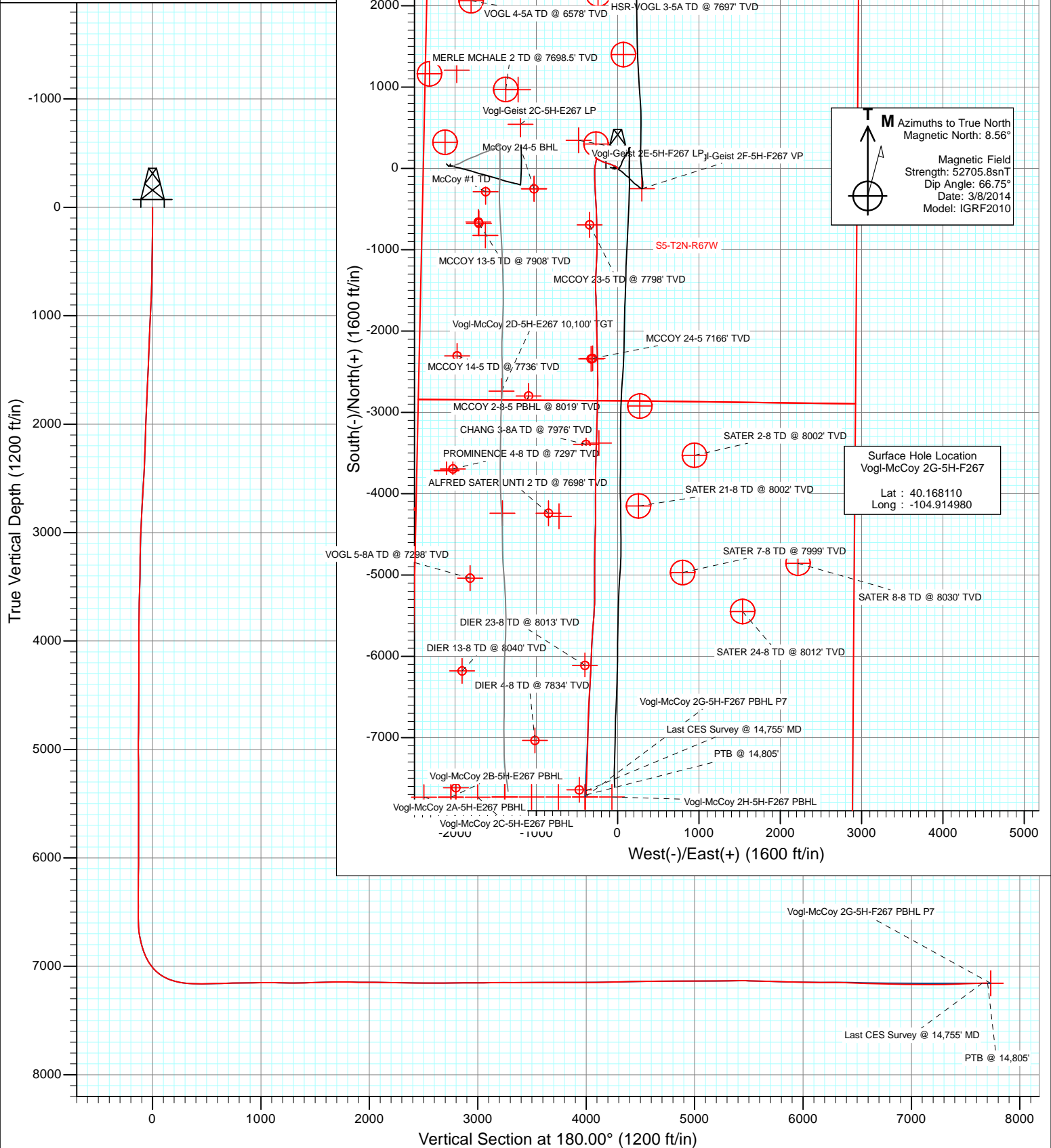




Project: DJ Wattenberg
Site: S5-T2N-R67W (Vogl-McCoy)
Well: Vogl-McCoy 2G-5H-F267
Wellbore: Hz
Design: FINAL

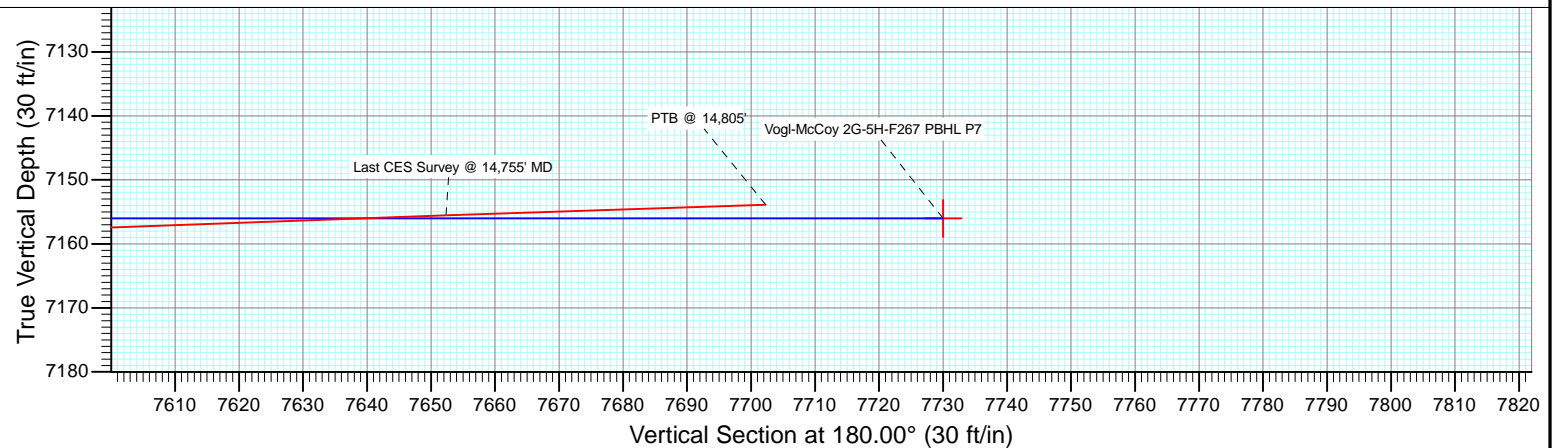
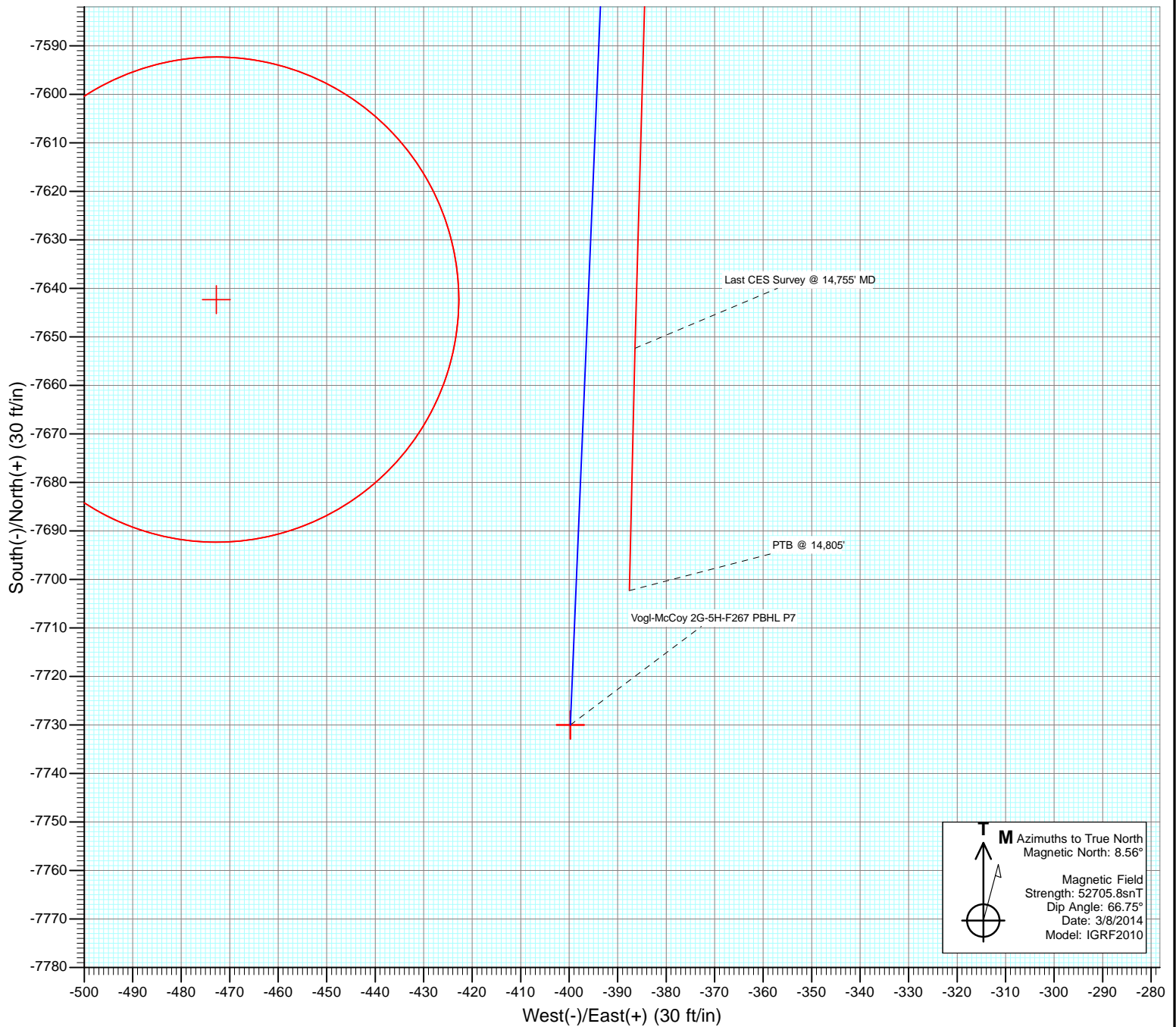


FINAL
Vogl-McCoy 2G-5H-F267
295955 145029; 296755 145058LR
KB @ 4889.0ft (H&P 278)
Ground Elevation @ 4859.0
North American Datum 1983
Well Vogl-McCoy 2G-5H-F267, True North





Project: DJ Wattenberg
Site: S5-T2N-R67W (Vogl-McCoy)
Well: Vogl-McCoy 2G-5H-F267
Wellbore: Hz
Design: FINAL



Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-McCoy 2G-5H-F267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4889.0ft (H&P 278)
Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4889.0ft (H&P 278)
Well:	Vogl-McCoy 2G-5H-F267	North Reference:	True
Wellbore:	Hz	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users DB

Project	DJ Wattenberg		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site		S5-T2N-R67W (Vogl-McCoy)			
Site Position:		Northing:	1,303,967.76 ft	Latitude:	40.166330
From:	Lat/Long	Easting:	3,161,787.74 ft	Longitude:	-104.921110
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	0.37 °

Well	Vogl-McCoy 2G-5H-F267					
Well Position	+N/-S	0.0 ft	Northing:	1,304,627.36 ft	Latitude:	40.168110
	+E/-W	0.0 ft	Easting:	3,163,496.58 ft	Longitude:	-104.914980
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,859.0 ft

Wellbore	Hz				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	3/8/2014	8.56	66.75	52,706

Design	FINAL				
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	180.00	

Survey Program	Date	3/28/2014			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
143.0	14,805.0	Survey #1 (Hz)	Geolink 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		
143.0	0.40	302.50	143.0	0.3	-0.4	-0.3	0.28	0.28		
266.0	0.80	318.40	266.0	1.1	-1.4	-1.1	0.35	0.33		
327.0	0.90	318.10	327.0	1.8	-2.0	-1.8	0.16	0.16		
419.0	0.90	335.20	419.0	3.0	-2.7	-3.0	0.29	0.00		
511.0	1.00	330.40	511.0	4.4	-3.4	-4.4	0.14	0.11		
603.0	0.90	316.00	602.9	5.6	-4.3	-5.6	0.28	-0.11		
695.0	1.90	316.00	694.9	7.2	-5.9	-7.2	1.09	1.09		
817.0	3.30	317.40	816.8	11.2	-9.7	-11.2	1.15	1.15		
919.0	3.70	315.60	918.6	15.8	-14.0	-15.8	0.41	0.39		
1,011.0	4.50	308.70	1,010.4	20.1	-18.9	-20.1	1.02	0.87		
1,103.0	5.70	299.90	1,102.0	24.7	-25.6	-24.7	1.55	1.30		
1,195.0	6.60	290.30	1,193.5	28.8	-34.6	-28.8	1.48	0.98		

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-McCoy 2G-5H-F267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4889.0ft (H&P 278)
Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4889.0ft (H&P 278)
Well:	Vogl-McCoy 2G-5H-F267	North Reference:	True
Wellbore:	Hz	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
1,287.0	5.80	289.20	1,284.9	32.1	-43.9	-32.1	0.88	-0.87	
1,379.0	6.20	289.50	1,376.4	35.3	-53.0	-35.3	0.44	0.43	
1,471.0	6.80	290.20	1,467.8	38.9	-62.8	-38.9	0.66	0.65	
1,562.0	6.60	300.50	1,558.2	43.4	-72.3	-43.4	1.34	-0.22	
1,654.0	6.40	290.30	1,649.6	47.8	-81.7	-47.8	1.27	-0.22	
1,746.0	8.00	290.00	1,740.9	51.8	-92.5	-51.8	1.74	1.74	
1,838.0	7.80	289.60	1,832.0	56.1	-104.4	-56.1	0.23	-0.22	
1,930.0	6.30	283.20	1,923.3	59.3	-115.2	-59.3	1.84	-1.63	
2,022.0	7.30	289.10	2,014.7	62.4	-125.7	-62.4	1.32	1.09	
2,114.0	6.40	280.20	2,106.0	65.2	-136.2	-65.2	1.51	-0.98	
2,206.0	7.30	288.20	2,197.4	68.0	-146.8	-68.0	1.42	0.98	
2,300.0	6.90	288.60	2,290.7	71.6	-157.9	-71.6	0.43	-0.43	
2,395.0	7.30	291.20	2,384.9	75.6	-168.9	-75.6	0.54	0.42	
2,490.0	8.10	296.00	2,479.1	80.7	-180.5	-80.7	1.08	0.84	
2,584.0	7.20	293.00	2,572.2	86.0	-191.9	-86.0	1.05	-0.96	
2,679.0	7.60	293.50	2,666.4	90.8	-203.2	-90.8	0.43	0.42	
2,773.0	7.30	300.80	2,759.6	96.3	-214.0	-96.3	1.06	-0.32	
2,868.0	5.80	301.10	2,854.0	101.9	-223.3	-101.9	1.58	-1.58	
2,963.0	5.00	298.80	2,948.6	106.4	-231.0	-106.4	0.87	-0.84	
3,058.0	4.30	299.70	3,043.3	110.1	-237.7	-110.1	0.74	-0.74	
3,153.0	3.10	292.10	3,138.1	112.9	-243.2	-112.9	1.36	-1.26	
3,247.0	2.30	282.10	3,232.0	114.2	-247.4	-114.2	0.98	-0.85	
3,342.0	2.20	277.30	3,326.9	114.8	-251.1	-114.8	0.22	-0.11	
3,437.0	2.50	302.40	3,421.8	116.2	-254.6	-116.2	1.12	0.32	
3,532.0	2.20	307.70	3,516.8	118.4	-257.8	-118.4	0.39	-0.32	
3,627.0	2.20	316.40	3,611.7	120.8	-260.5	-120.8	0.35	0.00	
3,721.0	1.70	343.80	3,705.6	123.5	-262.2	-123.5	1.11	-0.53	
3,815.0	1.70	56.40	3,799.6	125.6	-261.4	-125.6	2.14	0.00	
3,910.0	0.50	193.70	3,894.6	126.0	-260.3	-126.0	2.21	-1.26	
4,004.0	0.60	237.80	3,988.6	125.3	-260.8	-125.3	0.45	0.11	
4,099.0	0.80	327.20	4,083.6	125.6	-261.6	-125.6	1.05	0.21	
4,193.0	1.20	273.90	4,177.6	126.2	-263.0	-126.2	1.03	0.43	
4,288.0	0.30	117.50	4,272.6	126.2	-263.7	-126.2	1.56	-0.95	
4,382.0	0.10	309.80	4,366.6	126.1	-263.6	-126.1	0.42	-0.21	
4,477.0	0.30	23.10	4,461.6	126.4	-263.5	-126.4	0.30	0.21	
4,571.0	0.50	21.10	4,555.6	127.0	-263.3	-127.0	0.21	0.21	
4,665.0	0.50	19.20	4,649.6	127.8	-263.0	-127.8	0.02	0.00	
4,760.0	0.60	3.70	4,744.6	128.7	-262.8	-128.7	0.19	0.11	
4,855.0	0.60	356.50	4,839.5	129.7	-262.8	-129.7	0.08	0.00	
4,949.0	0.90	351.60	4,933.5	130.9	-263.0	-130.9	0.33	0.32	
5,044.0	0.90	220.70	5,028.5	131.0	-263.6	-131.0	1.72	0.00	
5,138.0	0.90	220.10	5,122.5	129.9	-264.5	-129.9	0.01	0.00	
5,233.0	1.40	246.20	5,217.5	128.9	-266.1	-128.9	0.75	0.53	
5,327.0	0.90	359.60	5,311.5	129.2	-267.1	-129.2	2.07	-0.53	
5,422.0	0.80	155.70	5,406.5	129.3	-266.9	-129.3	1.75	-0.11	
5,516.0	0.50	240.70	5,500.5	128.5	-266.9	-128.5	0.96	-0.32	
5,611.0	1.70	294.20	5,595.5	128.9	-268.6	-128.9	1.54	1.26	
5,705.0	0.20	123.70	5,689.5	129.4	-269.7	-129.4	2.02	-1.60	
5,800.0	0.40	116.50	5,784.5	129.1	-269.3	-129.1	0.21	0.21	
5,894.0	0.60	107.30	5,878.4	128.8	-268.5	-128.8	0.23	0.21	
5,989.0	0.50	59.40	5,973.4	128.9	-267.7	-128.9	0.48	-0.11	
6,084.0	0.60	37.60	6,068.4	129.5	-267.0	-129.5	0.24	0.11	
6,178.0	0.50	16.40	6,162.4	130.3	-266.6	-130.3	0.24	-0.11	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-McCoy 2G-5H-F267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4889.0ft (H&P 278)
Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4889.0ft (H&P 278)
Well:	Vogl-McCoy 2G-5H-F267	North Reference:	True
Wellbore:	Hz	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
6,273.0	0.50	0.60	6,257.4	131.1	-266.5	-131.1	0.14	0.00	
6,368.0	0.70	115.30	6,352.4	131.3	-266.0	-131.3	1.07	0.21	
6,463.0	0.20	39.00	6,447.4	131.1	-265.3	-131.1	0.72	-0.53	
6,557.0	0.40	6.60	6,541.4	131.6	-265.2	-131.6	0.27	0.21	
6,652.0	3.40	171.20	6,636.4	129.1	-264.7	-129.1	3.99	3.16	
6,700.0	7.60	171.50	6,684.1	124.6	-264.0	-124.6	8.75	8.75	
6,747.0	11.00	174.60	6,730.5	117.0	-263.2	-117.0	7.31	7.23	
6,795.0	13.70	180.20	6,777.4	106.8	-262.8	-106.8	6.15	5.62	
6,842.0	16.60	191.50	6,822.8	94.7	-264.1	-94.7	8.78	6.17	
6,890.0	20.40	191.70	6,868.3	79.7	-267.2	-79.7	7.92	7.92	
6,937.0	25.00	193.00	6,911.6	62.0	-271.1	-62.0	9.84	9.79	
6,984.0	31.10	191.50	6,953.1	40.4	-275.7	-40.4	13.06	12.98	
7,031.0	36.50	187.30	6,992.1	14.7	-279.9	-14.7	12.51	11.49	
7,079.0	43.30	182.80	7,029.0	-16.0	-282.6	16.0	15.38	14.17	
7,126.0	50.70	180.40	7,061.0	-50.3	-283.5	50.3	16.18	15.74	
7,173.0	58.50	179.60	7,088.2	-88.6	-283.5	88.6	16.65	16.60	
7,220.0	65.60	178.20	7,110.2	-130.1	-282.6	130.1	15.33	15.11	
7,268.0	71.20	177.60	7,127.9	-174.7	-281.0	174.7	11.72	11.67	
7,315.0	76.40	177.20	7,141.0	-219.7	-279.0	219.7	11.09	11.06	
7,363.0	80.40	177.00	7,150.6	-266.7	-276.6	266.7	8.34	8.33	
7,377.0	82.20	176.70	7,152.7	-280.5	-275.8	280.5	13.03	12.86	
7,456.0	87.80	176.70	7,159.6	-359.0	-271.3	359.0	7.09	7.09	
7,550.0	89.70	177.00	7,161.7	-452.9	-266.1	452.9	2.05	2.02	
7,645.0	91.40	178.30	7,160.8	-547.8	-262.2	547.8	2.25	1.79	
7,739.0	92.10	178.70	7,157.9	-641.7	-259.8	641.7	0.86	0.74	
7,834.0	92.10	178.30	7,154.4	-736.6	-257.3	736.6	0.42	0.00	
7,928.0	90.30	178.60	7,152.4	-830.6	-254.7	830.6	1.94	-1.91	
8,023.0	90.50	179.80	7,151.8	-925.5	-253.4	925.5	1.28	0.21	
8,118.0	90.50	181.80	7,151.0	-1,020.5	-254.7	1,020.5	2.11	0.00	
8,212.0	89.50	183.30	7,151.0	-1,114.4	-258.9	1,114.4	1.92	-1.06	
8,307.0	89.00	182.80	7,152.2	-1,209.3	-264.0	1,209.3	0.74	-0.53	
8,401.0	88.90	182.70	7,153.9	-1,303.2	-268.5	1,303.2	0.15	-0.11	
8,494.0	91.90	180.10	7,153.3	-1,396.1	-270.8	1,396.1	4.27	3.23	
8,586.0	92.70	178.60	7,149.6	-1,488.0	-269.7	1,488.0	1.85	0.87	
8,679.0	91.00	178.90	7,146.6	-1,580.9	-267.7	1,580.9	1.86	-1.83	
8,771.0	91.00	177.70	7,145.0	-1,672.9	-265.0	1,672.9	1.30	0.00	
8,863.0	89.50	178.10	7,144.6	-1,764.8	-261.6	1,764.8	1.69	-1.63	
8,955.0	88.40	178.50	7,146.3	-1,856.8	-258.9	1,856.8	1.27	-1.20	
9,047.0	90.20	179.00	7,147.4	-1,948.7	-256.9	1,948.7	2.03	1.96	
9,139.0	89.90	179.10	7,147.3	-2,040.7	-255.3	2,040.7	0.34	-0.33	
9,231.0	88.60	179.70	7,148.5	-2,132.7	-254.4	2,132.7	1.56	-1.41	
9,323.0	88.80	179.00	7,150.6	-2,224.7	-253.3	2,224.7	0.79	0.22	
9,415.0	90.00	178.00	7,151.6	-2,316.6	-250.9	2,316.6	1.70	1.30	
9,507.0	88.60	178.10	7,152.7	-2,408.6	-247.8	2,408.6	1.53	-1.52	
9,600.0	89.50	179.00	7,154.2	-2,501.5	-245.4	2,501.5	1.37	0.97	
9,692.0	90.20	179.50	7,154.5	-2,593.5	-244.2	2,593.5	0.94	0.76	
9,783.0	89.90	180.90	7,154.4	-2,684.5	-244.5	2,684.5	1.57	-0.33	
9,875.0	91.10	181.00	7,153.6	-2,776.5	-246.1	2,776.5	1.31	1.30	
9,967.0	90.70	181.30	7,152.1	-2,868.5	-247.9	2,868.5	0.54	-0.43	
10,059.0	90.10	181.60	7,151.5	-2,960.4	-250.2	2,960.4	0.73	-0.65	
10,151.0	89.60	181.40	7,151.7	-3,052.4	-252.7	3,052.4	0.59	-0.54	
10,243.0	91.30	182.10	7,151.0	-3,144.4	-255.5	3,144.4	2.00	1.85	
10,335.0	90.10	181.40	7,149.9	-3,236.3	-258.3	3,236.3	1.51	-1.30	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-McCoy 2G-5H-F267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4889.0ft (H&P 278)
Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4889.0ft (H&P 278)
Well:	Vogl-McCoy 2G-5H-F267	North Reference:	True
Wellbore:	Hz	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
10,427.0	89.10	181.40	7,150.5	-3,328.3	-260.5	3,328.3	1.09	-1.09	
10,519.0	90.50	182.10	7,150.9	-3,420.2	-263.3	3,420.2	1.70	1.52	
10,613.0	91.00	181.30	7,149.6	-3,514.2	-266.1	3,514.2	1.00	0.53	
10,708.0	90.30	181.50	7,148.5	-3,609.1	-268.4	3,609.1	0.77	-0.74	
10,803.0	89.40	181.10	7,148.8	-3,704.1	-270.6	3,704.1	1.04	-0.95	
10,897.0	90.50	180.50	7,148.9	-3,798.1	-271.9	3,798.1	1.33	1.17	
10,992.0	90.20	181.10	7,148.3	-3,893.1	-273.2	3,893.1	0.71	-0.32	
11,087.0	89.40	179.20	7,148.6	-3,988.1	-273.5	3,988.1	2.17	-0.84	
11,183.0	91.30	178.30	7,148.0	-4,084.1	-271.4	4,084.1	2.19	1.98	
11,277.0	91.00	180.60	7,146.2	-4,178.0	-270.5	4,178.0	2.47	-0.32	
11,372.0	91.20	180.00	7,144.3	-4,273.0	-271.0	4,273.0	0.67	0.21	
11,466.0	91.00	181.60	7,142.5	-4,367.0	-272.3	4,367.0	1.71	-0.21	
11,561.0	91.60	181.40	7,140.4	-4,461.9	-274.8	4,461.9	0.67	0.63	
11,656.0	90.70	181.50	7,138.5	-4,556.9	-277.2	4,556.9	0.95	-0.95	
11,750.0	90.40	181.60	7,137.6	-4,650.9	-279.7	4,650.9	0.34	-0.32	
11,845.0	90.80	181.90	7,136.6	-4,745.8	-282.6	4,745.8	0.53	0.42	
11,939.0	90.30	180.30	7,135.7	-4,839.8	-284.4	4,839.8	1.78	-0.53	
12,034.0	89.60	179.90	7,135.7	-4,934.8	-284.6	4,934.8	0.85	-0.74	
12,128.0	90.80	180.00	7,135.4	-5,028.8	-284.5	5,028.8	1.28	1.28	
12,223.0	89.40	179.20	7,135.3	-5,123.8	-283.9	5,123.8	1.70	-1.47	
12,317.0	90.40	179.70	7,135.4	-5,217.8	-282.9	5,217.8	1.19	1.06	
12,411.0	90.90	181.40	7,134.3	-5,311.8	-283.9	5,311.8	1.88	0.53	
12,506.0	91.00	183.00	7,132.8	-5,406.6	-287.5	5,406.6	1.69	0.11	
12,600.0	88.40	183.60	7,133.3	-5,500.5	-292.9	5,500.5	2.84	-2.77	
12,694.0	88.40	185.00	7,135.9	-5,594.2	-300.0	5,594.2	1.49	0.00	
12,789.0	88.60	185.10	7,138.4	-5,688.8	-308.3	5,688.8	0.24	0.21	
12,884.0	88.00	182.80	7,141.2	-5,783.5	-314.9	5,783.5	2.50	-0.63	
12,978.0	88.00	181.80	7,144.5	-5,877.4	-318.6	5,877.4	1.06	0.00	
13,073.0	89.70	182.60	7,146.4	-5,972.3	-322.3	5,972.3	1.98	1.79	
13,167.0	89.70	183.00	7,146.9	-6,066.2	-326.9	6,066.2	0.43	0.00	
13,262.0	89.10	182.50	7,147.9	-6,161.0	-331.4	6,161.0	0.82	-0.63	
13,356.0	90.20	182.80	7,148.4	-6,254.9	-335.8	6,254.9	1.21	1.17	
13,451.0	88.90	183.30	7,149.2	-6,349.8	-340.8	6,349.8	1.47	-1.37	
13,545.0	88.00	183.60	7,151.7	-6,443.6	-346.5	6,443.6	1.01	-0.96	
13,640.0	87.50	183.20	7,155.5	-6,538.4	-352.1	6,538.4	0.67	-0.53	
13,735.0	87.40	182.70	7,159.7	-6,633.1	-357.0	6,633.1	0.54	-0.11	
13,829.0	88.80	182.10	7,162.8	-6,727.0	-360.9	6,727.0	1.62	1.49	
13,924.0	89.00	181.40	7,164.6	-6,822.0	-363.8	6,822.0	0.77	0.21	
14,018.0	89.50	181.20	7,165.9	-6,915.9	-366.0	6,915.9	0.57	0.53	
14,113.0	89.10	180.70	7,167.0	-7,010.9	-367.5	7,010.9	0.67	-0.42	
14,207.0	89.70	181.60	7,168.0	-7,104.9	-369.4	7,104.9	1.15	0.64	
14,302.0	89.10	181.10	7,169.0	-7,199.9	-371.7	7,199.9	0.82	-0.63	
14,397.0	91.80	182.50	7,168.3	-7,294.8	-374.6	7,294.8	3.20	2.84	
14,492.0	92.10	182.10	7,165.0	-7,389.7	-378.4	7,389.7	0.53	0.32	
14,586.0	92.00	181.60	7,161.7	-7,483.5	-381.5	7,483.5	0.54	-0.11	
14,681.0	92.20	181.90	7,158.2	-7,578.4	-384.4	7,578.4	0.38	0.21	
14,755.0	91.90	181.30	7,155.5	-7,652.3	-386.4	7,652.3	0.91	-0.41	Last CES Survey @ 14,755' MD
14,805.0	91.90	181.30	7,153.9	-7,702.3	-387.6	7,702.3	0.00	0.00	PTB @ 14,805'

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-McCoy 2G-5H-F267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4889.0ft (H&P 278)
Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4889.0ft (H&P 278)
Well:	Vogl-McCoy 2G-5H-F267	North Reference:	True
Wellbore:	Hz	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users DB

Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
- Shape									
Interp @ 7166.0 (Vogl-M	0.00	0.00	7,166.0	-3,377.6	-230.0	1,301,248.29	3,163,288.87	40.158838	-104.915803
- actual wellpath misses target center by 35.2ft at 10475.5ft MD (7151.0 TVD, -3376.7 N, -261.9 E)									
- Point									
Vogl-McCoy 2G-5H-F26'	0.00	0.00	7,146.0	-7,730.0	-399.8	1,296,894.89	3,163,147.83	40.146890	-104.916410
- actual wellpath misses target center by 31.3ft at 14805.0ft MD (7153.9 TVD, -7702.3 N, -387.6 E)									
- Point									
Vogl-McCoy 2G-5H-F26'	0.00	0.00	7,166.0	-7,730.0	-399.8	1,296,894.89	3,163,147.83	40.146890	-104.916410
- actual wellpath misses target center by 32.6ft at 14805.0ft MD (7153.9 TVD, -7702.3 N, -387.6 E)									
- Point									
Vogl-McCoy 2G-5H-F26'	0.00	0.00	7,156.0	-7,730.0	-399.8	1,296,894.89	3,163,147.83	40.146890	-104.916410
- actual wellpath misses target center by 30.3ft at 14805.0ft MD (7153.9 TVD, -7702.3 N, -387.6 E)									
- Point									

Design Annotations					
Measured Depth	Vertical Depth	Local Coordinates			
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)	Comment	
14,755.0	7,155.5	-7,652.3	-386.4	Last CES Survey @ 14,755' MD	
14,805.0	7,153.9	-7,702.3	-387.6	PTB @ 14,805'	

Checked By: _____ Approved By: _____ Date: _____

EnCana Oil & Gas (USA) Inc

DJ Wattenberg

S5-T2N-R67W (Vogl-McCoy)

Vogl-McCoy 2G-5H-F267

Hz

Design: FINAL

Survey Report - Geographic

28 March, 2014

Cathedral Energy Services

Survey Report - Geographic

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-McCoy 2G-5H-F267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4889.0ft (H&P 278)
Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4889.0ft (H&P 278)
Well:	Vogl-McCoy 2G-5H-F267	North Reference:	True
Wellbore:	Hz	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users DB

Project	DJ Wattenberg		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site	S5-T2N-R67W (Vogl-McCoy)				
Site Position:		Northing:	1,303,967.76 ft	Latitude:	40.166330
From:	Lat/Long	Easting:	3,161,787.74 ft	Longitude:	-104.921110
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	0.37 °

Well	Vogl-McCoy 2G-5H-F267					
Well Position	+N/-S	0.0 ft	Northing:	1,304,627.36 ft	Latitude:	40.168110
	+E/-W	0.0 ft	Easting:	3,163,496.58 ft	Longitude:	-104.914980
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,859.0 ft

Wellbore	Hz				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	3/8/2014	8.56	66.75	52,706

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	180.00	

Survey Program	Date	3/28/2014			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
143.0	14,805.0	Survey #1 (Hz)	Geolink MWD	Geolink MWD	

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude	
0.0	0.00	0.00	0.0	0.0	0.0	1,304,627.36	3,163,496.58	40.168110	-104.914980	
143.0	0.40	302.50	143.0	0.3	-0.4	1,304,627.63	3,163,496.16	40.168111	-104.914982	
266.0	0.80	318.40	266.0	1.1	-1.4	1,304,628.49	3,163,495.22	40.168113	-104.914985	
327.0	0.90	318.10	327.0	1.8	-2.0	1,304,629.16	3,163,494.61	40.168115	-104.914987	
419.0	0.90	335.20	419.0	3.0	-2.7	1,304,630.35	3,163,493.82	40.168118	-104.914990	
511.0	1.00	330.40	511.0	4.4	-3.4	1,304,631.70	3,163,493.11	40.168122	-104.914993	
603.0	0.90	316.00	602.9	5.6	-4.3	1,304,632.91	3,163,492.21	40.168125	-104.914996	
695.0	1.90	316.00	694.9	7.2	-5.9	1,304,634.52	3,163,490.63	40.168130	-104.915001	
817.0	3.30	317.40	816.8	11.2	-9.7	1,304,638.54	3,163,486.83	40.168141	-104.915015	
919.0	3.70	315.60	918.6	15.8	-14.0	1,304,643.02	3,163,482.51	40.168153	-104.915030	
1,011.0	4.50	308.70	1,010.4	20.1	-18.9	1,304,647.37	3,163,477.58	40.168165	-104.915048	
1,103.0	5.70	299.90	1,102.0	24.7	-25.6	1,304,651.85	3,163,470.78	40.168178	-104.915072	

Cathedral Energy Services

Survey Report - Geographic

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-McCoy 2G-5H-F267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4889.0ft (H&P 278)
Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4889.0ft (H&P 278)
Well:	Vogl-McCoy 2G-5H-F267	North Reference:	True
Wellbore:	Hz	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)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude
1,195.0	6.60	290.30	1,193.5	28.8	-34.6	1,304,655.91	3,163,461.83	40.168189	-104.915104
1,287.0	5.80	289.20	1,284.9	32.1	-43.9	1,304,659.21	3,163,452.46	40.168198	-104.915137
1,379.0	6.20	289.50	1,376.4	35.3	-53.0	1,304,662.34	3,163,443.36	40.168207	-104.915170
1,471.0	6.80	290.20	1,467.8	38.9	-62.8	1,304,665.81	3,163,433.55	40.168217	-104.915205
1,562.0	6.60	300.50	1,558.2	43.4	-72.3	1,304,670.26	3,163,423.96	40.168229	-104.915239
1,654.0	6.40	290.30	1,649.6	47.8	-81.7	1,304,674.66	3,163,414.56	40.168241	-104.915273
1,746.0	8.00	290.00	1,740.9	51.8	-92.5	1,304,678.56	3,163,403.71	40.168252	-104.915311
1,838.0	7.80	289.60	1,832.0	56.1	-104.4	1,304,682.77	3,163,391.78	40.168264	-104.915354
1,930.0	6.30	283.20	1,923.3	59.3	-115.2	1,304,685.94	3,163,380.97	40.168273	-104.915393
2,022.0	7.30	289.10	2,014.7	62.4	-125.7	1,304,688.94	3,163,370.51	40.168281	-104.915430
2,114.0	6.40	280.20	2,106.0	65.2	-136.2	1,304,691.69	3,163,359.92	40.168289	-104.915468
2,206.0	7.30	288.20	2,197.4	68.0	-146.8	1,304,694.35	3,163,349.30	40.168297	-104.915506
2,300.0	6.90	288.60	2,290.7	71.6	-157.9	1,304,697.95	3,163,338.25	40.168307	-104.915545
2,395.0	7.30	291.20	2,384.9	75.6	-168.9	1,304,701.88	3,163,327.19	40.168318	-104.915585
2,490.0	8.10	296.00	2,479.1	80.7	-180.5	1,304,706.92	3,163,315.52	40.168332	-104.915626
2,584.0	7.20	293.00	2,572.2	86.0	-191.9	1,304,712.04	3,163,304.11	40.168346	-104.915667
2,679.0	7.60	293.50	2,666.4	90.8	-203.2	1,304,716.80	3,163,292.83	40.168359	-104.915707
2,773.0	7.30	300.80	2,759.6	96.3	-214.0	1,304,722.27	3,163,281.97	40.168374	-104.915746
2,868.0	5.80	301.10	2,854.0	101.9	-223.3	1,304,727.78	3,163,272.64	40.168390	-104.915779
2,963.0	5.00	298.80	2,948.6	106.4	-231.0	1,304,732.20	3,163,264.87	40.168402	-104.915807
3,058.0	4.30	299.70	3,043.3	110.1	-237.7	1,304,735.91	3,163,258.12	40.168412	-104.915831
3,153.0	3.10	292.10	3,138.1	112.9	-243.2	1,304,738.61	3,163,252.63	40.168420	-104.915851
3,247.0	2.30	282.10	3,232.0	114.2	-247.4	1,304,739.93	3,163,248.42	40.168423	-104.915866
3,342.0	2.20	277.30	3,326.9	114.8	-251.1	1,304,740.54	3,163,244.75	40.168425	-104.915879
3,437.0	2.50	302.40	3,421.8	116.2	-254.6	1,304,741.86	3,163,241.18	40.168429	-104.915891
3,532.0	2.20	307.70	3,516.8	118.4	-257.8	1,304,744.06	3,163,237.97	40.168435	-104.915903
3,627.0	2.20	316.40	3,611.7	120.8	-260.5	1,304,746.48	3,163,235.26	40.168442	-104.915913
3,721.0	1.70	343.80	3,705.6	123.5	-262.2	1,304,749.11	3,163,233.60	40.168449	-104.915918
3,815.0	1.70	56.40	3,799.6	125.6	-261.4	1,304,751.23	3,163,234.36	40.168455	-104.915916
3,910.0	0.50	193.70	3,894.6	126.0	-260.3	1,304,751.61	3,163,235.44	40.168456	-104.915912
4,004.0	0.60	237.80	3,988.6	125.3	-260.8	1,304,750.95	3,163,234.93	40.168454	-104.915914
4,099.0	0.80	327.20	4,083.6	125.6	-261.6	1,304,751.24	3,163,234.15	40.168455	-104.915916
4,193.0	1.20	273.90	4,177.6	126.2	-263.0	1,304,751.85	3,163,232.80	40.168456	-104.915921
4,288.0	0.30	117.50	4,272.6	126.2	-263.7	1,304,751.79	3,163,232.03	40.168456	-104.915924
4,382.0	0.10	309.80	4,366.6	126.1	-263.6	1,304,751.73	3,163,232.19	40.168456	-104.915923
4,477.0	0.30	23.10	4,461.6	126.4	-263.5	1,304,752.02	3,163,232.22	40.168457	-104.915923
4,571.0	0.50	21.10	4,555.6	127.0	-263.3	1,304,752.63	3,163,232.46	40.168459	-104.915922
4,665.0	0.50	19.20	4,649.6	127.8	-263.0	1,304,753.40	3,163,232.74	40.168461	-104.915921
4,760.0	0.60	3.70	4,744.6	128.7	-262.8	1,304,754.29	3,163,232.90	40.168463	-104.915921
4,855.0	0.60	356.50	4,839.5	129.7	-262.8	1,304,755.28	3,163,232.89	40.168466	-104.915921
4,949.0	0.90	351.60	4,933.5	130.9	-263.0	1,304,756.50	3,163,232.75	40.168469	-104.915921
5,044.0	0.90	220.70	5,028.5	131.0	-263.6	1,304,756.67	3,163,232.15	40.168470	-104.915923
5,138.0	0.90	220.10	5,122.5	129.9	-264.5	1,304,755.54	3,163,231.20	40.168467	-104.915927
5,233.0	1.40	246.20	5,217.5	128.9	-266.1	1,304,754.49	3,163,229.67	40.168464	-104.915932
5,327.0	0.90	359.60	5,311.5	129.2	-267.1	1,304,754.76	3,163,228.61	40.168465	-104.915936
5,422.0	0.80	155.70	5,406.5	129.3	-266.9	1,304,754.90	3,163,228.88	40.168465	-104.915935
5,516.0	0.50	240.70	5,500.5	128.5	-266.9	1,304,754.10	3,163,228.79	40.168463	-104.915935
5,611.0	1.70	294.20	5,595.5	128.9	-268.6	1,304,754.47	3,163,227.14	40.168464	-104.915941
5,705.0	0.20	123.70	5,689.5	129.4	-269.7	1,304,754.94	3,163,226.01	40.168465	-104.915945
5,800.0	0.40	116.50	5,784.5	129.1	-269.3	1,304,754.70	3,163,226.44	40.168464	-104.915944
5,894.0	0.60	107.30	5,878.4	128.8	-268.5	1,304,754.41	3,163,227.21	40.168464	-104.915941
5,989.0	0.50	59.40	5,973.4	128.9	-267.7	1,304,754.48	3,163,228.04	40.168464	-104.915938
6,084.0	0.60	37.60	6,068.4	129.5	-267.0	1,304,755.09	3,163,228.70	40.168465	-104.915936
6,178.0	0.50	16.40	6,162.4	130.3	-266.6	1,304,755.88	3,163,229.11	40.168468	-104.915934
6,273.0	0.50	0.60	6,257.4	131.1	-266.5	1,304,756.69	3,163,229.22	40.168470	-104.915934

Cathedral Energy Services

Survey Report - Geographic

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-McCoy 2G-5H-F267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4889.0ft (H&P 278)
Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4889.0ft (H&P 278)
Well:	Vogl-McCoy 2G-5H-F267	North Reference:	True
Wellbore:	Hz	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)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude
6,368.0	0.70	115.30	6,352.4	131.3	-266.0	1,304,756.86	3,163,229.75	40.168470	-104.915932
6,463.0	0.20	39.00	6,447.4	131.1	-265.3	1,304,756.75	3,163,230.38	40.168470	-104.915930
6,557.0	0.40	6.60	6,541.4	131.6	-265.2	1,304,757.20	3,163,230.52	40.168471	-104.915929
6,652.0	3.40	171.20	6,636.4	129.1	-264.7	1,304,754.75	3,163,231.00	40.168464	-104.915928
6,700.0	7.60	171.50	6,684.1	124.6	-264.0	1,304,750.21	3,163,231.72	40.168452	-104.915925
6,747.0	11.00	174.60	6,730.5	117.0	-263.2	1,304,742.67	3,163,232.65	40.168431	-104.915922
6,795.0	13.70	180.20	6,777.4	106.8	-262.8	1,304,732.43	3,163,233.13	40.168403	-104.915920
6,842.0	16.60	191.50	6,822.8	94.7	-264.1	1,304,720.27	3,163,231.85	40.168370	-104.915925
6,890.0	20.40	191.70	6,868.3	79.7	-267.2	1,304,705.33	3,163,228.89	40.168329	-104.915936
6,937.0	25.00	193.00	6,911.6	62.0	-271.1	1,304,687.60	3,163,225.11	40.168280	-104.915950
6,984.0	31.10	191.50	6,953.1	40.4	-275.7	1,304,665.98	3,163,220.59	40.168221	-104.915967
7,031.0	36.50	187.30	6,992.1	14.7	-279.9	1,304,640.17	3,163,216.56	40.168150	-104.915982
7,079.0	43.30	182.80	7,029.0	-16.0	-282.6	1,304,609.51	3,163,214.14	40.168066	-104.915991
7,126.0	50.70	180.40	7,061.0	-50.3	-283.5	1,304,575.17	3,163,213.45	40.167972	-104.915995
7,173.0	58.50	179.60	7,088.2	-88.6	-283.5	1,304,536.89	3,163,213.72	40.167867	-104.915995
7,220.0	65.60	178.20	7,110.2	-130.1	-282.6	1,304,495.42	3,163,214.80	40.167753	-104.915992
7,268.0	71.20	177.60	7,127.9	-174.7	-281.0	1,304,450.85	3,163,216.74	40.167630	-104.915986
7,315.0	76.40	177.20	7,141.0	-219.7	-279.0	1,304,405.79	3,163,219.08	40.167507	-104.915978
7,363.0	80.40	177.00	7,150.6	-266.7	-276.6	1,304,358.86	3,163,221.77	40.167378	-104.915970
7,377.0	82.20	176.70	7,152.7	-280.5	-275.8	1,304,345.04	3,163,222.62	40.167340	-104.915967
7,456.0	87.80	176.70	7,159.6	-359.0	-271.3	1,304,266.54	3,163,227.67	40.167124	-104.915951
7,550.0	89.70	177.00	7,161.7	-452.9	-266.1	1,304,172.74	3,163,233.45	40.166867	-104.915933
7,645.0	91.40	178.30	7,160.8	-547.8	-262.2	1,304,077.86	3,163,237.97	40.166606	-104.915919
7,739.0	92.10	178.70	7,157.9	-641.7	-259.8	1,303,983.96	3,163,241.05	40.166348	-104.915910
7,834.0	92.10	178.30	7,154.4	-736.6	-257.3	1,303,889.07	3,163,244.16	40.166088	-104.915901
7,928.0	90.30	178.60	7,152.4	-830.6	-254.7	1,303,795.15	3,163,247.33	40.165830	-104.915892
8,023.0	90.50	179.80	7,151.8	-925.5	-253.4	1,303,700.17	3,163,249.28	40.165569	-104.915887
8,118.0	90.50	181.80	7,151.0	-1,020.5	-254.7	1,303,605.18	3,163,248.58	40.165308	-104.915892
8,212.0	89.50	183.30	7,151.0	-1,114.4	-258.9	1,303,511.25	3,163,245.02	40.165051	-104.915907
8,307.0	89.00	182.80	7,152.2	-1,209.3	-264.0	1,303,416.37	3,163,240.59	40.164790	-104.915925
8,401.0	88.90	182.70	7,153.9	-1,303.2	-268.5	1,303,322.46	3,163,236.70	40.164533	-104.915941
8,494.0	91.90	180.10	7,153.3	-1,396.1	-270.8	1,303,229.50	3,163,235.04	40.164277	-104.915949
8,586.0	92.70	178.60	7,149.6	-1,488.0	-269.7	1,303,137.59	3,163,236.69	40.164025	-104.915945
8,679.0	91.00	178.90	7,146.6	-1,580.9	-267.7	1,303,044.68	3,163,239.33	40.163770	-104.915938
8,771.0	91.00	177.70	7,145.0	-1,672.9	-265.0	1,302,952.76	3,163,242.66	40.163518	-104.915928
8,863.0	89.50	178.10	7,144.6	-1,764.8	-261.6	1,302,860.85	3,163,246.64	40.163265	-104.915916
8,955.0	88.40	178.50	7,146.3	-1,856.8	-258.9	1,302,768.92	3,163,249.98	40.163013	-104.915906
9,047.0	90.20	179.00	7,147.4	-1,948.7	-256.9	1,302,676.97	3,163,252.59	40.162760	-104.915899
9,139.0	89.90	179.10	7,147.3	-2,040.7	-255.3	1,302,585.00	3,163,254.72	40.162508	-104.915894
9,231.0	88.60	179.70	7,148.5	-2,132.7	-254.4	1,302,493.02	3,163,256.29	40.162255	-104.915890
9,323.0	88.80	179.00	7,150.6	-2,224.7	-253.3	1,302,401.06	3,163,257.94	40.162003	-104.915887
9,415.0	90.00	178.00	7,151.6	-2,316.6	-250.9	1,302,309.12	3,163,260.96	40.161750	-104.915878
9,507.0	88.60	178.10	7,152.7	-2,408.6	-247.8	1,302,217.20	3,163,264.70	40.161498	-104.915867
9,600.0	89.50	179.00	7,154.2	-2,501.5	-245.4	1,302,124.26	3,163,267.66	40.161243	-104.915858
9,692.0	90.20	179.50	7,154.5	-2,593.5	-244.2	1,302,032.28	3,163,269.47	40.160990	-104.915854
9,783.0	89.90	180.90	7,154.4	-2,684.5	-244.5	1,301,941.29	3,163,269.75	40.160741	-104.915855
9,875.0	91.10	181.00	7,153.6	-2,776.5	-246.1	1,301,849.30	3,163,268.84	40.160488	-104.915861
9,967.0	90.70	181.30	7,152.1	-2,868.5	-247.9	1,301,757.32	3,163,267.60	40.160236	-104.915867
10,059.0	90.10	181.60	7,151.5	-2,960.4	-250.2	1,301,665.33	3,163,265.88	40.159983	-104.915876
10,151.0	89.60	181.40	7,151.7	-3,052.4	-252.7	1,301,573.35	3,163,264.07	40.159731	-104.915884
10,243.0	91.30	182.10	7,151.0	-3,144.4	-255.5	1,301,481.39	3,163,261.87	40.159478	-104.915894
10,335.0	90.10	181.40	7,149.9	-3,236.3	-258.3	1,301,389.42	3,163,259.67	40.159226	-104.915904
10,427.0	89.10	181.40	7,150.5	-3,328.3	-260.5	1,301,297.44	3,163,258.03	40.158973	-104.915912
10,519.0	90.50	182.10	7,150.9	-3,420.2	-263.3	1,301,205.47	3,163,255.83	40.158721	-104.915922
10,613.0	91.00	181.30	7,149.6	-3,514.2	-266.1	1,301,111.50	3,163,253.66	40.158463	-104.915932

Cathedral Energy Services

Survey Report - Geographic

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-McCoy 2G-5H-F267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4889.0ft (H&P 278)
Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4889.0ft (H&P 278)
Well:	Vogl-McCoy 2G-5H-F267	North Reference:	True
Wellbore:	Hz	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)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude
10,708.0	90.30	181.50	7,148.5	-3,609.1	-268.4	1,301,016.53	3,163,251.96	40.158202	-104.915941
10,803.0	89.40	181.10	7,148.8	-3,704.1	-270.6	1,300,921.54	3,163,250.43	40.157942	-104.915948
10,897.0	90.50	180.50	7,148.9	-3,798.1	-271.9	1,300,827.54	3,163,249.74	40.157684	-104.915953
10,992.0	90.20	181.10	7,148.3	-3,893.1	-273.2	1,300,732.55	3,163,249.04	40.157423	-104.915958
11,087.0	89.40	179.20	7,148.6	-3,988.1	-273.5	1,300,637.55	3,163,249.42	40.157162	-104.915959
11,183.0	91.30	178.30	7,148.0	-4,084.1	-271.4	1,300,541.60	3,163,252.15	40.156899	-104.915951
11,277.0	91.00	180.60	7,146.2	-4,178.0	-270.5	1,300,447.64	3,163,253.67	40.156641	-104.915948
11,372.0	91.20	180.00	7,144.3	-4,273.0	-271.0	1,300,352.66	3,163,253.80	40.156380	-104.915950
11,466.0	91.00	181.60	7,142.5	-4,367.0	-272.3	1,300,258.66	3,163,253.11	40.156122	-104.915954
11,561.0	91.60	181.40	7,140.4	-4,461.9	-274.8	1,300,163.70	3,163,251.25	40.155861	-104.915963
11,656.0	90.70	181.50	7,138.5	-4,556.9	-277.2	1,300,068.74	3,163,249.47	40.155601	-104.915972
11,750.0	90.40	181.60	7,137.6	-4,650.9	-279.7	1,299,974.76	3,163,247.55	40.155343	-104.915981
11,845.0	90.80	181.90	7,136.6	-4,745.8	-282.6	1,299,879.79	3,163,245.27	40.155082	-104.915991
11,939.0	90.30	180.30	7,135.7	-4,839.8	-284.4	1,299,785.81	3,163,244.09	40.154824	-104.915998
12,034.0	89.60	179.90	7,135.7	-4,934.8	-284.6	1,299,690.81	3,163,244.55	40.154563	-104.915998
12,128.0	90.80	180.00	7,135.4	-5,028.8	-284.5	1,299,596.81	3,163,245.25	40.154305	-104.915998
12,223.0	89.40	179.20	7,135.3	-5,123.8	-283.9	1,299,501.83	3,163,246.54	40.154045	-104.915996
12,317.0	90.40	179.70	7,135.4	-5,217.8	-282.9	1,299,407.84	3,163,248.06	40.153787	-104.915993
12,411.0	90.90	181.40	7,134.3	-5,311.8	-283.9	1,299,313.85	3,163,247.78	40.153528	-104.915996
12,506.0	91.00	183.00	7,132.8	-5,406.6	-287.5	1,299,218.94	3,163,244.76	40.153268	-104.916009
12,600.0	88.40	183.60	7,133.3	-5,500.5	-292.9	1,299,125.07	3,163,239.97	40.153010	-104.916028
12,694.0	88.40	185.00	7,135.9	-5,594.2	-300.0	1,299,031.33	3,163,233.54	40.152753	-104.916053
12,789.0	88.60	185.10	7,138.4	-5,688.8	-308.3	1,298,936.68	3,163,225.81	40.152494	-104.916083
12,884.0	88.00	182.80	7,141.2	-5,783.5	-314.9	1,298,841.91	3,163,219.89	40.152233	-104.916107
12,978.0	88.00	181.80	7,144.5	-5,877.4	-318.6	1,298,748.02	3,163,216.74	40.151976	-104.916120
13,073.0	89.70	182.60	7,146.4	-5,972.3	-322.3	1,298,653.09	3,163,213.72	40.151715	-104.916133
13,167.0	89.70	183.00	7,146.9	-6,066.2	-326.9	1,298,559.18	3,163,209.75	40.151458	-104.916150
13,262.0	89.10	182.50	7,147.9	-6,161.0	-331.4	1,298,464.27	3,163,205.82	40.151197	-104.916166
13,356.0	90.20	182.80	7,148.4	-6,254.9	-335.8	1,298,370.34	3,163,202.09	40.150939	-104.916181
13,451.0	88.90	183.30	7,149.2	-6,349.8	-340.8	1,298,275.45	3,163,197.66	40.150679	-104.916199
13,545.0	88.00	183.60	7,151.7	-6,443.6	-346.5	1,298,181.62	3,163,192.63	40.150421	-104.916220
13,640.0	87.50	183.20	7,155.5	-6,538.4	-352.1	1,298,086.83	3,163,187.62	40.150161	-104.916240
13,735.0	87.40	182.70	7,159.7	-6,633.1	-357.0	1,297,992.02	3,163,183.36	40.149901	-104.916257
13,829.0	88.80	182.10	7,162.8	-6,727.0	-360.9	1,297,898.13	3,163,180.05	40.149643	-104.916271
13,924.0	89.00	181.40	7,164.6	-6,822.0	-363.8	1,297,803.15	3,163,177.78	40.149383	-104.916282
14,018.0	89.50	181.20	7,165.9	-6,915.9	-366.0	1,297,709.17	3,163,176.26	40.149125	-104.916289
14,113.0	89.10	180.70	7,167.0	-7,010.9	-367.5	1,297,614.18	3,163,175.31	40.148864	-104.916295
14,207.0	89.70	181.60	7,168.0	-7,104.9	-369.4	1,297,520.20	3,163,174.05	40.148606	-104.916302
14,302.0	89.10	181.10	7,169.0	-7,199.9	-371.7	1,297,425.22	3,163,172.44	40.148345	-104.916310
14,397.0	91.80	182.50	7,168.3	-7,294.8	-374.6	1,297,330.26	3,163,170.08	40.148085	-104.916320
14,492.0	92.10	182.10	7,165.0	-7,389.7	-378.4	1,297,235.37	3,163,166.90	40.147824	-104.916334
14,586.0	92.00	181.60	7,161.7	-7,483.5	-381.5	1,297,141.46	3,163,164.48	40.147567	-104.916345
14,681.0	92.20	181.90	7,158.2	-7,578.4	-384.4	1,297,046.55	3,163,162.21	40.147306	-104.916355
14,755.0	91.90	181.30	7,155.5	-7,652.3	-386.4	1,296,972.64	3,163,160.63	40.147103	-104.916363
Last CES Survey @ 14,755' MD									
14,805.0	91.90	181.30	7,153.9	-7,702.3	-387.6	1,296,922.68	3,163,159.83	40.146966	-104.916367
PTB @ 14,805'									

Cathedral Energy Services

Survey Report - Geographic

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-McCoy 2G-5H-F267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4889.0ft (H&P 278)
Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4889.0ft (H&P 278)
Well:	Vogl-McCoy 2G-5H-F267	North Reference:	True
Wellbore:	Hz	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users DB

Design Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
Vogl-McCoy 2G-5H-F26	0.00	0.00	7,156.0	-7,730.0	-399.8	1,296,894.89	3,163,147.83	40.146890	-104.916410
- actual wellpath misses target center by 30.3ft at 14805.0ft MD (7153.9 TVD, -7702.3 N, -387.6 E)									
- Point									

Design Annotations					
Measured Depth	Vertical Depth	Local Coordinates			
(ft)	(ft)	+N/-S	+E/-W	Comment	
(ft)	(ft)	(ft)	(ft)		
14,755.0	7,155.5	-7,652.3	-386.4	Last CES Survey @ 14,755' MD	
14,805.0	7,153.9	-7,702.3	-387.6	PTB @ 14,805'	

Checked By: _____ Approved By: _____ Date: _____