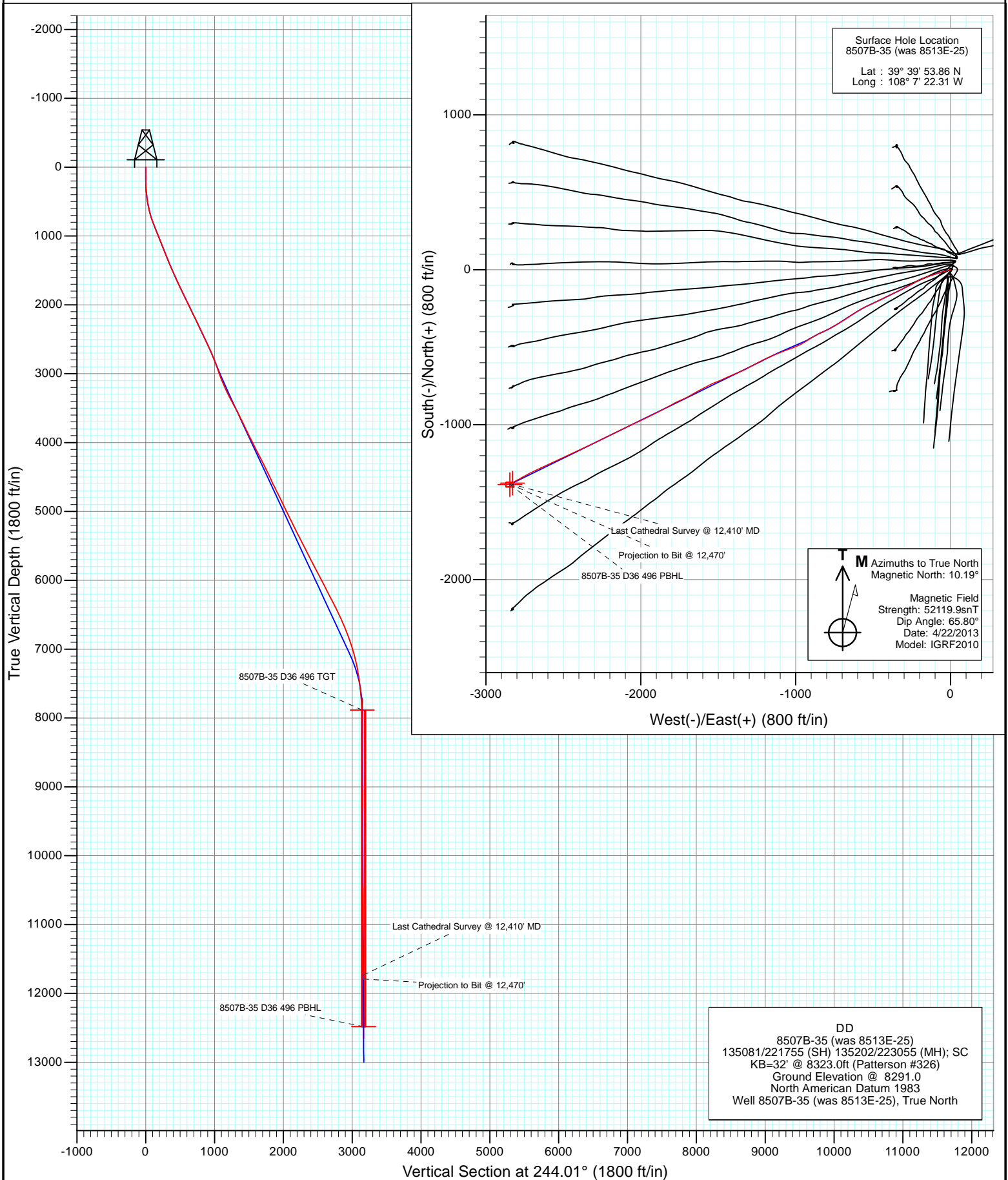


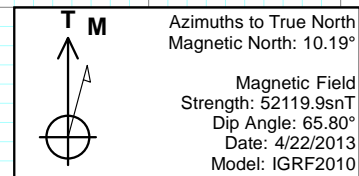
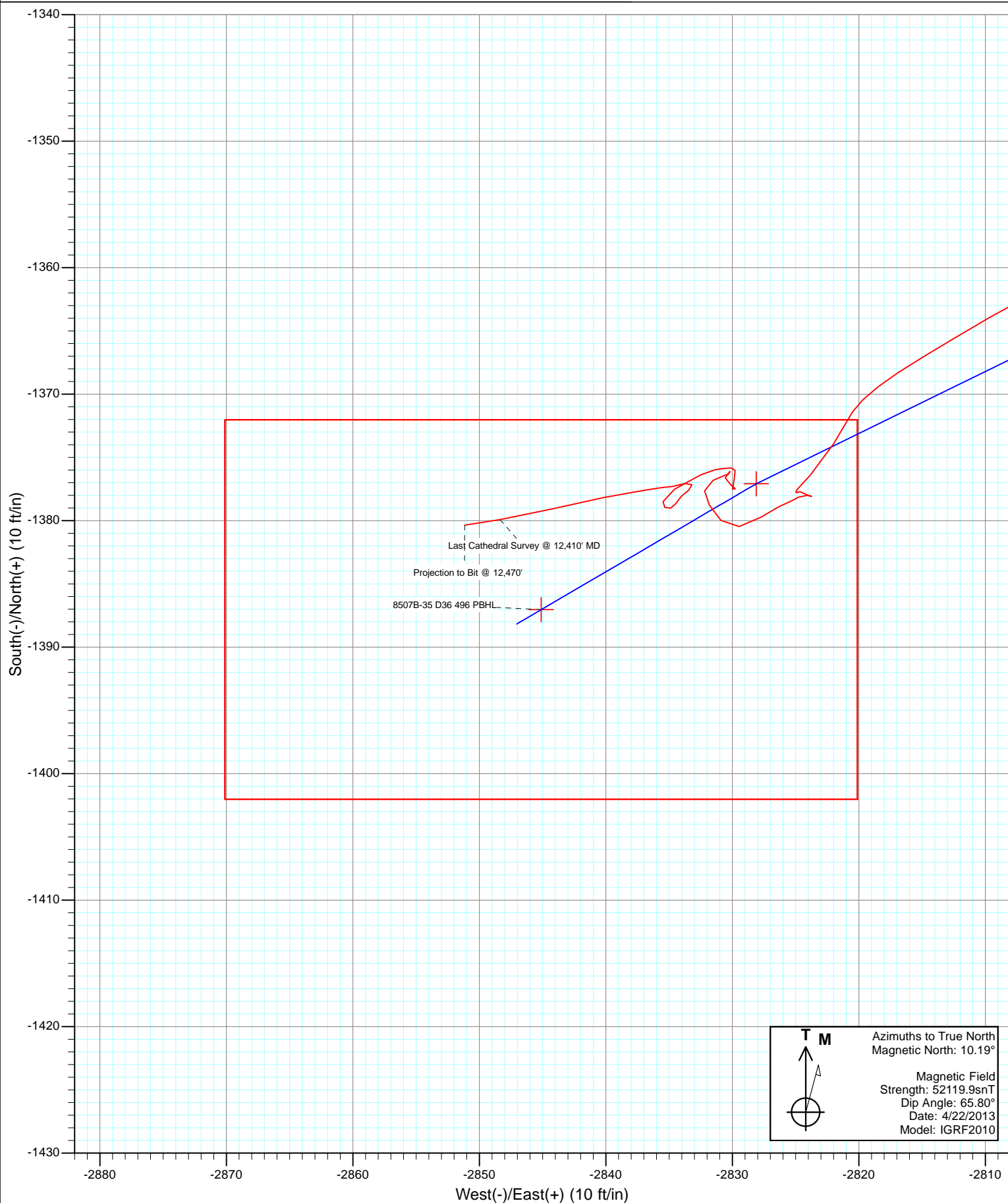


Project: Story Gulch
Site: S36-T4S-R96W (D36 496)
Well: 8507B-35 (was 8513E-25)
Wellbore: DD
Design: FINAL





Project: Story Gulch
Site: S36-T4S-R96W (D36 496)
Well: 8507B-35 (was 8513E-25)
Wellbore: DD
Design: FINAL



Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well 8507B-35 (was 8513E-25)
Project:	Story Gulch	TVD Reference:	KB=32' @ 8323.0ft (Patterson #326)
Site:	S36-T4S-R96W (D36 496)	MD Reference:	KB=32' @ 8323.0ft (Patterson #326)
Well:	8507B-35 (was 8513E-25)	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	DD	Database:	USA EDM 5000 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 (D36 496)			
Site Position:		Northing:	1,590,537.44 ft	Latitude:	39° 25' 42.24 N
From:	Lat/Long	Easting:	2,297,786.47 ft	Longitude:	107° 59' 10.64 W
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.57 °

Well	8507B-35 (was 8513E-25)					
Well Position	+N/-S	0.0 ft	Northing:	1,677,752.67 ft	Latitude:	39° 39' 53.86 N
	+E/-W	0.0 ft	Easting:	2,261,710.54 ft	Longitude:	108° 7' 22.31 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	8,291.0 ft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	4/22/2013	10.19	65.80	52,120

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	244.01	

Survey Program	Date	4/30/2013			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
182.0	12,470.0	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		
182.0	0.50	201.50	182.0	-0.7	-0.3	0.6	0.27	0.27		
243.0	1.30	254.40	243.0	-1.2	-1.1	1.5	1.76	1.31		
273.0	2.30	257.80	273.0	-1.4	-2.0	2.4	3.35	3.33		
304.0	3.50	258.90	303.9	-1.7	-3.5	3.9	3.87	3.87		
334.0	4.50	262.50	333.9	-2.0	-5.6	5.9	3.44	3.33		
365.0	5.60	257.40	364.7	-2.5	-8.3	8.5	3.83	3.55		
396.0	6.40	253.80	395.6	-3.3	-11.4	11.7	2.85	2.58		
425.0	7.40	253.40	424.4	-4.3	-14.7	15.1	3.45	3.45		
456.0	8.40	255.70	455.1	-5.4	-18.8	19.3	3.38	3.23		
486.0	9.50	257.30	484.7	-6.5	-23.4	23.9	3.76	3.67		
516.0	10.30	258.20	514.3	-7.6	-28.4	28.9	2.72	2.67		
611.0	12.60	256.70	607.4	-11.7	-46.8	47.2	2.44	2.42		

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well 8507B-35 (was 8513E-25)
Project:	Story Gulch	TVD Reference:	KB=32' @ 8323.0ft (Patterson #326)
Site:	S36-T4S-R96W (D36 496)	MD Reference:	KB=32' @ 8323.0ft (Patterson #326)
Well:	8507B-35 (was 8513E-25)	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	DD	Database:	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
702.0	16.20	252.00	695.5	-18.0	-68.6	69.5	4.16	3.96	
794.0	20.00	252.80	782.9	-26.6	-95.8	97.8	4.14	4.13	
885.0	21.80	248.80	867.9	-37.3	-126.4	130.0	2.52	1.98	
976.0	23.10	252.80	952.0	-48.7	-159.2	164.5	2.20	1.43	
1,068.0	22.00	245.10	1,037.0	-61.3	-192.1	199.5	3.42	-1.20	
1,159.0	21.10	238.40	1,121.7	-77.0	-221.5	232.9	2.88	-0.99	
1,251.0	21.50	243.00	1,207.4	-93.4	-250.7	266.2	1.87	0.43	
1,343.0	22.10	242.90	1,292.8	-108.9	-281.1	300.4	0.65	0.65	
1,435.0	22.80	244.10	1,377.8	-124.6	-312.5	335.5	0.91	0.76	
1,526.0	23.00	243.00	1,461.7	-140.4	-344.2	370.9	0.52	0.22	
1,617.0	24.00	242.80	1,545.1	-156.9	-376.5	407.2	1.10	1.10	
1,709.0	24.60	244.10	1,629.0	-173.8	-410.4	445.1	0.87	0.65	
1,799.0	25.30	244.70	1,710.6	-190.2	-444.6	483.0	0.83	0.78	
1,891.0	25.80	244.70	1,793.6	-207.2	-480.5	522.7	0.54	0.54	
1,982.0	26.20	245.40	1,875.4	-224.0	-516.7	562.6	0.55	0.44	
2,074.0	26.10	242.70	1,958.0	-241.7	-553.1	603.1	1.30	-0.11	
2,165.0	26.00	240.20	2,039.7	-260.8	-588.2	643.0	1.21	-0.11	
2,257.0	25.40	237.30	2,122.6	-281.5	-622.3	682.8	1.51	-0.65	
2,348.0	26.10	235.70	2,204.6	-303.3	-655.3	721.9	1.08	0.77	
2,440.0	25.90	237.60	2,287.3	-325.5	-689.0	761.9	0.93	-0.22	
2,531.0	25.40	238.10	2,369.3	-346.5	-722.3	801.1	0.60	-0.55	
2,623.0	25.40	241.10	2,452.4	-366.4	-756.4	840.4	1.40	0.00	
2,714.0	25.40	244.70	2,534.6	-384.2	-791.1	879.4	1.70	0.00	
2,806.0	24.50	244.40	2,618.0	-400.9	-826.1	918.2	0.99	-0.98	
2,898.0	23.20	242.20	2,702.2	-417.6	-859.4	955.4	1.71	-1.41	
2,975.0	22.40	240.20	2,773.2	-431.9	-885.5	985.2	1.45	-1.04	
3,080.0	20.40	236.20	2,870.9	-452.1	-918.1	1,023.3	2.36	-1.90	
3,172.0	19.30	239.50	2,957.5	-468.7	-944.5	1,054.4	1.71	-1.20	
3,263.0	20.70	242.70	3,043.0	-483.7	-971.8	1,085.5	1.95	1.54	
3,355.0	22.70	247.00	3,128.4	-498.1	-1,002.6	1,119.4	2.78	2.17	
3,446.0	24.30	252.70	3,211.9	-510.5	-1,036.6	1,155.5	3.05	1.76	
3,538.0	26.80	247.80	3,294.9	-524.0	-1,073.9	1,194.9	3.56	2.72	
3,629.0	27.50	248.10	3,375.9	-539.6	-1,112.4	1,236.3	0.78	0.77	
3,720.0	28.80	248.60	3,456.1	-555.4	-1,152.3	1,279.1	1.45	1.43	
3,812.0	28.20	242.10	3,537.0	-573.7	-1,192.1	1,323.0	3.43	-0.65	
3,904.0	26.30	246.00	3,618.8	-592.1	-1,230.0	1,365.1	2.83	-2.07	
3,996.0	25.60	239.70	3,701.5	-610.5	-1,265.8	1,405.3	3.09	-0.76	
4,088.0	26.80	240.50	3,784.1	-630.7	-1,301.0	1,445.8	1.36	1.30	
4,179.0	25.20	247.60	3,865.9	-648.2	-1,336.7	1,485.6	3.84	-1.76	
4,270.0	26.40	246.90	3,947.8	-663.5	-1,373.3	1,525.2	1.36	1.32	
4,362.0	27.80	246.40	4,029.7	-680.1	-1,411.7	1,567.0	1.54	1.52	
4,453.0	26.00	244.90	4,110.9	-697.1	-1,449.3	1,608.2	2.11	-1.98	
4,545.0	27.90	246.30	4,192.9	-714.3	-1,487.2	1,649.8	2.18	2.07	
4,636.0	26.80	249.30	4,273.7	-730.1	-1,525.9	1,691.6	1.94	-1.21	
4,728.0	26.50	240.80	4,355.9	-747.5	-1,563.3	1,732.7	4.15	-0.33	
4,820.0	26.50	243.80	4,438.3	-766.5	-1,599.6	1,773.7	1.45	0.00	
4,911.0	23.80	239.50	4,520.7	-784.8	-1,633.6	1,812.3	3.58	-2.97	
5,003.0	26.20	240.00	4,604.0	-804.4	-1,667.2	1,851.1	2.62	2.61	
5,094.0	27.20	242.90	4,685.3	-823.9	-1,703.1	1,892.0	1.80	1.10	
5,186.0	25.80	246.60	4,767.7	-841.5	-1,740.2	1,933.0	2.35	-1.52	
5,277.0	26.90	244.60	4,849.2	-858.2	-1,777.0	1,973.4	1.55	1.21	
5,369.0	25.00	239.60	4,931.9	-876.9	-1,812.6	2,013.6	3.15	-2.07	
5,460.0	25.30	240.60	5,014.3	-896.2	-1,846.1	2,052.1	0.57	0.33	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well 8507B-35 (was 8513E-25)
Project:	Story Gulch	TVD Reference:	KB=32' @ 8323.0ft (Patterson #326)
Site:	S36-T4S-R96W (D36 496)	MD Reference:	KB=32' @ 8323.0ft (Patterson #326)
Well:	8507B-35 (was 8513E-25)	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	DD	Database:	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
5,551.0	27.30	243.40	5,095.9	-915.1	-1,881.7	2,092.4	2.59	2.20	
5,643.0	26.20	243.20	5,178.1	-933.7	-1,918.7	2,133.8	1.20	-1.20	
5,734.0	26.50	244.70	5,259.6	-951.4	-1,955.0	2,174.2	0.80	0.33	
5,826.0	27.20	245.90	5,341.7	-968.8	-1,992.7	2,215.8	0.96	0.76	
5,918.0	25.80	242.70	5,424.0	-986.6	-2,029.7	2,256.8	2.17	-1.52	
6,010.0	26.70	246.00	5,506.5	-1,004.1	-2,066.4	2,297.5	1.86	0.98	
6,101.0	27.50	244.20	5,587.5	-1,021.6	-2,104.0	2,338.9	1.26	0.88	
6,193.0	27.90	243.00	5,669.0	-1,040.6	-2,142.3	2,381.7	0.75	0.43	
6,284.0	28.50	243.70	5,749.2	-1,059.9	-2,180.7	2,424.7	0.75	0.66	
6,376.0	26.30	242.70	5,830.9	-1,079.0	-2,218.5	2,467.0	2.44	-2.39	
6,467.0	28.00	246.40	5,911.8	-1,096.8	-2,256.0	2,508.5	2.63	1.87	
6,558.0	27.40	243.10	5,992.4	-1,114.8	-2,294.3	2,550.8	1.81	-0.66	
6,650.0	27.50	245.00	6,074.1	-1,133.4	-2,332.4	2,593.2	0.96	0.11	
6,742.0	27.30	245.40	6,155.7	-1,151.1	-2,370.8	2,635.5	0.30	-0.22	
6,833.0	26.90	246.40	6,236.8	-1,168.1	-2,408.7	2,676.9	0.67	-0.44	
6,924.0	26.30	243.30	6,318.1	-1,185.4	-2,445.6	2,717.7	1.66	-0.66	
7,016.0	27.70	245.10	6,400.1	-1,203.5	-2,483.2	2,759.4	1.76	1.52	
7,108.0	25.90	243.60	6,482.2	-1,221.5	-2,520.6	2,800.9	2.09	-1.96	
7,199.0	24.00	246.60	6,564.7	-1,237.6	-2,555.3	2,839.3	2.51	-2.09	
7,290.0	23.30	246.20	6,648.1	-1,252.3	-2,588.8	2,875.7	0.79	-0.77	
7,382.0	22.50	242.20	6,732.8	-1,267.8	-2,621.0	2,911.5	1.90	-0.87	
7,473.0	20.30	247.20	6,817.6	-1,282.1	-2,651.0	2,944.7	3.14	-2.42	
7,564.0	18.50	243.40	6,903.4	-1,294.6	-2,678.4	2,974.9	2.41	-1.98	
7,658.0	15.70	246.20	6,993.2	-1,306.4	-2,703.4	3,002.5	3.10	-2.98	
7,747.0	14.90	240.20	7,079.1	-1,317.0	-2,724.4	3,026.0	1.99	-0.90	
7,839.0	14.30	242.30	7,168.1	-1,328.2	-2,744.7	3,049.1	0.87	-0.65	
7,930.0	11.10	240.50	7,256.9	-1,337.7	-2,762.3	3,069.1	3.54	-3.52	
8,022.0	10.10	238.50	7,347.3	-1,346.3	-2,776.9	3,086.0	1.16	-1.09	
8,113.0	7.70	242.00	7,437.2	-1,353.3	-2,789.0	3,100.0	2.70	-2.64	
8,205.0	7.50	244.20	7,528.4	-1,358.8	-2,799.9	3,112.2	0.38	-0.22	
8,297.0	6.40	240.00	7,619.7	-1,364.0	-2,809.7	3,123.3	1.32	-1.20	
8,388.0	4.10	237.10	7,710.3	-1,368.3	-2,816.9	3,131.6	2.54	-2.53	
8,480.0	2.00	213.00	7,802.2	-1,371.4	-2,820.5	3,136.2	2.63	-2.28	
8,568.0	1.80	208.60	7,890.1	-1,373.9	-2,822.0	3,138.7	0.28	-0.23	
8,660.0	2.10	223.40	7,982.1	-1,376.4	-2,823.8	3,141.4	0.63	0.33	
8,752.0	0.10	153.80	8,074.1	-1,377.7	-2,825.0	3,143.0	2.25	-2.17	
8,843.0	0.00	190.90	8,165.1	-1,377.8	-2,824.9	3,143.0	0.11	-0.11	
8,935.0	0.40	78.10	8,257.1	-1,377.7	-2,824.6	3,142.7	0.43	0.43	
9,027.0	0.50	143.40	8,349.1	-1,378.0	-2,824.1	3,142.3	0.54	0.11	
9,118.0	0.30	27.60	8,440.1	-1,378.1	-2,823.7	3,142.1	0.75	-0.22	
9,210.0	0.60	254.40	8,532.1	-1,378.0	-2,824.1	3,142.3	0.91	0.33	
9,301.0	0.30	265.70	8,623.1	-1,378.1	-2,824.8	3,143.0	0.34	-0.33	
9,393.0	0.50	227.50	8,715.1	-1,378.4	-2,825.3	3,143.6	0.35	0.22	
9,484.0	1.00	253.60	8,806.1	-1,378.9	-2,826.4	3,144.8	0.65	0.55	
9,575.0	1.00	226.10	8,897.0	-1,379.7	-2,827.7	3,146.3	0.52	0.00	
9,667.0	1.50	260.20	8,989.0	-1,380.5	-2,829.5	3,148.3	0.95	0.54	
9,759.0	0.90	340.00	9,081.0	-1,380.0	-2,830.9	3,149.3	1.75	-0.65	
9,849.0	1.10	309.30	9,171.0	-1,378.8	-2,831.8	3,149.6	0.63	0.22	
9,941.0	0.80	26.80	9,263.0	-1,377.6	-2,832.2	3,149.5	1.32	-0.33	
10,032.0	0.60	56.90	9,354.0	-1,376.8	-2,831.5	3,148.5	0.45	-0.22	
10,124.0	0.30	85.80	9,446.0	-1,376.5	-2,830.9	3,147.8	0.40	-0.33	
10,216.0	0.50	56.20	9,538.0	-1,376.3	-2,830.3	3,147.2	0.31	0.22	
10,307.0	0.30	260.40	9,629.0	-1,376.1	-2,830.2	3,147.0	0.86	-0.22	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well 8507B-35 (was 8513E-25)
Project:	Story Gulch	TVD Reference:	KB=32' @ 8323.0ft (Patterson #326)
Site:	S36-T4S-R96W (D36 496)	MD Reference:	KB=32' @ 8323.0ft (Patterson #326)
Well:	8507B-35 (was 8513E-25)	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	DD	Database:	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
10,398.0	0.60	194.50	9,720.0	-1,376.6	-2,830.6	3,147.6	0.60	0.33	
10,490.0	0.70	97.90	9,812.0	-1,377.2	-2,830.1	3,147.4	1.06	0.11	
10,582.0	0.40	219.40	9,904.0	-1,377.5	-2,829.8	3,147.2	1.06	-0.33	
10,673.0	0.30	356.20	9,995.0	-1,377.5	-2,830.0	3,147.4	0.72	-0.11	
10,764.0	0.60	17.70	10,086.0	-1,376.8	-2,829.9	3,147.0	0.37	0.33	
10,855.0	0.40	347.20	10,177.0	-1,376.0	-2,829.8	3,146.6	0.36	-0.22	
10,947.0	0.30	242.00	10,269.0	-1,375.8	-2,830.1	3,146.8	0.61	-0.11	
11,039.0	0.50	280.40	10,360.9	-1,375.9	-2,830.7	3,147.3	0.35	0.22	
11,131.0	1.90	248.30	10,452.9	-1,376.4	-2,832.5	3,149.2	1.63	1.52	
11,223.0	1.10	229.10	10,544.9	-1,377.5	-2,834.6	3,151.6	1.02	-0.87	
11,314.0	0.60	211.50	10,635.9	-1,378.5	-2,835.5	3,152.8	0.61	-0.55	
11,404.0	0.50	99.80	10,725.9	-1,379.0	-2,835.3	3,152.9	1.01	-0.11	
11,495.0	0.10	74.10	10,816.9	-1,379.0	-2,834.9	3,152.5	0.45	-0.44	
11,586.0	0.50	45.00	10,907.9	-1,378.7	-2,834.5	3,152.0	0.46	0.44	
11,678.0	0.50	30.60	10,999.9	-1,378.1	-2,834.0	3,151.3	0.14	0.00	
11,770.0	0.50	69.20	11,091.9	-1,377.6	-2,833.4	3,150.6	0.36	0.00	
11,861.0	0.40	336.70	11,182.9	-1,377.2	-2,833.2	3,150.2	0.72	-0.11	
11,953.0	0.60	244.40	11,274.9	-1,377.1	-2,833.8	3,150.6	0.80	0.22	
12,044.0	0.70	267.10	11,365.9	-1,377.3	-2,834.7	3,151.6	0.30	0.11	
12,136.0	1.90	260.50	11,457.8	-1,377.6	-2,836.8	3,153.6	1.31	1.30	
12,227.0	2.40	259.60	11,548.8	-1,378.2	-2,840.2	3,156.9	0.55	0.55	
12,319.0	2.70	255.60	11,640.7	-1,379.1	-2,844.2	3,160.9	0.38	0.33	
12,410.0	2.70	261.20	11,731.6	-1,379.9	-2,848.4	3,165.0	0.29	0.00	Last Cathedral Survey @ 12,410' MD
12,470.0	2.70	261.20	11,791.5	-1,380.4	-2,851.2	3,167.7	0.00	0.00	Projection to Bit @ 12,470'

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									
8507B-35 D36 496 PBH	0.00	0.00	12,481.0	-1,387.0	-2,845.1	1,676,448.34	2,258,826.58	39° 39' 40.15 N	108° 7' 58.69 W
- actual wellpath misses target center by 689.5ft at 12470.0ft MD (11791.5 TVD, -1380.4 N, -2851.2 E)									
- Rectangle (sides W30.0 H50.0 D0.0)									
8507B-35 D36 496 TGT	0.00	0.00	7,885.0	-1,377.1	-2,828.1	1,676,457.80	2,258,843.87	39° 39' 40.25 N	108° 7' 58.47 W
- actual wellpath misses target center by 7.0ft at 8563.1ft MD (7885.2 TVD, -1373.8 N, -2821.9 E)									
- Point									

Design Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
12,410.0	11,731.6	-1,379.9	-2,848.4	Last Cathedral Survey @ 12,410' MD	
12,470.0	11,791.5	-1,380.4	-2,851.2	Projection to Bit @ 12,470'	

Checked By: _____ Approved By: _____ Date: _____