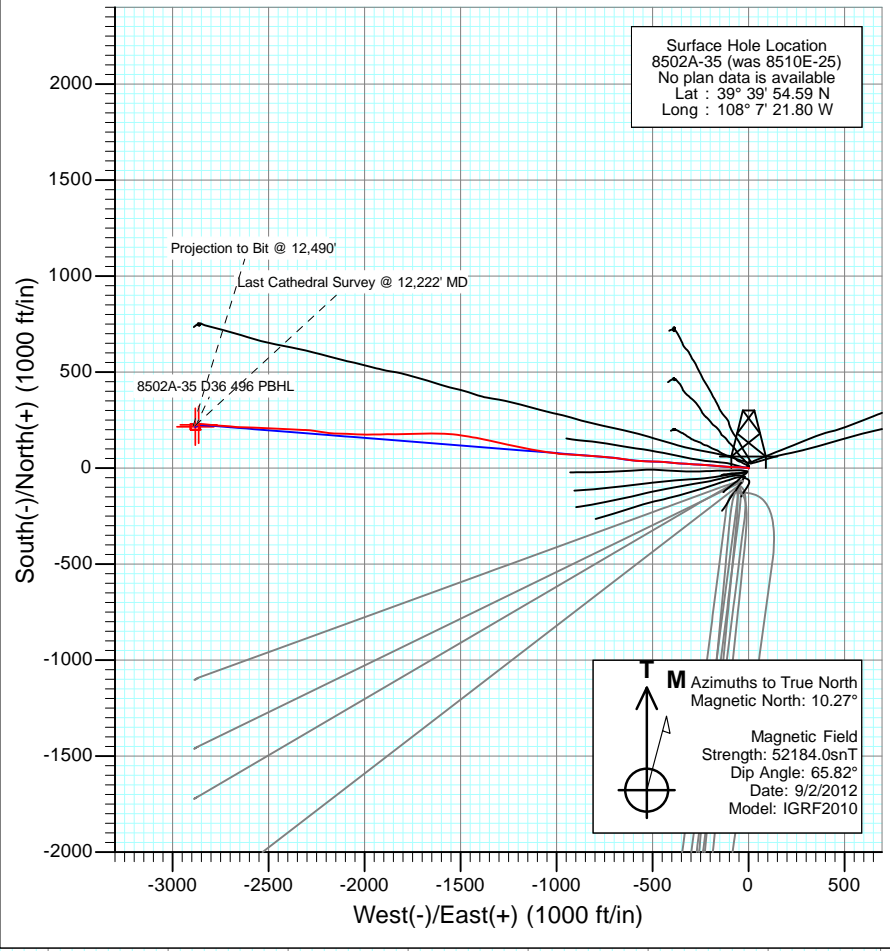
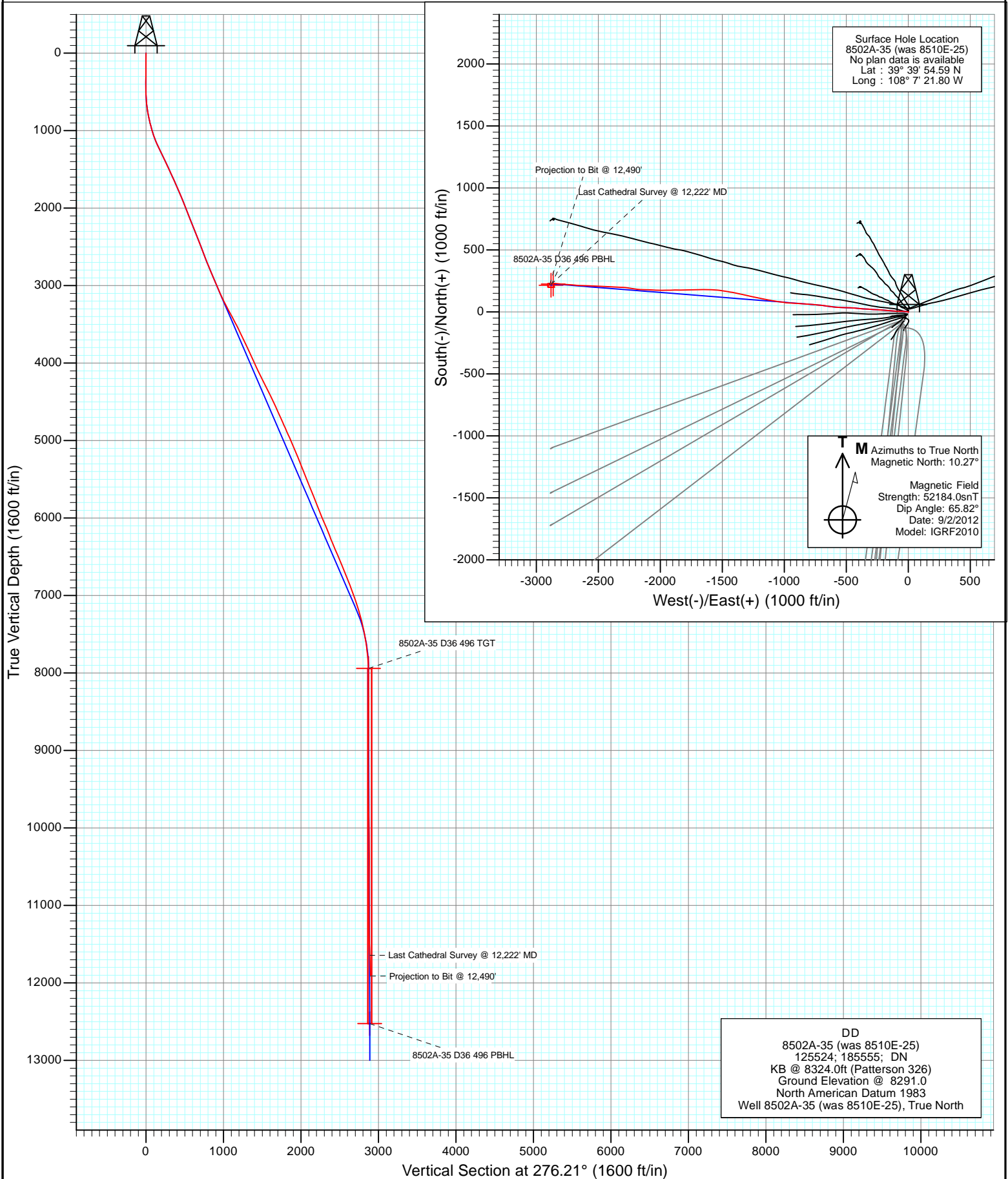




Project: Story Gulch
Site: S36-T4S-R96W (D36 496)
Well: 8502A-35 (was 8510E-25)
Wellbore: DD
Design: FINAL



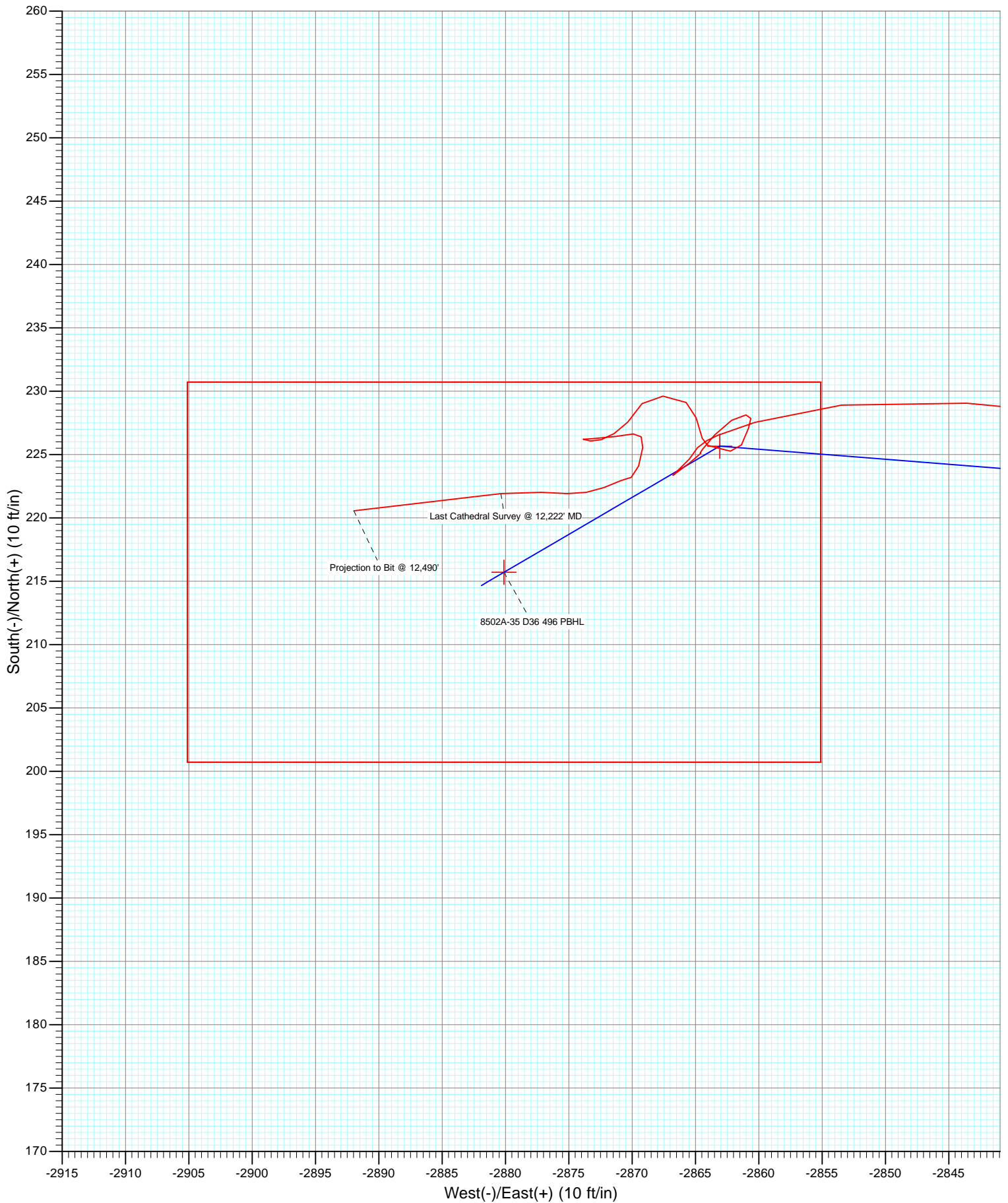
Surface Hole Location
8502A-35 (was 8510E-25)
No plan data is available
Lat : 39° 39' 54.59 N
Long : 108° 7' 21.80 W

M Azimuths to True North
Magnetic North: 10.27°
Magnetic Field
Strength: 52184.0snT
Dip Angle: 65.82°
Date: 9/2/2012
Model: IGRF2010

DD
8502A-35 (was 8510E-25)
125524; 185555; DN
KB @ 8324.0ft (Patterson 326)
Ground Elevation @ 8291.0
North American Datum 1983
Well 8502A-35 (was 8510E-25), True North



Project: Story Gulch
Site: S36-T4S-R96W (D36 496)
Well: 8502A-35 (was 8510E-25)
Wellbore: DD
Design: FINAL



Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well 8502A-35 (was 8510E-25)
Project:	Story Gulch	TVD Reference:	KB @ 8324.0ft (Patterson 326)
Site:	S36-T4S-R96W (D36 496)	MD Reference:	KB @ 8324.0ft (Patterson 326)
Well:	8502A-35 (was 8510E-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	8502A-35 (was 8510E-25)			
Well Position	+N/-S	0.0 ft	Northing:	1,677,825.35 ft
	+E/-W	0.0 ft	Easting:	2,261,752.54 ft
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	9/2/2012	10.27	65.82	52,184

Design	DD				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(ft)	(ft)	(ft)	(°)	
	0.0	0.0	0.0	276.21	

Survey Program	Date	12/15/2012			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
209.0	3,055.0	Survey #1 (DD)	MWD	Geolink MWD	
3,074.0	12,490.0	Survey #2 (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		
209.0	0.70	118.50	209.0	-0.6	1.1	-1.2	0.33	0.33		
240.0	0.70	127.40	240.0	-0.8	1.4	-1.5	0.35	0.00		
270.0	0.50	112.60	270.0	-1.0	1.7	-1.8	0.84	-0.67		
301.0	0.40	111.30	301.0	-1.1	1.9	-2.0	0.32	-0.32		
331.0	0.30	100.30	331.0	-1.1	2.1	-2.2	0.40	-0.33		
362.0	0.20	86.60	362.0	-1.1	2.2	-2.3	0.37	-0.32		
392.0	0.10	100.30	392.0	-1.1	2.3	-2.4	0.35	-0.33		
422.0	0.10	41.30	422.0	-1.1	2.4	-2.5	0.33	0.00		
453.0	0.30	287.20	453.0	-1.1	2.3	-2.4	1.14	0.65		
483.0	0.80	290.70	483.0	-1.0	2.0	-2.1	1.67	1.67		
514.0	1.50	289.80	514.0	-0.8	1.4	-1.5	2.26	2.26		

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well 8502A-35 (was 8510E-25)
Project:	Story Gulch	TVD Reference:	KB @ 8324.0ft (Patterson 326)
Site:	S36-T4S-R96W (D36 496)	MD Reference:	KB @ 8324.0ft (Patterson 326)
Well:	8502A-35 (was 8510E-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
559.0	3.20	283.50	558.9	-0.3	-0.3	0.3	3.82	3.78	
605.0	4.80	280.60	604.8	0.4	-3.5	3.5	3.50	3.48	
650.0	6.00	279.90	649.6	1.1	-7.6	7.7	2.67	2.67	
697.0	7.60	277.70	696.3	2.0	-13.1	13.3	3.45	3.40	
743.0	9.10	275.40	741.8	2.7	-19.8	20.0	3.34	3.26	
789.0	10.40	274.20	787.1	3.4	-27.5	27.7	2.86	2.83	
835.0	11.90	273.50	832.3	4.0	-36.4	36.6	3.27	3.26	
880.0	13.10	272.40	876.2	4.5	-46.1	46.4	2.72	2.67	
926.0	14.30	271.90	920.9	4.9	-57.0	57.2	2.62	2.61	
975.0	15.40	271.50	968.3	5.2	-69.6	69.7	2.25	2.24	
1,021.0	16.80	270.90	1,012.5	5.5	-82.3	82.4	3.06	3.04	
1,067.0	18.50	272.80	1,056.3	6.0	-96.3	96.3	3.90	3.70	
1,113.0	20.30	274.50	1,099.7	6.9	-111.5	111.6	4.10	3.91	
1,159.0	22.50	274.50	1,142.5	8.3	-128.2	128.4	4.78	4.78	
1,251.0	26.10	274.50	1,226.3	11.2	-166.0	166.2	3.91	3.91	
1,342.0	26.20	274.10	1,308.0	14.2	-206.0	206.3	0.22	0.11	
1,434.0	25.40	274.40	1,390.8	17.2	-245.9	246.3	0.88	-0.87	
1,526.0	24.90	273.20	1,474.1	19.8	-284.9	285.4	0.78	-0.54	
1,617.0	24.80	274.00	1,556.7	22.2	-323.1	323.6	0.39	-0.11	
1,709.0	24.20	273.80	1,640.4	24.8	-361.1	361.7	0.66	-0.65	
1,801.0	23.80	275.40	1,724.5	27.8	-398.4	399.1	0.83	-0.43	
1,892.0	22.90	274.80	1,808.0	31.0	-434.4	435.2	1.02	-0.99	
1,984.0	21.90	272.40	1,893.1	33.2	-469.3	470.2	1.47	-1.09	
2,075.0	22.00	271.20	1,977.5	34.3	-503.3	504.1	0.51	0.11	
2,167.0	21.80	272.40	2,062.8	35.4	-537.6	538.3	0.53	-0.22	
2,258.0	21.40	274.30	2,147.4	37.3	-571.1	571.8	0.89	-0.44	
2,350.0	21.20	277.00	2,233.2	40.6	-604.3	605.2	1.09	-0.22	
2,441.0	21.70	278.60	2,317.9	45.1	-637.3	638.4	0.85	0.55	
2,533.0	22.00	277.70	2,403.3	50.0	-671.2	672.7	0.49	0.33	
2,625.0	21.20	276.30	2,488.8	54.1	-704.8	706.5	1.03	-0.87	
2,716.0	20.40	274.50	2,573.9	57.2	-737.0	738.8	1.13	-0.88	
2,807.0	21.10	273.90	2,659.0	59.5	-769.1	771.0	0.80	0.77	
2,899.0	22.80	273.90	2,744.3	61.9	-803.4	805.4	1.85	1.85	
2,985.0	22.60	275.20	2,823.6	64.5	-836.5	838.6	0.63	-0.23	Last Cathedral Survey @ 2985' MD Projection to Bit @ 3055' MD
3,055.0	22.60	275.20	2,888.2	66.9	-863.3	865.5	0.00	0.00	
3,166.0	22.90	271.20	2,990.6	69.3	-906.1	908.3	1.42	0.27	
3,348.0	25.10	275.60	3,156.9	73.8	-980.0	982.2	1.56	1.21	
3,440.0	27.90	278.50	3,239.2	78.9	-1,020.7	1,023.2	3.35	3.04	
3,531.0	27.40	278.90	3,319.8	85.3	-1,062.4	1,065.4	0.59	-0.55	
3,622.0	28.60	280.60	3,400.2	92.5	-1,104.5	1,108.1	1.58	1.32	
3,713.0	27.90	280.60	3,480.3	100.5	-1,146.9	1,151.0	0.77	-0.77	
3,805.0	26.80	280.80	3,562.0	108.3	-1,188.4	1,193.1	1.20	-1.20	
3,896.0	25.70	281.40	3,643.7	116.1	-1,227.9	1,233.2	1.24	-1.21	
3,988.0	25.00	282.70	3,726.8	124.3	-1,266.4	1,272.4	0.97	-0.76	
4,079.0	26.00	284.30	3,808.9	133.4	-1,304.5	1,311.3	1.33	1.10	
4,170.0	23.90	281.40	3,891.4	142.0	-1,341.9	1,349.4	2.67	-2.31	
4,262.0	24.50	281.60	3,975.4	149.5	-1,378.9	1,386.9	0.66	0.65	
4,353.0	25.60	281.00	4,057.8	157.1	-1,416.6	1,425.3	1.24	1.21	
4,445.0	26.70	279.40	4,140.4	164.2	-1,456.5	1,465.8	1.42	1.20	
4,536.0	26.20	278.80	4,221.9	170.6	-1,496.6	1,506.2	0.62	-0.55	
4,628.0	27.20	275.70	4,304.0	175.8	-1,537.6	1,547.6	1.86	1.09	
4,719.0	26.70	273.70	4,385.2	179.2	-1,578.7	1,588.8	1.14	-0.55	
4,811.0	24.60	269.30	4,468.1	180.3	-1,618.4	1,628.5	3.08	-2.28	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well 8502A-35 (was 8510E-25)
Project:	Story Gulch	TVD Reference:	KB @ 8324.0ft (Patterson 326)
Site:	S36-T4S-R96W (D36 496)	MD Reference:	KB @ 8324.0ft (Patterson 326)
Well:	8502A-35 (was 8510E-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
4,902.0	25.10	268.60	4,550.7	179.6	-1,656.7	1,666.4	0.64	0.55	
4,993.0	24.30	268.60	4,633.4	178.7	-1,694.7	1,704.1	0.88	-0.88	
5,085.0	24.90	269.90	4,717.0	178.2	-1,733.0	1,742.1	0.88	0.65	
5,176.0	23.70	269.30	4,799.9	177.9	-1,770.4	1,779.3	1.35	-1.32	
5,267.0	25.00	269.20	4,882.8	177.4	-1,807.9	1,816.5	1.43	1.43	
5,359.0	23.50	268.50	4,966.7	176.7	-1,845.7	1,854.0	1.66	-1.63	
5,450.0	23.20	269.30	5,050.3	176.0	-1,881.8	1,889.8	0.48	-0.33	
5,541.0	22.50	269.50	5,134.1	175.6	-1,917.1	1,924.9	0.77	-0.77	
5,632.0	23.40	269.30	5,217.9	175.3	-1,952.6	1,960.1	0.99	0.99	
5,723.0	22.10	268.20	5,301.8	174.5	-1,987.8	1,995.0	1.50	-1.43	
5,815.0	21.20	273.70	5,387.4	175.0	-2,021.7	2,028.7	2.41	-0.98	
5,907.0	21.90	272.60	5,472.9	176.9	-2,055.4	2,062.5	0.88	0.76	
5,998.0	22.50	271.60	5,557.2	178.1	-2,089.8	2,096.8	0.78	0.66	
6,090.0	21.60	271.40	5,642.5	179.0	-2,124.3	2,131.2	0.98	-0.98	
6,181.0	21.90	273.30	5,727.0	180.4	-2,158.0	2,164.8	0.84	0.33	
6,272.0	21.40	276.60	5,811.6	183.3	-2,191.4	2,198.4	1.45	-0.55	
6,363.0	21.30	279.70	5,896.3	188.0	-2,224.2	2,231.5	1.24	-0.11	
6,455.0	23.30	279.20	5,981.4	193.7	-2,258.7	2,266.4	2.18	2.17	
6,545.0	23.70	273.30	6,064.0	197.6	-2,294.3	2,302.2	2.65	0.44	
6,637.0	21.90	270.70	6,148.8	198.9	-2,329.9	2,337.7	2.24	-1.96	
6,728.0	21.20	273.60	6,233.4	200.1	-2,363.3	2,371.1	1.40	-0.77	
6,819.0	22.60	273.60	6,317.9	202.3	-2,397.2	2,405.0	1.54	1.54	
6,911.0	22.60	272.80	6,402.8	204.2	-2,432.5	2,440.3	0.33	0.00	
7,003.0	23.60	272.80	6,487.4	206.0	-2,468.5	2,476.3	1.09	1.09	
7,093.0	21.50	273.20	6,570.5	207.8	-2,503.0	2,510.8	2.34	-2.33	
7,185.0	22.90	272.00	6,655.7	209.4	-2,537.7	2,545.5	1.60	1.52	
7,276.0	22.40	271.60	6,739.7	210.5	-2,572.7	2,580.4	0.57	-0.55	
7,368.0	21.70	271.50	6,825.0	211.4	-2,607.3	2,614.8	0.76	-0.76	
7,459.0	21.30	271.20	6,909.6	212.2	-2,640.6	2,648.1	0.46	-0.44	
7,550.0	19.50	275.90	6,994.9	214.1	-2,672.2	2,679.7	2.67	-1.98	
7,642.0	18.80	277.10	7,081.8	217.5	-2,702.2	2,709.9	0.87	-0.76	
7,733.0	16.80	272.70	7,168.5	219.9	-2,729.9	2,737.7	2.65	-2.20	
7,825.0	15.30	272.40	7,256.9	221.1	-2,755.3	2,763.1	1.63	-1.63	
7,916.0	12.90	275.40	7,345.1	222.5	-2,777.4	2,785.2	2.76	-2.64	
8,008.0	12.30	275.60	7,434.9	224.5	-2,797.4	2,805.3	0.65	-0.65	
8,100.0	10.90	274.60	7,525.0	226.1	-2,815.8	2,823.8	1.54	-1.52	
8,191.0	8.70	277.60	7,614.7	227.7	-2,831.2	2,839.3	2.48	-2.42	
8,282.0	7.00	274.50	7,704.9	229.1	-2,843.6	2,851.7	1.92	-1.87	
8,374.0	5.40	262.10	7,796.3	228.9	-2,853.5	2,861.5	2.26	-1.74	
8,466.0	3.30	253.20	7,888.1	227.5	-2,860.3	2,868.1	2.39	-2.28	
8,558.0	0.60	238.70	7,980.0	226.5	-2,863.2	2,870.9	2.96	-2.93	
8,650.0	0.60	249.10	8,072.0	226.1	-2,864.1	2,871.7	0.12	0.00	
8,742.0	0.60	216.60	8,164.0	225.5	-2,864.8	2,872.4	0.36	0.00	
8,833.0	0.80	215.30	8,255.0	224.6	-2,865.5	2,873.0	0.22	0.22	
8,924.0	1.20	231.50	8,346.0	223.5	-2,866.6	2,874.0	0.53	0.44	
9,016.0	0.90	53.80	8,438.0	223.4	-2,866.8	2,874.1	2.28	-0.33	
9,108.0	1.10	52.90	8,529.9	224.3	-2,865.5	2,872.9	0.22	0.22	
9,200.0	0.40	38.50	8,621.9	225.1	-2,864.6	2,872.1	0.78	-0.76	
9,291.0	0.40	228.40	8,712.9	225.1	-2,864.6	2,872.2	0.88	0.00	
9,383.0	0.80	40.60	8,804.9	225.4	-2,864.4	2,872.0	1.30	0.43	
9,474.0	1.10	40.20	8,895.9	226.6	-2,863.5	2,871.2	0.33	0.33	
9,566.0	1.10	58.00	8,987.9	227.7	-2,862.1	2,870.0	0.37	0.00	
9,657.0	0.50	95.40	9,078.9	228.1	-2,861.0	2,868.9	0.84	-0.66	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well 8502A-35 (was 8510E-25)
Project:	Story Gulch	TVD Reference:	KB @ 8324.0ft (Patterson 326)
Site:	S36-T4S-R96W (D36 496)	MD Reference:	KB @ 8324.0ft (Patterson 326)
Well:	8502A-35 (was 8510E-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
9,749.0	0.30	184.40	9,170.9	227.9	-2,860.6	2,868.5	0.63	-0.22	
9,840.0	0.70	196.80	9,261.9	227.1	-2,860.8	2,868.6	0.45	0.44	
9,932.0	1.10	206.80	9,353.9	225.8	-2,861.4	2,869.0	0.47	0.43	
10,024.0	0.70	302.90	9,445.9	225.3	-2,862.2	2,869.8	1.48	-0.43	
10,115.0	0.90	268.80	9,536.9	225.6	-2,863.4	2,871.0	0.56	0.22	
10,207.0	1.00	337.10	9,628.8	226.3	-2,864.5	2,872.1	1.16	0.11	
10,299.0	1.10	348.50	9,720.8	227.9	-2,864.9	2,872.8	0.25	0.11	
10,390.0	0.90	300.50	9,811.8	229.1	-2,865.7	2,873.7	0.92	-0.22	
10,482.0	1.50	276.50	9,903.8	229.6	-2,867.6	2,875.6	0.84	0.65	
10,573.0	1.10	213.40	9,994.8	229.0	-2,869.2	2,877.1	1.54	-0.44	
10,665.0	1.20	221.70	10,086.8	227.6	-2,870.3	2,878.1	0.21	0.11	
10,757.0	0.60	246.70	10,178.7	226.7	-2,871.4	2,879.1	0.76	-0.65	
10,848.0	0.80	243.80	10,269.7	226.2	-2,872.4	2,880.0	0.22	0.22	
10,940.0	0.40	302.80	10,361.7	226.1	-2,873.3	2,880.9	0.75	-0.43	
11,032.0	0.40	263.70	10,453.7	226.2	-2,873.9	2,881.5	0.29	0.00	
11,123.0	1.20	86.30	10,544.7	226.2	-2,873.2	2,880.8	1.76	0.88	
11,215.0	1.20	82.10	10,636.7	226.4	-2,871.3	2,879.0	0.10	0.00	
11,306.0	0.60	82.00	10,727.7	226.6	-2,869.9	2,877.6	0.66	-0.66	
11,398.0	0.40	154.70	10,819.7	226.4	-2,869.3	2,876.9	0.67	-0.22	
11,489.0	0.70	179.80	10,910.7	225.6	-2,869.2	2,876.7	0.42	0.33	
11,581.0	1.20	200.60	11,002.7	224.1	-2,869.5	2,876.9	0.65	0.54	
11,673.0	0.30	270.00	11,094.7	223.2	-2,870.1	2,877.4	1.23	-0.98	
11,764.0	0.80	246.10	11,185.7	222.9	-2,870.9	2,878.2	0.59	0.55	
11,856.0	1.00	248.80	11,277.7	222.4	-2,872.2	2,879.4	0.22	0.22	
11,948.0	0.80	263.30	11,369.6	222.0	-2,873.6	2,880.8	0.33	-0.22	
12,039.0	1.10	267.80	11,460.6	221.9	-2,875.1	2,882.2	0.34	0.33	
12,130.0	1.50	276.50	11,551.6	222.0	-2,877.2	2,884.3	0.49	0.44	
12,222.0	2.50	263.30	11,643.6	221.9	-2,880.4	2,887.5	1.19	1.09	Last Cathedral Survey @ 12,222' MD
12,490.0	2.50	263.30	11,911.3	220.6	-2,892.0	2,898.9	0.00	0.00	Projection to Bit @ 12,490'

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well 8502A-35 (was 8510E-25)
Project:	Story Gulch	TVD Reference:	KB @ 8324.0ft (Patterson 326)
Site:	S36-T4S-R96W (D36 496)	MD Reference:	KB @ 8324.0ft (Patterson 326)
Well:	8502A-35 (was 8510E-25)	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	DD	Database:	USA EDM 5000 Multi Users DB

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									
8502A-35 D36 496 PBH	0.00	0.00	12,525.0	215.7	-2,880.1	1,678,124.11	2,258,879.86	39° 39' 56.72 N	108° 7' 58.63 W
- actual wellpath misses target center by 613.8ft at 12490.0ft MD (11911.3 TVD, 220.6 N, -2892.0 E)									
- Rectangle (sides W30.0 H50.0 D0.0)									
8502A-35 D36 496 TGT	0.00	0.00	7,941.0	225.7	-2,863.1	1,678,133.57	2,258,897.17	39° 39' 56.82 N	108° 7' 58.41 W
- actual wellpath misses target center by 1.3ft at 8519.0ft MD (7941.0 TVD, 226.8 N, -2862.5 E)									
- Point									

Design Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)	
2,985.0	2,823.6	64.5	-836.5	Last Cathedral Survey @ 2985' MD
3,055.0	2,888.2	66.9	-863.3	Projection to Bit @ 3055' MD
12,222.0	11,643.6	221.9	-2,880.4	Last Cathedral Survey @ 12,222' MD
12,490.0	11,911.3	220.6	-2,892.0	Projection to Bit @ 12,490'

Checked By: _____ Approved By: _____ Date: _____