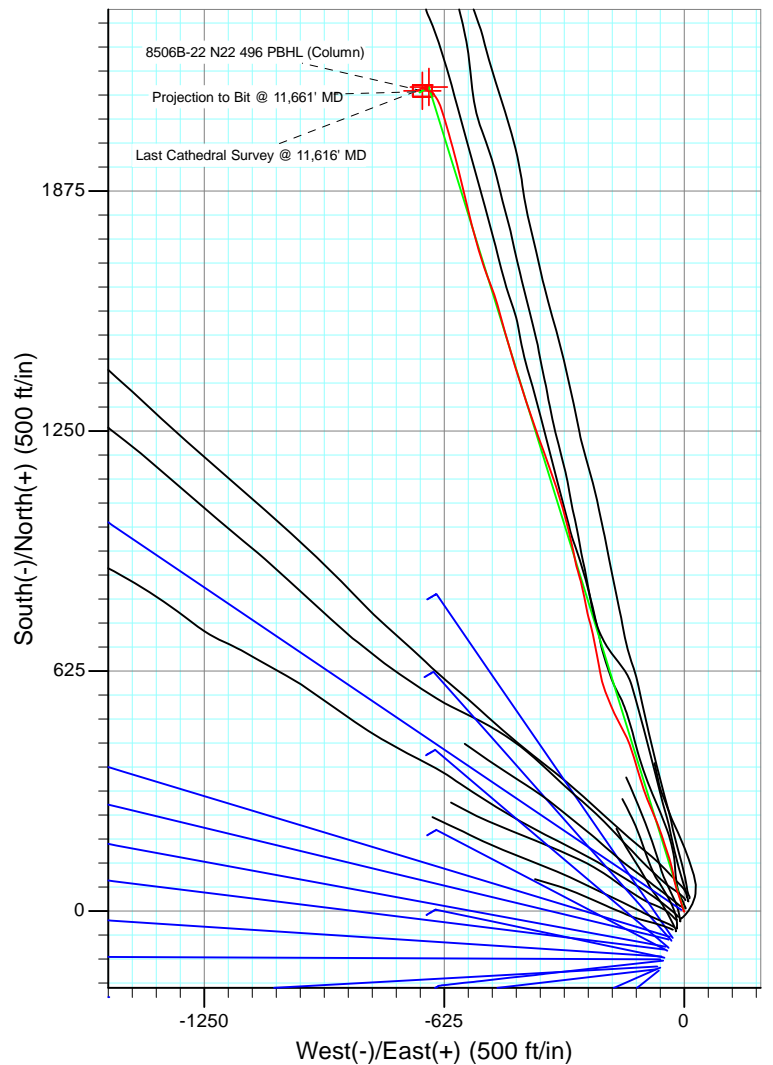
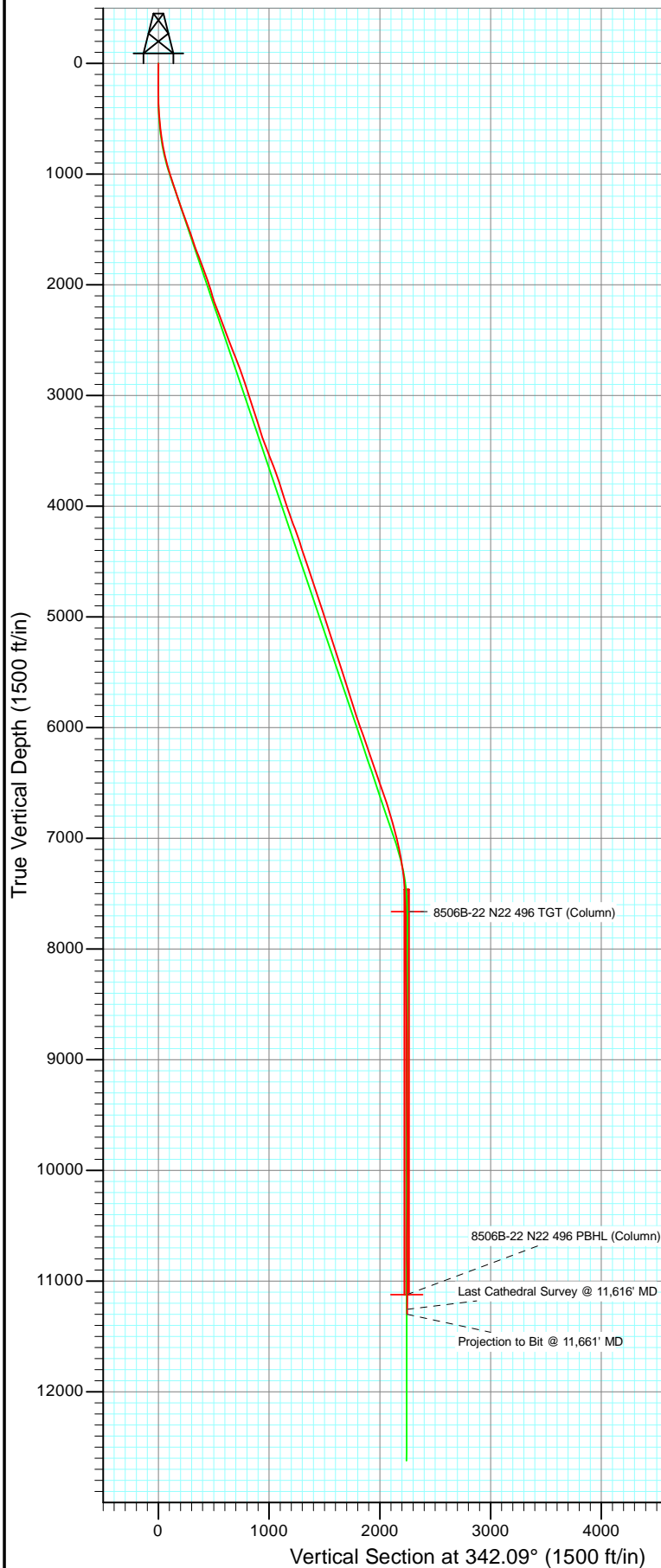




Project: Story Gulch  
 Site: S22-T4S-R96W (N22 496) (Column Pattern)  
 Well: 8506B-22 N22 496  
 Wellbore: DD  
 Design: FINAL



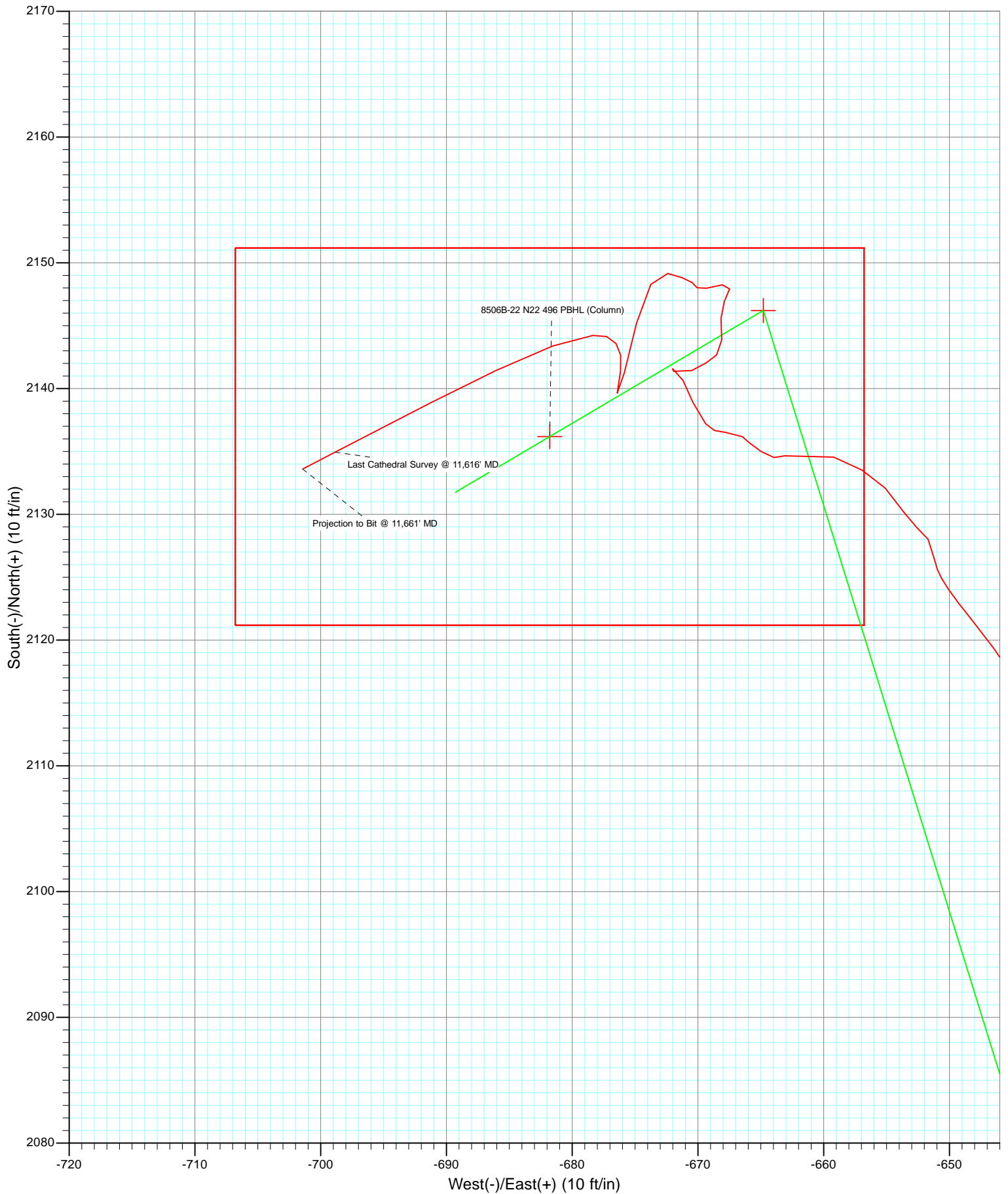
Azimuths to True North  
 Magnetic North: 10.39°

Magnetic Field  
 Strength: 52275.0nT  
 Dip Angle: 65.85°  
 Date: 11/19/2011  
 Model: IGRF2010

DD 8506B-22 N22 496 115517 123455; 125255 115534LR						
WELL @ 7602.0ft (Patterson 306) North American Datum 1983 Well 8506B-22 N22 496, True North						
Type User	Target No Target (Freehand)	Azimuth 342.09	Origin Type Slot	N/S 0.0	E/W 0.0	From TVD 0.0
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	
8506B-22 N22 496 TGT (Column)	7662.0	2146.2	-664.8	39° 41' 24.12 N	108° 9' 33.79 W	
8506B-22 N22 496 PBHL (Column)	11122.0	2136.2	-681.8	39° 41' 24.02 N	108° 9' 34.01 W	



Project: Story Gulch  
Site: S22-T4S-R96W (N22 496) (Column Pattern)  
Well: 8506B-22 N22 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 8506B-22 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>	8506B-22 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	8506B-22 N22 496					
Well Position	+N/-S	0.0 ft	Northing:	1,685,015.79 ft	Latitude:	39° 41' 2.91 N
	+E/-W	0.0 ft	Easting:	2,252,301.71 ft	Longitude:	108° 9' 25.29 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	11/19/2011	10.39	65.85	52,275

<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	342.09	

<b>Survey Program</b>	<b>Date</b>	12/11/2011			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
209.0	2,045.0	Survey #1 (DD)	MWD	Geolink MWD	
2,168.0	11,661.0	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		
209.0	0.50	169.40	209.0	-0.9	0.2	-0.9	0.24	0.24		
239.0	0.80	185.00	239.0	-1.2	0.2	-1.2	1.15	1.00		
331.0	1.80	320.50	331.0	-0.8	-0.8	-0.5	2.65	1.09		
422.0	3.80	350.10	421.9	3.3	-2.2	3.8	2.64	2.20		
513.0	4.80	341.80	512.6	9.9	-3.9	10.6	1.29	1.10		
608.0	6.50	345.40	607.2	18.9	-6.5	20.0	1.83	1.79		
699.0	8.60	340.30	697.4	30.3	-10.1	31.9	2.42	2.31		
791.0	12.10	339.70	787.8	45.8	-15.8	48.4	3.81	3.80		
882.0	14.60	345.50	876.4	65.9	-22.0	69.4	3.11	2.75		
974.0	16.70	350.60	965.0	90.1	-27.0	94.1	2.73	2.28		
1,065.0	18.50	344.90	1,051.7	117.0	-32.9	121.4	2.74	1.98		

# Cathedral Energy Services

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well 8506B-22 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>	8506B-22 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
1,157.0	17.40	342.10	1,139.2	144.1	-41.0	149.8	1.52	-1.20	
1,248.0	18.50	342.20	1,225.8	170.8	-49.6	177.8	1.21	1.21	
1,340.0	20.50	340.90	1,312.5	200.0	-59.3	208.5	2.22	2.17	
1,432.0	20.50	339.00	1,398.7	230.2	-70.3	240.7	0.72	0.00	
1,523.0	18.80	335.90	1,484.4	258.5	-82.0	271.2	2.19	-1.87	
1,615.0	19.00	338.00	1,571.4	285.9	-93.7	300.9	0.77	0.22	
1,706.0	19.70	341.10	1,657.3	314.2	-104.2	331.0	1.37	0.77	
1,798.0	21.30	343.20	1,743.5	344.8	-114.1	363.2	1.91	1.74	
1,889.0	19.60	343.70	1,828.7	375.3	-123.1	395.0	1.88	-1.87	
2,045.0	20.20	341.30	1,975.4	425.9	-139.1	448.1	0.65	0.38	Last Cathedral Survey @ 2,045' MD
2,168.0	15.40	332.30	2,092.5	460.5	-153.5	485.4	4.49	-3.90	
2,260.0	20.70	331.90	2,180.0	485.7	-166.9	513.5	5.76	5.76	
2,352.0	20.90	334.80	2,266.0	514.9	-181.5	545.8	1.14	0.22	
2,443.0	21.50	338.20	2,350.8	545.1	-194.6	578.5	1.50	0.66	
2,535.0	20.00	339.20	2,436.8	575.4	-206.5	611.0	1.68	-1.63	
2,626.0	21.10	348.30	2,522.1	606.0	-215.3	642.9	3.71	1.21	
2,717.0	22.00	349.90	2,606.7	638.8	-221.6	676.0	1.18	0.99	
2,809.0	21.00	348.90	2,692.3	672.0	-227.8	709.5	1.16	-1.09	
2,900.0	20.30	348.60	2,777.5	703.5	-234.1	741.4	0.78	-0.77	
2,992.0	19.50	346.40	2,864.0	734.0	-240.9	772.5	1.19	-0.87	
3,083.0	17.80	343.90	2,950.2	762.2	-248.3	801.6	2.06	-1.87	
3,175.0	17.70	350.00	3,037.8	789.5	-254.6	829.5	2.02	-0.11	
3,266.0	17.70	348.90	3,124.5	816.6	-259.7	856.9	0.37	0.00	
3,358.0	19.30	346.80	3,211.8	845.2	-265.8	886.0	1.88	1.74	
3,449.0	15.70	343.10	3,298.5	871.6	-272.9	913.3	4.14	-3.96	
3,541.0	19.20	345.80	3,386.3	898.2	-280.2	940.8	3.90	3.80	
3,633.0	22.70	348.50	3,472.2	930.3	-287.4	973.6	3.95	3.80	
3,724.0	21.30	347.50	3,556.6	963.6	-294.5	1,007.5	1.59	-1.54	
3,816.0	20.60	346.90	3,642.5	995.7	-301.8	1,040.2	0.80	-0.76	
3,907.0	19.50	345.00	3,728.0	1,026.0	-309.4	1,071.4	1.40	-1.21	
3,999.0	17.20	344.10	3,815.3	1,053.9	-317.1	1,100.3	2.52	-2.50	
4,090.0	17.30	341.00	3,902.2	1,079.6	-325.2	1,127.3	1.02	0.11	
4,182.0	19.40	342.20	3,989.5	1,107.1	-334.3	1,156.2	2.32	2.28	
4,273.0	18.90	341.00	4,075.5	1,135.4	-343.7	1,186.1	0.70	-0.55	
4,365.0	20.70	340.20	4,162.0	1,164.8	-354.1	1,217.2	1.98	1.96	
4,456.0	19.70	340.10	4,247.4	1,194.4	-364.7	1,248.6	1.10	-1.10	
4,547.0	17.80	340.20	4,333.6	1,221.9	-374.7	1,277.9	2.09	-2.09	
4,639.0	19.30	340.30	4,420.8	1,249.4	-384.6	1,307.1	1.63	1.63	
4,730.0	18.60	341.70	4,506.9	1,277.4	-394.2	1,336.7	0.92	-0.77	
4,822.0	19.00	341.30	4,594.0	1,305.5	-403.6	1,366.3	0.46	0.43	
4,913.0	17.00	341.70	4,680.5	1,332.1	-412.5	1,394.4	2.20	-2.20	
5,005.0	18.30	340.00	4,768.2	1,358.5	-421.7	1,422.3	1.52	1.41	
5,096.0	19.20	343.20	4,854.4	1,386.2	-430.9	1,451.6	1.50	0.99	
5,188.0	17.40	343.10	4,941.7	1,413.9	-439.3	1,480.4	1.96	-1.96	
5,280.0	17.60	345.70	5,029.4	1,440.5	-446.7	1,508.1	0.88	0.22	
5,371.0	17.90	343.50	5,116.1	1,467.3	-454.1	1,535.8	0.81	0.33	
5,463.0	18.50	343.20	5,203.5	1,494.8	-462.3	1,564.5	0.66	0.65	
5,554.0	18.50	343.80	5,289.8	1,522.5	-470.5	1,593.4	0.21	0.00	
5,646.0	18.50	345.30	5,377.1	1,550.6	-478.3	1,622.5	0.52	0.00	
5,828.0	17.60	341.50	5,550.1	1,604.6	-494.3	1,678.9	0.81	-0.49	
5,920.0	17.30	338.90	5,637.9	1,630.6	-503.7	1,706.5	0.91	-0.33	
6,011.0	17.10	339.70	5,724.8	1,655.8	-513.2	1,733.3	0.34	-0.22	
6,103.0	17.30	340.30	5,812.7	1,681.3	-522.5	1,760.5	0.29	0.22	

# Cathedral Energy Services

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well 8506B-22 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>	8506B-22 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
6,195.0	18.50	342.50	5,900.2	1,708.1	-531.5	1,788.8	1.50	1.30	
6,286.0	19.60	345.30	5,986.3	1,736.7	-539.7	1,818.5	1.57	1.21	
6,378.0	20.40	346.10	6,072.7	1,767.1	-547.5	1,849.9	0.92	0.87	
6,469.0	18.70	345.20	6,158.5	1,796.6	-555.0	1,880.3	1.90	-1.87	
6,561.0	19.50	346.60	6,245.4	1,825.8	-562.3	1,910.3	1.00	0.87	
6,653.0	18.00	346.10	6,332.5	1,854.6	-569.3	1,939.8	1.64	-1.63	
6,744.0	18.90	346.50	6,418.8	1,882.6	-576.1	1,968.5	1.00	0.99	
6,836.0	19.80	345.80	6,505.6	1,912.2	-583.4	1,998.9	1.01	0.98	
6,927.0	19.30	345.60	6,591.4	1,941.7	-591.0	2,029.3	0.55	-0.55	
7,019.0	18.50	345.40	6,678.4	1,970.5	-598.4	2,059.0	0.87	-0.87	
7,110.0	16.90	345.50	6,765.1	1,997.3	-605.4	2,086.7	1.76	-1.76	
7,202.0	15.70	344.30	6,853.4	2,022.2	-612.1	2,112.5	1.35	-1.30	
7,294.0	14.70	344.10	6,942.2	2,045.4	-618.6	2,136.6	1.09	-1.09	
7,385.0	13.20	342.70	7,030.5	2,066.5	-624.9	2,158.5	1.69	-1.65	
7,477.0	11.80	341.30	7,120.3	2,085.4	-631.0	2,178.4	1.56	-1.52	
7,569.0	9.10	339.50	7,210.8	2,101.1	-636.6	2,195.1	2.96	-2.93	
7,660.0	7.90	328.40	7,300.8	2,113.2	-642.4	2,208.3	2.23	-1.32	
7,752.0	5.20	320.50	7,392.2	2,121.8	-648.4	2,218.4	3.09	-2.93	
7,843.0	1.50	354.10	7,483.0	2,126.2	-651.1	2,223.4	4.44	-4.07	
7,935.0	1.00	324.80	7,575.0	2,128.0	-651.7	2,225.3	0.87	-0.54	
8,026.0	0.60	301.00	7,666.0	2,128.9	-652.6	2,226.4	0.56	-0.44	
8,118.0	1.50	327.40	7,758.0	2,130.2	-653.6	2,228.0	1.09	0.98	
8,210.0	1.50	317.50	7,849.9	2,132.1	-655.1	2,230.2	0.28	0.00	
8,301.0	1.50	297.70	7,940.9	2,133.5	-656.9	2,232.1	0.57	0.00	
8,393.0	1.60	292.30	8,032.9	2,134.6	-659.2	2,233.8	0.19	0.11	
8,576.0	1.10	240.10	8,215.8	2,134.7	-663.1	2,235.1	0.69	-0.27	
8,667.0	1.70	304.90	8,306.8	2,135.0	-665.0	2,236.0	1.74	0.66	
8,759.0	0.70	316.10	8,398.8	2,136.2	-666.5	2,237.6	1.11	-1.09	
8,850.0	1.20	266.60	8,489.8	2,136.5	-667.8	2,238.3	1.01	0.55	
8,942.0	1.20	320.50	8,581.8	2,137.2	-669.4	2,239.5	1.18	0.00	
9,034.0	1.30	337.10	8,673.7	2,138.9	-670.4	2,241.4	0.41	0.11	
9,125.0	1.10	334.40	8,764.7	2,140.6	-671.2	2,243.3	0.23	-0.22	
9,217.0	0.60	286.20	8,856.7	2,141.6	-672.0	2,244.5	0.90	-0.54	
9,309.0	0.70	115.00	9,038.7	2,141.4	-671.9	2,244.2	0.71	0.05	
9,491.0	1.20	72.00	9,130.7	2,141.4	-670.5	2,243.9	0.91	0.54	
9,564.0	0.90	48.80	9,203.7	2,142.0	-669.3	2,244.1	0.70	-0.41	
9,656.0	0.40	61.80	9,295.7	2,142.7	-668.5	2,244.4	0.56	-0.54	
9,748.0	1.30	6.70	9,387.7	2,143.9	-668.1	2,245.4	1.22	0.98	
9,839.0	0.90	346.10	9,478.6	2,145.6	-668.2	2,247.1	0.61	-0.44	
9,930.0	1.00	33.80	9,569.6	2,146.9	-667.9	2,248.3	0.85	0.11	
10,022.0	0.40	354.20	9,661.6	2,147.9	-667.5	2,249.1	0.80	-0.65	
10,113.0	0.70	271.20	9,752.6	2,148.3	-668.1	2,249.6	0.84	0.33	
10,205.0	0.90	247.60	9,844.6	2,148.0	-669.3	2,249.7	0.41	0.22	
10,296.0	0.40	340.00	9,935.6	2,148.0	-670.1	2,250.0	1.10	-0.55	
10,388.0	0.40	292.70	10,027.6	2,148.4	-670.5	2,250.5	0.35	0.00	
10,479.0	0.70	297.40	10,118.6	2,148.8	-671.3	2,251.1	0.33	0.33	
10,571.0	0.80	276.90	10,210.6	2,149.2	-672.4	2,251.8	0.31	0.11	
10,662.0	1.50	217.60	10,301.6	2,148.3	-673.7	2,251.4	1.42	0.77	
10,754.0	2.70	190.50	10,393.5	2,145.2	-674.9	2,248.8	1.66	1.30	
10,844.0	2.50	197.50	10,483.4	2,141.2	-675.9	2,245.3	0.42	-0.22	
10,936.0	0.40	8.50	10,575.4	2,139.6	-676.4	2,244.0	3.15	-2.28	
11,027.0	1.80	8.40	10,666.4	2,141.4	-676.2	2,245.5	1.54	1.54	
11,119.0	1.20	324.00	10,758.4	2,143.6	-676.5	2,247.8	1.37	-0.65	

# Cathedral Energy Services

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well 8506B-22 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>	8506B-22 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
11,211.0	1.60	263.90	10,850.3	2,144.2	-678.4	2,248.9	1.57	0.43	
11,302.0	2.60	249.80	10,941.3	2,143.4	-681.6	2,249.1	1.23	1.10	
11,394.0	3.50	244.40	11,033.1	2,141.4	-686.0	2,248.6	1.03	0.98	
11,485.0	3.80	243.00	11,124.0	2,138.9	-691.2	2,247.8	0.34	0.33	
11,616.0	3.70	242.40	11,254.7	2,134.9	-698.9	2,246.4	0.08	-0.08	Last Cathedral Survey @ 11,616' MD
11,661.0	3.70	242.40	11,299.6	2,133.6	-701.4	2,245.9	0.00	0.00	Projection to Bit @ 11,661' MD

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
8506B-22 N22 496 PBH	0.00	0.00	11,122.0	2,136.2	-681.8	1,687,171.00	2,251,682.69	39° 41' 24.02 N	108° 9' 34.01 W
- hit/miss target									
- Shape									
- actual wellpath misses target center by 9.7ft at 11482.6ft MD (11121.5 TVD, 2139.0 N, -691.1 E)									
- Rectangle (sides W30.0 H50.0 D0.0)									
8506B-22 N22 496 TGT	0.00	0.00	7,662.0	2,146.2	-664.8	1,687,180.52	2,251,699.95	39° 41' 24.12 N	108° 9' 33.79 W
- actual wellpath misses target center by 21.2ft at 8022.3ft MD (7662.3 TVD, 2128.9 N, -652.5 E)									
- Point									

Design Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
2,045.0	1,975.4	425.9	-139.1	Last Cathedral Survey @ 2,045' MD
11,616.0	11,254.7	2,134.9	-698.9	Last Cathedral Survey @ 11,616' MD
11,661.0	11,299.6	2,133.6	-701.4	Projection to Bit @ 11,661' MD

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