20720 Earl St. Torrance CA 90503 310-214-5092

www.srigc.com sales@srigc.com

Greenhouse Gas GC Configuration

February 2026

The SRI Greenhouse Gas GC configuration (part# 8610-0042) is designed to measure:

Nitrous Oxide (N2O) from 25ppb up

Methane (CH4) from 1ppm up

Carbon Dioxide (CO2) from 1ppm up

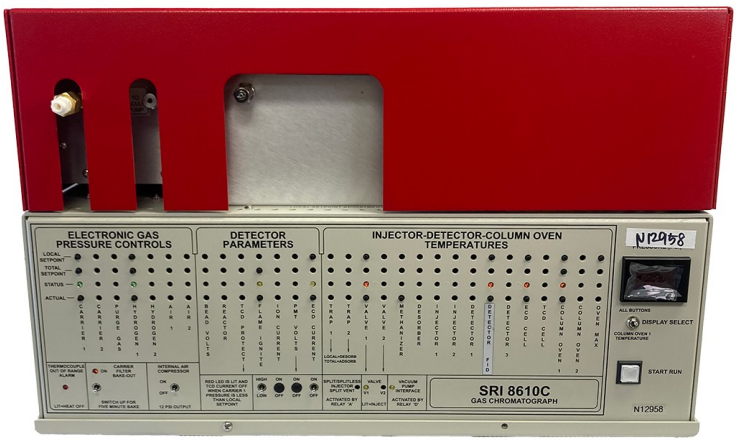
Other molecules like ethylene, acetylene, ethane, SF6, and halogenated tracer gases etc.

Shipping container is

28” (71cm) x 21”’(53cm) x 15”(38)cm)

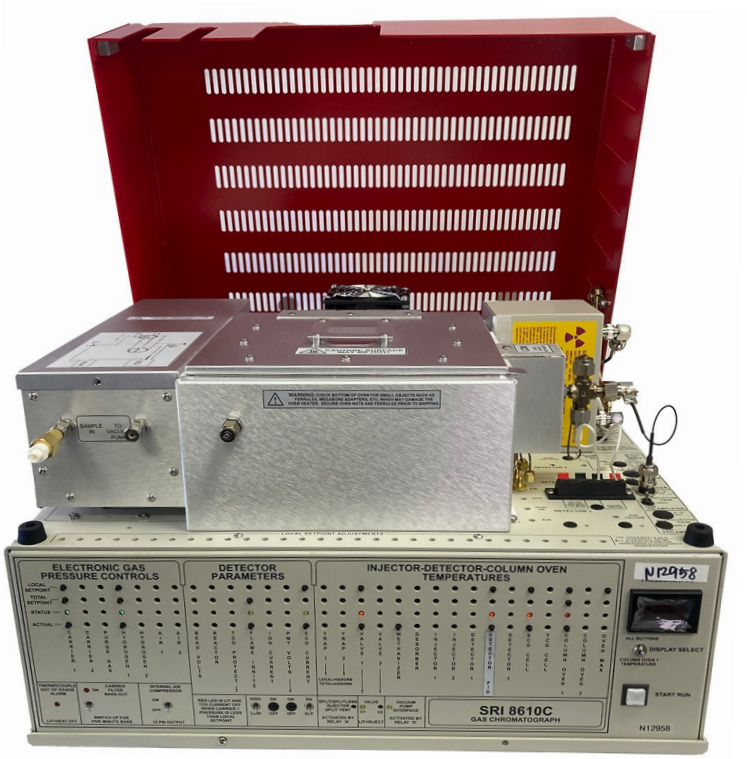
It comes in a rugged shipping container that is small enough to fly as airline baggage.

Power consumption is about 500watts so it can operate on low cost generators in the field.



19” (48.3cm)

Weighs 60 pounds (27 kg)



20720 Earl St. Torrance CA 90503 310-214-5092

www.srigc.com sales@srigc.com

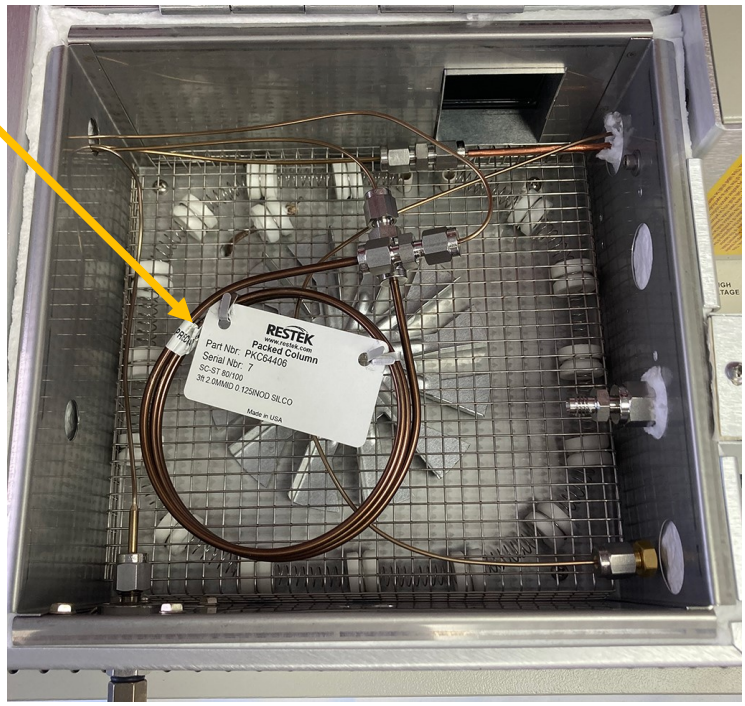
Greenhouse Gas GC Configuration

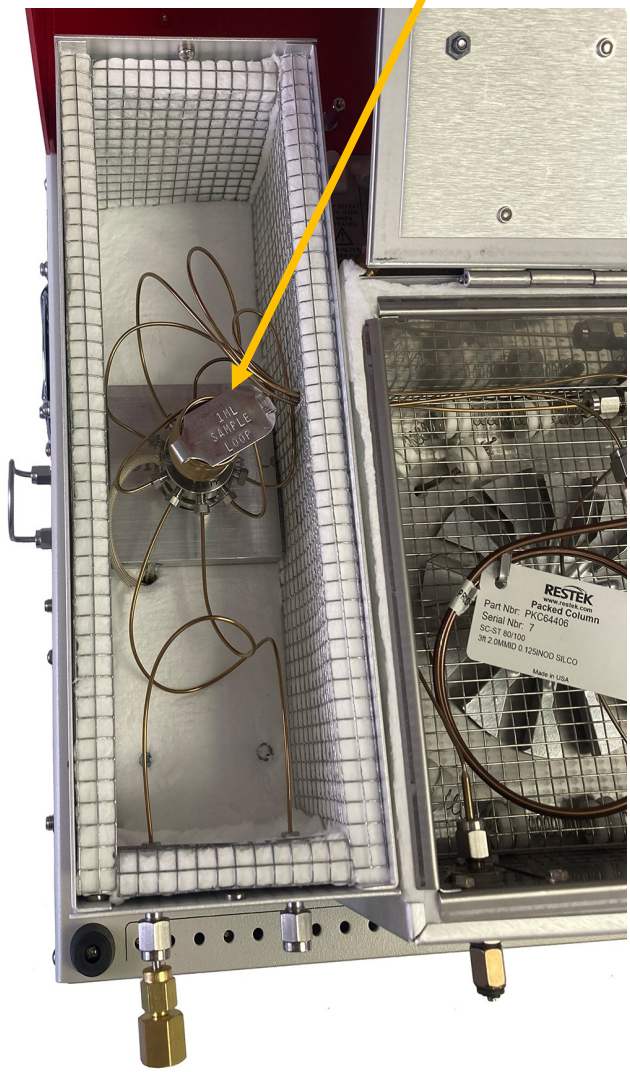
February 2026

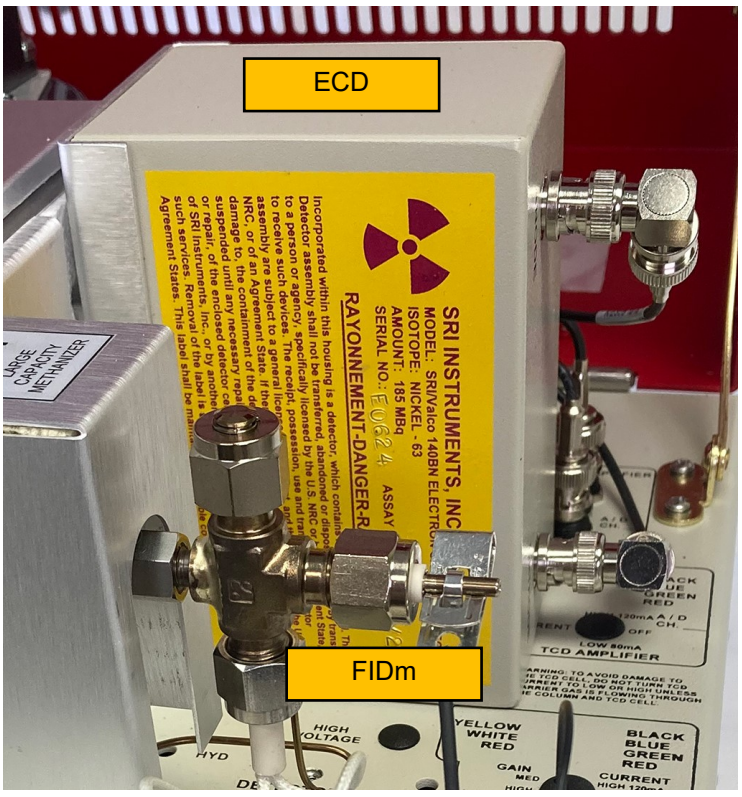
A 3 foot (92cm) 1/8” od Shincarbon column is mounted in the ambient to 400C column oven.

An Electron Capture detector (ECD) and FID-methanizer Detector (FIDm) is located at the right side of the column oven.

A 10 port (2 position) gas sampling valve (GSV) is mounted in the ambient to 180C valve oven right next to the column oven. The valve is plumbed to “backflush” the column after the N2O has eluted. This eliminates the water peak and any other higher boiling peaks in the shortest time.







20720 Earl St. Torrance CA 90503 310-214-5092

www.srigc.com sales@srigc.com

Greenhouse Gas GC Configuration

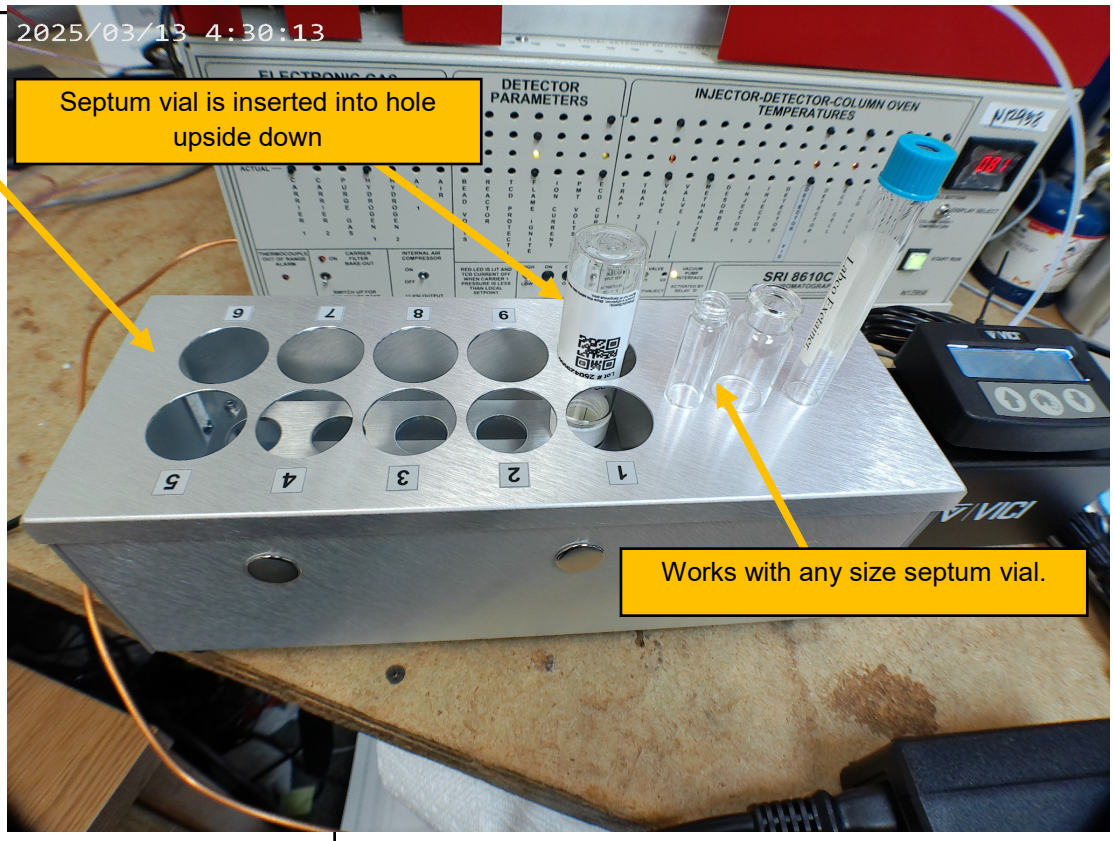
February 2026

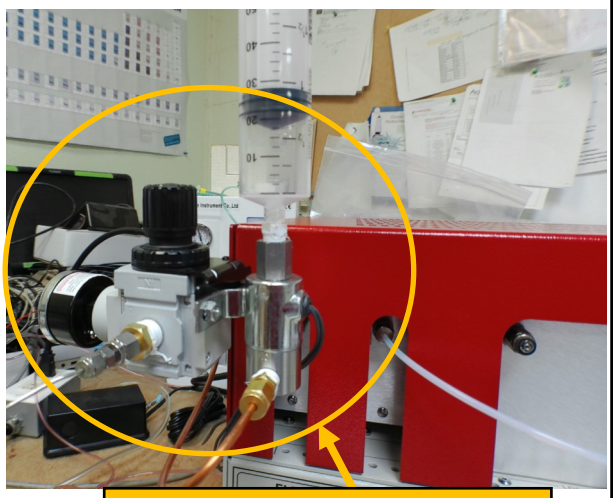
An optional 10 position vial autosampler (A/S) plugs into the GC and is controlled by the included and easy to learn PeakSimple software.

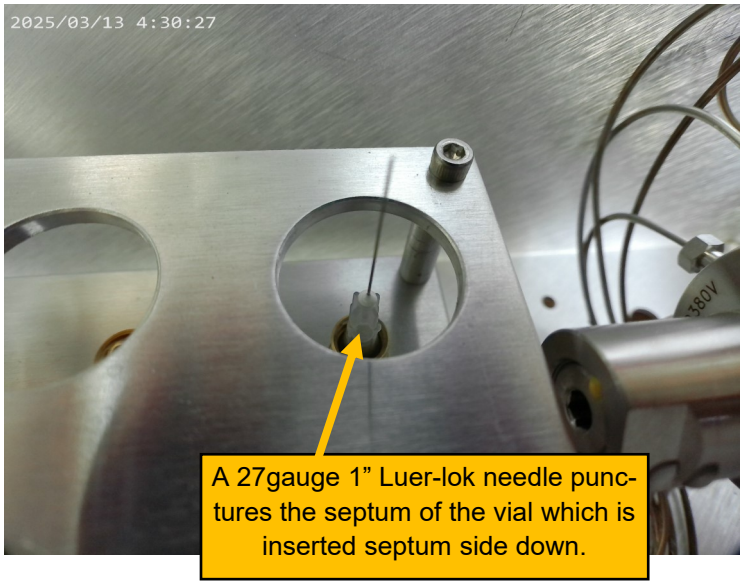
The 10 position A/S can be used with 40ml vials, 20ml vial, 12ml Exetainers or even smaller septum topped vials.

The vials are pressurized by carrier gas controlled by the included pressure regulator and then the pressurized gas is allowed to escape through the “loop” of the gas sampling valve.

This sequence is repeated automatically by the PeakSimple software.







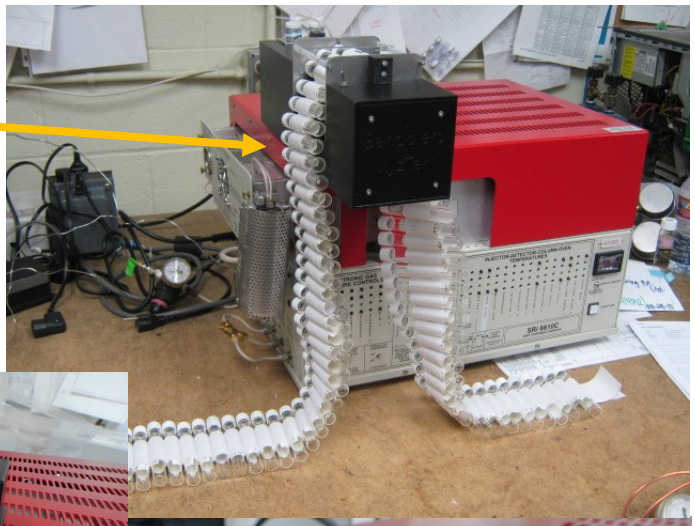
20720 Earl St. Torrance CA 90503 310-214-5092

www.srigc.com sales@srigc.com

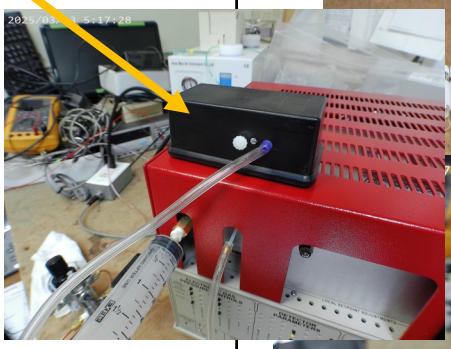
Greenhouse Gas GC Configuration

February 2026

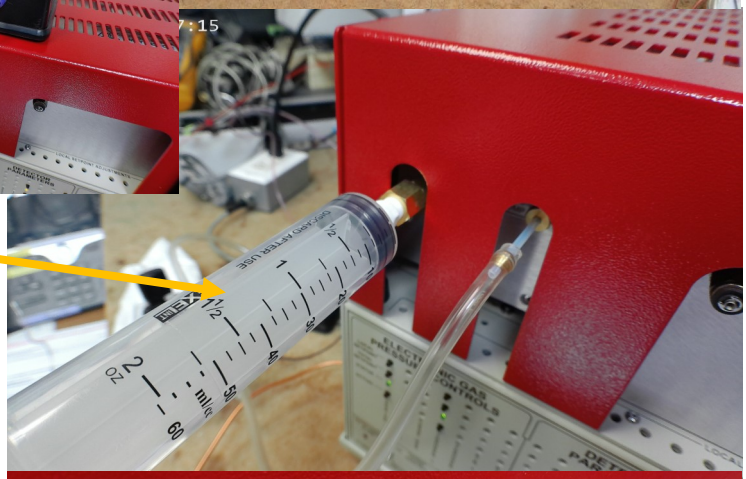
A 100 vial autosampler for 12ml Exetainer vials ONLY is also optionally available to connect to the SRI GreenHouse Gas GC. The Exetainers are mounted on a long belt.

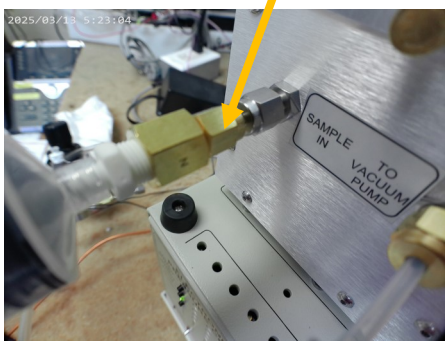


A PeakSimple software controlled vacuum pump is included. This is necessary for the operation of the 100 vial A/S but is also useful for taking ambient samples on-line by sucking ambient air through the gas sampling valve loop. This allows the GC to measure on-site in the field samples 24/7 and be software controlled remotely.

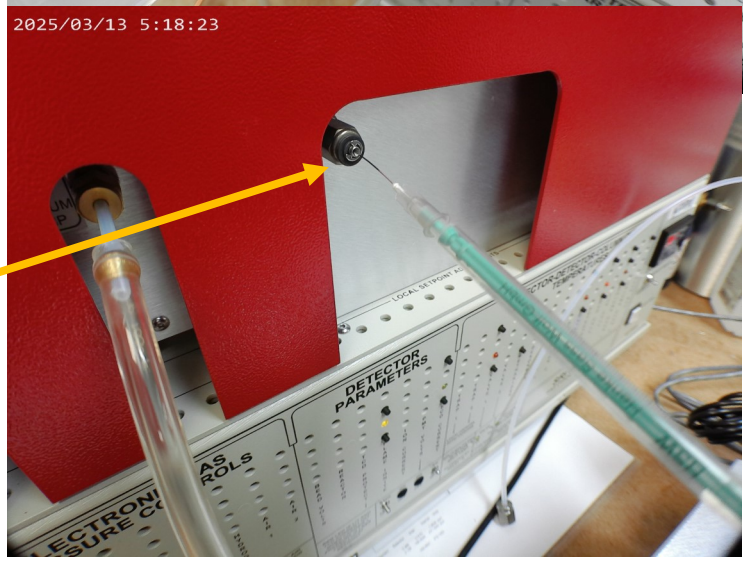


A Luer-lok connector is included which is handy for connecting samples collected in 50ml syringes or tedlar bags.





If there is not enough sample to purge the loop of the gas sampling valve (about 10ml) a smaller injection volume can be injected using the included on-column syringe injector.



20720 Earl St. Torrance CA 90503 310-214-5092

www.srigc.com sales@srigc.com

Greenhouse Gas GC Configuration

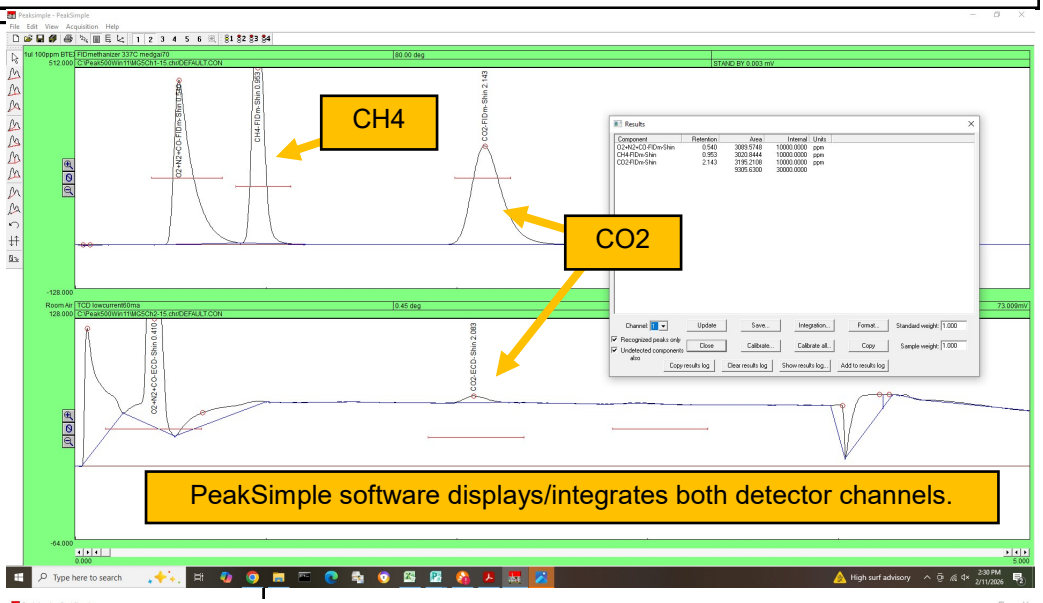
February 2026

At right is a calibration chromatogram wiith 1% methane and 1% CO2.

The methane and CO2 peaks from the FIDmethanizer detector are shown in the upper chromatogram.

There is only a small CO2 peak in the lower ECD chromatogram. No N2O is detected.

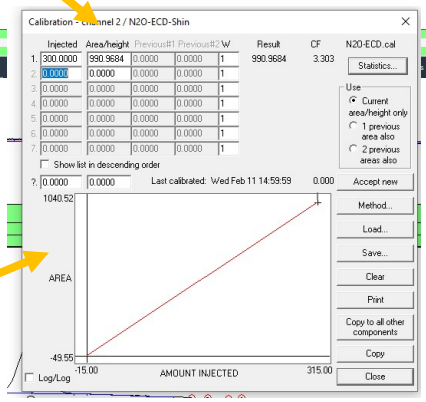
The two detectors are plumbed in series, so the peaks go through the ECD and then out to the FIDmeth.



The chromatogram at right shows the same GC response to ambient air. The methane peak is much smaller (about 2ppm) as is the CO2 peak (about 500ppm).

The ECD chromatogram shows a nice N2O peak (about 300ppb) and water which is backflushed from the column so it does not interfere with the next analysis. The CO2 peak is not detected by the ECD at the 500ppm level.

The calibration curve for N2O is shown as a single point straight line, but up to 7 concentration levels can be entered for multi-level calibration. Curves can be straight line, or quadratic.



N2O calibration curve

20720 Earl St. Torrance CA 90503 310-214-5092

www.srigc.com sales@srigc.com

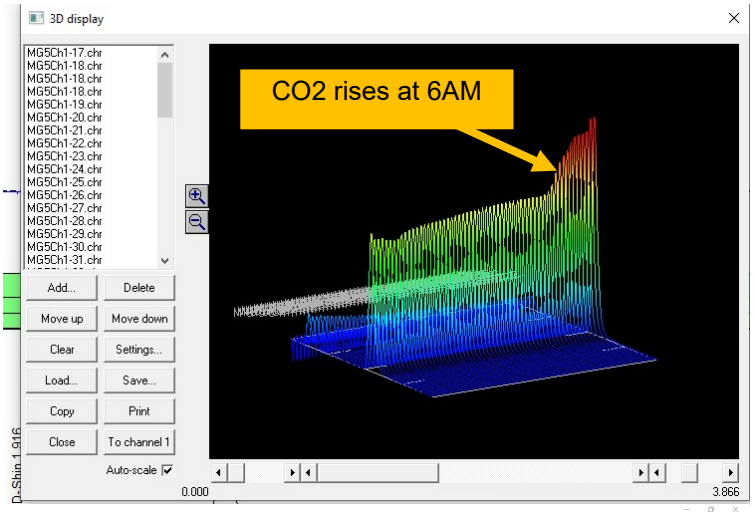
Greenhouse Gas GC Configuration

February 2026

At right is the 3D display window in PeakSimple software that lets you see an unlimited number of chromatograms overlaid on one screen. You can fly around the data and look at it from any angle.

This data was collected from the GreenHouse Gas GC overnight sampling the air in the SRI lab.

The big peak in the 3D screen is the CO2 which you can see rises at 6 AM when the technicians arrive and start breathing into the lab air.



The results are automatically appended to a “log” file at the end of each analysis.

The “log” file is a CSV (comma separated variable) file that exports with one mouse click to Excel.

The log file includes the time and date stamp as well as the data file name so data can be re-analyzed later if need be.

For the first 10 runs of this particular data set the percent relative standard deviation (%RSD) calculated to be:

CH4 3.34%

CO2 2.40%

N2O 1.66%

This is typical reproducibility for this GC configuration.