-92.59	DH14A-04 Landing PI
19,486.3	85.99	16.83	11,968.0	7,169.5	3,129.0	0.00	0.00	0.00	0.00	DH14A-04 Permit TD

# Cathedral Energy Services

## Planning Report

**Database:** EDM 5000.1 US Multi Users DB  
**Company:** EnCana Oil & Gas (USA) Inc  
**Project:** North Piceance  
**Site:** H17 696 (S17-T6S-R96W)  
**Well:** DH 14A-04 H17 696  
**Wellbore:** Hz  
**Design:** Plan #3

**Local Co-ordinate Reference:** Well DH 14A-04 H17 696  
**TVD Reference:** WELL @ 5687.0ft (Original Well Elev)  
**MD Reference:** WELL @ 5687.0ft (Original Well Elev)  
**North Reference:** True  
**Survey Calculation Method:** Minimum Curvature

### 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	2.00	0.00	300.0	1.7	0.0	1.6	2.00	2.00	
400.0	4.00	0.00	399.8	7.0	0.0	6.4	2.00	2.00	
450.0	5.00	0.00	449.7	10.9	0.0	10.0	2.00	2.00	Start Drop -2.00
500.0	4.00	0.00	499.5	14.8	0.0	13.6	2.00	-2.00	
600.0	2.00	360.00	599.4	20.1	0.0	18.4	2.00	-2.00	
700.0	0.00	0.00	699.4	21.8	0.0	20.0	2.00	-2.00	EOD; Inc=0°
800.0	0.00	0.00	799.4	21.8	0.0	20.0	0.00	0.00	
900.0	0.00	0.00	899.4	21.8	0.0	20.0	0.00	0.00	
1,000.0	0.00	0.00	999.4	21.8	0.0	20.0	0.00	0.00	
1,100.0	0.00	0.00	1,099.4	21.8	0.0	20.0	0.00	0.00	
1,200.0	0.00	0.00	1,199.4	21.8	0.0	20.0	0.00	0.00	
1,300.0	0.00	0.00	1,299.4	21.8	0.0	20.0	0.00	0.00	
1,400.0	0.00	0.00	1,399.4	21.8	0.0	20.0	0.00	0.00	
1,500.0	0.00	0.00	1,499.4	21.8	0.0	20.0	0.00	0.00	
1,600.0	0.00	0.00	1,599.4	21.8	0.0	20.0	0.00	0.00	
1,700.0	0.00	0.00	1,699.4	21.8	0.0	20.0	0.00	0.00	
1,800.0	0.00	0.00	1,799.4	21.8	0.0	20.0	0.00	0.00	
1,900.0	0.00	0.00	1,899.4	21.8	0.0	20.0	0.00	0.00	
2,000.0	0.00	0.00	1,999.4	21.8	0.0	20.0	0.00	0.00	
2,100.0	0.00	0.00	2,099.4	21.8	0.0	20.0	0.00	0.00	
2,200.0	0.00	0.00	2,199.4	21.8	0.0	20.0	0.00	0.00	
2,300.0	0.00	0.00	2,299.4	21.8	0.0	20.0	0.00	0.00	
2,400.0	0.00	0.00	2,399.4	21.8	0.0	20.0	0.00	0.00	
2,500.0	0.00	0.00	2,499.4	21.8	0.0	20.0	0.00	0.00	
2,600.0	0.00	0.00	2,599.4	21.8	0.0	20.0	0.00	0.00	
2,700.0	0.00	0.00	2,699.4	21.8	0.0	20.0	0.00	0.00	
2,800.0	0.00	0.00	2,799.4	21.8	0.0	20.0	0.00	0.00	
2,900.0	0.00	0.00	2,899.4	21.8	0.0	20.0	0.00	0.00	
3,000.0	0.00	0.00	2,999.4	21.8	0.0	20.0	0.00	0.00	
3,100.0	0.00	0.00	3,099.4	21.8	0.0	20.0	0.00	0.00	
3,200.0	0.00	0.00	3,199.4	21.8	0.0	20.0	0.00	0.00	
3,300.0	0.00	0.00	3,299.4	21.8	0.0	20.0	0.00	0.00	
3,400.0	0.00	0.00	3,399.4	21.8	0.0	20.0	0.00	0.00	
3,500.0	0.00	0.00	3,499.4	21.8	0.0	20.0	0.00	0.00	
3,600.0	0.00	0.00	3,599.4	21.8	0.0	20.0	0.00	0.00	
3,700.0	0.00	0.00	3,699.4	21.8	0.0	20.0	0.00	0.00	
3,800.0	0.00	0.00	3,799.4	21.8	0.0	20.0	0.00	0.00	
3,900.0	0.00	0.00	3,899.4	21.8	0.0	20.0	0.00	0.00	
4,000.0	0.00	0.00	3,999.4	21.8	0.0	20.0	0.00	0.00	
4,031.6	0.00	0.00	4,031.0	21.8	0.0	20.0	0.00	0.00	Williams Fork
4,100.0	0.00	0.00	4,099.4	21.8	0.0	20.0	0.00	0.00	
4,200.0	0.00	0.00	4,199.4	21.8	0.0	20.0	0.00	0.00	
4,300.0	0.00	0.00	4,299.4	21.8	0.0	20.0	0.00	0.00	
4,400.0	0.00	0.00	4,399.4	21.8	0.0	20.0	0.00	0.00	
4,500.0	0.00	0.00	4,499.4	21.8	0.0	20.0	0.00	0.00	
4,531.6	0.00	0.00	4,531.0	21.8	0.0	20.0	0.00	0.00	TOG
4,600.0	0.00	0.00	4,599.4	21.8	0.0	20.0	0.00	0.00	
4,700.0	0.00	0.00	4,699.4	21.8	0.0	20.0	0.00	0.00	
4,800.0	0.00	0.00	4,799.4	21.8	0.0	20.0	0.00	0.00	

# Cathedral Energy Services

## Planning Report

**Database:** EDM 5000.1 US Multi Users DB  
**Company:** EnCana Oil & Gas (USA) Inc  
**Project:** North Piceance  
**Site:** H17 696 (S17-T6S-R96W)  
**Well:** DH 14A-04 H17 696  
**Wellbore:** Hz  
**Design:** Plan #3

**Local Co-ordinate Reference:** Well DH 14A-04 H17 696  
**TVD Reference:** WELL @ 5687.0ft (Original Well Elev)  
**MD Reference:** WELL @ 5687.0ft (Original Well Elev)  
**North Reference:** True  
**Survey Calculation Method:** Minimum Curvature

### 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	0.00	0.00	4,899.4	21.8	0.0	20.0	0.00	0.00	
5,000.0	0.00	0.00	4,999.4	21.8	0.0	20.0	0.00	0.00	
5,100.0	0.00	0.00	5,099.4	21.8	0.0	20.0	0.00	0.00	
5,200.0	0.00	0.00	5,199.4	21.8	0.0	20.0	0.00	0.00	
5,300.0	0.00	0.00	5,299.4	21.8	0.0	20.0	0.00	0.00	
5,400.0	0.00	0.00	5,399.4	21.8	0.0	20.0	0.00	0.00	
5,500.0	0.00	0.00	5,499.4	21.8	0.0	20.0	0.00	0.00	
5,600.0	0.00	0.00	5,599.4	21.8	0.0	20.0	0.00	0.00	
5,700.0	0.00	0.00	5,699.4	21.8	0.0	20.0	0.00	0.00	
5,800.0	0.00	0.00	5,799.4	21.8	0.0	20.0	0.00	0.00	
5,900.0	0.00	0.00	5,899.4	21.8	0.0	20.0	0.00	0.00	
6,000.0	0.00	0.00	5,999.4	21.8	0.0	20.0	0.00	0.00	
6,100.0	0.00	0.00	6,099.4	21.8	0.0	20.0	0.00	0.00	
6,200.0	0.00	0.00	6,199.4	21.8	0.0	20.0	0.00	0.00	
6,300.0	0.00	0.00	6,299.4	21.8	0.0	20.0	0.00	0.00	
6,400.0	0.00	0.00	6,399.4	21.8	0.0	20.0	0.00	0.00	
6,500.0	0.00	0.00	6,499.4	21.8	0.0	20.0	0.00	0.00	
6,600.0	0.00	0.00	6,599.4	21.8	0.0	20.0	0.00	0.00	
6,700.0	0.00	0.00	6,699.4	21.8	0.0	20.0	0.00	0.00	
6,800.0	0.00	0.00	6,799.4	21.8	0.0	20.0	0.00	0.00	
6,900.0	0.00	0.00	6,899.4	21.8	0.0	20.0	0.00	0.00	
7,000.0	0.00	0.00	6,999.4	21.8	0.0	20.0	0.00	0.00	
7,100.0	0.00	0.00	7,099.4	21.8	0.0	20.0	0.00	0.00	
7,137.6	0.00	0.00	7,137.0	21.8	0.0	20.0	0.00	0.00	Rollins
7,200.0	0.00	0.00	7,199.4	21.8	0.0	20.0	0.00	0.00	
7,300.0	0.00	0.00	7,299.4	21.8	0.0	20.0	0.00	0.00	
7,400.0	0.00	0.00	7,399.4	21.8	0.0	20.0	0.00	0.00	
7,500.0	0.00	0.00	7,499.4	21.8	0.0	20.0	0.00	0.00	
7,600.0	0.00	0.00	7,599.4	21.8	0.0	20.0	0.00	0.00	
7,700.0	0.00	0.00	7,699.4	21.8	0.0	20.0	0.00	0.00	
7,800.0	0.00	0.00	7,799.4	21.8	0.0	20.0	0.00	0.00	
7,900.0	0.00	0.00	7,899.4	21.8	0.0	20.0	0.00	0.00	
8,000.0	0.00	0.00	7,999.4	21.8	0.0	20.0	0.00	0.00	
8,100.0	0.00	0.00	8,099.4	21.8	0.0	20.0	0.00	0.00	
8,200.0	0.00	0.00	8,199.4	21.8	0.0	20.0	0.00	0.00	
8,300.0	0.00	0.00	8,299.4	21.8	0.0	20.0	0.00	0.00	
8,400.0	0.00	0.00	8,399.4	21.8	0.0	20.0	0.00	0.00	
8,500.0	0.00	0.00	8,499.4	21.8	0.0	20.0	0.00	0.00	
8,562.6	0.00	0.00	8,562.0	21.8	0.0	20.0	0.00	0.00	Mancos A
8,600.0	0.00	0.00	8,599.4	21.8	0.0	20.0	0.00	0.00	
8,700.0	0.00	0.00	8,699.4	21.8	0.0	20.0	0.00	0.00	
8,800.0	0.00	0.00	8,799.4	21.8	0.0	20.0	0.00	0.00	
8,900.0	0.00	0.00	8,899.4	21.8	0.0	20.0	0.00	0.00	
9,000.0	0.00	0.00	8,999.4	21.8	0.0	20.0	0.00	0.00	
9,100.0	0.00	0.00	9,099.4	21.8	0.0	20.0	0.00	0.00	
9,200.0	0.00	0.00	9,199.4	21.8	0.0	20.0	0.00	0.00	
9,300.0	0.00	0.00	9,299.4	21.8	0.0	20.0	0.00	0.00	
9,400.0	0.00	0.00	9,399.4	21.8	0.0	20.0	0.00	0.00	
9,500.0	0.00	0.00	9,499.4	21.8	0.0	20.0	0.00	0.00	
9,600.0	0.00	0.00	9,599.4	21.8	0.0	20.0	0.00	0.00	
9,700.0	0.00	0.00	9,699.4	21.8	0.0	20.0	0.00	0.00	
9,800.0	0.00	0.00	9,799.4	21.8	0.0	20.0	0.00	0.00	

# Cathedral Energy Services

## Planning Report

**Database:** EDM 5000.1 US Multi Users DB  
**Company:** EnCana Oil & Gas (USA) Inc  
**Project:** North Piceance  
**Site:** H17 696 (S17-T6S-R96W)  
**Well:** DH 14A-04 H17 696  
**Wellbore:** Hz  
**Design:** Plan #3

**Local Co-ordinate Reference:** Well DH 14A-04 H17 696  
**TVD Reference:** WELL @ 5687.0ft (Original Well Elev)  
**MD Reference:** WELL @ 5687.0ft (Original Well Elev)  
**North Reference:** True  
**Survey Calculation Method:** Minimum Curvature

### 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	0.00	0.00	9,899.4	21.8	0.0	20.0	0.00	0.00	
10,000.0	0.00	0.00	9,999.4	21.8	0.0	20.0	0.00	0.00	
10,100.0	0.00	0.00	10,099.4	21.8	0.0	20.0	0.00	0.00	
10,200.0	0.00	0.00	10,199.4	21.8	0.0	20.0	0.00	0.00	
10,300.0	0.00	0.00	10,299.4	21.8	0.0	20.0	0.00	0.00	
10,400.0	0.00	0.00	10,399.4	21.8	0.0	20.0	0.00	0.00	
10,500.0	0.00	0.00	10,499.4	21.8	0.0	20.0	0.00	0.00	
10,600.0	0.00	0.00	10,599.4	21.8	0.0	20.0	0.00	0.00	
10,700.0	0.00	0.00	10,699.4	21.8	0.0	20.0	0.00	0.00	
10,800.0	0.00	0.00	10,799.4	21.8	0.0	20.0	0.00	0.00	
10,898.4	0.00	0.00	10,897.8	21.8	0.0	20.0	0.00	0.00	Start 11° Build @ 10,898' MD
10,900.0	0.17	82.67	10,899.4	21.8	0.0	20.0	11.00	11.00	
10,967.8	7.63	82.67	10,967.0	22.4	4.6	22.4	11.00	11.00	Niobrara
11,000.0	11.17	82.67	10,998.7	23.1	9.8	25.1	11.00	11.00	
11,100.0	22.17	82.67	11,094.4	26.7	38.2	39.8	11.00	11.00	
11,200.0	33.17	82.67	11,182.8	32.6	84.2	63.6	11.00	11.00	
11,300.0	44.17	82.67	11,260.8	40.6	146.1	95.6	11.00	11.00	
11,400.0	55.17	82.67	11,325.4	50.3	221.6	134.7	11.00	11.00	
11,500.0	66.17	82.67	11,374.3	61.4	307.9	179.4	11.00	11.00	
11,600.0	77.17	82.67	11,405.7	73.5	401.9	228.1	11.00	11.00	
11,680.2	85.99	82.67	11,417.4	83.6	480.5	268.8	11.00	11.00	Landing Pt @ 11,471' TVD, 86°
11,700.0	85.99	82.67	11,418.8	86.1	500.1	279.0	0.00	0.00	
11,800.0	85.99	82.67	11,425.8	98.8	599.1	330.2	0.00	0.00	
11,874.9	85.99	82.67	11,431.0	108.4	673.2	368.6	0.00	0.00	
11,900.0	85.87	79.91	11,432.8	112.2	697.9	381.9	11.00	-0.48	
12,000.0	85.49	68.89	11,440.4	138.9	793.8	444.8	11.00	-0.38	
12,100.0	85.28	57.85	11,448.4	183.5	882.8	521.3	11.00	-0.21	
12,200.0	85.23	46.82	11,456.7	244.3	961.5	608.5	11.00	-0.04	
12,300.0	85.37	35.78	11,464.9	319.1	1,027.2	703.3	11.00	0.14	
12,400.0	85.68	24.75	11,472.8	405.1	1,077.4	802.2	11.00	0.31	
12,471.8	85.99	16.83	11,478.0	472.0	1,102.8	873.7	11.00	0.44	DH14A-04 Landing Pt
12,500.0	85.99	16.83	11,480.0	498.9	1,110.9	901.6	0.00	0.00	
12,600.0	85.99	16.83	11,487.0	594.4	1,139.8	1,000.6	0.00	0.00	
12,700.0	85.99	16.83	11,493.9	689.8	1,168.7	1,099.7	0.00	0.00	
12,800.0	85.99	16.83	11,500.9	785.3	1,197.6	1,198.8	0.00	0.00	
12,900.0	85.99	16.83	11,507.9	880.8	1,226.5	1,297.8	0.00	0.00	
13,000.0	85.99	16.83	11,514.9	976.3	1,255.4	1,396.9	0.00	0.00	
13,100.0	85.99	16.83	11,521.9	1,071.8	1,284.2	1,496.0	0.00	0.00	
13,200.0	85.99	16.83	11,528.9	1,167.2	1,313.1	1,595.0	0.00	0.00	
13,300.0	85.99	16.83	11,535.9	1,262.7	1,342.0	1,694.1	0.00	0.00	
13,400.0	85.99	16.83	11,542.8	1,358.2	1,370.9	1,793.2	0.00	0.00	
13,500.0	85.99	16.83	11,549.8	1,453.7	1,399.8	1,892.2	0.00	0.00	
13,600.0	85.99	16.83	11,556.8	1,549.2	1,428.7	1,991.3	0.00	0.00	
13,700.0	85.99	16.83	11,563.8	1,644.7	1,457.6	2,090.4	0.00	0.00	
13,800.0	85.99	16.83	11,570.8	1,740.1	1,486.4	2,189.4	0.00	0.00	
13,900.0	85.99	16.83	11,577.8	1,835.6	1,515.3	2,288.5	0.00	0.00	
14,000.0	85.99	16.83	11,584.8	1,931.1	1,544.2	2,387.6	0.00	0.00	
14,100.0	85.99	16.83	11,591.7	2,026.6	1,573.1	2,486.6	0.00	0.00	
14,200.0	85.99	16.83	11,598.7	2,122.1	1,602.0	2,585.7	0.00	0.00	
14,300.0	85.99	16.83	11,605.7	2,217.5	1,630.9	2,684.8	0.00	0.00	
14,400.0	85.99	16.83	11,612.7	2,313.0	1,659.8	2,783.8	0.00	0.00	
14,500.0	85.99	16.83	11,619.7	2,408.5	1,688.6	2,882.9	0.00	0.00	

# Cathedral Energy Services

## Planning Report

**Database:** EDM 5000.1 US Multi Users DB  
**Company:** EnCana Oil & Gas (USA) Inc  
**Project:** North Piceance  
**Site:** H17 696 (S17-T6S-R96W)  
**Well:** DH 14A-04 H17 696  
**Wellbore:** Hz  
**Design:** Plan #3

**Local Co-ordinate Reference:** Well DH 14A-04 H17 696  
**TVD Reference:** WELL @ 5687.0ft (Original Well Elev)  
**MD Reference:** WELL @ 5687.0ft (Original Well Elev)  
**North Reference:** True  
**Survey Calculation Method:** Minimum Curvature

### 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
14,600.0	85.99	16.83	11,626.7	2,504.0	1,717.5	2,982.0	0.00	0.00	
14,700.0	85.99	16.83	11,633.6	2,599.5	1,746.4	3,081.0	0.00	0.00	
14,800.0	85.99	16.83	11,640.6	2,695.0	1,775.3	3,180.1	0.00	0.00	
14,900.0	85.99	16.83	11,647.6	2,790.4	1,804.2	3,279.2	0.00	0.00	
15,000.0	85.99	16.83	11,654.6	2,885.9	1,833.1	3,378.2	0.00	0.00	
15,100.0	85.99	16.83	11,661.6	2,981.4	1,862.0	3,477.3	0.00	0.00	
15,200.0	85.99	16.83	11,668.6	3,076.9	1,890.9	3,576.3	0.00	0.00	
15,300.0	85.99	16.83	11,675.6	3,172.4	1,919.7	3,675.4	0.00	0.00	
15,400.0	85.99	16.83	11,682.5	3,267.8	1,948.6	3,774.5	0.00	0.00	
15,500.0	85.99	16.83	11,689.5	3,363.3	1,977.5	3,873.5	0.00	0.00	
15,600.0	85.99	16.83	11,696.5	3,458.8	2,006.4	3,972.6	0.00	0.00	
15,700.0	85.99	16.83	11,703.5	3,554.3	2,035.3	4,071.7	0.00	0.00	
15,800.0	85.99	16.83	11,710.5	3,649.8	2,064.2	4,170.7	0.00	0.00	
15,900.0	85.99	16.83	11,717.5	3,745.3	2,093.1	4,269.8	0.00	0.00	
16,000.0	85.99	16.83	11,724.5	3,840.7	2,121.9	4,368.9	0.00	0.00	
16,100.0	85.99	16.83	11,731.4	3,936.2	2,150.8	4,467.9	0.00	0.00	
16,200.0	85.99	16.83	11,738.4	4,031.7	2,179.7	4,567.0	0.00	0.00	
16,300.0	85.99	16.83	11,745.4	4,127.2	2,208.6	4,666.1	0.00	0.00	
16,400.0	85.99	16.83	11,752.4	4,222.7	2,237.5	4,765.1	0.00	0.00	
16,500.0	85.99	16.83	11,759.4	4,318.1	2,266.4	4,864.2	0.00	0.00	
16,600.0	85.99	16.83	11,766.4	4,413.6	2,295.3	4,963.3	0.00	0.00	
16,700.0	85.99	16.83	11,773.4	4,509.1	2,324.2	5,062.3	0.00	0.00	
16,800.0	85.99	16.83	11,780.3	4,604.6	2,353.0	5,161.4	0.00	0.00	
16,900.0	85.99	16.83	11,787.3	4,700.1	2,381.9	5,260.5	0.00	0.00	
17,000.0	85.99	16.83	11,794.3	4,795.6	2,410.8	5,359.5	0.00	0.00	
17,100.0	85.99	16.83	11,801.3	4,891.0	2,439.7	5,458.6	0.00	0.00	
17,200.0	85.99	16.83	11,808.3	4,986.5	2,468.6	5,557.7	0.00	0.00	
17,300.0	85.99	16.83	11,815.3	5,082.0	2,497.5	5,656.7	0.00	0.00	
17,400.0	85.99	16.83	11,822.3	5,177.5	2,526.4	5,755.8	0.00	0.00	
17,500.0	85.99	16.83	11,829.2	5,273.0	2,555.2	5,854.8	0.00	0.00	
17,600.0	85.99	16.83	11,836.2	5,368.4	2,584.1	5,953.9	0.00	0.00	
17,700.0	85.99	16.83	11,843.2	5,463.9	2,613.0	6,053.0	0.00	0.00	
17,800.0	85.99	16.83	11,850.2	5,559.4	2,641.9	6,152.0	0.00	0.00	
17,900.0	85.99	16.83	11,857.2	5,654.9	2,670.8	6,251.1	0.00	0.00	
18,000.0	85.99	16.83	11,864.2	5,750.4	2,699.7	6,350.2	0.00	0.00	
18,100.0	85.99	16.83	11,871.2	5,845.9	2,728.6	6,449.2	0.00	0.00	
18,200.0	85.99	16.83	11,878.1	5,941.3	2,757.5	6,548.3	0.00	0.00	
18,300.0	85.99	16.83	11,885.1	6,036.8	2,786.3	6,647.4	0.00	0.00	
18,400.0	85.99	16.83	11,892.1	6,132.3	2,815.2	6,746.4	0.00	0.00	
18,500.0	85.99	16.83	11,899.1	6,227.8	2,844.1	6,845.5	0.00	0.00	
18,600.0	85.99	16.83	11,906.1	6,323.3	2,873.0	6,944.6	0.00	0.00	
18,700.0	85.99	16.83	11,913.1	6,418.7	2,901.9	7,043.6	0.00	0.00	
18,800.0	85.99	16.83	11,920.1	6,514.2	2,930.8	7,142.7	0.00	0.00	
18,900.0	85.99	16.83	11,927.0	6,609.7	2,959.7	7,241.8	0.00	0.00	
19,000.0	85.99	16.83	11,934.0	6,705.2	2,988.5	7,340.8	0.00	0.00	
19,100.0	85.99	16.83	11,941.0	6,800.7	3,017.4	7,439.9	0.00	0.00	
19,200.0	85.99	16.83	11,948.0	6,896.2	3,046.3	7,539.0	0.00	0.00	
19,300.0	85.99	16.83	11,955.0	6,991.6	3,075.2	7,638.0	0.00	0.00	
19,400.0	85.99	16.83	11,962.0	7,087.1	3,104.1	7,737.1	0.00	0.00	
19,486.3	85.99	16.83	11,968.0	7,169.5	3,129.0	7,822.6	0.00	0.00	DH14A-04 Permit TD

# Cathedral Energy Services

## Planning Report

<b>Database:</b> EDM 5000.1 US Multi Users DB	<b>Local Co-ordinate Reference:</b> Well DH 14A-04 H17 696
<b>Company:</b> EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b> WELL @ 5687.0ft (Original Well Elev)
<b>Project:</b> North Piceance	<b>MD Reference:</b> WELL @ 5687.0ft (Original Well Elev)
<b>Site:</b> H17 696 (S17-T6S-R96W)	<b>North Reference:</b> True
<b>Well:</b> DH 14A-04 H17 696	<b>Survey Calculation Method:</b> Minimum Curvature
<b>Wellbore:</b> Hz	
<b>Design:</b> Plan #3	

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									
DH14A-04 Landing Pt - plan hits target center - Point	0.00	358.35	11,478.0	472.0	1,102.8	1,628,190.93	2,261,207.75	39° 31' 44.09 N	108° 7' 10.46 W
DH14A-04 Permit TD - plan hits target center - Point	0.00	358.35	11,968.0	7,169.5	3,129.0	1,634,827.15	2,263,426.53	39° 32' 50.28 N	108° 6' 44.59 W

Formations					
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction
(ft)	(ft)			(°)	(°)
4,031.6	4,031.0	Williams Fork			
4,531.6	4,531.0	TOG			
7,137.6	7,137.0	Rollins			
8,562.6	8,562.0	Mancos A			
10,967.8	10,967.0	Niobrara		0.00	

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates		Comment	
(ft)	(ft)	+N/-S	+E/-W		
		(ft)	(ft)		
200.0	200.0	0.0	0.0	KOP @ 200'	
450.0	449.7	10.9	0.0	Start Drop -2.00	
700.0	699.4	21.8	0.0	EOD; Inc=0°	
10,898.4	10,897.8	21.8	0.0	Start 11° Build @ 10,898' MD	
11,680.2	11,417.4	83.6	480.5	Landing Pt @ 11,471' TVD, 86°	
19,486.3	11,968.0	108.4	673.2	TD at 19486.3	