

SUPERFUND

Fact Sheet

WYCKOFF-EAGLE HARBOR SITE
Bainbridge Island, Washington



U.S. ENVIRONMENTAL PROTECTION AGENCY REGION 10

May 1999

This fact sheet reports on the many recent developments at the Wyckoff/Eagle Harbor Superfund Site. We welcome your comments and questions. Please feel free to contact anyone listed on the last page.

EPA Continues to Evaluate Thermal Technologies; Proposed Plan Anticipated This Summer

Background

EPA continues to study *thermal technologies* to evaluate whether they would be effective in cleaning up contamination at the Wyckoff site. Thermal technologies enhance removal of creosote contaminants by heating and mobilizing contaminants underground using steam injection and/or electrical currents. Contaminants are recovered by vacuum extraction. Groundwater modeling and laboratory testing are ongoing. Preliminary results show that the technology is capable of removing a significant amount of contamination from the soils and groundwater at this site. In addition, the laboratory data indicate that as temperature increased, the density of the contaminants decreased. The decrease in density means that contaminants are less likely to move downward through the protective clay layer, or aquitard, into the lower aquifer.

A number of technical challenges remain to be resolved and EPA continues to evaluate these issues. A *Proposed Plan*, outlining the preferred remedy for the site, as well as a summary of findings from the studies, is expected this summer. When

In This Issue...

- EPA Continues to Evaluate Thermal Technologies; Proposed Plan Anticipated This Summer
- EPA Works to Control Product Seepage
- Bank Erosion Found and Stabilized
- Removal of West Dock Complete
- Coast Guard Proposes Rule to Protect Harbor Cap
- Clean Sediment Cap to be Monitored
- Local Group Calls for Minimizing Community Impacts

complete, the Proposed Plan will be made available for public review, and a formal public meeting will be held.

In-Situ Thermal Technologies Advisory Panel

In late 1998, EPA Region 10, EPA Region 9, and the Technology Innovations Office at EPA Headquarters, assembled a group of prominent researchers and industry experts. The group provides oversight and consultation for thermal technologies evaluation at both the Wyckoff site and at the EPA Region 9 McCormick and Baxter Site in Stockton, California. This group has become known as the In-Situ Thermal Technologies Advisory Panel, or ITTAP. EPA met with ITTAP

members in early April to discuss and obtain expert feedback regarding uncertainties of thermal remediation, community concerns, and development of the conceptual design for cleanup.

The primary outcomes of this meeting were that the experts do not believe there are any fatal flaws at Wyckoff preventing the use of thermal technologies. The group fully supports using thermal technologies at this site to remove the contamination in the soil

Site Background: The former Wyckoff wood-treating facility, located at the mouth of Eagle Harbor on Bainbridge Island, forms part of the Wyckoff/Eagle Harbor Superfund site. The facility operated as a wood-treating operation from 1903 until 1988. As a result of these operations, surface and subsurface soils at the facility, and groundwater beneath the facility, have been severely contaminated with creosote and other wood treatment compounds. Bottom sediments in much of Eagle Harbor are contaminated with chemicals from wood-treating and shipyard operations. These sediments are toxic to marine life. A public health advisory is in effect recommending against eating fish and shellfish harvested from the Harbor.

loc of operable units.FH5
FreeHand 5.5
10/29/97 10:14 AM

The Wyckoff/Eagle Harbor site is divided, for program purposes, into four work areas called "operable units." The four areas are: West Harbor Operable Unit, East Harbor Operable Unit, Wyckoff Soil Operable Unit, and Wyckoff Groundwater Operable Unit.

and groundwater. Community concerns such as noise, odor, and surface emissions were also discussed. The ITTAP and EPA feel strongly that engineering measures can be taken to significantly reduce overall nuisance to the community.

Sheet Pile Wall Driving Tests

An important component of the thermal remedy would be construction of a temporary (up to 15 years) sheet pile barrier wall extending below the surface around the site. The temporary barrier wall would be necessary to prevent contaminants from moving into Eagle Harbor during the thermal remediation process. This summer, EPA will test a couple types of sheet piles and sheet pile interlocks. The purpose of this test is to evaluate "driveability"—to learn to what degree the sheets can be driven deep underground through dense and cobbley locations in the subsurface. The test will also evaluate whether the barrier material can be seated into the layer that separates the upper aquifer from the lower aquifer under the site, called the aquitard. While local residents may hear some noise as a result of the driveability testing beginning around August, EPA will be taking measures to ensure that any disturbance is minimized, such as driving piles only during daytime hours.

Onsite Groundwater Supply

If steam injection is implemented, a large amount of fresh water would be required to generate steam for the cleanup process. This summer, EPA will be installing a test well on the Wyckoff property to evaluate the fresh ground water supply in deep aquifers. One purpose of the test well would be to determine the maximum yield in this area. The test well would also be used to assess impacts on other production wells and the potential for salt water intrusion. The test well would be operated for 30 days. If the test proves successful (if the well produces water without impairing current users), then the test well would be converted to a production well for use during cleanup activities.



EPA Works to Control Product Seepage

Control of the creosote which continues to seep through the bulkhead at the Wyckoff site has been an ongoing concern as a potential source of contaminants to the harbor. This concern was heightened this fall, as it was discovered that the intertidal silt curtains---or underwater fences---placed as the line of defense against potential recontamination of the cap, had become overgrown with algae and were beginning to sag. In October, divers under contract with the Army Corps of Engineers managed to locate and remove all of the visible product---about 1000 gallons---in the former log rafting area and successfully resuspend the silt curtains with floats. Two additional product “vacuuming” events took place before Christmas, recovering substantially less creosote (less than 100 gallons). Diver observations during the West Dock demolition indicated that very little creosote has accumulated since the last vacuuming effort. Diver observation of the log rafting area will continue on a regular basis, with product vacuuming taking place as needed.

To help prevent further seepage of contaminants from the site, a ninth groundwater extraction well was installed near the former log rafting area in early 1999. Since this well was put into operation, 12-14 gallons of non-aqueous phase liquid (NAPL) product has been recovered each day. A groundwater pumping test will be conducted this May to assess the pumping system’s ability to contain contaminants from entering Eagle Harbor. Based on test results, it is possible that a tenth well may be installed to enhance contaminant removal and containment.



Left: Bank erosion at the Wyckoff site likely was due to harsh winter.

Bank Erosion Found and Stabilized

In late March, EPA noted several pockets of erosion on the bank between the old West Dock location and the point at the mouth of the harbor. Bank erosion likely occurred due to the unusually harsh winter. In some cases erosion extended under the existing site perimeter fence, exposing buried debris and contaminated sediments to the harbor at high tide. In order to stabilize the bank and prevent further erosion of contaminated material into the intertidal area and the harbor, EPA and the Corps of Engineers quickly initiated an emergency action on April 5. The action consisted of the placement of riprap along the entire stretch of affected shore, tying into existing riprap along the Eastern shore of the site. The action was completed on April 10. Debris was also removed from the intertidal area prior to the placement of riprap. EPA coordinated with the City of Bainbridge Island, the Coast Guard, and the natural resource trustees prior to, and during the bank stabilization. Through coordination with the Suquamish Tribe and Washington State Fish and Wildlife, the original design of the stabilized riprap slope was altered, placing the toe of the new bank at least 7 feet landward of the previous bulkhead. This alteration minimized the amount of rock needed for placement, and allowed for potential future recovery of over 1000 square feet of intertidal area.



Above: Placement of riprap along the shore will help prevent further erosion.



Removal of West Dock Complete

Removal of the West Dock---the last in-water structure at the Wyckoff Facility---was completed in December 1998. West Dock, which was derelict and beyond repair according to a 1998 detailed reconnaissance performed by the US Army Corps of Engineers, was removed in its entirety. Due to the poor structural condition of the dock, the risk it posed to human health, and because it directly interfered with planned cleanup activities, EPA determined that the dock needed to be removed.

The dock was demolished, as were previous docks in the area, by a barge crane which removed dock materials to a secondary barge. All superstructure, or material which forms the top of the dock, was removed and disposed of off site. Dock piling was cut off 12 inches or less above the mud line and removed. In addition to removal of the dock, two abandoned, beached barges were removed, demolished, and disposed of off-site. Demolition activities lasted approximately 2 ½ months.

During the demolition activities, the natural resource trustees and the Association of Bainbridge Communities participated in a site visit to view the demolition in progress and ask questions.

Coast Guard Proposes Rule to Protect Harbor Cap

The U.S. Coast Guard has formally proposed a “regulated navigation area” in Eagle Harbor. The new rule is expected to be published by June 30, and delineation of the area with buoys may occur in July. This new rule would restrict activities---such as anchoring, dredging, or laying cable---that might disturb the harbor’s clean sediment cap. It would not affect normal navigation of the area, nor would it

affect vessels anchored elsewhere in the harbor. The cap was placed over the contaminated seabed in Eagle Harbor as part of the remediation process for the Wyckoff/Eagle Harbor Site. Consisting of a layer of clean medium-to-coarse grained sand about three feet thick, the cap isolates contaminants and limits their release into the water, and limits the potential for marine organisms to reach the contaminated sediments. The comment period on the regulated navigation area closed April 26.

Clean Sediment Cap to be Monitored

Regular monitoring of the East Harbor cap will continue this spring and summer. As with past events, monitoring will include bathymetry, to determine if the cap remains physically intact at the appropriate thickness, and cap sediment chemistry, to determine if the cap remains effective in isolating underlying contaminated sediments. Sampling will begin early this spring.

Local Group Calls for Minimizing Community Impacts

contributed by David Davison, Co-Chair, Association of Bainbridge Communities

The Association of Bainbridge Communities (ABC), a recipient of EPA technical assistance funds, is calling for minimizing the impact of the potential new steam technology to surrounding neighborhoods. The group has been actively monitoring cleanup of the Wyckoff/Eagle Harbor Site for about 10 years. Overall, ABC has supported EPA cleanup efforts during this period.

In a letter to EPA, ABC has stated it supports the

concept and goal of the cleanup of the creosote contaminants at the site so long as the cleanup: a) does not “push” contaminants through the protective clay layer below the site and b) is conducted in a way that minimizes impacts to surrounding residential areas.

The new technology promises to pull pure creosote product out of the ground at a much higher rate than the existing extraction well systems, which only help to reduce the outflow of creosote into Eagle Harbor. Instead of just containing contaminants at the site, this new technology offers the possibility of actually removing the contaminants and achieving a cleanup of this heavily polluted site.

However, the cleanup must be conducted in a way that minimizes community impacts. Because of the possible length of the cleanup, suggested at up to 10 years at 8 hours a day, EPA must work hard to develop a process at the outset that will reduce to zero the air emissions from the site, and reduce to a low level the noise generated by the cleanup equipment.

ABC believes fuel for steam generation should be delivered by barge so as not to bring heavy truck traffic to the residential roads along Eagle Harbor and Sportsman Club Road where schools are located. ABC believes EPA should select propane to generate steam because it is much cleaner burning than diesel. Diesel fuel should not be an option because of increased fumes even though the cost may be less.

ABC will be following the design process carefully to assure that the design will cause minimal impact to the surrounding residential community. ABC is a non-profit community organization that is open to all and encourages citizen participation in oversight and monitoring of cleanup of Eagle Harbor and the Wyckoff Superfund site. Please feel free to call Dave Davison at 206/842-7003 if you desire to participate in this process.

For more information...

Contacts:

Hanh Gold

EPA Project Manager
(Groundwater and Soils)
206/553-0171
E-mail: gold.hanh@epa.gov

Ken Marcy

EPA Project Manager
(West and East Harbor)
206/553-2782
E-mail: marcy.ken@epa.gov

Andrea Lindsay

EPA Community Involvement Coordinator
206/553-1896
E-mail: lindsay.andrea@epa.gov

Toll-Free Telephone Number:

1-800-424-4372

EPA Web Site:

www.epa.gov/r10earth/

Documents: The Administrative Record is a file that contains all information used by EPA to make decisions on cleanup actions from the beginning of the site's history. The Administrative Record can be reviewed at the EPA Records Center, 7th Floor, 1200 Sixth Avenue, Seattle. Call 206/553-4494 to make an appointment. Select documents can be viewed at the Information Repository located at the Bainbridge Island Public Library, 1270 Madison Avenue North. If the library does not have the document you need, feel free to call Andrea Lindsay, EPA Community Involvement Coordinator, at 1-206-553-1896.

Additional services can be made available to persons with disabilities by calling EPA toll-free at 1-800-424-4372.



United States
Environmental Protection
Agency

EPA Region 10
Community Relations and Outreach
1200 Sixth Avenue, ECO-081
Seattle, Washington 98101-1128

BULK RATE
POSTAGE & FEES PAID
U.S. EPA
Permit No. G-35

***SUPERFUND FACT SHEET
Wyckoff-Eagle Harbor Site
Bainbridge Island, Washington***