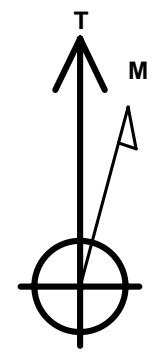
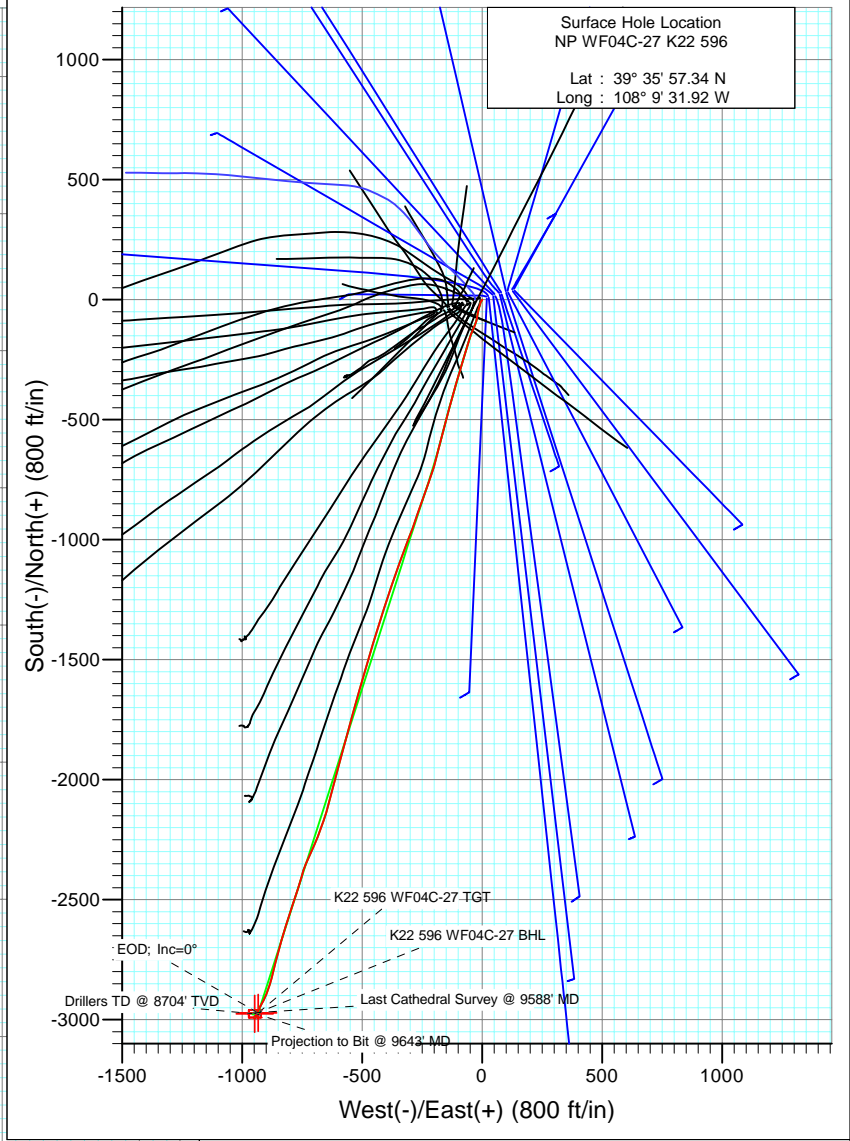
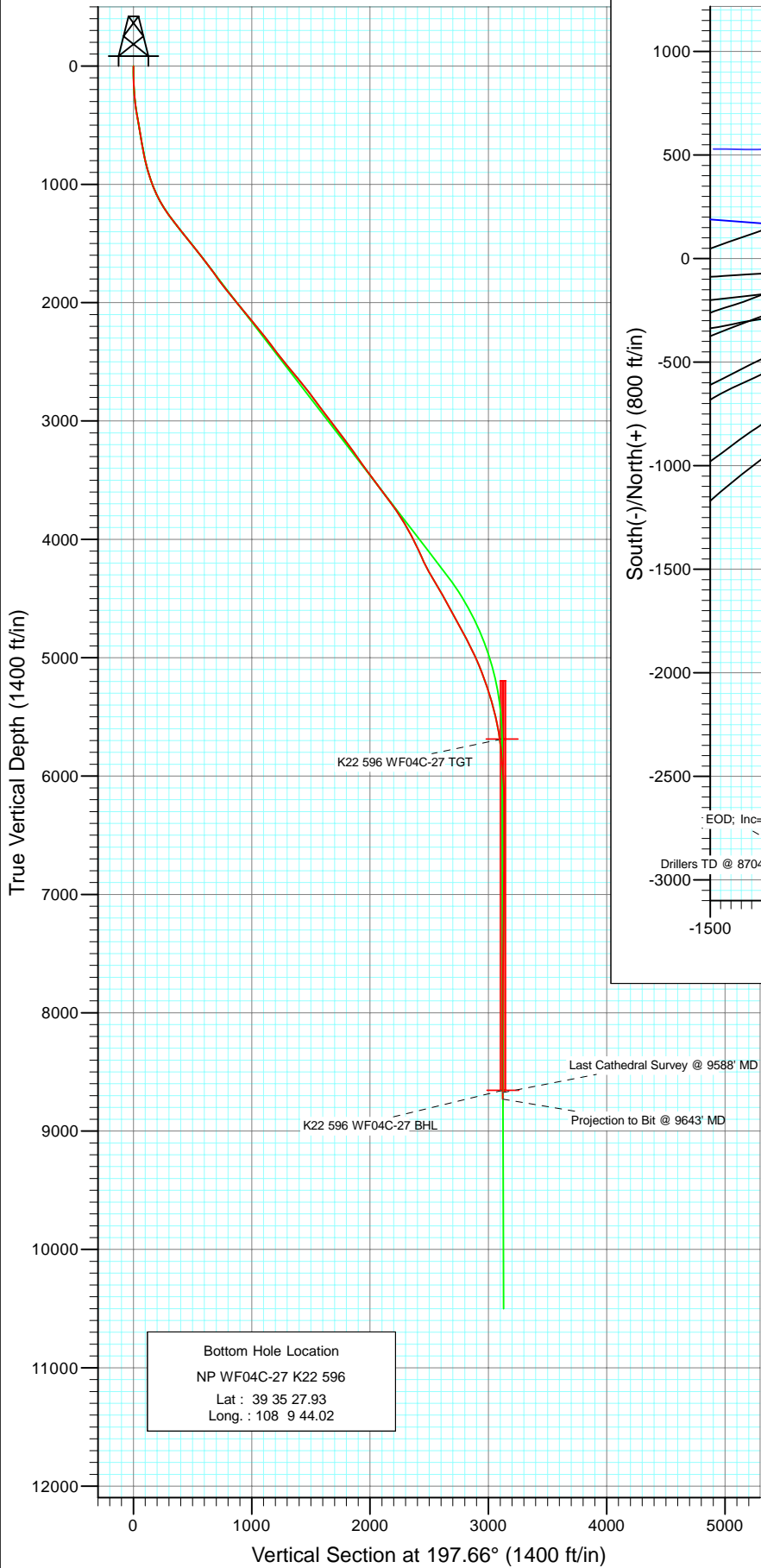




Project: North Piceance
 Site: K22 596 Pad (S22-T5S-R96W)
 Well: NP WF04C-27 K22 596
 Wellbore: DD
 Design: Final



Azimuths to True North
 Magnetic North: 10.59°
 Magnetic Field
 Strength: 52401.5nT
 Dip Angle: 65.83°
 Date: 4/3/2010
 Model: IGRF2010

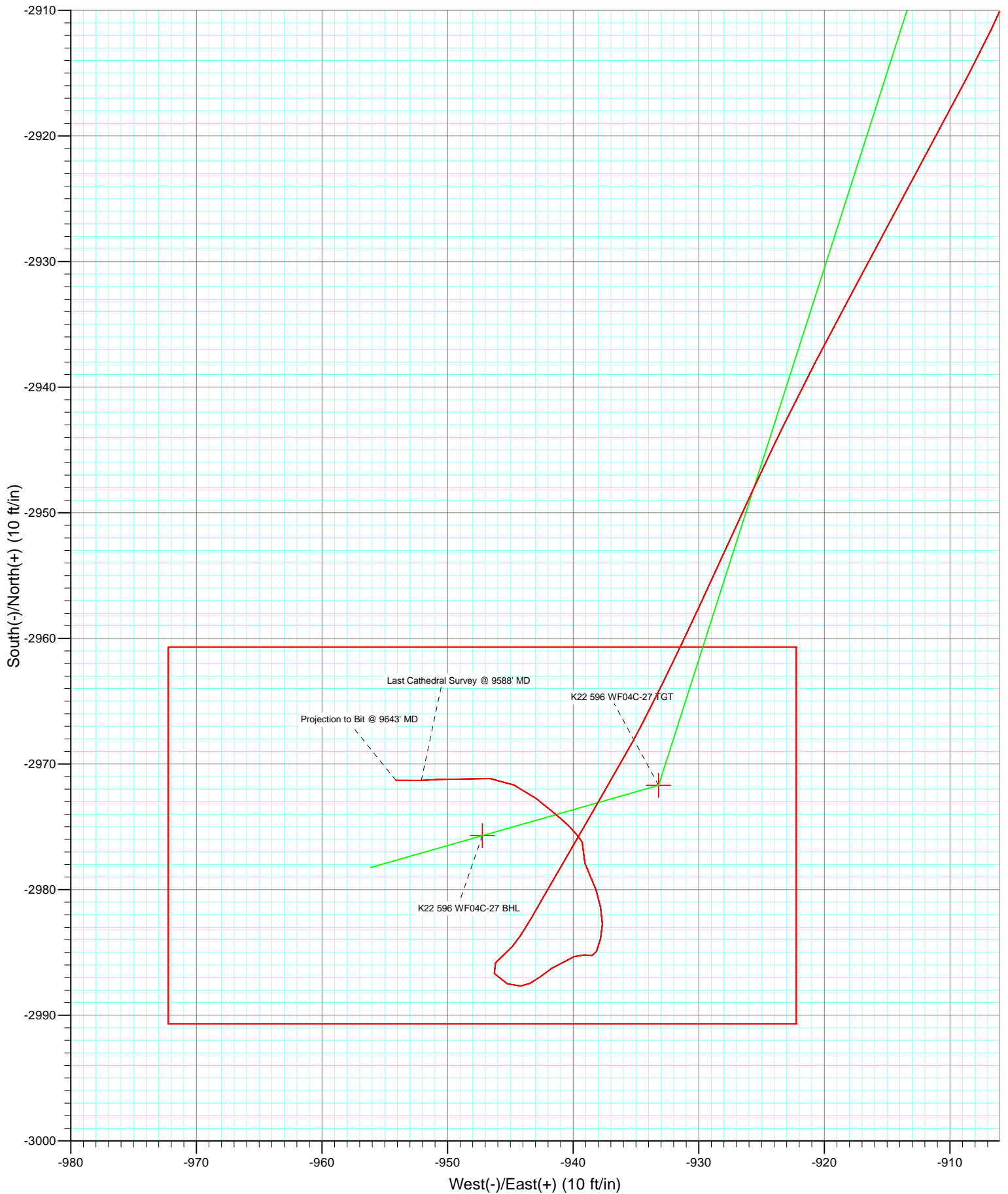
DESIGN DETAILS: DD

105156; LR
 Well @ 6549.0ft (Patterson 303)

Target	Azimuth	Origin	N/S	E/W	From TVD
K22 596 WF04C-27 BHL	197.66	Slot	0.0	0.0	0.0



Project: North Piceance
Site: K22 596 Pad (S22-T5S-R96W)
Well: NP WF04C-27 K22 596
Wellbore: DD
Design: Final



Cathedral Energy Services

Survey Report

Company: EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference: Well NP WF04C-27 K22 596
Project: North Piceance	TVD Reference: Well @ 6549.0ft (Patterson 303)
Site: K22 596 Pad (S22-T5S-R96W)	MD Reference: Well @ 6549.0ft (Patterson 303)
Well: NP WF04C-27 K22 596	North Reference: True
Wellbore: DD	Survey Calculation Method: Minimum Curvature
Design: DD	Database: EDM 5000.1 US 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 K22 596 Pad (S22-T5S-R96W)					
Site Position:	Northing: 1,654,096.85 ft	Latitude: 39° 35' 57.02 N			
From: Lat/Long	Easting: 2,250,762.90 ft	Longitude: 108° 9' 33.39 W			
Position Uncertainty: 0.0 ft	Slot Radius: 0.000 in	Grid Convergence: -1.68 °			

Well NP WF04C-27 K22 596					
Well Position	+N/-S 0.0 ft	Northing: 1,654,125.91 ft	Latitude: 39° 35' 57.34 N		
	+E/-W 0.0 ft	Easting: 2,250,878.87 ft	Longitude: 108° 9' 31.92 W		
Position Uncertainty	0.0 ft	Wellhead Elevation: ft	Ground Level: 6,527.0 ft		

Wellbore DD					
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	4/3/2010	10.59	65.83	52,401

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	197.66	

Survey Program Date 8/20/2010					
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
158.0	9,643.0	Survey #1 (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	
158.0	2.10	209.80	158.0	-2.5	-1.4	2.8	1.33	1.33	
173.0	2.30	221.80	173.0	-3.0	-1.8	3.4	3.34	1.33	
204.0	3.40	212.90	203.9	-4.2	-2.7	4.8	3.81	3.55	
235.0	4.50	199.90	234.8	-6.1	-3.6	6.9	4.55	3.55	
266.0	5.90	215.60	265.7	-8.6	-4.9	9.7	6.40	4.52	
296.0	6.80	202.40	295.5	-11.5	-6.5	12.9	5.70	3.00	
327.0	7.60	189.10	326.3	-15.2	-7.5	16.8	5.95	2.58	
358.0	8.30	193.50	357.0	-19.4	-8.4	21.0	2.99	2.26	
388.0	9.00	201.00	386.7	-23.7	-9.7	25.5	4.42	2.33	
419.0	9.30	199.80	417.3	-28.3	-11.5	30.4	1.15	0.97	
450.0	9.50	191.50	447.8	-33.2	-12.8	35.5	4.42	0.65	
480.0	10.10	194.50	477.4	-38.1	-14.0	40.6	2.63	2.00	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well NP WF04C-27 K22 596
Project:	North Piceance	TVD Reference:	Well @ 6549.0ft (Patterson 303)
Site:	K22 596 Pad (S22-T5S-R96W)	MD Reference:	Well @ 6549.0ft (Patterson 303)
Well:	NP WF04C-27 K22 596	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	DD	Database:	EDM 5000.1 US 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	10.20	194.60	507.9	-43.4	-15.3	46.0	0.33	0.32	
560.0	10.10	192.70	556.2	-51.8	-17.4	54.6	0.71	-0.20	
606.0	10.10	192.30	601.4	-59.7	-19.1	62.7	0.15	0.00	
652.0	9.70	183.20	646.8	-67.5	-20.2	70.4	3.51	-0.87	
697.0	9.80	188.70	691.1	-75.1	-21.0	77.9	2.08	0.22	
743.0	11.40	192.50	736.3	-83.4	-22.6	86.3	3.79	3.48	
789.0	12.80	199.50	781.3	-92.6	-25.2	95.9	4.40	3.04	
835.0	13.90	202.70	826.1	-102.5	-29.1	106.5	2.88	2.39	
881.0	15.50	202.80	870.6	-113.3	-33.6	118.1	3.48	3.48	
927.0	17.50	202.50	914.7	-125.3	-38.6	131.2	4.35	4.35	
972.0	18.90	200.70	957.4	-138.4	-43.8	145.2	3.35	3.11	
1,018.0	20.10	198.90	1,000.8	-152.9	-49.0	160.5	2.92	2.61	
1,064.0	21.80	198.40	1,043.7	-168.4	-54.2	177.0	3.72	3.70	
1,110.0	25.40	196.90	1,085.9	-186.0	-59.8	195.4	7.93	7.83	
1,156.0	28.30	196.90	1,126.9	-205.9	-65.8	216.1	6.30	6.30	
1,202.0	31.30	196.00	1,166.8	-227.8	-72.3	239.0	6.59	6.52	
1,247.0	32.70	196.30	1,205.0	-250.7	-78.9	262.8	3.13	3.11	
1,293.0	34.50	196.90	1,243.3	-275.1	-86.2	288.3	3.98	3.91	
1,339.0	35.90	196.90	1,280.9	-300.5	-93.9	314.8	3.04	3.04	
1,385.0	36.90	196.90	1,317.9	-326.6	-101.9	342.1	2.17	2.17	
1,431.0	37.60	196.00	1,354.5	-353.3	-109.7	369.9	1.93	1.52	
1,477.0	39.00	195.20	1,390.6	-380.7	-117.4	398.4	3.23	3.04	
1,523.0	39.60	195.10	1,426.2	-408.9	-125.0	427.5	1.31	1.30	
1,568.0	39.70	195.20	1,460.9	-436.6	-132.5	456.2	0.26	0.22	
1,614.0	39.20	195.40	1,496.4	-464.8	-140.2	485.4	1.12	-1.09	
1,706.0	38.20	194.60	1,568.2	-520.3	-155.1	542.9	1.22	-1.09	
1,770.0	37.30	194.40	1,618.8	-558.3	-164.9	582.0	1.42	-1.41	
1,890.0	36.10	194.30	1,715.0	-627.7	-182.7	653.6	1.00	-1.00	
1,981.0	36.20	194.90	1,788.5	-679.7	-196.3	707.2	0.40	0.11	
2,073.0	37.60	199.00	1,862.1	-732.5	-212.4	762.4	3.08	1.52	
2,165.0	39.90	200.70	1,933.8	-786.6	-231.9	819.9	2.75	2.50	
2,256.0	39.20	198.90	2,004.0	-841.2	-251.6	877.8	1.48	-0.77	
2,348.0	38.70	198.30	2,075.5	-896.0	-270.0	935.7	0.68	-0.54	
2,440.0	40.30	200.60	2,146.5	-951.1	-289.5	994.1	2.36	1.74	
2,532.0	39.20	200.20	2,217.2	-1,006.3	-310.0	1,052.9	1.23	-1.20	
2,623.0	38.50	199.90	2,288.1	-1,059.9	-329.6	1,109.9	0.80	-0.77	
2,715.0	36.70	200.40	2,361.0	-1,112.6	-348.9	1,166.0	1.98	-1.96	
2,807.0	37.80	199.40	2,434.2	-1,164.9	-367.9	1,221.7	1.36	1.20	
2,898.0	38.40	199.40	2,505.8	-1,217.9	-386.5	1,277.8	0.66	0.66	
2,990.0	41.00	197.10	2,576.6	-1,273.7	-404.9	1,336.5	3.25	2.83	
3,082.0	38.80	197.80	2,647.2	-1,330.0	-422.6	1,395.5	2.44	-2.39	
3,173.0	38.30	196.40	2,718.4	-1,384.2	-439.3	1,452.2	1.11	-0.55	
3,265.0	35.90	198.50	2,791.7	-1,437.2	-455.9	1,507.7	2.95	-2.61	
3,357.0	37.00	194.90	2,865.8	-1,489.5	-471.6	1,562.4	2.61	1.20	
3,448.0	38.30	196.40	2,937.8	-1,543.0	-486.6	1,617.9	1.75	1.43	
3,540.0	36.20	195.80	3,011.0	-1,596.5	-502.0	1,673.6	2.32	-2.28	
3,631.0	37.80	196.00	3,083.7	-1,649.2	-517.0	1,728.3	1.76	1.76	
3,723.0	35.80	195.60	3,157.4	-1,702.2	-532.0	1,783.4	2.19	-2.17	
3,815.0	37.20	194.60	3,231.3	-1,755.0	-546.3	1,838.0	1.65	1.52	
3,906.0	34.90	195.20	3,304.9	-1,806.8	-560.0	1,891.5	2.56	-2.53	
3,998.0	35.20	196.60	3,380.2	-1,857.6	-574.5	1,944.3	0.93	0.33	
4,090.0	37.20	194.70	3,454.5	-1,909.9	-589.1	1,998.6	2.49	2.17	
4,181.0	35.80	194.50	3,527.6	-1,962.3	-602.8	2,052.7	1.54	-1.54	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well NP WF04C-27 K22 596
Project:	North Piceance	TVD Reference:	Well @ 6549.0ft (Patterson 303)
Site:	K22 596 Pad (S22-T5S-R96W)	MD Reference:	Well @ 6549.0ft (Patterson 303)
Well:	NP WF04C-27 K22 596	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	DD	Database:	EDM 5000.1 US 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
4,273.0	37.80	194.90	3,601.3	-2,015.6	-616.8	2,107.7	2.19	2.17	
4,364.0	36.50	195.60	3,673.8	-2,068.6	-631.2	2,162.6	1.50	-1.43	
4,455.0	34.00	194.70	3,748.1	-2,119.3	-645.0	2,215.1	2.81	-2.75	
4,547.0	33.00	198.80	3,824.8	-2,167.9	-659.6	2,265.8	2.69	-1.09	
4,639.0	29.60	200.40	3,903.4	-2,212.9	-675.6	2,313.6	3.80	-3.70	
4,730.0	26.50	201.80	3,983.7	-2,252.9	-690.9	2,356.3	3.48	-3.41	
4,822.0	25.90	205.50	4,066.3	-2,290.1	-707.2	2,396.7	1.89	-0.65	
4,913.0	23.60	203.60	4,148.9	-2,324.7	-723.1	2,434.5	2.67	-2.53	
5,005.0	28.10	202.50	4,231.7	-2,361.6	-738.7	2,474.4	4.92	4.89	
5,097.0	30.30	194.20	4,312.0	-2,404.1	-752.7	2,519.2	5.00	2.39	
5,188.0	31.00	197.60	4,390.3	-2,448.7	-765.5	2,565.6	2.05	0.77	
5,280.0	29.10	199.40	4,470.0	-2,492.4	-780.1	2,611.6	2.29	-2.07	
5,372.0	29.70	197.30	4,550.1	-2,535.3	-794.3	2,656.8	1.30	0.65	
5,463.0	28.40	197.60	4,629.7	-2,577.4	-807.5	2,700.9	1.44	-1.43	
5,555.0	27.60	197.60	4,710.9	-2,618.6	-820.6	2,744.1	0.87	-0.87	
5,647.0	28.60	197.20	4,792.0	-2,660.0	-833.5	2,787.5	1.11	1.09	
5,738.0	27.40	194.50	4,872.4	-2,701.0	-845.2	2,830.2	1.92	-1.32	
5,830.0	26.10	195.00	4,954.5	-2,741.1	-855.7	2,871.5	1.43	-1.41	
5,922.0	22.90	193.60	5,038.3	-2,778.0	-865.2	2,909.6	3.53	-3.48	
6,013.0	20.70	193.80	5,122.7	-2,810.9	-873.2	2,943.3	2.42	-2.42	
6,105.0	19.70	195.80	5,209.1	-2,841.6	-881.3	2,975.0	1.32	-1.09	
6,196.0	17.30	200.20	5,295.4	-2,869.0	-890.1	3,003.9	3.05	-2.64	
6,288.0	16.50	200.30	5,383.4	-2,894.1	-899.4	3,030.6	0.87	-0.87	
6,380.0	12.60	207.70	5,472.4	-2,915.3	-908.6	3,053.5	4.69	-4.24	
6,471.0	12.10	208.50	5,561.3	-2,932.5	-917.8	3,072.7	0.58	-0.55	
6,563.0	9.90	204.50	5,651.6	-2,948.1	-925.7	3,090.0	2.53	-2.39	
6,655.0	6.70	205.40	5,742.7	-2,960.2	-931.2	3,103.2	3.48	-3.48	
6,747.0	4.40	208.10	5,834.2	-2,968.1	-935.2	3,112.0	2.52	-2.50	
6,838.0	4.40	211.40	5,925.0	-2,974.2	-938.7	3,118.8	0.28	0.00	
6,930.0	4.50	208.90	6,016.7	-2,980.4	-942.2	3,125.8	0.24	0.11	
7,022.0	1.60	220.40	6,108.5	-2,984.5	-944.8	3,130.5	3.21	-3.15	
7,113.0	0.80	236.20	6,199.5	-2,985.8	-946.2	3,132.2	0.94	-0.88	
7,205.0	0.80	137.80	6,291.5	-2,986.7	-946.3	3,133.0	1.32	0.00	
7,296.0	0.90	120.70	6,382.5	-2,987.5	-945.2	3,133.5	0.30	0.11	
7,388.0	0.60	64.70	6,474.5	-2,987.7	-944.2	3,133.3	0.82	-0.33	
7,480.0	0.40	89.50	6,566.5	-2,987.5	-943.4	3,132.9	0.32	-0.22	
7,571.0	0.90	43.50	6,657.5	-2,986.9	-942.6	3,132.1	0.75	0.55	
7,663.0	0.60	69.70	6,749.5	-2,986.2	-941.7	3,131.2	0.49	-0.33	
7,754.0	0.70	56.50	6,840.5	-2,985.8	-940.8	3,130.5	0.20	0.11	
7,846.0	0.50	70.90	6,932.5	-2,985.3	-939.9	3,129.8	0.27	-0.22	
7,938.0	0.50	90.00	7,024.5	-2,985.2	-939.1	3,129.4	0.18	0.00	
8,029.0	0.30	100.60	7,115.5	-2,985.2	-938.5	3,129.3	0.23	-0.22	
8,121.0	0.50	17.70	7,207.5	-2,984.9	-938.1	3,128.8	0.60	0.22	
8,213.0	0.80	17.80	7,299.5	-2,983.9	-937.8	3,127.8	0.33	0.33	
8,305.0	0.70	355.30	7,391.5	-2,982.7	-937.7	3,126.6	0.34	-0.11	
8,396.0	1.00	352.90	7,482.4	-2,981.4	-937.8	3,125.4	0.33	0.33	
8,488.0	0.80	335.30	7,574.4	-2,980.0	-938.2	3,124.2	0.37	-0.22	
8,634.0	1.00	339.50	7,720.4	-2,977.9	-939.1	3,122.4	0.14	0.14	
8,671.0	1.00	3.90	7,757.4	-2,977.3	-939.1	3,121.9	1.14	0.00	
8,762.0	0.40	324.30	7,848.4	-2,976.2	-939.3	3,120.9	0.81	-0.66	
8,854.0	0.20	327.90	7,940.4	-2,975.8	-939.5	3,120.6	0.22	-0.22	
8,946.0	0.40	316.00	8,032.4	-2,975.5	-939.9	3,120.4	0.23	0.22	
9,093.0	0.80	313.30	8,179.4	-2,974.4	-941.0	3,119.7	0.27	0.27	

Cathedral Energy Services

Survey Report

Company: EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference: Well NP WF04C-27 K22 596
Project: North Piceance	TVD Reference: Well @ 6549.0ft (Patterson 303)
Site: K22 596 Pad (S22-T5S-R96W)	MD Reference: Well @ 6549.0ft (Patterson 303)
Well: NP WF04C-27 K22 596	North Reference: True
Wellbore: DD	Survey Calculation Method: Minimum Curvature
Design: DD	Database: EDM 5000.1 US 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
9,129.0	1.00	312.40	8,215.4	-2,974.0	-941.4	3,119.4	0.56	0.56	
9,221.0	1.50	306.10	8,307.4	-2,972.7	-942.9	3,118.7	0.56	0.54	
9,313.0	1.10	294.80	8,399.3	-2,971.7	-944.7	3,118.2	0.51	-0.43	
9,404.0	1.40	277.70	8,490.3	-2,971.2	-946.6	3,118.3	0.52	0.33	
9,551.0	1.90	262.60	8,637.3	-2,971.2	-950.8	3,119.6	0.45	0.34	
9,588.0	2.10	270.20	8,674.2	-2,971.3	-952.1	3,120.1	0.90	0.54	Last Cathedral Survey @ 9588' MD
9,643.0	2.10	270.20	8,729.2	-2,971.3	-954.1	3,120.7	0.00	0.00	Projection to Bit @ 9643' MD

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
K22 596 WF04C-27 BHL - hit/miss target - Shape	0.00	0.00	8,655.0	-2,975.7	-947.2	1,651,179.21	2,249,844.97	39° 35' 27.93 N	108° 9' 44.02 W
- survey misses target center by 6.1ft at 9568.6ft MD (8654.9 TVD, -2971.3 N, -951.4 E)									
- Rectangle (sides W30.0 H50.0 D0.0)									
K22 596 WF04C-27 TG ¹ - hit/miss target - Shape	0.00	0.00	5,687.0	-2,971.7	-933.2	1,651,182.79	2,249,859.10	39° 35' 27.97 N	108° 9' 43.84 W
- survey misses target center by 18.8ft at 6601.5ft MD (5689.7 TVD, -2953.7 N, -928.2 E)									
- Point									

Survey Annotations				
Measured Depth (ft)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Comment
9,588.0	8,674.2	-2,971.3	-952.1	Last Cathedral Survey @ 9588' MD
9,643.0	8,729.2	-2,971.3	-954.1	Projection to Bit @ 9643' MD

Checked By: _____ Approved By: _____ Date: _____