



Aerial view of AX Tank Farm

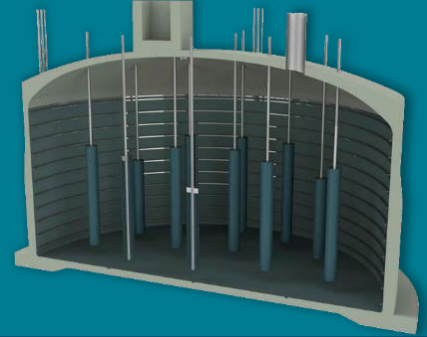
The U.S. Department of Energy (DOE) and contractor Washington River Protection Solutions are retrieving waste from tanks in the A and AX Tank Farms at the Hanford Site in southeastern Washington state.

## Background

Hanford's A and AX Tank Farms consist of six 1-million-gallon single-shell tanks constructed from 1953 to 1955 (A Farm) and four 1-million-gallon single-shell tanks constructed from 1963 to 1965 (AX Farm). The A and AX farms are part of the overall Hanford Site legacy of 56 million gallons of radioactive and chemical waste stored in 177 underground tanks. The waste is left over from World War II and Cold War production of nuclear materials for the nation's defense. Schedule requirements for retrieval of the waste in Tanks AX-101, AX-102, AX-103, AX-104, A-101, A-102, A-104, A-105, and A-106 are driven by a U.S. District Court order. Retrieval of Tank A-103 is also required, under an agreement between the DOE, U.S. Environmental Protection Agency and Washington State Department of Ecology.

## Mission

The overall mission of A/AX Tank Farm retrieval is to safely retrieve tank waste from aging single-shell tanks into newer double-shell tanks until it can be treated for long-term storage. The A/AX Tank farm facilities can be viewed using the self-guided [Hanford Virtual Tour](#).



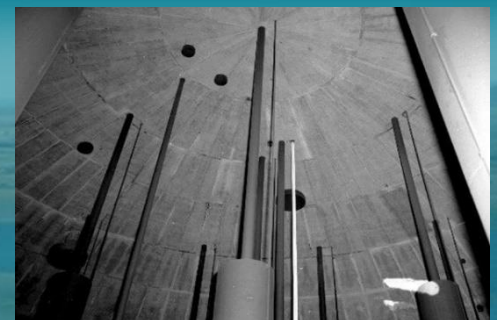
There are approximately 1.38 million gallons of waste to be retrieved from both A and AX Tank Farms.



Shield box for Tank AX-103.



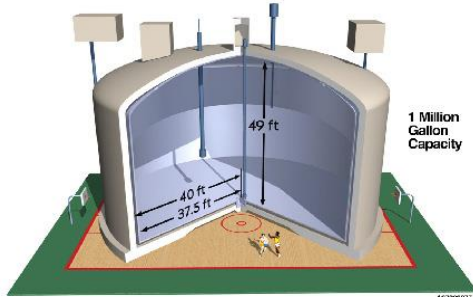
Air lift circulators before installation into waste tanks. Man on right for size reference.



Air lift circulators after installation. View from bottom of tank up toward dome.



# A/AX Tank Farms Retrievals (cont.)



Typical 1-million-gallon tank



A/AX Tank Farms at night

## Hazards

In addition to the high levels of radioactive contamination, workers risk exposure to chemical vapors that can be released when tanks are opened. Current respiratory requirements dictate that workers entering a tank farm wear air purifying respirators or a self-contained breathing apparatus during waste-disturbing activities, such as retrieval operations.

## Safety and Efficiency

The retrievals project implemented best practices and new technologies to control radiological and industrial hazards. New technologies have been implemented to protect workers from the potential exposure to tank waste vapors. The development of new technologies is also crucial to reducing the time and cost required to safely retrieve tank waste.

## Progress

- Two retrieval technologies completed deployment in Tank AX-102 on Jan. 6, 2020. Post-retrieval sampling was completed on Oct. 28, 2020, and analysis is ongoing.
- Two retrieval technologies completed deployment in Tank AX-104 on Feb. 1, 2021. Post-retrieval sampling and analysis is ongoing.
- Final installation of equipment in Tank AX-103 is currently in progress, with retrievals planned to start late this summer.

## Future

Work continues on preparing remaining tanks at A and AX Farms for retrieval. Installation of waste retrieval equipment for Tank AX-101 will begin in fiscal year 2022, while infrastructure work (electrical and transfer pipeline) gets underway in A Farm. Removal of old in-tank equipment will be ongoing over the next several years in A Farm to prepare the tanks for the installation of new retrieval equipment.



Workers removing legacy equipment from Tank A-103



Portable valve boxes installed in AX Tank Farm

