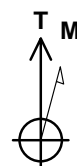
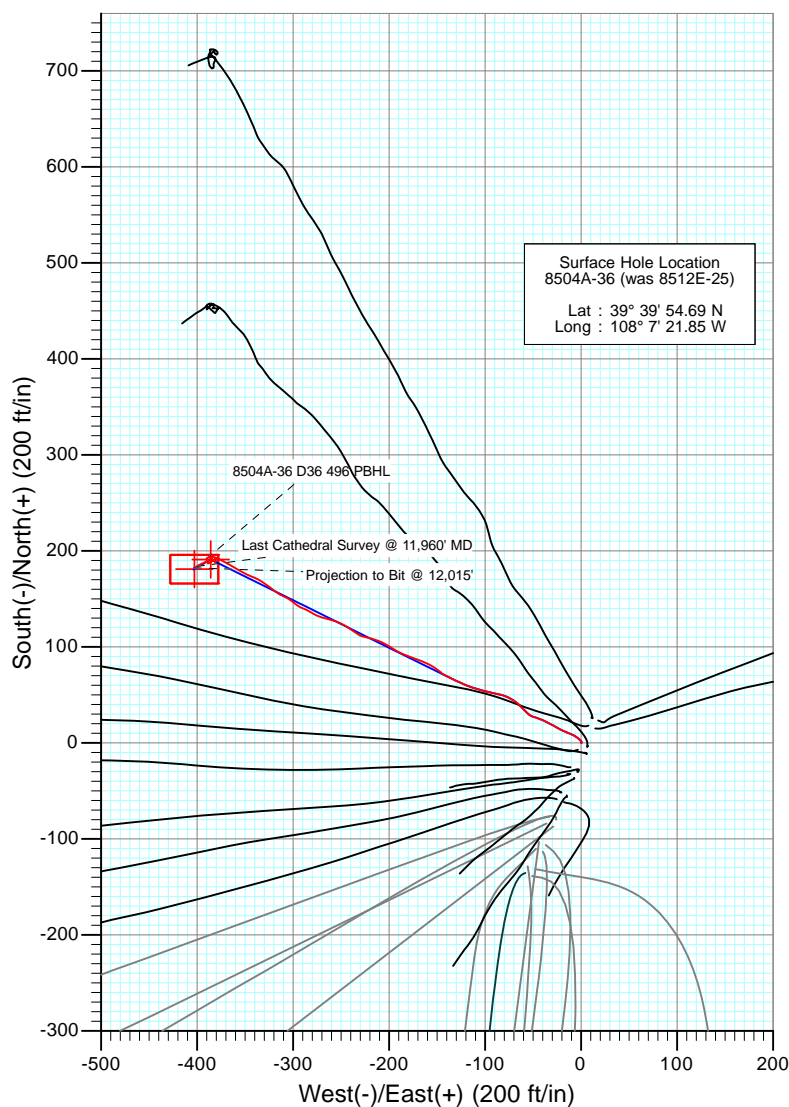
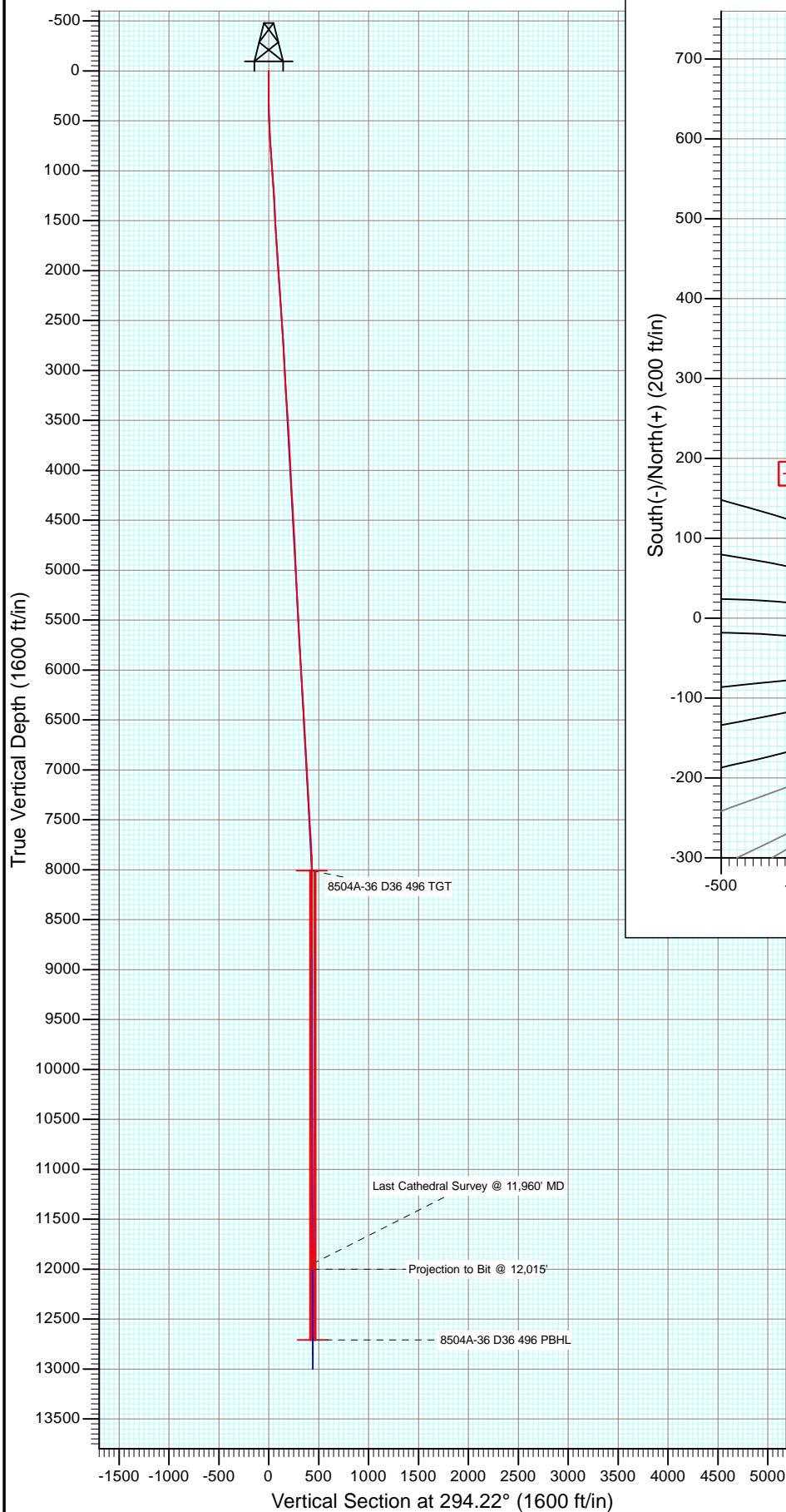




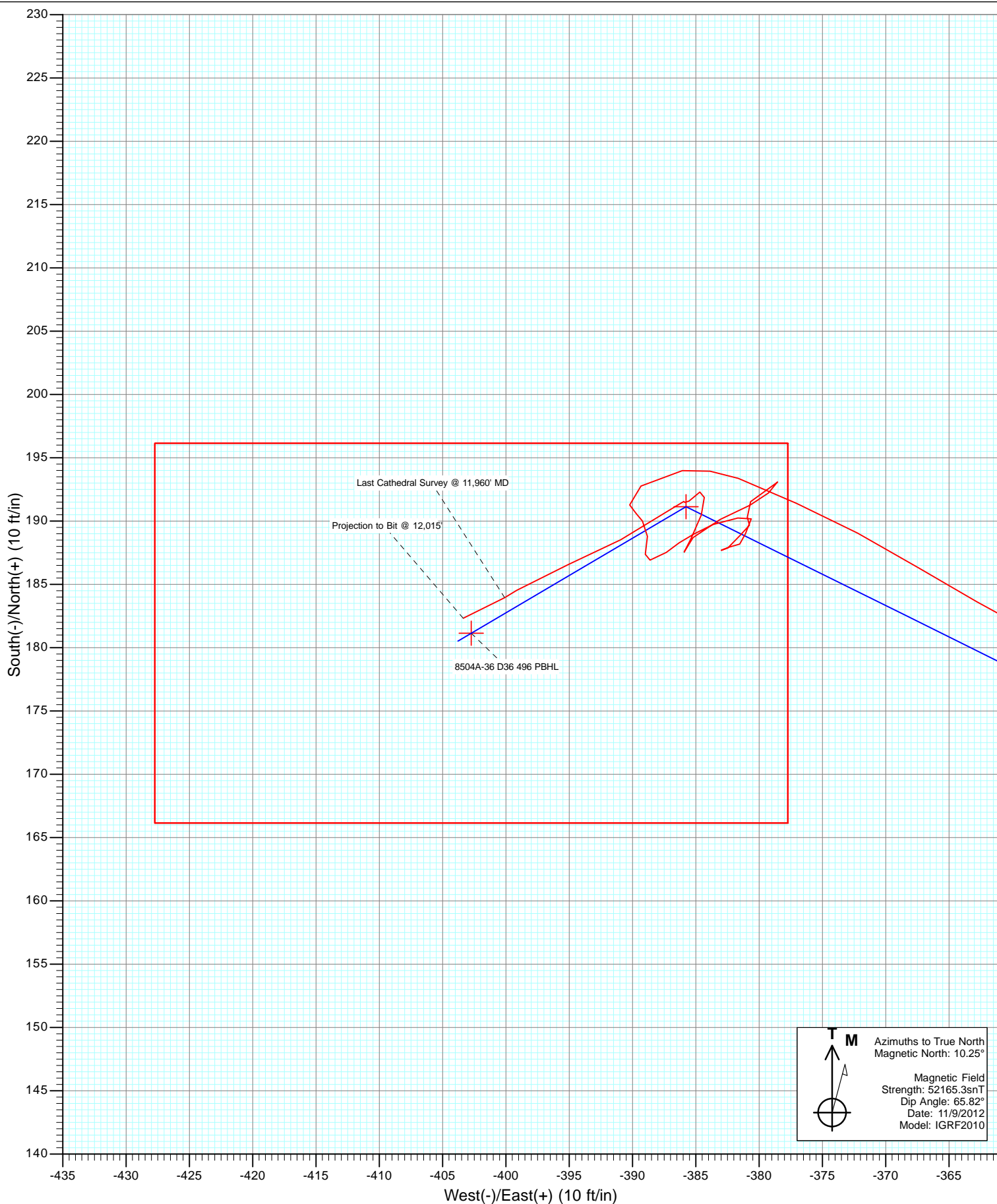
Project: Story Gulch
Site: S36-T4S-R96W (D36 496)
Well: 8504A-36 (was 8512E-25)
Wellbore: DD
Design: FINAL



Azimuths to True North
Magnetic North: 10.25°

Magnetic Field
Strength: 52165.3nT
Dip Angle: 65.82°
Date: 11/9/2012
Model: IGRF2010

DD									
8504A-36 (was 8512E-25)									
125610; 194055; DN									
KB @ 8324.0ft (Patterson 306)									
GL @ 8291.0									
North American Datum 1983									
Well 8504A-36 (was 8512E-25), True North									
Type	Target	Azimuth	Origin Type	N/S	E/W	From TVD			
Target	8504A-36 D36 496 PBHL	294.22	Slot	0.0	0.0	0.0			
8504A-36 D36 496 TGT	TVD	+N/-S	+E/-W	Latitude	Longitude				
	8009.0	191.1	-385.8	39° 39' 56.58 N	108° 7' 26.78 W				
8504A-36 D36 496 PBHL	12710.0	181.1	-402.7	39° 39' 56.48 N	108° 7' 27.00 W				



Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well 8504A-36 (was 8512E-25)
Project:	Story Gulch	TVD Reference:	KB @ 8324.0ft (Patterson 306)
Site:	S36-T4S-R96W (D36 496)	MD Reference:	KB @ 8324.0ft (Patterson 306)
Well:	8504A-36 (was 8512E-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:	1,677,701.75 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	8504A-36 (was 8512E-25)					
Well Position	+N/-S	0.0 ft	Northing:	1,677,835.59 ft	Latitude:	39° 39' 54.69 N
	+E/-W	0.0 ft	Easting:	2,261,748.92 ft	Longitude:	108° 7' 21.85 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	11/9/2012	10.25	65.82	52,165

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	294.22	

Survey Program	Date	12/20/2012			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
200.0	12,015.0	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		
200.0	0.40	77.20	200.0	0.2	0.7	-0.6	0.20	0.20		
241.0	0.30	33.10	241.0	0.3	0.9	-0.7	0.68	-0.24		
271.0	0.50	6.80	271.0	0.5	0.9	-0.7	0.89	0.67		
302.0	0.60	340.10	302.0	0.8	0.9	-0.5	0.88	0.32		
332.0	0.80	331.40	332.0	1.1	0.7	-0.2	0.75	0.67		
423.0	2.20	311.70	423.0	2.8	-0.9	1.9	1.62	1.54		
515.0	2.50	308.70	514.9	5.2	-3.7	5.6	0.35	0.33		
609.0	3.00	301.60	608.8	7.8	-7.4	10.0	0.64	0.53		
701.0	3.30	288.70	700.6	9.9	-12.0	15.0	0.83	0.33		
792.0	2.90	293.70	791.5	11.7	-16.6	19.9	0.53	-0.44		
884.0	4.00	298.70	883.3	14.2	-21.5	25.5	1.24	1.20		
976.0	4.80	298.60	975.1	17.5	-27.7	32.5	0.87	0.87		

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well 8504A-36 (was 8512E-25)
Project:	Story Gulch	TVD Reference:	KB @ 8324.0ft (Patterson 306)
Site:	S36-T4S-R96W (D36 496)	MD Reference:	KB @ 8324.0ft (Patterson 306)
Well:	8504A-36 (was 8512E-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
1,067.0	4.40	297.20	1,065.8	21.0	-34.2	39.8	0.46	-0.44	
1,159.0	3.80	293.80	1,157.5	23.8	-40.1	46.3	0.70	-0.65	
1,251.0	3.30	287.30	1,249.4	25.8	-45.4	52.0	0.70	-0.54	
1,342.0	3.10	288.30	1,340.2	27.4	-50.3	57.1	0.23	-0.22	
1,434.0	2.40	310.50	1,432.1	29.4	-54.1	61.4	1.37	-0.76	
1,526.0	3.20	316.50	1,524.0	32.5	-57.3	65.6	0.92	0.87	
1,617.0	3.50	315.80	1,614.8	36.4	-61.0	70.5	0.33	0.33	
1,709.0	3.80	312.30	1,706.7	40.4	-65.2	76.1	0.41	0.33	
1,801.0	4.30	303.70	1,798.4	44.4	-70.3	82.4	0.85	0.54	
1,892.0	4.20	294.10	1,889.2	47.6	-76.2	89.1	0.79	-0.11	
1,984.0	3.70	286.20	1,981.0	49.8	-82.1	95.4	0.80	-0.54	
2,075.0	3.40	280.30	2,071.8	51.1	-87.6	100.9	0.52	-0.33	
2,167.0	4.00	283.40	2,163.6	52.4	-93.4	106.7	0.69	0.65	
2,258.0	4.40	283.00	2,254.4	53.9	-99.9	113.2	0.44	0.44	
2,350.0	4.30	287.50	2,346.1	55.7	-106.6	120.1	0.39	-0.11	
2,441.0	4.20	286.30	2,436.8	57.7	-113.1	126.8	0.15	-0.11	
2,533.0	3.90	293.60	2,528.6	59.9	-119.2	133.3	0.65	-0.33	
2,625.0	3.70	294.60	2,620.4	62.4	-124.8	139.4	0.23	-0.22	
2,716.0	3.10	289.70	2,711.2	64.4	-129.8	144.8	0.73	-0.66	
3,035.0	2.90	305.80	3,029.8	72.1	-144.4	161.3	0.27	-0.06	
3,075.0	2.60	316.50	3,069.8	73.3	-145.9	163.1	1.48	-0.75	
3,167.0	2.90	302.40	3,161.7	76.1	-149.3	167.3	0.80	0.33	
3,258.0	4.10	305.40	3,252.5	79.2	-153.9	172.8	1.33	1.32	
3,350.0	4.60	292.00	3,344.2	82.5	-160.0	179.7	1.23	0.54	
3,440.0	4.70	292.90	3,433.9	85.3	-166.7	187.0	0.14	0.11	
3,532.0	3.60	292.40	3,525.7	87.8	-172.8	193.7	1.20	-1.20	
3,623.0	3.50	287.50	3,616.5	89.8	-178.1	199.3	0.35	-0.11	
3,715.0	2.60	292.30	3,708.4	91.4	-182.7	204.1	1.02	-0.98	
3,806.0	3.00	295.60	3,799.3	93.2	-186.8	208.6	0.47	0.44	
3,897.0	2.40	296.50	3,890.2	95.1	-190.7	212.9	0.66	-0.66	
3,989.0	3.30	302.40	3,982.1	97.4	-194.6	217.4	1.03	0.98	
4,080.0	3.10	300.40	4,072.9	100.0	-198.9	222.5	0.25	-0.22	
4,172.0	2.90	303.10	4,164.8	102.5	-203.0	227.2	0.27	-0.22	
4,263.0	3.50	293.60	4,255.6	104.9	-207.5	232.3	0.88	0.66	
4,355.0	3.50	287.70	4,347.5	106.9	-212.8	237.9	0.39	0.00	
4,446.0	3.30	288.00	4,438.3	108.5	-217.9	243.2	0.22	-0.22	
4,538.0	3.30	281.10	4,530.2	109.9	-223.0	248.5	0.43	0.00	
4,629.0	3.10	285.80	4,621.0	111.0	-228.0	253.4	0.36	-0.22	
4,721.0	3.30	306.10	4,712.9	113.3	-232.5	258.5	1.24	0.22	
4,812.0	3.00	303.80	4,803.7	116.1	-236.6	263.4	0.36	-0.33	
4,903.0	2.80	304.20	4,894.6	118.7	-240.4	267.9	0.22	-0.22	
4,995.0	2.50	304.00	4,986.5	121.1	-243.9	272.1	0.33	-0.33	
5,086.0	2.20	295.50	5,077.5	123.0	-247.1	275.8	0.50	-0.33	
5,177.0	1.90	295.10	5,168.4	124.4	-250.1	279.1	0.33	-0.33	
5,268.0	3.20	289.70	5,259.3	125.9	-253.8	283.1	1.45	1.43	
5,360.0	2.90	290.30	5,351.2	127.5	-258.4	288.0	0.33	-0.33	
5,450.0	2.70	286.80	5,441.1	128.9	-262.6	292.4	0.29	-0.22	
5,542.0	2.60	278.50	5,533.0	129.9	-266.8	296.5	0.43	-0.11	
5,634.0	3.00	294.50	5,624.9	131.2	-271.0	301.0	0.95	0.43	
5,725.0	3.00	289.20	5,715.7	132.9	-275.4	305.7	0.30	0.00	
5,817.0	3.90	303.00	5,807.6	135.4	-280.3	311.2	1.32	0.98	
5,908.0	4.10	294.80	5,898.3	138.5	-285.9	317.5	0.67	0.22	
5,999.0	3.30	292.20	5,989.2	140.8	-291.2	323.4	0.90	-0.88	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well 8504A-36 (was 8512E-25)
Project:	Story Gulch	TVD Reference:	KB @ 8324.0ft (Patterson 306)
Site:	S36-T4S-R96W (D36 496)	MD Reference:	KB @ 8324.0ft (Patterson 306)
Well:	8504A-36 (was 8512E-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
6,090.0	4.10	308.70	6,080.0	143.9	-296.2	329.2	1.45	0.88	
6,182.0	3.60	307.00	6,171.8	147.7	-301.1	335.2	0.56	-0.54	
6,273.0	3.30	300.10	6,262.6	150.7	-305.6	340.5	0.56	-0.33	
6,364.0	2.70	290.60	6,353.5	152.8	-309.9	345.3	0.85	-0.66	
6,455.0	3.30	301.30	6,444.3	154.9	-314.1	350.0	0.90	0.66	
6,547.0	3.90	308.10	6,536.2	158.2	-318.9	355.7	0.80	0.65	
6,638.0	3.70	307.50	6,627.0	161.9	-323.6	361.6	0.22	-0.22	
6,729.0	3.20	304.00	6,717.8	165.1	-328.1	366.9	0.60	-0.55	
6,821.0	2.90	304.60	6,809.7	167.8	-332.1	371.7	0.33	-0.33	
6,912.0	2.70	298.30	6,900.6	170.2	-335.9	376.1	0.40	-0.22	
7,003.0	2.90	293.80	6,991.5	172.1	-339.9	380.6	0.33	0.22	
7,095.0	3.10	288.60	7,083.3	173.8	-344.4	385.4	0.37	0.22	
7,186.0	3.50	298.50	7,174.2	176.0	-349.2	390.6	0.76	0.44	
7,278.0	3.10	300.50	7,266.0	178.6	-353.8	395.9	0.45	-0.43	
7,369.0	3.40	299.80	7,356.9	181.1	-358.2	401.0	0.33	0.33	
7,461.0	3.10	297.10	7,448.7	183.6	-362.8	406.2	0.37	-0.33	
7,552.0	3.60	302.80	7,539.6	186.3	-367.4	411.5	0.66	0.55	
7,643.0	3.40	296.50	7,630.4	189.1	-372.2	417.0	0.48	-0.22	
7,735.0	3.30	295.40	7,722.2	191.4	-377.0	422.4	0.13	-0.11	
7,826.0	3.00	290.60	7,813.1	193.4	-381.6	427.4	0.44	-0.33	
7,918.0	2.70	263.80	7,905.0	194.0	-386.1	431.6	1.47	-0.33	
8,009.0	1.90	229.00	7,995.9	192.8	-389.3	434.1	1.73	-0.88	
8,100.0	0.70	154.00	8,086.9	191.3	-390.2	434.3	2.03	-1.32	
8,191.0	0.40	122.50	8,177.9	190.6	-389.7	433.6	0.46	-0.33	
8,283.0	0.60	151.00	8,269.9	190.0	-389.2	432.9	0.34	0.22	
8,375.0	1.00	169.20	8,361.9	188.8	-388.8	432.0	0.51	0.43	
8,466.0	0.90	206.30	8,452.9	187.4	-389.0	431.6	0.67	-0.11	
8,557.0	0.90	75.40	8,543.9	186.9	-388.6	431.1	1.80	0.00	
8,649.0	0.90	53.90	8,635.9	187.5	-387.3	430.2	0.36	0.00	
8,740.0	0.70	52.80	8,726.9	188.3	-386.3	429.5	0.22	-0.22	
8,832.0	1.00	63.50	8,818.8	189.0	-385.1	428.8	0.37	0.33	
8,923.0	1.10	63.70	8,909.8	189.7	-383.6	427.7	0.11	0.11	
9,014.0	1.50	83.60	9,000.8	190.2	-381.7	426.1	0.66	0.44	
9,106.0	0.30	212.50	9,092.8	190.2	-380.6	425.1	1.85	-1.30	
9,288.0	0.50	194.90	9,274.8	189.0	-381.1	425.1	0.13	0.11	
9,379.0	0.70	218.90	9,365.8	188.2	-381.5	425.1	0.35	0.22	
9,471.0	0.70	287.80	9,457.8	187.9	-382.4	425.8	0.86	0.00	
9,562.0	0.50	185.70	9,548.8	187.7	-383.0	426.3	1.03	-0.22	
9,653.0	1.00	43.80	9,639.8	187.9	-382.5	425.9	1.57	0.55	
9,745.0	0.80	44.80	9,731.8	188.9	-381.5	425.4	0.22	-0.22	
9,837.0	0.50	40.00	9,823.8	189.7	-380.8	425.0	0.33	-0.33	
9,925.0	0.70	308.60	9,911.8	190.3	-380.9	425.5	0.99	0.23	
10,017.0	1.40	38.20	10,003.7	191.5	-380.7	425.7	1.70	0.76	
10,109.0	0.90	79.20	10,095.7	192.6	-379.3	424.9	1.01	-0.54	
10,200.0	0.50	4.30	10,186.7	193.1	-378.5	424.4	1.00	-0.44	
10,292.0	0.70	196.50	10,278.7	192.9	-378.7	424.5	1.30	0.22	
10,383.0	0.60	246.00	10,369.7	192.2	-379.3	424.7	0.61	-0.11	
10,475.0	1.60	233.30	10,461.7	191.3	-380.7	425.7	1.11	1.09	
10,567.0	1.70	254.60	10,553.7	190.1	-383.1	427.3	0.67	0.11	
10,658.0	1.70	218.30	10,644.6	188.7	-385.2	428.7	1.16	0.00	
10,749.0	0.20	125.20	10,735.6	187.6	-385.9	428.9	1.89	-1.65	
10,841.0	1.50	19.60	10,827.6	188.6	-385.4	428.8	1.70	1.41	
10,932.0	1.10	29.00	10,918.6	190.5	-384.6	428.9	0.50	-0.44	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well 8504A-36 (was 8512E-25)
Project:	Story Gulch	TVD Reference:	KB @ 8324.0ft (Patterson 306)
Site:	S36-T4S-R96W (D36 496)	MD Reference:	KB @ 8324.0ft (Patterson 306)
Well:	8504A-36 (was 8512E-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
11,024.0	0.80	342.00	11,010.6	191.9	-384.3	429.2	0.88	-0.33	
11,116.0	0.30	219.10	11,102.6	192.3	-384.7	429.7	1.08	-0.54	
11,207.0	1.10	233.10	11,193.6	191.6	-385.5	430.2	0.89	0.88	
11,299.0	0.70	40.70	11,285.6	191.5	-385.9	430.5	1.95	-0.43	
11,482.0	0.70	226.50	11,468.6	191.6	-385.9	430.6	0.76	0.00	
11,573.0	0.30	267.20	11,559.6	191.2	-386.6	431.0	0.56	-0.44	
11,757.0	2.90	235.90	11,743.5	188.5	-390.9	433.9	1.44	1.41	
11,848.0	3.00	253.20	11,834.4	186.5	-395.1	436.9	0.98	0.11	
11,940.0	2.70	232.40	11,926.2	184.5	-399.1	439.7	1.16	-0.33	
11,960.0	3.80	243.59	11,946.2	184.0	-400.1	440.3	6.33	5.50	Last Cathedral Survey @ 11,960' MD Projection to Bit @ 12,015'
12,015.0	3.80	243.60	12,001.1	182.3	-403.4	442.7	0.00	0.00	

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
8504A-36 D36 496 TGT	0.00	0.00	8,009.0	191.1	-385.8	1,678,037.78	2,261,368.83	39° 39' 56.58 N	108° 7' 26.78 W
- hit/miss target									
- Shape									
- actual wellpath misses target center by 4.1ft at 8022.1ft MD (8009.0 TVD, 192.5 N, -389.6 E)									
- Point									
8504A-36 D36 496 PBH	0.00	0.00	12,710.0	181.1	-402.7	1,678,028.28	2,261,351.59	39° 39' 56.48 N	108° 7' 27.00 W
- actual wellpath misses target center by 708.9ft at 12015.0ft MD (12001.1 TVD, 182.3 N, -403.4 E)									
- Rectangle (sides W30.0 H50.0 D0.0)									

Design Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
11,960.0	11,946.2	184.0	-400.1	Last Cathedral Survey @ 11,960' MD	
12,015.0	12,001.1	182.3	-403.4	Projection to Bit @ 12,015'	

Checked By: _____ Approved By: _____ Date: _____