

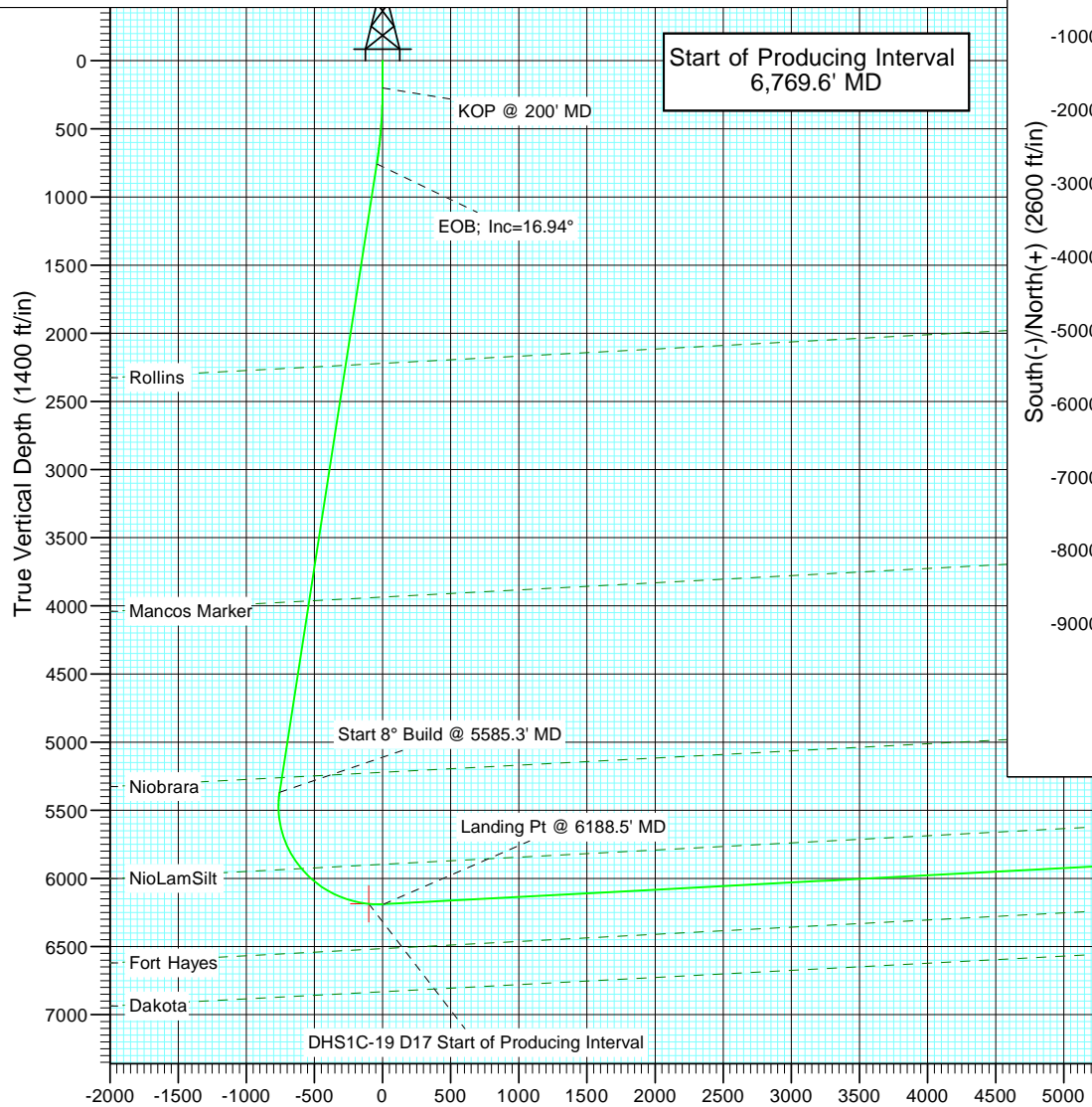


Project: North Piceance
Site: D17 998
Well: DHS1C-19 D17
Wellbore: HZ
Design: Plan #2

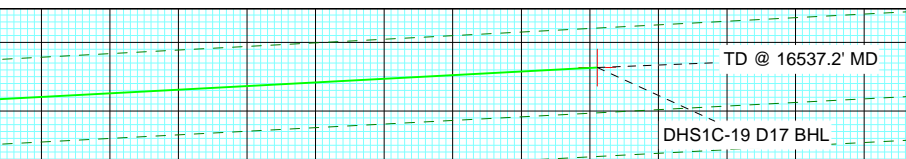
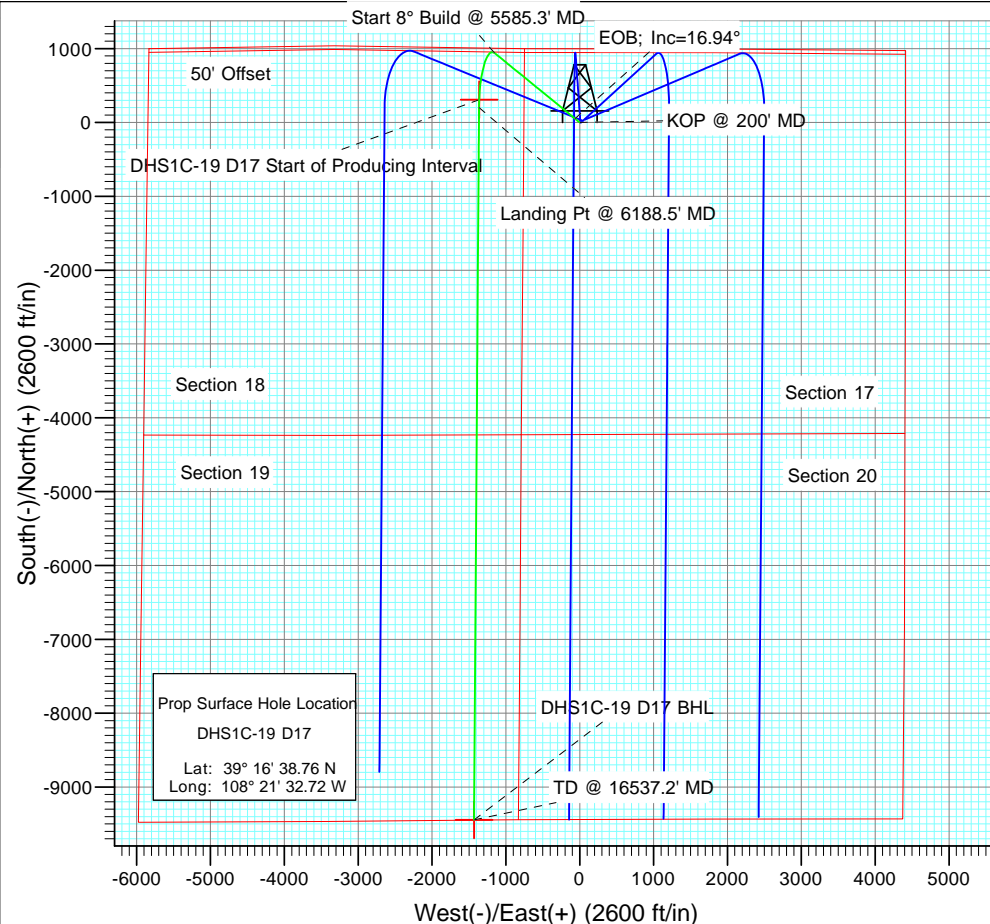


SECTION DETAILS

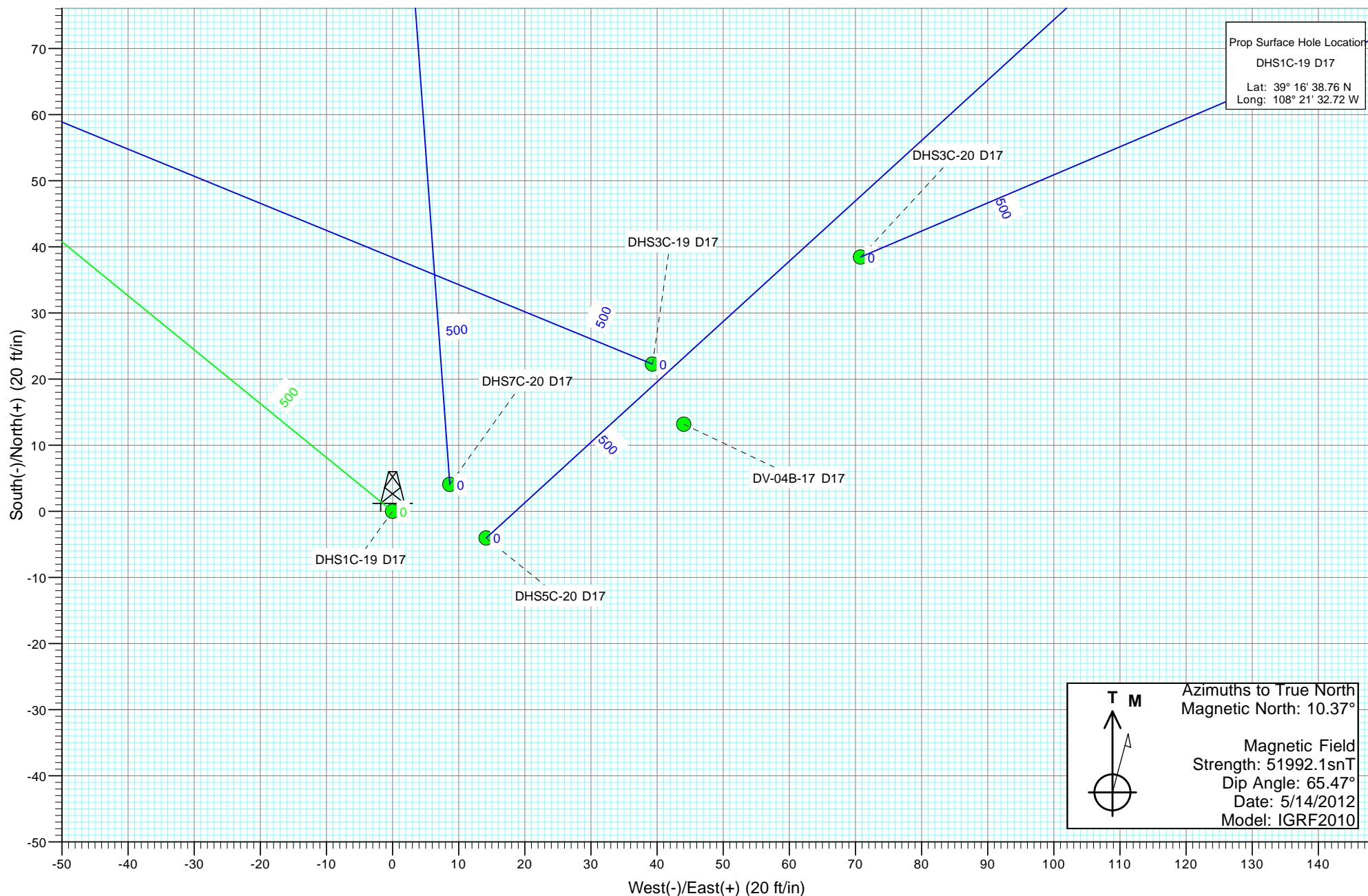
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Annotation
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.0	KOP @ 200' MD
3	764.6	16.94	309.17	756.4	52.3	-64.2	3.00	309.17	-42.1	EOB; Inc=16.94°
4	5585.3	16.94	309.17	5368.0	939.3	-1153.0	0.00	0.00	-755.9	Start 8° Build @ 5585.3' MD
5	6878.2	93.00	180.40	6188.5	200.2	-1364.3	8.00	-126.82	6.5	Landing Pt @ 6188.5' MD
6	16537.2	93.00	180.40	5683.0	-9445.3	-1431.6	0.00	0.00	9553.2	TD @ 16537.2' MD



Vertical Section at 188.62° (1400 ft/in)

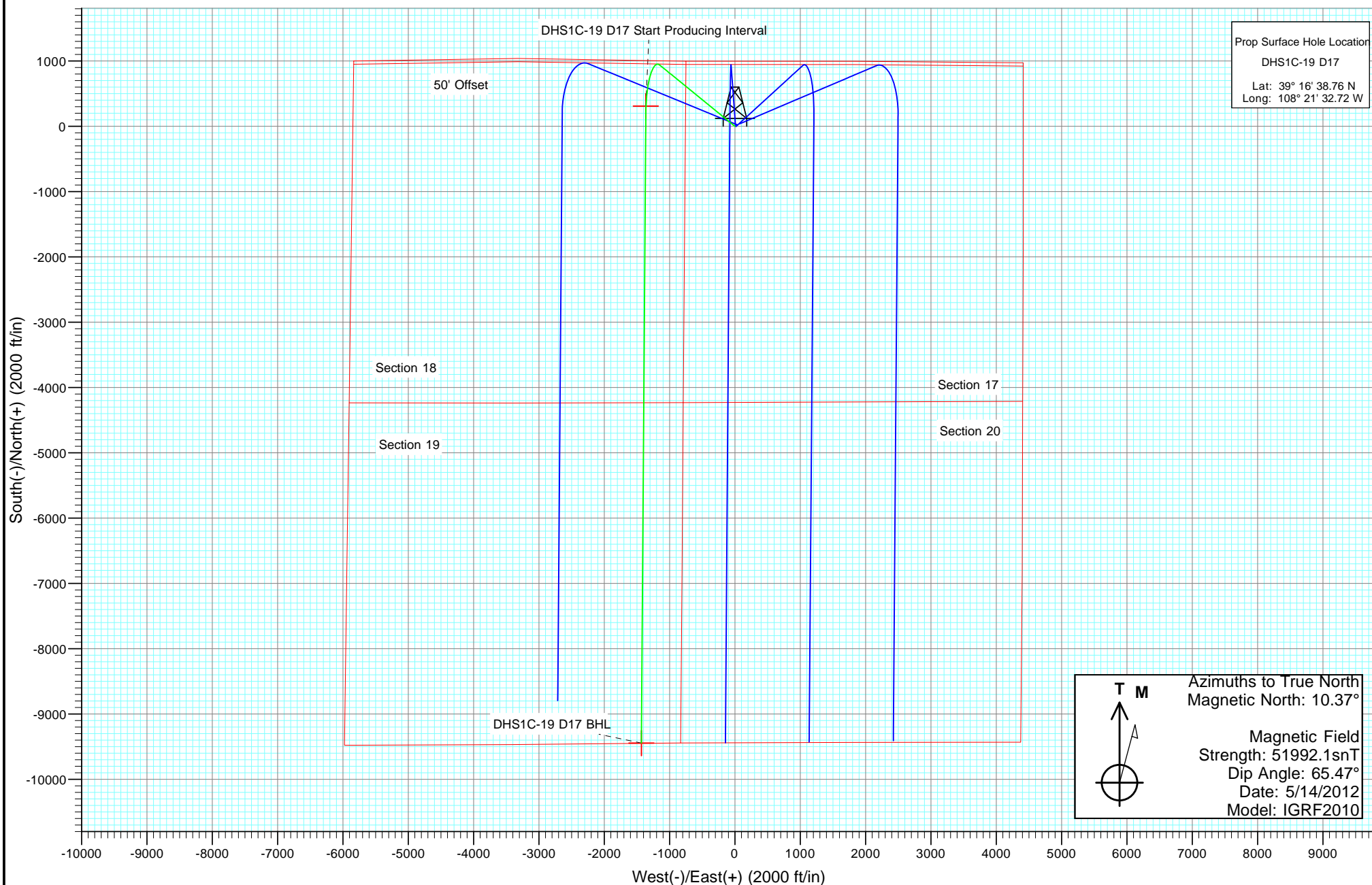


Plan #2 DHS1C-19 D17 12XXXX; DN WELL @ 5805.0ft (Original Well Elev) North American Datum 1983 Well DHS1C-19 D17, True North							
Type	Target	Target	Azimuth	Origin	Type	N/S	E/W
Target	DHS1C-19 D17 BHL	188.62	188.62	0.0	0.0	0.0	0.0
Name	TVD	+N/-S	+E/-W	Latitude	Longitude		
DHS1C-19 D17 BHL	5683.0	-9445.3	-1431.6	39° 15' 5.40 N	108° 21' 50.92 W		
DHS1C-19 D17 Start of Producing Interval	6186.2	308.6	-1361.6	39° 16' 41.81 N	108° 21' 50.04 W		





Project: North Piceance
Site: D17 998
Well: DHS1C-19 D17
Wellbore: HZ
Design: Plan #2



Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well DHS1C-19 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:	DHS1C-19 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	DHS1C-19 D17					
Well Position	+N/-S	0.0 ft	Northing:	1,538,676.23 ft	Latitude:	39° 16' 38.76 N
	+E/-W	0.0 ft	Easting:	2,190,796.34 ft	Longitude:	108° 21' 32.72 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	188.62

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	
764.6	16.94	309.17	756.4	52.3	-64.2	3.00	3.00	0.00	309.17	
5,585.3	16.94	309.17	5,368.0	939.3	-1,153.0	0.00	0.00	0.00	0.00	
6,878.2	93.00	180.40	6,188.5	200.2	-1,364.3	8.00	5.88	-9.96	-126.82	
16,537.2	93.00	180.40	5,683.0	-9,445.3	-1,431.6	0.00	0.00	0.00	0.00	DHS1C-19 D17 BHL

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well DHS1C-19 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:	DHS1C-19 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	309.17	300.0	1.7	-2.0	-1.3	3.00	3.00	
400.0	6.00	309.17	399.6	6.6	-8.1	-5.3	3.00	3.00	
500.0	9.00	309.17	498.8	14.9	-18.2	-12.0	3.00	3.00	
600.0	12.00	309.17	597.1	26.4	-32.4	-21.2	3.00	3.00	
700.0	15.00	309.17	694.3	41.1	-50.5	-33.1	3.00	3.00	
764.6	16.94	309.17	756.4	52.3	-64.2	-42.1	3.00	3.00	EOB; Inc=16.94°
800.0	16.94	309.17	790.3	58.8	-72.2	-47.4	0.00	0.00	
900.0	16.94	309.17	885.9	77.2	-94.8	-62.2	0.00	0.00	
1,000.0	16.94	309.17	981.6	95.6	-117.4	-77.0	0.00	0.00	
1,100.0	16.94	309.17	1,077.3	114.0	-140.0	-91.8	0.00	0.00	
1,200.0	16.94	309.17	1,172.9	132.4	-162.6	-106.6	0.00	0.00	
1,300.0	16.94	309.17	1,268.6	150.8	-185.2	-121.4	0.00	0.00	
1,400.0	16.94	309.17	1,364.3	169.2	-207.7	-136.2	0.00	0.00	
1,500.0	16.94	309.17	1,459.9	187.6	-230.3	-151.0	0.00	0.00	
1,600.0	16.94	309.17	1,555.6	206.0	-252.9	-165.8	0.00	0.00	
1,700.0	16.94	309.17	1,651.2	224.4	-275.5	-180.6	0.00	0.00	
1,800.0	16.94	309.17	1,746.9	242.8	-298.1	-195.4	0.00	0.00	
1,900.0	16.94	309.17	1,842.6	261.2	-320.7	-210.2	0.00	0.00	
2,000.0	16.94	309.17	1,938.2	279.6	-343.3	-225.0	0.00	0.00	
2,100.0	16.94	309.17	2,033.9	298.0	-365.8	-239.8	0.00	0.00	
2,200.0	16.94	309.17	2,129.6	316.4	-388.4	-254.6	0.00	0.00	
2,300.0	16.94	309.17	2,225.2	334.8	-411.0	-269.5	0.00	0.00	
2,309.4	16.94	309.17	2,234.2	336.6	-413.1	-270.8	0.00	0.00	Rollins
2,400.0	16.94	309.17	2,320.9	353.2	-433.6	-284.3	0.00	0.00	
2,500.0	16.94	309.17	2,416.5	371.6	-456.2	-299.1	0.00	0.00	
2,600.0	16.94	309.17	2,512.2	390.0	-478.8	-313.9	0.00	0.00	
2,700.0	16.94	309.17	2,607.9	408.4	-501.4	-328.7	0.00	0.00	
2,800.0	16.94	309.17	2,703.5	426.8	-524.0	-343.5	0.00	0.00	
2,900.0	16.94	309.17	2,799.2	445.2	-546.5	-358.3	0.00	0.00	
3,000.0	16.94	309.17	2,894.9	463.6	-569.1	-373.1	0.00	0.00	
3,100.0	16.94	309.17	2,990.5	482.0	-591.7	-387.9	0.00	0.00	
3,200.0	16.94	309.17	3,086.2	500.4	-614.3	-402.7	0.00	0.00	
3,300.0	16.94	309.17	3,181.8	518.8	-636.9	-417.5	0.00	0.00	
3,400.0	16.94	309.17	3,277.5	537.2	-659.5	-432.3	0.00	0.00	
3,500.0	16.94	309.17	3,373.2	555.6	-682.1	-447.1	0.00	0.00	
3,600.0	16.94	309.17	3,468.8	574.0	-704.6	-461.9	0.00	0.00	
3,700.0	16.94	309.17	3,564.5	592.4	-727.2	-476.7	0.00	0.00	
3,800.0	16.94	309.17	3,660.2	610.8	-749.8	-491.6	0.00	0.00	
3,900.0	16.94	309.17	3,755.8	629.2	-772.4	-506.4	0.00	0.00	
4,000.0	16.94	309.17	3,851.5	647.6	-795.0	-521.2	0.00	0.00	
4,100.0	16.94	309.17	3,947.1	666.0	-817.6	-536.0	0.00	0.00	
4,116.8	16.94	309.17	3,963.2	669.1	-821.4	-538.5	0.00	0.00	Mancos Marker
4,200.0	16.94	309.17	4,042.8	684.4	-840.2	-550.8	0.00	0.00	
4,300.0	16.94	309.17	4,138.5	702.8	-862.7	-565.6	0.00	0.00	
4,400.0	16.94	309.17	4,234.1	721.2	-885.3	-580.4	0.00	0.00	
4,500.0	16.94	309.17	4,329.8	739.6	-907.9	-595.2	0.00	0.00	
4,600.0	16.94	309.17	4,425.5	758.0	-930.5	-610.0	0.00	0.00	
4,700.0	16.94	309.17	4,521.1	776.4	-953.1	-624.8	0.00	0.00	
4,800.0	16.94	309.17	4,616.8	794.8	-975.7	-639.6	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well DHS1C-19 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:	DHS1C-19 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	16.94	309.17	4,712.4	813.2	-998.3	-654.4	0.00	0.00	
5,000.0	16.94	309.17	4,808.1	831.6	-1,020.8	-669.2	0.00	0.00	
5,100.0	16.94	309.17	4,903.8	850.0	-1,043.4	-684.0	0.00	0.00	
5,200.0	16.94	309.17	4,999.4	868.4	-1,066.0	-698.9	0.00	0.00	
5,300.0	16.94	309.17	5,095.1	886.8	-1,088.6	-713.7	0.00	0.00	
5,400.0	16.94	309.17	5,190.8	905.2	-1,111.2	-728.5	0.00	0.00	
5,472.1	16.94	309.17	5,259.7	918.5	-1,127.5	-739.1	0.00	0.00	Niobrara
5,500.0	16.94	309.17	5,286.4	923.6	-1,133.8	-743.3	0.00	0.00	
5,585.3	16.94	309.17	5,368.0	939.3	-1,153.0	-755.9	0.00	0.00	Start 8° Build @ 5585.3' MD
5,600.0	16.26	305.81	5,382.1	941.9	-1,156.4	-757.9	8.00	-4.61	
5,700.0	13.54	276.12	5,478.9	951.3	-1,179.4	-763.8	8.00	-2.72	
5,800.0	15.09	243.93	5,575.9	946.8	-1,202.8	-755.9	8.00	1.55	
5,900.0	19.94	222.49	5,671.4	928.5	-1,226.0	-734.3	8.00	4.85	
6,000.0	26.33	210.10	5,763.3	896.7	-1,248.7	-699.4	8.00	6.39	
6,100.0	33.38	202.46	5,850.0	852.0	-1,270.4	-652.0	8.00	7.05	
6,196.6	40.50	197.43	5,927.2	797.4	-1,289.9	-595.1	8.00	7.37	NioLamSilt
6,200.0	40.75	197.28	5,929.8	795.3	-1,290.6	-592.9	8.00	7.47	
6,300.0	48.30	193.46	6,001.0	727.7	-1,309.0	-523.3	8.00	7.54	
6,400.0	55.94	190.45	6,062.4	650.6	-1,325.2	-444.6	8.00	7.64	
6,500.0	63.64	187.95	6,112.7	565.3	-1,339.0	-358.3	8.00	7.70	
6,600.0	71.38	185.75	6,150.9	473.7	-1,349.9	-266.0	8.00	7.74	
6,700.0	79.14	183.76	6,176.3	377.4	-1,357.9	-169.6	8.00	7.76	
6,769.6	84.55	182.43	6,186.2	308.6	-1,361.6	-101.1	8.00	7.77	Start of Producing Interval
6,800.0	86.92	181.86	6,188.5	278.3	-1,362.8	-70.9	8.00	7.78	
6,878.2	93.00	180.40	6,188.5	200.2	-1,364.3	6.5	8.00	7.78	Landing Pt @ 6188.5' MD
6,900.0	93.00	180.40	6,187.4	178.4	-1,364.5	28.1	0.00	0.00	
7,000.0	93.00	180.40	6,182.1	78.5	-1,365.1	126.9	0.00	0.00	
7,100.0	93.00	180.40	6,176.9	-21.3	-1,365.8	225.8	0.00	0.00	
7,200.0	93.00	180.40	6,171.7	-121.2	-1,366.5	324.6	0.00	0.00	
7,300.0	93.00	180.40	6,166.4	-221.1	-1,367.2	423.5	0.00	0.00	
7,400.0	93.00	180.40	6,161.2	-320.9	-1,367.9	522.3	0.00	0.00	
7,500.0	93.00	180.40	6,156.0	-420.8	-1,368.6	621.1	0.00	0.00	
7,600.0	93.00	180.40	6,150.7	-520.6	-1,369.3	720.0	0.00	0.00	
7,700.0	93.00	180.40	6,145.5	-620.5	-1,370.0	818.8	0.00	0.00	
7,800.0	93.00	180.40	6,140.3	-720.4	-1,370.7	917.6	0.00	0.00	
7,900.0	93.00	180.40	6,135.0	-820.2	-1,371.4	1,016.5	0.00	0.00	
8,000.0	93.00	180.40	6,129.8	-920.1	-1,372.1	1,115.3	0.00	0.00	
8,100.0	93.00	180.40	6,124.6	-1,019.9	-1,372.8	1,214.2	0.00	0.00	
8,200.0	93.00	180.40	6,119.3	-1,119.8	-1,373.5	1,313.0	0.00	0.00	
8,300.0	93.00	180.40	6,114.1	-1,219.7	-1,374.2	1,411.8	0.00	0.00	
8,400.0	93.00	180.40	6,108.9	-1,319.5	-1,374.9	1,510.7	0.00	0.00	
8,500.0	93.00	180.40	6,103.6	-1,419.4	-1,375.6	1,609.5	0.00	0.00	
8,600.0	93.00	180.40	6,098.4	-1,519.2	-1,376.3	1,708.3	0.00	0.00	
8,700.0	93.00	180.40	6,093.2	-1,619.1	-1,377.0	1,807.2	0.00	0.00	
8,800.0	93.00	180.40	6,087.9	-1,719.0	-1,377.7	1,906.0	0.00	0.00	
8,900.0	93.00	180.40	6,082.7	-1,818.8	-1,378.4	2,004.9	0.00	0.00	
9,000.0	93.00	180.40	6,077.5	-1,918.7	-1,379.1	2,103.7	0.00	0.00	
9,100.0	93.00	180.40	6,072.2	-2,018.5	-1,379.8	2,202.5	0.00	0.00	
9,200.0	93.00	180.40	6,067.0	-2,118.4	-1,380.5	2,301.4	0.00	0.00	
9,300.0	93.00	180.40	6,061.8	-2,218.3	-1,381.2	2,400.2	0.00	0.00	
9,400.0	93.00	180.40	6,056.5	-2,318.1	-1,381.9	2,499.0	0.00	0.00	
9,500.0	93.00	180.40	6,051.3	-2,418.0	-1,382.6	2,597.9	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:	DHS1C-19 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	180.40	6,046.1	-2,517.9	-1,383.3	2,696.7	0.00	0.00	
9,700.0	93.00	180.40	6,040.8	-2,617.7	-1,384.0	2,795.6	0.00	0.00	
9,800.0	93.00	180.40	6,035.6	-2,717.6	-1,384.7	2,894.4	0.00	0.00	
9,900.0	93.00	180.40	6,030.4	-2,817.4	-1,385.4	2,993.2	0.00	0.00	
10,000.0	93.00	180.40	6,025.1	-2,917.3	-1,386.1	3,092.1	0.00	0.00	
10,100.0	93.00	180.40	6,019.9	-3,017.2	-1,386.8	3,190.9	0.00	0.00	
10,200.0	93.00	180.40	6,014.7	-3,117.0	-1,387.5	3,289.7	0.00	0.00	
10,300.0	93.00	180.40	6,009.4	-3,216.9	-1,388.2	3,388.6	0.00	0.00	
10,400.0	93.00	180.40	6,004.2	-3,316.7	-1,388.9	3,487.4	0.00	0.00	
10,500.0	93.00	180.40	5,999.0	-3,416.6	-1,389.5	3,586.2	0.00	0.00	
10,600.0	93.00	180.40	5,993.7	-3,516.5	-1,390.2	3,685.1	0.00	0.00	
10,700.0	93.00	180.40	5,988.5	-3,616.3	-1,390.9	3,783.9	0.00	0.00	
10,800.0	93.00	180.40	5,983.3	-3,716.2	-1,391.6	3,882.8	0.00	0.00	
10,900.0	93.00	180.40	5,978.0	-3,816.0	-1,392.3	3,981.6	0.00	0.00	
11,000.0	93.00	180.40	5,972.8	-3,915.9	-1,393.0	4,080.4	0.00	0.00	
11,100.0	93.00	180.40	5,967.6	-4,015.8	-1,393.7	4,179.3	0.00	0.00	
11,200.0	93.00	180.40	5,962.3	-4,115.6	-1,394.4	4,278.1	0.00	0.00	
11,300.0	93.00	180.40	5,957.1	-4,215.5	-1,395.1	4,376.9	0.00	0.00	
11,400.0	93.00	180.40	5,951.9	-4,315.3	-1,395.8	4,475.8	0.00	0.00	
11,500.0	93.00	180.40	5,946.6	-4,415.2	-1,396.5	4,574.6	0.00	0.00	
11,600.0	93.00	180.40	5,941.4	-4,515.1	-1,397.2	4,673.5	0.00	0.00	
11,700.0	93.00	180.40	5,936.2	-4,614.9	-1,397.9	4,772.3	0.00	0.00	
11,800.0	93.00	180.40	5,930.9	-4,714.8	-1,398.6	4,871.1	0.00	0.00	
11,900.0	93.00	180.40	5,925.7	-4,814.6	-1,399.3	4,970.0	0.00	0.00	
12,000.0	93.00	180.40	5,920.5	-4,914.5	-1,400.0	5,068.8	0.00	0.00	
12,100.0	93.00	180.40	5,915.2	-5,014.4	-1,400.7	5,167.6	0.00	0.00	
12,200.0	93.00	180.40	5,910.0	-5,114.2	-1,401.4	5,266.5	0.00	0.00	
12,300.0	93.00	180.40	5,904.8	-5,214.1	-1,402.1	5,365.3	0.00	0.00	
12,400.0	93.00	180.40	5,899.5	-5,313.9	-1,402.8	5,464.2	0.00	0.00	
12,500.0	93.00	180.40	5,894.3	-5,413.8	-1,403.5	5,563.0	0.00	0.00	
12,600.0	93.00	180.40	5,889.1	-5,513.7	-1,404.2	5,661.8	0.00	0.00	
12,700.0	93.00	180.40	5,883.8	-5,613.5	-1,404.9	5,760.7	0.00	0.00	
12,800.0	93.00	180.40	5,878.6	-5,713.4	-1,405.6	5,859.5	0.00	0.00	
12,900.0	93.00	180.40	5,873.4	-5,813.2	-1,406.3	5,958.3	0.00	0.00	
13,000.0	93.00	180.40	5,868.1	-5,913.1	-1,407.0	6,057.2	0.00	0.00	
13,100.0	93.00	180.40	5,862.9	-6,013.0	-1,407.7	6,156.0	0.00	0.00	
13,200.0	93.00	180.40	5,857.7	-6,112.8	-1,408.4	6,254.9	0.00	0.00	
13,300.0	93.00	180.40	5,852.4	-6,212.7	-1,409.1	6,353.7	0.00	0.00	
13,400.0	93.00	180.40	5,847.2	-6,312.5	-1,409.8	6,452.5	0.00	0.00	
13,500.0	93.00	180.40	5,842.0	-6,412.4	-1,410.5	6,551.4	0.00	0.00	
13,600.0	93.00	180.40	5,836.7	-6,512.3	-1,411.2	6,650.2	0.00	0.00	
13,700.0	93.00	180.40	5,831.5	-6,612.1	-1,411.9	6,749.0	0.00	0.00	
13,800.0	93.00	180.40	5,826.3	-6,712.0	-1,412.6	6,847.9	0.00	0.00	
13,900.0	93.00	180.40	5,821.0	-6,811.9	-1,413.3	6,946.7	0.00	0.00	
14,000.0	93.00	180.40	5,815.8	-6,911.7	-1,414.0	7,045.6	0.00	0.00	
14,100.0	93.00	180.40	5,810.6	-7,011.6	-1,414.6	7,144.4	0.00	0.00	
14,200.0	93.00	180.40	5,805.3	-7,111.4	-1,415.3	7,243.2	0.00	0.00	
14,300.0	93.00	180.40	5,800.1	-7,211.3	-1,416.0	7,342.1	0.00	0.00	
14,400.0	93.00	180.40	5,794.9	-7,311.2	-1,416.7	7,440.9	0.00	0.00	
14,500.0	93.00	180.40	5,789.6	-7,411.0	-1,417.4	7,539.7	0.00	0.00	
14,600.0	93.00	180.40	5,784.4	-7,510.9	-1,418.1	7,638.6	0.00	0.00	
14,700.0	93.00	180.40	5,779.1	-7,610.7	-1,418.8	7,737.4	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well DHS1C-19 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:	DHS1C-19 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	180.40	5,773.9	-7,710.6	-1,419.5	7,836.3	0.00	0.00	
14,900.0	93.00	180.40	5,768.7	-7,810.5	-1,420.2	7,935.1	0.00	0.00	
15,000.0	93.00	180.40	5,763.4	-7,910.3	-1,420.9	8,033.9	0.00	0.00	
15,100.0	93.00	180.40	5,758.2	-8,010.2	-1,421.6	8,132.8	0.00	0.00	
15,200.0	93.00	180.40	5,753.0	-8,110.0	-1,422.3	8,231.6	0.00	0.00	
15,300.0	93.00	180.40	5,747.7	-8,209.9	-1,423.0	8,330.4	0.00	0.00	
15,400.0	93.00	180.40	5,742.5	-8,309.8	-1,423.7	8,429.3	0.00	0.00	
15,500.0	93.00	180.40	5,737.3	-8,409.6	-1,424.4	8,528.1	0.00	0.00	
15,600.0	93.00	180.40	5,732.0	-8,509.5	-1,425.1	8,627.0	0.00	0.00	
15,700.0	93.00	180.40	5,726.8	-8,609.3	-1,425.8	8,725.8	0.00	0.00	
15,800.0	93.00	180.40	5,721.6	-8,709.2	-1,426.5	8,824.6	0.00	0.00	
15,900.0	93.00	180.40	5,716.3	-8,809.1	-1,427.2	8,923.5	0.00	0.00	
16,000.0	93.00	180.40	5,711.1	-8,908.9	-1,427.9	9,022.3	0.00	0.00	
16,100.0	93.00	180.40	5,705.9	-9,008.8	-1,428.6	9,121.1	0.00	0.00	
16,200.0	93.00	180.40	5,700.6	-9,108.6	-1,429.3	9,220.0	0.00	0.00	
16,300.0	93.00	180.40	5,695.4	-9,208.5	-1,430.0	9,318.8	0.00	0.00	
16,400.0	93.00	180.40	5,690.2	-9,308.4	-1,430.7	9,417.7	0.00	0.00	
16,500.0	93.00	180.40	5,684.9	-9,408.2	-1,431.4	9,516.5	0.00	0.00	
16,537.2	93.00	180.40	5,683.0	-9,445.3	-1,431.6	9,553.2	0.00	0.00	TD @ 16537.2' 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
DHS1C-19 D17 Start of - plan hits target center - Point	0.00	0.00	6,186.2	308.6	-1,361.6	1,539,027.52	2,189,445.10	39° 16' 41.81 N	108° 21' 50.04 W
DHS1C-19 D17 BHL - plan hits target center - Point	0.00	0.00	5,683.0	-9,445.3	-1,431.6	1,529,280.61	2,189,068.19	39° 15' 5.40 N	108° 21' 50.92 W

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,309.4	2,220.0	Rollins		-3.00	188.62
4,116.8	3,935.0	Mancos Marker		-3.00	188.62
5,472.1	5,221.0	Niobrara		-3.00	188.62
6,196.6	5,896.0	NioLamSilt		-3.00	188.62

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well DHS1C-19 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:	DHS1C-19 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
764.6	756.4	52.3	-64.2	EOB; Inc=16.94°
5,585.3	5,368.0	939.3	-1,153.0	Start 8° Build @ 5585.3' MD
6,769.6	6,186.2	308.6	-1,361.6	Start of Producing Interval
6,878.2	6,188.5	200.2	-1,364.3	Landing Pt @ 6188.5' MD
16,537.2	5,683.0	-9,445.3	-1,431.6	TD @ 16537.2' MD