



Mansfield Trail Dump Superfund Site Operable Unit 2 (OU2) Proposed Remedial Action Plan

Public Meeting

July 23, 2019

www.epa.gov/superfund/mansfield-trail



Agenda

1. Introduction and Background
 - Site History
 - EPA Actions
 - OU1 Remedy
2. Summary of Investigations
3. Assessment of Risk
4. Feasibility Study Results
5. Proposed Plan (EPA Preferred Alternative)
6. Path Forward
 - Address Public Comment
 - Issue OU2 Record of Decision
7. Questions and Comments

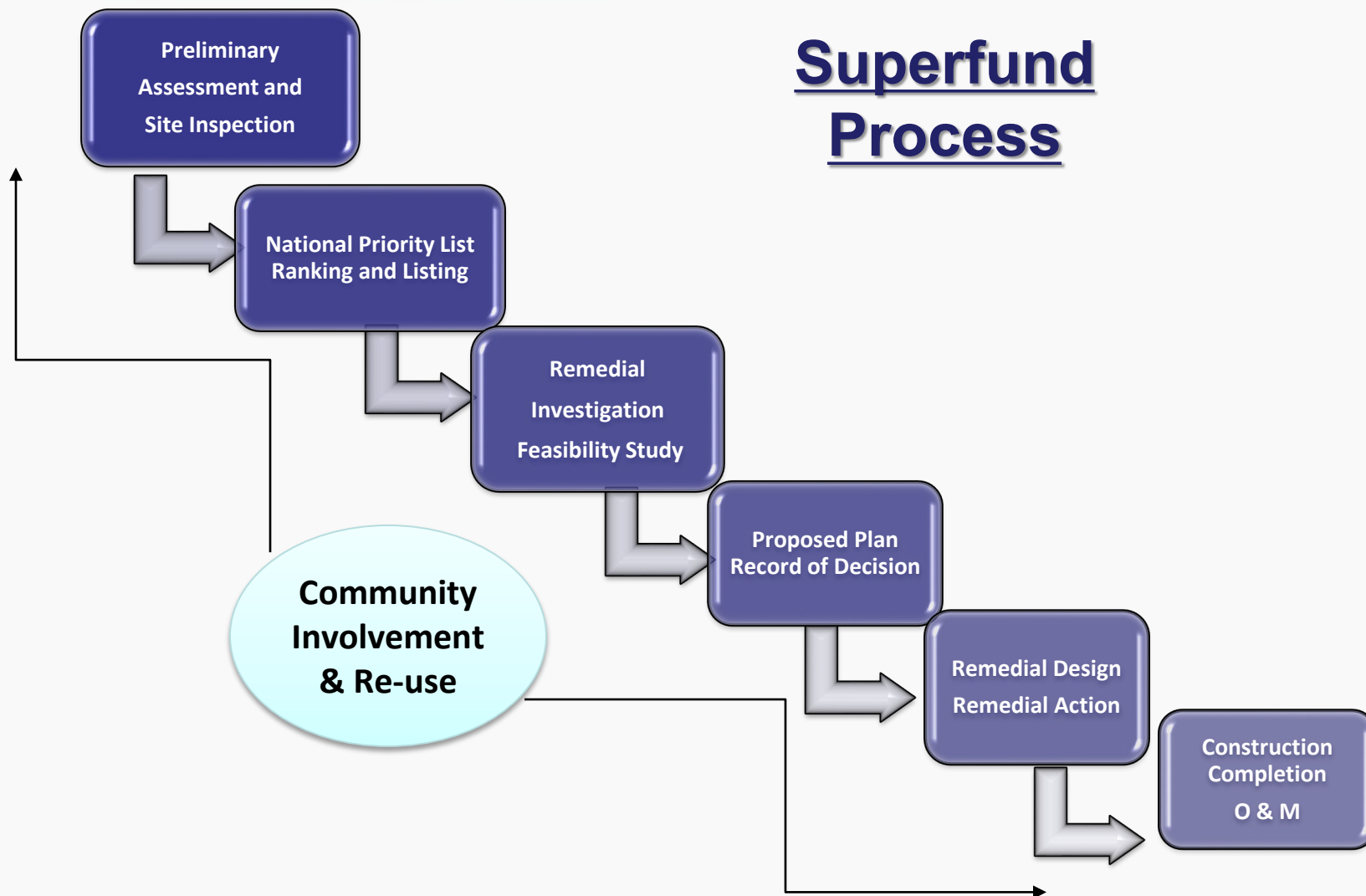


Why Are We Here Tonight?

- To discuss the Proposed Plan for the Mansfield Trail Dump Superfund site located in Byram Township, New Jersey.
- EPA will accept additional verbal comments and written comments until Tuesday, August 13, 2019.
- All public comments will be considered and included formally in the Administrative Record.
- EPA will assess public comments in its Record of Decision Responsiveness Summary.

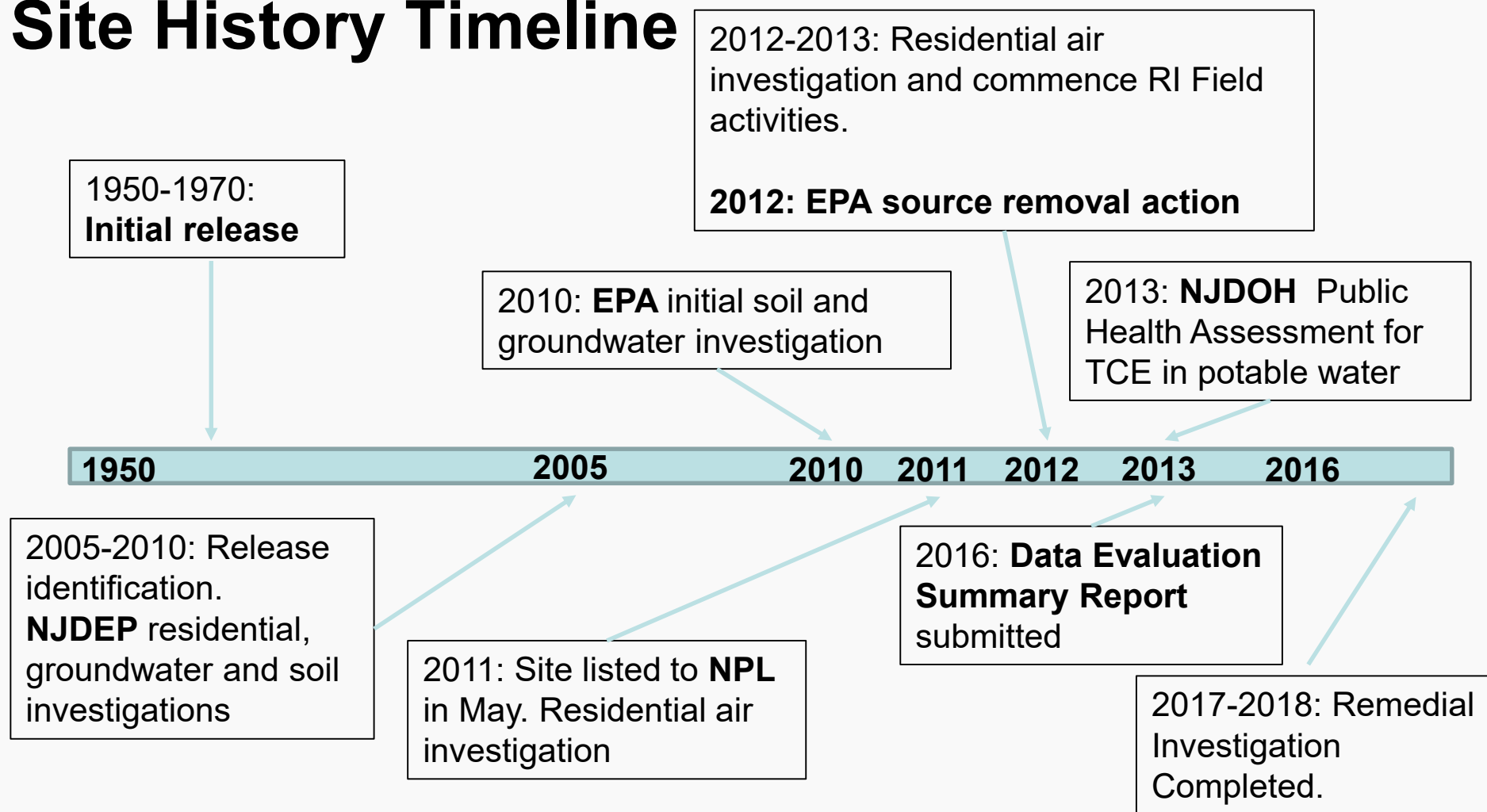


Superfund Process



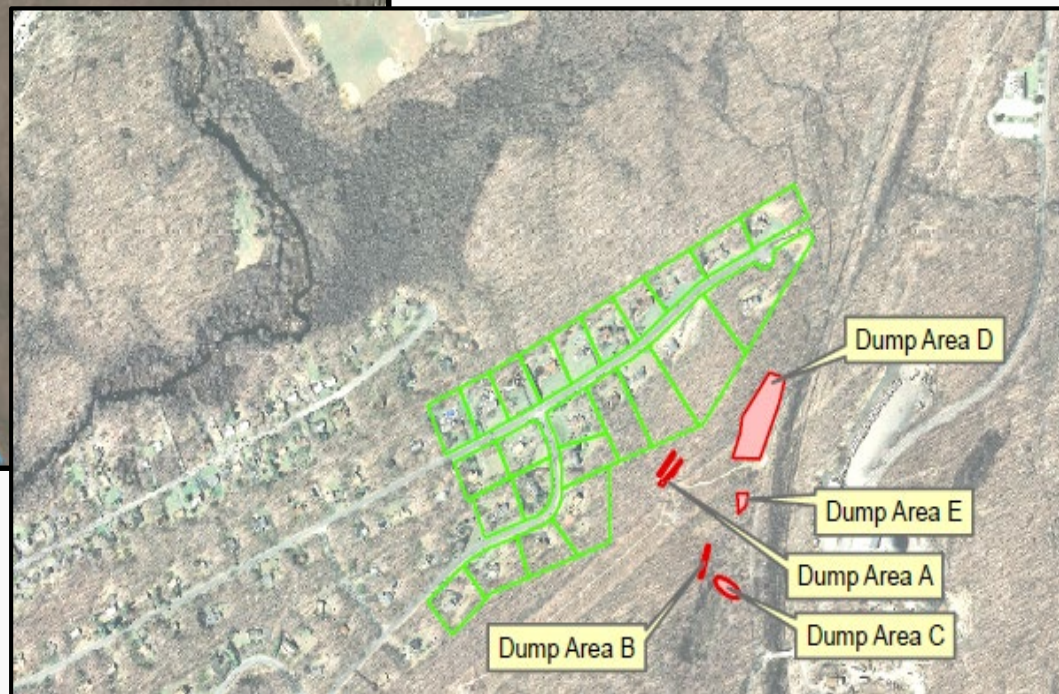
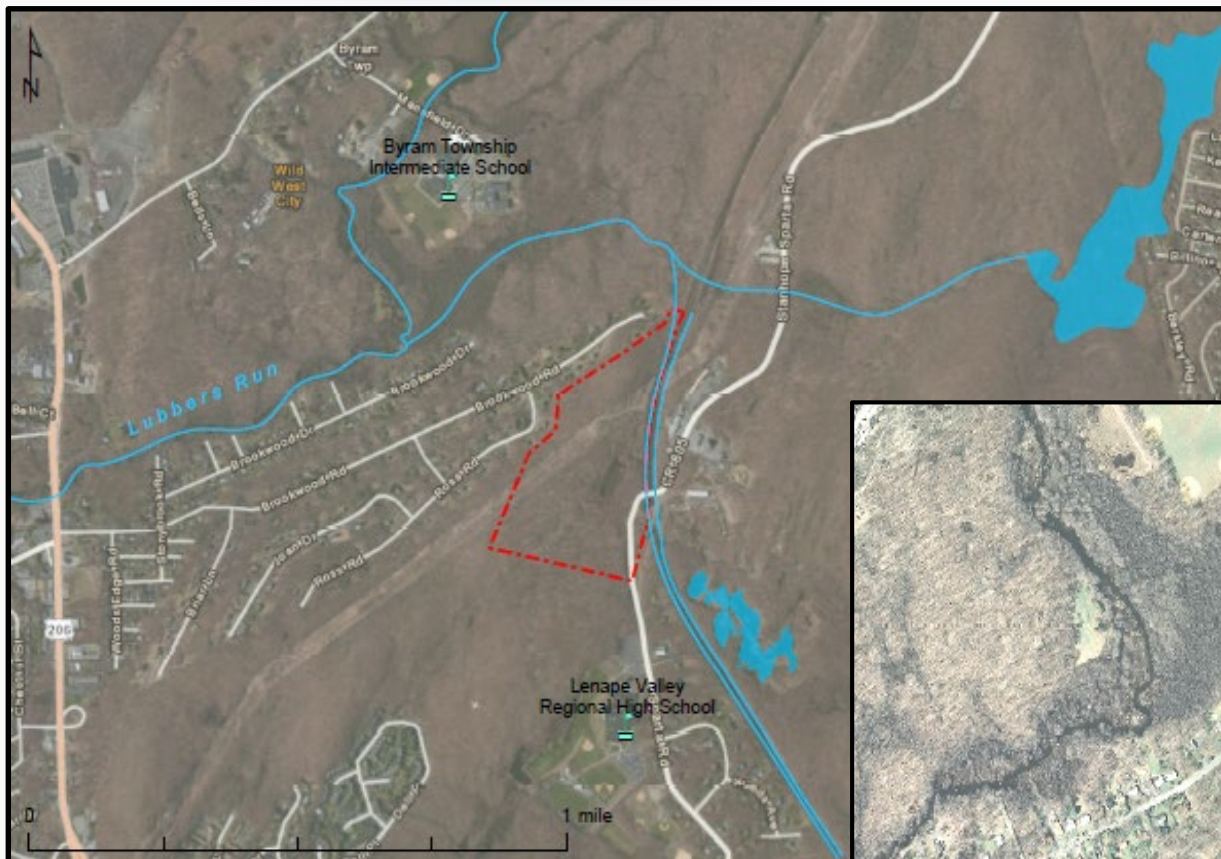


Site History Timeline





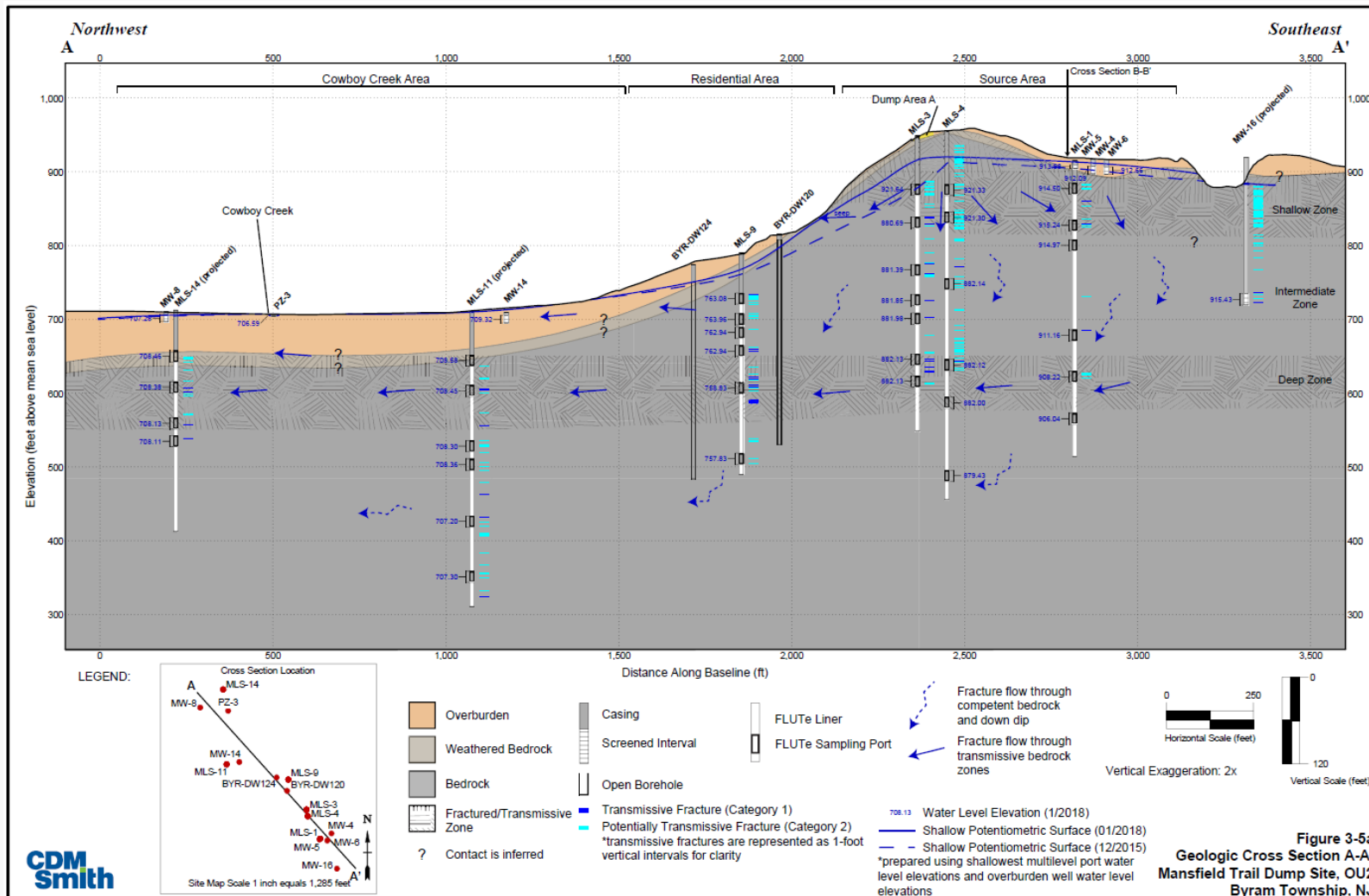
Site Location



Site Strategy

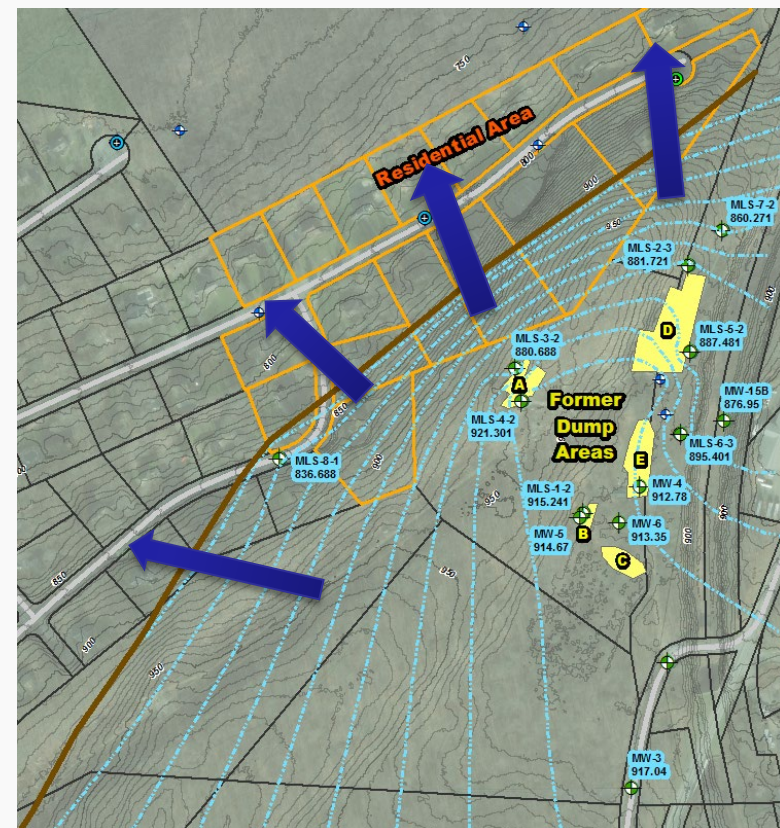


Complex Geologic Setting



Hydrogeologic Framework

- Thin overburden
 - Rocky, silty sand
 - Radial flow off ridge
 - Seeps/Springs
- Fractured Bedrock
 - Hard crystalline rock with low primary porosity
 - Northwest with regional flow through fractures
 - Pumping residential wells





OU1 Remedy

Operable Unit 1: Addresses contaminated drinking water wells at residential properties at the Site.

Connection of impacted residents to an existing water supply.

- New water main and connections to impacted residences would be installed
- Make necessary upgrades to existing water supply
- Monitor private wells of nearby residences

Current measures for:

- Impacted Residential Potable Wells, **POETS**.
- Vapor Intrusion (VI), **Mitigation systems**.
- NJDEP Maintains Eligible Systems



Human Health Risk Assessment Results

- Risk Drivers for Groundwater:
 - Vinyl Chloride, TCE, and cis-1,2-DCE
- Risk Drivers for Soil:
 - Lead (in residential area)
 - PCBs were detected in excess of screening criteria but were within EPA's acceptable risk thresholds



Screening Level Ecological Risk Assessment (SLERA)

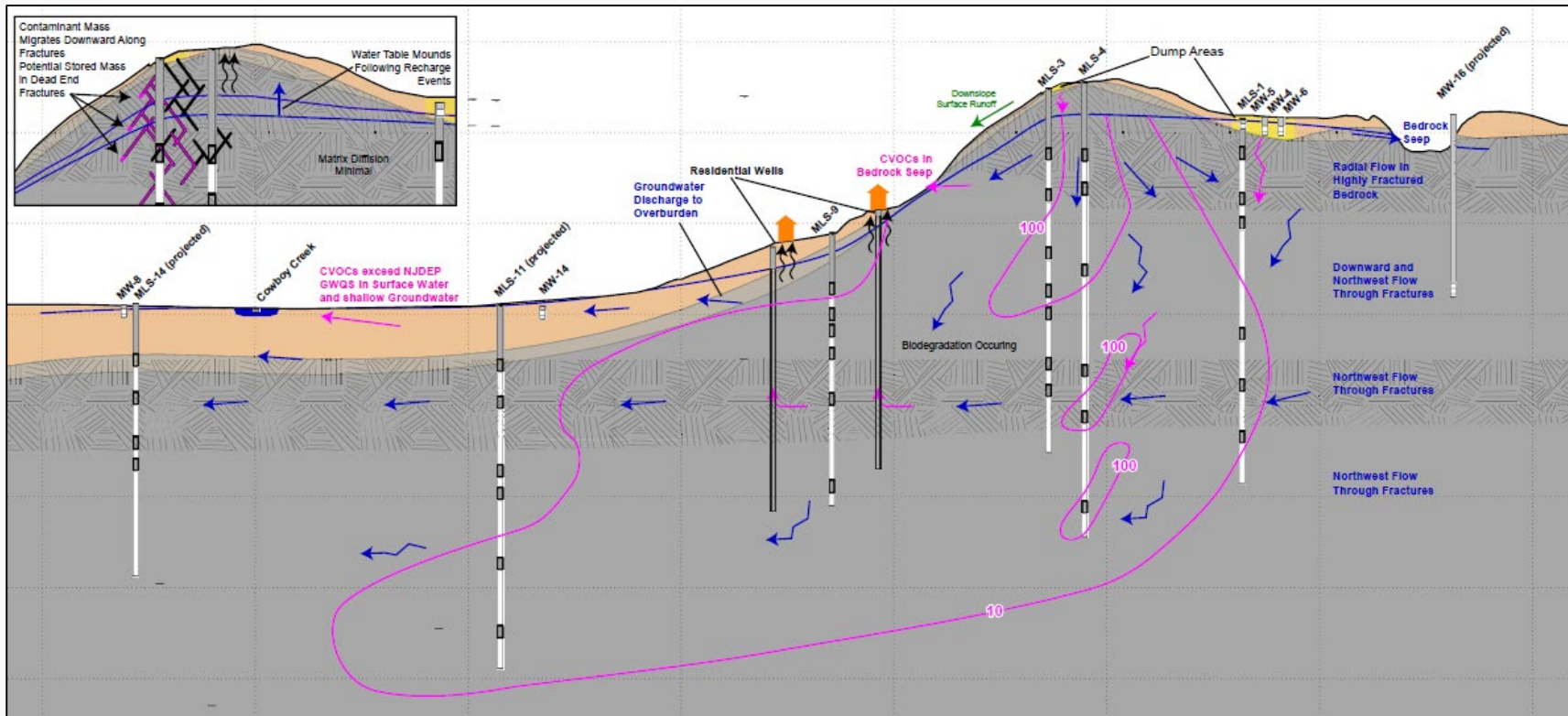
- To evaluate if contaminants at the site may pose risk to ecological receptors
- Conclusion:
 - An additional ecological evaluation warranted --Step 3a Ecological Risk Assessment
 - Conclusion: no action warranted for ecological receptors



Conceptual Site Model

CVOC approximate groundwater contamination extent (dashed where inferred)

Groundwater flow pathway
Contaminant flow pathway





OU2 Remedial Action Objectives

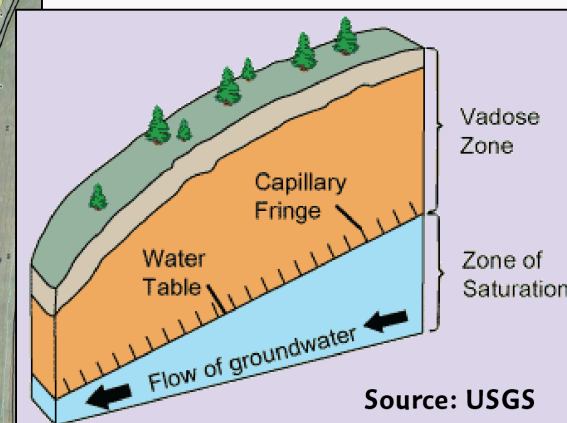
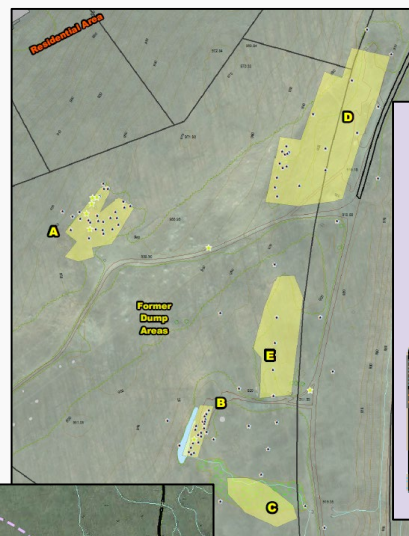
- Specific cleanup goals for a Superfund site that ensure the protection of human health and the environment.
- The RAOs for contaminated soil are:
 - Reduce or eliminate exposure of human receptors to contaminated soil at concentrations exceeding remedial goals.
 - Prevent or minimize contaminated soil from serving as a source of contamination to sediment, surface water, and groundwater.



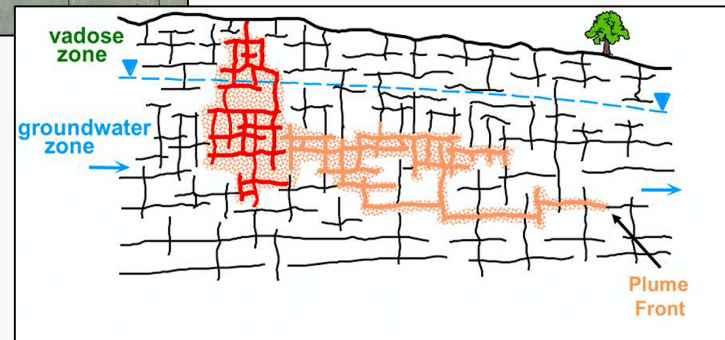
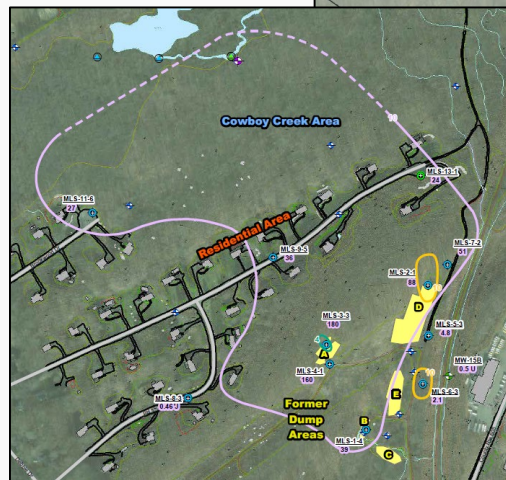
- The RAOs for contaminated groundwater are:
 - Restore the impacted aquifer to its most beneficial use as a source of drinking water by reducing contaminant levels to the remedial goals
 - Prevent or minimize unacceptable risk from exposure (via direct contact, ingestion, or inhalation) to contaminated groundwater attributable to the site
 - Minimize the potential for further migration of groundwater containing site contaminants at concentrations greater than remedial goals
 - Prevent or minimize contaminated groundwater from serving as sources of current and future vapor intrusion.

Target Remediation Zones – Groundwater / Vadose Zone

- Former Dump Areas A, B, D, and E and the underlying groundwater



- Distal Plume - groundwater outside of Source Areas





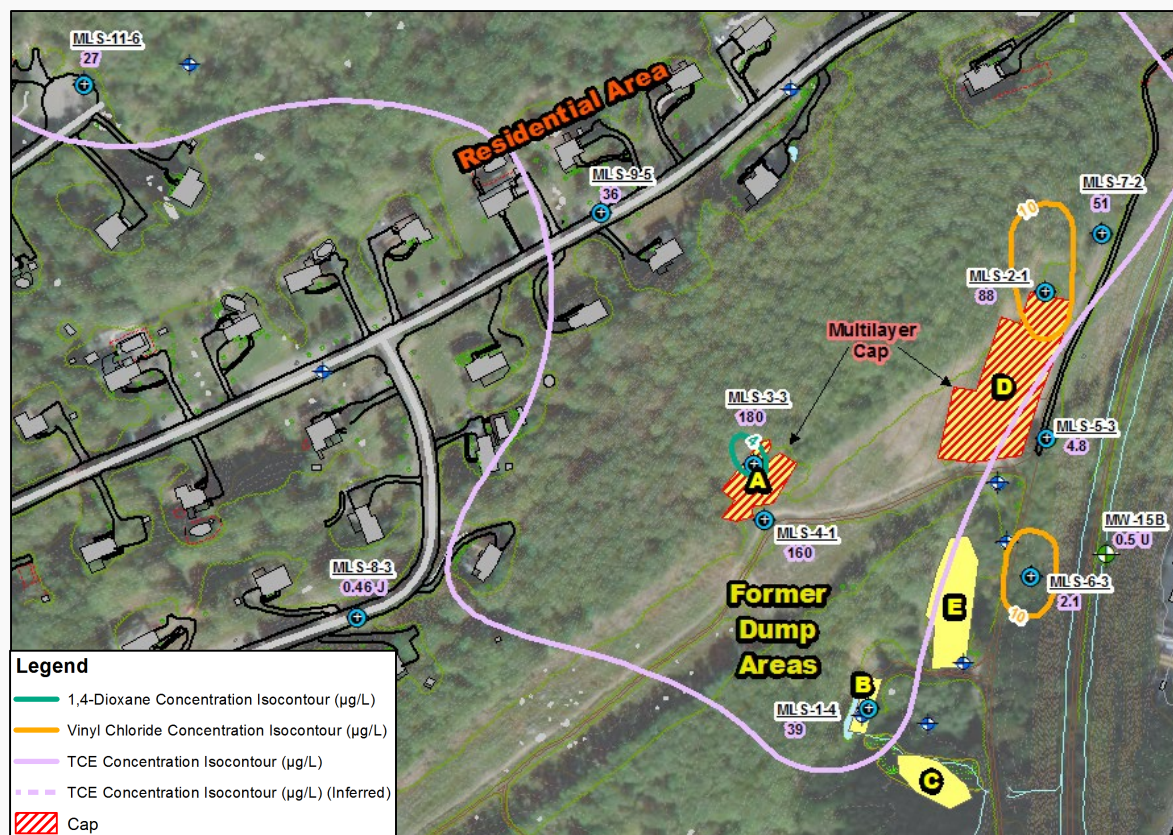
OU2 Feasibility Study Alternatives

| | Source Area Vadose Zone | Source Area Saturated Zone | Dilute Plume Saturated Zone |
|------------------|--------------------------------|-----------------------------------|------------------------------------|
| Alternative GW-1 | No Action | No Action | No Action |
| Alternative GW-2 | Capping | MNA | MNA |
| Alternative GW-3 | Capping + SVE | MNA | MNA |
| Alternative GW-4 | Capping + SVE | Amendment Injections | MNA |
| Alternative GW-5 | Capping + DPE | | MNA |

| | Soil Alternatives |
|-----------------|--------------------------|
| Alternative S-1 | No Action |
| Alternative S-2 | Capping (Soil Cover) |
| Alternative S-3 | Excavation |

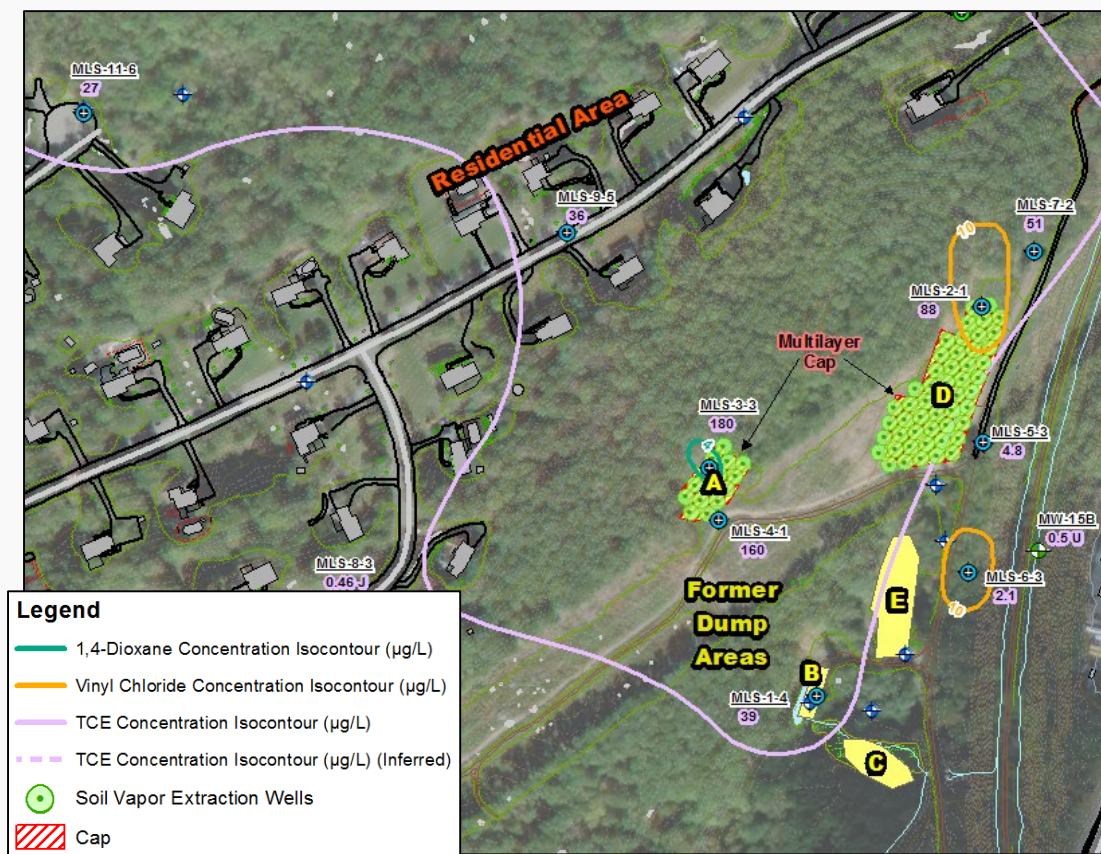
Remedial Alternative GW-2

Capping and Monitored Natural Attenuation



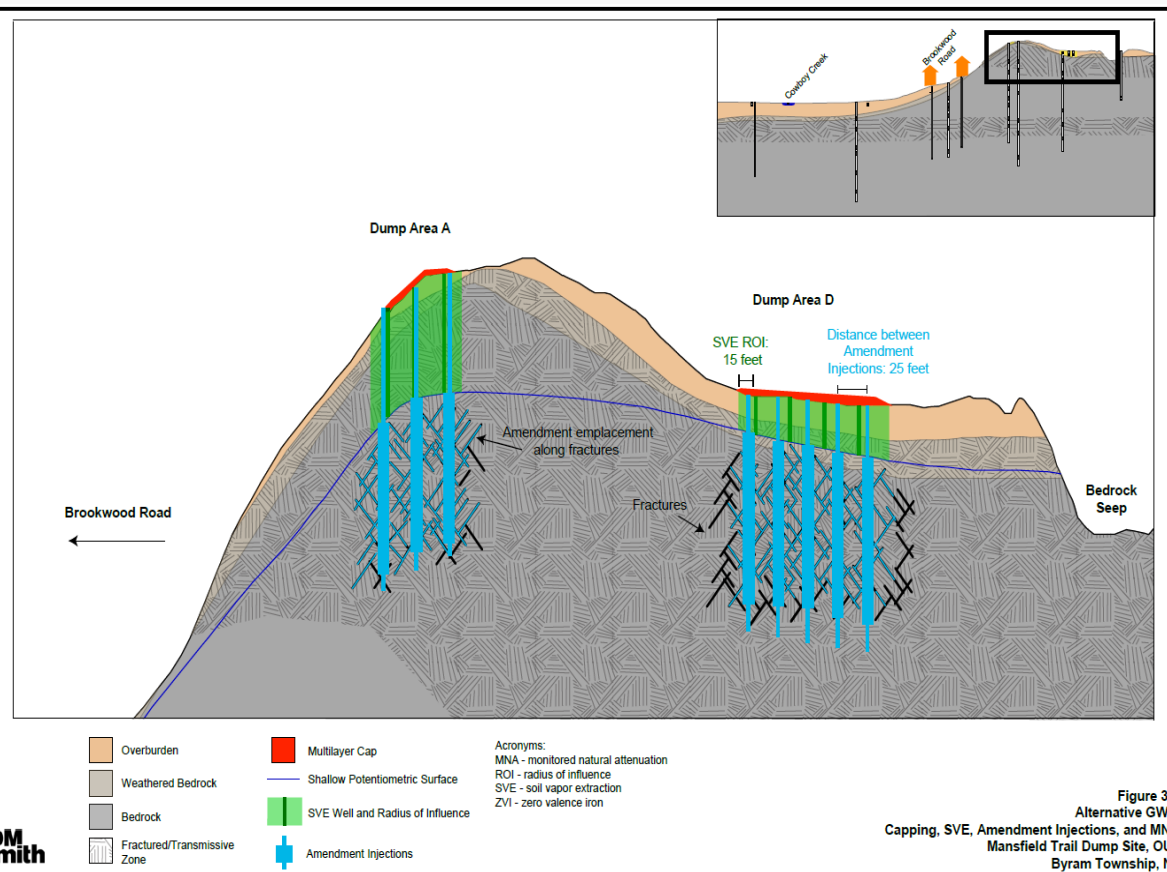
- Cap will reduce infiltration of water into subsurface minimizing spread of contamination
- Groundwater will be monitored to ensure concentrations are decreasing over time

Remedial Alternative GW-3: Capping + Vapor Extraction + Monitored Natural Attenuation



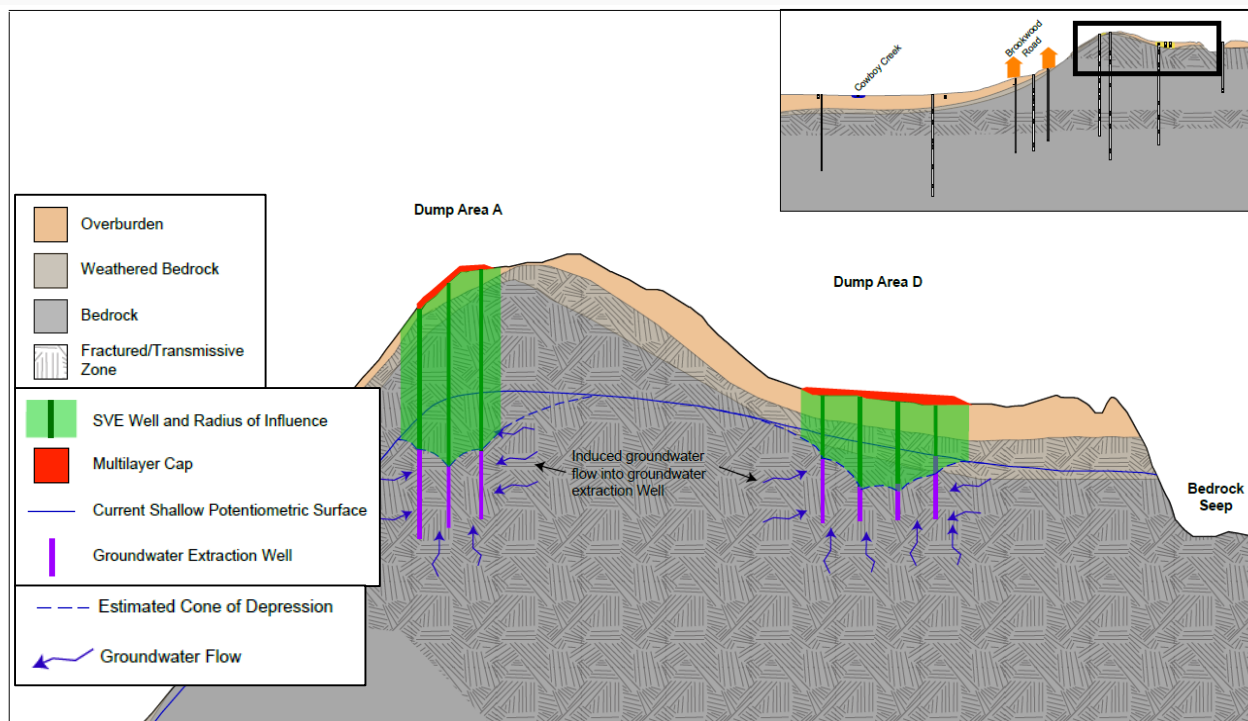
- Capping and Monitored Natural Attenuation as in Alt. 2
- Vapor extraction wells installed in vadose zone to target residual contaminant mass in fractured rock

Remedial Alternative GW-4 – Cap + Vapor Extraction + Injections + Monitored Natural Attenuation



- Capping and Monitoring as in Alt. 2
- Vapor extraction wells installed in vadose zone to target residual contaminant mass in fractured rock
- Injections of pilot tested amendment to target contaminant mass in the saturated zone

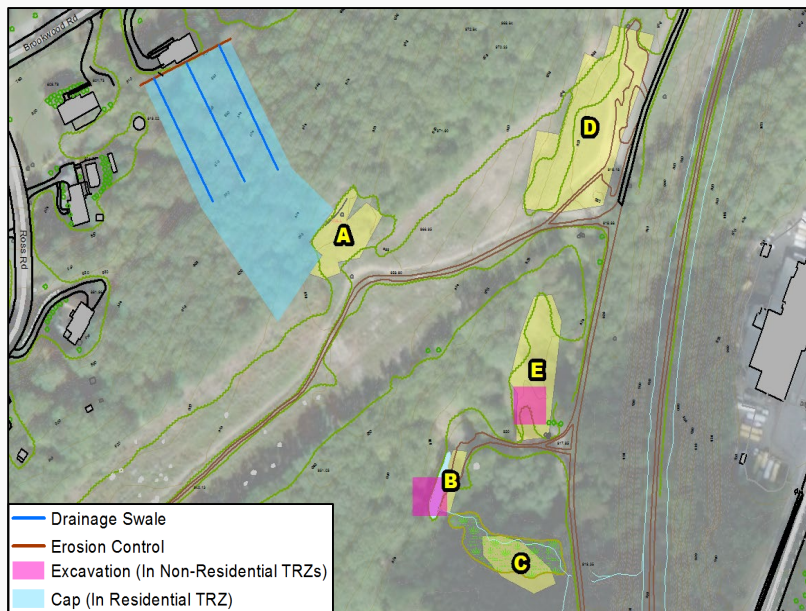
Remedial Alternative GW-5 – Cap + Dual Phase Extraction + Monitored Natural Attenuation



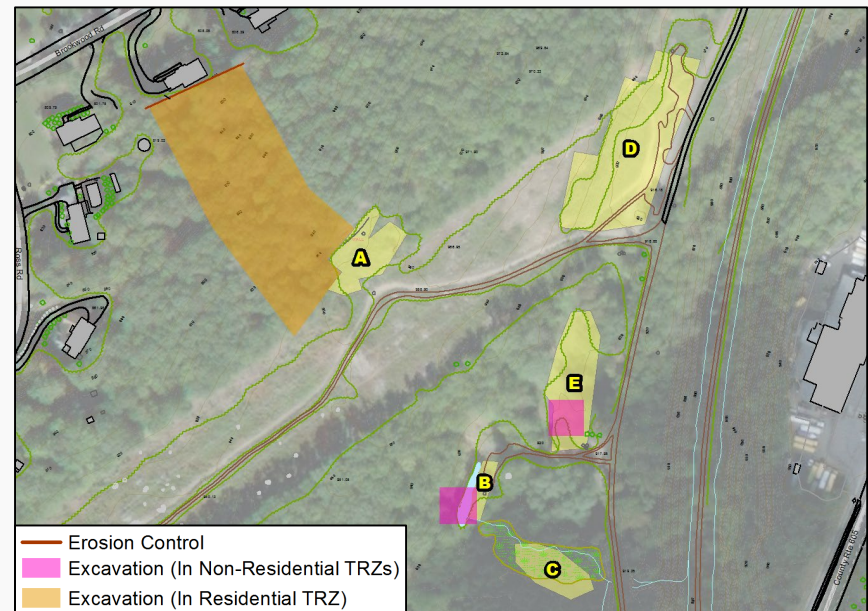
- Capping and Monitoring as in Alt. 2
- Vapor extraction wells installed into vadose zone to target residual contaminant mass in fractured rock
- Groundwater extraction wells installed in saturated zone to target contaminant mass in fractures below water table

Soil Remedial Alternatives

S2 - Capping



S3 - Excavation





Common Elements

- Long Term Groundwater Monitoring
- Residential Vapor Sampling and Mitigation System Maintenance
- Pre-Design Investigation
- Remedial Design
- Institutional Controls
- Site Restoration
- Five-Year Site Reviews



Nine Criteria

Threshold Criteria

1. Overall protection of human health and the environment
2. Compliance with ARARs (applicable or relevant and appropriate standards)

Primary Balancing Criteria

3. Long-term effectiveness and permanence
4. Reduction of toxicity, mobility or volume
5. Short-term effectiveness
6. Implementability
7. Cost

Modifying Criteria

8. State acceptance
9. Community acceptance



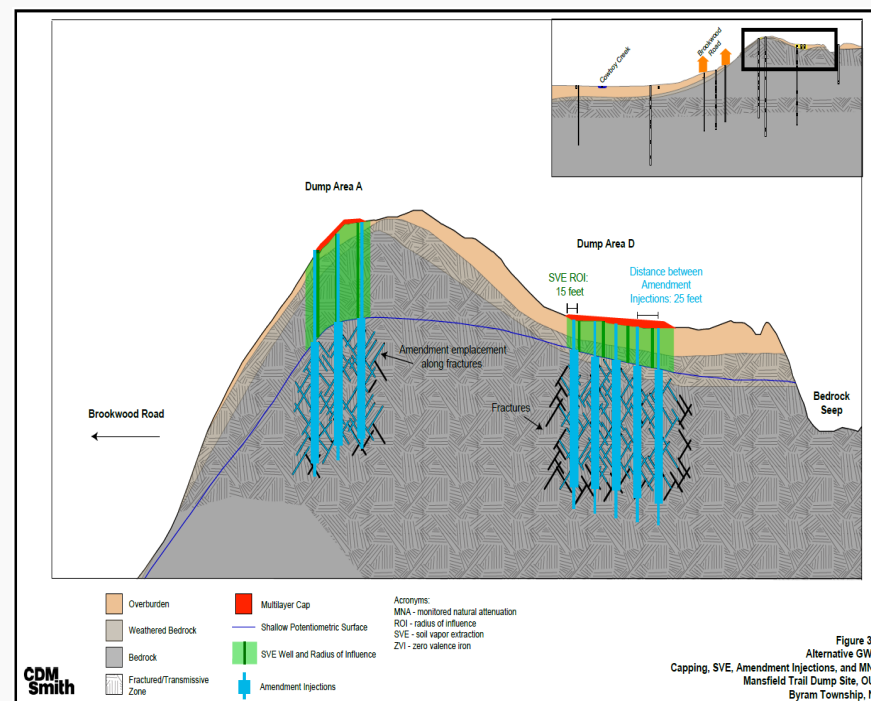
EPA's Preferred Alternatives

| | Source Area Vadose Zone | Source Area Saturated Zone | Dilute Plume Saturated Zone |
|------------------|-------------------------|----------------------------|-----------------------------|
| Alternative GW-1 | No Action | No Action | No Action |
| Alternative GW-2 | Capping | MNA | MNA |
| Alternative GW-3 | Capping + SVE | MNA | MNA |
| Alternative GW-4 | Capping + SVE | Amendment Injections | MNA |
| Alternative GW-5 | Capping + DPE | | MNA |

| | Soil Alternatives |
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| Alternative S-1 | No Action |
| Alternative S-2 | Capping (Soil Cover) |
| Alternative S-3 | Excavation |

Remedy Considerations

- Complex Geology – longer time frames for alternatives without active treatment
 - EPA believes GW-4 will be the most effective and the quickest way to reduce contamination in the subsurface and groundwater
- Full restoration of the aquifer will most likely take a significant amount of time
- Pilot testing necessary to ensure effectiveness of injection amendments and vapor extraction system





Next Steps

- Public Comments
- Signing the Record of Decision
- Remedial Design
 - Pilot Testing
- Implementing the Remedy



Questions/Comments

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