

Maintenance Activities That May Impact Water Quality at LaRC

NASA Langley Research Center (LaRC) is located on the Chesapeake Bay. Stormwater drains off the Center to three local waterways without any treatment: Brick Kiln Creek, Tabbs Creek, and the Back River. LaRC operates under three water discharge permits that set limits on the amounts of pollutants and types of wastewater that is allowed to leave LaRC's property. LaRC is continuing to educate personnel on ways to reduce water pollution from everyday activities, including water that may be generated or handled during maintenance or mechanical processes.

What Maintenance Activities Should I Be Aware Of?

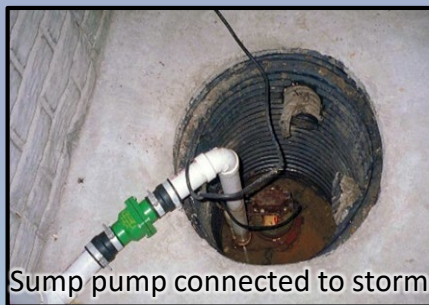
Examples of maintenance activities that may impact water quality include draining of cooling towers and boilers, washing of equipment, chiller tubes and pumps, and dewatering of basements, utility tunnels, and sumps. The water may be chemically treated or carry harmful pollutants like oils and metals and should not be drained to a stormwater connection.

What Is A Stormwater Connection, Anyway?

When the word "storm drain" is mentioned, you may picture a parking lot or curb drain. At LaRC, stormwater connections may look different at each facility. Depending on the age of the facility there could be basement sump pumps, floor drains, roof drains, and cooling tower blowdown that are connected to the storm system. Your facility may also have green infrastructure areas that have stormwater underdrains installed. It is helpful to get to know your facility and learn to recognize what may be a stormwater connection, so you are familiar with areas in the facility that are at risk for stormwater pollution.



Roof drain through a building



Sump pump connected to storm



Floor drain connected to storm



Cooling tower



Pervious pavers are stormwater features

Best Management Practices (BMPs): Maintenance of Mechanical Processes

ILLICIT DISCHARGE: What's Not Allowed?

Illicit discharge means any non-stormwater flow to the storm drain system. Prohibited illicit discharges include wash waters (power washing with detergents, paint debris or color), concrete cut and washout water, oily water, chemically-treated water, dumping of equipment maintenance fluids, cleaning paint brushes/materials in or near a storm drain, and leaking dumpsters.

***Condensate is not considered illicit discharge and should always be drained to storm. Condensate is not allowed to drain to sanitary.*

Here's how you can prevent harmful products from entering the storm drain system:

Draining Mechanical Systems (cooling towers, boilers, closed-loop systems, pumps, etc.):

Coordinate with LaRC Environmental prior to starting the task to make sure you have the proper permissions and understand where the water is allowed to go. Do not discharge water to the ground or any utility connection without receiving permission first. Always notify Environmental if the water contains chemicals or has an oily sheen.



Dewatering Flooded Areas:

When dewatering an excavated hole, flooded basement, utility tunnel, or sump, use methods that prevent pollutants from being discharged. Dewatering bags are great at capturing sediment. If the water has an oily sheen, do not drain it.

Working Around Floor Drains and Sumps:

When working in a facility with stormwater connections (floor drains and/or sump pumps), be aware of any potential risks (drum storage, water infiltration, leaky equipment, etc.) and take steps to not allow liquids like oils and chemicals to enter the storm system through these routes. If you're not sure where a drain goes, ask Environmental or the Facility Coordinator.

Winter Clean-up and Deicing:

Shovel/Plow as much as possible prior to applying deicer. When disposing of snow and ice do not dump in a wetland, near a waterway, or on top of storm drains. **LaRC Permit requirement: Deicing agents containing urea or other forms of nitrogen or phosphorous are **NOT ALLOWED** for any reason. These are major contaminants of aquatic ecosystems.**

Remember: LaRC's storm systems are highly regulated. Nothing should be poured down storm drains or dumped outside without LaRC Environmental approval. Materials in storm drains flow directly into our watershed without any treatment.

Best Management Practices (BMPs): Maintenance of Mechanical Processes

Removing or Pouring Concrete:

When doing concrete work, all cutting and/or washout slurry shall be collected. Here are some tips for using a concrete washout:

1. Direct concrete wash water into a leak-proof container or leak-proof settling basin.
2. Choose an adequate size container so that no overflow can occur due to inadequate sizing or precipitation.
3. Hardened concrete waste can be removed and disposed of as construction waste.
4. Concrete wash water or cutting slurry should **never** be discharged into the storm system.



REMINDERS!

If your facility is planning on discharging wastewater, changing water-generating processes, draining equipment (closed loop chiller systems, cooling towers, etc.), changing approved products, draining piping, etc. -

Remember to coordinate with Environmental staff through a LF 461.



**NASA Langley Research Center
Environmental Project Planning Form**

NASA Langley Form 461 (Rev. Dec. 2010)



Call the LaRC Environmental Water Program*:

**Ande Remington 757.864.8332,
Sarat Calamur 757.864.4791, or
Jazmin Argarin 757.864.7031**

*In an emergency, call 911 (from a Center phone) or 757.864.2222 (from a cell phone)