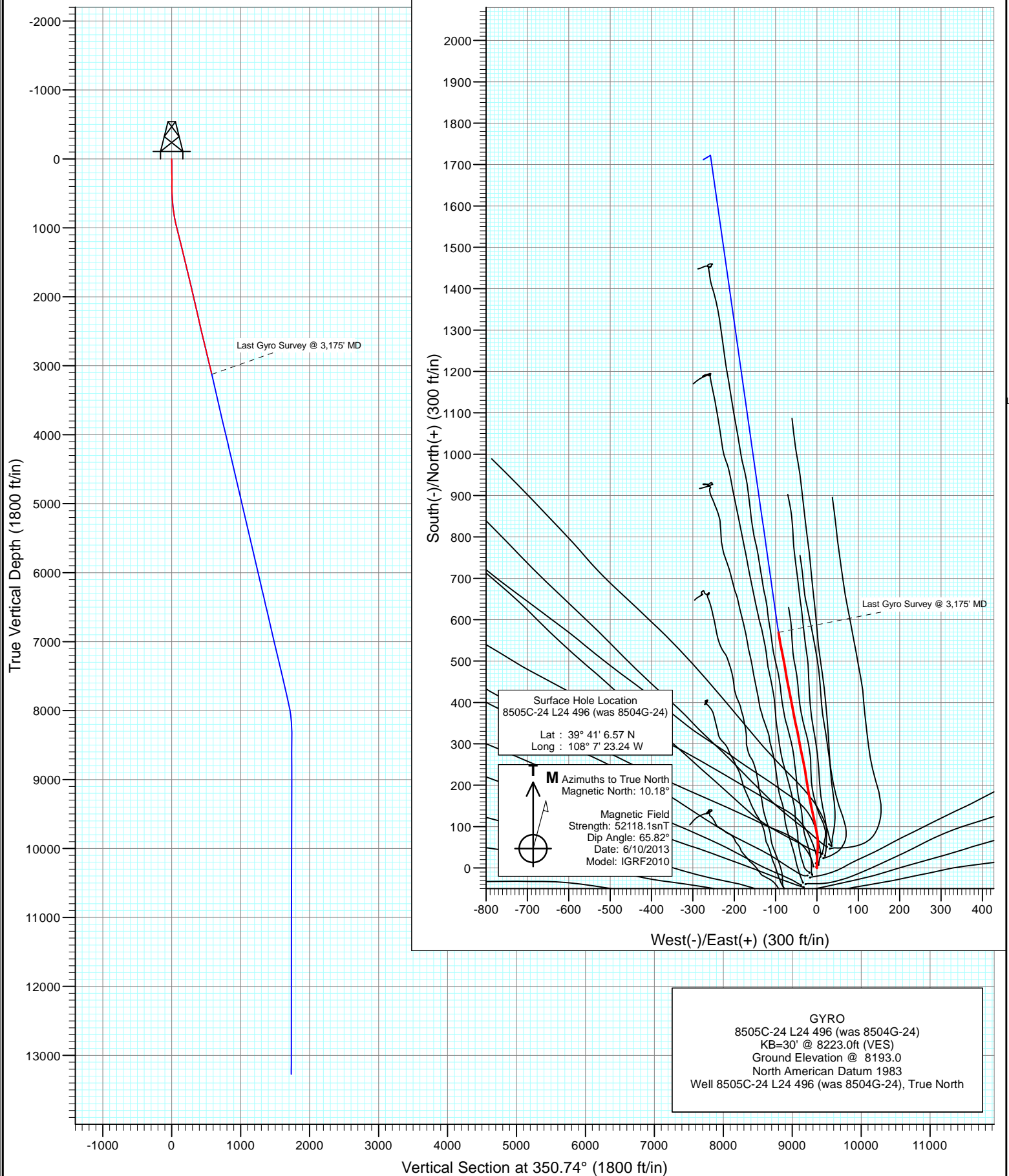




Project: Story Gulch  
Site: L24 496  
Well: 8505C-24 L24 496 (was 8504G-24)  
Wellbore: GYRO  
Design: GYRO



# Cathedral Energy Services

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well 8505C-24 L24 496 (was 8504G-24)
<b>Project:</b>	Story Gulch	<b>TVD Reference:</b>	KB=30' @ 8223.0ft (VES)
<b>Site:</b>	L24 496	<b>MD Reference:</b>	KB=30' @ 8223.0ft (VES)
<b>Well:</b>	8505C-24 L24 496 (was 8504G-24)	<b>North Reference:</b>	True
<b>Wellbore:</b>	GYRO	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	GYRO	<b>Database:</b>	USA EDM 5000 Multi Users DB

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

<b>Site</b>	L24 496			
<b>Site Position:</b>		<b>Northing:</b>	1,685,024.52 ft	<b>Latitude:</b> 39° 41' 5.72 N
<b>From:</b>	Lat/Long	<b>Easting:</b>	2,261,789.15 ft	<b>Longitude:</b> 108° 7' 23.99 W
<b>Position Uncertainty:</b>	0.0 ft	<b>Slot Radius:</b>	13.200 in	<b>Grid Convergence:</b> -1.65 °

<b>Well</b>	8505C-24 L24 496 (was 8504G-24)			
<b>Well Position</b>	<b>+N/-S</b>	0.0 ft	<b>Northing:</b>	1,685,108.78 ft
	<b>+E/-W</b>	0.0 ft	<b>Easting:</b>	2,261,850.24 ft
<b>Position Uncertainty</b>	0.0 ft	<b>Wellhead Elevation:</b>	ft	<b>Ground Level:</b> 8,193.0 ft

<b>Wellbore</b>	GYRO				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	6/10/2013	10.18	65.82	52,118

<b>Design</b>	GYRO			
<b>Audit Notes:</b>				
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b> 0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	350.74

<b>Survey Program</b>	<b>Date</b>	6/10/2013		
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
100.0	3,175.0	Survey #1 (GYRO)	Gyro	Gyro

<b>Survey</b>									
<b>Measured Depth (ft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Vertical Section (ft)</b>	<b>Dogleg Rate (°/100ft)</b>	<b>Build Rate (°/100ft)</b>	<b>Formations / Comments</b>
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
100.0	0.78	338.17	100.0	0.6	-0.3	0.7	0.78	0.78	
200.0	0.69	315.36	200.0	1.7	-0.9	1.8	0.30	-0.08	
300.0	0.09	287.43	300.0	2.1	-1.4	2.3	0.62	-0.61	
400.0	0.57	103.26	400.0	2.1	-1.0	2.2	0.66	0.48	
500.0	2.01	8.19	500.0	3.7	-0.3	3.7	2.14	1.45	
600.0	4.21	2.71	599.8	9.1	0.1	8.9	2.21	2.20	
700.0	6.34	0.70	699.4	18.3	0.4	18.0	2.14	2.13	
800.0	9.38	1.89	798.4	31.9	0.7	31.4	3.05	3.04	
900.0	12.14	7.12	896.7	50.5	2.3	49.5	2.93	2.76	
1,000.0	13.90	350.50	994.1	72.8	1.6	71.6	4.12	1.76	
1,100.0	14.48	348.67	1,091.1	96.9	-2.8	96.1	0.73	0.58	
1,200.0	14.30	347.33	1,187.9	121.2	-8.0	120.9	0.38	-0.18	

# Cathedral Energy Services

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well 8505C-24 L24 496 (was 8504G-24)
<b>Project:</b>	Story Gulch	<b>TVD Reference:</b>	KB=30' @ 8223.0ft (VES)
<b>Site:</b>	L24 496	<b>MD Reference:</b>	KB=30' @ 8223.0ft (VES)
<b>Well:</b>	8505C-24 L24 496 (was 8504G-24)	<b>North Reference:</b>	True
<b>Wellbore:</b>	GYRO	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	GYRO	<b>Database:</b>	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
1,300.0	14.30	348.10	1,284.8	145.4	-13.3	145.6	0.19	0.00	
1,400.0	12.61	350.11	1,382.1	168.2	-17.7	168.9	1.75	-1.69	
1,500.0	12.87	349.88	1,479.6	189.9	-21.5	190.9	0.27	0.26	
1,600.0	13.53	351.56	1,577.0	212.5	-25.2	213.7	0.76	0.65	
1,700.0	14.14	350.12	1,674.1	236.1	-29.0	237.6	0.70	0.61	
1,800.0	13.81	347.94	1,771.1	259.8	-33.6	261.8	0.62	-0.32	
1,900.0	14.06	348.28	1,868.2	283.3	-38.5	285.8	0.26	0.24	
2,000.0	13.61	350.79	1,965.3	306.8	-42.9	309.7	0.75	-0.44	
2,100.0	12.62	347.34	2,062.7	329.1	-47.2	332.4	1.26	-0.99	
2,200.0	12.41	347.30	2,160.3	350.3	-51.9	354.0	0.22	-0.22	
2,300.0	12.11	350.48	2,258.0	371.1	-56.0	375.3	0.73	-0.29	
2,400.0	12.99	348.40	2,355.6	392.4	-60.0	397.0	0.98	0.87	
2,500.0	12.87	349.64	2,453.1	414.4	-64.3	419.3	0.30	-0.12	
2,600.0	13.44	348.44	2,550.5	436.7	-68.6	442.1	0.64	0.58	
2,700.0	13.73	349.16	2,647.7	459.8	-73.2	465.6	0.34	0.29	
2,800.0	13.38	351.86	2,744.9	482.9	-77.0	489.0	0.73	-0.36	
2,900.0	14.10	347.78	2,842.0	506.3	-81.3	512.7	1.21	0.72	
3,000.0	14.21	348.65	2,939.0	530.2	-86.3	537.2	0.24	0.11	
3,100.0	12.80	351.19	3,036.2	553.2	-90.4	560.5	1.53	-1.41	
3,175.0	12.61	351.17	3,109.4	569.5	-92.9	577.0	0.26	-0.26	Last Gyro Survey @ 3,175' MD

### Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Comment
3,175.0	3,109.4	569.5	-92.9	Last Gyro Survey @ 3,175' MD

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_