United States Environmental Protection Agency

FISHERVILLE MILL UPDATE

U.S. Environmental Protection Agency (EPA)
New England Office

Community Update #4
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Fisherville Mill
Grafton, MA

Overview

The Fisherville Mill operated from 1882 to 1986 manufacturing a variety of products including textiles, steel racks and machine parts. In August 1999, a fire destroyed the mill. A groundwater treatment plant located adjacent to the mill, installed by Massachusetts Department of Environmental Protection (MA DEP) was also destroyed.

The groundwater treated in the plant was contaminated with petroleum, and toxic chemicals, chlorinated volatile organic compounds (VOC's), that were used in manufacturing. Exposure to this groundwater and contaminants at the site poses a threat to human health and the environment, especially drinking water wells, the nearby Blackstone River, and the Blackstone Canal.

EPA's past and current cleanup activities

After the 1999 fire gutted the Fisherville mill buildings, EPA conducted an emergency response action.

In June 2000, EPA, MA DEP and Central Massachusetts Economic Development Authority (CMEDA) disposed of approximately 3,400 tons of asbestos-containing material, 3,226 tons of lead contaminated ash and building debris, 111 gallons of PCB-contaminated oil, and 94 tons of mineral oil that were transported to secure disposal facilities.

In January 2000, South Grafton Water District (SGWD) reported trichloroethylene (TCE) in a sample taken from one of its wells. In March, 2001, EPA, MA DEP and CMEDA agreed that additional monitoring wells were needed to evaluate the extent of contamination in the groundwater.

Subsequently, EPA installed 13 monitoring wells in the area to determine the extent of VOC groundwater contamination.

All 35 new and existing wells were sampled and analyzed for VOC contamination. Additionally 76 subsurface soil samples were collected and analyzed during the monitoring well installation.

EPA believes that the VOC contamination is coming from the area of the former loading dock and the mill foundation.

EPA identified a plume of contaminated groundwater that is moving towards the Blackstone River. However, during drought and extensive SGWD pumping periods, the plume will move to the west beneath the Blackstone Canal toward the SGWD wells.

EPA has installed a portable dam (which is made up of stacks of sandbags) at the Blackstone Canal that creates a water impoundment which acts as the hydraulic barrier to keep the contaminants from migrating.

EPA has conducted studies to evaluate the effectiveness of chemical oxidation treatment technology which was then used to treat TCE and other chlorinated VOCs. Sodium permanganate was injected into the groundwater causing a chemical reaction that breaks down toxic chemicals to less harmful forms.

Two injections of chemical oxidant were conducted to treat the 100 ft by 200 ft source area. A total of 100 to 120 injection points were installed in the source area. On going sampling monitors the performance and effectiveness of the treatment. EPA believes that this approach is achieving cleanup goals which has decreased TCE concentrations significantly.

The sandbag dam is being replaced with a temporary sheetpile dam to reduce maintenance costs and improve effectiveness.

EPA plans to continue groundwater monitoring to ensure cleanup goals are met, and that the treatment system continues to work.

For more information on Fisherville Mill cleanup, call EPA Toll Free at:
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The portable dam pictured above was installed along the Blackstone Canal in preparation of EPA removal actions.

In Situ Chemical Oxidation Treatment System.

Groundwater sampling equipment.