

HIDDEN LANE LANDFILL SUPERFUND SITE

Sterling, Loudoun County, VA

Site Update

November 18, 2019



- Update on Waterline Design
- Update on Superfund
- Revitalization Initiative

Agenda

- Review of the Source Area Investigation
- Next Steps: Proposed Plan & Record of Decision for Source Area and Landfill

Hidden Lane Landfill



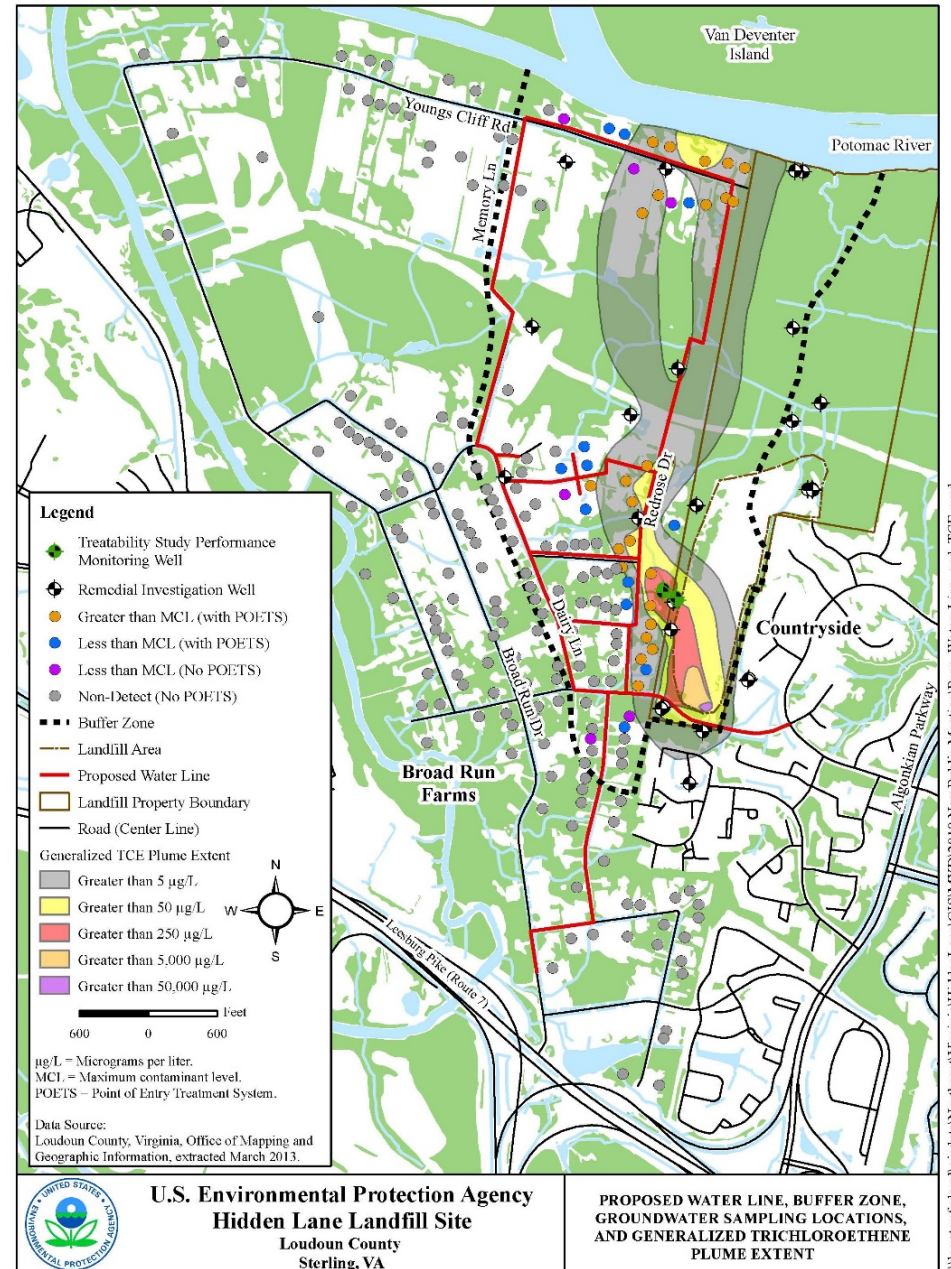


Environmental Summary

- **Groundwater:** Contaminated by TCE and potential breakdown products
- **Landfill:** Capped with 2 ft. impermeable clay layer
- **Methane:** No detections since 2011,
 - EPA stopped sampling for methane in 2017
- **Landfill Leachate, Soil, Surface Water & Sediments:** No detections above EPA Human Health or Ecological Risk numbers

Waterline Extension and Land Use Controls

- **Goal:** Prevent human exposure to TCE in groundwater
- **Buffer zone:** addressed potentially impacted residences (124 properties)
- **Land Use Controls** to protect this remedy
 - Restrict groundwater use in buffer zone to non-potable use



Impacts on Buffer Zone Residences

EPA/DEQ will:

Connect residence
to Loudoun Water

Abandon existing
residential well

Remove Treatment
Systems



EPA/DEQ/County will work together on land use restrictions to prohibit use of groundwater for potable use within Buffer Zone

Options for Buffer Zone Residents

Residents may:

- Decline hook-up
 - May change their mind up to point EPA turns waterline over to Loudoun Water
 - Residence responsible for hook-up once Loudoun Water takes control of waterline
- Request their well not be abandoned and used for non-potable use
 - EPA will consult with residents to discuss potential risks
- May request to keep treatments systems
 - Future O&M of treatment system becomes owner's responsibility

EPA Remedial Design and Action Funding Process

1. Remedial Design: Funded and Ongoing
2. Remedial Action Funding Steps:
 - A. Priority Panel: Presented Site Info November 2020
 - B. Priority Panel Funding Decision: June 2020
 - Potential Outcomes
 - a. Fully funded
 - b. Partially Funded
 - 2020 – funding for easements
 - 2021 – construction funding (automatic)
 - c. Funding Declined (return to Priority Panel)

EPA and Loudoun Water working closely on schedule

Waterline Extension Design Schedule

EVENT	DUE DATE
Design Kick-Off Meeting with EPA/Loudoun Water/Design Contractor	July 2019
Street Survey for Waterline Layout	Nov./Dec. 2019
Questionnaire to Buffer Zone Property Owners	December 2019
Draft 60% - Waterline Design	December 2019
Draft 90% - Waterline Design	April 2020
Final Waterline Design	May 2020

PLEASE RETURN QUESTIONNAIRES WITHIN 30 DAYS!

Example Questions

- Do you want to be connected to Loudoun Water?
- Do you want to keep the existing treatment system?
- Do you want keep your groundwater well for non-potable service?
- Are there any specific known details/complexities to current or future system connections?

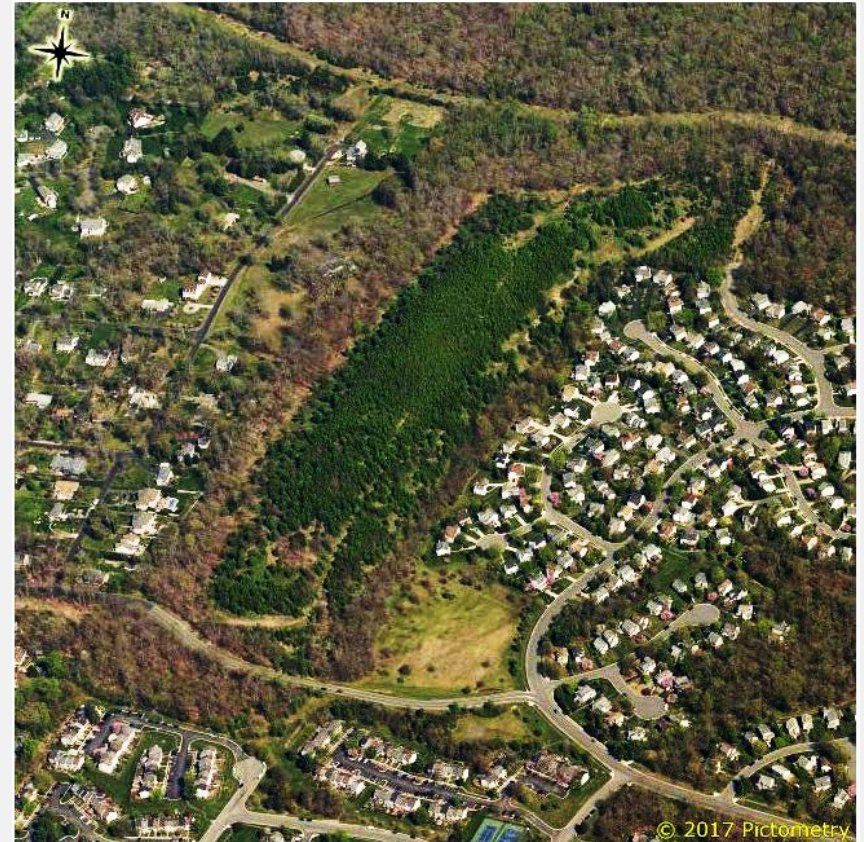
PLEASE RETURN QUESTIONNAIRES WITHIN 30 DAYS!

Update: Superfund Revitalization Initiative

Community Based Process

Purpose

Identify potential future use options for the Hidden Lane Landfill site based on site suitability, community goals, land use and regional opportunities.



Note: EPA does not decide or pay for the future land use of properties after a cleanup but supports the safe redevelopment of Superfund sites through tools and technical assistance.

Potential Future Use Zones



Future Use Zones

Zone A - Landfill Area

- Level ground (cap considerations)
- Steep slope (cap considerations)
- Buffer

Zone B - Potential Development

- Infill development (zoning considerations)

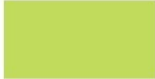




Zone C - Floodplain / Wetlands

- Limited passive recreation (floodplain considerations)

Potential Future Use Scenarios



Potential Future Use Scenario

-  Flexible light use (i.e., recreation, solar, habitat)
-  Passive recreation (i.e., hiking and riding trails, birdwatching)
-  Infill development (i.e., housing, agriculture, limited commercial)
-  Parking
-  Multi-use trail

On-line Survey

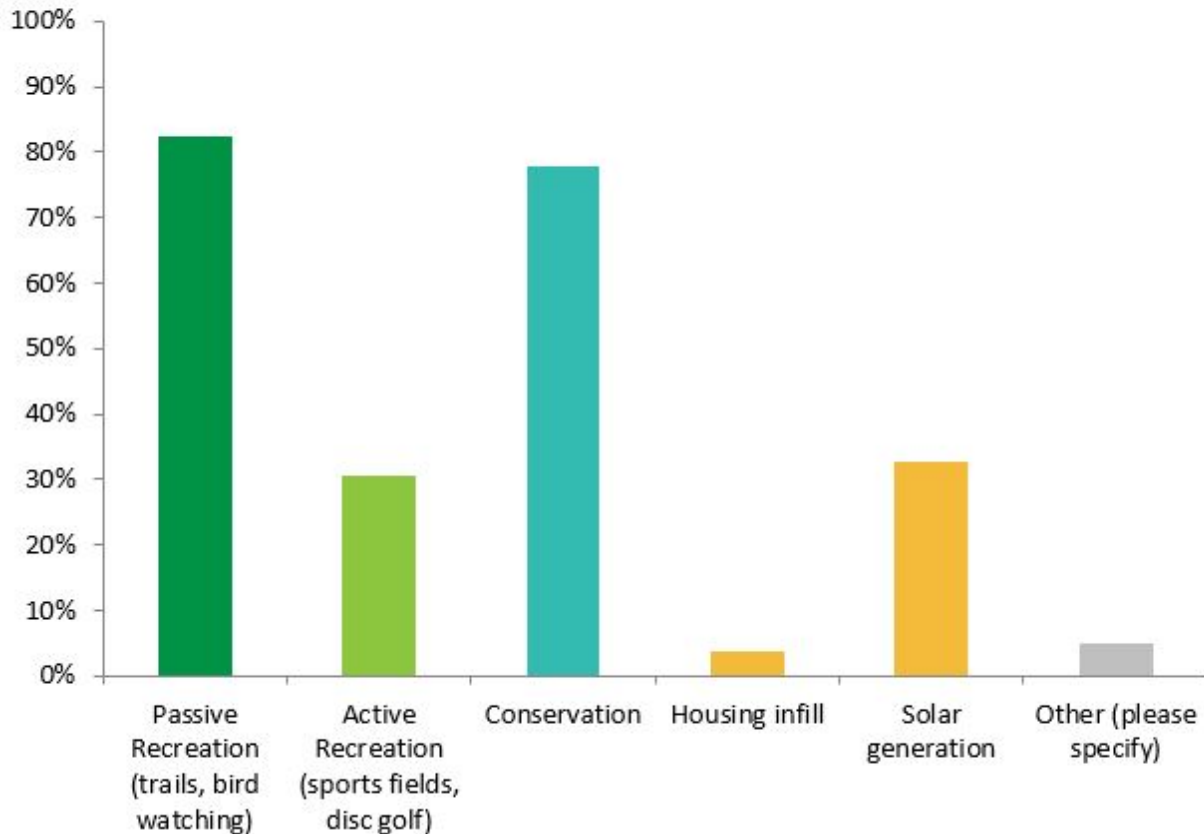
186 respondents

71% Countryside

14% Broad Run Farms

Survey Results

What types of future uses are most compatible with surrounding properties?



Major Concerns

- Traffic
- Noise
- Safety

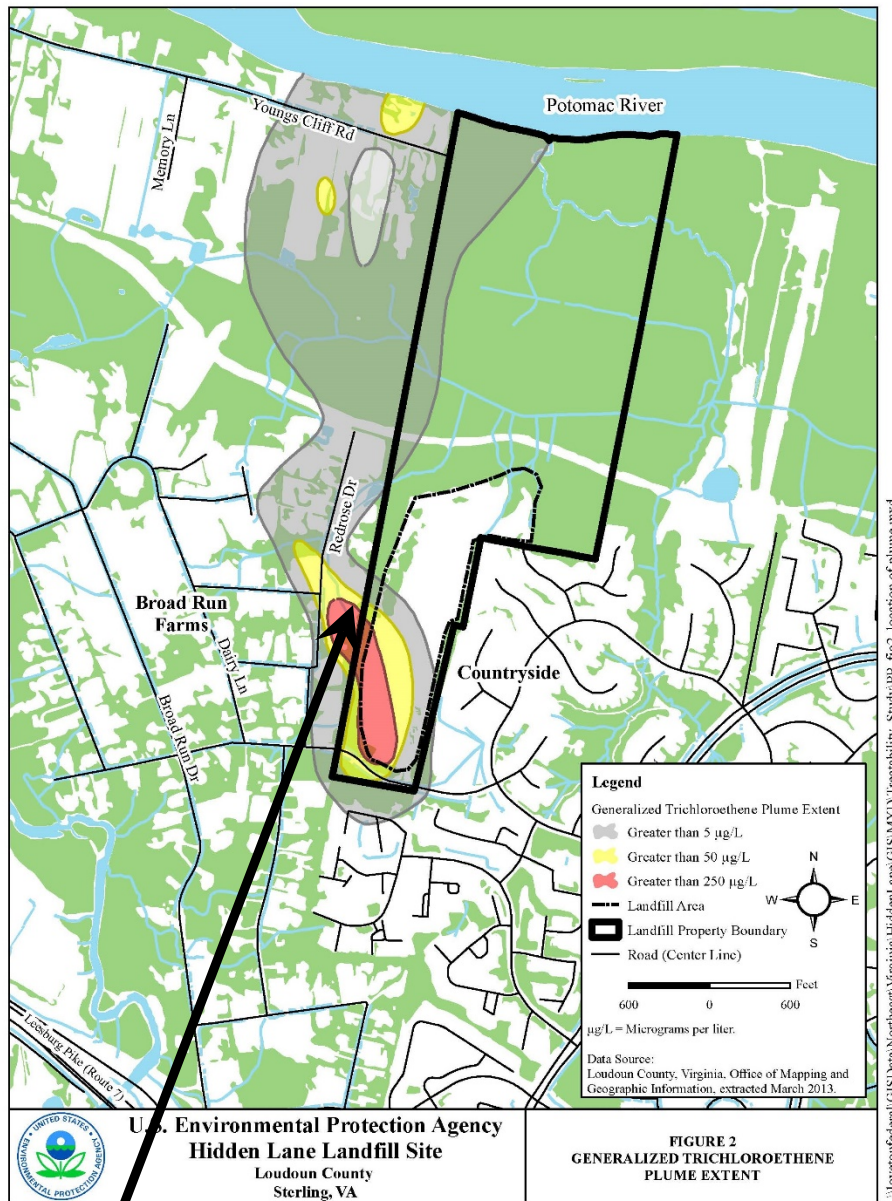
Major Opposition

- 75% against Housing Infill
- 38% against Active Recreation
- 20% against Solar Generation

Final Report due by end of year

Groundwater Contamination Findings

- Low concentration TCE plume w/ likely source southern end of landfill
- Primary human health risk due to TCE through ingestion, inhalation and dermal contact with groundwater
- Evaluated 18 homes for vapor intrusion. No risk due to vapor intrusion



2017 Bioremediation Pilot Study

WEST

EAST

Pilot Study

RI-14

Landfill

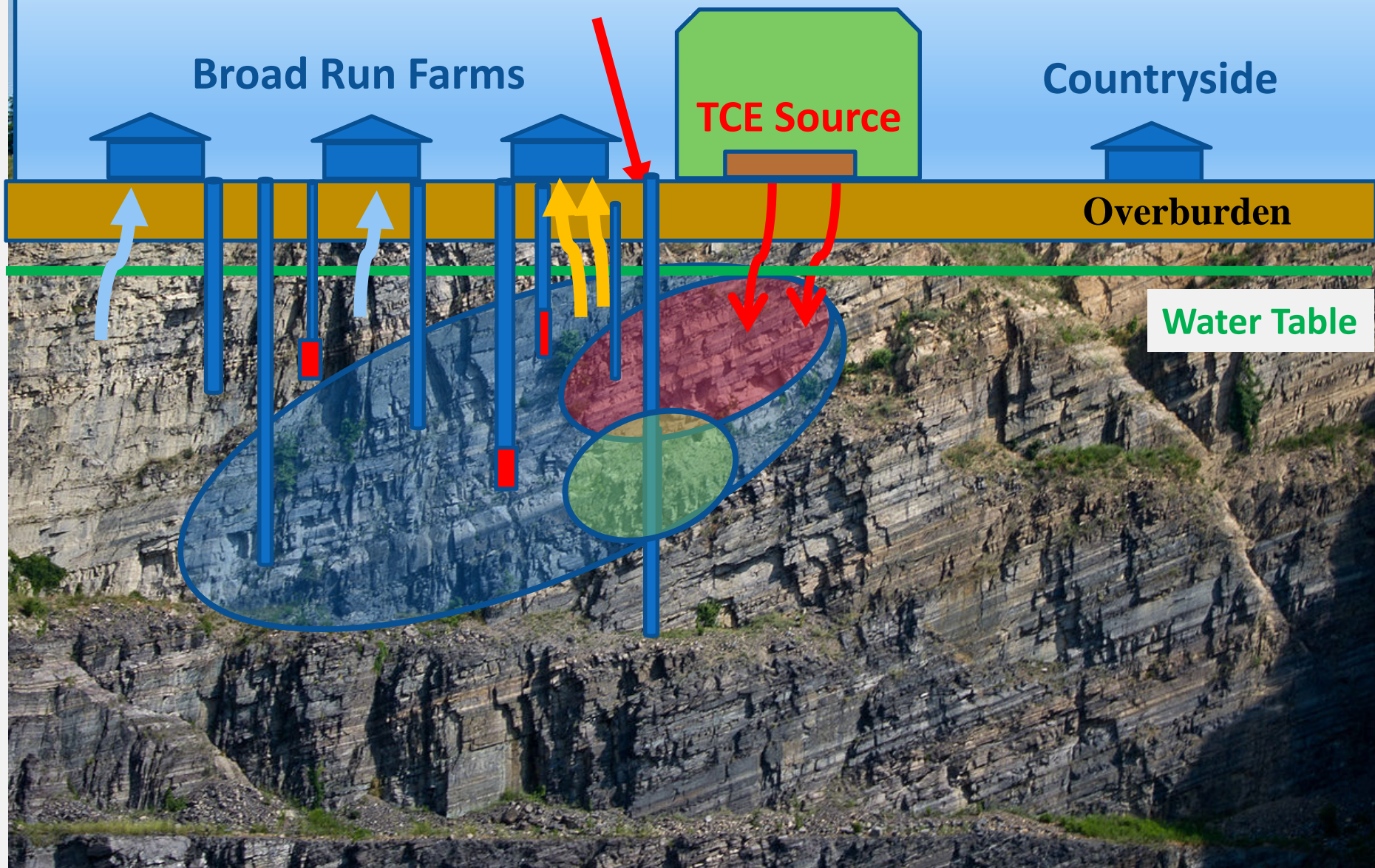
Broad Run Farms

TCE Source

Countryside

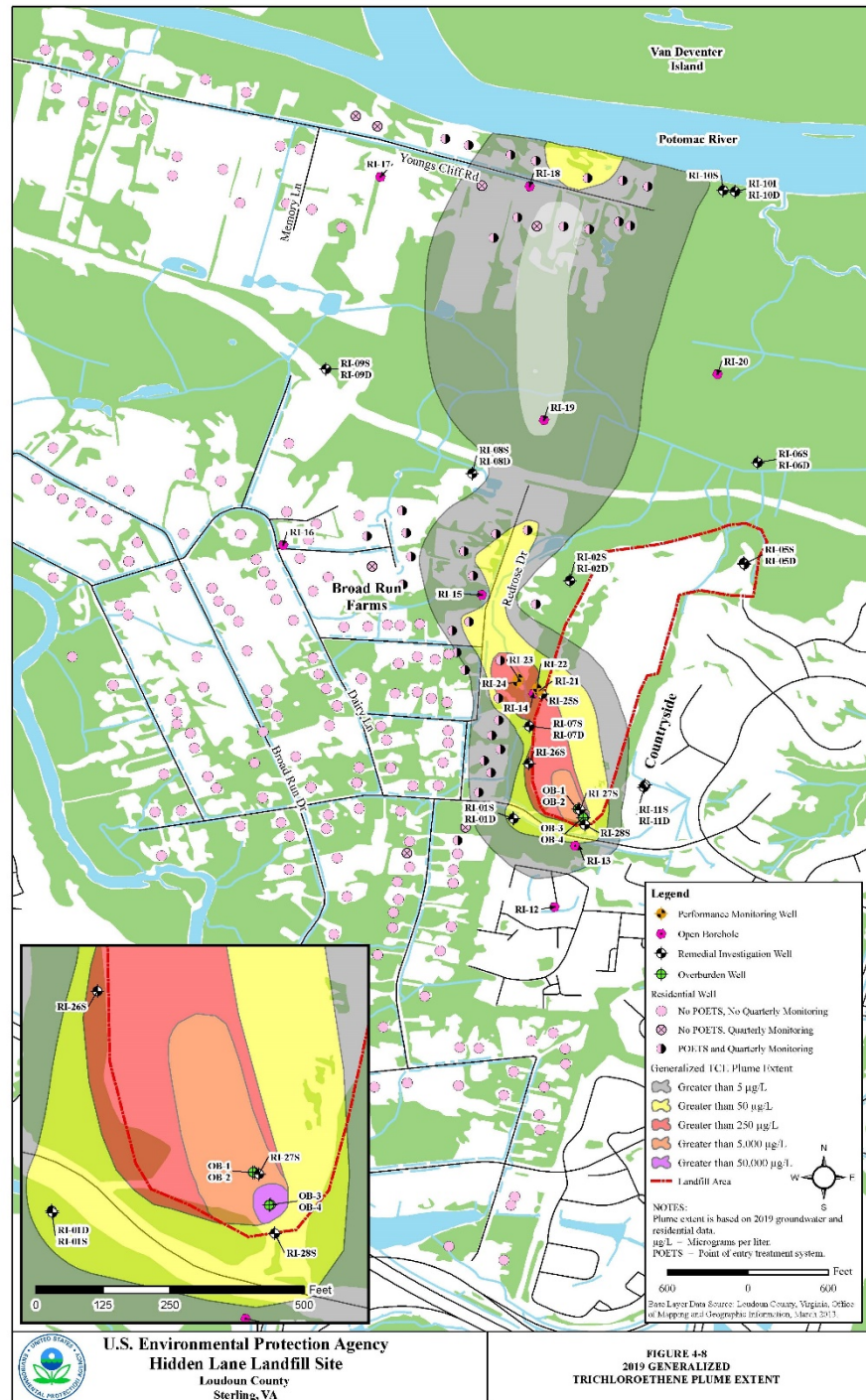
Overburden

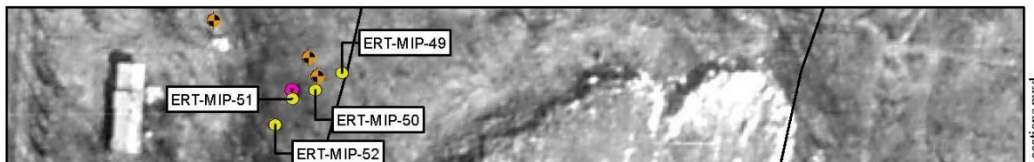
Water Table



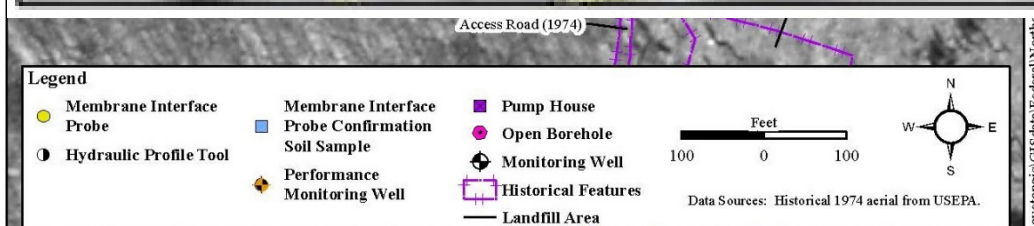
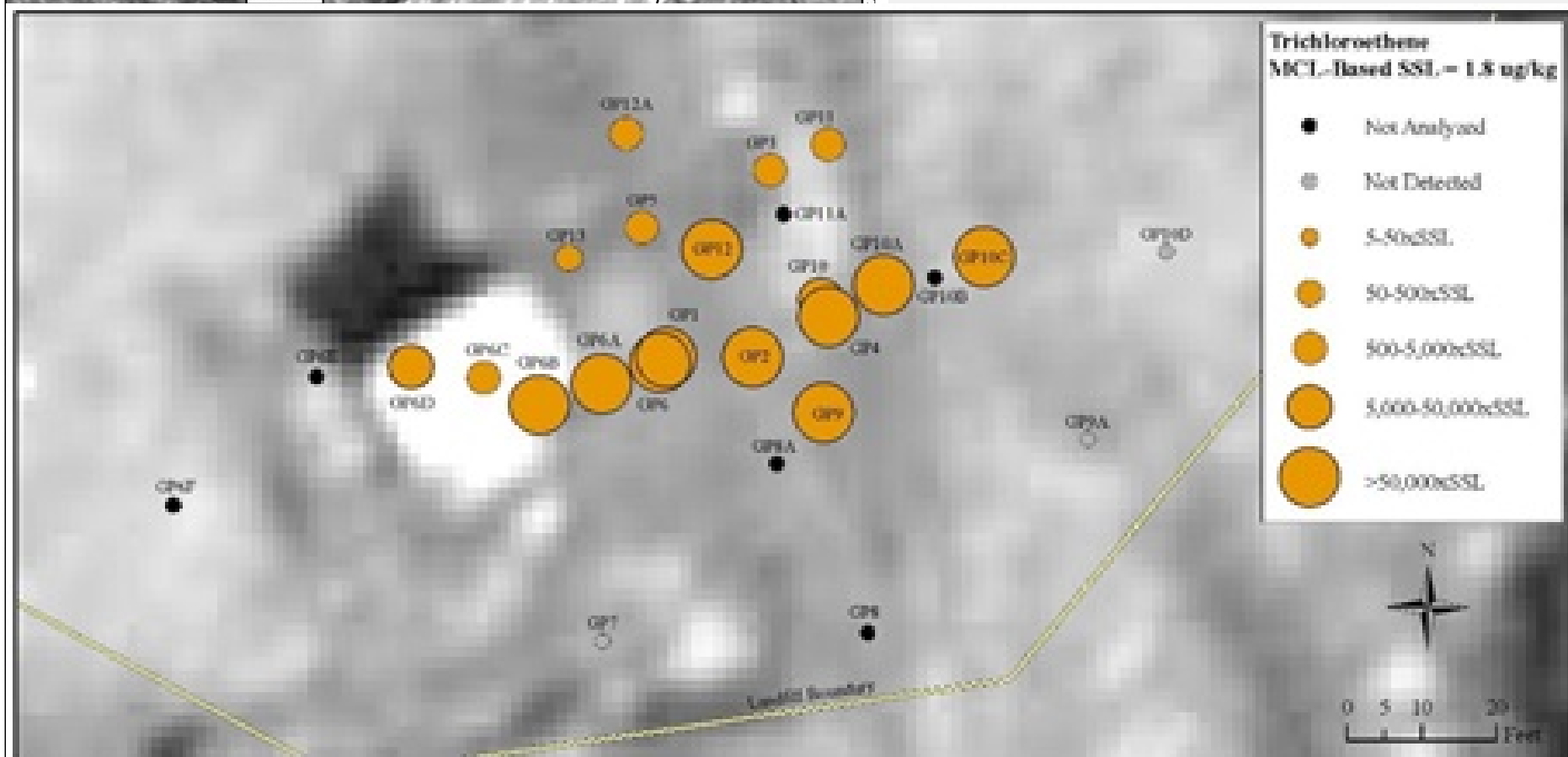
Findings of Source Area Investigation

- TCE source located near old landfill entrance in current parking area
- Source area believed to be associated with landfill equipment maintenance building
- High levels of contamination found in both bedrock and unconsolidated overburden aquifer
- Water table rose into overburden, like due to heavy rains of last few years





locations.mxd

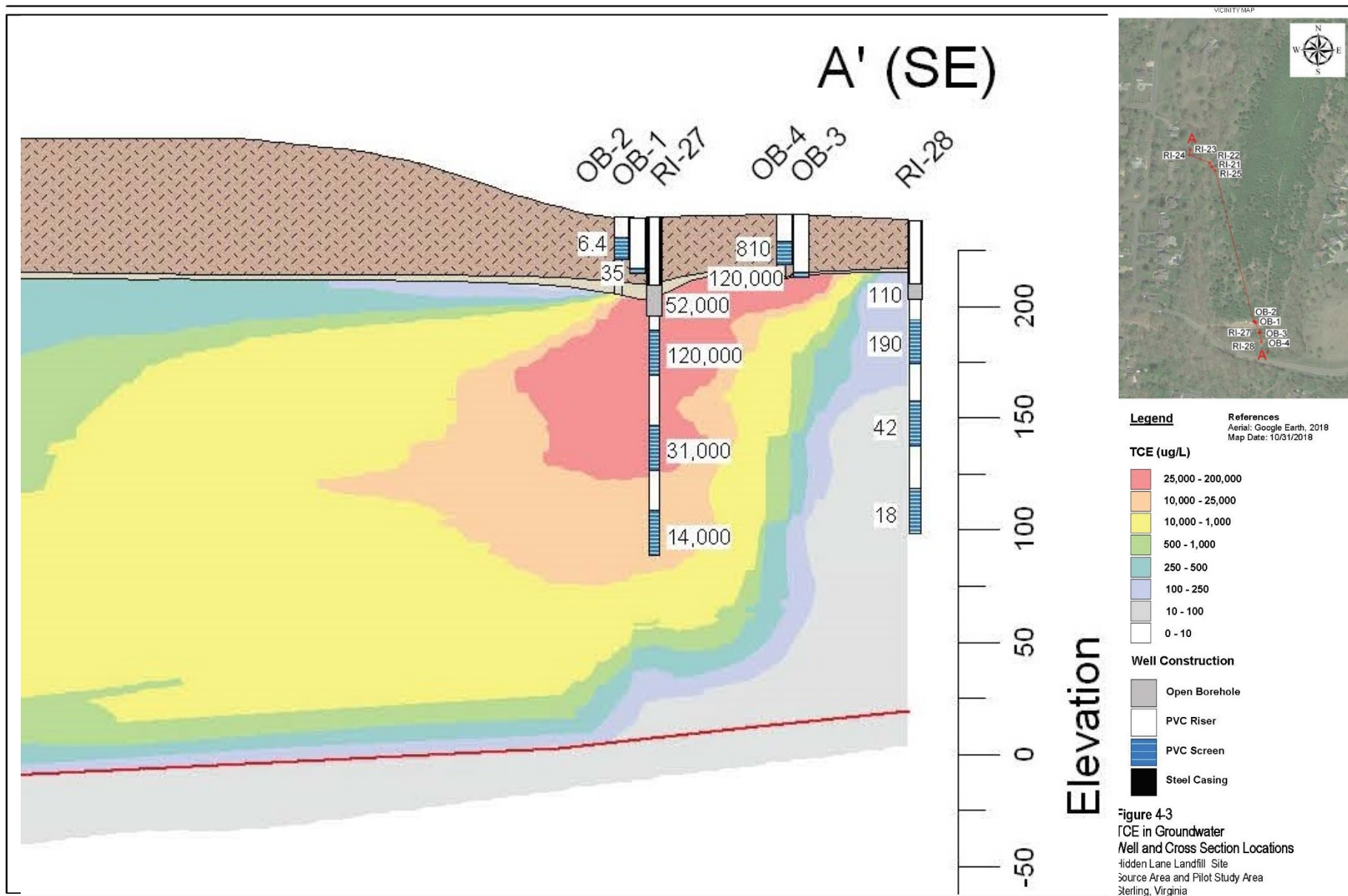


U.S. Environmental Protection Agency
Hidden Lane Landfill Site
 Loudoun County
 Sterling, VA

FIGURE 3-2
 MIP LOCATIONS, HPT LOCATIONS,
 AND SOIL CONFIRMATION
 SAMPLE LOCATIONS

List of Contaminants found in Source Area Groundwater

Analyte	Maximum Source Area Detection (ppb)	Maximum Residential Area Detection (ppb)	MCL (PPB)
TCE	120,000	300	5
1,1 DCE	6,700	30	7
Cis 1,2 DCE	33,000	ND	70
Vinyl Chloride	4,9000	ND	2
1,1,1 TCA	24,000	ND	200
1,1,2 TCA	170	ND	5
1,2 DCA	230	ND	5
Benzene	110	ND	5
Methylene Chloride	23,000	ND	5



West

East

Broad Run Farms

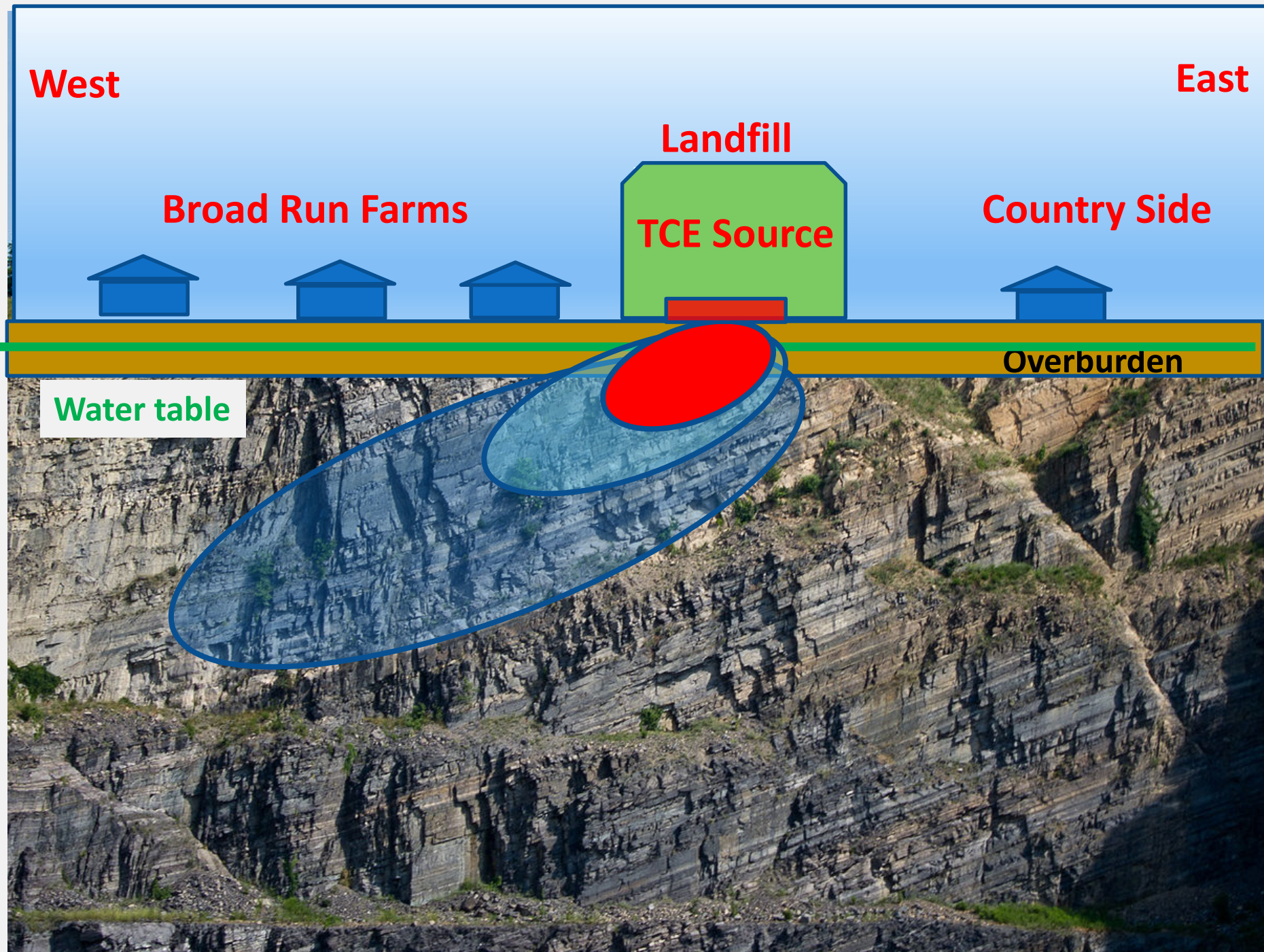
Landfill

Country Side

TCE Source

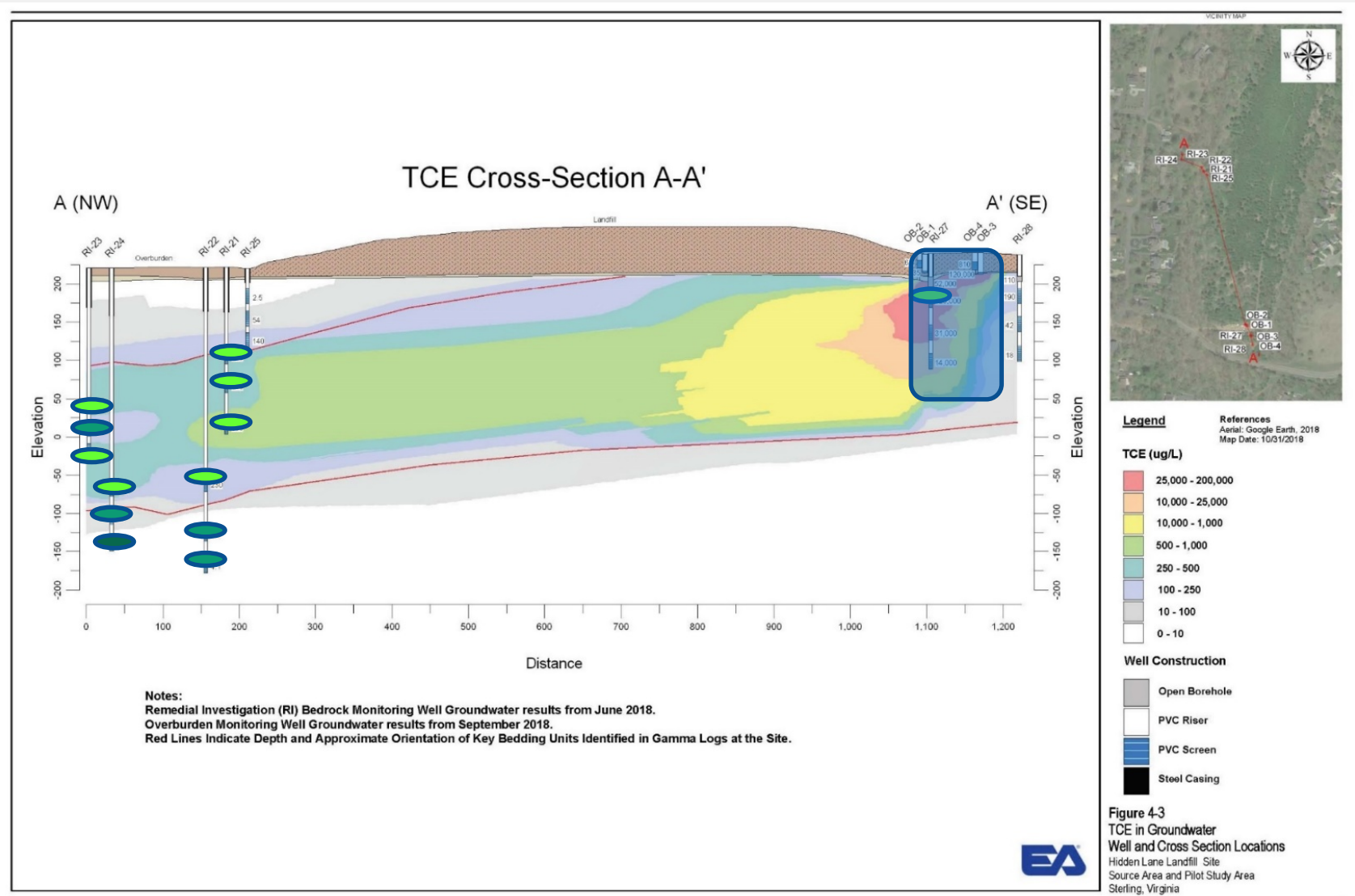
Overburden

Water table



Source Area Treatment Goals

Preliminary Dye Tracer Test



Next Step: Feasibility Study & Proposed Plan

Remedial Alternatives to Evaluate

Excavation w/ Offsite Disposal (Overburden Only)

In-Situ Chemical Oxidation

In-Situ Bioremediation

Thermal w/ Soil Vapor Extraction

Pump and Treat

QUESTIONS?

Thank You for Attending!

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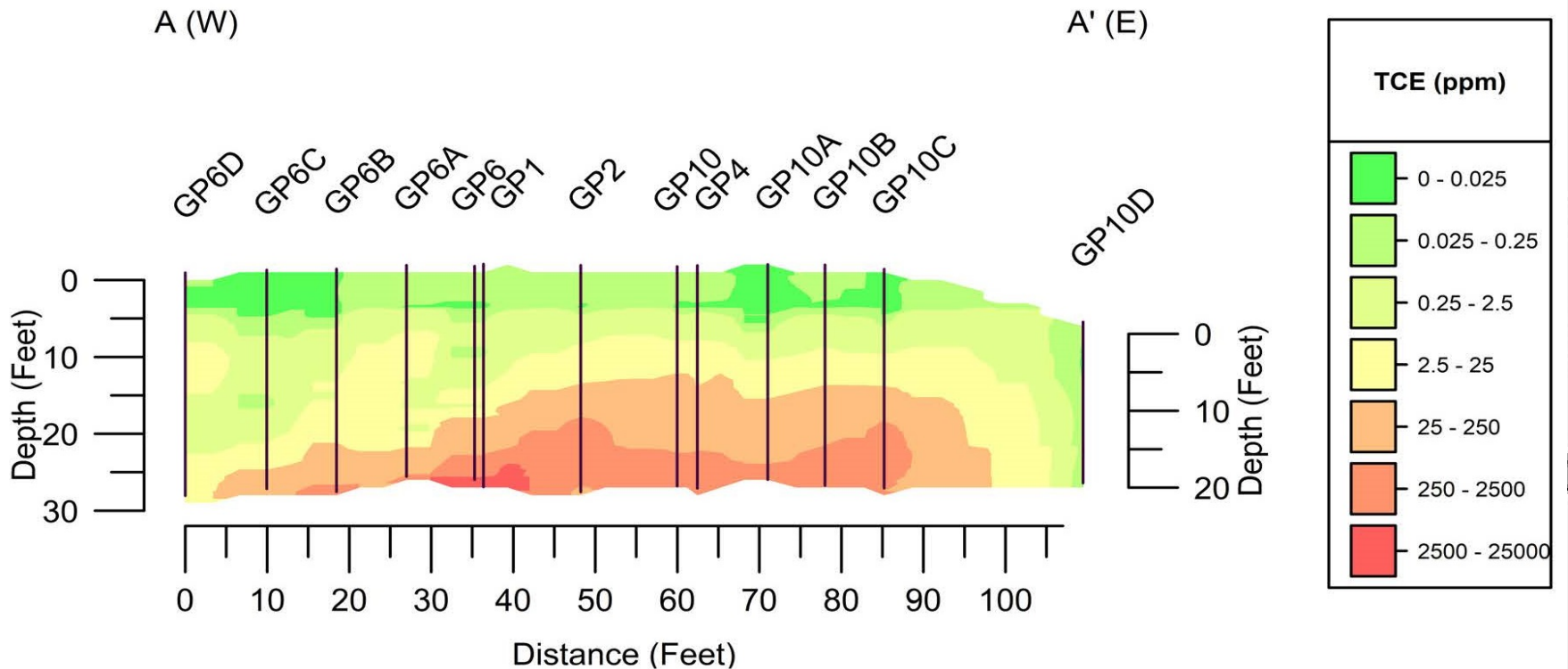
Extra Slides

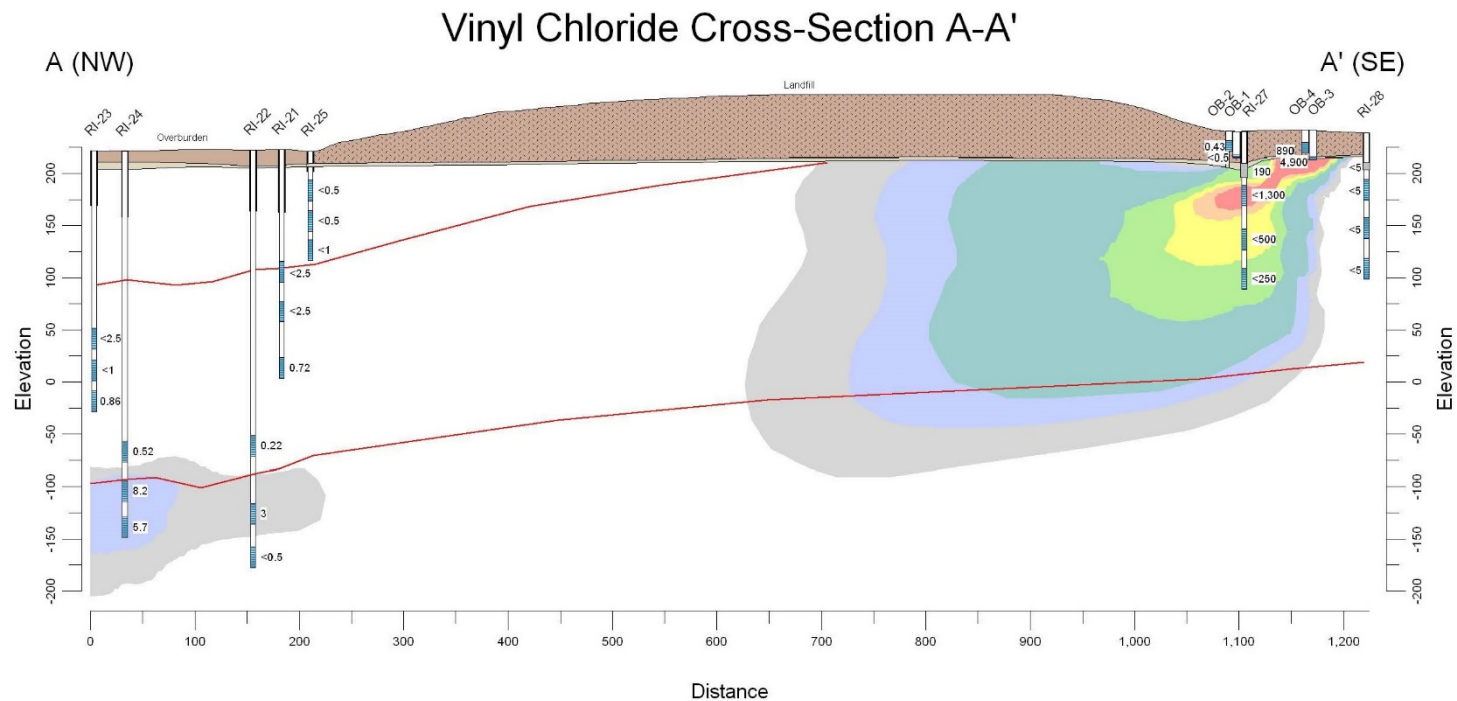
Source Area Contaminant Distribution

Maintenance Building



Ground Surface

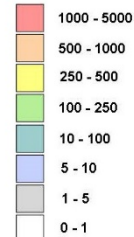




Legend

References
 Aerial: Google Earth, 2018
 Map Date: 10/31/2018

Vinyl Chloride (ug/L)



Well Construction

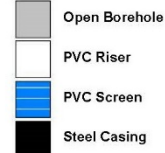


Figure 4-4
 Vinyl Chloride in Groundwater
 Well and Cross Section Locations
 Hidden Lane Landfill Site
 Source Area and Pilot Study Area
 Sterling, Virginia

