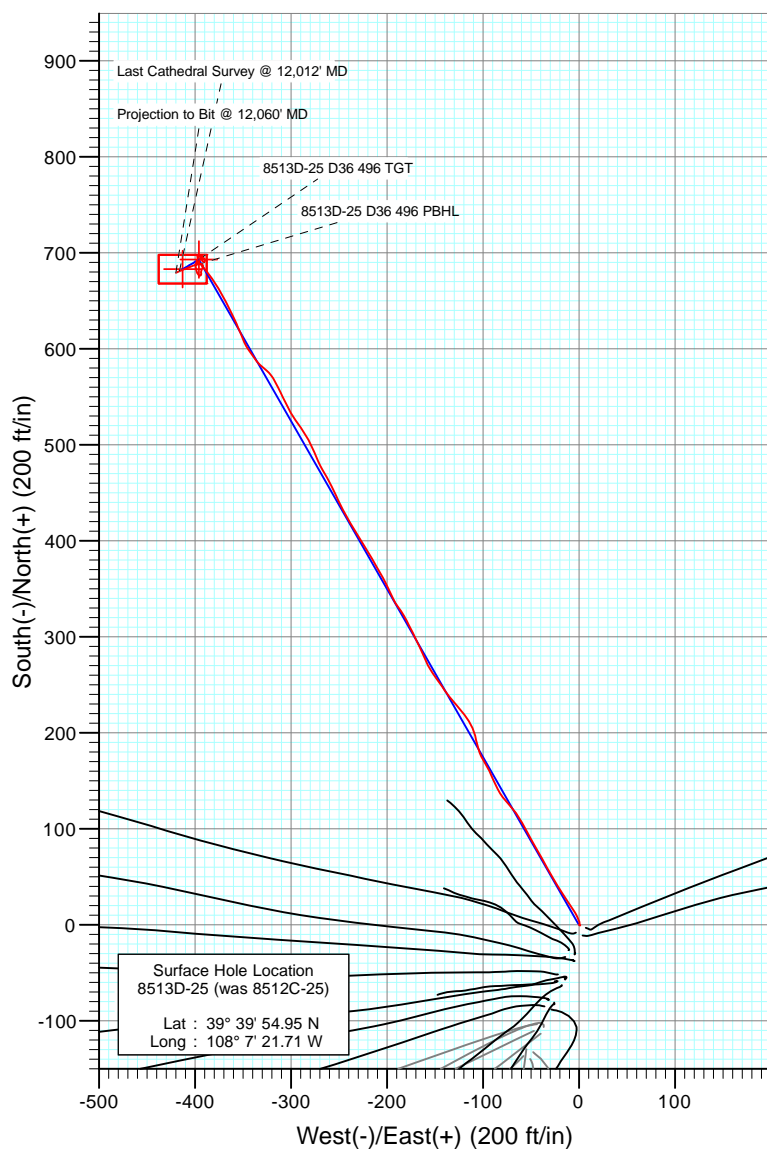
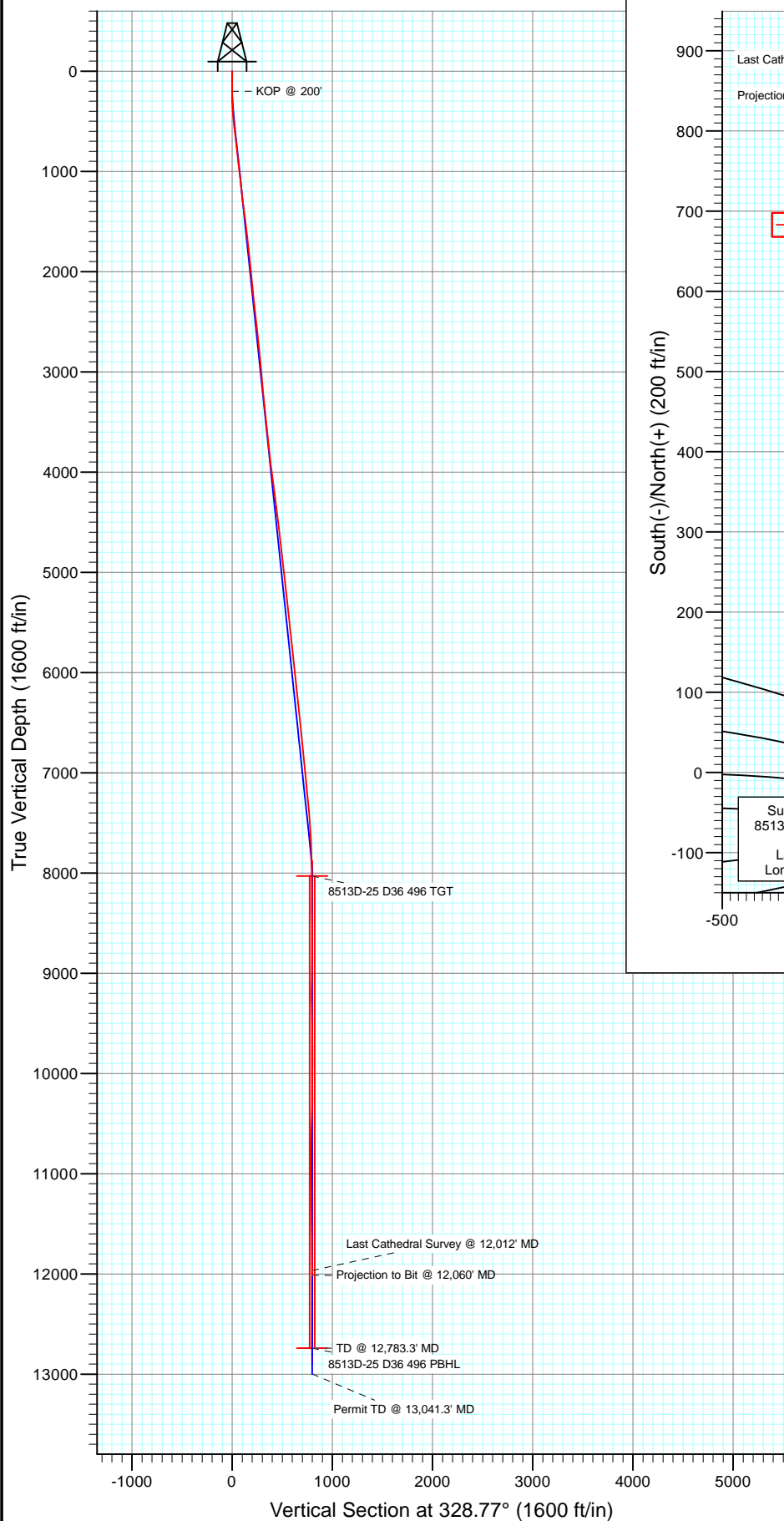




Project: Story Gulch  
 Site: S36-T4S-R96W (D36 496)  
 Well: 8513D-25 (was 8512C-25)  
 Wellbore: DD  
 Design: FINAL



#### FORMATION TOP DETAILS

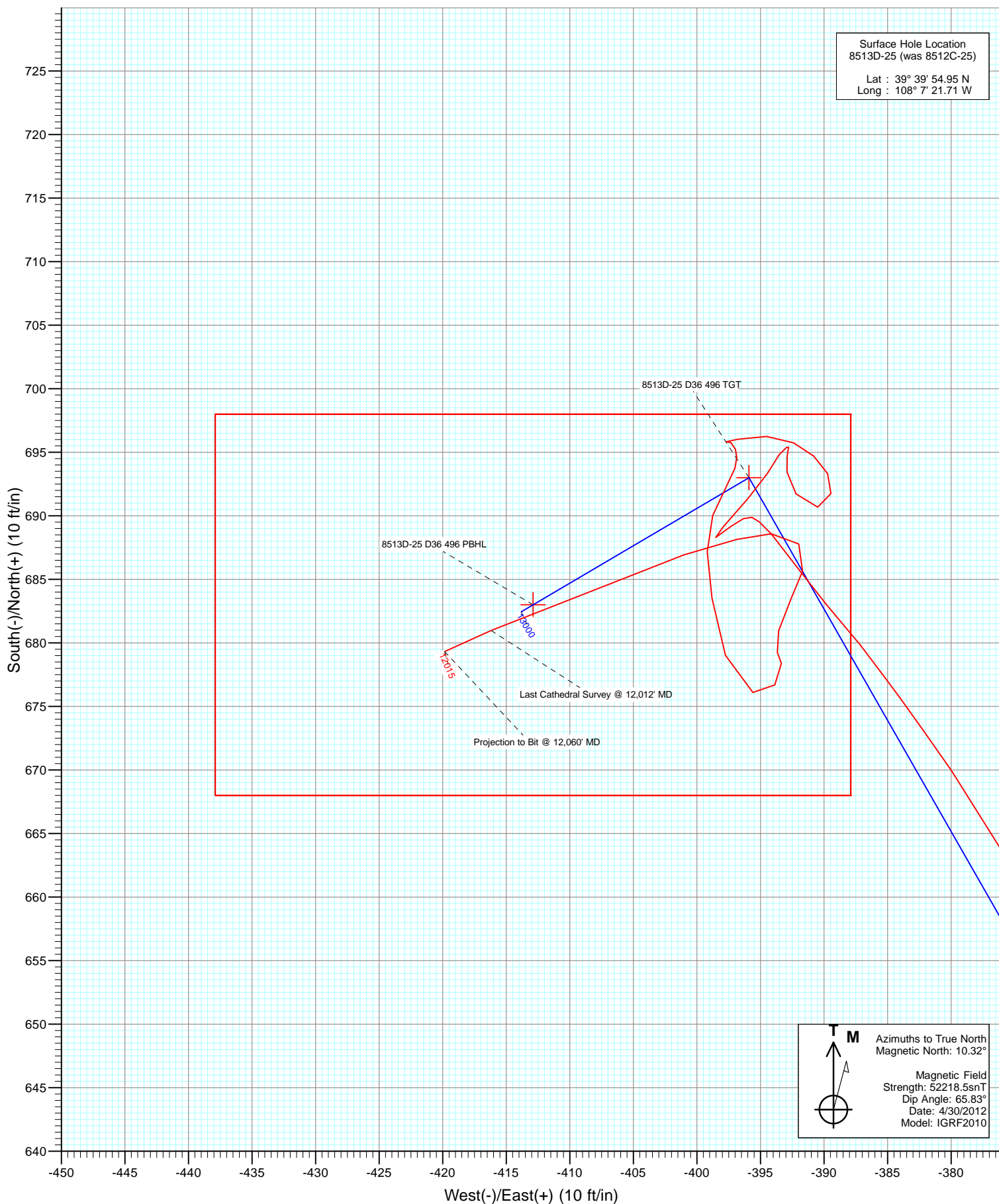
No formation data is available



Azimuths to True North  
 Magnetic North: 10.32°

Magnetic Field  
 Strength: 52218.5nT  
 Dip Angle: 65.83°  
 Date: 4/30/2012  
 Model: IGRF2010

FINAL							
8513D-25 (was 8512C-25)							
125540; 193855; DN							
KB @ 8324.0ft (Patterson 306)							
GL @ 8291.0							
North American Datum 1983							
Well 8513D-25 (was 8512C-25), True North							
Type	Target	Azimuth	Origin	Type	N/S	E/W	From TVD
User	No Target (Freehand)	328.77	Slot		0.0	0.0	0.0
		TVD	+N/-S	+E/-W	Latitude	Longitude	
8513D-25 D36 496 TGT		8031.0	693.0	-395.9	39° 40' 1.80 N	108° 7' 26.77 W	
8513D-25 D36 496 PBHL		12742.0	683.0	-412.9	39° 40' 1.70 N	108° 7' 26.99 W	



# Cathedral Energy Services

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well 8513D-25 (was 8512C-25)
<b>Project:</b>	Story Gulch	<b>TVD Reference:</b>	KB @ 8324.0ft (Patterson 306)
<b>Site:</b>	S36-T4S-R96W (D36 496)	<b>MD Reference:</b>	KB @ 8324.0ft (Patterson 306)
<b>Well:</b>	8513D-25 (was 8512C-25)	<b>North Reference:</b>	True
<b>Wellbore:</b>	DD	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	FINAL	<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		S36-T4S-R96W (D36 496)			
Site Position:		Northing:	1,677,701.75 ft	Latitude:	39° 39' 53.35 N
From:	Lat/Long	Easting:	2,261,687.16 ft	Longitude:	108° 7' 22.59 W
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.65 °

Well	8513D-25 (was 8512C-25)					
Well Position	+N/-S	0.0 ft	Northing:	1,677,861.57 ft	Latitude:	39° 39' 54.95 N
	+E/-W	0.0 ft	Easting:	2,261,760.63 ft	Longitude:	108° 7' 21.71 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	8,291.0 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	4/30/2012	10.32	65.83	52,219

<b>Design</b>	FINAL				
<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	328.77	

<b>Survey Program</b>	<b>Date</b>	10/3/2012			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
179.0	12,060.0	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		
179.0	0.60	116.30	179.0	-0.4	0.8	-0.8	0.34	0.34		
209.0	0.50	106.40	209.0	-0.5	1.1	-1.0	0.46	-0.33		
240.0	0.40	49.20	240.0	-0.5	1.3	-1.1	1.42	-0.32		
270.0	0.90	313.50	270.0	-0.3	1.2	-0.9	3.40	1.67		
300.0	1.80	352.70	300.0	0.4	1.0	-0.2	4.14	3.00		
332.0	2.50	348.80	332.0	1.6	0.8	0.9	2.23	2.19		
362.0	3.30	342.70	361.9	3.0	0.4	2.4	2.85	2.67		
392.0	4.20	339.90	391.9	4.9	-0.2	4.3	3.06	3.00		
423.0	5.00	336.00	422.8	7.2	-1.2	6.7	2.77	2.58		
514.0	6.80	327.10	513.3	15.3	-5.7	16.1	2.21	1.98		
606.0	6.60	325.80	604.6	24.3	-11.6	26.8	0.27	-0.22		
698.0	6.20	327.60	696.1	32.8	-17.3	37.0	0.49	-0.43		

# Cathedral Energy Services

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well 8513D-25 (was 8512C-25)
<b>Project:</b>	Story Gulch	<b>TVD Reference:</b>	KB @ 8324.0ft (Patterson 306)
<b>Site:</b>	S36-T4S-R96W (D36 496)	<b>MD Reference:</b>	KB @ 8324.0ft (Patterson 306)
<b>Well:</b>	8513D-25 (was 8512C-25)	<b>North Reference:</b>	True
<b>Wellbore:</b>	DD	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	FINAL	<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
792.0	5.80	328.40	789.6	41.2	-22.5	46.9	0.43	-0.43	
883.0	6.70	330.00	880.0	49.7	-27.5	56.8	1.01	0.99	
975.0	7.40	331.30	971.3	59.5	-33.1	68.0	0.78	0.76	
1,067.0	6.60	330.40	1,062.6	69.3	-38.5	79.2	0.88	-0.87	
1,158.0	5.80	329.80	1,153.1	77.8	-43.4	89.1	0.88	-0.88	
1,250.0	6.60	330.10	1,244.6	86.4	-48.4	99.0	0.87	0.87	
1,342.0	7.40	332.70	1,335.9	96.3	-53.7	110.2	0.94	0.87	
1,433.0	7.50	330.50	1,426.1	106.7	-59.4	122.0	0.33	0.11	
1,525.0	7.00	324.40	1,517.4	116.5	-65.6	133.6	1.00	-0.54	
1,616.0	6.80	317.50	1,607.7	124.9	-72.4	144.4	0.94	-0.22	
1,708.0	6.30	322.20	1,699.1	132.9	-79.2	154.7	0.80	-0.54	
1,800.0	6.70	332.90	1,790.5	141.7	-84.8	165.1	1.38	0.43	
1,892.0	6.60	337.30	1,881.9	151.4	-89.2	175.7	0.56	-0.11	
1,983.0	6.00	333.70	1,972.4	160.4	-93.4	185.6	0.79	-0.66	
2,075.0	5.20	329.10	2,063.9	168.3	-97.6	194.6	1.00	-0.87	
2,166.0	5.00	332.30	2,154.6	175.4	-101.6	202.6	0.38	-0.22	
2,257.0	6.00	344.10	2,245.1	183.5	-104.7	211.2	1.65	1.10	
2,349.0	5.80	347.10	2,336.7	192.6	-107.1	220.2	0.40	-0.22	
2,440.0	6.00	340.90	2,427.2	201.6	-109.7	229.3	0.73	0.22	
2,532.0	6.90	330.70	2,518.6	211.0	-114.0	239.5	1.58	0.98	
2,624.0	6.80	321.90	2,609.9	220.1	-120.0	250.4	1.14	-0.11	
2,715.0	5.90	316.00	2,700.4	227.7	-126.6	260.3	1.22	-0.99	
2,807.0	6.00	322.40	2,791.9	234.9	-132.8	269.7	0.73	0.11	
2,898.0	5.80	325.40	2,882.4	242.4	-138.3	279.0	0.40	-0.22	
2,970.0	5.10	324.60	2,954.1	248.0	-142.3	285.9	0.98	-0.97	
3,081.0	4.20	324.60	3,064.7	255.4	-147.5	294.8	0.81	-0.81	
3,173.0	5.70	324.40	3,156.4	261.8	-152.1	302.7	1.63	1.63	
3,265.0	6.90	333.40	3,247.8	270.5	-157.2	312.8	1.69	1.30	
3,356.0	6.50	336.70	3,338.2	280.1	-161.7	323.4	0.61	-0.44	
3,447.0	5.70	333.60	3,428.7	288.9	-165.7	333.0	0.95	-0.88	
3,539.0	4.90	336.80	3,520.3	296.6	-169.3	341.4	0.93	-0.87	
3,630.0	5.40	332.40	3,610.9	304.0	-172.8	349.5	0.70	0.55	
3,722.0	6.30	333.90	3,702.4	312.3	-177.1	358.9	0.99	0.98	
3,814.0	7.50	330.00	3,793.8	322.1	-182.3	369.9	1.40	1.30	
3,906.0	6.10	323.00	3,885.1	331.2	-188.2	380.8	1.77	-1.52	
3,997.0	7.30	332.90	3,975.5	340.2	-193.8	391.4	1.83	1.32	
4,089.0	7.30	336.50	4,066.8	350.7	-198.8	403.0	0.50	0.00	
4,180.0	8.10	331.20	4,156.9	361.7	-204.2	415.1	1.17	0.88	
4,271.0	7.50	328.60	4,247.1	372.4	-210.3	427.5	0.76	-0.66	
4,363.0	6.70	329.80	4,338.4	382.1	-216.2	438.8	0.88	-0.87	
4,455.0	7.30	331.20	4,429.7	391.9	-221.7	450.0	0.68	0.65	
4,546.0	6.80	326.40	4,520.0	401.4	-227.5	461.2	0.85	-0.55	
4,638.0	6.10	327.30	4,611.4	410.1	-233.1	471.5	0.77	-0.76	
4,728.0	7.10	331.30	4,700.8	419.0	-238.4	481.9	1.22	1.11	
4,820.0	6.80	331.70	4,792.2	428.8	-243.7	493.0	0.33	-0.33	
4,912.0	5.90	332.10	4,883.6	437.7	-248.5	503.1	0.98	-0.98	
5,003.0	6.90	335.60	4,974.0	446.9	-252.9	513.2	1.18	1.10	
5,095.0	6.90	334.10	5,065.4	456.9	-257.6	524.2	0.20	0.00	
5,186.0	6.20	330.10	5,155.8	466.0	-262.5	534.6	0.92	-0.77	
5,278.0	5.50	330.00	5,247.3	474.2	-267.1	544.0	0.76	-0.76	
5,370.0	6.40	336.30	5,338.8	482.7	-271.4	553.4	1.21	0.98	
5,461.0	6.60	335.70	5,429.2	492.1	-275.6	563.7	0.23	0.22	
5,553.0	5.60	335.40	5,520.7	501.0	-279.6	573.4	1.09	-1.09	

# Cathedral Energy Services

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well 8513D-25 (was 8512C-25)
<b>Project:</b>	Story Gulch	<b>TVD Reference:</b>	KB @ 8324.0ft (Patterson 306)
<b>Site:</b>	S36-T4S-R96W (D36 496)	<b>MD Reference:</b>	KB @ 8324.0ft (Patterson 306)
<b>Well:</b>	8513D-25 (was 8512C-25)	<b>North Reference:</b>	True
<b>Wellbore:</b>	DD	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	FINAL	<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
5,644.0	6.60	327.60	5,611.2	509.4	-284.3	583.0	1.42	1.10	
5,736.0	6.10	326.80	5,702.6	518.0	-289.8	593.2	0.55	-0.54	
5,827.0	5.60	323.70	5,793.1	525.6	-295.1	602.4	0.65	-0.55	
5,919.0	6.10	331.50	5,884.6	533.5	-300.1	611.8	1.02	0.54	
6,011.0	5.70	332.70	5,976.2	541.9	-304.5	621.2	0.45	-0.43	
6,102.0	5.80	333.60	6,066.7	550.0	-308.6	630.3	0.15	0.11	
6,194.0	7.30	335.30	6,158.1	559.5	-313.1	640.8	1.64	1.63	
6,285.0	7.10	328.00	6,248.4	569.5	-318.5	652.1	1.03	-0.22	
6,377.0	6.10	309.50	6,339.8	577.4	-325.3	662.4	2.54	-1.09	
6,468.0	5.80	312.80	6,430.3	583.6	-332.4	671.4	0.50	-0.33	
6,560.0	6.20	328.40	6,521.8	591.0	-338.4	680.9	1.82	0.43	
6,651.0	5.70	321.50	6,612.3	598.8	-343.8	690.2	0.96	-0.55	
6,743.0	5.80	336.70	6,703.8	606.6	-348.5	699.4	1.65	0.11	
6,835.0	5.50	338.90	6,795.4	615.0	-351.9	708.3	0.40	-0.33	
6,926.0	4.90	335.50	6,886.0	622.6	-355.1	716.5	0.74	-0.66	
7,018.0	6.00	336.60	6,977.6	630.6	-358.6	725.1	1.20	1.20	
7,109.0	6.30	332.60	7,068.1	639.4	-362.8	734.8	0.57	0.33	
7,200.0	5.60	334.10	7,158.6	647.8	-367.1	744.2	0.79	-0.77	
7,292.0	5.40	329.20	7,250.2	655.6	-371.2	753.0	0.55	-0.22	
7,384.0	5.30	330.10	7,341.8	663.0	-375.6	761.6	0.14	-0.11	
7,475.0	5.10	325.40	7,432.4	669.9	-380.0	769.9	0.52	-0.22	
7,566.0	3.90	323.80	7,523.1	675.8	-384.1	777.0	1.33	-1.32	
7,658.0	2.50	321.80	7,615.0	679.9	-387.2	782.1	1.53	-1.52	
7,749.0	2.60	318.20	7,705.9	683.0	-389.8	786.1	0.21	0.11	
7,841.0	2.10	326.70	7,797.8	685.9	-392.1	789.8	0.66	-0.54	
7,933.0	2.10	317.60	7,889.7	688.6	-394.2	793.2	0.36	0.00	
8,024.0	0.50	279.70	7,980.7	689.9	-395.7	795.1	1.90	-1.76	
8,074.3	0.42	259.25	8,031.0	689.9	-396.1	795.3	0.36	-0.17	8513D-25 D36 496 TGT
8,116.0	0.40	238.00	8,072.7	689.8	-396.3	795.3	0.36	-0.04	
8,207.0	1.00	238.70	8,163.7	689.2	-397.3	795.3	0.66	0.66	
8,299.0	0.90	228.80	8,255.7	688.3	-398.5	795.2	0.21	-0.11	
8,391.0	2.10	40.90	8,347.7	689.1	-398.0	795.6	3.25	1.30	
8,482.0	1.70	41.50	8,438.6	691.4	-396.0	796.5	0.44	-0.44	
8,574.0	1.40	32.90	8,530.6	693.3	-394.5	797.4	0.41	-0.33	
8,665.0	0.80	31.60	8,621.6	694.8	-393.5	798.2	0.66	-0.66	
8,757.0	0.30	83.60	8,713.6	695.4	-392.9	798.4	0.72	-0.54	
8,849.0	0.10	263.80	8,805.6	695.4	-392.8	798.3	0.43	-0.22	
8,940.0	0.90	182.40	8,896.6	694.7	-392.9	797.7	0.98	0.88	
9,034.0	0.60	178.80	8,990.6	693.5	-392.9	796.7	0.32	-0.32	
9,125.0	1.80	150.80	9,081.5	691.7	-392.2	794.8	1.43	1.32	
9,216.0	1.30	78.70	9,172.5	690.7	-390.5	793.1	2.05	-0.55	
9,307.0	1.10	2.40	9,263.5	691.8	-389.5	793.4	1.64	-0.22	
9,396.0	1.00	336.20	9,352.5	693.3	-389.7	794.9	0.55	-0.11	
9,490.0	1.20	310.00	9,446.5	694.7	-390.8	796.7	0.57	0.21	
9,581.0	1.20	296.40	9,537.4	695.7	-392.4	798.4	0.31	0.00	
9,672.0	1.60	273.50	9,628.4	696.2	-394.5	799.9	0.75	0.44	
9,763.0	1.30	253.40	9,719.4	696.0	-396.8	800.9	0.64	-0.33	
9,855.0	0.20	44.90	9,811.4	695.8	-397.7	801.2	1.61	-1.20	
9,947.0	0.40	129.90	9,903.4	695.7	-397.3	800.9	0.47	0.22	
10,038.0	0.40	164.70	9,994.4	695.2	-397.0	800.3	0.26	0.00	
10,130.0	0.40	175.40	10,086.4	694.6	-396.9	799.7	0.08	0.00	
10,222.0	0.70	197.60	10,178.4	693.8	-397.0	799.1	0.39	0.33	
10,404.0	1.90	207.80	10,360.3	690.0	-398.8	796.8	0.67	0.66	

# Cathedral Energy Services

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well 8513D-25 (was 8512C-25)
<b>Project:</b>	Story Gulch	<b>TVD Reference:</b>	KB @ 8324.0ft (Patterson 306)
<b>Site:</b>	S36-T4S-R96W (D36 496)	<b>MD Reference:</b>	KB @ 8324.0ft (Patterson 306)
<b>Well:</b>	8513D-25 (was 8512C-25)	<b>North Reference:</b>	True
<b>Wellbore:</b>	DD	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	FINAL	<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
10,496.0	1.90	169.40	10,452.3	687.2	-399.2	794.6	1.36	0.00	
10,588.0	2.70	177.80	10,544.2	683.5	-398.8	791.2	0.94	0.87	
10,679.0	3.20	157.20	10,635.1	679.0	-397.8	786.9	1.28	0.55	
10,771.0	1.60	115.40	10,727.0	676.1	-395.6	783.2	2.47	-1.74	
10,862.0	1.60	27.10	10,818.0	676.7	-393.9	782.8	2.45	0.00	
10,954.0	0.70	353.30	10,910.0	678.4	-393.4	784.0	1.19	-0.98	
11,045.0	0.50	319.70	11,001.0	679.3	-393.7	784.9	0.44	-0.22	
11,137.0	1.80	14.10	11,092.9	681.0	-393.6	786.3	1.70	1.41	
11,228.0	1.70	29.30	11,183.9	683.5	-392.6	788.0	0.52	-0.11	
11,320.0	1.20	13.00	11,275.9	685.7	-391.7	789.4	0.70	-0.54	
11,595.0	1.30	272.40	11,550.8	688.6	-394.2	793.2	0.70	0.04	
11,686.0	2.20	254.00	11,641.8	688.1	-396.9	794.2	1.15	0.99	
11,778.0	3.20	253.20	11,733.7	686.9	-401.0	795.3	1.09	1.09	
12,012.0	4.80	245.50	11,967.1	681.0	-416.2	798.1	0.72	0.68	Last Cathedral Survey @ 12,012' MD
12,060.0	4.80	245.90	12,014.9	679.3	-419.8	798.6	0.07	0.00	Projection to Bit @ 12,060' MD - 8513D-25 D36 4

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
8513D-25 D36 496 TGT	0.00	0.00	8,031.0	693.0	-395.9	1,678,565.72	2,261,384.89	39° 40' 1.80 N	108° 7' 26.77 W
- hit/miss target									
- actual wellpath misses target center by 3.1ft at 8074.3ft MD (8031.0 TVD, 689.9 N, -396.1 E)									
- Point									
8513D-25 D36 496 PBH	0.00	0.00	12,742.0	683.0	-412.9	1,678,556.21	2,261,367.62	39° 40' 1.70 N	108° 7' 26.99 W
- actual wellpath misses target center by 727.1ft at 12060.0ft MD (12014.9 TVD, 679.3 N, -419.8 E)									
- Rectangle (sides W30.0 H50.0 D0.0)									

Design Annotations				
Measured Depth (ft)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Comment
12,012.0	11,967.1	681.0	-416.2	Last Cathedral Survey @ 12,012' MD
12,060.0	12,014.9	679.3	-419.8	Projection to Bit @ 12,060' MD

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