*e*GC
environmental Gas Chromatograph
Directional Concentration Vector Analysis Software

The ENMET eGC cloud-based data stream can be used by a TerraBase's ChemRose™ software program to provide source visualization of emissions. The ChemRose™ software application creates on-demand videos to allow you to understand how fenceline emissions change over time and to identify probable emission source locations.

INTRODUCTION

The interpretation of multi-point environmental data on a near real-time basis often poses a difficult challenge. The processing of data from multiple units can be very time consuming and require specific staff with specialized skills. This requirement often results in time delays and increased costs. The ChemRose™ software application offers a practical solution that avoids the time delay and unique employee skillset. It creates directional vectors automatically that combine both local metrological data, GIS[1] position and concentration assay values, which help identify emission areas of concern on a near real time basis.

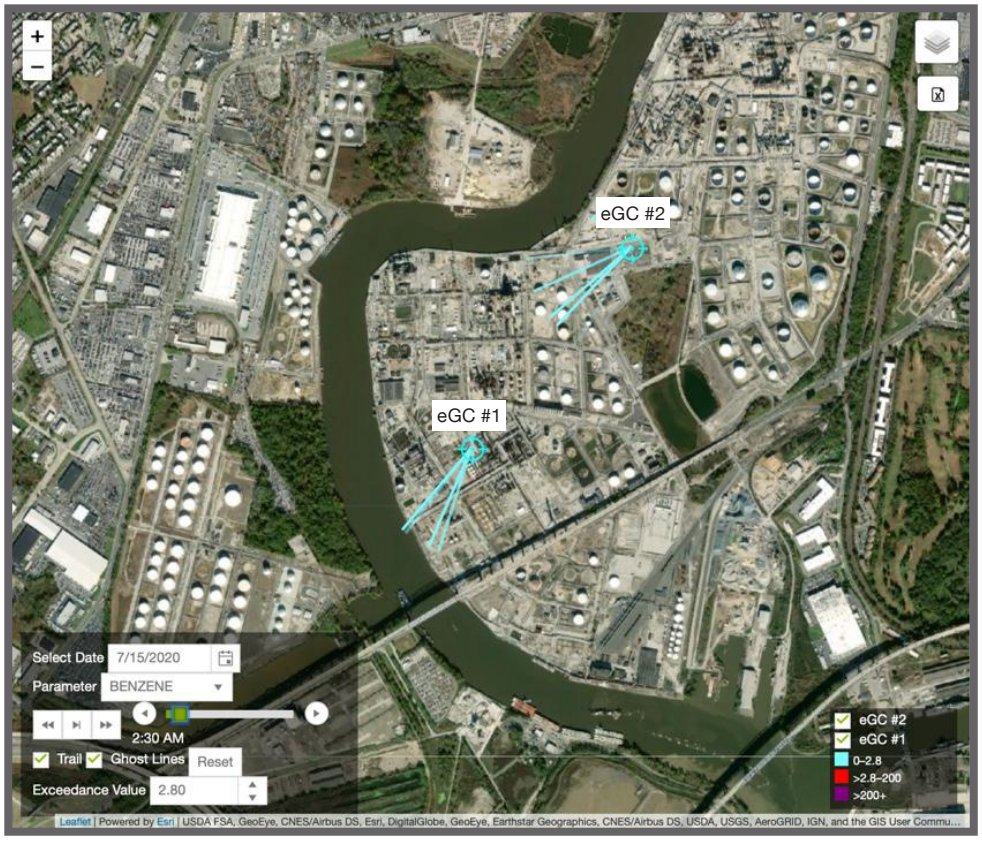
[1](GIS) Geographic Information System - GIS is a software program that helps people use the information that is collected from the GPS satellites.

ENMET
Creative Gas Detection Solutions

SOLUTION

A key advantage of the eGC is its ability to be deployed as a fully self-contained mobile platform. This offers the opportunity to implement the eGC in a monitoring array configuration. Since the eGC's are mobile, they can be easily relocated based on emission information profiles generated from directional vectors. These vectors point to the general area associated with the source. ChemRose™ software creates these directional vectors automatically by using the eGC concentration value, GIS position and meteorological data.

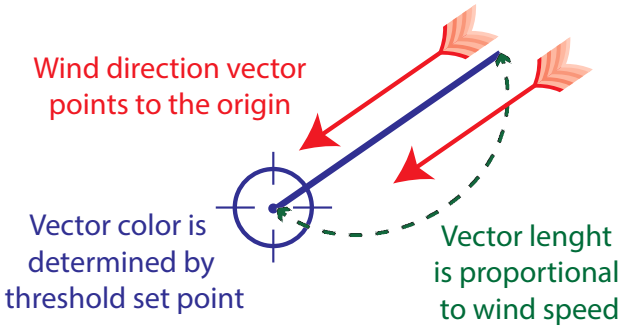
eGC configured with solar array and weather station



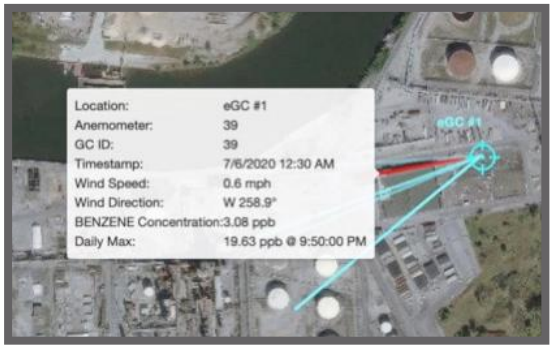
ChemRose™ GIS Map with eGC vectors

A key feature of the ChemRose™ is the integration of all the eGC's in a single GIS map graphic. An important aspect of these GIS maps is the associated site infrastructure of the facility, which is a critical factor in evaluating the how and why of the emissions. ChemRose™ takes all of this data and compresses it into a time-lapse video presentation. This creates an easy to understand near real-time picture of what is occurring across the facility. Best of all, these videos are available on-demand over a time interval defined by the user. This greatly simplifies the communication process by using pictures so you can quickly identify regions of concern and take corrective actions.

Vectors are useful because they are easy to understand. A vector is a graphical representation of direction and concentration data. The length of a vector is proportional to the wind speed and provides cardinal direction, so you know where the emission is coming from. Next, we add concentration information to the vector. Using vector colors to represent concentration values is a quick method for the identification of concentration excursions by merely observing the color changes over time.

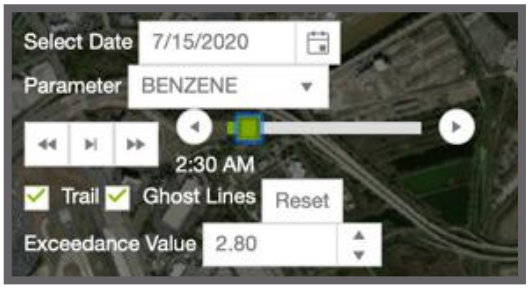


Vector example



Vector additional data window

To create a video you must select the date using the menu window below. Once that date is selcted, the server will process the new data request.



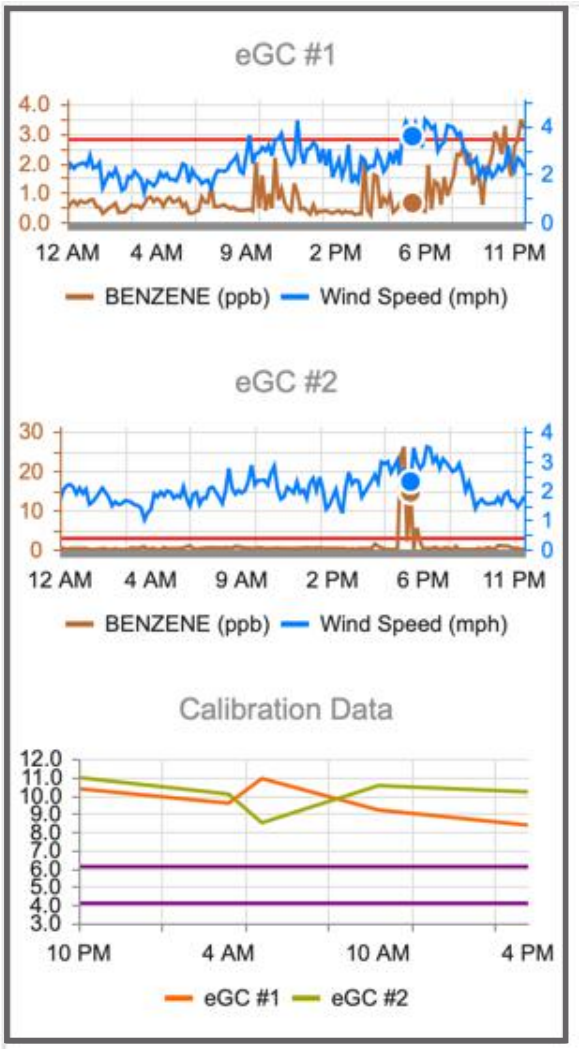
Data selection and video window

Additionally, you can adjust the exceedance value concentration in the data selection window which changes the red vector color.

Legend window

The legend box shown above, located on the lower right hand side of the map allows you the option to activate or deactive the eGC units on the GIS map display by clicking the function box to the right of the name.

If you see a red vector (high alarm level), you can quickly obtain more detailed analysis information by using your mouse pointer and hovering over the vector position, which will pop up a window that displays the actual concentration and time of the measurement.



Data dashboard

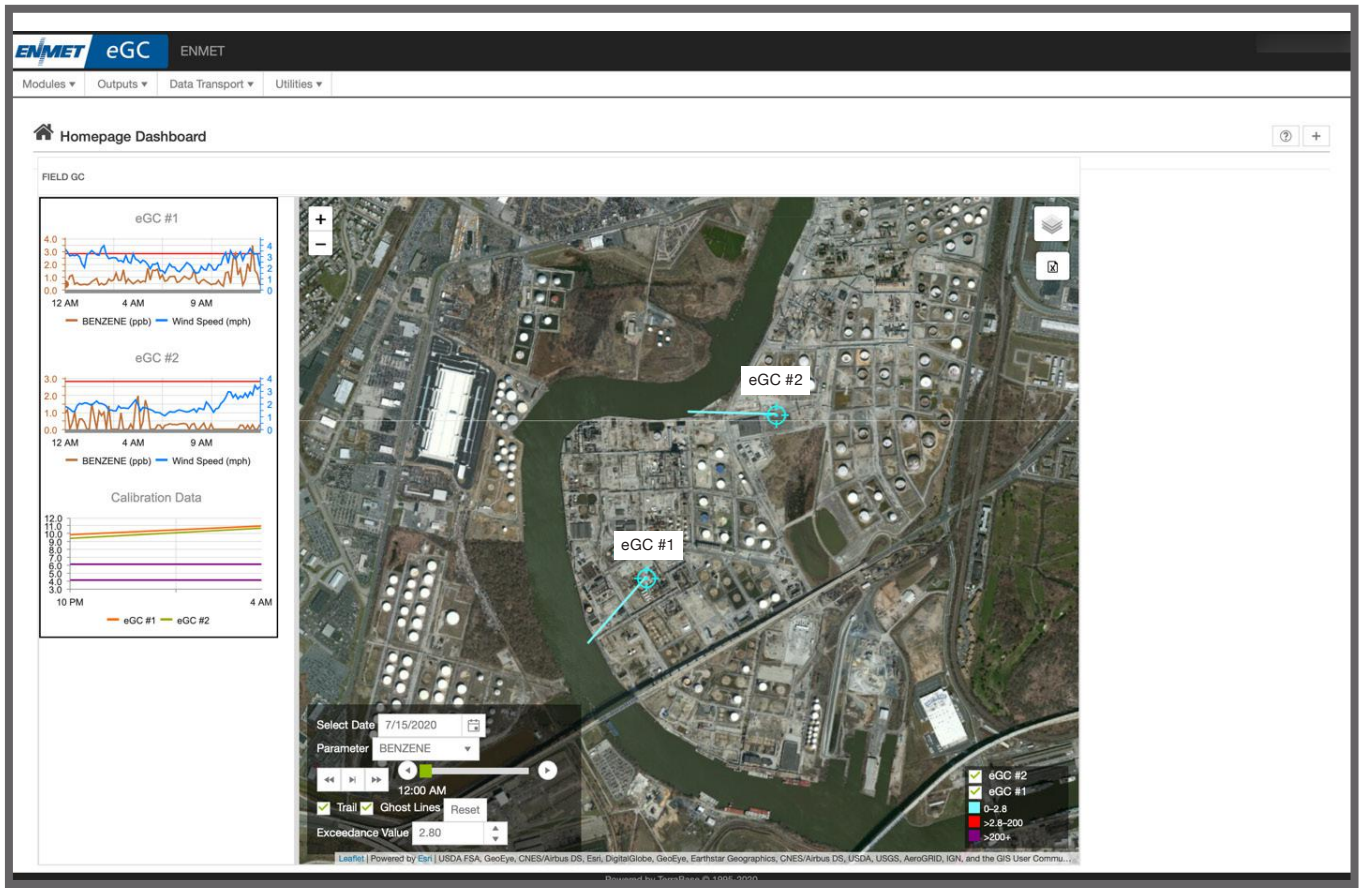
ChemRose™ is a secure, easy to use platform. As a web-based application, it is only accessible via the internet by using a browser. Accounts are assigned to specific users and are password protected. This allows full control over information access and is available anywhere the web is present.

eGC ChemRose™ ADVANTAGES

- Emission videos
- Determination of locations where threats are originating.
- Emission triangulation to better define a point source location.

CONCLUSION

ChemRose™ and the eGC offer a simplified approach to environmental field data collection and analysis. By using the ChemRose™ software with your eGC units, you now have a way to know where a chemical threat is originating from and how it changes with different metrological conditions. These next-generation tools you can make better predictive assessments and useful mitigation recommendations with confidence.



Main ChemRose™ web screen

Contact ENMET's application team for additional information.

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