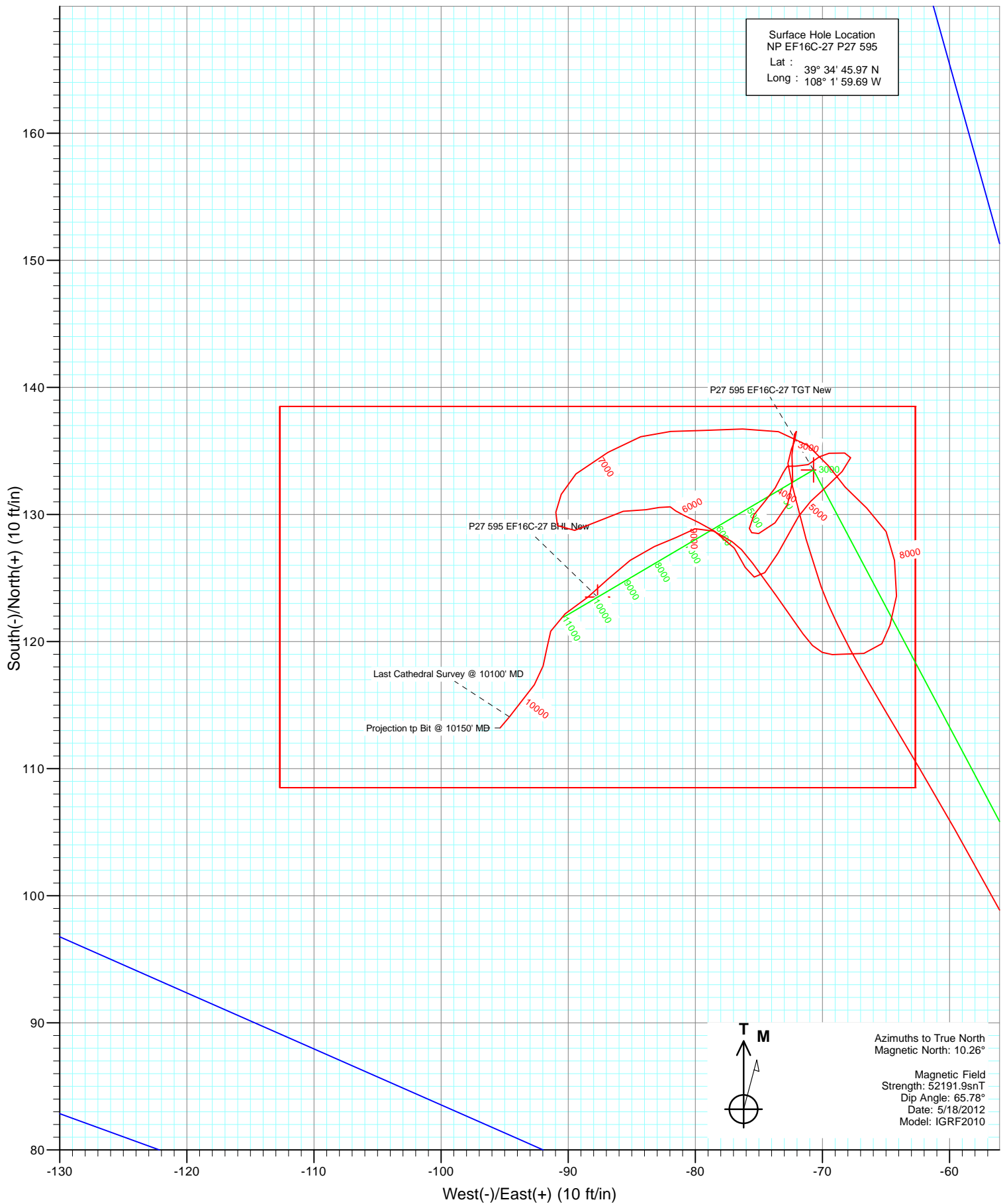


Azimuths to True North  
 Magnetic North: 10.26°

Magnetic Field  
 Strength: 52191.9nT  
 Dip Angle: 65.78°  
 Date: 5/18/2012  
 Model: IGRF2010

DD NP EF16C-27 P27 595 125191; 145655; DN 22' KBE @ 6671.0ft (Patterson #303) North American Datum 1983 Well NP EF16C-27 P27 595, True North							
Type	Target	Azimuth	Origin	Type	N/S	E/W	From
Target	P27 595 EF16C-27 BHL New	123.5	Slot		0.0	0.0	TVD
Name	P27 595 EF16C-27 TGT New	3000.0	+N/-S	+E/-W	Latitude	Longitude	
	P27 595 EF16C-27 BHL New	10044.0	123.5	-87.7	39° 34' 47.29 N 108° 2' 0.59 W	39° 34' 47.19 N 108° 2' 0.81 W	



# Cathedral Energy Services

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well NP EF16C-27 P27 595
<b>Project:</b>	North Piceance	<b>TVD Reference:</b>	22' KBE @ 6671.0ft (Patterson #303)
<b>Site:</b>	P27 595 (S27-T5S-R95W)	<b>MD Reference:</b>	22' KBE @ 6671.0ft (Patterson #303)
<b>Well:</b>	NP EF16C-27 P27 595	<b>North Reference:</b>	True
<b>Wellbore:</b>	DD	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	DD	<b>Database:</b>	USA EDM 5000 Multi Users DB

<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	P27 595 (S27-T5S-R95W)				
Site Position:		Northing:	1,645,842.89 ft	Latitude:	39° 34' 45.45 N
From:	Lat/Long	Easting:	2,286,079.88 ft	Longitude:	108° 1' 59.43 W
Position Uncertainty:	0.0 ft	Slot Radius:	0.000 in	Grid Convergence:	-1.60 °

Well	NP EF16C-27 P27 595					
Well Position	+N/-S	0.0 ft	Northing:	1,645,895.67 ft	Latitude:	39° 34' 45.97 N
	+E/-W	0.0 ft	Easting:	2,286,060.86 ft	Longitude:	108° 1' 59.69 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	6,649.0 ft

<b>Wellbore</b>	DD				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	5/18/2012	10.26	65.78	52,192

<b>Design</b>	DD				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<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	324.62	

<b>Survey Program</b>	<b>Date</b>	5/30/2012			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
50.0	137.0	Survey #1 (DD)	Gyro	Gyro	
174.0	10,150.0	Survey #2 (DD)	MWD	Geolink MWD	

<b>Survey</b>										
<b>Measured Depth (ft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Vertical Section (ft)</b>	<b>Dogleg Rate (°/100ft)</b>	<b>Build Rate (°/100ft)</b>	<b>Formations / Comments</b>	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00		
50.0	0.25	114.60	50.0	0.0	0.1	-0.1	0.50	0.50		
100.0	0.48	132.62	100.0	-0.2	0.4	-0.4	0.51	0.46		
137.0	0.45	136.16	137.0	-0.4	0.6	-0.7	0.11	-0.08		
174.0	0.70	183.20	174.0	-0.8	0.7	-1.0	1.39	0.68		
204.0	0.10	170.90	204.0	-1.0	0.6	-1.2	2.01	-2.00		
266.0	0.10	238.40	266.0	-1.1	0.6	-1.2	0.18	0.00		
296.0	0.30	215.20	296.0	-1.1	0.5	-1.2	0.71	0.67		
327.0	0.30	270.80	327.0	-1.2	0.4	-1.2	0.90	0.00		
358.0	0.70	208.60	358.0	-1.4	0.2	-1.3	2.00	1.29		
388.0	0.70	259.10	388.0	-1.6	0.0	-1.3	1.99	0.00		
419.0	0.70	172.10	419.0	-1.8	-0.2	-1.4	3.11	0.00		

# Cathedral Energy Services

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well NP EF16C-27 P27 595
<b>Project:</b>	North Piceance	<b>TVD Reference:</b>	22' KBE @ 6671.0ft (Patterson #303)
<b>Site:</b>	P27 595 (S27-T5S-R95W)	<b>MD Reference:</b>	22' KBE @ 6671.0ft (Patterson #303)
<b>Well:</b>	NP EF16C-27 P27 595	<b>North Reference:</b>	True
<b>Wellbore:</b>	DD	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	DD	<b>Database:</b>	USA EDM 5000 Multi Users DB

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Formations / Comments
450.0	0.70	200.00	450.0	-2.2	-0.2	-1.6	1.09	0.00	
480.0	0.60	210.70	480.0	-2.5	-0.4	-1.8	0.52	-0.33	
514.0	0.40	229.70	514.0	-2.7	-0.5	-1.9	0.76	-0.59	
559.0	0.90	2.50	559.0	-2.4	-0.7	-1.6	2.68	1.11	
605.0	1.50	18.60	605.0	-1.5	-0.4	-1.0	1.48	1.30	
651.0	0.90	13.80	651.0	-0.6	-0.2	-0.4	1.32	-1.30	
697.0	1.00	9.00	697.0	0.2	0.0	0.1	0.28	0.22	
743.0	1.10	357.20	742.9	1.0	0.0	0.8	0.52	0.22	
788.0	1.30	345.10	787.9	1.9	-0.1	1.6	0.72	0.44	
834.0	1.60	337.50	833.9	3.0	-0.5	2.8	0.77	0.65	
880.0	2.30	330.80	879.9	4.4	-1.2	4.3	1.60	1.52	
925.0	2.20	332.20	924.9	6.0	-2.0	6.1	0.25	-0.22	
971.0	2.60	331.50	970.8	7.7	-3.0	8.0	0.87	0.87	
1,017.0	3.30	331.90	1,016.8	9.8	-4.1	10.3	1.52	1.52	
1,063.0	3.60	329.10	1,062.7	12.2	-5.4	13.1	0.75	0.65	
1,154.0	4.40	332.50	1,153.5	17.7	-8.5	19.4	0.92	0.88	
1,246.0	4.80	329.30	1,245.2	24.1	-12.1	26.7	0.52	0.43	
1,337.0	4.60	329.60	1,335.9	30.6	-15.9	34.1	0.22	-0.22	
1,429.0	5.30	333.30	1,427.5	37.5	-19.7	42.0	0.84	0.76	
1,521.0	5.20	332.10	1,519.1	45.0	-23.5	50.3	0.16	-0.11	
1,612.0	6.00	325.90	1,609.7	52.6	-28.1	59.2	1.10	0.88	
1,704.0	5.70	329.90	1,701.2	60.5	-33.1	68.5	0.55	-0.33	
1,780.0	6.00	327.90	1,776.8	67.2	-37.1	76.3	0.48	0.39	
1,893.0	6.90	329.60	1,889.1	78.0	-43.7	88.9	0.81	0.80	
1,985.0	5.90	327.20	1,980.5	86.8	-49.1	99.2	1.12	-1.09	
2,076.0	6.80	331.70	2,071.0	95.4	-54.1	109.2	1.13	0.99	
2,168.0	7.20	330.20	2,162.3	105.2	-59.6	120.3	0.48	0.43	
2,259.0	6.10	329.00	2,252.7	114.3	-64.9	130.8	1.22	-1.21	
2,351.0	3.80	334.10	2,344.3	121.3	-68.8	138.7	2.54	-2.50	
2,442.0	1.80	345.80	2,435.2	125.4	-70.4	143.0	2.27	-2.20	
2,534.0	1.70	339.10	2,527.2	128.0	-71.3	145.7	0.25	-0.11	
2,625.0	1.10	355.80	2,618.1	130.2	-71.8	147.7	0.79	-0.66	
2,717.0	1.50	338.00	2,710.1	132.2	-72.3	149.7	0.61	0.43	
2,809.0	0.90	6.60	2,802.1	134.0	-72.7	151.4	0.90	-0.65	
2,900.0	0.60	23.10	2,893.1	135.2	-72.4	152.1	0.40	-0.33	
2,992.0	0.20	20.10	2,985.1	135.8	-72.2	152.5	0.44	-0.43	
3,006.9	0.30	15.01	3,000.0	135.8	-72.2	152.5	0.67	0.65	P27 595 EF16C-27 TGT New
3,083.0	0.80	8.50	3,076.1	136.5	-72.0	153.0	0.67	0.66	
3,175.0	1.10	195.80	3,168.1	136.3	-72.2	152.9	2.06	0.33	
3,266.0	1.00	177.20	3,259.1	134.7	-72.4	151.7	0.39	-0.11	
3,358.0	1.50	179.30	3,351.0	132.7	-72.3	150.1	0.55	0.54	
3,449.0	1.00	210.90	3,442.0	130.8	-72.7	148.8	0.92	-0.55	
3,541.0	1.20	217.00	3,534.0	129.3	-73.7	148.1	0.25	0.22	
3,632.0	0.90	263.70	3,625.0	128.5	-75.0	148.2	0.96	-0.33	
3,724.0	0.60	357.90	3,717.0	128.9	-75.7	149.0	1.21	-0.33	
3,815.0	0.90	32.90	3,808.0	130.0	-75.4	149.6	0.59	0.33	
3,907.0	0.70	47.40	3,900.0	131.0	-74.6	150.0	0.31	-0.22	
3,998.0	1.10	31.30	3,991.0	132.1	-73.7	150.4	0.52	0.44	
4,090.0	0.60	20.50	4,082.9	133.3	-73.1	151.0	0.57	-0.54	
4,181.0	0.20	72.70	4,173.9	133.8	-72.8	151.2	0.55	-0.44	
4,273.0	0.60	94.00	4,265.9	133.8	-72.1	150.9	0.46	0.43	
4,364.0	0.70	74.50	4,356.9	133.9	-71.1	150.4	0.27	0.11	
4,456.0	0.70	35.70	4,448.9	134.5	-70.2	150.4	0.51	0.00	

# Cathedral Energy Services

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well NP EF16C-27 P27 595
<b>Project:</b>	North Piceance	<b>TVD Reference:</b>	22' KBE @ 6671.0ft (Patterson #303)
<b>Site:</b>	P27 595 (S27-T5S-R95W)	<b>MD Reference:</b>	22' KBE @ 6671.0ft (Patterson #303)
<b>Well:</b>	NP EF16C-27 P27 595	<b>North Reference:</b>	True
<b>Wellbore:</b>	DD	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	DD	<b>Database:</b>	USA EDM 5000 Multi Users DB

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Formations / Comments
4,548.0	0.60	110.50	4,540.9	134.8	-69.5	150.1	0.86	-0.11	
4,639.0	1.00	76.40	4,631.9	134.8	-68.2	149.5	0.67	0.44	
4,731.0	0.80	208.90	4,723.9	134.5	-67.8	148.9	1.79	-0.22	
4,822.0	0.80	215.00	4,814.9	133.4	-68.4	148.4	0.09	0.00	
4,914.0	1.20	232.20	4,906.9	132.3	-69.6	148.1	0.54	0.43	
5,005.0	1.10	221.70	4,997.9	131.0	-70.9	147.9	0.26	-0.11	
5,096.0	0.80	215.40	5,088.9	129.9	-71.9	147.5	0.35	-0.33	
5,188.0	0.90	204.20	5,180.8	128.7	-72.5	146.9	0.21	0.11	
5,279.0	1.60	211.80	5,271.8	127.0	-73.5	146.1	0.79	0.77	
5,371.0	0.70	219.40	5,363.8	125.4	-74.5	145.4	0.99	-0.98	
5,463.0	0.60	280.30	5,455.8	125.1	-75.4	145.6	0.72	-0.11	
5,554.0	0.90	340.60	5,546.8	125.8	-76.1	146.6	0.88	0.33	
5,646.0	1.30	323.20	5,638.8	127.4	-76.9	148.4	0.56	0.43	
5,738.0	1.30	297.70	5,730.7	128.7	-78.5	150.3	0.62	0.00	
5,829.0	0.50	302.20	5,821.7	129.4	-79.7	151.6	0.88	-0.88	
5,921.0	1.00	293.00	5,913.7	129.9	-80.8	152.7	0.56	0.54	
6,012.0	0.10	352.80	6,004.7	130.3	-81.5	153.4	1.05	-0.99	
6,104.0	0.60	300.80	6,096.7	130.6	-82.0	153.9	0.59	0.54	
6,195.0	0.70	237.60	6,187.7	130.6	-82.8	154.4	0.75	0.11	
6,287.0	0.70	282.10	6,279.7	130.4	-83.9	154.9	0.58	0.00	
6,378.0	1.60	259.50	6,370.7	130.3	-85.7	155.8	1.09	0.99	
6,470.0	1.30	234.60	6,462.7	129.4	-87.8	156.3	0.75	-0.33	
6,561.0	1.10	265.80	6,553.6	128.8	-89.5	156.8	0.74	-0.22	
6,653.0	0.80	312.10	6,645.6	129.1	-90.8	157.9	0.87	-0.33	
6,745.0	0.90	30.00	6,737.6	130.2	-91.0	158.8	1.16	0.11	
6,836.0	1.00	4.50	6,828.6	131.6	-90.5	159.7	0.47	0.11	
6,928.0	1.70	53.60	6,920.6	133.2	-89.4	160.4	1.40	0.76	
7,020.0	2.10	58.20	7,012.5	134.9	-86.9	160.3	0.46	0.43	
7,111.0	1.50	73.20	7,103.5	136.1	-84.3	159.8	0.83	-0.66	
7,203.0	1.50	86.60	7,195.5	136.5	-81.9	158.8	0.38	0.00	
7,294.0	1.90	89.70	7,286.4	136.6	-79.2	157.3	0.45	0.44	
7,386.0	1.80	85.90	7,378.4	136.7	-76.3	155.6	0.17	-0.11	
7,477.0	1.80	102.60	7,469.3	136.5	-73.5	153.8	0.57	0.00	
7,569.0	1.50	130.20	7,561.3	135.4	-71.1	151.6	0.91	-0.33	
7,661.0	1.30	140.20	7,653.3	133.8	-69.5	149.4	0.34	-0.22	
7,752.0	1.40	143.50	7,744.2	132.2	-68.2	147.3	0.14	0.11	
7,844.0	1.60	125.70	7,836.2	130.5	-66.5	144.9	0.55	0.22	
7,936.0	1.50	156.90	7,928.2	128.7	-65.0	142.5	0.91	-0.11	
8,027.0	1.50	170.40	8,019.1	126.4	-64.3	140.3	0.39	0.00	
8,119.0	2.00	181.50	8,111.1	123.6	-64.2	137.9	0.65	0.54	
8,210.0	1.10	213.00	8,202.1	121.3	-64.7	136.3	1.33	-0.99	
8,301.0	0.90	192.50	8,293.1	119.8	-65.3	135.5	0.45	-0.22	
8,392.0	1.60	266.70	8,384.0	119.1	-66.7	135.7	1.77	0.77	
8,484.0	1.50	269.20	8,476.0	119.0	-69.2	137.1	0.13	-0.11	
8,575.0	2.50	326.10	8,567.0	120.6	-71.5	139.7	2.31	1.10	
8,672.0	1.90	323.40	8,663.9	123.7	-73.7	143.5	0.63	-0.62	
8,763.0	2.00	324.50	8,754.8	126.2	-75.5	146.6	0.12	0.11	
8,855.0	1.00	300.00	8,846.8	127.9	-77.1	148.9	1.27	-1.09	
8,946.0	1.10	299.40	8,937.8	128.7	-78.6	150.4	0.11	0.11	
9,038.0	0.90	249.60	9,029.8	128.9	-80.0	151.4	0.94	-0.22	
9,129.0	1.20	242.20	9,120.8	128.2	-81.5	151.7	0.36	0.33	
9,221.0	1.10	252.90	9,212.7	127.5	-83.2	152.1	0.26	-0.11	
9,312.0	1.70	232.40	9,303.7	126.4	-85.1	152.3	0.85	0.66	

# Cathedral Energy Services

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well NP EF16C-27 P27 595
<b>Project:</b>	North Piceance	<b>TVD Reference:</b>	22' KBE @ 6671.0ft (Patterson #303)
<b>Site:</b>	P27 595 (S27-T5S-R95W)	<b>MD Reference:</b>	22' KBE @ 6671.0ft (Patterson #303)
<b>Well:</b>	NP EF16C-27 P27 595	<b>North Reference:</b>	True
<b>Wellbore:</b>	DD	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	DD	<b>Database:</b>	USA EDM 5000 Multi Users DB

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Formations / Comments
9,404.0	1.20	226.60	9,395.7	124.9	-86.9	152.1	0.57	-0.54	
9,496.0	1.40	229.30	9,487.7	123.5	-88.4	151.9	0.23	0.22	
9,587.0	1.40	238.10	9,578.6	122.2	-90.2	151.9	0.24	0.00	
9,679.0	1.00	193.00	9,670.6	120.8	-91.4	151.4	1.08	-0.43	
9,770.0	0.80	192.10	9,761.6	119.4	-91.7	150.4	0.22	-0.22	
9,862.0	0.90	191.80	9,853.6	118.1	-92.0	149.5	0.11	0.11	
9,953.0	1.20	215.00	9,944.6	116.6	-92.7	148.7	0.57	0.33	
10,052.2	1.27	218.74	10,043.8	114.9	-93.9	148.1	0.11	0.07	P27 595 EF16C-27 BHL New
10,100.0	1.30	220.40	10,091.5	114.1	-94.6	147.8	0.11	0.07	Last Cathedral Survey @ 10100' MD
10,150.0	1.30	220.40	10,141.5	113.2	-95.4	147.5	0.00	0.00	Projection tp Bit @ 10150' 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									
P27 595 EF16C-27 TGT	0.00	0.00	3,000.0	133.5	-70.7	1,646,031.10	2,285,993.91	39° 34' 47.29 N	108° 2' 0.59 W
- actual wellpath misses target center by 2.7ft at 3006.9ft MD (3000.0 TVD, 135.8 N, -72.2 E)									
- Point									
P27 595 EF16C-27 BHL	0.00	0.00	10,044.0	123.5	-87.7	1,646,021.57	2,285,976.65	39° 34' 47.19 N	108° 2' 0.81 W
- actual wellpath misses target center by 10.6ft at 10052.2ft MD (10043.8 TVD, 114.9 N, -93.9 E)									
- Rectangle (sides W30.0 H50.0 D0.0)									

Design Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
10,100.0	10,091.5	114.1	-94.6	Last Cathedral Survey @ 10100' MD	
10,150.0	10,141.5	113.2	-95.4	Projection tp Bit @ 10150' MD	

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_