

Environmental Chemistry



RTI International is known for excellence in performing trace measurements of a wide array of environmental sample matrices, including ambient air, workplace and industrial air, animal and plant tissues, soils and sediments, hazardous wastes, water, and physiological fluids. Researchers in RTI's Environmental Chemistry Department provide technical support in environmental sampling and analyses to state and federal agencies and commercial clients. With a staff of experienced scientists and state-of-the-art laboratories and equipment, RTI provides data of the highest quality to enable our clients to make the best decisions about their programs.

Strengths

RTI's environmental chemists specialize in the sampling and analysis of environmental pollutants that impact human, animal, and plant health and are detrimental to cultural or geological landmarks. We provide expert services in

- Ion chromatography procedures and research
- Organic and elemental carbon investigations
- Filter module loading and shipping
- Passive sampling and analyses
- Automated procedures for high volume and quality management.

Solving Sampling and Analytical Problems for Government and Commercial Clients

Since 1985, RTI's Ion Analysis Laboratory has performed ion analyses for the National Park Service's Interagency Monitoring of Protected Visual Environments (IMPROVE) Program. Annually, we process approximately 22,000 nylon filter samples for anions. We have also prepared and analyzed carbonate-impregnated filters for SO₂ and conducted summertime passive ozone studies.

Since 1998, RTI has served as the U.S. support laboratory for Ogawa & Co., inventor and supplier of passive samplers and supplies. RTI loads, ships, and analyzes passive samplers for O₃, NO₂/NO_x, SO₂, and NH₃ for commercial and government clients, universities, international studies, libraries, museums, and archives. Passive samplers have the advantages of requiring no power (and, therefore, have no noisy pumps), relatively low cost, and ease of use. Small and unobtrusive, they are ideal for identifying "hot spots" for intensive monitoring.

Case Study: Support to the National Park Service "IMPROVE" Program

Client Problem: To provide accurate and timely ion, SO₂, and ozone data to assist the National Park Service in its mission of "protection and enhancement of air quality-related resources in the areas it manages."

RTI Solution: RTI's qualified researchers used validated procedures and state-of-the-art instrumentation to make reliable determinations of the analytes of interest.



RTI has loaded, shipped, and analyzed ozone samplers for the National Park Service and other clients to aid in special summer studies of the effects of ozone on plant health, agriculture, and ecosystems. We have also provided similar services for measurement of ammonia in agricultural settings and for NO₂ studies related to asthma and children's health.

Since 1999, RTI has consistently provided sampling and analytical services for the U.S. Environmental Protection Agency's PM_{2.5} Chemical Speciation Program. Our Sample Handling and Archiving Laboratory loads sampler modules and ships 15,600 packages (representing 46,800 filters) per year. Our researchers perform approximately 80,000 air analyses per year for organic and elemental carbon, as well as sulfate, nitrate, sodium, ammonium, and potassium ions.

Our skilled professionals and state-of-the-art instrumentation enable RTI to conduct these types of analyses and services at competitive costs and deliver high-quality results.

Case Study: Passive Sampling in a Museum Environment

Client Problem: To accurately monitor for NO₂, SO₂, and ozone in a museum environment in accordance with NARA Standards Para. 1571.10 and Appendix B, while meeting the client's specific needs for an unobtrusive sampling method.

RTI Solution: Using our experience in passive sampling, RTI loaded Ogawa passive samplers with the appropriate collection pads and shipped them to the client. The client was able to deploy the samplers by "hiding" them in display cases or on shelves, and there was no need for a noisy pump. The exposed samplers were returned to RTI, where they were analyzed for the gases of interest.

More Information

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