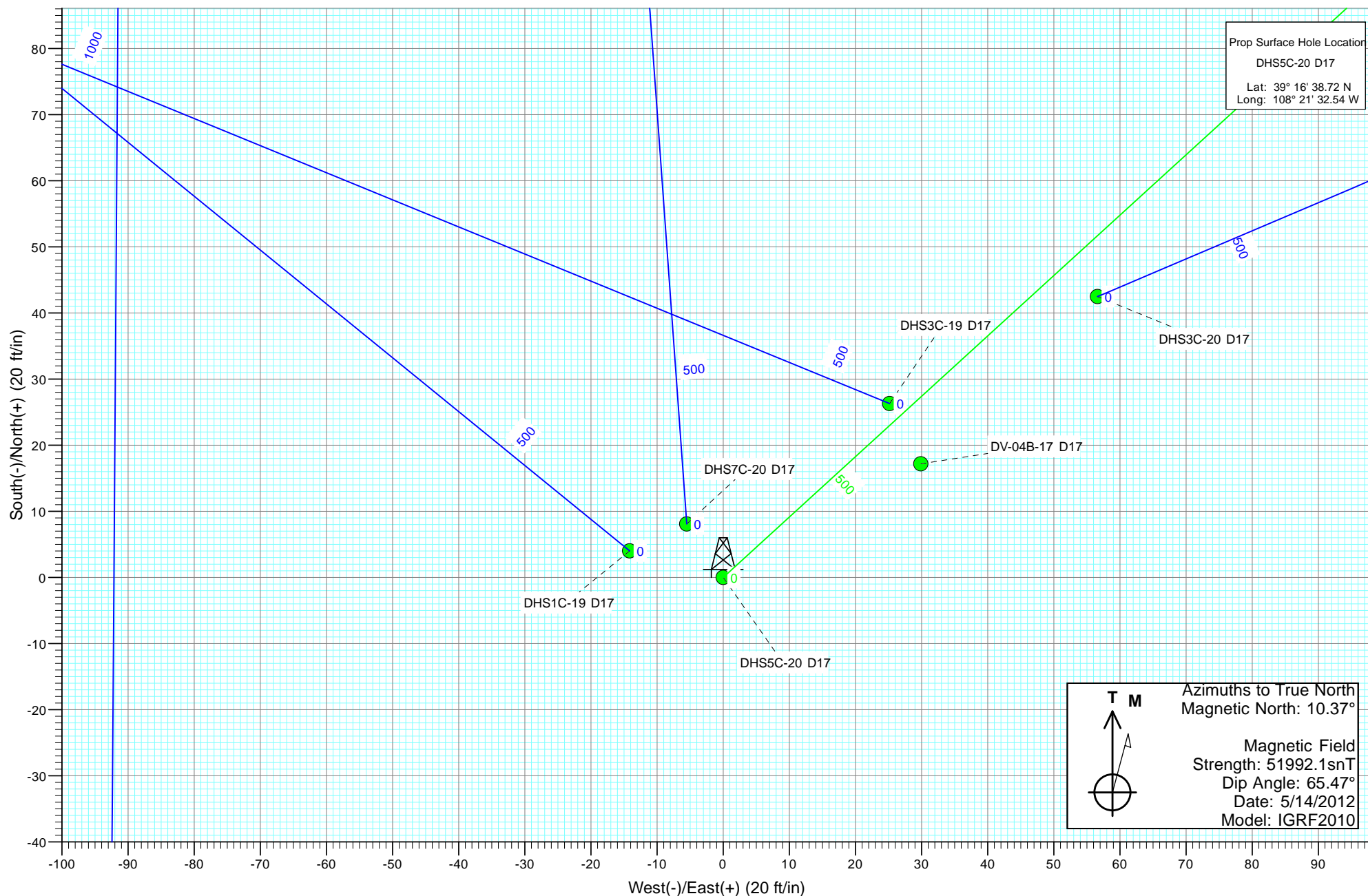
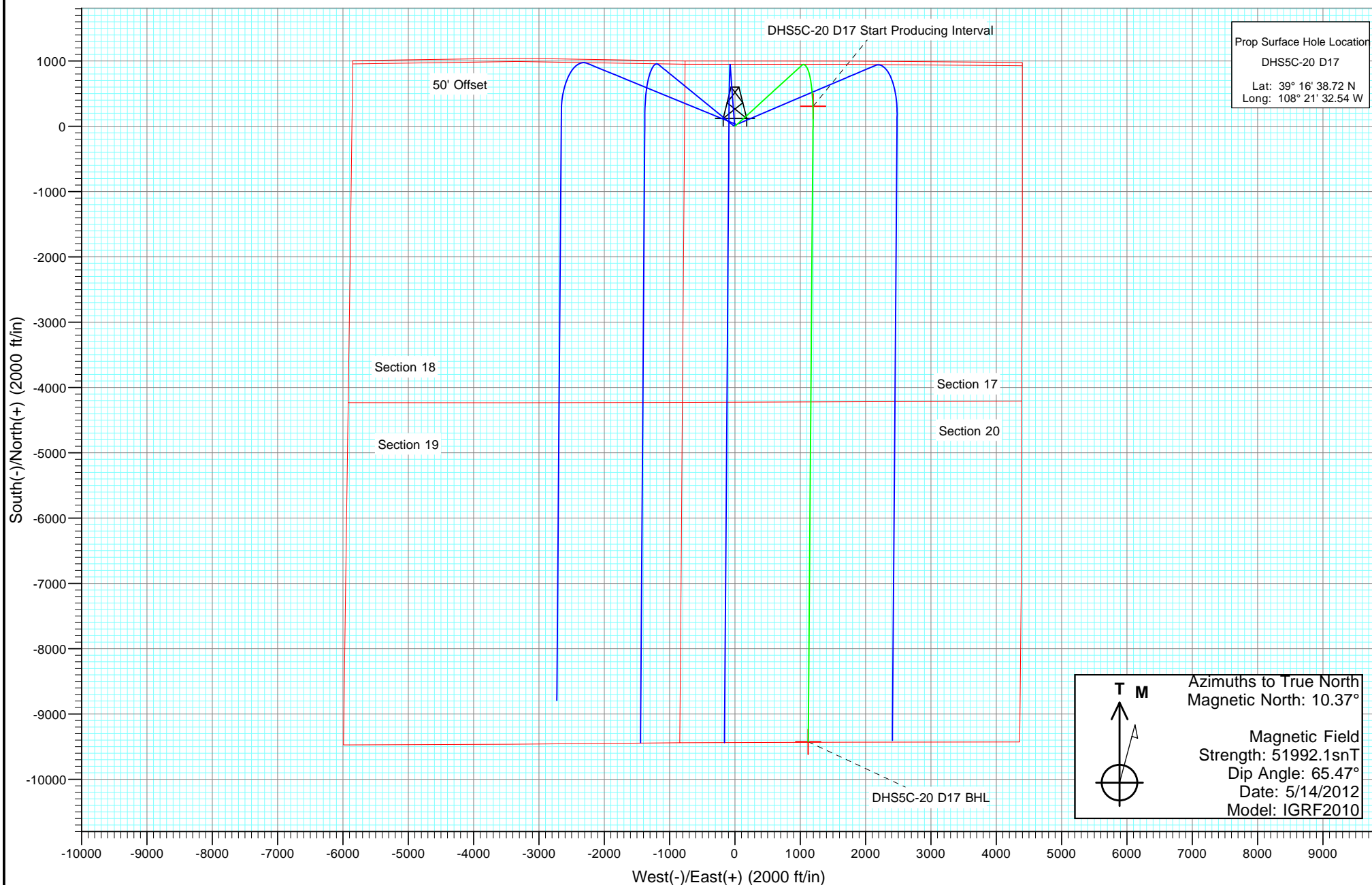




Project: North Piceance
Site: D17 998
Well: DHS5C-20 D17
Wellbore: HZ
Design: Plan #2





Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well DHS5C-20 D17
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 5805.0ft (Original Well Elev)
Project:	North Piceance	MD Reference:	WELL @ 5805.0ft (Original Well Elev)
Site:	D17 998	North Reference:	True
Well:	DHS5C-20 D17	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #2		

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	D17 998				
Site Position:		Northing:	1,538,697.26 ft	Latitude:	39° 16' 38.98 N
From:	Lat/Long	Easting:	2,190,836.33 ft	Longitude:	108° 21' 32.22 W
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.80 °

Well	DHS5C-20 D17					
Well Position	+N/-S	0.0 ft	Northing:	1,538,671.74 ft	Latitude:	39° 16' 38.72 N
	+E/-W	0.0 ft	Easting:	2,190,810.36 ft	Longitude:	108° 21' 32.54 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	5,773.0 ft

Wellbore	HZ				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	IGRF2010	5/14/2012	10.37	65.47	51,992

Design	Plan #2				
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	173.21	

Plan Sections										
Measured Depth	Inclination	Azimuth	Vertical Depth	+N/-S	+E/-W	Dogleg Rate	Build Rate	Turn Rate	TFO	Target
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(°/100ft)	(°/100ft)	(°/100ft)	(°)	
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	
715.8	15.47	47.60	709.5	46.7	51.1	3.00	3.00	0.00	47.60	
5,653.8	15.47	47.60	5,468.6	935.0	1,023.9	0.00	0.00	0.00	0.00	
6,946.2	93.00	180.44	6,295.0	192.7	1,195.6	8.00	6.00	10.28	131.18	
16,576.5	93.00	180.44	5,791.0	-9,424.1	1,121.7	0.00	0.00	0.00	0.00	DHS5C-20 D17 BHL

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well DHS5C-20 D17
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 5805.0ft (Original Well Elev)
Project:	North Piceance	MD Reference:	WELL @ 5805.0ft (Original Well Elev)
Site:	D17 998	North Reference:	True
Well:	DHS5C-20 D17	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #2		

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	47.60	300.0	1.8	1.9	-1.5	3.00	3.00	
400.0	6.00	47.60	399.6	7.1	7.7	-6.1	3.00	3.00	
500.0	9.00	47.60	498.8	15.9	17.4	-13.7	3.00	3.00	
600.0	12.00	47.60	597.1	28.1	30.8	-24.3	3.00	3.00	
700.0	15.00	47.60	694.3	43.9	48.1	-37.9	3.00	3.00	
715.8	15.47	47.60	709.5	46.7	51.1	-40.3	3.00	3.00	EOB; Inc=15.47°
800.0	15.47	47.60	790.7	61.8	67.7	-53.4	0.00	0.00	
900.0	15.47	47.60	887.1	79.8	87.4	-68.9	0.00	0.00	
1,000.0	15.47	47.60	983.5	97.8	107.1	-84.5	0.00	0.00	
1,100.0	15.47	47.60	1,079.8	115.8	126.8	-100.0	0.00	0.00	
1,200.0	15.47	47.60	1,176.2	133.8	146.5	-115.5	0.00	0.00	
1,300.0	15.47	47.60	1,272.6	151.8	166.2	-131.1	0.00	0.00	
1,400.0	15.47	47.60	1,369.0	169.8	185.9	-146.6	0.00	0.00	
1,500.0	15.47	47.60	1,465.3	187.8	205.6	-162.1	0.00	0.00	
1,600.0	15.47	47.60	1,561.7	205.8	225.3	-177.7	0.00	0.00	
1,700.0	15.47	47.60	1,658.1	223.7	245.0	-193.2	0.00	0.00	
1,800.0	15.47	47.60	1,754.5	241.7	264.7	-208.8	0.00	0.00	
1,900.0	15.47	47.60	1,850.8	259.7	284.4	-224.3	0.00	0.00	
2,000.0	15.47	47.60	1,947.2	277.7	304.1	-239.8	0.00	0.00	
2,100.0	15.47	47.60	2,043.6	295.7	323.8	-255.4	0.00	0.00	
2,200.0	15.47	47.60	2,140.0	313.7	343.5	-270.9	0.00	0.00	
2,300.0	15.47	47.60	2,236.3	331.7	363.2	-286.4	0.00	0.00	
2,400.0	15.47	47.60	2,332.7	349.7	382.9	-302.0	0.00	0.00	
2,404.9	15.47	47.60	2,337.4	350.6	383.9	-302.7	0.00	0.00	Rollins
2,500.0	15.47	47.60	2,429.1	367.7	402.6	-317.5	0.00	0.00	
2,600.0	15.47	47.60	2,525.5	385.6	422.3	-333.0	0.00	0.00	
2,700.0	15.47	47.60	2,621.8	403.6	442.0	-348.6	0.00	0.00	
2,800.0	15.47	47.60	2,718.2	421.6	461.7	-364.1	0.00	0.00	
2,900.0	15.47	47.60	2,814.6	439.6	481.4	-379.6	0.00	0.00	
3,000.0	15.47	47.60	2,911.0	457.6	501.1	-395.2	0.00	0.00	
3,100.0	15.47	47.60	3,007.3	475.6	520.8	-410.7	0.00	0.00	
3,200.0	15.47	47.60	3,103.7	493.6	540.5	-426.3	0.00	0.00	
3,300.0	15.47	47.60	3,200.1	511.6	560.2	-441.8	0.00	0.00	
3,400.0	15.47	47.60	3,296.5	529.6	579.9	-457.3	0.00	0.00	
3,500.0	15.47	47.60	3,392.8	547.6	599.6	-472.9	0.00	0.00	
3,600.0	15.47	47.60	3,489.2	565.5	619.3	-488.4	0.00	0.00	
3,700.0	15.47	47.60	3,585.6	583.5	639.0	-503.9	0.00	0.00	
3,800.0	15.47	47.60	3,682.0	601.5	658.7	-519.5	0.00	0.00	
3,900.0	15.47	47.60	3,778.3	619.5	678.4	-535.0	0.00	0.00	
4,000.0	15.47	47.60	3,874.7	637.5	698.1	-550.5	0.00	0.00	
4,100.0	15.47	47.60	3,971.1	655.5	717.8	-566.1	0.00	0.00	
4,200.0	15.47	47.60	4,067.5	673.5	737.5	-581.6	0.00	0.00	
4,202.0	15.47	47.60	4,069.4	673.9	737.9	-581.9	0.00	0.00	Mancos Marker
4,300.0	15.47	47.60	4,163.9	691.5	757.2	-597.1	0.00	0.00	
4,400.0	15.47	47.60	4,260.2	709.5	776.9	-612.7	0.00	0.00	
4,500.0	15.47	47.60	4,356.6	727.5	796.6	-628.2	0.00	0.00	
4,600.0	15.47	47.60	4,453.0	745.4	816.3	-643.8	0.00	0.00	
4,700.0	15.47	47.60	4,549.4	763.4	836.0	-659.3	0.00	0.00	
4,800.0	15.47	47.60	4,645.7	781.4	855.7	-674.8	0.00	0.00	

Cathedral Energy Services

Planning Report

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Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 5805.0ft (Original Well Elev)
Project:	North Piceance	MD Reference:	WELL @ 5805.0ft (Original Well Elev)
Site:	D17 998	North Reference:	True
Well:	DHS5C-20 D17	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #2		

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	15.47	47.60	4,742.1	799.4	875.4	-690.4	0.00	0.00	
5,000.0	15.47	47.60	4,838.5	817.4	895.1	-705.9	0.00	0.00	
5,100.0	15.47	47.60	4,934.9	835.4	914.8	-721.4	0.00	0.00	
5,200.0	15.47	47.60	5,031.2	853.4	934.5	-737.0	0.00	0.00	
5,300.0	15.47	47.60	5,127.6	871.4	954.2	-752.5	0.00	0.00	
5,400.0	15.47	47.60	5,224.0	889.4	973.9	-768.0	0.00	0.00	
5,500.0	15.47	47.60	5,320.4	907.4	993.6	-783.6	0.00	0.00	
5,549.6	15.47	47.60	5,368.2	916.3	1,003.4	-791.3	0.00	0.00	Niobrara
5,600.0	15.47	47.60	5,416.7	925.3	1,013.3	-799.1	0.00	0.00	
5,653.8	15.47	47.60	5,468.6	935.0	1,023.9	-807.5	0.00	0.00	Start 8° Build @ 5653.8' MD
5,700.0	13.33	59.74	5,513.3	941.9	1,033.0	-813.2	8.00	-4.65	
5,800.0	11.66	96.59	5,611.1	946.5	1,053.1	-815.4	8.00	-1.66	
5,900.0	14.86	129.22	5,708.6	937.2	1,073.1	-803.9	8.00	3.19	
6,000.0	20.78	147.12	5,803.8	914.2	1,092.7	-778.7	8.00	5.92	
6,100.0	27.73	156.87	5,895.0	877.9	1,111.5	-740.4	8.00	6.95	
6,200.0	35.10	162.87	5,980.3	828.9	1,129.1	-689.7	8.00	7.37	
6,271.0	40.46	165.92	6,036.4	787.0	1,140.7	-646.7	8.00	7.56	NioLamSilt
6,300.0	42.67	166.98	6,058.1	768.3	1,145.2	-627.6	8.00	7.62	
6,400.0	50.36	170.05	6,126.8	697.3	1,159.5	-555.3	8.00	7.69	
6,500.0	58.11	172.50	6,185.2	617.1	1,171.8	-474.3	8.00	7.75	
6,600.0	65.90	174.56	6,232.2	529.4	1,181.6	-386.1	8.00	7.79	
6,700.0	73.71	176.39	6,266.7	436.0	1,189.0	-292.4	8.00	7.81	
6,800.0	81.54	178.08	6,288.1	338.5	1,193.7	-195.0	8.00	7.83	
6,832.1	84.06	178.60	6,292.1	306.6	1,194.6	-163.3	8.00	7.83	Start of Producing Interval
6,900.0	89.38	179.70	6,296.0	238.9	1,195.6	-95.9	8.00	7.84	
6,946.2	93.00	180.44	6,295.0	192.7	1,195.6	-50.1	8.00	7.84	Landing Pt @ 6295' TVD
7,000.0	93.00	180.44	6,292.2	139.0	1,195.2	3.2	0.00	0.00	
7,100.0	93.00	180.44	6,287.0	39.1	1,194.4	102.3	0.00	0.00	
7,200.0	93.00	180.44	6,281.7	-60.7	1,193.6	201.4	0.00	0.00	
7,300.0	93.00	180.44	6,276.5	-160.6	1,192.9	300.4	0.00	0.00	
7,400.0	93.00	180.44	6,271.3	-260.5	1,192.1	399.5	0.00	0.00	
7,500.0	93.00	180.44	6,266.0	-360.3	1,191.3	498.6	0.00	0.00	
7,600.0	93.00	180.44	6,260.8	-460.2	1,190.6	597.7	0.00	0.00	
7,700.0	93.00	180.44	6,255.6	-560.0	1,189.8	696.7	0.00	0.00	
7,800.0	93.00	180.44	6,250.3	-659.9	1,189.0	795.8	0.00	0.00	
7,900.0	93.00	180.44	6,245.1	-759.8	1,188.3	894.9	0.00	0.00	
8,000.0	93.00	180.44	6,239.9	-859.6	1,187.5	993.9	0.00	0.00	
8,100.0	93.00	180.44	6,234.6	-959.5	1,186.7	1,093.0	0.00	0.00	
8,200.0	93.00	180.44	6,229.4	-1,059.3	1,186.0	1,192.1	0.00	0.00	
8,300.0	93.00	180.44	6,224.2	-1,159.2	1,185.2	1,291.1	0.00	0.00	
8,400.0	93.00	180.44	6,218.9	-1,259.1	1,184.4	1,390.2	0.00	0.00	
8,500.0	93.00	180.44	6,213.7	-1,358.9	1,183.6	1,489.3	0.00	0.00	
8,600.0	93.00	180.44	6,208.5	-1,458.8	1,182.9	1,588.3	0.00	0.00	
8,700.0	93.00	180.44	6,203.2	-1,558.6	1,182.1	1,687.4	0.00	0.00	
8,800.0	93.00	180.44	6,198.0	-1,658.5	1,181.3	1,786.5	0.00	0.00	
8,900.0	93.00	180.44	6,192.8	-1,758.4	1,180.6	1,885.6	0.00	0.00	
9,000.0	93.00	180.44	6,187.5	-1,858.2	1,179.8	1,984.6	0.00	0.00	
9,100.0	93.00	180.44	6,182.3	-1,958.1	1,179.0	2,083.7	0.00	0.00	
9,200.0	93.00	180.44	6,177.1	-2,057.9	1,178.3	2,182.8	0.00	0.00	
9,300.0	93.00	180.44	6,171.8	-2,157.8	1,177.5	2,281.8	0.00	0.00	
9,400.0	93.00	180.44	6,166.6	-2,257.7	1,176.7	2,380.9	0.00	0.00	
9,500.0	93.00	180.44	6,161.4	-2,357.5	1,176.0	2,480.0	0.00	0.00	

Cathedral Energy Services

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Well:	DHS5C-20 D17	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #2		

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
9,600.0	93.00	180.44	6,156.1	-2,457.4	1,175.2	2,579.0	0.00	0.00	
9,700.0	93.00	180.44	6,150.9	-2,557.2	1,174.4	2,678.1	0.00	0.00	
9,800.0	93.00	180.44	6,145.7	-2,657.1	1,173.7	2,777.2	0.00	0.00	
9,900.0	93.00	180.44	6,140.4	-2,757.0	1,172.9	2,876.3	0.00	0.00	
10,000.0	93.00	180.44	6,135.2	-2,856.8	1,172.1	2,975.3	0.00	0.00	
10,100.0	93.00	180.44	6,130.0	-2,956.7	1,171.4	3,074.4	0.00	0.00	
10,200.0	93.00	180.44	6,124.7	-3,056.5	1,170.6	3,173.5	0.00	0.00	
10,300.0	93.00	180.44	6,119.5	-3,156.4	1,169.8	3,272.5	0.00	0.00	
10,400.0	93.00	180.44	6,114.3	-3,256.3	1,169.1	3,371.6	0.00	0.00	
10,500.0	93.00	180.44	6,109.0	-3,356.1	1,168.3	3,470.7	0.00	0.00	
10,600.0	93.00	180.44	6,103.8	-3,456.0	1,167.5	3,569.7	0.00	0.00	
10,700.0	93.00	180.44	6,098.6	-3,555.8	1,166.8	3,668.8	0.00	0.00	
10,800.0	93.00	180.44	6,093.3	-3,655.7	1,166.0	3,767.9	0.00	0.00	
10,900.0	93.00	180.44	6,088.1	-3,755.6	1,165.2	3,866.9	0.00	0.00	
11,000.0	93.00	180.44	6,082.9	-3,855.4	1,164.5	3,966.0	0.00	0.00	
11,100.0	93.00	180.44	6,077.6	-3,955.3	1,163.7	4,065.1	0.00	0.00	
11,200.0	93.00	180.44	6,072.4	-4,055.1	1,162.9	4,164.2	0.00	0.00	
11,300.0	93.00	180.44	6,067.2	-4,155.0	1,162.2	4,263.2	0.00	0.00	
11,400.0	93.00	180.44	6,061.9	-4,254.9	1,161.4	4,362.3	0.00	0.00	
11,500.0	93.00	180.44	6,056.7	-4,354.7	1,160.6	4,461.4	0.00	0.00	
11,600.0	93.00	180.44	6,051.5	-4,454.6	1,159.9	4,560.4	0.00	0.00	
11,700.0	93.00	180.44	6,046.2	-4,554.4	1,159.1	4,659.5	0.00	0.00	
11,800.0	93.00	180.44	6,041.0	-4,654.3	1,158.3	4,758.6	0.00	0.00	
11,900.0	93.00	180.44	6,035.7	-4,754.2	1,157.6	4,857.6	0.00	0.00	
12,000.0	93.00	180.44	6,030.5	-4,854.0	1,156.8	4,956.7	0.00	0.00	
12,100.0	93.00	180.44	6,025.3	-4,953.9	1,156.0	5,055.8	0.00	0.00	
12,200.0	93.00	180.44	6,020.0	-5,053.7	1,155.3	5,154.9	0.00	0.00	
12,300.0	93.00	180.44	6,014.8	-5,153.6	1,154.5	5,253.9	0.00	0.00	
12,400.0	93.00	180.44	6,009.6	-5,253.5	1,153.7	5,353.0	0.00	0.00	
12,500.0	93.00	180.44	6,004.3	-5,353.3	1,153.0	5,452.1	0.00	0.00	
12,600.0	93.00	180.44	5,999.1	-5,453.2	1,152.2	5,551.1	0.00	0.00	
12,700.0	93.00	180.44	5,993.9	-5,553.0	1,151.4	5,650.2	0.00	0.00	
12,800.0	93.00	180.44	5,988.6	-5,652.9	1,150.7	5,749.3	0.00	0.00	
12,900.0	93.00	180.44	5,983.4	-5,752.8	1,149.9	5,848.3	0.00	0.00	
13,000.0	93.00	180.44	5,978.2	-5,852.6	1,149.1	5,947.4	0.00	0.00	
13,100.0	93.00	180.44	5,972.9	-5,952.5	1,148.4	6,046.5	0.00	0.00	
13,200.0	93.00	180.44	5,967.7	-6,052.3	1,147.6	6,145.5	0.00	0.00	
13,300.0	93.00	180.44	5,962.5	-6,152.2	1,146.8	6,244.6	0.00	0.00	
13,400.0	93.00	180.44	5,957.2	-6,252.1	1,146.1	6,343.7	0.00	0.00	
13,500.0	93.00	180.44	5,952.0	-6,351.9	1,145.3	6,442.8	0.00	0.00	
13,600.0	93.00	180.44	5,946.8	-6,451.8	1,144.5	6,541.8	0.00	0.00	
13,700.0	93.00	180.44	5,941.5	-6,551.6	1,143.8	6,640.9	0.00	0.00	
13,800.0	93.00	180.44	5,936.3	-6,651.5	1,143.0	6,740.0	0.00	0.00	
13,900.0	93.00	180.44	5,931.1	-6,751.4	1,142.2	6,839.0	0.00	0.00	
14,000.0	93.00	180.44	5,925.8	-6,851.2	1,141.5	6,938.1	0.00	0.00	
14,100.0	93.00	180.44	5,920.6	-6,951.1	1,140.7	7,037.2	0.00	0.00	
14,200.0	93.00	180.44	5,915.4	-7,050.9	1,139.9	7,136.2	0.00	0.00	
14,300.0	93.00	180.44	5,910.1	-7,150.8	1,139.2	7,235.3	0.00	0.00	
14,400.0	93.00	180.44	5,904.9	-7,250.7	1,138.4	7,334.4	0.00	0.00	
14,500.0	93.00	180.44	5,899.7	-7,350.5	1,137.6	7,433.5	0.00	0.00	
14,600.0	93.00	180.44	5,894.4	-7,450.4	1,136.9	7,532.5	0.00	0.00	
14,700.0	93.00	180.44	5,889.2	-7,550.2	1,136.1	7,631.6	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well DHS5C-20 D17
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 5805.0ft (Original Well Elev)
Project:	North Piceance	MD Reference:	WELL @ 5805.0ft (Original Well Elev)
Site:	D17 998	North Reference:	True
Well:	DHS5C-20 D17	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #2		

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
14,800.0	93.00	180.44	5,884.0	-7,650.1	1,135.3	7,730.7	0.00	0.00	
14,900.0	93.00	180.44	5,878.7	-7,750.0	1,134.6	7,829.7	0.00	0.00	
15,000.0	93.00	180.44	5,873.5	-7,849.8	1,133.8	7,928.8	0.00	0.00	
15,100.0	93.00	180.44	5,868.3	-7,949.7	1,133.0	8,027.9	0.00	0.00	
15,200.0	93.00	180.44	5,863.0	-8,049.5	1,132.3	8,126.9	0.00	0.00	
15,300.0	93.00	180.44	5,857.8	-8,149.4	1,131.5	8,226.0	0.00	0.00	
15,400.0	93.00	180.44	5,852.6	-8,249.3	1,130.7	8,325.1	0.00	0.00	
15,500.0	93.00	180.44	5,847.3	-8,349.1	1,130.0	8,424.1	0.00	0.00	
15,600.0	93.00	180.44	5,842.1	-8,449.0	1,129.2	8,523.2	0.00	0.00	
15,700.0	93.00	180.44	5,836.9	-8,548.8	1,128.4	8,622.3	0.00	0.00	
15,800.0	93.00	180.44	5,831.6	-8,648.7	1,127.7	8,721.4	0.00	0.00	
15,900.0	93.00	180.44	5,826.4	-8,748.6	1,126.9	8,820.4	0.00	0.00	
16,000.0	93.00	180.44	5,821.2	-8,848.4	1,126.1	8,919.5	0.00	0.00	
16,100.0	93.00	180.44	5,815.9	-8,948.3	1,125.4	9,018.6	0.00	0.00	
16,200.0	93.00	180.44	5,810.7	-9,048.1	1,124.6	9,117.6	0.00	0.00	
16,300.0	93.00	180.44	5,805.5	-9,148.0	1,123.8	9,216.7	0.00	0.00	
16,400.0	93.00	180.44	5,800.2	-9,247.9	1,123.1	9,315.8	0.00	0.00	
16,500.0	93.00	180.44	5,795.0	-9,347.7	1,122.3	9,414.8	0.00	0.00	
16,576.5	93.00	180.44	5,791.0	-9,424.1	1,121.7	9,490.6	0.00	0.00	TD @ 16576.5' 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
DHS5C-20 D17 BHL - plan hits target center - Point	0.00	0.00	5,791.0	-9,424.1	1,121.7	1,529,216.99	2,191,634.97	39° 15' 5.57 N	108° 21' 18.28 W
DHS5C-20 D17 Start Pt - plan hits target center - Point	0.00	0.00	6,292.1	306.6	1,194.6	1,538,940.60	2,192,014.01	39° 16' 41.75 N	108° 21' 17.35 W

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,404.9	2,319.0	Rollins		3.01	
4,202.0	4,034.0	Mancos Marker		3.01	
5,549.6	5,320.0	Niobrara		3.01	
6,271.0	5,995.0	NioLamSilt		3.01	

Cathedral Energy Services

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Project:	North Piceance	MD Reference:	WELL @ 5805.0ft (Original Well Elev)
Site:	D17 998	North Reference:	True
Well:	DHS5C-20 D17	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #2		

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
715.8	709.5	46.7	51.1	EOB; Inc=15.47°
5,653.8	5,468.6	935.0	1,023.9	Start 8° Build @ 5653.8' MD
6,832.1	6,292.1	306.6	1,194.6	Start of Producing Interval
6,946.2	6,295.0	192.7	1,195.6	Landing Pt @ 6295' TVD
16,576.5	5,791.0	-9,424.1	1,121.7	TD @ 16576.5' MD