



## Examples of real-time data use in Maine

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MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION

*Protecting Maine's Air, Land and Water*

- Real-time field measurements are used in many Maine DEP programs
- Real-time measurements used to guide timely field decisions
- Confirm field measurements with laboratory results



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## Routine petroleum clean-up in soil

Everyday real-time field method

Followed by lab confirmation

Photoionization detector- PPM range



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## VI investigation

Everyday real-time method

Photoionization detector- ppb range

Ambient indoor air



Monitor progress before taking canister for lab confirmation



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## Maine sand & gravel aquifers



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## Milo, Maine retail gasoline UST



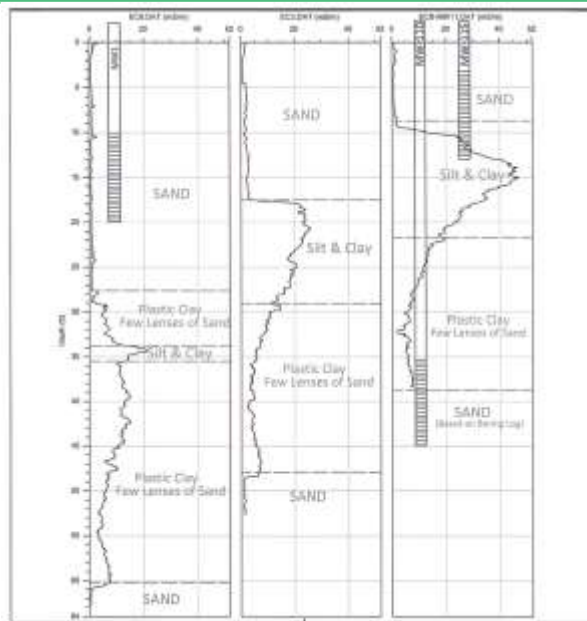
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- 10-15 feet to water table
- Gasoline compounds in shallow ground water
- Public water supply well downhill
- Needed to define aquifer at depths greater than 15 feet

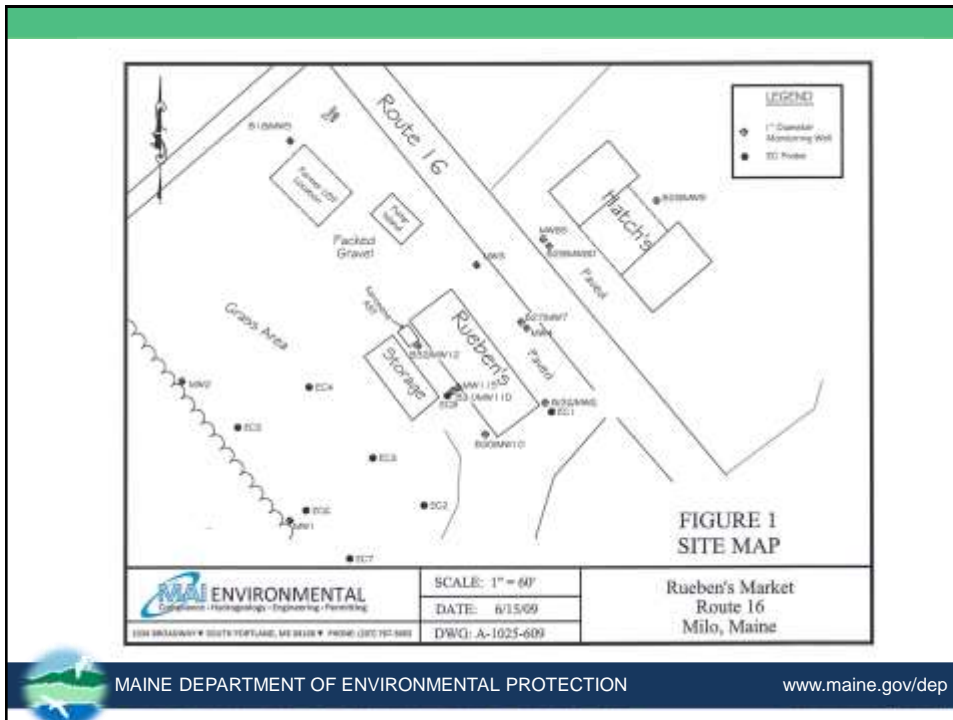


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## Using the EC logs

- Selected deep screen intervals
- Explored an extensive area quickly
- EC readings confirmed with selected deep soil borings

## Petroleum bulk storage AST Free product investigation



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## Shallow water table ~4 feet

- Several dozen shallow soil gas points



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## Real-time field analysis

- Portable FID



- Mobile GC lab



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- FID delineated extremely high readings
- Chemist used GC in mobile lab to categorize type of product based on chromatograms
- Subsequent sample points selected based on real-time interpretation
- Targeted water, soil, and neat samples to send to fixed lab for fingerprinting



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## Use of field XRF

- Screening of soil samples to guide further sampling and clean-up
- Followed by lab confirmation for final closure



## Screening & Delineation

- XRF an excellent tool for lead in soil:
  - Pb is a common contaminant and risk driver;
  - It has a low XRF detection limit relative to soil health risk guidelines;
  - There are few interferences from metals commonly present in soil at higher levels.
- We know lead paint or flashing can form a 'halo' around older buildings. But what if there is no lead paint anymore?







## Real-time Removal Confirmation



## Real-time Removal Confirmation

- Without RT data, the choices can be to over-excavate or come back later for more removal.
- XRF gives instant feedback on whether the remedial goals have been met.
- Greener Remediation: Saves on Mob/Demob, trucking, treatment, and disposal costs.
- Multiple reads per plot, generous margin of error reduce the likelihood of lab contradiction.



- Real-time field data useful to guide daily site activities
- Back up real-time measurements with laboratory data





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