

Who We Are

EML is a federal technical resource with a distinguished 50-year reputation in radiation and radioactivity metrology. It is government-owned, government-operated, program-matically under the Office of Environmental Management in the U. S. Department of Energy. The Laboratory is administered by the Chicago Operations Office.

What We Do

EML provides technical assistance, program management support, and data quality assurance for measurements of low-level radiation and radioactivity relating to environmental restoration, long-term stewardship of DOE's Office of Environmental Management sites, global nuclear nonproliferation, and other priority issues for DOE, as well as for other government, national, and international organizations.

Our Value

As a federal resource laboratory with a readily available and objective in-house capability, EML is a critical asset to DOE's site closure and cleanup operations. The Laboratory develops and deploys radiological field characterization and monitoring technologies; conducts impartial assessments and critical reviews; and provides expert consultation and programmatic management.

Core Capabilities:

- Aerosol Measurements
- Airborne Radioactivity Assessment
- Atmospheric and Groundwater Modeling
- Data Quality Assessment
- Database Management
- Dose Assessment
- Dose Reconstruction
- Electronics/Mechanical Design
- Environmental Sampling
- Gamma-Ray Spectrometry
- Instrument Fabrication
- Neutron Spectrometry
- Physical Modeling
- Radiochemistry
- Radiological Surveys
- Survey Design/Data Quality Objectives
- Thermoluminescence Dosimetry

Unique and Special Facilities

- Electron Microscope
- Electronics Assembly and Test Area
- Environmental Chamber
- Machine Shop
- Neutron and Gamma-Ray Calibration Facility
- Pulse Ionization Chambers for Radon Measurements
- Radiochemistry Laboratories
- Sample Preparation Facility
- Thermoluminescent Dosimetry Reader Facility

Activities:

- **Serves** the DOE as a nationally and internationally recognized low-level environmental radiation and radioactivity measurements laboratory.
- **Develops**, demonstrates and deploys innovative and advanced radiological measurement and survey methods and instruments in support of cleanup, decommissioning and clearance operations at sites in the DOE complex.
- **Serves** as specialists for applications of *in situ* gamma-ray spectrometry to site remediation, fallout assessment and nuclear facility measurements.
- **Provides** and implements an ongoing quality assessment program (QAP) for environmental measurements performed by all DOE contractors.
- **Serves** as a Reference Laboratory for the DOE Radiological Traceability Program.
- **Performs** technical coordination and program management for DOE initiatives.
- **Maintains** and updates a comprehensive database on DOE's Protecting Human Subjects Program.
- **Develops** and maintains an International Environmental Sample Archive Database.
- **Responsible** for the management, analysis and coordination of updates of the Cleanup Criteria Decision Document Database for the Center for Risk Excellence.
- **Contributes** to the development of U.S. policy on the analyses of environmental radioactivity for CTBT and nonproliferation monitoring.
- **Organizes** intercomparisons of environmental dosimeters and *in situ* gamma-ray spectrometers.
- **Establishes** methods for the analysis of environmental samples with a focus on radionuclides. Publishes these methods in its Procedures Manual (HASL-300, 28th Edition), first published in 1957.
- **Serves** as a federal presence and represents DOE on inter-agency working groups such as the Multi-Agency Radiation Laboratory Protocols Manual (MARLAP) and the Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM).
- **Serves** on Advisory Review Teams for the Los Alamos Pueblo Project to provide technical assistance for the Accord Pueblos.
- **Provides** training in radiation survey designs, including MARSSIM.
- **Maintains** a worldwide network of aerosol and deposition sampling sites.

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