



# Proper Concrete Washout Procedures

February 28, 2017  
City of Newport News

# Agenda

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- ▶ **Basic Definitions**
- ▶ **What's in Concrete & Concrete Washwater**
  - ▶ Why's it Harmful?
- ▶ **Laws & Enforcement**
  - ▶ EPA, DEQ, City, SCOPs.
- ▶ **Best Management Practices**
  - ▶ Acceptable & Unacceptable Washouts
- ▶ **Questions & Discussion**

## Who we are...

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- ▶ City of Newport News Representatives
- ▶ Title: Environmental Specialist
- ▶ Job: Protect stormwater systems and any components thereof.
  - ▶ E&S/VSMP Inspections
  - ▶ Chesapeake Bay Preservation Area Inspections
  - ▶ Plan Review
  - ▶ Wetlands Delineation
  - ▶ Spill Response
  - ▶ Water Sampling
  - ▶ Illicit Discharge, Detection, & Elimination
  - ▶ Environmental Enforcement



# Basic Definitions

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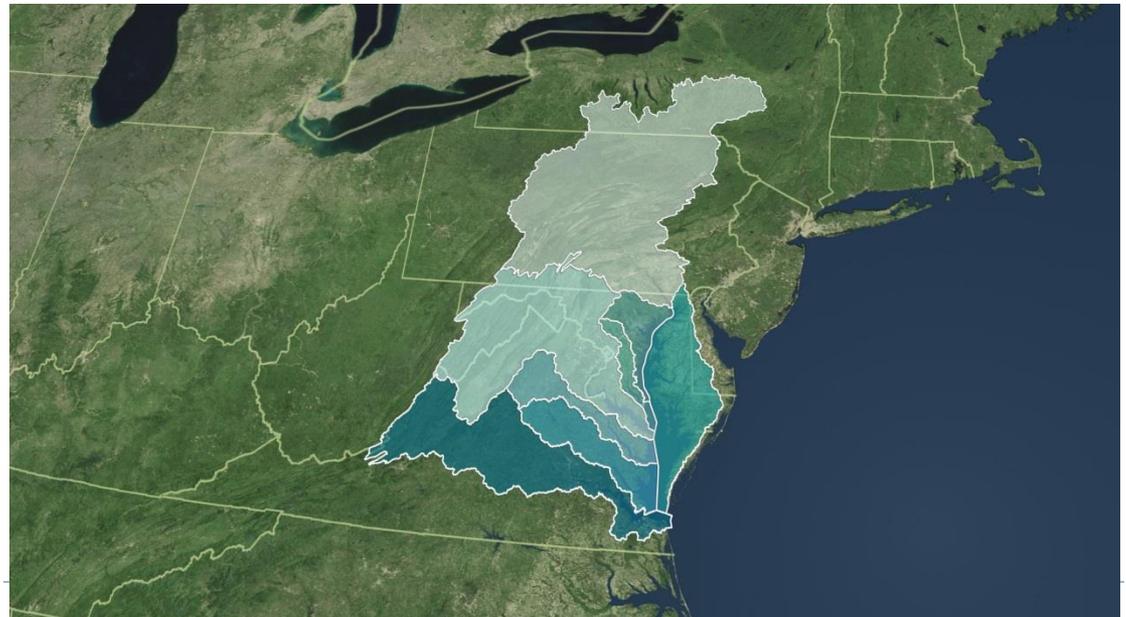
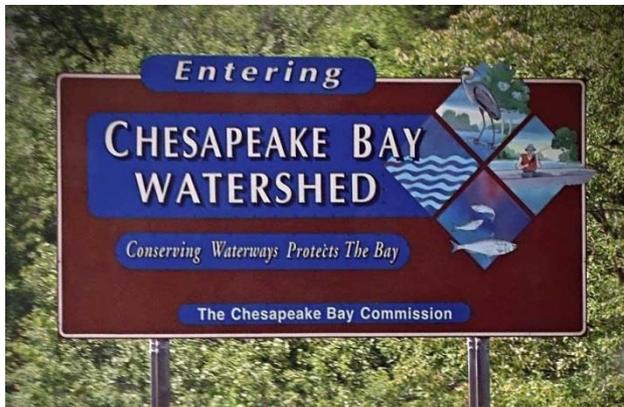
- ▶ **Stormwater:** Runoff from natural precipitation, such as rain or snow.



- ▶ **Watershed:** The land that water flows across or under on its way to a receiving water body.
  - ▶ We all live in a watershed, therefore our collective, individual activities impact stormwater quality.

# Chesapeake Bay Watershed

- ▶ Largest estuary in the US and 3<sup>rd</sup> largest in the world.
- ▶ Includes parts of New York, Pennsylvania, Delaware, West Virginia, Virginia, and Washington D.C.
- ▶ Approx. 64,000 square mile area & 18.1 million people.



# What's in Concrete?

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- ▶ **Three Primary Ingredients:**

- ▶ Water
- ▶ Aggregate
- ▶ Portland Cement

- ▶ **Portland cement contains:**

- ▶ Clay
- ▶ Limestone
- ▶ Oxides of calcium, aluminum, silicon, and other metals.



# What's in concrete washwater?

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- ▶ It's not just water!
- ▶ Slurry of toxic metals
  - ▶ Caused by the chemical reaction called hydration.
  - ▶ Aluminum, Barium, Chromium, Chromium 6, Copper, Iron, Magnesium, Manganese, Nickel, Potassium, Selenium, Sodium, Vanadium, and Zinc.
- ▶ Trace elements of petroleum products
- ▶ Suspended solids
- ▶ Sediment



## Why is this harmful?

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- ▶ Human: It's caustic and corrosive.
- ▶ Aquatic life: Harms fish gill & eyes. Interferes with reproduction. Death.
- ▶ Vegetation: Inhibited growth, damage to soil, substantial alteration of soil and plant chemical composition.
- ▶ Groundwater: Polluted water can percolate down through the soil and ultimately enter into the watershed.

High pH increases the toxicity of other substances in the surface waters and soils.



# pH of Concrete Washwater



6.5-8.5



12



13.5

# Environmental Protection Agency (EPA)

- ▶ Clean Water Act
- ▶ MS4 Regulation 122.34 9(b)(3)
- ▶ Construction General Permit (CGP)
  - ▶ **Part 1.3.1: concrete washout listed specifically as a prohibited discharge.**
- ▶ National Pretreatment Standards for Prohibited Dischargers.



## Clean Water Act, The Process

Set Water Quality Standards



Assess Water Quality



Issue Discharge Permits



Enforce Permit Limits

# State Law

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- ▶ Department of Environmental Quality (DEQ)

- ▶ [www.deq.virginia.gov](http://www.deq.virginia.gov)



- ▶ Operate under the Dillon Rule.
  - ▶ A legal principle that local government have only those powers granted by their state government.
- ▶ Virginia Stormwater Management Act
  - ▶ Code of Virginia, Title 62.1, Chapter 3.1, Article 2.3
- ▶ Virginia Stormwater Management Program (VSMP) Regulation
  - ▶ Virginia Admin Code, Chapter 870
- ▶ General VPDES Permit for Discharges of Stormwater from Construction Activities
  - ▶ Virginia Admin Code, Chapter 880

# Local Ordinance

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- ▶ Operate in Chapter 37.1 – Stormwater Management

- ▶ 37.1-22. a(1):

- ▶ It shall be a violation of this article to:

- Discharge , or cause or allow to be discharged, sewage, industrial wastes, or other wastes into the storm sewer system, or any component thereof, or onto driveways, sidewalks, parking lots or other areas draining to the storm sewer system;

- ▶ Industrial Waste: Liquid or other waste resulting from any process of industry, manufacture, trade, or business, or from the development of any natural resource.

# Local Enforcement

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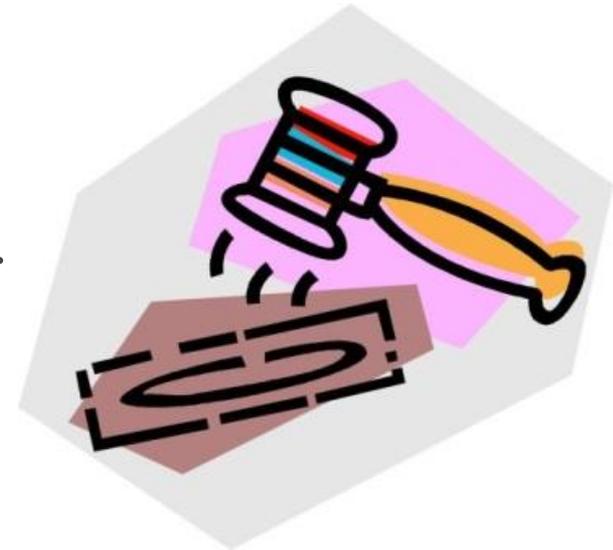
- ▶ Some of our staff are S.C.O.P.
- ▶ S.C.O.P. = Special Conservator of the Peace.
  - ▶ Badged official.
  - ▶ Appointed by the circuit court and have full police powers within the City of Newport News.
  - ▶ Ability to enforce City Code & Ordinance.
  - ▶ Also can enforce the Criminal Code of Virginia.
  - ▶ Not a police officer.
- ▶ Those not appointed can go before the Magistrate if a violation of City Ordinance was observed.



# Enforcement Workflow

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- ▶ **When a violation is observed:**
  - ▶ Identify myself as a City official & S.C.O.P.
  - ▶ Detain person committing violation for the purpose of conducting a criminal investigation.
  - ▶ Gather any other necessary evidence.
  - ▶ Identify individual(s)
    - ▶ Drivers License & Vehicle Registration
  - ▶ Take photos and/or video of violation.
  - ▶ Determine if a citation needs to be issued.



# Concrete Washout Violations

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- ▶ **Issue citations to both the driver and the business owner.**
  - ▶ Per the City attorney.
- ▶ **Class I Misdemeanor.**
  - ▶ Punishable by up to 12 months in jail and/or up to a \$2,500 fine.
- ▶ **Person convicted would have a criminal record.**
  - ▶ May affect their ability to maintain employment.
- ▶ **Alternatively, we have offered civil penalties in lieu of criminal charges.**

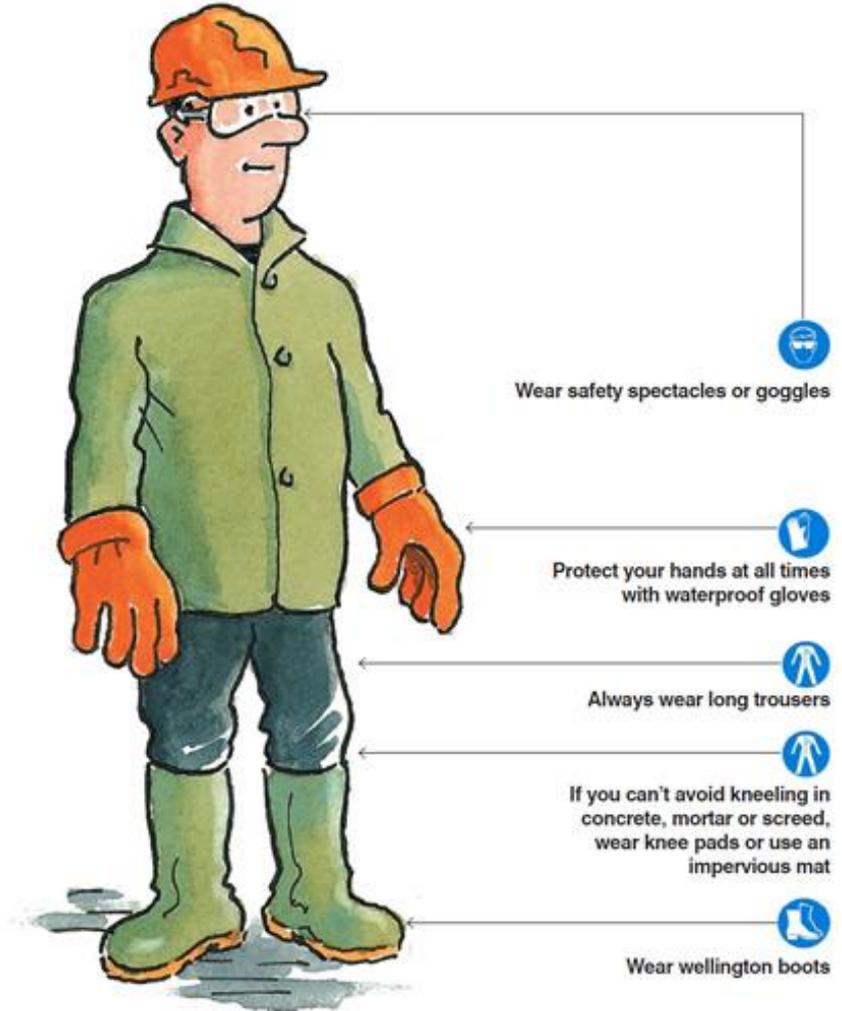
# Best Management Practices

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- ▶ **Locate the concrete washout facility onsite.**
  - ▶ Must be as far away from storm drains, ditches, or water bodies as possible.
- ▶ **If the facility is full or if one is not available we recommend that you:**
  - ▶ Contact construction site supervisor.
  - ▶ Contact your dispatch/supervisor.
  - ▶ Set up your own concrete washout facility onsite (if one is in your truck.)
  - ▶ Refuse service until concrete washout facility is provided.

# Best Management Practices

- ▶ Always handle concrete in a safe manner.
- ▶ Never add anything to your wash water such as solvents or acid.
  - ▶ Violates federal law.
- ▶ Use as little water as possible.



# Unacceptable Washouts



# Unacceptable Washouts

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# Unacceptable Washouts

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# Unacceptable Washouts

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# Unacceptable Washouts

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# Unacceptable Washouts

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# No Washouts!

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# No Washouts!



# Acceptable Washouts

- ▶ **2 Types:**
  - ▶ Pre-fabricated
  - ▶ Manufactured
- ▶ **All washouts should:**
  - ▶ Spill-proof container
  - ▶ Impervious
  - ▶ Level
  - ▶ Allow time for dewatering



# Acceptable Washouts



# Acceptable Washouts

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# Other Activities

- ▶ It's not just concrete!
- ▶ Regulations include mortaring, stucco, and grout activities.
- ▶ Cleaning brick with Muriatic acid.
- ▶ Exposed aggregate using Control-Set.
- ▶ Requires containment systems similar to concrete washout facilities.



## One More Time...

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- ▶ We are here today to educate about Stormwater regulations pertaining to concrete washout.
- ▶ Concrete wash water is not just water!
  - ▶ Toxic metals, petroleum products, suspended solids, and sediment.
- ▶ Washing concrete trucks in anything other than an approved facility is a violation of Federal, State, and City law.
- ▶ There are several types of approved washout facilities to utilize.
- ▶ Include mortaring and other activities.

**REMINDER**

Remember, we aren't the  
only ones watching!



Citizen  
Organizations



# Additional Resources

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- ▶ **EPA Concrete Washout Handout:**
  - ▶ <https://www3.epa.gov/npdes/pubs/concretewashout.pdf>
  
- ▶ **Youtube video:**
  - ▶ <https://www.youtube.com/watch?v=Agt3XibuNcl>

# Questions?