

Water Quality Issues and Stormwater Concerns in the District of Columbia

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WQD Regulatory Authority

- **Water Pollution Control Act of 1984, as amended, (D.C. Law 5-188; D.C. Official Code §§ 8-103 *et seq.*)**
- **Storm Water Permit Compliance Amendment Act of 2000 (D.C. Law 13-311; D.C. Official Code §§ 34-2202.06a (2001)(section(c))**

New Stormwater Management Regulations

- Promulgated in 2013
- Paradigm shift occurred
- Move from First Flush Approach (1/2 inch)
- Move to Retention Standards

New Stormwater Management Regulations (Cont'd)

Major land-disturbing activity

- 5,000 sf or more of land-disturbing activity.
- Required to retain the first 1.2" of rainfall.
- Detention requirements also apply.
- Disturbance solely for utility trench is exempt.

New Stormwater Management Regulations (Cont'd)

Major substantial improvement activity

- Renovation for which:
 - Cost exceeds 50% pre-project value of structure AND
 - Combined footprint of structures & land disturb $\geq 5,000$ sf.
- Required to retain the first 0.8" of rainfall.

Allowable Use of Off-Site Retention

On-site retention $\geq 50\%$ of volume.

- No need to prove that on-site retention is technically infeasible or environmentally harmful.



On-site retention $< 50\%$ of volume.

- Must prove that on-site retention is technically infeasible or environmentally harmful.



Options to Achieve Off-Site Retention

Stormwater Retention Credits (SRCs)

- Privately tradable
- Created by voluntary retrofits or sites that exceed regulatory obligation

In-lieu fee

- Payable to DDOE

Soil Erosion and Sediment Control Regulations

- Triggered by 50 sqft of land disturbance
- Emergency work to protect lives or property and emergency repairs can proceed without first obtaining DOEE approval of ESC plan, but:
 - Protective control measures must be used in accordance with DOEE-approved standards;
 - Disturbed area must be shaped and stabilized in accordance with DOEE-approved standards; and
 - An ESC Plan must be submitted within 3 weeks of beginning emergency work

Utility Trenching/Work with No Sediment Protections



Utility Trenching/Work with No Sediment Protections



NPDES Permits

- **Individual Permit:**

- A permit specifically tailored to an individual facility.
- The permitting authority develops a permit for that particular facility based on the information contained in the permit application (e.g., type of activity, nature of discharge, receiving water quality).

- **General Permit**

- A permit that covers multiple facilities within a specific category or having common elements.
- General permits may offer a cost-effective option for permitting agencies because of the large number of facilities that can be covered under a single permit.

U.S. & DC WATERS
- Streams and Rivers

MS4 PERMIT
- Stormwater
- Other discharges with
their own NPDES permit

DC WASA (DC Water)
- Wastewater Treatment Plant

GENERAL PERMITS
- Different types

INDIVIDUAL PERMITS
- Treated industrial wastewater
- Treated process water
- Municipal stormwater

**CONSTRUCTION
GENERAL PERMIT**
- Stormwater
- Uncontaminated
non-stormwater

**VESSEL GENERAL
PERMIT**
- Normal
operations of boats
/vessels > 79 ft
long

**SMALL VESSEL
GENERAL
PERMIT**
- Normal
operations of
boats/vessel s <
79 ft long

**PESTICIDE
GENERAL
PERMIT**
- Pesticide
application

**MULTI-SECTOR
GENERAL PERMIT**
- Stormwater
discharges
associated with
past & current
industrial activities



Water Quality Concerns

Fixed Sources

- **Industrial Stormwater Discharges (NPDES MSGP)**
 - Sub-Stations, Switch yards, utility vaults, and power generation stations
 - Compressor stations, utility vaults, and manufactured gas plants
- **Waste Water Discharges (NPDES Individual Permit)**
 - Process water
 - Cooling water
- **Emergency Response Incidents**
 - Spills and releases
 - Equipment Failures



Regulatory and Permitting Scenarios

- Larger fixed generation and production facilities have clear permitting paths;
 - Individual NPDES Permits
 - MSGP Industrial Stormwater Permit
- Small auxiliary facilities not explicitly covered by these permits;
 - Sub-stations, switch yards, and utility vaults.

Cooperative solutions must be developed, so utilities and regulators can work together to protect water quality.

Industrial Stormwater Discharges



- Utility Vaults
 - Designed to house underground equipment; including transformers and pressure regulators
 - Collect stormwater and groundwater which must be drained prior to access for maintenance.

Industrial Stormwater Discharges

Control Measures

- Substations, Switch Yards, Compressor Stations:
 - Stormwater contact with equipment
 - Equipment Protections and BMPs Installation
 - Stormwater contact with operational spills, leaks and drips
 - Good BMPs and Housekeeping Measures
 - Oil Reclamations Pits (ORPs)
 - Designed to contain spills, but collect large volumes of stormwater.
 - Auxillary operations
 - Fleet and Equipment Maintenance and Fueling

Waste Water Discharges

- Process Water
 - Water removed during gas processing
 - Treated contact or stormwater
 - Water used during plant operations
- Cooling Water
 - Water used during generation or other production operations



Emergency Response

- Major Equipment Failures
- AST releases or failures
- Insulated line release or failures
- Auxiliary Operations Spills and releases.



Emergency Response

- Accidents Can and Will Happen.
- Prepare and Practice for the Worst
 - Updated SPCC Plans and SWPPPs
 - Trained and drilled personnel
- Notification, Notification, Notification
 - Communication with first responders and regulatory agencies can mean the difference between 1,000 mL entering the water and 1,000 gallons entering the water.

Water Quality Concerns

Mobile Sources

- Pesticide and Herbicide Applications
 - May require Pesticide Management Plan and/or Pesticide General Permit coverage
- Fleet and Service Operations
 - Service area, service frequency, and operations create an increased potential for threats to water quality
 - Best Management Practices and Employee Training can greatly reduce this potential.

Environmental and Human Health Problems from Leaky Utility Vaults

Vaults can develop leaks from aging materials (seals and valves, cracked concrete, corrosion, etc.) Leaky vaults may:

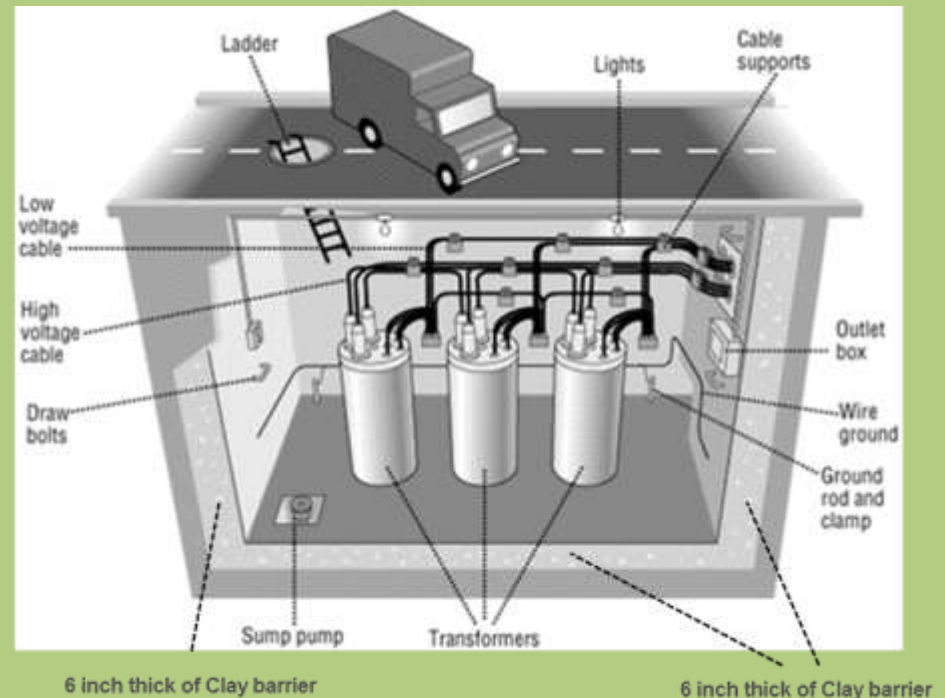
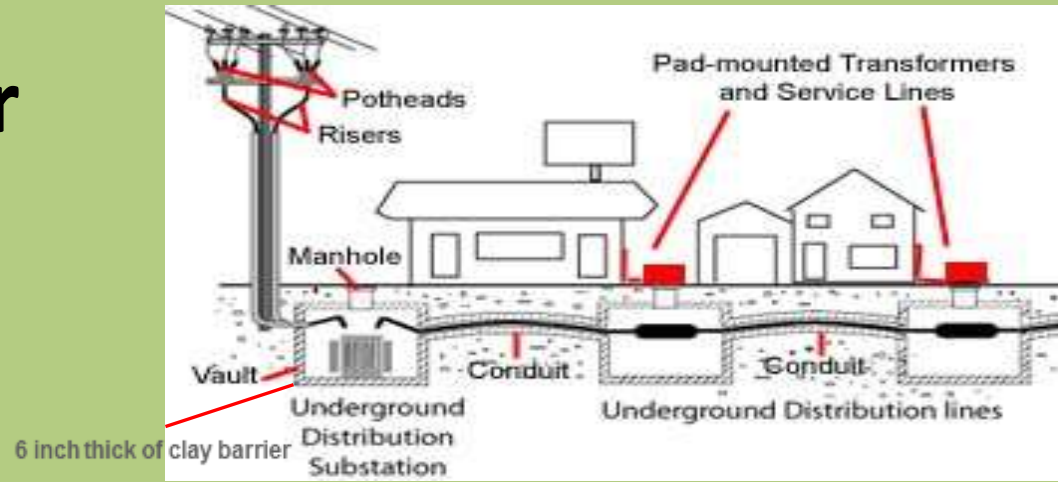
- Leach pollutants into surrounding soils;
- Infiltrate into groundwater
- Create a contaminant plume
- Contribute to non-point source pollutant discharges into surface water bodies; and
- Pose an unacceptable risk to workers and nearby residents



Protecting Water Resources

Leaking pollutants may be prevented from escaping into the environment by

- Installing a protective clay barrier in the excavation hole to prevent groundwater or surface water intrusion or leaking of pollutants from the vault.



Protecting Water Resources (cont.)

Conducting:

- periodic inspections and maintenance of the vault and its contents to identify problems before they occur
- inspections after events that can impact the structural integrity of the vault (e.g., earthquakes & construction activities)
- promptly making necessary repairs.



Questions?

