Hanford 222-S Laboratory Contact
Our Mission
To safeguard the nuclear waste stored in Hanford’s 177 underground tanks, and to manage the waste safely and responsibly until it can be treated in the Waste Treatment and Immobilization Plant for final disposition.

Vision
To be a high-performing, innovative organization that is safety-conscious and employee-focused, and committed to achieving our mission with environmental and fiscal responsibility.
Office of River Protection (ORP)
ORP is responsible for planning, integrating, and managing the River Protection Program executed by contractors performing work under ORP management. ORP has ~225 employees, both federal and contractor.

Washington River Protection Solutions (WRPS)
WRPS is the prime contractor responsible for safely managing and operating the Tank Farms. WRPS has 2,094 employees*.

Bechtel National, Inc. (BNI)
BNI is responsible for the engineering, construction, startup and commissioning of the Waste Treatment and Immobilization Plant. BNI has 3,044 employees*.

Wastren Advantage, Inc. (WAI)
WAI is the prime contractor responsible for managing the 222-S Laboratory. WAI has 56 employees.*

*As of September 30, 2016
Retrieval efforts at double-shell tank AY-102

Tank Farm update

Future location of Low-Activity Waste Pretreatment System

Waste Treatment and Immobilization Plant
222-S Laboratory
222-S Laboratory – First Floor
222-S Laboratory Layout of 11A Hot Cell

222-S Laboratory Layout of the Basement/Tunnel
Laboratory Overview

- The 222-S Laboratory complex in the 200 West Area of the Hanford Site is the primary onsite lab for analysis of highly radioactive samples in support of all Hanford projects.

- Washington River Protection Solutions (WRPS), under the direction of DOE’s Office of River Protection (ORP), provides the laboratory’s support functions, maintenance, waste services and analytical work. WRPS also develops process technology and analytical methods.

- Another DOE contractor, Wastren Advantage, Inc. (WAI) performs analytical services production functions at the laboratory.
Laboratory Overview

- Began operations in 1951 as the process control laboratory for the REDOX plutonium separations plant
- Series of upgrades and expansions
  - Hot-cell addition (1994)
  - Reconstruction of exhaust ventilation system (2004)
  - Construction of 2713-S, a new office building
  - Construction of 2227-S, a new storage building
  - Upgrade heating system from steam to electric
Laboratory Overview

- 70,000 square foot full-service analytical facility that handles highly radioactive samples for purpose of organic, inorganic, and radio-chemistry analyses.

- Contains 11 hot-cells, which gives the lab the capability to remotely handle highly radioactive samples of tank waste while minimizing radiation dose to workers.

- Contains over 100 pieces of analytical equipment, 156 fume hoods, and 46 manipulators to perform work, about half of which are in use at any one time.

- Performs many functions, which include testing of waste compatibility and physical characteristics to support tank-to-tank waste transfers, performing corrosion rate studies and chemical testing to support tank corrosion inhibition, and providing input to the engineering specifications for each of the 242-A Evaporator campaigns.

- Studies the physical and chemical characteristics of waste necessary to enable waste retrievals, provides data to support tank closure requirements, and supports the Vadose Zone program.
11A Hot Cell
11A Hot Cells
Counting Room
Room 4S
Current Hanford 222-S Complex Contracts:

Laboratory Analytical and Testing Services (LA&TS) Contract

- Contractor: Wastren Advantage, Inc. (WAI), LLC: September 21, 2015
- Completion of Contract - Estimated completion date in contract: September 20, 2020 (after all option-years)
- Performance-based Fixed-Price-Award Fee contract with Cost-Reimbursement and Labor Hour provisions
- Current price/cost: $44,768,192
- Current available fee: $855,207

Mission requirements identified in the current LA&TS Contract:

- Analytical Operations
- Integrated Planning
- Pension and Benefit Plans
Current Hanford 222-S Complex Contracts:

Tank Operations Contract

- Completion of Contract - Estimated completion date in contract: September 30, 2018
- Performance-based Cost-Plus-Award Fee contract
- Current price/cost: $6,102,560,800*
- Current available fee: $286,665,548*

Mission requirements identified in the current Tank Farm Contract:

- Facility and Equipment Maintenance and Upgrades
- Integrated Planning
- Miscellaneous Mission Requirements
- Process Chemistry
- Sample Waste Management
- Pension and Benefit Plans

* Note this value is for the full Tank Operations Contract. The 222-S Analytical Laboratory portion is substantially less.
### Summary - 222-S Complex Work Scope

#### Analytical Operations
- The Contractor provides analytical chemistry support for the Hanford Site. Currently there are approximately 25,000 analyses being performed annually. Once Direct Feed Low Activity Waste pretreatment system is operational, it is expected the number of analyses performed annually will increase to approximately 35,000. QA/QC samples account for an additional 35% analyses. Tank farm activities are anticipated to continue to be the 222-S Analytical Laboratory’s primary customer, with a comparatively small amount of work from other Hanford Site activities, DOE sites, or DOE research facilities.
- Responsibilities will include but will not be limited to: receipt of highly radioactive samples (300 rad/hour) with a significant portion gamma, sample handling and preparation that may require hot cell operations, customer consultation, sample analysis, data management, issue of data reports, and site standards laboratory services.
- Develop new analytical and chemistry processes and perform research as needed to support the Environmental Management Mission.
- Manage, treat, and store sample wastes generated at the 222-S Analytical Laboratory and other Hanford Site Contractors.

#### Facility and Equipment Upgrades
- Continually evaluate facilities and operations to improve analytical processes, cost effectiveness, safety enhancements, and proactively seeking enhancements to progress the Hanford Site
- Plan and execute upgrades to the 222-S Analytical Laboratory Complex and equipment to support safe, reliable, and compliant operations according to the life cycle management plan
- Provide analytical instrumentation and support equipment to ensure capability, capacity, storage, and reliability are available to support Hanford Site Cleanup Schedules

#### Safely Manage & Operate Laboratory
- Safely operate and maintain the 222-S Analytical Laboratory Complex Facilities and supporting infrastructure systems including Safeguards and Security and Emergency Response
- Maintain an Integrated Safety Management System
- Implement Quality Assurance and Program Description
- Maintain command and control through central shift manager
- Ensure efficient and effective conduct of operations, conduct of maintenance and conduct of engineering

#### Facility and Equipment Upgrades
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- Provide analytical instrumentation and support equipment to ensure capability, capacity, storage, and reliability are available to support Hanford Site Cleanup Schedules
## Summary - 222-S Complex Work Scope (cont.)

### Integrated Planning
- Coordinate with Hanford Site Contractors to develop integrated Hanford Sitewide analysis plans, data quality objectives, and provide process and analytical technology support
- Develop mutually agreed upon interfaces with the Hanford Site Contractors to support their analytical chemistry sampling needs and other chemistry support
- Determine, implement, and report sample analysis rates and waste generation estimates to effectively manage commitments and personnel

### Miscellaneous Mission Requirements
- Provide a radiological protection program to perform 222-S Analytical Laboratory Operations and Maintenance
- Develop, evaluate, and maintain authorization basis documentation, environmental permitting, and other regulatory compliance documentation and perform the necessary compliance activities as required for a DOE Hazardous Category 3 Facility
- Interface for site services
- Legal support
- Pension and benefit plans
Hanford 222-S Acquisition Objectives/Goals

Award contract that will:

- Safely manage and operate the 222-S Analytical Laboratory
- Protect the well-being and safety of workers, public, and the environment
- Provide quality, timely, and cost effective sample analysis through innovative approaches
- Develop/enhance workforce skills processes to meet future site challenges
- Implement cost-saving innovative approaches
- Encourage and develop small business capacity
- Have a strong, effective working relationship with labor unions
- Continually evaluate facilities and operations to improve analytical processes and proactively seek enhancements
- Coordinate with other Hanford Site Contractors to effectively communicate and execute laboratory analyses
Additional Information

- EM Consolidated Business Center, 222-S Laboratory Contract web page: https://www.emcbc.doe.gov/SEB/222S_Lab/
- EMCBC email address: 222-SLab@emcbc.doe.gov
- Both Industry and Community will have another opportunity to provide input to the future contact
- Hanford Acquisitions