



Randle Reef Remediation A Transformative Brownfield Redevelopment

Hamilton Harbour, ON

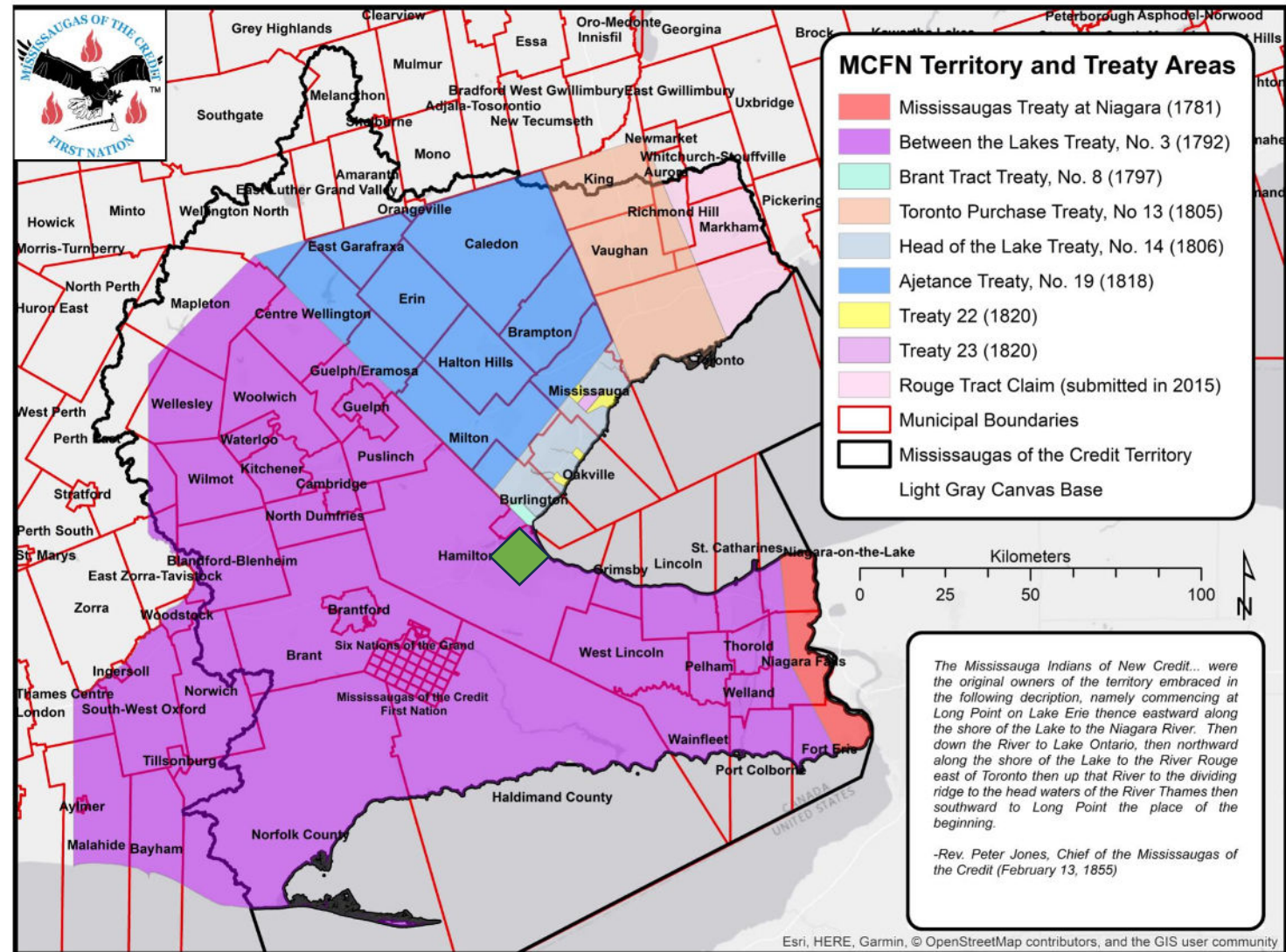
Presented by: Eric Pringle



Land Acknowledgment

- We acknowledge that Banff National Park is within the present-day territories of Treaty 6, 7 and 8, as well as the Metis Homeland. The lands and waters of Banff National Park have been used for millennia by Indigenous Peoples for sustenance, ceremony, trade and travel. We thank them for their continuous stewardship and for sharing the land with us.
- The Randle Reef Site is located within the traditional and treaty lands of Mississaugas of the Credit.

Mississaugas of the Credit Treaty Lands and Territory



Municipalities within Mississaugas of the Credit Treaty Lands and Territory

Randle Reef Sediment Remediation Project Hamilton Harbour, Lake Ontario



Location
Randle
Reef

Hamilton Harbour – Stelco in Early 1950's



The
Remediation
Site is tucked
into the corner
of Harbour



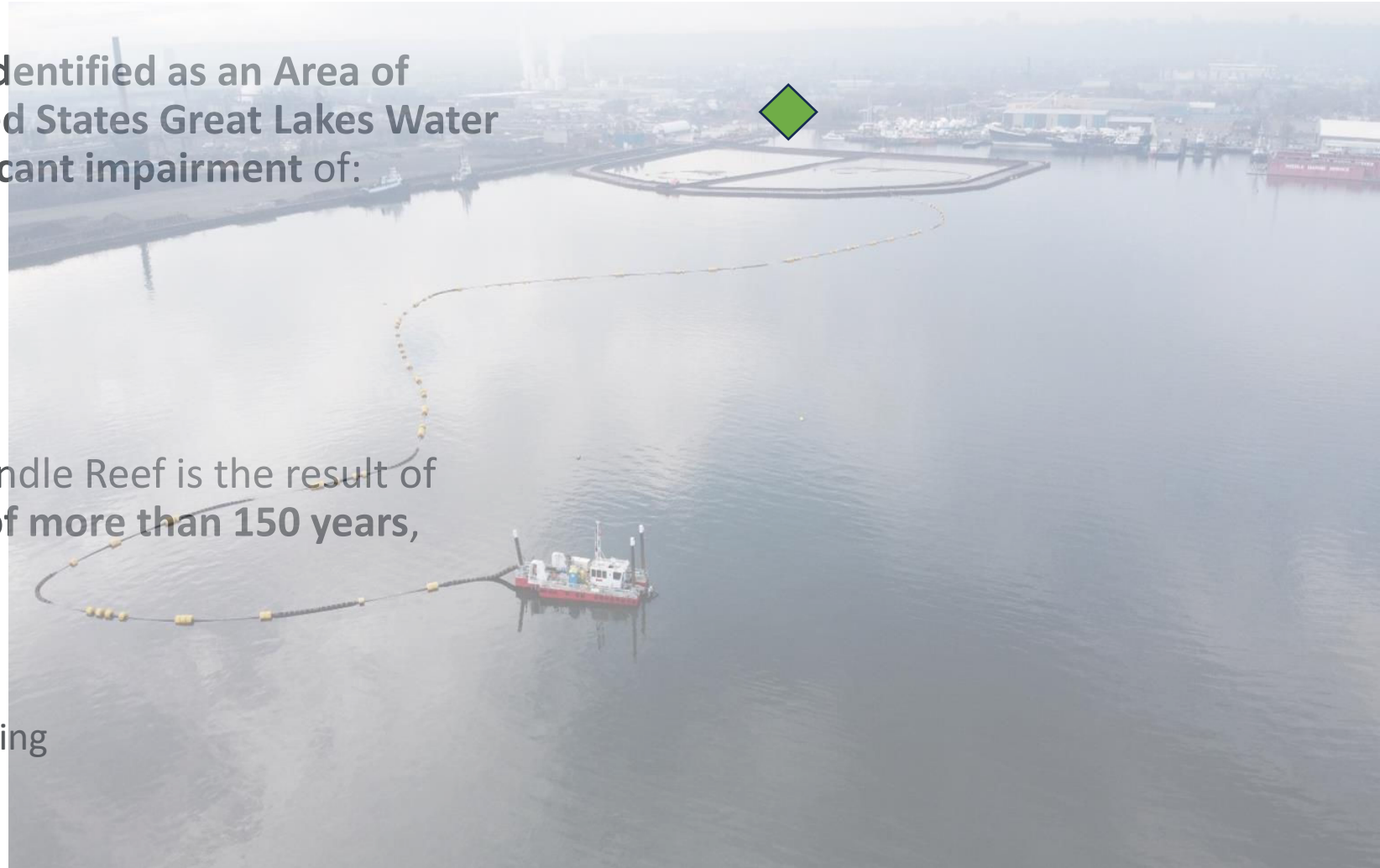
Brief History of Randle Reef

- ◆ In 1985, **Hamilton Harbour** was identified as an Area of Concern under the **Canada-United States Great Lakes Water Quality Agreement** due to significant impairment of:

- ◆ Water quality
- ◆ Loss of fish and wild life habitat
- ◆ Contaminated sediment

- ◆ Contamination of Sediment at Randle Reef is the result of **historical sources over a period of more than 150 years**, including:

- ◆ Coal Gasification
- ◆ Petroleum Refining
- ◆ Steel Making and associated coking
- ◆ Municipal Waste
- ◆ Sewage Effluent
- ◆ Overland Drainage



Remediation Plan

The Randle Reef clean-up is funded by:



Environment and
Climate Change Canada

Environnement et
Changement climatique Canada

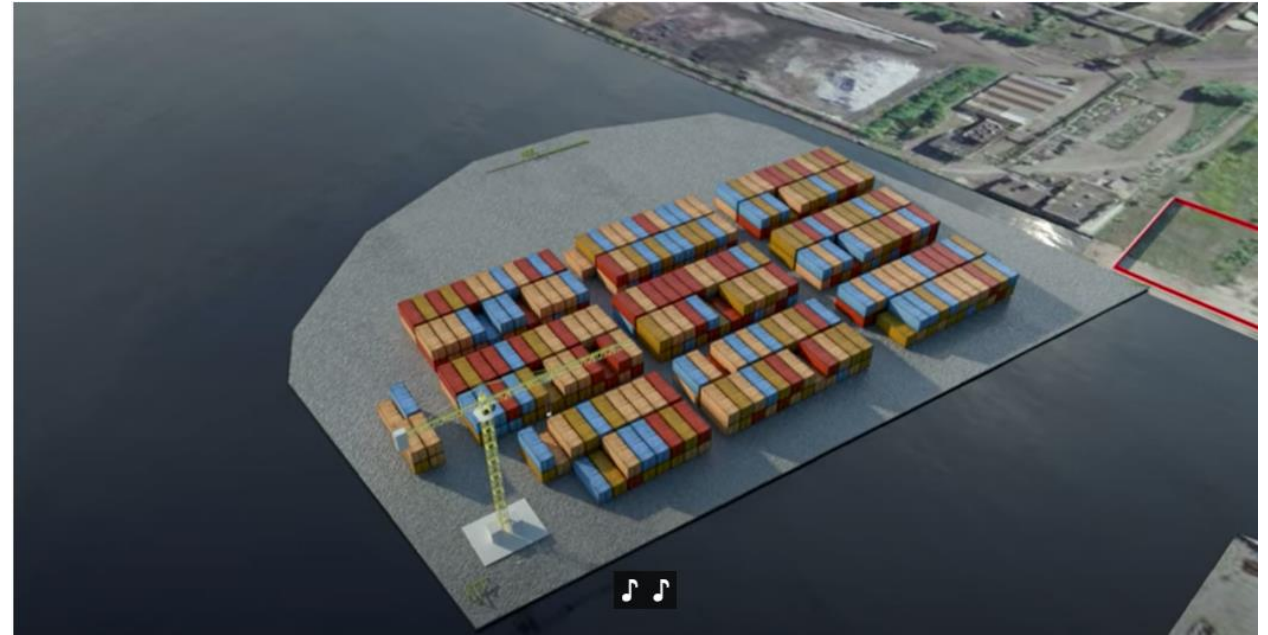


Hamilton



Award winning Brownfield at Randle Reef

- ◆ Cleaning up Randle Reef is a significant step in remediating Hamilton Harbour, **de-listing it as a Great Lakes Area of Concern**, reducing contamination and improving water quality and fish and wildlife habitat.
- ◆ This project is a critical phase in the brownfield redevelopment of the Hamilton Harbour that will create economic and social benefits by:
 - ◆ Enhancing shipping and port facilities
 - ◆ Increasing recreational opportunities
 - ◆ Creating a stimulus for development and promoting the harbour as a clean and progressive workplace.



Hamilton Harbour – A new Brownfield on the water

- ◆ The newly constructed containment facility minimizes environmental impacts by mitigating significant greenhouse gases from offsite disposal.
- ◆ It will serve as the foundation for a new wharf that will enhance the shipping and port facilities
- ◆ Reducing contamination, improving water quality, and fish and wildlife habitat.



Remediation Plan

- ◆ Randle Reef is approximately 60 hectares in size (About 120 football Fields)
- ◆ The site contains approximately 695,000 m³ of sediment contaminated with PAHs and other toxic chemicals
- ◆ Construction of a 6.2-hectare engineered containment facility



Remediation Plan

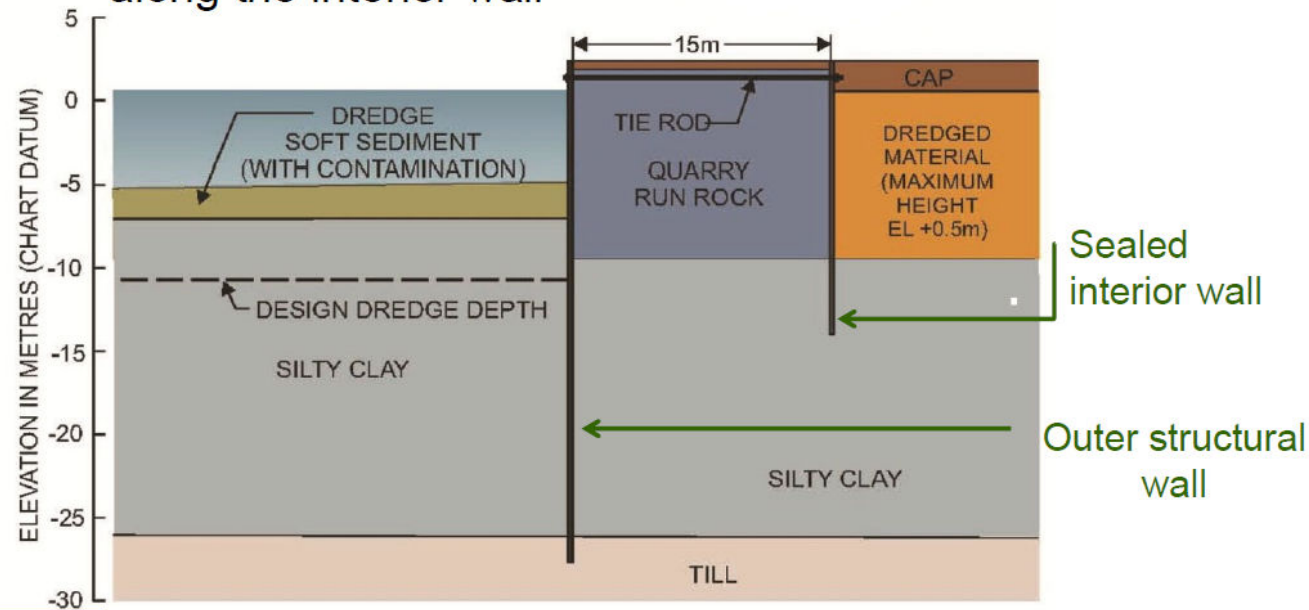
- ◆ Stage One (Completed):
 - ◆ Construction of an in-water, double-walled engineered containment facility (ECF) over the most contaminated sediment in the harbour.
 - ◆ This structure consists of 3,400 steel beams of 23 to 33 metres in length inserted into the harbour floor.



Remediation Plan

Isolation Structure

A double steel sheetpile wall with sealed interlocks along the interior wall



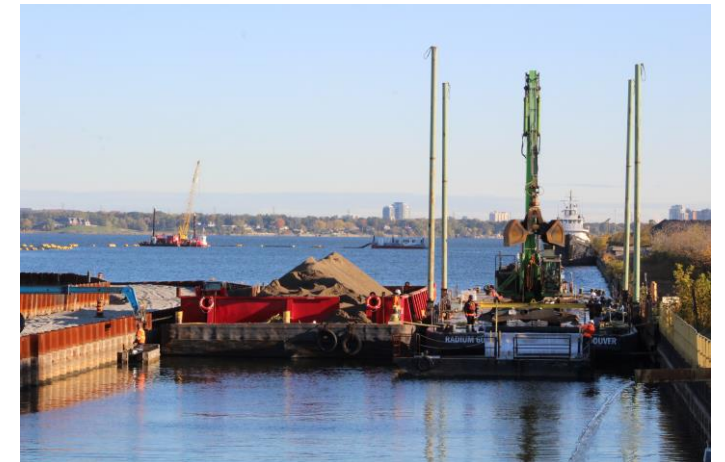
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Remediation Plan

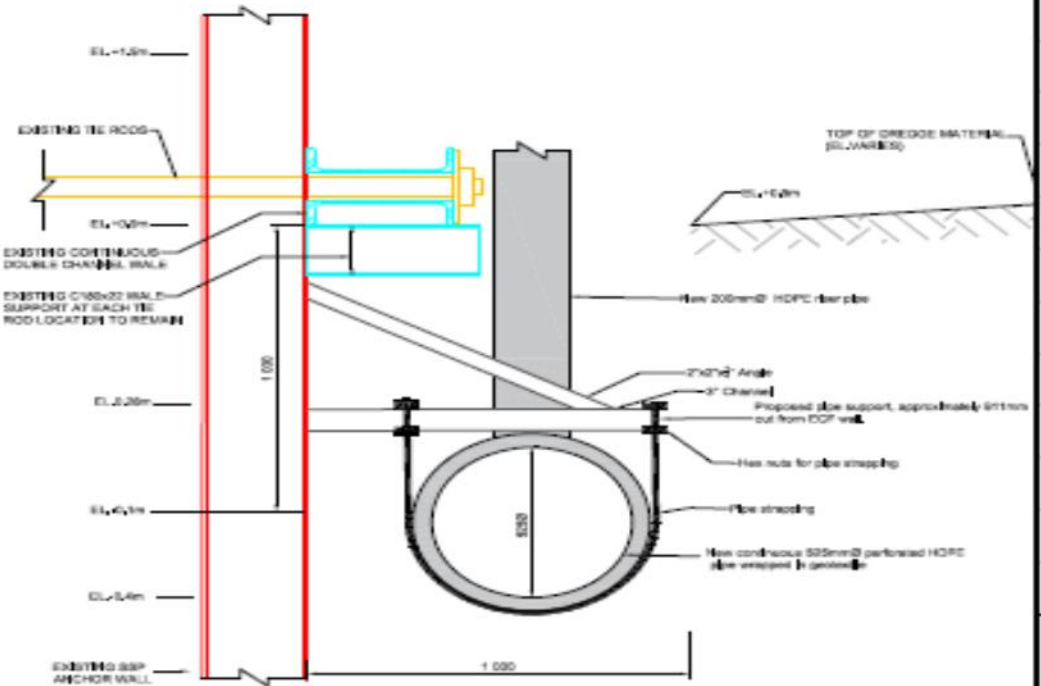
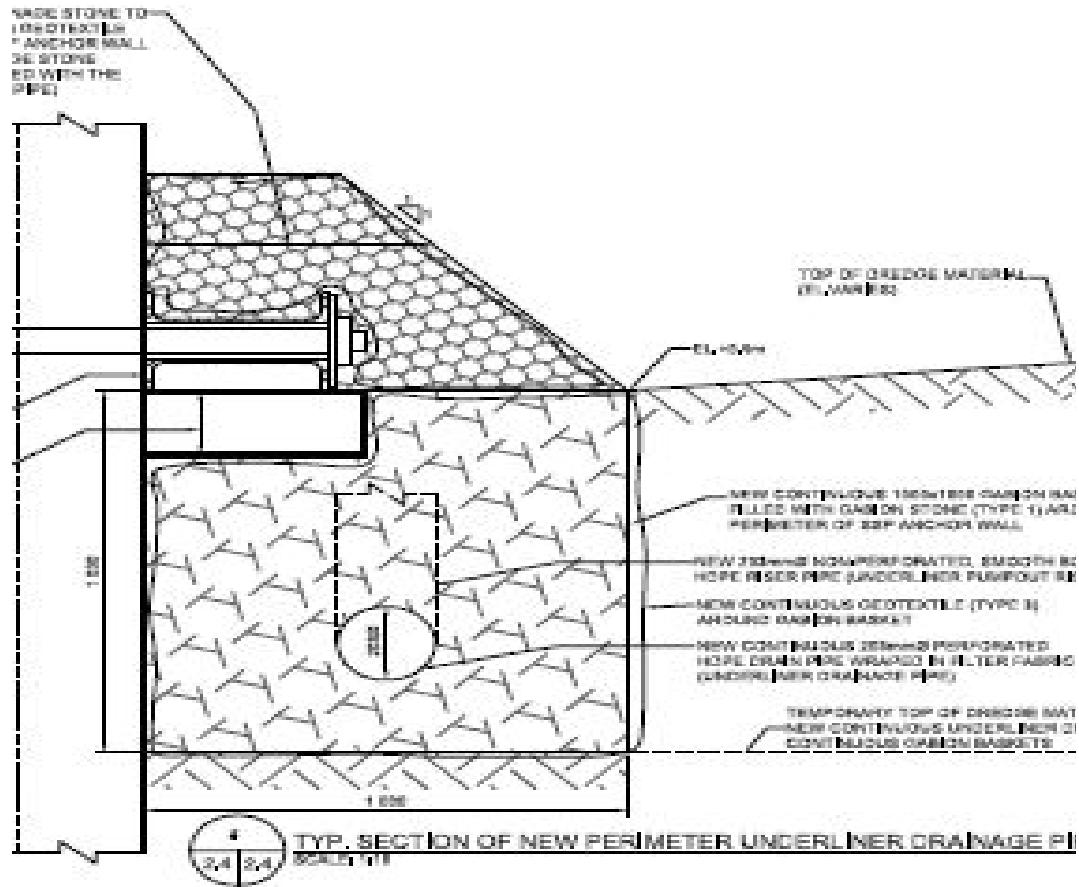
- ◆ Stage Two (Completed):
 - ◆ Contaminated sediment surrounding the ECF was dredged from the harbour and placed into the structure.
 - ◆ Remaining contaminated sediment outside the ECF was managed in place using an isolation cap.



Remediation Plan



Remediation Plan



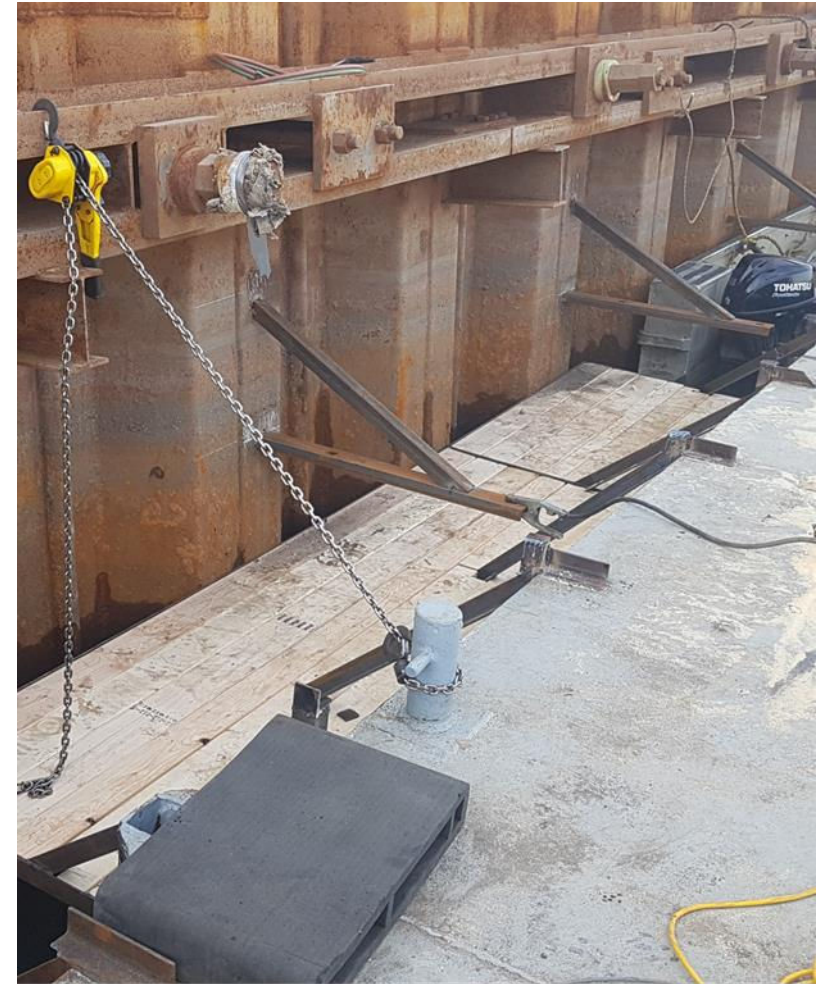
Cross Section of Proposed Underliner Drainage Pipe
 Scale: 1:25

Remediation Plan

VAP – Gabion Alternative

WHY DID WE DO IT?

- ◆ Savings of ~\$250,000
 - ◆ Original estimate \$517,900
 - ◆ Completed for \$263,900
 - ◆ Provided credit of \$16,505
- ◆ Schedule
 - ◆ Could complete in advance of dredging
- ◆ H&S Benefit
 - ◆ Safer access, could float work platform
 - ◆ Eliminate concern of settlement



Remediation Plan

◆ Stage Three (Awarded):

- ◆ Stage 3 is Placing a multi-layered environmental top on the ECF and transferring responsibility for the facility to the Hamilton–Oshawa Port Authority to provide new valuable port lands.
- ◆ Work commenced in August, focusing on water treatment.
- ◆ Preparations for large-scale production are underway – involving truckloads of materials, which commenced on September 11.
- ◆ Project completion targeted for January 2025.



Mississaugas of the Credit

- ◆ Randle Reef is located on the traditional and treaty lands of Mississaugas of the Credit
- ◆ Milestone Environmental and the Mississaugas of the Credit entered a long-term partnership and was awarded Phase 3 of Randle Reef

“Our Nation is pleased that Canada has set this important precedent for the Mississaugas of the Credit to benefit from economic activity on our Traditional Territory,” **said Chief R. Stacey Laforme.** “We thank Ministers Duclos, Guilbeault, Piccini and Mayor Howarth for their leadership to ensure our Nation has been included in this important project.”





Q&A

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