

The logo features a central dark blue circle with the letters 'UIC' in light blue. This circle is surrounded by a yellow ring, which is further enclosed by a red ring. Four thick lines radiate from the center: a yellow line pointing up and to the right, a red line pointing up and to the left, a yellow line pointing down, and a red line pointing down and to the right. The background is a solid light blue.

UIC

Alumni Exchange

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Cleaning up Our Communities: Environmental Protection Agency

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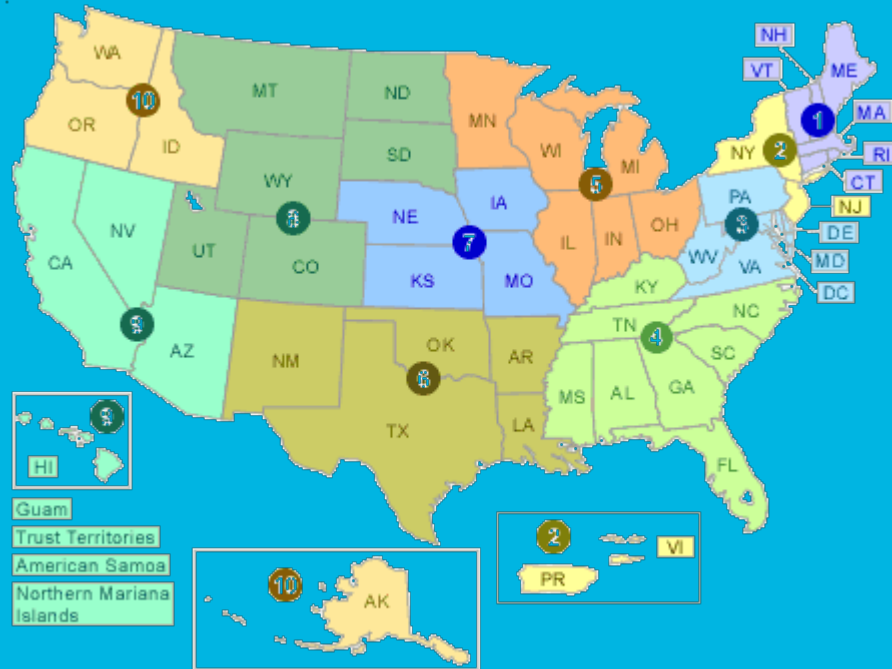
Michelle Kaysen
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US Environmental Protection Agency (EPA), Region 5

Hazardous Waste Remediation
Resource Conservation and Recovery Act, RCRA
Corrective Action Program

Not speaking on behalf of the EPA
All Material Presented is Public Record

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US Environmental Protection Agency



Home Sweet Home



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Our homes and properties
typically our greatest
investment...

Imagine walking down to
your basement and seeing
this; a sustained flame on
your foundation wall,

Or, watching this drilling equipment on your front lawn,



Or, *this* rolling
through your
backyard...



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- EPA often thought of as the Agency making national air or water policy under the Clean Water and Air Acts
- Or on the scene at large, national spills or events, like the BP Deepwater Horizon Spill



- But we also manage and oversee cleanups that impact our very own communities, homes and, sometimes, even our public lands



- I will walk through a couple of case studies I have worked on to provide insight into that work
 - *All information presented is based on my personal experience and I am not speaking on behalf of EPA*



My work varies from industrial settings, to commercial buildings, residential communities and individual homes.

Also interface with some of our Great Lake resources and ecosystems.

- Resource Conservation & Recovery Act, RCRA
 - EPA's authority to regulate solid and hazardous waste
 - Title 40 of the Code of Federal Regulations (CFR), parts 239 through 282
- RCRA Corrective Action
 - Requires facilities that treat, store or dispose of hazardous wastes to investigate and clean up contamination
 - Implemented by permits and orders
 - Almost 4,000 Corrective Action sites nationally
 - Almost 1,000 in EPA Region 5
- Facilities range from chemical plants, refineries, steel mills
 - Authority to go beyond facility boundary to address contamination that has migrated off site to other properties

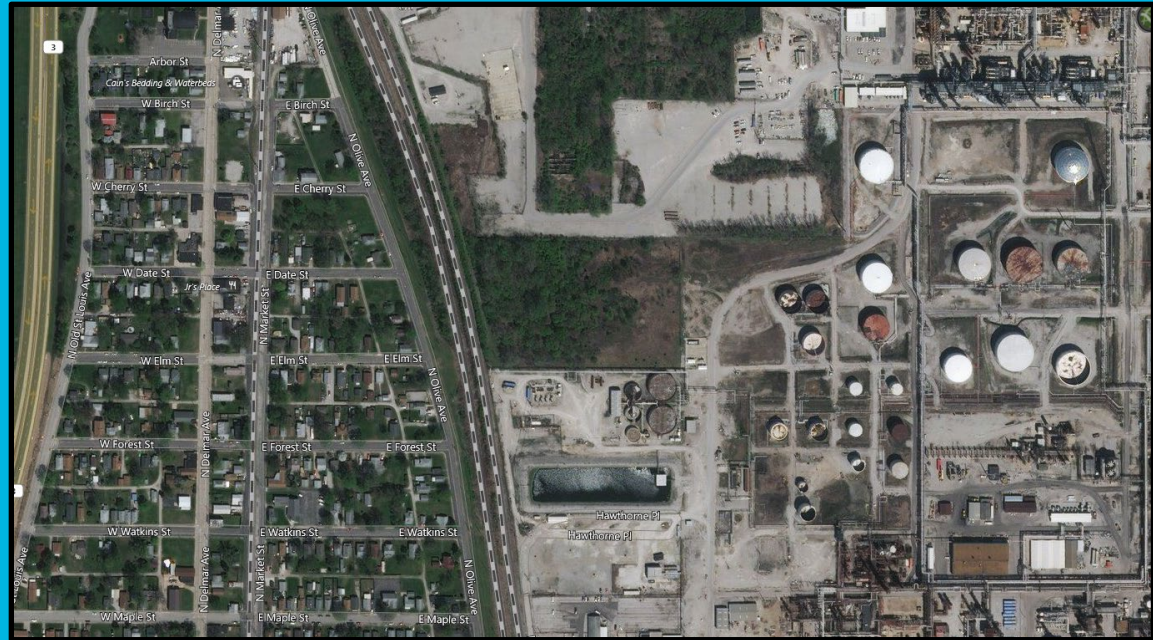
Community Contaminated by Gasoline

Vapor Intrusion

Half of the entire village sits on top of a gas plume from adjacent oil refineries.

The underground gasoline off-gases and causes gasoline vapors.

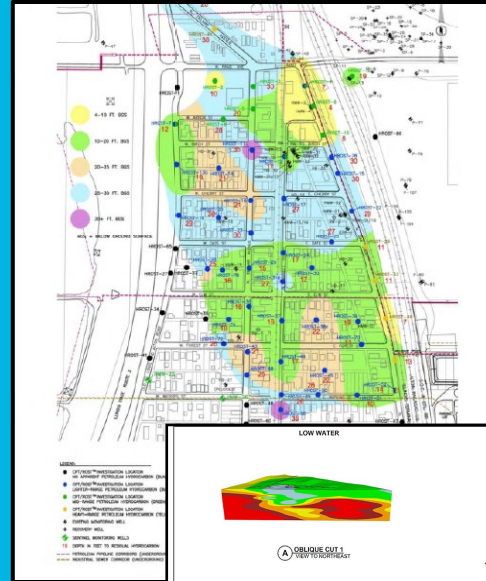
Vapors move up through the soil, reach the foundation of a home and “intrude” in through small cracks, or preferential pathways.



Vapor Intrusion from Ignitable Sources

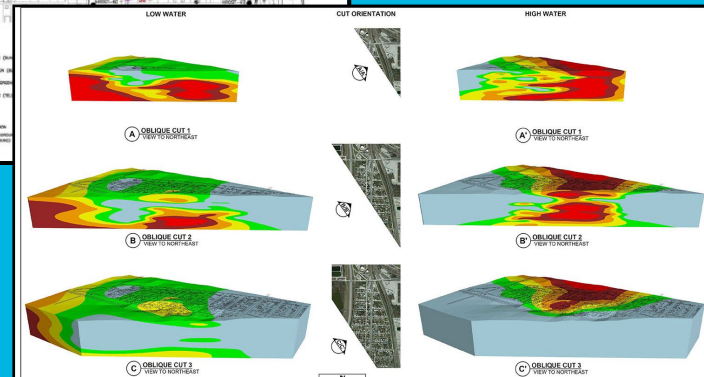


Long history of fires in homes dating back to the '70s. Contamination accumulated over 40-50 years. Over 10 million gallons in ground. Highly complicated site with extensive litigation history. EPA involved in 2004.



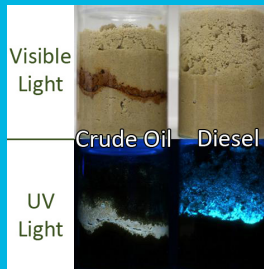
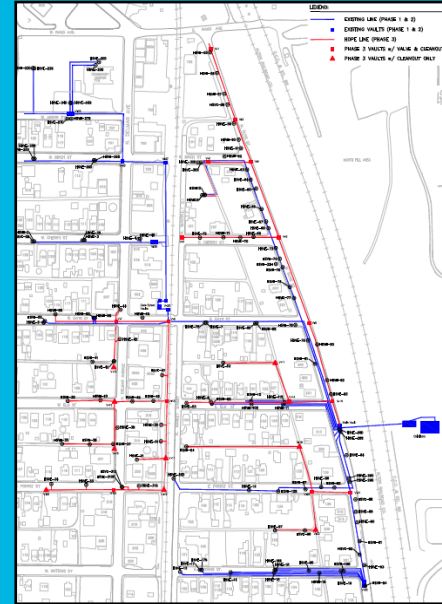
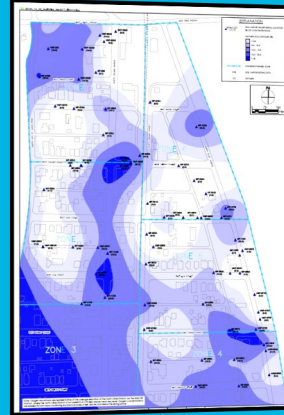
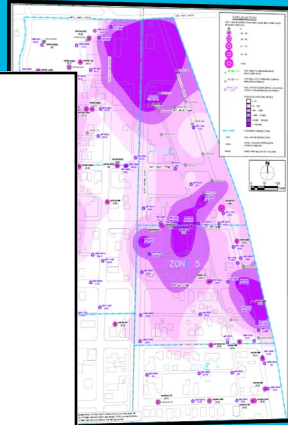
Steps to Every Cleanup

- Problem Identification
- Conceptual Site Model
- Investigation
- Data Analysis
- Risk Assessment
- Cleanup Evaluation
- Remediation
- Long-term Monitoring



Investigations

Data quality objectives established, systematic planning up front, & iterative phases build on each other to inform conceptual site model and sound remedy decisions



Dakota Technologies

Each piece of data should build on the last to provide a representative picture of environmental conditions.

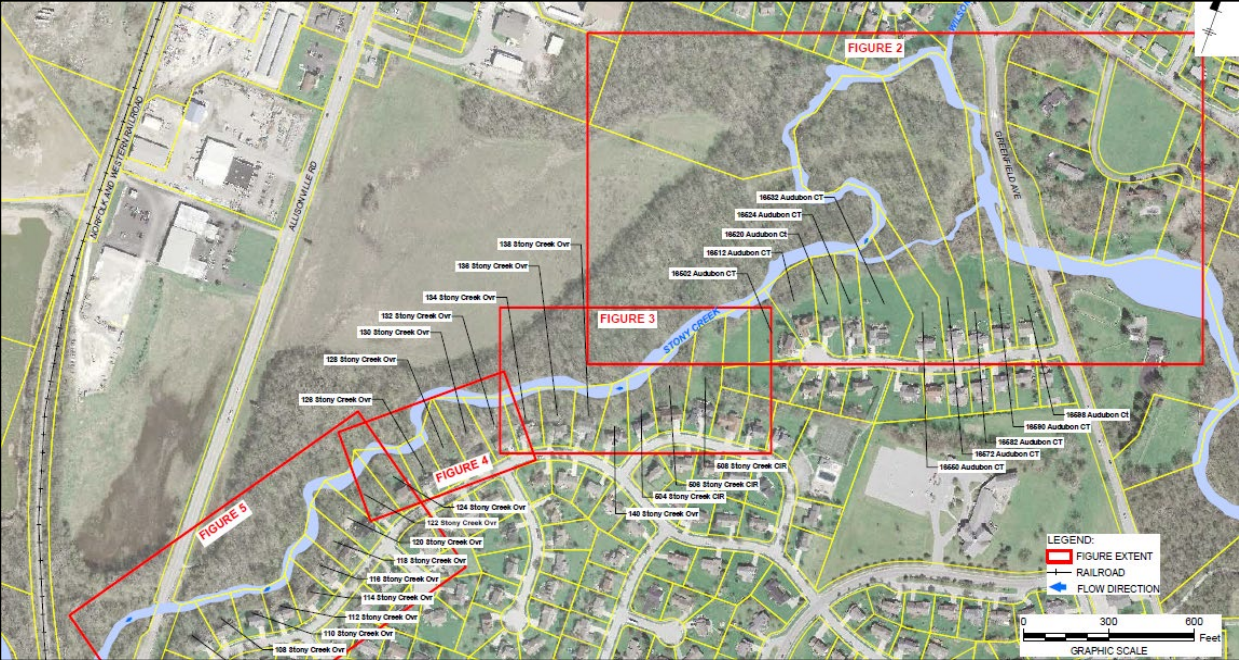
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Follow the Data: Sampling Inside Homes



- A difficult but necessary part of some investigations.
- Work with responsible party to gain access to property.
- Help home owner to understand the purpose and procedures of sampling.
- Conduct oversight of activities.

Remediating Residential Backyards: Over 30 properties contaminated with PCBs



Excavating Contaminated Soil and Replacing with Clean Soil and Landscaping



Before

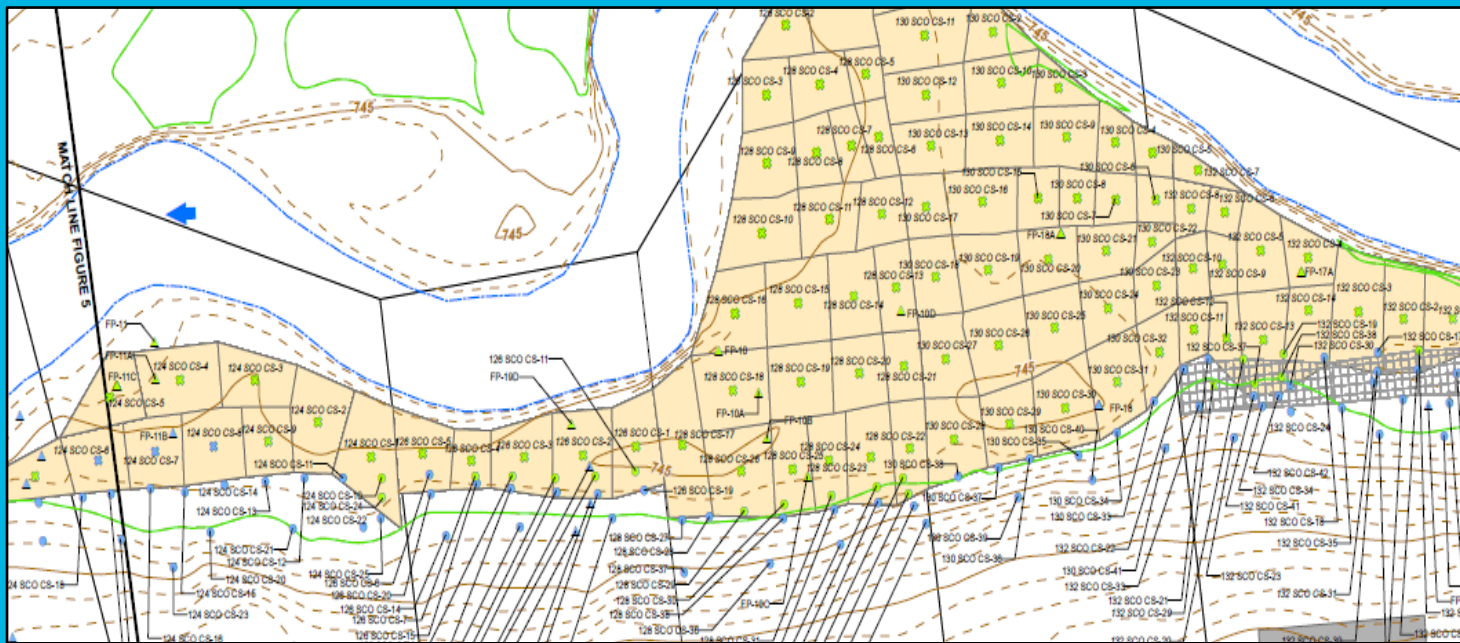


During



After

Changing Approach & Customizing Properties





Our gridding approach allowed us to scale the equipment size to further minimize damage



