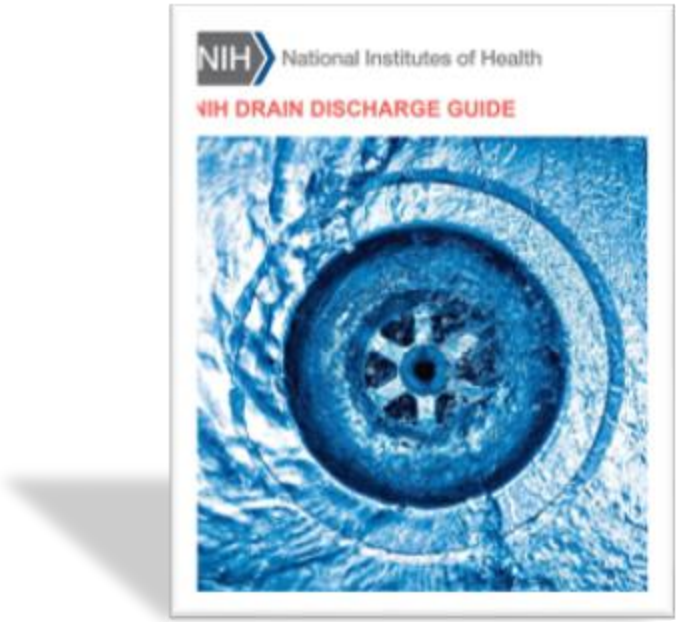
The Drain Discharge Program



Waste and Resource Recovery Branch (WRRB)

Division of Environmental Protection (DEP)

Office of Research Facilities

Outline

****** Click on the title to jump to the specific title slide******

Background

- NIH has a long-standing policy (NIH 3032) that disallows the disposal of chemicals via the sanitary sewer.
- Staff were discharging a variety of chemicals (in low concentrations) without considering the potential impacts on NIH.
- Lengthy history of problematic chemical discharges to the sanitary sewer and frequent violations from Publicly Owned Treatment Works (POTW).

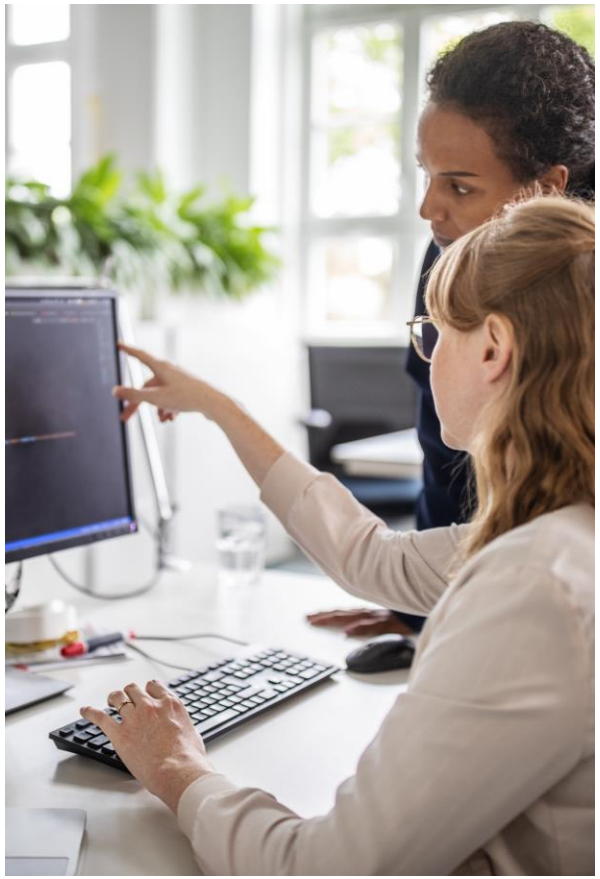
Problem with Noncompliance

The Problem

- NIH risks losing the ability to discharge waste due to problems with chemicals affecting sanitary sewer compliance.
- Even the threat of a sewer authority revoking a discharge permit could have serious implications.
- Discharging unauthorized chemicals, even in small amounts, is in direct conflict with the NIH Mission.
- NIH is licensed by the Washington Sanitary Suburban Commission (WSSC) to discharge certain waste streams to the sanitary sewer if NIH remains within certain parameters.
    - Any unauthorized discharges can seriously affect these parameters. If WSSC revokes the NIH permit, waste disposal costs will increase, and resources (proper spacing) will be burdened.

Any question or matter involving doubt, uncertainty, or difficulty

Solution



- NIH developed a drain discharge guide, and online approval process for staff to submit requests to discharge certain waste materials via the sanitary sewer.
- Developed and beta-tested the discharge guide and application process with the NIH research community.
- Established working groups that included lab managers and safety representatives.
- Collaboration between NIH Main Campus and satellite NIH campuses.

Significant Points for Chemicals Approved for Drain Disposal

Before submitting an application for review, check if the chemical is listed under the "Chemicals Approved for Drain Disposal" list. All Approved Chemicals are used in a process before discharge.

Chemicals **listed** under "Chemicals Approved for Drain Disposal"

- If *already listed*, you may pour the waste down the drain if:
  - It is an aqueous waste.
  - It has not been mixed with ***unlisted*** or ***unapproved*** materials.
  - The pH range is between 6 and 10 at the point of disposal.

- If unsure of concentration, pH, or contents in the total waste, have the waste collected and disposed of by the Chemical Waste Service.

NIH Drain Discharge Guide, (page. 9)

Significant Points for Chemicals Not Approved for Drain Disposal

For chemicals **not listed** under "Chemicals Approved for Drain Disposal"

- If *not listed* under the Chemicals Approved for Drain Disposal list:
  - You must submit a Chemical Discharge Request via DEP online.
- If ***approved***, the waste can be poured down the drain.
- If ***disapproved***, request pickup through the chemical waste vendor.

Chemical waste that is Ignitable, Corrosive, Reactive, Toxic, or an Oxidizer, is hazardous and must not be disposed of down the drain.

NIH Drain Discharge Guide, (page. 9)

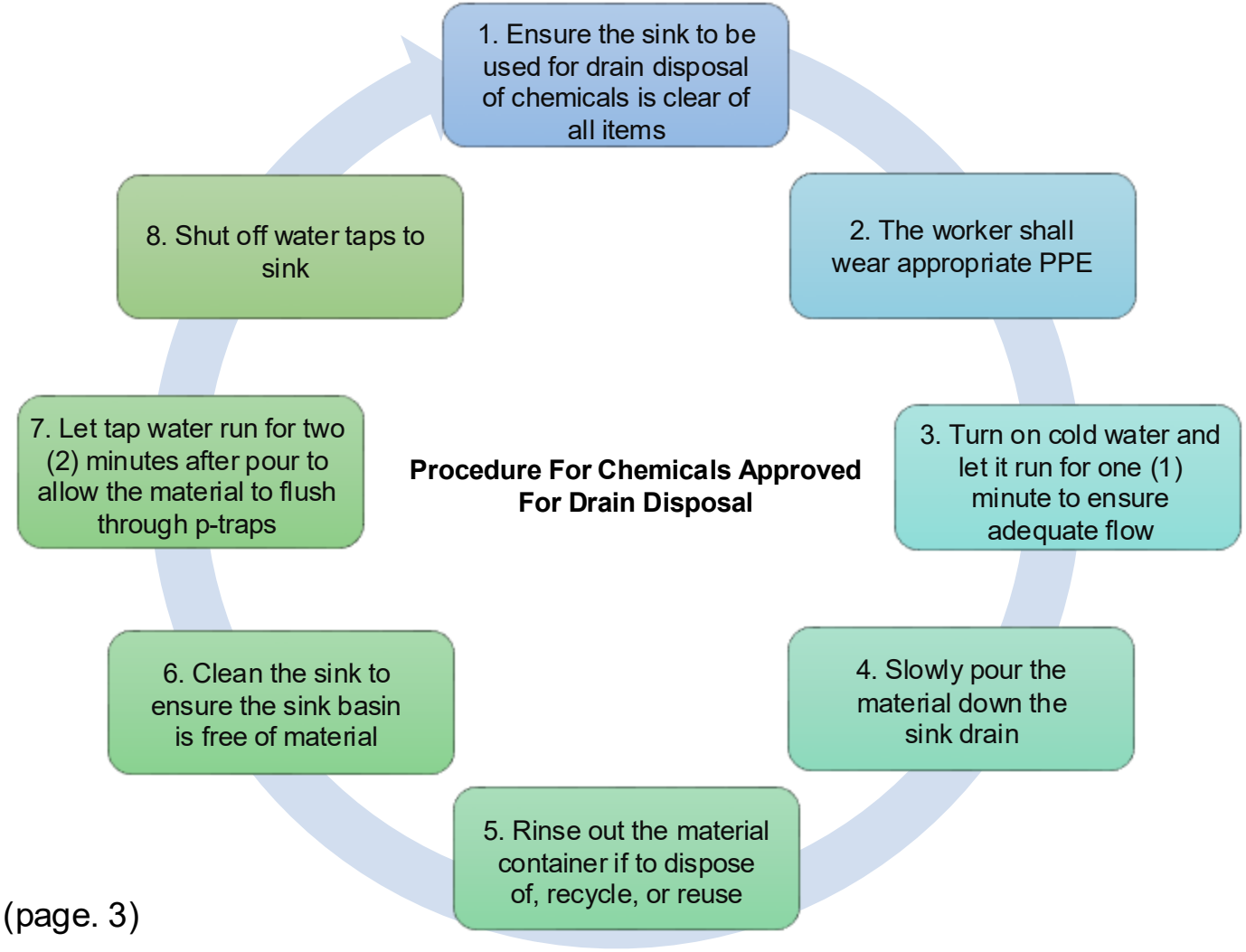
Drain Disposal Guidance for Waste Containing Antibiotics

Do not dispose of antibiotics with bleach down the drain. They must be collected by the Chemical Waste Service for proper disposal.

Only approved antibiotics, by autoclave, can go down the drain.

NIH Drain Discharge Guide, (page. 5)

Procedure For Chemicals Approved For Drain Disposal



NIH Drain Discharge Guide, (page. 3)

Application Example(s): Case by Case

National Institutes of Health
Office of Management

Chemical Waste

Example Lab Process: Flow Cytometry

Authorization **granted** for:

- Locations that use a preservative-free Sheath fluid containing no hazardous/regulated/harmful constituents.
- pH within wastewater discharge permit limits (6 – 10 pH).
- Bleach used to clean or disinfect equipment approved for discharge to the sanitary sewer.

Authorization **denied** for:

- Locations that use ‘Sheath Fluid” containing a preservative that is very toxic to aquatic life with long-lasting effects (e.g., Sodium Azide).
- pH exceeds the wastewater discharge limit.
- Use of Methanol, or Ethanol if exceeds the allowable limit (10%), use the NIH Chemical Waste Disposal Service.

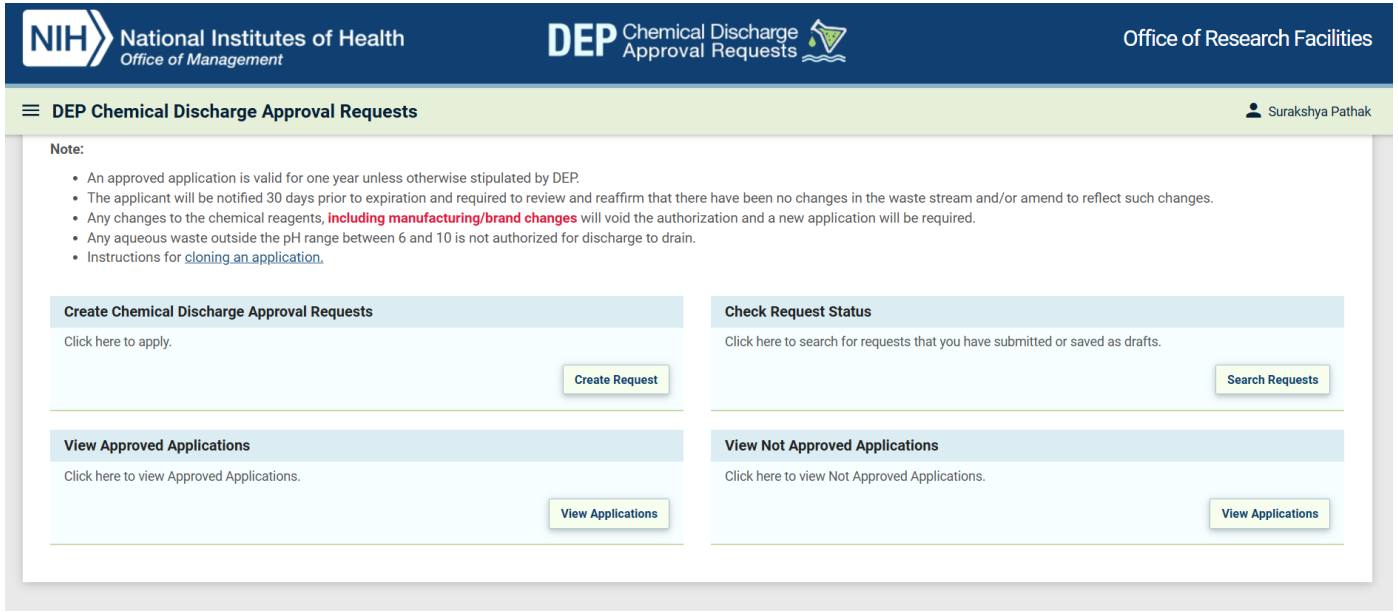
Sources Used for Evaluation

- **Safety Data Sheet (SDS) information**
  - Provides chemical ingredients, pH levels, and disposal recommendations.
- **Aquatic toxicity**
  - The goal is to prevent negative impacts on receiving waters downstream from wastewater treatment plants.
- **RCRA compliance**
  - Hazardous waste discharge into the sanitary sewer is prohibited.
- **Wastewater discharge permit limitations**
  - Wastewater permit contains concentration limits and other prohibitions on discharge.

The Drain Discharge Application Site

Functionality of Application Site:

- Improves the structure and features of applications.
- Centralizes the records and evaluations.
- Generates reports, specific or general.
- Provides vital flexibility in managing applications.



The Drain Discharge Application Site, Cont.

Application to Dispose of Specific Chemical Reagents to the Sanitary Sewer

This application is a conduit for DEP to obtain information to establish a better understanding regarding your need to dispose of chemicals to the Sanitary Sewer System versus collection and pick up by the NIH Chemical Waste Disposal Service. Our intent is to promote prudent laboratory practices that will not harm human health or the environment.

This authorization process is based on NIH Manual Issuance 3032 and developed with input from the research community to address the limited need for disposal of specific liquid chemical waste to the sanitary sewer. **Consult the** NIH Drain Discharge Guidance **prior to initiating an application.**

Note:

- An approved application is valid for one year unless otherwise stipulated by DEP.
- The applicant will be notified 30 days prior to expiration and required to review and reaffirm that there have been no changes in the waste stream and/or amend to reflect such changes.
- Any changes to the chemical reagents, **including manufacturing/brand changes** will void the authorization and a new application will be required.
- Any aqueous waste outside the pH range between 6 and 10 is not authorized for discharge to drain.

Create Chemical Discharge Approval Requests

Click here to apply.

Create Request

Check Request Status

Click here to search for requests that you have submitted or saved as drafts.

Search Requests

View Approved Applications

Click here to view Approved Applications.

View Applications

View Not Approved Applications

Click here to view Not Approved Applications.

View Applications

Down the Drain Articles

NEWS YOU CAN USE

Down the Drain

Tips for Keeping Hazardous Waste Out of the Sanitary Sewers

"There's not one sort of magic person that can remove everything we put down the drain."
— David Sedlak, Director of the Institute for Environmental Science and Engineering at University of California, Berkeley (Berkeley, California)

THE VALUABLE RESEARCH AND support activities performed at NIH produce an array of waste products. Whether they are hazardous or non-hazardous, all must be managed appropriately. Submitting materials through waste-management services ensures proper disposal and prevents hazardous chemicals from being discharged into the sanitary sewer (system of pipes that carries sewage from labs, bathrooms, sinks, kitchens, etc., to wastewater treatment plants). The NIH waste-management policy requires that all waste be reduced to the greatest extent feasible to limit any potential negative environmental impacts. It's the responsibility of everyone at NIH to know what can and cannot go down the drain.

Wastewater treatment technologies have advanced over the years. As a result, we have become overly confident in our publicly owned treatment works' capabilities to clean the waste we release into the sanitary sewers. Unfortunately, there are still problems. Newly introduced chemicals may interfere with the treatment process or pass through the system entirely untreated. In the 1980s, for example, some states enacted bans on phosphates in laundry detergents because they promoted harmful growth of algae in waterways.

We continue to discover new chemicals in our environment and water supply which defy treatment standards. Substances such as asbestos, PFAs (per- and polyfluoroalkyl substances), and pharmaceuticals—a chief concern as it relates to NIH operations—all pose significant challenges to our waste-management systems.

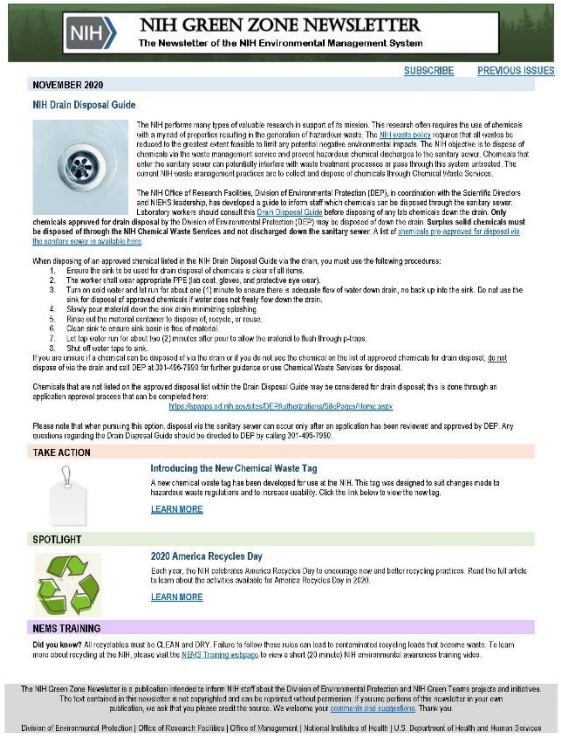
In cooperation with NIH scientific directors and the National Institute of Environmental Health Sciences, the Division of Environmental Protection (DEP) in the NIH Office of Research Facilities—has developed a Drain Discharge Guide to inform staff which chemicals can be disposed through the sanitary sewer.

- Only chemicals approved for drain disposal by the DEP may be poured down the drain.
- Surplus solid chemicals must be disposed of through the NIH chemical-waste services and not discharged down the sanitary sewer.
- If you are unsure whether a chemical can be disposed of via the drain, or if you do not see the chemical on the list of approved chemicals for drain disposal, do not dispose of via the drain. Instead, call DEP at 301-496-7990 for further guidance.
- Chemicals that are not listed on the approved disposal list within the Drain Discharge Guide may be considered for drain disposal, but you first have to complete an application requesting approval (VPN and NIH credentials required) at https://spapps.od.nih.gov/sites/DEPAuthorizations/SitePages/Home.aspx. Please note that when pursuing this option, disposal via the sanitary sewer can occur only after DEP has reviewed and approved the application. ●

You can find the Drain Discharge Guide at https://nems.nih.gov/Documents/NIH_Drain_Discharge_Guide.pdf. Any questions regarding the guide should be directed to the DEP by calling 301-496-7990 or emailing depwasteresource@mail.nih.gov. For links to more resources, read the online article at https://irp.nih.gov/catalyst/v29i3/news-you-can-use.

Craig Upson is a Chemical Waste Technical Specialist in the Waste and Resource Recovery Branch, Division of Environmental Protection.

[NIH Community: NIH Catalyst]
(Volume 29, Issue 3/ May-June 2021)



NIH GREEN ZONE NEWSLETTER
The Newsletter of the NIH Environmental Management System

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NOVEMBER 2020

NIH Drain Disposal Guide

The NIH performs many types of valuable research in support of its mission. This research often requires the use of chemicals with a myriad of properties resulting in the generation of hazardous waste. The NIH waste policy requires that all wastes be reduced to the greatest extent feasible to limit any potential negative environmental impacts. The NIH objective is to dispose of chemicals via the waste management services and prevent hazardous chemical discharges to the sanitary sewer. Chemicals that enter the sanitary sewer can potentially interfere with waste treatment processes or pass through this system untreated. The current NIH waste management practices are to collect and dispose of chemicals through Chemical Waste Services.

The NIH Office of Research Facilities, Division of Environmental Protection (DEP), in coordination with the Scientific Directors and NIEHS leadership, has developed a guide to inform staff which chemicals can be disposed through the sanitary sewer. Laboratory workers should consult this Drain Disposal Guide before disposing of any lab chemicals down the drain. **Only chemicals approved for drain disposal** by the Division of Environmental Protection (DEP) may be disposed of down the drain. **Surplus solid chemicals must be disposed of through the NIH Chemical Waste Services and not discharged down the sanitary sewer.** A list of chemicals pre-approved for disposal via the sanitary sewer is available here.

When disposing of an approved chemical listed in the NIH Drain Disposal Guide via the drain, you must use the following procedures:

1. Ensure the sink to be used for drain disposal of chemicals is clear of all items.
2. The worker shall wear appropriate PPE (lab coat, gloves, and protective eye wear).
3. Turn on cold water and let run for about one (1) minute to ensure there is adequate flow of water down drain, no back up into the sink. Do not use the sink for disposal of approved chemicals if water does not freely flow down the drain.
4. Slowly pour material down the sink drain minimizing splashing.
5. Rinse out the material container to dispose of, recycle, or reuse.
6. Clean sink to ensure sink basin is free of material.
7. Let tap water run for about two (2) minutes after pour to allow the material to flush through p-traps.
8. Shut off water taps to sink.

If you are unsure if a chemical can be disposed of via the drain or if you do not see the chemical on the list of approved chemicals for drain disposal, do not dispose of via the drain and call DEP at 301-496-7990 for further guidance or use Chemical Waste Services for disposal.

Chemicals that are not listed on the approved disposal list within the Drain Disposal Guide may be considered for drain disposal; this is done through an application approval process that can be completed here:
https://spapps.od.nih.gov/sites/DEPAuthorizations/SitePages/Home.aspx

Please note that when pursuing this option, disposal via the sanitary sewer can occur only after an application has been reviewed and approved by DEP. Any questions regarding the Drain Disposal Guide should be directed to DEP by calling 301-496-7990.

TAKE ACTION

Introducing the New Chemical Waste Tag

A new chemical waste tag has been developed for use at the NIH. This tag was designed to suit changes made to hazardous waste regulations and to increase usability. Click the link below to view the new tag.

LEARN MORE

SPOTLIGHT

2020 America Recycles Day

Each year, the NIH celebrates America Recycles Day to encourage new and better recycling practices. Read the full article to learn about the activities available for America Recycles Day in 2020.

LEARN MORE

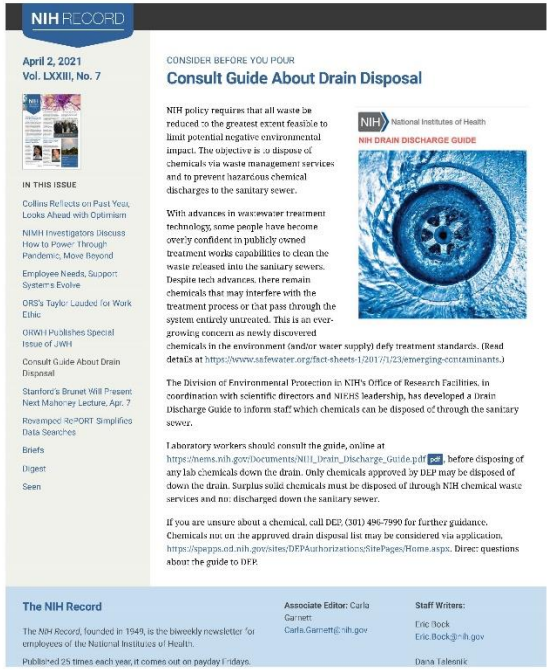
NEMS TRAINING

Did you know? All recyclables must be CLEAN and DRY. Failure to follow these rules can lead to contaminated recycling loads that become waste. To learn more about recycling at the NIH, please visit the NEMS Training webpage to view a short (20 minute) NIH environmental awareness training video.

The NIH Green Zone Newsletter is a publication intended to inform NIH staff about the Division of Environmental Protection and NIH Green Teams projects and initiatives. The text contained in this newsletter is not copyrighted and can be reprinted without permission. If you use portions of this newsletter in your own publication, we ask that you please credit the source. We welcome your comments and suggestions. Thank you.

Division of Environmental Protection | Office of Research Facilities | Office of Management | National Institutes of Health | U.S. Department of Health and Human Services

[NIH Green Zone Newsletter]
(November 2020)



NIH RECORD

April 2, 2021
Vol. LXXIII, No. 7

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Consult Guide About Drain Disposal
Stanford's Brunet Will Present Next Mahoney Lecture, Apr. 7
Revamped REPORT Simplifies Data Searches
Briefs
Digest
Seen

CONSIDER BEFORE YOU POUR

Consult Guide About Drain Disposal

NIH policy requires that all waste be reduced to the greatest extent feasible to limit potential negative environmental impact. The objective is to dispose of chemicals via waste management services and to prevent hazardous chemical discharges to the sanitary sewer.

With advances in wastewater treatment technology, some people have become overly confident in publicly owned treatment works' capabilities to clean the waste released into the sanitary sewers. Despite tech advances, there remain chemicals that may interfere with the treatment process or that pass through the system entirely untreated. This is an ever-growing concern as newly discovered chemicals in the environment (and/or water supply) defy treatment standards. (Read details at https://www.safewater.org/fact-sheets-1/2017/1/23/emerging-contaminants.)

The Division of Environmental Protection in NIH's Office of Research Facilities, in coordination with scientific directors and NIEHS leadership, has developed a Drain Discharge Guide to inform staff which chemicals can be disposed of through the sanitary sewer.

Laboratory workers should consult the guide, online at https://nems.nih.gov/Documents/NIH_Drain_Discharge_Guide.pdf, before disposing of any lab chemicals down the drain. Only chemicals approved by DEP may be disposed of down the drain. Surplus solid chemicals must be disposed of through NIH chemical waste services and no; discharged down the sanitary sewer.

If you are unsure about a chemical, call DEP, (301) 496-7990 for further guidance. Chemicals not on the approved drain disposal list may be considered via application, https://spapps.od.nih.gov/sites/DEPAuthorizations/SitePages/Home.aspx. Direct questions about the guide to DEP.

The NIH Record

The NIH Record, founded in 1949, is the biweekly newsletter for employees of the National Institutes of Health.

Published 25 times each year, it comes out on payday Fridays.

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[NIH Record]
(April 2, 2021, Vol. LXXIII, No.7)

the Office of Intramural Training and Education has provided many sessions aimed at reducing stress for trainees and the principal investigators who supervise them. The results of the recent survey that most of you filled out about how the pandemic is affecting your life has been very helpful as we develop new strategies for dealing with stress in the workplace.

I am proud to say that you all have demonstrated, once again, your adaptability and willingness to suffer inconvenience to keep all of us safe. Compliance with safety requirements is very high, and patience with all of the other impediments to a more normal existence is impressive. I have not listed all of the individuals whose hard work has kept us safe, but I can assure you that this is a full-time job for quite a few dedicated individuals.

Please stay safe and continue to show concern and respect for your colleagues by physical distancing, wearing masks, washing your hands, sanitizing public spaces, and getting tested.

-mg

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Down the Drain

What goes down must come up. So, for this reason, we have updated our drain discharge policy to prevent harmful substances from polluting our waterways.

Have no doubt that what we pour down the drains in our laboratories ultimately flows into major recreational waterways and drinking water resources to some extent. One-hundred percent removal of noxious agents is not technically feasible. So, with more than 3,000 labs on the Bethesda campus alone, the potential for harm is great. How ironic it would be for the NIH, whose mission is to protect human health, to inadvertently place the health of humans and the planet in harm's way.

The NIH Office of Research Facilities, Division of Environmental Protection (DEP), in coordination with the Scientific Directors and NIEHS leadership, has developed a guide about what cannot and what can go down the drain, part of a larger, far more comprehensive waste policy strategy that I won't detail here. But I do request that you review the new Drain Discharge Guide. You may find some useful information, whether you are the greenest of the greens or from a generation of scientists and lab personnel trained under the notion that "dilution is the solution." Dilution is absolutely not the solution.

This latest guide has been approved by county and state regulators and will be implemented immediately. You can find a PDF of the guidelines at https://nems.nih.gov/Documents/NIH_Drain_Discharge_Guide.pdf. Look, too, for various elements of our educational campaign in the coming months in the form of posters and placards for display in the labs as a constant reminder of the core message: We have a social responsibility to prevent harm to our waterways.

[NIH Deputy Director for Intramural Research (DDIR) Web Board]
(September 2020: Archived)

Questions?

Questions about Drain Discharge Program?

- Contact Josh Haines at joshua.haines@nih.gov and Mike Stefan at joseph.stefan@nih.gov

If you need a presentation on additional waste management-related topics…

- Contact Surakshya Pathak at Surakshya.Pathak@nih.gov

Please join our Microsoft Teams channel

OD DEP [WRRB Outreach and Engagement] | General | Microsoft Teams