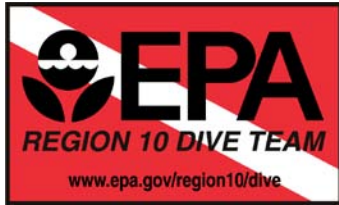


US EPA ARCHIVE DOCUMENT



[EPA Region 10 Dive Team](http://www.epa.gov/region10/dive)

McCormick and Baxter Superfund Site Transition Zone Water Diver Sampling Events 2001-2002

What: The EPA Region 10 Dive Team with assistance from divers with the EPA Environmental Response Team (ERT) out of Edison, NJ performed a diver survey near the McCormick and Baxter site (creosote seeping into the Willamette River, in Portland Harbor) to support hydrogeological field investigations by the Region 10 Superfund program and Oregon Department of Environmental Quality.

Why: The survey was performed to assess the sediment, ground water, and surface water quality to compare to previous data from the site, and to have a comprehensive set of data (together with on-site ground water monitoring well sampling, shore sampling with mini-piezometers and seepage meters, and sampling with semi-permeable membrane samplers) just prior to installation of a barrier wall at the site and prior to final design of the sediment cap (both expected in early 2003).

Where: Off-shore of the McCormick and Baxter Superfund site in the Willamette River, Portland, Oregon.

When: Surveys were conducted in July 2001 and September, 2002.

How: Divers performed a survey of the area to describe biota and bottom conditions and used three techniques to collect and evaluate ground water discharge through the river bottom to the surface water. In addition, sediment cores were collected and bottom water samples were collected by carrying a Niskin-type sampler to the bottom without disturbing the surface layer, then triggering the device by hand. Due to contaminants in the water column from frequent CSO and in the sediment, diver decon was required. See the [safety / sop](#) page for more information on diver decon and polluted water diving.

Ground-water Sampling Techniques: One of the sampling techniques employed was a "push probe," essentially a large syringe. This sampling technique allows the diver to collect a sample of sediment pore water at various depths to determine a realistic exposure point concentration to benthic organisms from contaminants from upland seeps and bottom sediments. Another technique tested was the use of "seepage meters." These are used to measure relative flux of groundwater through the sediment. Using buckets with calibrated bags connected to them, estimates can be made of the flux of groundwater through the bottom. The third technique was installation of minipiezometers. These thin tubes with a screened section at the lower end are pushed into the sediment (generally deeper than the push probe described above), tubing is connected to the surface via the vessel's anchor chain and pore water is pumped up to collection bottles for analysis.

Equipment Used: Support vessel with GPS; down lines, seepage meters, push probes, minipiezometers, hand-held Niskin-type water samplers, sediment corers, field analytical kit for pH, conductivity, etc., sample collection jars.

Results: Samples taken by divers helped to direct the nature of the cleanup selected for the Superfund

Site.

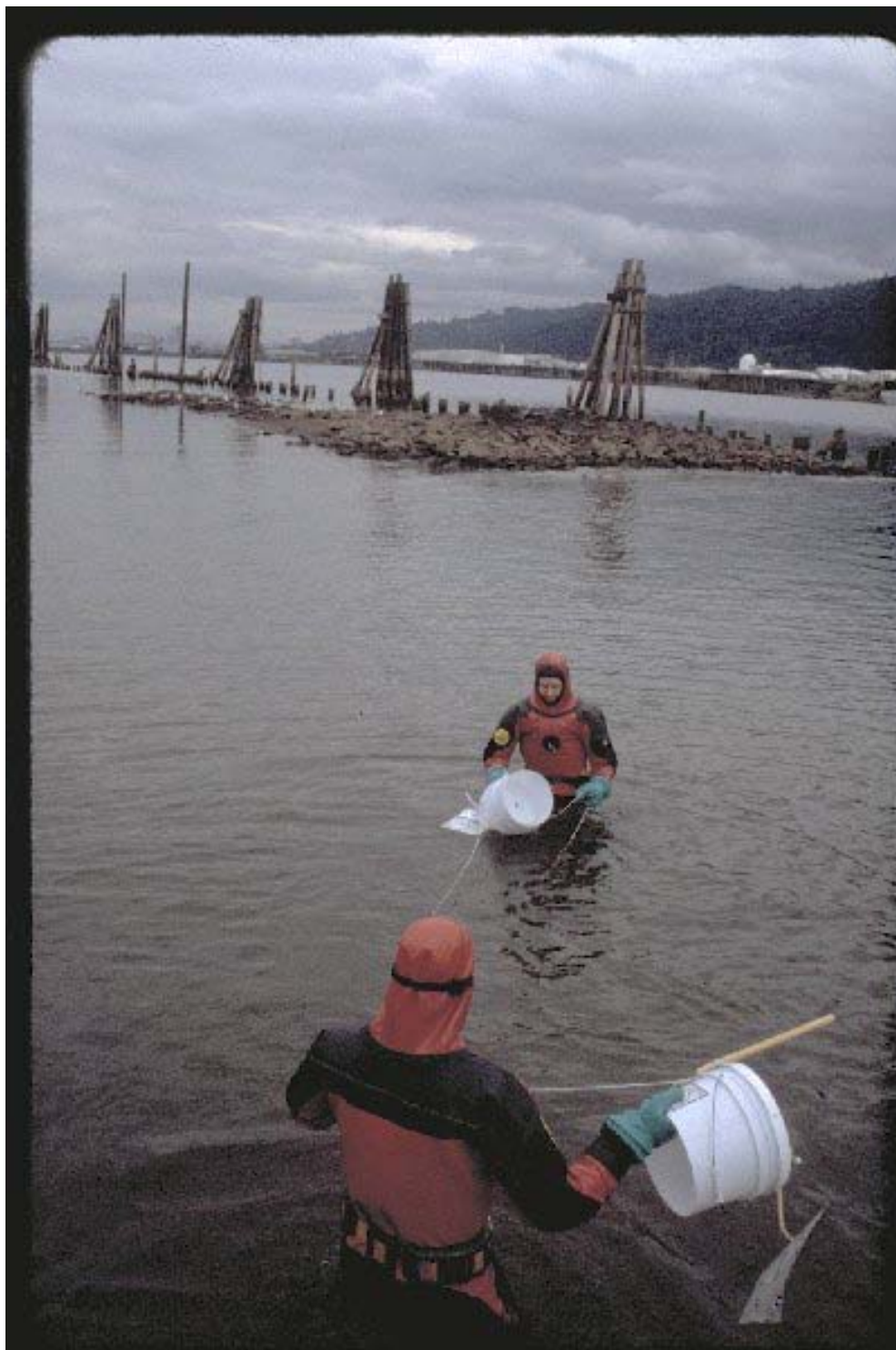
More Details: EPA [McCormick and Baxter Superfund Site](#) webpage

Contact: Bruce Duncan at duncan.bruce@epa.gov

Photos:



Diver preparing to enter the water .



Divers holding seepage meters



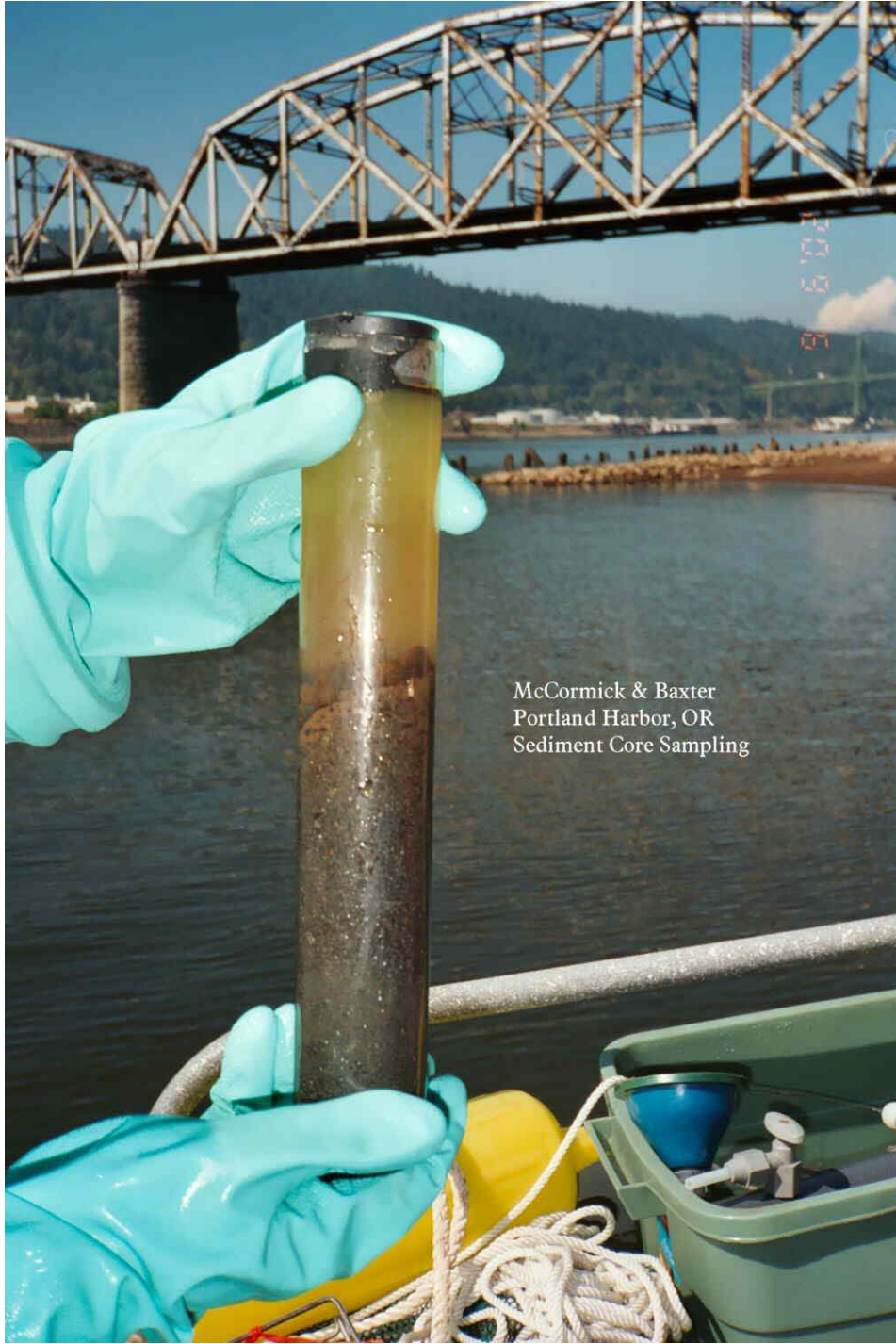
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Decontamination Rinse

Diver decontamination



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Sediment Core from EPA Divers



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Sediment Core Sampling



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EPA Diver with used mini-piezometer tip

Diver with mini-piezometer



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EPA Divers & Sediment Cores

Diver with sediment cores

Return to [EPA Region 10 Dive Team](#) homepage.