MERCURY TREATMENT FACILITY
AT THE Y-12 NATIONAL SECURITY COMPLEX

OREM
Oak Ridge Office of Environmental Management

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 in 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

When operational, the facility will limit and control potential mercury releases as crews demolish massive mercury-contaminated Manhattan Project and Cold War-era buildings and address the soil beneath them.

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

Construction progressing on the headworks facility.

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

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, and it is expected to assist in removing existing water and fish consumption restrictions near the site.