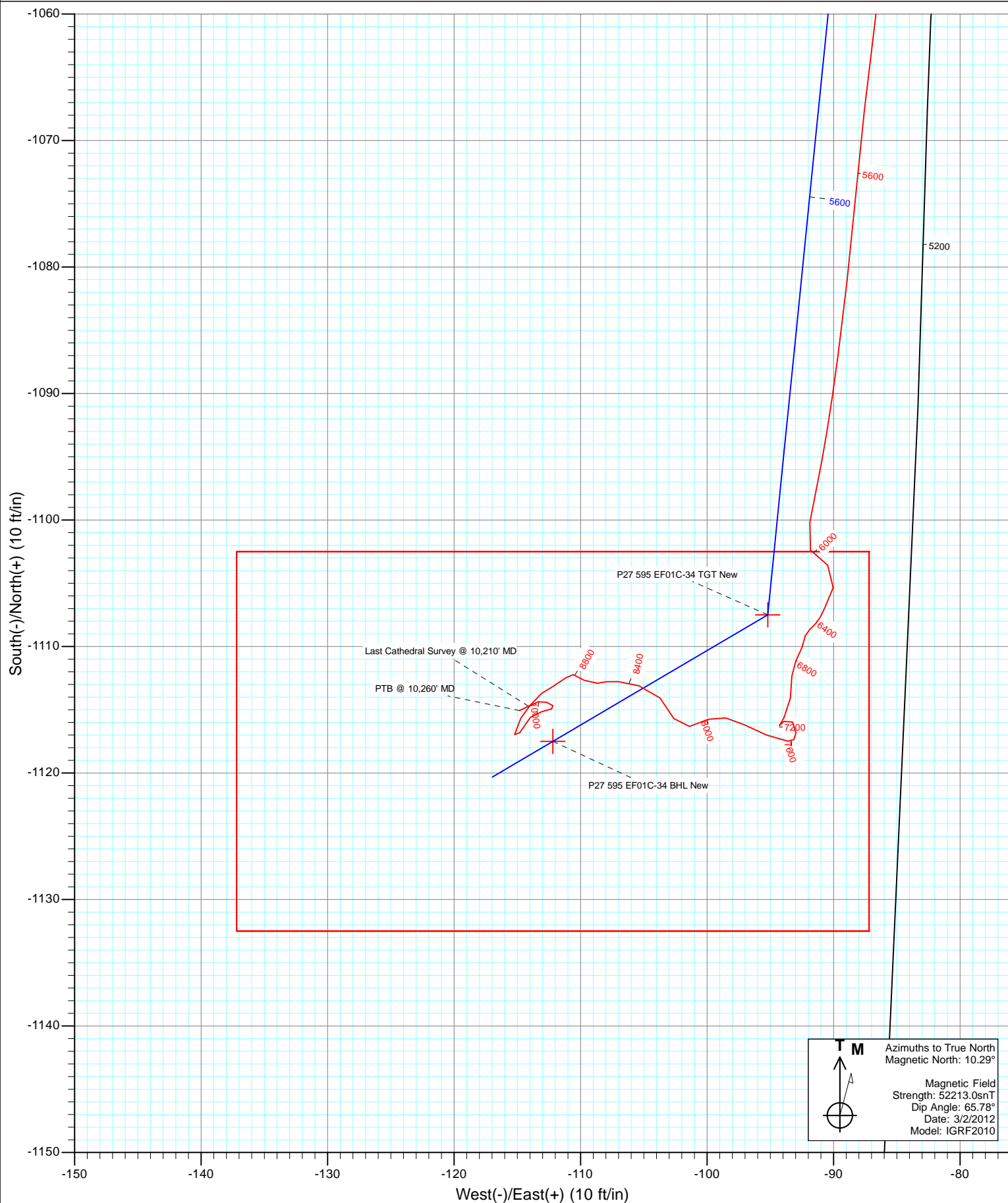


Azimuths to True North
 Magnetic North: 10.29°

Magnetic Field
 Strength: 52213.0nT
 Dip Angle: 65.78°
 Date: 3/2/2012
 Model: IGRF2010

FINAL							
NP EF01C-34 P27 595							
115116/122755 (SH) 125187/144855 (MH); LR							
EF01C-34 P27 @ 6671.0ft (Patterson 303)							
North American Datum 1983							
Well NP EF01C-34 P27 595, True North							
Type	Target	Azimuth	Origin Type	N/S	E/W	From TVD	
Target	P27 595 EF01C-34 BHL	184.34	Slot	0.0	0.0	0.0	
Name							
P27 595 EF01C-34 TGT New	TVD	+N/-S	+E/-W				Latitude
	6035.0	-1107.5	-95.2				39° 34' 34.52 N 108° 2' 0.61 W
P27 595 EF01C-34 BHL New	9995.0	-1117.5	-112.2				39° 34' 34.42 N 108° 2' 0.82 W



Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well NP EF01C-34 P27 595
Project:	North Piceance	TVD Reference:	EF01C-34 P27 @ 6671.0ft (Patterson 303)
Site:	P27 595 (S27-T5S-R95W)	MD Reference:	EF01C-34 P27 @ 6671.0ft (Patterson 303)
Well:	NP EF01C-34 P27 595	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users DB

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		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 EF01C-34 P27 595					
Well Position	+N/-S	0.0 ft	Northing:	1,645,844.40 ft	Latitude:	39° 34' 45.47 N
	+E/-W	0.0 ft	Easting:	2,286,083.11 ft	Longitude:	108° 1' 59.39 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	6,649.0 ft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	3/2/2012	10.29	65.78	52,213

Design	FINAL			
Audit Notes:				
Version:	1.0	Phase:	ACTUAL	Tie On Depth: 0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	184.34

Survey Program	Date	7/2/2013			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
140.0	1,800.0	Survey #1 (DD)	MWD	Geolink MWD	
1,890.0	10,260.0	Survey #2 (DD)	MWD	Geolink MWD	

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
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
140.0	0.70	288.80	140.0	0.3	-0.8	-0.2	0.50	0.50	
170.0	0.40	262.50	170.0	0.3	-1.1	-0.2	1.28	-1.00	
231.0	0.40	18.90	231.0	0.5	-1.2	-0.4	1.11	0.00	
292.0	0.40	100.30	292.0	0.7	-1.0	-0.6	0.86	0.00	
322.0	0.50	151.10	322.0	0.5	-0.8	-0.5	1.32	0.33	
353.0	0.70	105.20	353.0	0.4	-0.5	-0.3	1.62	0.65	
383.0	0.70	149.70	383.0	0.2	-0.3	-0.1	1.77	0.00	
414.0	0.80	147.10	414.0	-0.2	-0.1	0.2	0.34	0.32	
445.0	0.60	161.30	445.0	-0.5	0.1	0.5	0.85	-0.65	
475.0	1.10	148.50	475.0	-0.9	0.3	0.9	1.77	1.67	
506.0	1.10	160.90	506.0	-1.5	0.6	1.4	0.77	0.00	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well NP EF01C-34 P27 595
Project:	North Piceance	TVD Reference:	EF01C-34 P27 @ 6671.0ft (Patterson 303)
Site:	P27 595 (S27-T5S-R95W)	MD Reference:	EF01C-34 P27 @ 6671.0ft (Patterson 303)
Well:	NP EF01C-34 P27 595	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	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
555.0	1.00	146.60	555.0	-2.3	1.0	2.2	0.57	-0.20	
600.0	1.50	165.40	600.0	-3.2	1.3	3.0	1.42	1.11	
646.0	1.70	148.30	645.9	-4.3	1.8	4.2	1.12	0.43	
692.0	2.40	163.40	691.9	-5.8	2.5	5.6	1.91	1.52	
738.0	3.60	164.50	737.8	-8.1	3.1	7.9	2.61	2.61	
784.0	4.30	164.10	783.7	-11.2	4.0	10.9	1.52	1.52	
829.0	5.50	166.70	828.6	-14.9	4.9	14.5	2.71	2.67	
875.0	6.70	172.70	874.3	-19.7	5.8	19.2	2.95	2.61	
921.0	7.60	175.10	920.0	-25.4	6.4	24.9	2.06	1.96	
967.0	8.70	174.60	965.5	-31.9	7.0	31.3	2.40	2.39	
1,013.0	9.60	176.10	1,010.9	-39.2	7.6	38.5	2.02	1.96	
1,058.0	10.50	176.50	1,055.2	-47.0	8.1	46.3	2.01	2.00	
1,104.0	10.80	179.60	1,100.4	-55.5	8.4	54.7	1.41	0.65	
1,150.0	11.50	180.40	1,145.5	-64.4	8.4	63.6	1.56	1.52	
1,196.0	12.10	183.80	1,190.6	-73.8	8.0	73.0	2.00	1.30	
1,241.0	12.70	182.50	1,234.5	-83.5	7.5	82.7	1.47	1.33	
1,287.0	12.80	183.60	1,279.4	-93.6	6.9	92.8	0.57	0.22	
1,333.0	12.60	181.50	1,324.3	-103.7	6.5	102.9	1.09	-0.43	
1,424.0	13.60	182.30	1,412.9	-124.3	5.8	123.5	1.12	1.10	
1,516.0	14.00	185.40	1,502.2	-146.2	4.3	145.5	0.91	0.43	
1,608.0	13.80	185.80	1,591.5	-168.2	2.2	167.6	0.24	-0.22	
1,699.0	13.40	186.80	1,680.0	-189.5	-0.2	188.9	0.51	-0.44	
1,800.0	13.30	189.70	1,778.3	-212.5	-3.5	212.2	0.67	-0.10	Last Cathedral Survey @ 1,800' MD
1,890.0	12.90	189.00	1,865.9	-232.7	-6.8	232.5	0.48	-0.44	
1,981.0	12.80	187.80	1,954.6	-252.7	-9.8	252.7	0.31	-0.11	
2,073.0	12.20	184.10	2,044.5	-272.5	-11.9	272.6	1.09	-0.65	
2,165.0	12.30	184.70	2,134.4	-291.9	-13.4	292.1	0.18	0.11	
2,256.0	12.30	186.20	2,223.3	-311.2	-15.2	311.5	0.35	0.00	
2,348.0	13.50	188.60	2,313.0	-331.6	-17.9	332.0	1.43	1.30	
2,439.0	13.50	188.00	2,401.4	-352.6	-20.9	353.2	0.15	0.00	
2,531.0	13.50	185.10	2,490.9	-374.0	-23.4	374.6	0.74	0.00	
2,622.0	13.10	184.20	2,579.5	-394.8	-25.1	395.6	0.49	-0.44	
2,714.0	13.30	184.10	2,669.0	-415.8	-26.6	416.6	0.22	0.22	
2,805.0	13.50	185.70	2,757.6	-436.8	-28.4	437.7	0.46	0.22	
2,897.0	12.70	185.60	2,847.2	-457.5	-30.5	458.5	0.87	-0.87	
2,988.0	12.20	185.60	2,936.0	-477.1	-32.4	478.1	0.55	-0.55	
3,080.0	13.20	186.00	3,025.8	-497.2	-34.4	498.4	1.09	1.09	
3,171.0	13.20	186.70	3,114.4	-517.8	-36.7	519.1	0.18	0.00	
3,263.0	12.20	189.30	3,204.1	-537.9	-39.5	539.3	1.25	-1.09	
3,354.0	12.70	185.50	3,293.0	-557.3	-42.0	558.9	1.05	0.55	
3,446.0	12.20	184.10	3,382.8	-577.1	-43.7	578.7	0.63	-0.54	
3,538.0	11.30	186.40	3,472.9	-595.7	-45.4	597.4	1.10	-0.98	
3,629.0	12.40	186.10	3,561.9	-614.3	-47.4	616.1	1.21	1.21	
3,721.0	11.20	187.80	3,652.0	-633.0	-49.7	634.9	1.36	-1.30	
3,812.0	12.70	184.60	3,741.0	-651.7	-51.7	653.7	1.80	1.65	
3,904.0	12.20	185.30	3,830.9	-671.5	-53.4	673.6	0.57	-0.54	
3,996.0	12.70	184.40	3,920.7	-691.2	-55.1	693.4	0.58	0.54	
4,088.0	13.80	186.30	4,010.2	-712.2	-57.1	714.5	1.29	1.20	
4,179.0	13.10	187.70	4,098.8	-733.2	-59.6	735.6	0.85	-0.77	
4,270.0	13.90	185.10	4,187.2	-754.3	-62.0	756.9	1.10	0.88	
4,362.0	13.30	184.30	4,276.7	-775.9	-63.8	778.5	0.68	-0.65	
4,453.0	14.20	186.30	4,365.1	-797.4	-65.8	800.1	1.12	0.99	
4,545.0	14.20	187.60	4,454.2	-819.8	-68.5	822.7	0.35	0.00	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well NP EF01C-34 P27 595
Project:	North Piceance	TVD Reference:	EF01C-34 P27 @ 6671.0ft (Patterson 303)
Site:	P27 595 (S27-T5S-R95W)	MD Reference:	EF01C-34 P27 @ 6671.0ft (Patterson 303)
Well:	NP EF01C-34 P27 595	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	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
4,637.0	13.20	188.30	4,543.6	-841.4	-71.5	844.4	1.10	-1.09	
4,728.0	13.20	186.90	4,632.2	-862.0	-74.3	865.1	0.35	0.00	
4,820.0	11.70	185.20	4,722.1	-881.7	-76.4	885.0	1.68	-1.63	
4,911.0	12.00	183.10	4,811.1	-900.3	-77.7	903.6	0.58	0.33	
5,003.0	12.90	183.30	4,900.9	-920.1	-78.8	923.5	0.98	0.98	
5,094.0	12.70	182.50	4,989.7	-940.3	-79.8	943.6	0.29	-0.22	
5,186.0	13.50	180.90	5,079.3	-961.1	-80.5	964.5	0.95	0.87	
5,277.0	13.70	183.40	5,167.7	-982.5	-81.3	985.8	0.68	0.22	
5,368.0	13.30	184.30	5,256.2	-1,003.7	-82.7	1,007.1	0.50	-0.44	
5,460.0	12.60	183.20	5,345.9	-1,024.3	-84.0	1,027.7	0.81	-0.76	
5,551.0	11.00	183.30	5,435.0	-1,042.8	-85.1	1,046.3	1.76	-1.76	
5,642.0	10.50	187.10	5,524.4	-1,059.7	-86.6	1,063.3	0.95	-0.55	
5,733.0	8.60	185.40	5,614.1	-1,074.7	-88.3	1,078.3	2.11	-2.09	
5,825.0	6.70	187.50	5,705.3	-1,086.9	-89.6	1,090.6	2.09	-2.07	
5,916.0	4.00	190.70	5,795.9	-1,095.3	-90.9	1,099.0	2.98	-2.97	
6,008.0	2.20	191.60	5,887.7	-1,100.2	-91.9	1,104.0	1.96	-1.96	
6,099.0	0.80	140.90	5,978.7	-1,102.4	-91.8	1,106.2	1.98	-1.54	
6,190.0	1.50	125.70	6,069.7	-1,103.6	-90.5	1,107.3	0.83	0.77	
6,282.0	1.50	207.30	6,161.7	-1,105.3	-90.0	1,109.0	2.13	0.00	
6,373.0	0.70	192.80	6,252.6	-1,106.9	-90.7	1,110.6	0.92	-0.88	
6,464.0	0.40	227.30	6,343.6	-1,107.7	-91.1	1,111.4	0.48	-0.33	
6,556.0	0.40	206.40	6,435.6	-1,108.2	-91.4	1,112.0	0.16	0.00	
6,647.0	0.40	244.80	6,526.6	-1,108.6	-91.9	1,112.4	0.29	0.00	
6,739.0	0.50	193.00	6,618.6	-1,109.2	-92.2	1,113.0	0.44	0.11	
6,830.0	0.70	197.10	6,709.6	-1,110.1	-92.5	1,113.9	0.22	0.22	
6,922.0	0.80	210.80	6,801.6	-1,111.2	-93.0	1,115.0	0.22	0.11	
7,013.0	0.80	178.60	6,892.6	-1,112.3	-93.3	1,116.2	0.49	0.00	
7,104.0	1.40	186.20	6,983.6	-1,114.1	-93.4	1,118.0	0.68	0.66	
7,196.0	0.70	223.20	7,075.6	-1,115.6	-93.9	1,119.5	1.02	-0.76	
7,287.0	0.30	177.50	7,166.6	-1,116.3	-94.3	1,120.2	0.59	-0.44	
7,379.0	0.30	356.10	7,258.6	-1,116.3	-94.3	1,120.2	0.65	0.00	
7,470.0	0.50	76.20	7,349.6	-1,115.9	-93.9	1,119.8	0.59	0.22	
7,562.0	0.40	116.10	7,441.6	-1,116.0	-93.2	1,119.8	0.35	-0.11	
7,653.0	0.90	181.10	7,532.6	-1,116.8	-93.0	1,120.7	0.90	0.55	
7,745.0	0.80	275.30	7,624.6	-1,117.5	-93.6	1,121.4	1.36	-0.11	
7,837.0	1.40	292.80	7,716.5	-1,117.0	-95.3	1,121.0	0.74	0.65	
7,928.0	1.00	298.00	7,807.5	-1,116.2	-97.0	1,120.3	0.46	-0.44	
8,025.0	0.90	281.50	7,904.5	-1,115.6	-98.5	1,119.9	0.30	-0.10	
8,116.0	0.90	250.20	7,995.5	-1,115.7	-99.9	1,120.1	0.53	0.00	
8,208.0	1.10	248.00	8,087.5	-1,116.3	-101.4	1,120.8	0.22	0.22	
8,299.0	1.30	336.20	8,178.5	-1,115.7	-102.6	1,120.3	1.84	0.22	
8,391.0	1.20	314.80	8,270.5	-1,114.1	-103.7	1,118.7	0.52	-0.11	
8,482.0	1.30	286.20	8,361.4	-1,113.1	-105.4	1,117.9	0.69	0.11	
8,573.0	0.80	274.10	8,452.4	-1,112.8	-107.0	1,117.7	0.60	-0.55	
8,665.0	0.40	259.70	8,544.4	-1,112.8	-108.0	1,117.8	0.46	-0.43	
8,756.0	0.50	260.50	8,635.4	-1,112.9	-108.7	1,117.9	0.11	0.11	
8,848.0	0.90	295.60	8,727.4	-1,112.7	-109.7	1,117.8	0.62	0.43	
8,939.0	0.30	301.80	8,818.4	-1,112.2	-110.6	1,117.4	0.66	-0.66	
9,031.0	0.70	226.00	8,910.4	-1,112.5	-111.2	1,117.7	0.75	0.43	
9,122.0	0.70	246.80	9,001.4	-1,113.1	-112.1	1,118.4	0.28	0.00	
9,213.0	0.80	231.30	9,092.4	-1,113.7	-113.1	1,119.1	0.25	0.11	
9,305.0	0.80	215.20	9,184.4	-1,114.6	-114.0	1,120.1	0.24	0.00	
9,396.0	0.80	217.40	9,275.4	-1,115.7	-114.7	1,121.1	0.03	0.00	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well NP EF01C-34 P27 595
Project:	North Piceance	TVD Reference:	EF01C-34 P27 @ 6671.0ft (Patterson 303)
Site:	P27 595 (S27-T5S-R95W)	MD Reference:	EF01C-34 P27 @ 6671.0ft (Patterson 303)
Well:	NP EF01C-34 P27 595	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	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
9,487.0	1.00	187.50	9,366.4	-1,117.0	-115.2	1,122.5	0.55	0.22	
9,579.0	1.30	28.30	9,458.3	-1,116.8	-114.8	1,122.3	2.46	0.33	
9,671.0	0.60	49.40	9,550.3	-1,115.6	-114.0	1,121.0	0.84	-0.76	
9,762.0	0.70	75.00	9,641.3	-1,115.1	-113.1	1,120.5	0.33	0.11	
9,853.0	0.30	75.20	9,732.3	-1,114.9	-112.3	1,120.2	0.44	-0.44	
9,945.0	0.30	327.70	9,824.3	-1,114.7	-112.2	1,120.0	0.53	0.00	
10,036.0	0.50	280.30	9,915.3	-1,114.4	-112.7	1,119.7	0.41	0.22	
10,127.0	0.30	259.30	10,006.3	-1,114.4	-113.3	1,119.8	0.27	-0.22	
10,210.0	0.90	242.90	10,089.3	-1,114.7	-114.1	1,120.2	0.74	0.72	Last Cathedral Survey @ 10,210' MD
10,260.0	0.90	242.90	10,139.3	-1,115.1	-114.8	1,120.6	0.00	0.00	PTB @ 10,260' 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 EF01C-34 BHL	0.00	0.00	9,995.0	-1,117.5	-112.2	1,644,730.47	2,285,939.81	39° 34' 34.42 N	108° 2' 0.82 W
- actual wellpath misses target center by 3.3ft at 10115.7ft MD (9995.0 TVD, -1114.4 N, -113.3 E)									
- Rectangle (sides W30.0 H50.0 D0.0)									
P27 595 EF01C-34 TGT	0.00	0.00	6,035.0	-1,107.5	-95.2	1,644,739.99	2,285,957.07	39° 34' 34.52 N	108° 2' 0.61 W
- actual wellpath misses target center by 6.0ft at 6155.3ft MD (6035.0 TVD, -1103.1 N, -91.1 E)									
- Point									

Design Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,800.0	1,778.3	-212.5	-3.5	Last Cathedral Survey @ 1,800' MD
10,210.0	10,089.3	-1,114.7	-114.1	Last Cathedral Survey @ 10,210' MD
10,260.0	10,139.3	-1,115.1	-114.8	PTB @ 10,260' MD

Checked By: _____ Approved By: _____ Date: _____