



OPERATED BY SAVANNAH RIVER NUCLEAR SOLUTIONS

WASTE FORM DEVELOPMENT



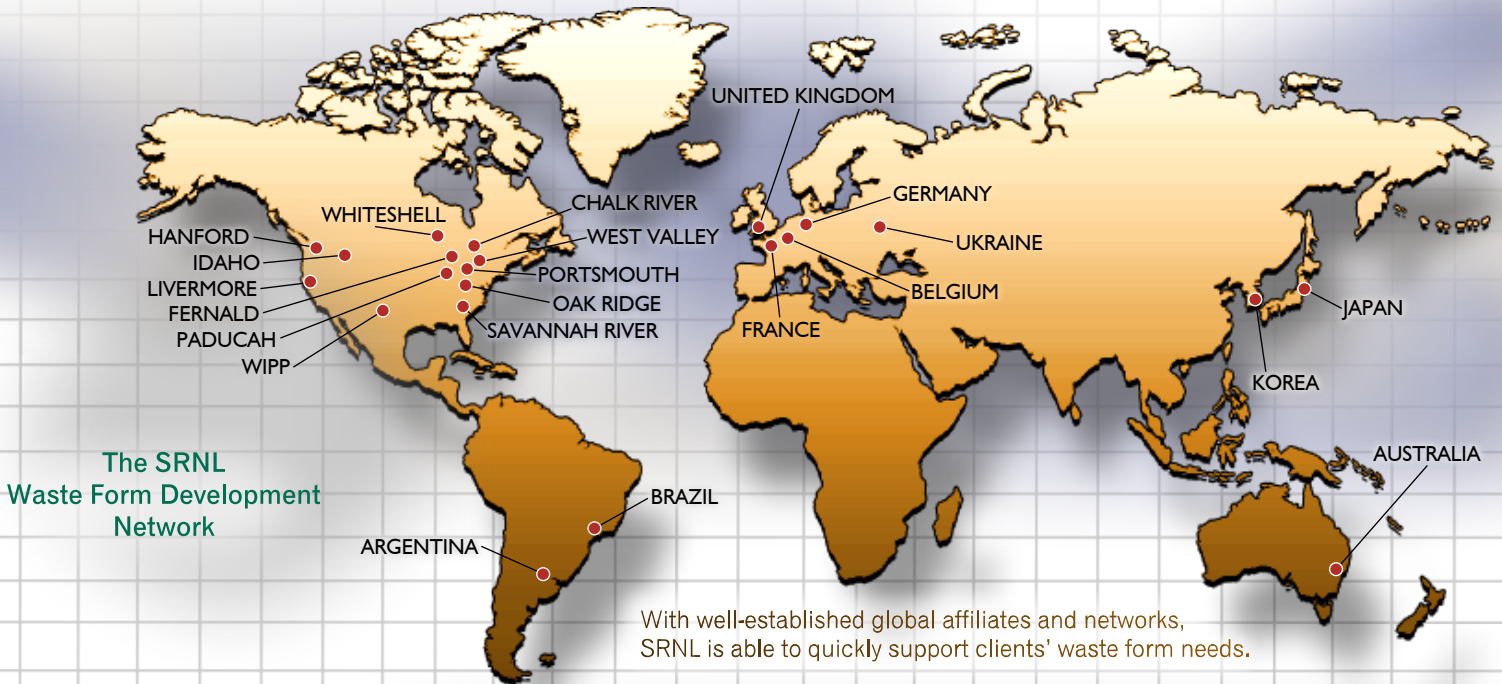
For nearly half a century, Savannah River National Laboratory has been at the forefront of waste form development. With a proven track record of social responsibility, facility implementation, and effective results, SRNL is the trusted steward of the Department of Energy - Environmental Management mission.

During all phases of waste clean-up, SRNL provides direct involvement in full-spectrum services and delivers viable, performance-based solutions. Beginning with the establishment of any program, SRNL leads the client through the correct and appropriate course - ensuring that the client's goals, needs and actions are regulatory compliant.

Through waste characterization, formulation, testing and examination, a specifically tailored composition is developed to maximize waste form performance.

SRNL administers hands-on support for the client's implementation needs, and the waste form development team helps to establish and maintain a fully-functional, long-term program.

Throughout the entire waste form development process, SRNL's team of experts provide continual monitoring and assessment to ensure the program achieves stable, permanent and enduring performance.



With well-established global affiliates and networks, SRNL is able to quickly support clients' waste form needs.

WASTE FORM DEVELOPMENT

CORE EXPERTISE



- Radio-chemical analysis
- Sludge & Salt treatment; preparation for waste processing
- Waste form chemistry & behavior
- Melter technologies - pilot & bench-scale
- Immobilization process modeling
- Waste form qualification
- Integrated flowsheet testing & process control

THE PROCESS

Program Development

- SRNL helps the client plan and establish an all-encompassing progressive program, treatment concept, and process flowsheet.
- To ensure regulatory compliance, a fully-integrated pathway is established.

Analysis & Characterization

- SRNL examines, identifies, formulates, and then tests a tailored composition designed to effectively immobilize the waste.
- Waste form formulation, qualification, process modeling, and both bench- and pilot-scale testing are incorporated in this meticulous and comprehensive phase.

Implementation

- SRNL guides and advises the client through the full range of program implementation.
- System and facility consultation, location and logistical solutions, and the continued adherence to regulatory requirements.

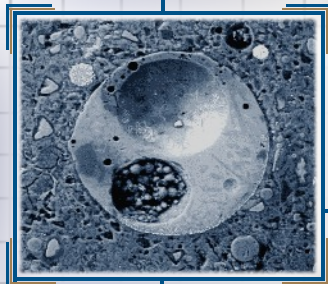
Continual Assessment

- SRNL provides hands-on, long-term monitoring and assessment of the program.
- Every unique and independent waste stream is re-routed through characterization and implementation, processes are fine-tuned, and the client's performance value is refreshed and advanced.

THE BASICS OF FORMULATION

Through varied manipulation of a form's microstructure and chemistry, along with innovative processing methods, a specifically tailored composition (chemical recipe) is developed.

Formulation achieves the maximum performance for the client's needs.



COMPLEX MICROSTRUCTURE

(left) fly ash magnification shows the myriad intricacies within cementitious waste form composition.

