

Friends of Penobscot Bay
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Penobscot Bay intertidal habitat restoration plan. Phase II.

Purpose: Survey and remove contaminated mud and debris from approximately one acre of an intertidal flat of Stockton Harbor in Searsport, Maine.

Location: The site is located in the intertidal flats adjacent to the GAC Chemical facility on Kidder Point, between the south end of the facility and the Sears Island Road. It may be reached from US Rte 1 via from the Sears Island Road, on the landward end of the Sears Island causeway. (See map)

Problem In the 1970s, Delta Chemical Inc, (now GAC Corporation) began dumping highly acidic bauxite tailings onto the shore of Stockton Harbor from its processing plant located on Kidder Point. Delta Chemical made alum from bauxite ore, using an acid leaching process. While the company has ceased dumping its tailings onto the shoreline, there has been a continuing erosion of the existing bauxite wastes into the harbor from a bluff on the company's waterfront where alum tailings were dumped.

Maine DEP's 1998 study of the contaminated mud states:

"The sediment itself is a discolored an off-white creamy color in small patches up to a meter square. Just under the surface, over an area comprising about an acre, similar discolored sediment is found. Overall depth of this material varies from a few millimeters to several (10) centimeters. Below the discolored material, a typical anoxic (black) sediment is found. The texture of the discolored material is similar to mud/silt and soft, having a high water content."

"The origin of the material is probably from historical spills and slumping banks and chemical piles. An eroding/slumping embankment is immediately landward of the altered flat. This is filled land and, according to Alec, contains a creamy/light rose colored bauxite. Presumably, the beach and flat contains this same material."

TARPAPER Tarpaper roofing materials blown from the roof of a abandoned quonset building at the site (now demolished) have been found in large quantities in the intertidal mud. The materials have been located at depths of 6 - 12 inches below the surface of the mud and may prevent softshell clams and other invertebrates from reaching mud depths preferred at maturity over an unknown percentage of the cove in question.

The ecologists' report identified a roughly one square acre area as visibly contaminated with the bauxite tailings, and noted that the abundance of benthic invertebrates was far lower in the vicinity of the facility than in a similar control area across Stockton Harbor. The conditions at the site and the results of the DEP review of the mudflats strongly suggest a

link between the eroding wastes and the low abundance of species there.

MOST RECENT ACTIONS GAC Chemical, the present Responsible Party owner of the site has recently agreed to recontour the eroding bluff to end waste migration into the tidal flat. The company has also begun removing ceramic wastes from the intertidal area that were dumped there by a long defunct operation at the site.

PROPOSED FURTHER ACTIONS We propose (1) identifying and removing a significant portion of the contaminated sediments from the intertidal area in question and (2) Identifying and removing roofing materials from the intertidal area.

SEDIMENTS. Identification of the extent and depth of contaminated intertidal sediments will be carried out by core sampling throughout the intertidal area adjacent to the GAC facility. The contaminated muds are easily identifiable due to their silver-gray aluminum color which contrasts sharply with the brown and black color of uncontaminated muds. We will try several ways of demarcating out the tainted area including aerial mapping and core sampling.

Once an area of significant contamination has been demarcated, the mud from that area will be removed by intertidal dredge, and transported by truck to an appropriate landfill.

ROOFING MATERIAL Identification and removal of buried roofing materials will be carried out by probing the mud with rods in areas where it has been previously located in, then digging it up with hand tools, and repeating the process nearby. The materials will be taken to a landfill for disposal.

Next Steps Determine methods of survey. Determine costs per cubic yard for removing tainted mud with a mudcat or other intertidal dredger Top 12 or 18 inches of mud within contaminated areas.