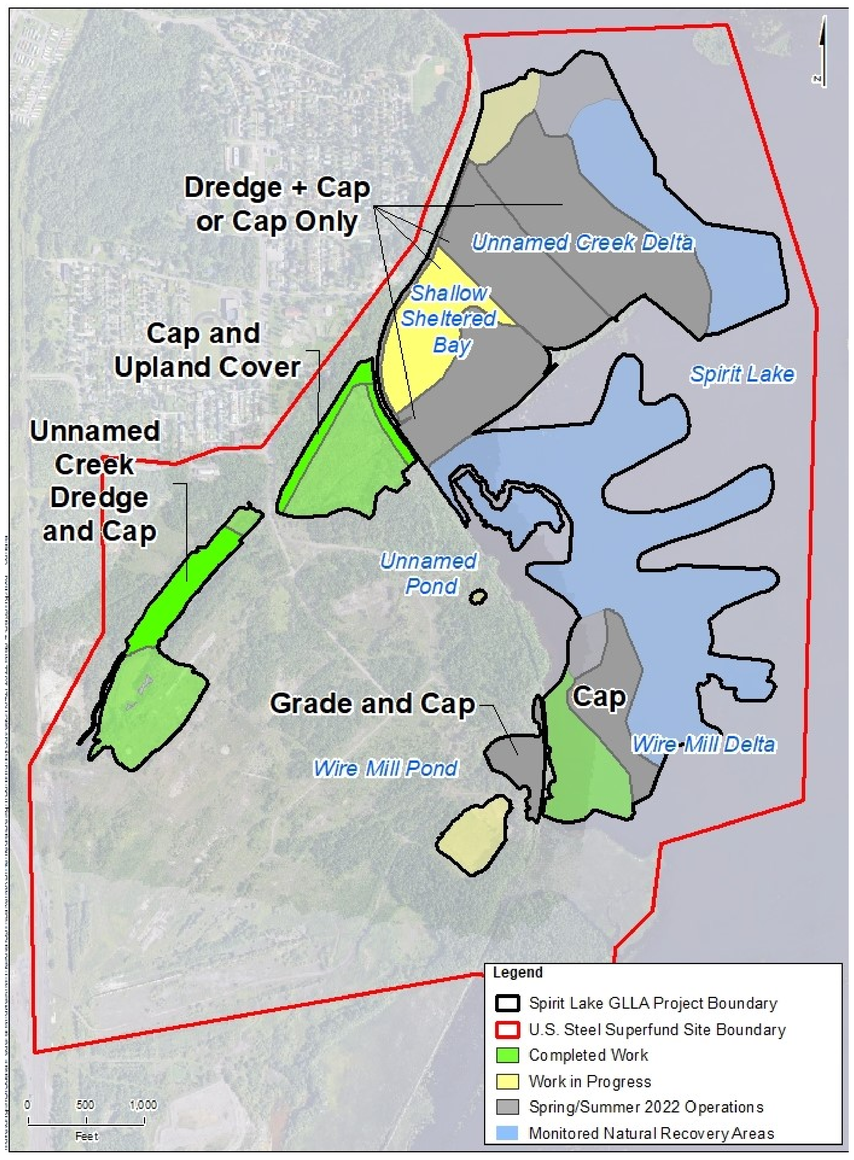
Spirit Lake Great Lakes Legacy Act Project

Environmental Capping



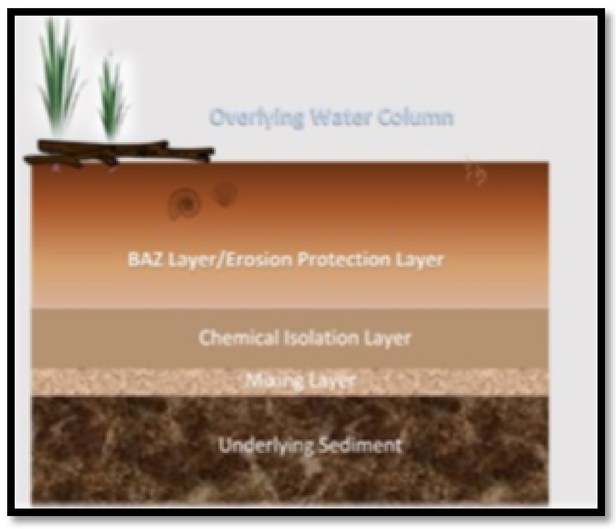
How do Caps Work?

- Underwater caps provide a physical and a chemical barrier to prevent exposure of humans and wildlife to impacted sediment.
- Caps prevent direct contact with the sediments and reduce movement of chemicals.
- Upland caps also provide a physical barrier to prevent exposure to impacted sediment or soil below.

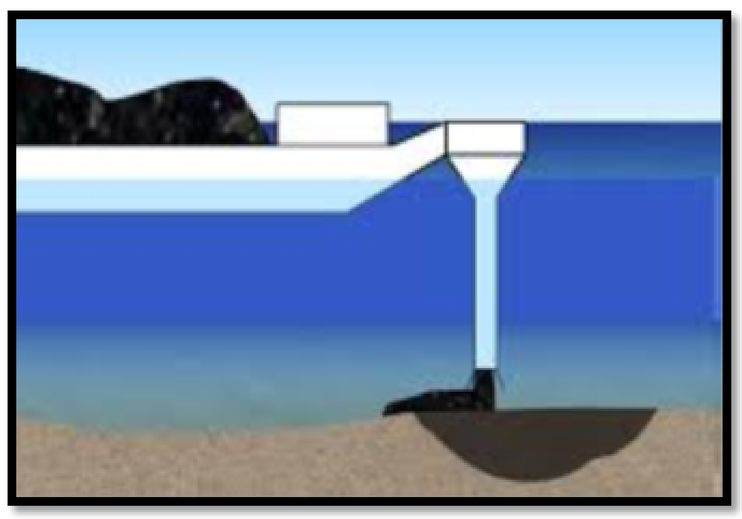
Have Caps Been Used at Other Sites?

- Caps have been used throughout the Great Lakes and the U.S. to successfully remediate impacted sediments.
- They can be one of the most effective ways to immediately reduce exposures to impacted sediments.
- The Interlake/ Duluth Tar site and Duluth Slip 2 project are local examples of successful capping remedies.

Typical Cap Components and Placement Methods



Example of typical cap layers.



Example of cap material placement by pipeline.

Conceptual example of cap armor placed along a shoreline.

Root barrier being installed in a cap in the Shallow Sheltered Bay Spirit Lake.

Cap Placement at Spirit Lake

Clean cap material placed in Weir Pond using a spreader barge.

Armor stone is loaded for capping in the Unnamed Creek area.

How Long Do Caps Last?

- Caps are usually designed to last 30 to 100 years, but modeling indicates they can be effective even longer.
- MPCA and EPA will require long-term monitoring of the site to verify the capping component of the remedy remains effective.