How to Run the CASPiE Gas Chromatograph

A gas chromatograph (GC) is used to **separate** and **quantify** complex mixtures. You will use the CASPiE GC to quantify Fatty Acid Methyl Esters (FAME) in food samples.

You must have already created and saved a batch file before you run the GC. (Instructions for this are provided in a different document.)

Please Note:

DO NOT make any changes to the instrument that are not instructed in this document. Others will use the instrument after you. Be courteous to your fellow students and leave them a usable instrument!

Load the CASPiE Instrument Site

- **To open the GC control software launch your web browser and navigate to the CASPiE instrument website at https://instruments.caspie.org.**
- **Enter your account information to login.**

The GC Control Software

The software used to control the GC instrument is called 'GC Remote Control'.

You will only have access to the GC instrument for <u>remote control</u> during your scheduled hours.

You will also see the icon for GC data processing. You will always have access to the GC data processing software during a CASPiE module.
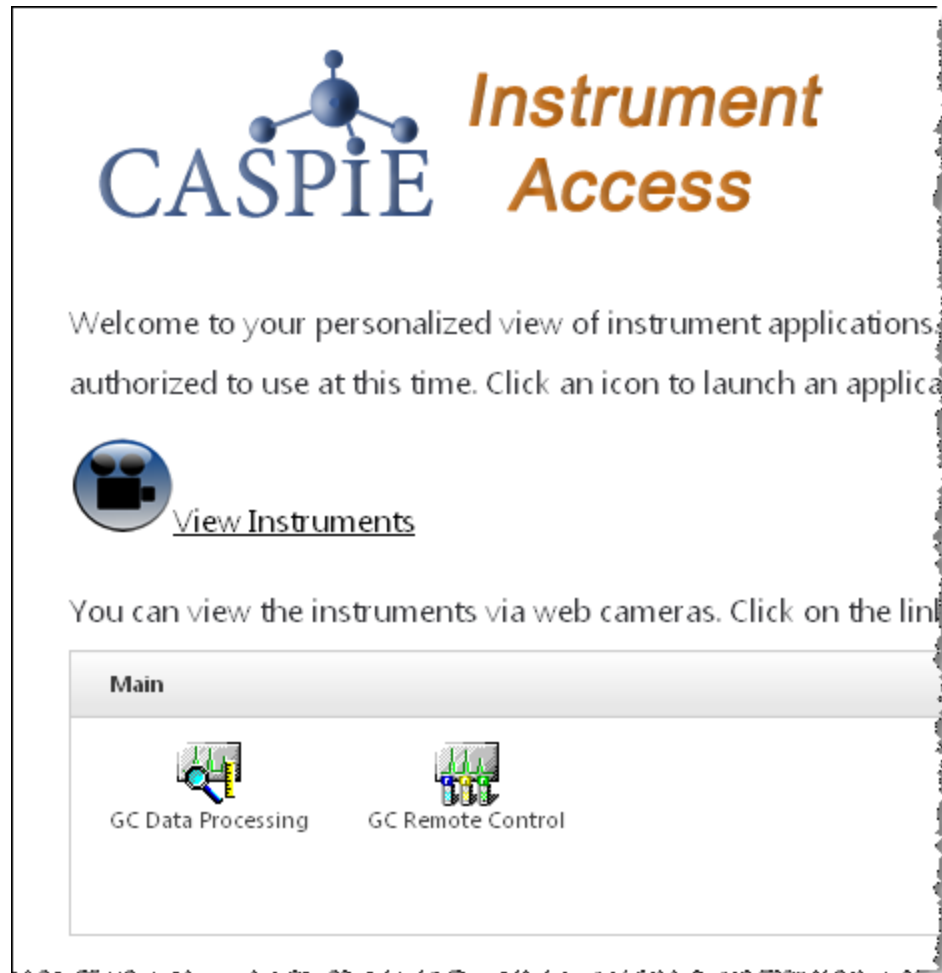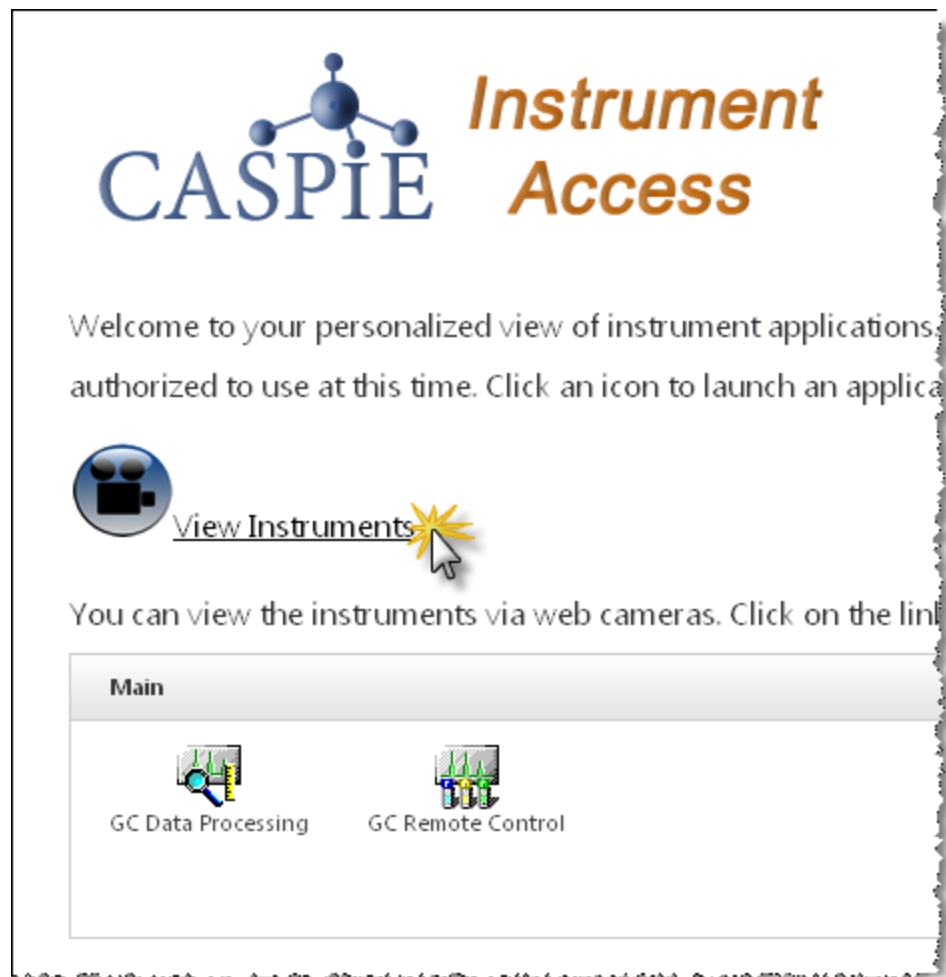
The GC Camera

While you are using the GC you can view the actual instrument live via an internet camera. (Note that Java is required for loading the camera image.)

The camera is accessed via the link labeled 'View Instruments' next to the camera icon.

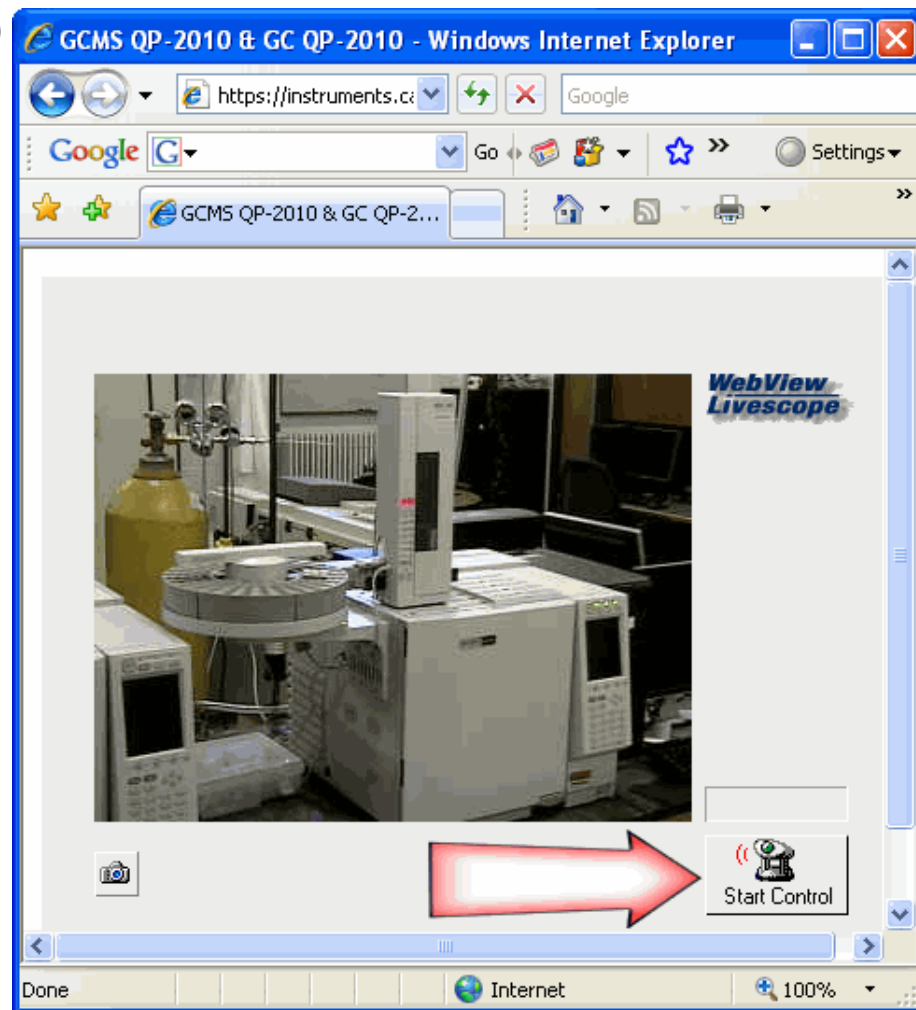When you click the link another browser window will open.

The GC Camera

- **In the 'Instrument Cameras Available' browser window (a) click on the 'Shimadzu GCMS QP-2010 & GC QP-2010' link to load the camera image.**

- **Note that the same camera is used for two different instruments.**

- **To control the camera position click on the 'Start Control' button (b). You may have to click it twice.**

(a)
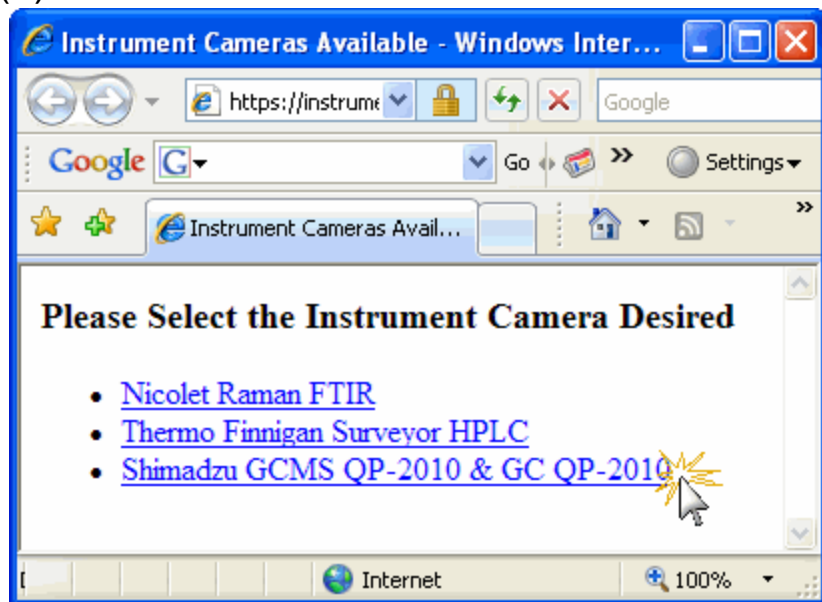
(b)

The GC Camera Presets

- **When you have control of the camera there will be a green countdown clock above the 'Start Control' button.**

- **Click on the '- select camera presets' drop down and select one of the presets to move the camera to a different position.**

- **Only preset positions are available for viewing.**

- **The 'GCMS' presets are for the GCMS instrument. The 'GC/FID' presets are the ones you can use to view the CASPiE GC.**
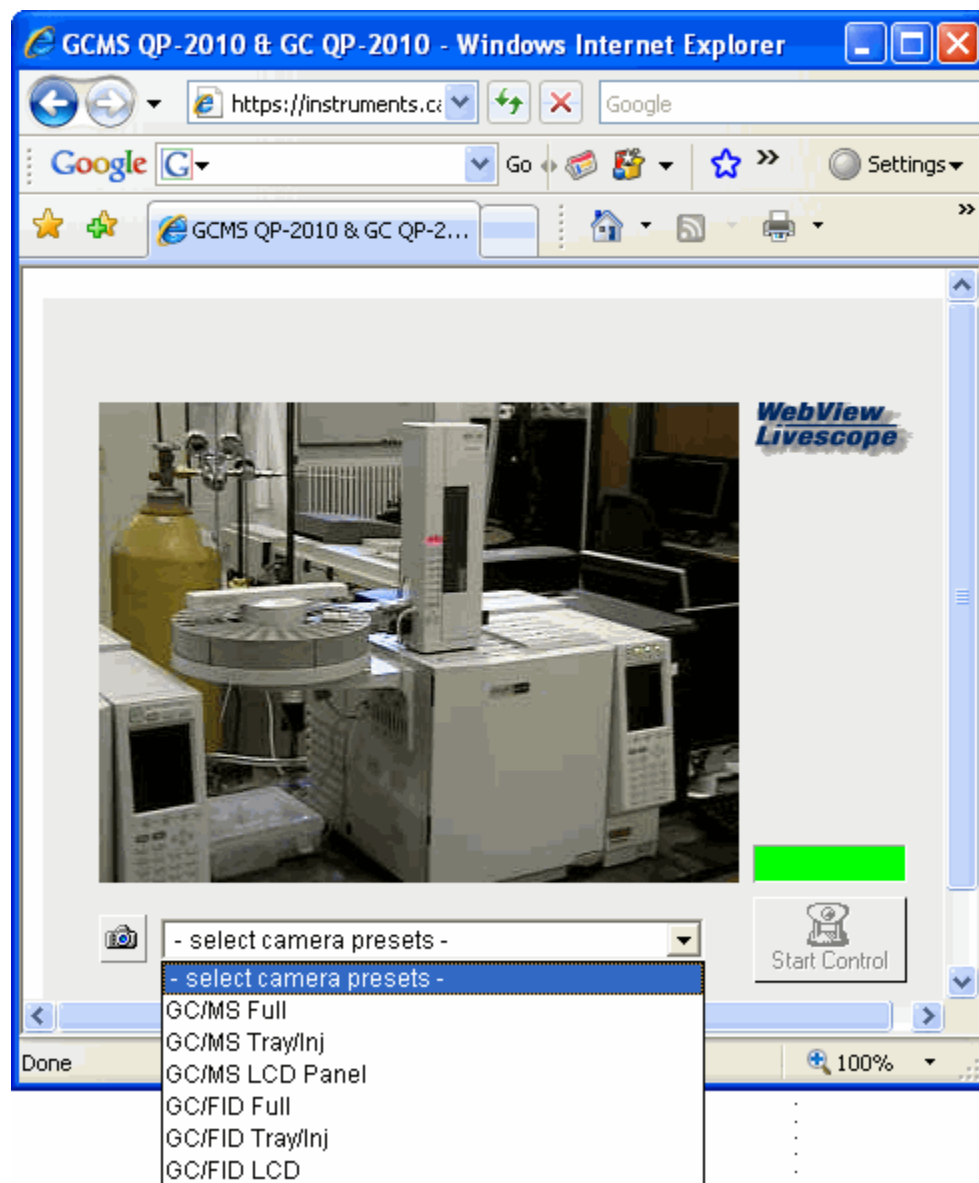
Launch the GC Remote Control Software

- **To launch the GC control software go back to the CASPiE Web Interface browser window (a) and click once on the 'GC Remote Control' icon.**

- **A login window will appear (b). Use the user ID 'Student.' No password is required.**

(a)

(b)
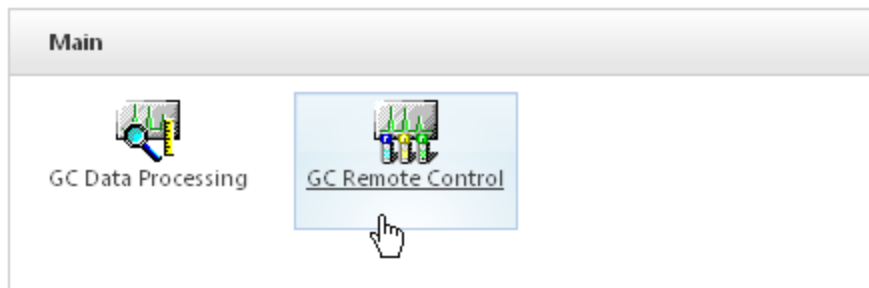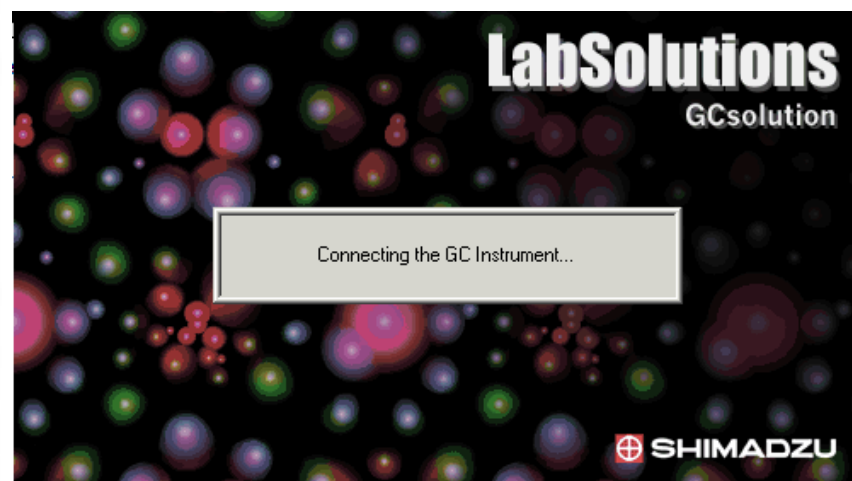
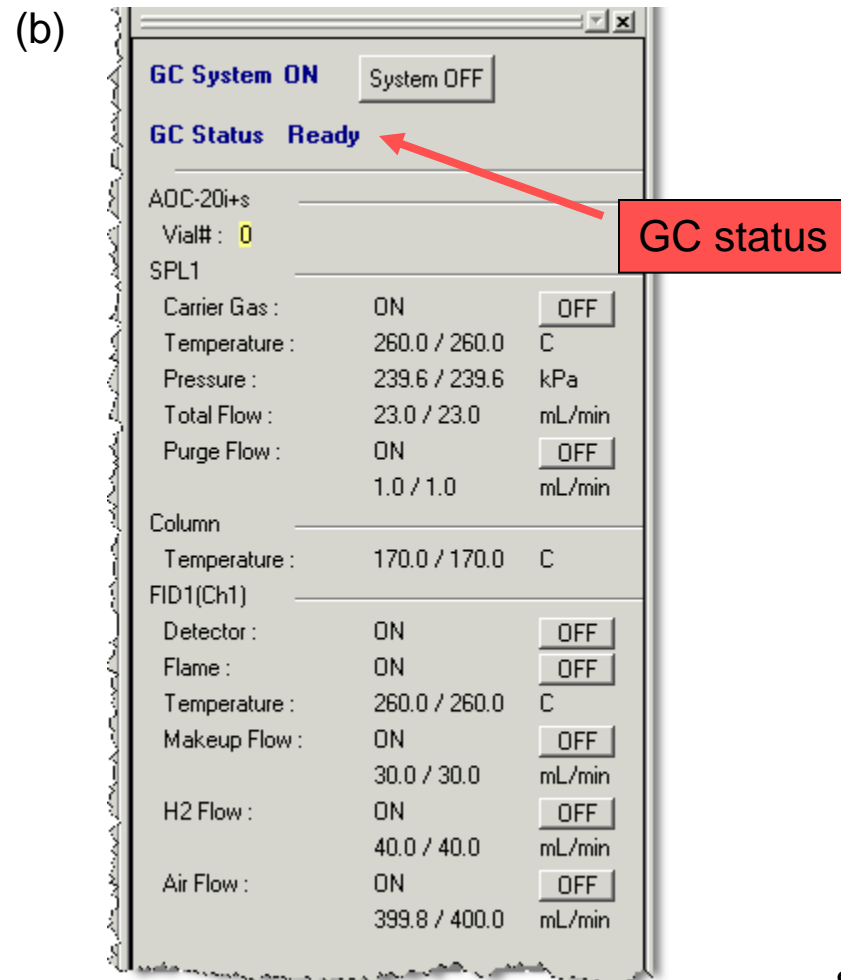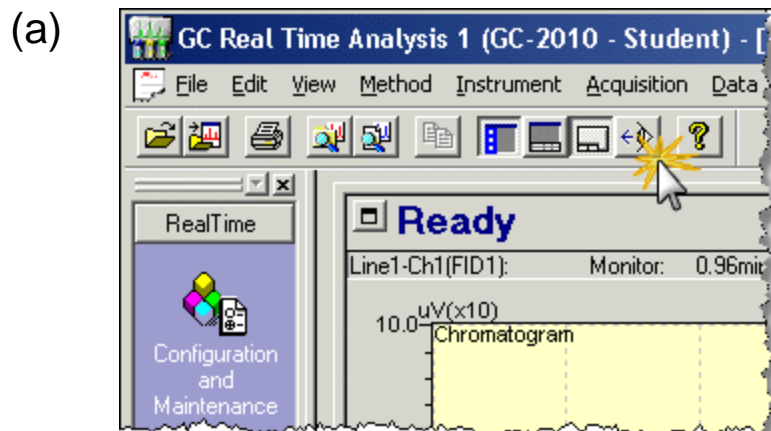# *Open Instrument Monitor*

- **The status of the instrument can be viewed by opening the instrument monitor. Click on the eyeball icon (a) at the top of the 'GC Real Time Analysis 1' window to open the instrument monitor.**

- **The monitor window will open on the right side of the screen (b).**
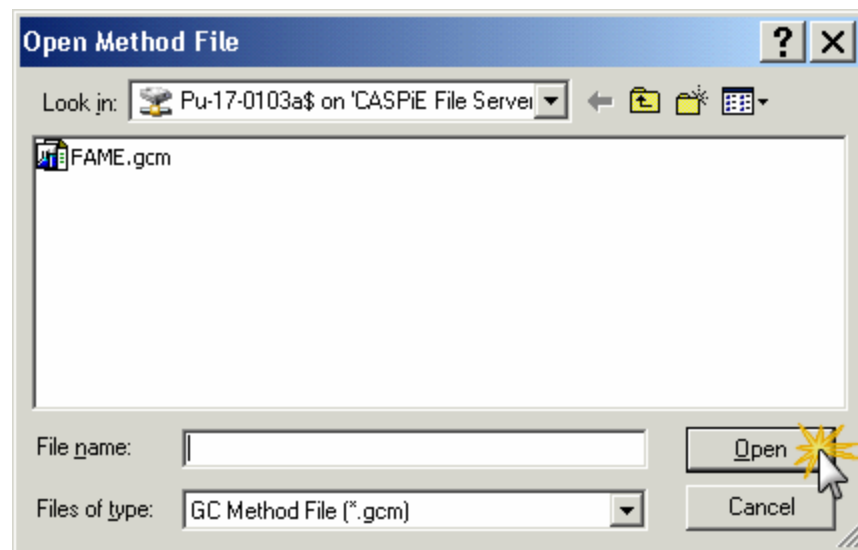
- **The status of the GC should read 'Ready'.**

(a)

(b)

GC status

Open Method File

- **Open the method file by selecting File | Open Method File (a).**
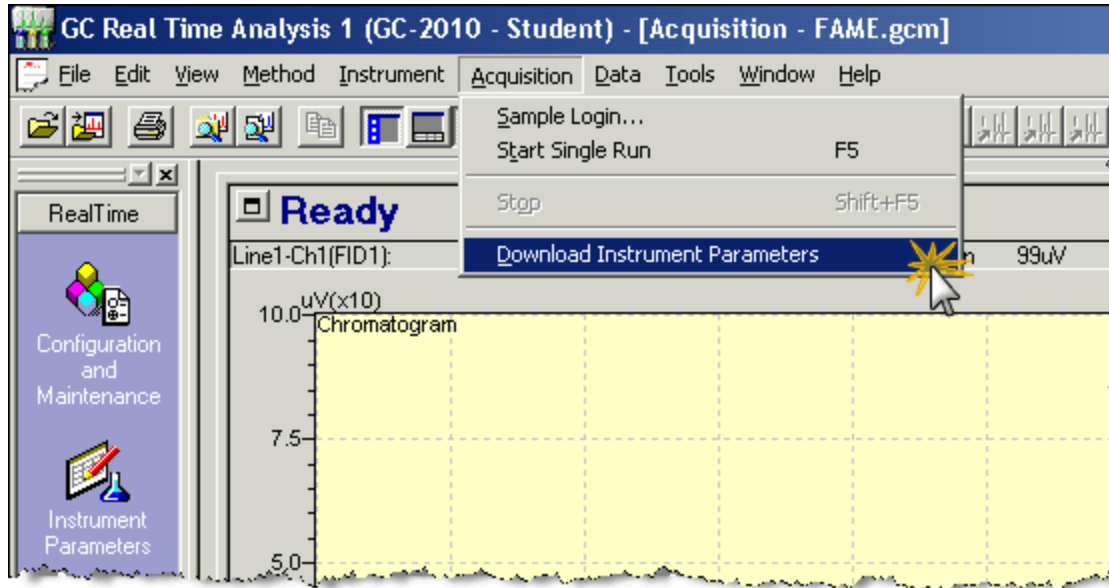- **Select the 'FAME.gcm' file and open it (b).**

(a)
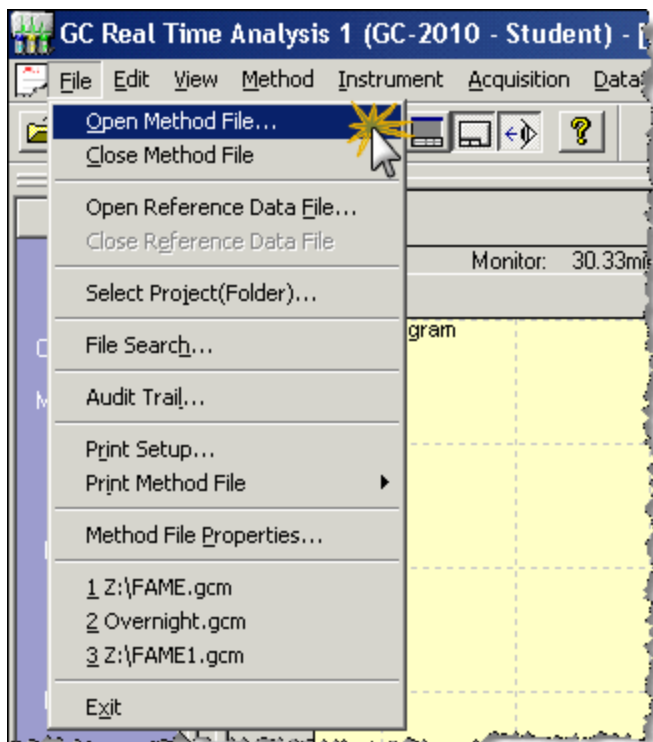
(b)

Download Instrument Parameters

- **Download the information in the method to the instrument by selecting Acquisition | Download Instrument Parameters.**

Open Batch File

- **Open the Batch Processing window by clicking on the 'Batch Processing' icon on the left side of the window (a).**

- **Open the batch file you created previously. To do this select File | Open Batch File (b).**

- **Select your batch file and click Open (c).**

(a)

(b)

(c)
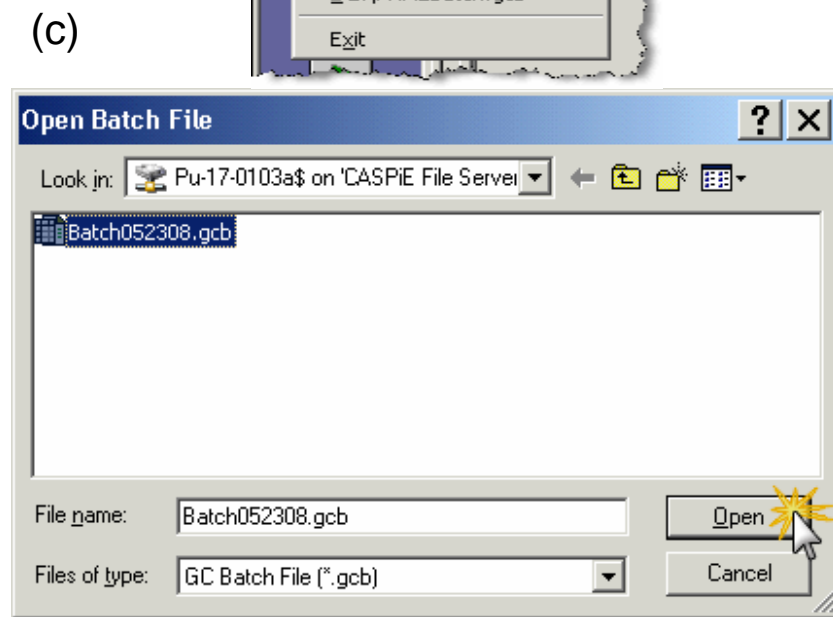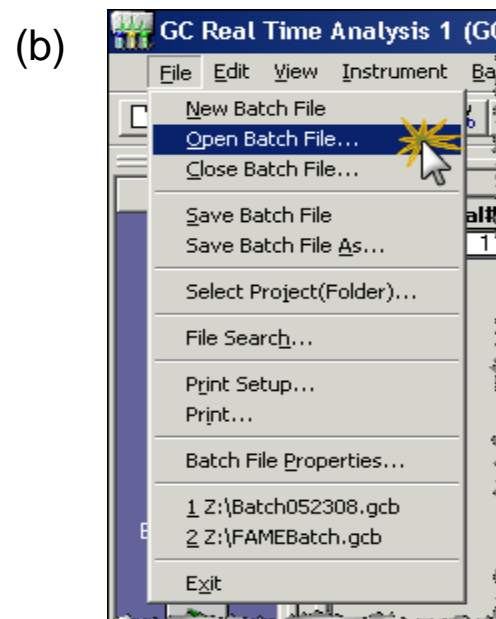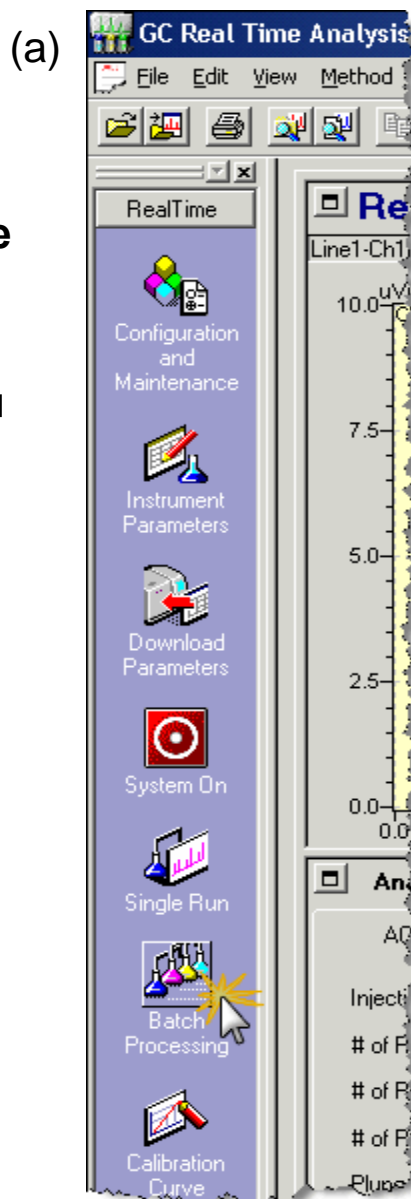
Start Batch Run

- **Check your batch table to make sure it is correct.**
- **Click on the green 'Start' button located on the left side of the window (a) to initiate the batch run.**
- **The chromatogram/acquisition window will appear (b). The batch table will be displayed above the chromatogram window.**

(a)

(b)
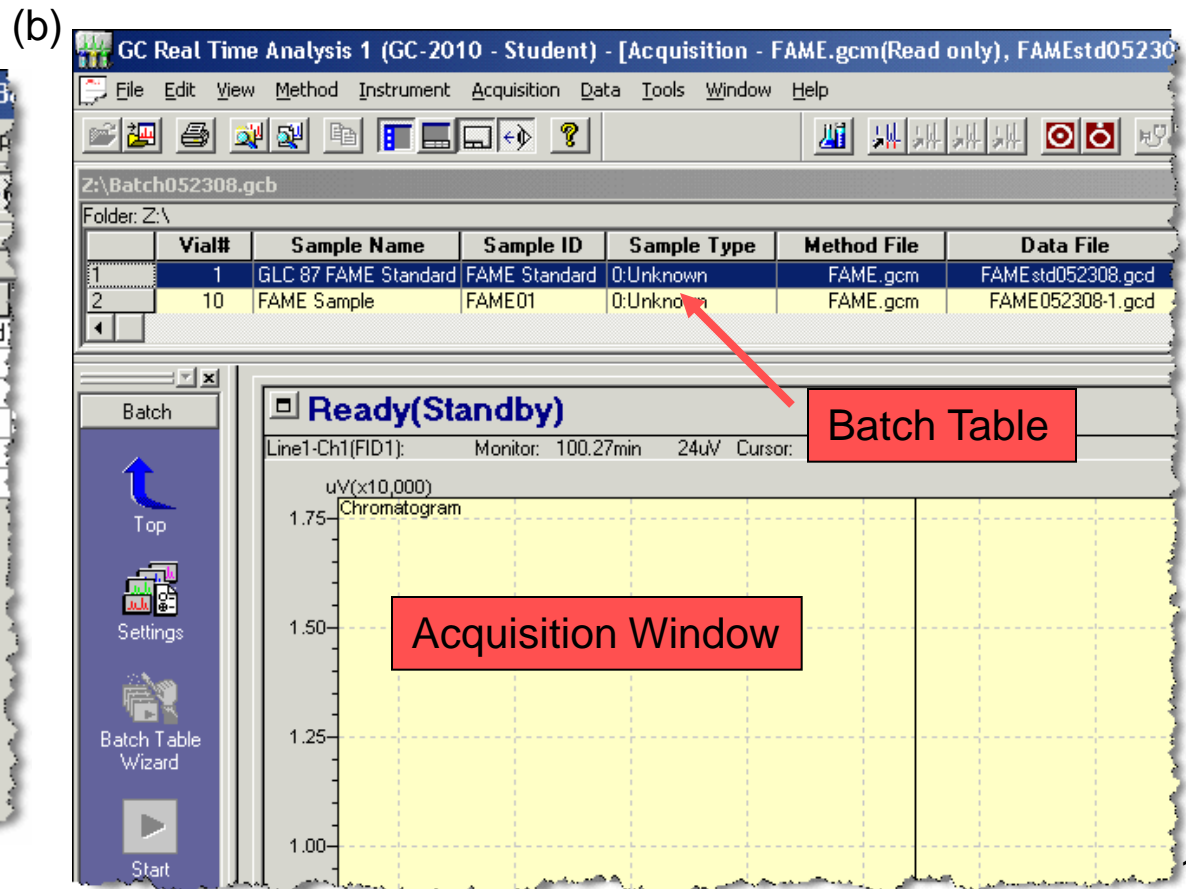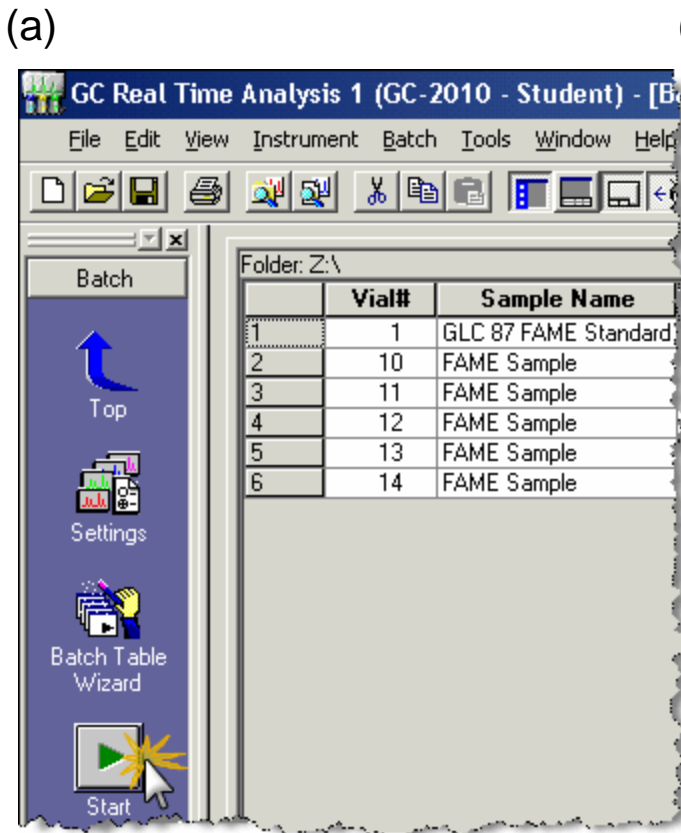
Acquisition Window

- **At the start of the run the instrument will take a few seconds to get the sample ready.**

- **After the sample is injected the GC status will show 'Acquire'.**

- **The acquisition window displays the progress of the run.**

- **You can scale the chromatogram by using the scaling tools shown.**
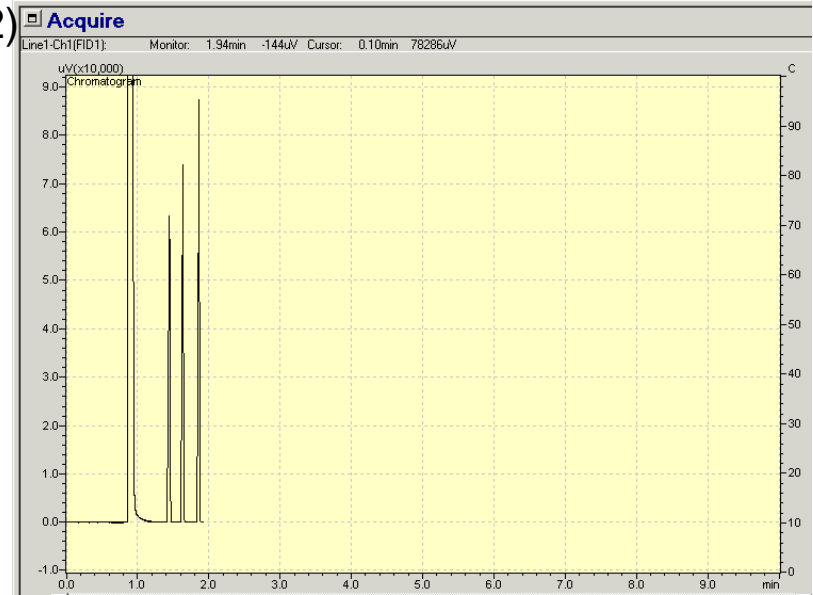

13
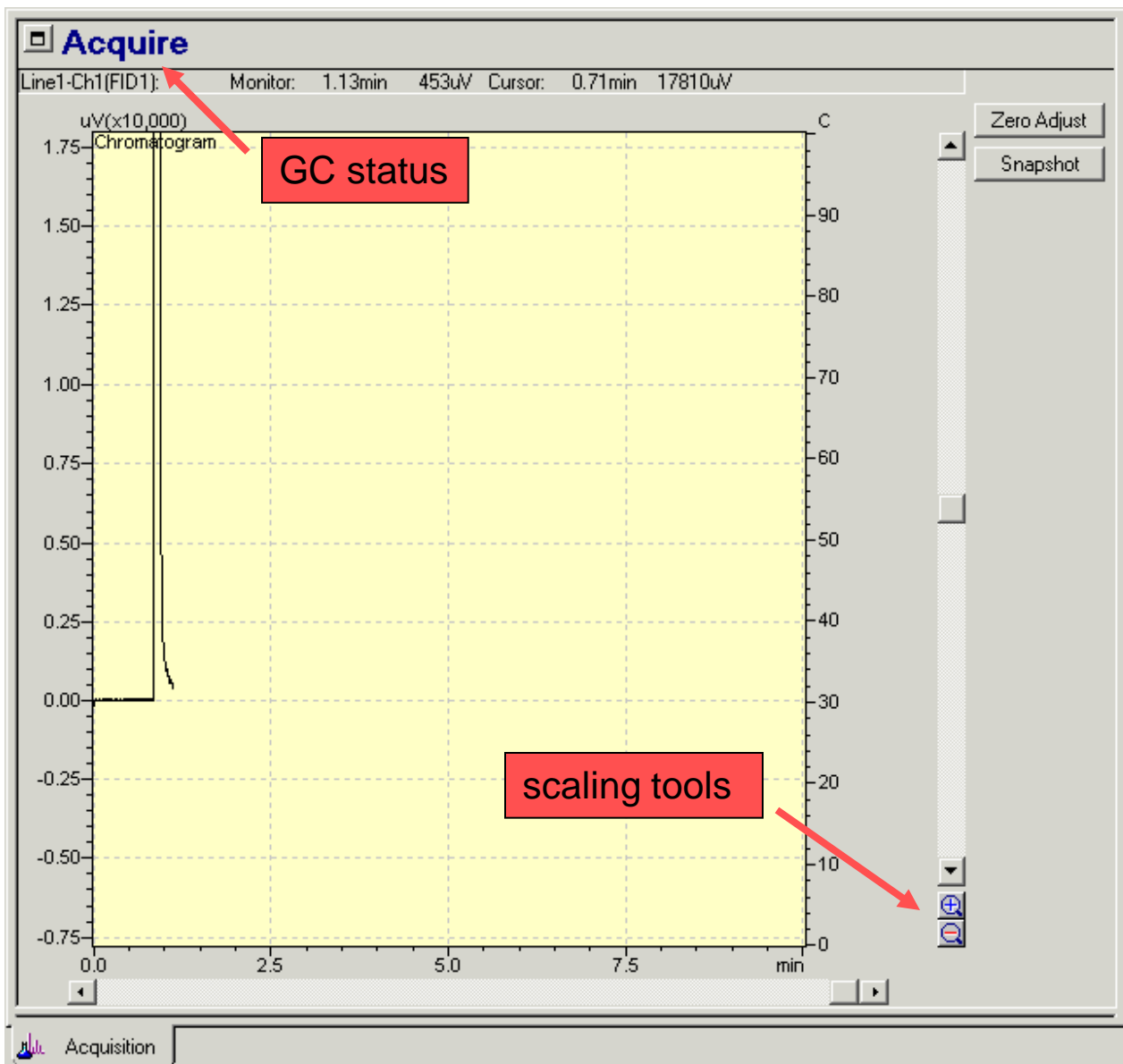
Data Collection

- **It will take 7 minutes to collect each chromatogram.**

- **After each sample run, the GC is returned to initial temperature conditions. This will take a couple of minutes.**
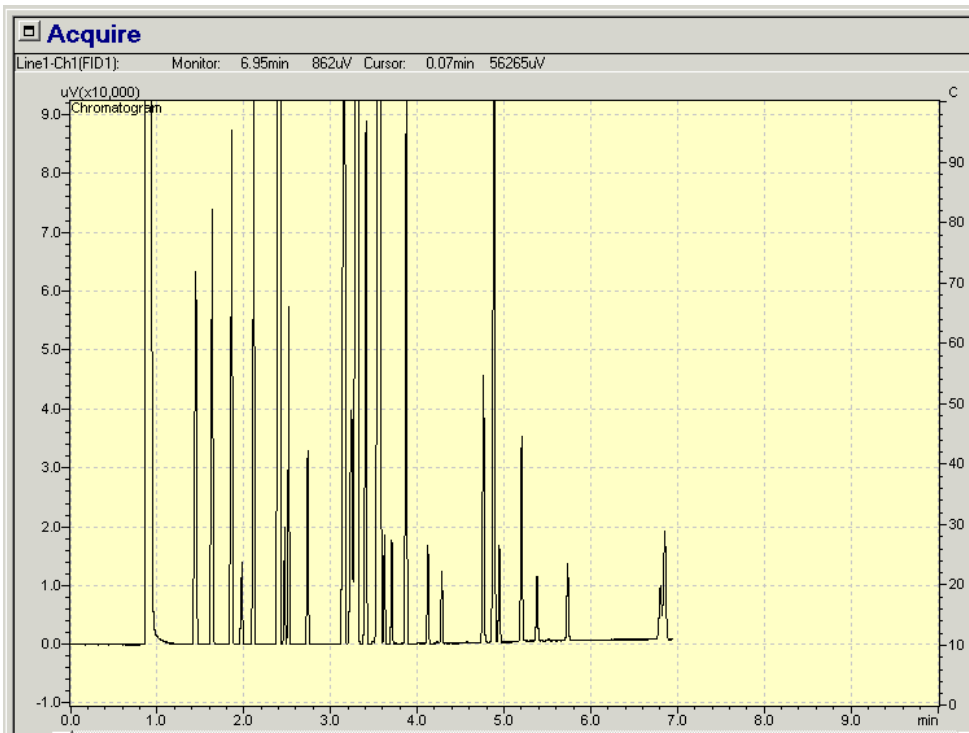
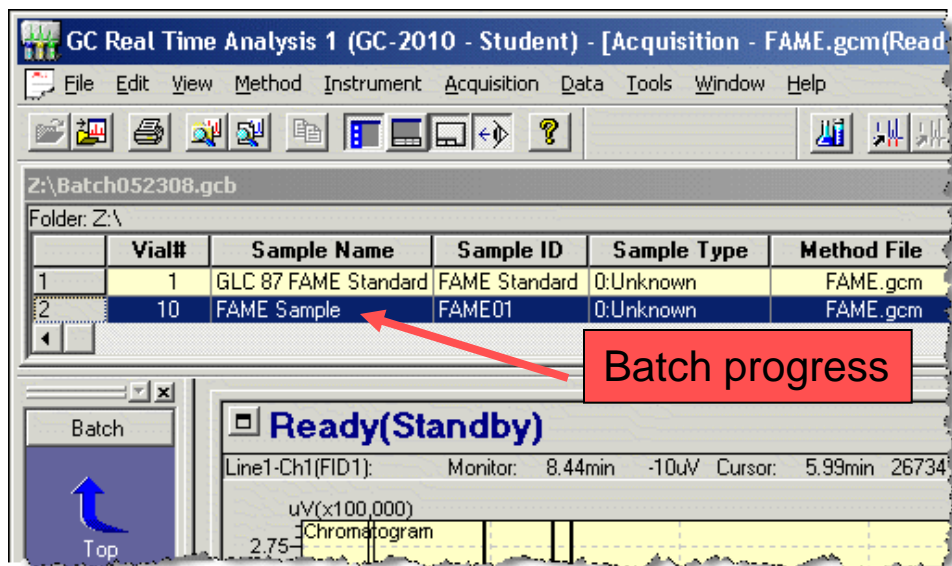- **An example chromatogram collection is shown here.**

(1)

(3)

(2)
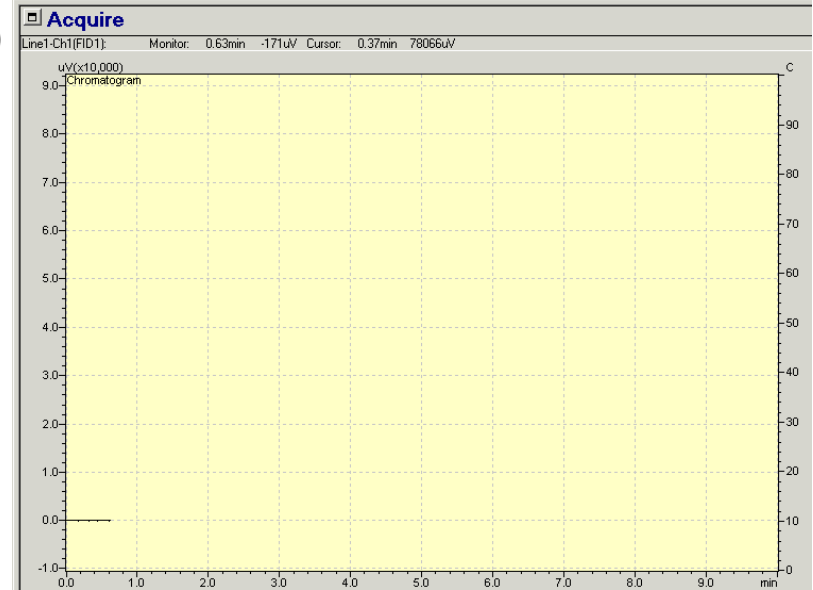
Batch Run Progress

- **Monitor the progress of the run by noting the highlighted row in the batch window (a).**
- **The instrument will automatically proceed down the list of samples in the batch file.**
- **The vial number of the current run is also displayed on the GC injector tower. You can view the injector tower with the camera (b).**

(a)

(b)

Vial No.

Batch progress
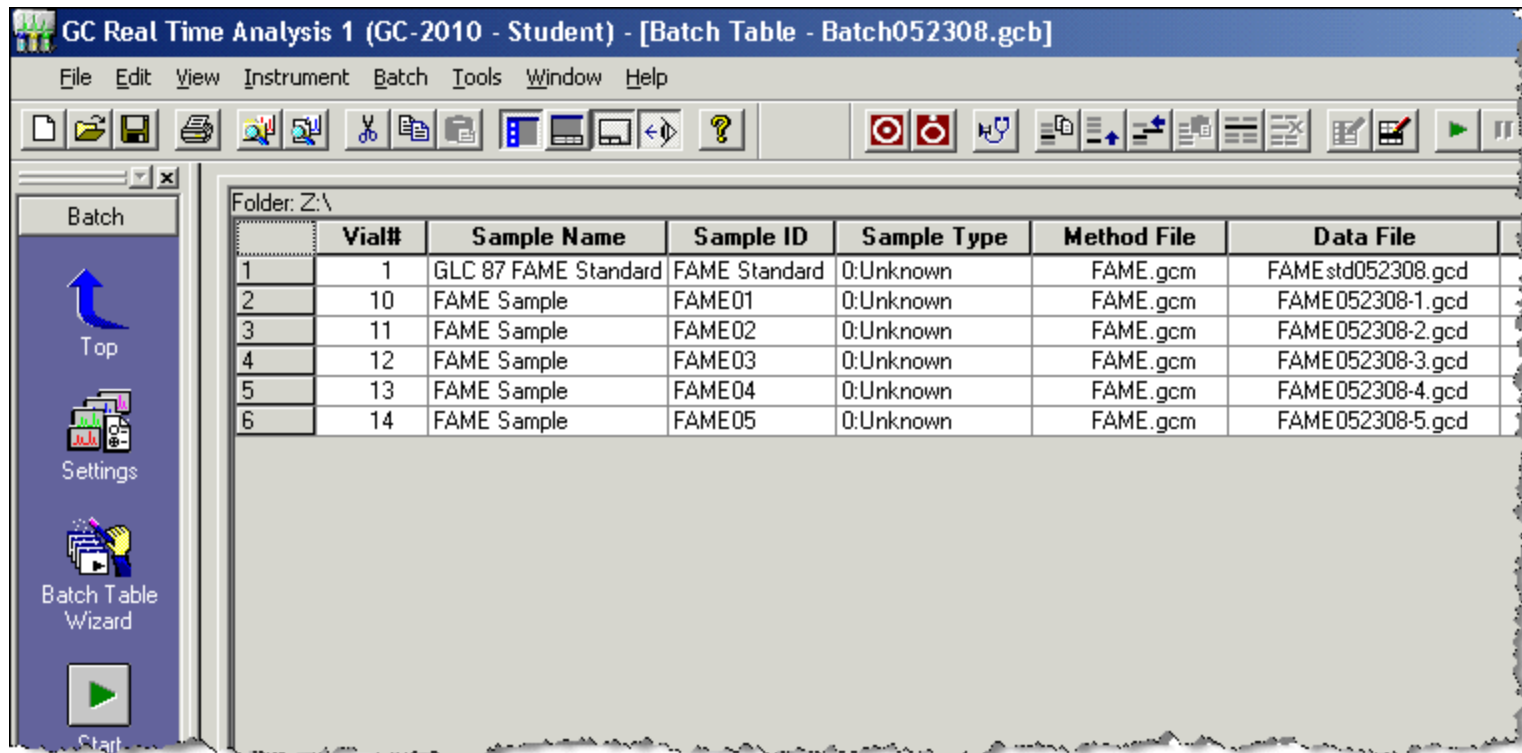
Batch Run Finished

- **When the batch is finished and chromatograms are collected for all your samples the chromatogram/acquisition window will disappear.**
- **You are now finished collecting data and can exit the program.**

Close Application

- **Remember, DO NOT make any changes to the instrument.**
- **Exit the GC Real Time Analysis software.**