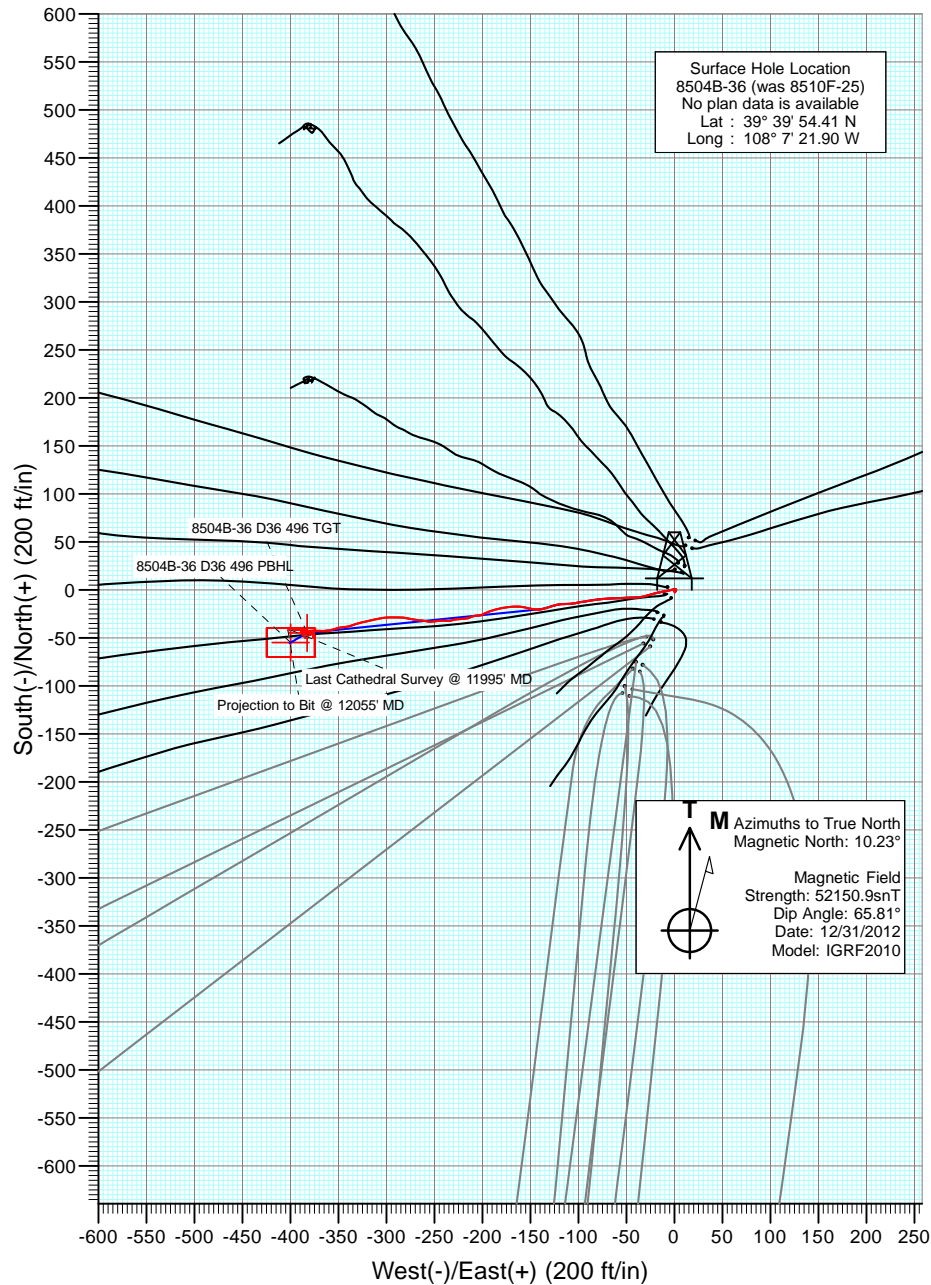
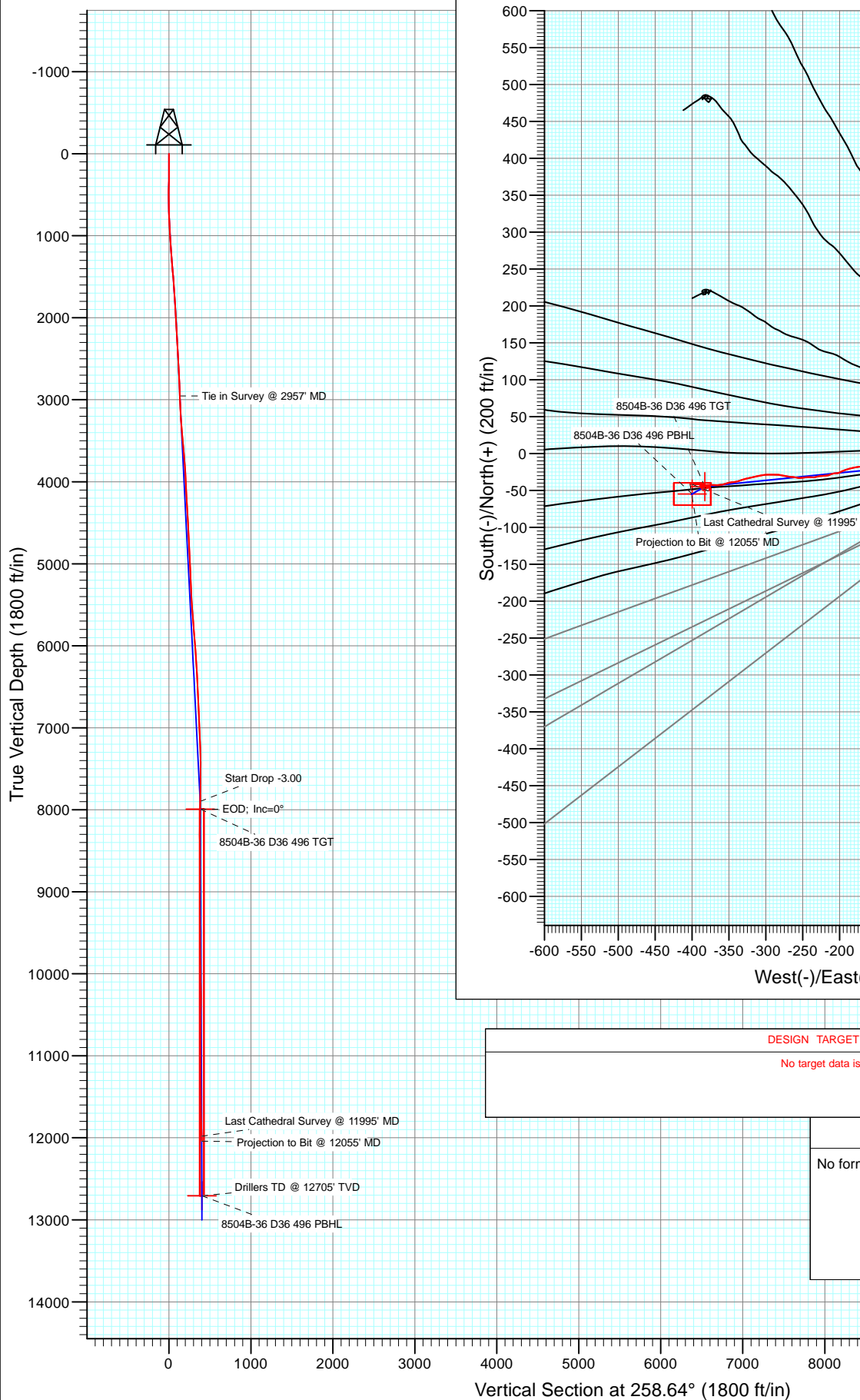




Project: Story Gulch
 Site: S36-T4S-R96W (D36 496)
 Well: 8504B-36 (was 8510F-25)
 Wellbore: DD
 Design: DD



DESIGN TARGET DETAILS

No target data is available.

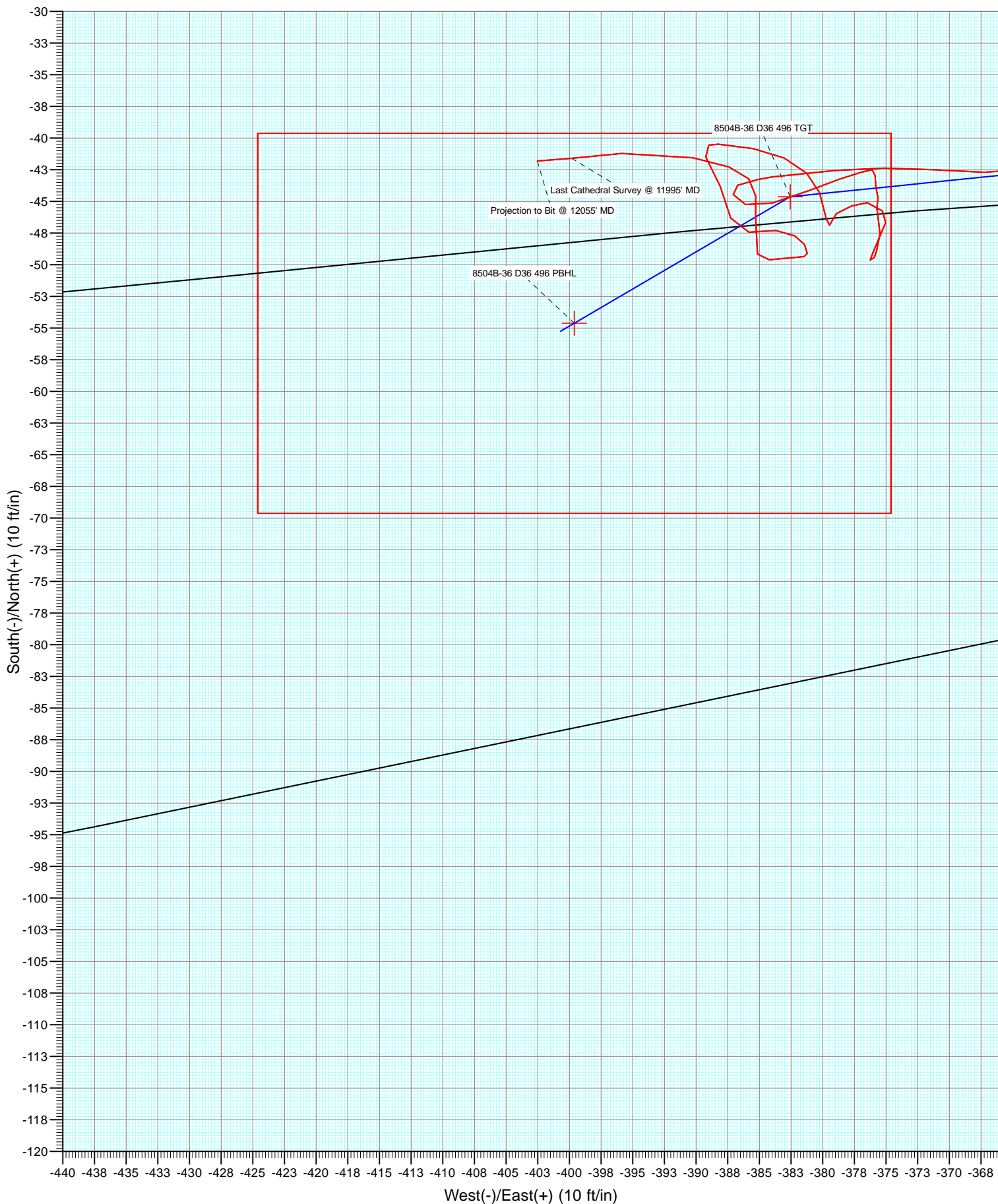
FORMATION TOP DETAILS

No formation data is available

DD
 8504B-36 (was 8510F-25)
 125514/185255 (SH): 125669, 206655 MH
 KB @ 8324.0ft (Original Well Elev)
 Ground Elevation @ 8291.0
 North American Datum 1983
 Well 8504B-36 (was 8510F-25), True North



Project: Story Gulch
Site: S36-T4S-R96W (D36 496)
Well: 8504B-36 (was 8510F-25)
Wellbore: DD
Design: DD



Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well 8504B-36 (was 8510F-25)
Project:	Story Gulch	TVD Reference:	KB @ 8324.0ft (Original Well Elev)
Site:	S36-T4S-R96W (D36 496)	MD Reference:	KB @ 8324.0ft (Original Well Elev)
Well:	8504B-36 (was 8510F-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	8504B-36 (was 8510F-25)					
Well Position	+N/-S	0.0 ft	Northing:	1,677,807.38 ft	Latitude:	39° 39' 54.41 N
	+E/-W	0.0 ft	Easting:	2,261,744.20 ft	Longitude:	108° 7' 21.90 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	12/31/2012	10.23	65.81	52,151

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	258.64	

Survey Program	Date	1/10/2013			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
179.0	12,055.0	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		
179.0	0.70	171.70	179.0	-1.1	0.2	0.1	0.39	0.39		
209.0	0.80	174.80	209.0	-1.5	0.2	0.1	0.36	0.33		
239.0	0.80	178.90	239.0	-1.9	0.2	0.2	0.19	0.00		
330.0	0.50	39.90	330.0	-2.2	0.5	0.0	1.34	-0.33		
421.0	0.80	36.60	421.0	-1.4	1.1	-0.8	0.33	0.33		
512.0	1.00	29.60	512.0	-0.2	1.9	-1.8	0.25	0.22		
606.0	0.60	283.70	606.0	0.6	1.8	-1.9	1.38	-0.43		
698.0	1.10	273.40	698.0	0.8	0.5	-0.6	0.57	0.54		
790.0	2.30	254.60	789.9	0.4	-2.2	2.1	1.42	1.30		
881.0	3.70	258.80	880.8	-0.7	-6.8	6.8	1.56	1.54		
973.0	4.00	260.40	972.6	-1.8	-12.9	13.0	0.35	0.33		
1,065.0	4.00	256.90	1,064.4	-3.1	-19.2	19.4	0.27	0.00		

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well 8504B-36 (was 8510F-25)
Project:	Story Gulch	TVD Reference:	KB @ 8324.0ft (Original Well Elev)
Site:	S36-T4S-R96W (D36 496)	MD Reference:	KB @ 8324.0ft (Original Well Elev)
Well:	8504B-36 (was 8510F-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
1,157.0	3.80	250.30	1,156.1	-4.8	-25.2	25.6	0.53	-0.22	
1,248.0	3.70	255.70	1,246.9	-6.6	-30.9	31.6	0.40	-0.11	
1,340.0	4.60	266.70	1,338.7	-7.5	-37.4	38.2	1.30	0.98	
1,432.0	4.90	267.40	1,430.4	-7.9	-45.0	45.7	0.33	0.33	
1,523.0	4.60	268.80	1,521.1	-8.2	-52.6	53.1	0.35	-0.33	
1,615.0	4.20	265.50	1,612.8	-8.5	-59.6	60.1	0.51	-0.43	
1,706.0	4.00	268.50	1,703.6	-8.8	-66.1	66.6	0.32	-0.22	
1,798.0	3.70	267.40	1,795.4	-9.1	-72.3	72.7	0.34	-0.33	
1,890.0	3.30	263.80	1,887.2	-9.5	-77.9	78.2	0.50	-0.43	
1,981.0	3.50	262.10	1,978.0	-10.2	-83.2	83.6	0.25	0.22	
2,073.0	3.30	257.70	2,069.9	-11.1	-88.6	89.1	0.36	-0.22	
2,164.0	3.20	261.70	2,160.7	-12.0	-93.7	94.2	0.27	-0.11	
2,256.0	3.10	261.70	2,252.6	-12.8	-98.7	99.3	0.11	-0.11	
2,347.0	2.90	256.40	2,343.5	-13.7	-103.4	104.0	0.38	-0.22	
2,439.0	3.10	267.20	2,435.3	-14.3	-108.1	108.8	0.65	0.22	
2,530.0	3.20	269.30	2,526.2	-14.5	-113.1	113.7	0.17	0.11	
2,622.0	3.00	263.10	2,618.1	-14.8	-118.1	118.7	0.42	-0.22	
2,713.0	2.70	258.50	2,709.0	-15.5	-122.5	123.2	0.41	-0.33	
2,805.0	2.40	254.60	2,800.9	-16.5	-126.5	127.3	0.38	-0.33	
2,896.0	2.40	251.80	2,891.8	-17.6	-130.1	131.1	0.13	0.00	
2,957.0	2.20	254.70	2,952.7	-18.3	-132.5	133.5	0.38	-0.33	
3,075.0	2.50	247.50	3,070.6	-19.8	-137.1	138.3	0.36	0.25	
3,166.0	3.50	274.40	3,161.5	-20.4	-141.7	142.9	1.87	1.10	
3,258.0	3.70	276.50	3,253.3	-19.8	-147.4	148.4	0.26	0.22	
3,349.0	4.20	284.20	3,344.1	-18.7	-153.6	154.2	0.80	0.55	
3,440.0	5.40	278.30	3,434.8	-17.3	-161.0	161.3	1.42	1.32	
3,532.0	6.20	261.20	3,526.3	-17.4	-170.2	170.3	2.06	0.87	
3,623.0	5.20	260.30	3,616.9	-18.8	-179.1	179.3	1.10	-1.10	
3,715.0	4.70	254.70	3,708.5	-20.5	-186.9	187.3	0.76	-0.54	
3,806.0	4.30	249.50	3,799.3	-22.7	-193.7	194.4	0.63	-0.44	
3,897.0	3.30	241.50	3,890.1	-25.2	-199.2	200.2	1.24	-1.10	
3,988.0	2.50	267.30	3,980.9	-26.5	-203.5	204.7	1.66	-0.88	
4,080.0	2.90	261.90	4,072.8	-26.9	-207.8	209.0	0.51	0.43	
4,171.0	3.40	245.90	4,163.7	-28.3	-212.5	213.9	1.11	0.55	
4,262.0	3.20	265.70	4,254.6	-29.6	-217.5	219.1	1.26	-0.22	
4,353.0	3.10	264.70	4,345.4	-30.1	-222.5	224.0	0.13	-0.11	
4,445.0	2.90	263.90	4,437.3	-30.5	-227.3	228.8	0.22	-0.22	
4,536.0	3.20	252.50	4,528.2	-31.5	-232.0	233.7	0.74	0.33	
4,627.0	2.90	274.90	4,619.0	-32.1	-236.7	238.4	1.34	-0.33	
4,719.0	2.90	270.80	4,710.9	-31.9	-241.3	242.9	0.23	0.00	
4,810.0	2.90	264.90	4,801.8	-32.0	-245.9	247.4	0.33	0.00	
4,901.0	2.90	257.20	4,892.7	-32.8	-250.5	252.0	0.43	0.00	
4,993.0	2.60	277.20	4,984.6	-33.0	-254.8	256.3	1.09	-0.33	
5,084.0	2.50	281.90	5,075.5	-32.4	-258.8	260.1	0.25	-0.11	
5,175.0	2.40	275.40	5,166.4	-31.8	-262.7	263.8	0.32	-0.11	
5,267.0	2.10	272.60	5,258.3	-31.5	-266.3	267.2	0.35	-0.33	
5,358.0	3.40	280.40	5,349.2	-30.9	-270.6	271.4	1.48	1.43	
5,450.0	3.70	281.60	5,441.1	-29.9	-276.2	276.6	0.34	0.33	
5,541.0	4.20	278.00	5,531.8	-28.8	-282.3	282.5	0.61	0.55	
5,633.0	4.80	267.60	5,623.6	-28.5	-289.5	289.5	1.10	0.65	
5,725.0	4.40	271.30	5,715.3	-28.6	-296.9	296.7	0.54	-0.43	
5,816.0	5.00	260.90	5,806.0	-29.1	-304.3	304.1	1.14	0.66	
5,908.0	4.90	257.00	5,897.6	-30.6	-312.1	312.0	0.38	-0.11	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well 8504B-36 (was 8510F-25)
Project:	Story Gulch	TVD Reference:	KB @ 8324.0ft (Original Well Elev)
Site:	S36-T4S-R96W (D36 496)	MD Reference:	KB @ 8324.0ft (Original Well Elev)
Well:	8504B-36 (was 8510F-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
5,999.0	4.40	257.40	5,988.3	-32.3	-319.3	319.4	0.55	-0.55	
6,091.0	4.20	256.50	6,080.1	-33.8	-326.0	326.3	0.23	-0.22	
6,183.0	3.80	253.10	6,171.8	-35.5	-332.2	332.7	0.51	-0.43	
6,275.0	3.00	248.60	6,263.7	-37.3	-337.4	338.1	0.92	-0.87	
6,367.0	2.60	264.90	6,355.6	-38.3	-341.7	342.5	0.96	-0.43	
6,458.0	2.60	262.20	6,446.5	-38.8	-345.8	346.6	0.13	0.00	
6,549.0	3.00	258.60	6,537.4	-39.5	-350.2	351.1	0.48	0.44	
6,641.0	3.00	249.60	6,629.2	-40.9	-354.8	355.9	0.51	0.00	
6,733.0	2.60	264.60	6,721.1	-41.9	-359.1	360.3	0.90	-0.43	
6,824.0	2.50	259.60	6,812.0	-42.4	-363.1	364.4	0.27	-0.11	
6,916.0	2.70	273.10	6,904.0	-42.7	-367.2	368.5	0.70	0.22	
7,008.0	2.30	272.40	6,995.9	-42.5	-371.3	372.4	0.44	-0.43	
7,099.0	2.60	271.20	7,086.8	-42.4	-375.1	376.1	0.33	0.33	
7,191.0	2.20	263.00	7,178.7	-42.6	-379.0	379.9	0.57	-0.43	
7,283.0	2.20	265.20	7,270.6	-42.9	-382.5	383.5	0.09	0.00	
7,374.0	1.10	256.20	7,361.6	-43.3	-385.1	386.1	1.24	-1.21	
7,466.0	1.00	252.00	7,453.6	-43.7	-386.7	387.7	0.14	-0.11	
7,557.0	0.80	140.20	7,544.6	-44.5	-387.1	388.2	1.64	-0.22	
7,648.0	0.80	117.50	7,635.6	-45.2	-386.1	387.4	0.35	0.00	
7,740.0	2.00	75.10	7,727.5	-45.1	-384.0	385.3	1.64	1.30	
7,832.0	1.80	66.70	7,819.5	-44.1	-381.1	382.3	0.37	-0.22	
7,924.0	1.40	73.00	7,911.5	-43.2	-378.7	379.8	0.47	-0.43	
8,015.0	0.80	72.00	8,002.4	-42.7	-377.0	378.0	0.66	-0.66	
8,106.0	0.40	85.30	8,093.4	-42.5	-376.1	377.1	0.46	-0.44	
8,198.0	0.60	189.80	8,185.4	-42.9	-375.9	377.0	0.87	0.22	
8,290.0	0.60	162.60	8,277.4	-43.9	-375.8	377.1	0.31	0.00	
8,381.0	0.50	176.80	8,368.4	-44.7	-375.6	377.1	0.18	-0.11	
8,473.0	0.50	195.80	8,460.4	-45.5	-375.7	377.3	0.18	0.00	
8,565.0	0.80	158.80	8,552.4	-46.5	-375.6	377.4	0.54	0.33	
8,657.0	0.60	193.40	8,644.4	-47.6	-375.5	377.5	0.50	-0.22	
8,748.0	1.00	189.30	8,735.4	-48.8	-375.7	378.0	0.44	0.44	
8,840.0	0.50	266.70	8,827.4	-49.6	-376.2	378.6	1.10	-0.54	
8,931.0	1.10	44.60	8,918.4	-49.0	-376.0	378.3	1.66	0.66	
9,114.0	0.70	347.90	9,101.4	-46.7	-375.0	376.9	0.51	-0.22	
9,206.0	0.50	341.40	9,193.4	-45.8	-375.3	376.9	0.23	-0.22	
9,390.0	0.60	264.40	9,377.4	-45.1	-376.5	378.0	0.37	0.05	
9,481.0	1.00	253.40	9,468.3	-45.4	-377.7	379.3	0.47	0.44	
9,573.0	0.70	228.30	9,560.3	-46.0	-378.9	380.5	0.51	-0.33	
9,664.0	0.70	193.00	9,651.3	-46.9	-379.5	381.3	0.47	0.00	
9,755.0	1.40	352.10	9,742.3	-46.3	-379.7	381.4	2.27	0.77	
9,847.0	1.20	337.90	9,834.3	-44.3	-380.2	381.5	0.41	-0.22	
9,938.0	1.20	315.20	9,925.3	-42.8	-381.3	382.2	0.52	0.00	
10,030.0	1.50	294.60	10,017.3	-41.6	-383.0	383.7	0.62	0.33	
10,122.0	1.70	280.10	10,109.2	-40.8	-385.5	386.0	0.49	0.22	
10,213.0	1.80	274.20	10,200.2	-40.5	-388.2	388.6	0.23	0.11	
10,305.0	1.50	157.40	10,292.1	-41.5	-389.2	389.8	3.06	-0.33	
10,397.0	1.70	150.90	10,384.1	-43.8	-388.1	389.1	0.29	0.22	
10,488.0	1.70	172.40	10,475.1	-46.3	-387.3	388.8	0.70	0.00	
10,580.0	1.60	79.50	10,567.0	-47.4	-385.8	387.6	2.60	-0.11	
10,671.0	1.10	96.20	10,658.0	-47.3	-383.7	385.5	0.69	-0.55	
10,762.0	0.90	117.70	10,749.0	-47.7	-382.2	384.1	0.46	-0.22	
10,853.0	0.50	157.70	10,840.0	-48.4	-381.4	383.5	0.67	-0.44	
10,945.0	0.40	171.90	10,932.0	-49.1	-381.2	383.4	0.16	-0.11	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well 8504B-36 (was 8510F-25)
Project:	Story Gulch	TVD Reference:	KB @ 8324.0ft (Original Well Elev)
Site:	S36-T4S-R96W (D36 496)	MD Reference:	KB @ 8324.0ft (Original Well Elev)
Well:	8504B-36 (was 8510F-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
11,037.0	1.40	269.80	11,024.0	-49.4	-382.3	384.5	1.64	1.09	
11,129.0	1.00	258.10	11,116.0	-49.6	-384.2	386.4	0.51	-0.43	
11,220.0	0.80	345.40	11,207.0	-49.2	-385.1	387.3	1.37	-0.22	
11,402.0	1.10	5.50	11,388.9	-46.2	-385.3	386.8	0.24	0.16	
11,494.0	0.90	353.70	11,480.9	-44.6	-385.3	386.5	0.31	-0.22	
11,586.0	1.00	324.20	11,572.9	-43.2	-385.8	386.8	0.54	0.11	
11,678.0	1.40	284.70	11,664.9	-42.3	-387.4	388.1	0.97	0.43	
11,769.0	2.30	284.20	11,755.8	-41.6	-390.2	390.8	0.99	0.99	
11,906.0	2.50	263.50	11,892.7	-41.2	-395.9	396.2	0.65	0.15	
11,995.0	2.60	265.60	11,981.6	-41.6	-399.8	400.2	0.15	0.11	Last Cathedral Survey @ 11995' MD Projection to Bit @ 12055' MD
12,055.0	2.60	265.60	12,041.6	-41.8	-402.5	402.9	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
8504B-36 D36 496 PBH - survey misses target center by 664.6ft at 12055.0ft MD (12041.6 TVD, -41.8 N, -402.5 E) - Rectangle (sides W30.0 H50.0 D0.0)	0.00	0.00	12,706.0	-54.6	-399.6	1,677,764.32	2,261,343.18	39° 39' 53.87 N	108° 7' 27.01 W
8504B-36 D36 496 TGT - survey misses target center by 5.7ft at 8005.5ft MD (7992.9 TVD, -42.8 N, -377.1 E) - Point	0.00	0.00	7,993.0	-44.6	-382.6	1,677,773.81	2,261,360.51	39° 39' 53.97 N	108° 7' 26.79 W

Survey Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
11,995.0	11,981.6	-41.6	-399.8	Last Cathedral Survey @ 11995' MD	
12,055.0	12,041.6	-41.8	-402.5	Projection to Bit @ 12055' MD	

Checked By: _____ Approved By: _____ Date: _____