



A Siemens Healthineers Company

## **Public Involvement Plan (PIP) Meeting**

- Temporary Solution Statement and Phase IV Status Report**
- Release Abatement Measure (RAM) Completion Report**
- Public Involvement Plan Update**
- Asbestos Abatement Immediate Response Action (IRA)**

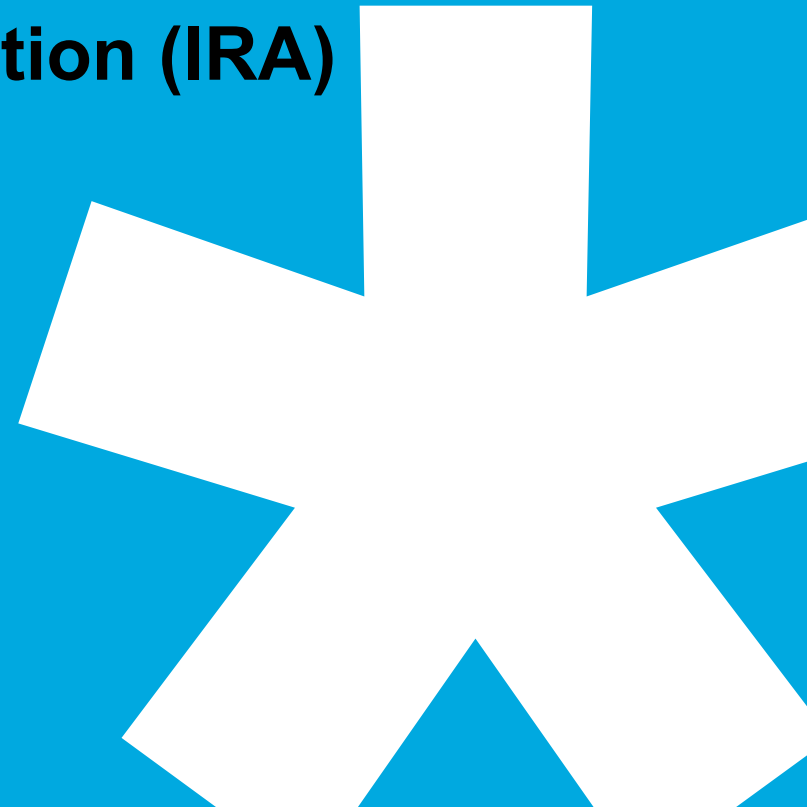
**Former Varian Facility (Site 3-0485)**

**150 Sohier Road**

**Beverly, Massachusetts**

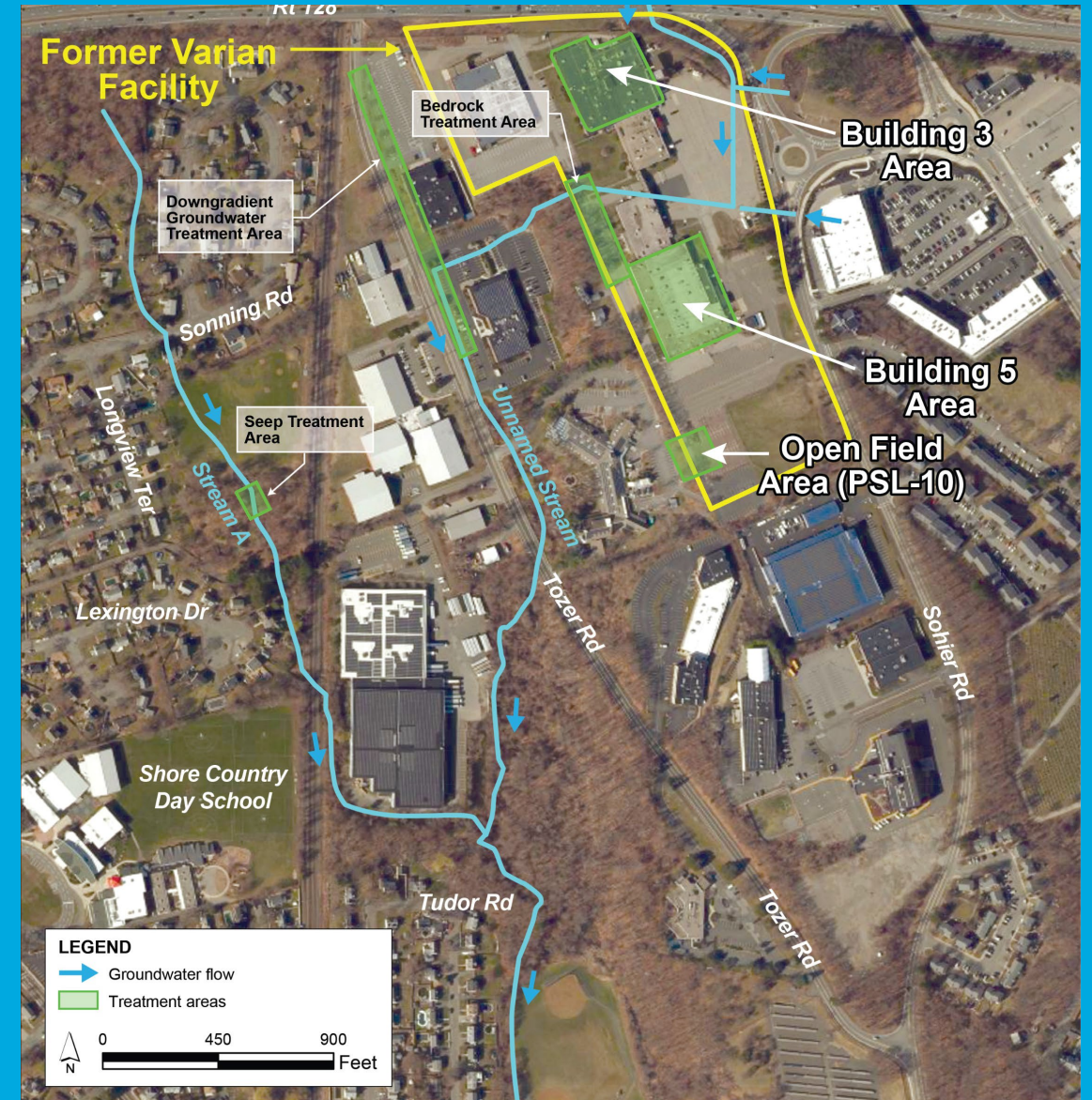
**April 3, 2024**

**Beverly Middle School**

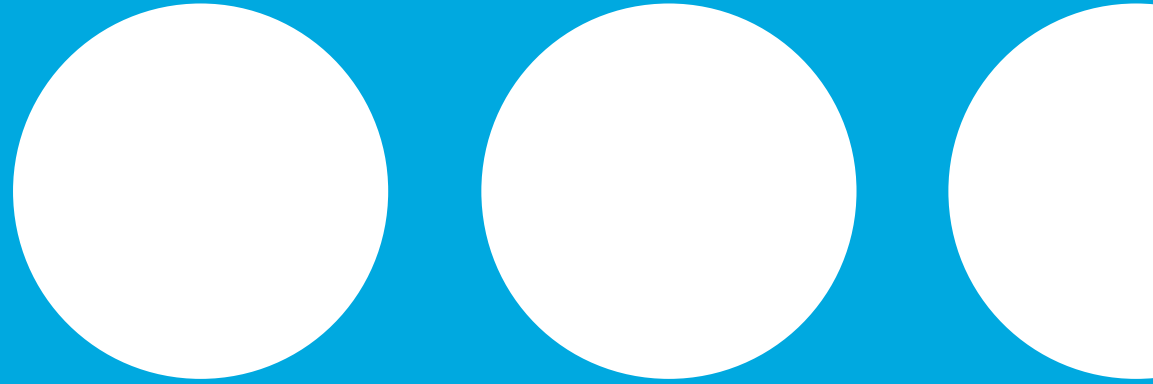


# Presentation Objectives

- Provide an update on the treatment system installation
- Present draft documents for public comment
  - Phase IV Status Report & Temporary Solution Statement
  - Release Abatement Measure (RAM) Completion Report
  - Asbestos Abatement Immediate Response Action (IRA) – upcoming
  - Public Involvement Plan Update
- Receive feedback and answer questions from the public



# Phase IV Status Report

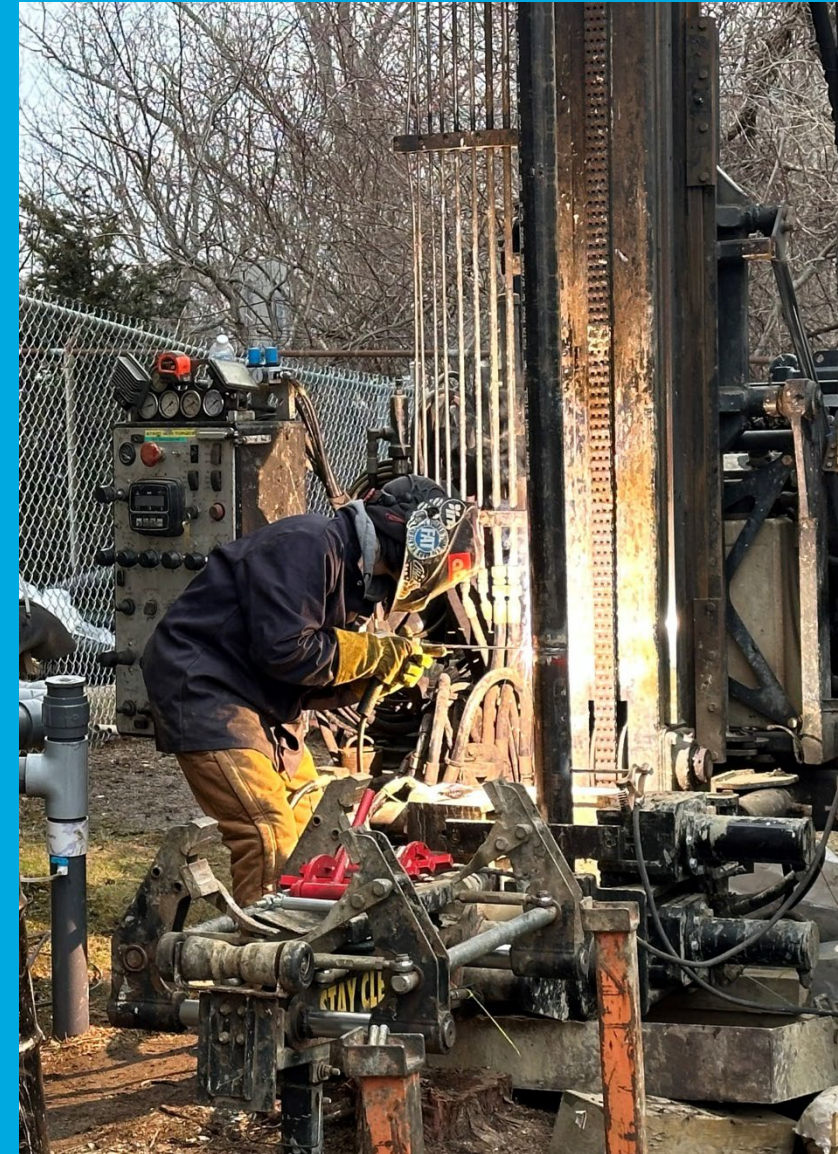




# Building 3 Source Area

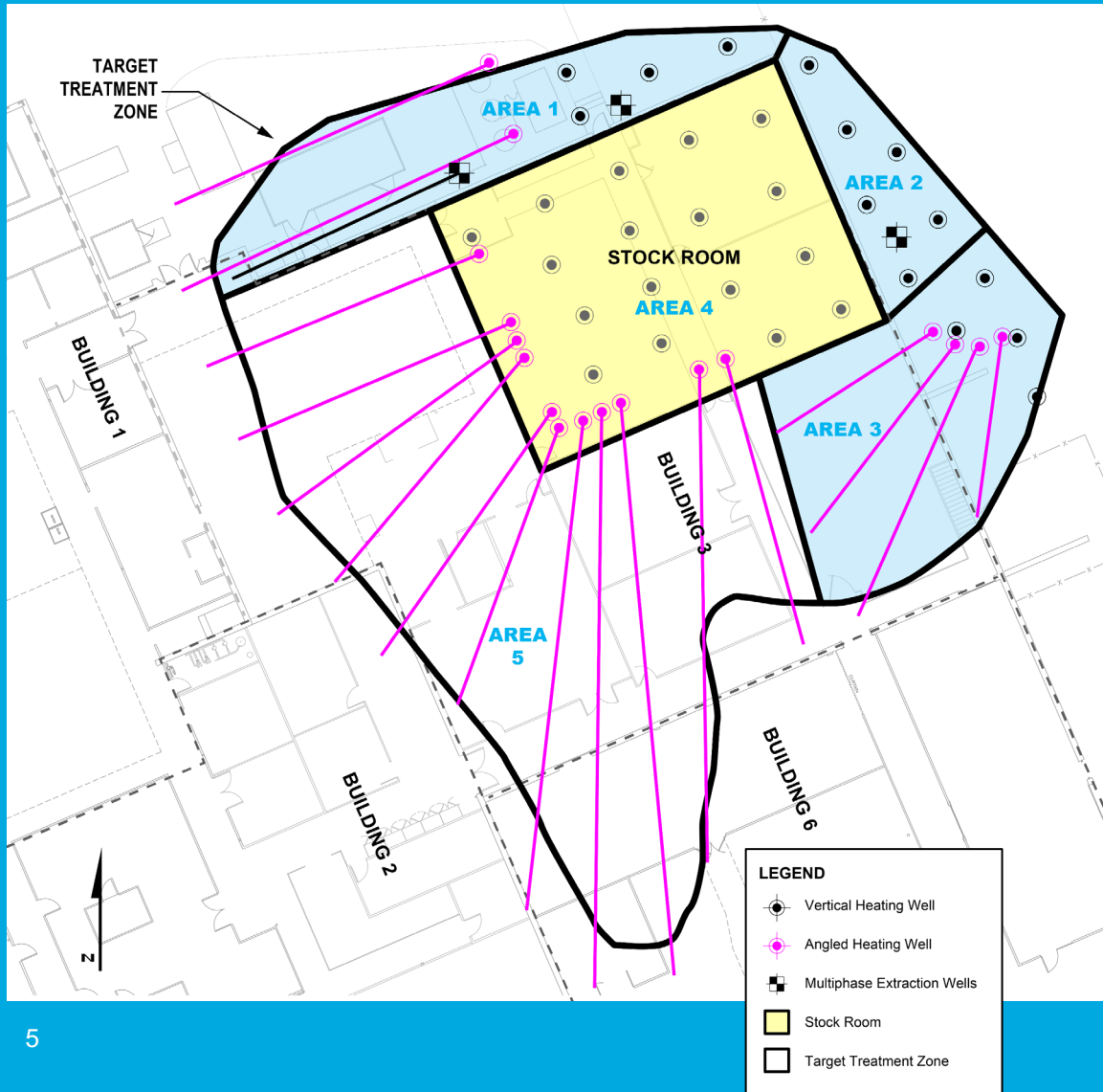
- ❖ In situ thermal treatment
- ❖ In situ bioremediation polish
- ❖ Continued soil vapor extraction (SVE)

- Thermal treatment system design and construction efforts are underway
  - Relocation of CPI stockroom for treatment system installation is ongoing
  - Primary power service design by National Grid is complete
  - Outdoor thermal system construction began in December 2023
- SVE system trailer and carbon treatment filters were relocated and continue to operate
  - SVE system helps prevent vapors from migrating into building indoor air
- Buried asbestos-containing material was encountered in soil during outdoor clearing and needs to be abated (upcoming IRA)



Welding sections  
of a heating well

# Thermal Treatment System Construction Update



- Two additional soil borings were advanced to bedrock north of Building 3 to confirm northern boundary of thermal treatment zone
- Soil data and utility information is being used to design the well field locations and the angles of the heating wells
- Outdoor system installation is underway in Areas 1 - 3
- Indoor construction (Area 4) will begin once CPI stockroom move is completed





# Outdoor Drilling

## Current Status

- Field construction began as scheduled in December 2023
- Bedrock was encountered shallower than expected in some areas which could reduce drilling efforts
- Installation of vertical and angled system infrastructure is ongoing
- Outdoor drilling projected to be done by late spring

Heating well drilling and installation



Uncovering buried utilities using “air knife” (prior to drilling)



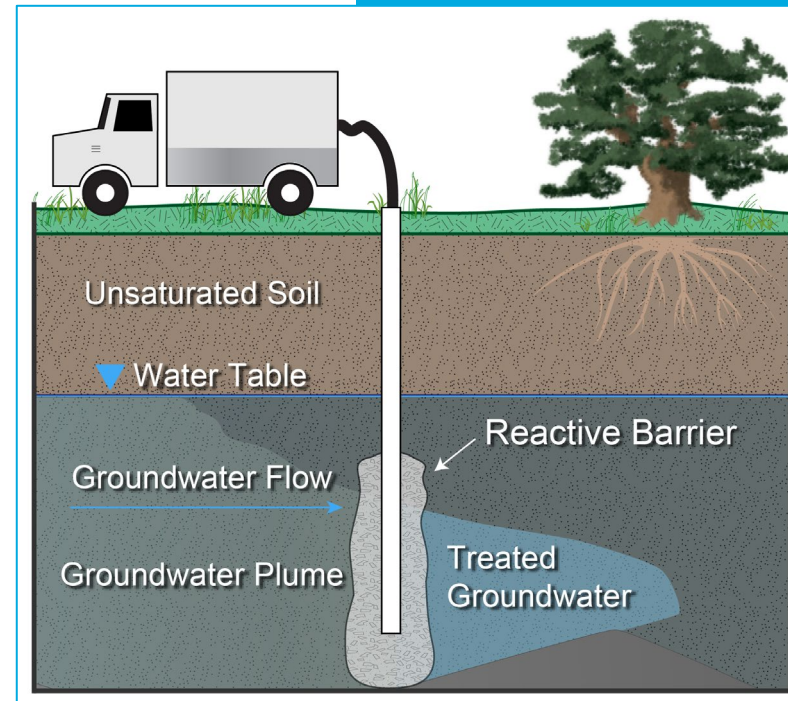


# Tozer Road Groundwater

## ❖ Permeable Reactive and Adsorptive Barrier

### ➤ Remedial activities will include:

- Investigation to provide additional high-resolution data and soil/groundwater sampling data to help refine the design
- Installation of new monitoring wells upgradient and downgradient of the treatment area
- Baseline groundwater sampling
- Injection of amendments to form a permeable treatment zone along Tozer Road
- Monitoring during injection
- Post-remediation monitoring to assess barrier performance



# Pre-design Investigation

- Investigation to provide additional high-resolution data and soil/groundwater sampling data to help refine the Tozer Road barrier design



Deployment of a membrane interface hydraulic profiling tool (MIHPT) along Tozer Rd to collect groundwater data (March 2023)

## ➤ MiHPT Complete

- 29 locations drilled between 16 and 32 Tozer Road
- Provided data on
  - Volatile organic compound (VOC) distribution
  - Zones that are more and less permeable to groundwater flow

## ➤ Next Step

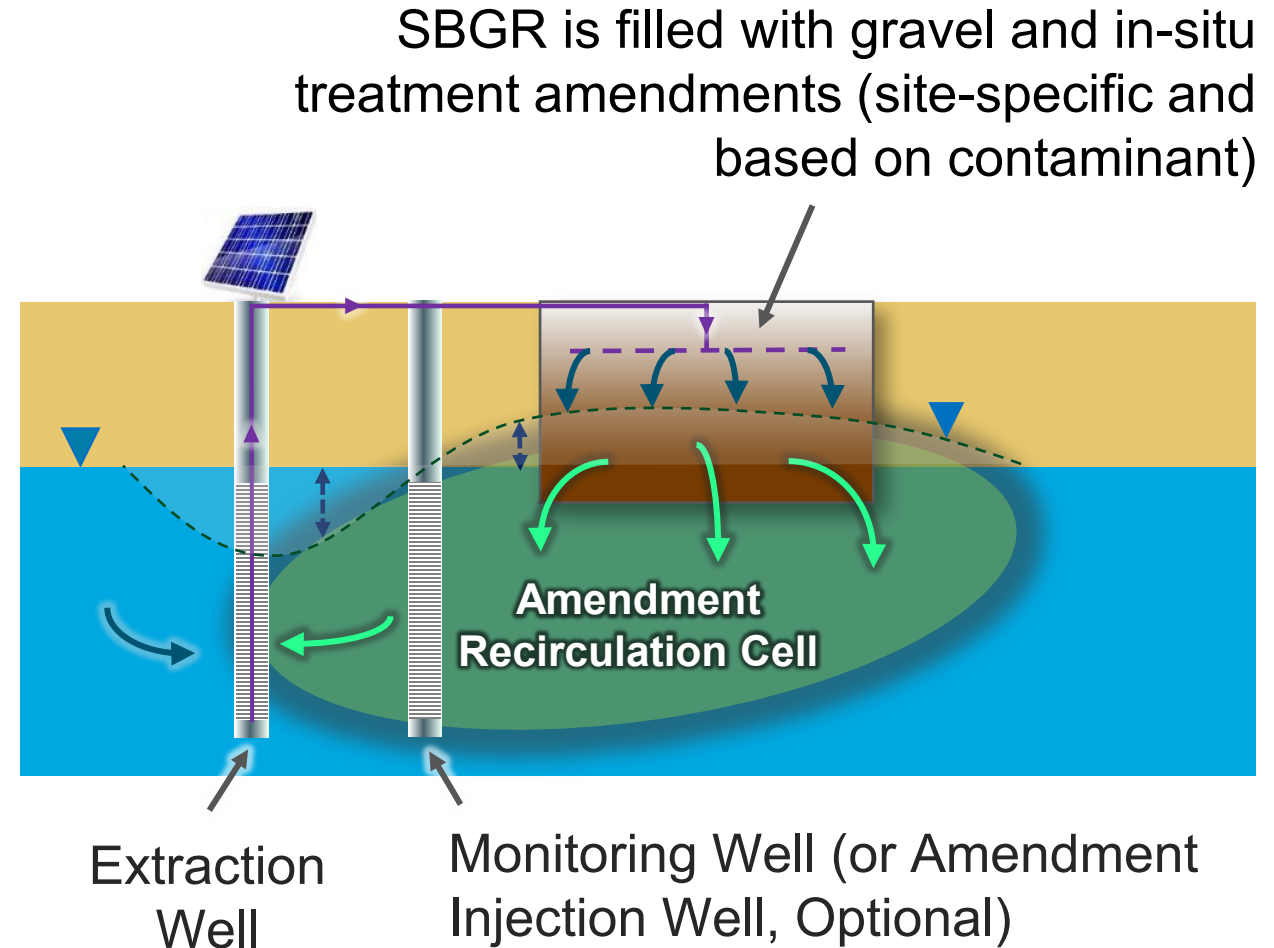
- Soil and groundwater sampling

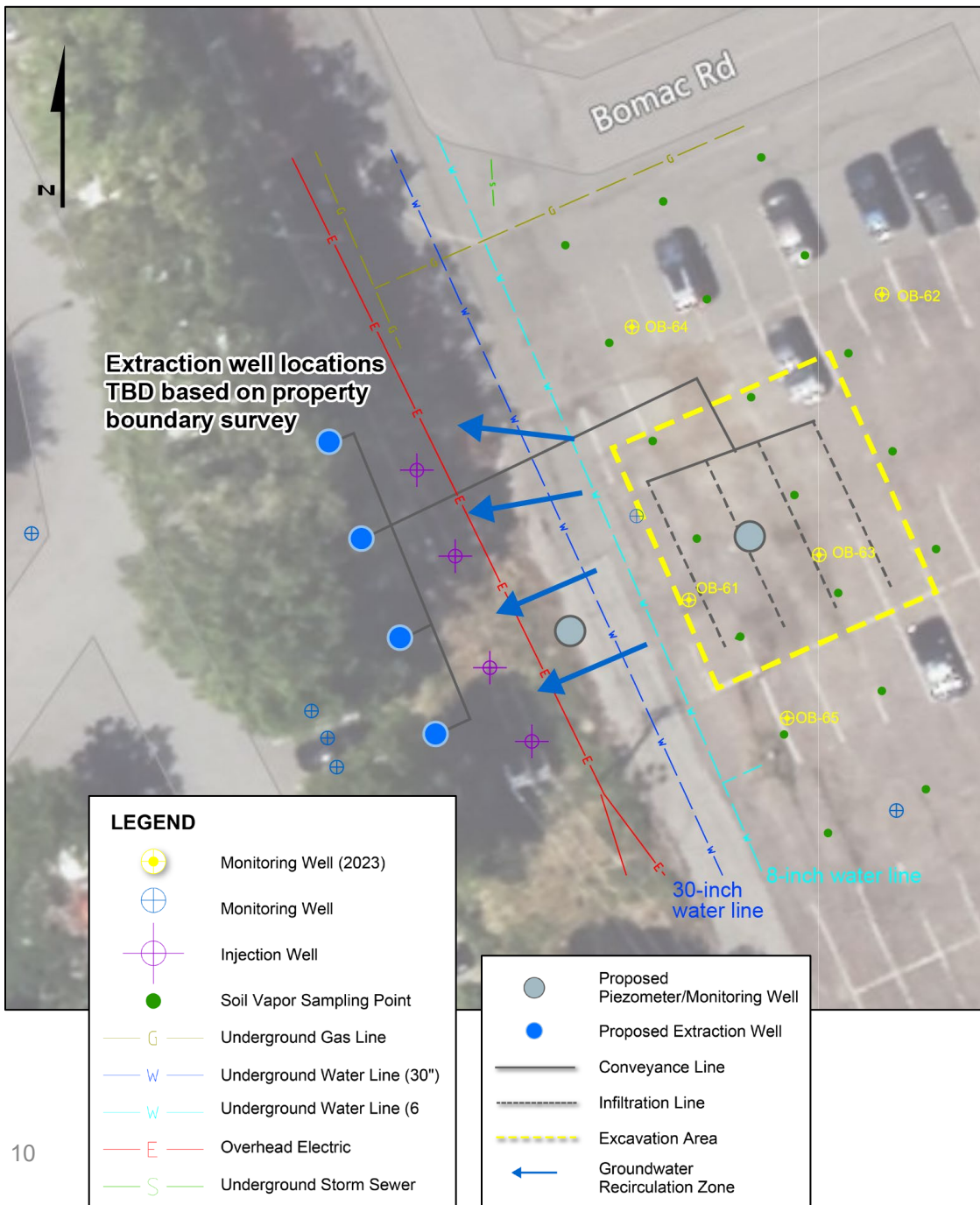


# PSL 10

## ❖ Subgrade Biogeochemical Reactor (SBGR)

- Completed aquifer testing to determine groundwater flow characteristics
- Coordinated with City of Beverly and City of Salem to locate utilities
- Completed 60% design





# PSL-10 Remedy Implementation

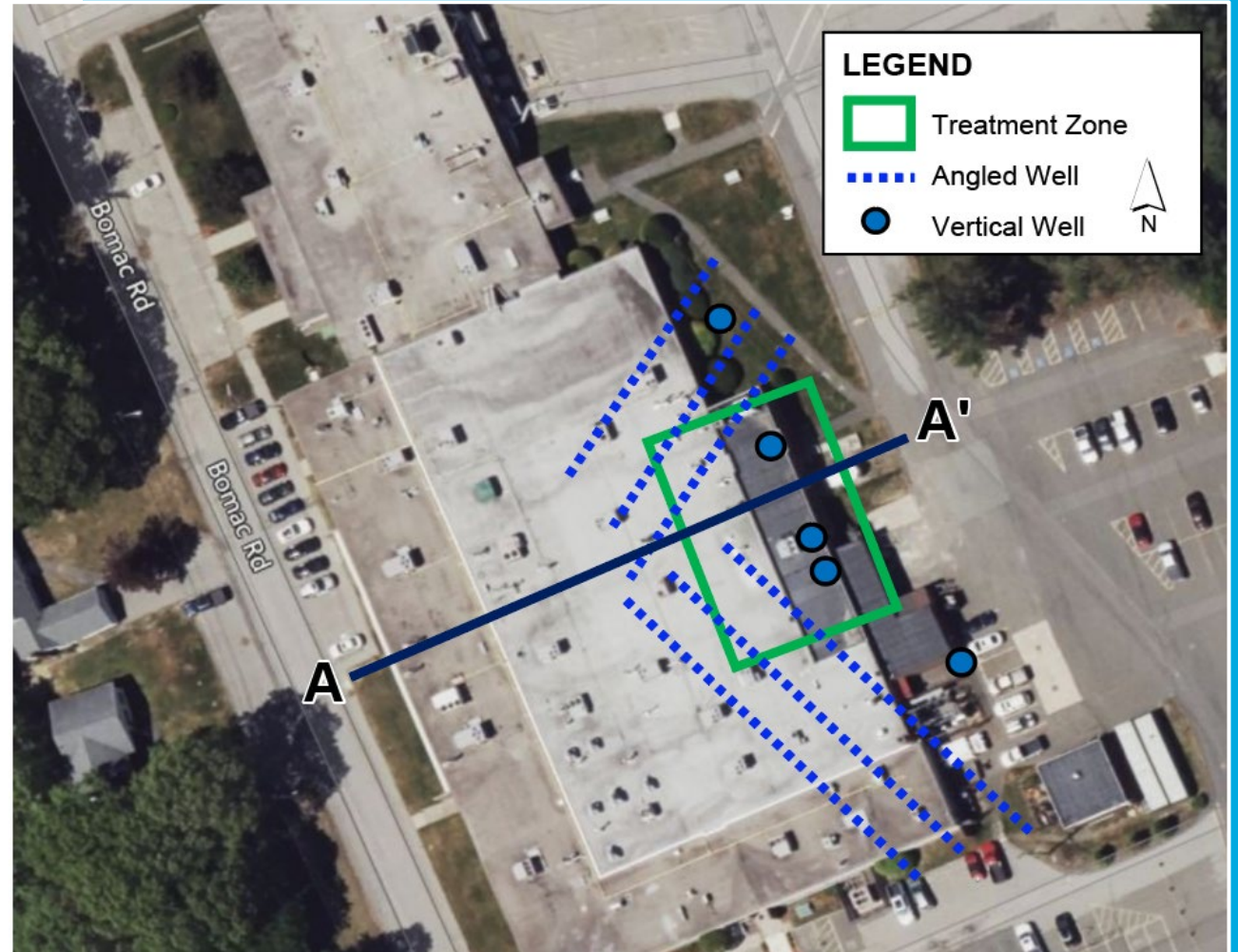
- Up to two excavation areas with contaminated soil disposal offsite
- East excavation (30 ft x 20 ft) into the top of groundwater (up to 15 ft deep); backfilled with organic amendments to support microbial community growth
- West excavation TBD (based on field instrument screening and confirmation sampling during utility trenching prior to construction); clean soil backfill
- Installation of four groundwater extraction wells and piping recirculation system
- Monitoring well system to monitor groundwater levels and VOC concentration reductions



# Building 5

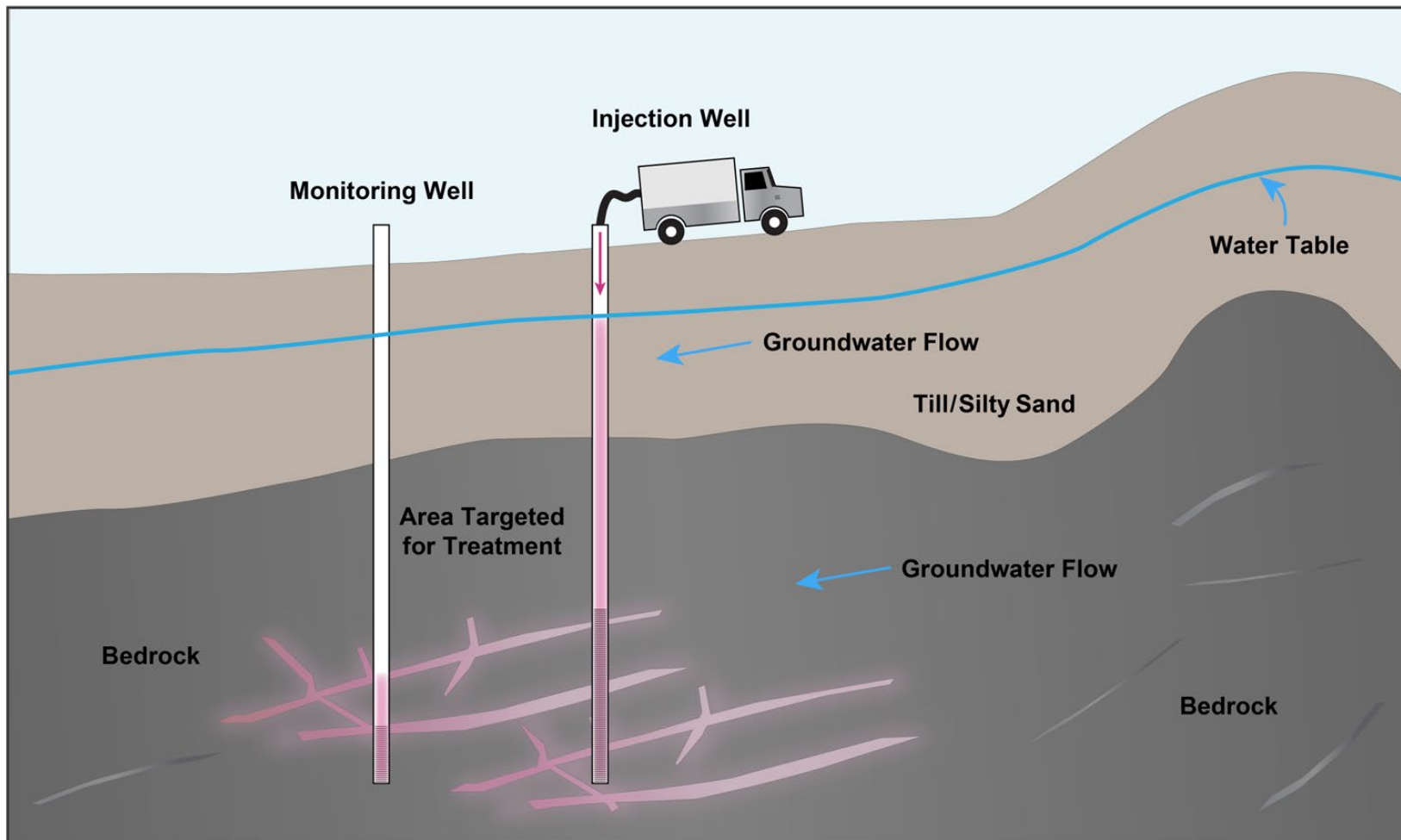
- ❖ In situ bioremediation
- ❖ Continued soil vapor extraction

- Planning and coordinating pre-design investigation
  - Includes vertical and angled wells
  - Drilling will start in the spring
  - Test results will be used to select injection depths and locations
- After pre-design investigation
  - Treatment wells will be installed
  - Treatment amendments and volumes will be finalized
  - Injections will begin



# Bedrock

## ❖ In situ chemical oxidation (ISCO)



- Pre-design investigation will start in spring or early summer
- Implementation activities will include:
  - Bedrock drilling
  - Tests to confirm connections in fractures
  - Additional well installation
  - Injection of permanganate (an oxidant) to chemically oxidize contaminants
  - Monitoring during injection



# Stream A Reactive Core Mat

## ❖ Granular activated carbon permeable adsorptive barrier

- Permeable adsorptive barrier installed in October 2023
  - Designed to intercept and capture contaminants before seep groundwater discharges to the stream
  - Designed to limit access to the groundwater seep
  - Encountered historical drainpipe
- Scheduled and storm-related inspections completed – no issues observed
- Drainpipe water has been tested
  - Video-inspection to be conducted
  - Mat covers drainpipe and treats discharge



# System Installation Schedule\*

Treatment Area	Design Complete	System Installation	Start of Treatment	Monitoring
Building 3 (Thermal)	Spring 2024	In Progress	Late Fall 2024	2025
Tozer Rd (Barrier)	Spring 2024	Summer/Fall 2024	Fall 2024	Fall/Winter 2024
PSL10 (SBGR)	Spring 2024	Summer 2024	Summer 2024	Fall 2024
Building 5 (Bio)	Summer 2024	Fall 2024	Fall/Winter 2024	2025
Bedrock (ISCO)	Summer 2024	Fall 2024	Fall/Winter 2024	2025
Stream A (Mat)	Complete	Complete	Complete	Ongoing

**NOTES:**

\* = Estimated schedule, subject to change

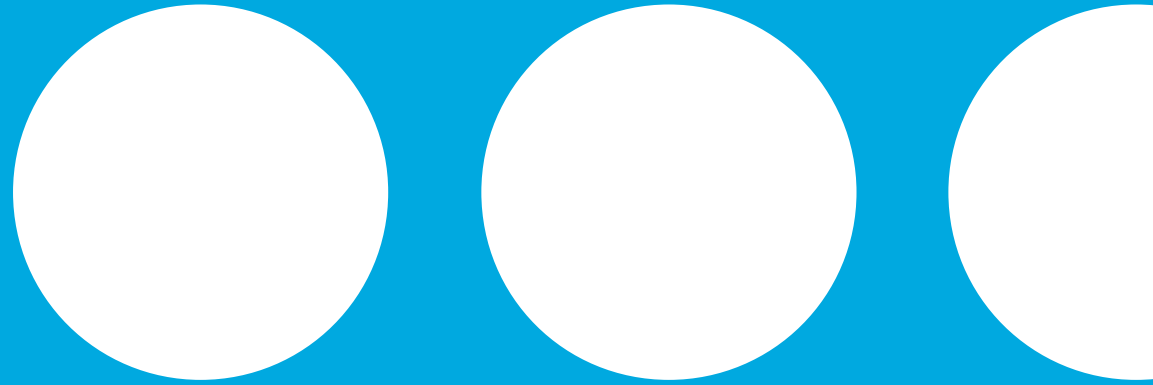
Bio = Bioremediation

ISCO = In situ chemical oxidation

Mat = Reactive core mats

SBGR = Subgrade Biogeochemical Reactor





# Temporary Solution Statement

# Temporary Solution Statement

- Feb. 19, 2024 – Temporary Solution Statement submitted to MassDEP to indicate Site meets MCP requirements for a Temporary Solution
- What is a Temporary Solution?
  - A statement by a Licensed Site Professional (LSP) that the Site does not pose a risk, but that treatment needs to continue to achieve a Permanent Solution
- Will the Site achieve a Permanent Solution?
  - Current treatment activities – once fully implemented – are expected to reduce VOC concentrations in the subsurface and achieve a Permanent Solution at the Site

The Temporary Solution Statement demonstrates that

1. There is No Substantial Hazard
2. Sources of VOCs have been identified, characterized, and eliminated/controlled to the extent feasible
3. Control of VOCs in groundwater and soil vapor has been achieved to the extent feasible
4. Nonaqueous phase liquid (NAPL) has been removed and/or controlled to the extent feasible



# Temporary Solution Statement

1. No Substantial Hazard currently exists at the site based on the results of the Phase II Comprehensive Site Assessment
  - **Human Health:** The Phase II used test results and conservative potential exposure assumptions to demonstrate there is No Significant Risk to current workers or residents
  - **Ecological:** The Phase II test results show No Significant Risk to ecological receptors (e.g., birds, amphibians, etc.)
2. The Phase II indicates that VOC sources have been identified and characterized, and that there are no ongoing sources/releases of these chemicals to the environment at the Site

**Jacobs**

## Temporary Solution Statement and Phase IV Status Report

Version: Draft

Former Varian Facility Site, 150 Sohler Road, Beverly, Massachusetts 01915  
MassDEP Site # 3-0485

February 19, 2024

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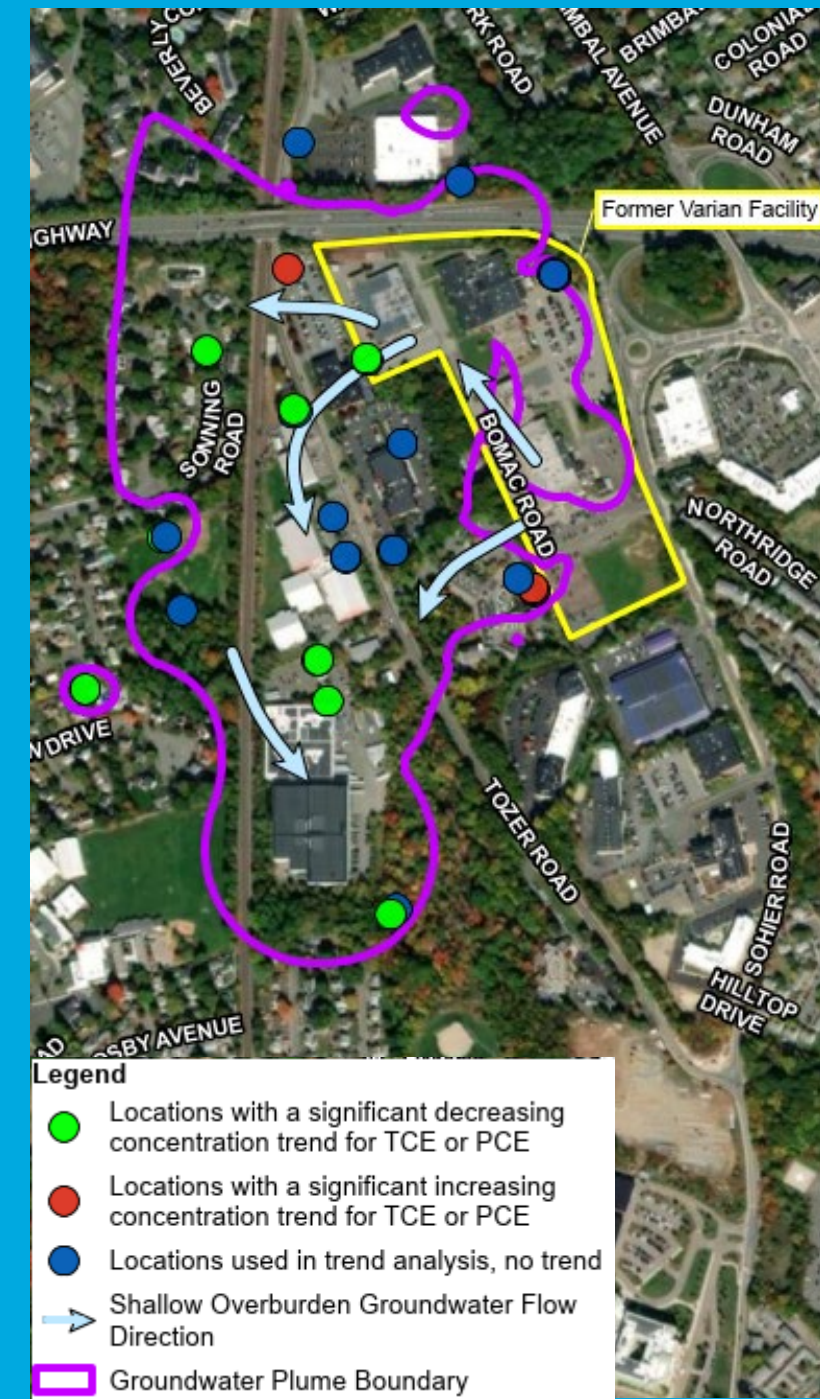
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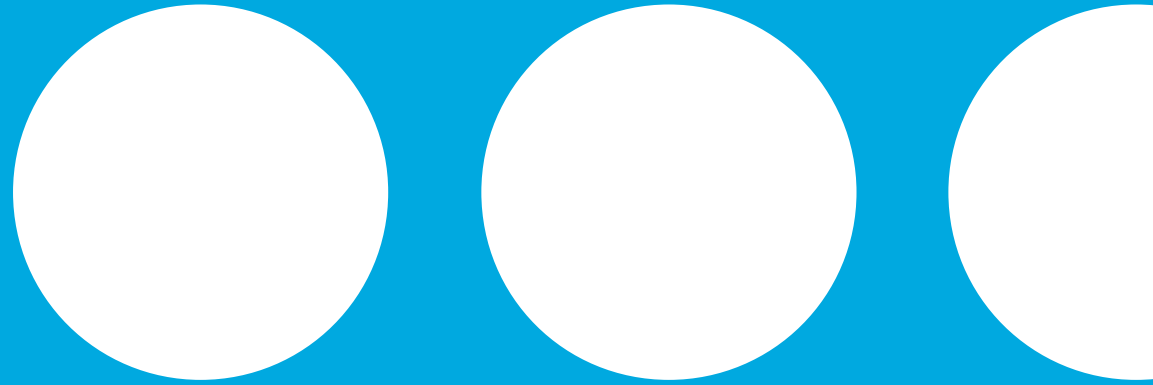
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# Temporary Solution Statement

3. The Temporary Solution Statement demonstrates that the plume is stable (i.e., under control)
  - VOC concentration trends were evaluated at monitoring wells and surface water locations
  - At the edge of the plume, VOC concentrations are **decreasing** or **not changing**
  - NAPL has been removed and/or controlled at the Site to the extent feasible
  - NAPL has not been reported in Site monitoring wells since 1997; therefore, the NAPL that was released is likely no longer mobile





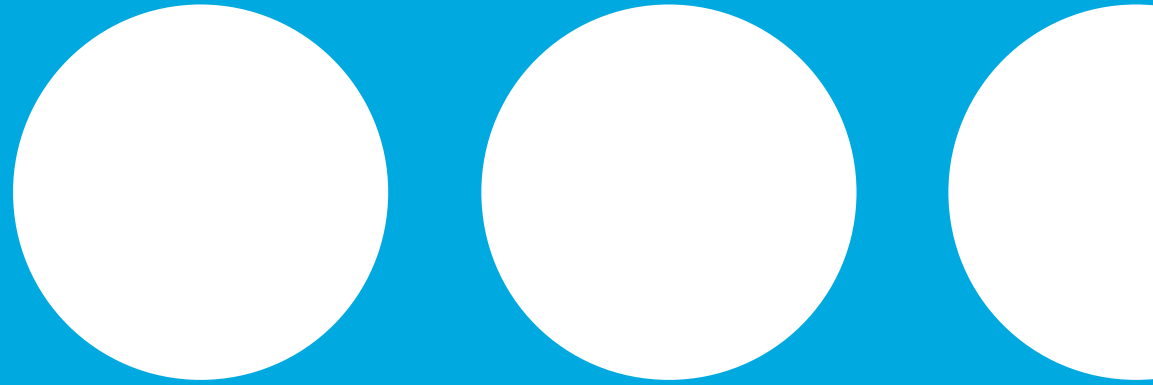


# Release Abatement Measures (RAM) Completion Report

# Release Abatement Measure (RAM) Completion Report

- Summarizes the results of activities conducted to address portions of the Site cleanup
- Details activities completed from July to Dec. 2023
  - Buildings 3 and 5 soil vapor extraction (SVE) systems
  - Sub-slab depressurization system at a Longview Drive residential property
  - Soil vapor and indoor air sampling at a commercial property on Tozer Road
  - Site-wide groundwater and surface water sampling in November and December 2023
- **Results of future activities will be presented every six months in Temporary Solution Status Reports**

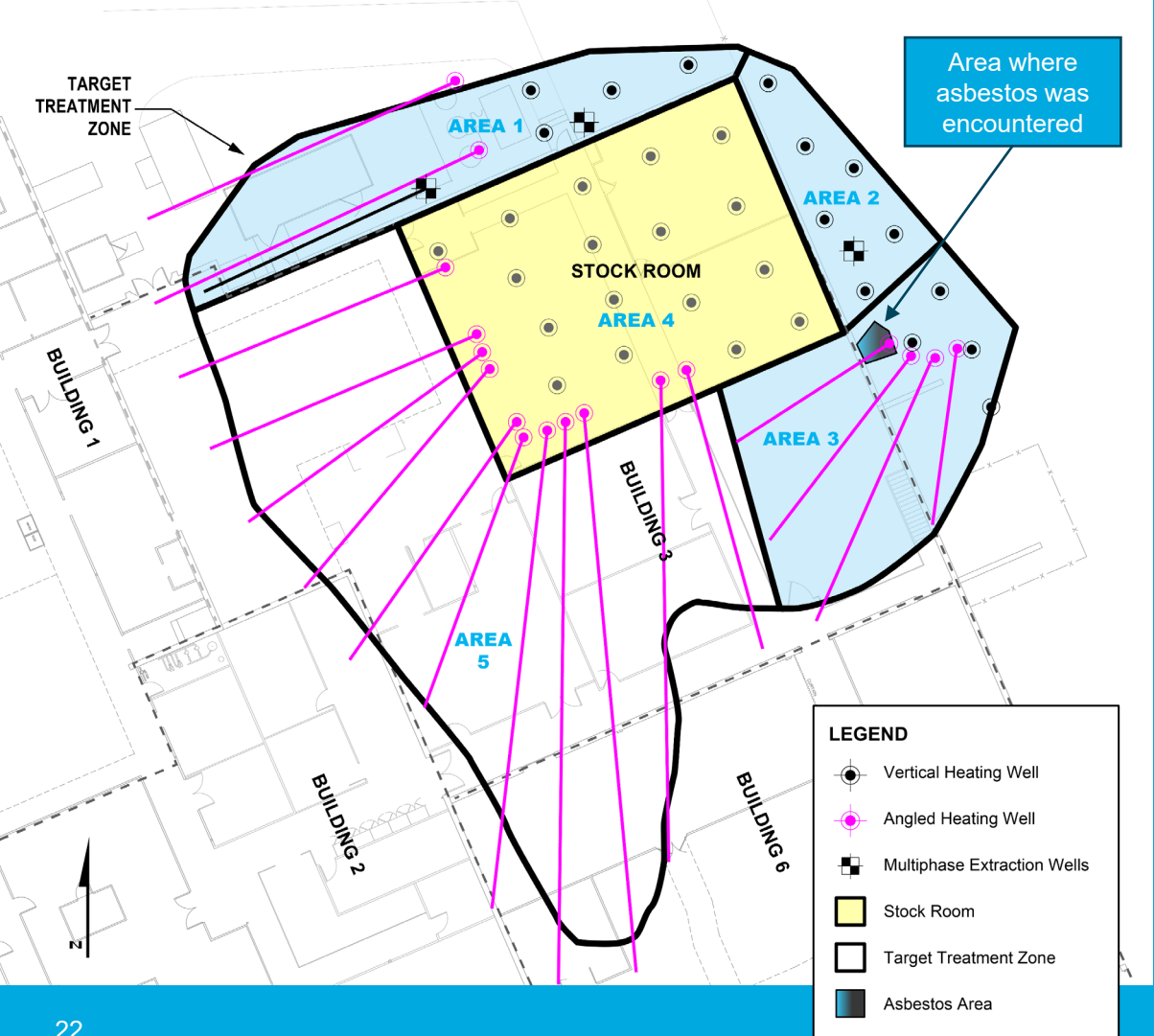




# Asbestos Abatement Immediate Response Action (IRA)



# Removal of Asbestos Containing Material in Soil



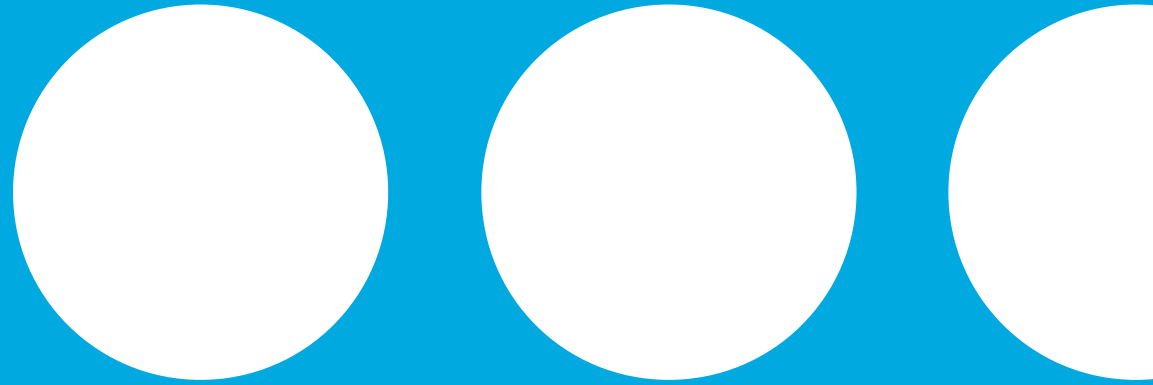


# Removal of Asbestos Containing Material in Soil

- Varian is developing a work plan to remove the asbestos containing material in soil
  - Work plan will be approved by MassDEP before starting
  - Will utilize asbestos trained and licensed workers
  - Expect wet soil to limit dust & monitoring to ensure worker safety
- Once work plan is final, will be submitting an Immediate Response Action (IRA) plan for a 20-day public comment period (likely in April)



**Asbestos area covered by plastic containment (March 2023)**



# Public Involvement Plan (PIP) Update



# Updated Public Involvement Plan

- Summarizes technical and public involvement activities conducted in the past two years
- Describes planned public involvement activities
  - Information repository at public library
  - Informational public meetings twice per year
  - Technical Advisory Group (TAG) meetings twice per year (between public meetings)
  - Regular progress emails
  - Annual fact sheet
  - Choice between emailed and mailed notices
  - Neighborhood notifications (e.g., robo-calls) as needed
  - Continued maintenance of website  
<https://beverlysitecleanup.com>



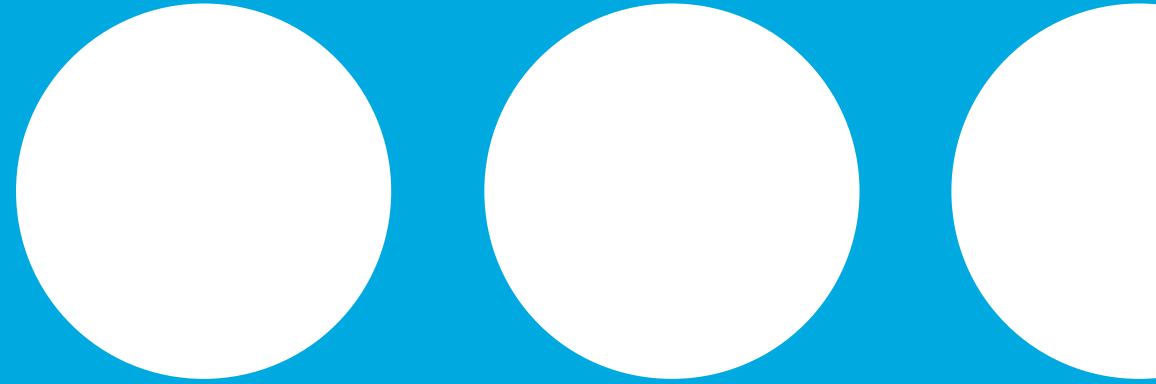
# Documents for Public Review

- Documents Available for Public Review
  - Temporary Solution Statement and Phase IV Status Report
  - Release Abatement Measure (RAM) Completion Report
  - Public Involvement Plan Update
  - Asbestos Abatement IRA (upcoming)
- Hard copy
  - Beverly Public Library Reference Desk
- Online
  - <https://eeaonline.eea.state.ma.us/EEA/FileViewer/Rtn.aspx?rtn=3-0000485>

# Public Comment Period April 4-23

- Complete comment sheet at welcome table
- Submit comments to Raymond Cadorette
  - Online: <https://beverlysitecleanup.com/public-involvement>
  - Email: [Raymond.Cadorette@jacobs.com](mailto:Raymond.Cadorette@jacobs.com)
  - Mail: Jacobs Solutions  
Attn: Raymond Cadorette  
120 St. James Avenue, 5<sup>th</sup> Floor  
Boston, MA 02116

Questions





**varian**

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