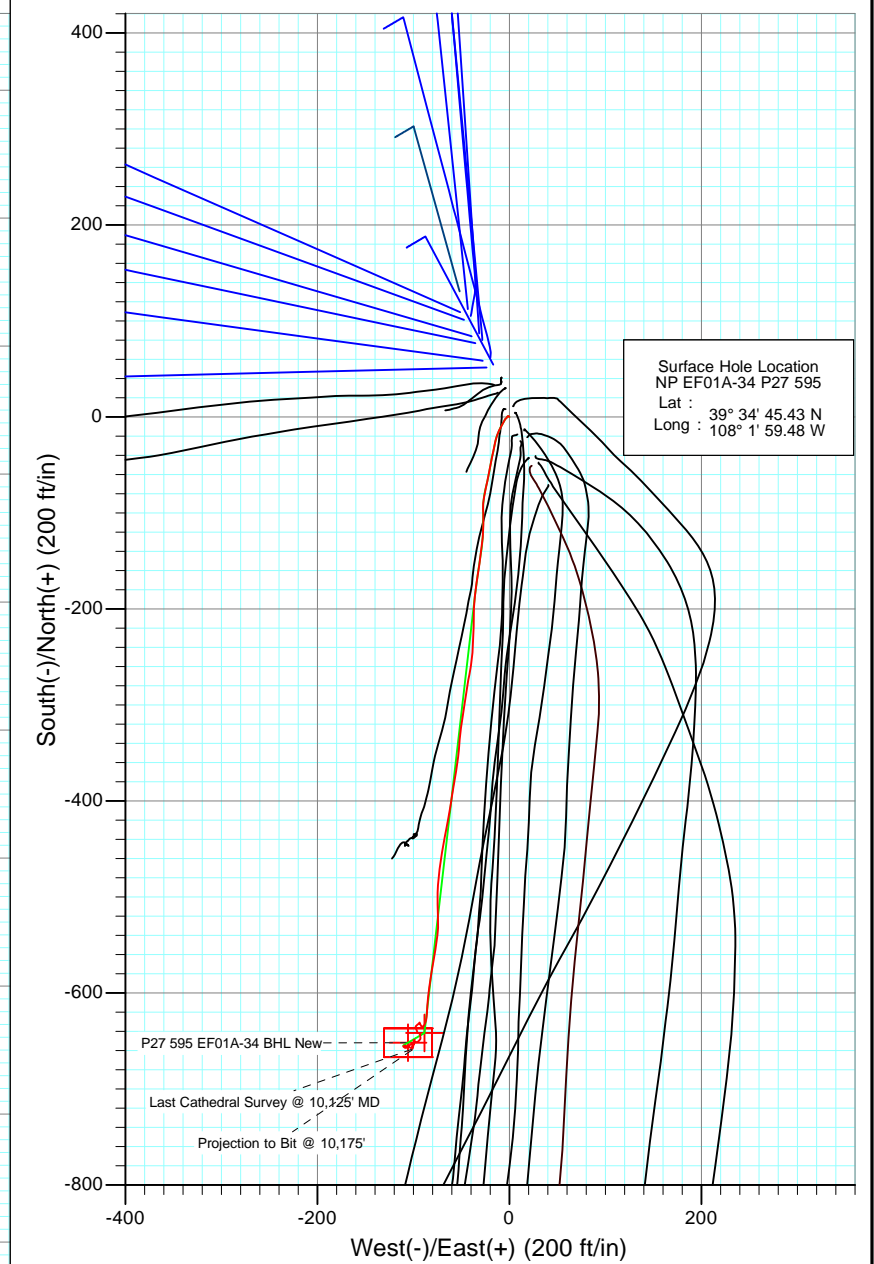
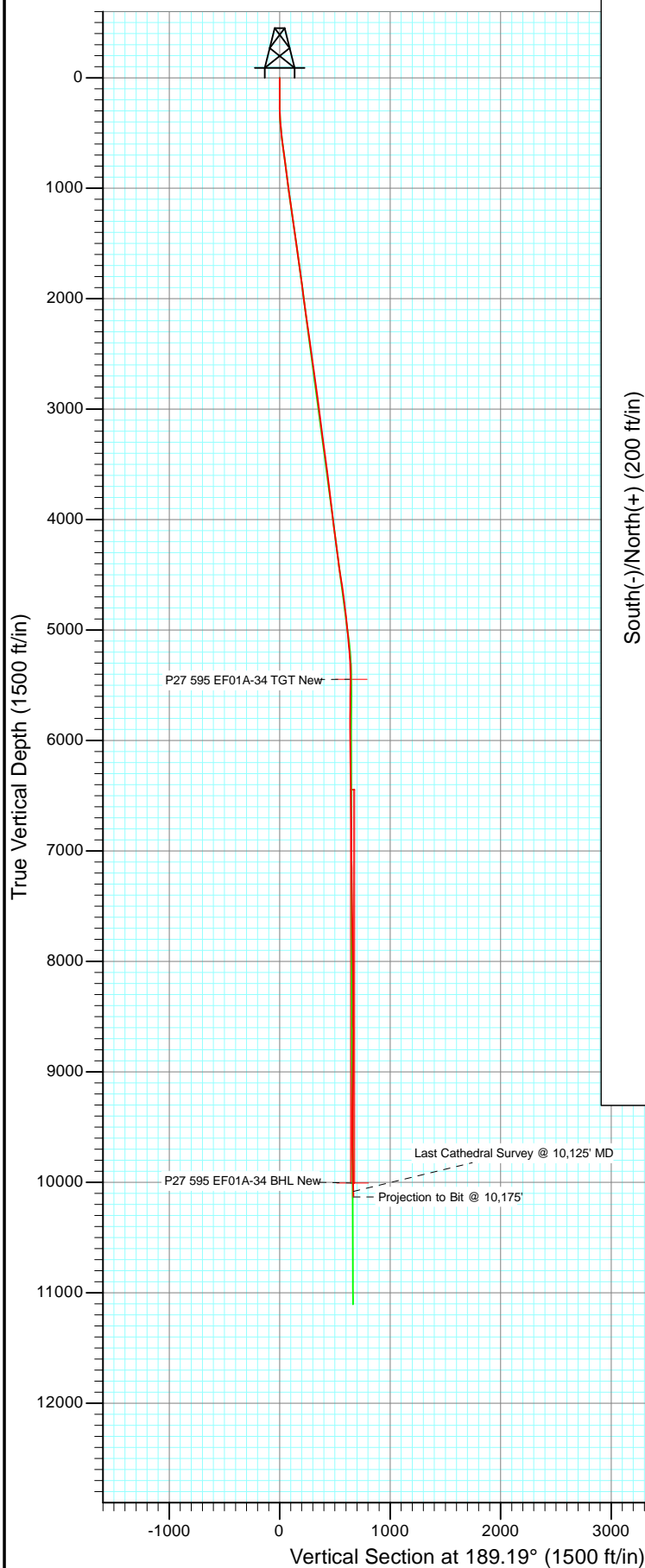




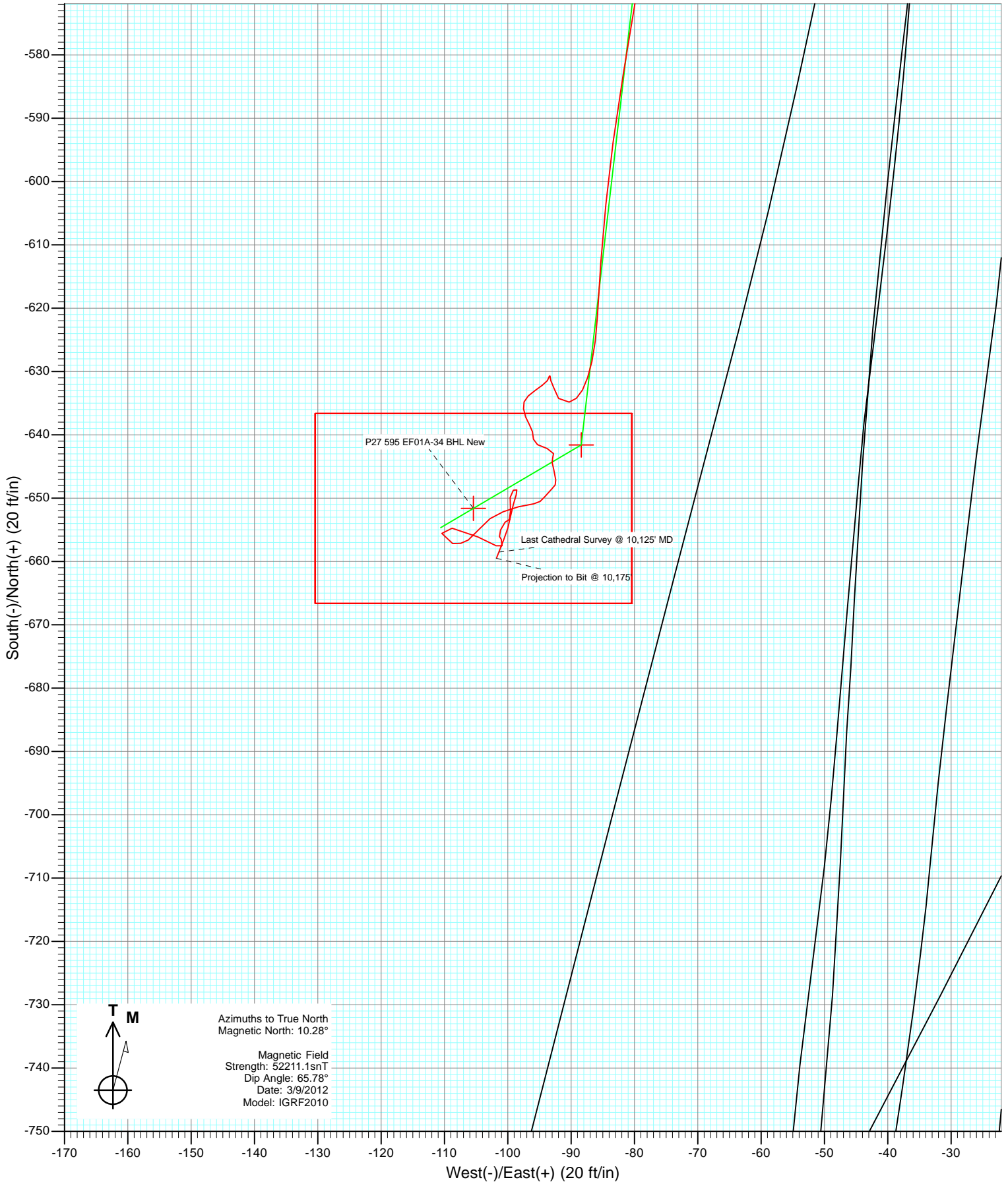
Project: North Piceance  
 Site: P27 595 (S27-T5S-R95W)  
 Well: NP EF01A-34 P27 595  
 Wellbore: DD  
 Design: FINAL



Azimuths to True North  
 Magnetic North: 10.28°

Magnetic Field  
 Strength: 52211.1nT  
 Dip Angle: 65.78°  
 Date: 3/9/2012  
 Model: IGRF2010

DD						
NP EF01A-34 P27 595						
144955; 125188; DN						
EF01A-34 P27 @ 6671.0ft (Patterson 303)						
North American Datum 1983						
Well NP EF01A-34 P27 595, True North						
Type	Target	Azimuth	Origin	Type	N/S	E/W
Target	P27 595 EF01A-34 BHL New	189.19	Slot		0.0	0.0
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	
P27 595 EF01A-34 TGT New	5445.0	-641.6	-88.4	39° 34' 39.09 N	108° 2' 0.61 W	
P27 595 EF01A-34 BHL New	10005.0	-651.6	-105.4	39° 34' 38.99 N	108° 2' 0.83 W	



# Cathedral Energy Services

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well NP EF01A-34 P27 595
<b>Project:</b>	North Piceance	<b>TVD Reference:</b>	EF01A-34 P27 @ 6671.0ft (Patterson 303)
<b>Site:</b>	P27 595 (S27-T5S-R95W)	<b>MD Reference:</b>	EF01A-34 P27 @ 6671.0ft (Patterson 303)
<b>Well:</b>	NP EF01A-34 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 EF01A-34 P27 595					
Well Position	+N/-S	0.0 ft	Northing:	1,645,840.58 ft	Latitude:	39° 34' 45.43 N
	+E/-W	0.0 ft	Easting:	2,286,075.96 ft	Longitude:	108° 1' 59.48 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	3/9/2012	10.29	65.78	52,211

Design	DD			
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	189.19

<b>Survey Program</b>	<b>Date</b>	3/17/2012			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
150.0	10,175.0	Survey #1 (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		
150.0	0.50	321.00	150.0	0.5	-0.4	-0.4	0.33	0.33		
171.0	0.50	328.80	171.0	0.7	-0.5	-0.6	0.32	0.00		
201.0	0.70	311.10	201.0	0.9	-0.7	-0.8	0.90	0.67		
231.0	0.50	269.30	231.0	1.0	-1.0	-0.8	1.56	-0.67		
262.0	1.30	237.00	262.0	0.8	-1.4	-0.6	2.96	2.58		
292.0	2.20	222.10	292.0	0.2	-2.1	0.1	3.34	3.00		
322.0	2.90	219.30	321.9	-0.8	-3.0	1.3	2.37	2.33		
353.0	3.50	216.10	352.9	-2.2	-4.0	2.8	2.02	1.94		
383.0	4.10	211.30	382.8	-3.8	-5.1	4.6	2.26	2.00		
414.0	4.80	206.70	413.7	-5.9	-6.3	6.9	2.53	2.26		
445.0	5.30	211.50	444.6	-8.3	-7.6	9.4	2.11	1.61		
475.0	5.90	208.80	474.5	-10.9	-9.1	12.2	2.18	2.00		

# Cathedral Energy Services

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well NP EF01A-34 P27 595
<b>Project:</b>	North Piceance	<b>TVD Reference:</b>	EF01A-34 P27 @ 6671.0ft (Patterson 303)
<b>Site:</b>	P27 595 (S27-T5S-R95W)	<b>MD Reference:</b>	EF01A-34 P27 @ 6671.0ft (Patterson 303)
<b>Well:</b>	NP EF01A-34 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
506.0	6.50	204.30	505.3	-13.9	-10.6	15.4	2.49	1.94	
555.0	6.90	199.90	554.0	-19.1	-12.7	20.9	1.33	0.82	
600.0	7.30	192.40	598.6	-24.5	-14.2	26.4	2.24	0.89	
646.0	7.40	192.90	644.2	-30.2	-15.5	32.3	0.26	0.22	
692.0	7.60	190.90	689.8	-36.1	-16.8	38.3	0.71	0.43	
738.0	7.60	192.70	735.4	-42.1	-18.0	44.4	0.52	0.00	
784.0	7.60	189.80	781.0	-48.0	-19.2	50.5	0.83	0.00	
875.0	8.30	191.40	871.2	-60.4	-21.5	63.0	0.81	0.77	
967.0	7.30	193.30	962.3	-72.6	-24.2	75.5	1.12	-1.09	
1,058.0	7.30	188.60	1,052.6	-83.9	-26.4	87.1	0.66	0.00	
1,150.0	7.60	179.80	1,143.8	-95.8	-27.2	98.9	1.28	0.33	
1,241.0	8.00	179.80	1,234.0	-108.1	-27.2	111.1	0.44	0.44	
1,333.0	8.50	182.00	1,325.0	-121.3	-27.4	124.2	0.64	0.54	
1,424.0	8.40	188.10	1,415.0	-134.6	-28.6	137.5	0.99	-0.11	
1,516.0	8.60	188.00	1,506.0	-148.1	-30.5	151.1	0.22	0.22	
1,608.0	7.60	187.40	1,597.1	-160.9	-32.2	164.0	1.09	-1.09	
1,699.0	8.00	189.50	1,687.2	-173.2	-34.0	176.4	0.54	0.44	
1,800.0	7.50	185.90	1,787.3	-186.7	-35.9	190.0	0.69	-0.50	
1,894.0	7.60	182.90	1,880.5	-199.0	-36.8	202.3	0.43	0.11	
1,986.0	7.10	179.30	1,971.8	-210.7	-37.0	213.9	0.74	-0.54	
2,078.0	7.80	180.70	2,063.0	-222.7	-37.1	225.7	0.79	0.76	
2,169.0	7.90	184.40	2,153.1	-235.1	-37.6	238.0	0.57	0.11	
2,261.0	7.60	184.20	2,244.3	-247.4	-38.5	250.4	0.33	-0.33	
2,352.0	8.60	191.00	2,334.4	-260.1	-40.3	263.2	1.52	1.10	
2,444.0	8.50	189.80	2,425.4	-273.6	-42.7	276.9	0.22	-0.11	
2,535.0	8.10	188.00	2,515.4	-286.5	-44.8	290.0	0.52	-0.44	
2,627.0	8.00	188.40	2,606.5	-299.3	-46.6	302.9	0.12	-0.11	
2,718.0	7.80	188.80	2,696.6	-311.7	-48.5	315.4	0.23	-0.22	
2,810.0	7.70	187.50	2,787.8	-323.9	-50.3	327.8	0.22	-0.11	
2,901.0	7.30	185.50	2,878.0	-335.7	-51.6	339.7	0.52	-0.44	
2,992.0	6.70	184.40	2,968.3	-346.8	-52.6	350.7	0.68	-0.66	
3,084.0	7.80	188.50	3,059.6	-358.3	-53.9	362.3	1.32	1.20	
3,176.0	7.80	188.90	3,150.8	-370.7	-55.8	374.8	0.06	0.00	
3,267.0	7.30	189.70	3,241.0	-382.5	-57.7	386.8	0.56	-0.55	
3,359.0	6.80	188.80	3,332.3	-393.6	-59.5	398.1	0.56	-0.54	
3,451.0	8.20	188.60	3,423.5	-405.5	-61.3	410.1	1.52	1.52	
3,542.0	7.70	190.50	3,513.6	-417.9	-63.4	422.6	0.62	-0.55	
3,634.0	7.10	191.30	3,604.8	-429.5	-65.7	434.5	0.66	-0.65	
3,726.0	6.60	191.30	3,696.2	-440.3	-67.8	445.5	0.54	-0.54	
3,817.0	7.50	188.70	3,786.5	-451.3	-69.7	456.6	1.05	0.99	
3,909.0	7.30	188.10	3,877.7	-463.0	-71.5	468.5	0.23	-0.22	
4,000.0	6.80	187.00	3,968.0	-474.1	-72.9	479.6	0.57	-0.55	
4,092.0	6.50	186.00	4,059.4	-484.7	-74.2	490.3	0.35	-0.33	
4,183.0	6.90	179.50	4,149.8	-495.2	-74.6	500.8	0.94	0.44	
4,275.0	8.10	181.10	4,241.0	-507.2	-74.7	512.7	1.32	1.30	
4,366.0	7.40	174.60	4,331.2	-519.5	-74.3	524.7	1.23	-0.77	
4,458.0	8.50	183.00	4,422.3	-532.2	-74.1	537.2	1.74	1.20	
4,550.0	8.80	190.20	4,513.3	-545.9	-75.7	551.0	1.22	0.33	
4,641.0	8.30	188.90	4,603.2	-559.2	-77.9	564.5	0.59	-0.55	
4,733.0	7.60	189.20	4,694.4	-571.8	-79.9	577.2	0.76	-0.76	
4,824.0	7.00	189.20	4,784.6	-583.2	-81.8	588.8	0.66	-0.66	
4,916.0	6.40	187.80	4,876.0	-593.8	-83.4	599.5	0.68	-0.65	
5,007.0	6.00	185.30	4,966.5	-603.6	-84.5	609.3	0.53	-0.44	

# Cathedral Energy Services

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well NP EF01A-34 P27 595
<b>Project:</b>	North Piceance	<b>TVD Reference:</b>	EF01A-34 P27 @ 6671.0ft (Patterson 303)
<b>Site:</b>	P27 595 (S27-T5S-R95W)	<b>MD Reference:</b>	EF01A-34 P27 @ 6671.0ft (Patterson 303)
<b>Well:</b>	NP EF01A-34 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
5,099.0	5.50	184.60	5,058.0	-612.8	-85.3	618.5	0.55	-0.54	
5,190.0	5.20	182.70	5,148.6	-621.2	-85.8	627.0	0.38	-0.33	
5,282.0	3.80	192.50	5,240.3	-628.4	-86.7	634.2	1.73	-1.52	
5,373.0	2.30	208.00	5,331.2	-632.9	-88.2	638.9	1.87	-1.65	
5,464.0	1.60	257.00	5,422.1	-634.8	-90.3	641.1	1.91	-0.77	
5,556.0	1.20	334.70	5,514.1	-634.3	-92.0	640.8	1.94	-0.43	
5,647.0	1.10	336.10	5,605.1	-632.6	-92.7	639.3	0.11	-0.11	
5,738.0	0.50	343.60	5,696.1	-631.4	-93.2	638.2	0.67	-0.66	
5,829.0	0.40	355.40	5,787.1	-630.7	-93.3	637.5	0.15	-0.11	
5,921.0	0.40	192.20	5,879.1	-630.7	-93.4	637.5	0.86	0.00	
6,012.0	0.60	213.00	5,970.1	-631.4	-93.8	638.3	0.29	0.22	
6,103.0	0.80	235.90	6,061.1	-632.2	-94.5	639.2	0.37	0.22	
6,195.0	0.90	233.60	6,153.1	-633.0	-95.7	640.1	0.11	0.11	
6,286.0	0.90	229.00	6,244.1	-633.9	-96.8	641.2	0.08	0.00	
6,377.0	0.60	194.90	6,335.1	-634.8	-97.4	642.2	0.58	-0.33	
6,469.0	0.80	175.20	6,427.0	-635.9	-97.5	643.3	0.34	0.22	
6,560.0	0.90	157.20	6,518.0	-637.2	-97.2	644.5	0.31	0.11	
6,652.0	0.80	149.20	6,610.0	-638.4	-96.6	645.6	0.17	-0.11	
6,743.0	0.70	167.20	6,701.0	-639.5	-96.1	646.6	0.28	-0.11	
6,835.0	0.80	176.10	6,793.0	-640.7	-95.9	647.8	0.17	0.11	
6,926.0	0.80	111.50	6,884.0	-641.5	-95.3	648.5	0.94	0.00	
7,017.0	1.30	112.60	6,975.0	-642.2	-93.8	648.9	0.55	0.55	
7,109.0	0.50	174.40	7,067.0	-643.0	-92.8	649.5	1.25	-0.87	
7,200.0	0.40	213.80	7,158.0	-643.6	-92.9	650.2	0.35	-0.11	
7,292.0	0.60	169.40	7,250.0	-644.4	-93.0	651.0	0.46	0.22	
7,384.0	0.90	166.20	7,342.0	-645.6	-92.7	652.1	0.33	0.33	
7,475.0	1.10	171.60	7,432.9	-647.1	-92.4	653.6	0.24	0.22	
7,566.0	1.10	233.40	7,523.9	-648.5	-93.0	655.0	1.24	0.00	
7,658.0	1.20	211.50	7,615.9	-649.8	-94.2	656.6	0.49	0.11	
7,750.0	1.50	259.10	7,707.9	-650.9	-95.9	657.9	1.22	0.33	
7,841.0	1.60	258.20	7,798.9	-651.4	-98.3	658.7	0.11	0.11	
7,933.0	1.50	246.30	7,890.8	-652.1	-100.7	659.8	0.37	-0.11	
8,024.0	1.50	237.90	7,981.8	-653.2	-102.8	661.3	0.24	0.00	
8,116.0	1.50	213.70	8,073.8	-654.9	-104.5	663.2	0.68	0.00	
8,207.0	1.70	236.30	8,164.7	-656.6	-106.3	665.2	0.72	0.22	
8,298.0	1.70	278.60	8,255.7	-657.2	-108.7	666.1	1.35	0.00	
8,390.0	1.80	345.80	8,347.6	-655.6	-110.4	664.8	2.11	0.11	
8,481.0	2.60	106.10	8,438.6	-654.7	-108.8	663.7	4.22	0.88	
8,573.0	2.70	111.10	8,530.5	-656.1	-104.8	664.4	0.27	0.11	
8,664.0	1.40	124.80	8,621.5	-657.5	-101.8	665.3	1.52	-1.43	
8,756.0	0.80	1.70	8,713.4	-657.5	-100.9	665.2	2.13	-0.65	
8,847.0	0.50	339.60	8,804.4	-656.5	-101.0	664.2	0.42	-0.33	
8,939.0	0.20	291.00	8,896.4	-656.1	-101.3	663.8	0.43	-0.33	
9,030.0	1.30	17.70	8,987.4	-655.0	-101.1	662.8	1.43	1.21	
9,121.0	0.60	57.70	9,078.4	-653.8	-100.4	661.4	1.02	-0.77	
9,213.0	0.40	59.10	9,170.4	-653.4	-99.7	660.9	0.22	-0.22	
9,304.0	1.50	355.30	9,261.4	-652.0	-99.6	659.6	1.51	1.21	
9,395.0	1.20	2.70	9,352.4	-649.9	-99.6	657.4	0.38	-0.33	
9,487.0	0.60	69.50	9,444.4	-648.7	-99.1	656.3	1.21	-0.65	
9,578.0	0.20	134.20	9,535.4	-648.7	-98.6	656.1	0.60	-0.44	
9,669.0	0.90	198.50	9,626.4	-649.5	-98.7	656.9	0.92	0.77	
9,761.0	1.10	195.10	9,718.3	-651.0	-99.1	658.5	0.23	0.22	
9,852.0	1.20	190.70	9,809.3	-652.8	-99.5	660.3	0.15	0.11	

# Cathedral Energy Services

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well NP EF01A-34 P27 595
<b>Project:</b>	North Piceance	<b>TVD Reference:</b>	EF01A-34 P27 @ 6671.0ft (Patterson 303)
<b>Site:</b>	P27 595 (S27-T5S-R95W)	<b>MD Reference:</b>	EF01A-34 P27 @ 6671.0ft (Patterson 303)
<b>Well:</b>	NP EF01A-34 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
9,943.0	1.30	195.60	9,900.3	-654.7	-100.0	662.3	0.16	0.11	
10,034.0	1.30	202.90	9,991.3	-656.7	-100.7	664.3	0.18	0.00	
10,125.0	1.20	200.60	10,082.3	-658.5	-101.4	666.3	0.12	-0.11	Last Cathedral Survey @ 10,125' MD Projection to Bit @ 10,175'
10,175.0	1.20	200.60	10,132.2	-659.5	-101.8	667.3	0.00	0.00	

Targets									
Target Name									
- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- Shape									
P27 595 EF01A-34 TGT	0.00	0.00	5,445.0	-641.6	-88.4	1,645,201.71	2,285,969.70	39° 34' 39.09 N	108° 2' 0.61 W
- actual wellpath misses target center by 7.1ft at 5486.8ft MD (5444.9 TVD, -634.9 N, -90.9 E)									
- Point									
P27 595 EF01A-34 BHL	0.00	0.00	10,005.0	-651.6	-105.4	1,645,192.16	2,285,952.41	39° 34' 38.99 N	108° 2' 0.83 W
- actual wellpath misses target center by 7.1ft at 10047.7ft MD (10004.9 TVD, -657.0 N, -100.8 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	
10,125.0	10,082.3	-658.5	-101.4	Last Cathedral Survey @ 10,125' MD	
10,175.0	10,132.2	-659.5	-101.8	Projection to Bit @ 10,175'	

Checked By: _____	Approved By: _____	Date: _____
-------------------	--------------------	-------------