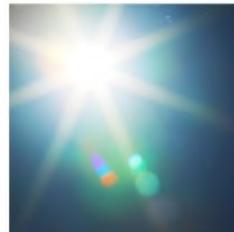


Dry Cleaning and the Environment

Virginia Voluntary Remediation Program





- The primary difference between laundering and dry-cleaning is the method by which wastes from the cleaning process are handled. When you launder clothes with water, the waste water and dryer air only contain soap, lint, and dirt. Dry –cleaning solvents , on the other hand, present an environmental hazard and therefore must be contained and reclaimed after they are used.



Solvent leaks and waste streams can contaminate the environment

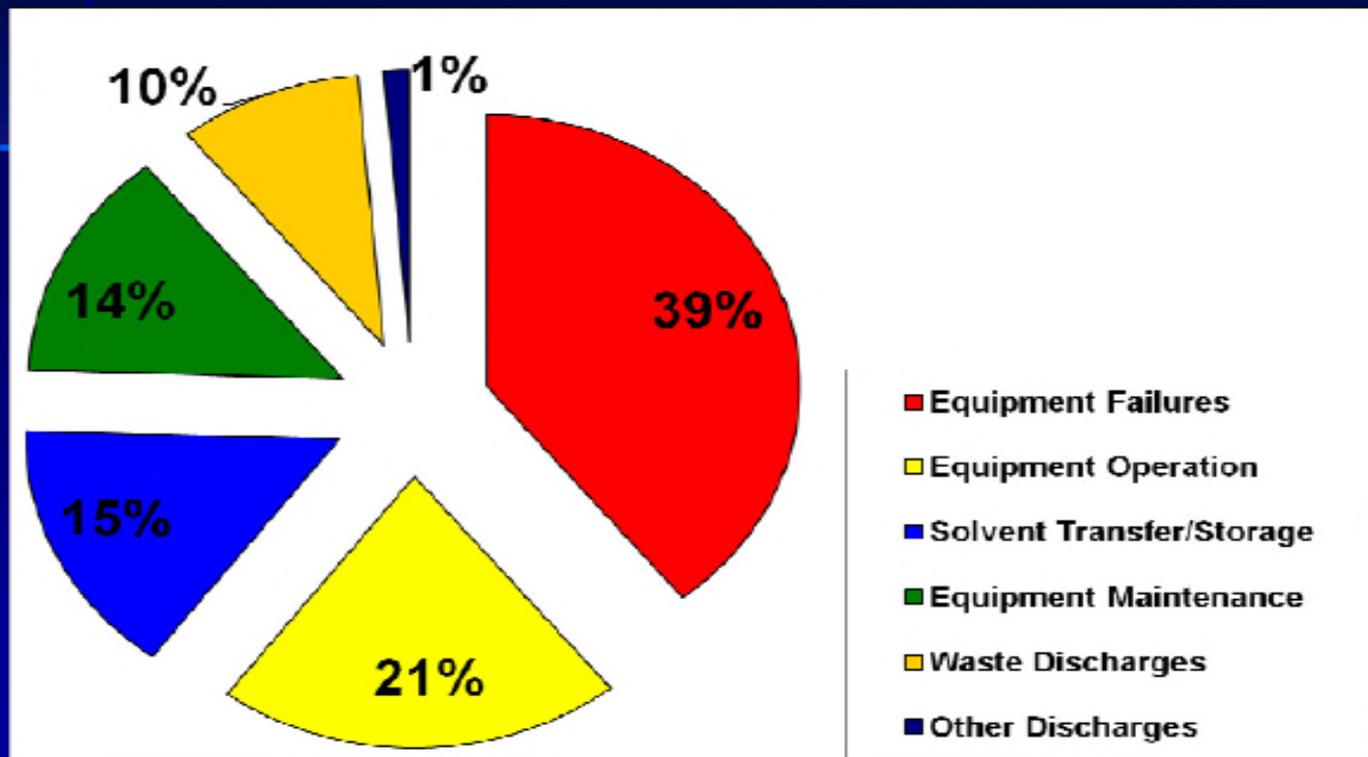
Types of Wastes Generated by Drycleaning Operations

- Distillation Residues/Cooked Powder Residues
- Spent Filters, Spent Filter Powder (Muck)
- Separator Water
- Mop Water
- Vacuum Water
- Lint
- Waste Solvent

- A solvent leak, dripping at the rate of one drop per second will result in one gallon of solvent being discharged during an eight hour (working) day (EPA, 1994).

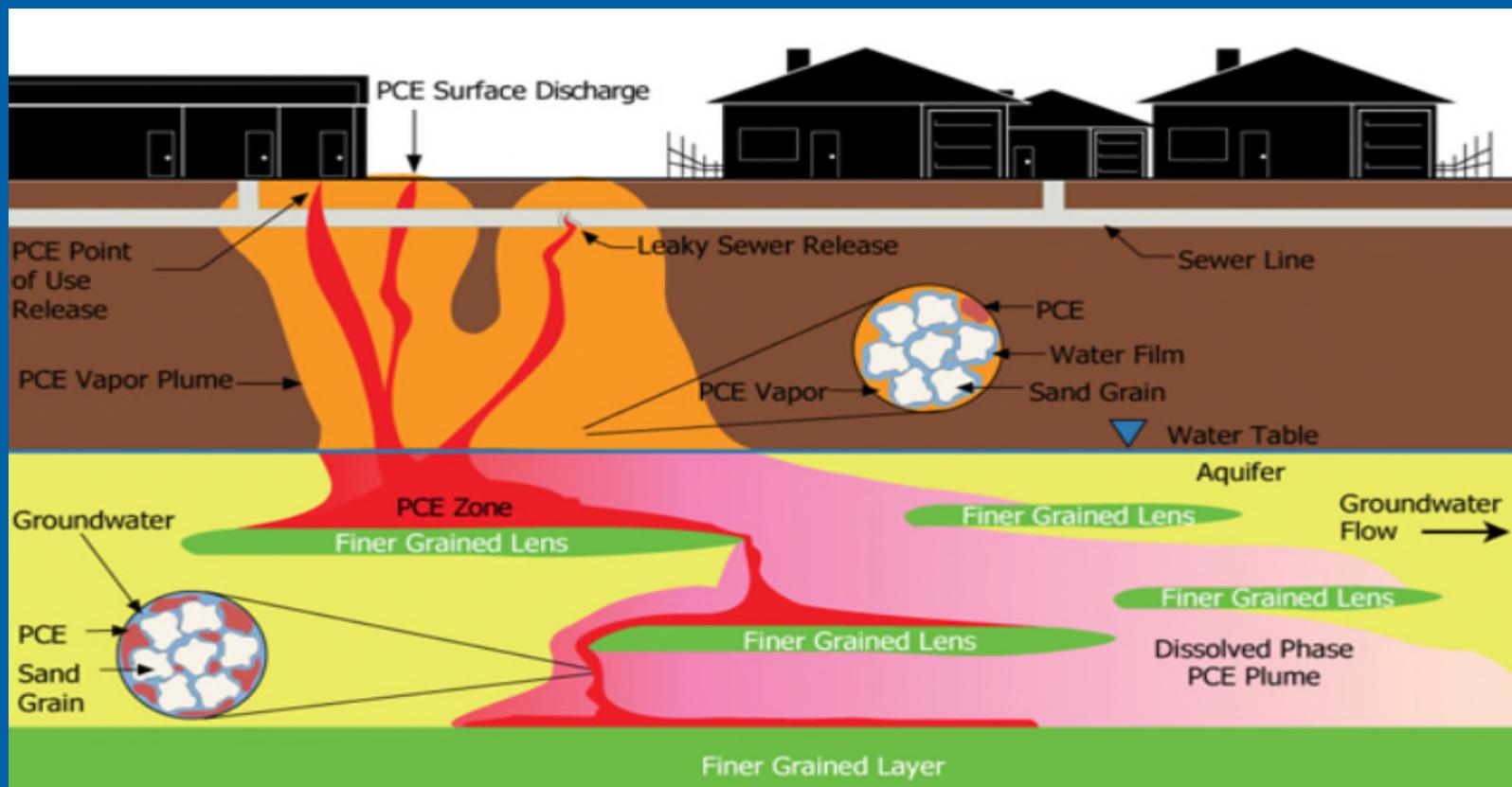
Unintended leaks and spills account for the majority of solvent releases to the environment

Sources of Reported Drycleaning Solvent/Waste Discharges

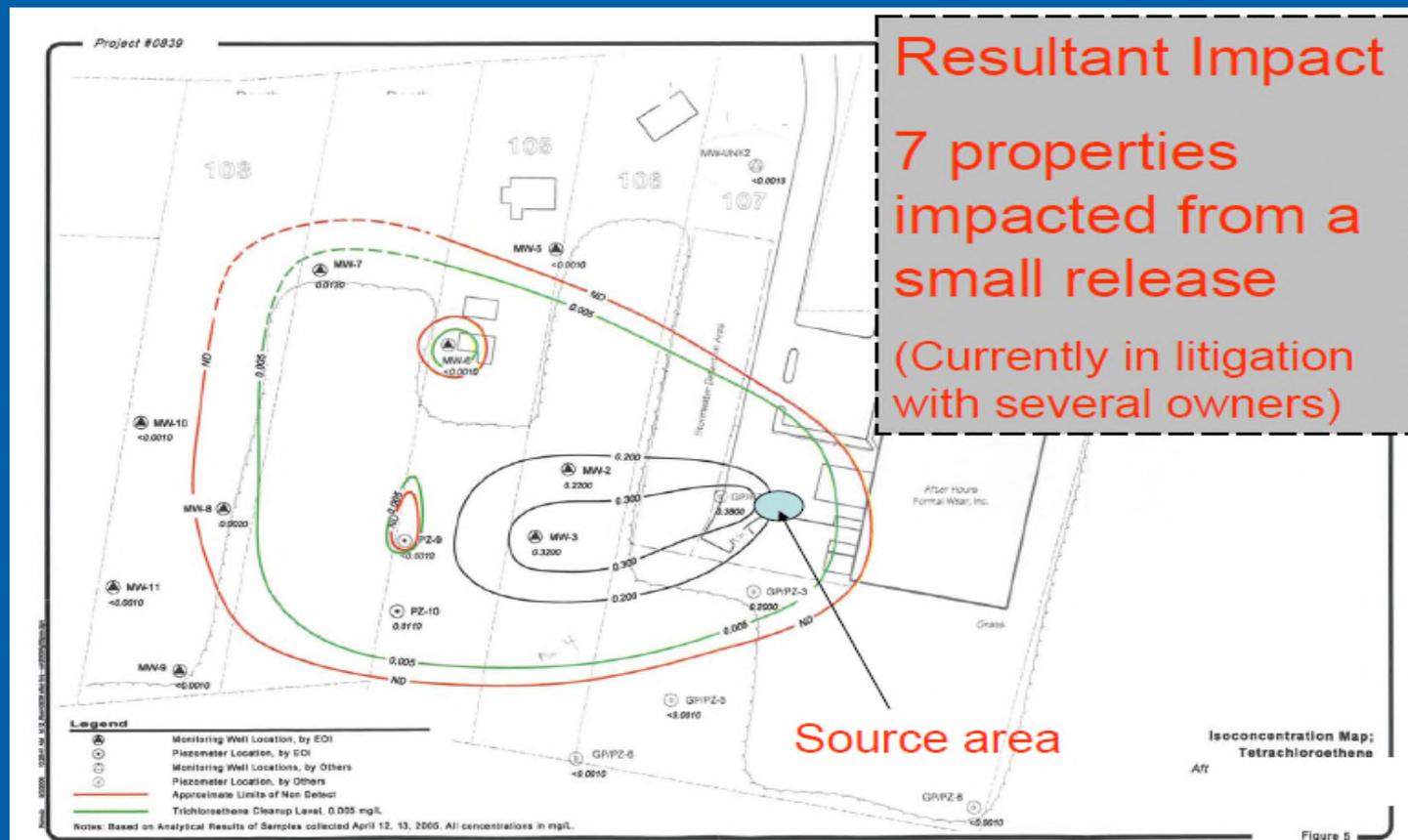


Solvent releases create environmental impacts through soil, groundwater and vapor intrusion (VI) pathways

Perchloroethylene (PCE) spill conceptual site model



Groundwater, utility lines and other flow paths can move impacts far beyond the release site creating off-site risks and extended liabilities



Health Risks

Dry-cleaning solvents can threaten human health mainly by contaminating indoor air and / or drinking water. They often cannot be smelled or tasted. The amount of solvent contamination does not need to be large to be harmful.





DEQ - VRP

“The Voluntary Remediation program is essential to our liability management strategy and provides an efficient means to eliminate environmental impacts to high-value commercial property.”

Southside Virginia Property Manager



Benefits of VRP participation

- **Not an enforcement program – participation is voluntary**
- **Site cleanup is driven by risk reduction thereby creating more flexible remediation goals**
- **Flexible Site Characterization and Remediation schedules allow resource commitments to be phased over time**
- **Successful VRP completion provides the participant with future enforcement immunity**

VRP Participation Process

- **Application – enrollment:**



- **Site Characterization Investigation**

- **Site remediation**

- **Demonstration of Completeness – VRP Certification**



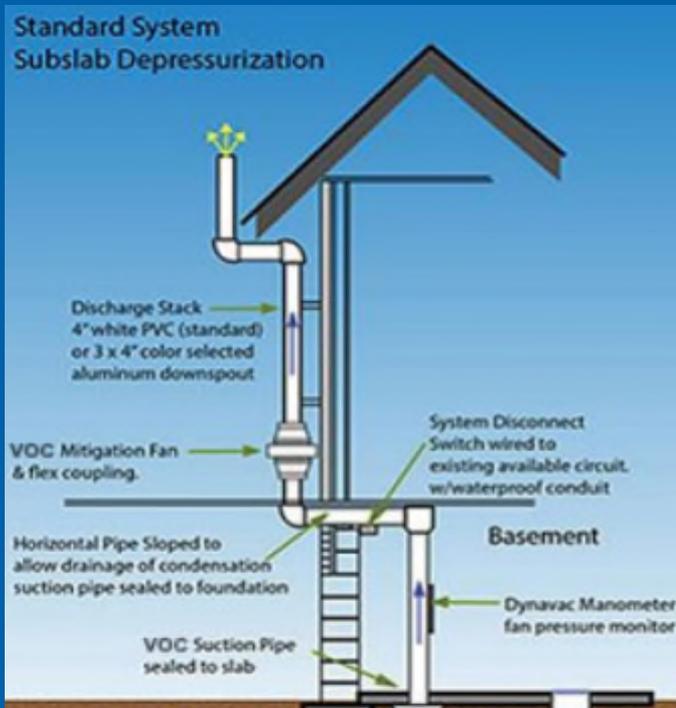
Site Characterization

- Soil, groundwater and vapor sampling are conducted to create a Conceptual Site Model
- Sample locations typically include under the Dry Cleaning facility; outside perimeter of the Dry Cleaning facility and down gradient property boundaries if a contamination plume is suspected.



Site Remediation

- Remediation goals are tailored to risk reduction needs.
- Remediation can include engineering and institutional controls:



Deed Restrictions

Restrictions on land use that a owner places in the deed to control future development.

Also known as restrictive covenants.



- Many VRP sites use Institutional Controls to break VI and other exposure pathways -minimizing the need for engineering controls



Certification

- **Site and remediation overview is published in a public notice**
- **DEQ-VRP issues a Certificate of Satisfactory Completion of Remediation**
- **Certificate and any Institutional Controls are recorded with the property deed.**
- **Participant is granted enforcement immunity**



Information / Contacts:

VRP Home Page:

[Virginia DEQ - Voluntary Remediation Program](#)

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Federal regulation links

[Standards of Performance for Petroleum Dry Cleaners](#)

[National PCE Air Emission Standards for Dry Cleaning Facilities](#)