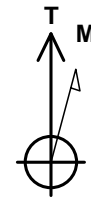
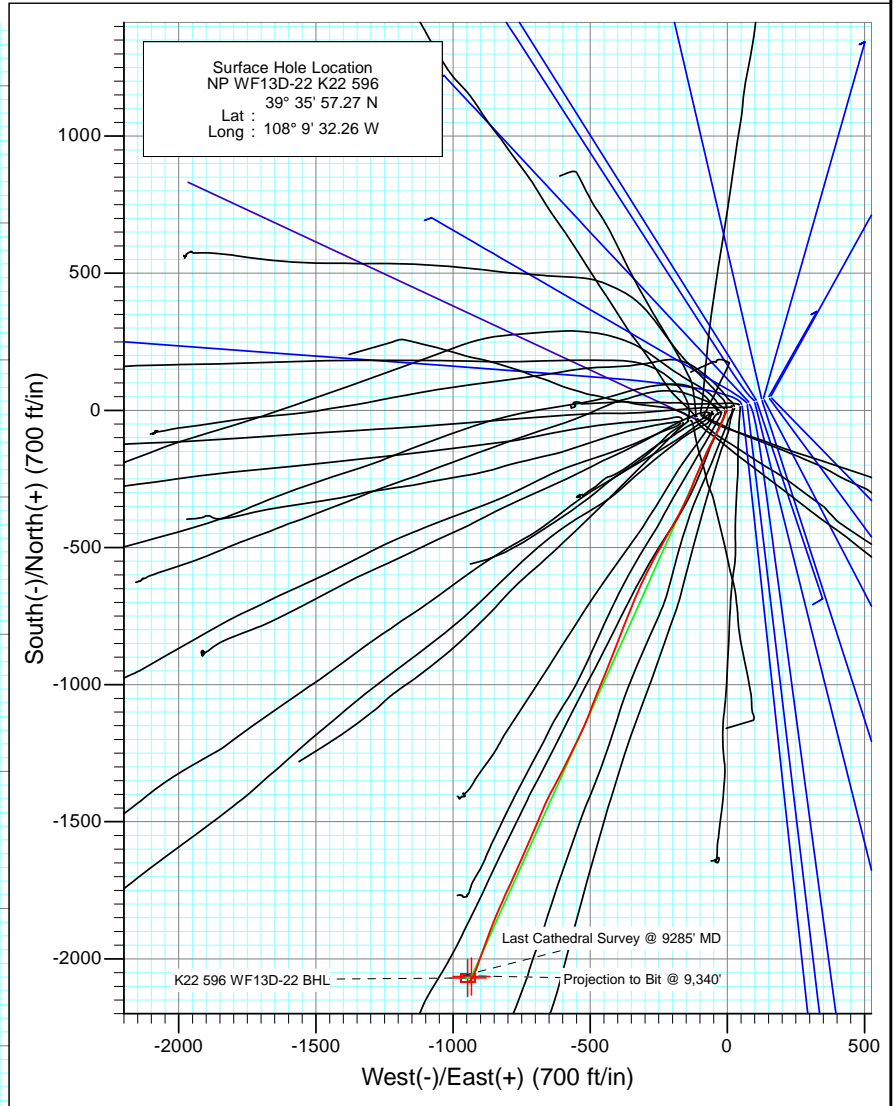
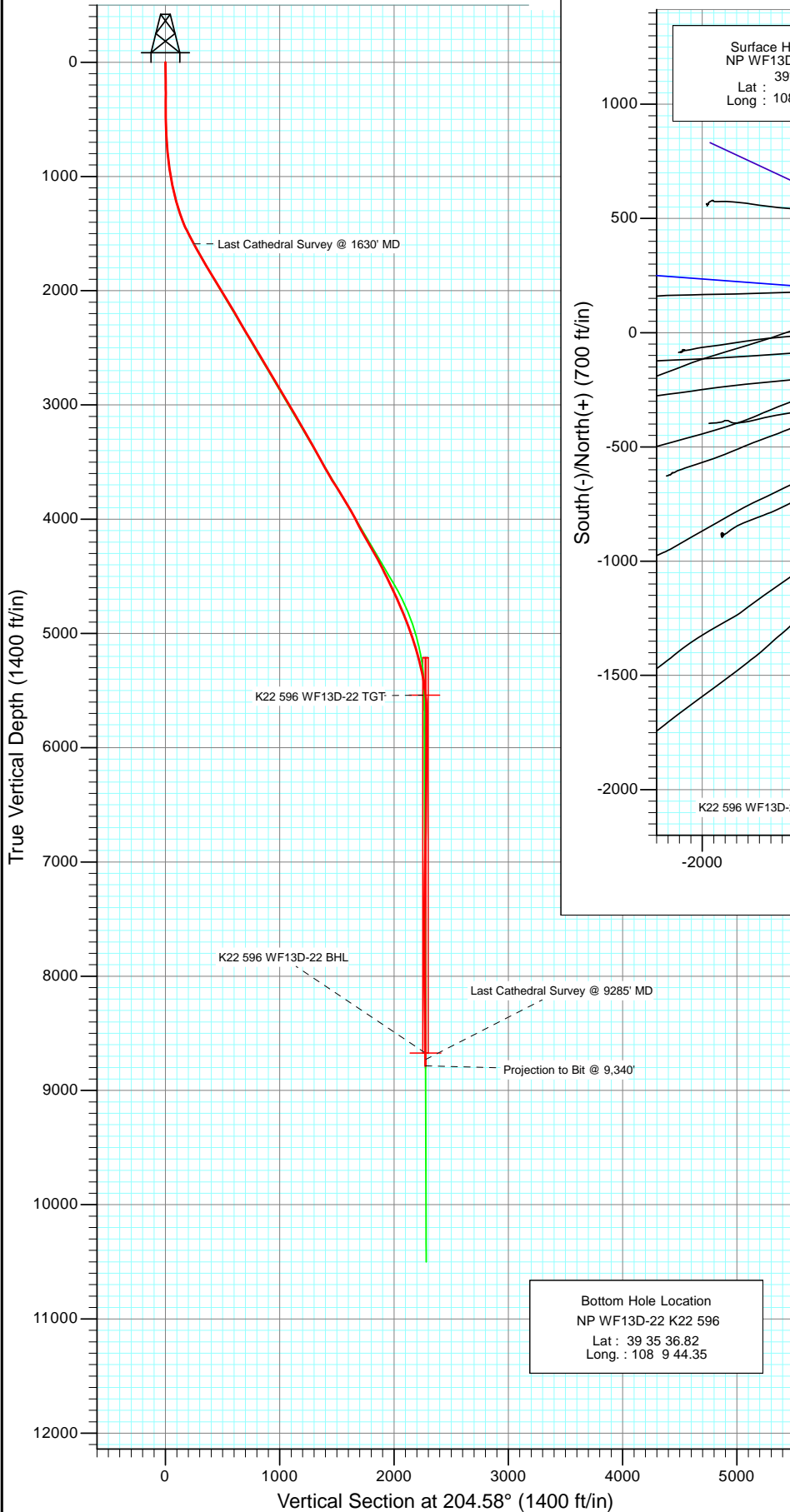




Project: North Piceance  
 Site: K22 596 Pad (S22-T5S-R96W)  
 Well: NP WF13D-22 K22 596  
 Wellbore: DD  
 Design: FINAL



Azimuths to True North  
 Magnetic North: 10.59°  
 Magnetic Field  
 Strength: 52394.8snT  
 Dip Angle: 65.82°  
 Date: 4/27/2010  
 Model: IGRF2010

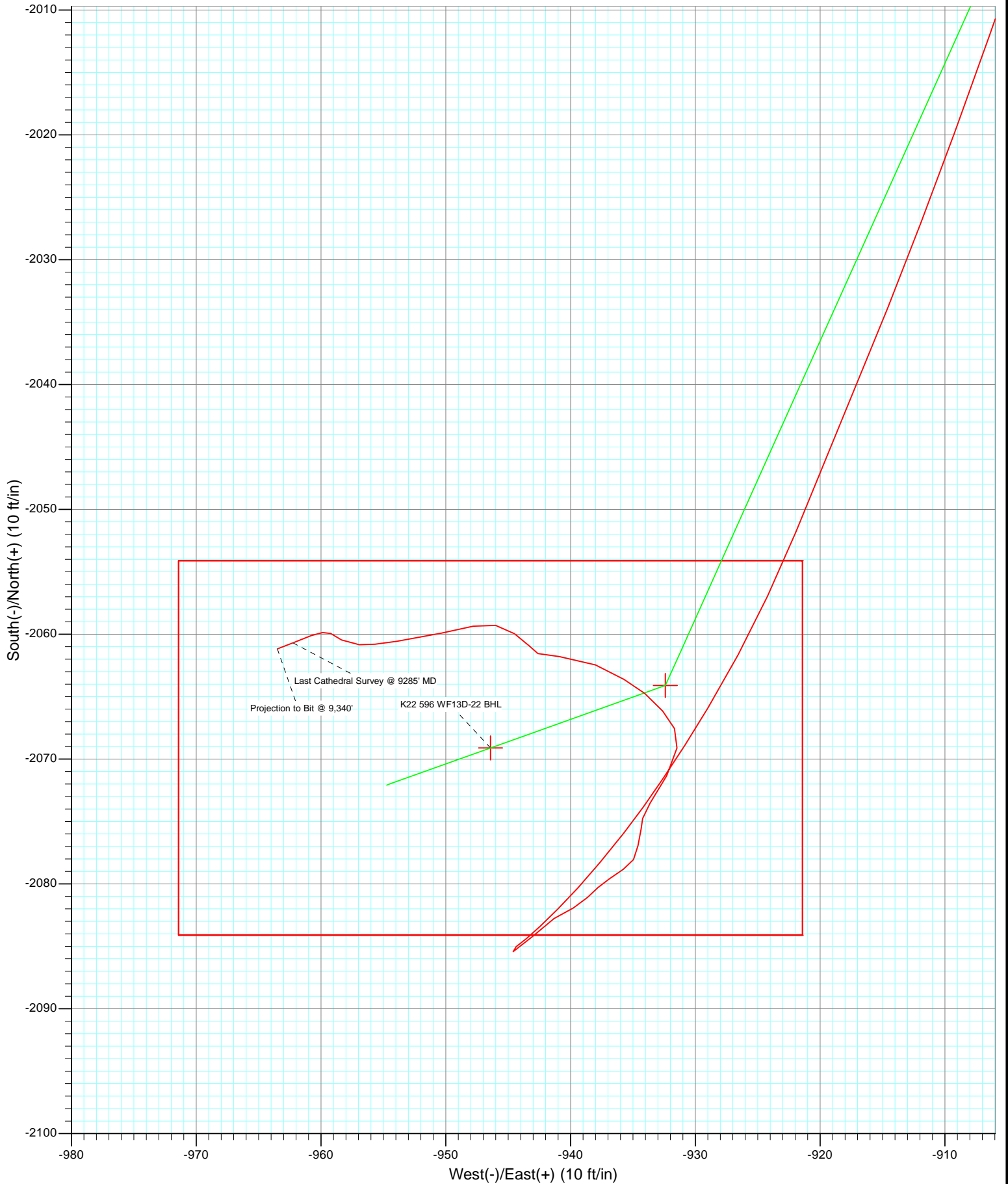
DESIGN DETAILS: DD

105135, 105185; LR  
 Well @ 6549.0ft (Patterson 303)

Target	Azimuth	Origin	N/S	E/W	From TVD
K22 596 WF13D-22 BHL	204.58	Slot	0.0	0.0	0.0



Project: North Piceance  
Site: K22 596 Pad (S22-T5S-R96W)  
Well: NP WF13D-22 K22 596  
Wellbore: DD  
Design: DD



# Cathedral Energy Services

## Survey Report

<b>Company:</b> EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b> Well NP WF13D-22 K22 596
<b>Project:</b> North Piceance	<b>TVD Reference:</b> Well @ 6549.0ft (Patterson 303)
<b>Site:</b> K22 596 Pad (S22-T5S-R96W)	<b>MD Reference:</b> Well @ 6549.0ft (Patterson 303)
<b>Well:</b> NP WF13D-22 K22 596	<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		

<b>Site</b> K22 596 Pad (S22-T5S-R96W)					
<b>Site Position:</b>	<b>Northing:</b> 1,654,096.85 ft	<b>Latitude:</b> 39° 35' 57.02 N			
<b>From:</b> Lat/Long	<b>Easting:</b> 2,250,762.90 ft	<b>Longitude:</b> 108° 9' 33.39 W			
<b>Position Uncertainty:</b> 0.0 ft	<b>Slot Radius:</b> 0.000 in	<b>Grid Convergence:</b> -1.68 °			

<b>Well</b> NP WF13D-22 K22 596					
<b>Well Position</b>	<b>+N/-S</b> 0.0 ft	<b>Northing:</b> 1,654,119.60 ft	<b>Latitude:</b> 39° 35' 57.27 N		
	<b>+E/-W</b> 0.0 ft	<b>Easting:</b> 2,250,852.06 ft	<b>Longitude:</b> 108° 9' 32.26 W		
<b>Position Uncertainty</b>	0.0 ft	<b>Wellhead Elevation:</b> ft	<b>Ground Level:</b> 6,527.0 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	4/27/2010	10.58	65.82	52,395

<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) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>	
	0.0	0.0	0.0	204.58	

<b>Survey Program</b> Date 9/15/2011					
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
174.0	1,630.0	Survey #1 (DD)	MWD	Geolink MWD	
1,706.0	9,340.0	Survey #2 (DD)	MWD	Geolink MWD	

<b>Survey</b>									
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	
174.0	0.80	244.20	174.0	-0.5	-1.1	0.9	0.46	0.46	
235.0	0.80	227.50	235.0	-1.0	-1.8	1.7	0.38	0.00	
266.0	0.90	230.20	266.0	-1.3	-2.1	2.1	0.35	0.32	
296.0	0.80	225.10	296.0	-1.6	-2.5	2.5	0.42	-0.33	
327.0	0.60	232.50	327.0	-1.9	-2.7	2.8	0.71	-0.65	
358.0	0.20	196.60	358.0	-2.0	-2.9	3.0	1.46	-1.29	
389.0	0.10	244.50	389.0	-2.1	-2.9	3.1	0.49	-0.32	
419.0	0.10	56.00	419.0	-2.1	-2.9	3.1	0.66	0.00	
512.0	0.10	318.40	512.0	-2.0	-2.9	3.0	0.16	0.00	
557.0	0.70	187.00	557.0	-2.2	-3.0	3.2	1.71	1.33	
603.0	1.90	194.10	603.0	-3.2	-3.2	4.3	2.63	2.61	

# Cathedral Energy Services

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well NP WF13D-22 K22 596
<b>Project:</b>	North Piceance	<b>TVD Reference:</b>	Well @ 6549.0ft (Patterson 303)
<b>Site:</b>	K22 596 Pad (S22-T5S-R96W)	<b>MD Reference:</b>	Well @ 6549.0ft (Patterson 303)
<b>Well:</b>	NP WF13D-22 K22 596	<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
649.0	3.60	200.20	648.9	-5.3	-3.9	6.5	3.74	3.70	
695.0	4.40	204.70	694.8	-8.3	-5.1	9.7	1.87	1.74	
741.0	5.60	206.20	740.6	-11.9	-6.9	13.7	2.62	2.61	
787.0	6.30	209.00	786.4	-16.1	-9.1	18.4	1.65	1.52	
833.0	6.90	205.70	832.1	-20.8	-11.5	23.7	1.54	1.30	
878.0	7.40	203.80	876.7	-25.9	-13.8	29.3	1.23	1.11	
924.0	8.00	202.90	922.3	-31.6	-16.3	35.5	1.33	1.30	
970.0	8.50	200.60	967.8	-37.7	-18.7	42.1	1.30	1.09	
1,016.0	9.60	200.50	1,013.3	-44.5	-21.3	49.3	2.39	2.39	
1,062.0	10.90	201.60	1,058.5	-52.1	-24.2	57.4	2.86	2.83	
1,108.0	12.00	204.80	1,103.6	-60.5	-27.8	66.6	2.76	2.39	
1,156.0	12.70	207.30	1,150.5	-69.7	-32.3	76.8	1.83	1.46	
1,202.0	14.20	209.10	1,195.2	-79.1	-37.4	87.5	3.39	3.26	
1,248.0	15.20	208.60	1,239.7	-89.4	-43.0	99.1	2.19	2.17	
1,294.0	17.30	208.20	1,283.9	-100.7	-49.1	112.0	4.57	4.57	
1,340.0	19.10	206.90	1,327.6	-113.4	-55.8	126.3	4.01	3.91	
1,386.0	21.20	206.90	1,370.8	-127.5	-62.9	142.2	4.57	4.57	
1,431.0	23.00	205.00	1,412.5	-142.8	-70.3	159.1	4.30	4.00	
1,477.0	25.00	204.20	1,454.5	-159.8	-78.1	177.8	4.40	4.35	
1,523.0	27.00	204.30	1,495.8	-178.2	-86.4	198.0	4.35	4.35	
1,569.0	28.10	204.00	1,536.6	-197.6	-95.1	219.2	2.41	2.39	
1,615.0	28.80	203.30	1,577.0	-217.7	-103.9	241.1	1.69	1.52	
1,630.0	29.00	203.00	1,590.2	-224.3	-106.7	248.4	1.65	1.33	Last Cathedral Survey @ 1630' MD
1,706.0	29.70	202.50	1,656.4	-258.7	-121.1	285.6	0.98	0.92	
1,798.0	29.60	202.50	1,736.4	-300.7	-138.6	331.1	0.11	-0.11	
1,890.0	29.70	206.10	1,816.3	-342.2	-157.3	376.6	1.94	0.11	
1,981.0	32.50	209.70	1,894.3	-383.7	-179.3	423.5	3.69	3.08	
2,073.0	32.00	209.50	1,972.1	-426.4	-203.6	472.4	0.56	-0.54	
2,165.0	30.80	208.70	2,050.6	-468.2	-226.9	520.2	1.38	-1.30	
2,256.0	30.70	208.50	2,128.8	-509.1	-249.2	566.6	0.16	-0.11	
2,348.0	29.80	208.80	2,208.3	-549.8	-271.4	612.8	0.99	-0.98	
2,440.0	30.40	206.80	2,287.9	-590.6	-292.9	658.9	1.27	0.65	
2,531.0	31.20	205.70	2,366.0	-632.4	-313.5	705.5	1.08	0.88	
2,623.0	30.50	202.70	2,445.0	-675.4	-332.8	752.6	1.84	-0.76	
2,715.0	30.90	201.10	2,524.1	-719.0	-350.3	799.5	0.99	0.43	
2,807.0	30.10	202.10	2,603.4	-762.4	-367.5	846.2	1.03	-0.87	
2,898.0	31.10	200.30	2,681.7	-805.6	-384.3	892.4	1.49	1.10	
2,990.0	31.70	201.60	2,760.2	-850.3	-401.4	940.2	0.98	0.65	
3,082.0	30.70	201.60	2,838.9	-894.6	-419.0	987.8	1.09	-1.09	
3,173.0	30.60	203.20	2,917.2	-937.5	-436.6	1,034.2	0.90	-0.11	
3,265.0	29.50	201.60	2,996.9	-980.1	-454.2	1,080.2	1.48	-1.20	
3,357.0	31.60	202.20	3,076.1	-1,023.5	-471.6	1,126.9	2.31	2.28	
3,448.0	30.10	200.40	3,154.2	-1,067.0	-488.6	1,173.5	1.94	-1.65	
3,540.0	29.70	200.70	3,234.0	-1,109.9	-504.7	1,219.3	0.46	-0.43	
3,631.0	29.90	205.00	3,312.9	-1,151.5	-522.3	1,264.4	2.36	0.22	
3,723.0	28.40	206.10	3,393.3	-1,192.0	-541.6	1,309.2	1.73	-1.63	
3,815.0	29.10	205.10	3,473.9	-1,231.9	-560.7	1,353.5	0.92	0.76	
3,906.0	29.20	205.90	3,553.4	-1,271.9	-579.8	1,397.8	0.44	0.11	
3,998.0	30.60	207.40	3,633.2	-1,312.9	-600.4	1,443.6	1.73	1.52	
4,090.0	32.80	209.00	3,711.4	-1,355.5	-623.2	1,491.9	2.56	2.39	
4,181.0	31.60	207.00	3,788.5	-1,398.3	-646.0	1,540.3	1.76	-1.32	
4,273.0	31.00	204.00	3,867.1	-1,441.4	-666.6	1,588.0	1.82	-0.65	
4,364.0	27.80	202.90	3,946.3	-1,482.4	-684.4	1,632.7	3.57	-3.52	

# Cathedral Energy Services

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well NP WF13D-22 K22 596
<b>Project:</b>	North Piceance	<b>TVD Reference:</b>	Well @ 6549.0ft (Patterson 303)
<b>Site:</b>	K22 596 Pad (S22-T5S-R96W)	<b>MD Reference:</b>	Well @ 6549.0ft (Patterson 303)
<b>Well:</b>	NP WF13D-22 K22 596	<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
4,455.0	27.80	202.60	4,026.8	-1,521.5	-700.8	1,675.1	0.15	0.00	
4,547.0	28.90	203.50	4,107.8	-1,561.7	-717.9	1,718.8	1.28	1.20	
4,639.0	30.60	203.80	4,187.7	-1,603.5	-736.2	1,764.4	1.85	1.85	
4,730.0	29.50	204.90	4,266.4	-1,645.0	-755.0	1,810.0	1.35	-1.21	
4,822.0	28.00	202.60	4,347.1	-1,685.5	-772.8	1,854.2	2.03	-1.63	
4,913.0	27.20	205.30	4,427.7	-1,724.0	-789.9	1,896.4	1.63	-0.88	
5,005.0	26.00	204.50	4,510.0	-1,761.4	-807.3	1,937.6	1.36	-1.30	
5,097.0	25.20	204.20	4,593.0	-1,797.6	-823.7	1,977.3	0.88	-0.87	
5,188.0	24.20	201.80	4,675.6	-1,832.6	-838.5	2,015.3	1.56	-1.10	
5,280.0	23.60	202.10	4,759.8	-1,867.2	-852.5	2,052.6	0.67	-0.65	
5,372.0	22.90	201.60	4,844.3	-1,900.9	-866.0	2,088.8	0.79	-0.76	
5,463.0	20.20	198.60	4,928.9	-1,932.2	-877.5	2,122.1	3.20	-2.97	
5,555.0	19.20	201.10	5,015.5	-1,961.4	-888.0	2,153.0	1.42	-1.09	
5,647.0	16.70	199.60	5,103.1	-1,988.0	-897.9	2,181.3	2.76	-2.72	
5,738.0	15.90	199.40	5,190.4	-2,012.0	-906.4	2,206.8	0.88	-0.88	
5,830.0	13.40	201.80	5,279.4	-2,033.8	-914.6	2,230.0	2.80	-2.72	
5,922.0	11.00	202.80	5,369.3	-2,051.8	-921.9	2,249.4	2.62	-2.61	
6,013.0	9.00	211.20	5,458.9	-2,065.9	-929.0	2,265.1	2.71	-2.20	
6,105.0	6.10	218.10	5,550.1	-2,075.9	-935.7	2,277.0	3.30	-3.15	
6,196.0	4.10	225.20	5,640.8	-2,082.0	-941.0	2,284.8	2.30	-2.20	
6,288.0	1.50	235.40	5,732.6	-2,085.0	-944.4	2,288.9	2.87	-2.83	
6,380.0	1.00	69.50	5,824.6	-2,085.4	-944.6	2,289.4	2.70	-0.54	
6,471.0	1.50	39.90	5,915.6	-2,084.2	-943.1	2,287.7	0.88	0.55	
6,563.0	1.40	61.90	6,007.6	-2,082.8	-941.3	2,285.6	0.61	-0.11	
6,655.0	0.80	59.70	6,099.6	-2,081.9	-939.8	2,284.2	0.65	-0.65	
6,746.0	1.00	48.10	6,190.6	-2,081.1	-938.6	2,282.9	0.30	0.22	
6,838.0	0.40	43.30	6,282.6	-2,080.3	-937.8	2,281.9	0.65	-0.65	
6,930.0	1.00	56.20	6,374.5	-2,079.6	-936.9	2,280.9	0.67	0.65	
7,021.0	0.80	54.40	6,465.5	-2,078.8	-935.8	2,279.7	0.22	-0.22	
7,113.0	0.60	35.10	6,557.5	-2,078.0	-935.0	2,278.6	0.33	-0.22	
7,205.0	0.90	6.90	6,649.5	-2,076.9	-934.6	2,277.5	0.51	0.33	
7,296.0	0.80	15.30	6,740.5	-2,075.6	-934.3	2,276.2	0.18	-0.11	
7,388.0	0.30	347.00	6,832.5	-2,074.8	-934.2	2,275.4	0.60	-0.54	
7,479.0	1.50	33.20	6,923.5	-2,073.5	-933.6	2,274.0	1.44	1.32	
7,571.0	1.70	29.60	7,015.5	-2,071.3	-932.3	2,271.4	0.24	0.22	
7,663.0	1.30	7.80	7,107.4	-2,069.1	-931.5	2,269.1	0.75	-0.43	
7,754.0	0.80	327.60	7,198.4	-2,067.6	-931.7	2,267.7	0.95	-0.55	
7,846.0	1.30	325.60	7,290.4	-2,066.2	-932.6	2,266.9	0.54	0.54	
7,937.0	1.30	303.10	7,381.4	-2,064.7	-934.1	2,266.2	0.56	0.00	
8,029.0	1.20	304.60	7,473.3	-2,063.6	-935.7	2,265.8	0.11	-0.11	
8,121.0	2.00	292.60	7,565.3	-2,062.5	-938.0	2,265.7	0.94	0.87	
8,212.0	1.80	272.60	7,656.3	-2,061.8	-940.9	2,266.3	0.76	-0.22	
8,304.0	0.40	301.60	7,748.2	-2,061.5	-942.6	2,266.8	1.59	-1.52	
8,395.0	0.80	315.90	7,839.2	-2,060.9	-943.3	2,266.6	0.47	0.44	
8,487.0	1.10	304.80	7,931.2	-2,060.0	-944.5	2,266.2	0.38	0.33	
8,579.0	1.00	282.40	8,023.2	-2,059.3	-946.0	2,266.2	0.46	-0.11	
8,671.0	1.30	256.70	8,115.2	-2,059.4	-947.8	2,267.0	0.64	0.33	
8,762.0	2.00	258.20	8,206.2	-2,059.9	-950.4	2,268.6	0.77	0.77	
8,854.0	2.50	260.60	8,298.1	-2,060.6	-953.9	2,270.6	0.55	0.54	
8,946.0	1.30	273.60	8,390.0	-2,060.8	-956.9	2,272.1	1.38	-1.30	
9,038.0	0.60	309.60	8,482.0	-2,060.5	-958.4	2,272.4	0.96	-0.76	
9,129.0	0.70	293.40	8,573.0	-2,059.9	-959.2	2,272.3	0.23	0.11	
9,221.0	1.40	248.80	8,665.0	-2,060.1	-960.8	2,273.1	1.12	0.76	

# Cathedral Energy Services

## Survey Report

<b>Company:</b> EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b> Well NP WF13D-22 K22 596
<b>Project:</b> North Piceance	<b>TVD Reference:</b> Well @ 6549.0ft (Patterson 303)
<b>Site:</b> K22 596 Pad (S22-T5S-R96W)	<b>MD Reference:</b> Well @ 6549.0ft (Patterson 303)
<b>Well:</b> NP WF13D-22 K22 596	<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
9,285.0	1.40	248.60	8,729.0	-2,060.7	-962.2	2,274.2	0.01	0.00	Last Cathedral Survey @ 9285' MD
9,340.0	1.40	248.60	8,784.0	-2,061.2	-963.5	2,275.2	0.00	0.00	Projection to Bit @ 9,340'

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
K22 596 WF13D-22 BHL - hit/miss target - Shape	0.00	0.00	8,672.0	-2,069.1	-946.4	1,652,079.08	2,249,845.50	39° 35' 36.82 N	108° 9' 44.35 W
- actual wellpath misses target center by 17.1ft at 9227.8ft MD (8671.7 TVD, -2060.2 N, -960.9 E)									
- Rectangle (sides W30.0 H50.0 D0.0)									
K22 596 WF13D-22 TG <sup>-</sup> - hit/miss target - Shape	0.00	0.00	5,540.0	-2,064.1	-932.4	1,652,083.67	2,249,859.65	39° 35' 36.87 N	108° 9' 44.17 W
- actual wellpath misses target center by 11.2ft at 6093.4ft MD (5538.6 TVD, -2074.9 N, -935.0 E)									
- Point									

Design Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
1,630.0	1,590.2	-224.3	-106.7	Last Cathedral Survey @ 1630' MD	
9,285.0	8,729.0	-2,060.7	-962.2	Last Cathedral Survey @ 9285' MD	
9,340.0	8,784.0	-2,061.2	-963.5	Projection to Bit @ 9,340'	

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