

MERCURY TREATMENT FACILITY AT THE Y-12 NATIONAL SECURITY COMPLEX



FACT: More than 20 million pounds of mercury were used at the Y-12 National Security Complex (Y-12) during the 1950s and early 1960s, when Y-12 used enormous quantities of the metal to process lithium. Approximately 700,000 pounds are suspected to have been released into the buildings and surrounding environment.

CHALLENGE: The Upper East Fork Poplar Creek leaves the Y-12 plant and winds through the City of Oak Ridge, carrying mercury from the plant at levels above Clean Water Act standards for fish consumption. The risk lies in eating fish from the creek, not from drinking the water.

SOLUTION: The Oak Ridge Office of Environmental Management (OREM) is constructing a water treatment facility at the Y-12 site. The treatment facility is a key component of the mercury remediation strategy at Y-12 and will help reduce mercury releases into the Upper East Fork Poplar Creek. It will also serve as an important control measure during cleanup of the site.

Y-12 Mercury Treatment Facility

PAVES WAY FOR MEANINGFUL CLEANUP

This vital piece of infrastructure is the linchpin for OREM's cleanup strategy at Y-12. It is designed to safeguard against mercury releases in the Upper East Fork Poplar Creek during demolition of Y-12's large, deteriorated, mercury-contaminated facilities and subsequent soil remediation. Construction is scheduled for completion in 2027.

FACILITY DESIGN

The project encompasses two components at two locations: a headworks facility and a treatment plant connected by a 3,200-foot-long transfer pipeline.

The headworks facility will capture creek flow on the west end of Y-12, store excess stormwater collected during large rainfalls, remove grit, and pump water via the pipeline to the treatment plant on the east side of Y-12. Design parameters include a treatment capacity of 3,000 gallons per minute, a stormwater capture rate of 40,000 gallons per minute, and 2 million gallons of stormwater storage capacity.



Construction progressing on the treatment plant



Mercury-contaminated buildings on the west side of Y-12



Construction progressing on the headworks facility

REGULATORY COMPLIANCE

This is an essential piece of infrastructure that allows OREM to fulfill its regulatory commitments to reduce mercury levels in the East Fork Poplar Creek. Reducing those levels will assist in removing existing water and fish consumption restrictions near the site.



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