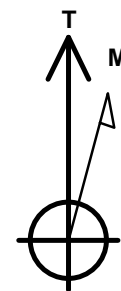
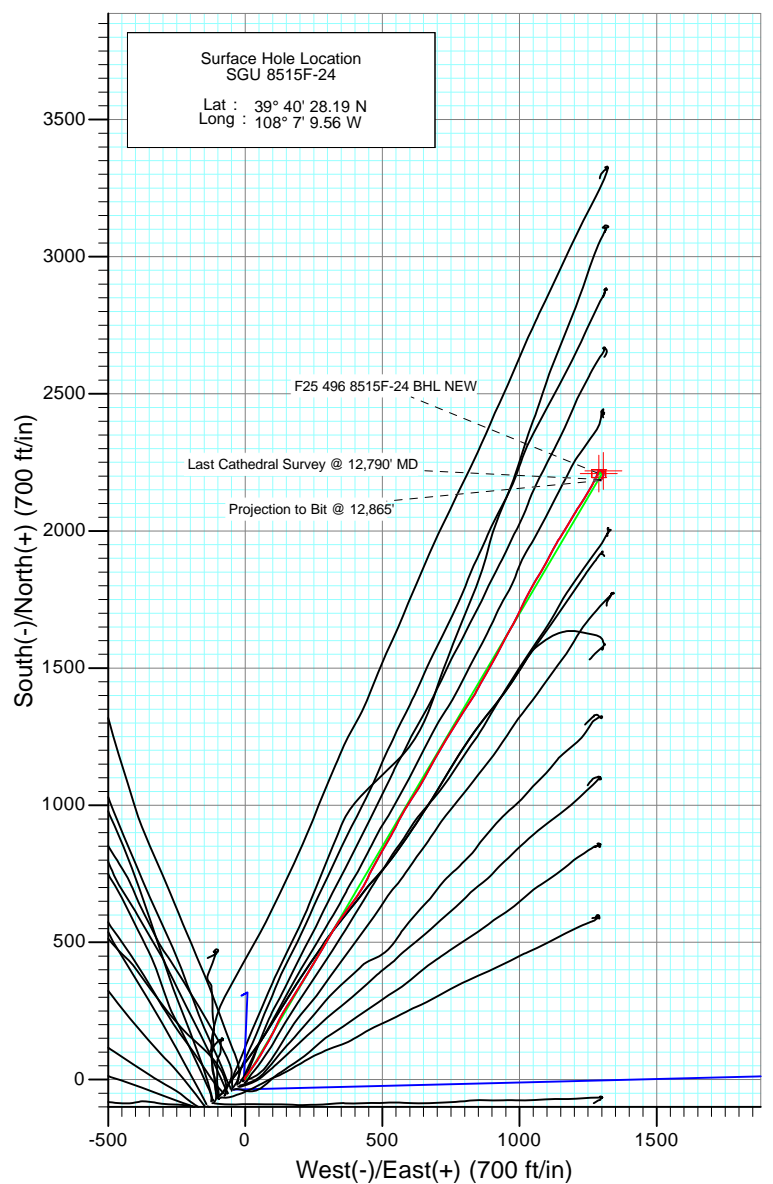
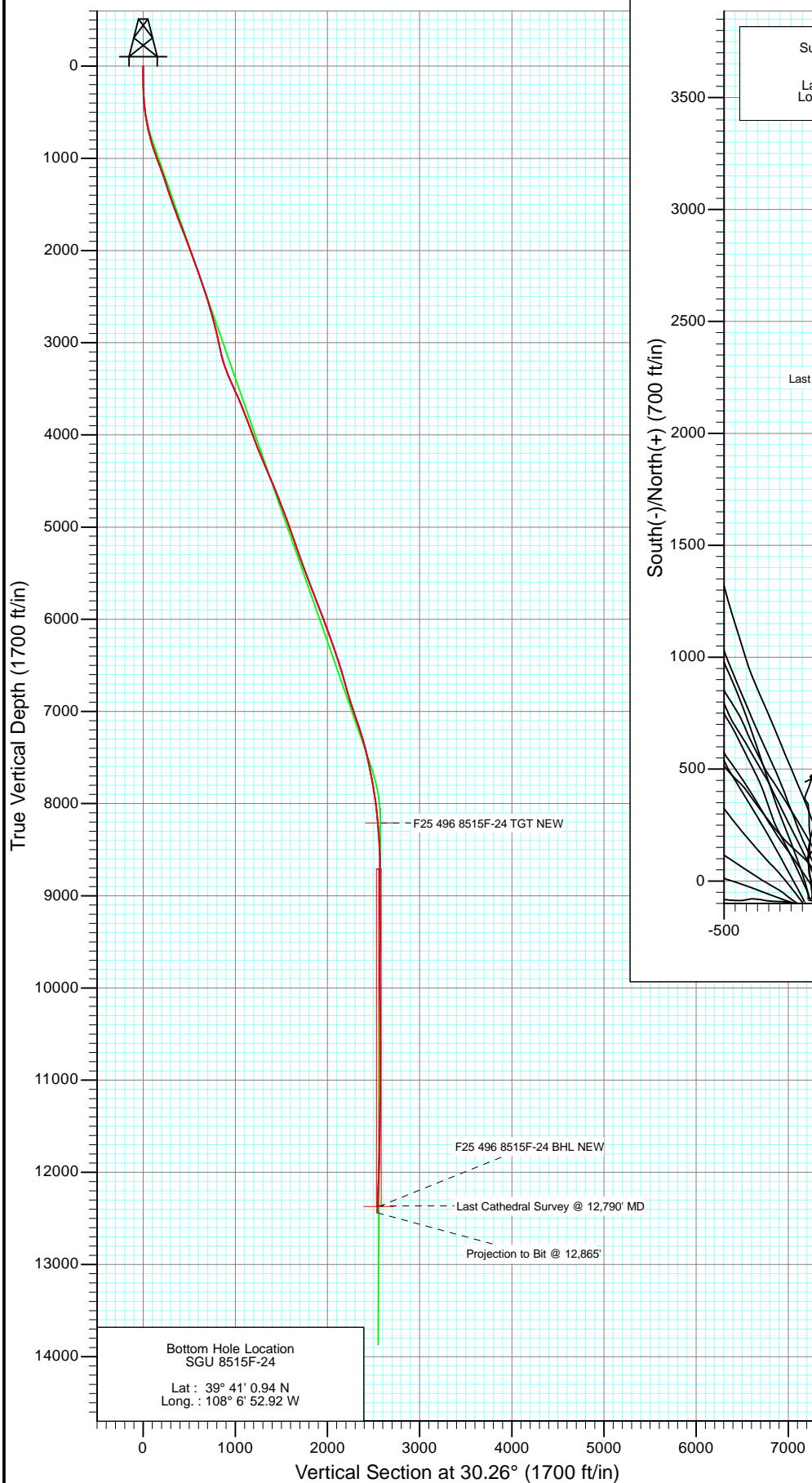




Project: Story Gulch  
 Site: F25 496  
 Well: SGU 8515F-24  
 Wellbore: DD  
 Design: FINAL



Azimuths to True North  
 Magnetic North: 10.41°

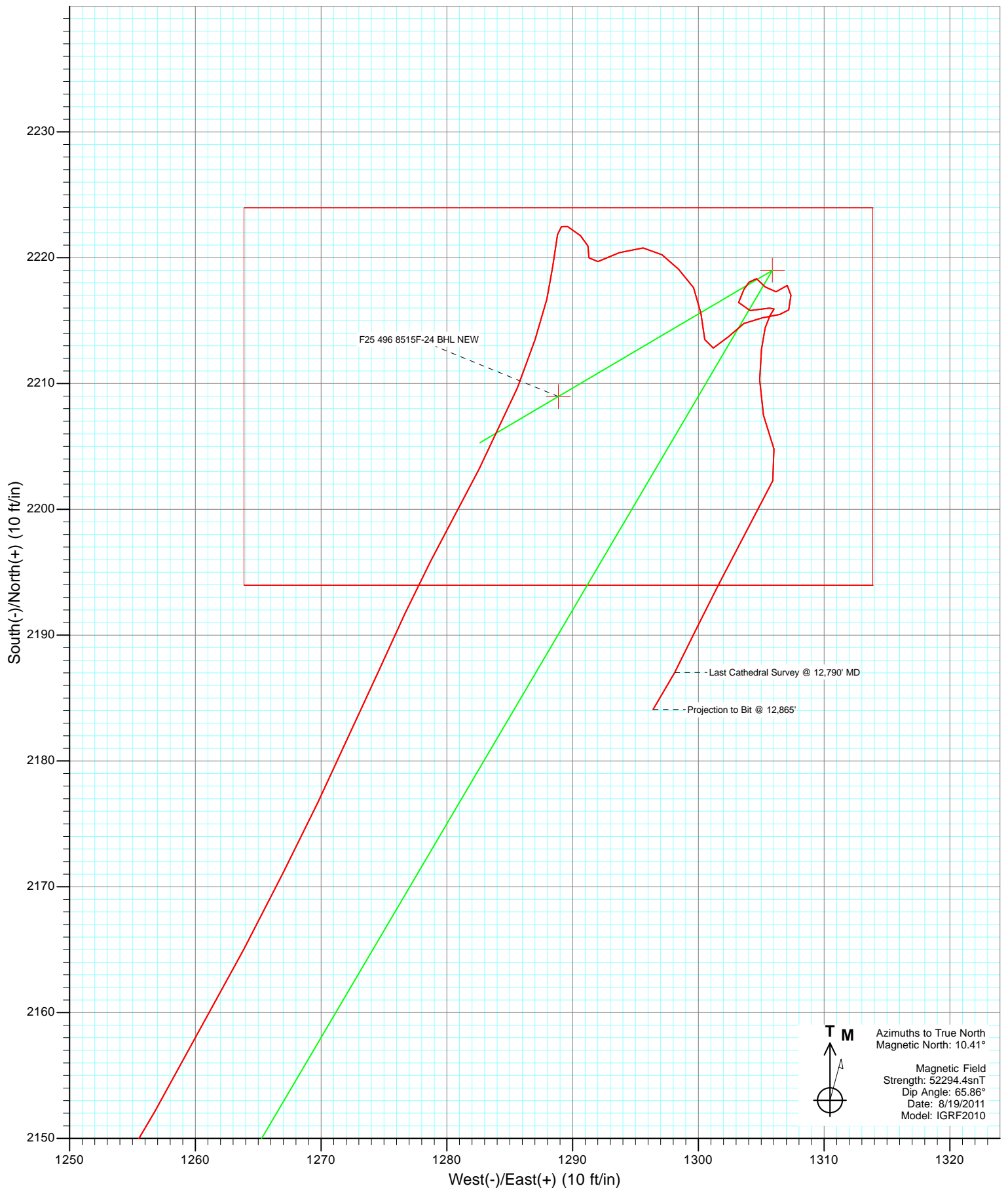
Magnetic Field  
 Strength: 52294.4snT  
 Dip Angle: 65.86°  
 Date: 8/19/2011  
 Model: IGRF2010

DESIGN DETAILS: DD  
 115099 (SH); LR 115336 (MH) SC  
 WELL @ 8320.0ft (Original Well Elev)

	Azimuth	Origin	N/S	E/W	From TVD
F25 496 8515F-24 BHL NEW	30.26	Slot	0.0	0.0	0.0



Project: Story Gulch  
Site: F25 496  
Well: SGU 8515F-24  
Wellbore: DD  
Design: FINAL



# Cathedral Energy Services

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well SGU 8515F-24
<b>Project:</b>	Story Gulch	<b>TVD Reference:</b>	WELL @ 8320.0ft (Original Well Elev)
<b>Site:</b>	F25 496	<b>MD Reference:</b>	WELL @ 8320.0ft (Original Well Elev)
<b>Well:</b>	SGU 8515F-24	<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>	Story Gulch		
<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		

Site		F25 496				
Site Position:		Northing:	1,681,091.06 ft	Latitude:	39° 40' 27.10 N	
From:	Lat/Long	Easting:	2,262,632.54 ft	Longitude:	108° 7' 11.76 W	
Position Uncertainty:		0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.65 °

Well	SGU 8515F-24					
Well Position	+N/-S	0.0 ft	Northing:	1,681,196.25 ft	Latitude:	39° 40' 28.19 N
	+E/-W	0.0 ft	Easting:	2,262,807.30 ft	Longitude:	108° 7' 9.56 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	8,298.0 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	8/19/2011	10.41	65.86	52,294

<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	30.26	

<b>Survey Program</b>	<b>Date</b>	8/29/2011			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
190.0	12,865.0	Survey #1 (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		
190.0	1.50	338.00	190.0	2.3	-0.9	1.5	0.79	0.79		
221.0	1.80	348.40	221.0	3.2	-1.2	2.1	1.36	0.97		
313.0	2.80	28.00	312.9	6.6	-0.4	5.5	1.98	1.09		
405.0	5.00	38.00	404.7	11.7	3.1	11.7	2.49	2.39		
498.0	7.30	34.40	497.1	19.8	8.9	21.6	2.51	2.47		
590.0	9.80	35.30	588.1	31.0	16.8	35.2	2.72	2.72		
682.0	12.50	36.70	678.4	45.4	27.2	52.9	2.95	2.93		
774.0	14.60	33.30	767.8	63.0	39.6	74.4	2.44	2.28		
869.0	17.30	30.20	859.1	85.3	53.2	100.5	2.98	2.84		
964.0	20.00	30.20	949.1	111.5	68.5	130.9	2.84	2.84		
1,060.0	21.10	29.50	1,039.0	140.7	85.3	164.5	1.17	1.15		
1,155.0	19.70	26.70	1,128.1	169.9	100.9	197.6	1.80	-1.47		

# Cathedral Energy Services

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well SGU 8515F-24
<b>Project:</b>	Story Gulch	<b>TVD Reference:</b>	WELL @ 8320.0ft (Original Well Elev)
<b>Site:</b>	F25 496	<b>MD Reference:</b>	WELL @ 8320.0ft (Original Well Elev)
<b>Well:</b>	SGU 8515F-24	<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
1,250.0	18.50	23.90	1,217.8	198.0	114.2	228.6	1.59	-1.26	
1,345.0	18.10	28.10	1,308.0	224.8	127.3	258.3	1.45	-0.42	
1,441.0	18.30	31.70	1,399.2	250.8	142.2	288.3	1.19	0.21	
1,536.0	19.80	33.30	1,489.0	276.9	158.9	319.3	1.67	1.58	
1,631.0	20.70	31.90	1,578.2	304.6	176.6	352.1	1.08	0.95	
1,725.0	21.10	31.70	1,666.0	333.1	194.3	385.6	0.43	0.43	
1,820.0	20.90	31.30	1,754.7	362.2	212.0	419.7	0.26	-0.21	
1,915.0	21.10	32.10	1,843.4	391.1	229.9	453.7	0.37	0.21	
2,010.0	20.90	30.80	1,932.1	420.2	247.7	487.7	0.53	-0.21	
2,106.0	20.10	30.70	2,022.0	449.1	264.9	521.4	0.83	-0.83	
2,201.0	19.80	30.30	2,111.3	477.0	281.3	553.8	0.35	-0.32	
2,296.0	19.60	31.00	2,200.7	504.5	297.7	585.8	0.33	-0.21	
2,391.0	19.60	29.50	2,290.2	532.1	313.7	617.7	0.53	0.00	
2,487.0	18.50	32.80	2,381.0	558.9	329.9	649.0	1.60	-1.15	
2,582.0	18.00	35.40	2,471.2	583.5	346.6	678.7	1.01	-0.53	
2,677.0	16.90	35.50	2,561.8	606.7	363.1	707.0	1.16	-1.16	
2,772.0	16.20	35.60	2,652.9	628.7	378.8	734.0	0.74	-0.74	
2,867.0	14.90	36.10	2,744.4	649.4	393.7	759.3	1.38	-1.37	
2,975.0	14.50	36.60	2,848.9	671.5	410.0	786.6	0.39	-0.37	
3,088.0	11.60	30.30	2,958.9	692.6	424.2	812.0	2.85	-2.57	
3,179.0	12.00	28.30	3,048.0	708.9	433.3	830.6	0.63	0.44	
3,271.0	13.70	25.90	3,137.7	727.1	442.5	851.0	1.94	1.85	
3,362.0	17.50	25.30	3,225.3	749.2	453.1	875.4	4.18	4.18	
3,454.0	21.20	29.70	3,312.1	776.1	467.3	905.8	4.32	4.02	
3,545.0	24.10	29.50	3,396.1	806.6	484.6	940.9	3.19	3.19	
3,637.0	24.70	28.70	3,479.9	839.8	503.0	978.9	0.74	0.65	
3,728.0	23.60	30.50	3,562.9	872.2	521.4	1,016.1	1.45	-1.21	
3,820.0	22.90	28.50	3,647.4	903.8	539.3	1,052.4	1.15	-0.76	
3,911.0	21.20	26.20	3,731.8	934.1	555.0	1,086.5	2.09	-1.87	
4,003.0	20.50	28.90	3,817.8	963.1	570.2	1,119.2	1.29	-0.76	
4,095.0	22.00	31.30	3,903.5	992.0	586.9	1,152.6	1.88	1.63	
4,186.0	20.30	33.70	3,988.4	1,019.7	604.5	1,185.4	2.10	-1.87	
4,278.0	20.40	32.60	4,074.6	1,046.4	622.0	1,217.3	0.43	0.11	
4,369.0	21.70	31.20	4,159.6	1,074.2	639.3	1,250.0	1.53	1.43	
4,461.0	22.80	27.80	4,244.7	1,104.5	656.4	1,284.8	1.84	1.20	
4,552.0	23.10	27.90	4,328.5	1,135.9	673.0	1,320.2	0.33	0.33	
4,643.0	23.60	30.10	4,412.1	1,167.4	690.5	1,356.3	1.10	0.55	
4,735.0	22.20	30.20	4,496.8	1,198.4	708.4	1,392.1	1.52	-1.52	
4,827.0	21.60	29.90	4,582.2	1,228.1	725.6	1,426.4	0.66	-0.65	
4,918.0	21.20	32.60	4,666.9	1,256.5	742.8	1,459.6	1.17	-0.44	
5,010.0	21.50	32.00	4,752.6	1,284.8	760.7	1,493.1	0.40	0.33	
5,101.0	22.00	30.80	4,837.1	1,313.6	778.3	1,526.8	0.74	0.55	
5,193.0	20.00	33.70	4,923.0	1,341.5	795.9	1,559.7	2.45	-2.17	
5,284.0	19.60	34.30	5,008.6	1,367.0	813.1	1,590.5	0.49	-0.44	
5,376.0	19.00	31.80	5,095.4	1,392.5	829.7	1,620.9	1.11	-0.65	
5,467.0	17.90	27.70	5,181.8	1,417.5	844.0	1,649.6	1.87	-1.21	
5,559.0	19.10	28.80	5,269.0	1,443.2	857.8	1,678.8	1.36	1.30	
5,651.0	20.90	30.30	5,355.5	1,470.5	873.3	1,710.3	2.03	1.96	
5,742.0	20.40	29.40	5,440.6	1,498.4	889.3	1,742.4	0.65	-0.55	
5,834.0	20.90	28.30	5,526.7	1,526.8	905.0	1,774.8	0.69	0.54	
5,925.0	21.40	28.00	5,611.6	1,555.7	920.5	1,807.6	0.56	0.55	
6,017.0	21.30	26.80	5,697.3	1,585.5	935.9	1,841.1	0.49	-0.11	
6,109.0	21.00	28.50	5,783.1	1,614.9	951.3	1,874.2	0.74	-0.33	

# Cathedral Energy Services

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well SGU 8515F-24
<b>Project:</b>	Story Gulch	<b>TVD Reference:</b>	WELL @ 8320.0ft (Original Well Elev)
<b>Site:</b>	F25 496	<b>MD Reference:</b>	WELL @ 8320.0ft (Original Well Elev)
<b>Well:</b>	SGU 8515F-24	<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
6,200.0	20.70	30.40	5,868.1	1,643.1	967.2	1,906.6	0.81	-0.33	
6,292.0	20.70	27.20	5,954.2	1,671.6	982.8	1,939.1	1.23	0.00	
6,383.0	21.00	26.70	6,039.2	1,700.4	997.5	1,971.4	0.38	0.33	
6,475.0	20.40	25.60	6,125.3	1,729.6	1,011.9	2,003.9	0.78	-0.65	
6,566.0	19.00	26.20	6,210.9	1,757.2	1,025.3	2,034.4	1.55	-1.54	
6,658.0	18.90	28.20	6,298.0	1,783.8	1,038.9	2,064.3	0.71	-0.11	
6,750.0	18.90	29.60	6,385.0	1,809.9	1,053.3	2,094.1	0.49	0.00	
6,841.0	18.50	32.80	6,471.2	1,834.8	1,068.4	2,123.2	1.21	-0.44	
6,932.0	16.30	29.00	6,558.0	1,858.1	1,082.4	2,150.4	2.72	-2.42	
7,024.0	15.90	29.00	6,646.4	1,880.4	1,094.8	2,175.9	0.43	-0.43	
7,116.0	16.80	27.50	6,734.7	1,903.3	1,107.0	2,201.8	1.08	0.98	
7,207.0	16.80	27.30	6,821.8	1,926.6	1,119.1	2,228.1	0.06	0.00	
7,298.0	16.30	29.60	6,909.0	1,949.4	1,131.5	2,254.0	0.91	-0.55	
7,390.0	19.00	32.20	6,996.7	1,973.3	1,145.8	2,281.9	3.06	2.93	
7,481.0	19.60	32.00	7,082.6	1,998.8	1,161.8	2,311.9	0.66	0.66	
7,573.0	18.40	30.80	7,169.6	2,024.3	1,177.4	2,341.9	1.37	-1.30	
7,664.0	17.00	30.30	7,256.3	2,048.2	1,191.5	2,369.5	1.55	-1.54	
7,756.0	15.00	31.80	7,344.7	2,069.9	1,204.6	2,394.9	2.22	-2.17	
7,847.0	13.80	34.60	7,432.8	2,088.8	1,216.9	2,417.5	1.52	-1.32	
7,939.0	12.70	32.50	7,522.4	2,106.4	1,228.6	2,438.5	1.30	-1.20	
8,031.0	11.70	31.10	7,612.3	2,122.9	1,238.9	2,458.0	1.13	-1.09	
8,122.0	10.90	32.60	7,701.6	2,138.1	1,248.3	2,475.8	0.94	-0.88	
8,214.0	9.70	29.70	7,792.1	2,152.1	1,256.8	2,492.2	1.42	-1.30	
8,305.0	8.90	27.70	7,881.9	2,165.0	1,263.9	2,506.9	0.95	-0.88	
8,397.0	7.50	25.70	7,972.9	2,176.7	1,269.8	2,520.0	1.55	-1.52	
8,488.0	6.80	23.90	8,063.2	2,187.0	1,274.5	2,531.3	0.81	-0.77	
8,580.0	5.50	27.10	8,154.7	2,195.9	1,278.7	2,541.1	1.46	-1.41	
8,672.0	4.80	28.50	8,246.3	2,203.2	1,282.6	2,549.4	0.77	-0.76	
8,763.0	4.20	21.50	8,337.0	2,209.7	1,285.6	2,556.5	0.89	-0.66	
8,946.0	2.10	5.80	8,519.8	2,219.2	1,288.4	2,566.1	1.23	-1.15	
9,037.0	1.20	13.30	8,610.7	2,221.8	1,288.8	2,568.6	1.01	-0.99	
9,129.0	0.80	117.00	8,702.7	2,222.5	1,289.6	2,569.5	1.73	-0.43	
9,220.0	0.80	132.80	8,793.7	2,221.8	1,290.6	2,569.4	0.24	0.00	
9,312.0	0.50	163.20	8,885.7	2,220.9	1,291.2	2,569.0	0.49	-0.33	
9,404.0	0.70	183.60	8,977.7	2,220.0	1,291.3	2,568.2	0.31	0.22	
9,495.0	1.00	71.00	9,068.7	2,219.7	1,292.0	2,568.3	1.56	0.33	
9,587.0	1.30	64.70	9,160.7	2,220.4	1,293.7	2,569.8	0.35	0.33	
9,678.0	1.20	94.30	9,251.6	2,220.8	1,295.6	2,571.1	0.71	-0.11	
9,770.0	0.90	130.60	9,343.6	2,220.2	1,297.1	2,571.4	0.78	-0.33	
9,861.0	1.30	131.30	9,434.6	2,219.1	1,298.4	2,571.0	0.44	0.44	
9,953.0	1.10	152.30	9,526.6	2,217.6	1,299.6	2,570.4	0.52	-0.22	
10,044.0	1.60	172.10	9,617.6	2,215.6	1,300.2	2,568.9	0.74	0.55	
10,137.0	1.00	170.50	9,710.5	2,213.5	1,300.5	2,567.3	0.65	-0.65	
10,228.0	0.70	79.80	9,801.5	2,212.8	1,301.2	2,567.0	1.35	-0.33	
10,320.0	1.30	38.60	9,893.5	2,213.7	1,302.4	2,568.4	0.98	0.65	
10,411.0	0.80	67.70	9,984.5	2,214.8	1,303.6	2,569.9	0.79	-0.55	
10,503.0	1.10	77.00	10,076.5	2,215.2	1,305.1	2,571.1	0.37	0.33	
10,594.0	0.70	81.50	10,167.5	2,215.5	1,306.5	2,572.0	0.45	-0.44	
10,685.0	0.40	29.00	10,258.4	2,215.9	1,307.2	2,572.7	0.61	-0.33	
10,777.0	1.10	1.10	10,350.4	2,217.0	1,307.4	2,573.8	0.84	0.76	
10,869.0	0.40	250.10	10,442.4	2,217.8	1,307.1	2,574.3	1.41	-0.76	
10,960.0	0.90	236.60	10,533.4	2,217.3	1,306.2	2,573.4	0.57	0.55	
11,053.0	1.00	342.80	10,626.4	2,217.7	1,305.3	2,573.3	1.64	0.11	

# Cathedral Energy Services

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well SGU 8515F-24
<b>Project:</b>	Story Gulch	<b>TVD Reference:</b>	WELL @ 8320.0ft (Original Well Elev)
<b>Site:</b>	F25 496	<b>MD Reference:</b>	WELL @ 8320.0ft (Original Well Elev)
<b>Well:</b>	SGU 8515F-24	<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
11,143.0	0.60	260.40	10,716.4	2,218.3	1,304.6	2,573.5	1.22	-0.44	
11,235.0	0.30	211.80	10,808.4	2,218.1	1,304.0	2,573.0	0.50	-0.33	
11,326.0	0.60	216.30	10,899.4	2,217.5	1,303.6	2,572.3	0.33	0.33	
11,418.0	0.80	192.10	10,991.4	2,216.4	1,303.2	2,571.2	0.38	0.22	
11,510.0	1.30	90.70	11,083.4	2,215.8	1,304.1	2,571.1	1.80	0.54	
11,601.0	0.70	69.00	11,174.4	2,216.0	1,305.7	2,572.0	0.77	-0.66	
11,693.0	0.40	212.20	11,266.4	2,215.9	1,306.0	2,572.1	1.14	-0.33	
11,784.0	0.40	209.20	11,357.4	2,215.4	1,305.7	2,571.5	0.02	0.00	
11,876.0	0.90	198.10	11,449.4	2,214.4	1,305.3	2,570.5	0.56	0.54	
11,967.0	1.30	184.00	11,540.3	2,212.7	1,305.0	2,568.8	0.53	0.44	
12,059.0	1.70	182.70	11,632.3	2,210.3	1,304.9	2,566.7	0.44	0.43	
12,150.0	1.90	166.10	11,723.3	2,207.5	1,305.2	2,564.4	0.61	0.22	
12,242.0	1.60	158.90	11,815.3	2,204.8	1,306.0	2,562.5	0.40	-0.33	
12,334.0	1.80	202.50	11,907.2	2,202.3	1,305.9	2,560.3	1.39	0.22	
12,608.0	2.10	211.90	12,181.1	2,194.0	1,301.6	2,551.0	0.16	0.11	
12,700.0	2.60	202.40	12,273.0	2,190.7	1,299.9	2,547.3	0.69	0.54	
12,790.0	2.60	210.40	12,362.9	2,187.0	1,298.1	2,543.2	0.40	0.00	Last Cathedral Survey @ 12,790' MD
12,865.0	2.60	210.40	12,437.8	2,184.1	1,296.4	2,539.8	0.00	0.00	Projection to Bit @ 12,865'

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									
F25 496 8515F-24 BHL	0.00	0.00	12,370.0	2,209.0	1,288.9	1,683,367.15	2,264,159.31	39° 40' 50.02 N	108° 6' 53.08 W
- survey misses target center by 24.9ft at 12790.0ft MD (12362.9 TVD, 2187.0 N, 1298.1 E)									
- Rectangle (sides W30.0 H50.0 D0.0)									
F25 496 8515F-24 TGT	0.00	0.00	8,210.0	2,219.0	1,305.9	1,683,376.69	2,264,176.62	39° 40' 50.12 N	108° 6' 52.86 W
- survey misses target center by 30.9ft at 8638.1ft MD (8212.5 TVD, 2200.7 N, 1281.2 E)									
- Point									

Survey Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
12,790.0	12,362.9	2,187.0	1,298.1	Last Cathedral Survey @ 12,790' MD
12,865.0	12,437.8	2,184.1	1,296.4	Projection to Bit @ 12,865'

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