

# 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.

## REMEDIAL ACTION UPDATE # 1:

The Remedial Action is underway for the some on-site soils and the Knox Trail groundwater treatment system expansion.

On-property soil includes the Areas of Interest (AOI) 8 and 9 soils phase, also referred to as the Sweepings Pile Soil. Excavation of AOI 8/9 soils began in November 2022 and is expected to be complete in June 2023. Soil samples were collected following each soil excavation to confirm that no unacceptable risk to human health or the environment remains. This additional confirmation sampling resulted in over 10,000 cubic yards of soil being excavated; far exceeding the design estimate of 3,800 cubic yards.

Construction of the Knox Trail groundwater treatment phase of the cleanup began in June 2023. The work is an expansion of the existing Knox Trail groundwater capture and treatment system installed at 16 Knox Trail in Acton, Massachusetts. This treatment system was 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 via the installation of a pipe beneath the Assabet River. The system will expand capture and treatment of NMI impacted groundwater and minimize impacts to the Assabet river and the Acton public water supply wells.

## WHAT TO EXPECT:

The Knox Trail groundwater treatment system expansion work began in June 2023. Residents should expect to see personnel and heavy equipment working in the rear of the Valley Sports Club (2320 Main Street) parking lot. The noise of the drill rigs will be moderate and heavy equipment may be seen entering and exiting the property from Route 62. Normal working hours will be between 7:00 AM to 5:00 PM, Monday to Friday. While this work is ongoing, air monitoring and dust control and suppression will be performed (as needed) for worker protection and public health. All generated wastes will be disposed of off-site at an EPA approved facility.

## KEY CONTACTS

### KARA NIERENBERG

U.S. EPA Project Manager  
617-918-1435

[nierenberg.kara@epa.gov](mailto:nierenberg.kara@epa.gov)

### ZANETTA PURNELL

U.S. EPA, Community  
Involvement Coordinator  
617-918-1306

[purnell.zanetta@epa.gov](mailto:purnell.zanetta@epa.gov)

### GARRY WALDECK

Massachusetts Dept. of  
Environmental Protection  
Project Manager

[garry.waldeck@mass.gov](mailto:garry.waldeck@mass.gov)

### MEGAN ZAMMUTO

Deputy Town Manager

[mzammuto@concordma.gov](mailto:mzammuto@concordma.gov)

## LEARN MORE AT

[www.epa.gov/superfund/nmi](http://www.epa.gov/superfund/nmi)

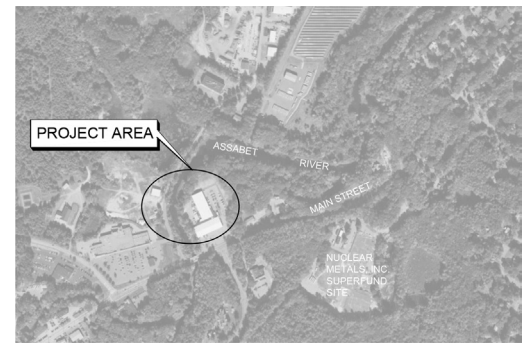
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The image at right shows the project area and Figure 1 shows the alignment of the proposed piping beneath the Assabet River.

### NEXT STEPS:

Site restoration is being performed for the AOI 8/9 Soils (Sweeping Pile soils). Remedial Design Reports for the Holding Basin, on-property bedrock and overburden groundwater (including in-situ treatment via sequestration), and site-wide soils and sediments are all underway and expected to be complete between 2023 and 2025.



LOCATION MAP  
NOT TO SCALE



### SITE DESCRIPTION:

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, until 2011 when Nuclear Metals, Inc. ended operations at the site.

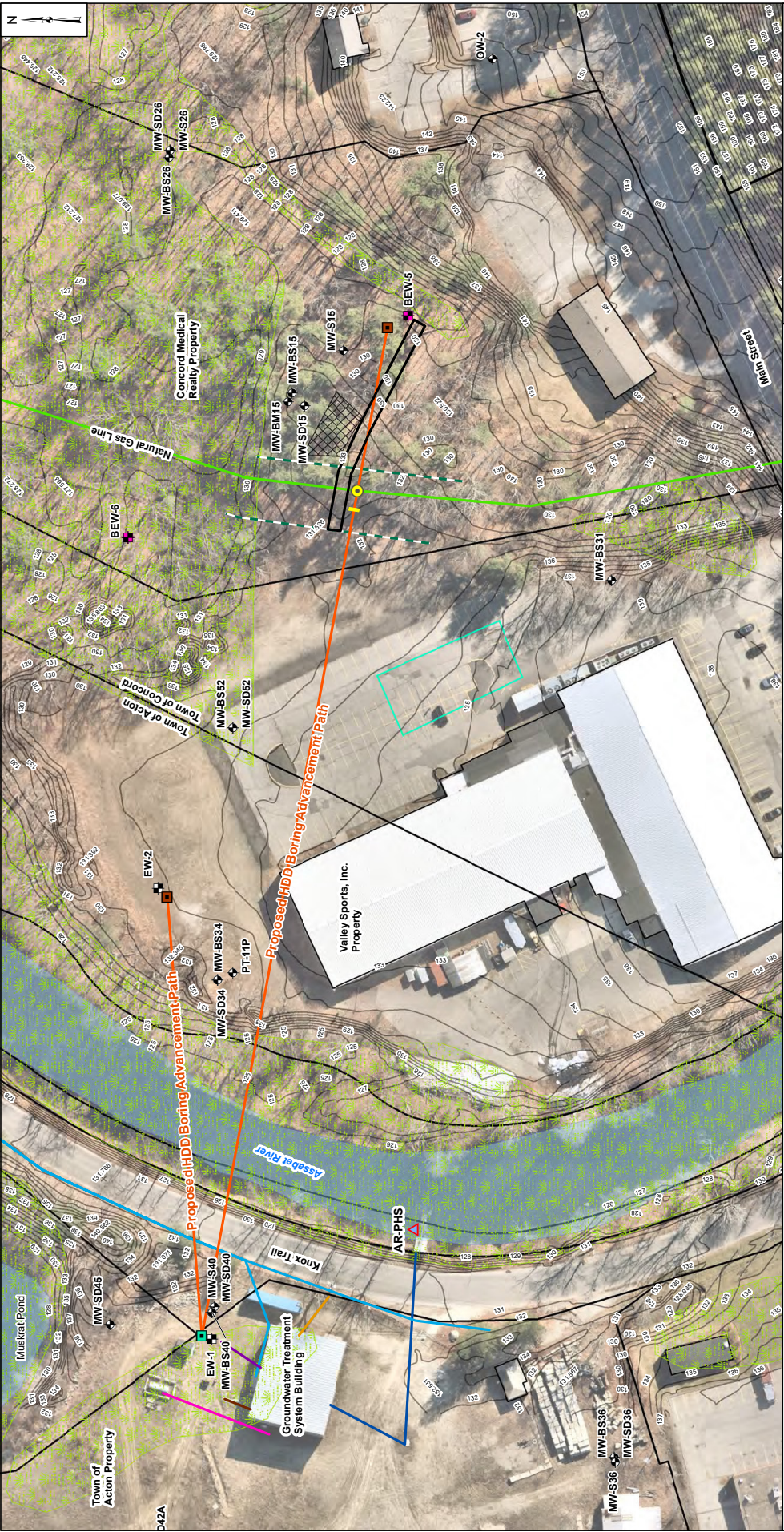
From 1958 to 1985, waste was discharged into an unlined holding basin. Facility operations contaminated soil and groundwater with hazardous chemicals. Following short-term actions to protect human health and the environment, the site's long-term cleanup is ongoing.

The Remedial Design/Remedial Action phase of the multi-phase cleanup at the Nuclear Metals, Inc. is underway. In December 2019, the [Remedial Design/Remedial Action Consent Decree \(494 pp, 39Mb\)](#) was approved by the United States. The Consent Decree and its accompanying Statement of Work describe how the Remedial Design/Remedial Action (as outlined in the [2015 ROD \(406 pp, 16 MB\)](#)) 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 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.

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 Knox Trail Groundwater Treatment System Expansion) 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 to 2025.



**Horizontal Directional Drilling Layout**

Nuclear Metals, Inc. Superfund Site  
Concord, Massachusetts

**Geosyntec**  
consultants  
de maximis, inc.

Acton, Massachusetts  
September 2022

**Figure 1**

**Notes:**

1. Aerial image dated March 27, 2021.
2. Property boundaries obtained from MassGIS.
3. Topographic Contours (2001) created by SANBORN. Topography in the vicinity of the groundwater treatment system is known to have been altered since 2001 and contours are shown in this area.
4. Elevation is presented relative to the National Geodetic Vertical Datum of 1929.
5. HDD indicates horizontal directional drilling.
6. Location of underground Kinder Morgan natural gas pipe and utility easement are approximate based on above-ground markings (bollards and temporary flagging) made by Kinder Morgan and information provided by Kinder Morgan regarding utility easement width. Approximate location of underground utility was determined by Feldman Land Surveyors in June 2022.
7. Valley Sports, Inc. septic system location and extent are approximate and based on a sketch developed in consultation with the property operator.

**Legend**

- Monitoring Well
- Extraction Well
- Open Bedrock Well for 1,4-Dioxane Rebound
- Realing
- Asabel River Stage Elevation
- Building Outline
- 1-foot Topographic Contours
- Wetlands (Town of Acton, Town of Concord)
- Surface Water
- Natural Gas Line and HDD Crossing Location, Test
- Pit Confirmation 3/31/2022
- HDD Vault Entrance Side
- HDD Transition/Vault (Exit Side)
- Gravel Access
- Vertical Shaft Plate Location
- Proposed HDD Boring Advancement
- General Areas of Soil Excavation for Flood Storage Mitigation

**Subsurface Utilities**

- Natural Gas Line
- Kinder Morgan Utility Easement Boundary
- Electric Utility and Data
- Propane Line
- Groundwater Inflow
- Septic Line
- Town of Acton Potable Water
- Treated Groundwater Effluent
- Valley Sports Septic System

**Proposed Construction**

- HDD Vault Entrance Side
- HDD Transition/Vault (Exit Side)
- Gravel Access
- Vertical Shaft Plate Location
- Proposed HDD Boring Advancement
- General Areas of Soil Excavation for Flood Storage Mitigation