

Who We Are

- Maritime Systems and Sensors (MS2) is a business unit within the Electronic Systems business area of Lockheed Martin Corporation
- MS2 provides surface, air and undersea applications on more than 460 programs for U.S. military and international customers. The same expertise we provide to military customers is being applied to increase capabilities of U.S. and international civilian agencies. Our vision for MS2 is to set performance standards for our customers worldwide, every day with the best people, best systems and best services
- Moorestown lines of business include Advanced Naval Systems, Coast Guard Systems and Sea-based Missile Defense



Issue

Vapor Intrusion investigations under current New Jersey Department of Environmental Protection (NJDEP) policy have recently become a primary focus where contamination in shallow groundwater aquifers has the potential to impact residential properties.

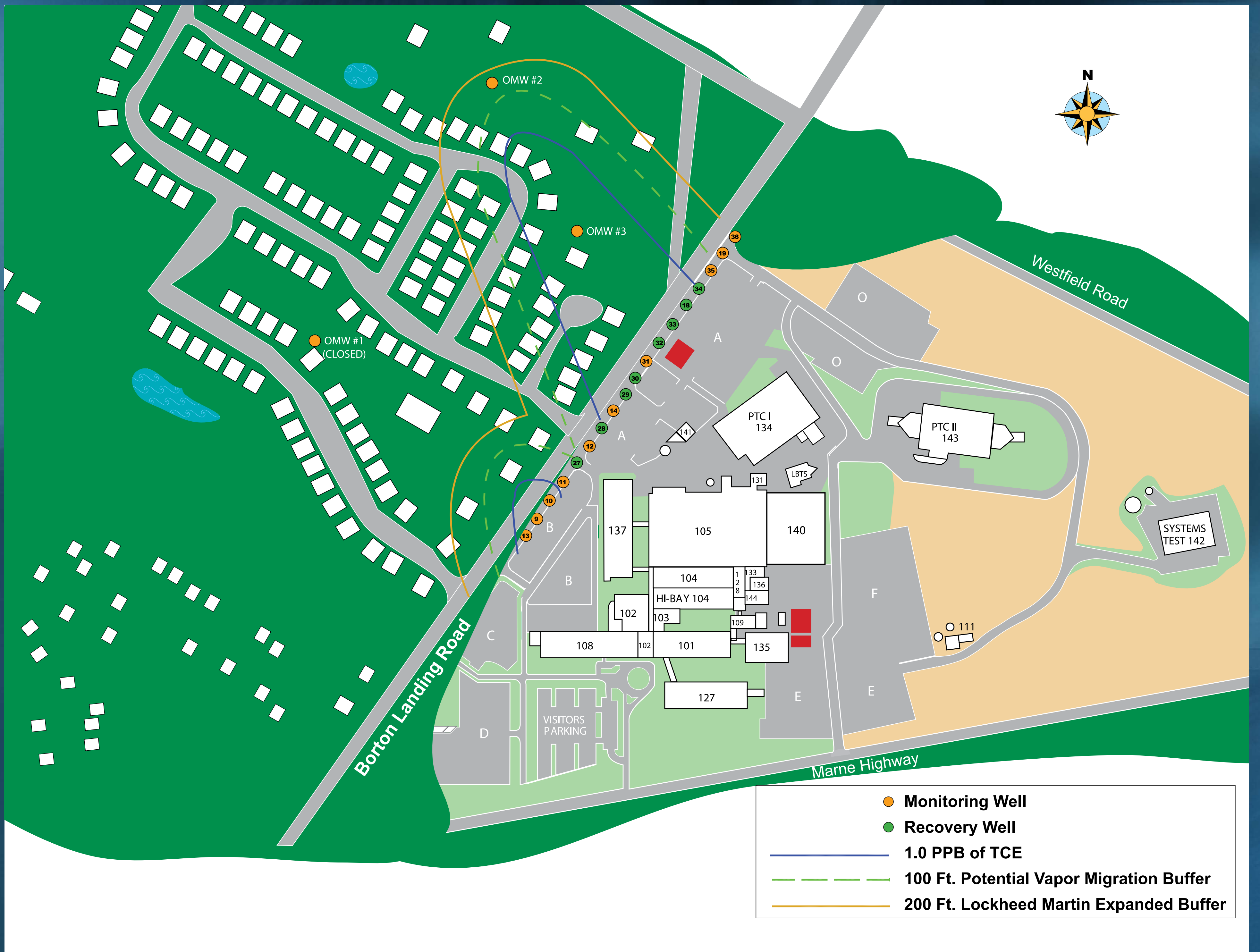


Current Focus

- **Lockheed Martin is taking steps to determine if vapor intrusion is occurring as a result of groundwater contamination**
- **Lockheed Martin is working with the NJDEP to ensure the safety of the surrounding community**
- **Lockheed Martin is also working with the Burlington County Department of Health and Moorestown Township**



Residential Map



Who Is Here Tonight?

- **Lockheed Martin**
- **New Jersey Department of Environmental Protection**
- **Burlington County Department of Health**
- **Moorestown Township**
- **URS**
- **Handex Consulting and Remediation**



On-Site History

- An environmental investigation that began prior to Lockheed Martin's ownership, revealed on-site soil and groundwater contamination from historic trichloroethylene (TCE) use
- Groundwater monitoring wells were installed in the early 1990s
- Based on groundwater sample results, and coordination with the NJDEP, three remediation systems were installed in 1994 for on-site cleanup and to prevent further migration of contaminants across Borton Landing Road
- Remediation systems have been removing contaminants virtually 24/7 for 14 years
- On-site and off-site groundwater monitoring is on-going
- TCE groundwater concentrations have been decreasing

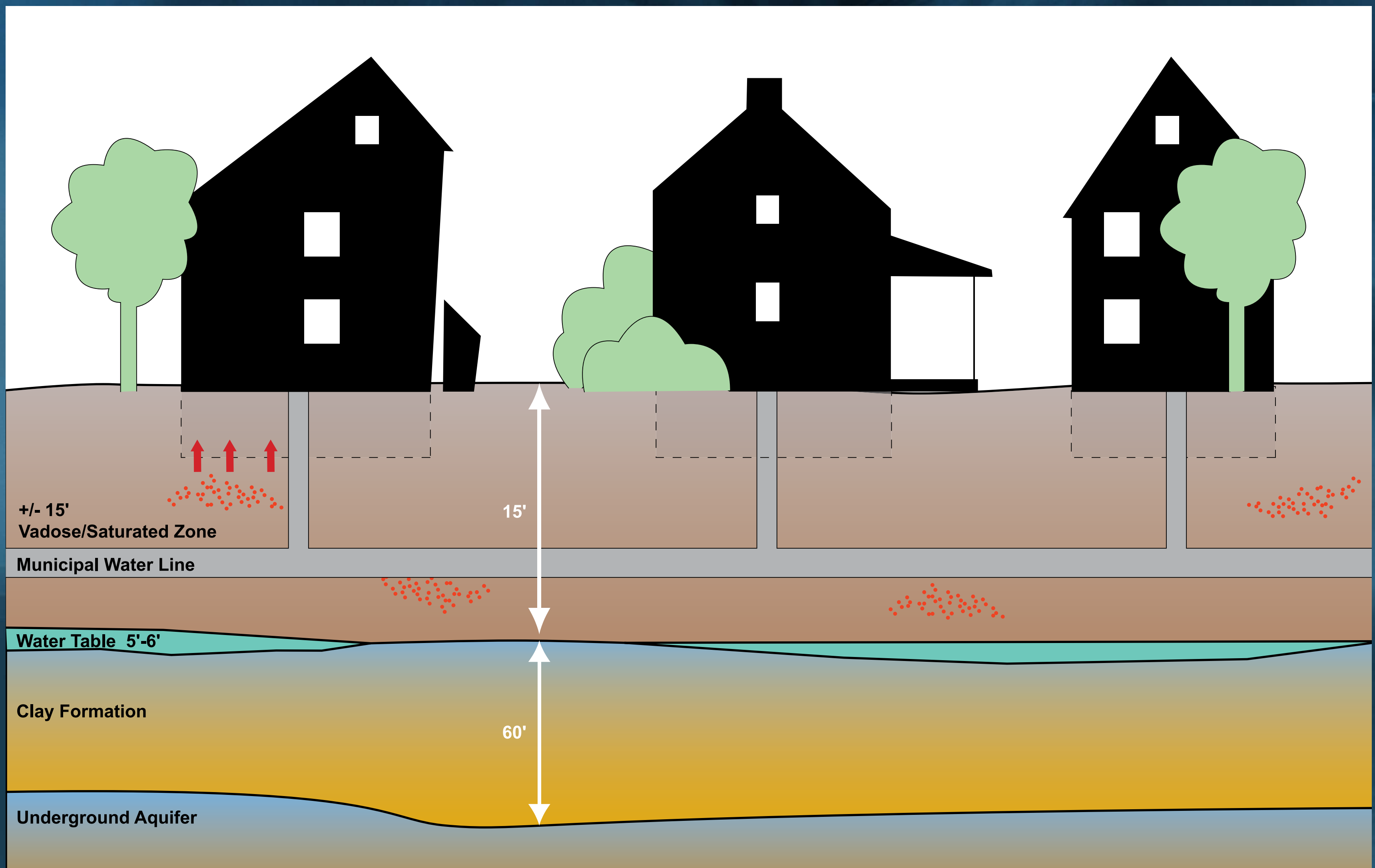


Off-Site History

- Four off-site monitoring wells were installed in 1991. Sampled annually as per NJDEP guidance
- In 1992, (Pre-Wexford) seven residences (two with low levels of TCE in private well water) were connected to Moorestown municipal water system
- In 1995, the NJDEP approved closing two off-site monitoring wells with consistent readings showing no contamination
- At the request of NJDEP in May 2007, Lockheed Martin conducted precautionary vapor intrusion testing at Chesterbrook Academy (day care facility)
No TCE detected
 - Lockheed Martin conducted vapor intrusion sampling at the Main Plant building closest to Borton Landing Road. No TCE detected

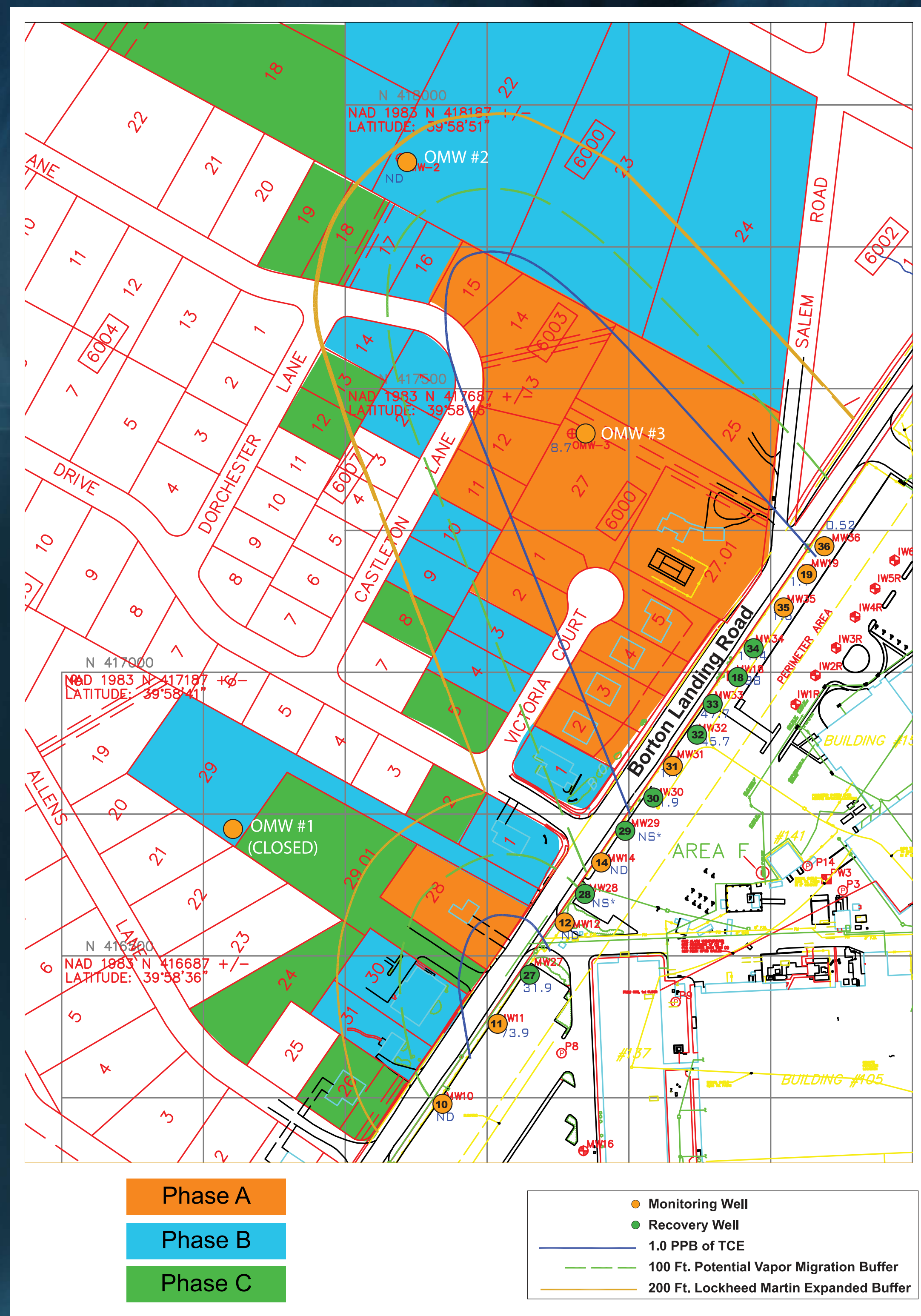


Soil Vapor Intrusion Example



- Certain chemicals called volatile organic compounds that originate from a contaminant plume* in the groundwater can evaporate from groundwater through the soil and rise towards the ground surface. From there they can penetrate into a basement through a sump or drain system and affect indoor air quality.
- Plume: A body of contaminated groundwater that extends from the source of contamination to another point in the direction of the flow of groundwater

Phased Approach Map



- Estimated Phases based on Lockheed Martin 200 ft. expanded buffer

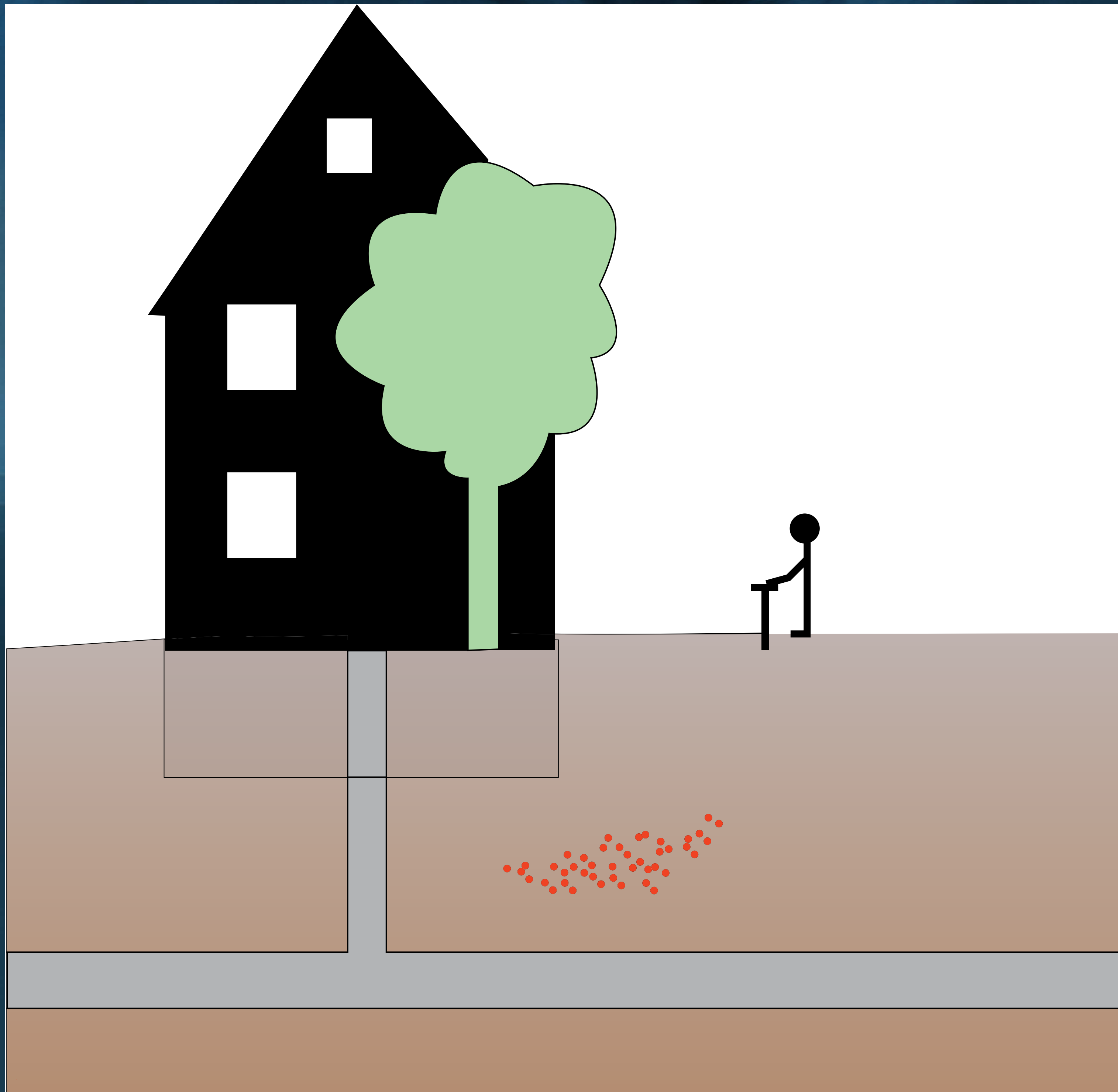


Near Slab Testing

- Near slab testing is a US Environmental Protection Agency and NJDEP approved method for sampling vapors in the soil near the foundation of a building
- A utility mark out is performed prior to the drilling to assure that no utilities are interrupted, such as electricity, natural gas, or plumbing
- The near slab testing process involves drilling a small diameter hole within 10 feet of the residential foundation, five to 10 feet below grade, inserting a plastic tube, packing sand and clay around the tube and drawing an air sample from the tube into a Summa canister



Near Slab Testing



Next Steps

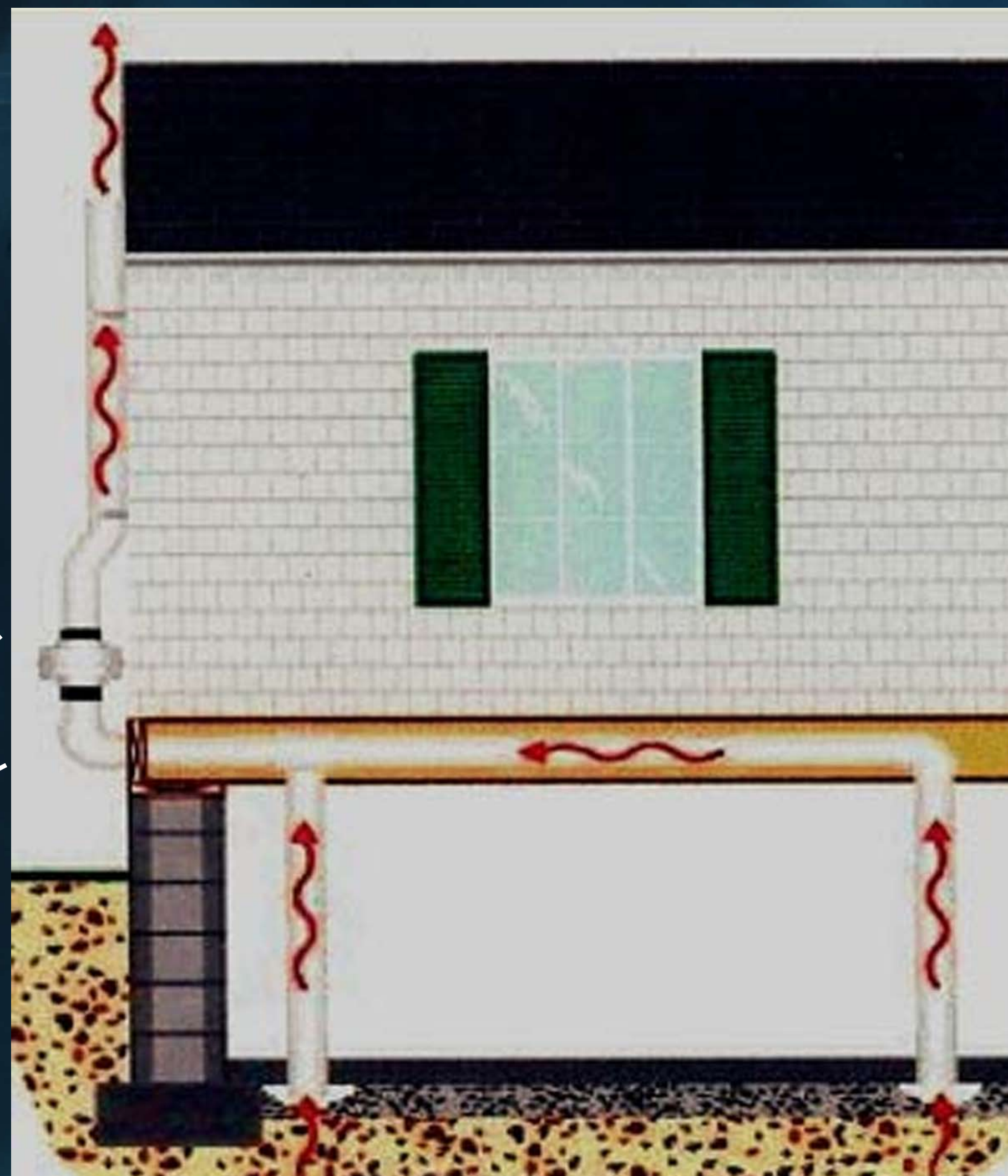
- **Continue on-site groundwater remediation and further on-site investigation of groundwater and vapor intrusion potential**
- **Investigate and further define off-site groundwater contamination by installing 27 temporary groundwater sampling wells on Moorestown Township right-of-ways**
- **Conduct precautionary near slab sampling of properties**
- **If near slab testing results reflect levels above NJDEP limits on the first test and a retest, we will conduct indoor basement subslab vapor intrusion testing**
- **Install vapor remediation systems in residential homes if indoor basement subslab test results reflect need**



Underground Vapor Mitigation System

This fan runs continuously, pulling air (and vapor intrusion) out from underneath the basement floor

This pipe runs into the basement, then underneath the basement floor



- Similar to systems used for radon



TCE

Health Concerns

- Health effects from TCE vary based on the concentration of the chemical, period of exposure, and physical condition of the individual
- TCE concentrations identified on-site and in one off-site well are above the NJDEP trigger level to sample for vapor intrusion. However, this level is extremely conservative and vapor intrusion at such levels is highly unlikely
- When TCE builds up in indoor air at concentrations high enough to cause an odor, temporary side effects may include:
 - Eye and respiratory irritation
 - Headache and/or nausea
- Some studies of people exposed over long periods to high levels of trichloroethylene in drinking water or in the workplace air have found evidence of increased cancer. (Source: Department of Health and Human Services, Agency for Toxic Substances Disease Registry, TOXFAQ's for TCE July 2003)

Activity You Will See

- **Identify sample locations on property**
- **Utility markings**
- **Temporary well installation in roadways and public right-of-ways**
- **Near slab testing: Drilling a small hole within 10 feet of foundation**



Summary

- **All properties connected to municipal water**
- **Remediation system successfully removing contaminants**
- **Vapor intrusion testing will cause minimal disruption and is being conducted as a precaution to ensure indoor air quality has not been impacted by contaminants in the groundwater**



More Information

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Vapor Intrusion Testing Process

- **Step 1: Pre-sampling survey of the home. A survey form will be completed that will include: a floor diagram; inventory of any chemicals that could interfere with test results, and review of storage and use areas, basement sumps, plumbing, electrical conduits, elevator shafts, etc. In addition, a small 1/2 inch hole will be drilled into the basement floor for the sampling canister. (estimated 2 hours)**
- **Step 2: Canisters for air sampling will be placed in the basement in the drilled hole in the floor. (1 hour)**
- **Step 3: Canisters will be retrieved within 24 hours. (1 hour)**
- **Step 4: Analysis of samples (approx. 2 weeks lab time), evaluation of results**
- **Step 5: Discussion of results with home owner (1 hour)**
- **Step 6: Lockheed Martin will submit a report summarizing the results to the NJDEP**
- ***Note: upon the request of the homeowner, Lockheed Martin will collect any waste chemicals and provide disposal.**



Household Hazardous Waste

- Any other waste that we find during testing, upon the request of the homeowner, will be taken by Lockheed Martin as household hazardous waste for disposal

Unacceptable wastes include:

Asbestos containing siding, other asbestos containing material, radioactives, roof shingles, smoke detectors, carbon monoxide (CO) detectors, tires, unknowns, biological waste, needles, waste from a business / commercial activity, appliances, and anything so deemed by company attendants.

