



Nockamixon TCE HSCA Site

Public Hearing

July 19, 2018

Nockamixon Township Municipal Building

➤ Agenda

- The Groundwater Investigation & Response
- Soil Investigation
- Vapor Intrusion Investigation & Response
- Next Steps
- Public Comments on the Response & the Contents of the Administrative Record

➤ Contaminants of Concern

Trichloroethene (TCE)

- Used as an industrial solvent - degreaser for metal parts
- Septic tank cleaner

Health Effects

- Known carcinogen
- Central nervous system
- Kidney & liver damage
- Fetal Development

➤ Contaminants of Concern

Tetrachloroethene (PCE)

- Used as an industrial solvent - degreaser for metal parts
- Used for dry cleaning

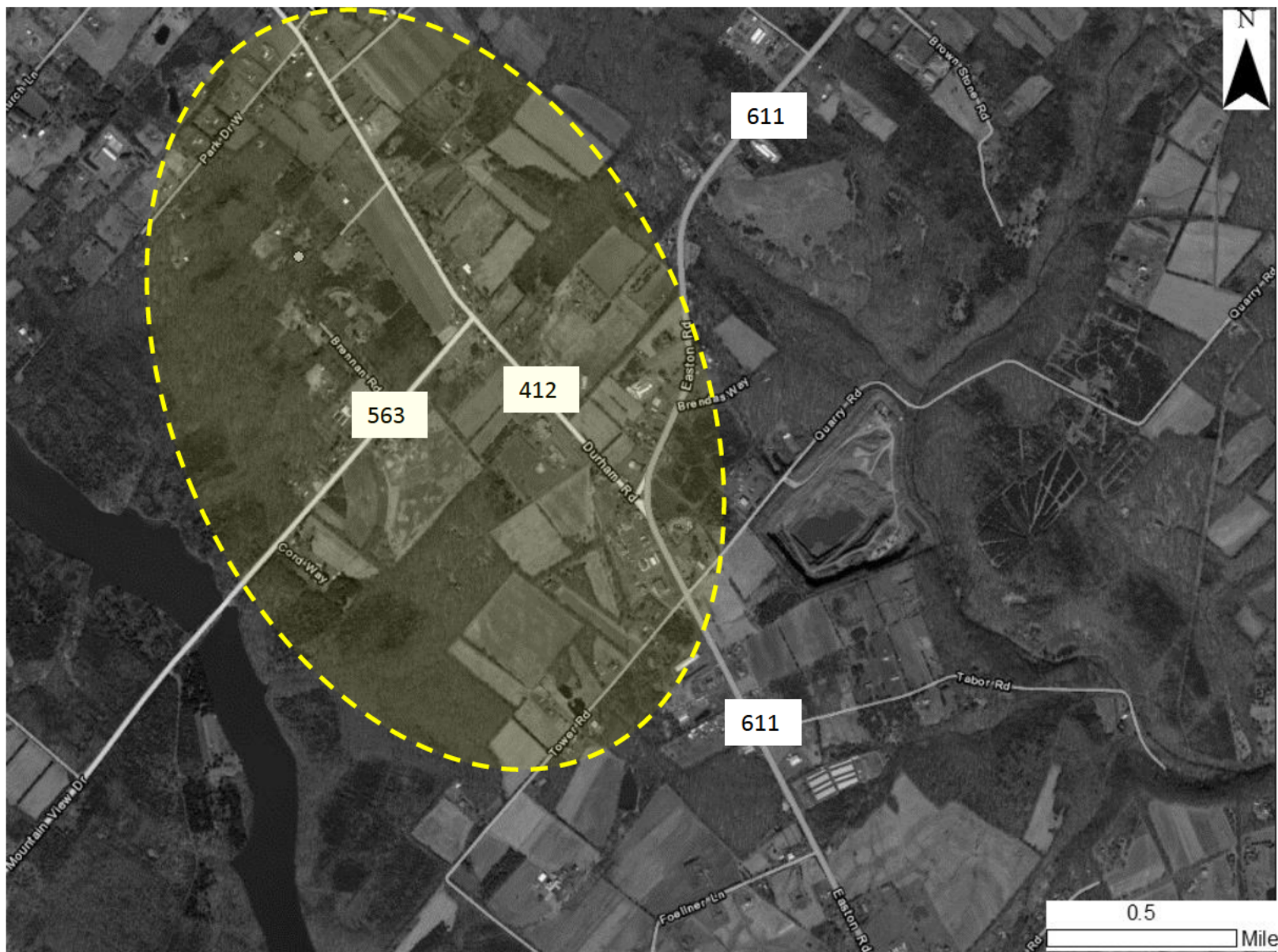
Health Effects

- Possible carcinogen.
- Kidney & liver damage

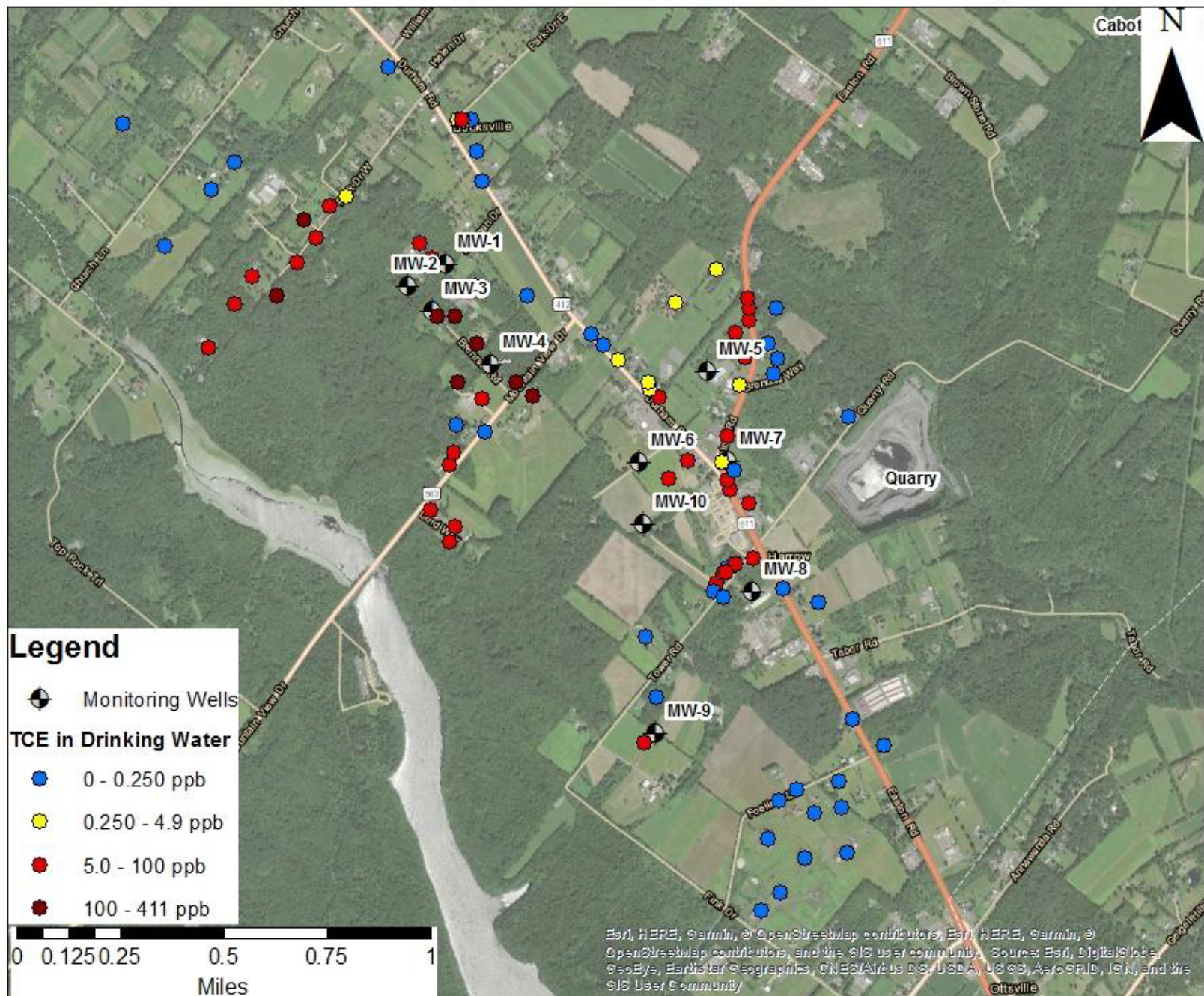
▶ Groundwater Investigation & Response

- 2009: the BCHD referred the Site to DEP after TCE contamination was discovered in wells serving a local restaurant & a number of nearby homes.
- DEP sampled more than 100 private wells in the area.
- 2012 & 2013: DEP installed 17 monitoring wells in the Site area.

Groundwater Area of Concern



Nockamixon TCE HSCA Site, Nockamixon Township, Bucks County



Groundwater Investigation & Response

- TCE concentrations in drinking water ranged up to 411 ppb.
- PCE concentrations in drinking water ranged up to 92 ppb.

The Maximum Contaminant Level (MCL) for TCE & PCE in drinking water is 5 parts per billion (ppb).

1 ppb = 1 drop of water in an Olympic sized swimming pool.

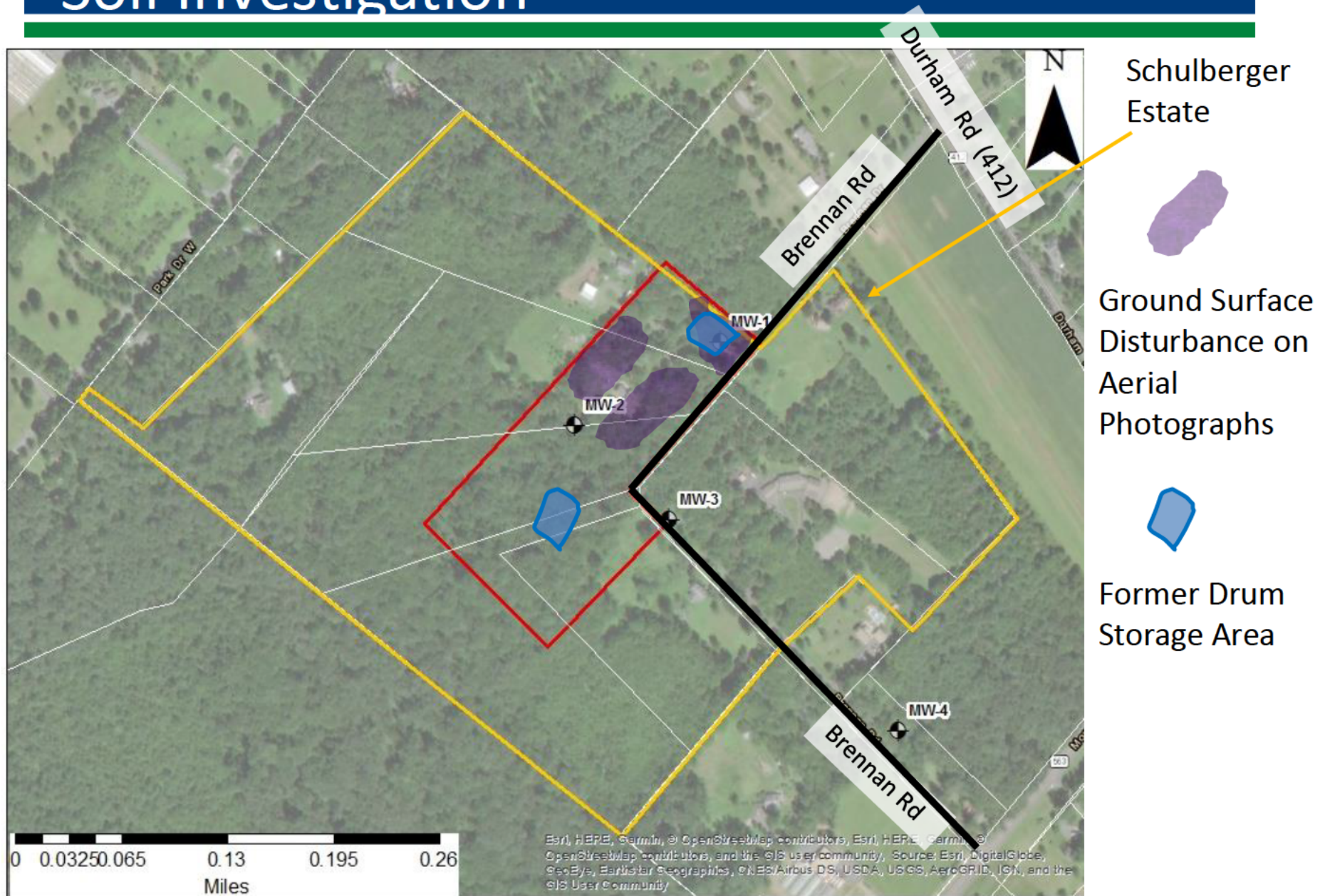
➤ Groundwater Investigation & Response

- In August 2011, DEP initiated an Interim Response Action;
 - Carbon filtration systems have been installed at 41 local properties served by private wells.
 - DEP sampled & maintained the filtration systems for one-year before turning over the maintenance to the homeowners.

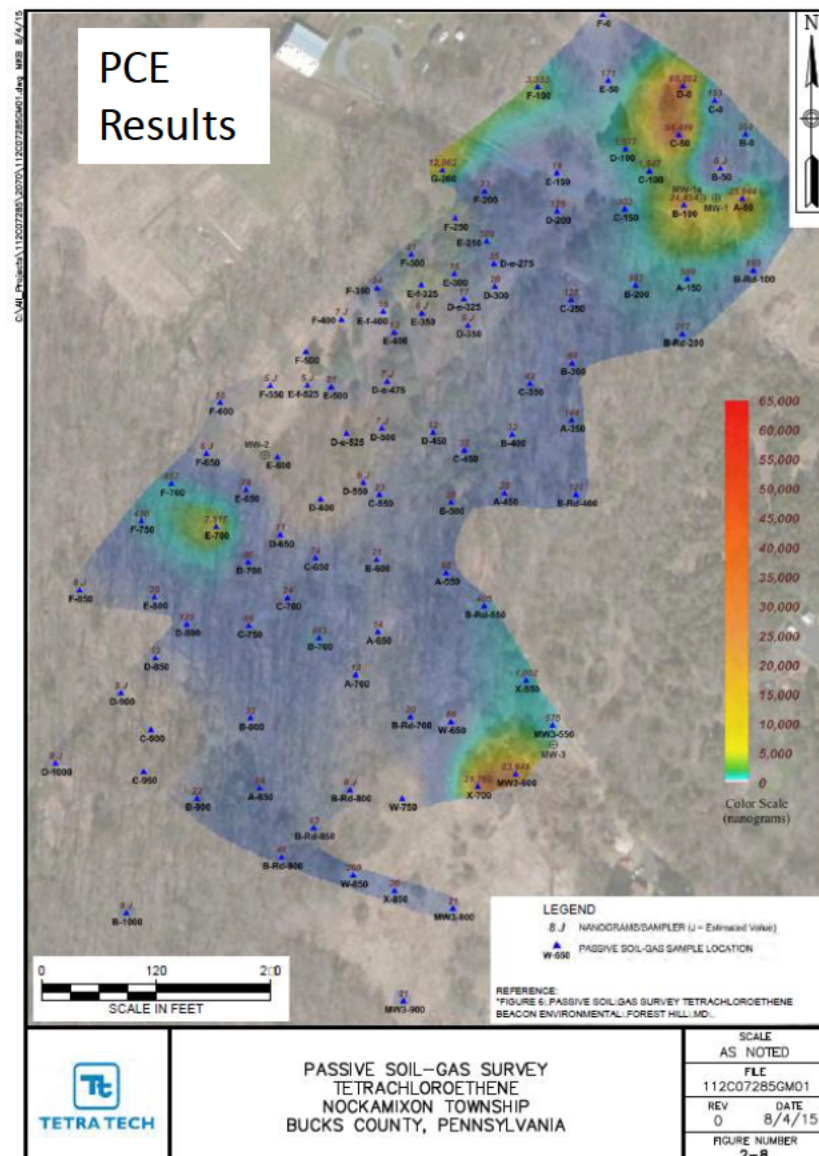
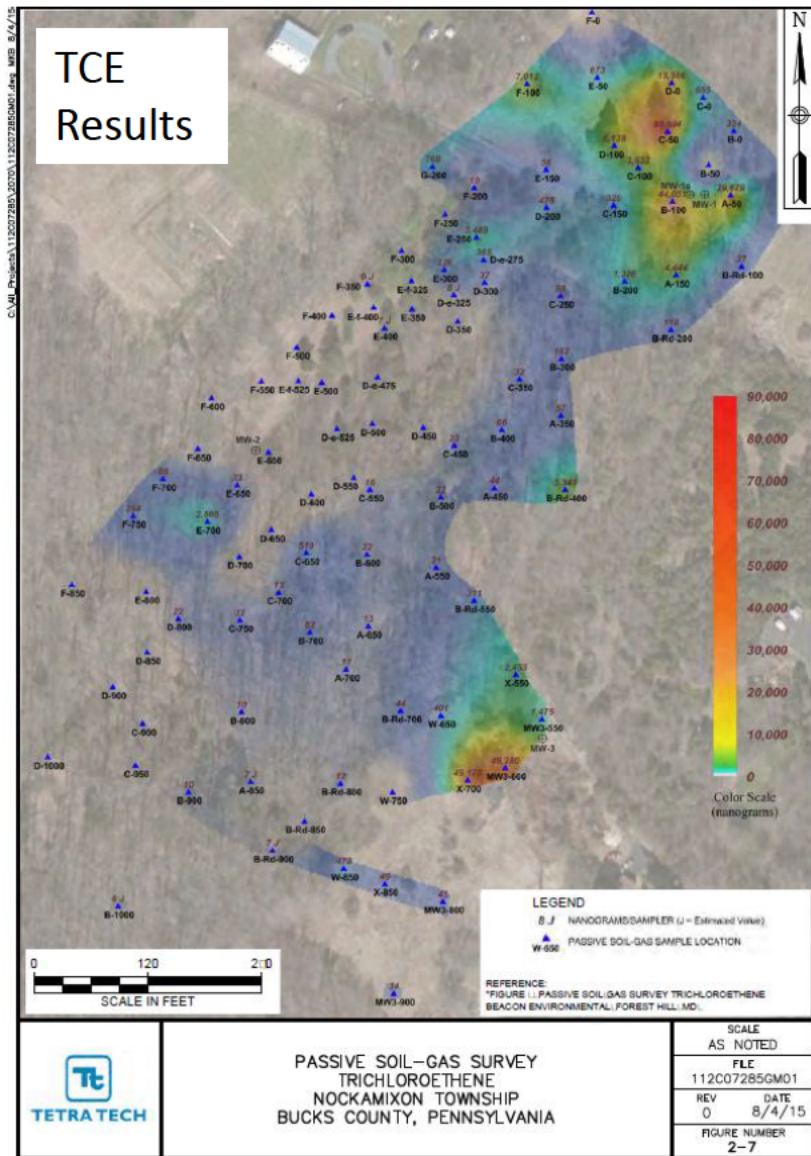
➤ Soil Investigation

- DEP identified a property along Brennan Road (formerly owned by William Schulberger's Estate) as the source of the groundwater contamination. Mr. Schulberger reportedly disposed of hazardous substances on the property prior to 1973.
- 2015: DEP initiated a soil investigation.

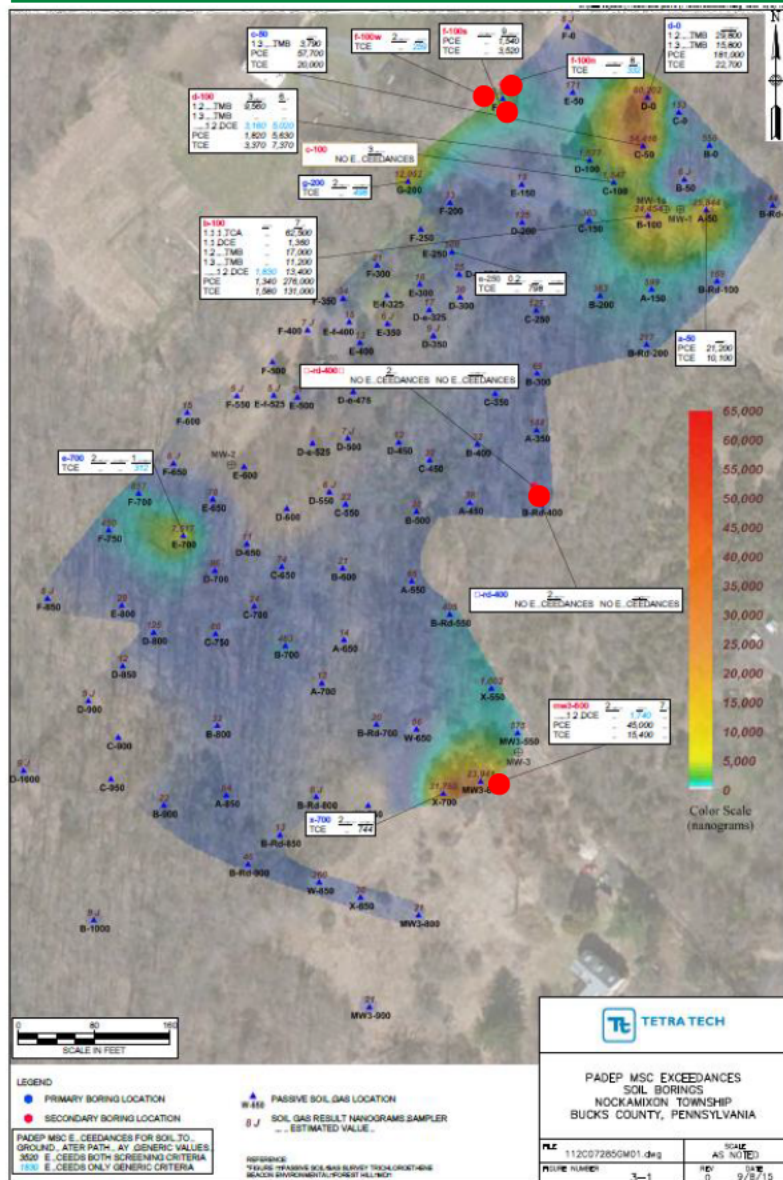
Soil Investigation



Soil Investigation – Passive Soil Gas

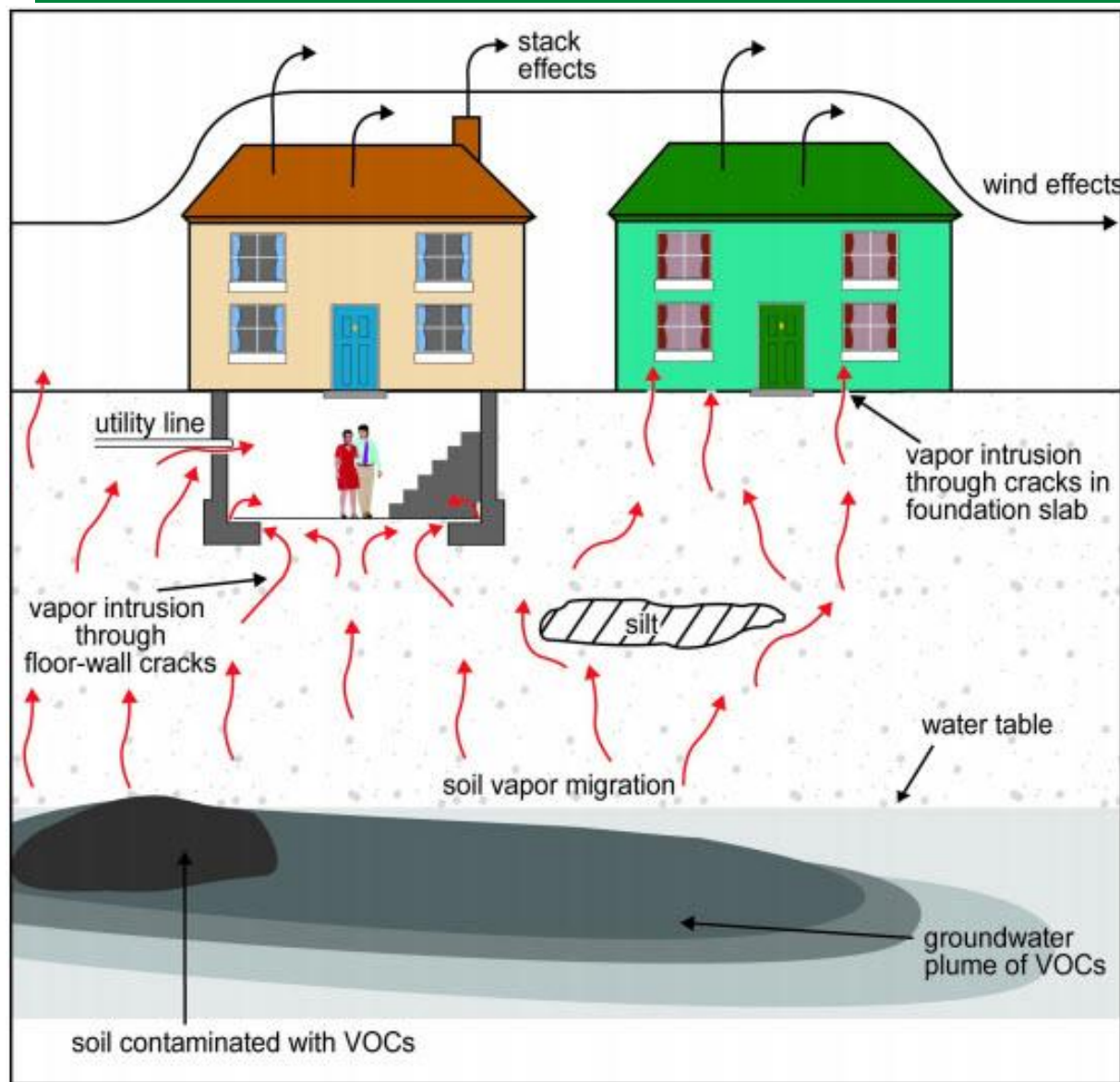


Soil Investigation – Soil Borings



- TCE concentrations in soil ranged up to 131,000 ppb.
- PCE concentrations in soil ranged up to 276,000 ppb.
- Samples collected between 4ft & 12ft.
- The cleanup standard for TCE & PCE in soil is 500 ppb.

➤ Vapor Intrusion (VI)



VI is the pathway where TCE & PCE vapors may be entering homes near the source area due to the soil & groundwater contamination.

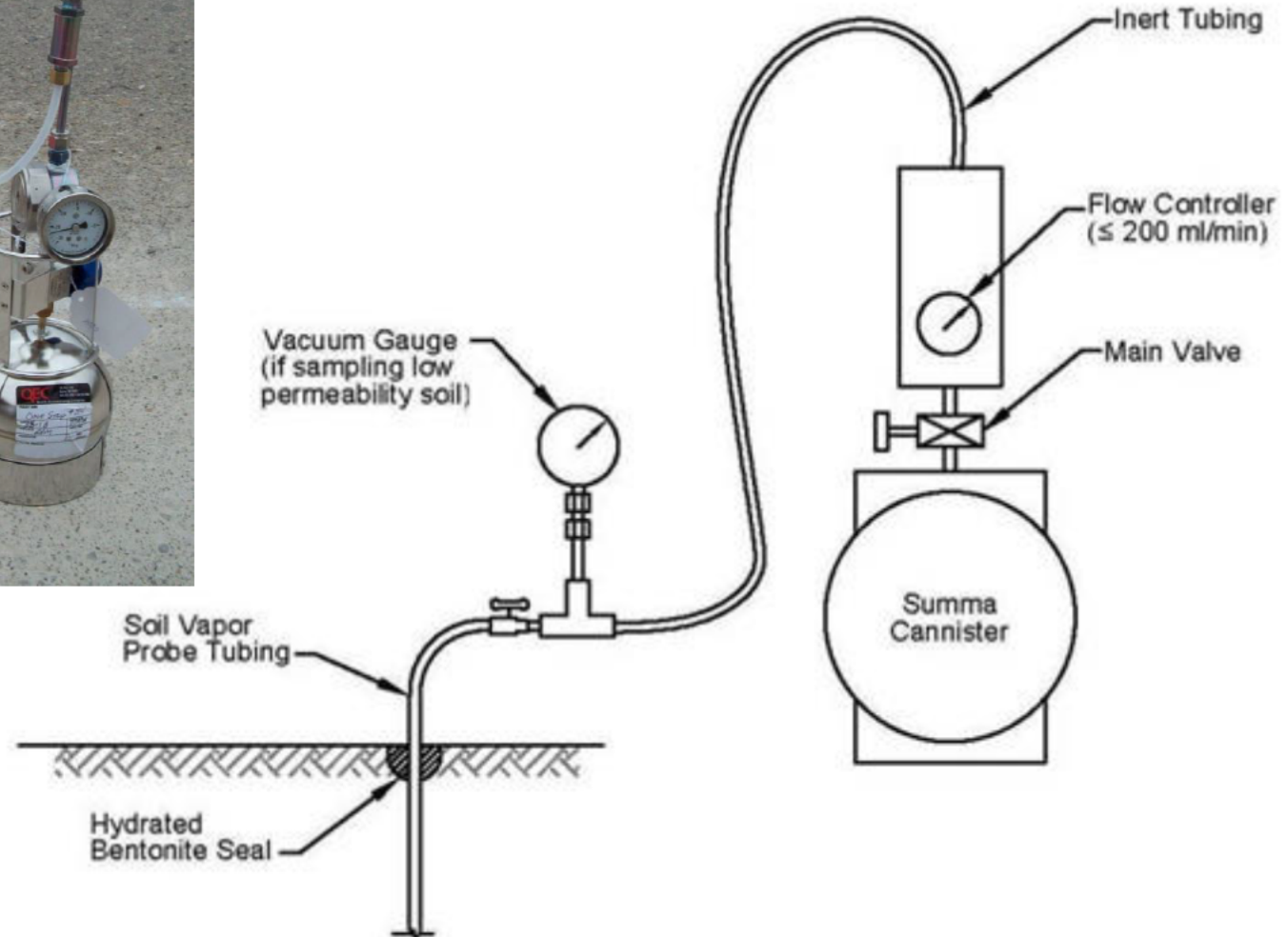


pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

▶ VI Sampling Methodologies

- Active Soil Gas
- Indoor Air
- Sub-Slab Sampling

▶ VI –Active Soil Gas

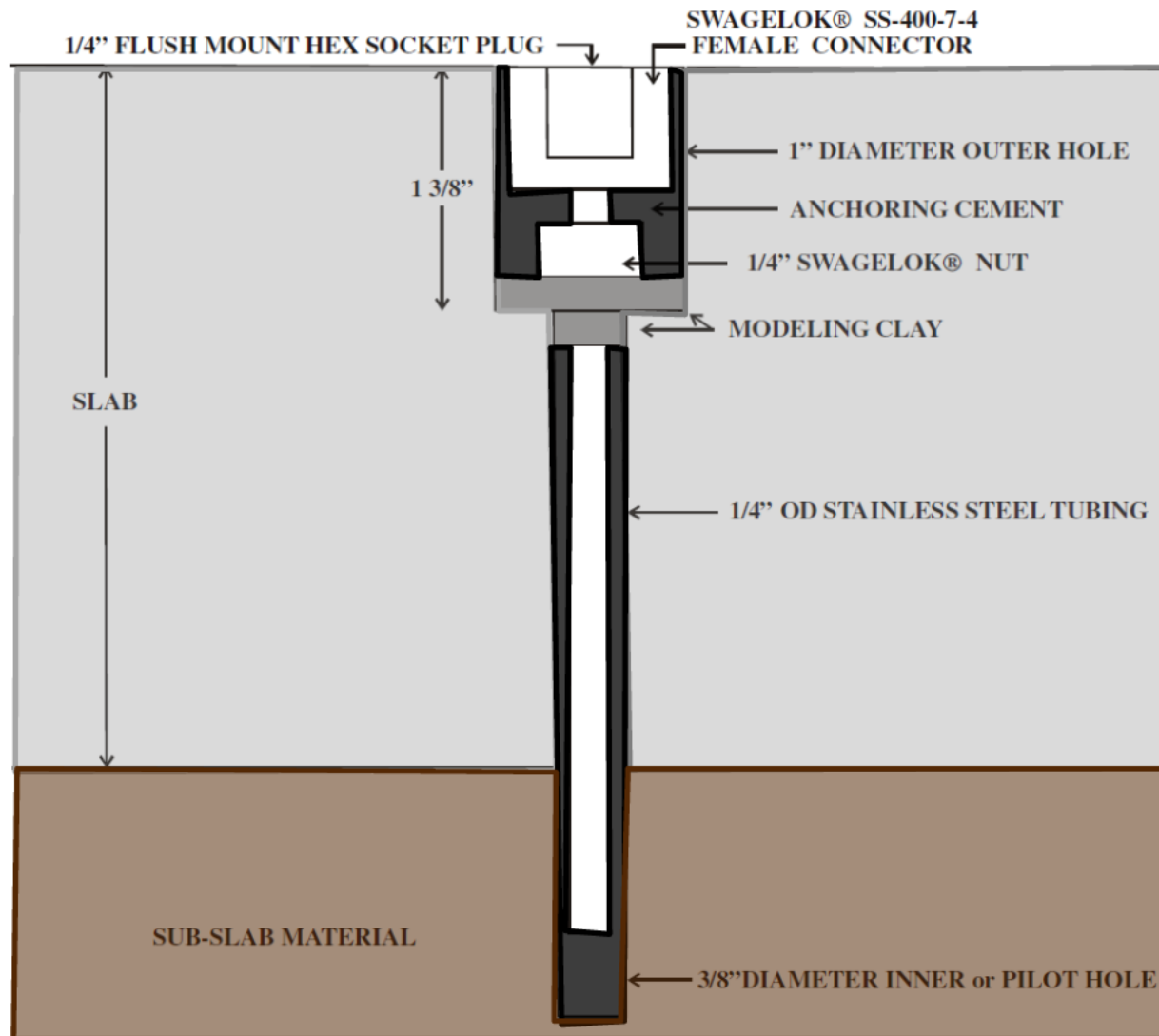


➤ VI –Indoor Air



- Prior to sampling a survey of the home is performed to make sure there isn't anything in the home that can impact the samples.
- The canisters are placed in the basement & on the first floor.
- The samples are collected during the winter months.

VI – Sub-slab Sampling



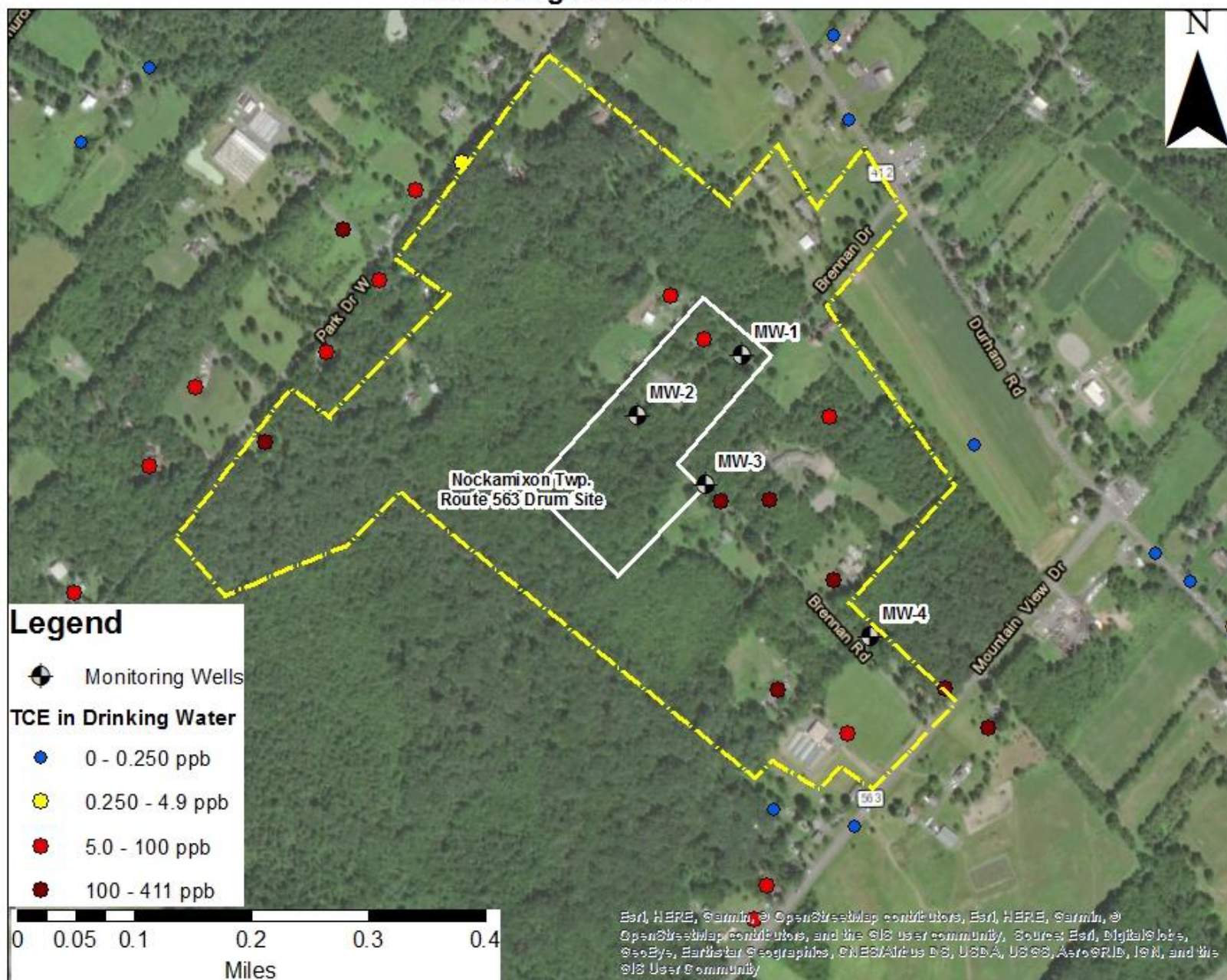
▶ VI – Sub-slab Sampling



➤ VI Investigation

- DEP sought access to 11 properties to evaluate VI. Several property owners have declined this sampling.
- DEP confirmed that one home is affected by VI & worked with the homeowners to address the concern by upgrading an existing radon mitigation system.

Nockamixon TCE HSCA Site, Nockamixon Township, Bucks County VI Investigation Area



➤ Response Alternative Evaluation Criteria

- Protection of human health & the environment
- Compliance with Federal, State, & Local Rules & Regulations
- Community acceptance
- Feasibility
- Effectiveness
- Implementability
- Permanence
- Cost

➤ Alternative 1

No Action

(Baseline Alternative, required by law)

PROS

Implementable

No cost

CONS

Not protective of human health

Not a permanent solution

➤ Alternative 2

Installation of VI mitigation systems to eliminate the VI pathway, combined with institutional controls

PROS

Protective of human health

Permanent solution

Cost effective

CONS

Long-term maintenance required

Sub-Slab Depressurization System

(commonly called a radon mitigation system)

Mitigation System



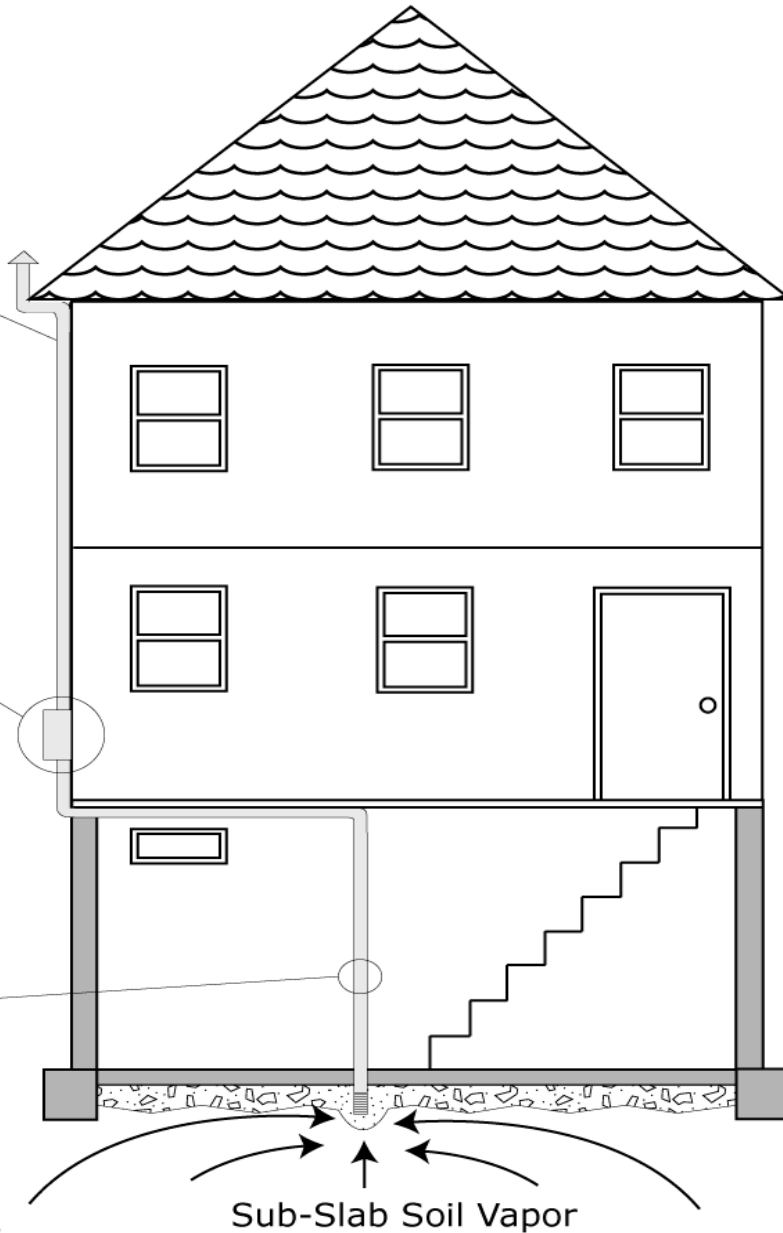
The vent pipe is routed up the side of the structure to a location above the roof line.



A fan is used to draw soil vapor from beneath the slab.



A liquid gauge, or manometer is used to verify that the system is operating properly



Sub-Slab Soil Vapor

A sub-slab depressurization system vents contaminated soil vapor before it enters a structure. The fan draws vapor from beneath the building outside to the roof line where it is released to the outside air.

➤ Mitigation System - Fan



➤ Mitigation System – Liquid Gauge



➤ Proposed Alternative

Installation of VI mitigation systems to eliminate the VI pathway, combined with institutional controls

➤ Environmental Covenants

Environmental Covenants would be required:

- Agreement between DEP & the homeowner that documents presence of indoor air above risk criteria on the property deed.**
- Provides guidelines for the operation & maintenance of the mitigation system.
- Can be removed from property deed after VI determined to no longer occurring.

**HSCA 512 Order can be issued if agreement cannot be reached.

➤ Next Steps

- Continue the investigation of indoor air in the area of concern. (Additional mitigation systems would be installed as necessary).
- Evaluate data from soil characterization activities completed in June/July 2018.
- Propose an interim response action to address soil contamination.
- Another hearing will be scheduled to give the public a chance to comment.

Off the Record

Public Hearing

- Please state your first and last name.
- Please spell your name for the court recorder.
- State your address.
- Provide your comment for the record.

****DEP Appreciates for your comment.****



Submit written comments to:

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HSCA Project Officer

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Norristown, PA 19401

darmstrong@pa.gov

484-250-5723

DEADLINE FOR COMMENTS: August 31, 2018

**Please indicate in the letter or email that you are providing a comment to be included in the Administrative Record.*