



UNITED STATES DEPARTMENT OF ENERGY

OFFICE OF RIVER PROTECTION

Hanford Advisory Board Agency Update

JD Dowell, Deputy Manager

Thursday, September 4, 2014





Areas of Responsibility

**200 West Area
Tank Farms**

S/SX/SY

U

TX/TY

T

**200 East Area
Tank Farms**

BX/BY

B

AW/AP

A/AX

AY/AZ

C

AN

**Waste Treatment
Plant**



Our Team

Office of River Protection (ORP)

ORP is responsible for planning, integrating, and managing the River Protection Program executed by contractors performing work under ORP overall management.

Washington River Protection Solutions LLC (WRPS)

WRPS is the prime contractor responsible for safely managing and operating the tank farms.

Bechtel National, Inc. (BNI)

BNI is responsible for the engineering and construction of the Waste Treatment and Immobilization Plant (WTP).

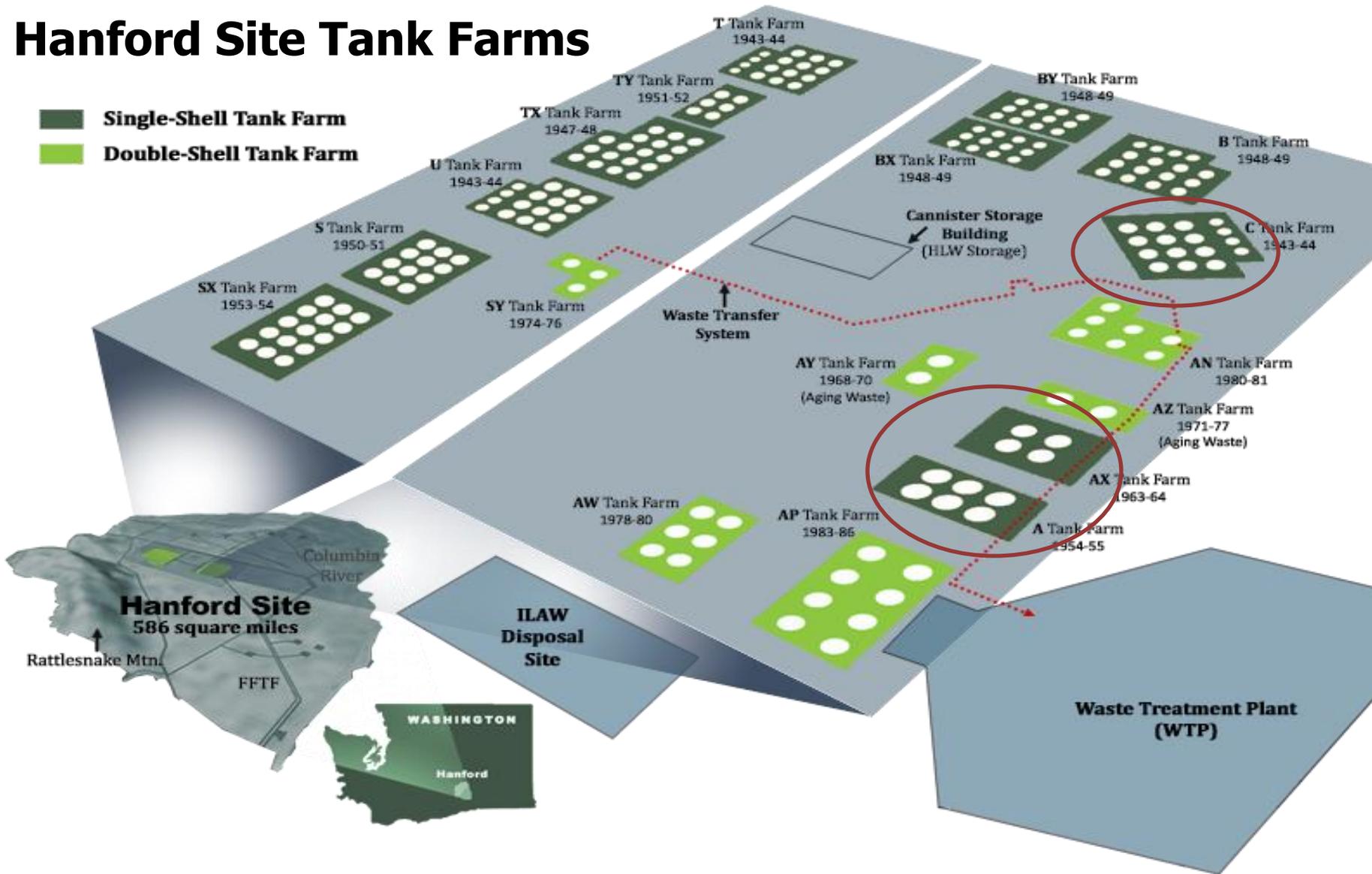
Advanced Technology and Laboratories International (ATL)

ATL is the prime contractor responsible for managing the 222-S Laboratory.



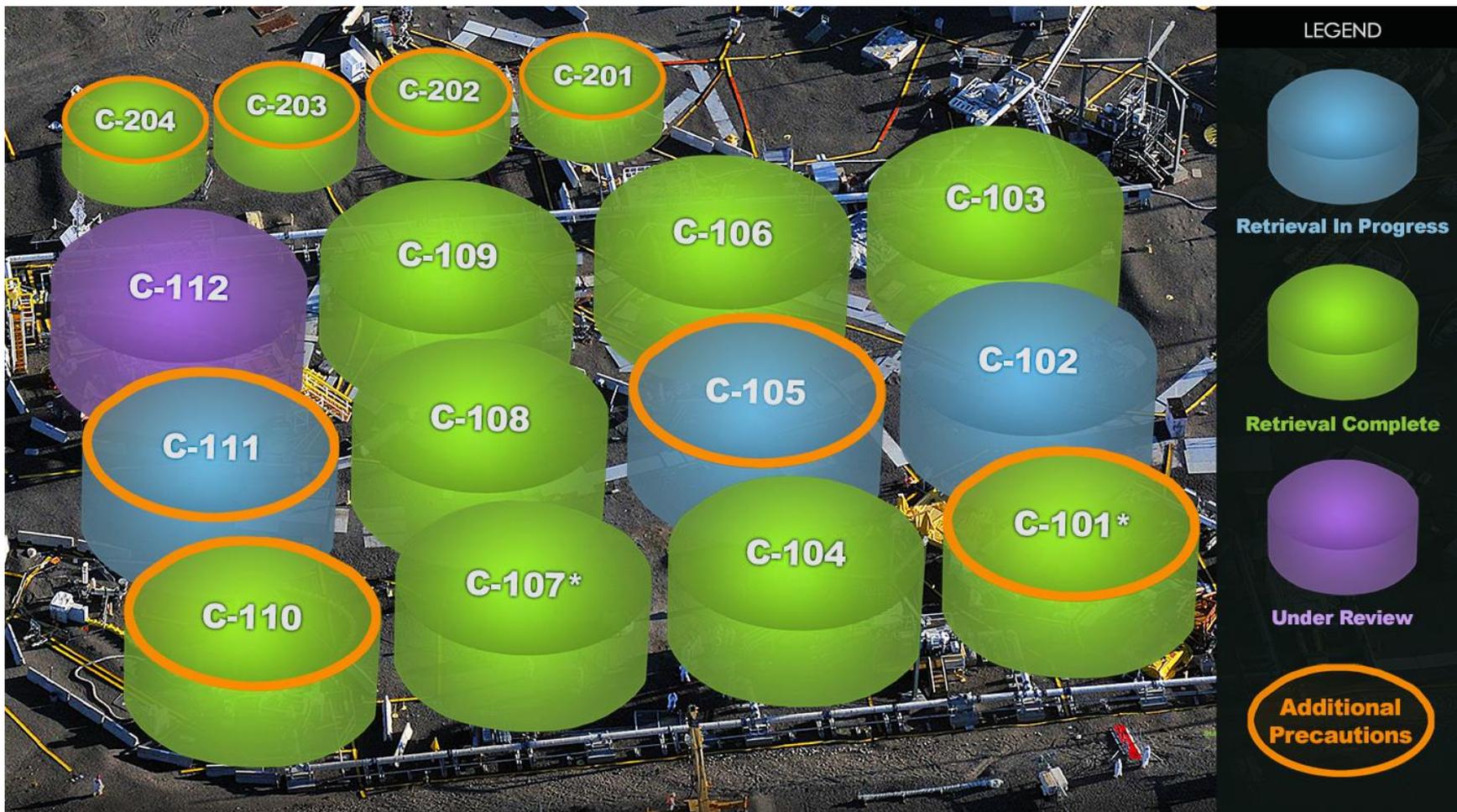


Hanford Site Tank Farms





C-Farm Retrieval Status



* Pending submittal of the retrieval completion certificate



Single-Shell Tank C-107 Retrieval - Complete





Single-Shell Tank C-102 Retrieval - Challenges



Obstruction near the C-102 Pump



Slucier #2 Under Riser #2



Commence Next Single-Shell Tank Retrievals



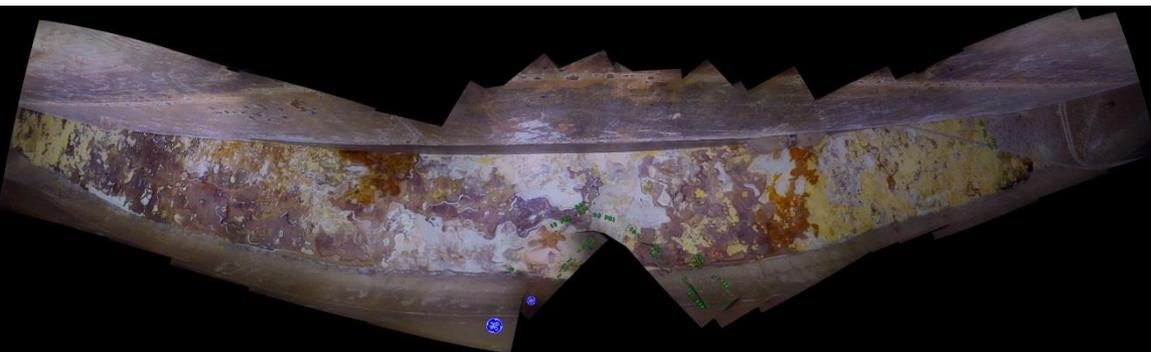


242-A Evaporator Campaign

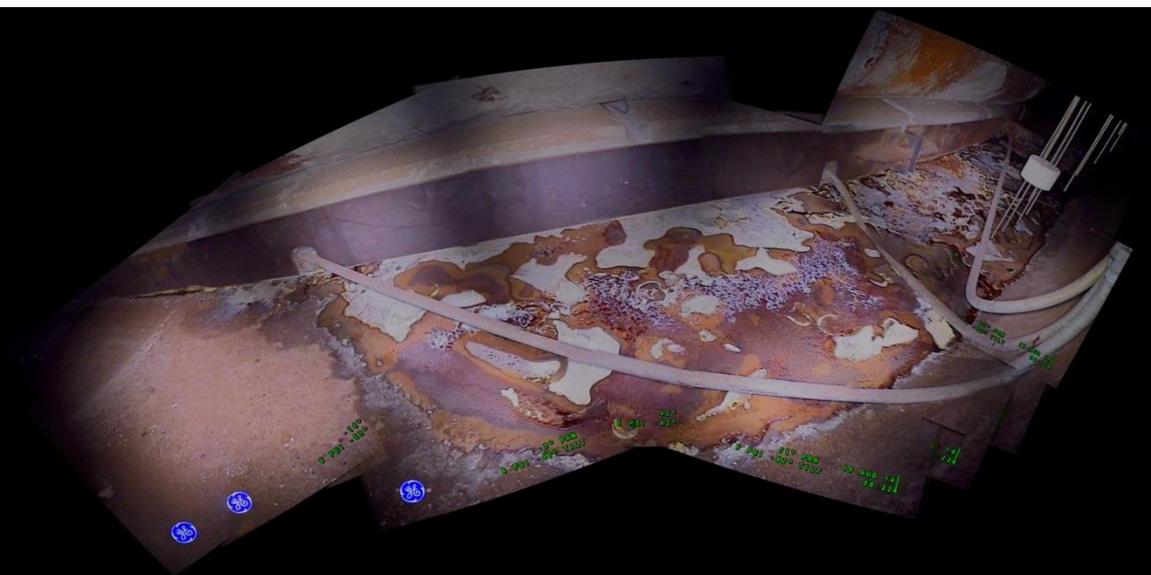




Double-Shell Tank AY-102 Status



Riser 87



Riser 77



Riser 83



Riser 87

Riser 77

Riser 86

Riser 79

SECONDARY TANK (WSTA)
PRIMARY TANK (WST)

Riser 89

Riser 88



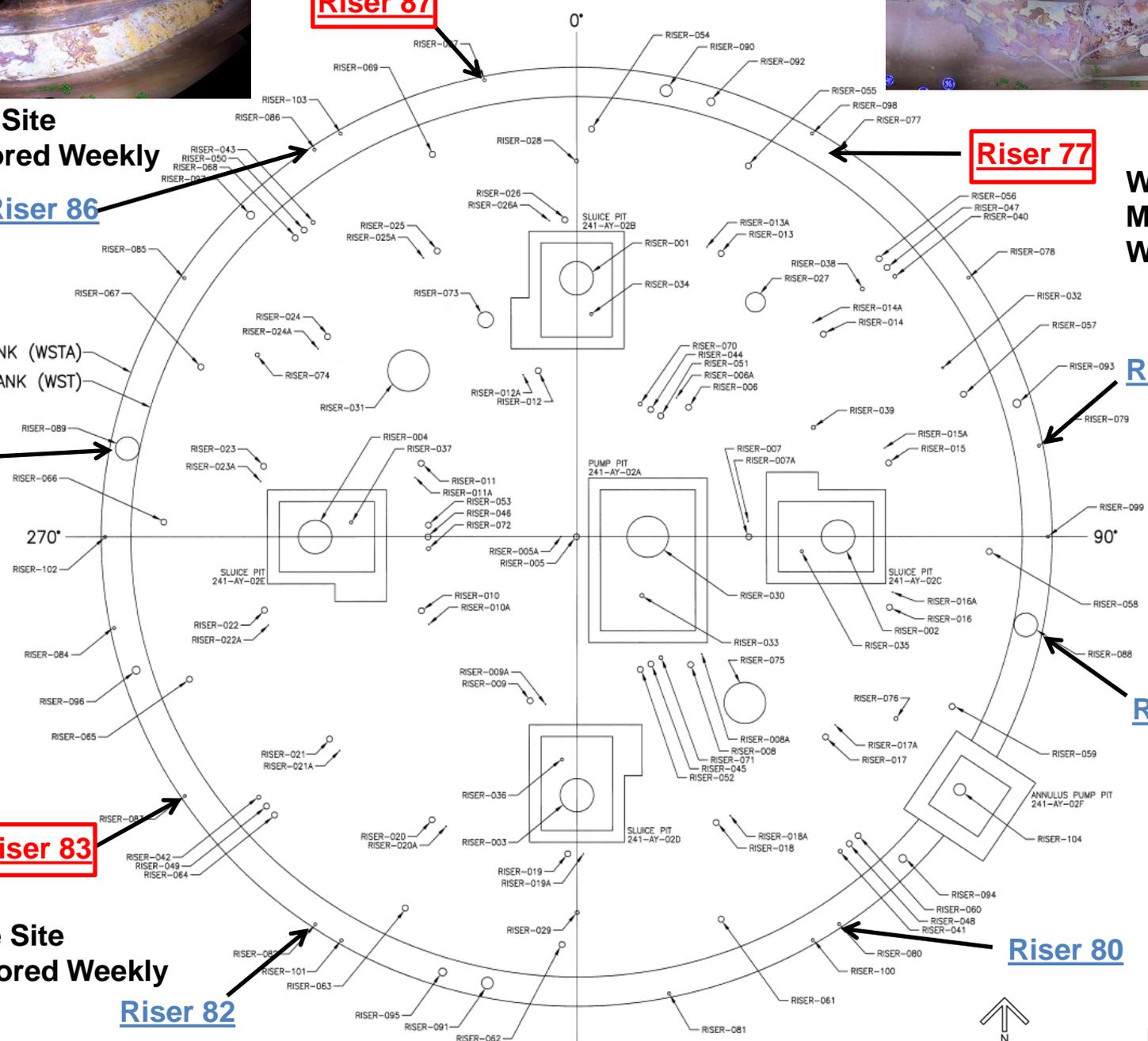
Riser 83

Riser 80

Waste Site Monitored Weekly

Riser 82

180°
PLAN VIEW TANK 241-AY-102



Waste Site Monitored Weekly

Waste Site Monitored Weekly

7/15/2014



Safely Managing Tank Farm Hazards

- Hanford's tank farms are a hazardous work space – workers deal with radiological, industrial and chemical hazards on a daily basis
- Hazards are identified, controlled and minimized; vapor exposures are far below applicable occupational limits
- Many improvements have been made in the past 10 years
- We continue to look for ways to safely reduce exposures as much as possible





Changes Required Concerning Vapors

½ mask or better required for all Tank Farm work and corridor work during retrievals until retrieval has been terminated and:

- Industrial Hygiene Technicians perform monitoring sweep of Tank Farm areas and
- Exhauster samples are collected at two hours post termination to confirm headspace sources are purged and at or below pre-retrieval baselines.

Before Tank Farm access requirements are returned to normal





Worker Monitoring Results

In addition to all of the normal stack monitoring and area monitoring approximately 3,200 personal samples were collected from April 1 to July 7, 2014:

- 19 above 1% of Occupational Exposure Limit (OEL) (including asbestos samples)
- 4 above 10% of OEL (2 asbestos samples, mercury (14.8%) and nitrous oxide (24.5%))
- 0 above 50% of OEL





Chemical Vapor Solutions Team

The Chemical Vapors Solutions Team is a working group of managers, safety employees, HAMTC safety representatives and others who evaluate chemical vapor hazards and controls. Sub-teams have been established:

- **Medical Protocol and Communications** – Improved the interface between HPMC, contractors, employees and outside medical providers
- **Engineered Controls** – Focused efforts on long-term controls to move vapors away from work zones and evaluate other technologies for implementation. Ongoing evaluations and implementations occurring
- **Streamlined use of PPE** – Streamlined process for upgrading and making respiratory protection more easily accessible
- **A Farms Vapor Controls** – Updated controls in A, AX, AY and AZ farms
- **Event Protocol** – Implemented enhanced event protocol tools
- **New Technology** – Evaluating new technology for detecting, modeling and sampling vapors
- **Chemical/Vapor ALARA** – Starting to focus on ALARA principles and industry best practices



Independent Expert Assessment

- Savannah River National Laboratory is leading an expert panel review of current chemical vapors management and worker protection measures
- Experts from academia, industry, professional societies, and government agencies
- Experienced in toxicology, exposure assessment, industrial hygiene engineering and program management, chemistry and respiratory protection
- Not just a review; focused on solutions
- Draft report in September; final in December



Eliminate Vapor Sources



Administrative Controls



Waste Treatment and Immobilization Plant Update

**High-Level
Waste Facility**

**Pretreatment
Facility**

**Analytical
Laboratory**

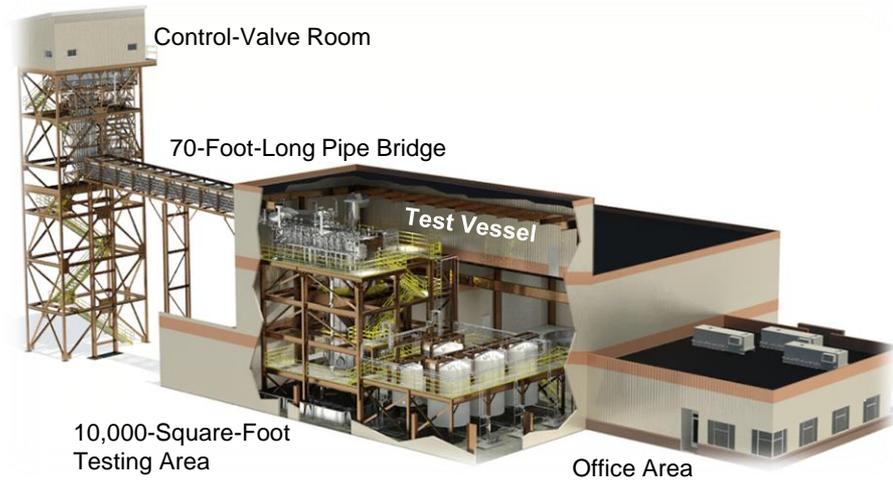
**Balance of Facilities
(20 support buildings)**

**Low-Activity
Waste Facility**

September 10, 2013



Full Scale Vessel Testing



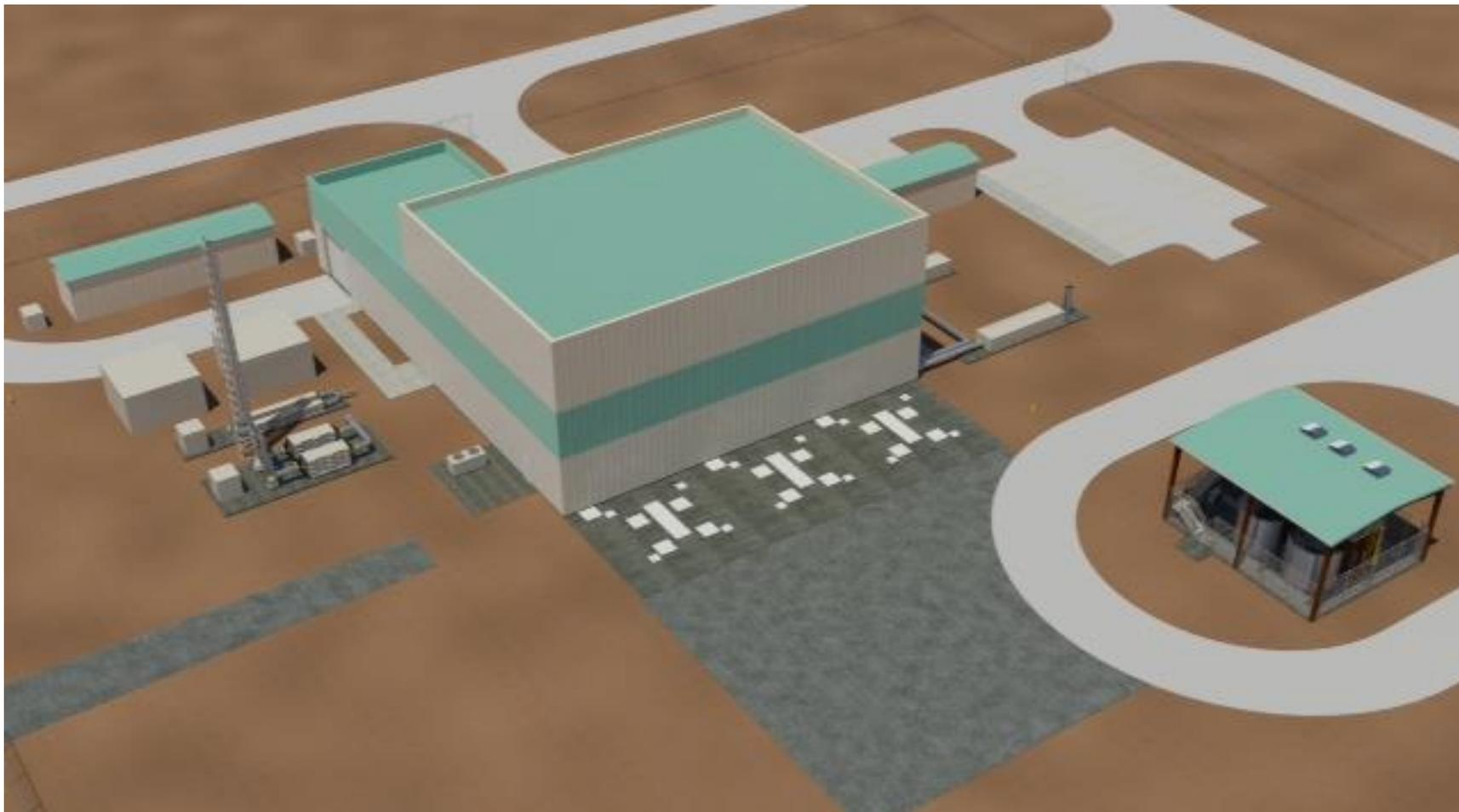
Mixing Tanks



High Bay

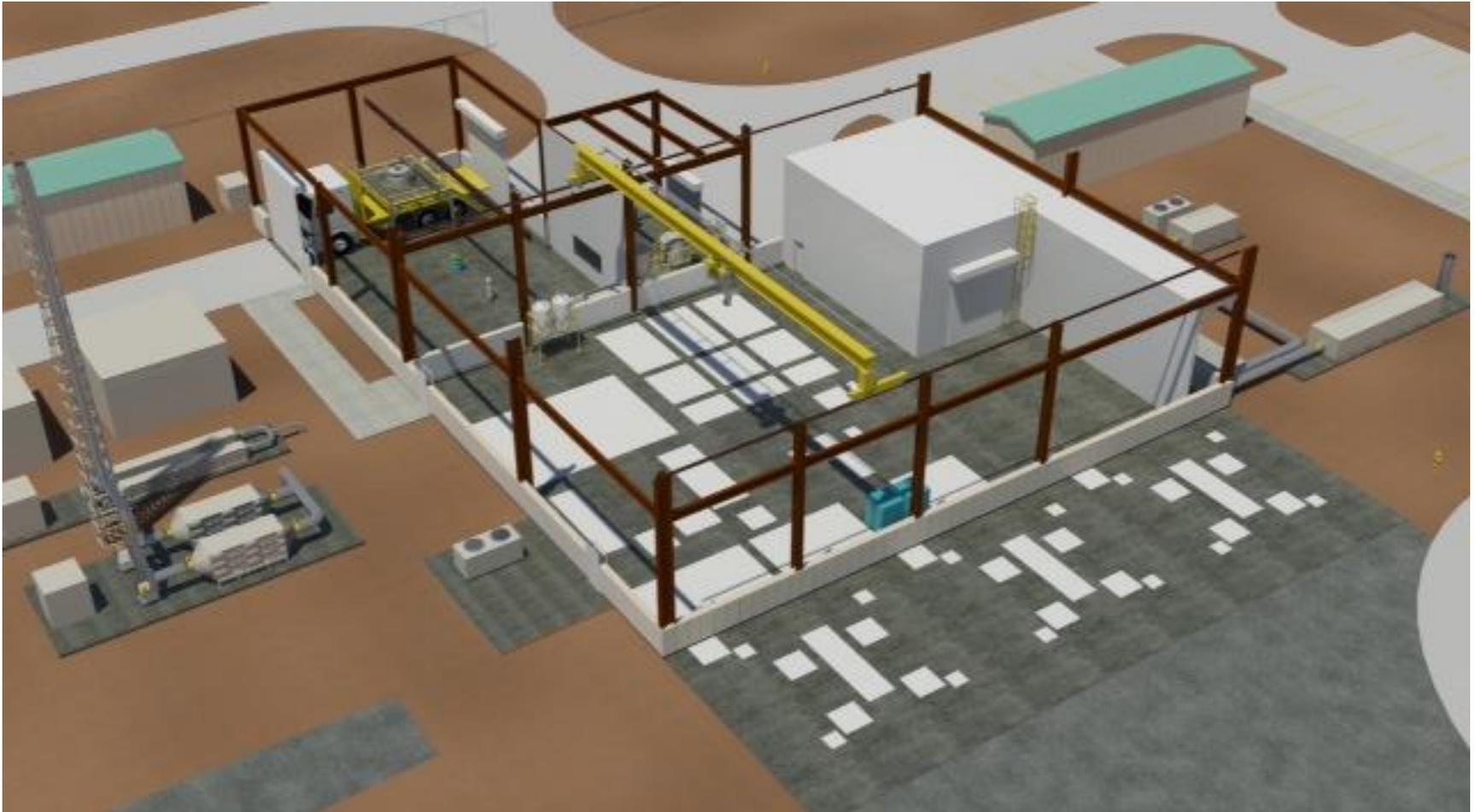


Low-Activity Waste Pretreatment System (LAWPS)



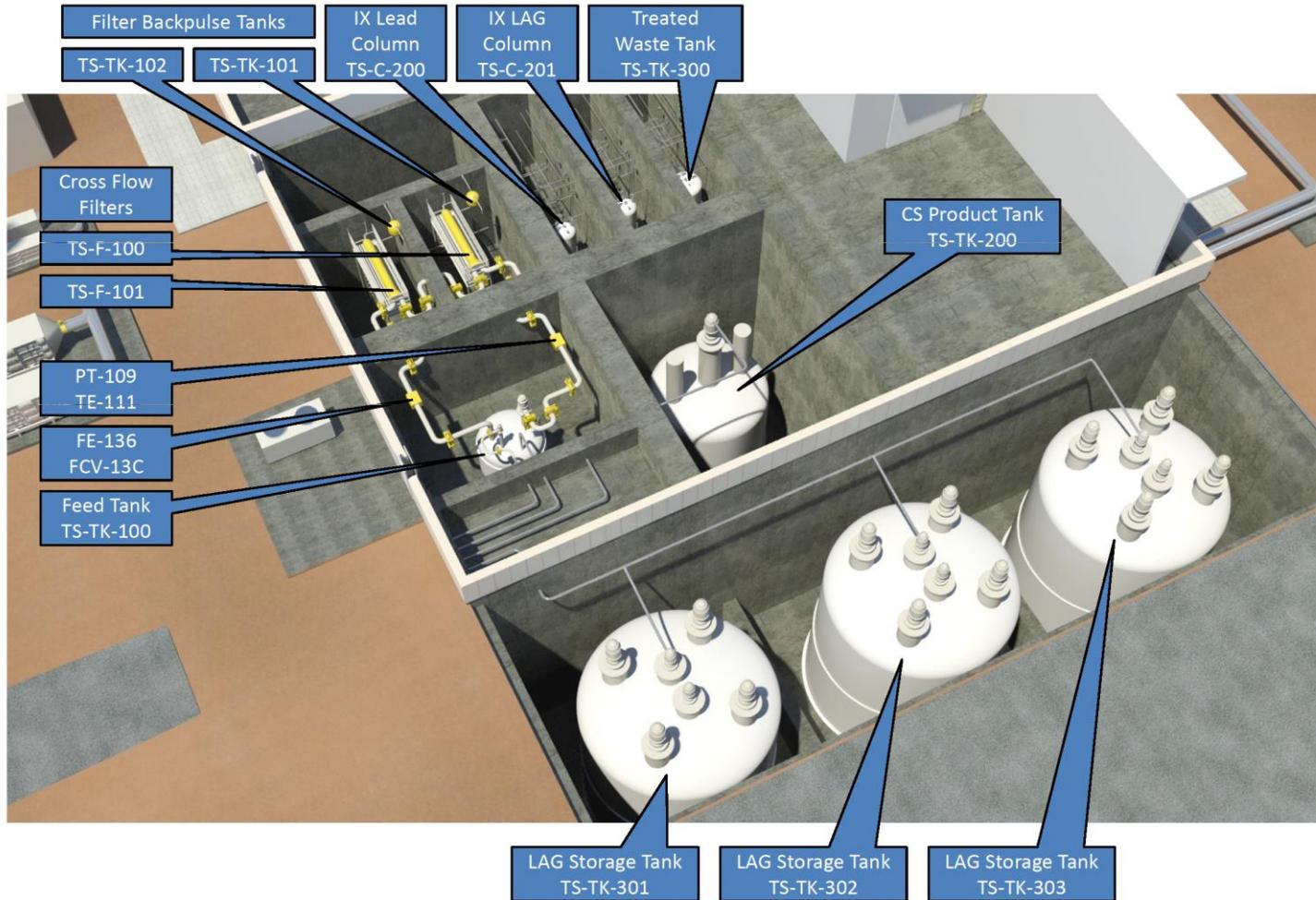


Low-Activity Waste Pretreatment System - Interior





Low-Activity Waste Pretreatment System





ORP Cleanup Priorities

- Safety
- Base Operations
- Waste Treatment and Immobilization Plant technical issues resolution
- Direct Feed Low Activity Waste
 - Waste Treatment Plant Low Activity Waste/Analytical Laboratory/Balance of Facilities completion
 - Low Activity Waste Pretreatment System
- C Farm Retrieval
- Retrieval of next nine single-shell tanks



UNITED STATES DEPARTMENT OF ENERGY

OFFICE OF RIVER PROTECTION

Protect the Public, the Environment and Our Workers

Safety Always Comes First



White Bluffs overlooking the Columbia River on the Hanford Reach