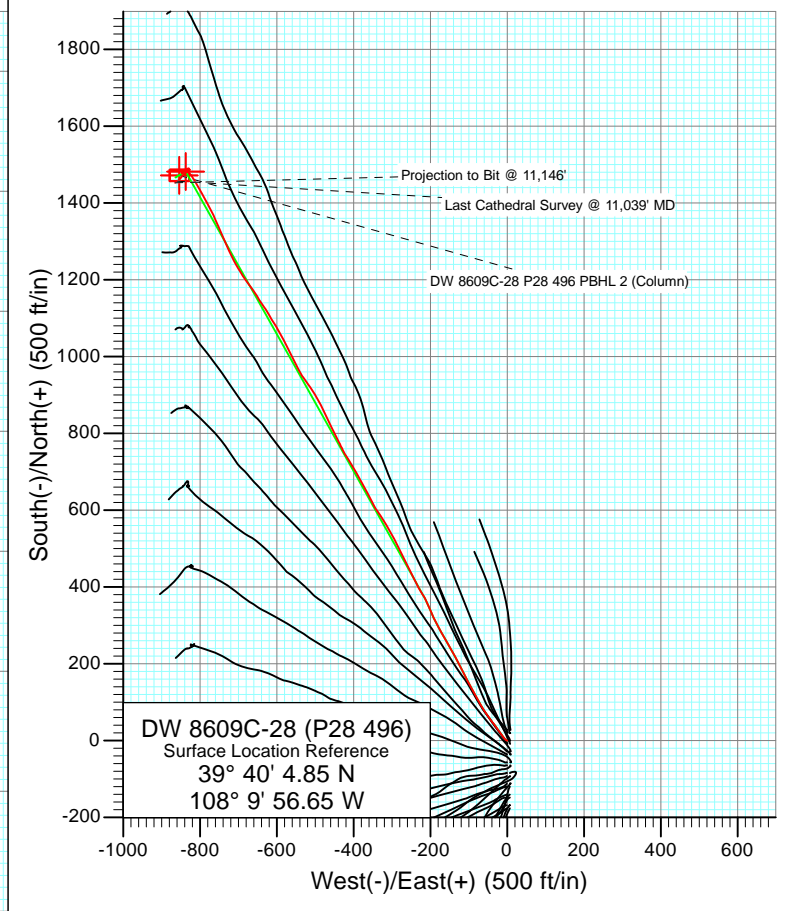
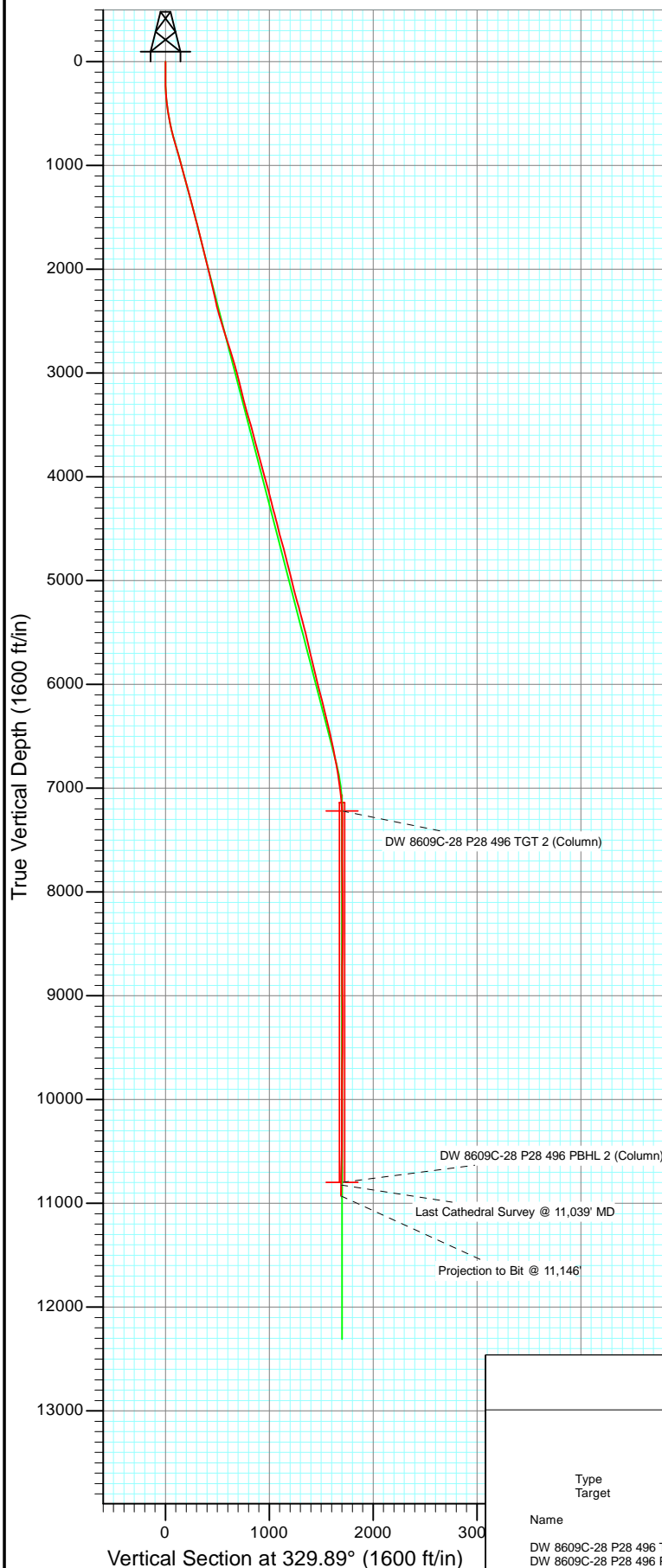




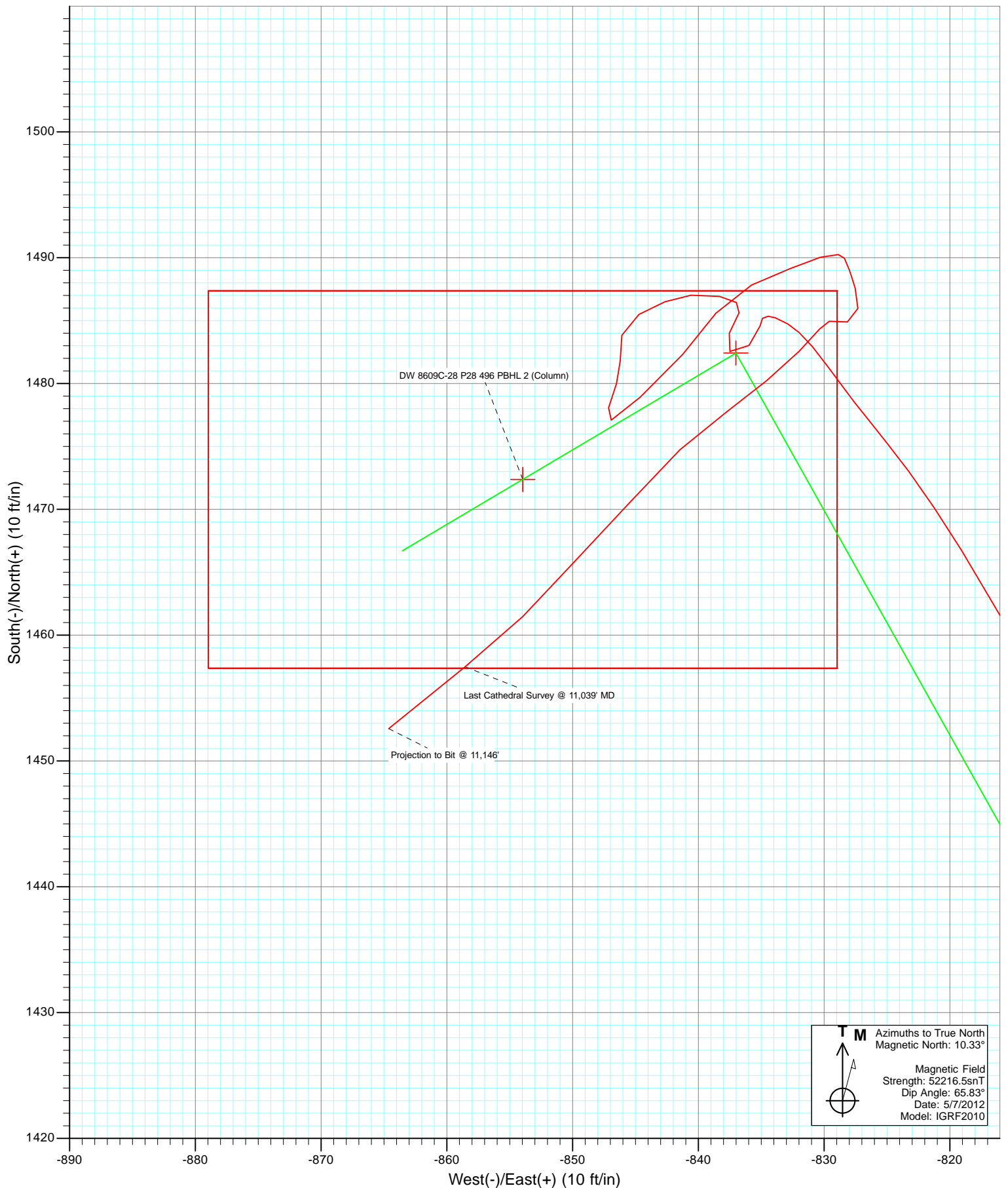
Project: Double Willow
 Site: S28-T4S-R96W (P28 496)(column pattern)
 Well: DW 8609C-28 (P28 496)
 Wellbore: DD
 Design: FINAL



Azimuths to True North
 Magnetic North: 10.33°

Magnetic Field
 Strength: 52216.5nT
 Dip Angle: 65.83°
 Date: 5/7/2012
 Model: IGRF2010

DD DW 8609C-28 (P28 496) 125132; 143055; DN						
KBE @ 7813.0ft (Patterson 308) North American Datum 1983 Well DW 8609C-28 (P28 496), True North						
Type	Target	Azimuth	Origin	Type	N/S	E/W
Target	DW 8609C-28 P28 496 PBHL (Column)	329.89	Slot		0.0	0.0
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	
DW 8609C-28 P28 496 TGT 2 (Column)	7219.0	1482.4	-837.0	39° 40' 19.50 N	108° 10' 7.36 W	
DW 8609C-28 P28 496 PBHL 2 (Column)	10818.0	1472.4	-854.0	39° 40' 19.40 N	108° 10' 7.57 W	



Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well DW 8609C-28 (P28 496)
Project:	Double Willow	TVD Reference:	KBE @ 7813.0ft (Patterson 308)
Site:	S28-T4S-R96W (P28 496)(column pattern)	MD Reference:	KBE @ 7813.0ft (Patterson 308)
Well:	DW 8609C-28 (P28 496)	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	DD	Database:	USA EDM 5000 Multi Users DB

Project	Double Willow		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Central Zone		

Site	S28-T4S-R96W (P28 496)(column pattern)				
Site Position:		Northing:	1,679,243.29 ft	Latitude:	39° 40' 5.13 N
From:	Lat/Long	Easting:	2,249,687.54 ft	Longitude:	108° 9' 56.55 W
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.68 °

Well	DW 8609C-28 (P28 496)					
Well Position	+N/-S	0.0 ft	Northing:	1,679,215.52 ft	Latitude:	39° 40' 4.85 N
	+E/-W	0.0 ft	Easting:	2,249,678.60 ft	Longitude:	108° 9' 56.65 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	7,780.0 ft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/7/2012	10.33	65.83	52,217

Design	DD				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.0	0.0	0.0	329.89	

Survey Program	Date	5/18/2012			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
82.0	11,146.0	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		
82.0	0.00	0.00	82.0	0.0	0.0	0.0	0.00	0.00		
112.0	0.00	0.00	112.0	0.0	0.0	0.0	0.00	0.00		
143.0	0.00	0.00	143.0	0.0	0.0	0.0	0.00	0.00		
173.0	0.00	0.00	173.0	0.0	0.0	0.0	0.00	0.00		
203.0	1.70	309.60	203.0	0.3	-0.3	0.4	5.67	5.67		
233.0	2.90	299.30	233.0	0.9	-1.3	1.5	4.21	4.00		
262.0	3.60	294.90	261.9	1.7	-2.8	2.9	2.56	2.41		
292.0	3.70	316.10	291.9	2.8	-4.3	4.6	4.49	0.33		
322.0	4.70	323.10	321.8	4.5	-5.7	6.7	3.74	3.33		
352.0	4.70	317.90	351.7	6.4	-7.3	9.2	1.42	0.00		
383.0	5.90	321.90	382.6	8.5	-9.1	12.0	4.05	3.87		
414.0	7.10	326.20	413.4	11.4	-11.2	15.5	4.17	3.87		

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well DW 8609C-28 (P28 496)
Project:	Double Willow	TVD Reference:	KBE @ 7813.0ft (Patterson 308)
Site:	S28-T4S-R96W (P28 496)(column pattern)	MD Reference:	KBE @ 7813.0ft (Patterson 308)
Well:	DW 8609C-28 (P28 496)	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	DD	Database:	USA EDM 5000 Multi Users DB

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Formations / Comments
444.0	7.90	323.20	443.1	14.6	-13.5	19.4	2.97	2.67	
474.0	8.70	322.80	472.8	18.0	-16.1	23.7	2.67	2.67	
505.0	9.60	323.30	503.4	22.0	-19.0	28.6	2.91	2.90	
553.0	10.30	327.30	550.7	28.8	-23.7	36.8	2.05	1.46	
599.0	11.60	320.40	595.8	35.8	-28.9	45.5	4.01	2.83	
645.0	13.00	322.70	640.8	43.5	-35.0	55.2	3.22	3.04	
691.0	14.10	324.30	685.5	52.2	-41.4	65.9	2.53	2.39	
782.0	16.80	324.70	773.2	71.9	-55.5	90.0	2.97	2.97	
874.0	16.50	331.60	861.3	94.3	-69.4	116.3	2.17	-0.33	
965.0	15.00	329.90	948.9	115.8	-81.4	141.0	1.72	-1.65	
1,057.0	14.80	332.30	1,037.8	136.5	-92.9	164.7	0.71	-0.22	
1,148.0	14.80	332.20	1,125.8	157.1	-103.7	187.9	0.03	0.00	
1,240.0	15.50	333.80	1,214.6	178.5	-114.6	211.9	0.89	0.76	
1,331.0	14.80	333.10	1,302.5	199.8	-125.2	235.6	0.80	-0.77	
1,423.0	14.70	331.10	1,391.4	220.5	-136.2	259.0	0.56	-0.11	
1,514.0	15.20	330.00	1,479.3	240.9	-147.7	282.5	0.63	0.55	
1,606.0	14.20	330.40	1,568.3	261.2	-159.3	305.9	1.09	-1.09	
1,698.0	13.20	330.80	1,657.7	280.2	-170.0	327.7	1.09	-1.09	
1,789.0	13.90	330.60	1,746.2	298.8	-180.5	349.0	0.77	0.77	
1,881.0	14.20	334.30	1,835.4	318.6	-190.8	371.3	1.03	0.33	
1,972.0	14.70	337.70	1,923.5	339.3	-200.0	393.8	1.08	0.55	
2,087.0	14.20	334.60	2,034.9	365.5	-211.6	422.4	0.80	-0.43	
2,165.0	12.50	328.70	2,110.8	381.4	-220.1	440.3	2.79	-2.18	
2,257.0	12.90	328.70	2,200.6	398.7	-230.6	460.6	0.43	0.43	
2,349.0	11.90	335.00	2,290.4	416.0	-239.9	480.3	1.83	-1.09	
2,440.0	15.20	333.30	2,378.9	435.2	-249.2	501.5	3.65	3.63	
2,531.0	15.90	333.20	2,466.5	457.0	-260.2	525.9	0.77	0.77	
2,623.0	17.40	336.00	2,554.7	480.8	-271.5	552.1	1.85	1.63	
2,714.0	17.40	331.70	2,641.5	505.2	-283.5	579.3	1.41	0.00	
2,806.0	18.10	332.10	2,729.1	530.0	-296.7	607.3	0.77	0.76	
2,898.0	17.80	329.30	2,816.7	554.7	-310.6	635.6	0.99	-0.33	
2,989.0	16.30	328.50	2,903.7	577.5	-324.3	662.3	1.67	-1.65	
3,081.0	14.40	323.40	2,992.4	597.7	-337.9	686.6	2.53	-2.07	
3,172.0	14.00	334.80	3,080.6	616.8	-349.3	708.8	3.10	-0.44	
3,264.0	13.40	333.20	3,170.0	636.4	-358.9	730.5	0.77	-0.65	
3,355.0	15.30	328.90	3,258.2	656.1	-369.8	753.1	2.39	2.09	
3,446.0	14.30	332.80	3,346.1	676.3	-381.2	776.3	1.55	-1.10	
3,538.0	17.80	330.40	3,434.5	698.7	-393.3	801.7	3.87	3.80	
3,629.0	15.30	329.60	3,521.8	721.1	-406.3	827.6	2.76	-2.75	
3,721.0	13.40	326.10	3,610.9	740.5	-418.4	850.4	2.27	-2.07	
3,812.0	16.90	334.70	3,698.7	761.2	-429.9	874.1	4.56	3.85	
3,903.0	13.80	331.20	3,786.5	782.6	-440.8	898.2	3.55	-3.41	
3,995.0	15.60	336.10	3,875.5	803.6	-451.1	921.4	2.38	1.96	
4,086.0	14.20	332.40	3,963.4	824.7	-461.2	944.8	1.86	-1.54	
4,178.0	16.80	336.00	4,052.0	846.8	-471.9	969.3	3.01	2.83	
4,270.0	14.10	333.70	4,140.7	869.0	-482.2	993.7	3.01	-2.93	
4,361.0	14.50	328.30	4,228.9	888.6	-493.1	1,016.1	1.53	0.44	
4,452.0	15.60	328.10	4,316.8	908.7	-505.6	1,039.7	1.21	1.21	
4,544.0	14.60	325.10	4,405.6	928.7	-518.8	1,063.6	1.38	-1.09	
4,636.0	12.80	324.50	4,495.0	946.5	-531.3	1,085.3	1.96	-1.96	
4,727.0	16.60	333.00	4,583.0	966.3	-543.1	1,108.4	4.79	4.18	
4,819.0	15.70	334.30	4,671.4	989.3	-554.4	1,133.9	1.05	-0.98	
4,911.0	13.00	331.00	4,760.5	1,009.5	-564.9	1,156.7	3.07	-2.93	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well DW 8609C-28 (P28 496)
Project:	Double Willow	TVD Reference:	KBE @ 7813.0ft (Patterson 308)
Site:	S28-T4S-R96W (P28 496)(column pattern)	MD Reference:	KBE @ 7813.0ft (Patterson 308)
Well:	DW 8609C-28 (P28 496)	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	DD	Database:	USA EDM 5000 Multi Users DB

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Formations / Comments
5,002.0	15.30	333.90	4,848.7	1,029.3	-575.1	1,178.9	2.64	2.53	
5,093.0	13.40	334.60	4,936.9	1,049.6	-584.9	1,201.4	2.10	-2.09	
5,185.0	13.10	327.00	5,026.4	1,067.9	-595.2	1,222.4	1.92	-0.33	
5,276.0	15.00	328.30	5,114.7	1,086.6	-607.0	1,244.5	2.12	2.09	
5,368.0	16.70	330.30	5,203.2	1,108.2	-619.8	1,269.6	1.94	1.85	
5,460.0	14.60	326.00	5,291.8	1,129.3	-632.8	1,294.4	2.61	-2.28	
5,551.0	14.40	326.00	5,379.9	1,148.2	-645.5	1,317.1	0.22	-0.22	
5,643.0	14.90	328.30	5,468.9	1,167.8	-658.2	1,340.4	0.83	0.54	
5,734.0	12.90	322.30	5,557.2	1,185.8	-670.5	1,362.1	2.71	-2.20	
5,826.0	12.80	325.90	5,646.9	1,202.3	-682.5	1,382.5	0.88	-0.11	
5,917.0	13.50	327.00	5,735.5	1,219.6	-693.9	1,403.1	0.82	0.77	
6,009.0	14.60	331.50	5,824.8	1,238.8	-705.3	1,425.5	1.68	1.20	
6,100.0	12.30	331.70	5,913.3	1,257.4	-715.4	1,446.6	2.53	-2.53	
6,192.0	13.80	337.20	6,002.9	1,276.1	-724.3	1,467.3	2.12	1.63	
6,284.0	15.40	335.40	6,091.9	1,297.4	-733.6	1,490.3	1.81	1.74	
6,375.0	14.80	336.80	6,179.8	1,319.0	-743.2	1,513.9	0.77	-0.66	
6,467.0	13.90	336.40	6,268.9	1,340.0	-752.3	1,536.5	0.98	-0.98	
6,559.0	12.60	336.80	6,358.5	1,359.3	-760.7	1,557.5	1.42	-1.41	
6,650.0	13.50	331.80	6,447.1	1,377.8	-769.6	1,578.0	1.59	0.99	
6,742.0	12.50	331.80	6,536.8	1,396.0	-779.4	1,598.6	1.09	-1.09	
6,834.0	11.30	332.00	6,626.8	1,412.8	-788.3	1,617.6	1.31	-1.30	
6,925.0	11.00	331.10	6,716.1	1,428.2	-796.7	1,635.2	0.38	-0.33	
7,017.0	9.80	329.30	6,806.6	1,442.7	-804.9	1,651.8	1.35	-1.30	
7,109.0	8.60	330.50	6,897.4	1,455.4	-812.3	1,666.5	1.32	-1.30	
7,200.0	8.10	328.10	6,987.4	1,466.7	-819.1	1,679.7	0.67	-0.55	
7,291.0	5.30	320.60	7,077.8	1,475.4	-825.1	1,690.3	3.22	-3.08	
7,383.0	4.10	324.40	7,169.5	1,481.4	-829.7	1,697.7	1.35	-1.30	
7,474.0	1.80	299.20	7,260.4	1,484.7	-832.9	1,702.2	2.84	-2.53	
7,566.0	0.40	251.90	7,352.3	1,485.3	-834.4	1,703.5	1.69	-1.52	
7,658.0	0.20	248.20	7,444.3	1,485.2	-834.9	1,703.6	0.22	-0.22	
7,749.0	0.70	185.20	7,535.3	1,484.6	-835.1	1,703.2	0.70	0.55	
7,841.0	1.60	219.70	7,627.3	1,483.0	-836.0	1,702.3	1.19	0.98	
7,932.0	1.10	305.80	7,718.3	1,482.6	-837.5	1,702.6	2.06	-0.55	
8,019.0	1.50	33.20	7,805.3	1,484.0	-837.5	1,703.9	2.09	0.46	
8,110.0	0.80	12.00	7,896.3	1,485.6	-836.8	1,704.9	0.89	-0.77	
8,202.0	0.50	300.80	7,988.3	1,486.4	-837.0	1,705.7	0.86	-0.33	
8,293.0	1.30	285.50	8,079.2	1,486.9	-838.3	1,706.8	0.91	0.88	
8,385.0	1.60	261.30	8,171.2	1,487.0	-840.6	1,708.0	0.73	0.33	
8,476.0	1.10	248.70	8,262.2	1,486.5	-842.6	1,708.6	0.64	-0.55	
8,567.0	1.80	241.10	8,353.2	1,485.5	-844.7	1,708.8	0.80	0.77	
8,659.0	1.20	185.60	8,445.1	1,483.8	-846.1	1,708.1	1.62	-0.65	
8,750.0	1.40	182.40	8,536.1	1,481.8	-846.2	1,706.3	0.23	0.22	
8,842.0	0.90	200.00	8,628.1	1,480.0	-846.5	1,704.9	0.66	-0.54	
8,934.0	1.60	197.20	8,720.1	1,478.1	-847.1	1,703.6	0.76	0.76	
9,025.0	0.80	67.90	8,811.1	1,477.1	-846.9	1,702.6	2.41	-0.88	
9,117.0	2.90	47.20	8,903.0	1,478.9	-844.6	1,703.1	2.36	2.28	
9,208.0	3.10	42.70	8,993.9	1,482.3	-841.3	1,704.3	0.34	0.22	
9,300.0	2.20	33.50	9,085.8	1,485.6	-838.6	1,705.8	1.08	-0.98	
9,392.0	2.50	67.60	9,177.7	1,487.8	-835.8	1,706.3	1.53	0.33	
9,483.0	1.70	65.90	9,268.6	1,489.1	-832.7	1,705.9	0.88	-0.88	
9,575.0	1.50	73.30	9,360.6	1,490.0	-830.3	1,705.5	0.31	-0.22	
9,666.0	0.40	113.70	9,451.6	1,490.3	-828.9	1,705.0	1.34	-1.21	
9,758.0	0.30	130.10	9,543.6	1,490.0	-828.4	1,704.5	0.15	-0.11	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well DW 8609C-28 (P28 496)
Project:	Double Willow	TVD Reference:	KBE @ 7813.0ft (Patterson 308)
Site:	S28-T4S-R96W (P28 496)(column pattern)	MD Reference:	KBE @ 7813.0ft (Patterson 308)
Well:	DW 8609C-28 (P28 496)	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	DD	Database:	USA EDM 5000 Multi Users DB

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Formations / Comments
9,849.0	1.10	163.70	9,634.6	1,489.0	-828.0	1,703.4	0.95	0.88	
9,941.0	0.70	160.70	9,726.6	1,487.6	-827.5	1,702.0	0.44	-0.43	
10,032.0	1.40	177.90	9,817.6	1,486.0	-827.3	1,700.5	0.84	0.77	
10,124.0	1.10	273.70	9,909.5	1,484.9	-828.1	1,700.0	2.03	-0.33	
10,216.0	0.70	269.50	10,001.5	1,484.9	-829.6	1,700.7	0.44	-0.43	
10,307.0	0.80	198.80	10,092.5	1,484.3	-830.3	1,700.6	0.96	0.11	
10,399.0	2.30	230.50	10,184.5	1,482.6	-832.0	1,699.9	1.82	1.63	
10,490.0	2.10	225.10	10,275.4	1,480.2	-834.6	1,699.2	0.32	-0.22	
10,582.0	2.90	237.10	10,367.3	1,477.8	-837.7	1,698.6	1.03	0.87	
10,673.0	3.20	225.40	10,458.2	1,474.7	-841.5	1,697.9	0.76	0.33	
10,765.0	4.00	222.30	10,550.0	1,470.6	-845.4	1,696.3	0.89	0.87	
10,856.0	3.90	223.60	10,640.8	1,466.0	-849.7	1,694.4	0.15	-0.11	
10,948.0	3.80	223.10	10,732.6	1,461.5	-854.0	1,692.7	0.11	-0.11	
11,039.0	3.90	234.70	10,823.4	1,457.5	-858.5	1,691.5	0.86	0.11	Last Cathedral Survey @ 11,039' MD Projection to Bit @ 11,146'
11,146.0	4.50	227.70	10,930.1	1,452.6	-864.6	1,690.3	0.74	0.56	

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
DW 8609C-28 P28 496 - hit/miss target - Shape	0.00	0.00	7,219.0	1,482.4	-837.0	1,680,721.87	2,248,885.45	39° 40' 19.50 N	108° 10' 7.36 W
- actual wellpath misses target center by 5.5ft at 7432.8ft MD (7219.1 TVD, 1483.7 N, -831.6 E)									
- Point									
DW 8609C-28 P28 496 I	0.00	0.00	10,818.0	1,472.4	-854.0	1,680,712.32	2,248,868.21	39° 40' 19.40 N	108° 10' 7.57 W
- actual wellpath misses target center by 15.3ft at 11032.7ft MD (10817.1 TVD, 1457.7 N, -858.2 E)									
- Rectangle (sides W30.0 H50.0 D0.0)									
DW 8609C-28 P28 496 I	0.00	0.00	10,799.0	1,472.4	-854.0	1,680,712.32	2,248,868.21	39° 40' 19.40 N	108° 10' 7.57 W
- actual wellpath misses target center by 14.3ft at 11013.8ft MD (10798.2 TVD, 1458.5 N, -857.2 E)									
- Rectangle (sides W30.0 H50.0 D0.0)									
DW 8609C-28 P28 496 -	0.00	0.00	7,158.0	1,482.4	-837.0	1,680,721.87	2,248,885.45	39° 40' 19.50 N	108° 10' 7.36 W
- actual wellpath misses target center by 7.9ft at 7372.0ft MD (7158.5 TVD, 1480.7 N, -829.3 E)									
- Point									

Design Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
11,039.0	10,823.4	1,457.5	-858.5	Last Cathedral Survey @ 11,039' MD Projection to Bit @ 11,146'	
11,146.0	10,930.1	1,452.6	-864.6		

Checked By: _____ Approved By: _____ Date: _____