

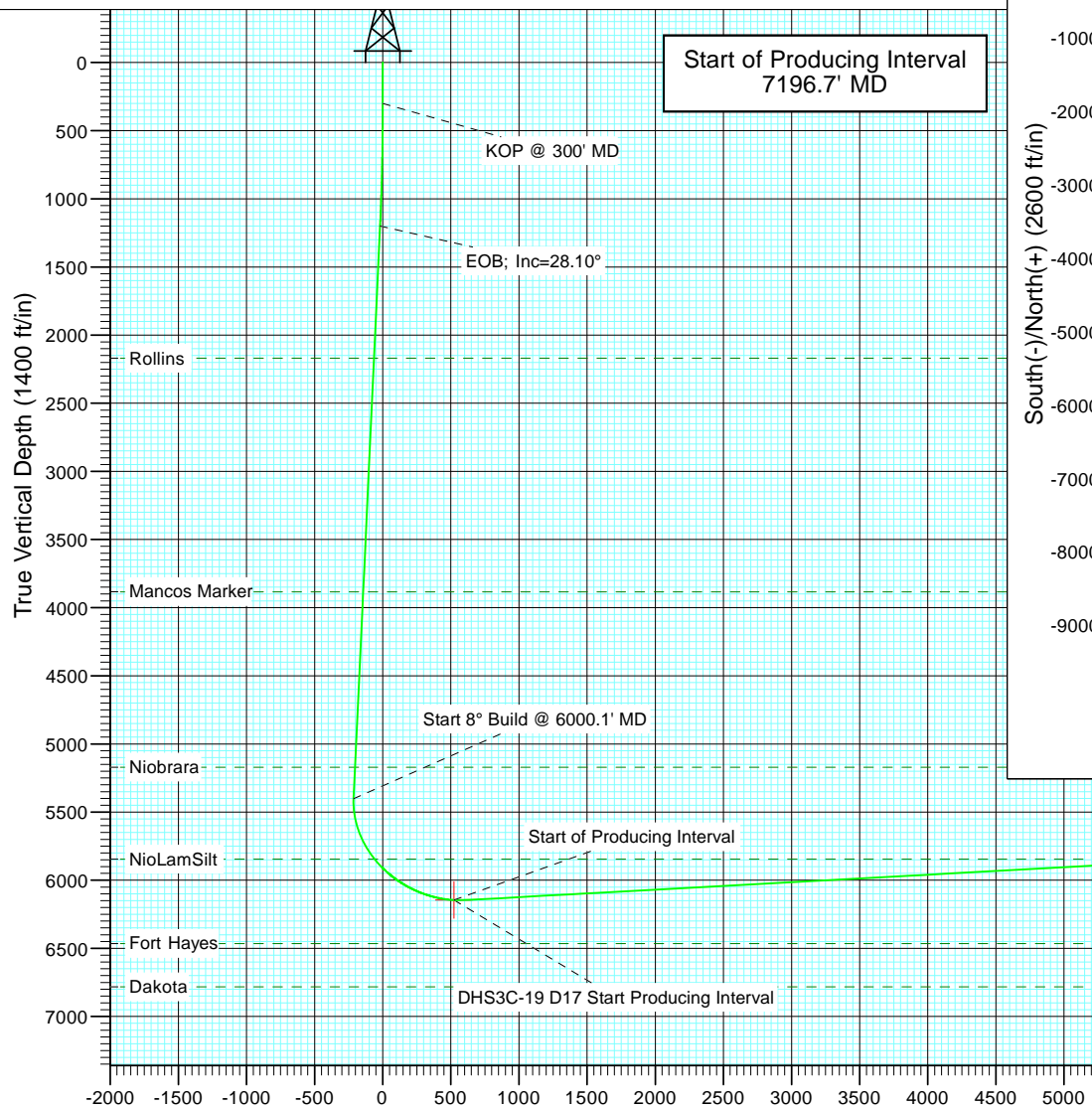


Project: North Piceance  
Site: D17 998  
Well: DHS3C-19 D17  
Wellbore: HZ  
Design: Plan #2

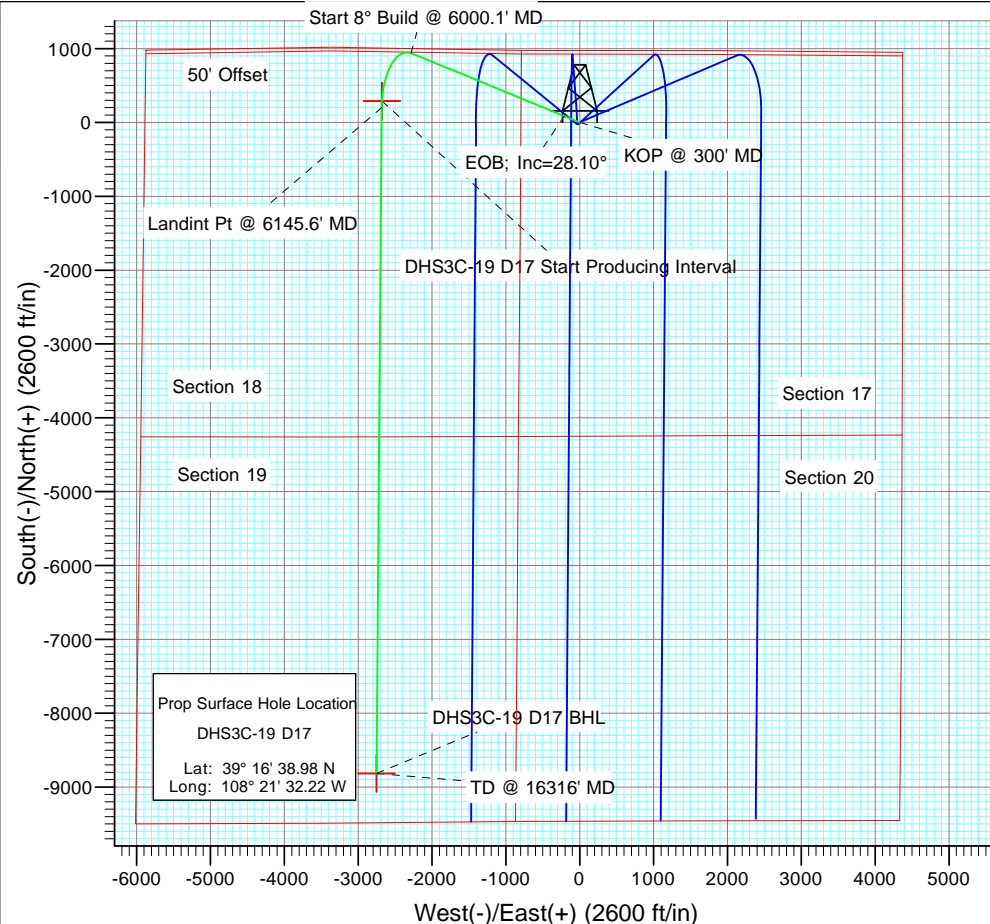


#### SECTION DETAILS

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	300.0	0.00	0.00	300.0	0.0	0.0	0.00	0.00	0.0	KOP @ 300' MD
3	1236.8	28.10	292.30	1199.7	85.4	-208.3	3.00	292.30	-19.5	EOB; Inc=28.10°
4	6000.1	28.10	292.30	5401.4	936.8	-2284.4	0.00	0.00	-213.7	Start 8° Build @ 6000.1' MD
5	7285.0	93.00	180.44	6145.6	201.4	-2682.3	8.00	-108.12	606.8	Landint Pt @ 6145.6' MD
6	16316.0	93.00	180.44	5673.0	-8817.0	-2751.5	0.00	0.00	9236.3	TD @ 16316' MD



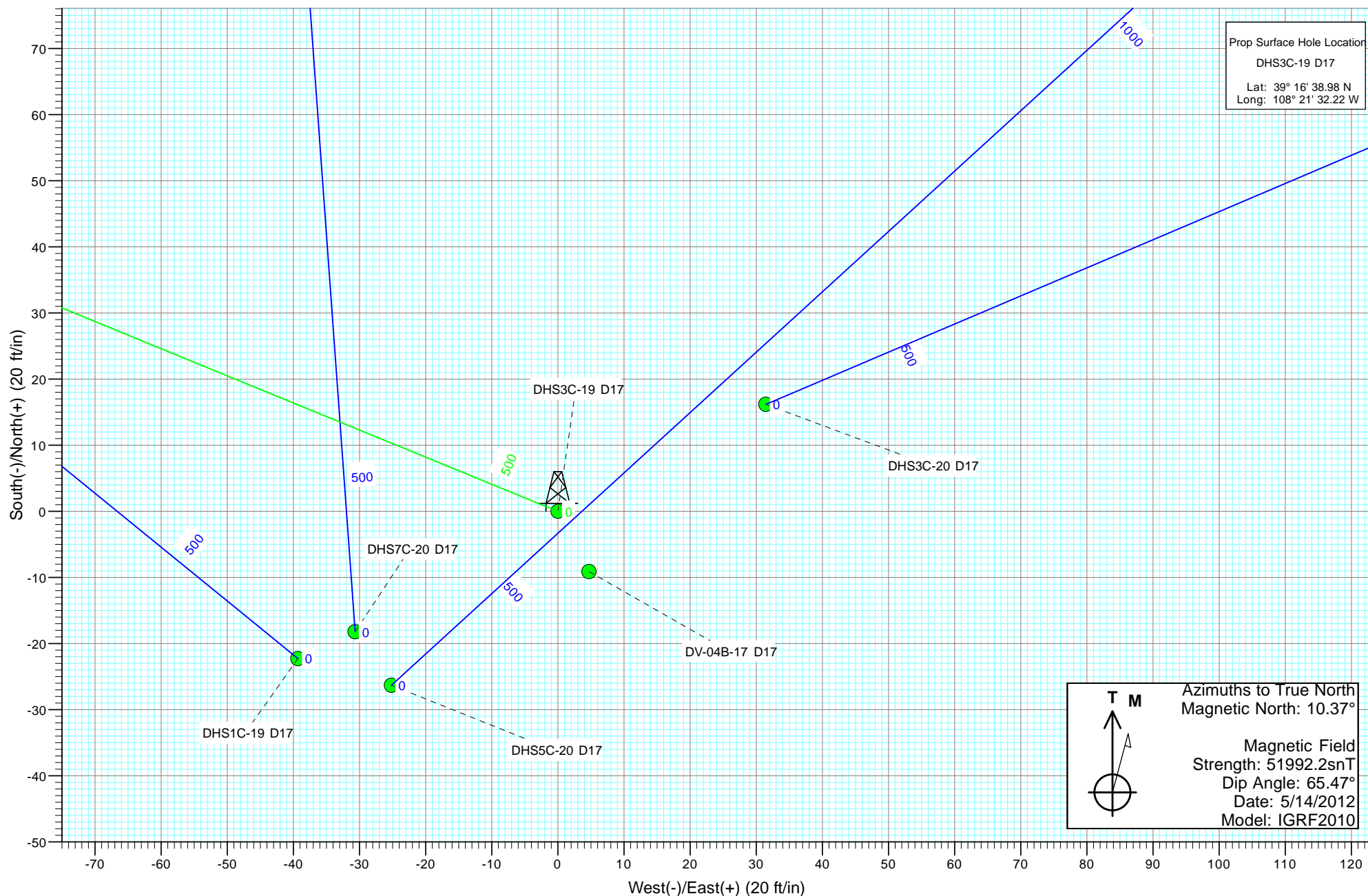
Vertical Section at 197.33° (1400 ft/in)



Prop Surface Hole Location  
DHS3C-19 D17  
Lat: 39° 16' 38.98 N  
Long: 108° 21' 32.22 W

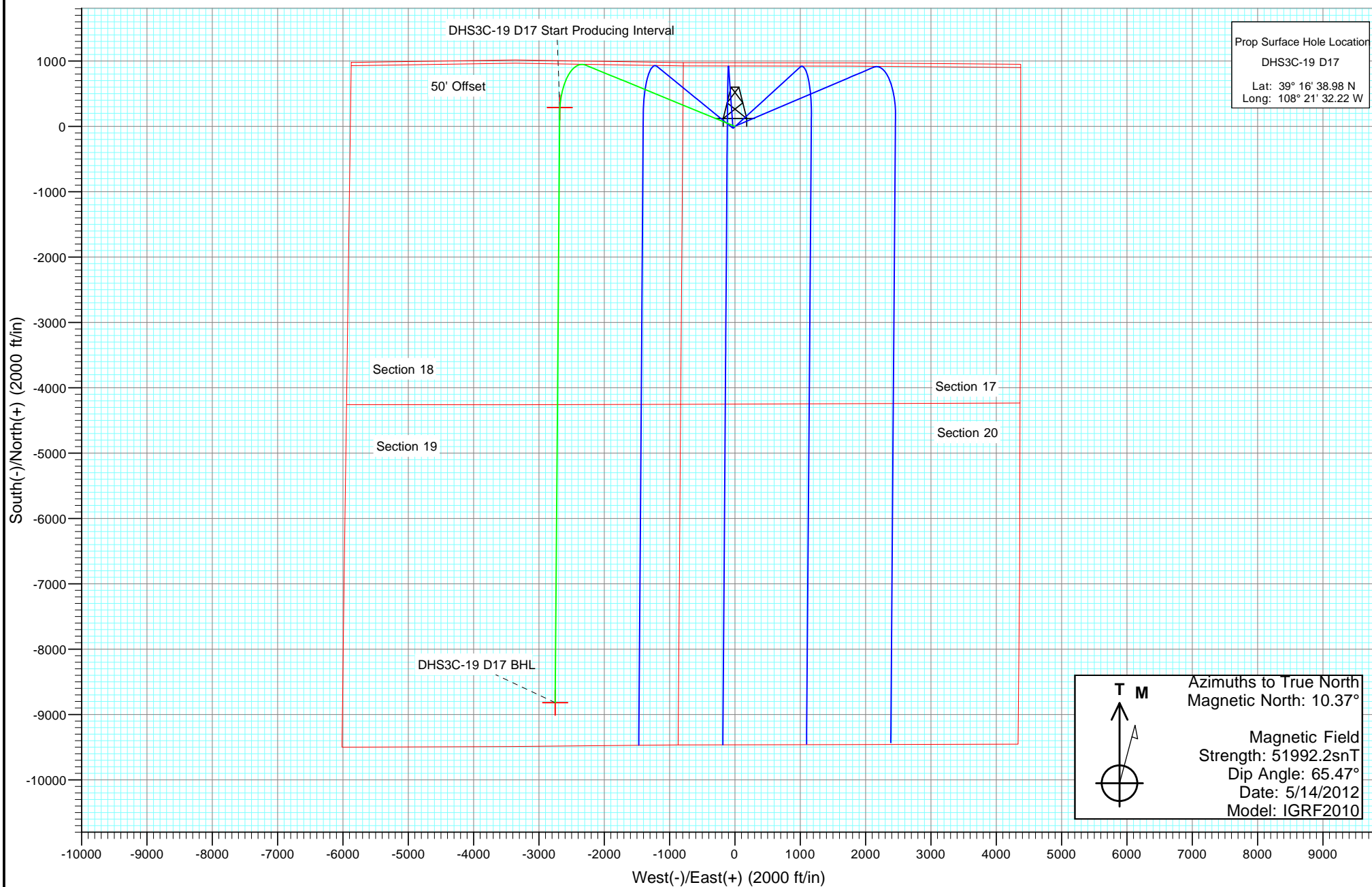
TD @ 16316' MD  
DHS3C-19 D17 BHL

Type TD	Target No Target (Freehand)	Azimuth 197.33	Origin Type Slot	N/S 0.0	E/W 0.0	From TVD 0.0
Name						
DHS3C-19 D17 BHL		5673.0	+N/-S -8817.0	+E/-W -2751.5	Latitude 39° 15' 11.83 N	Longitude 108° 22' 7.20 W
DHS3C-19 D17 Start Producing Interval		6145.4	+N/-S 289.5	+E/-W -2679.1	Latitude 39° 16' 41.84 N	Longitude 108° 22' 6.29 W





Project: North Piceance  
Site: D17 998  
Well: DHS3C-19 D17  
Wellbore: HZ  
Design: Plan #2



# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well DHS3C-19 D17
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	WELL @ 5805.0ft (Original Well Elev)
<b>Project:</b>	North Piceance	<b>MD Reference:</b>	WELL @ 5805.0ft (Original Well Elev)
<b>Site:</b>	D17 998	<b>North Reference:</b>	True
<b>Well:</b>	DHS3C-19 D17	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	HZ		
<b>Design:</b>	Plan #2		

<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		

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	DHS3C-19 D17					
Well Position	+N/-S	0.0 ft	Northing:	1,538,697.24 ft	Latitude:	39° 16' 38.98 N
	+E/-W	0.0 ft	Easting:	2,190,836.33 ft	Longitude:	108° 21' 32.22 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	5,773.0 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 (nT)</b>
	IGRF2010	5/14/2012	10.37	65.47	51,992

<b>Design</b>	Plan #2				
<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) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>	
	0.0	0.0	0.0	197.33	

<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	
300.0	0.00	0.00	300.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,236.8	28.10	292.30	1,199.7	85.4	-208.3	3.00	3.00	0.00	292.30	
6,000.1	28.10	292.30	5,401.4	936.8	-2,284.4	0.00	0.00	0.00	0.00	
7,285.0	93.00	180.44	6,145.6	201.4	-2,682.3	8.00	5.05	-8.71	-108.12	
16,316.0	93.00	180.44	5,673.0	-8,817.0	-2,751.5	0.00	0.00	0.00	0.00	DHS3C-19 D17 BHL

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well DHS3C-19 D17
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	WELL @ 5805.0ft (Original Well Elev)
<b>Project:</b>	North Piceance	<b>MD Reference:</b>	WELL @ 5805.0ft (Original Well Elev)
<b>Site:</b>	D17 998	<b>North Reference:</b>	True
<b>Well:</b>	DHS3C-19 D17	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	HZ		
<b>Design:</b>	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	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	KOP @ 300' MD
400.0	3.00	292.30	400.0	1.0	-2.4	-0.2	3.00	3.00	
500.0	6.00	292.30	499.6	4.0	-9.7	-0.9	3.00	3.00	
600.0	9.00	292.30	598.8	8.9	-21.8	-2.0	3.00	3.00	
700.0	12.00	292.30	697.1	15.8	-38.6	-3.6	3.00	3.00	
800.0	15.00	292.30	794.3	24.7	-60.2	-5.6	3.00	3.00	
900.0	18.00	292.30	890.2	35.5	-86.5	-8.1	3.00	3.00	
1,000.0	21.00	292.30	984.4	48.1	-117.4	-11.0	3.00	3.00	
1,100.0	24.00	292.30	1,076.8	62.6	-152.8	-14.3	3.00	3.00	
1,200.0	27.00	292.30	1,167.1	79.0	-192.6	-18.0	3.00	3.00	
1,236.8	28.10	292.30	1,199.7	85.4	-208.3	-19.5	3.00	3.00	EOB; Inc=28.10°
1,300.0	28.10	292.30	1,255.4	96.7	-235.9	-22.1	0.00	0.00	
1,400.0	28.10	292.30	1,343.6	114.6	-279.5	-26.1	0.00	0.00	
1,500.0	28.10	292.30	1,431.9	132.5	-323.1	-30.2	0.00	0.00	
1,600.0	28.10	292.30	1,520.1	150.3	-366.6	-34.3	0.00	0.00	
1,700.0	28.10	292.30	1,608.3	168.2	-410.2	-38.4	0.00	0.00	
1,800.0	28.10	292.30	1,696.5	186.1	-453.8	-42.5	0.00	0.00	
1,900.0	28.10	292.30	1,784.7	204.0	-497.4	-46.5	0.00	0.00	
2,000.0	28.10	292.30	1,872.9	221.8	-541.0	-50.6	0.00	0.00	
2,100.0	28.10	292.30	1,961.1	239.7	-584.6	-54.7	0.00	0.00	
2,200.0	28.10	292.30	2,049.3	257.6	-628.2	-58.8	0.00	0.00	
2,300.0	28.10	292.30	2,137.5	275.5	-671.7	-62.8	0.00	0.00	
2,336.8	28.10	292.30	2,170.0	282.0	-687.8	-64.3	0.00	0.00	Rollins
2,400.0	28.10	292.30	2,225.7	293.3	-715.3	-66.9	0.00	0.00	
2,500.0	28.10	292.30	2,313.9	311.2	-758.9	-71.0	0.00	0.00	
2,600.0	28.10	292.30	2,402.2	329.1	-802.5	-75.1	0.00	0.00	
2,700.0	28.10	292.30	2,490.4	346.9	-846.1	-79.1	0.00	0.00	
2,800.0	28.10	292.30	2,578.6	364.8	-889.7	-83.2	0.00	0.00	
2,900.0	28.10	292.30	2,666.8	382.7	-933.3	-87.3	0.00	0.00	
3,000.0	28.10	292.30	2,755.0	400.6	-976.8	-91.4	0.00	0.00	
3,100.0	28.10	292.30	2,843.2	418.4	-1,020.4	-95.5	0.00	0.00	
3,200.0	28.10	292.30	2,931.4	436.3	-1,064.0	-99.5	0.00	0.00	
3,300.0	28.10	292.30	3,019.6	454.2	-1,107.6	-103.6	0.00	0.00	
3,400.0	28.10	292.30	3,107.8	472.1	-1,151.2	-107.7	0.00	0.00	
3,500.0	28.10	292.30	3,196.0	489.9	-1,194.8	-111.8	0.00	0.00	
3,600.0	28.10	292.30	3,284.3	507.8	-1,238.3	-115.8	0.00	0.00	
3,700.0	28.10	292.30	3,372.5	525.7	-1,281.9	-119.9	0.00	0.00	
3,800.0	28.10	292.30	3,460.7	543.5	-1,325.5	-124.0	0.00	0.00	
3,900.0	28.10	292.30	3,548.9	561.4	-1,369.1	-128.1	0.00	0.00	
4,000.0	28.10	292.30	3,637.1	579.3	-1,412.7	-132.1	0.00	0.00	
4,100.0	28.10	292.30	3,725.3	597.2	-1,456.3	-136.2	0.00	0.00	
4,200.0	28.10	292.30	3,813.5	615.0	-1,499.9	-140.3	0.00	0.00	
4,281.0	28.10	292.30	3,885.0	629.5	-1,535.2	-143.6	0.00	0.00	Mancos Marker
4,300.0	28.10	292.30	3,901.7	632.9	-1,543.4	-144.4	0.00	0.00	
4,400.0	28.10	292.30	3,989.9	650.8	-1,587.0	-148.5	0.00	0.00	
4,500.0	28.10	292.30	4,078.1	668.7	-1,630.6	-152.5	0.00	0.00	
4,600.0	28.10	292.30	4,166.3	686.5	-1,674.2	-156.6	0.00	0.00	
4,700.0	28.10	292.30	4,254.6	704.4	-1,717.8	-160.7	0.00	0.00	
4,800.0	28.10	292.30	4,342.8	722.3	-1,761.4	-164.8	0.00	0.00	

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well DHS3C-19 D17
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	WELL @ 5805.0ft (Original Well Elev)
<b>Project:</b>	North Piceance	<b>MD Reference:</b>	WELL @ 5805.0ft (Original Well Elev)
<b>Site:</b>	D17 998	<b>North Reference:</b>	True
<b>Well:</b>	DHS3C-19 D17	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	HZ		
<b>Design:</b>	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	28.10	292.30	4,431.0	740.1	-1,804.9	-168.8	0.00	0.00	
5,000.0	28.10	292.30	4,519.2	758.0	-1,848.5	-172.9	0.00	0.00	
5,100.0	28.10	292.30	4,607.4	775.9	-1,892.1	-177.0	0.00	0.00	
5,200.0	28.10	292.30	4,695.6	793.8	-1,935.7	-181.1	0.00	0.00	
5,300.0	28.10	292.30	4,783.8	811.6	-1,979.3	-185.1	0.00	0.00	
5,400.0	28.10	292.30	4,872.0	829.5	-2,022.9	-189.2	0.00	0.00	
5,500.0	28.10	292.30	4,960.2	847.4	-2,066.5	-193.3	0.00	0.00	
5,600.0	28.10	292.30	5,048.4	865.2	-2,110.0	-197.4	0.00	0.00	
5,700.0	28.10	292.30	5,136.7	883.1	-2,153.6	-201.5	0.00	0.00	
5,738.9	28.10	292.30	5,171.0	890.1	-2,170.6	-203.0	0.00	0.00	Niobrara
5,800.0	28.10	292.30	5,224.9	901.0	-2,197.2	-205.5	0.00	0.00	
5,900.0	28.10	292.30	5,313.1	918.9	-2,240.8	-209.6	0.00	0.00	
6,000.0	28.10	292.30	5,401.3	936.7	-2,284.4	-213.7	0.00	0.00	
6,000.1	28.10	292.30	5,401.4	936.8	-2,284.4	-213.7	0.00	0.00	Start 8° Build @ 6000.1' MD
6,100.0	26.63	275.16	5,490.2	947.7	-2,328.6	-211.0	8.00	-1.47	
6,200.0	27.34	257.54	5,579.5	944.8	-2,373.4	-194.8	8.00	0.70	
6,300.0	30.06	241.83	5,667.3	928.0	-2,418.0	-165.5	8.00	2.73	
6,400.0	34.33	229.09	5,752.0	897.6	-2,461.4	-123.6	8.00	4.27	
6,500.0	39.65	219.12	5,831.9	854.3	-2,502.9	-69.9	8.00	5.31	
6,518.4	40.71	217.53	5,846.0	845.0	-2,510.3	-58.8	8.00	5.76	NioLamSilt
6,600.0	45.64	211.27	5,905.5	798.9	-2,541.7	-5.5	8.00	6.04	
6,700.0	52.06	204.92	5,971.3	732.5	-2,576.9	68.4	8.00	6.42	
6,800.0	58.77	199.62	6,028.1	656.4	-2,607.9	150.3	8.00	6.71	
6,900.0	65.66	195.03	6,074.7	572.0	-2,634.1	238.7	8.00	6.90	
7,000.0	72.69	190.92	6,110.2	480.9	-2,655.0	331.8	8.00	7.02	
7,100.0	79.78	187.12	6,134.0	385.1	-2,670.2	427.9	8.00	7.10	
7,196.7	86.69	183.60	6,145.4	289.5	-2,679.1	521.7	8.00	7.14	Start of Producing Interval
7,200.0	86.92	183.49	6,145.6	286.3	-2,679.3	524.9	8.00	7.15	
7,285.0	93.00	180.44	6,145.6	201.4	-2,682.3	606.8	8.00	7.15	Landint Pt @ 6145.6' MD
7,300.0	93.00	180.44	6,144.9	186.4	-2,682.4	621.2	0.00	0.00	
7,400.0	93.00	180.44	6,139.6	86.5	-2,683.1	716.7	0.00	0.00	
7,500.0	93.00	180.44	6,134.4	-13.3	-2,683.9	812.3	0.00	0.00	
7,600.0	93.00	180.44	6,129.2	-113.2	-2,684.7	907.8	0.00	0.00	
7,700.0	93.00	180.44	6,123.9	-213.1	-2,685.4	1,003.4	0.00	0.00	
7,800.0	93.00	180.44	6,118.7	-312.9	-2,686.2	1,098.9	0.00	0.00	
7,900.0	93.00	180.44	6,113.5	-412.8	-2,687.0	1,194.5	0.00	0.00	
8,000.0	93.00	180.44	6,108.2	-512.6	-2,687.7	1,290.0	0.00	0.00	
8,100.0	93.00	180.44	6,103.0	-612.5	-2,688.5	1,385.6	0.00	0.00	
8,200.0	93.00	180.44	6,097.8	-712.4	-2,689.3	1,481.2	0.00	0.00	
8,300.0	93.00	180.44	6,092.5	-812.2	-2,690.0	1,576.7	0.00	0.00	
8,400.0	93.00	180.44	6,087.3	-912.1	-2,690.8	1,672.3	0.00	0.00	
8,500.0	93.00	180.44	6,082.1	-1,011.9	-2,691.6	1,767.8	0.00	0.00	
8,600.0	93.00	180.44	6,076.8	-1,111.8	-2,692.3	1,863.4	0.00	0.00	
8,700.0	93.00	180.44	6,071.6	-1,211.7	-2,693.1	1,958.9	0.00	0.00	
8,800.0	93.00	180.44	6,066.4	-1,311.5	-2,693.9	2,054.5	0.00	0.00	
8,900.0	93.00	180.44	6,061.1	-1,411.4	-2,694.6	2,150.0	0.00	0.00	
9,000.0	93.00	180.44	6,055.9	-1,511.2	-2,695.4	2,245.6	0.00	0.00	
9,100.0	93.00	180.44	6,050.7	-1,611.1	-2,696.2	2,341.1	0.00	0.00	
9,200.0	93.00	180.44	6,045.4	-1,711.0	-2,696.9	2,436.7	0.00	0.00	
9,300.0	93.00	180.44	6,040.2	-1,810.8	-2,697.7	2,532.3	0.00	0.00	
9,400.0	93.00	180.44	6,035.0	-1,910.7	-2,698.5	2,627.8	0.00	0.00	
9,500.0	93.00	180.44	6,029.7	-2,010.5	-2,699.2	2,723.4	0.00	0.00	

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well DHS3C-19 D17
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	WELL @ 5805.0ft (Original Well Elev)
<b>Project:</b>	North Piceance	<b>MD Reference:</b>	WELL @ 5805.0ft (Original Well Elev)
<b>Site:</b>	D17 998	<b>North Reference:</b>	True
<b>Well:</b>	DHS3C-19 D17	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	HZ		
<b>Design:</b>	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	6,024.5	-2,110.4	-2,700.0	2,818.9	0.00	0.00	
9,700.0	93.00	180.44	6,019.3	-2,210.3	-2,700.8	2,914.5	0.00	0.00	
9,800.0	93.00	180.44	6,014.0	-2,310.1	-2,701.5	3,010.0	0.00	0.00	
9,900.0	93.00	180.44	6,008.8	-2,410.0	-2,702.3	3,105.6	0.00	0.00	
10,000.0	93.00	180.44	6,003.6	-2,509.8	-2,703.1	3,201.1	0.00	0.00	
10,100.0	93.00	180.44	5,998.3	-2,609.7	-2,703.8	3,296.7	0.00	0.00	
10,200.0	93.00	180.44	5,993.1	-2,709.6	-2,704.6	3,392.2	0.00	0.00	
10,300.0	93.00	180.44	5,987.9	-2,809.4	-2,705.4	3,487.8	0.00	0.00	
10,400.0	93.00	180.44	5,982.6	-2,909.3	-2,706.1	3,583.4	0.00	0.00	
10,500.0	93.00	180.44	5,977.4	-3,009.1	-2,706.9	3,678.9	0.00	0.00	
10,600.0	93.00	180.44	5,972.2	-3,109.0	-2,707.7	3,774.5	0.00	0.00	
10,700.0	93.00	180.44	5,966.9	-3,208.9	-2,708.4	3,870.0	0.00	0.00	
10,800.0	93.00	180.44	5,961.7	-3,308.7	-2,709.2	3,965.6	0.00	0.00	
10,900.0	93.00	180.44	5,956.4	-3,408.6	-2,710.0	4,061.1	0.00	0.00	
11,000.0	93.00	180.44	5,951.2	-3,508.4	-2,710.7	4,156.7	0.00	0.00	
11,100.0	93.00	180.44	5,946.0	-3,608.3	-2,711.5	4,252.2	0.00	0.00	
11,200.0	93.00	180.44	5,940.7	-3,708.2	-2,712.3	4,347.8	0.00	0.00	
11,300.0	93.00	180.44	5,935.5	-3,808.0	-2,713.0	4,443.3	0.00	0.00	
11,400.0	93.00	180.44	5,930.3	-3,907.9	-2,713.8	4,538.9	0.00	0.00	
11,500.0	93.00	180.44	5,925.0	-4,007.7	-2,714.6	4,634.5	0.00	0.00	
11,600.0	93.00	180.44	5,919.8	-4,107.6	-2,715.3	4,730.0	0.00	0.00	
11,700.0	93.00	180.44	5,914.6	-4,207.5	-2,716.1	4,825.6	0.00	0.00	
11,800.0	93.00	180.44	5,909.3	-4,307.3	-2,716.9	4,921.1	0.00	0.00	
11,900.0	93.00	180.44	5,904.1	-4,407.2	-2,717.6	5,016.7	0.00	0.00	
12,000.0	93.00	180.44	5,898.9	-4,507.0	-2,718.4	5,112.2	0.00	0.00	
12,100.0	93.00	180.44	5,893.6	-4,606.9	-2,719.2	5,207.8	0.00	0.00	
12,200.0	93.00	180.44	5,888.4	-4,706.8	-2,719.9	5,303.3	0.00	0.00	
12,300.0	93.00	180.44	5,883.2	-4,806.6	-2,720.7	5,398.9	0.00	0.00	
12,400.0	93.00	180.44	5,877.9	-4,906.5	-2,721.5	5,494.4	0.00	0.00	
12,500.0	93.00	180.44	5,872.7	-5,006.3	-2,722.2	5,590.0	0.00	0.00	
12,600.0	93.00	180.44	5,867.5	-5,106.2	-2,723.0	5,685.6	0.00	0.00	
12,700.0	93.00	180.44	5,862.2	-5,206.1	-2,723.8	5,781.1	0.00	0.00	
12,800.0	93.00	180.44	5,857.0	-5,305.9	-2,724.5	5,876.7	0.00	0.00	
12,900.0	93.00	180.44	5,851.8	-5,405.8	-2,725.3	5,972.2	0.00	0.00	
13,000.0	93.00	180.44	5,846.5	-5,505.6	-2,726.1	6,067.8	0.00	0.00	
13,100.0	93.00	180.44	5,841.3	-5,605.5	-2,726.8	6,163.3	0.00	0.00	
13,200.0	93.00	180.44	5,836.1	-5,705.4	-2,727.6	6,258.9	0.00	0.00	
13,300.0	93.00	180.44	5,830.8	-5,805.2	-2,728.4	6,354.4	0.00	0.00	
13,400.0	93.00	180.44	5,825.6	-5,905.1	-2,729.1	6,450.0	0.00	0.00	
13,500.0	93.00	180.44	5,820.4	-6,004.9	-2,729.9	6,545.5	0.00	0.00	
13,600.0	93.00	180.44	5,815.1	-6,104.8	-2,730.7	6,641.1	0.00	0.00	
13,700.0	93.00	180.44	5,809.9	-6,204.7	-2,731.4	6,736.7	0.00	0.00	
13,800.0	93.00	180.44	5,804.7	-6,304.5	-2,732.2	6,832.2	0.00	0.00	
13,900.0	93.00	180.44	5,799.4	-6,404.4	-2,733.0	6,927.8	0.00	0.00	
14,000.0	93.00	180.44	5,794.2	-6,504.2	-2,733.7	7,023.3	0.00	0.00	
14,100.0	93.00	180.44	5,789.0	-6,604.1	-2,734.5	7,118.9	0.00	0.00	
14,200.0	93.00	180.44	5,783.7	-6,704.0	-2,735.3	7,214.4	0.00	0.00	
14,300.0	93.00	180.44	5,778.5	-6,803.8	-2,736.0	7,310.0	0.00	0.00	
14,400.0	93.00	180.44	5,773.3	-6,903.7	-2,736.8	7,405.5	0.00	0.00	
14,500.0	93.00	180.44	5,768.0	-7,003.5	-2,737.6	7,501.1	0.00	0.00	
14,600.0	93.00	180.44	5,762.8	-7,103.4	-2,738.3	7,596.6	0.00	0.00	
14,700.0	93.00	180.44	5,757.6	-7,203.3	-2,739.1	7,692.2	0.00	0.00	

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well DHS3C-19 D17
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	WELL @ 5805.0ft (Original Well Elev)
<b>Project:</b>	North Piceance	<b>MD Reference:</b>	WELL @ 5805.0ft (Original Well Elev)
<b>Site:</b>	D17 998	<b>North Reference:</b>	True
<b>Well:</b>	DHS3C-19 D17	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	HZ		
<b>Design:</b>	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	5,752.3	-7,303.1	-2,739.9	7,787.7	0.00	0.00	
14,900.0	93.00	180.44	5,747.1	-7,403.0	-2,740.6	7,883.3	0.00	0.00	
15,000.0	93.00	180.44	5,741.9	-7,502.8	-2,741.4	7,978.9	0.00	0.00	
15,100.0	93.00	180.44	5,736.6	-7,602.7	-2,742.2	8,074.4	0.00	0.00	
15,200.0	93.00	180.44	5,731.4	-7,702.6	-2,743.0	8,170.0	0.00	0.00	
15,300.0	93.00	180.44	5,726.2	-7,802.4	-2,743.7	8,265.5	0.00	0.00	
15,400.0	93.00	180.44	5,720.9	-7,902.3	-2,744.5	8,361.1	0.00	0.00	
15,500.0	93.00	180.44	5,715.7	-8,002.1	-2,745.3	8,456.6	0.00	0.00	
15,600.0	93.00	180.44	5,710.5	-8,102.0	-2,746.0	8,552.2	0.00	0.00	
15,700.0	93.00	180.44	5,705.2	-8,201.9	-2,746.8	8,647.7	0.00	0.00	
15,800.0	93.00	180.44	5,700.0	-8,301.7	-2,747.6	8,743.3	0.00	0.00	
15,900.0	93.00	180.44	5,694.8	-8,401.6	-2,748.3	8,838.8	0.00	0.00	
16,000.0	93.00	180.44	5,689.5	-8,501.4	-2,749.1	8,934.4	0.00	0.00	
16,100.0	93.00	180.44	5,684.3	-8,601.3	-2,749.9	9,030.0	0.00	0.00	
16,200.0	93.00	180.44	5,679.1	-8,701.2	-2,750.6	9,125.5	0.00	0.00	
16,300.0	93.00	180.44	5,673.8	-8,801.0	-2,751.4	9,221.1	0.00	0.00	
16,316.0	93.00	180.44	5,673.0	-8,817.0	-2,751.5	9,236.3	0.00	0.00	TD @ 16316' 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									
DHS3C-19 D17 Start Prt	0.00	0.00	6,145.4	289.5	-2,679.1	1,539,070.91	2,188,167.67	39° 16' 41.84 N	108° 22' 6.29 W
- plan hits target center									
- Point									
DHS3C-19 D17 BHL	0.00	0.00	5,673.0	-8,817.0	-2,751.5	1,529,971.22	2,187,808.76	39° 15' 11.83 N	108° 22' 7.20 W
- plan hits target center									
- Point									

### Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,336.8	2,170.0	Rollins			
4,281.0	3,885.0	Mancos Marker			
5,738.9	5,171.0	Niobrara			
6,518.4	5,846.0	NioLamSilt			



# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well DHS3C-19 D17
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	WELL @ 5805.0ft (Original Well Elev)
<b>Project:</b>	North Piceance	<b>MD Reference:</b>	WELL @ 5805.0ft (Original Well Elev)
<b>Site:</b>	D17 998	<b>North Reference:</b>	True
<b>Well:</b>	DHS3C-19 D17	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	HZ		
<b>Design:</b>	Plan #2		

### Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
300.0	300.0	0.0	0.0	KOP @ 300' MD
1,236.8	1,199.7	85.4	-208.3	EOB; Inc=28.10°
6,000.1	5,401.4	936.8	-2,284.4	Start 8° Build @ 6000.1' MD
7,196.7	6,145.4	289.5	-2,679.1	Start of Producing Interval
7,285.0	6,145.6	201.4	-2,682.3	Landint Pt @ 6145.6' MD
16,316.0	5,673.0	-8,817.0	-2,751.5	TD @ 16316' MD