Unique Aspects of Capping and Long-Term Monitoring at River Raisin, Michigan

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Background/Objectives. Polychlorinated biphenyl (PCB)-containing sediment dredging and post-removal capping was employed in an area of the River Raisin referred to as the "NAPL Area" as part of a Great Lakes Legacy Act agreement between the U.S. Environmental Protection Agency (USEPA), Michigan Department of Environmental Quality, and Ford Motor Company (Ford). The dredging and capping was completed in 2016, and post-construction monitoring of the engineered cap has been completed in 2017 and 2018. The NAPL Area is defined as the portion of the River Raisin Area of Concern containing an apparent nonaqueous phase liquid (NAPL) substance and concentrations of PCBs greater than 50 parts per million. The scope of remedial action activities consisted of dredging sediment containing PCBs to specified depths, followed by the placement of cover material in the nearshore area and an engineered cap in other dredge areas, undertaken for the sequestration of sediments containing PCBs in the NAPL Area.

Approach/Activities.
The scope of activities performed at this site included the following:

- Installing a sheetpile wall for shoreline erosion protection
- Dredging sediment containing PCBs to specified design depths
- Processing dredged sediments, which included dewatering, water treatment, and solidifying the sediment by either Portland cement or Calciment
- Trucking and disposing sediments at US Ecology's Toxic Substances Control Act landfill
- Installing a three-layer engineered cap in the dredged NAPL Area
- Placing residual cover material in the nearshore area
- Monitoring of the engineered cap as part of a long-term monitoring plan, including physical monitoring (bathymetry, probing), chemical monitoring (surface sediment, semipermeable membrane devices in water column, solid phase microextraction in porewater), and institutional controls

Results/Lessons Learned.
This presentation will provide an overview of the remedy implemented and a summary of the results from monitoring activities conducted in 2017 and 2018 (to the extent data are available for the conference). Key aspects that will be highlighted include the following:

- Challenges encountered during remedy implementation along with methods used to address challenges, which included close coordination between multiple "owners" for the implementation (Ford and USEPA managed different aspects), and scheduling restrictions to coordinate with port operations
- Review of available monitoring data from 2017 and 2018, including both physical and chemical monitoring data, along with changes implemented after 2017 data were reviewed