



# Rocky Mountain Arsenal

## Project Description

At the height of World War II, the United States Army purchased 17,000 acres of land (now known as the Rocky Mountain Arsenal or RMA) on which to manufacture chemical weapons. This land is located approximately 10 miles northeast of downtown Denver, Colorado. After the war, private industries were encouraged to lease facilities at the RMA to foster economic growth in the area and to maintain facilities for national security. Common industrial and waste disposal practices used in that era resulted in soil, surface water, and groundwater contamination.

In June of 1996, a site-wide remedy was approved and signed by the U.S. Army, the Environmental Protection Agency, and the Colorado Department of Public Health and Environment. Foster Wheeler Environmental Corporation (now Tetra Tech) served as the program management contractor for the entire operation, which included:

- closing or protecting wells
- consolidating contaminated soils
- re-grading to maximize runoff and to minimize ponding
- constructing a soil cap over the contaminated soils
- and re-establishing vegetation over the site.

## GeoTesting Express' Role

GeoTesting Express, Inc. (GTX) worked directly for Foster Wheeler Environmental Corporation (FWEC) as the on-site quality control laboratory in support of the soil-capping efforts.

On two separate occasions during a four-year span, GTX mobilized to staff and to equip an on-site laboratory within 5 days of the notice to proceed. The laboratory was equipped to perform various soil index tests, such as

- grain size analysis
- Atterberg limits
- moisture-density tests
- specific gravity
- and permeability.

GTX managed the staff and provided rapid turnaround on data reduction/reporting of test results directly to FWEC. Each mobilization lasted for approximately 1.5 years. During the peak of operations, we employed 6 full-time personnel.

All activities were performed under the oversight of the United States Army Corps of Engineers. Strict adherence to safety and quality guidelines was enforced, and we were frequently audited to ensure compliance.

In addition to on-site testing, GTX provided laboratory services at our other

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## Projects

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- HIGHWAYS AND BRIDGES
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- REINFORCED-SOIL STRUCTURES
- RETAINING STRUCTURES
- SITE DEVELOPMENTS
- TANK FOUNDATIONS
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- WATER AND WASTEWATER FACILITIES

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permanent locations. These labs provided support by testing geosynthetic materials (geomembrane, geocomposite, and geotextile) used during construction of the landfill cap. GTX's Massachusetts laboratory also performed permeability tests on undisturbed samples of clay used in constructing the landfill cap. Tests were carried out with 24 – 48 hour turnaround times.

Overall fees for services provided to FWEC totaled more than \$1,000,000 over a four-year span.

**Benefits to Client**

GTX's ability to fulfill FWEC's request for an on-site laboratory on short notice (within 5 days) proved invaluable to the success of an on-time project start-up. The experience and helpfulness of our staff was repeatedly praised throughout the project duration. Our stellar record dur-

ing quality and safety audits was unparalleled on the project site. Time and again, GTX responded to uncommon requests for tests and turnaround times while maintaining an excellent working relationship with FWEC's management team. Our flexibility and responsiveness made us a critical part of the success of this project.