

# **EPA Presentation on Phase 2 Groundwater Monitoring Report**

Kristine Matzko, Remedial Project Manager

[matzko.kristine@epa.gov](mailto:matzko.kristine@epa.gov)

EPA Region 3

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# Remedial Investigation Summary

- EPA performing Remedial Investigation
- Focus on environmental sampling
- Second part of sampling program includes:
  - Soil sampling (completed)
  - **Well installation, water sampling (completed)**
  - Water level measurements (2 of 5 completed)
  - Activity-based sampling (not yet completed)



# Groundwater Sampling Timeline

- Installed bedrock monitoring wells – Oct to Nov 2010
- Sampled bedrock wells – Nov 2010
- Groundwater (gw) results from laboratory – Dec 2010 to Feb 2011
- Compiled gw data – Feb 2011
- Report submitted to EPA for review – March 2011
- Present gw data to BoRit CAG – May 2011

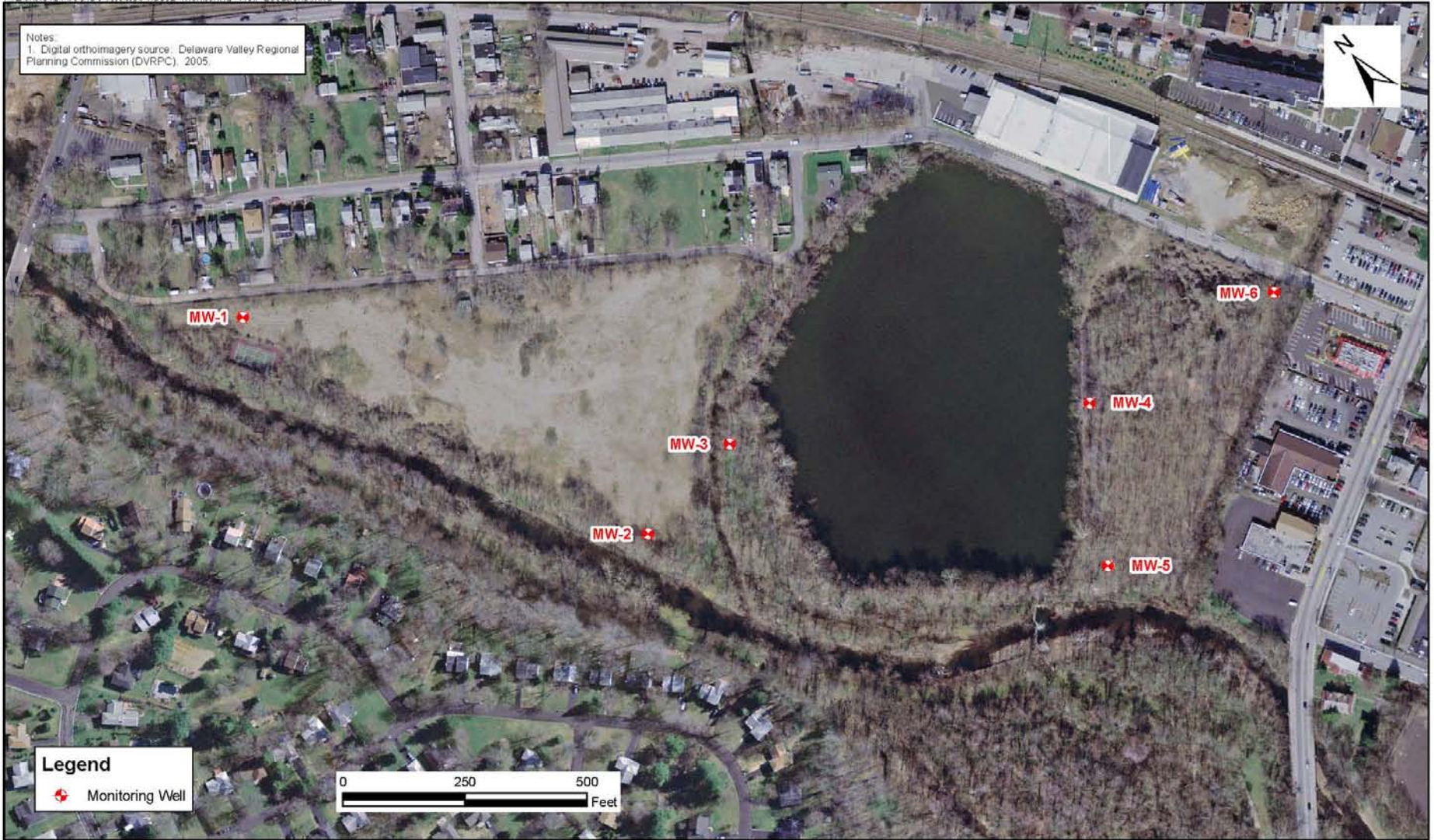


# Groundwater Wells

- Installed wells to monitor groundwater
- Six locations
  - 2 at the park, 2 at the reservoir, 2 at the pile
- Monitoring wells drilled into bedrock
  - Wells range 53-to-100 feet deep
  - Phase 1 groundwater sampling: Shallow depths, different locations, and different sampling methods

F:\Bort\GIS\Arc\GISProjects\Phase2\_Monitoring\_Well\_Locations.mxd

Notes:  
1. Digital orthoimagery source: Delaware Valley Regional Planning Commission (DVRPC), 2005.



CDM

BoRit Asbestos Superfund Site, OU1  
Ambler, Pennsylvania

Figure 1  
Phase 2 Monitoring Well Locations



# Groundwater Sampling

- Groundwater flows north to south, towards Wissahickon Creek
- Groundwater samples analyzed for:
  - Volatile organic compounds (VOCs)
  - Semi-volatile organic compounds (SVOCs)
  - Polychlorinated biphenyls (PCBs)
  - Pesticides
  - Metals
  - Asbestos



# Groundwater Screening Levels

- Groundwater results compared against risk-based screening levels (RSLs) and maximum contaminant levels (MCL)
  - RSLs are generic screening levels based on conservative exposure assumptions
  - MCLs are based on EPA's Safe Drinking Water Act
    - Asbestos MCL - 7 MFL, million fibers per liter



## On-line Resources on MCLs and RSLs

<http://water.epa.gov/drink/contaminants/index.cfm#List>

[www.epa.gov/reg3hwmd/risk/human/rb-concentration\\_table/faq.htm](http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/faq.htm)





## Groundwater Results for Asbestos Contamination

- No results of asbestos above MCL of 7 MFL
  - 7 million fibers per liter
- One detection of asbestos at 0.51 MFL
  - Monitoring well #4 between asbestos-contaminated pile and reservoir



## Groundwater Wells Results

- Monitoring well #1 – Park, near alley
  - No exceedances
- Monitoring well #2 – Park, near creek
  - Carbon Tetrachloride
  - Tetrachloroethene
  - Bis(2-ethylhexyl)phthalate\*

\*Detected in field blank. Not site related.



## Groundwater Results (continued)

- Monitoring well #3 – Reservoir, near creek
  - Arsenic
  - Manganese
- Monitoring well #4 – Reservoir, near pile
  - Manganese



## Groundwater Results (continued)

- Monitoring well #5 – Pile, near creek
  - Bis(2-ethylhexyl)phthalate\*
  - Arsenic
  - Manganese
- Monitoring well #6 – Pile, near Maple Street
  - Bis(2-ethylhexyl)phthalate\*
  - Manganese

\*Detected in field blank. Not site related.



## On-line Resource for Contaminants

- <http://www.atsdr.cdc.gov/toxpro2.html>
- ATSDR website – ToxFAQs
- Arsenic and Manganese - Naturally occurring metals found in soil, rock
- Residents served by public water supplier



# Carbon Tetrachloride

- Carbon Tetrachloride - Was used in the production of refrigeration fluid and propellants for aerosol cans, as a pesticide, as a cleaning fluid and degreasing agent, in fire extinguishers, and in spot removers
- Common names - carbon tetrachloride, tetrachloromethane



# Tetrachloroethene

- Tetrachloroethene - Is a manufactured chemical that is widely used for dry cleaning of fabrics and for metal-degreasing
- Common names - tetrachloroethene, tetrachloroethylene, PCE or “perc”



## Bis(2-ethylhexyl)phthalate

- Bis(2-ethylhexyl)phthalate - Is a manufactured chemical that is commonly added to plastics to make them flexible. DEHP is a colorless liquid with almost no odor
- Common names – di(2-ethylhexyl)phthalate, bis(2-ethylhexyl)phthalate, DEHP





## Next steps

- Complete environmental sampling
  - perform activity-based air sampling
- Plan
  - additional groundwater sampling
  - background sampling program
  - human and ecological risk program



## Additional Information

- Soil Sampling Completed



## Tested Soils for Dioxins

- 7 locations on pile property
- Collected soil samples at several depths
  - 0-3 inches; 0-6 inches; 6-12 inches
- Analyzed for dioxins
  - Due to history of fire training
  - Dioxins detected where burning



## Dioxin results

- EPA clean-up goal for dioxin residential soil
  - 1,000 parts per trillion or ppt
- Highest dioxin result is 46 ppt
- Dioxin in soil not above EPA cleanup goal



# Dioxins

- Family of 75 chemically-related compounds commonly known as chlorinated dioxins
- Common names – dioxins, CDD, TCDD
- 2,3,7,8-TCDD may be formed during the chlorine bleaching process at pulp and paper mills
- Can be released into the air in emissions from municipal solid waste and industrial incinerators



# Groundwater Monitoring Report

- Available on-line at EPA's website:
  - [www.epa.gov/reg3hwmd/npl/PAD981034887.htm](http://www.epa.gov/reg3hwmd/npl/PAD981034887.htm)
  - Listed under "Reports and Documents" section