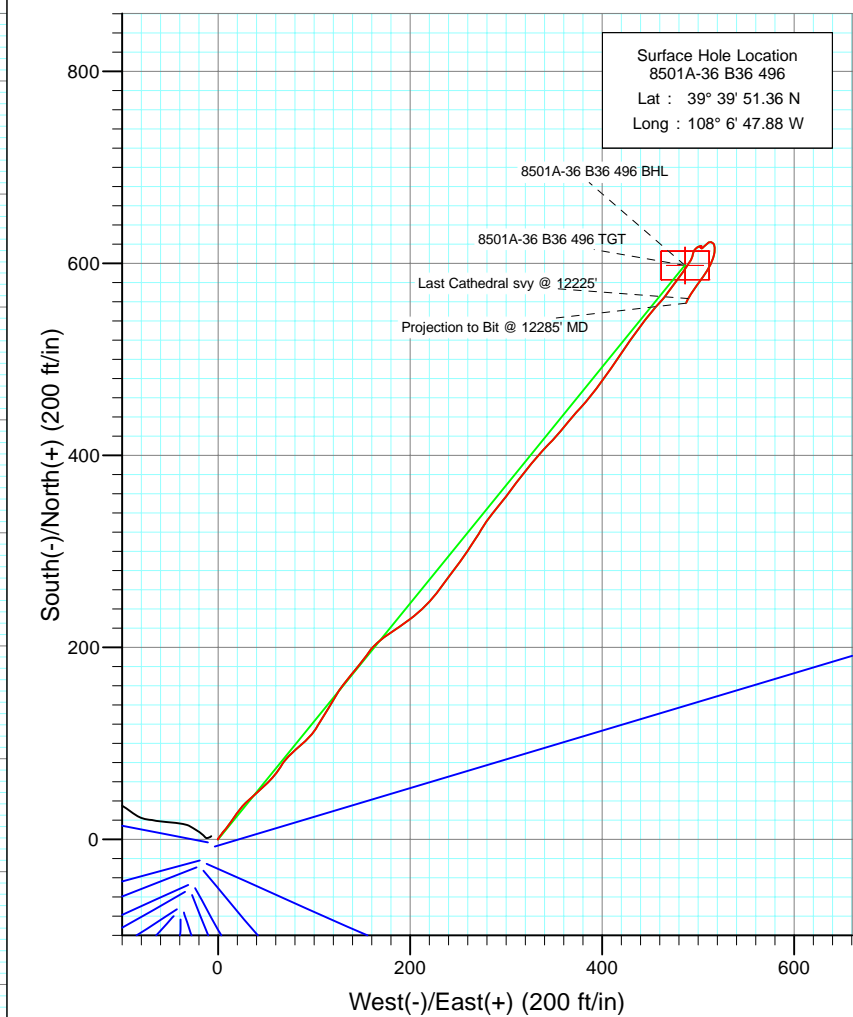
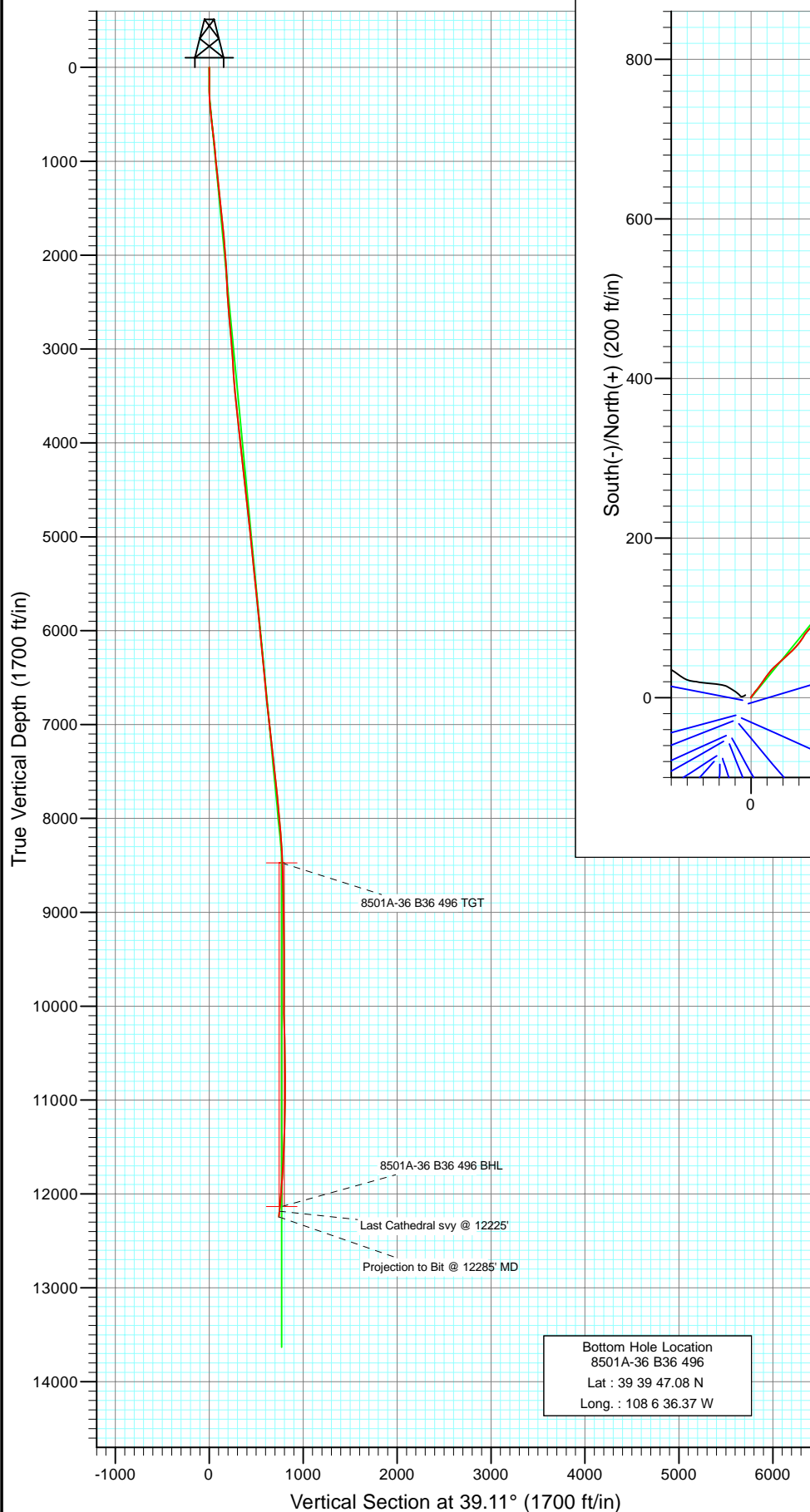




Project: Story Gulch
 Site: S36-T4S-R96W (B36 496)
 Well: 8501A-36 B36 496
 Wellbore: DD
 Design: Final



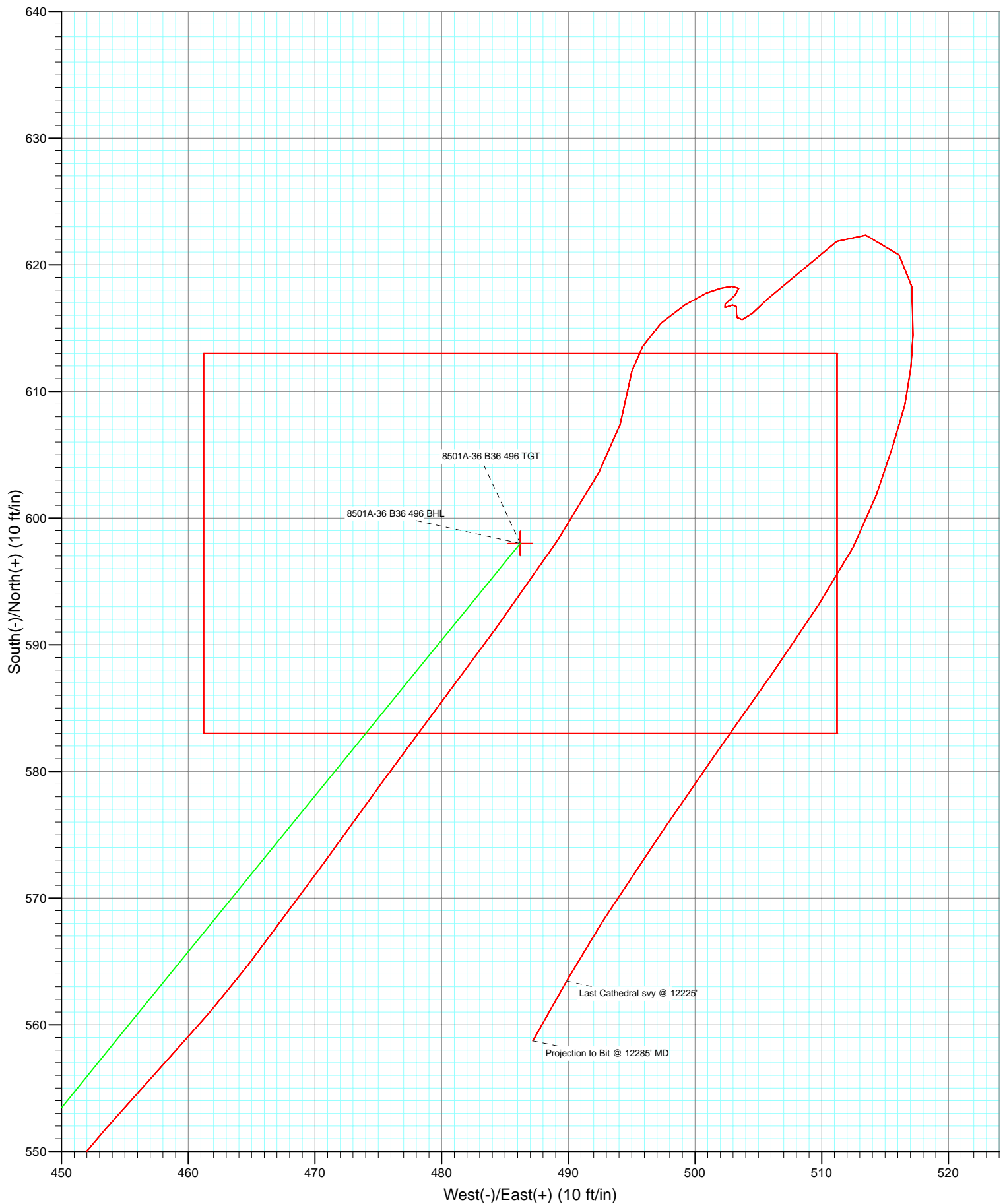
Azimuths to True North
 Magnetic North: 10.57°

Magnetic Field
 Strength: 52420.0nT
 Dip Angle: 65.89°
 Date: 5/3/2010
 Model: IGRF2010

DD 8501A-36 B36 496						
KBE @ 8374.0ft (Patterson #308) North American Datum 1983 Well 8501A-36 B36 496, True North						
Type	Target	Azimuth	Origin	Type	N/S	E/W From TVD
Target	8501A-36 B36 496 BHL	39.11	Slot		0.0	0.0
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	
8501A-36 B36 496 BHL	134.0	598.0	486.239° 39' 57.27 N	108° 6' 41.66 W		



Project: Story Gulch
Site: S36-T4S-R96W (B36 496)
Well: 8501A-36 B36 496
Wellbore: DD
Design: Final



Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well 8501A-36 B36 496
Project:	Story Gulch	TVD Reference:	KBE @ 8374.0ft (Patterson #308)
Site:	S36-T4S-R96W (B36 496)	MD Reference:	KBE @ 8374.0ft (Patterson #308)
Well:	8501A-36 B36 496	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	DD	Database:	EDM 5000.1 US Multi Users DB

Project	Story Gulch		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Central Zone		

Site		S36-T4S-R96W (B36 496)			
Site Position:		Northing:	1,677,422.27 ft	Latitude:	39° 39' 51.36 N
From:	Lat/Long	Easting:	2,264,394.80 ft	Longitude:	108° 6' 47.88 W
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.65 °

Well	8501A-36 B36 496					
Well Position	+N/-S	0.0 ft	Northing:	1,677,422.26 ft	Latitude:	39° 39' 51.36 N
	+E/-W	0.0 ft	Easting:	2,264,394.80 ft	Longitude:	108° 6' 47.88 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	8,352.0 ft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/3/2010	10.57	65.89	52,420

Design	DD				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.0	0.0	0.0	39.11	

Survey Program	Date	5/14/2010			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
203.0	12,285.0	Survey #1 (DD)	MWD	Geolink MWD	

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	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00		
203.0	0.20	266.00	203.0	0.0	-0.4	-0.2	0.10	0.10		
234.0	0.70	23.00	234.0	0.1	-0.3	-0.1	2.61	1.61		
264.0	1.30	32.80	264.0	0.6	-0.1	0.4	2.07	2.00		
295.0	2.00	31.90	295.0	1.4	0.4	1.3	2.26	2.26		
326.0	2.50	35.60	326.0	2.4	1.1	2.5	1.68	1.61		
357.0	3.80	35.70	356.9	3.7	2.1	4.2	4.19	4.19		
419.0	4.90	40.50	418.7	7.4	5.0	8.9	1.87	1.77		
511.0	6.40	37.10	510.3	14.5	10.6	18.0	1.67	1.63		
603.0	7.60	33.40	601.6	23.7	17.1	29.1	1.39	1.30		
695.0	6.80	40.70	692.9	32.9	24.0	40.6	1.32	-0.87		
790.0	4.70	48.10	787.4	39.8	30.5	50.1	2.34	-2.21		
886.0	5.30	47.50	883.0	45.4	36.7	58.4	0.63	0.62		

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well 8501A-36 B36 496
Project:	Story Gulch	TVD Reference:	KBE @ 8374.0ft (Patterson #308)
Site:	S36-T4S-R96W (B36 496)	MD Reference:	KBE @ 8374.0ft (Patterson #308)
Well:	8501A-36 B36 496	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	DD	Database:	EDM 5000.1 US 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
981.0	5.60	45.60	977.6	51.6	43.3	67.3	0.37	0.32	
1,076.0	5.80	50.10	1,072.1	57.9	50.3	76.6	0.52	0.21	
1,171.0	6.80	39.50	1,166.6	65.3	57.5	87.0	1.61	1.05	
1,266.0	6.70	32.10	1,260.9	74.4	64.1	98.1	0.92	-0.11	
1,361.0	5.30	39.40	1,355.4	82.4	69.8	108.0	1.68	-1.47	
1,456.0	6.70	46.20	1,449.9	89.7	76.6	117.9	1.65	1.47	
1,551.0	7.40	48.20	1,544.1	97.6	85.1	129.4	0.78	0.74	
1,647.0	5.80	47.40	1,639.5	105.0	93.3	140.3	1.67	-1.67	
1,739.0	5.00	33.90	1,731.1	111.5	99.0	148.9	1.63	-0.87	
1,836.0	4.70	32.60	1,827.7	118.3	103.5	157.1	0.33	-0.31	
1,932.0	4.40	32.90	1,923.4	124.7	107.6	164.6	0.31	-0.31	
2,027.0	3.40	29.50	2,018.2	130.2	111.0	171.0	1.08	-1.05	
2,123.0	3.80	33.20	2,114.0	135.4	114.1	177.0	0.48	0.42	
2,218.0	3.20	31.00	2,208.9	140.3	117.2	182.8	0.65	-0.63	
2,313.0	2.90	28.30	2,303.7	144.7	119.7	187.8	0.35	-0.32	
2,408.0	3.60	30.60	2,398.6	149.4	122.4	193.1	0.75	0.74	
2,504.0	4.30	35.70	2,494.3	154.9	126.0	199.6	0.82	0.73	
2,599.0	4.30	35.50	2,589.1	160.7	130.1	206.8	0.02	0.00	
2,694.0	4.60	38.30	2,683.8	166.5	134.6	214.1	0.39	0.32	
2,788.0	5.60	40.30	2,777.4	173.0	139.9	222.5	1.08	1.06	
2,883.0	4.90	38.40	2,872.0	179.7	145.4	231.2	0.76	-0.74	
2,978.0	4.30	38.70	2,966.7	185.7	150.1	238.8	0.63	-0.63	
3,073.0	3.50	36.00	3,061.5	190.8	154.1	245.2	0.86	-0.84	
3,213.0	3.30	33.90	3,201.2	197.6	158.8	253.5	0.17	-0.14	
3,305.0	4.90	49.00	3,293.0	202.4	163.3	260.0	2.08	1.74	
3,396.0	4.80	47.60	3,383.7	207.5	169.0	267.6	0.17	-0.11	
3,488.0	6.30	56.00	3,475.2	212.9	176.0	276.3	1.85	1.63	
3,580.0	6.10	54.80	3,566.7	218.6	184.2	285.8	0.26	-0.22	
3,671.0	5.40	55.80	3,657.2	223.8	191.7	294.6	0.78	-0.77	
3,763.0	6.20	55.20	3,748.8	229.0	199.4	303.5	0.87	0.87	
3,855.0	6.90	46.10	3,840.2	235.7	207.4	313.7	1.36	0.76	
3,947.0	5.80	49.60	3,931.6	242.5	215.0	323.8	1.27	-1.20	
4,038.0	6.20	38.50	4,022.1	249.4	221.5	333.2	1.35	0.44	
4,130.0	6.00	39.80	4,113.6	256.9	227.7	343.0	0.26	-0.22	
4,222.0	7.00	36.40	4,205.0	265.1	234.1	353.4	1.16	1.09	
4,314.0	6.60	35.80	4,296.4	273.9	240.5	364.3	0.44	-0.43	
4,405.0	5.90	36.70	4,386.8	281.9	246.4	374.2	0.78	-0.77	
4,497.0	5.80	38.60	4,478.3	289.4	252.1	383.6	0.24	-0.11	
4,589.0	6.80	31.90	4,569.8	297.6	257.9	393.6	1.35	1.09	
4,680.0	6.20	33.30	4,660.2	306.3	263.4	403.8	0.68	-0.66	
4,772.0	5.60	34.70	4,751.7	314.1	268.7	413.3	0.67	-0.65	
4,864.0	6.60	29.80	4,843.2	322.4	273.9	423.0	1.22	1.09	
4,956.0	6.60	35.40	4,934.6	331.3	279.6	433.4	0.70	0.00	
5,047.0	6.20	38.90	5,025.0	339.4	285.7	443.6	0.61	-0.44	
5,139.0	5.70	39.30	5,116.5	346.8	291.7	453.1	0.55	-0.54	
5,231.0	5.20	38.30	5,208.1	353.6	297.2	461.9	0.55	-0.54	
5,323.0	6.20	36.30	5,299.6	360.9	302.7	471.0	1.11	1.09	
5,414.0	5.70	36.40	5,390.1	368.5	308.3	480.4	0.55	-0.55	
5,506.0	5.50	37.10	5,481.7	375.7	313.7	489.4	0.23	-0.22	
5,597.0	4.80	39.00	5,572.3	382.1	318.7	497.5	0.79	-0.77	
5,689.0	6.70	38.70	5,663.9	389.3	324.5	506.8	2.07	2.07	
5,780.0	6.20	41.20	5,754.3	397.1	331.0	517.0	0.63	-0.55	
5,872.0	6.10	42.90	5,845.8	404.5	337.6	526.8	0.23	-0.11	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well 8501A-36 B36 496
Project:	Story Gulch	TVD Reference:	KBE @ 8374.0ft (Patterson #308)
Site:	S36-T4S-R96W (B36 496)	MD Reference:	KBE @ 8374.0ft (Patterson #308)
Well:	8501A-36 B36 496	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	DD	Database:	EDM 5000.1 US 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
5,964.0	5.50	42.70	5,937.3	411.3	343.9	536.1	0.65	-0.65	
6,055.0	4.70	44.60	6,027.9	417.1	349.5	544.2	0.90	-0.88	
6,147.0	5.80	39.30	6,119.5	423.4	355.1	552.6	1.31	1.20	
6,239.0	5.80	40.70	6,211.1	430.5	361.1	561.9	0.15	0.00	
6,331.0	4.70	37.10	6,302.7	437.1	366.4	570.3	1.25	-1.20	
6,422.0	5.10	43.70	6,393.4	443.0	371.4	578.0	0.76	0.44	
6,514.0	5.80	41.10	6,484.9	449.4	377.3	586.7	0.81	0.76	
6,606.0	5.00	42.70	6,576.5	455.9	383.1	595.4	0.88	-0.87	
6,698.0	5.80	37.70	6,668.1	462.5	388.7	604.0	1.01	0.87	
6,789.0	6.00	35.40	6,758.6	470.0	394.2	613.4	0.34	0.22	
6,881.0	5.80	37.00	6,850.2	477.7	399.8	622.8	0.28	-0.22	
6,973.0	6.90	35.10	6,941.6	485.9	405.8	633.0	1.22	1.20	
7,065.0	6.90	35.20	7,032.9	494.9	412.1	644.0	0.01	0.00	
7,156.0	6.80	34.20	7,123.3	503.8	418.3	654.8	0.17	-0.11	
7,248.0	6.30	35.00	7,214.7	512.5	424.3	665.3	0.55	-0.54	
7,340.0	6.20	33.80	7,306.1	520.8	429.9	675.3	0.18	-0.11	
7,431.0	5.90	33.10	7,396.6	528.8	435.2	684.8	0.34	-0.33	
7,523.0	6.50	38.90	7,488.1	536.8	441.1	694.7	0.94	0.65	
7,615.0	6.20	39.40	7,579.5	544.7	447.5	704.9	0.33	-0.33	
7,706.0	5.50	40.80	7,670.0	551.8	453.5	714.2	0.78	-0.77	
7,797.0	4.90	43.00	7,760.7	557.9	459.0	722.4	0.69	-0.66	
7,889.0	6.30	38.00	7,852.2	564.8	464.8	731.4	1.61	1.52	
7,981.0	5.50	35.10	7,943.7	572.3	470.4	740.8	0.93	-0.87	
8,072.0	5.30	36.60	8,034.3	579.3	475.4	749.4	0.27	-0.22	
8,256.0	4.00	36.30	8,217.7	591.3	484.3	764.3	0.71	-0.71	
8,530.0	2.20	28.20	8,491.3	603.6	492.4	779.0	0.67	-0.66	
8,655.0	1.60	17.80	8,616.2	607.4	494.1	783.0	0.55	-0.48	
8,746.0	1.30	6.20	8,707.2	609.6	494.6	785.0	0.46	-0.33	
8,838.0	1.20	18.60	8,799.2	611.6	495.0	786.8	0.31	-0.11	
8,930.0	1.50	27.40	8,891.2	613.6	495.9	788.9	0.40	0.33	
9,021.0	1.50	49.20	8,982.1	615.4	497.3	791.2	0.62	0.00	
9,113.0	1.50	56.50	9,074.1	616.8	499.2	793.6	0.21	0.00	
9,205.0	0.90	69.20	9,166.1	617.8	500.9	795.3	0.71	-0.65	
9,296.0	0.60	75.10	9,257.1	618.1	502.0	796.3	0.34	-0.33	
9,388.0	0.50	85.40	9,349.1	618.3	502.9	797.0	0.15	-0.11	
9,480.0	0.30	143.60	9,441.1	618.1	503.5	797.2	0.46	-0.22	
9,571.0	0.70	230.70	9,532.1	617.6	503.2	796.6	0.82	0.44	
9,663.0	0.60	225.20	9,624.1	616.9	502.4	795.6	0.13	-0.11	
9,755.0	0.40	79.30	9,716.1	616.6	502.4	795.4	1.04	-0.22	
9,847.0	0.40	65.20	9,808.1	616.8	503.0	795.9	0.11	0.00	
9,938.0	0.30	178.40	9,899.1	616.7	503.3	796.0	0.65	-0.11	
10,030.0	0.50	178.50	9,991.1	616.1	503.3	795.5	0.22	0.22	
10,057.0	0.50	158.20	10,018.1	615.8	503.3	795.4	0.65	0.00	
10,240.0	1.90	43.70	10,201.0	617.3	505.7	798.0	1.18	0.77	
10,515.0	1.10	61.60	10,475.9	621.8	511.2	805.0	0.33	-0.29	
10,665.0	0.80	100.60	10,625.9	622.3	513.5	806.8	0.46	-0.20	
10,882.0	0.90	138.50	10,842.9	620.8	516.1	807.3	0.26	0.05	
11,065.0	0.90	177.80	11,025.9	618.3	517.1	805.9	0.33	0.00	
11,157.0	1.20	178.40	11,117.9	616.6	517.2	804.7	0.33	0.33	
11,248.0	1.50	179.50	11,208.8	614.4	517.2	803.0	0.33	0.33	
11,340.0	1.70	187.10	11,300.8	611.9	517.0	800.9	0.32	0.22	
11,432.0	2.00	191.30	11,392.7	609.0	516.6	798.4	0.36	0.33	
11,523.0	2.30	200.30	11,483.7	605.7	515.6	795.2	0.50	0.33	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well 8501A-36 B36 496
Project:	Story Gulch	TVD Reference:	KBE @ 8374.0ft (Patterson #308)
Site:	S36-T4S-R96W (B36 496)	MD Reference:	KBE @ 8374.0ft (Patterson #308)
Well:	8501A-36 B36 496	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	DD	Database:	EDM 5000.1 US 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
11,615.0	2.80	197.50	11,575.6	601.8	514.3	791.4	0.56	0.54	
11,706.0	2.90	210.00	11,666.5	597.7	512.5	787.1	0.69	0.11	
11,798.0	3.70	211.90	11,758.3	593.2	509.8	781.8	0.88	0.87	
11,890.0	4.30	215.60	11,850.1	587.8	506.2	775.4	0.71	0.65	
11,981.0	4.90	214.70	11,940.8	581.9	502.0	768.1	0.66	0.66	
12,073.0	5.30	214.40	12,032.4	575.1	497.3	760.0	0.44	0.43	
12,165.0	5.20	212.70	12,124.1	568.1	492.7	751.6	0.20	-0.11	
12,225.0	5.20	209.50	12,183.8	563.5	489.9	746.2	0.48	0.00	Last Cathedral svy @ 12225' Projection to Bit @ 12285' MD
12,285.0	5.20	209.50	12,243.6	558.7	487.2	740.9	0.00	0.00	

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
8501A-36 B36 496 TGT - survey misses target center by 7.7ft at 8512.3ft MD (8473.6 TVD, 603.0 N, 492.1 E) - Point	0.00	0.00	8,474.0	598.0	486.2	1,678,006.02	2,264,898.01	39° 39' 57.27 N	108° 6' 41.66 W
8501A-36 B36 496 BHL - survey misses target center by 31.2ft at 12172.9ft MD (12131.9 TVD, 567.5 N, 492.3 E) - Rectangle (sides W30.0 H50.0 D0.0)	0.00	0.00	12,134.0	598.0	486.2	1,678,006.02	2,264,898.01	39° 39' 57.27 N	108° 6' 41.66 W

Survey Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	+E/-W (ft)	Comment
12,225.0	12,183.8	563.5	489.9	Last Cathedral svy @ 12225'
12,285.0	12,243.6	558.7	487.2	Projection to Bit @ 12285' MD

Checked By: _____ Approved By: _____ Date: _____