



Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well 8503D-34 E34 496
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 8324.0ft (Original Well Elev)
Project:	Story Gulch	MD Reference:	WELL @ 8324.0ft (Original Well Elev)
Site:	S33-T4S-R96W (E34 496)	North Reference:	True
Well:	8503D-34 E34 496	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

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		S33-T4S-R96W (E34 496)			
Site Position:		Northing:	1,676,257.20 ft	Latitude:	39° 39' 36.020 N
From:	Lat/Long	Easting:	2,251,040.13 ft	Longitude:	108° 9' 38.140 W
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.68 °

Well	8503D-34 E34 496					
Well Position	+N/-S	0.0 ft	Northing:	1,676,291.21 ft	Latitude:	39° 39' 36.360 N
	+E/-W	0.0 ft	Easting:	2,251,053.65 ft	Longitude:	108° 9' 37.980 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	8,301.0 ft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	6/19/2012	10.32	65.82	52,197

Design	Plan #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	13.93

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.00	0.00	
566.9	11.01	14.43	564.6	34.0	8.8	3.00	3.00	0.00	14.43	
7,449.2	11.01	14.43	7,320.4	1,306.6	336.2	0.00	0.00	0.00	0.00	
7,816.1	0.00	0.00	7,685.0	1,340.6	345.0	3.00	-3.00	0.00	180.00	E34 496 8503D-34 TC
7,860.6	0.22	236.22	7,729.5	1,340.6	344.9	0.50	0.50	-278.39	236.22	
12,485.1	0.22	236.22	12,354.0	1,330.6	330.0	0.00	0.00	0.00	0.00	E34 496 8503D-34 Pf
12,635.1	0.22	236.22	12,504.0	1,330.3	329.5	0.00	0.00	0.00	0.00	

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Project:	Story Gulch	MD Reference:	WELL @ 8324.0ft (Original Well Elev)
Site:	S33-T4S-R96W (E34 496)	North Reference:	True
Well:	8503D-34 E34 496	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	KOP @ 200'
300.0	3.00	14.43	300.0	2.5	0.7	2.6	3.00	3.00	
400.0	6.00	14.43	399.6	10.1	2.6	10.5	3.00	3.00	
500.0	9.00	14.43	498.8	22.8	5.9	23.5	3.00	3.00	
566.9	11.01	14.43	564.6	34.0	8.8	35.1	3.00	3.00	EOB; Inc=11°
600.0	11.01	14.43	597.1	40.1	10.3	41.5	0.00	0.00	
700.0	11.01	14.43	695.3	58.6	15.1	60.5	0.00	0.00	
800.0	11.01	14.43	793.5	77.1	19.8	79.6	0.00	0.00	
900.0	11.01	14.43	891.6	95.6	24.6	98.7	0.00	0.00	
1,000.0	11.01	14.43	989.8	114.1	29.4	117.8	0.00	0.00	
1,100.0	11.01	14.43	1,087.9	132.6	34.1	136.9	0.00	0.00	
1,200.0	11.01	14.43	1,186.1	151.1	38.9	156.0	0.00	0.00	
1,237.6	11.01	14.43	1,223.0	158.0	40.7	163.2	0.00	0.00	Formation 2
1,300.0	11.01	14.43	1,284.3	169.6	43.6	175.1	0.00	0.00	
1,394.5	11.01	14.43	1,377.0	187.0	48.1	193.1	0.00	0.00	Formation 3
1,400.0	11.01	14.43	1,382.4	188.1	48.4	194.2	0.00	0.00	
1,417.9	11.01	14.43	1,400.0	191.4	49.3	197.6	0.00	0.00	Formation 4
1,500.0	11.01	14.43	1,480.6	206.6	53.2	213.3	0.00	0.00	
1,600.0	11.01	14.43	1,578.7	225.0	57.9	232.4	0.00	0.00	
1,700.0	11.01	14.43	1,676.9	243.5	62.7	251.5	0.00	0.00	
1,800.0	11.01	14.43	1,775.1	262.0	67.4	270.6	0.00	0.00	
1,900.0	11.01	14.43	1,873.2	280.5	72.2	289.6	0.00	0.00	
2,000.0	11.01	14.43	1,971.4	299.0	76.9	308.7	0.00	0.00	
2,100.0	11.01	14.43	2,069.5	317.5	81.7	327.8	0.00	0.00	
2,200.0	11.01	14.43	2,167.7	336.0	86.5	346.9	0.00	0.00	
2,300.0	11.01	14.43	2,265.9	354.5	91.2	366.0	0.00	0.00	
2,370.4	11.01	14.43	2,335.0	367.5	94.6	379.5	0.00	0.00	Formation 5
2,400.0	11.01	14.43	2,364.0	373.0	96.0	385.1	0.00	0.00	
2,500.0	11.01	14.43	2,462.2	391.5	100.7	404.2	0.00	0.00	
2,600.0	11.01	14.43	2,560.3	409.9	105.5	423.3	0.00	0.00	
2,700.0	11.01	14.43	2,658.5	428.4	110.3	442.4	0.00	0.00	
2,800.0	11.01	14.43	2,756.7	446.9	115.0	461.5	0.00	0.00	
2,900.0	11.01	14.43	2,854.8	465.4	119.8	480.6	0.00	0.00	
3,000.0	11.01	14.43	2,953.0	483.9	124.5	499.7	0.00	0.00	
3,100.0	11.01	14.43	3,051.1	502.4	129.3	518.7	0.00	0.00	
3,200.0	11.01	14.43	3,149.3	520.9	134.0	537.8	0.00	0.00	
3,300.0	11.01	14.43	3,247.5	539.4	138.8	556.9	0.00	0.00	
3,394.3	11.01	14.43	3,340.0	556.8	143.3	574.9	0.00	0.00	Formation 6
3,400.0	11.01	14.43	3,345.6	557.9	143.6	576.0	0.00	0.00	
3,500.0	11.01	14.43	3,443.8	576.4	148.3	595.1	0.00	0.00	
3,600.0	11.01	14.43	3,542.0	594.9	153.1	614.2	0.00	0.00	
3,700.0	11.01	14.43	3,640.1	613.3	157.8	633.3	0.00	0.00	
3,800.0	11.01	14.43	3,738.3	631.8	162.6	652.4	0.00	0.00	
3,900.0	11.01	14.43	3,836.4	650.3	167.4	671.5	0.00	0.00	
4,000.0	11.01	14.43	3,934.6	668.8	172.1	690.6	0.00	0.00	
4,100.0	11.01	14.43	4,032.8	687.3	176.9	709.7	0.00	0.00	
4,200.0	11.01	14.43	4,130.9	705.8	181.6	728.8	0.00	0.00	
4,300.0	11.01	14.43	4,229.1	724.3	186.4	747.9	0.00	0.00	
4,400.0	11.01	14.43	4,327.2	742.8	191.2	766.9	0.00	0.00	
4,500.0	11.01	14.43	4,425.4	761.3	195.9	786.0	0.00	0.00	

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Well:	8503D-34 E34 496	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
4,600.0	11.01	14.43	4,523.6	779.8	200.7	805.1	0.00	0.00	
4,700.0	11.01	14.43	4,621.7	798.2	205.4	824.2	0.00	0.00	
4,800.0	11.01	14.43	4,719.9	816.7	210.2	843.3	0.00	0.00	
4,900.0	11.01	14.43	4,818.0	835.2	214.9	862.4	0.00	0.00	
5,000.0	11.01	14.43	4,916.2	853.7	219.7	881.5	0.00	0.00	
5,100.0	11.01	14.43	5,014.4	872.2	224.5	900.6	0.00	0.00	
5,200.0	11.01	14.43	5,112.5	890.7	229.2	919.7	0.00	0.00	
5,300.0	11.01	14.43	5,210.7	909.2	234.0	938.8	0.00	0.00	
5,400.0	11.01	14.43	5,308.8	927.7	238.7	957.9	0.00	0.00	
5,500.0	11.01	14.43	5,407.0	946.2	243.5	977.0	0.00	0.00	
5,592.7	11.01	14.43	5,498.0	963.3	247.9	994.7	0.00	0.00	Formation 7
5,600.0	11.01	14.43	5,505.2	964.7	248.3	996.0	0.00	0.00	
5,700.0	11.01	14.43	5,603.3	983.1	253.0	1,015.1	0.00	0.00	
5,800.0	11.01	14.43	5,701.5	1,001.6	257.8	1,034.2	0.00	0.00	
5,900.0	11.01	14.43	5,799.6	1,020.1	262.5	1,053.3	0.00	0.00	
6,000.0	11.01	14.43	5,897.8	1,038.6	267.3	1,072.4	0.00	0.00	
6,100.0	11.01	14.43	5,996.0	1,057.1	272.0	1,091.5	0.00	0.00	
6,200.0	11.01	14.43	6,094.1	1,075.6	276.8	1,110.6	0.00	0.00	
6,300.0	11.01	14.43	6,192.3	1,094.1	281.6	1,129.7	0.00	0.00	
6,400.0	11.01	14.43	6,290.4	1,112.6	286.3	1,148.8	0.00	0.00	
6,500.0	11.01	14.43	6,388.6	1,131.1	291.1	1,167.9	0.00	0.00	
6,600.0	11.01	14.43	6,486.8	1,149.6	295.8	1,187.0	0.00	0.00	
6,700.0	11.01	14.43	6,584.9	1,168.0	300.6	1,206.1	0.00	0.00	
6,800.0	11.01	14.43	6,683.1	1,186.5	305.4	1,225.1	0.00	0.00	
6,900.0	11.01	14.43	6,781.2	1,205.0	310.1	1,244.2	0.00	0.00	
7,000.0	11.01	14.43	6,879.4	1,223.5	314.9	1,263.3	0.00	0.00	
7,100.0	11.01	14.43	6,977.6	1,242.0	319.6	1,282.4	0.00	0.00	
7,200.0	11.01	14.43	7,075.7	1,260.5	324.4	1,301.5	0.00	0.00	
7,300.0	11.01	14.43	7,173.9	1,279.0	329.1	1,320.6	0.00	0.00	
7,400.0	11.01	14.43	7,272.0	1,297.5	333.9	1,339.7	0.00	0.00	
7,449.2	11.01	14.43	7,320.4	1,306.6	336.2	1,349.1	0.00	0.00	Start Drop -3.00
7,500.0	9.48	14.43	7,370.3	1,315.3	338.5	1,358.1	3.00	-3.00	
7,600.0	6.48	14.43	7,469.4	1,328.8	342.0	1,372.0	3.00	-3.00	
7,700.0	3.48	14.43	7,569.0	1,337.2	344.1	1,380.7	3.00	-3.00	
7,800.0	0.48	14.43	7,668.9	1,340.5	345.0	1,384.2	3.00	-3.00	
7,816.1	0.00	0.00	7,685.0	1,340.6	345.0	1,384.2	3.00	-3.00	EOD; Inc=0° - Formation 8 - E34 496 8503D-34
7,860.6	0.22	236.22	7,729.5	1,340.6	344.9	1,384.2	0.50	0.50	
7,900.0	0.22	236.22	7,768.9	1,340.5	344.8	1,384.1	0.00	0.00	
8,000.0	0.22	236.22	7,868.9	1,340.3	344.5	1,383.8	0.00	0.00	
8,100.0	0.22	236.22	7,968.9	1,340.0	344.2	1,383.5	0.00	0.00	
8,200.0	0.22	236.22	8,068.9	1,339.8	343.8	1,383.2	0.00	0.00	
8,300.0	0.22	236.22	8,168.9	1,339.6	343.5	1,382.9	0.00	0.00	
8,400.0	0.22	236.22	8,268.9	1,339.4	343.2	1,382.6	0.00	0.00	
8,500.0	0.22	236.22	8,368.9	1,339.2	342.9	1,382.3	0.00	0.00	
8,600.0	0.22	236.22	8,468.9	1,339.0	342.5	1,382.0	0.00	0.00	
8,700.0	0.22	236.22	8,568.9	1,338.7	342.2	1,381.8	0.00	0.00	
8,800.0	0.22	236.22	8,668.9	1,338.5	341.9	1,381.5	0.00	0.00	
8,900.0	0.22	236.22	8,768.9	1,338.3	341.6	1,381.2	0.00	0.00	
9,000.0	0.22	236.22	8,868.9	1,338.1	341.3	1,380.9	0.00	0.00	
9,100.0	0.22	236.22	8,968.9	1,337.9	340.9	1,380.6	0.00	0.00	
9,200.0	0.22	236.22	9,068.9	1,337.7	340.6	1,380.3	0.00	0.00	
9,300.0	0.22	236.22	9,168.9	1,337.4	340.3	1,380.0	0.00	0.00	

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Project:	Story Gulch	MD Reference:	WELL @ 8324.0ft (Original Well Elev)
Site:	S33-T4S-R96W (E34 496)	North Reference:	True
Well:	8503D-34 E34 496	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
9,400.0	0.22	236.22	9,268.9	1,337.2	340.0	1,379.7	0.00	0.00	
9,500.0	0.22	236.22	9,368.9	1,337.0	339.6	1,379.5	0.00	0.00	
9,600.0	0.22	236.22	9,468.9	1,336.8	339.3	1,379.2	0.00	0.00	
9,700.0	0.22	236.22	9,568.9	1,336.6	339.0	1,378.9	0.00	0.00	
9,800.0	0.22	236.22	9,668.9	1,336.4	338.7	1,378.6	0.00	0.00	
9,900.0	0.22	236.22	9,768.9	1,336.2	338.4	1,378.3	0.00	0.00	
10,000.0	0.22	236.22	9,868.9	1,335.9	338.0	1,378.0	0.00	0.00	
10,100.0	0.22	236.22	9,968.9	1,335.7	337.7	1,377.7	0.00	0.00	
10,200.0	0.22	236.22	10,068.9	1,335.5	337.4	1,377.4	0.00	0.00	
10,300.0	0.22	236.22	10,168.9	1,335.3	337.1	1,377.2	0.00	0.00	
10,400.0	0.22	236.22	10,268.9	1,335.1	336.7	1,376.9	0.00	0.00	
10,500.0	0.22	236.22	10,368.9	1,334.9	336.4	1,376.6	0.00	0.00	
10,600.0	0.22	236.22	10,468.9	1,334.6	336.1	1,376.3	0.00	0.00	
10,700.0	0.22	236.22	10,568.9	1,334.4	335.8	1,376.0	0.00	0.00	
10,800.0	0.22	236.22	10,668.9	1,334.2	335.4	1,375.7	0.00	0.00	
10,900.0	0.22	236.22	10,768.9	1,334.0	335.1	1,375.4	0.00	0.00	
11,000.0	0.22	236.22	10,868.9	1,333.8	334.8	1,375.2	0.00	0.00	
11,056.1	0.22	236.22	10,925.0	1,333.7	334.6	1,375.0	0.00	0.00	Formation 9
11,100.0	0.22	236.22	10,968.9	1,333.6	334.5	1,374.9	0.00	0.00	
11,200.0	0.22	236.22	11,068.9	1,333.3	334.2	1,374.6	0.00	0.00	
11,300.0	0.22	236.22	11,168.9	1,333.1	333.8	1,374.3	0.00	0.00	
11,400.0	0.22	236.22	11,268.9	1,332.9	333.5	1,374.0	0.00	0.00	
11,461.1	0.22	236.22	11,330.0	1,332.8	333.3	1,373.8	0.00	0.00	Formation 10
11,500.0	0.22	236.22	11,368.9	1,332.7	333.2	1,373.7	0.00	0.00	
11,600.0	0.22	236.22	11,468.9	1,332.5	332.9	1,373.4	0.00	0.00	
11,689.1	0.22	236.22	11,558.0	1,332.3	332.6	1,373.2	0.00	0.00	Formation 11
11,700.0	0.22	236.22	11,568.9	1,332.3	332.5	1,373.1	0.00	0.00	
11,800.0	0.22	236.22	11,668.9	1,332.1	332.2	1,372.9	0.00	0.00	
11,877.1	0.22	236.22	11,746.0	1,331.9	332.0	1,372.6	0.00	0.00	Formation 12
11,900.0	0.22	236.22	11,768.9	1,331.8	331.9	1,372.6	0.00	0.00	
12,000.0	0.22	236.22	11,868.9	1,331.6	331.6	1,372.3	0.00	0.00	
12,100.0	0.22	236.22	11,968.9	1,331.4	331.3	1,372.0	0.00	0.00	
12,185.1	0.22	236.22	12,054.0	1,331.2	331.0	1,371.8	0.00	0.00	Formation 13
12,200.0	0.22	236.22	12,068.9	1,331.2	330.9	1,371.7	0.00	0.00	
12,300.0	0.22	236.22	12,168.9	1,331.0	330.6	1,371.4	0.00	0.00	
12,335.1	0.22	236.22	12,204.0	1,330.9	330.5	1,371.3	0.00	0.00	Formation 14
12,400.0	0.22	236.22	12,268.9	1,330.8	330.3	1,371.1	0.00	0.00	
12,485.1	0.22	236.22	12,354.0	1,330.6	330.0	1,370.9	0.00	0.00	Drillers TD @ 12,485' MD - E34 496 8503D-34
12,500.0	0.22	236.22	12,368.9	1,330.5	330.0	1,370.8	0.00	0.00	
12,600.0	0.22	236.22	12,468.9	1,330.3	329.6	1,370.6	0.00	0.00	
12,635.1	0.22	236.22	12,504.0	1,330.3	329.5	1,370.5	0.00	0.00	Permit TD @ 12,635' MD

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well 8503D-34 E34 496
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 8324.0ft (Original Well Elev)
Project:	Story Gulch	MD Reference:	WELL @ 8324.0ft (Original Well Elev)
Site:	S33-T4S-R96W (E34 496)	North Reference:	True
Well:	8503D-34 E34 496	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
- Shape									
E34 496 8503D-34 PBH	0.00	0.00	12,354.0	1,330.6	330.0	1,677,611.55	2,251,422.48	39° 39' 49.510 N	108° 9' 33.760 W
- plan hits target center									
- Rectangle (sides W30.0 H50.0 D0.0)									
E34 496 8503D-34 TGT	0.00	0.00	7,685.0	1,340.6	345.0	1,677,621.13	2,251,437.75	39° 39' 49.609 N	108° 9' 33.568 W
- plan hits target center									
- Point									

Formations						
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction	
(ft)	(ft)			(°)	(°)	
1,237.6	1,223.0	Formation 2				
1,394.5	1,377.0	Formation 3				
1,417.9	1,400.0	Formation 4				
2,370.4	2,335.0	Formation 5				
3,394.3	3,340.0	Formation 6				
5,592.7	5,498.0	Formation 7				
7,816.1	7,685.0	Formation 8				
11,056.1	10,925.0	Formation 9				
11,461.1	11,330.0	Formation 10				
11,689.1	11,558.0	Formation 11				
11,877.1	11,746.0	Formation 12				
12,185.1	12,054.0	Formation 13				
12,335.1	12,204.0	Formation 14				

Plan Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)	
200.0	200.0	0.0	0.0	KOP @ 200'
566.9	564.6	34.0	8.8	EOB; Inc=11°
7,449.2	7,320.4	1,306.6	336.2	Start Drop -3.00
7,816.1	7,685.0	1,340.6	345.0	EOD; Inc=0°
12,485.1	12,354.0	1,340.6	344.9	Drillers TD @ 12,485' MD
12,635.1	12,504.0	1,330.6	330.0	Permit TD @ 12,635' MD