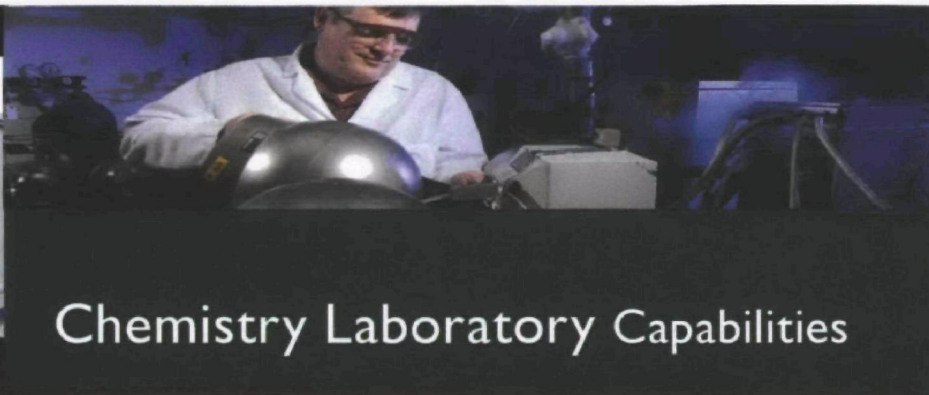


**Science
TO RESULTS**
Using science to create a healthier environment



Chemistry Laboratory Capabilities

U.S. EPA | SCIENCE AT THE EPA NEW ENGLAND REGIONAL LABORATORY

SCIENCE lies at the heart of the mission of the U.S. Environmental Protection Agency (EPA). The Agency must rely on cutting edge research, accurate measurements and effective technology to implement its programs to protect the environment and human health. Without sound science and credible data, EPA can not wisely set environmental and health standards, clean up contaminated sites, measure ambient air and water quality conditions, or identify the new technologies or practices that will reduce releases to the environment. These fact sheets share with you some of our EPA New England's laboratory capabilities and exemplify some of the very best science we do to meet our agency mission.

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GOAL:

Environmental decisions must be grounded in accurate data. The day to day mission of the chemistry team at EPA New England's regional laboratory is to maintain the capability to detect a wide variety of contaminants in various media (air, soil, water, wastewater, and solid wastes) at the minute detection levels required to make risk decisions in EPA's cleanup work and regulatory decisions in its compliance programs.

PROGRESS:

The regional laboratory maintains over 50 standard operating procedures that support the analysis of volatile organic compounds (materials that evaporate readily into air), semi-volatile organic compounds, PCBs, pesticides, and inorganic compounds (e.g., heavy metals and cyanide.) The laboratory is also able to develop methods for emerging contaminants when analyses are not readily available from commercial labs or available only at extremely high cost.

The laboratory's chemistry team performs analyses by Gas Chromatography, Liquid Chromatography, Mass Spectrometry, X-ray Diffraction, Atomic Absorption, Inductively Coupled Plasma, Ion Chromatography and a variety of wet chemistry techniques.

The laboratory performs an average of 12,000 to 15,000 analyses a year and all of the associated quality control analyses needed to support that data in decision making and, when needed, in court. To maintain the overall integrity of the laboratory's program and help assure the quality of analytical data, the laboratory has achieved and maintains accreditation under



Analyzing metals by Inductively Coupled Plasma (ICP) technique

the National Environmental Laboratory Accreditation Conference (NELAC) standard for water and wastewater analyses. The laboratory is expanding its accreditation to include soils and solid waste methods. Accreditation requires that we maintain a number of management systems to control samples, analyses, and data; perform semi-annual proficiency tests on test samples provided by outside sources, and conduct periodic internal and third party external audits.

BENEFITS:

EPA New England's in-house analytical capability provides the region's air, water, waste and enforcement programs efficient and customizable analytical services, including

(1) flexible planning for situations where sampling needs are difficult to define up-front, (2) fast response times in emergency situations, and (3) an ability to respond to emerging issues at the cutting edge of environmental science. Most importantly, it provides a thinking chemist on the team that can help identify when results suggest something more is going on at a site and will report more than the target analytes contracted on a scope of work.