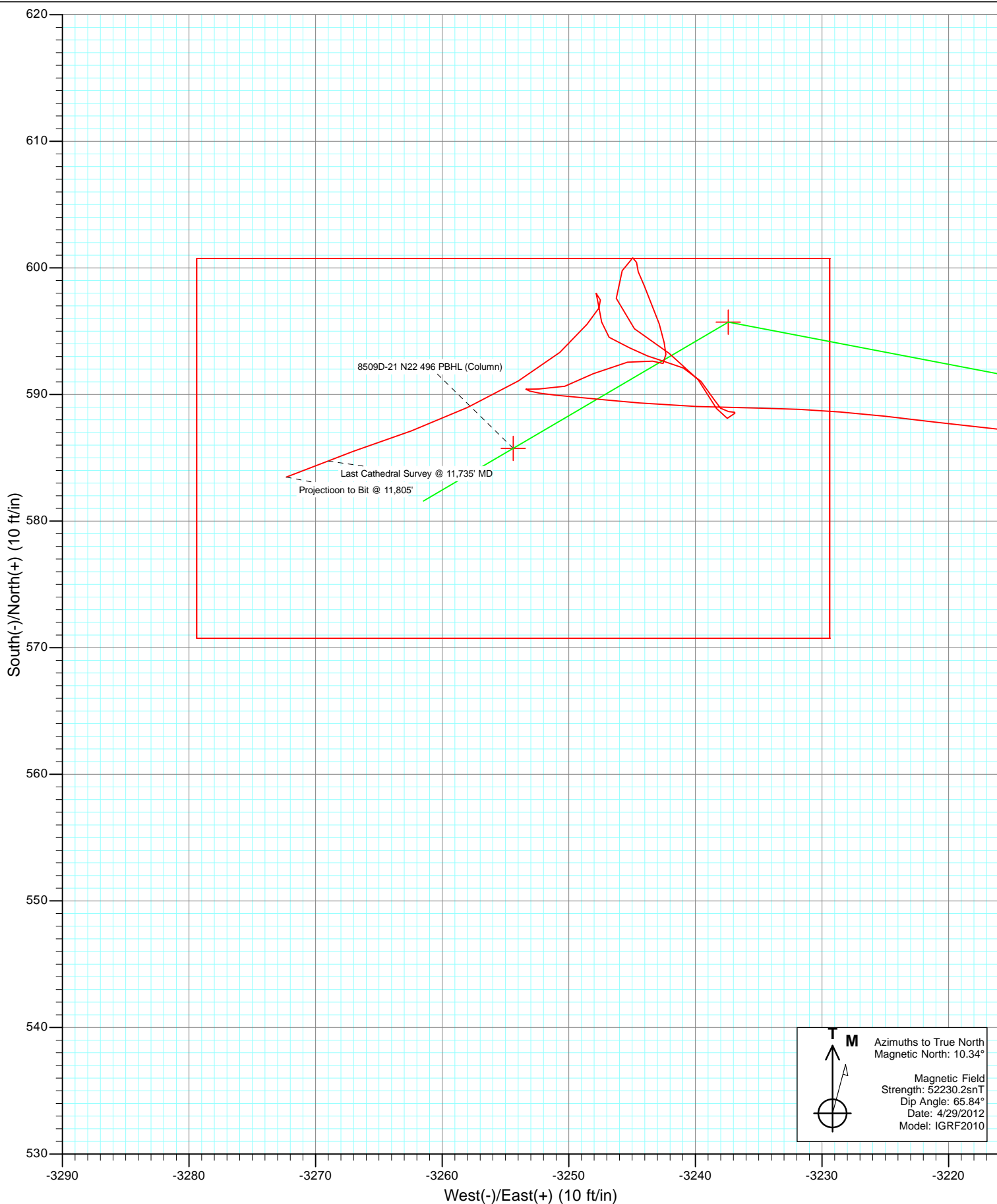


Azimuths to True North  
 Magnetic North: 10.34°

Magnetic Field  
 Strength: 52230.2snT  
 Dip Angle: 65.84°  
 Date: 4/29/2012  
 Model: IGRF2010

DD 8509D-21 N22 496 WELL @ 7602.0ft (Patterson #306) North American Datum 1983 Well 8509D-21 N22 496, True North						
Type	Target	Azimuth	Origin Type	N/S	E/W	From TVD
Target	8509D-21 N22 496 PBHL (Column)	280.20	Slot	0.0	0.0	0.0
Name	8509D-21 N22 496 TGT (Column)	TVD	+N/-S	+E/-W	Latitude	Longitude
	8509D-21 N22 496 PBHL (Column)	7202.0	595.7	-3237.4	39° 41' 7.88 N	108° 10' 7.32 W
		0862.0	585.7	-3254.4	39° 41' 7.78 N	108° 10' 7.53 W



# Cathedral Energy Services

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well 8509D-21 N22 496
<b>Project:</b>	Story Gulch	<b>TVD Reference:</b>	WELL @ 7602.0ft (Patterson #306)
<b>Site:</b>	S22-T4S-R96W (N22 496) (Column Pattern)	<b>MD Reference:</b>	WELL @ 7602.0ft (Patterson #306)
<b>Well:</b>	8509D-21 N22 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>	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		S22-T4S-R96W (N22 496) (Column Pattern)			
Site Position:		Northing:	1,685,048.56 ft	Latitude:	39° 41' 3.24 N
From:	Lat/Long	Easting:	2,252,316.79 ft	Longitude:	108° 9' 25.11 W
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.68 °

Well	8509D-21 N22 496					
Well Position	+N/-S	0.0 ft	Northing:	1,684,924.65 ft	Latitude:	39° 41' 1.99 N
	+E/-W	0.0 ft	Easting:	2,252,250.96 ft	Longitude:	108° 9' 25.91 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	7,569.0 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	4/29/2012	10.34	65.84	52,230

<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	280.20	

<b>Survey Program</b>	<b>Date</b>	5/15/2012			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
149.0	2,072.0	Survey #1 (DD)	MWD	Geolink MWD	
2,169.0	11,805.0	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		
149.0	0.60	331.30	149.0	0.7	-0.4	0.5	0.40	0.40		
210.0	1.10	285.00	210.0	1.1	-1.1	1.3	1.33	0.82		
240.0	2.60	277.50	240.0	1.3	-2.0	2.2	5.05	5.00		
331.0	5.40	282.90	330.7	2.5	-8.3	8.6	3.10	3.08		
423.0	7.90	280.90	422.1	4.7	-18.7	19.2	2.73	2.72		
514.0	10.80	274.20	511.9	6.5	-33.3	34.0	3.40	3.19		
609.0	14.60	277.90	604.6	8.8	-54.1	54.8	4.09	4.00		
700.0	17.30	278.40	692.0	12.3	-78.8	79.8	2.97	2.97		
791.0	20.10	279.50	778.2	16.9	-107.7	108.9	3.10	3.08		
883.0	22.60	281.20	863.9	22.9	-140.6	142.4	2.80	2.72		
975.0	24.60	284.70	948.2	31.2	-176.5	179.2	2.65	2.17		

# Cathedral Energy Services

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well 8509D-21 N22 496
<b>Project:</b>	Story Gulch	<b>TVD Reference:</b>	WELL @ 7602.0ft (Patterson #306)
<b>Site:</b>	S22-T4S-R96W (N22 496) (Column Pattern)	<b>MD Reference:</b>	WELL @ 7602.0ft (Patterson #306)
<b>Well:</b>	8509D-21 N22 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
1,067.0	26.50	284.30	1,031.2	41.2	-214.9	218.8	2.07	2.07	
1,158.0	26.80	279.70	1,112.6	49.6	-254.8	259.5	2.29	0.33	
1,249.0	28.30	279.10	1,193.2	56.5	-296.3	301.6	1.68	1.65	
1,341.0	28.00	279.10	1,274.4	63.4	-339.2	345.0	0.33	-0.33	
1,432.0	28.40	279.00	1,354.6	70.1	-381.6	388.0	0.44	0.44	
1,524.0	28.30	278.90	1,435.5	76.9	-424.8	431.7	0.12	-0.11	
1,616.0	26.60	278.70	1,517.2	83.4	-466.7	474.1	1.85	-1.85	
1,706.0	26.80	279.00	1,597.6	89.6	-506.6	514.5	0.27	0.22	
1,798.0	28.60	281.20	1,679.0	97.2	-548.7	557.3	2.25	1.96	
1,889.0	28.10	281.30	1,759.1	105.6	-591.1	600.5	0.55	-0.55	
1,981.0	26.90	280.50	1,840.7	113.6	-632.8	642.9	1.36	-1.30	
2,072.0	26.80	280.60	1,921.9	121.1	-673.2	684.0	0.12	-0.11	
2,169.0	24.70	276.80	2,009.3	127.6	-714.9	726.1	2.75	-2.16	
2,261.0	25.60	268.80	2,092.6	129.4	-753.8	764.8	3.82	0.98	
2,352.0	29.10	270.70	2,173.4	129.3	-795.6	805.9	3.96	3.85	
2,444.0	31.90	277.90	2,252.7	132.9	-842.1	852.3	5.00	3.04	
2,535.0	30.90	275.60	2,330.4	138.5	-889.2	899.6	1.71	-1.10	
2,627.0	29.80	276.80	2,409.7	143.5	-935.4	946.0	1.37	-1.20	
2,719.0	31.30	281.60	2,489.0	151.0	-981.5	992.7	3.11	1.63	
2,810.0	32.10	283.60	2,566.4	161.5	-1,028.2	1,040.5	1.45	0.88	
2,902.0	31.00	282.20	2,644.8	172.2	-1,075.1	1,088.6	1.44	-1.20	
2,993.0	30.70	284.60	2,722.9	183.0	-1,120.5	1,135.2	1.39	-0.33	
3,085.0	30.50	286.00	2,802.1	195.4	-1,165.6	1,181.8	0.80	-0.22	
3,177.0	28.70	285.50	2,882.1	207.7	-1,209.4	1,227.0	1.97	-1.96	
3,268.0	27.20	281.30	2,962.5	217.6	-1,250.8	1,269.6	2.72	-1.65	
3,359.0	26.60	276.20	3,043.7	223.9	-1,291.5	1,310.7	2.62	-0.66	
3,451.0	26.60	278.00	3,125.9	229.0	-1,332.3	1,351.8	0.88	0.00	
3,543.0	26.40	280.10	3,208.3	235.4	-1,372.9	1,392.9	1.04	-0.22	
3,635.0	27.50	276.70	3,290.3	241.5	-1,414.1	1,434.5	2.06	1.20	
3,726.0	30.40	280.40	3,369.9	248.1	-1,457.6	1,478.5	3.74	3.19	
3,817.0	32.70	284.50	3,447.5	258.4	-1,504.1	1,526.1	3.46	2.53	
3,909.0	30.80	283.30	3,525.7	270.1	-1,551.1	1,574.4	2.18	-2.07	
4,000.0	29.90	281.60	3,604.2	280.0	-1,596.0	1,620.3	1.37	-0.99	
4,092.0	30.40	281.30	3,683.8	289.2	-1,641.3	1,666.5	0.57	0.54	
4,184.0	31.30	281.80	3,762.8	298.6	-1,687.5	1,713.7	1.02	0.98	
4,275.0	28.70	278.30	3,841.6	306.6	-1,732.3	1,759.2	3.44	-2.86	
4,366.0	29.60	278.70	3,921.0	313.2	-1,776.1	1,803.5	1.01	0.99	
4,458.0	32.40	280.40	3,999.9	321.1	-1,822.8	1,850.9	3.19	3.04	
4,550.0	33.00	280.40	4,077.3	330.0	-1,871.7	1,900.6	0.65	0.65	
4,642.0	31.00	278.50	4,155.3	338.1	-1,919.8	1,949.3	2.43	-2.17	
4,734.0	29.00	280.20	4,235.0	345.5	-1,965.2	1,995.3	2.36	-2.17	
4,825.0	27.20	282.60	4,315.3	353.9	-2,007.2	2,038.1	2.34	-1.98	
4,917.0	27.10	282.10	4,397.1	362.9	-2,048.2	2,080.1	0.27	-0.11	
5,008.0	27.80	284.00	4,477.9	372.4	-2,089.0	2,122.0	1.23	0.77	
5,100.0	28.40	284.30	4,559.0	383.0	-2,131.1	2,165.2	0.67	0.65	
5,191.0	26.20	282.40	4,639.9	392.7	-2,171.7	2,206.9	2.60	-2.42	
5,283.0	27.10	281.40	4,722.1	401.2	-2,212.0	2,248.1	1.09	0.98	
5,375.0	28.70	281.80	4,803.4	409.8	-2,254.2	2,291.1	1.75	1.74	
5,466.0	27.30	280.00	4,883.8	417.9	-2,296.1	2,333.9	1.80	-1.54	
5,558.0	26.40	279.50	4,965.9	425.0	-2,337.1	2,375.4	1.01	-0.98	
5,650.0	26.40	282.10	5,048.3	432.6	-2,377.3	2,416.3	1.26	0.00	
5,742.0	29.10	283.10	5,129.7	442.0	-2,419.1	2,459.1	2.98	2.93	
5,833.0	27.90	282.40	5,209.7	451.6	-2,461.4	2,502.5	1.37	-1.32	

# Cathedral Energy Services

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well 8509D-21 N22 496
<b>Project:</b>	Story Gulch	<b>TVD Reference:</b>	WELL @ 7602.0ft (Patterson #306)
<b>Site:</b>	S22-T4S-R96W (N22 496) (Column Pattern)	<b>MD Reference:</b>	WELL @ 7602.0ft (Patterson #306)
<b>Well:</b>	8509D-21 N22 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
5,925.0	28.20	282.50	5,290.9	460.9	-2,503.7	2,545.7	0.33	0.33	
6,017.0	29.90	281.50	5,371.3	470.2	-2,547.4	2,590.4	1.92	1.85	
6,108.0	28.00	279.80	5,450.9	478.3	-2,590.6	2,634.4	2.28	-2.09	
6,200.0	25.50	275.10	5,533.1	483.8	-2,631.6	2,675.7	3.56	-2.72	
6,291.0	25.80	275.10	5,615.1	487.3	-2,670.9	2,715.0	0.33	0.33	
6,383.0	24.70	278.50	5,698.3	491.9	-2,709.8	2,754.1	1.98	-1.20	
6,475.0	24.10	281.60	5,782.1	498.5	-2,747.3	2,792.1	1.54	-0.65	
6,566.0	26.20	283.10	5,864.5	506.8	-2,785.0	2,830.8	2.41	2.31	
6,657.0	26.10	282.30	5,946.1	515.6	-2,824.1	2,870.8	0.40	-0.11	
6,749.0	24.30	280.90	6,029.4	523.5	-2,862.5	2,910.0	2.06	-1.96	
6,840.0	22.40	280.60	6,112.9	530.2	-2,897.9	2,946.0	2.09	-2.09	
6,931.0	22.10	280.40	6,197.2	536.5	-2,931.8	2,980.5	0.34	-0.33	
7,023.0	20.90	279.60	6,282.8	542.4	-2,965.0	3,014.2	1.34	-1.30	
7,114.0	21.00	281.30	6,367.7	548.3	-2,997.0	3,046.7	0.68	0.11	
7,206.0	21.40	281.20	6,453.5	554.8	-3,029.6	3,080.0	0.44	0.43	
7,298.0	21.10	282.90	6,539.3	561.7	-3,062.3	3,113.3	0.74	-0.33	
7,388.0	22.00	283.90	6,623.0	569.4	-3,094.4	3,146.3	1.08	1.00	
7,480.0	20.90	283.80	6,708.6	577.4	-3,127.1	3,179.9	1.20	-1.20	
7,572.0	18.60	276.30	6,795.2	583.0	-3,157.6	3,210.9	3.72	-2.50	
7,664.0	13.80	274.20	6,883.5	585.4	-3,183.1	3,236.5	5.26	-5.22	
7,755.0	12.00	271.80	6,972.2	586.5	-3,203.4	3,256.7	2.06	-1.98	
7,847.0	10.30	277.30	7,062.5	587.8	-3,221.1	3,274.3	2.18	-1.85	
7,938.0	6.90	270.60	7,152.4	588.9	-3,234.7	3,287.9	3.89	-3.74	
8,030.0	5.30	274.90	7,243.9	589.3	-3,244.4	3,297.5	1.81	-1.74	
8,122.0	2.90	276.10	7,335.7	589.9	-3,251.0	3,304.1	2.61	-2.61	
8,213.0	0.30	336.30	7,426.6	590.4	-3,253.4	3,306.5	3.04	-2.86	
8,306.0	1.40	99.90	7,519.6	590.4	-3,252.4	3,305.5	1.71	1.18	
8,397.0	1.30	66.80	7,610.6	590.7	-3,250.3	3,303.5	0.85	-0.11	
8,488.0	1.80	65.90	7,701.6	591.6	-3,248.1	3,301.5	0.55	0.55	
8,579.0	1.80	77.00	7,792.5	592.6	-3,245.4	3,299.0	0.38	0.00	
8,670.0	0.80	111.60	7,883.5	592.6	-3,243.4	3,297.1	1.35	-1.10	
8,762.0	0.30	76.00	7,975.5	592.5	-3,242.6	3,296.2	0.63	-0.54	
8,854.0	0.80	359.20	8,067.5	593.2	-3,242.3	3,296.1	0.86	0.54	
8,946.0	2.30	343.60	8,159.5	595.6	-3,242.9	3,297.1	1.68	1.63	
9,037.0	1.80	332.50	8,250.4	598.6	-3,244.0	3,298.8	0.70	-0.55	
9,129.0	0.70	5.40	8,342.4	600.4	-3,244.6	3,299.7	1.38	-1.20	
9,221.0	0.50	240.00	8,434.4	600.8	-3,244.9	3,300.0	1.16	-0.22	
9,312.0	1.20	211.20	8,525.4	599.8	-3,245.8	3,300.7	0.88	0.77	
9,404.0	1.70	178.60	8,617.3	597.6	-3,246.2	3,300.8	1.03	0.54	
9,495.0	2.20	126.80	8,708.3	595.2	-3,244.8	3,298.9	1.94	0.55	
9,587.0	2.00	123.80	8,800.2	593.2	-3,242.1	3,295.9	0.25	-0.22	
9,679.0	1.90	141.10	8,892.2	591.2	-3,239.8	3,293.3	0.65	-0.11	
9,770.0	1.50	155.70	8,983.2	588.9	-3,238.3	3,291.4	0.64	-0.44	
9,862.0	0.60	49.60	9,075.1	588.1	-3,237.5	3,290.5	1.92	-0.98	
9,954.0	0.30	70.00	9,167.1	588.5	-3,236.9	3,289.9	0.36	-0.33	
10,046.0	0.90	274.80	9,259.1	588.7	-3,237.4	3,290.5	1.28	0.65	
10,137.0	1.20	333.90	9,350.1	589.6	-3,238.5	3,291.7	1.17	0.33	
10,229.0	1.10	313.50	9,442.1	591.0	-3,239.6	3,293.0	0.46	-0.11	
10,320.0	1.10	300.60	9,533.1	592.1	-3,241.0	3,294.6	0.27	0.00	
10,412.0	1.00	276.40	9,625.1	592.6	-3,242.5	3,296.2	0.49	-0.11	
10,503.0	0.70	304.60	9,716.1	593.0	-3,243.8	3,297.5	0.56	-0.33	
10,594.0	1.30	289.10	9,807.0	593.7	-3,245.2	3,299.0	0.72	0.66	
10,686.0	1.00	307.60	9,899.0	594.5	-3,246.8	3,300.8	0.51	-0.33	

# Cathedral Energy Services

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well 8509D-21 N22 496
<b>Project:</b>	Story Gulch	<b>TVD Reference:</b>	WELL @ 7602.0ft (Patterson #306)
<b>Site:</b>	S22-T4S-R96W (N22 496) (Column Pattern)	<b>MD Reference:</b>	WELL @ 7602.0ft (Patterson #306)
<b>Well:</b>	8509D-21 N22 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
10,778.0	0.90	3.50	9,991.0	595.7	-3,247.4	3,301.6	0.97	-0.11	
10,869.0	1.20	338.70	10,082.0	597.3	-3,247.7	3,302.2	0.59	0.33	
10,961.0	0.40	136.40	10,174.0	598.0	-3,247.8	3,302.4	1.71	-0.87	
11,052.0	0.40	159.10	10,265.0	597.5	-3,247.5	3,302.0	0.17	0.00	
11,144.0	0.50	213.60	10,357.0	596.8	-3,247.6	3,302.0	0.46	0.11	
11,236.0	1.50	217.50	10,449.0	595.5	-3,248.6	3,302.7	1.09	1.09	
11,327.0	2.40	228.00	10,539.9	593.3	-3,250.7	3,304.4	1.06	0.99	
11,419.0	2.60	242.30	10,631.8	591.1	-3,254.0	3,307.2	0.71	0.22	
11,511.0	3.00	242.60	10,723.7	589.0	-3,258.0	3,310.8	0.44	0.43	
11,602.0	3.10	251.90	10,814.6	587.1	-3,262.4	3,314.8	0.55	0.11	
11,694.0	3.00	249.20	10,906.4	585.5	-3,267.0	3,319.1	0.19	-0.11	
11,735.0	2.90	248.90	10,947.4	584.7	-3,269.0	3,320.9	0.25	-0.24	Last Cathedral Survey @ 11,735' MD
11,805.0	2.90	248.90	11,017.3	583.5	-3,272.3	3,323.9	0.00	0.00	Projection to Bit @ 11,805'

### 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
8509D-21 N22 496 TGT - actual wellpath misses target center by 7.2ft at 7987.6ft MD (7201.7 TVD, 589.1 N, -3240.3 E) - Point	0.00	0.00	7,202.0	595.7	-3,237.4	1,685,614.79	2,249,032.37	39° 41' 7.88 N	108° 10' 7.32 W
8509D-21 N22 496 PBH - actual wellpath misses target center by 10.4ft at 11649.0ft MD (10861.5 TVD, 586.3 N, -3264.8 E) - Rectangle (sides W30.0 H50.0 D0.0)	0.00	0.00	10,862.0	585.7	-3,254.4	1,685,605.32	2,249,015.10	39° 41' 7.78 N	108° 10' 7.53 W

### Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	+E/-W (ft)	Comment
11,735.0	10,947.4	584.7	-3,269.0	Last Cathedral Survey @ 11,735' MD
11,805.0	11,017.3	583.5	-3,272.3	Projection to Bit @ 11,805'

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