south river SCIENCE TEAM FACT SHEET
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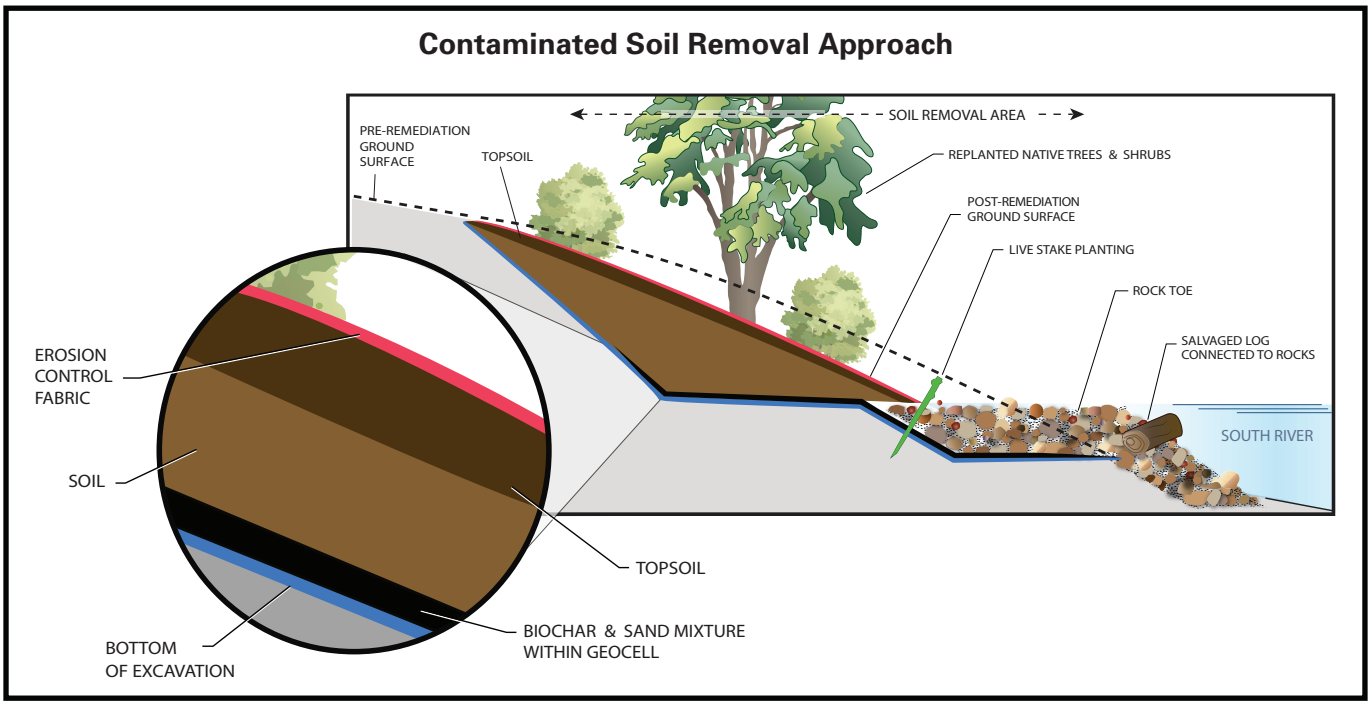
Phase 1 Riverbank Remediation and Restoration



At riverbanks with large, eroding areas of contaminated soil, some of the impacted soil will be removed, the riverbank will be reshaped to a natural slope, and native trees and shrubs will be replanted on the riverbank to help prevent erosion.

The ultimate goal of all South River Science Team (SRST) efforts is to reduce mercury levels in South River fish. The South River Phase 1 riverbank remediation and restoration design includes soil removal and capping approaches to help achieve this goal. The initial phase of this work was completed in February 2017 at the riverbank at Constitution Park, upstream of the Main Street bridge in Waynesboro. The next phase of work will concentrate on riverbanks downstream within the first two miles of the South River.

Two approaches were designed to remediate eroding riverbanks that contain elevated soil mercury levels. In the removal approach, the contaminated soil is excavated (see graphic above); in the capping approach (see graphic on reverse), the contaminated soil remains and a cap is placed over it. Both approaches include a mixture of biochar and sand within a geocell. Biochar is a charcoal-like material that has the ability to absorb mercury and bind it into place. A geocell is a perforated plastic, honeycomb grid that is used to stabilize the soil and control erosion. The approach selected and used depends on the mercury levels in the riverbank and the amount of erosion. Regardless of the approach, preserving valuable trees and habitat is a priority and care will be taken to minimize the overall impact of construction.

The work is being completed in phases using enhanced adaptive management. This technique combines remediation work with monitoring to determine if the remedy is achieving the desired goal. Monitoring data are entered into models to evaluate which aspects of the river system are improving and which remain unchanged. This information is used to provide a basis for adjusting the remediation approach to improve effectiveness.

Throughout the work, the technical and outreach activities of the South River Science Team will continue to contribute to these efforts. Public information sessions will be held and information will continue to be posted on the South River Science Team website (www.southriverscienceteam.org).

In addition, a Remediation Advisory Panel has been established as a means through which members of community and stakeholder groups can discuss their viewpoints as the project progresses.

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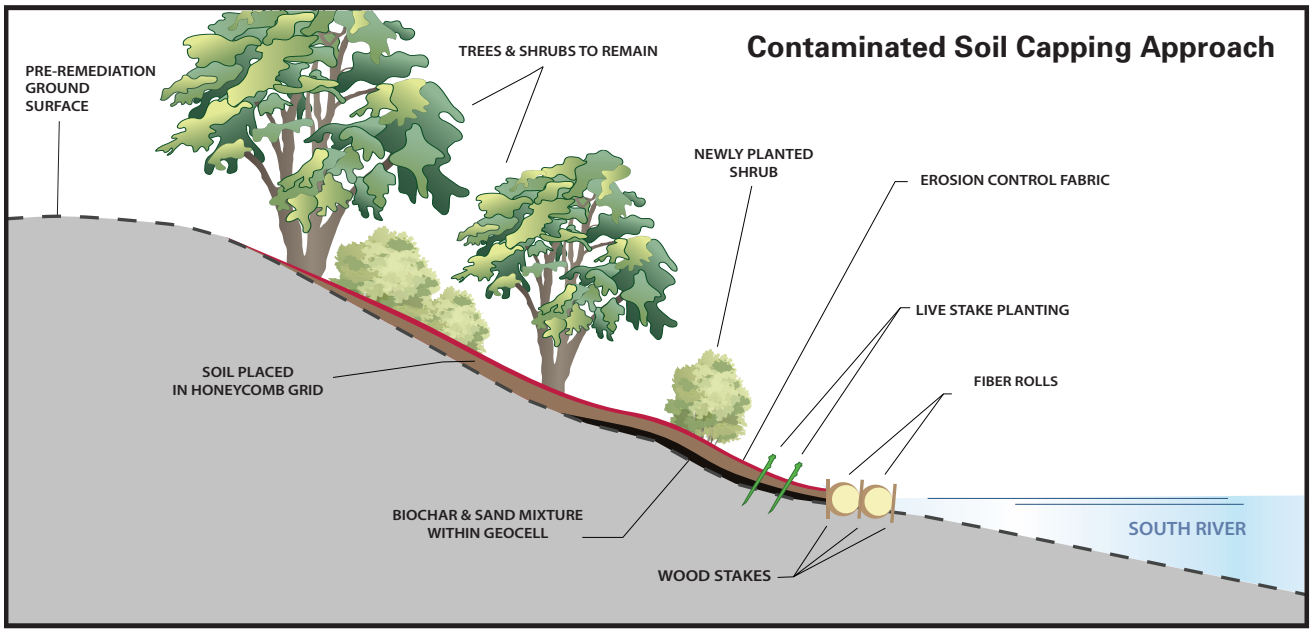

At riverbanks with less erosion and/or lower levels of mercury-impacted soil, erosion control fabric will be used to cap the riverbank and prevent further erosion. When possible, most of the trees and shrubs on these riverbanks will remain so that their deep roots can help naturally stabilize the riverbank. After the bank is stabilized, more vegetation that is native to the area will be planted on the riverbank slopes.

Above, workers install a geocell.

Contacts

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All fact sheets are available at:
www.southriverscienceteam.org/news

The Virginia Department of Environmental Quality and others have been monitoring mercury in fish, water, sediment, and soil in and along the South River and South Fork Shenandoah River since its discovery in the 1970s. Mercury was released to the South River as a result of past practices at the former DuPont plant in Waynesboro, where mercury was used from 1929 to 1950.

In 2001, the South River Science Team was formed to serve as a focal point for technical issues concerning mercury in the South River and downstream waterways. The Science Team is a cooperative effort between the Virginia Department of Environmental Quality, Department of Health, Department of Game and Inland Fisheries and representatives from academia, citizens groups, the USEPA, and DuPont.