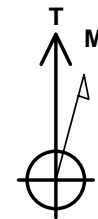
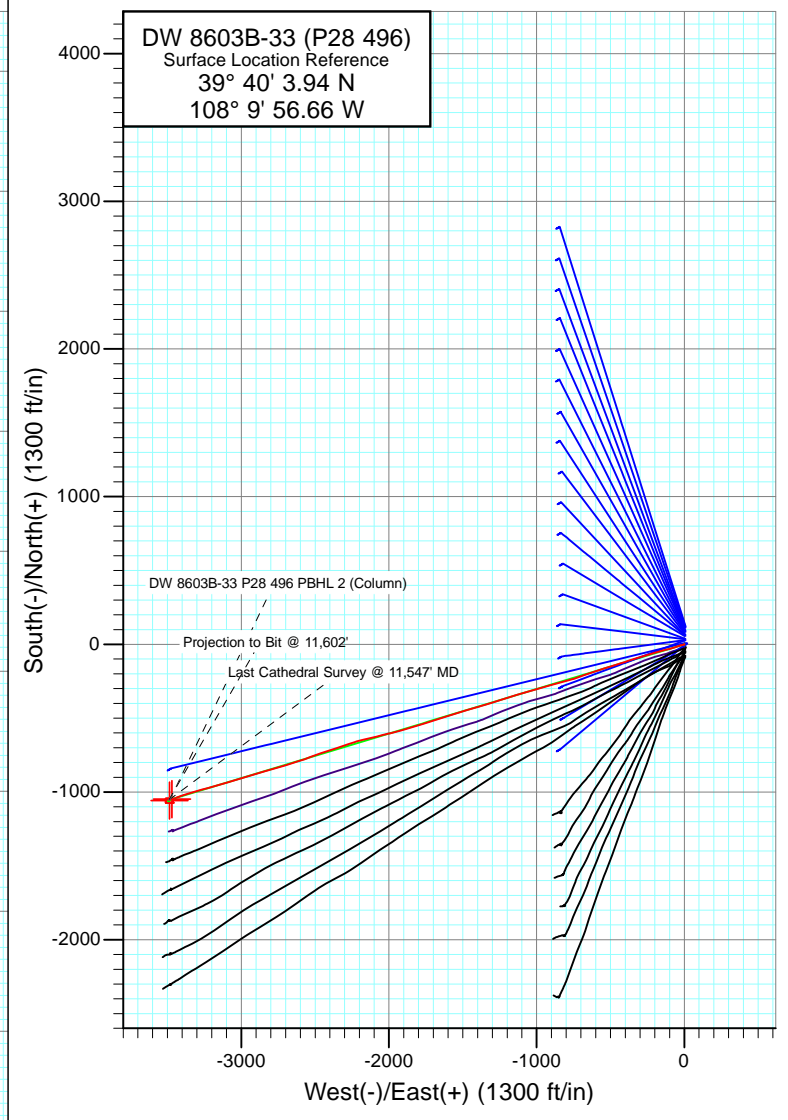
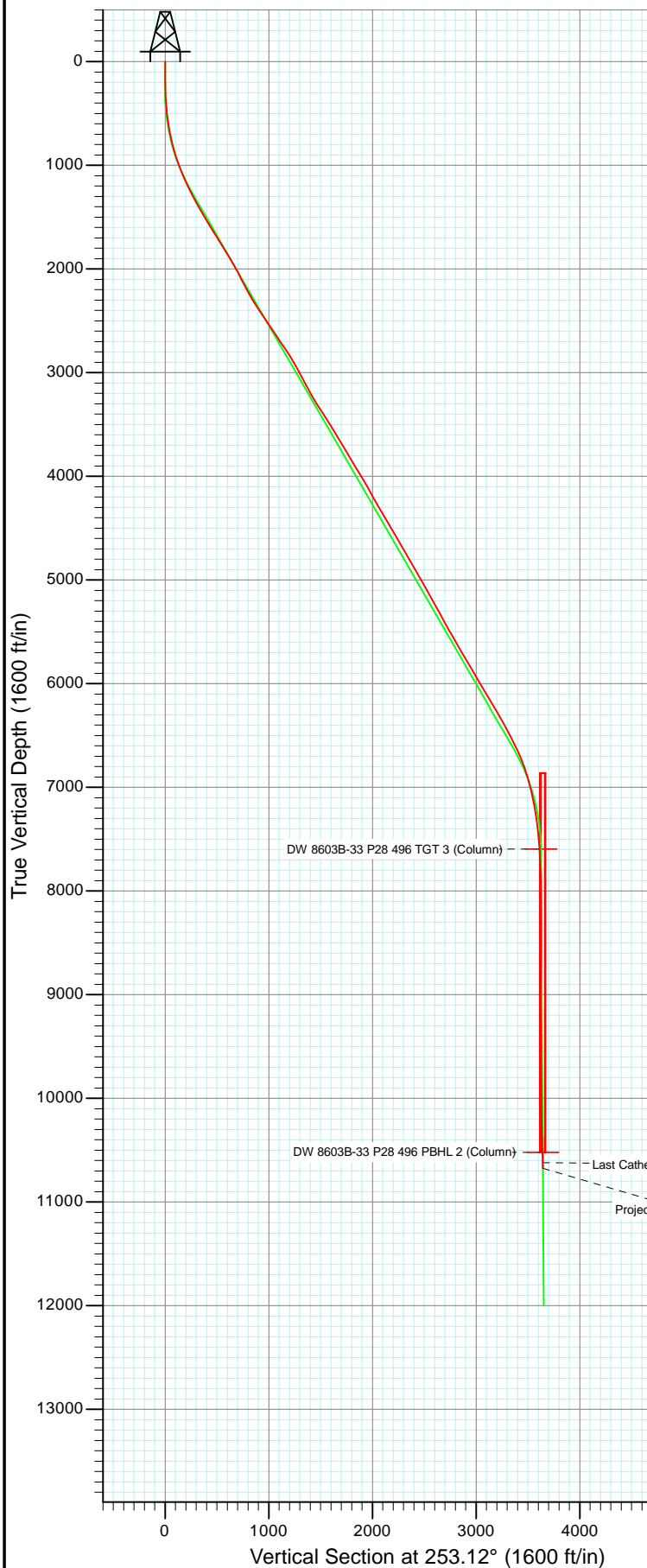




Project: Double Willow  
 Site: S28-T4S-R96W (P28 496)(column pattern)  
 Well: DW 8603B-33 (P28 496)  
 Wellbore: DD  
 Design: FINAL



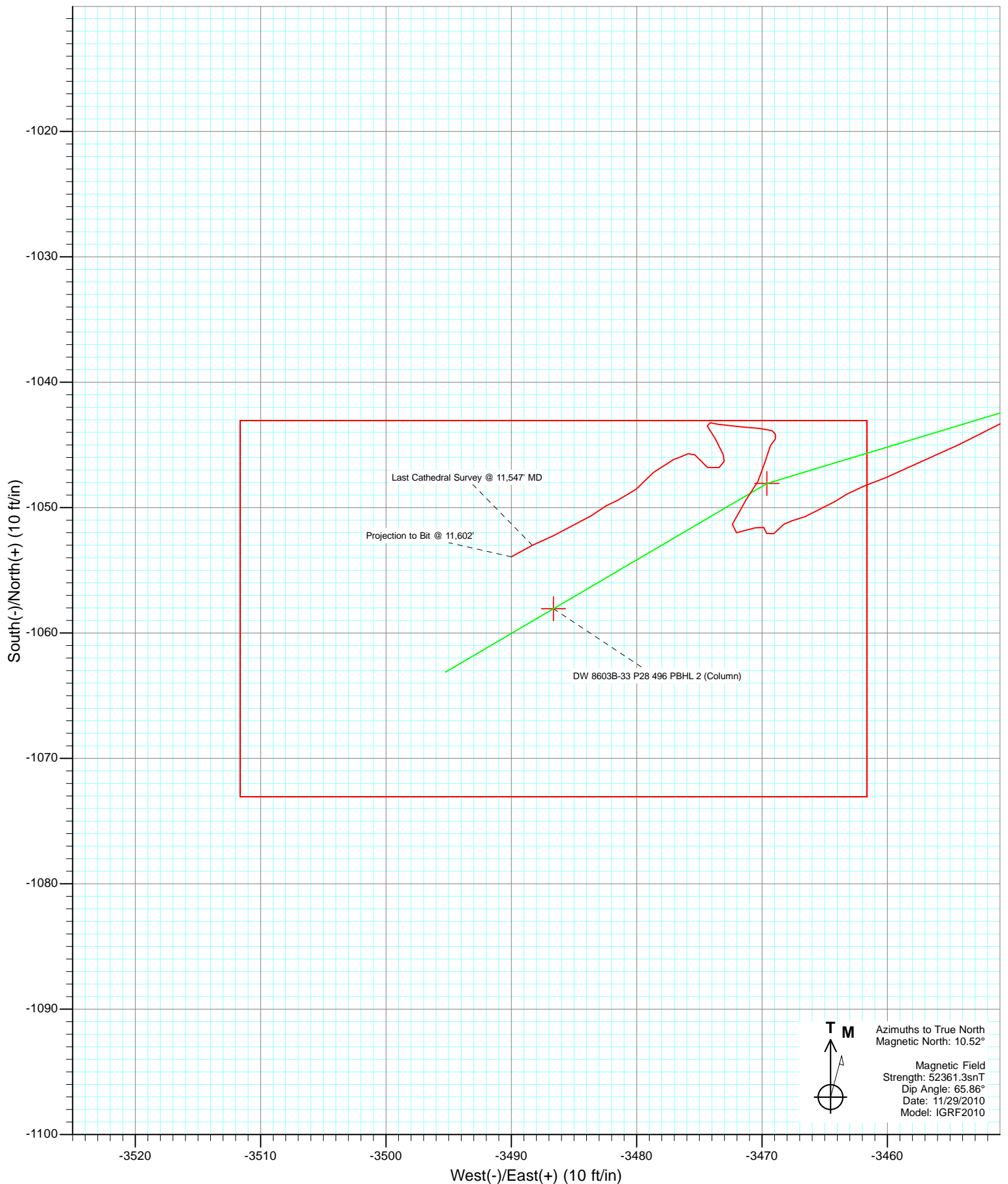
Azimuths to True North  
 Magnetic North: 10.52°

Magnetic Field  
 Strength: 52361.3snT  
 Dip Angle: 65.86°  
 Date: 11/29/2010  
 Model: IGRF2010

DD DW 8603B-33 (P28 496) 115364 (SH) 115532/120755 (MH): SC						
KBE @ 7813.0ft (patterson 308) North American Datum 1983 Well DW 8603B-33 (P28 496), True North						
Type	Target	Azimuth	Origin	Type	N/S	E/W
Target	DW 8603B-33 P28 496 PBHL (Column)	253.12	Slot		0.0	0.0
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	From
						TVD
DW 8603B-33 P28 496 TGT 3 (Column)	7595.3	-1048.1	-3469.6	39° 39' 53.58 N	108° 10' 41.03 W	0.0
DW 8603B-33 P28 496 PBHL 2 (Column)	10522.0	-1058.1	-3486.6	39° 39' 53.48 N	108° 10' 41.24 W	



Project: Double Willow  
Site: S28-T4S-R96W (P28 496)(column pattern)  
Well: DW 8603B-33 (P28 496)  
Wellbore: DD  
Design: FINAL



# Cathedral Energy Services

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well DW 8603B-33 (P28 496)
<b>Project:</b>	Double Willow	<b>TVD Reference:</b>	KBE @ 7813.0ft (patterson 308)
<b>Site:</b>	S28-T4S-R96W (P28 496)(column pattern)	<b>MD Reference:</b>	KBE @ 7813.0ft (patterson 308)
<b>Well:</b>	DW 8603B-33 (P28 496)	<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>	Double Willow		
<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>	S28-T4S-R96W (P28 496)(column pattern)			
<b>Site Position:</b>		<b>Northing:</b>	1,679,243.29 ft	<b>Latitude:</b> 39° 40' 5.13 N
<b>From:</b>	Lat/Long	<b>Easting:</b>	2,249,687.54 ft	<b>Longitude:</b> 108° 9' 56.55 W
<b>Position Uncertainty:</b>	0.0 ft	<b>Slot Radius:</b>	13.200 in	<b>Grid Convergence:</b> -1.68 °

<b>Well</b>	DW 8603B-33 (P28 496)			
<b>Well Position</b>	<b>+N/-S</b>	0.0 ft	<b>Northing:</b>	1,679,123.59 ft
	<b>+E/-W</b>	0.0 ft	<b>Easting:</b>	2,249,675.37 ft
<b>Position Uncertainty</b>	0.0 ft	<b>Wellhead Elevation:</b>	ft	<b>Ground Level:</b> 7,780.0 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	11/29/2010	10.52	65.86	52,361

<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)</b>	<b>+N/-S</b>	<b>+E/-W</b>	<b>Direction</b>
	(ft)	(ft)	(ft)	(°)
	0.0	0.0	0.0	253.12

<b>Survey Program</b>	<b>Date</b>	11/28/2011		
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
170.0	2,090.0	Survey #1 (DD)	MWD	Geolink MWD
2,165.0	11,602.0	Survey #2 (DD)	MWD	Geolink MWD

<b>Survey</b>									
<b>Measured Depth (ft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Vertical Section (ft)</b>	<b>Dogleg Rate (°/100ft)</b>	<b>Build Rate (°/100ft)</b>	<b>Formations / Comments</b>
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
170.0	0.60	236.70	170.0	-0.5	-0.7	0.9	0.35	0.35	
200.0	1.10	238.20	200.0	-0.7	-1.1	1.3	1.67	1.67	
231.0	1.20	224.30	231.0	-1.1	-1.6	1.9	0.95	0.32	
262.0	1.40	238.40	262.0	-1.5	-2.1	2.5	1.21	0.65	
292.0	1.90	238.50	292.0	-2.0	-2.9	3.3	1.67	1.67	
323.0	2.80	253.90	322.9	-2.5	-4.1	4.6	3.52	2.90	
353.0	3.10	254.00	352.9	-2.9	-5.5	6.1	1.00	1.00	
384.0	4.00	261.10	383.8	-3.3	-7.4	8.0	3.23	2.90	
415.0	4.20	258.20	414.8	-3.7	-9.6	10.2	0.93	0.65	
445.0	5.00	259.80	444.7	-4.2	-12.0	12.6	2.70	2.67	
476.0	5.50	263.90	475.5	-4.6	-14.8	15.4	2.02	1.61	

# Cathedral Energy Services

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well DW 8603B-33 (P28 496)
<b>Project:</b>	Double Willow	<b>TVD Reference:</b>	KBE @ 7813.0ft (patterson 308)
<b>Site:</b>	S28-T4S-R96W (P28 496)(column pattern)	<b>MD Reference:</b>	KBE @ 7813.0ft (patterson 308)
<b>Well:</b>	DW 8603B-33 (P28 496)	<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
506.0	6.20	258.00	505.4	-5.0	-17.8	18.5	3.07	2.33	
555.0	7.80	255.90	554.0	-6.4	-23.6	24.4	3.31	3.27	
601.0	9.20	249.80	599.5	-8.4	-30.1	31.2	3.62	3.04	
647.0	10.20	251.90	644.8	-11.0	-37.4	39.0	2.31	2.17	
692.0	11.10	250.50	689.1	-13.7	-45.3	47.3	2.08	2.00	
738.0	12.30	250.80	734.1	-16.7	-54.1	56.6	2.61	2.61	
784.0	13.30	252.40	779.0	-20.0	-63.7	66.8	2.31	2.17	
830.0	14.00	251.60	823.7	-23.3	-74.1	77.6	1.58	1.52	
875.0	16.50	254.10	867.1	-26.8	-85.4	89.5	5.74	5.56	
921.0	18.50	255.40	911.0	-30.4	-98.7	103.3	4.43	4.35	
967.0	19.40	256.30	954.5	-34.1	-113.2	118.2	2.06	1.96	
1,013.0	20.30	257.50	997.7	-37.6	-128.4	133.8	2.15	1.96	
1,059.0	21.40	256.40	1,040.7	-41.3	-144.4	150.1	2.54	2.39	
1,104.0	22.30	254.10	1,082.5	-45.6	-160.5	166.9	2.76	2.00	
1,150.0	23.10	252.30	1,124.9	-50.7	-177.5	184.6	2.30	1.74	
1,196.0	24.30	254.00	1,167.0	-56.1	-195.2	203.1	3.00	2.61	
1,242.0	25.80	255.00	1,208.7	-61.3	-214.0	222.6	3.39	3.26	
1,287.0	26.50	254.70	1,249.1	-66.4	-233.1	242.4	1.58	1.56	
1,333.0	27.60	254.30	1,290.1	-72.0	-253.3	263.3	2.42	2.39	
1,379.0	28.20	252.00	1,330.7	-78.3	-273.9	284.8	2.68	1.30	
1,425.0	29.00	252.40	1,371.1	-85.0	-294.9	306.8	1.79	1.74	
1,471.0	29.60	252.10	1,411.2	-91.9	-316.3	329.3	1.34	1.30	
1,516.0	30.20	251.70	1,450.2	-98.8	-337.6	351.8	1.41	1.33	
1,562.0	30.70	252.50	1,489.9	-106.0	-359.8	375.1	1.40	1.09	
1,608.0	30.80	253.10	1,529.4	-113.0	-382.3	398.6	0.70	0.22	
1,654.0	31.10	252.10	1,568.9	-120.0	-404.8	422.3	1.29	0.65	
1,699.0	31.90	252.00	1,607.2	-127.3	-427.2	445.8	1.78	1.78	
1,745.0	32.00	252.50	1,646.3	-134.7	-450.4	470.1	0.61	0.22	
1,791.0	31.90	252.30	1,685.3	-142.1	-473.6	494.4	0.32	-0.22	
1,837.0	31.80	252.60	1,724.4	-149.4	-496.7	518.7	0.41	-0.22	
1,882.0	32.20	252.60	1,762.5	-156.5	-519.5	542.6	0.89	0.89	
1,928.0	31.90	253.30	1,801.5	-163.7	-542.8	567.0	1.04	-0.65	
1,974.0	31.50	252.40	1,840.7	-170.8	-565.9	591.1	1.35	-0.87	
2,020.0	30.80	250.90	1,880.0	-178.3	-588.5	614.9	2.27	-1.52	
2,090.0	30.30	251.80	1,940.3	-189.7	-622.2	650.5	0.97	-0.71	Last Cathedral Survey @ 2,090' MD
2,165.0	28.20	250.20	2,005.8	-201.6	-656.9	687.1	2.99	-2.80	
2,211.0	26.90	251.40	2,046.5	-208.6	-677.0	708.4	3.07	-2.83	
2,257.0	27.90	251.50	2,087.4	-215.3	-697.0	729.5	2.18	2.17	
2,302.0	27.30	248.80	2,127.3	-222.4	-716.6	750.3	3.08	-1.33	
2,348.0	27.30	250.10	2,168.1	-229.8	-736.4	771.4	1.30	0.00	
2,394.0	28.40	254.30	2,208.8	-236.3	-756.9	792.9	4.89	2.39	
2,440.0	29.50	254.10	2,249.1	-242.4	-778.3	815.1	2.40	2.39	
2,485.0	31.00	255.60	2,287.9	-248.3	-800.2	837.8	3.73	3.33	
2,531.0	32.90	256.80	2,327.0	-254.1	-823.8	862.1	4.35	4.13	
2,623.0	32.80	253.60	2,404.3	-266.9	-872.0	911.9	1.89	-0.11	
2,714.0	33.90	254.10	2,480.3	-280.8	-920.1	962.0	1.25	1.21	
2,806.0	35.10	254.60	2,556.1	-294.8	-970.3	1,014.1	1.34	1.30	
2,897.0	32.80	253.00	2,631.6	-309.0	-1,019.1	1,064.9	2.71	-2.53	
2,989.0	34.80	254.70	2,708.0	-323.2	-1,068.2	1,116.0	2.40	2.17	
3,080.0	33.80	253.80	2,783.2	-337.1	-1,117.6	1,167.3	1.23	-1.10	
3,172.0	31.40	252.80	2,860.7	-351.3	-1,165.1	1,216.9	2.67	-2.61	
3,263.0	28.80	252.00	2,939.4	-365.1	-1,208.6	1,262.5	2.89	-2.86	
3,354.0	28.10	251.10	3,019.4	-378.8	-1,249.7	1,305.8	0.90	-0.77	

# Cathedral Energy Services

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well DW 8603B-33 (P28 496)
<b>Project:</b>	Double Willow	<b>TVD Reference:</b>	KBE @ 7813.0ft (patterson 308)
<b>Site:</b>	S28-T4S-R96W (P28 496)(column pattern)	<b>MD Reference:</b>	KBE @ 7813.0ft (patterson 308)
<b>Well:</b>	DW 8603B-33 (P28 496)	<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
3,446.0	28.20	252.40	3,100.6	-392.4	-1,290.9	1,349.2	0.68	0.11	
3,537.0	29.10	252.70	3,180.4	-405.5	-1,332.5	1,392.9	1.00	0.99	
3,629.0	29.70	255.20	3,260.6	-418.0	-1,375.9	1,438.0	1.48	0.65	
3,720.0	32.80	253.30	3,338.4	-430.8	-1,421.3	1,485.2	3.57	3.41	
3,812.0	33.40	253.90	3,415.4	-445.0	-1,469.5	1,535.4	0.74	0.65	
3,903.0	31.80	254.80	3,492.1	-458.2	-1,516.7	1,584.4	1.84	-1.76	
3,995.0	32.60	251.50	3,569.9	-472.5	-1,563.6	1,633.5	2.10	0.87	
4,086.0	30.60	251.50	3,647.4	-487.6	-1,608.9	1,681.1	2.20	-2.20	
4,178.0	30.20	250.90	3,726.8	-502.6	-1,652.9	1,727.6	0.55	-0.43	
4,269.0	30.30	252.70	3,805.4	-516.9	-1,696.5	1,773.5	1.00	0.11	
4,361.0	30.70	253.90	3,884.7	-530.3	-1,741.2	1,820.2	0.79	0.43	
4,452.0	32.10	253.60	3,962.3	-543.6	-1,786.7	1,867.6	1.55	1.54	
4,544.0	31.30	252.90	4,040.6	-557.5	-1,833.0	1,915.9	0.96	-0.87	
4,635.0	28.90	252.40	4,119.3	-571.1	-1,876.6	1,961.5	2.65	-2.64	
4,727.0	28.90	255.00	4,199.9	-583.6	-1,919.2	2,006.0	1.37	0.00	
4,819.0	29.60	255.30	4,280.2	-595.1	-1,962.7	2,050.9	0.78	0.76	
4,910.0	31.20	258.00	4,358.6	-605.7	-2,007.5	2,096.9	2.31	1.76	
5,002.0	29.40	255.70	4,438.1	-616.3	-2,052.7	2,143.2	2.33	-1.96	
5,093.0	30.50	255.50	4,516.9	-627.6	-2,096.7	2,188.6	1.21	1.21	
5,185.0	31.80	257.20	4,595.7	-638.8	-2,142.9	2,236.1	1.71	1.41	
5,276.0	30.20	256.20	4,673.7	-649.6	-2,188.5	2,282.8	1.85	-1.76	
5,368.0	30.60	252.10	4,753.0	-662.3	-2,233.3	2,329.4	2.30	0.43	
5,459.0	29.40	251.10	4,831.8	-676.6	-2,276.5	2,374.8	1.43	-1.32	
5,551.0	30.10	251.80	4,911.7	-691.1	-2,319.7	2,420.5	0.85	0.76	
5,642.0	29.00	252.30	4,990.9	-705.0	-2,362.4	2,465.4	1.24	-1.21	
5,734.0	29.80	251.40	5,071.0	-719.1	-2,405.3	2,510.5	0.99	0.87	
5,825.0	28.00	252.40	5,150.7	-732.7	-2,447.1	2,554.5	2.05	-1.98	
5,917.0	28.60	249.10	5,231.7	-747.1	-2,488.3	2,598.0	1.82	0.65	
6,008.0	28.70	249.50	5,311.5	-762.5	-2,529.1	2,641.6	0.24	0.11	
6,100.0	29.00	251.10	5,392.1	-777.5	-2,570.9	2,685.9	0.90	0.33	
6,192.0	29.90	252.60	5,472.2	-791.6	-2,613.9	2,731.1	1.26	0.98	
6,283.0	30.00	251.70	5,551.1	-805.5	-2,657.1	2,776.5	0.51	0.11	
6,375.0	29.90	252.40	5,630.8	-819.7	-2,700.8	2,822.5	0.40	-0.11	
6,467.0	31.30	254.90	5,710.0	-832.8	-2,745.8	2,869.3	2.06	1.52	
6,558.0	29.60	254.90	5,788.4	-844.8	-2,790.3	2,915.4	1.87	-1.87	
6,650.0	30.90	252.50	5,867.9	-857.9	-2,834.8	2,961.7	1.93	1.41	
6,742.0	30.00	253.90	5,947.2	-871.3	-2,879.4	3,008.3	1.25	-0.98	
6,834.0	31.20	252.30	6,026.4	-885.0	-2,924.2	3,055.2	1.58	1.30	
6,925.0	30.10	252.60	6,104.7	-898.9	-2,968.4	3,101.5	1.22	-1.21	
7,017.0	31.60	254.70	6,183.7	-912.2	-3,013.7	3,148.7	2.01	1.63	
7,108.0	30.50	254.30	6,261.6	-924.7	-3,058.9	3,195.6	1.23	-1.21	
7,200.0	29.00	253.10	6,341.5	-937.6	-3,102.7	3,241.3	1.75	-1.63	
7,291.0	28.20	253.20	6,421.4	-950.2	-3,144.4	3,284.8	0.88	-0.88	
7,383.0	27.40	254.60	6,502.8	-962.1	-3,185.6	3,327.7	1.12	-0.87	
7,474.0	27.40	255.30	6,583.6	-973.0	-3,226.1	3,369.6	0.35	0.00	
7,566.0	24.60	254.60	6,666.3	-983.4	-3,265.0	3,409.9	3.06	-3.04	
7,657.0	20.70	255.10	6,750.2	-992.6	-3,298.8	3,444.9	4.29	-4.29	
7,749.0	18.00	252.90	6,837.0	-1,000.9	-3,328.1	3,475.4	3.04	-2.93	
7,841.0	16.10	249.90	6,925.0	-1,009.5	-3,353.7	3,502.3	2.28	-2.07	
7,932.0	13.90	254.30	7,012.9	-1,016.8	-3,376.1	3,525.9	2.72	-2.42	
8,023.0	12.70	253.80	7,101.4	-1,022.6	-3,396.2	3,546.8	1.32	-1.32	
8,115.0	9.90	251.40	7,191.6	-1,027.9	-3,413.4	3,564.8	3.09	-3.04	
8,206.0	8.00	246.90	7,281.5	-1,032.9	-3,426.7	3,578.9	2.22	-2.09	

# Cathedral Energy Services

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well DW 8603B-33 (P28 496)
<b>Project:</b>	Double Willow	<b>TVD Reference:</b>	KBE @ 7813.0ft (patterson 308)
<b>Site:</b>	S28-T4S-R96W (P28 496)(column pattern)	<b>MD Reference:</b>	KBE @ 7813.0ft (patterson 308)
<b>Well:</b>	DW 8603B-33 (P28 496)	<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
8,298.0	6.70	247.20	7,372.8	-1,037.5	-3,437.5	3,590.6	1.41	-1.41	
8,389.0	6.00	246.70	7,463.2	-1,041.4	-3,446.8	3,600.7	0.77	-0.77	
8,481.0	4.30	241.80	7,554.8	-1,044.9	-3,454.2	3,608.8	1.91	-1.85	
8,572.0	3.90	250.00	7,645.6	-1,047.6	-3,460.1	3,615.3	0.78	-0.44	
8,664.0	1.70	232.70	7,737.5	-1,049.5	-3,464.2	3,619.7	2.54	-2.39	
8,755.0	1.70	253.80	7,828.5	-1,050.7	-3,466.5	3,622.3	0.68	0.00	
8,847.0	0.60	238.60	7,920.4	-1,051.3	-3,468.3	3,624.1	1.23	-1.20	
8,938.0	0.80	218.20	8,011.4	-1,052.1	-3,469.1	3,625.1	0.35	0.22	
9,030.0	0.70	341.70	8,103.4	-1,052.1	-3,469.6	3,625.6	1.44	-0.11	
9,121.0	0.10	221.60	8,194.4	-1,051.6	-3,469.9	3,625.7	0.83	-0.66	
9,213.0	0.80	272.40	8,286.4	-1,051.6	-3,470.6	3,626.4	0.81	0.76	
9,299.0	1.30	245.40	8,372.4	-1,052.0	-3,472.0	3,627.9	0.80	0.58	
9,390.0	1.60	29.30	8,463.4	-1,051.3	-3,472.4	3,628.0	3.03	0.33	
9,482.0	1.20	29.50	8,555.4	-1,049.4	-3,471.3	3,626.4	0.43	-0.43	
9,573.0	1.00	35.80	8,646.4	-1,047.9	-3,470.3	3,625.1	0.26	-0.22	
9,665.0	1.10	6.00	8,738.3	-1,046.4	-3,469.8	3,624.1	0.60	0.11	
9,756.0	0.70	37.40	8,829.3	-1,045.1	-3,469.3	3,623.3	0.68	-0.44	
9,848.0	0.10	34.30	8,921.3	-1,044.5	-3,468.9	3,622.8	0.65	-0.65	
9,940.0	0.40	354.70	9,013.3	-1,044.2	-3,468.9	3,622.7	0.36	0.33	
10,031.0	0.30	262.80	9,104.3	-1,043.9	-3,469.2	3,622.8	0.56	-0.11	
10,123.0	1.00	285.30	9,196.3	-1,043.7	-3,470.2	3,623.7	0.80	0.76	
10,214.0	0.80	261.80	9,287.3	-1,043.6	-3,471.6	3,625.0	0.46	-0.22	
10,306.0	1.60	283.50	9,379.3	-1,043.4	-3,473.5	3,626.8	0.99	0.87	
10,397.0	0.70	139.30	9,470.3	-1,043.5	-3,474.4	3,627.7	2.42	-0.99	
10,489.0	0.90	155.70	9,562.3	-1,044.6	-3,473.7	3,627.3	0.33	0.22	
10,580.0	0.80	151.10	9,653.3	-1,045.8	-3,473.1	3,627.1	0.13	-0.11	
10,672.0	1.00	233.80	9,745.2	-1,046.8	-3,473.4	3,627.7	1.30	0.22	
10,763.0	0.70	330.10	9,836.2	-1,046.8	-3,474.3	3,628.6	1.41	-0.33	
10,855.0	0.70	299.10	9,958.2	-1,045.8	-3,475.4	3,629.3	0.31	0.00	
10,946.0	0.40	242.40	10,019.3	-1,045.7	-3,475.9	3,629.8	0.96	-0.49	
11,038.0	1.20	250.00	10,111.2	-1,046.2	-3,477.1	3,631.0	0.88	0.87	
11,130.0	1.20	224.60	10,203.2	-1,047.2	-3,478.7	3,632.9	0.57	0.00	
11,221.0	1.20	227.50	10,294.2	-1,048.5	-3,480.0	3,634.5	0.07	0.00	
11,313.0	1.00	252.60	10,386.2	-1,049.4	-3,481.5	3,636.2	0.56	-0.22	
11,405.0	2.10	233.80	10,478.2	-1,050.6	-3,483.6	3,638.6	1.30	1.20	
11,496.0	2.20	249.70	10,569.1	-1,052.2	-3,486.6	3,641.9	0.66	0.11	
11,547.0	2.00	241.30	10,620.0	-1,053.0	-3,488.3	3,643.8	0.72	-0.39	Last Cathedral Survey @ 11,547' MD
11,602.0	2.00	241.30	10,675.0	-1,053.9	-3,490.0	3,645.7	0.00	0.00	Projection to Bit @ 11,602'

# Cathedral Energy Services

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well DW 8603B-33 (P28 496)
<b>Project:</b>	Double Willow	<b>TVD Reference:</b>	KBE @ 7813.0ft (patterson 308)
<b>Site:</b>	S28-T4S-R96W (P28 496)(column pattern)	<b>MD Reference:</b>	KBE @ 7813.0ft (patterson 308)
<b>Well:</b>	DW 8603B-33 (P28 496)	<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

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									
DW 8603B-33 P28 496 I	0.00	0.00	10,522.0	-1,058.1	-3,486.6	1,678,168.27	2,246,159.19	39° 39' 53.48 N	108° 10' 41.24 W
- actual wellpath misses target center by 6.8ft at 11449.1ft MD (10522.2 TVD, -1051.5 N, -3485.0 E)									
- Rectangle (sides W30.0 H50.0 D0.0)									
DW 8603B-33 P28 496 I	0.00	0.00	10,503.0	-1,058.1	-3,486.6	1,678,168.27	2,246,159.19	39° 39' 53.48 N	108° 10' 41.24 W
- actual wellpath misses target center by 7.3ft at 11430.1ft MD (10503.2 TVD, -1051.2 N, -3484.4 E)									
- Rectangle (sides W30.0 H50.0 D0.0)									
DW 8603B-33 P28 496 ^	0.00	0.00	6,843.0	-1,048.1	-3,469.6	1,678,177.76	2,246,176.51	39° 39' 53.58 N	108° 10' 41.03 W
- actual wellpath misses target center by 140.4ft at 7798.4ft MD (6884.2 TVD, -1005.5 N, -3342.3 E)									
- Point									
DW 8603B-33 P28 496 ^	0.00	0.00	7,595.3	-1,048.1	-3,469.6	1,678,177.76	2,246,176.51	39° 39' 53.58 N	108° 10' 41.03 W
- actual wellpath misses target center by 12.8ft at 8522.4ft MD (7596.2 TVD, -1046.3 N, -3456.9 E)									
- Point									
DW 8603B-33 P28 496 ^	0.00	0.00	7,493.0	-1,048.1	-3,469.6	1,678,177.76	2,246,176.51	39° 39' 53.58 N	108° 10' 41.03 W
- actual wellpath misses target center by 20.7ft at 8420.8ft MD (7494.8 TVD, -1042.7 N, -3449.7 E)									
- Point									

Design Annotations					
Measured Depth	Vertical Depth	Local Coordinates			
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)	Comment	
2,090.0	1,940.3	-189.7	-622.2	Last Cathedral Survey @ 2,090' MD	
11,547.0	10,620.0	-1,053.0	-3,488.3	Last Cathedral Survey @ 11,547' MD	
11,602.0	10,675.0	-1,053.9	-3,490.0	Projection to Bit @ 11,602'	

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