

This fact sheet summarizes the U.S. Environmental Protection Agency's Record of Decision for cleanup of the Quendall Terminals Superfund site. The site is located on the southeastern shore of Lake Washington in Renton, Washington. The upland part of the site is called Operable Unit 1, or OU1. The offshore part is called Operable Unit 2, or OU2. The site is contaminated with creosote, coal tar, pitch, and other hazardous chemicals.

The Record of Decision

After carefully considering public comments on our proposed plans, EPA has decided to go forward with the preferred alternatives outlined in the Proposed Plans.

In response to comments received on the Proposed Plan, EPA has refined some aspects of the cleanup alternative for OU1, the upland part of the site. EPA's Preferred Alternative 7a, with some refinements, will include smoldering combustion, in-situ solidification, and soil capping. This section briefly describes the refinements.

- **Cleanup Levels for Soil.** The ROD clarifies that the soil cleanup goals apply to the top 15-feet of soil. Areas where chemicals of concern that exceed cleanup levels remain in the top 15-feet of soil will be covered with a soil cap to prevent people and animals from coming in contact with contaminated soil.
- **Action Levels and Performance Criteria.** Metrics have been defined for deciding which areas of the site will be targeted for smoldering combustion and which areas will be targeted for ISS (In-situ solidification) treatment, how the success of smoldering combustion will be defined, and the path forward for groundwater following source treatment.

Before we start cleanup, we will use data to define where to apply smoldering combustion and where we will use ISS. This will reduce the time needed to complete the remedy and will allow for more certainty with the treatment approach.

These refinements do not significantly change the Selected Remedy, nor do they change the expected accuracy of the costs.

For OU2, the in-water portion of the site, EPA has selected Alternative D. Alternative D includes DNAPL (dense nonaqueous phase liquid) removal via dredging, placement of an engineered sand cap, and enhanced natural recovery. After reviewing all public comments, EPA determined that no significant changes to the remedy identified in the Proposed Plan were necessary or appropriate.

Cleanup Decision for OU1

During remedial design, a plan will be developed to detail the implementation process. The data collected prior to the start of design will be used to delineate separate areas for smoldering combustion and ISS and performance measures for each technology. Remedial action implementation will include ongoing evaluation of the smoldering technology and optimization of the implementation approach.

Time to design and complete construction of this cleanup is estimated to be about 5 years. Estimated cost for this OU1 cleanup is \$66.1M.

This cost estimate assumes about 60 percent of the creosote/coal tar DNAPL will be treated with smoldering combustion and solidification will be used on about 40 percent of the DNAPL. Costs assume 100 years of monitoring and maintenance to make sure the remedy stays protective.

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Cleanup Decision for OU1

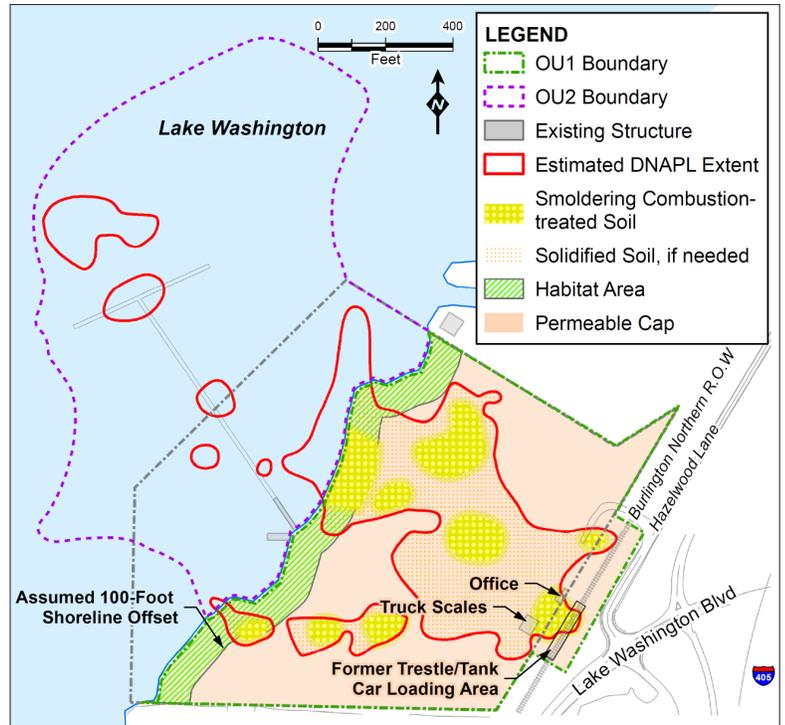
Descriptions of the Remedial Components:

In-situ self-sustaining smoldering combustion:

Smoldering combustion is a thermal oxidation process that results in the destruction of the contaminants in place. The selected remedy will use in-situ smoldering combustion as the primary DNAPL treatment technology. The smoldering combustion reaction (similar to charcoal burning in a grill) treats certain types of contaminants like creosote and coal tar. The combustion process basically converts these chemicals into carbon dioxide, carbon monoxide, water, and heat. Other gases are captured and treated as part of the process. This is a relatively new, but very effective way of addressing oily contamination underground. In summer 2018, EPA conducted a field study of a smoldering combustion technology at the Quendall Terminals site. The test results showed this technology to be an effective option for treating soil contamination.

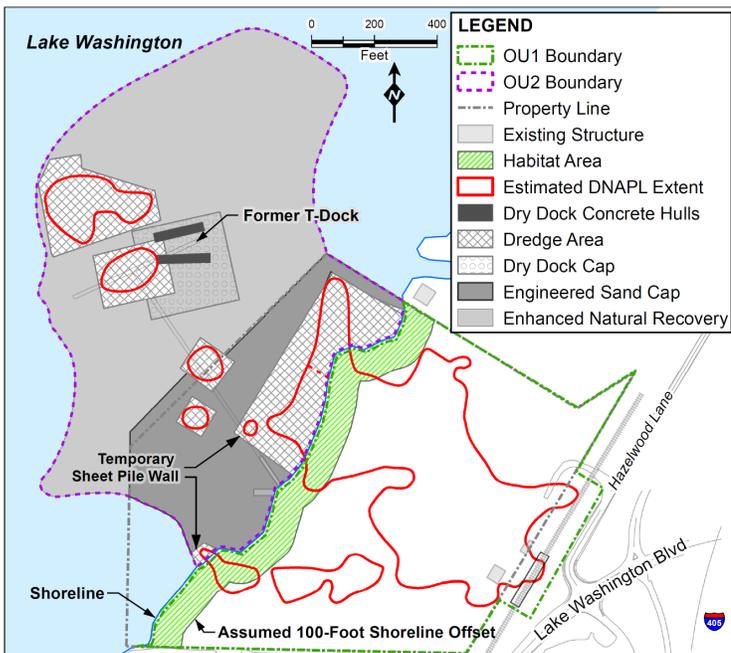
In-situ solidification: Using this technology, creosote/coal tar and contaminants in soil are solidified in place. This is done by injecting material very similar to cement into the ground and mixing it with the contaminated soil using large augers. This has become a common way of addressing contamination at sites with oil creosote and coal tar contaminants like Quendall Terminals.

Soil cap: About 3 feet of clean fill will be placed over areas where soil cleanup goals are not met, to keep people and animals from coming into contact with the contaminated soil.



Cleanup Decision for OU2

The cleanup decision includes dredging and offsite disposal of creosote/coal tar in sediment (6.4 acres), placement of an engineered sand cap (5.5 acres) and Enhanced Natural Recovery (17.6 acres). The estimated cost of the OU2



cleanup remedy is \$39.9M and will take a little over 4 years to design and construct. Cost assumes 100 years of monitoring and maintenance to make sure the remedy stays protective.

Monitoring will verify that the remedy is performing as intended (that is, concentrations of contaminants of concern are decreasing over time).

Remedial components include:

Dredging and Offsite Disposal: The primary objective of this cleanup remedy is to remove (dredge) creosote/coal tar-containing sediments along the lake shore and along the former T-Dock, using either hydraulic or mechanical means. Dredged materials will be disposed of at an offsite landfill.

Reactive Core Mat (RCM) and Amended Sand Caps:

Areas with creosote/coal tar left in sediment may be capped with a RCM or amended sand cap.

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Cleanup Decision for OU2 – Remedial Components

These covers contain materials that sorb oil and contaminants, controlling migration to surface waters.

Engineered Sand Cap/Enhanced Natural Recovery (ENR): An engineered sand cap will be placed in areas outside those with creosote/coal tar in sediment (those areas will be dredged) that may continue to be impacted by nearshore upwelling of contaminated groundwater. Farther offshore, a thin layer of clean sand will be placed over sediment to accelerate the rate of natural recovery.

The Proposed Plans

Before making our final decisions on how to clean up the site, we issued two Proposed Plans, one for each operable unit. We accepted public comment on the plans from September 9 through November 8, 2019. The Proposed Plans summarized the analysis of pollution at the site, and presented cleanup options, including EPA’s preferred alternative for each operable unit. During the comment period, EPA held an open house and public meeting. During the meeting, community members viewed displays, asked questions, heard presentations and then provided comments in person. The community’s knowledge and perspective are important to inform the final selection of a cleanup remedy. Public comments, and EPA’s responses to them, can be found in the Responsiveness Summary, in Part 3 of the Record of Decision.

More background on the site, the problems that need to be solved at the site, and the cleanup alternatives considered before the final decision was made, are available in the Proposed Plans and the fact sheet that summarizes them. The Record of Decision, Proposed Plans, fact sheets, and additional technical documents can be viewed under “Site Documents & Data” at www.epa.gov/superfund/quendall-terminals.

Contamination at the Quendall Terminals Site

Quendall Terminals was contaminated by releases of coal tars and distillate products from transport, production, storage, and disposal. Soil in the uplands and sediments on the lake bottom are contaminated.

The upland portion of the site (OU1) covers about 22 acres, including nearly 1,500 feet of Lake Washington Shoreline. The upland soils are contaminated with oily creosote and coal tars found in thick liquid form (dense nonaqueous phase liquid or DNAPL). Soil and sediment containing DNAPL have been defined by EPA as principal threat wastes. Contaminants leach out of this thick liquid into the groundwater.

EPA guidance defines principal threat waste as source materials considered to be highly toxic or highly mobile that generally cannot be reliably contained or would present a significant risk to human health or the environment should exposure occur.

The offshore portion of the site extending into Lake Washington (OU2) covers about 29 acres. Spills contaminated shallow sediment with oily creosote and coal tars. Creosote and coal tars are present in deeper sediment along the shoreline where it has moved from the uplands. The groundwater from the uplands also spreads the contamination into the nearby lake sediments where people and aquatic life can be exposed to it.

Current and future land uses

Currently, the site is vacant and unused. The site could be redeveloped once it is cleaned up. To protect the cleanup, EPA will require Institutional Controls, which restrict certain uses or activities. While EPA’s cleanup may make the site suitable for redevelopment, EPA does not have jurisdiction over redevelopment decisions. Those activities are managed at the local level.

Before the Quendall Terminals site can be developed, the health risk to people who may live or work at the site must be addressed. Likewise, risks to people and the environment from contamination in Lake Washington sediments must also be addressed. Risks to future recreational beach users, and recreational and subsistence shellfish consumers, exceed thresholds for human health unless the contamination is cleaned up. Risks to lake plants and wildlife are also unacceptable.

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The Record of Decision provides for cleanup actions that will address threats posed to people and the environment by contaminants related to the site. Cleanup will leave the site ready for reuse.

Where is EPA in the cleanup process?

EPA has issued a single Record of Decision that documents the cleanup methods for both operable units. It includes our responses to the public comments we receive during this period. EPA carefully considers public comments before coming to a final decision.

Next steps will include additional sampling of soil, sediment, and groundwater; designing the final cleanup plan; and implementing the cleanup plan.

Extensive research on the contamination at the Quendall Terminals site has been performed by Altino Properties, Inc., J.H. Baxter & Co., Quendall Terminals LLC, and their engineering contractors under the direction of EPA. The State of Washington and the Muckleshoot Indian Tribe have helped EPA oversee this work. EPA has also conducted supplemental studies at the site.

Keeping the Community Informed and Involved During the Cleanup

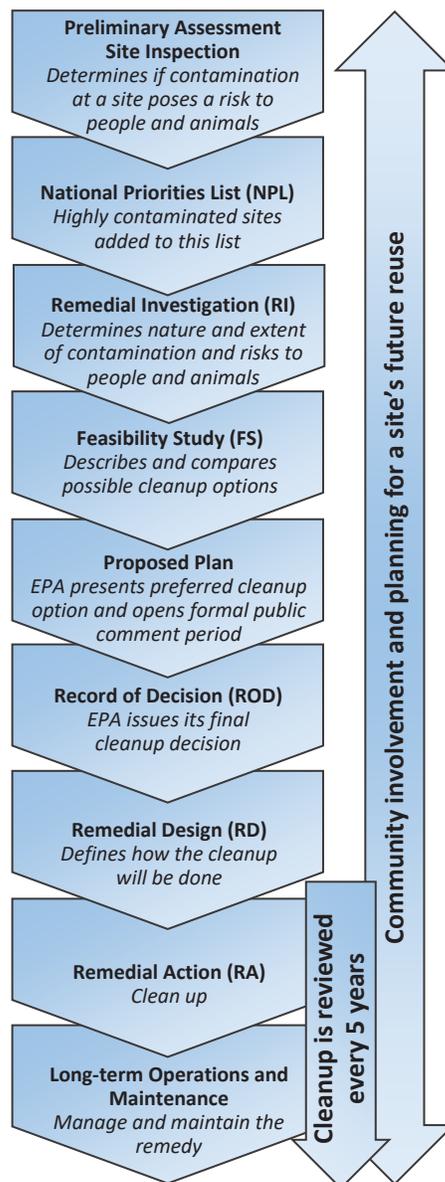
As we work to make the site a healthier place for people and the environment, we are committed to working in a positive way with residents and other stakeholders. We welcome suggestions at any time.

EPA has prepared a Community Involvement Plan tailored for the local community. It lays out how EPA will provide information and engage with community members on the Quendall Terminals cleanup. Involving the community is a priority for EPA. We understand that our activities at this site may affect many people.

We maintain an email distribution list and will send updates on our work going forward. You can sign up for email on our website (epa.gov/superfund/quendall-terminals) or send an email to Kay Morrison (morrison.kay@epa.gov).

[You can also find the Community Involvement Plan, fact sheets, and other documents on our website.](#)

We are here



For more Information

Website: epa.gov/superfund/quendall-terminals

Site Documents: Renton Public Library • 100 Mill Avenue South • Renton, WA 98057 • 425-430-6610

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EPA provides reasonable accommodation to individuals with disabilities where appropriate.

If you need a reasonable accommodation such as requiring information in a certain format (Braille, large print), please notify Kay Morrison, at 800-424-4372, ext. 8321 or by email at morrison.kay@epa.gov.

 *TTY users: please call the Federal Relay Service: 800-877-8339 and ask for Kay.*