

Coakley Landfill Superfund Site

North Hampton & Greenland, NH

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.

REDUCING YOUR EXPOSURE TO PFAS IN SURFACE WATER

In September 2024, EPA conducted a risk evaluation for perfluorooctanoic acid (PFOA), perfluorooctane sulfonate (PFOS), perfluorobutane sulfonic acid (PFBS), perfluorononanoic acid (PFNA), perfluorohexanesulfonic acid (PFHxS), and perfluorodecanoic acid (PFDA) in surface water at the Site. EPA has determined that there is an unacceptable added risk from the incidental ingestion of surface water from Berrys Brook, Little River, and associated wetlands near the Coakley Landfill Superfund Site. EPA is evaluating what long-term measures would be most effective to reduce contaminant migration to surface water at the Site and to protect human health from exposure to contaminants in surface water.

Avoid contact with, and ingestion of, surface water in wetlands and in Berrys Brook and Little River near the Site.

There are existing signs notifying residents of the presence of contaminants in surface water and to avoid contact in these areas where the public may come in contact with surface water. EPA has directed the Coakley Landfill Group (CLG) to post additional signs in these areas and associated wetlands.

UPDATED SCREENING AND RISK EVALUATION FOR PFAS IN SURFACE WATER

Developing PFAS Levels for Coakley

On May 14, 2024, EPA published updated Regional Screening Levels (RSLs) for PFOA and PFOS in tap water based on new toxicity information. This new toxicity information for PFOA and PFOS, along with exposure assumptions for the recreational surface water path-

continued >

KEY CONTACTS

RICHARD HULL

U.S. EPA
Project Manager
617-918-1882
Hull.Richard@epa.gov

AARON SHAHEEN

U.S. EPA
Community Involvement
Coordinator
617-918-1071
Shaheen.Aaron@epa.gov

ANDREW HOFFMAN

NHDES
Project Manager
603-271-7378
Andrew.Hoffman@des.nh.gov

LEARN MORE AT

www.epa.gov/superfund/coakley

way, were used to calculate site-specific screening levels (SSSLs) for PFOA, PFOS and other per- and polyfluoroalkyl substances (PFAS) in surface water at Coakley Landfill.

EPA uses values called RSLs to determine if a contaminant at a Superfund Site requires further investigation. RSLs are risk-based concentrations derived from contaminant toxicity data and exposure assumptions and are not enforceable standards. On April 10, 2024, EPA's Office of Water established legally enforceable levels, called Maximum Contaminant Levels (MCLs), for six PFAS in drinking water - PFOA, PFOS, PFHxS, PFNA, and Hexafluoropropylene oxide-dimer acid (HFPO-DA). A MCL at a Hazard Index of 1 was also set for PFAS mixtures containing at least two or more of PFHxS, PFNA, HFPO-DA, and PFBS to account for the combined and co-occurring levels of these PFAS in drinking water. EPA also finalized health-based, non-enforceable Maximum Contaminant Level Goals (MCLGs) for these PFAS. Scan the qr code to find additional information on the rule or visit <https://www.epa.gov/sdwa/and-polyfluoroalkyl-substances-pfas>.



The SSSLs for PFOA and PFOS were determined to be lower than previous SSSLs. Monitoring data from surface water is compared against the SSSLs to determine if further investigation of these contaminants is required. The updated SSSLs were provided to the CLG and the Legislative Commission to Study Environmentally-Triggered Chronic Illness (SB 85) on June 3, 2024 (<https://semsub.epa.gov/src/document/01/100030200>).

Development of EPA Screening and Risk Evaluation

Risk assessors used the updated SSSLs to conduct a screening and risk evaluation for PFOA, PFOS, PFBS, PFNA, PFHxS, and PFDA in surface water at the Site. This screening and risk evaluation was performed using analytical data from surface water samples collected during 2023 and 2024. Surface water samples were collected by the CLG from wetland areas that form the headwaters for Berrys Brook and Little River; from within Berrys Brook and Little River; and from the leachate seep located at the north-west corner of the landfill. A child recreational scenario was selected as the most conservative potential receptor for this risk screening and evaluation. The child recreational scenario is an exposure scenario for a person who spends time wading in surface water and may be exposed through incidental ingestion and dermal contact.

- For the screening step, the highest values of PFOA, PFOS, PFBS, PFNA, PFHxS, and PFDA were selected for each sampling event and compared to the corresponding SSSLs. Results of the screening show that highest values of PFOA, PFOS, PFNA, and PFDA exceeded the SSSLs in one or more of the 2023 and 2024 sampling rounds. Due to this result, risk assessors conducted a risk evaluation for these contaminants.
- For the risk evaluation step, risk assessors used EPA's RSL calculator and established toxicity values for each contaminant to generate estimates of risk for the child recreator scenario. The exposure parameters used for the child recreator assumed default inputs, including incidental ingestion of up to 0.12 liters (about 4 ounces) of water per exposure event. The exposure frequency; exposure time; and exposure events per day, require site-specific values. Exposure frequency was assumed to be 45 days per year, exposure time was assumed to be one hour per daily event, and one exposure event per day was assumed.

Estimates of the Incremental Lifetime Cancer Risk (ILCR) represent the lifetime incremental risk of cancer from the Site. Hazard Quotient (HQ) estimates represent the risk of health effects other than cancer from exposure to contaminants. A Hazard Index (HI) is obtained by summing HQs for individual contaminants. EPA's target cancer risk range is 1 in 10,000 to 1 in 1,000,000 and the non-cancer target limit is 1.

Results

Results of the risk evaluation for surface water at the Site indicate that the total ILCR exceeds the EPA target cancer risk range of 1 in 10,000 to 1 in 1,000,000 and the non-cancer target limit of 1.

Scan the qr code to view EPA's detailed screening and risk evaluation or visit: <https://semsub.epa.gov/src/document/01/100031649>.



OTHER COMMUNITY UPDATES

On September 13, 2024, the CLG sent all private well owners that are part of the CLG's ongoing monitoring program the results from the sampling of private wells that was conducted in May 2024. These most recent results were consistent with results from past sampling events.

Thirteen wells were sampled during this event.

- Two wells exceeded the NH Ambient Groundwater Quality Standards (AGQS) for 1,4-dioxane and PFOA. These two wells have been equipped with treatment systems since 2018.
- One other well exceeded the NH AGQS for PFOA. This well has been taken off-line and will be connected to municipal water.
- One well exceeded the NH AGQS for PFOA. This is the first time that this well has had an exceedance. A resample of the well had results that were below the NH AGQS. The New Hampshire Department of Environmental Services (NHDES) notified private well owners within a 500-foot radius of the private well that there had been an exceedance.

The CLG continues to investigate the interaction between surface water and groundwater and the relative contribution of contaminants migrating from the Site. The CLG has increased sampling of surface water, stormwater runoff from the landfill cap, and shallow groundwater that is discharging to surface water. This sampling information will be used to evaluate and develop alternatives to address the migration of contaminants from the landfill to surface water and to protect human health from exposure to contaminants in surface water.

CLG continues to implement recommendations from the deep bedrock investigation that was completed in 2021, including the completion and monitoring of new wells, the drilling of a new well along the primary groundwater flowpath in bedrock south of the landfill, and further investigation of the extent of contamination and potential for back diffusion and transport of contaminants in groundwater east of the landfill.

NEXT STEPS

- Avoid contact with, and ingestion of, surface water in wetlands and in Berrys Brook and Little River near the Site.
- EPA is evaluating what long-term measures would be most effective to reduce contaminant migration to surface water at the Site and to protect human health from exposure to contaminants in surface water.
- EPA has directed the CLG to post additional signs in impacted areas near the landfill.

BACKGROUND

In 2016, EPA and NHDES identified PFAS as an emerging environmental contaminant group that may be present in site landfill waste and requested that the CLG sample for PFAS in groundwater. In May 2016, the CLG initiated sampling for PFAS at a select group of monitoring wells and confirmed the presence of PFOA and PFOS above EPA's health advisory for lifetime exposure to these substances. Since 2016, PFAS has been included in the CLG's ongoing monitoring program for groundwater, surface water, sediment, and private water supply wells.

