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# Capturing the blob at Randle Reef



## RANDLE REEF

Barry Gray, The Hamilton Spectator

*Under the surface of the Randle Reef area of Hamilton Harbour lies a toxic blob of epic proportions. Cleanup of the worst coal tar-contaminated site in Canada is expected to begin this spring and take several years.*

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By [Mark McNeil](#)

Twenty-five years after Environment Canada scientist Tom Murphy pulled a sediment sample of "black, oily, oozing sludge" into his boat from a section of Hamilton Harbour known as Randle Reef, a massive \$138.9-million remediation project is set to begin on the ghastly environmental mess he discovered.

It has taken more than two decades of scientific research, changing plans, shifting priorities, squabbling over responsibility and escalating cost estimates, but the project is finally calling for tenders to begin the first phase of the work later this year, probably in the spring.

Randle Reef, just west of Stelco (U.S. Steel) property on the harbour, is the worst coal tar-contaminated site in Canada and its remediation is expected to take eight years. The plan involves building a 7.5-hectare steel containment structure over the worst part of the polluted area. Then, less contaminated sediment from a 50-hectare surrounding area will be dredged and pumped into the structure. Water will be removed from the captured sediment, and the structure will be capped and made into a port facility with green space. The containment facility is capable of holding enough coal tar sediment to fill FirstOntario Centre (formerly Copps Coliseum) three times.

A harbour area, now off limits to ships to avoid stirring up contaminants, is destined to become a docking facility and a shining symbol of waterfront renewal and urban revitalization.

Here is a look at the herculean plan to deal with an environmental nightmare larger than the infamous Sydney Tar Ponds hot spot, which was remediated in a four-year project announced in early 2007 and completed in September. In Hamilton, there will be one million tonnes of polluted sediments remediated, which is 200,000 tonnes more than in Sydney, N.S.

[Randle Reef cleanup](#) by [The Hamilton Spectator](#)

### **Randle Reef at a glance:**

**The name:** The reef is named after Harvey T. Randle, a Hamilton Harbour Commissioners marine pilot who guided ships in and out of the bay in the 1960s. Apparently, Randle ran aground on the reef and his harbour friends came up with Randle Reef as a way to mockingly remember the incident.

**The problem:** Longtime coal tar pollution has left a legacy of heavily polluted sediments with polycyclic aromatic hydrocarbons (PAHs) that are highly toxic to fish, wildlife and humans. Coal tar is a byproduct of coke-making and other industrial activities.

**What are polycyclic aromatic hydrocarbons?** PAHs are produced in the incomplete burning and lower-temperature burning of carbon-containing materials such as oil, wood, garbage or coal. They can be carcinogenic, cause reproductive health problems and damage organs in humans and wildlife.

**How much PAH-contaminated sediments will be remediated?** One million tonnes of sediments will be encapsulated (630,000 cubic metres), enough to fill FirstOntario Centre three times over. A total of 1,500 tonnes of PAHs will be contained in the project.

**Project cost:** \$138.9 million — with \$46.3 million each from the federal government and the province; \$14 million each from the City of Hamilton, U.S. Steel Canada and the Port Authority; \$2.3 million from the City of Burlington and \$2 million from Halton region.

**Start date:** 2014

**Finish date:** 2021 or 2022

**Projected life of containment facility:** 200 years

### **What are the similarities and differences between Randle Reef and the Sydney Tar Ponds?**

- Both projects involve containment of toxic runoff in an area next to a major steelmaking operation. Hamilton's problem is almost entirely coal tar whereas in Sydney, N.S., PCBs and other contaminants were dealt with over a wide area of land and water. In Sydney, the area was dried out and a concrete-like compound was added to the contaminated sediments. From there it was capped and turned into a park.

- The Sydney project cost \$400 million and took four years of construction. Randle Reef is estimated to cost \$138.9 million and take eight years. The tar ponds fixup cost more because the contaminated area was land and water over a larger area. That effort also involved remediating former coke-making operations, rather than simply a downstream blob such as the one at Randle Reef.

### **Are there similar projects taking place in other cities?**

Environment Canada is aware of eight sediment remediation projects involving containment in North America that are either completed or in the works. They are in: Island End River in Boston; Tacoma APL Terminal and Milwaukee Waterway in Tacoma, Wash.; Eagle Harbor in Bainbridge Island, Wash.; Seattle Short Fill in Seattle; Everett Terminal in Everett, Wash.; Port of Portland, Terminal 4 in Portland, Ore. (design phase); NOWPARC in Thunder Bay.

### **What will the Randle Reef project mean for the overall plan to rehabilitate Hamilton Harbour?**

It will mean a section of the bay will be a lot healthier and pollutants from Randle Reef will no longer spread in currents to other places in the harbour. It will bring the harbour closer to the dream of being delisted as an "area of concern" by the International Joint Commission. Hamilton Harbour was given the scarlet letter in 1987 by the binational commission because of severe pollution and the degradation of the harbour over the years — mostly from industrial activity, sewage treatment plant effluent and urban runoff. Water quality and other environmental measures will have to reach a certain level before the harbour will be delisted.

### **What other major projects are planned to improve Hamilton Harbour?**

- A \$150-million upgrade (through 2014 to 2015) at the Skyway Wastewater Treatment Plant in Burlington;
- A \$330-million upgrade (from 2018 to 2019) to the Woodward Avenue Wastewater Treatment Plant.

### **What is the estimated total cost of all projects past and future to restore the harbour?**

\$2 billion

[No turning back on Randle Reef](#)

[Report says port authority worried about Randle Reef liability](#)

[City completes \\$80m harbour cleanup](#)

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### **Randle Reef timeline**

**1985** — Hamilton's Remedial Action Plant for Hamilton Harbour officially begins.

**1987** — Hamilton Harbour is deemed an area of concern by the International Joint Commission. It is one of 43 highly polluted spots around the Great Lakes.

**1988** — Scientist Tom Murphy finds a massive blob of toxic sludge by Randle Reef caused by longtime coal tar pollution.

**1992** — Work completed on stage 1 and stage 2 of the Remedial Action Plan for Hamilton Harbour that calls for an extensive list of rehabilitative measures, including cleaning up Randle Reef.

**1995** — A modest Randle Reef cleanup proposal is pegged at around \$15 million.

**2003** — Environment Canada estimates the containment will cost \$45 million.

**2007** — Province and federal government commit \$30 million each to a \$90-million plan.

**2008** — Planners aim to have environmental assessment done and tenders called by 2010.

**2010** — Project cost jumps to \$105 million; local partners still haven't raised one-third share.

**2011** — Federal Environment Minister Peter Kent warns costs will rise; Mayor Bob Bratina suggests revisiting cleanup strategy.

**2012** — A city report pegs cost at \$138.9 million; project completion in 2022 at earliest.

**November 2012** — Local partners and the province announce that they will top up their contributions to match inflation.

**Winter 2013-14** — A call is put out for tenders in February for the first phase of the project.

**2014 to 2016Phase 1:** Construct the Engineered Containment Facility over top of 130,000 cubic metres of the most contaminated sediment.

**2016 to 2018Phase 2:** More than half a million cubic metres of PAH-contaminated sediments will be dredged from the area around Randle Reef and pumped into the Engineered Containment Facility built on top of the most highly contaminated sediment. This involves setting 130,000 cubic metres in place and dredging another half-million cubic metres.

**2018 to 2021 (or 2022)Phase 3:** Place environmental cap over the containment facility and isolate the contaminated sediments from any surface water. Prepare for future use as port facility and green space.