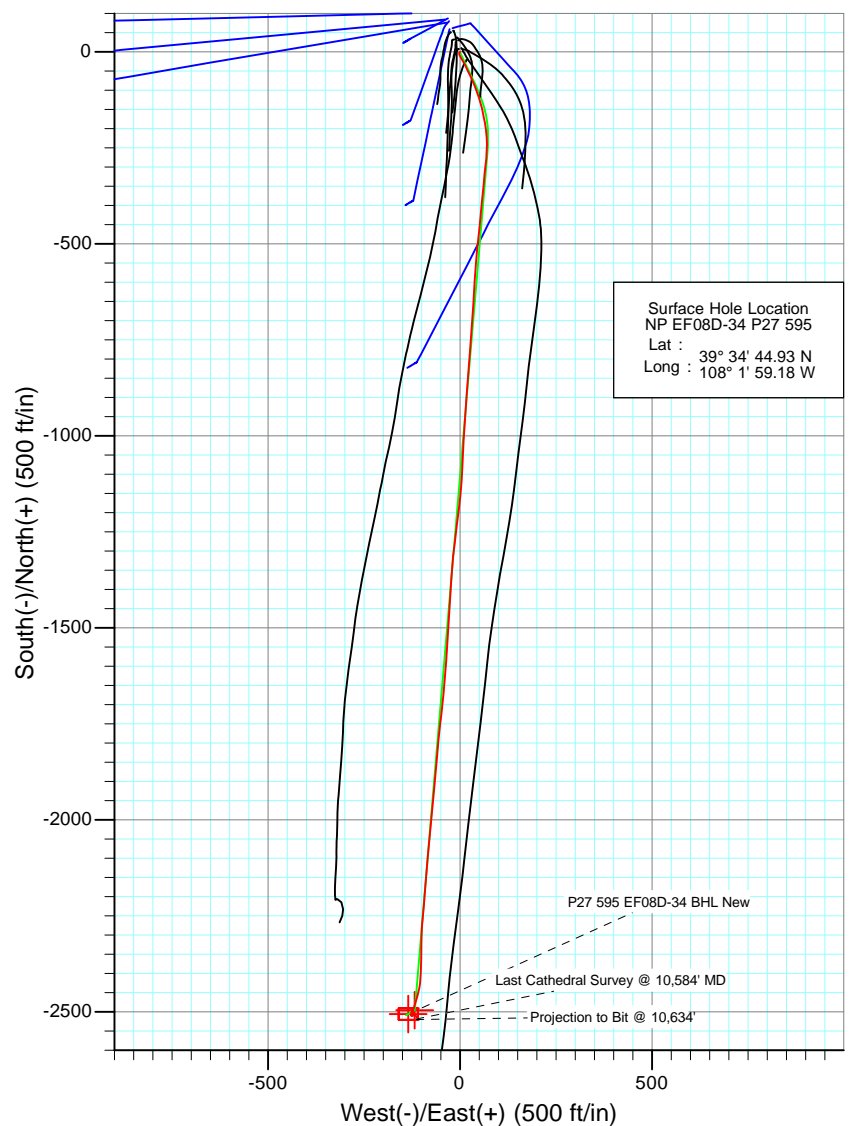
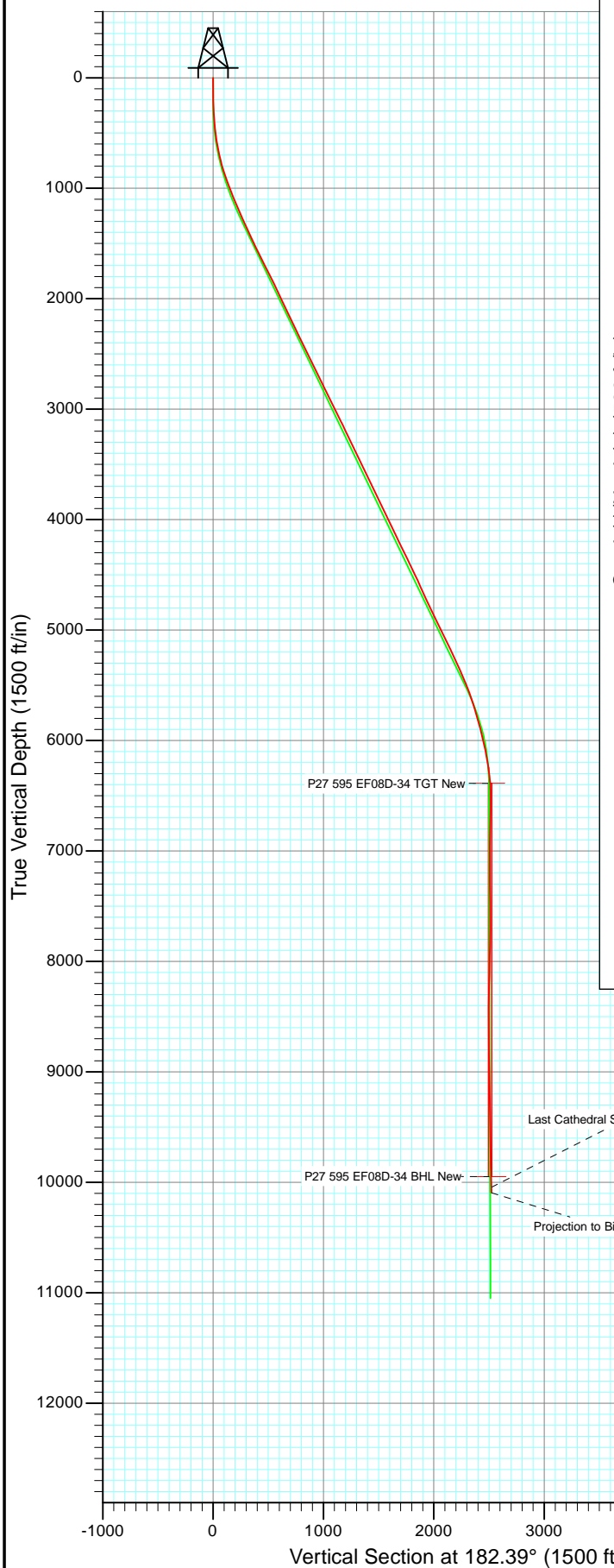




Project: North Piceance
 Site: P27 595 (S27-T5S-R95W)
 Well: NP EF08D-34 P27 595
 Wellbore: DD
 Design: FINAL



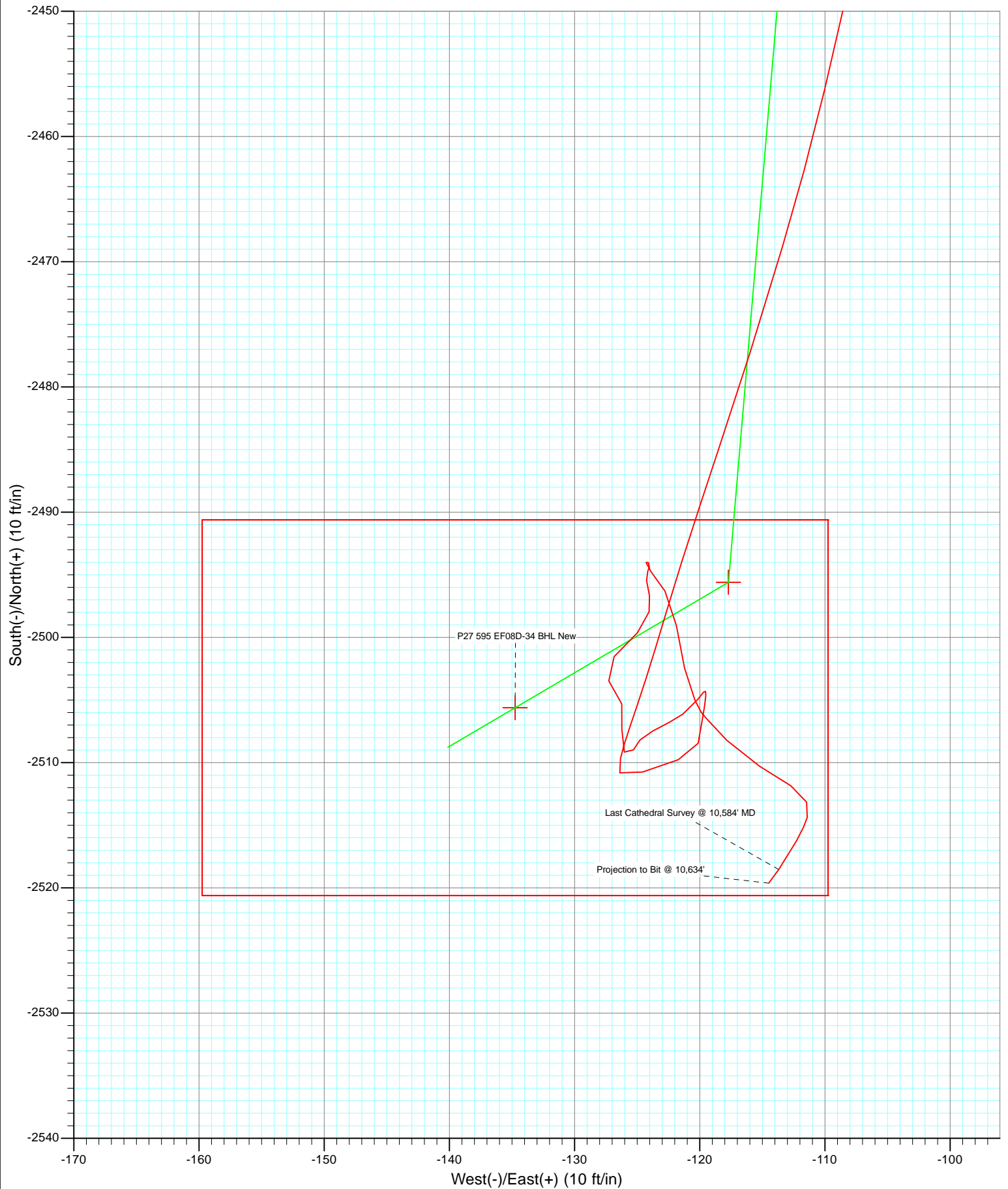
Azimuths to True North
 Magnetic North: 10.32°

Magnetic Field
 Strength: 52238.3nT
 Dip Angle: 65.79°
 Date: 12/1/2011
 Model: IGRF2010

DD NP EF08D-34 P27 595 115553/125655 (SH) 115567/126355 (MH); LR EF08D-34 P27 @ 6671.0ft (Patterson 303) North American Datum 1983 Well NP EF08D-34 P27 595, True North							
Type	Target	Azimuth	Origin	Type	N/S	E/W	From
Target	P27 595 EF08D-34 BHL	182.39	Slot		0.0	0.0	TVD
Name							
P27 595 EF08D-34 TGT New	TVD	+N/-S	+E/-W	Latitude	Longitude		
P27 595 EF08D-34 BHL New	6388.0	-2495.6	-117.7	39° 34' 20.26 N	108° 2' 0.68 W		
	9948.0	-2505.6	-134.7	39° 34' 20.16 N	108° 2' 0.90 W		



Project: North Piceance
Site: P27 595 (S27-T5S-R95W)
Well: NP EF08D-34 P27 595
Wellbore: DD
Design: FINAL



Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well NP EF08D-34 P27 595
Project:	North Piceance	TVD Reference:	EF08D-34 P27 @ 6671.0ft (Patterson 303)
Site:	P27 595 (S27-T5S-R95W)	MD Reference:	EF08D-34 P27 @ 6671.0ft (Patterson 303)
Well:	NP EF08D-34 P27 595	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	DD	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 EF08D-34 P27 595					
Well Position	+N/-S	0.0 ft	Northing:	1,645,789.33 ft	Latitude:	39° 34' 44.93 N
	+E/-W	0.0 ft	Easting:	2,286,097.93 ft	Longitude:	108° 1' 59.18 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	12/1/2011	10.32	65.79	52,238

Design	DD				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(ft)	(ft)	(ft)	(°)	
	0.0	0.0	0.0	182.39	

Survey Program	Date	12/20/2011			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
175.0	1,790.0	Survey #1 (DD)	MWD	Geolink MWD	
1,892.0	10,634.0	Survey #3 (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		
175.0	0.90	229.20	175.0	-0.9	-1.0	0.9	0.51	0.51		
205.0	1.50	210.70	205.0	-1.4	-1.4	1.4	2.36	2.00		
236.0	2.20	200.50	236.0	-2.3	-1.8	2.4	2.49	2.26		
267.0	2.50	188.80	266.9	-3.5	-2.1	3.6	1.82	0.97		
298.0	3.00	177.00	297.9	-5.0	-2.2	5.1	2.43	1.61		
327.0	3.60	165.90	326.9	-6.6	-1.9	6.7	3.01	2.07		
358.0	4.40	159.90	357.8	-8.7	-1.3	8.7	2.91	2.58		
388.0	5.10	148.80	387.7	-10.9	-0.2	10.9	3.84	2.33		
419.0	5.90	147.70	418.5	-13.4	1.4	13.4	2.60	2.58		
450.0	6.70	149.20	449.4	-16.3	3.1	16.2	2.63	2.58		
480.0	7.60	149.70	479.1	-19.6	5.0	19.3	3.01	3.00		

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well NP EF08D-34 P27 595
Project:	North Piceance	TVD Reference:	EF08D-34 P27 @ 6671.0ft (Patterson 303)
Site:	P27 595 (S27-T5S-R95W)	MD Reference:	EF08D-34 P27 @ 6671.0ft (Patterson 303)
Well:	NP EF08D-34 P27 595	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	DD	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
511.0	8.60	148.60	509.8	-23.3	7.3	23.0	3.26	3.23	
560.0	10.20	152.40	558.1	-30.3	11.2	29.8	3.50	3.27	
606.0	11.50	154.50	603.3	-38.0	15.0	37.4	2.95	2.83	
651.0	12.80	154.60	647.3	-46.6	19.1	45.7	2.89	2.89	
697.0	14.00	154.10	692.1	-56.2	23.7	55.2	2.62	2.61	
743.0	15.50	154.30	736.5	-66.7	28.8	65.5	3.26	3.26	
789.0	16.90	155.90	780.7	-78.4	34.2	76.9	3.19	3.04	
835.0	18.10	157.90	824.6	-91.1	39.6	89.4	2.92	2.61	
880.0	18.90	161.20	867.3	-104.5	44.6	102.5	2.93	1.78	
926.0	20.30	162.60	910.6	-119.2	49.4	117.0	3.21	3.04	
972.0	21.20	164.70	953.6	-134.8	54.0	132.4	2.54	1.96	
1,018.0	22.20	167.20	996.4	-151.3	58.1	148.7	2.96	2.17	
1,064.0	22.80	169.10	1,038.9	-168.5	61.7	165.8	2.05	1.30	
1,110.0	23.30	169.70	1,081.2	-186.2	65.0	183.3	1.20	1.09	
1,156.0	23.30	172.30	1,123.4	-204.2	67.9	201.2	2.24	0.00	
1,201.0	23.40	176.90	1,164.8	-221.9	69.6	218.8	4.06	0.22	
1,247.0	23.60	179.20	1,206.9	-240.3	70.2	237.1	2.04	0.43	
1,293.0	23.60	183.00	1,249.1	-258.7	69.8	255.5	3.31	0.00	
1,339.0	23.60	185.20	1,291.2	-277.0	68.5	273.9	1.91	0.00	
1,430.0	23.80	186.10	1,374.6	-313.4	64.9	310.4	0.45	0.22	
1,522.0	25.40	185.50	1,458.2	-351.5	61.0	348.7	1.76	1.74	
1,613.0	26.40	185.30	1,540.1	-391.1	57.3	388.4	1.10	1.10	
1,705.0	27.00	185.40	1,622.3	-432.3	53.4	429.6	0.65	0.65	
1,790.0	26.80	186.20	1,698.1	-470.5	49.6	468.0	0.49	-0.24	Last Cathedral Survey @ 1,790' MD
1,892.0	26.70	185.90	1,789.2	-516.2	44.7	513.8	0.16	-0.10	
1,984.0	26.10	184.40	1,871.6	-556.9	41.0	554.7	0.98	-0.65	
2,075.0	25.60	183.30	1,953.5	-596.5	38.4	594.4	0.76	-0.55	
2,167.0	25.10	183.80	2,036.6	-635.8	35.9	633.7	0.59	-0.54	
2,259.0	25.00	182.40	2,119.9	-674.7	33.8	672.7	0.65	-0.11	
2,350.0	25.10	183.60	2,202.4	-713.2	31.8	711.2	0.57	0.11	
2,442.0	26.00	185.60	2,285.4	-752.7	28.6	750.9	1.35	0.98	
2,533.0	25.70	185.10	2,367.3	-792.2	24.9	790.5	0.41	-0.33	
2,625.0	27.20	184.20	2,449.6	-833.1	21.6	831.4	1.69	1.63	
2,716.0	26.50	183.90	2,530.8	-874.1	18.7	872.5	0.78	-0.77	
2,808.0	26.30	184.00	2,613.2	-914.9	15.9	913.4	0.22	-0.22	
2,899.0	25.70	183.30	2,695.0	-954.7	13.3	953.3	0.74	-0.66	
2,990.0	26.30	183.20	2,776.8	-994.5	11.1	993.2	0.66	0.66	
3,082.0	25.00	183.50	2,859.8	-1,034.3	8.8	1,033.0	1.42	-1.41	
3,174.0	27.00	182.80	2,942.4	-1,074.5	6.6	1,073.3	2.20	2.17	
3,265.0	26.10	182.60	3,023.8	-1,115.2	4.6	1,114.0	0.99	-0.99	
3,357.0	26.80	186.30	3,106.2	-1,156.0	1.4	1,154.9	1.95	0.76	
3,449.0	25.10	187.60	3,188.9	-1,196.0	-3.4	1,195.1	1.95	-1.85	
3,540.0	25.20	186.60	3,271.3	-1,234.3	-8.2	1,233.6	0.48	0.11	
3,632.0	27.00	186.40	3,353.9	-1,274.5	-12.8	1,274.0	1.96	1.96	
3,723.0	25.50	187.30	3,435.5	-1,314.5	-17.6	1,314.1	1.71	-1.65	
3,815.0	26.60	183.60	3,518.2	-1,354.7	-21.4	1,354.4	2.13	1.20	
3,907.0	24.80	183.10	3,601.1	-1,394.5	-23.7	1,394.3	1.97	-1.96	
3,998.0	26.70	183.70	3,683.1	-1,434.0	-26.1	1,433.8	2.11	2.09	
4,090.0	25.70	183.70	3,765.6	-1,474.5	-28.7	1,474.4	1.09	-1.09	
4,181.0	26.10	183.00	3,847.5	-1,514.2	-31.0	1,514.2	0.55	0.44	
4,273.0	24.70	183.40	3,930.6	-1,553.6	-33.2	1,553.6	1.53	-1.52	
4,364.0	25.40	184.50	4,013.0	-1,592.0	-35.9	1,592.2	0.92	0.77	
4,456.0	26.80	185.00	4,095.6	-1,632.4	-39.2	1,632.6	1.54	1.52	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well NP EF08D-34 P27 595
Project:	North Piceance	TVD Reference:	EF08D-34 P27 @ 6671.0ft (Patterson 303)
Site:	P27 595 (S27-T5S-R95W)	MD Reference:	EF08D-34 P27 @ 6671.0ft (Patterson 303)
Well:	NP EF08D-34 P27 595	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	DD	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
4,548.0	25.20	186.00	4,178.3	-1,672.5	-43.1	1,672.9	1.80	-1.74	
4,639.0	26.20	186.60	4,260.3	-1,711.7	-47.4	1,712.2	1.14	1.10	
4,731.0	26.10	185.70	4,342.9	-1,752.1	-51.8	1,752.7	0.44	-0.11	
4,822.0	25.70	185.90	4,424.8	-1,791.6	-55.8	1,792.4	0.45	-0.44	
4,914.0	25.60	184.40	4,507.7	-1,831.3	-59.3	1,832.1	0.71	-0.11	
5,005.0	24.30	184.60	4,590.2	-1,869.5	-62.4	1,870.5	1.43	-1.43	
5,097.0	24.20	186.70	4,674.1	-1,907.1	-66.1	1,908.2	0.94	-0.11	
5,188.0	25.60	185.00	4,756.6	-1,945.2	-70.0	1,946.5	1.73	1.54	
5,280.0	26.30	184.50	4,839.3	-1,985.4	-73.3	1,986.7	0.80	0.76	
5,371.0	24.70	185.70	4,921.5	-2,024.4	-76.8	2,025.8	1.85	-1.76	
5,462.0	26.00	186.40	5,003.7	-2,063.1	-80.9	2,064.7	1.47	1.43	
5,553.0	26.90	184.00	5,085.2	-2,103.5	-84.5	2,105.2	1.54	0.99	
5,644.0	26.00	184.30	5,166.7	-2,143.9	-87.5	2,145.7	1.00	-0.99	
5,736.0	25.10	184.70	5,249.7	-2,183.5	-90.6	2,185.3	1.00	-0.98	
5,827.0	24.30	185.00	5,332.3	-2,221.4	-93.8	2,223.3	0.89	-0.88	
5,919.0	23.80	185.80	5,416.3	-2,258.7	-97.3	2,260.8	0.65	-0.54	
6,010.0	21.90	181.70	5,500.2	-2,293.9	-99.7	2,296.1	2.72	-2.09	
6,101.0	19.50	179.90	5,585.3	-2,326.1	-100.2	2,328.2	2.73	-2.64	
6,193.0	18.10	181.50	5,672.4	-2,355.7	-100.5	2,357.9	1.62	-1.52	
6,284.0	14.80	182.80	5,759.7	-2,381.5	-101.4	2,383.6	3.65	-3.63	
6,375.0	15.00	181.20	5,847.6	-2,404.8	-102.3	2,407.0	0.50	0.22	
6,467.0	14.40	189.40	5,936.6	-2,428.0	-104.4	2,430.3	2.35	-0.65	
6,558.0	13.40	192.30	6,025.0	-2,449.5	-108.5	2,451.9	1.34	-1.10	
6,650.0	11.60	196.60	6,114.8	-2,468.8	-113.4	2,471.4	2.20	-1.96	
6,741.0	9.80	198.60	6,204.2	-2,484.9	-118.5	2,487.7	2.02	-1.98	
6,833.0	7.60	196.70	6,295.1	-2,498.1	-122.7	2,501.1	2.41	-2.39	
6,924.0	4.30	199.20	6,385.6	-2,507.1	-125.6	2,510.2	3.64	-3.63	
7,015.0	0.70	146.50	6,476.5	-2,510.8	-126.4	2,513.9	4.30	-3.96	
7,107.0	2.00	70.30	6,568.5	-2,510.7	-124.6	2,513.8	2.12	1.41	
7,198.0	1.80	71.90	6,659.5	-2,509.8	-121.7	2,512.7	0.23	-0.22	
7,290.0	1.10	13.70	6,751.4	-2,508.5	-120.1	2,511.3	1.67	-0.76	
7,381.0	1.00	5.80	6,842.4	-2,506.8	-119.8	2,509.6	0.19	-0.11	
7,473.0	0.70	14.80	6,934.4	-2,505.5	-119.6	2,508.3	0.36	-0.33	
7,564.0	0.40	353.60	7,025.4	-2,504.6	-119.5	2,507.4	0.39	-0.33	
7,656.0	0.00	155.50	7,117.4	-2,504.3	-119.5	2,507.1	0.43	-0.43	
7,748.0	0.20	248.20	7,209.4	-2,504.4	-119.7	2,507.2	0.22	0.22	
7,839.0	0.80	211.10	7,300.4	-2,505.0	-120.2	2,507.8	0.72	0.66	
7,931.0	1.30	234.50	7,392.4	-2,506.1	-121.3	2,509.0	0.71	0.54	
7,976.0	1.90	241.70	7,437.4	-2,506.8	-122.4	2,509.7	1.40	1.33	
8,023.0	1.80	242.20	7,484.4	-2,507.5	-123.8	2,510.5	0.22	-0.21	
8,114.0	1.10	198.10	7,575.3	-2,509.0	-125.3	2,512.0	1.39	-0.77	
8,206.0	1.00	325.90	7,667.3	-2,509.2	-126.0	2,512.2	2.05	-0.11	
8,297.0	1.50	11.70	7,758.3	-2,507.3	-126.2	2,510.4	1.18	0.55	
8,389.0	1.10	343.40	7,850.3	-2,505.3	-126.2	2,508.4	0.81	-0.43	
8,480.0	1.60	322.00	7,941.2	-2,503.5	-127.3	2,506.6	0.77	0.55	
8,572.0	1.90	52.90	8,033.2	-2,501.5	-126.8	2,504.7	2.72	0.33	
8,663.0	1.50	33.40	8,124.2	-2,499.6	-125.0	2,502.7	0.77	-0.44	
8,755.0	0.90	21.50	8,216.2	-2,498.0	-124.0	2,501.0	0.70	-0.65	
8,847.0	0.80	339.30	8,308.2	-2,496.7	-124.0	2,499.7	0.67	-0.11	
8,938.0	0.80	359.40	8,399.1	-2,495.5	-124.2	2,498.5	0.31	0.00	
9,030.0	0.20	40.30	8,491.1	-2,494.7	-124.1	2,497.7	0.72	-0.65	
9,121.0	0.20	5.90	8,582.1	-2,494.4	-124.0	2,497.4	0.13	0.00	
9,213.0	0.30	339.50	8,674.1	-2,494.0	-124.1	2,497.0	0.16	0.11	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well NP EF08D-34 P27 595
Project:	North Piceance	TVD Reference:	EF08D-34 P27 @ 6671.0ft (Patterson 303)
Site:	P27 595 (S27-T5S-R95W)	MD Reference:	EF08D-34 P27 @ 6671.0ft (Patterson 303)
Well:	NP EF08D-34 P27 595	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	DD	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
9,304.0	0.30	206.10	8,765.1	-2,494.0	-124.3	2,497.0	0.61	0.00	
9,396.0	0.90	136.40	8,857.1	-2,494.8	-123.9	2,497.8	0.92	0.65	
9,487.0	1.50	148.60	8,948.1	-2,496.3	-122.8	2,499.2	0.71	0.66	
9,579.0	2.20	170.60	9,040.0	-2,499.1	-121.9	2,502.0	1.07	0.76	
9,671.0	2.10	167.60	9,132.0	-2,502.4	-121.2	2,505.3	0.16	-0.11	
9,762.0	1.30	153.10	9,222.9	-2,505.0	-120.4	2,507.8	0.99	-0.88	
9,853.0	0.10	150.90	9,313.9	-2,506.0	-119.9	2,508.8	1.32	-1.32	
9,944.0	0.80	137.70	9,404.9	-2,506.5	-119.4	2,509.3	0.77	0.77	
10,036.0	2.10	136.60	9,496.9	-2,508.2	-117.8	2,511.0	1.41	1.41	
10,127.0	2.10	120.20	9,587.8	-2,510.3	-115.2	2,512.9	0.66	0.00	
10,219.0	1.60	124.10	9,679.8	-2,511.8	-112.7	2,514.4	0.56	-0.54	
10,310.0	0.80	160.50	9,770.8	-2,513.2	-111.5	2,515.6	1.17	-0.88	
10,402.0	0.80	195.50	9,862.8	-2,514.4	-111.4	2,516.8	0.52	0.00	
10,493.0	1.80	209.00	9,953.7	-2,516.2	-112.3	2,518.7	1.14	1.10	
10,584.0	1.60	214.80	10,044.7	-2,518.5	-113.7	2,521.1	0.29	-0.22	Last Cathedral Survey @ 10,584' MD
10,634.0	1.50	218.00	10,094.7	-2,519.6	-114.5	2,522.2	0.26	-0.20	Projection to Bit @ 10,634'

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 EF08D-34 BHL	0.00	0.00	9,948.0	-2,505.6	-134.7	1,643,288.44	2,285,893.38	39° 34' 20.16 N	108° 2' 0.90 W
- actual wellpath misses target center by 24.9ft at 10487.3ft MD (9948.0 TVD, -2516.1 N, -112.2 E)									
- Rectangle (sides W30.0 H50.0 D0.0)									
P27 595 EF08D-34 TGT	0.00	0.00	6,388.0	-2,495.6	-117.7	1,643,297.99	2,285,910.70	39° 34' 20.26 N	108° 2' 0.68 W
- actual wellpath misses target center by 14.1ft at 6925.8ft MD (6387.5 TVD, -2507.3 N, -125.6 E)									
- Point									

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,790.0	1,698.1	-470.5	49.6	Last Cathedral Survey @ 1,790' MD
10,584.0	10,044.7	-2,518.5	-113.7	Last Cathedral Survey @ 10,584' MD
10,634.0	10,094.7	-2,519.6	-114.5	Projection to Bit @ 10,634'

Checked By: _____ Approved By: _____ Date: _____