

Nuclear Metals, Inc. Superfund Site Concord, MA

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.

BACKGROUND:

The Nuclear Metals, Inc. site – also known as the Starmet Corporation site – is located on a 46-acre parcel in Concord, Massachusetts. Nuclear Metals was originally a specialty metal research and development facility that was licensed to possess low-level radioactive substances including depleted uranium (DU). From 1957 to 1972, Nuclear Metals was engaged principally in specialty metals research and development contract work. In 1972, Nuclear Metals employees purchased the operation and developed a large-scale DU manufacturing operation. This included manufacture of DU shields, counterweights, armor penetrators, metal powders, beryllium and beryllium alloy parts production, and manufacture of specialty titanium parts.

From 1958 to 1985, waste was discharged into an unlined holding basin. Facility operations contaminated soil and groundwater with hazardous chemicals. Following immediate actions to protect human health and the environment, the site's long-term cleanup is ongoing.

CURRENT SITE STATUS:

The next phase of the multi-phase cleanup at the Nuclear Metals, Inc. site has been initiated. This phase is called "Remedial Design/Remedial Action." In December 2019, the [Remedial Design/Remedial Action Consent Decree](#) (494 pp, 39Mb) was entered by the United States District Court for the District of Massachusetts. The Consent Decree and its accompanying Statement of Work describe how the Remedial Design/Remedial Action (as outlined in the 2015 ROD) will be performed. The Remedial Design phase of the project started in July 2020 and is nearing completion.

The remedy for the site includes the following:

- Excavation and off-site disposal of contaminated soils and sediments in various

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areas of the Site, approximately 85,000 cubic yards of material;

- Treatment of of DU contaminated soils in the Holding Basin via injection using a stabilization agent to prevent leaching of contaminants to groundwater;
- Containment of Holding Basin stabilized soils with a low-permeability vertical wall and horizontal sub-grade cover to isolate the stabilized soils and further limit mobility of contaminants by removing the flow of groundwater;
- Extraction and ex-situ treatment of VOCs and 1,4-dioxane in overburden and bedrock aquifers, and in-situ treatment of DU in overburden aquifer and natural uranium in bedrock aquifer;
- Long-term monitoring for effectiveness of in- and ex-situ treatment; and Institutional Controls.

In support of the remedial designs, pre-design investigations were performed across the Site resulting in:

- more than 40,000 work hours (8/2020 - 12/2021 with 0 injuries)
- 7,000 feet of drilling resulting in installation of 42 new monitoring wells
- a 10-week pumping study using 4 new bedrock extraction wells
- 660 soil samples collected, and
- specialized testing including soil geophysics, seismic evaluations, ground penetrating radar, treatability and pilot studies.

Two of the Remedial Design Reports are completed (Remedial Design for Soils in Areas of Interest [AOI] 8 and 9, also referred to as the Sweepings Pile Soils, and the Remedial Design for Off-Site Ex-Situ Groundwater) and were approved by EPA in September 2022. Remedial Design Reports and the approved Pre-Design Investigation Reports can be reviewed on the [site webpage](#). Remedial Designs for other areas of the site are underway and are expected to be complete in 2023/2024.

NEXT STEPS:

The Remedial Action for AOI 8/9 Soils (Sweeping Pile soils) has begun and soils will continue to be excavated from two on-site areas during the next few months (see map). The excavated soils will be placed in containers and transported off-site via truck and rail to final landfill disposal in Michigan. Each excavated area will be sampled again before being backfilled to confirm that no soil posing an unacceptable risk to health remains.

The Remedial Action for off-site groundwater includes an expansion of the existing Knox Trail groundwater capture and treatment system installed at 16 Knox Trail in Acton, Massachusetts as part of the Site's non-time critical removal action (NTCRA) in 2017. The expansion of the groundwater treatment system includes the installation of two new extraction wells and connection to the existing treatment plant. This work is expected to start in the Spring of 2023.



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WHAT TO EXPECT:

Soil started moving off-site in mid-November and will continue for about 8 weeks. As cleanup work begins, residents should expect to see personnel and heavy equipment working on or about the Site. Normal working hours will be between 7:00 AM to 5:00 PM, Monday to Friday. During the entire 8 weeks, air monitoring and dust control and suppression will be performed (as needed) for worker protection and public health. EPA estimates that approximately 250 truck trips will be needed to transport and dispose of the wastes generated from the Site, which will be approximately 10 trucks per day leaving the Site. All wastes will be disposed of at an EPA approved facility. The Site contractors are coordinating with the Town in selecting the safest traffic truck routes that also help to alleviate a potential increase in traffic.

The image shows the approximate extents of soil excavation of the Areas of Interest 8 and 9.

