



SUPERFUND

Western Sand & Gravel Superfund Site North Smithfield, RI

U.S. EPA | HAZARDOUS WASTE PROGRAM AT EPA NEW ENGLAND



THE SUPERFUND PROGRAM protects human health and the environment by investigating and cleaning up often-abandoned hazardous waste sites and engaging communities throughout the process. Many of these sites are complex and need long-term cleanup actions. Those responsible for contamination are held liable for cleanup costs. EPA strives to return previously contaminated land and groundwater to productive use.

SITE DESCRIPTION

The Western Sand and Gravel Superfund Site (WS&G Site) encompasses 25 acres of land in the Towns of Burrillville and North Smithfield, Rhode Island. Historically used as a dumping location for liquid and solid wastes between 1953 and 1975, the WS&G Site was added to the list of National Priority sites in 1983.

BACKGROUND: LANDFILL CAP DESIGN AND ALTERNATIVE WATER SUPPLY

In 1989, an unlined landfill was constructed on the WS&G Site to contain hazardous materials and contaminated soils. The landfill cap is constructed of several layers of impermeable textiles and layers of clay which cover the hazardous waste and prevent precipitation from infiltrating and entering groundwater. The top layer consists of soil and vegetative cover made up of local grasses which absorb water, reduce runoff, and help to prevent erosion and damage to the impermeable layers beneath. The landfill cap includes a built-in swale, which was designed to direct the majority of precipitation towards the forested area west of the WS&G Site, downgradient of the landfill. Since its completion in 1989, the landfill cap and stormwater management system have operated as designed. Recently, however, flooding and changes to groundwater have become a concern.

An alternative water supply was also built and went into service in 1994 to provide potable water to 54 impacted residences west of the WS&G Site. All impacted residences are connected to the municipal water supply, and EPA does not provide bottled water or point-of-entry filtration systems at any residences. The groundwater remedy, monitored natural attenuation, is on-going.

SITE UPDATES AND ACTIVITIES

The WS&G Site experienced severe flooding from December 2023 – April 2024 due to frequent rainfall and partial failures of the infiltration pond berms at the adjacent property to

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the east. The flooding resulted in minor damage to the vegetative cap, an increase in groundwater elevation beneath the landfill, as well as a discharge of turbid water to Tarklin Brook. EPA and the Rhode Island Department of Environmental Management (RIDEM) have documented multiple instances of water discharge from the pond berms. As a result, EPA is investigating the discharge of water to Tarklin Brook and RIDEM required modifications to the infiltration pond berms to prevent future releases. As this is a surface water discharge regulated by the RIDEM RIPDES Program, EPA was not involved in the approval or implementation of the berm improvements.

Several on-site monitoring wells downgradient of the landfill are sampled twice per year for chemical contaminants associated with the WS&G Site. These samples help to ensure the remedy remains protective of human health on and downgradient of the WS&G Site. Concentrations of contaminants of concern, mainly tetrachloroethene (PCE), trichloroethene (TCE), and vinyl chloride have steadily decreased and are expected to meet treatment goals within the next several years.

Groundwater elevation has historically been measured in six monitoring wells at the WS&G Site twice per year. The monitoring program was expanded in 2024, and groundwater pressure transducers were added to five monitoring wells which measure the groundwater elevation multiple times per day, allowing for a better characterization of groundwater elevation beneath the landfill. This expanded monitoring program is anticipated to continue for several years to evaluate impacts from off-site water infiltration. This investigation is ongoing, and no conclusions have been made at this time. An interim report is anticipated to be submitted by December 2025, and EPA will review all data as it is reported.

While EPA engages in expansive monitoring activities at the WS&G Site, it does not monitor groundwater or surface water upgradient (east) of the WS&G Site. EPA also does not conduct any sampling, analysis, or monitoring of groundwater or surface water on any adjacent properties located outside the boundaries of the WS&G Site.

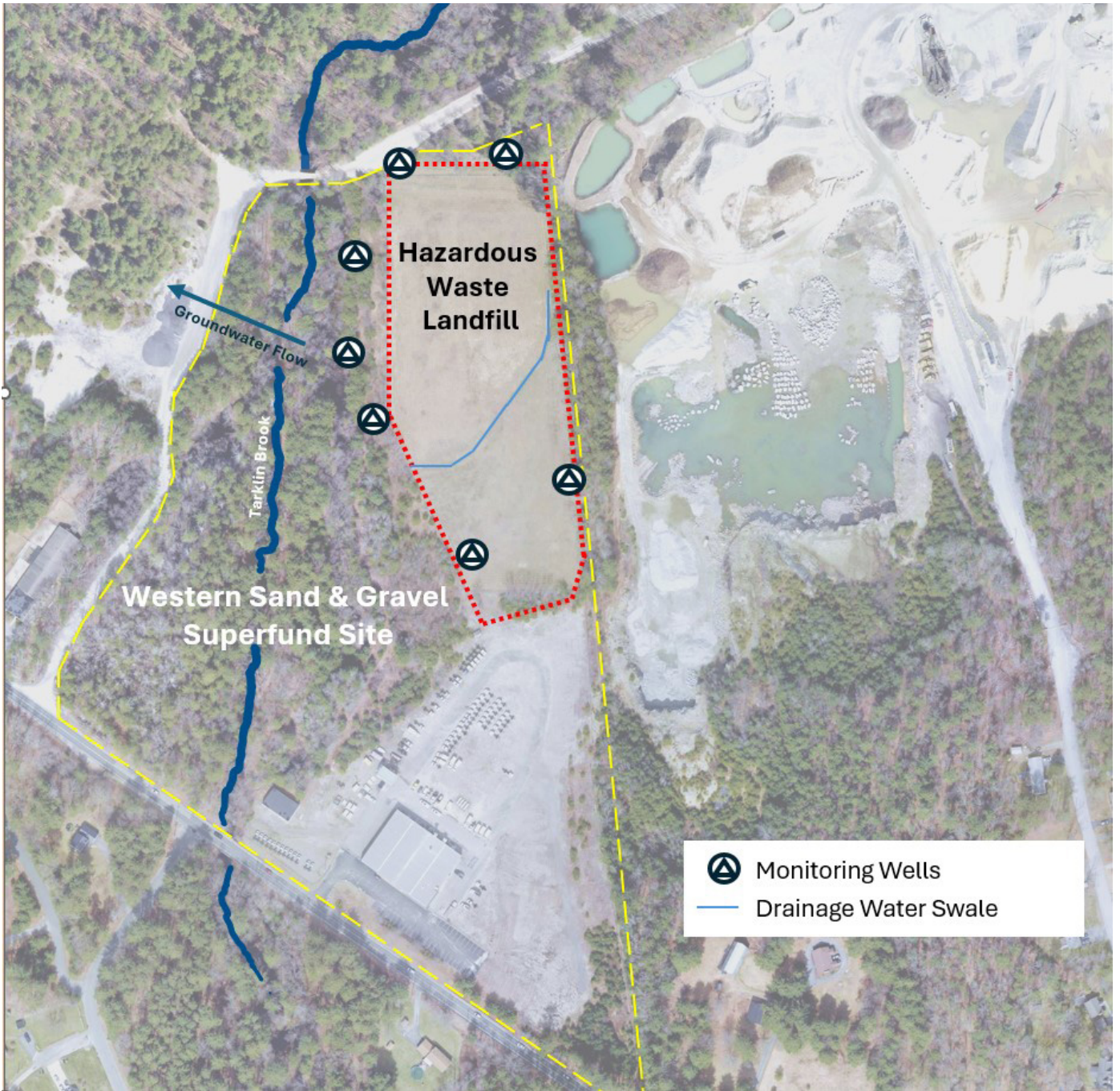
PROTECTIVENESS OF REMEDY AT THE SITE

As noted in the 2023 Five Year Review for the WS&G Site, EPA determined that the remedy of the WS&G Site was protective. However, the presence and proximity of multiple water infiltration basins on the adjacent property could potentially raise the groundwater table under the hazardous waste landfill via increased infiltration. Due to the narrow margin (< 5 ft) between the base of the landfill and mean average groundwater elevation, any increase in discharge to groundwater could impact the protectiveness of the remedy at the WS&G Site.

The composition, thickness, and permeability of the layers beneath the landfill and infiltration ponds are not well defined. These properties help determine the rate at which water can be discharged into the aquifer without significantly altering groundwater elevation and cause mixing with contaminants. The EPA has proposed investigation and characterization of the layers to make those determinations. Any statements regarding the safety of groundwater infiltration are premature.

ADDITIONAL INFORMATION

For additional information please see EPA's websites for the WS&G Site and the L&RR Site. Any questions regarding air, including fugitive dust, surface water discharges, or groundwater quality outside of WS&G Site property boundaries should be directed to RIDEM as it has delegated authority to enforce Federal surface water, groundwater, and air quality regulations in Rhode Island. Any questions regarding mine safety should be directed to the Mine Safety and Health Administration.



Aerial view of Western Sand & Gravel Superfund site with site boundaries and monitoring wells.