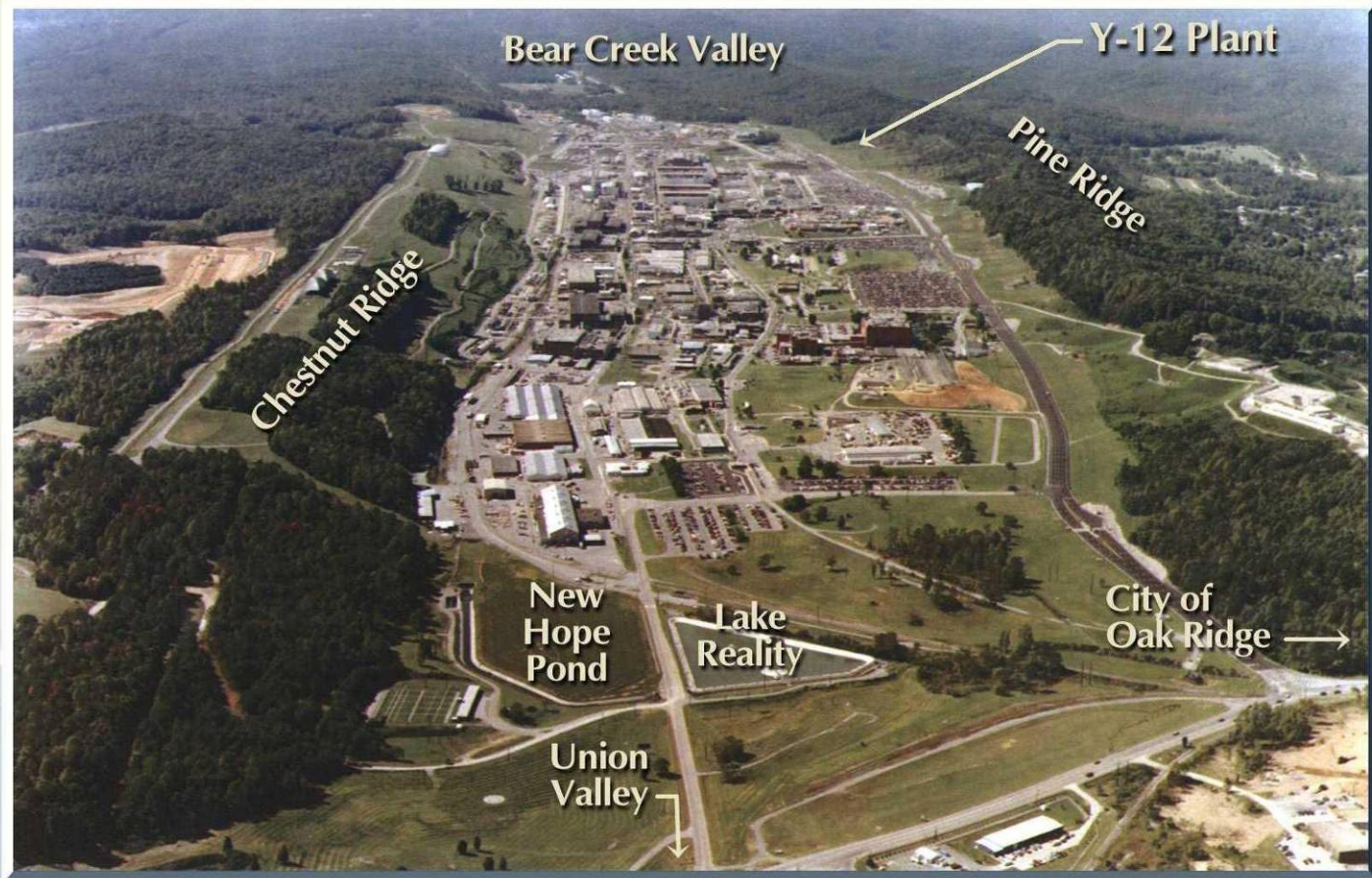
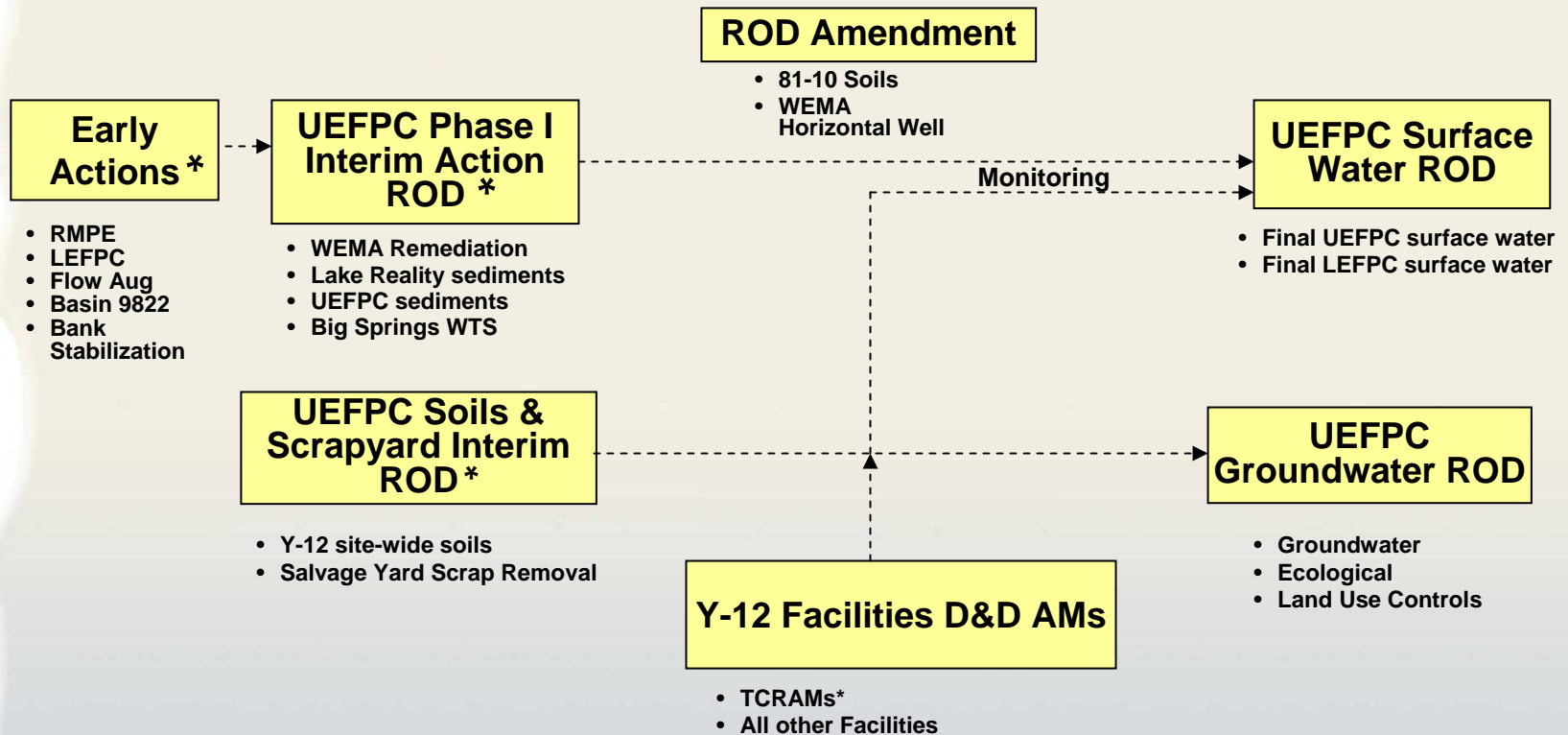

UEFPC Past and Planned CERCLA Remediation

October 2009

Upper East Fork Poplar Creek Watershed



UEFPC CERCLA Decision Strategy



* Decision document approved; remediation in progress

Early Clean-up Actions

- Reduction of Mercury in Plant Effluent
- Lower East Fork Poplar Creek Remediation
- UEFPC Streambank Stabilization
- UEFPC Flow Augmentation
- Basin 9822 Remediation

Reduction of Mercury in Plant Effluent

- Initiated in 1982 by Clean Water Act
- Two phases focused on mercury sources
- >90 percent mercury reductions achieved
 - Storm sewer cleaning/relining
 - rerouting process water
 - focused water treatment
 - rerouting UEFPC

Lower East Fork Poplar Creek Remediation

- 1995 Record of Decision
- Public input raised cleanup level based on mercury form (sulfide)
- 1996-1997 excavation of ~35,000 cy of mercury contaminated floodplain
- Surface water decision deferred



UEFPC Bank Stabilization

- CERCLA Treatability Study
- Stabilized stream bank to prevent erosion of mercury contamination
- Reduced storm event driven releases of mercury



UEFPC Flow Augmentation

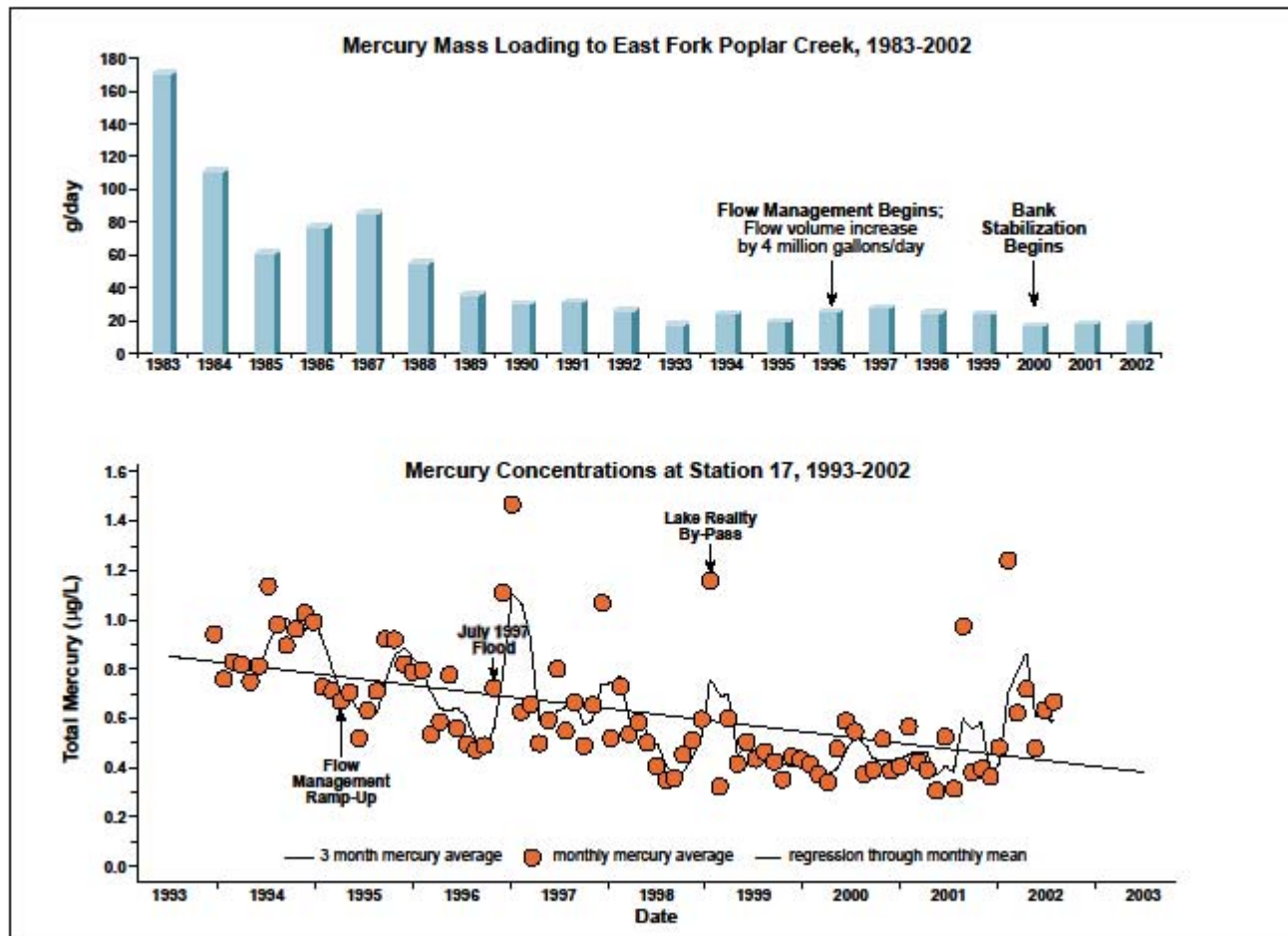
- 1995 NPDES permit
- Goal to protect stream water quality
- 7 mgd flow at Station 17 needed for protection
- 4.5 mgd of Clinch River water added at Outfall 200 (North/South pipe)



Basin 9822 Remediation



- Mercury/PCB source adjacent to 81-10 Mercury Roaster
- 1997 Action Memo
- Basin water and sludge removed and treated
- Basin demolished/filled
- 81-10 sump cleanout/closure included



Historical average mercury concentrations and flux at Station 17.

UEFPC Phase 1 ROD (2002)

Principal Threat Waste Source Control Actions

- Outfall 51 Water Treatment (BSWTS)
- West End Mercury Area (WEMA) Remediation
- Remove UEFPC Sediments
- Remove Lake Reality Sediments
- Surface Water Monitoring/Institutional Controls

Treatability Studies

- WEMA Horizontal Wells
- 81-10 Area Insitu Treatment

Big Springs Water Treatment System

- Mercury contaminated Spring near 9201-2
- Source of ~25% mercury at Station 17
- 300 gpm Activated Carbon Treatment
- Effluent 51 ppt mercury
- 2005 startup; \$8.2 M capital cost
- 3.6 kg mercury removed in 2006



UEFPC Soils & Scrapyard ROD

Remedial Action Objectives

- Protect workers from exposure to contaminated soil
- Minimize further contamination of groundwater (to industrial risk levels) by remediating accessible soil, buried waste or subsurface structures
- Minimize further contamination of UEFPC surface water by remediating accessible soil, buried waste, or subsurface that contribute significantly to exceedance of the UEFPC Phase 1 ROD mercury interim goal of 200 ppt at UEFPC Station 17

UEFPC Soils & Scrapyard ROD

Selected Remedy (2006)

- Remove Salvage Yard scrap metal
- Excavate contaminated soils to 2 feet (10 feet in east) to protect industrial worker
- Excavate contaminated soils to water table as needed to protect groundwater and surface water
- Includes buried waste, contaminated slabs and subsurface structures (pipelines, basements, vaults)
- Institutional controls

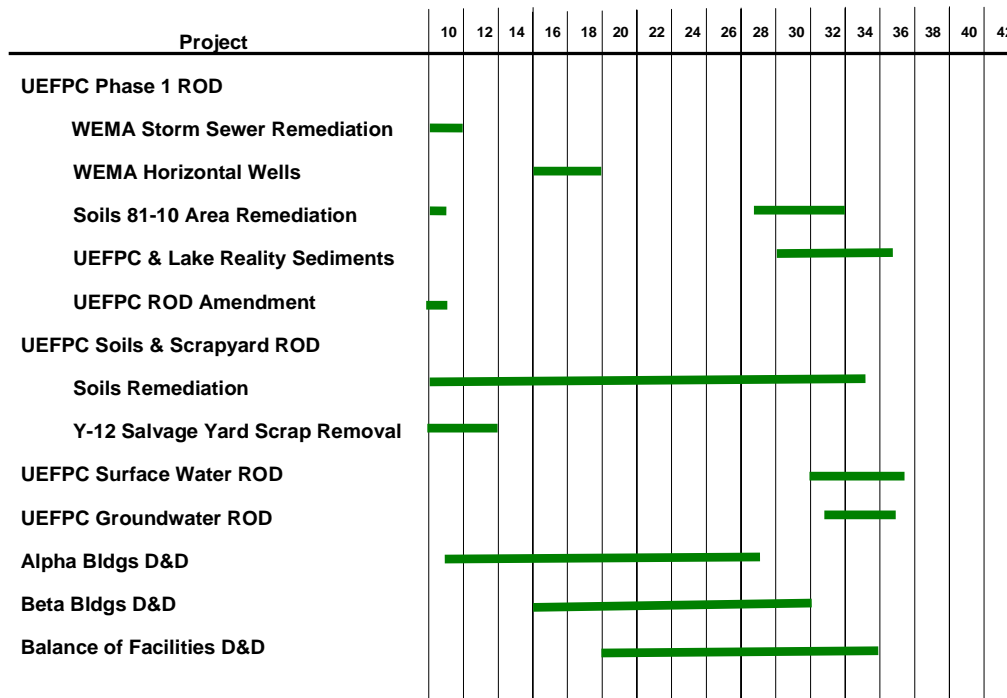
Remedial Action Implementation Considerations

- Y-12 NSC is an active facility currently undergoing modernization
- Access to contaminated media restricted by existing facilities and infrastructure
- Mission related security requirements present challenges
- IFDP and ARRA is accelerating demolition of inactive facilities and access to contaminated media
- Construction logic must be considered to avoid recontamination
- Interim decision, additional remediation may be required per final surface water/groundwater decisions

Ongoing Projects

- UEFPC Soils Remediation Planning
- UEFPC Scrapyard remediation
- WEMA Storm Sewer Remediation
- 81-10 Area Site Characterization
- Facility Legacy Waste Removal/Demolition
- Y-12 Facilities D&D Decision Document

UEFPC Remediation Project Schedule



Station 17 Monitoring

Date	Average Hg (ppt)	Annual Rainfall (in)
2000	746	52
2001	638	46
2002	536	53
2003	597	74
2004	524	56
2005	742	59
2006	328	46
2007	198	36
2008	221	46

Elemental Mercury

