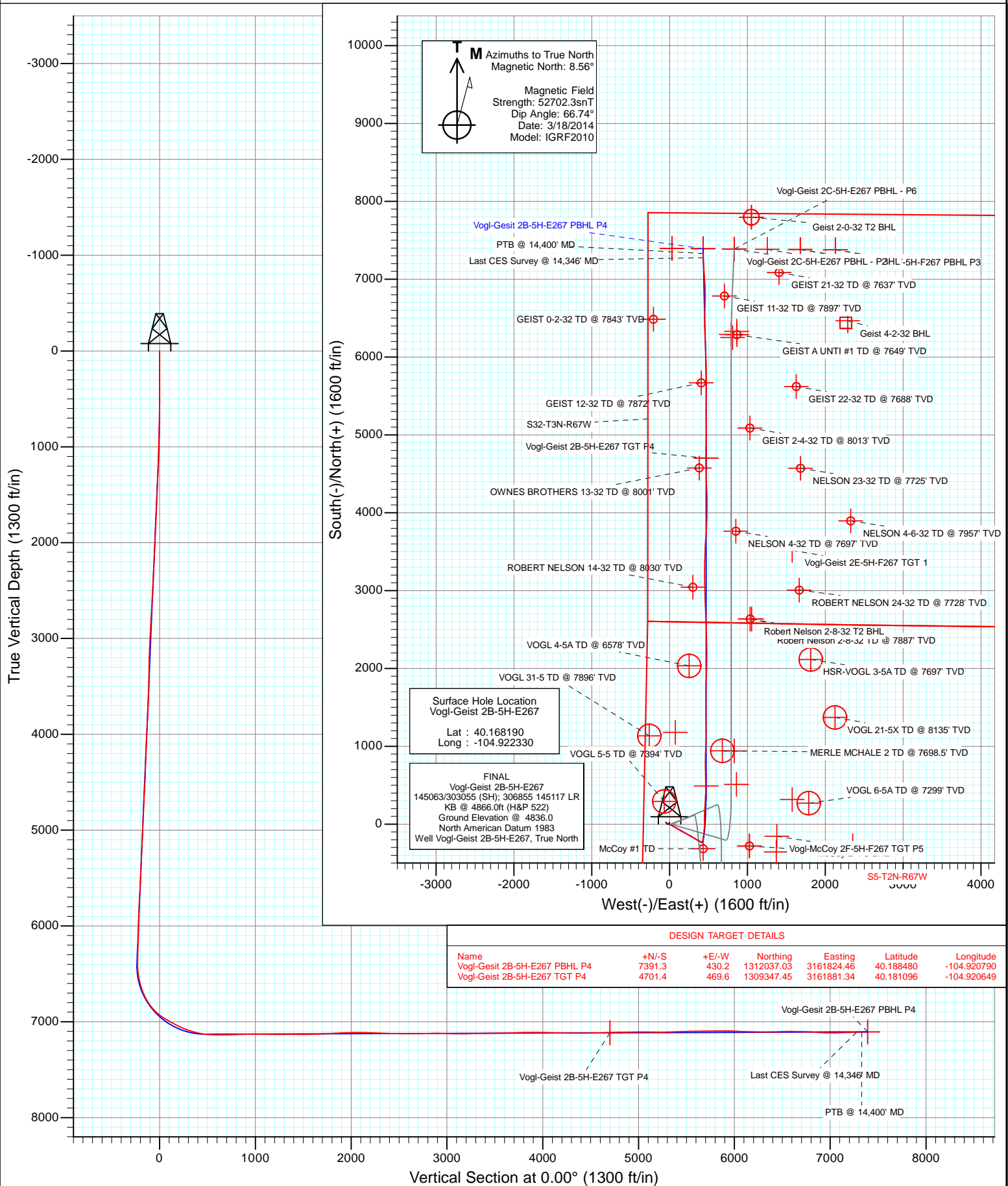


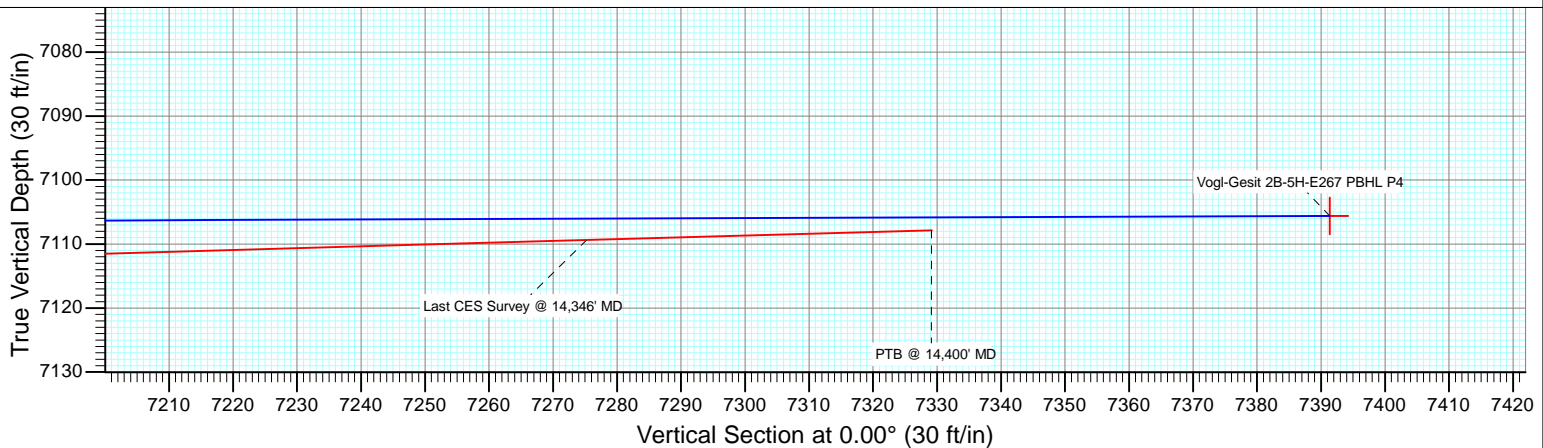
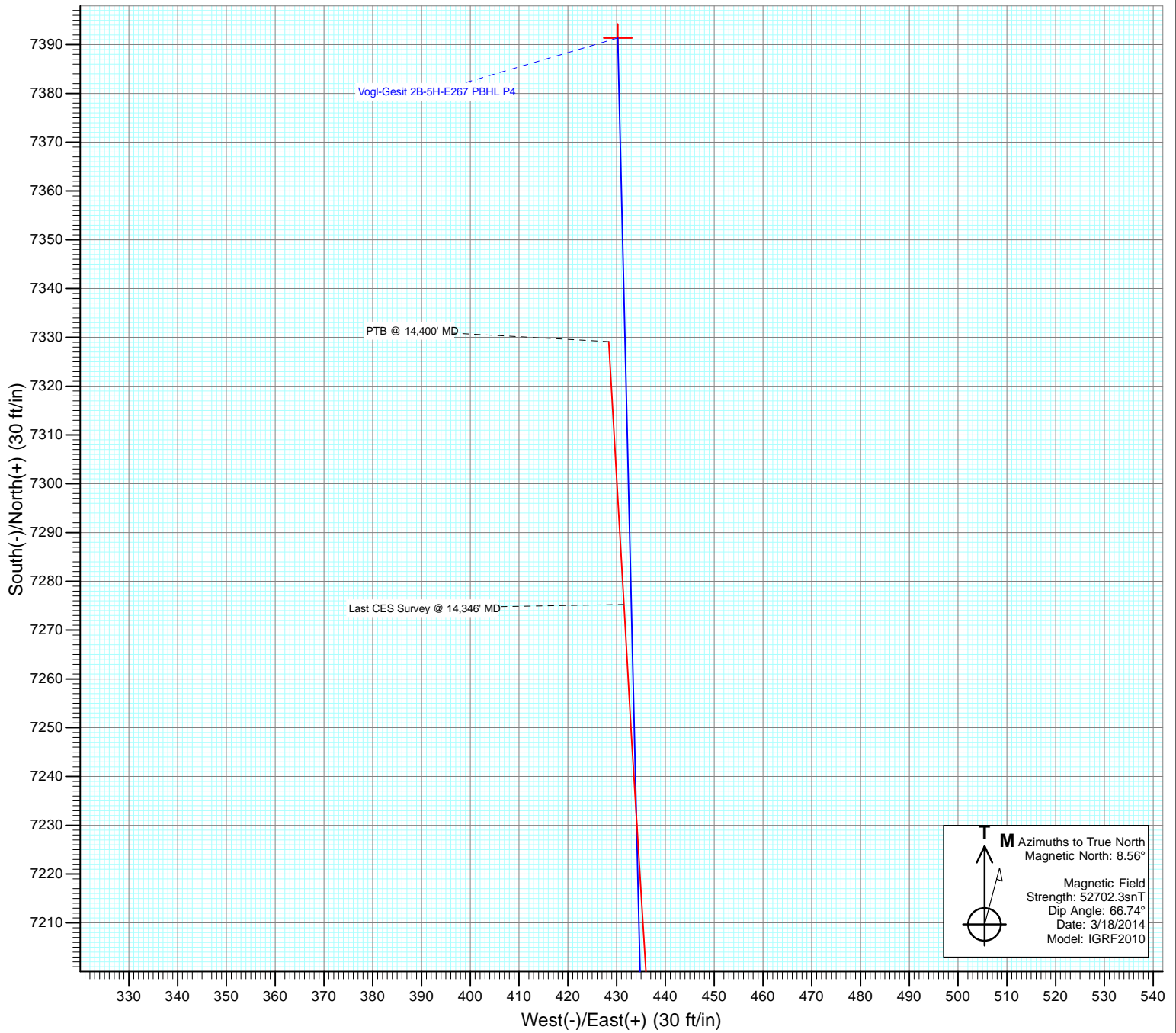


Project: DJ Wattenberg
Site: S5-T2N-R67W (Vogl-McCoy)
Well: Vogl-Geist 2B-5H-E267
Wellbore: Hz
Design: FINAL





Project: DJ Wattenberg
Site: S5-T2N-R67W (Vogl-McCoy)
Well: Vogl-Geist 2B-5H-E267
Wellbore: Hz
Design: FINAL



Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-Geist 2B-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (H&P 522)
Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (H&P 522)
Well:	Vogl-Geist 2B-5H-E267	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-Geist 2B-5H-E267					
Well Position	+N/-S	0.0 ft	Northing:	1,304,643.05 ft	Latitude:	40.168190
	+E/-W	0.0 ft	Easting:	3,161,442.38 ft	Longitude:	-104.922330
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,836.0 ft

Wellbore	Hz				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	3/18/2014	8.56	66.74	52,702

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	0.00	

Survey Program	Date	4/28/2014			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
143.0	14,400.0	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	0.09	132.57	143.0	-0.1	0.1	-0.1	0.06	0.06		
235.0	0.18	33.43	235.0	0.0	0.2	0.0	0.23	0.10		
327.0	0.09	308.71	327.0	0.2	0.2	0.2	0.21	-0.10		
419.0	0.22	278.56	419.0	0.2	0.0	0.2	0.16	0.14		
511.0	0.09	228.73	511.0	0.2	-0.2	0.2	0.19	-0.14		
603.0	0.44	228.73	603.0	-0.1	-0.5	-0.1	0.38	0.38		
695.0	0.83	196.29	695.0	-0.9	-1.0	-0.9	0.56	0.42		
787.0	1.23	148.13	787.0	-2.4	-0.7	-2.4	1.00	0.43		
813.0	1.58	146.64	813.0	-3.0	-0.3	-3.0	1.35	1.35		
913.0	2.10	149.40	912.9	-5.7	1.4	-5.7	0.53	0.52		
1,005.0	4.80	111.60	1,004.8	-8.6	5.8	-8.6	3.69	2.93		
1,097.0	5.30	112.00	1,096.4	-11.6	13.3	-11.6	0.54	0.54		

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-Geist 2B-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (H&P 522)
Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (H&P 522)
Well:	Vogl-Geist 2B-5H-E267	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
1,189.0	5.10	115.60	1,188.0	-14.9	21.0	-14.9	0.42	-0.22	
1,281.0	4.60	114.50	1,279.7	-18.2	28.0	-18.2	0.55	-0.54	
1,373.0	3.90	113.10	1,371.4	-21.0	34.2	-21.0	0.77	-0.76	
1,465.0	5.70	124.80	1,463.1	-24.8	40.9	-24.8	2.22	1.96	
1,557.0	5.40	123.00	1,554.7	-29.8	48.3	-29.8	0.38	-0.33	
1,649.0	5.10	115.60	1,646.3	-33.9	55.6	-33.9	0.80	-0.33	
1,740.0	4.80	114.40	1,737.0	-37.2	62.7	-37.2	0.35	-0.33	
1,832.0	4.40	110.50	1,828.7	-40.0	69.5	-40.0	0.55	-0.43	
1,924.0	5.30	121.70	1,920.3	-43.5	76.4	-43.5	1.42	0.98	
2,016.0	5.20	123.60	2,011.9	-48.1	83.5	-48.1	0.22	-0.11	
2,108.0	5.00	125.80	2,103.6	-52.7	90.2	-52.7	0.30	-0.22	
2,200.0	6.20	120.10	2,195.1	-57.5	97.8	-57.5	1.44	1.30	
2,292.0	5.80	119.20	2,286.6	-62.3	106.1	-62.3	0.45	-0.43	
2,384.0	5.50	121.50	2,378.2	-66.9	114.0	-66.9	0.41	-0.33	
2,476.0	5.30	121.70	2,469.8	-71.4	121.3	-71.4	0.22	-0.22	
2,568.0	4.90	123.40	2,561.4	-75.8	128.2	-75.8	0.46	-0.43	
2,660.0	5.80	123.60	2,653.0	-80.5	135.4	-80.5	0.98	0.98	
2,752.0	5.40	126.50	2,744.6	-85.7	142.7	-85.7	0.53	-0.43	
2,846.0	6.90	117.70	2,838.0	-90.9	151.3	-90.9	1.88	1.60	
2,940.0	6.20	119.00	2,931.4	-96.0	160.7	-96.0	0.76	-0.74	
3,034.0	5.80	116.60	3,024.9	-100.6	169.4	-100.6	0.50	-0.43	
3,128.0	4.70	116.90	3,118.5	-104.5	177.1	-104.5	1.17	-1.17	
3,223.0	3.90	115.30	3,213.2	-107.6	183.5	-107.6	0.85	-0.84	
3,317.0	4.10	101.70	3,307.0	-109.7	189.7	-109.7	1.03	0.21	
3,411.0	2.50	112.40	3,400.9	-111.1	194.8	-111.1	1.82	-1.70	
3,505.0	4.10	116.80	3,494.7	-113.4	199.7	-113.4	1.72	1.70	
3,600.0	3.30	110.40	3,589.5	-115.9	205.3	-115.9	0.95	-0.84	
3,695.0	5.00	113.20	3,684.2	-118.5	211.7	-118.5	1.80	1.79	
3,789.0	5.30	123.20	3,777.9	-122.5	219.1	-122.5	1.01	0.32	
3,884.0	5.10	125.30	3,872.5	-127.3	226.2	-127.3	0.29	-0.21	
3,979.0	4.60	126.90	3,967.1	-132.1	232.7	-132.1	0.55	-0.53	
4,073.0	5.00	118.00	4,060.8	-136.3	239.3	-136.3	0.90	0.43	
4,168.0	4.70	120.90	4,155.5	-140.2	246.3	-140.2	0.41	-0.32	
4,262.0	5.60	111.40	4,249.1	-143.8	253.9	-143.8	1.32	0.96	
4,357.0	5.50	115.40	4,343.6	-147.5	262.3	-147.5	0.42	-0.11	
4,452.0	4.90	115.30	4,438.3	-151.2	270.1	-151.2	0.63	-0.63	
4,546.0	4.40	120.30	4,531.9	-154.7	276.9	-154.7	0.68	-0.53	
4,641.0	5.70	125.10	4,626.6	-159.3	283.9	-159.3	1.44	1.37	
4,736.0	5.20	124.80	4,721.1	-164.4	291.3	-164.4	0.53	-0.53	
4,830.0	5.10	122.60	4,814.8	-169.1	298.3	-169.1	0.24	-0.11	
4,925.0	4.10	124.90	4,909.5	-173.3	304.6	-173.3	1.07	-1.05	
5,019.0	4.40	112.60	5,003.2	-176.6	310.7	-176.6	1.02	0.32	
5,114.0	4.70	119.40	5,097.9	-180.0	317.5	-180.0	0.65	0.32	
5,209.0	5.60	127.70	5,192.5	-184.7	324.5	-184.7	1.23	0.95	
5,303.0	4.90	124.80	5,286.1	-189.8	331.5	-189.8	0.80	-0.74	
5,398.0	5.40	118.20	5,380.8	-194.2	338.7	-194.2	0.82	0.53	
5,492.0	4.40	117.50	5,474.4	-198.0	345.8	-198.0	1.07	-1.06	
5,587.0	4.90	119.70	5,569.1	-201.7	352.6	-201.7	0.56	0.53	
5,682.0	6.10	124.60	5,663.7	-206.5	360.3	-206.5	1.36	1.26	
5,776.0	5.50	129.70	5,757.2	-212.3	367.8	-212.3	0.84	-0.64	
5,871.0	4.70	111.80	5,851.8	-216.6	375.0	-216.6	1.86	-0.84	
5,966.0	4.10	107.00	5,946.5	-219.1	381.8	-219.1	0.74	-0.63	
6,060.0	3.30	104.30	6,040.3	-220.7	387.6	-220.7	0.87	-0.85	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-Geist 2B-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (H&P 522)
Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (H&P 522)
Well:	Vogl-Geist 2B-5H-E267	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
6,155.0	4.00	111.70	6,135.1	-222.6	393.4	-222.6	0.89	0.74	
6,249.0	4.30	119.70	6,228.9	-225.6	399.5	-225.6	0.69	0.32	
6,344.0	3.80	119.00	6,323.7	-228.9	405.3	-228.9	0.53	-0.53	
6,391.0	3.60	108.80	6,370.6	-230.1	408.1	-230.1	1.46	-0.43	
6,438.0	5.80	75.90	6,417.4	-230.0	411.8	-230.0	7.22	4.68	
6,486.0	9.10	53.00	6,465.0	-227.1	417.2	-227.1	9.12	6.87	
6,533.0	10.80	34.30	6,511.3	-221.2	422.6	-221.2	7.72	3.62	
6,581.0	11.30	13.70	6,558.4	-212.9	426.3	-212.9	8.25	1.04	
6,628.0	14.50	6.90	6,604.2	-202.6	428.1	-202.6	7.52	6.81	
6,675.0	18.50	7.60	6,649.3	-189.4	429.8	-189.4	8.52	8.51	
6,722.0	22.60	9.20	6,693.3	-173.1	432.2	-173.1	8.80	8.72	
6,770.0	26.90	9.70	6,736.9	-153.3	435.5	-153.3	8.97	8.96	
6,817.0	29.60	6.80	6,778.3	-131.2	438.7	-131.2	6.44	5.74	
6,865.0	35.60	4.80	6,818.7	-105.5	441.3	-105.5	12.70	12.50	
6,912.0	39.30	4.60	6,856.0	-77.0	443.6	-77.0	7.88	7.87	
6,959.0	46.00	3.80	6,890.6	-45.3	445.9	-45.3	14.30	14.26	
7,006.0	50.20	0.90	6,921.9	-10.4	447.3	-10.4	10.05	8.94	
7,054.0	57.30	359.90	6,950.3	28.3	447.6	28.3	14.89	14.79	
7,101.0	59.10	359.90	6,975.1	68.3	447.5	68.3	3.83	3.83	
7,148.0	60.30	1.00	6,998.8	108.8	447.8	108.8	3.26	2.55	
7,195.0	61.80	2.70	7,021.5	149.9	449.1	149.9	4.49	3.19	
7,243.0	64.30	4.00	7,043.3	192.6	451.7	192.6	5.74	5.21	
7,290.0	66.30	3.60	7,062.9	235.3	454.5	235.3	4.32	4.26	
7,337.0	69.10	3.10	7,080.8	278.7	457.0	278.7	6.04	5.96	
7,384.0	72.60	2.50	7,096.2	323.0	459.2	323.0	7.54	7.45	
7,432.0	74.80	2.90	7,109.6	369.0	461.4	369.0	4.65	4.58	
7,479.0	79.00	2.50	7,120.3	414.7	463.5	414.7	8.97	8.94	
7,527.0	82.20	0.50	7,128.1	462.1	464.7	462.1	7.83	6.67	
7,574.0	85.70	359.20	7,133.1	508.8	464.6	508.8	7.94	7.45	
7,636.0	89.70	357.90	7,135.6	570.7	463.1	570.7	6.78	6.45	
7,668.0	89.50	358.00	7,135.8	602.7	461.9	602.7	0.70	-0.62	
7,760.0	91.00	358.90	7,135.4	694.6	459.4	694.6	1.90	1.63	
7,852.0	92.20	0.70	7,132.8	786.6	459.1	786.6	2.35	1.30	
7,944.0	91.30	1.60	7,130.0	878.5	460.9	878.5	1.38	-0.98	
8,036.0	89.80	2.30	7,129.1	970.5	464.1	970.5	1.80	-1.63	
8,128.0	89.10	1.90	7,130.0	1,062.4	467.4	1,062.4	0.88	-0.76	
8,220.0	89.40	359.40	7,131.2	1,154.4	468.5	1,154.4	2.74	0.33	
8,311.0	89.80	359.80	7,131.9	1,245.4	467.9	1,245.4	0.62	0.44	
8,403.0	91.20	359.40	7,131.1	1,337.4	467.2	1,337.4	1.58	1.52	
8,495.0	89.20	359.40	7,130.7	1,429.4	466.3	1,429.4	2.17	-2.17	
8,587.0	90.70	359.70	7,130.8	1,521.4	465.5	1,521.4	1.66	1.63	
8,679.0	90.90	359.80	7,129.5	1,613.4	465.1	1,613.4	0.24	0.22	
8,771.0	93.10	0.30	7,126.3	1,705.3	465.2	1,705.3	2.45	2.39	
8,863.0	92.90	1.60	7,121.5	1,797.2	466.7	1,797.2	1.43	-0.22	
8,955.0	93.00	2.00	7,116.8	1,889.0	469.6	1,889.0	0.45	0.11	
9,046.0	91.10	2.20	7,113.5	1,979.9	472.9	1,979.9	2.10	-2.09	
9,138.0	90.70	1.20	7,112.1	2,071.8	475.7	2,071.8	1.17	-0.43	
9,230.0	87.60	0.50	7,113.4	2,163.8	477.0	2,163.8	3.45	-3.37	
9,322.0	88.10	359.90	7,116.9	2,255.7	477.4	2,255.7	0.85	0.54	
9,414.0	88.30	359.50	7,119.8	2,347.7	476.9	2,347.7	0.49	0.22	
9,506.0	88.40	357.90	7,122.4	2,439.6	474.8	2,439.6	1.74	0.11	
9,598.0	89.40	357.60	7,124.2	2,531.5	471.2	2,531.5	1.13	1.09	
9,690.0	89.90	357.00	7,124.8	2,623.4	466.9	2,623.4	0.85	0.54	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-Geist 2B-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (H&P 522)
Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (H&P 522)
Well:	Vogl-Geist 2B-5H-E267	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
9,782.0	90.80	357.10	7,124.2	2,715.3	462.1	2,715.3	0.98	0.98	
9,874.0	91.80	358.00	7,122.1	2,807.2	458.2	2,807.2	1.46	1.09	
9,968.0	89.80	359.10	7,120.8	2,901.1	455.8	2,901.1	2.43	-2.13	
10,063.0	88.20	358.90	7,122.5	2,996.1	454.1	2,996.1	1.70	-1.68	
10,158.0	88.80	358.40	7,124.9	3,091.0	451.9	3,091.0	0.82	0.63	
10,252.0	91.00	359.00	7,125.1	3,185.0	449.8	3,185.0	2.43	2.34	
10,347.0	91.60	359.80	7,122.9	3,280.0	448.8	3,280.0	1.05	0.63	
10,441.0	90.10	3.10	7,121.6	3,373.9	451.2	3,373.9	3.86	-1.60	
10,536.0	91.80	1.60	7,120.0	3,468.8	455.1	3,468.8	2.39	1.79	
10,631.0	90.10	1.90	7,118.4	3,563.8	458.0	3,563.8	1.82	-1.79	
10,725.0	91.70	4.10	7,116.9	3,657.6	462.9	3,657.6	2.89	1.70	
10,820.0	92.00	4.10	7,113.9	3,752.3	469.7	3,752.3	0.32	0.32	
10,915.0	90.50	2.90	7,111.8	3,847.1	475.5	3,847.1	2.02	-1.58	
11,009.0	88.80	0.80	7,112.4	3,941.1	478.5	3,941.1	2.87	-1.81	
11,104.0	89.70	1.00	7,113.6	4,036.0	480.0	4,036.0	0.97	0.95	
11,199.0	88.60	359.70	7,115.0	4,131.0	480.6	4,131.0	1.79	-1.16	
11,293.0	89.20	358.70	7,116.8	4,225.0	479.3	4,225.0	1.24	0.64	
11,388.0	88.40	356.70	7,118.8	4,319.9	475.4	4,319.9	2.27	-0.84	
11,482.0	90.70	358.00	7,119.5	4,413.8	471.1	4,413.8	2.81	2.45	
11,577.0	91.80	359.10	7,117.5	4,508.7	468.7	4,508.7	1.64	1.16	
11,671.0	91.60	0.10	7,114.7	4,602.7	468.0	4,602.7	1.08	-0.21	
11,766.0	91.30	0.50	7,112.3	4,697.6	468.5	4,697.6	0.53	-0.32	
11,861.0	91.10	0.50	7,110.3	4,792.6	469.4	4,792.6	0.21	-0.21	
11,955.0	91.50	0.30	7,108.2	4,886.6	470.0	4,886.6	0.48	0.43	
12,050.0	90.10	0.00	7,106.8	4,981.6	470.3	4,981.6	1.51	-1.47	
12,144.0	89.60	359.80	7,107.1	5,075.6	470.1	5,075.6	0.57	-0.53	
12,239.0	88.70	359.70	7,108.5	5,170.6	469.7	5,170.6	0.95	-0.95	
12,333.0	91.40	359.80	7,108.4	5,264.6	469.3	5,264.6	2.87	2.87	
12,428.0	92.10	0.20	7,105.5	5,359.5	469.3	5,359.5	0.85	0.74	
12,522.0	92.40	0.60	7,101.8	5,453.4	469.9	5,453.4	0.53	0.32	
12,617.0	90.40	0.60	7,099.5	5,548.4	470.9	5,548.4	2.11	-2.11	
12,711.0	91.30	0.70	7,098.1	5,642.4	472.0	5,642.4	0.96	0.96	
12,806.0	90.20	359.80	7,096.9	5,737.4	472.4	5,737.4	1.50	-1.16	
12,901.0	91.00	358.70	7,095.9	5,832.4	471.2	5,832.4	1.43	0.84	
12,995.0	89.60	358.20	7,095.4	5,926.3	468.6	5,926.3	1.58	-1.49	
13,090.0	87.60	357.70	7,097.7	6,021.2	465.2	6,021.2	2.17	-2.11	
13,184.0	86.50	357.70	7,102.5	6,115.0	461.5	6,115.0	1.17	-1.17	
13,216.0	87.30	357.40	7,104.3	6,146.9	460.1	6,146.9	2.67	2.50	
13,279.0	89.50	357.50	7,106.0	6,209.9	457.3	6,209.9	3.50	3.49	
13,373.0	90.20	357.40	7,106.3	6,303.8	453.1	6,303.8	0.75	0.74	
13,468.0	91.60	358.80	7,104.8	6,398.7	450.0	6,398.7	2.08	1.47	
13,562.0	91.30	1.40	7,102.4	6,492.7	450.1	6,492.7	2.78	-0.32	
13,657.0	90.10	1.60	7,101.2	6,587.6	452.6	6,587.6	1.28	-1.26	
13,751.0	89.50	1.90	7,101.6	6,681.6	455.5	6,681.6	0.71	-0.64	
13,846.0	86.60	0.50	7,104.8	6,776.5	457.5	6,776.5	3.39	-3.05	
13,877.0	86.10	0.50	7,106.8	6,807.4	457.7	6,807.4	1.61	-1.61	
13,941.0	87.30	358.10	7,110.4	6,871.3	457.0	6,871.3	4.19	1.87	
14,004.0	87.60	356.20	7,113.3	6,934.2	453.8	6,934.2	3.05	0.48	
14,035.0	87.30	356.10	7,114.6	6,965.1	451.8	6,965.1	1.02	-0.97	
14,130.0	91.60	356.00	7,115.5	7,059.8	445.2	7,059.8	4.53	4.53	
14,224.0	91.70	356.20	7,112.8	7,153.5	438.8	7,153.5	0.24	0.11	
14,319.0	91.60	356.80	7,110.1	7,248.3	433.0	7,248.3	0.64	-0.11	
14,346.0	91.60	356.70	7,109.3	7,275.2	431.5	7,275.2	0.37	0.00	Last CES Survey @ 14,346' MD

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-Geist 2B-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (H&P 522)
Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (H&P 522)
Well:	Vogl-Geist 2B-5H-E267	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
14,400.0	91.60	356.70	7,107.8	7,329.1	428.4	7,329.1	0.00	0.00	PTB @ 14,400' MD

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
Vogl-Gesit 2B-5H-E267 - actual wellpath misses target center by 62.3ft at 14400.0ft MD (7107.8 TVD, 7329.1 N, 428.4 E) - Point	0.00	0.00	7,105.6	7,391.3	430.2	1,312,037.03	3,161,824.46	40.188480	-104.920790
Interp @ 7093.0 (Vogl-G - actual wellpath misses target center by 5.0ft at 7553.9ft MD (7131.3 TVD, 488.8 N, 464.8 E) - Point	0.00	0.00	7,130.0	488.9	469.6	1,305,135.05	3,161,908.78	40.169532	-104.920650
Vogl-Geist 2B-5H-E267 - actual wellpath misses target center by 19.2ft at 11770.2ft MD (7112.2 TVD, 4701.9 N, 468.6 E) - Point	0.00	0.00	7,093.0	4,701.4	469.6	1,309,347.45	3,161,881.34	40.181096	-104.920649
Vogl-Gesit 2B-5H-E267 - actual wellpath misses target center by 64.0ft at 14400.0ft MD (7107.8 TVD, 7329.1 N, 428.4 E) - Point	0.00	0.00	7,093.0	7,391.3	430.2	1,312,037.03	3,161,824.46	40.188480	-104.920790
Vogl-Geist 2B-5H-E267 - actual wellpath misses target center by 3.1ft at 11769.8ft MD (7112.2 TVD, 4701.4 N, 468.6 E) - Point	0.00	0.00	7,115.1	4,701.4	469.6	1,309,347.45	3,161,881.34	40.181096	-104.920649

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	+E/-W (ft)	Comment
14,346.0	7,109.3	7,275.2	431.5	Last CES Survey @ 14,346' MD
14,400.0	7,107.8	7,329.1	428.4	PTB @ 14,400' MD

Checked By: _____ Approved By: _____ Date: _____

EnCana Oil & Gas (USA) Inc

DJ Wattenberg

S5-T2N-R67W (Vogl-McCoy)

Vogl-Geist 2B-5H-E267

Hz

Design: FINAL

Survey Report - Geographic

28 April, 2014

Cathedral Energy Services

Survey Report - Geographic

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-Geist 2B-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (H&P 522)
Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (H&P 522)
Well:	Vogl-Geist 2B-5H-E267	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-Geist 2B-5H-E267					
Well Position	+N/-S	0.0 ft	Northing:	1,304,643.05 ft	Latitude:	40.168190
	+E/-W	0.0 ft	Easting:	3,161,442.38 ft	Longitude:	-104.922330
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,836.0 ft

Wellbore	Hz				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	3/18/2014	8.56	66.74	52,702

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	0.00	

Survey Program	Date	4/28/2014			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
143.0	14,400.0	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	1,304,643.05	3,161,442.38	40.168190	-104.922330
143.0	0.09	132.57	143.0	-0.1	0.1	1,304,642.97	3,161,442.46	40.168190	-104.922330
235.0	0.18	33.43	235.0	0.0	0.2	1,304,643.04	3,161,442.60	40.168190	-104.922329
327.0	0.09	308.71	327.0	0.2	0.2	1,304,643.21	3,161,442.62	40.168190	-104.922329
419.0	0.22	278.56	419.0	0.2	0.0	1,304,643.28	3,161,442.39	40.168191	-104.922330
511.0	0.09	228.73	511.0	0.2	-0.2	1,304,643.26	3,161,442.16	40.168191	-104.922331
603.0	0.44	228.73	603.0	-0.1	-0.5	1,304,642.97	3,161,441.84	40.168190	-104.922332
695.0	0.83	196.29	695.0	-0.9	-1.0	1,304,642.10	3,161,441.39	40.168187	-104.922334
787.0	1.23	148.13	787.0	-2.4	-0.7	1,304,640.62	3,161,441.74	40.168183	-104.922333
813.0	1.58	146.64	813.0	-3.0	-0.3	1,304,640.09	3,161,442.08	40.168182	-104.922331
913.0	2.10	149.40	912.9	-5.7	1.4	1,304,637.37	3,161,443.79	40.168174	-104.922325
1,005.0	4.80	111.60	1,004.8	-8.6	5.8	1,304,634.53	3,161,448.25	40.168166	-104.922309

Cathedral Energy Services

Survey Report - Geographic

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-Geist 2B-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (H&P 522)
Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (H&P 522)
Well:	Vogl-Geist 2B-5H-E267	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
1,097.0	5.30	112.00	1,096.4	-11.6	13.3	1,304,631.57	3,161,455.79	40.168158	-104.922283
1,189.0	5.10	115.60	1,188.0	-14.9	21.0	1,304,628.26	3,161,463.44	40.168149	-104.922255
1,281.0	4.60	114.50	1,279.7	-18.2	28.0	1,304,625.01	3,161,470.50	40.168140	-104.922230
1,373.0	3.90	113.10	1,371.4	-21.0	34.2	1,304,622.29	3,161,476.76	40.168132	-104.922208
1,465.0	5.70	124.80	1,463.1	-24.8	40.9	1,304,618.50	3,161,483.41	40.168122	-104.922184
1,557.0	5.40	123.00	1,554.7	-29.8	48.3	1,304,613.59	3,161,490.82	40.168108	-104.922158
1,649.0	5.10	115.60	1,646.3	-33.9	55.6	1,304,609.51	3,161,498.17	40.168097	-104.922131
1,740.0	4.80	114.40	1,737.0	-37.2	62.7	1,304,606.23	3,161,505.31	40.168088	-104.922106
1,832.0	4.40	110.50	1,828.7	-40.0	69.5	1,304,603.45	3,161,512.14	40.168080	-104.922082
1,924.0	5.30	121.70	1,920.3	-43.5	76.4	1,304,600.03	3,161,519.08	40.168071	-104.922057
2,016.0	5.20	123.60	2,011.9	-48.1	83.5	1,304,595.54	3,161,526.20	40.168058	-104.922031
2,108.0	5.00	125.80	2,103.6	-52.7	90.2	1,304,590.93	3,161,532.95	40.168045	-104.922007
2,200.0	6.20	120.10	2,195.1	-57.5	97.8	1,304,586.14	3,161,540.53	40.168032	-104.921980
2,292.0	5.80	119.20	2,286.6	-62.3	106.1	1,304,581.43	3,161,548.92	40.168019	-104.921950
2,384.0	5.50	121.50	2,378.2	-66.9	114.0	1,304,576.91	3,161,556.77	40.168006	-104.921923
2,476.0	5.30	121.70	2,469.8	-71.4	121.3	1,304,572.43	3,161,564.17	40.167994	-104.921896
2,568.0	4.90	123.40	2,561.4	-75.8	128.2	1,304,568.08	3,161,571.09	40.167982	-104.921871
2,660.0	5.80	123.60	2,653.0	-80.5	135.4	1,304,563.39	3,161,578.28	40.167969	-104.921846
2,752.0	5.40	126.50	2,744.6	-85.7	142.7	1,304,558.29	3,161,585.66	40.167955	-104.921820
2,846.0	6.90	117.70	2,838.0	-90.9	151.3	1,304,553.09	3,161,594.25	40.167940	-104.921789
2,940.0	6.20	119.00	2,931.4	-96.0	160.7	1,304,548.06	3,161,603.72	40.167926	-104.921755
3,034.0	5.80	116.60	3,024.9	-100.6	169.4	1,304,543.53	3,161,612.44	40.167914	-104.921724
3,128.0	4.70	116.90	3,118.5	-104.5	177.1	1,304,539.71	3,161,620.15	40.167903	-104.921697
3,223.0	3.90	115.30	3,213.2	-107.6	183.5	1,304,536.61	3,161,626.56	40.167895	-104.921674
3,317.0	4.10	101.70	3,307.0	-109.7	189.7	1,304,534.61	3,161,632.75	40.167889	-104.921652
3,411.0	2.50	112.40	3,400.9	-111.1	194.8	1,304,533.18	3,161,637.95	40.167885	-104.921633
3,505.0	4.10	116.80	3,494.7	-113.4	199.7	1,304,530.91	3,161,642.86	40.167879	-104.921616
3,600.0	3.30	110.40	3,589.5	-115.9	205.3	1,304,528.46	3,161,648.47	40.167872	-104.921596
3,695.0	5.00	113.20	3,684.2	-118.5	211.7	1,304,525.92	3,161,654.85	40.167865	-104.921573
3,789.0	5.30	123.20	3,777.9	-122.5	219.1	1,304,521.98	3,161,662.28	40.167854	-104.921546
3,884.0	5.10	125.30	3,872.5	-127.3	226.2	1,304,517.18	3,161,669.43	40.167840	-104.921521
3,979.0	4.60	126.90	3,967.1	-132.1	232.7	1,304,512.50	3,161,675.95	40.167827	-104.921498
4,073.0	5.00	118.00	4,060.8	-136.3	239.3	1,304,508.35	3,161,682.61	40.167816	-104.921474
4,168.0	4.70	120.90	4,155.5	-140.2	246.3	1,304,504.46	3,161,689.63	40.167805	-104.921449
4,262.0	5.60	111.40	4,249.1	-143.8	253.9	1,304,500.86	3,161,697.23	40.167795	-104.921422
4,357.0	5.50	115.40	4,343.6	-147.5	262.3	1,304,497.27	3,161,705.68	40.167785	-104.921392
4,452.0	4.90	115.30	4,438.3	-151.2	270.1	1,304,493.63	3,161,713.48	40.167775	-104.921364
4,546.0	4.40	120.30	4,531.9	-154.7	276.9	1,304,490.14	3,161,720.25	40.167765	-104.921340
4,641.0	5.70	125.10	4,626.6	-159.3	283.9	1,304,485.63	3,161,727.28	40.167753	-104.921314
4,736.0	5.20	124.80	4,721.1	-164.4	291.3	1,304,480.51	3,161,734.71	40.167739	-104.921288
4,830.0	5.10	122.60	4,814.8	-169.1	298.3	1,304,475.88	3,161,741.76	40.167726	-104.921263
4,925.0	4.10	124.90	4,909.5	-173.3	304.6	1,304,471.70	3,161,748.13	40.167714	-104.921240
5,019.0	4.40	112.60	5,003.2	-176.6	310.7	1,304,468.43	3,161,754.24	40.167705	-104.921218
5,114.0	4.70	119.40	5,097.9	-180.0	317.5	1,304,465.16	3,161,761.01	40.167696	-104.921194
5,209.0	5.60	127.70	5,192.5	-184.7	324.5	1,304,460.46	3,161,768.10	40.167683	-104.921169
5,303.0	4.90	124.80	5,286.1	-189.8	331.5	1,304,455.41	3,161,775.06	40.167669	-104.921144
5,398.0	5.40	118.20	5,380.8	-194.2	338.7	1,304,451.03	3,161,782.36	40.167657	-104.921118
5,492.0	4.40	117.50	5,474.4	-198.0	345.8	1,304,447.32	3,161,789.48	40.167646	-104.921093
5,587.0	4.90	119.70	5,569.1	-201.7	352.6	1,304,443.68	3,161,796.26	40.167636	-104.921069
5,682.0	6.10	124.60	5,663.7	-206.5	360.3	1,304,438.85	3,161,803.98	40.167623	-104.921041
5,776.0	5.50	129.70	5,757.2	-212.3	367.8	1,304,433.18	3,161,811.59	40.167607	-104.921014
5,871.0	4.70	111.80	5,851.8	-216.6	375.0	1,304,428.88	3,161,818.74	40.167595	-104.920989
5,966.0	4.10	107.00	5,946.5	-219.1	381.8	1,304,426.48	3,161,825.61	40.167589	-104.920964
6,060.0	3.30	104.30	6,040.3	-220.7	387.6	1,304,424.87	3,161,831.46	40.167584	-104.920943
6,155.0	4.00	111.70	6,135.1	-222.6	393.4	1,304,423.01	3,161,837.20	40.167579	-104.920923

Cathedral Energy Services

Survey Report - Geographic

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-Geist 2B-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (H&P 522)
Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (H&P 522)
Well:	Vogl-Geist 2B-5H-E267	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
6,249.0	4.30	119.70	6,228.9	-225.6	399.5	1,304,420.09	3,161,843.33	40.167571	-104.920901
6,344.0	3.80	119.00	6,323.7	-228.9	405.3	1,304,416.84	3,161,849.19	40.167562	-104.920880
6,391.0	3.60	108.80	6,370.6	-230.1	408.1	1,304,415.62	3,161,851.96	40.167558	-104.920870
6,438.0	5.80	75.90	6,417.4	-230.0	411.8	1,304,415.75	3,161,855.66	40.167559	-104.920857
6,486.0	9.10	53.00	6,465.0	-227.1	417.2	1,304,418.66	3,161,861.03	40.167567	-104.920837
6,533.0	10.80	34.30	6,511.3	-221.2	422.6	1,304,424.57	3,161,866.44	40.167583	-104.920818
6,581.0	11.30	13.70	6,558.4	-212.9	426.3	1,304,432.89	3,161,870.04	40.167605	-104.920805
6,628.0	14.50	6.90	6,604.2	-202.6	428.1	1,304,443.22	3,161,871.77	40.167634	-104.920798
6,675.0	18.50	7.60	6,649.3	-189.4	429.8	1,304,456.46	3,161,873.38	40.167670	-104.920792
6,722.0	22.60	9.20	6,693.3	-173.1	432.2	1,304,472.79	3,161,875.70	40.167715	-104.920784
6,770.0	26.90	9.70	6,736.9	-153.3	435.5	1,304,492.63	3,161,878.88	40.167769	-104.920772
6,817.0	29.60	6.80	6,778.3	-131.2	438.7	1,304,514.66	3,161,881.90	40.167830	-104.920761
6,865.0	35.60	4.80	6,818.7	-105.5	441.3	1,304,540.40	3,161,884.31	40.167900	-104.920751
6,912.0	39.30	4.60	6,856.0	-77.0	443.6	1,304,568.89	3,161,886.46	40.167978	-104.920743
6,959.0	46.00	3.80	6,890.6	-45.3	445.9	1,304,600.64	3,161,888.57	40.168066	-104.920735
7,006.0	50.20	0.90	6,921.9	-10.4	447.3	1,304,635.59	3,161,889.75	40.168162	-104.920730
7,054.0	57.30	359.90	6,950.3	28.3	447.6	1,304,674.28	3,161,889.75	40.168268	-104.920729
7,101.0	59.10	359.90	6,975.1	68.3	447.5	1,304,714.22	3,161,889.42	40.168377	-104.920729
7,148.0	60.30	1.00	6,998.8	108.8	447.8	1,304,754.80	3,161,889.48	40.168489	-104.920728
7,195.0	61.80	2.70	7,021.5	149.9	449.1	1,304,795.91	3,161,890.54	40.168602	-104.920723
7,243.0	64.30	4.00	7,043.3	192.6	451.7	1,304,838.63	3,161,892.77	40.168719	-104.920714
7,290.0	66.30	3.60	7,062.9	235.3	454.5	1,304,881.25	3,161,895.32	40.168836	-104.920704
7,337.0	69.10	3.10	7,080.8	278.7	457.0	1,304,924.67	3,161,897.58	40.168955	-104.920695
7,384.0	72.60	2.50	7,096.2	323.0	459.2	1,304,969.03	3,161,899.45	40.169077	-104.920687
7,432.0	74.80	2.90	7,109.6	369.0	461.4	1,305,015.06	3,161,901.32	40.169203	-104.920679
7,479.0	79.00	2.50	7,120.3	414.7	463.5	1,305,060.78	3,161,903.18	40.169328	-104.920672
7,527.0	82.20	0.50	7,128.1	462.1	464.7	1,305,108.12	3,161,904.11	40.169458	-104.920667
7,574.0	85.70	359.20	7,133.1	508.8	464.6	1,305,154.85	3,161,903.68	40.169587	-104.920668
7,636.0	89.70	357.90	7,135.6	570.7	463.1	1,305,216.74	3,161,901.71	40.169757	-104.920673
7,668.0	89.50	358.00	7,135.8	602.7	461.9	1,305,248.71	3,161,900.36	40.169844	-104.920677
7,760.0	91.00	358.90	7,135.4	694.6	459.4	1,305,340.65	3,161,897.27	40.170097	-104.920686
7,852.0	92.20	0.70	7,132.8	786.6	459.1	1,305,432.61	3,161,896.35	40.170349	-104.920687
7,944.0	91.30	1.60	7,130.0	878.5	460.9	1,305,524.56	3,161,897.60	40.170602	-104.920681
8,036.0	89.80	2.30	7,129.1	970.5	464.1	1,305,616.51	3,161,900.13	40.170854	-104.920670
8,128.0	89.10	1.90	7,130.0	1,062.4	467.4	1,305,708.47	3,161,902.90	40.171106	-104.920658
8,220.0	89.40	359.40	7,131.2	1,154.4	468.5	1,305,800.45	3,161,903.34	40.171359	-104.920654
8,311.0	89.80	359.80	7,131.9	1,245.4	467.9	1,305,891.44	3,161,902.11	40.171609	-104.920656
8,403.0	91.20	359.40	7,131.1	1,337.4	467.2	1,305,983.42	3,161,900.87	40.171861	-104.920658
8,495.0	89.20	359.40	7,130.7	1,429.4	466.3	1,306,075.42	3,161,899.31	40.172114	-104.920662
8,587.0	90.70	359.70	7,130.8	1,521.4	465.5	1,306,167.41	3,161,897.99	40.172366	-104.920664
8,679.0	90.90	359.80	7,129.5	1,613.4	465.1	1,306,259.40	3,161,896.99	40.172619	-104.920666
8,771.0	93.10	0.30	7,126.3	1,705.3	465.2	1,306,351.33	3,161,896.47	40.172871	-104.920666
8,863.0	92.90	1.60	7,121.5	1,797.2	466.7	1,306,443.20	3,161,897.39	40.173123	-104.920660
8,955.0	93.00	2.00	7,116.8	1,889.0	469.6	1,306,535.05	3,161,899.68	40.173375	-104.920650
9,046.0	91.10	2.20	7,113.5	1,979.9	472.9	1,306,625.95	3,161,902.42	40.173625	-104.920638
9,138.0	90.70	1.20	7,112.1	2,071.8	475.7	1,306,717.91	3,161,904.55	40.173877	-104.920628
9,230.0	87.60	0.50	7,113.4	2,163.8	477.0	1,306,809.88	3,161,905.32	40.174130	-104.920623
9,322.0	88.10	359.90	7,116.9	2,255.7	477.4	1,306,901.82	3,161,905.04	40.174382	-104.920622
9,414.0	88.30	359.50	7,119.8	2,347.7	476.9	1,306,993.77	3,161,903.96	40.174635	-104.920624
9,506.0	88.40	357.90	7,122.4	2,439.6	474.8	1,307,085.69	3,161,901.27	40.174887	-104.920631
9,598.0	89.40	357.60	7,124.2	2,531.5	471.2	1,307,177.57	3,161,897.06	40.175139	-104.920644
9,690.0	89.90	357.00	7,124.8	2,623.4	466.9	1,307,269.44	3,161,892.13	40.175392	-104.920660
9,782.0	90.80	357.10	7,124.2	2,715.3	462.1	1,307,361.28	3,161,886.80	40.175644	-104.920676
9,874.0	91.80	358.00	7,122.1	2,807.2	458.2	1,307,453.14	3,161,882.27	40.175896	-104.920691
9,968.0	89.80	359.10	7,120.8	2,901.1	455.8	1,307,547.08	3,161,879.28	40.176154	-104.920699

Cathedral Energy Services

Survey Report - Geographic

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-Geist 2B-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (H&P 522)
Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (H&P 522)
Well:	Vogl-Geist 2B-5H-E267	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
10,063.0	88.20	358.90	7,122.5	2,996.1	454.1	1,307,642.04	3,161,877.00	40.176415	-104.920705
10,158.0	88.80	358.40	7,124.9	3,091.0	451.9	1,307,736.96	3,161,874.15	40.176675	-104.920713
10,252.0	91.00	359.00	7,125.1	3,185.0	449.8	1,307,830.91	3,161,871.40	40.176933	-104.920721
10,347.0	91.60	359.80	7,122.9	3,280.0	448.8	1,307,925.87	3,161,869.79	40.177194	-104.920724
10,441.0	90.10	3.10	7,121.6	3,373.9	451.2	1,308,019.83	3,161,871.55	40.177452	-104.920716
10,536.0	91.80	1.60	7,120.0	3,468.8	455.1	1,308,114.76	3,161,874.83	40.177712	-104.920702
10,631.0	90.10	1.90	7,118.4	3,563.8	458.0	1,308,209.71	3,161,877.11	40.177973	-104.920691
10,725.0	91.70	4.10	7,116.9	3,657.6	462.9	1,308,303.59	3,161,881.42	40.178231	-104.920674
10,820.0	92.00	4.10	7,113.9	3,752.3	469.7	1,308,398.34	3,161,887.59	40.178491	-104.920649
10,915.0	90.50	2.90	7,111.8	3,847.1	475.5	1,308,493.18	3,161,892.77	40.178751	-104.920629
11,009.0	88.80	0.80	7,112.4	3,941.1	478.5	1,308,587.13	3,161,895.19	40.179009	-104.920618
11,104.0	89.70	1.00	7,113.6	4,036.0	480.0	1,308,682.12	3,161,896.07	40.179269	-104.920612
11,199.0	88.60	359.70	7,115.0	4,131.0	480.6	1,308,777.11	3,161,896.03	40.179530	-104.920610
11,293.0	89.20	358.70	7,116.8	4,225.0	479.3	1,308,871.07	3,161,894.10	40.179788	-104.920615
11,388.0	88.40	356.70	7,118.8	4,319.9	475.4	1,308,965.94	3,161,889.67	40.180049	-104.920629
11,482.0	90.70	358.00	7,119.5	4,413.8	471.1	1,309,059.80	3,161,884.72	40.180306	-104.920644
11,577.0	91.80	359.10	7,117.5	4,508.7	468.7	1,309,154.72	3,161,881.70	40.180567	-104.920653
11,671.0	91.60	0.10	7,114.7	4,602.7	468.0	1,309,248.67	3,161,880.43	40.180825	-104.920655
11,766.0	91.30	0.50	7,112.3	4,697.6	468.5	1,309,343.64	3,161,880.31	40.181086	-104.920653
11,861.0	91.10	0.50	7,110.3	4,792.6	469.4	1,309,438.62	3,161,880.52	40.181346	-104.920650
11,955.0	91.50	0.30	7,108.2	4,886.6	470.0	1,309,532.60	3,161,880.56	40.181604	-104.920648
12,050.0	90.10	0.00	7,106.8	4,981.6	470.3	1,309,627.58	3,161,880.19	40.181865	-104.920647
12,144.0	89.60	359.80	7,107.1	5,075.6	470.1	1,309,721.58	3,161,879.41	40.182123	-104.920648
12,239.0	88.70	359.70	7,108.5	5,170.6	469.7	1,309,816.56	3,161,878.38	40.182384	-104.920649
12,333.0	91.40	359.80	7,108.4	5,264.6	469.3	1,309,910.55	3,161,877.36	40.182642	-104.920651
12,428.0	92.10	0.20	7,105.5	5,359.5	469.3	1,310,005.50	3,161,876.74	40.182902	-104.920651
12,522.0	92.40	0.60	7,101.8	5,453.4	469.9	1,310,099.43	3,161,876.78	40.183160	-104.920648
12,617.0	90.40	0.60	7,099.5	5,548.4	470.9	1,310,194.40	3,161,877.16	40.183421	-104.920645
12,711.0	91.30	0.70	7,098.1	5,642.4	472.0	1,310,288.38	3,161,877.61	40.183679	-104.920641
12,806.0	90.20	359.80	7,096.9	5,737.4	472.4	1,310,383.37	3,161,877.41	40.183940	-104.920639
12,901.0	91.00	358.70	7,095.9	5,832.4	471.2	1,310,478.35	3,161,875.55	40.184200	-104.920644
12,995.0	89.60	358.20	7,095.4	5,926.3	468.6	1,310,572.29	3,161,872.39	40.184458	-104.920653
13,090.0	87.60	357.70	7,097.7	6,021.2	465.2	1,310,667.17	3,161,868.38	40.184719	-104.920665
13,184.0	86.50	357.70	7,102.5	6,115.0	461.5	1,310,760.95	3,161,864.00	40.184976	-104.920679
13,216.0	87.30	357.40	7,104.3	6,146.9	460.1	1,310,792.86	3,161,862.43	40.185064	-104.920683
13,279.0	89.50	357.50	7,106.0	6,209.9	457.3	1,310,855.75	3,161,859.21	40.185237	-104.920694
13,373.0	90.20	357.40	7,106.3	6,303.8	453.1	1,310,949.63	3,161,854.42	40.185495	-104.920708
13,468.0	91.60	358.80	7,104.8	6,398.7	450.0	1,311,044.54	3,161,850.65	40.185755	-104.920720
13,562.0	91.30	1.40	7,102.4	6,492.7	450.1	1,311,138.50	3,161,850.20	40.186013	-104.920719
13,657.0	90.10	1.60	7,101.2	6,587.6	452.6	1,311,233.47	3,161,852.07	40.186274	-104.920710
13,751.0	89.50	1.90	7,101.6	6,681.6	455.5	1,311,327.44	3,161,854.33	40.186532	-104.920700
13,846.0	86.60	0.50	7,104.8	6,776.5	457.5	1,311,422.36	3,161,855.70	40.186792	-104.920693
13,877.0	86.10	0.50	7,106.8	6,807.4	457.7	1,311,453.30	3,161,855.77	40.186877	-104.920692
13,941.0	87.30	358.10	7,110.4	6,871.3	457.0	1,311,517.18	3,161,854.57	40.187053	-104.920695
14,004.0	87.60	356.20	7,113.3	6,934.2	453.8	1,311,580.01	3,161,851.03	40.187225	-104.920706
14,035.0	87.30	356.10	7,114.6	6,965.1	451.8	1,311,610.90	3,161,848.75	40.187310	-104.920713
14,130.0	91.60	356.00	7,115.5	7,059.8	445.2	1,311,705.60	3,161,841.59	40.187570	-104.920737
14,224.0	91.70	356.20	7,112.8	7,153.5	438.8	1,311,799.30	3,161,834.59	40.187827	-104.920760
14,319.0	91.60	356.80	7,110.1	7,248.3	433.0	1,311,894.05	3,161,828.18	40.188088	-104.920780
14,346.0	91.60	356.70	7,109.3	7,275.2	431.5	1,311,920.95	3,161,826.47	40.188161	-104.920786
Last CES Survey @ 14,346' MD									
14,400.0	91.60	356.70	7,107.8	7,329.1	428.4	1,311,974.82	3,161,823.02	40.188309	-104.920797
PTB @ 14,400' MD									

Cathedral Energy Services

Survey Report - Geographic

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-Geist 2B-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (H&P 522)
Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (H&P 522)
Well:	Vogl-Geist 2B-5H-E267	North Reference:	True
Wellbore:	Hz	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users DB

Design 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									
Vogl-Gesit 2B-5H-E267	0.00	0.00	7,105.6	7,391.3	430.2	1,312,037.03	3,161,824.47	40.188480	-104.920790
- actual wellpath misses target center by 62.3ft at 14400.0ft MD (7107.8 TVD, 7329.1 N, 428.4 E)									
- Point									
Vogl-Geist 2B-5H-E267	0.00	0.00	7,115.1	4,701.4	469.6	1,309,347.45	3,161,881.34	40.181096	-104.920650
- actual wellpath misses target center by 3.1ft at 11769.8ft MD (7112.2 TVD, 4701.4 N, 468.6 E)									
- Point									

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
14,346.0	7,109.3	7,275.2	431.5	Last CES Survey @ 14,346' MD
14,400.0	7,107.8	7,329.1	428.4	PTB @ 14,400' MD

Checked By: _____ Approved By: _____ Date: _____