

ENVIRONMENTAL  
RESOURCE ANALYSTS,  
INC.

SPECIAL  
POINTS OF  
INTEREST:

- Operator Training Course set for June 14th.
- ERA is growing! Read about our new facility and website!
- Learn about our watershed monitoring services!
- Read about the contaminant of the month – chloroform.
- Read about how packing a cooler can affect your results.

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# ERA Newsletter

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## Exciting News from ERA!

This year's operator training course, entitled "Current Topics in Water and Wastewater Treatment" will be offered on Thursday June 14th at the Moore's Mill Country Club in Auburn, AL from 10:00am till 3pm. Attendance and completion of this course will qualify you for 4 hours of continuing education credits in both the state of Alabama and Georgia (approval pending). Topics this year are presentations on Total Residual Chlorine measurement, Disinfection By-Products, Laboratory Ethics, and The Use of Coagulants in Wastewater Treatment. This course is free of charge to our current clients with admission granted on a first come first serve basis. Attendance forms will be posted on our website beginning May 1st. If you are interested in attending, please download the form, fill it out, and submit it to ERA by mail, email ([carroej@gmail.com](mailto:carroej@gmail.com)) or fax (334-502-8888). Following the training course at the country club, ERA would like to encourage our clients to attend a lab tour at our facilities. You can view our lab, see where your samples are being run, meet our technicians, and view our plans for our new building. Dr.

Joe Freda will also reveal his new ERA sponsored race car. Dr. Freda has been racing cars since 1981 both as an amateur and professionally. His new car will be campaigned in the 2012 racing season and will make it's debut following the training course at ERA lab. Be sure not to miss this exciting event!



Team: Speed Quest Motorsports

Driver: Joe Freda

## Contaminant of the Quarter: Chloroform

Have you ever read the back of the bleach container, noticed it says not to mix it with your toilet bowl cleaner, and wondered why that was? It is because toxic gases, including chloroform, can be released by the reaction of the two solutions with the air. Chloroform is an organic molecule that consists of a carbon atom, a hydrogen atom and three chlorine atoms. As a liquid, it is clear, colorless, and has a slightly sweet smell to it. It has gotten publicity for it's use during criminal activity, but it was also used in the medical field as an anes-

thetic in the 1800's until it was suspected of causing death to patients.

Chloroform is a naturally occurring molecule, but it is often made for industrial purposes. It was believed that a majority of the chloroform present in the environment was man-made, but a study in 2002 revealed that man-made chloroform only accounts for <10% of the total chloroform emissions<sup>1</sup>. (continued on page 3)

## Packing a Cooler

Properly packing a cooler is a critical step in obtaining accurate results in a timely fashion. It may seem like a trivial step, but the way a cooler is packed can affect results in several ways. First, it is important to double check your paper work when packing the cooler. Verify that the number appearing on the sample bottle corresponds to that on the chain of custody, and that all the necessary sampling information is properly filled out. If for some reason you are sending mismatching bottle numbers and chain of custody numbers, be sure to write this on the chain of custody. If you need a new chain of custody, contact ERA and we will be happy to send you a copy. Ensuring proper paperwork helps in the efficiency of

obtaining results. It allows for a smooth log-in process and aids in data entry for faster online-access. To keep your paperwork dry, place it in the provided zip-lock bag and tape the bag to the underside of the cooler lid so that it does not become submerged in ice. Also, please be sure to write the date the sample was collected on the sample bottle. Secondly, it is important that coolers be packed carefully, ensuring that all sample bottle caps are securely tightened to prevent spillage of the sample and cooler-wide contamination. When packing a cooler for microbiological analysis, it is important to keep surface waters separate from finished drinking water and fecal effluent samples separate from influent samples.

Thirdly, it is important to keep the samples on ice to ensure they remain  $\leq 4^{\circ}\text{C}$ . This step is important because it helps ensure accurate results. Maintaining the samples at this low temperature prevents bacterial growth which can degrade various analytes of interest. Taking a little extra time up front to verify that the cooler is properly packaged before sending it to our lab will help us obtain the most accurate results on our analysis and provide you with the fastest turn around time for seeing your data.

## Watershed Studies

For the past few years, ERA has been involved in conducting watershed studies. These studies help identify and understand non-point sources of pollution. The services

for these studies includes sample collection, transport to the lab, and sample analysis. Once finished, we will provide you with a final report. We offer very competitive prices

and look forward to giving you a free quote for your watershed study. If you would like a quote please contact Joe Freda at [jfreda@eralab.com](mailto:jfreda@eralab.com).

*“We offer very competitive prices and would love to give you a free quote for your watershed study.”*



Environmental Resource Analysts, Inc.

## ERA Lab Expansion and Website Update

We have been fortunate to grow as a company again this year. Through our growth, we are able to provide you with more comprehensive testing capabilities at competitive prices. This year we are going to be expanding our lab to give us some much needed additional space. Our new building will house our volatile organic lab, a secure data archive area, and a conference room for formal meetings. Having a separate volatile lab will ensure you are getting the most ac-

curate VOC results that are free from residual air contaminants. As the company grows, so does the amount of paperwork. Regulatory agencies require that records and data be kept available for review in a secure location for a minimum of 5 years. ERA provides peace of mind to our clients by maintaining both the raw data and copies of your reports for the required time period. Our new conference room will serve as a comfortable meeting place for our clients. ERA will also

be updating our website and joining Facebook. Our website will still have all the features our clients love, but will now host promotional and “how to” videos. Look for the new website this summer!



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Environmental Resource Analysts (ERA) was founded in 1991 by Dr. Joseph Freda. The company's initial focus was ecological field studies, but expanded into the areas of aquatic toxicology and analytical chemistry. Our primary motivation for expansion has always been, and will continue to be, meeting the needs of our valued clients. This commitment to service has allowed us to obtain many diverse capabilities such as toxicology studies, bacteriological analysis, inorganic and organic testing, and hazardous waste identification.

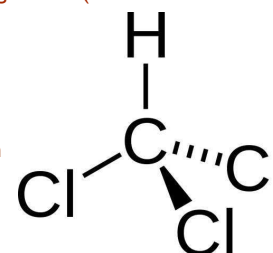


# Contaminant of the Quarter: Chloroform

In industry, it is employed for a variety of uses such as a solvent and as components in fuel, refrigerants, and paints. In nature it is produced in a number of ways including by microorganisms, volcanism, and burning vegetation (such as forest fires). Chloroform is also commonly found in treated water sources such as drinking water, effluents, and even swimming pools. This is because water is often treated with chlorine to rid the water of harmful bacteria. When the chlorine interacts with organic compounds found naturally in the water, chlorinated byproducts, such as chloroform, are produced. The EPA has categorized chloroform as a "probable human carcinogen"<sup>2</sup>. The toxicity of chloroform is dependent not only on the amount of exposure but also the route of exposure. Humans can be exposed to chloroform orally by ingesting tap water, or prepared foods and beverages that include the use of tap water during the production process. Humans are also exposed to chloroform by inhalation of air containing either naturally occurring chloroform, chloroform produced from tap water vapor, or chloroform emission released by industrial sources. The expected amount of chloroform that humans are exposed to in the air each day is 2-5µg/day in rural areas and 6-200µg/day in cities<sup>3</sup>. People with increased risk of exposure are those who swim in chlorinated swimming pools regularly, work at or near chemical plants, and those that work at water

**"The EPA has categorized chloroform as a "probably human carcinogen."**

treatment plants as well as paper and pulp mills. Exposure to chloroform by inhalation can cause central nervous system depression in humans. Based on studies in animals, it is believed that ingested chloroform can cause an increase in liver and kidney tumors. Because of these health effects, the EPA has placed a regulatory limit of 80µg/L on the combined amounts of chloroform and other potentially hazardous compounds in drinking water. While chlorinating drinking water can produce chloroform, not chlorinating the water can lead to the even more probable contamination of the water with disease causing organisms. If you are concerned about the organic byproducts in your drinking water, you can install a carbon filter (such as a Britta filter) to remove them before drinking.



The chloroform molecule

Source: [Chemistry.about.com](http://Chemistry.about.com)

#### Sources:

1. *Terrestrial natural sources of trichloromethans (Chloroform, CHCl<sub>3</sub>)-An overview*—Laternus, F et al, Biogeochemistry 60: 121-139, 2002.
2. *Chloroform Hazard Summary* EPA, created in April 1992, revised in Jan 2000
3. *Toxicological Profile for Chloroform*—Selene, C et. Al US Department of Health and Human Services, 1997