

Update on DNREC's Vapor Intrusion Investigation at the former Ron's Discount Energy Mart Site and Hillside Road

Public Workshop at
Claymont Community Center
October 27, 2009

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Purpose of Presentation

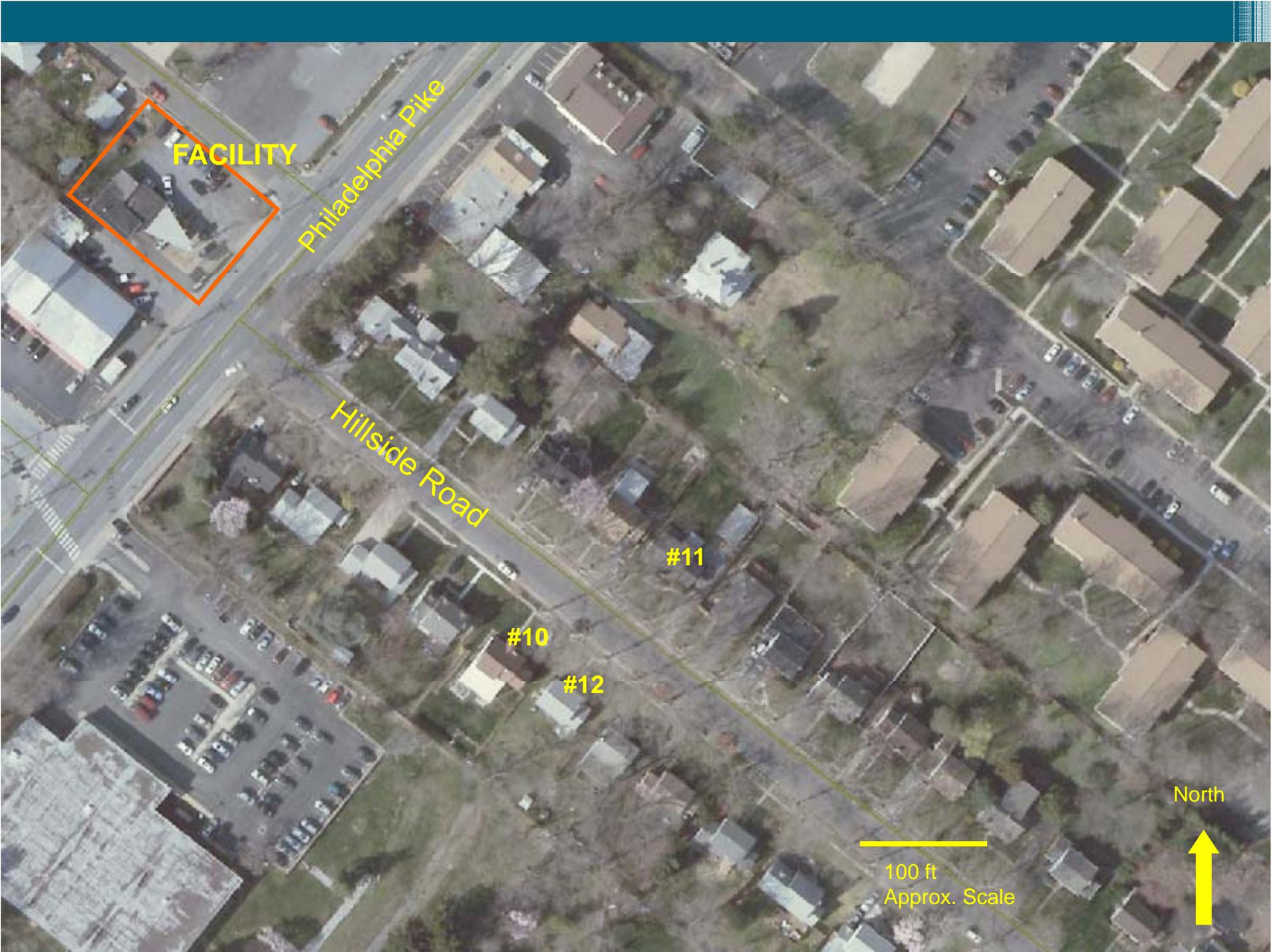
Update on progress of cleanup actions

- Project history
- Project goals
- Recent Vapor Intrusion Investigation & resulting recommendations



- Business: Penny Hill Mobil, Inc.
- dba Ron's Discount Energy Mart
- Property owner: Palstein Enterprises, Inc.
- Currently leased by Infanzon Auto Repair
- State take-over of cleanup actions





FACILITY

Philadelphia Pike

Hillside Road

#11

#10

#12

100 ft
Approx. Scale

North

Project History

- **November 1988** - petroleum vapors in sanitary sewer and several residences along Hillside Rd.
- DNREC responds, determines that petroleum USTs at Ron's Discount Energy Mart are source
- Responsible Party (RP) directed to investigate the extent of contamination and perform cleanup
- **November 1988** - RP refuses responsibilities and DNREC takes over corrective actions

Project History

- **November 1988** - first of many Community Meetings; early 1989 Newsletter begun
- **December 1988** - initial investigation and installation of monitor wells
- **February 1989** - residents of 10 Hillside Road relocated; house-to-house survey performed; mitigation begun at residences

Past Mitigation at Hillside Road Residences - Controlling Groundwater and Vapors

- 10 - interceptor trench & piping; tied to sewer line; vapor venting; sealed basement; drain trap
- 11 - enclosed French drain & sump; repaired basement floor; vapor venting
- 12 - seep in driveway re-directed; tied to sewer trench backfill



Project History

- **March 1989** - shallow soil gas survey throughout Hillside Road neighborhood
- **August 1989** - mitigation complete at 10, 11, 12 Hillside Rd. and 10 reoccupied
- Groundwater monitoring continues
- **April 1993** - all underground storage tanks removed from Ron's Discount facility
- **1999** - began review of long-term remedial strategies

Remedial Activities



- 2000 - 2001 - interim remedial action (enhanced fluid recovery) on about a monthly basis; continued review of remedial strategies
- **August 2005** - Oxygen Release Compound (ORC) remediation event
- **July 2007** - repair of three (3) monitor wells at facility
- Continued groundwater monitoring



⊕ **Approx. Monitor Well Location**

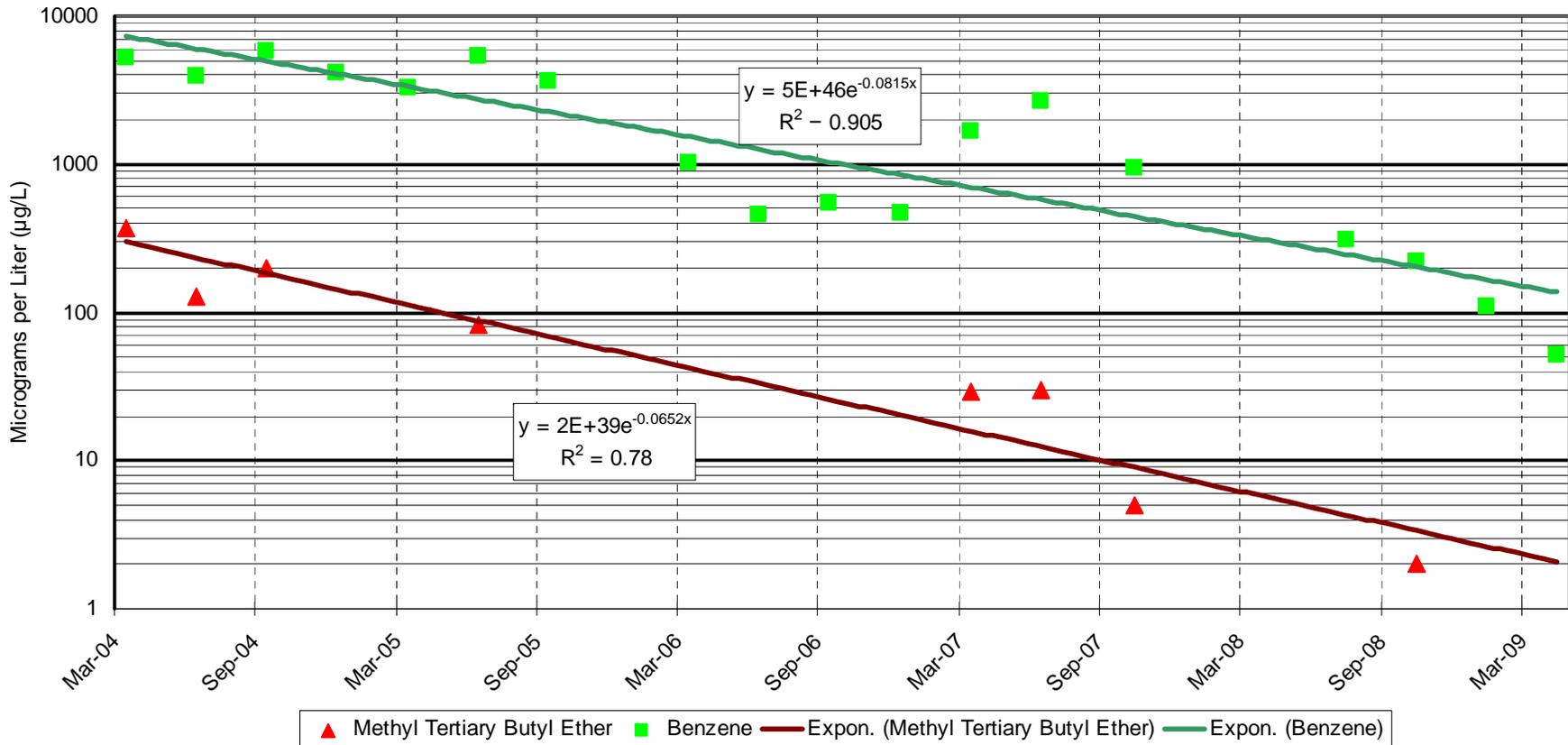
— **ORC Remediation Area**

100 ft
Approx. Scale

↑ North

Dissolved Contaminant Concentration Trends

HR-2
Trend Analysis of Benzene and MTBE Over Time
Ron's Discount Energy Mart





Goals of Corrective Actions

- Address historic emergency conditions
- Investigate extent of contamination
- Assess health and exposure risks
- Re-assess health & exposure risks based on current conditions
- Mitigate risks
- Stable or shrinking groundwater plume
- No Further Action status



Most Recent Activities

- **March 2009:** Public Workshop & related outreach
- **April & August 2009:** Continued quarterly groundwater monitoring
- **May - July 2009:** Phase 1 of Vapor Intrusion Investigation
- Current Outreach efforts



Enforcement

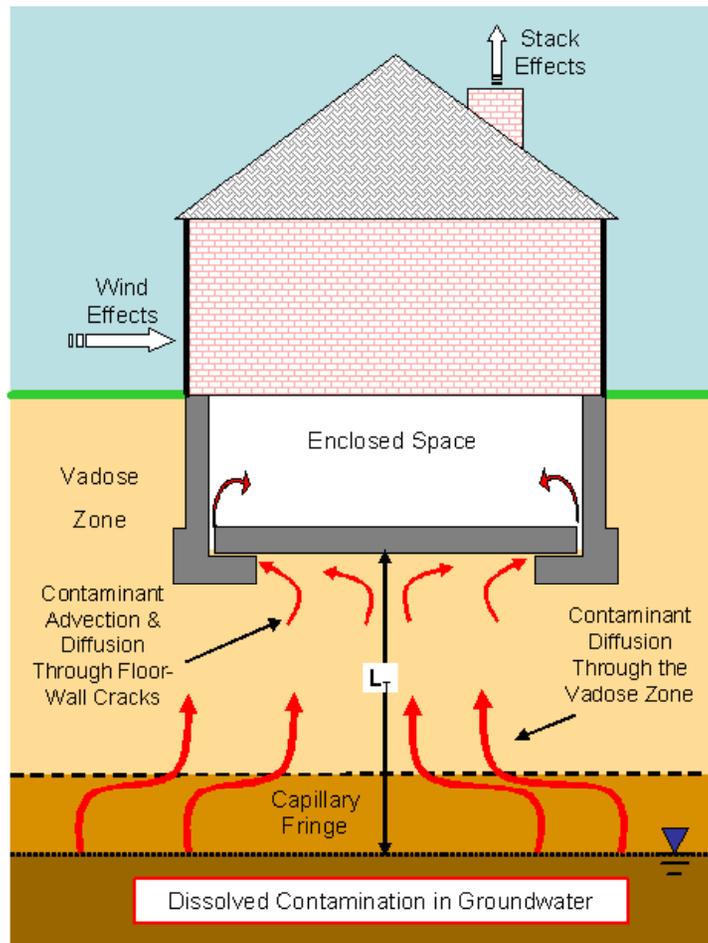
- July 31, 2009 Notice of Administrative Penalty Assessment and Secretary's Order
- \$447,125 in penalties for failure to clean up release, and tank compliance violations
- \$712,887 cost reimbursement
- DE law – responsible parties are liable for past, and any future, costs associated with the clean up effort



Current Vapor Intrusion Investigation & Risk Assessment

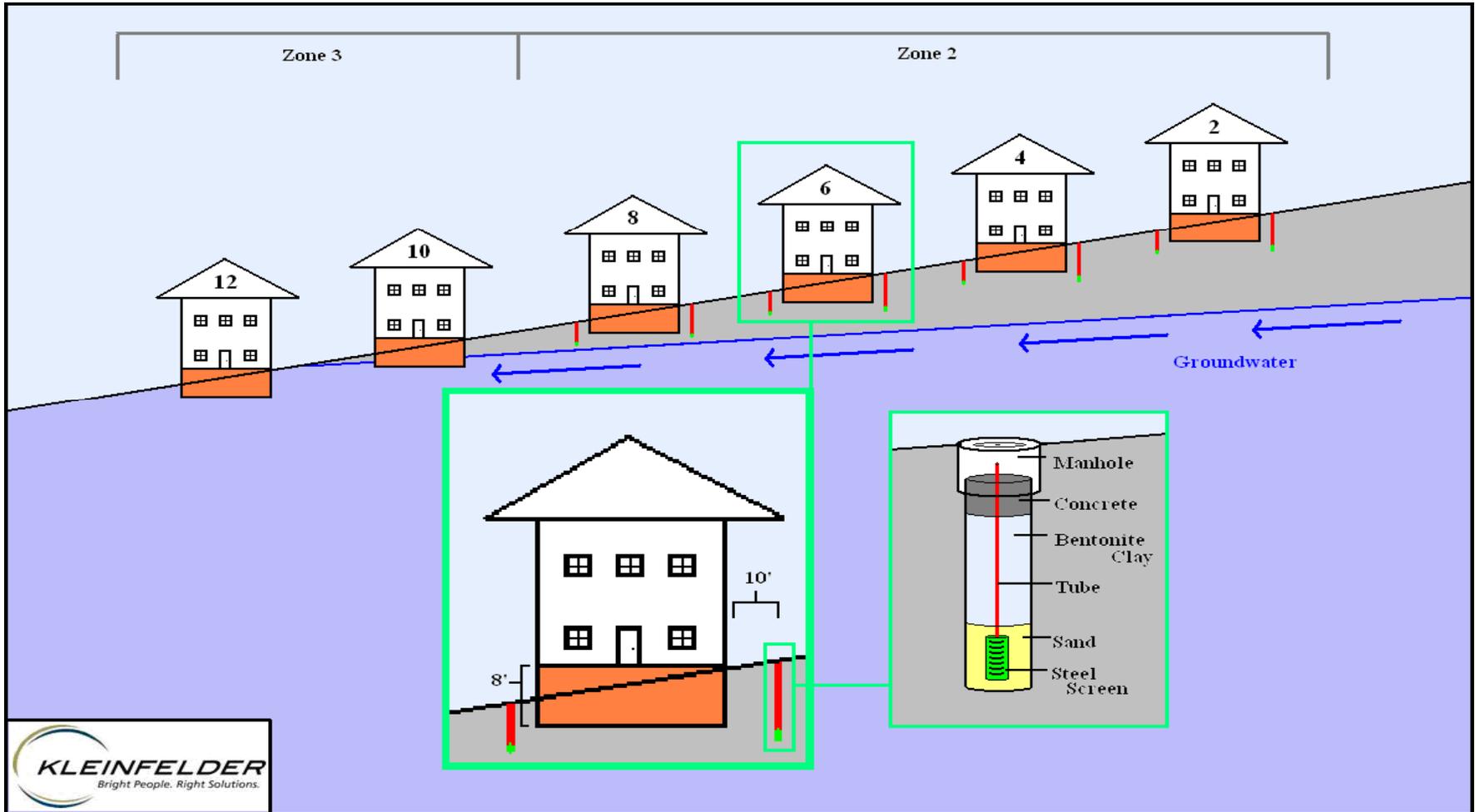
Two-phased Investigation

General Conceptual Model



- Vapor from soil or groundwater contamination
- Vadose Zone - soil above the water table
- Indoor Air - residential or commercial

Hillside Road Conceptual Model



Technical Approach

Table 1 - Investigation Summary

Designation	Area	Conceptual Site Model	Risk Scenario	Scope of Work
Zone 1	On-Site Facility	Future Vapor Intrusion	Commercial	Soil Vapor Investigation
Zone 2	2-8 Hillside Road	Vapor Intrusion	Residential	Soil Vapor Investigation
Zone 3	9-12 Hillside Road	Groundwater Intrusion / Preferential Pathway	Residential	Indoor Air Sampling

Investigation Zones & Sampling Locations





Access to Properties

- Attempts to contact all property owners in each of the Investigation Zones
- Multiple attempts at contact
- Signed Access Agreements from 10 out of 11 homeowners

Zone 1 & 2 – Soil Vapor Investigation

- Sixteen soil vapor points for initial assessment
- Points installed with direct push to 8 feet
- Sample collection with summa canisters and analysis for VOCs
- Ambient air samples included for background conditions
- Risk analysis using J&E Model under commercial and residential scenarios



Collecting Soil Vapor Sample





Zone 1 & 2– Soil Vapor Investigation Results

- Site specific target levels (SSTLs) calculated using DNREC guidelines and J&E Model for Zones 1 and 2
- Soil vapor concentrations in Zone 1 do not pose a vapor intrusion risk to the existing structure above DNREC guidelines
- Soil vapor data at off-site properties (Zone 2) below calculated SSTLs

Zone 3 – Residential Indoor Air Sampling

- Indoor air sampling of 4 residences in May 2009
- Sampling consisted of a three step process
- 24 hour sample collection with summa canisters and analysis for VOCs



Zone 3 – Residential Indoor Air Sampling Results

- 1,2,4 trimethylbenzene detected slightly above the prescribed target concentration in the basement air sample from 9 Hillside Road
- No detections of analytes above the prescribed target concentrations in the air samples from 12 Hillside Road
- Follow up sampling event for 10 and 11 Hillside Road - July 2009
- 11 Hillside - re-sampled at owner's request; owner addressing drainage issue. No detections of analytes above the prescribed target concentrations in the two rounds of air samples from 11 Hillside Road



Zone 3 – Residential Indoor Air Sampling Results

- 10 Hillside - several compounds detected above risk levels in initial sampling event
- Resample event completed after removing household items that may contain VOCs and could complicate the data interpretation
- Benzene, ethyl benzene, and 1,2,4 trimethylbenzene were detected above risk levels



Conclusions & Recommendations

- Based on detections of analytes above prescribed target concentrations, evaluate options, design and implement vapor mitigation system for 10 Hillside Road
- Perform second indoor air sampling event at 9 and 12 Hillside Road to confirm the initial results, to evaluate the potential for temporal changes, and to establish the baseline conditions
- Second round of SVMP sampling in Zone 1 and 2 to evaluate potential temporal changes and establish baseline



Conclusions & Recommendations Continued

- Based on the two rounds of indoor air sampling results, additional indoor air sampling or evaluation for 11 Hillside Road is not considered warranted
- Following second phase of sampling at other locations, determine if additional sampling is warranted
- In the case of future development, excavation, or construction in Zone 1, the property owner or developer should file a plan with DNREC-TMB regarding any planned change in site conditions or usage

Estimated Schedule – Remaining Work

Task or Milestone	Estimated Date
Mitigation at 10 Hillside Road	November 2009 – January 2010
Phase 2 Vapor Intrusion Sampling	Dec 2009/Jan 2010
Quarterly Groundwater Monitoring	November 2009
Phase 2 Report & Recommendations	March 2010
Review Project Status	April 2010



Keeping You Informed

- Residential mitigation at 10 Hillside Road
- Upcoming Phase 2 sampling
- Phase 2 Investigation report and recommendations
- Project milestones
- Decision on project status
- Future fact sheets, workshop
- www.awm.delaware.gov/Info/Pages/PetrolUpdate-Rons.aspx



For Additional Information

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