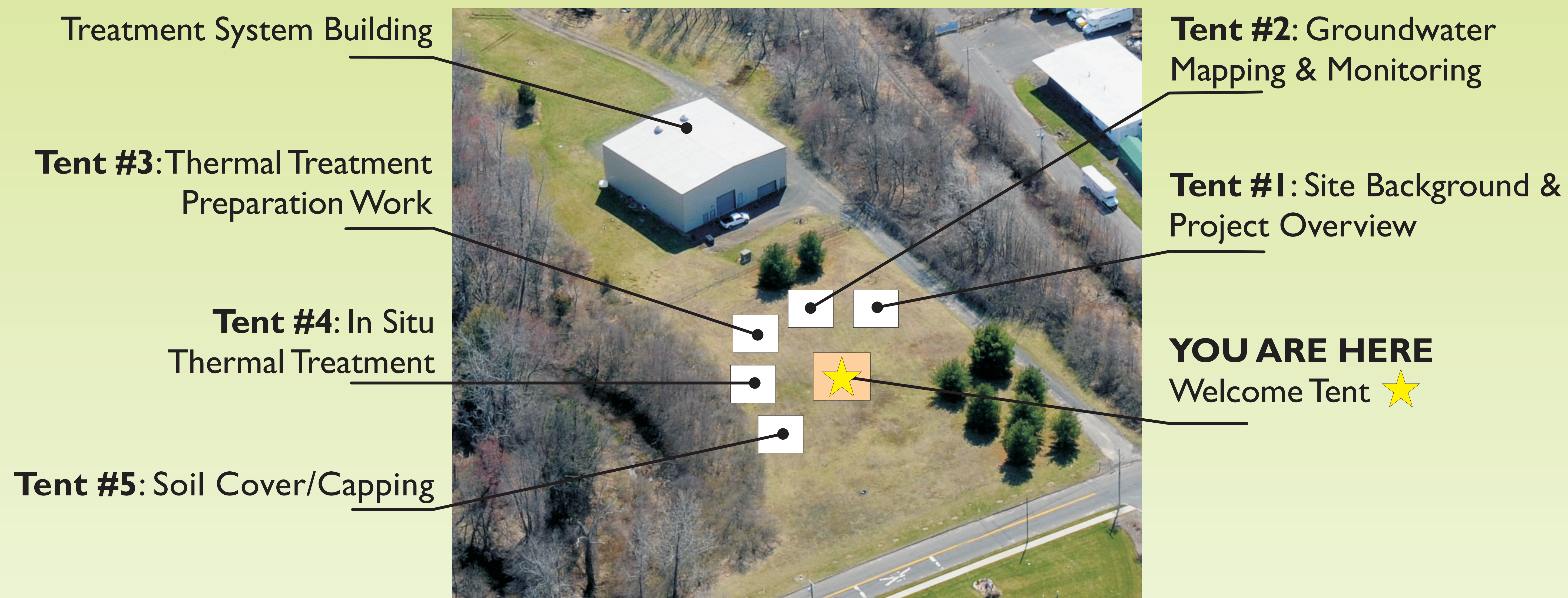


Solvents Recovery Service of New England, Inc. Superfund Site Open House – July 2010

Welcome! A new phase of cleanup work is about to begin at the SRSNE Superfund Site. Visit the different topic-specific tents and the treatment system building to meet with project representatives and learn about each element of the cleanup plan.

Visit www.epa.gov/region1/superfund/sites/srs, www.srsnesite.com, or the **Southington Public Library** for additional information.



Robin Swift
Project Manager
Willey Leung
Electrical Engineer



Ralph Fletcher
Treatment System Operator
Bryce Fletcher
Engineer



Karen Lumino
Project Manager
Jim Murphy
Community Involvement
Coordinator



Ryan Santos
Project Manager
Tom RisCassi
Remediation District
Supervisor



Bruce Thompson
Project Coordinator
John Hunt
Project Manager
Brandon Pizzoferrato
Field Quality Assurance Representative



Jeff Holden
Project Manager/Engineer

Solvents Recovery Service of New England, Inc. Superfund Site Site History, Key Investigations & Actions, Cleanup Plan

Site History

- **1955 - 1991:** Spent solvents received from customers were distilled to remove impurities, then returned or sold for reuse. More than 41 million gallons of waste solvents, fuels, paints, and other materials were processed at the facility.
- **1957 - 1967:** Waste materials generated during processing were disposed onsite. After 1967, wastes were either transported to a disposal facility or burned – the State of Connecticut issued an order to stop burning waste in the 1970s.
- **1983:** SRSNE Site added to the Superfund List
- **1990:** U.S. Environmental Protection Agency started the Remedial Investigation process to characterize the nature and extent of impacts from historical operations.

Key Investigations & Actions

More than 15 investigations have been completed over the past two decades across a 50-acre study area, and 275 groundwater monitoring wells have been installed. Highlights:

- **1990 - 1994:** U.S. Environmental Protection Agency's Remedial Investigation – carried out in three phases
- **1992:** USEPA removes soils from the railroad drainage ditch and chemicals stored at the Site
- **1995:** SRSNE Site Group builds a pump and treat system for groundwater
- **1996:** SRSNE Site Group begins new Remedial Investigation & Feasibility Study work
- **1999:** SRSNE Site Group constructs an enhanced groundwater containment system
- **1995/1999 - Present:** SRSNE Site Group operates the groundwater containment and treatment systems
- **2005:** USEPA issues the Record of Decision for the Site
- **2009:** Agreement for the design and implementation of the final cleanup plan is finalized, engineering work begins

Cleanup Plan

Key elements of the cleanup plan, formalized in the *September 2005 Record of Decision*:

- **Heating soils** in the former Operations Area to remove, capture, and treat waste oils and solvents in the ground – this process is called *in situ* thermal remediation
- **Excavating** targeted areas of soil from across the Site, **consolidating** the soils in the former Operations Area, and **covering** the materials with a permanent, waterproof cap
- **Continuing to pump and treat groundwater** in certain areas of the Site, **monitoring groundwater** in other locations
- **Placing restrictions on future use of the property and groundwater**
- **Carrying out long-term monitoring** to make sure all the elements of the remedy perform as expected

Solvents Recovery Service of New England, Inc. Superfund Site Historical Operations & Prior Cleanup



SRSNE Site 1965



SRSNE Site 1975



SRSNE Site 1980



Drilling a groundwater
monitoring well



May 1999

Phytoremediation
Study Area



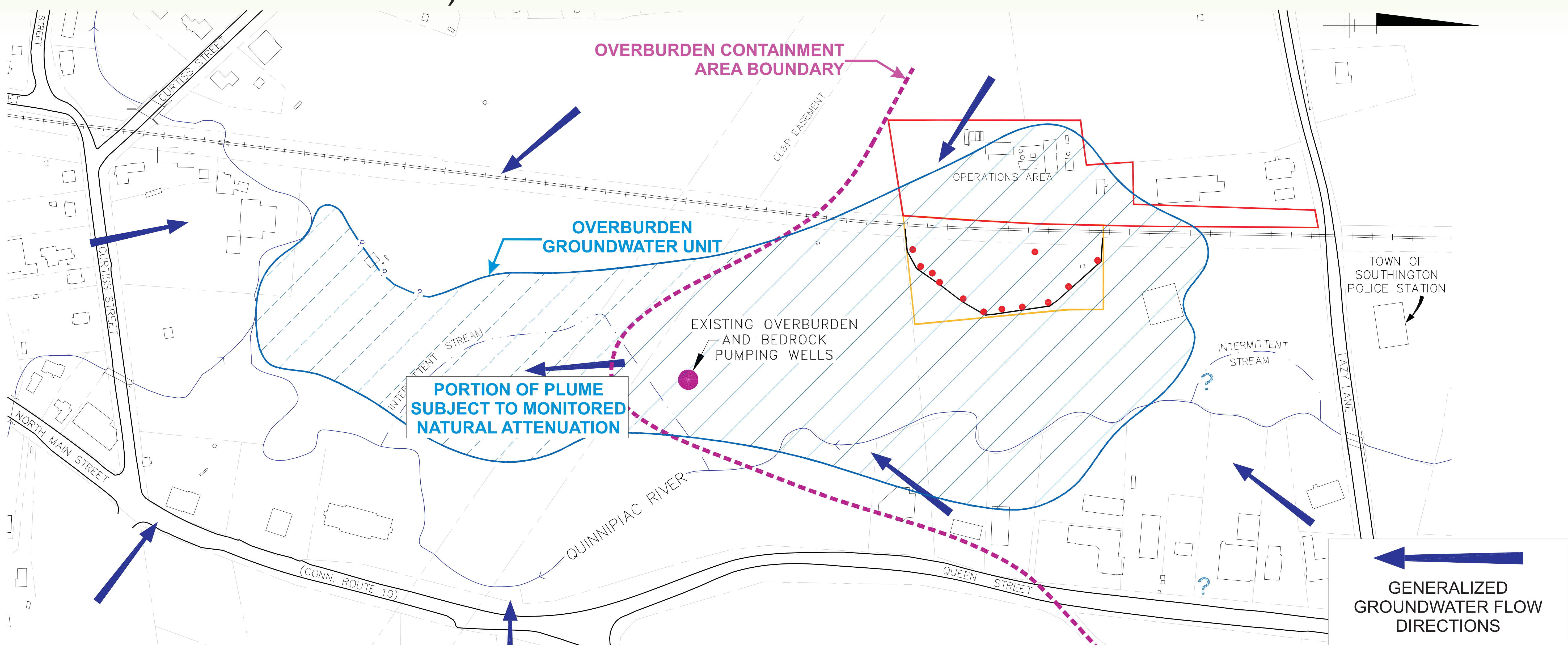
June 2000



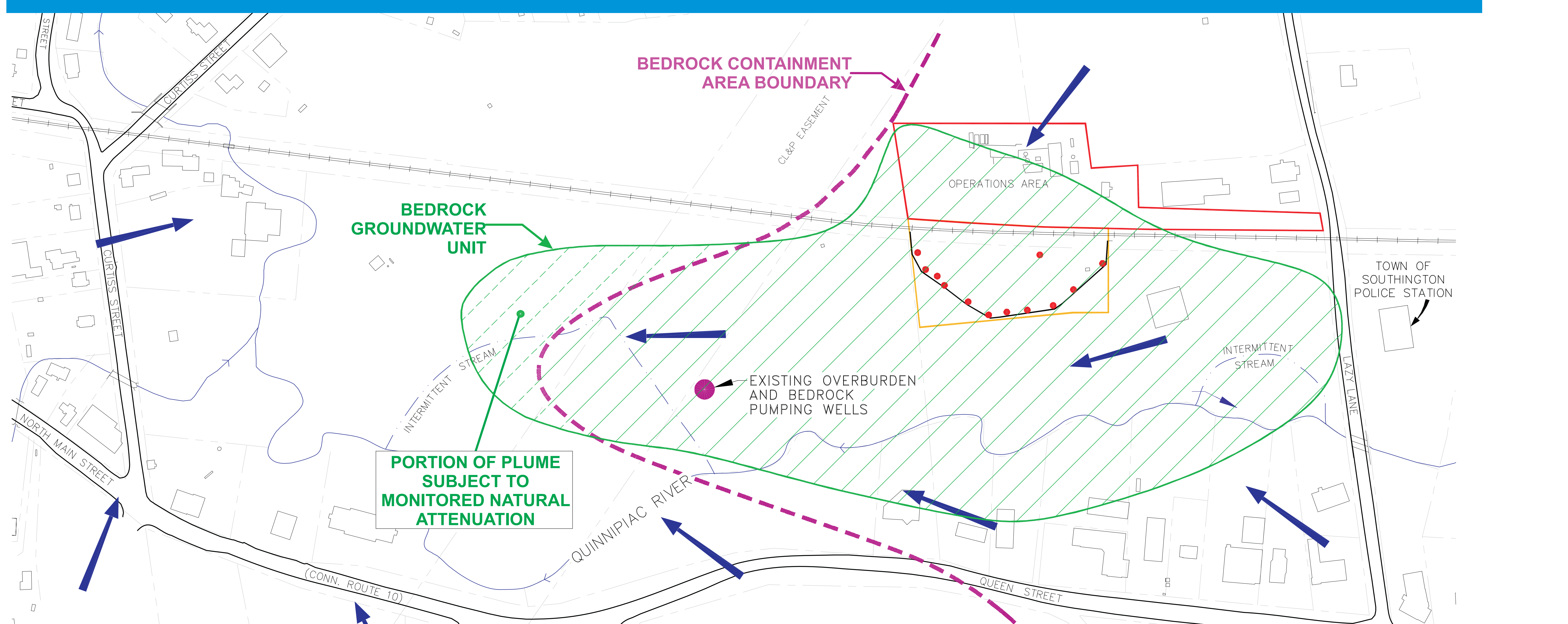
Testing for non-
aqueous phase liquids

Solvents Recovery Service of New England, Inc. Superfund Site Groundwater Monitoring Zones

Groundwater at the Site is monitored both in the soils above bedrock (referred to as the overburden) and in the fractured bedrock. The depth to bedrock varies across the Site from approximately 12 to 175 feet. The maps below show the estimated location and extent of the groundwater plumes in the overburden and bedrock zones, and the portion of the plumes that will be addressed using Monitored Natural Attenuation (see posters in Tent #2 for more on Monitored Natural Attenuation).

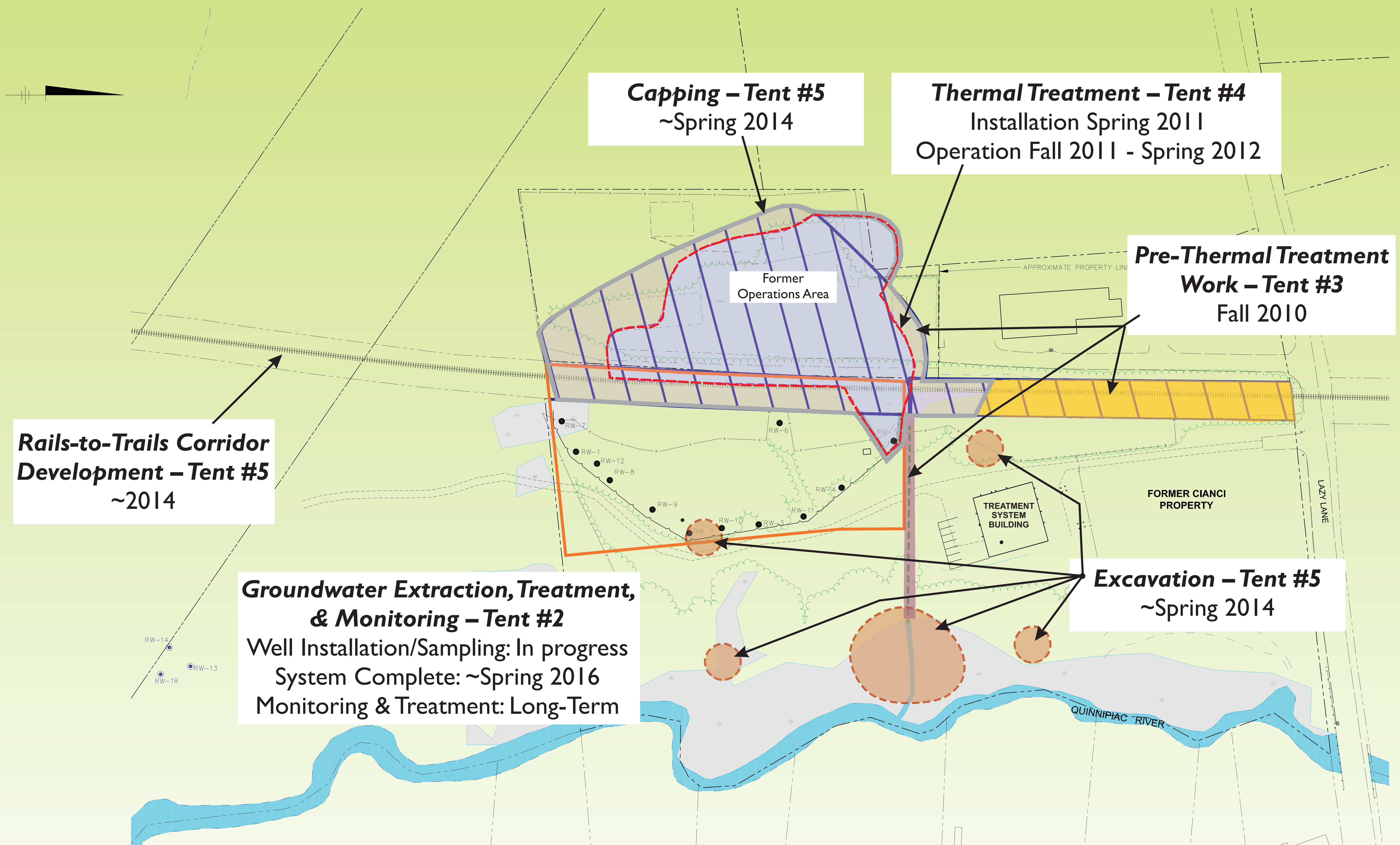


OVERBURDEN GROUNDWATER ZONE



BEDROCK GROUNDWATER ZONE

Solvents Recovery Service of New England, Inc. Superfund Site Cleanup/Remedy Components & Timing



Solvents Recovery Service of New England, Inc. Superfund Site Public Outreach Activities

USEPA, Connecticut DEP, and the SRSNE Site Group will work together throughout the cleanup process to carry out **community involvement and outreach activities**.

Tools the team will use to provide updates on the status of work will include:

- Producing fact sheets
- Hosting open house sessions
- Maintaining project websites at www.epa.gov/region1/superfund/sites/srs and www.srsnesite.com
- Archiving project documents at the Southington Public Library

USEPA is also in the process of conducting a five-year review of work at the Site. As part of this comprehensive review of the last five years of activities, USEPA will interview local officials and citizens.



USEPA's May 2010 Fact Sheet



The SRSNE Site Group Website



The Southington Public Library



Solvents Recovery Service of New England, Inc. Superfund Site Vision of Final Conditions

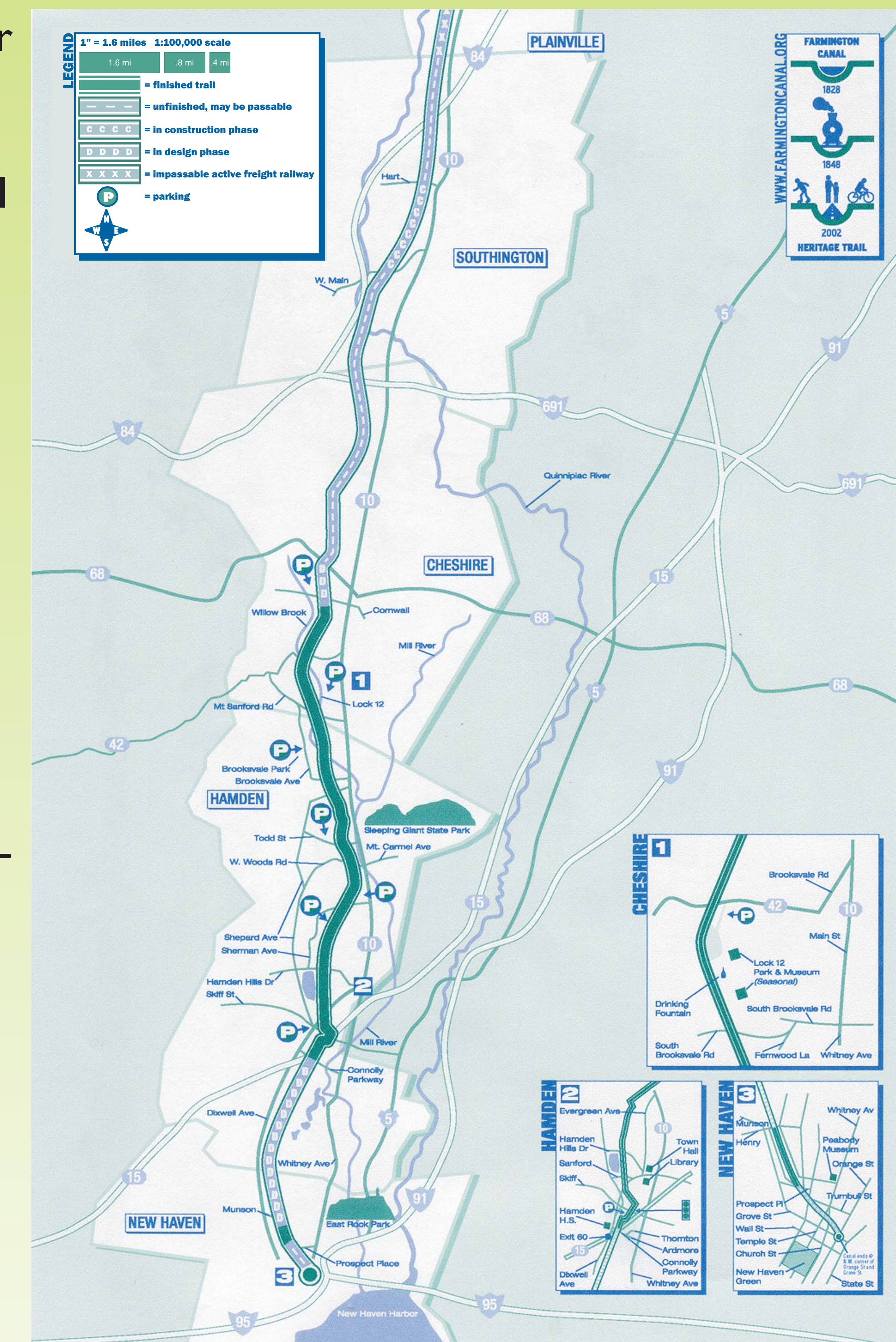


After thermal treatment of the soils in the former Operations Area is complete, the area will be covered with a **multiple-layer waterproof cap**. The cap will be designed to **isolate treated soils and materials excavated from other areas of the Site** and protect human health by preventing people from coming into contact with them. Conceptual future views of the Site are shown to the left.

Once the cap is in place, the SRSNE Site Group will build a new segment of the **Farmington Canal Heritage Trail**, paving the former



railroad right-of-way between **Curtiss Street and Lazy Lane**. This will link up the existing rails-to-trails corridor in Southington, and provide additional recreational opportunities for local residents and visitors. Plans for the trail also include construction of a **public parking lot** just off Lazy Lane.



Farmington Canal Heritage Trail – Plainville to New Haven

Solvents Recovery Service of New England, Inc. Superfund Site Groundwater Monitoring Program

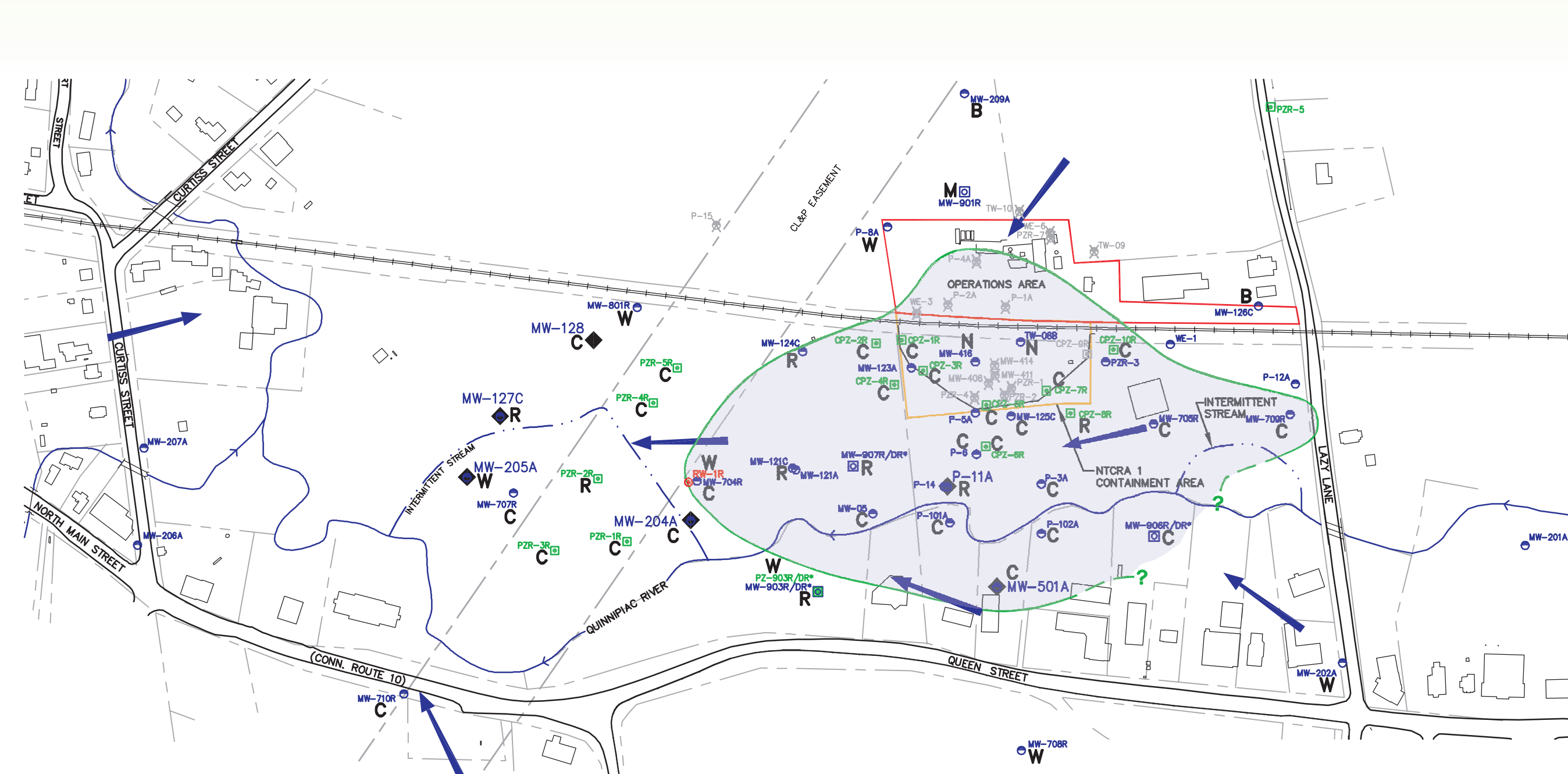
Well Group	# Wells	Sampling Period	Sampling Frequency	Analytical Parameters
"C" wells	80	first comprehensive event	1 event completed in May-June 2010	VOCs, alcohols, 1,4-dioxane, TAL metals, PAHs, PCBs
"R" wells	26			VOCs, alcohols, 1,4-dioxane, TAL metals, PAHs, PCBs, MNA parameters
"N" wells	10			VOCs, alcohols, 1,4-dioxane, TAL metals, PAHs, PCBs, MNA parameters
"M" wells	5			TAL metals, MNA parameters (background)
"B" wells	3			TAL metals (background)
"C" wells	80	subsequent comprehensive events	every 5 years beginning in 2015	VOCs, 1,4-dioxane, TAL metals
"R" wells	26			VOCs, 1,4-dioxane, TAL metals, MNA parameters
"N" wells	10			VOCs, 1,4-dioxane, TAL metals, MNA parameters
"M" wells	5			TAL metals, MNA parameters
"B" wells	3			TAL metals
"R" wells	26	after first comprehensive event	annual beginning in 2011	VOCs
			biennial beginning in 2012	MNA parameters
"M" wells	5	after first comprehensive event	biennial beginning in 2012	TAL metals (background)
			biennial beginning in 2012	MNA parameters (background)
"W" wells	36	all comprehensive events	every 5 years beginning in 2010	Water levels only - during all comprehensive events

Well Group	# Wells	Sampling Period	Sampling Frequency	Analytical Parameters
"N" wells - overburden	8	before thermal treatment	biennial beginning in 2012	VOCs, MNA parameters
		during thermal treatment	annual	VOCs, MNA parameters
		after thermal, before equilibrium	3x / year	VOCs, MNA parameters
		after equilibrium	annual	VOCs
"N" wells - bedrock	2	before thermal treatment	annual beginning in 2011	VOCs, MNA parameters
		during thermal treatment	annual beginning	VOCs, MNA parameters
		after thermal, before equilibrium	3x / year	VOCs, MNA parameters
		after equilibrium	annual	VOCs
			biennial	MNA parameters

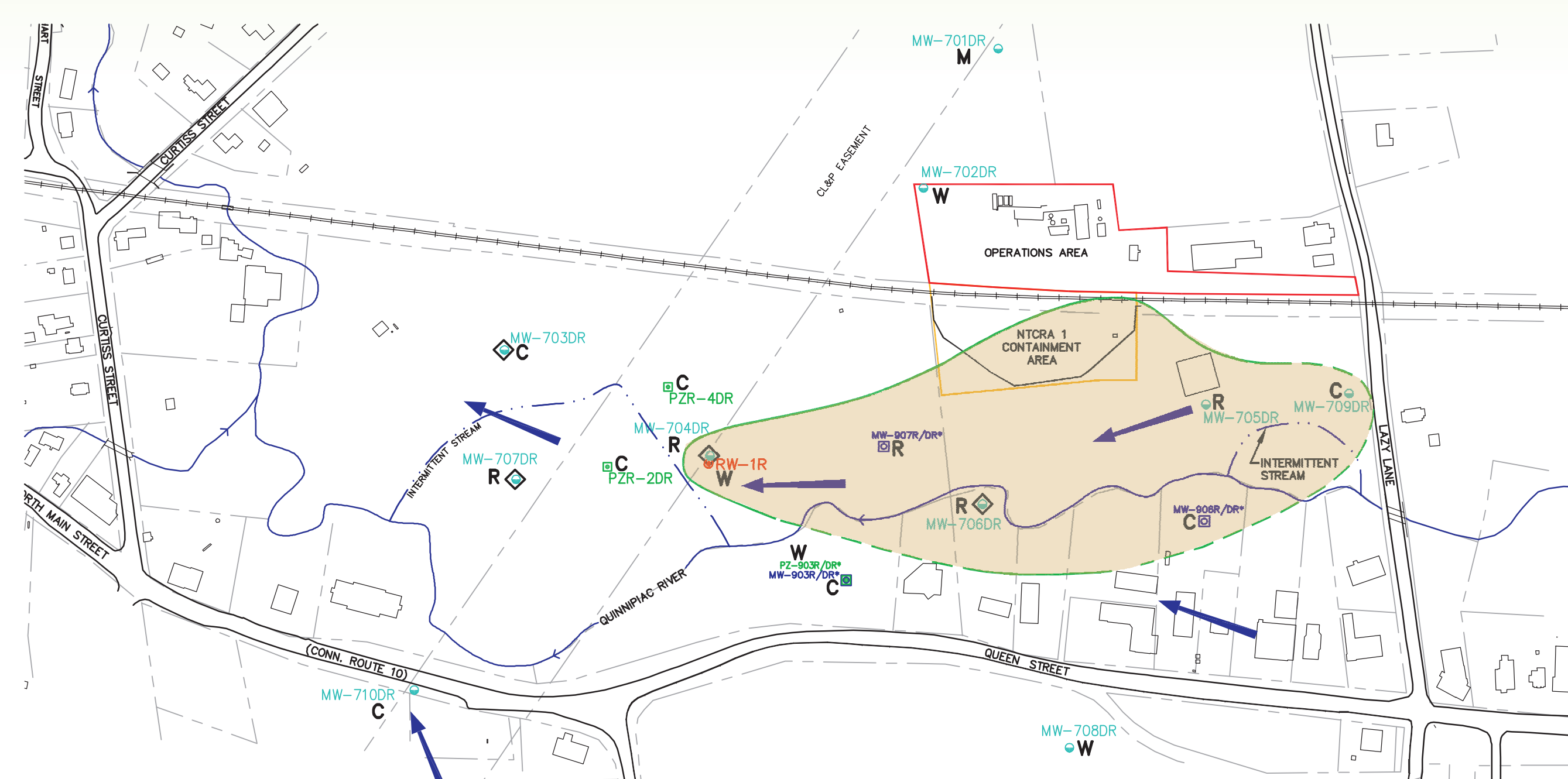
Monitoring Well Types

- C** Monitoring Well for Comprehensive Sampling Rounds Only
- R** Monitoring Well for Routine VOC and MNA Monitoring
- N** NTCRA 1 Area Monitoring Well
- M** Background Monitoring Well for Metals Sampling Only
- B** Background Monitoring Well for Metals and MNA Sampling
- W** Monitoring Well for Water Level Measurements Only

VOCs: Volatile Organic Compounds
TAL: Target Analyte List
PAHs: Polycyclic Aromatic Hydrocarbons
PCBs: Polychlorinated Biphenyls
MNA: Monitored Natural Attenuation

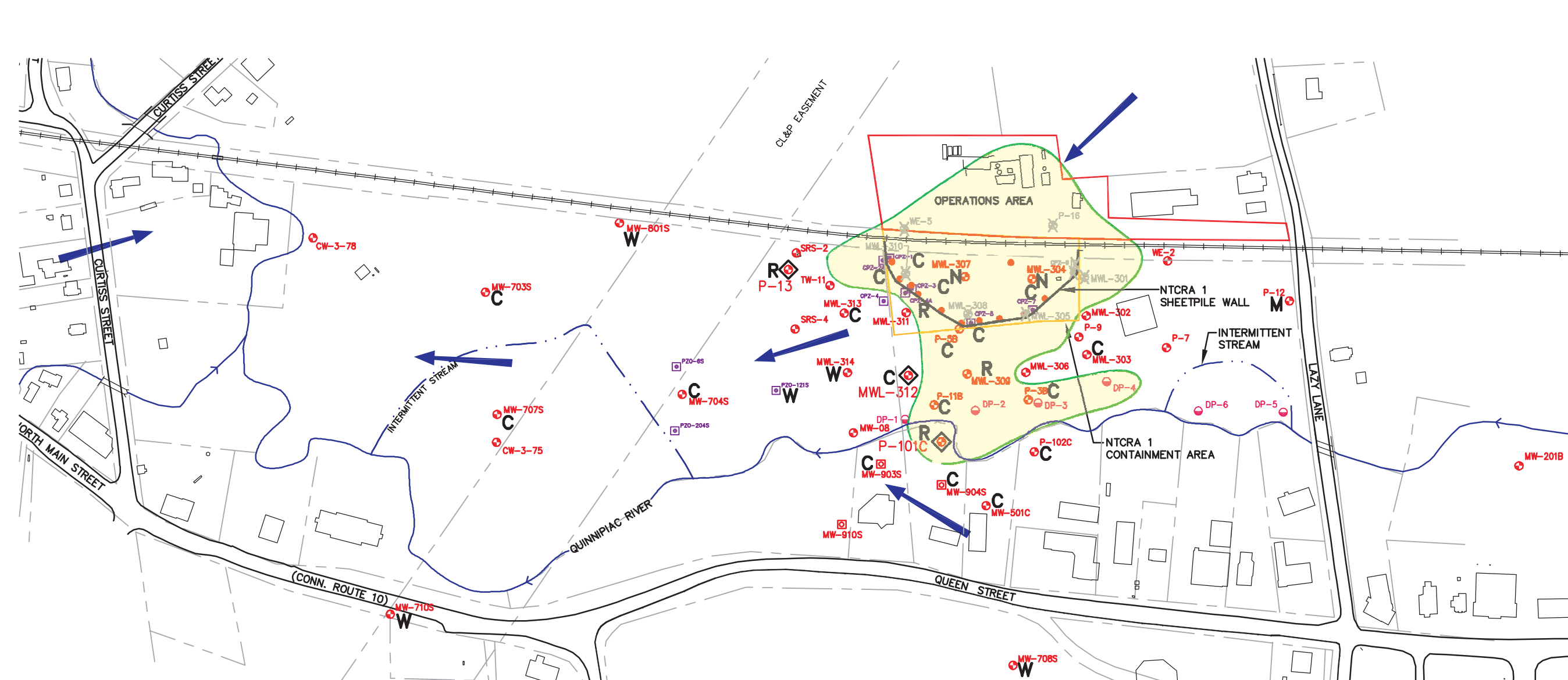


Shallow Bedrock Zone

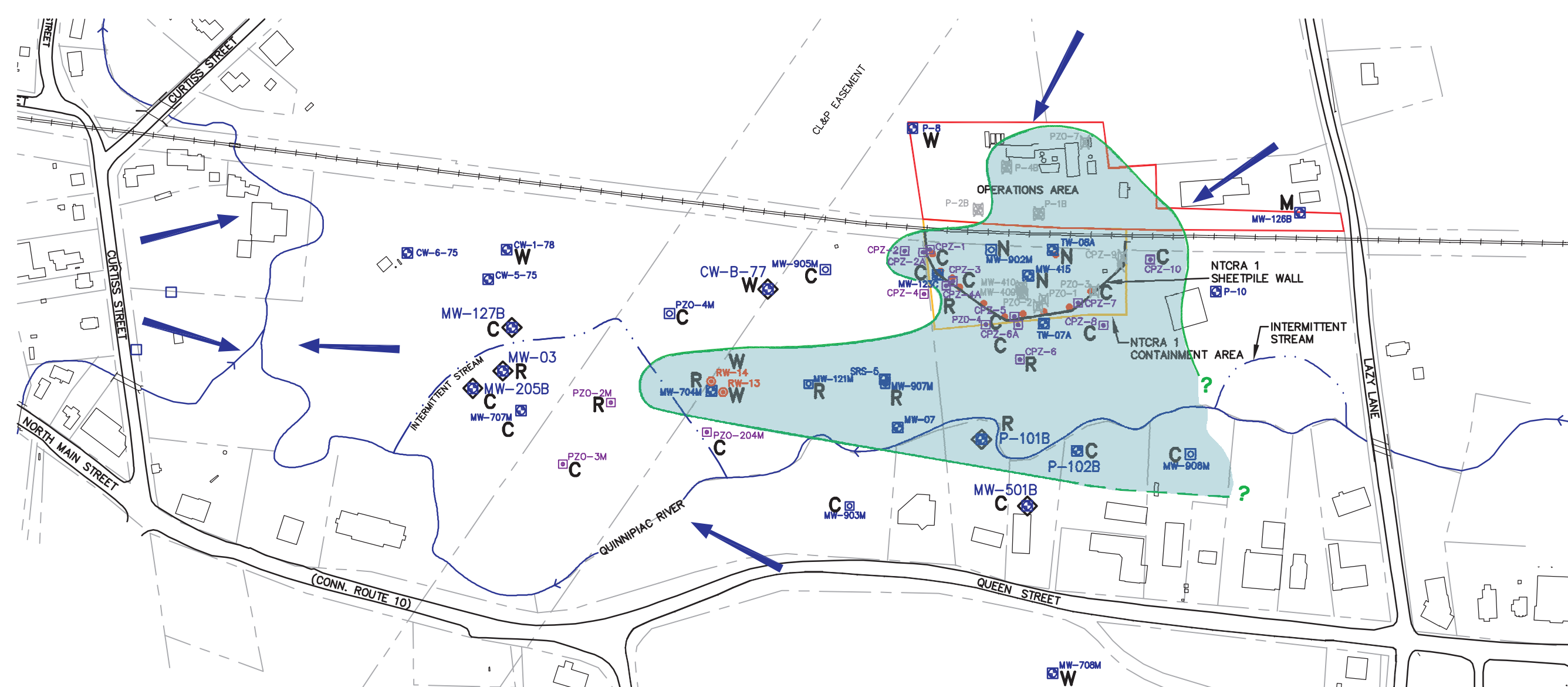


Deep Bedrock Zone

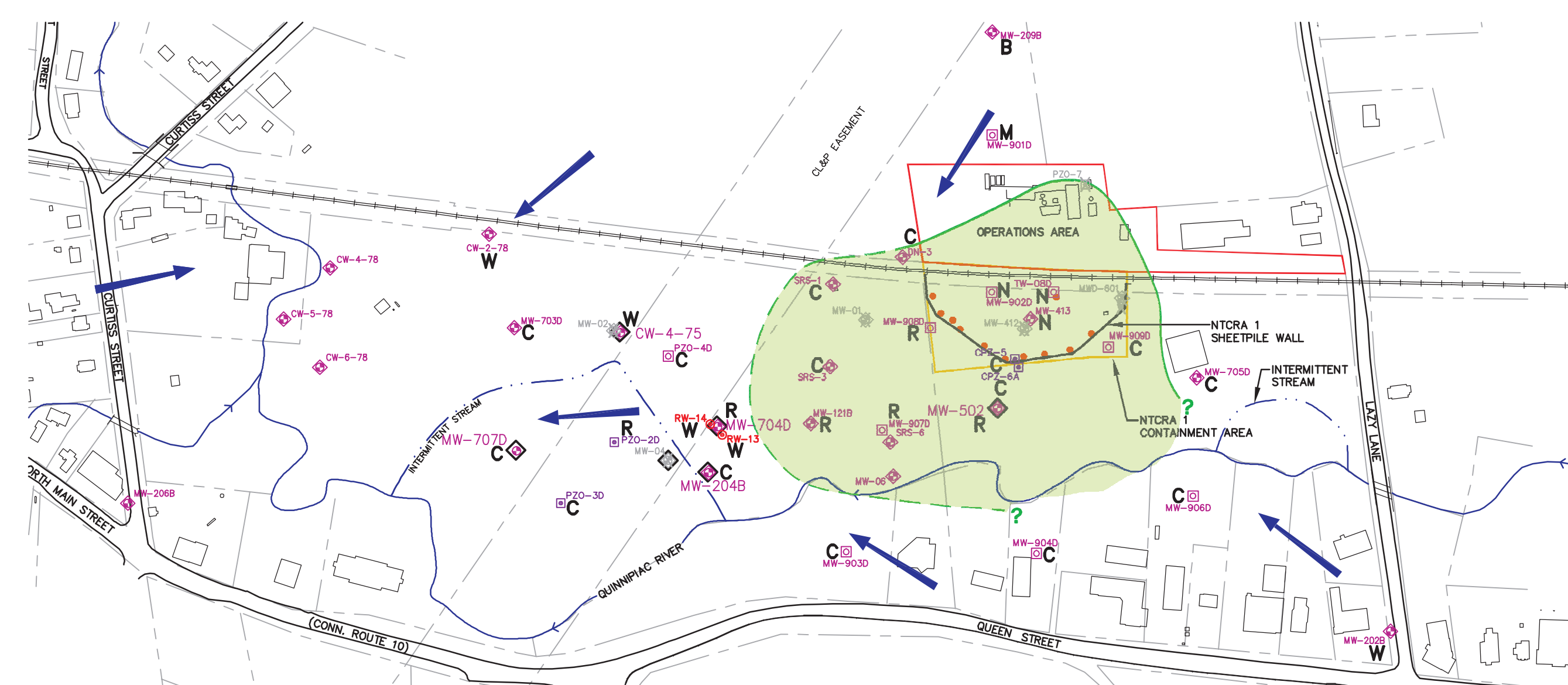
- FORMER INTERIM MONITORING AND SAMPLING LOCATIONS
- NTCRA 1 EXTRACTION WELL
- NTCRA 2 EXTRACTION WELL
- NTCRA 1 WETLAND DRIVEPOINT
- PIEZOMETER
- MONITORING WELL INSTALLED IN 2010
- ESTIMATED EXTENT OF GROUNDWATER VOC EXCEEDANCES OF DRINKING WATER STANDARDS
- GENERALIZED GROUNDWATER FLOW DIRECTION
- SHALLOW OVERBURDEN MONITORING WELL
- MIDDLE OVERBURDEN MONITORING WELL
- DEEP OVERBURDEN MONITORING WELL
- SHALLOW BEDROCK MONITORING WELL
- DEEP BEDROCK MONITORING WELL



Shallow Overburden Zone



Middle Overburden Zone



Deep Overburden Zone

Solvents Recovery Service of New England, Inc. Superfund Site Monitored Natural Attenuation in Groundwater

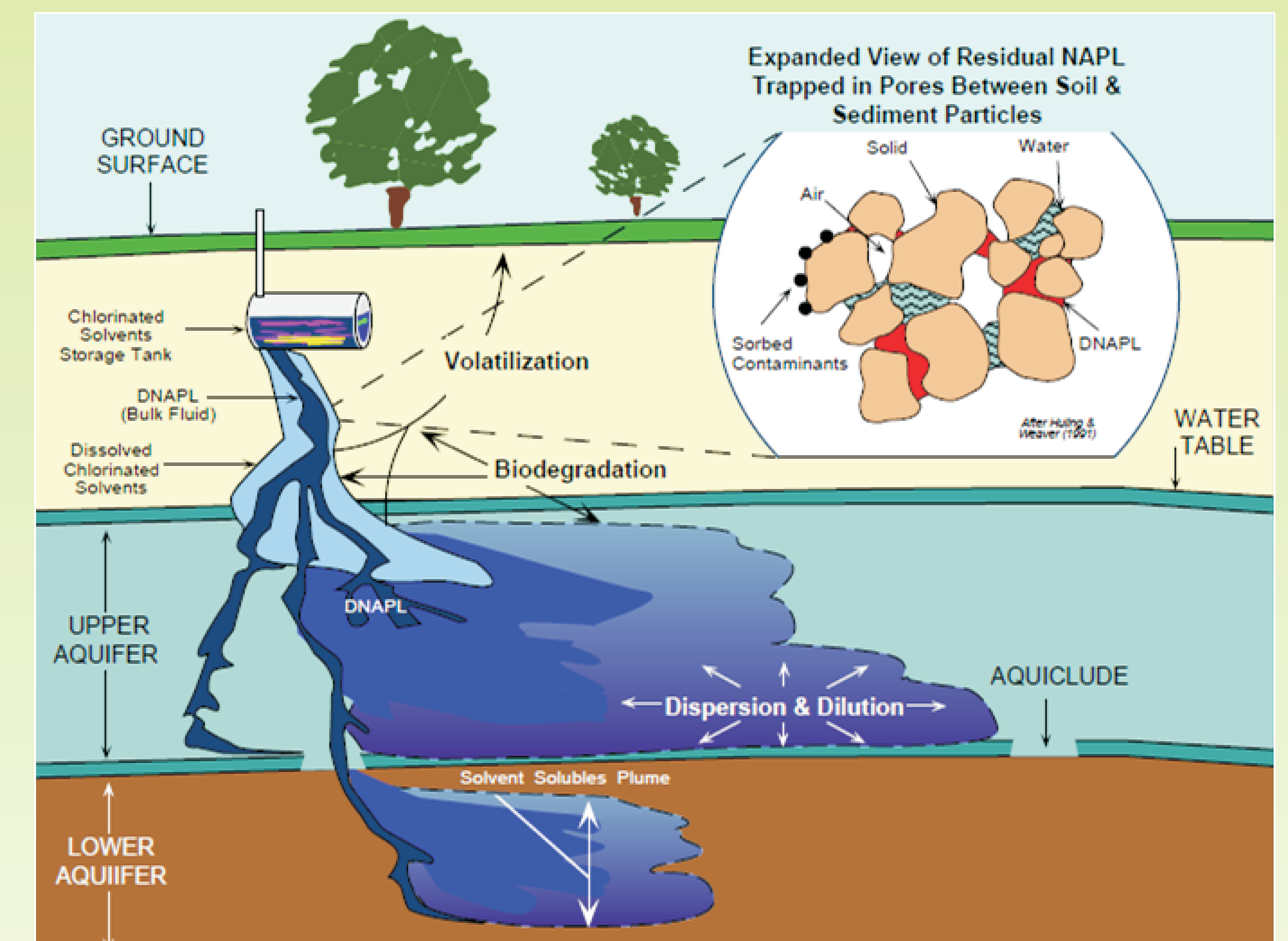
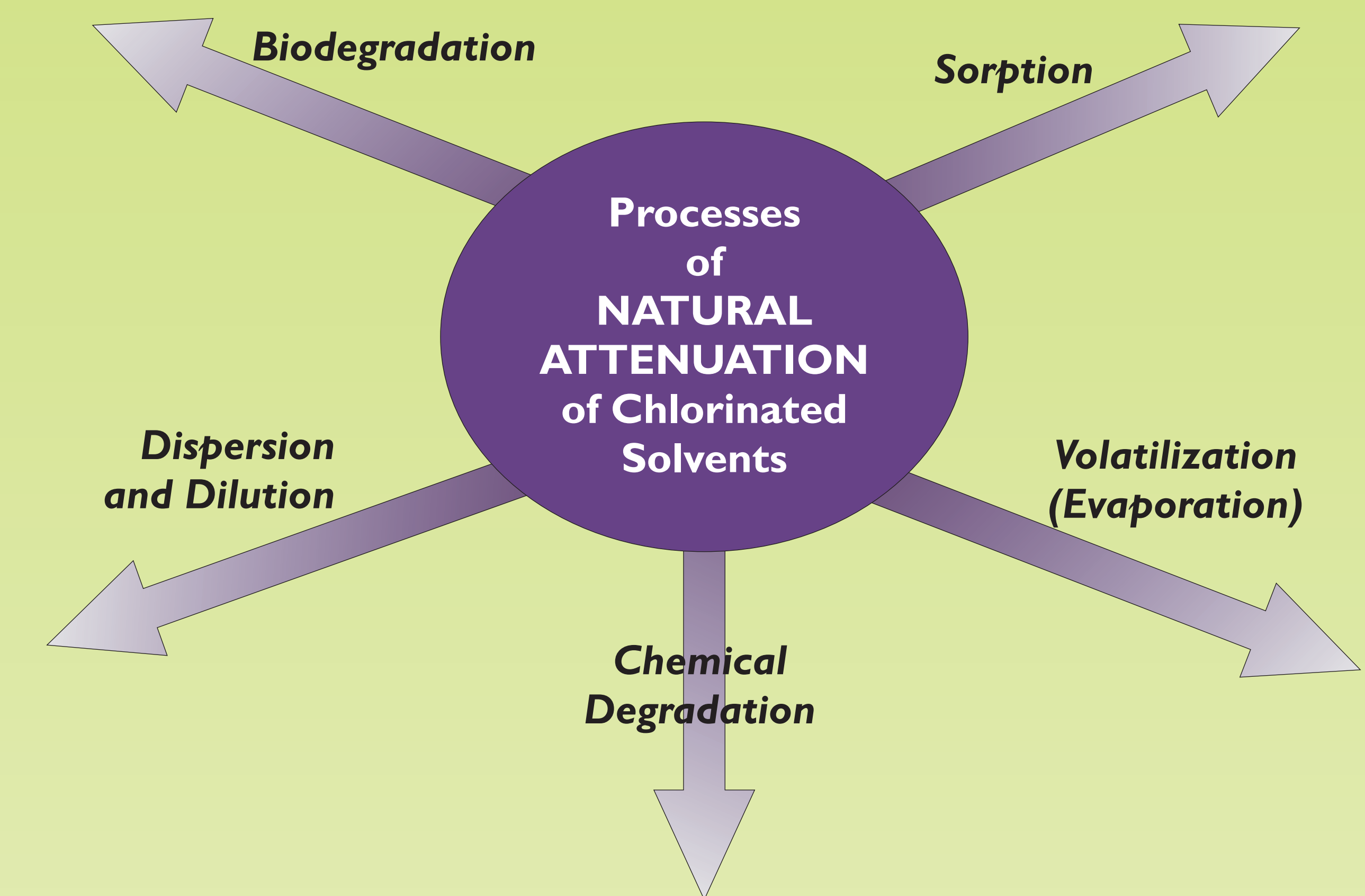
Monitored natural attenuation, or MNA, is the reliance on natural processes to achieve site-specific cleanup goals. MNA is always used in combination with source control and as part of a carefully controlled and monitored cleanup program.

Natural attenuation processes reduce mass, toxicity, mobility, volume, and concentration of chemicals in groundwater.

- **Biodegradation:** transformation of chemicals carried out by microorganisms – the organisms are almost everywhere in nature
- **Sorption:** where chemicals dissolved in groundwater “stick” to solids like silt, sand or clay – this slows or stops the movement of the chemicals
- **Volatilization:** when chemicals move from the solid or liquid phase into the atmosphere or the spaces in soil
- **Chemical degradation:** a spontaneous change in chemicals without microorganism activity
- **Dilution:** when concentrations of chemicals in groundwater are reduced by the addition of clean water from lakes and rivers or precipitation

At the SRSNE Site, the key chemicals of concern are chlorinated solvents. **MNA is an appropriate cleanup approach for groundwater** at the Site based on:

- **Historical groundwater data**, which show a declining trend in chemicals of concern over time at most monitoring locations (see companion poster)
- **Hydrogeological and geochemical data**, which demonstrate that conditions are right for MNA
- The documented **presence of microorganisms** capable of breaking down chemicals of concern in the soils of the Site

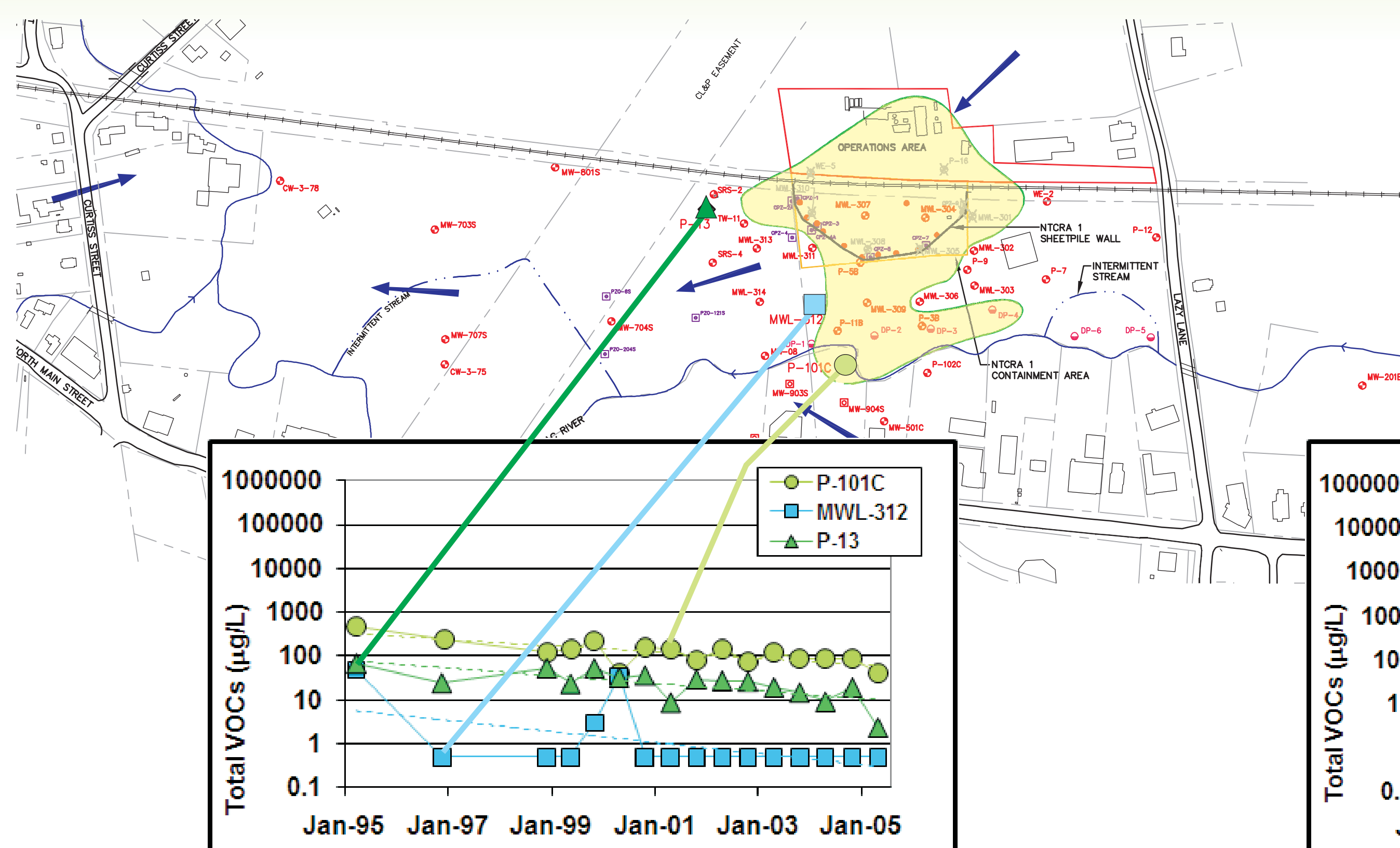


As chlorinated solvents move through the subsurface, some of the liquid may: 1) be trapped in the soil or sediment pores; 2) evaporate (volatilization); 3) become attached to soil particle surfaces (sorption); and 4) dissolve in groundwater (dissolved plume). Some chlorinated solvent liquids are heavier than water and may sink below the water table. As the dissolved plume moves, the concentration of the dissolved chlorinated solvents is lowered by dilution. Microorganisms and chemical reactions may degrade chlorinated solvents that are dissolved, volatilized, or sorbed.

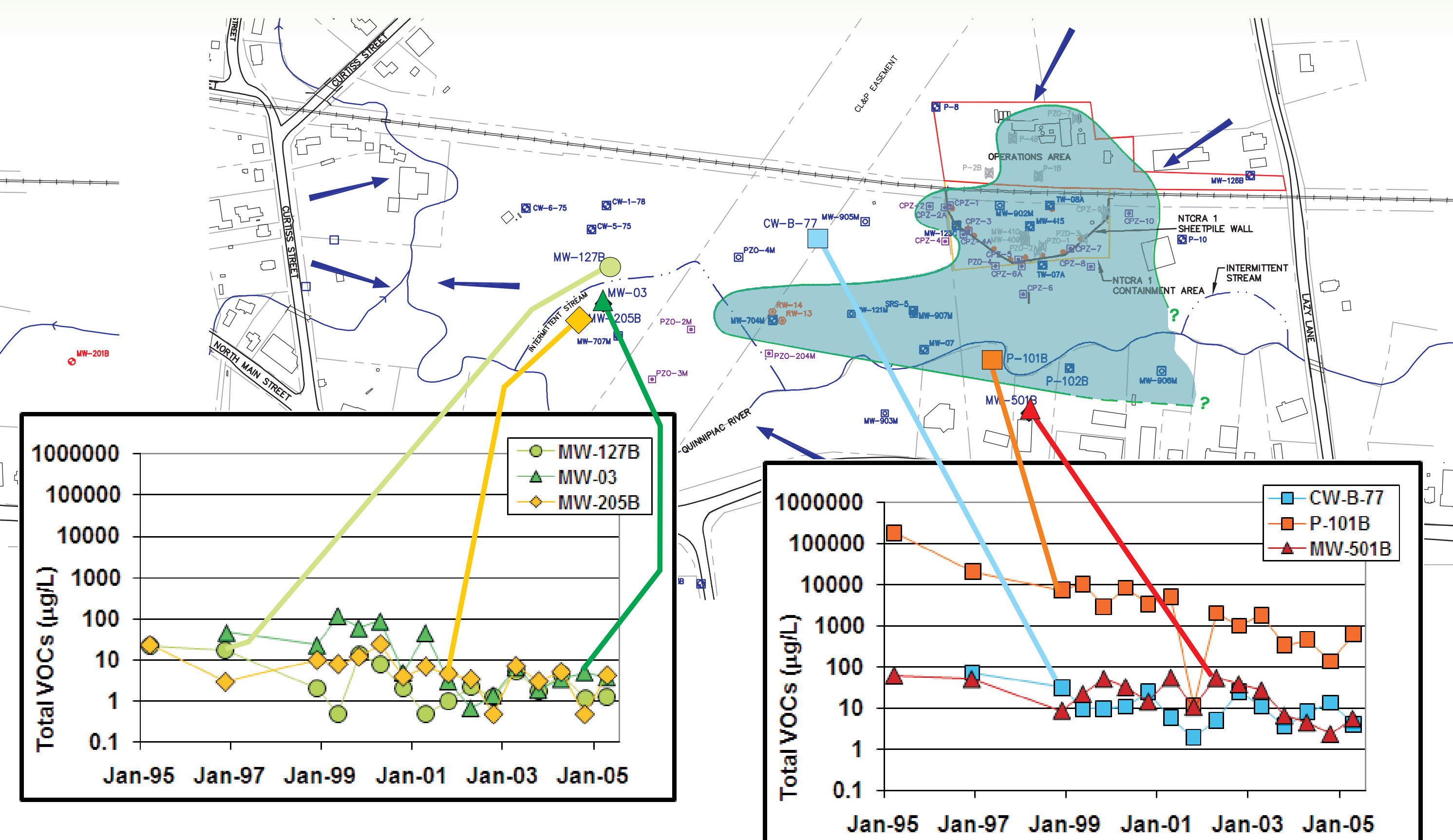
Solvents Recovery Service of New England, Inc. Superfund Site Monitored Natural Attenuation in Groundwater

Changes in Concentrations of Volatile Organic Compounds in Groundwater Over Time at the SRSNE Site

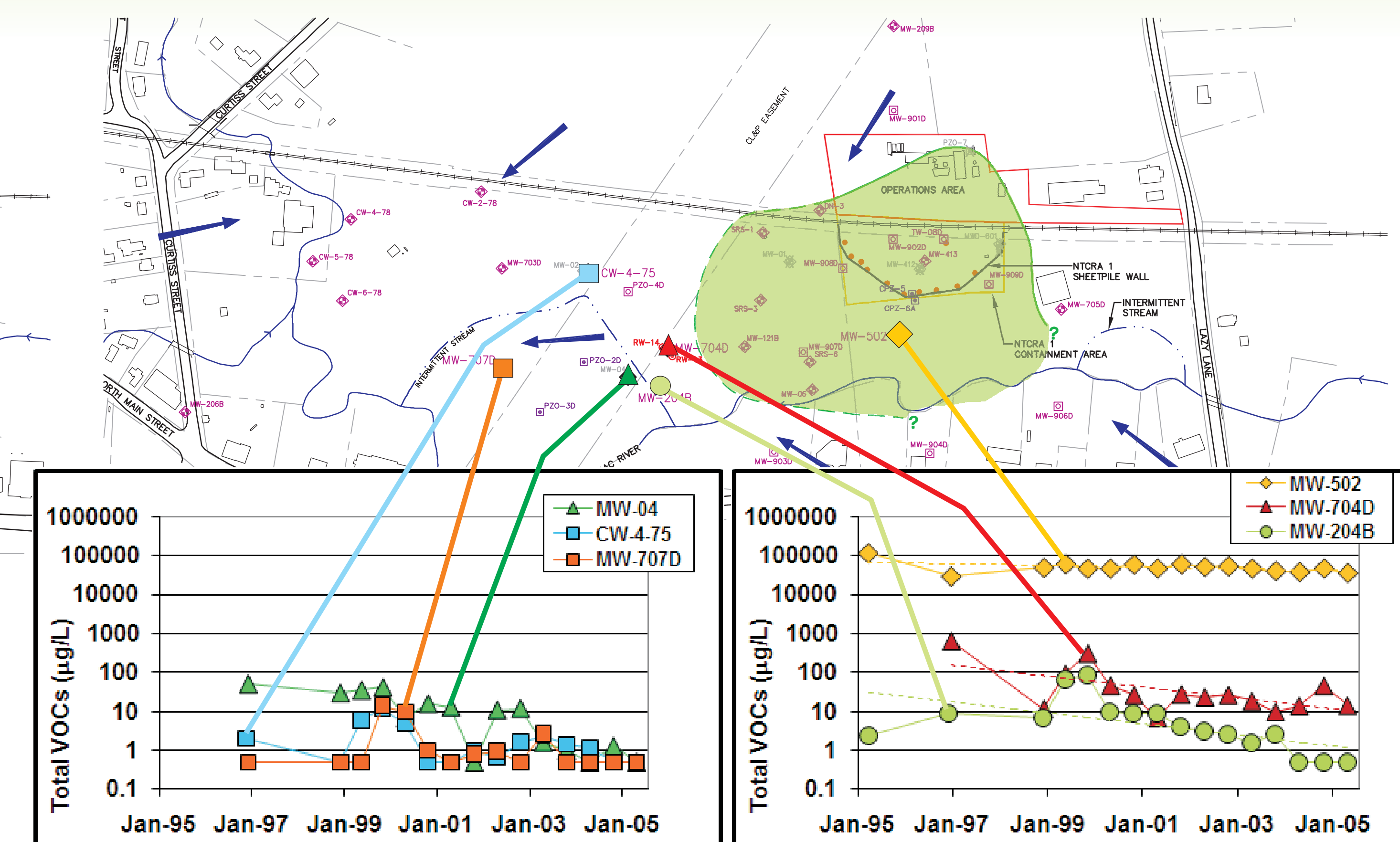
Shallow Overburden Plume



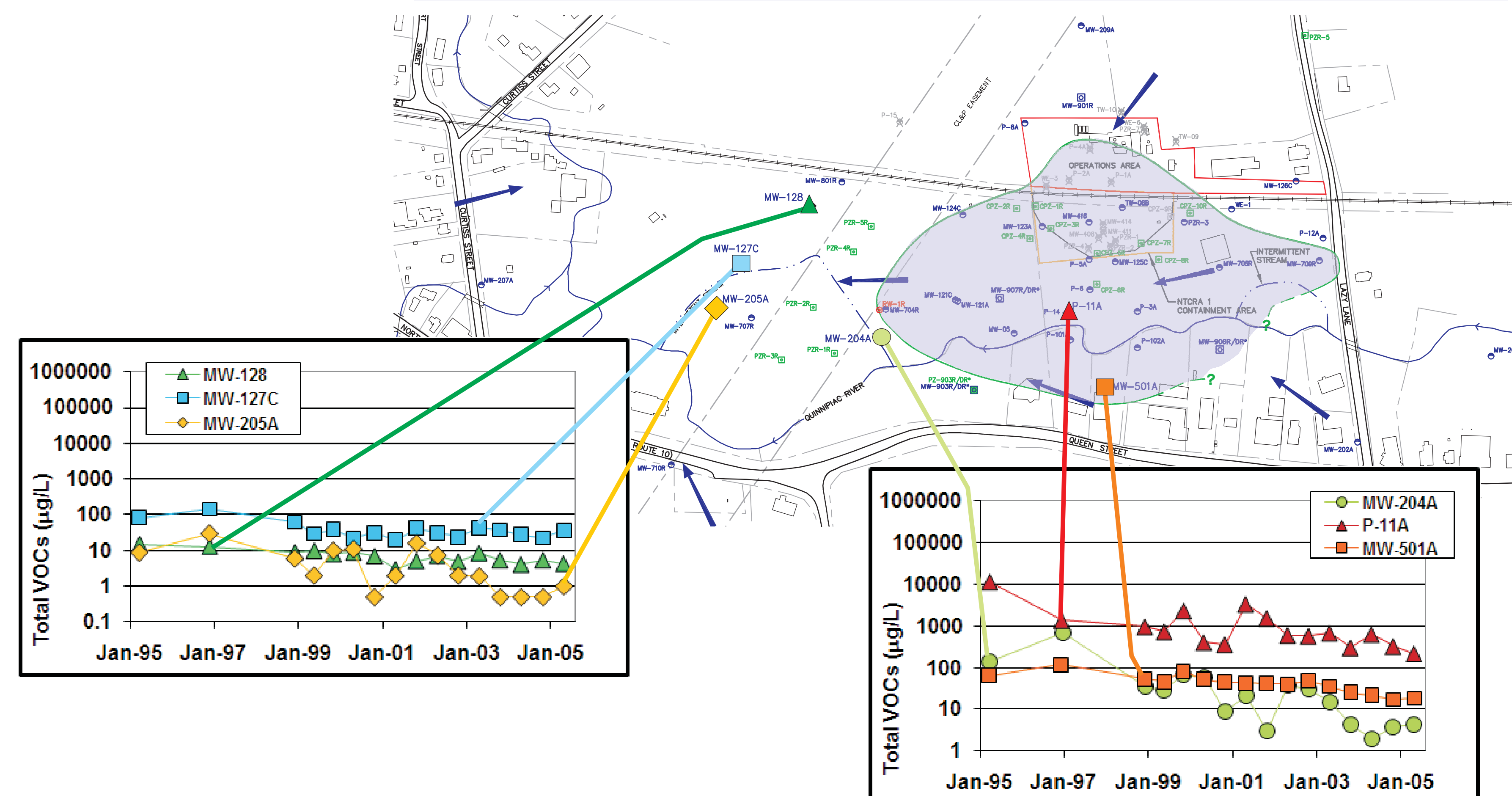
Middle Overburden Plume



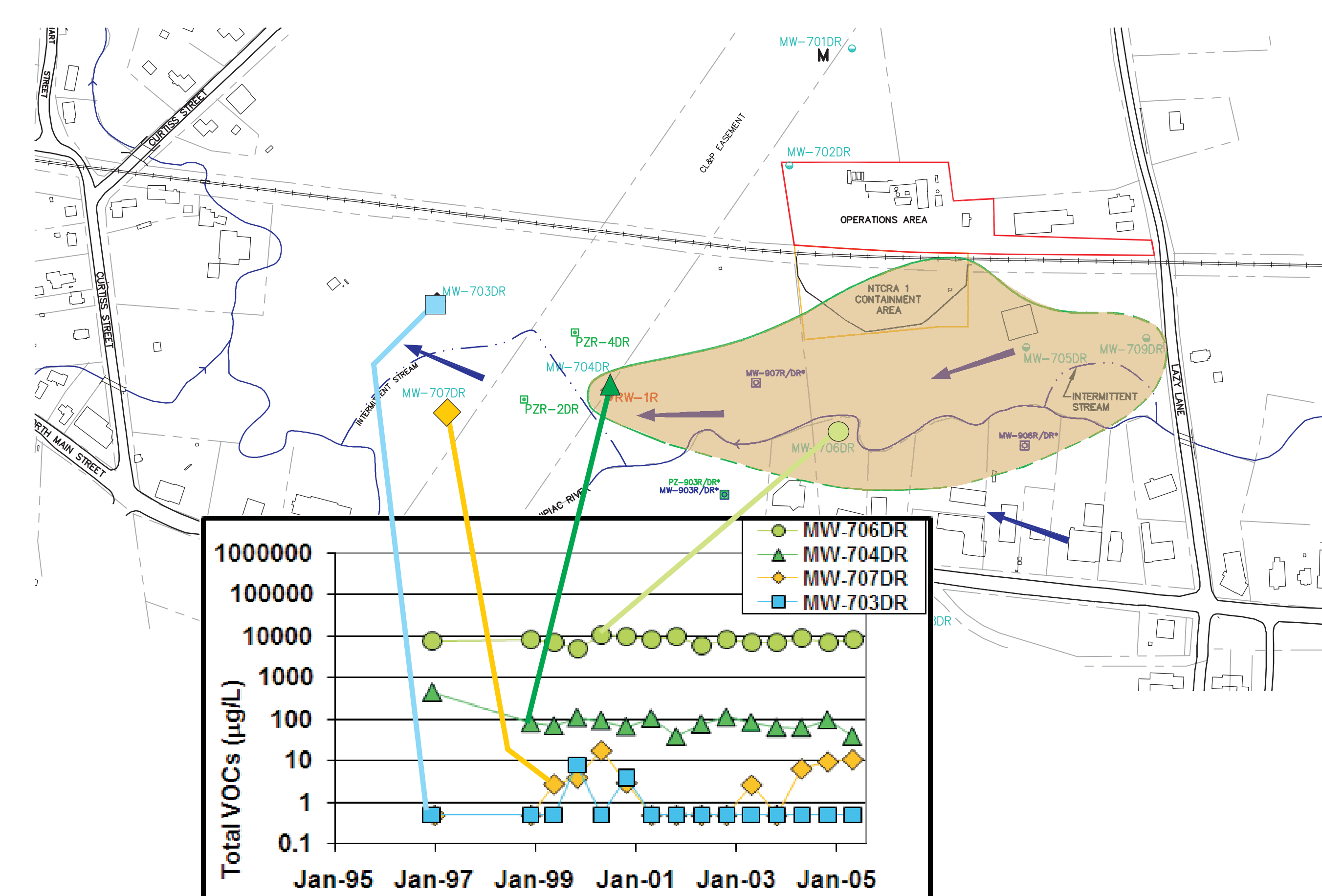
Deep Overburden Plume



Shallow Bedrock Plume



Deep Bedrock Plume

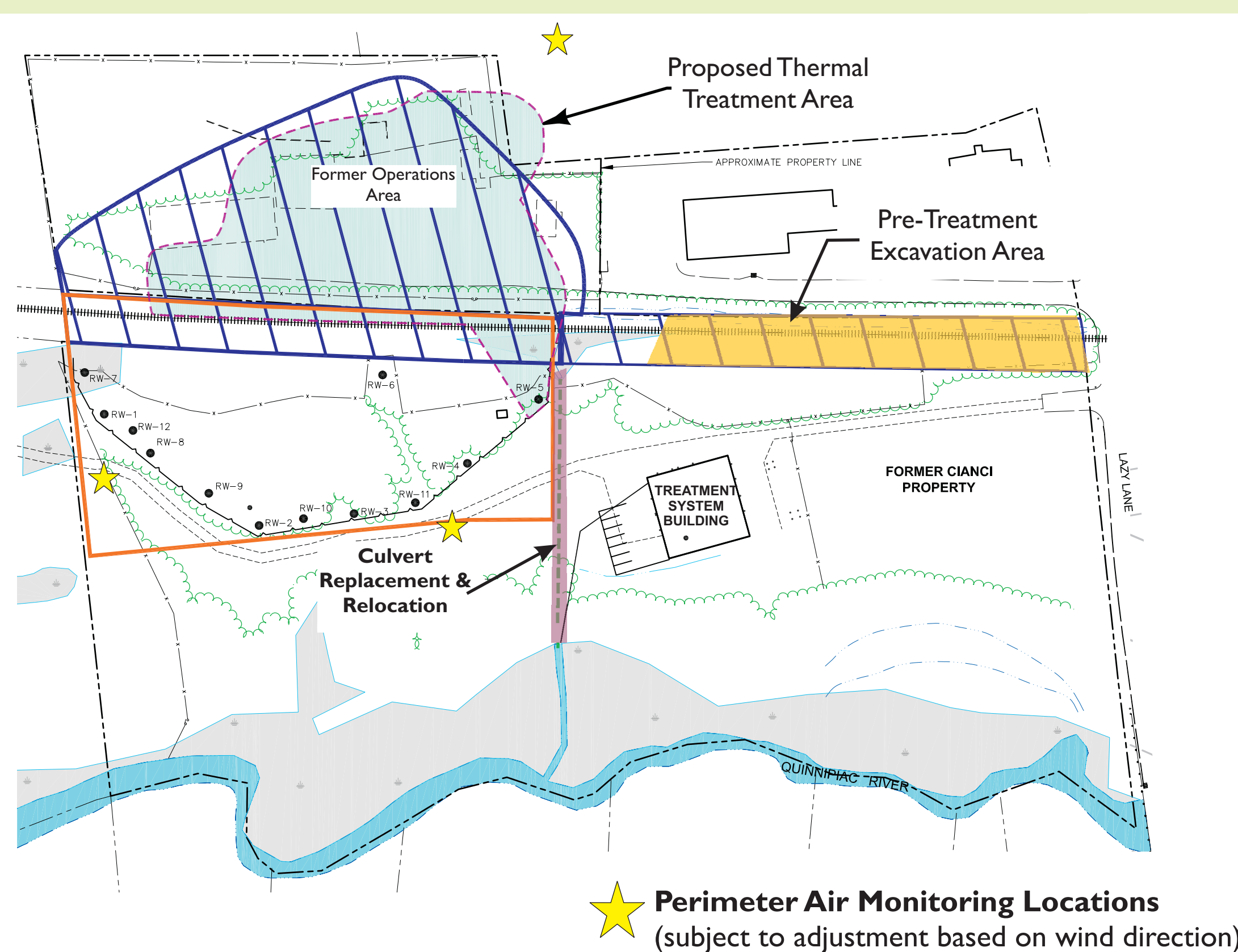
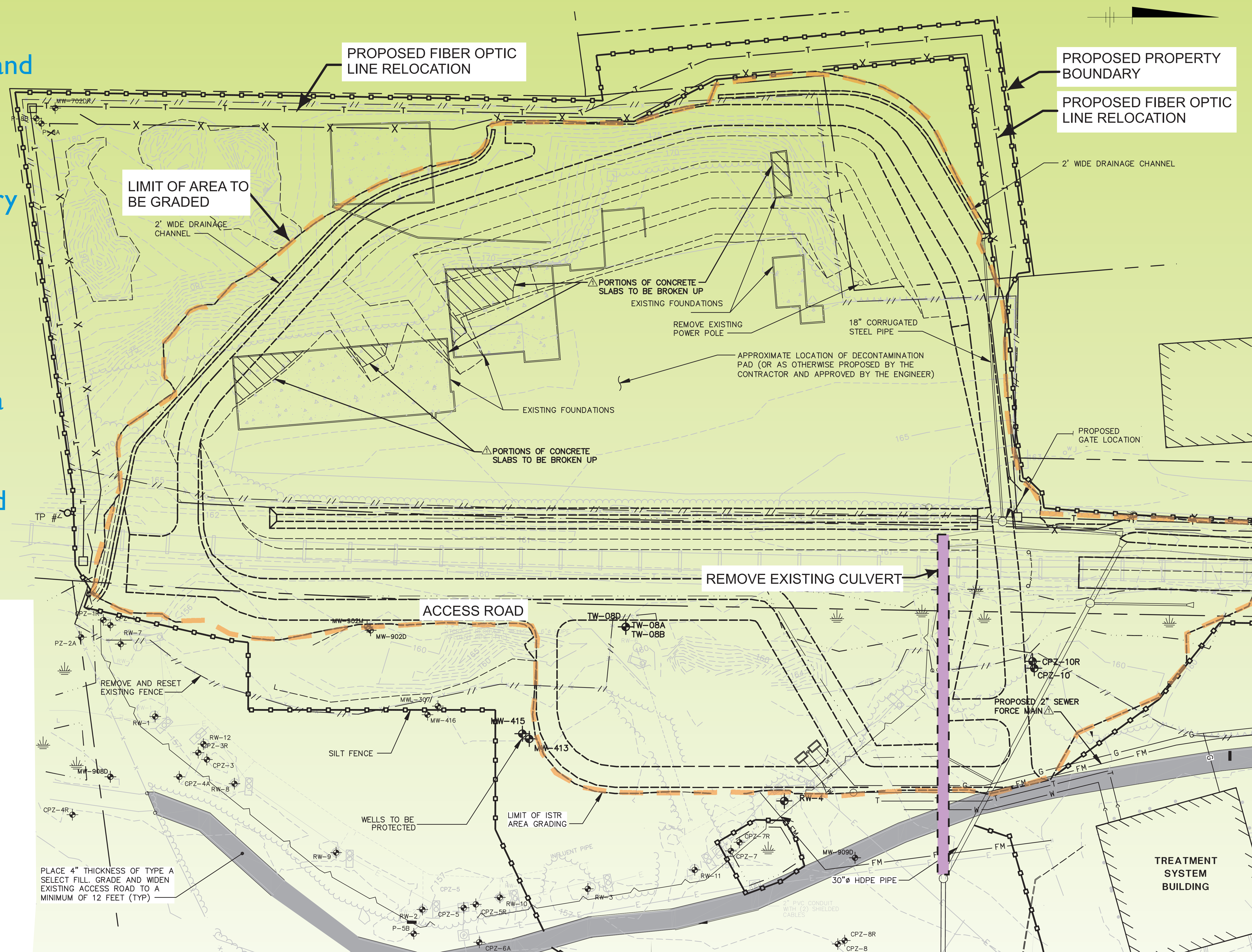


Solvents Recovery Service of New England, Inc. Superfund Site Remedy Component: Thermal Treatment Preparation

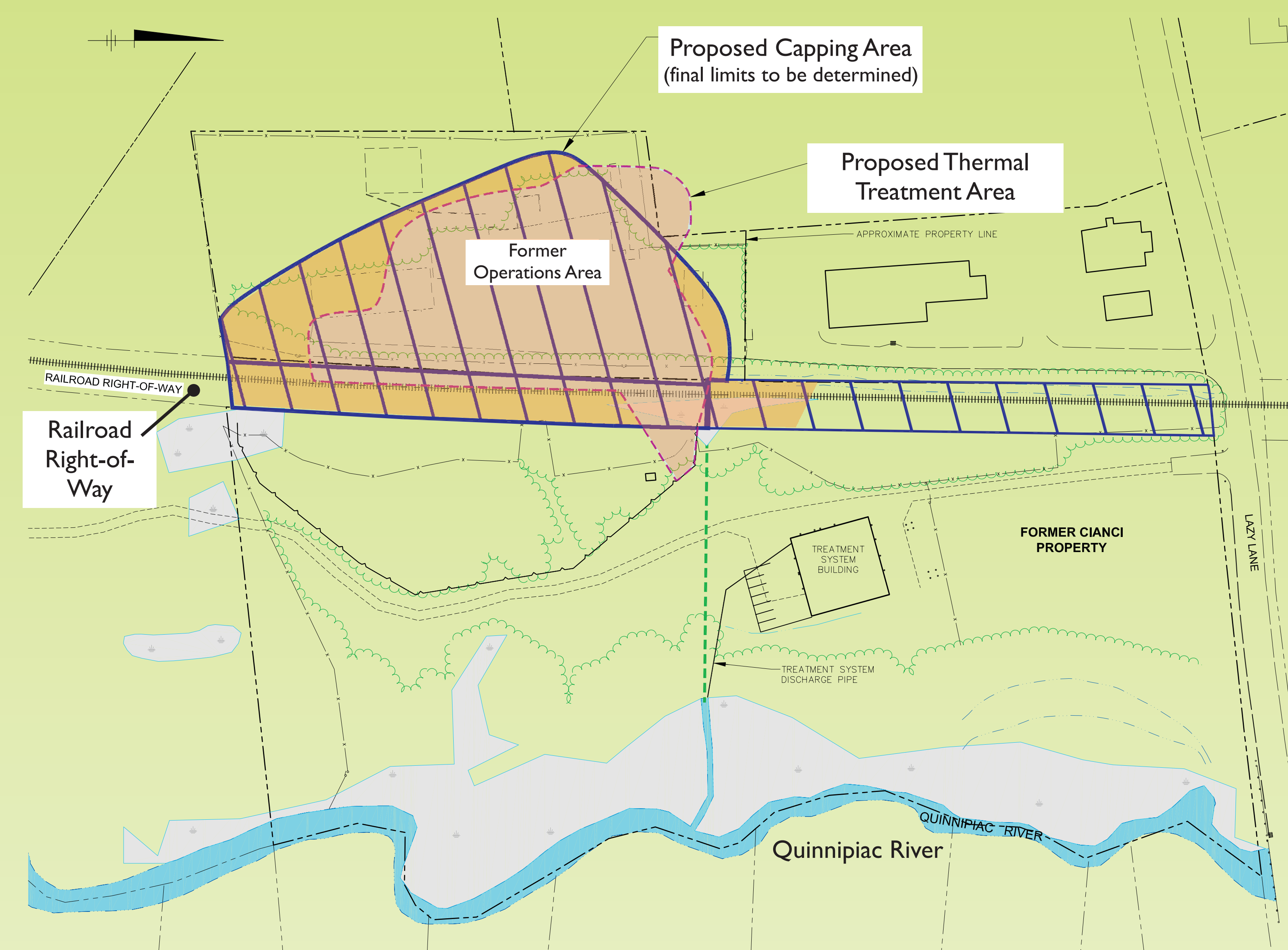
Most of the work in 2010 will be focused on preparing the Site for **Thermal Treatment** and subsequent capping. Activities will include:

- Moving the property fence so it encloses the entire work zone
- Clearing work areas and building temporary access roads
- Rerouting an existing AT&T fiber optic line
- Relocating a drainage culvert
- Excavating targeted soils from along the railroad tracks
- Grading/leveling soils in the treatment area

After the preparatory work scheduled for this fall is complete, the project team plans to build and operate the thermal treatment system beginning in **Spring 2011**.

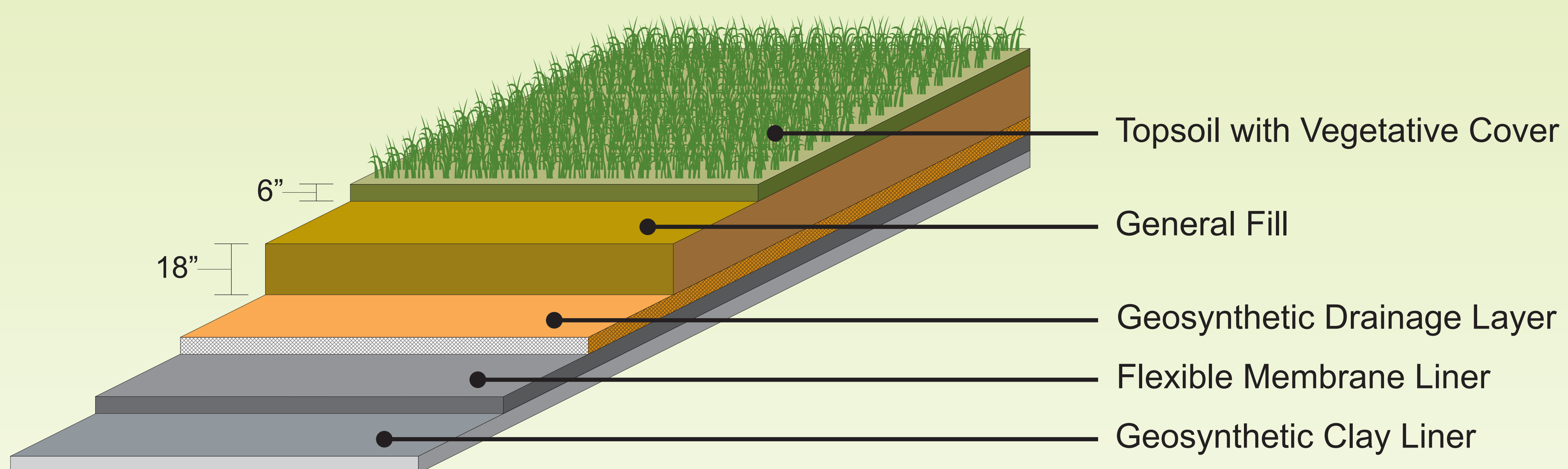


Solvents Recovery Service of New England, Inc. Superfund Site Remedy Component: Capping



After thermal treatment of the soils in the former Operations Area of the SRSNE Site is complete, the area will be covered with a **multiple-layer waterproof cap** (the thermal treatment component is described in Tents #3 and #4). The cap will be designed to **isolate treated soils and materials excavated from other areas of the Site**, and protect human health by preventing people from coming into contact with them.

The boundaries of the area to be capped are not yet finalized. **Additional sampling** is planned as part of the preparatory work for the thermal treatment component of the remedy, and the results of that effort will be used to establish the extent of the multi-layer cover. The various layers of the cap will also be developed later in the engineering design process. The cap will include layers to separate the isolated materials from the clean fill and soil added on top – these liner layers will also keep animals from burrowing down into the treated and consolidated soils. After the liner and drainage layers are in place, clean soil will be added across the entire capping area, and the soil will be planted with native grasses. The cap will be inspected over the long term and repaired as necessary to verify that it continues to function as intended.



Typical Elements of a Multi-Layer Cap



Solvents Recovery Service of New England, Inc. Superfund Site Remedy Component: Excavating & Capping

Soils from **five areas** (defined as part of sampling programs) will be dug up and consolidated in the **proposed capping area**. After excavation and thermal treatment efforts are complete and additional sampling work has been conducted, the final boundaries of the capping area will be established, and the multi-layer cap will be installed. Then a **new trail** along the rails-to-trails corridor will be paved between Lazy Lane and Curtiss Street.

