



Lower Darby Creek Area Superfund Site Community Update

Mercy Wellness Center
Philadelphia, PA
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Objectives

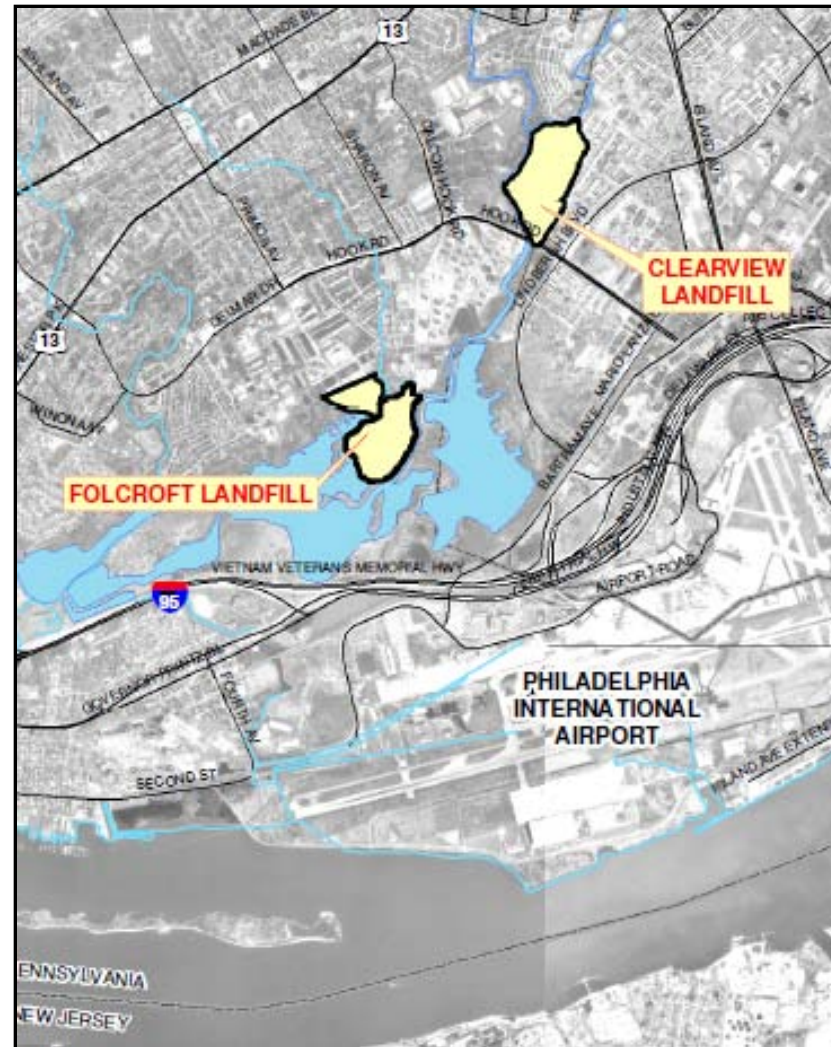


- Overview of Lower Darby Creek Area (LDCA) Site and the Superfund process
- Present findings of the Clearview Landfill EPA Remedial Investigation (RI)
- Provide update on current activities for Clearview and Folcroft Landfills
- Discuss next steps
- Answer your questions

Lower Darby Creek Area (LDCA) Superfund Site



- Clearview and Folcroft Landfill (LF)
- Philadelphia and Delaware County
- Folcroft in John Heinz NWR
- Clearview LF 2 miles upstream of Folcroft LF
- Placed on EPA National Priorities List on 6/14/2001



LDCA Site and
surrounding area

Yellow line is
watershed
boundary



Folcroft Landfill – History

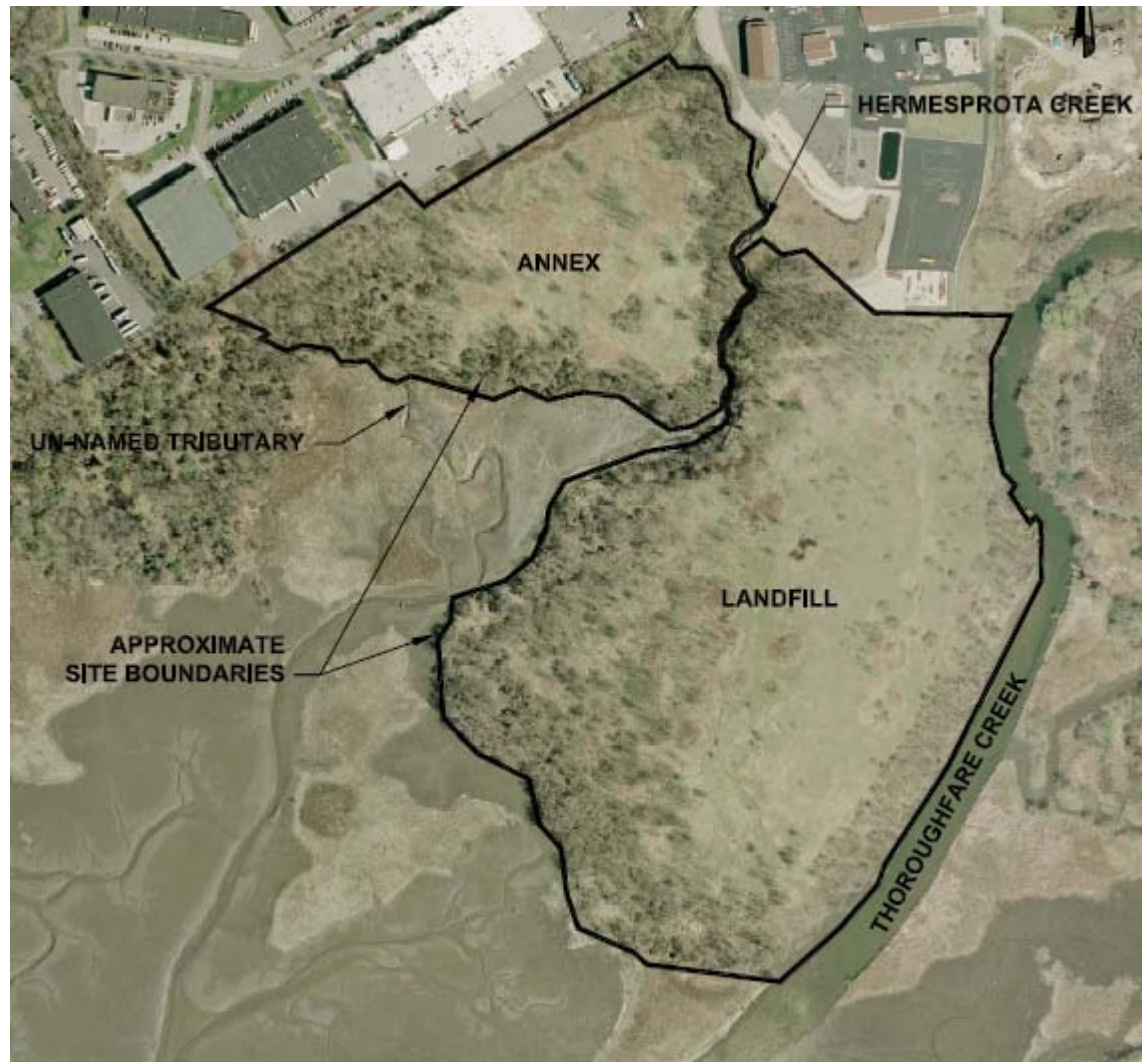


- Operated from 1960s to early 1970s as sanitary and municipal waste landfill
- Closed in 1974; 2'-10' of cover soils
- NWR formed in 1971; landfill acquired by NWR in 1976
- Multiple environmental investigations from 1980 – 2002
- Responsible parties initiate investigation in 2006 with EPA oversight

Folcroft Landfill Historic Photos



Folcroft Landfill Present Day

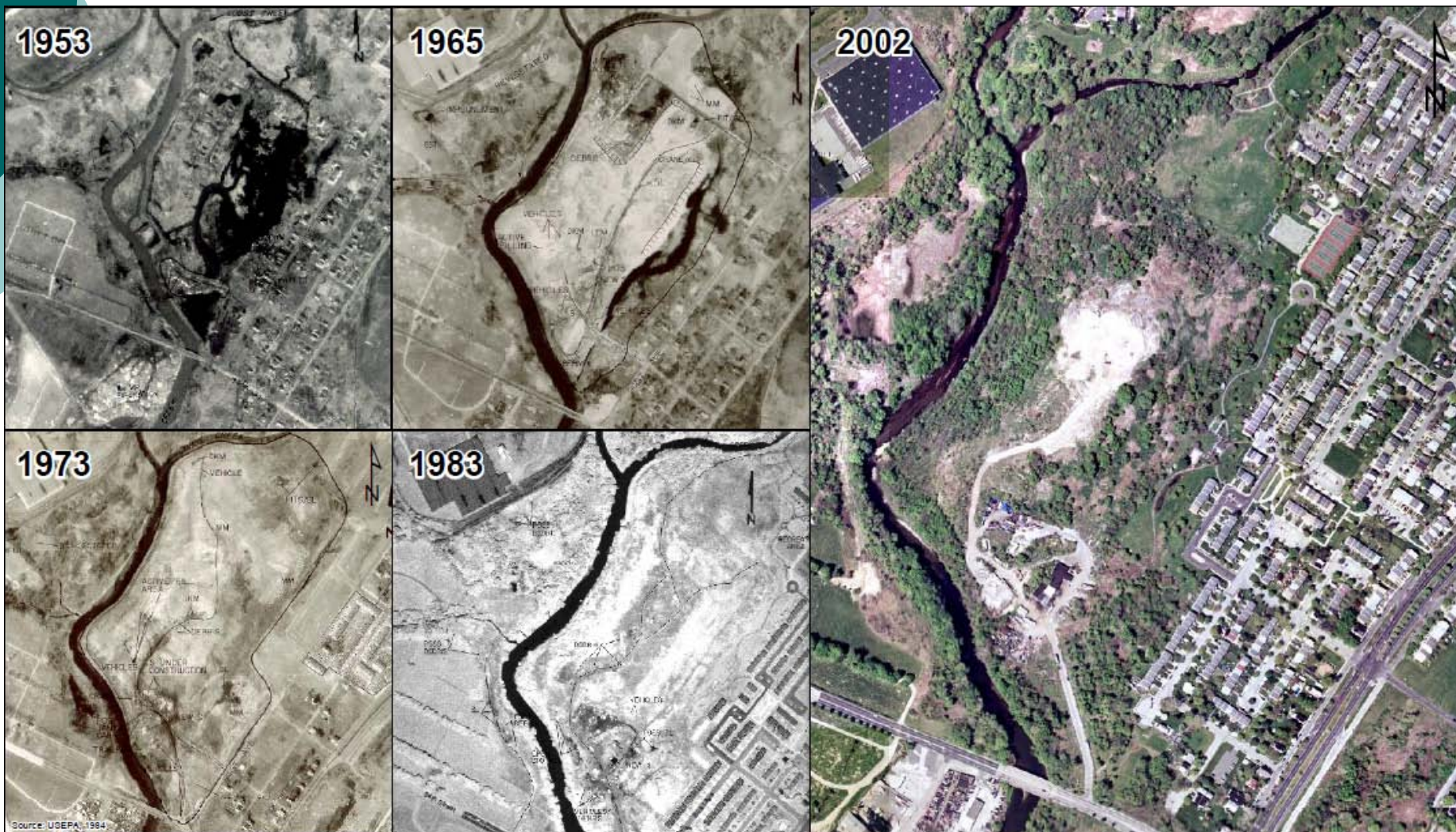


Clearview Landfill – History



- Unpermitted disposal from the 1950s to 1970s of municipal and industrial wastes
- Excavation, filling and grading of eastern portion of landfill in mid-1970s for development of Eastwick neighborhood and City park
- Continued illegal disposal activities from 1970s through late 1990s
- EPA initiates official investigation in 2002
- Several businesses currently located on landfill

Clearview Landfill Historic Photos



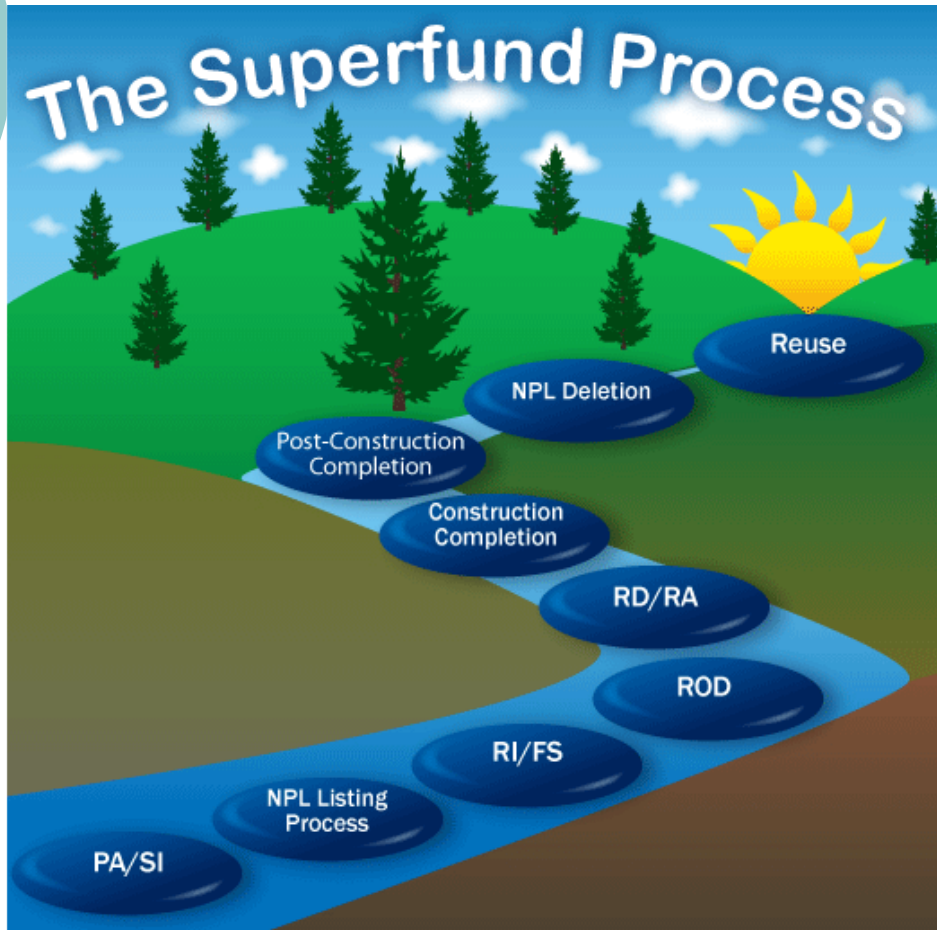
Source: USEPA, 1984



Phases of the Superfund Process

- Remedial Investigation (RI) – determines what, where and how much contamination is present and the risks they may pose to people and the environment
- Feasibility Study (FS) – evaluates various potential cleanup options using several criteria including effectiveness, implementability and cost.
- Proposed Plan (PRAP) – document that is reviewed by the public which summarizes the findings in the RI & FS and recommends a specific cleanup plan.
- Record of Decision (ROD) – a more detailed version of the PRAP that officially selects the cleanup plan for the site.
- Remedial Design (RD) – plans for that actual construction and monitoring of cleanup activities and technologies.

Where is LDCA in the Superfund Process?



- Both LFs are in the RI/FS phase
- Clearview LF RI report is nearly complete and the FS is underway
- Folcroft RI is underway and development of FS will start later this year
- Information from both RIs indicates that risks to humans are low, but cleanup action is necessary

What's the purpose of an RI?



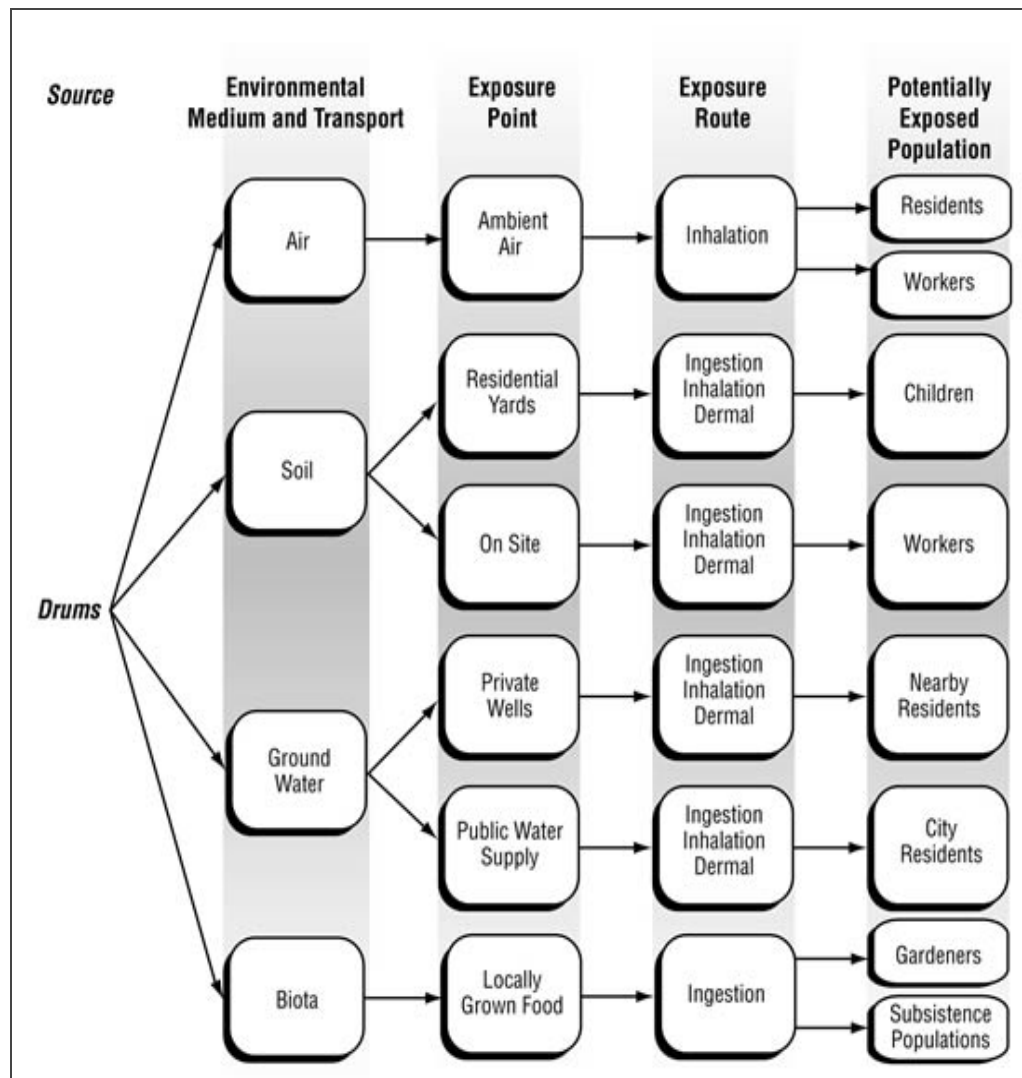
- Take samples of soil (surface and deeper), groundwater, surface water, sediment, air to determine:
 - What contaminants are present in the environment?
 - How much contamination is there?
 - Where can the contaminants potentially move?

- Conduct a Risk Assessment to determine:
 - How people, plants and animals can come in contact with the contaminants (Exposure Assessment)?
 - How toxic are the contaminants to people and animals (Toxicity Assessment)?
 - What are the increased chances of having a negative health effect(s) from exposure to site contaminants (Risk Characterization)?

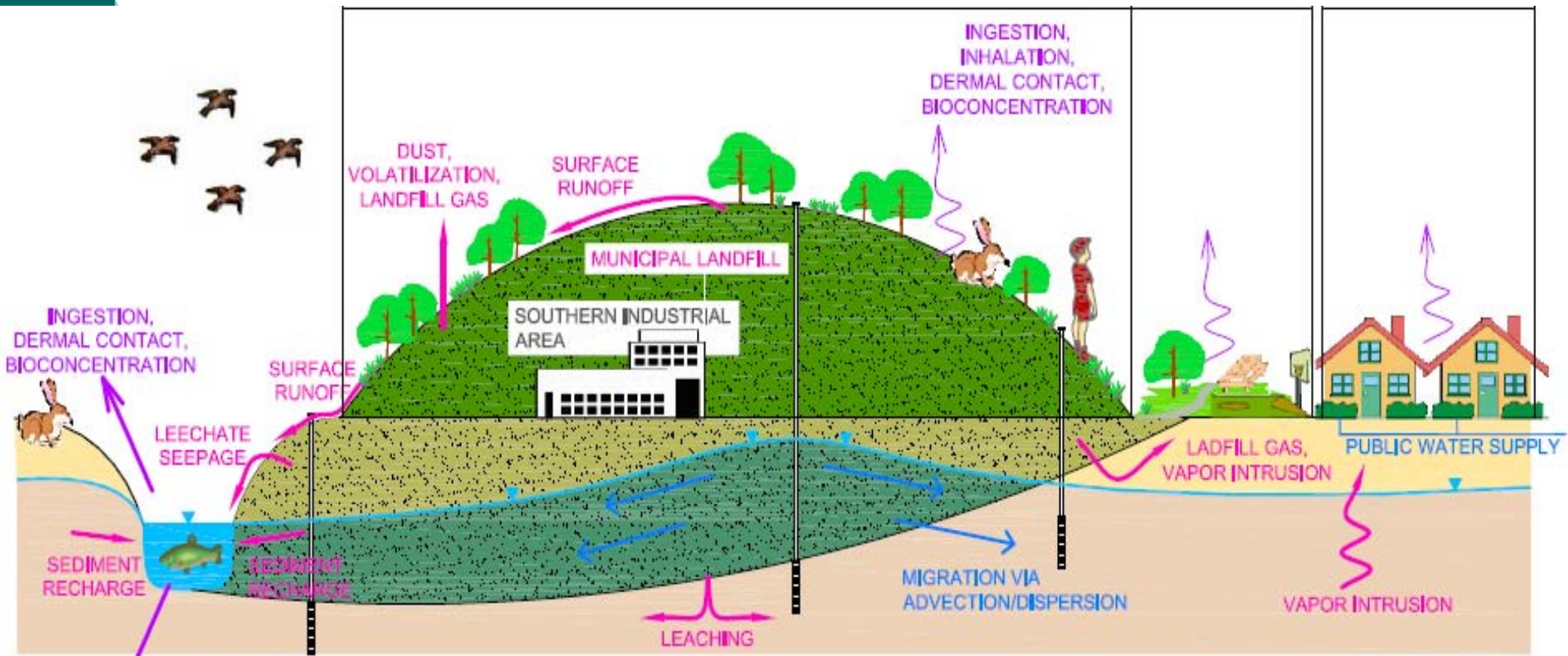


Example Exposure Pathways

This shows several types of exposure pathways that could occur at a Superfund site. It is not specific to Clearview or Folcroft LF.



Contaminant Migration and Exposure Pathways



- An exposure pathway is the way in which a person may come in contact with a contaminated material.
 - Exposure occurs when you come in contact with a material and that material enters your body.

And a little bit more about Risk Assessment



- A risk assessment combines all the information from the RI to calculate the increased risk of getting cancer over a lifetime from exposure to contaminants at the site.
- There is a lot of uncertainty when calculating risks; because of this EPA uses very conservative assumptions to make sure the public is safe.
- EPA considers an increased chance of cancer happening in more than one person in ten thousand to be unacceptable.
- Without any exposure to a Superfund Site, there are still risks of developing cancer from everyday activities, lifestyle and genetics.
- Potential for non-cancer effects are calculated into a Hazard Index. Any site that has a Hazard Index greater than 1 indicates a potential increased health risk.

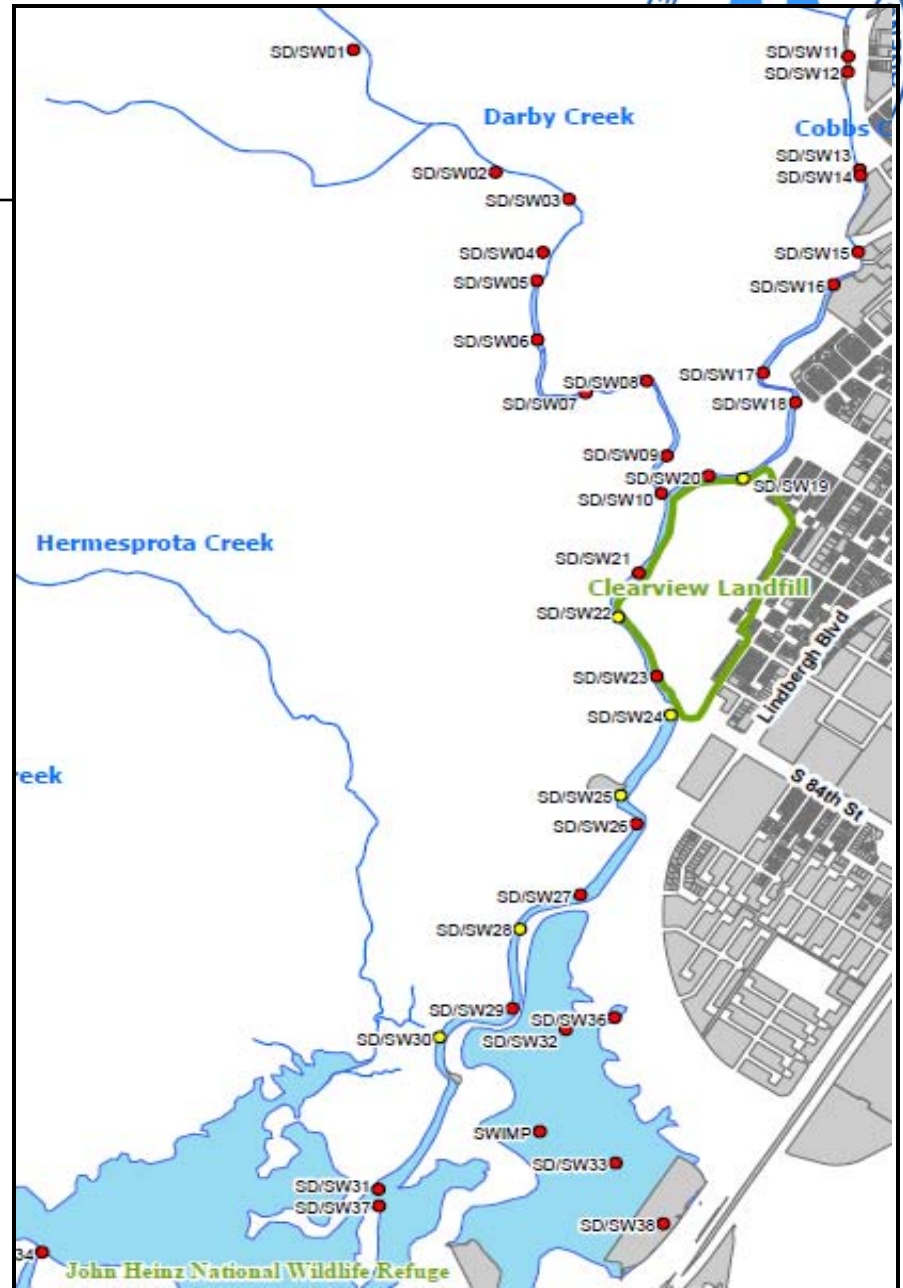
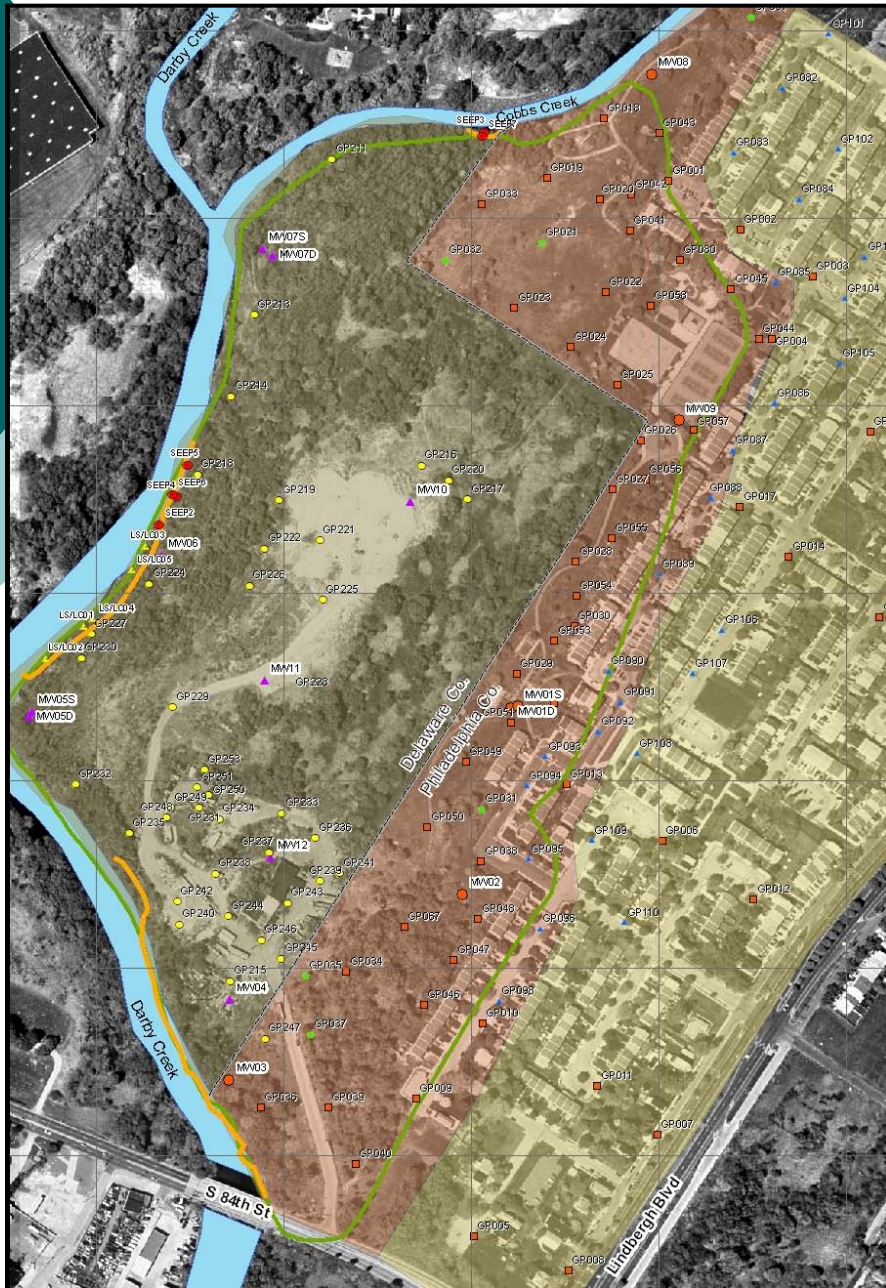
Some perspective on concentrations



Unit	1 part per million	1 part per billion
Length	1 in./16 mi.	1 in./16,000 mi.
Time	1 min./2 years	1 sec./32 years
Money	1 cent/\$10,000	1 cent/\$10,000,000
Weight	1 oz./31 tons	1 pinch salt/10 tons of potato chips
Volume	1 drop vermouth/ 80 "fifths" of gin	1 drop vermouth/ 500 barrels of gin
Area	1 square ft./ 23 acres	1 square in./ 160-acre farm
Action	1 lob/1,200 tennis matches	1 lob/1,200,000 tennis matches
Quality	1 bad apple/ 2,000 barrels	1 bad apple/ 2,000,000 barrels

Where has EPA tested?

- Sampled 2003
- Sampled 2003 or 2005
- Sampled 2004
- Sampled 2006
- County Boundary
- Cleanview Landfill
- City Park
- Eastwick Neighborhood
- Historical Extent of Cleanview



Clearview Landfill RI Findings: What, Where, How Much?



- Most waste and debris is under LF “mound” in Delaware County; Eastwick Park and neighborhood has very little and it is generally found several feet below surface.
- Wide variety of contaminants detected in media throughout the site.
 - Polycyclic Aromatic Hydrocarbons (PAHs), Pesticides, Polychlorinated Biphenyls (PCBs), metals, dioxins (Del. Co.)
- Overall, portion of LF in Del. Co. has more contaminants at much higher concentrations.
- Groundwater impacted with low levels of many contaminants – residents currently on public water supply.

Clearview Landfill RI Findings: Risk Assessment



- Being exposed to the site in the short-term is safe, risks from long-term exposure (30-70+ years) to soils, groundwater and fish are unacceptable and require action.
- Greatest potential increased negative health risks are from groundwater and eating fish from Darby Creek.
- Surface and deeper soil potential risks were just outside EPA's acceptable range:
 - Landfill in Del. Co. – Highest potential increased risks
 - City Park & Eastwick Neighborhood – slightly above EPA's unacceptable risk threshold, but action still necessary
- No unacceptable risks from potential exposure to air, sediment and surface water



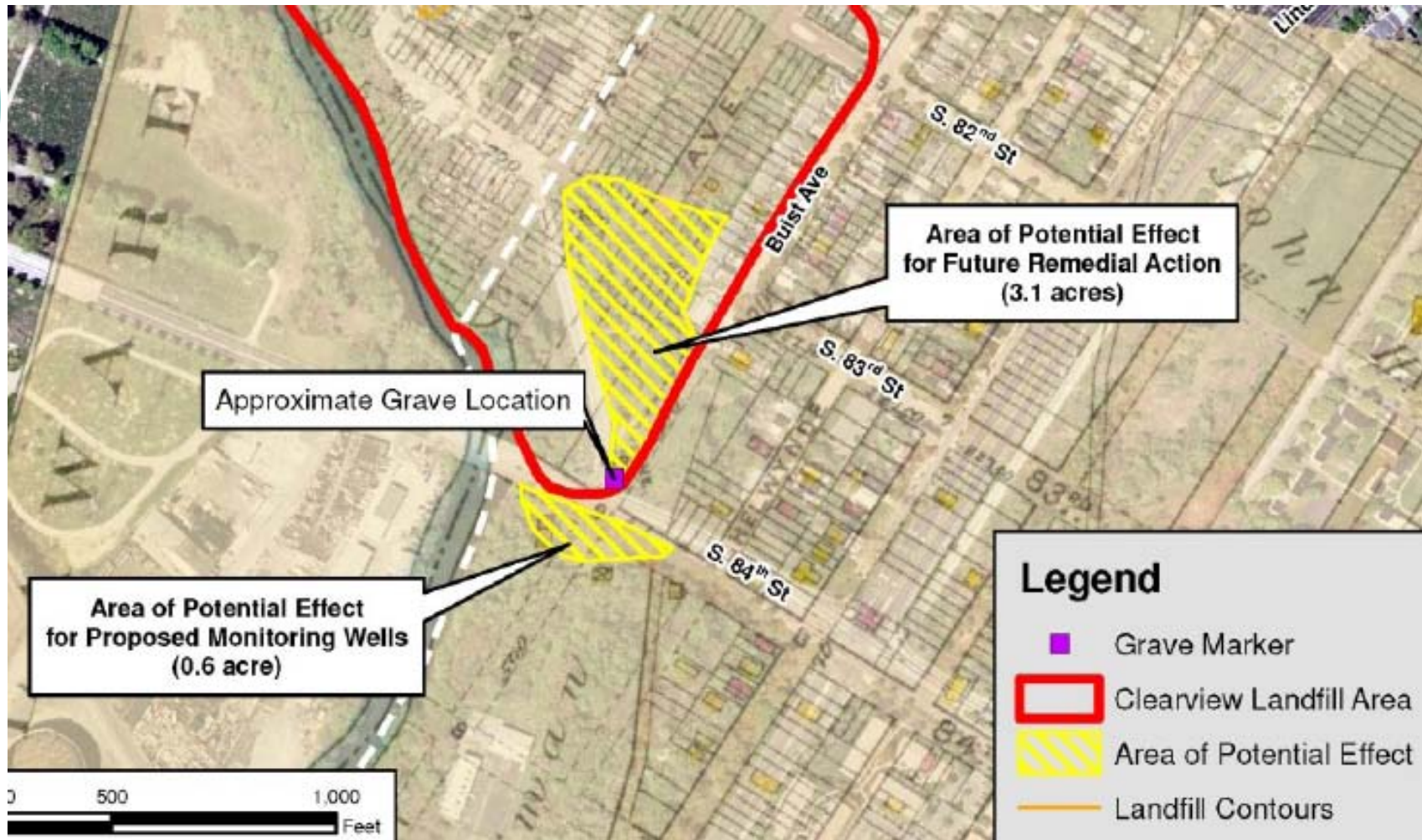
Questions?

Clearview Landfill: Current and Upcoming Activities



- FS Development – Evaluates cleanup options
- Residential vapor intrusion testing in select Eastwick residences
- Monitoring well installation – Eastwick, City Park, John Heinz NWR, Cemetery, Colwyn
- Cultural Resource Survey
- Reuse Assessment
- Agency for Toxic Substances Disease Registry (ATSDR) Public Health Assessment (PHA)

Cultural Resource Survey Findings



Phase 1 Reuse Assessment



- EPA does not redevelop sites after the cleanup is complete.
- EPA supports redevelopment, but must ensure that it does not interfere with the remedy.
- Reuse assessment conducted to gather information on potential options for future reuse based on property owner and municipality goals.
- Next step is to reach to individuals in the community to find out how they would like to see the LDCA site reused.

ATSDR & PADOH Involvement



- Stands for “Agency for Toxic Substances Disease Registry”, PA Dept. of Health
- ATSDR & PADOH work in cooperative agreement
- Federal advisory “information” agency
- Required by law to conduct public health assessments (PHAs) on all sites proposed for EPA’s National Priorities List
- EPA, states, local governments or other federal agencies may directly request ATSDR’s help

Clearview Landfill - Next Steps



- Incorporate findings from current field activities into RI addendum and FS cleanup options.
- Conduct Phase 2 Reuse Assessment and discuss reuse options with community (pending funding).
- Develop Proposed Plan and Record of Decision → documents cleanup strategy

Folcroft Landfill and Darby Creek, John Heinz NWR Activities



- Folcroft RI report under development
 - Potential additional field work
- FS development to follow
- Darby Creek Aquatic Risk Assessment
 - Sample collection – fish, sediment, water
- ATSDR Folcroft PHA

Questions, Comments?



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