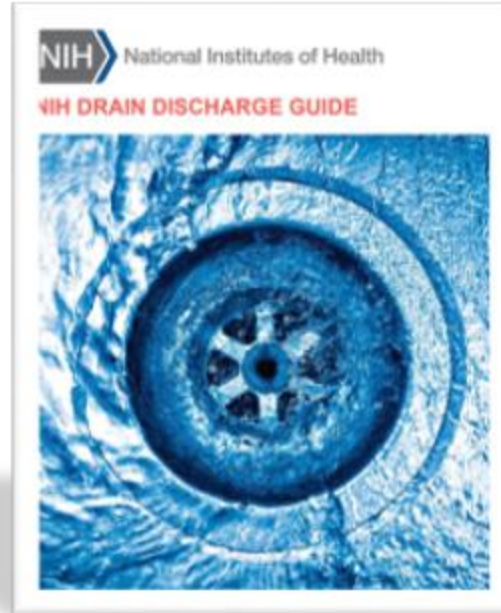


The Drain Discharge Program



Waste and Resource Recovery Branch (WRRB)
Division of Environmental Protection (DEP)
Office of Research Facilities

- Background
- Problem with Noncompliance
- Solution
- Significant Points for Chemicals **Approved** for Drain Disposal
- Significant Points for Chemicals **Not Approved** for Drain Disposal
- Drain Disposal Guidance for Waste Containing Antibiotics
- Procedure For Chemicals Approved For Drain Disposal
- Application Examples: Case by Case
- Sources Used for Evaluation
- The Drain Discharge Application Site
- Down the Drain Articles

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

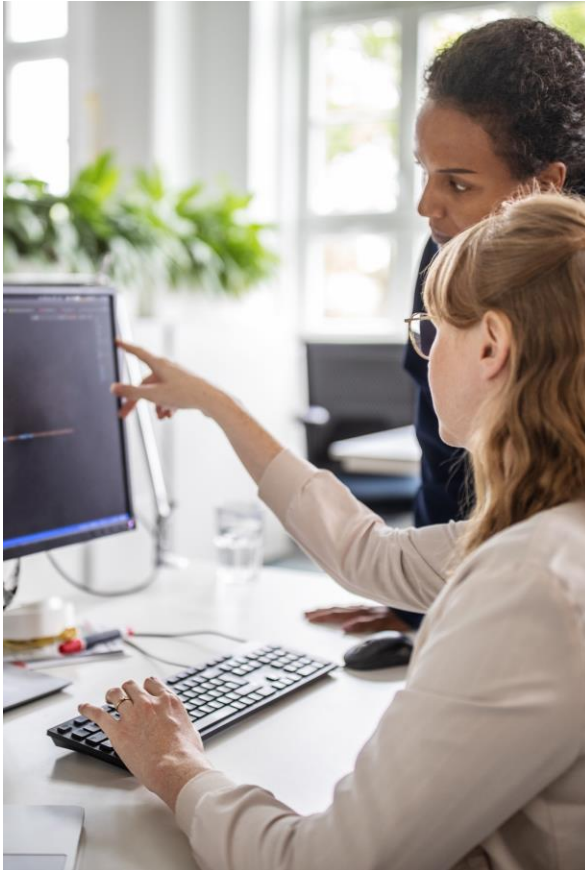


- NIH has a long-standing policy (NIH 3032) that prevents the disposal of chemicals via the sanitary sewer.
- Staff were discharging a variety of chemicals (in low concentrations) without considering the potential impacts on NIH and the wastewater treatment process.
- Lengthy history of problematic chemical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

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 will be burdened.

Any question or matter involving doubt, uncertainty, or difficulty



- 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 Bethesda 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 (Appendix B of the Drain Discharge Guide).

All approved chemicals **must** be 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 any amount of **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.



Significant Points for Chemicals Not Approved for Drain Disposal

For chemicals **not listed** under “[Chemicals Approved for Drain Disposal](#)”

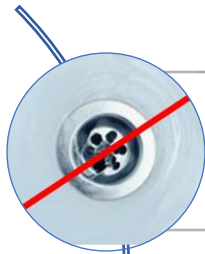
- If *not listed* under the [Chemicals Approved for Drain Disposal](#) list:
 - You must submit a [Chemical Discharge Request](#) via DEP online.
- If **approved**, the waste can be poured down the drain.
- If **disapproved**, request pickup through the chemical waste vendor.

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 (even with bleach) down the drain. They must be collected by the Chemical Waste Service for proper disposal.

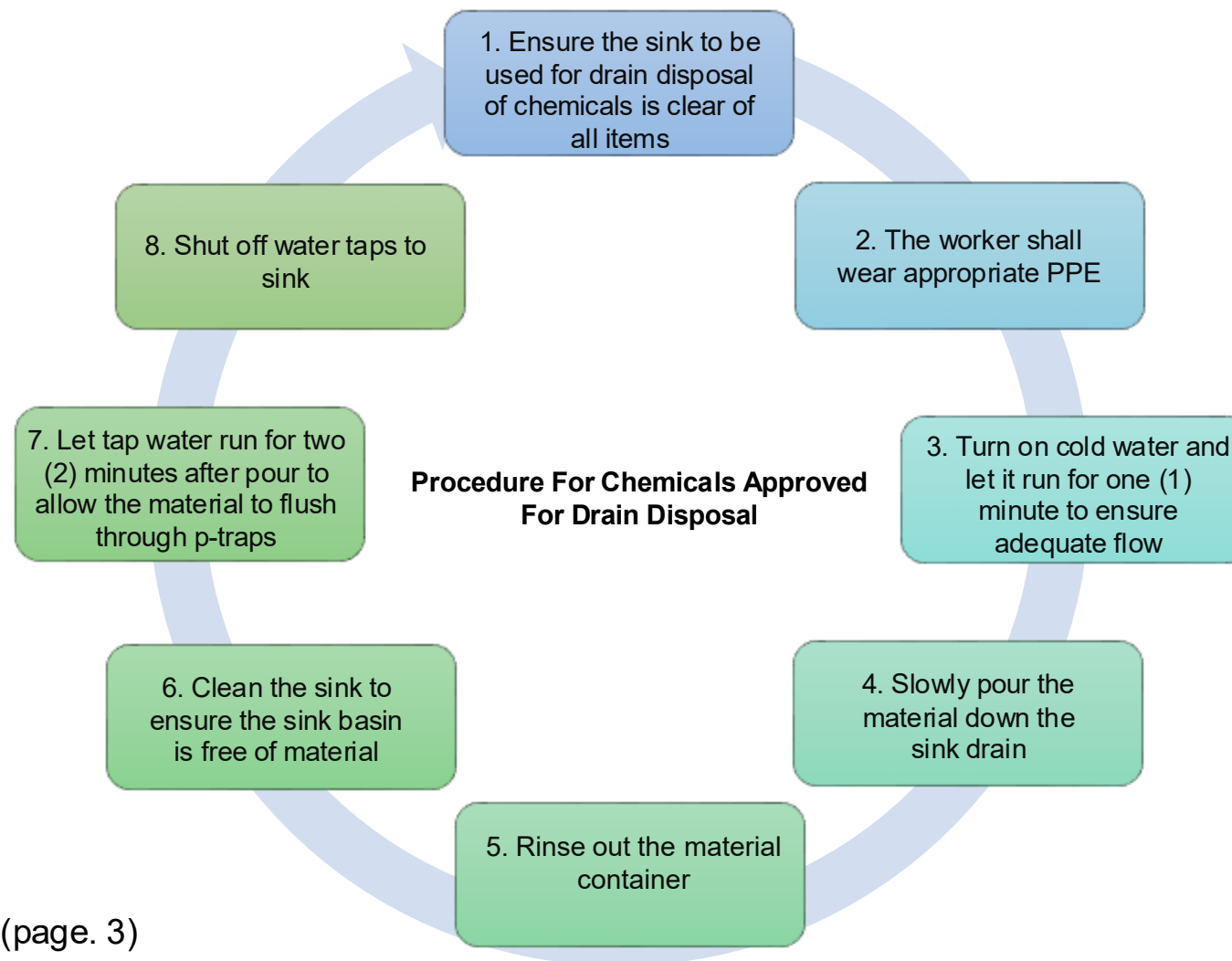


Only approved antibiotics, following autoclave, can go down the drain.



[NIH Drain Discharge Guide](#), (page. 5)

Procedure For Chemicals Approved For Drain Disposal



[NIH Drain Discharge Guide](#), (page. 3)



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 (up to 10%) 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 (any concentration), or Ethanol if exceeds the allowable limit (10%), use the NIH Chemical Waste Disposal Service.

Sources Used for Evaluation



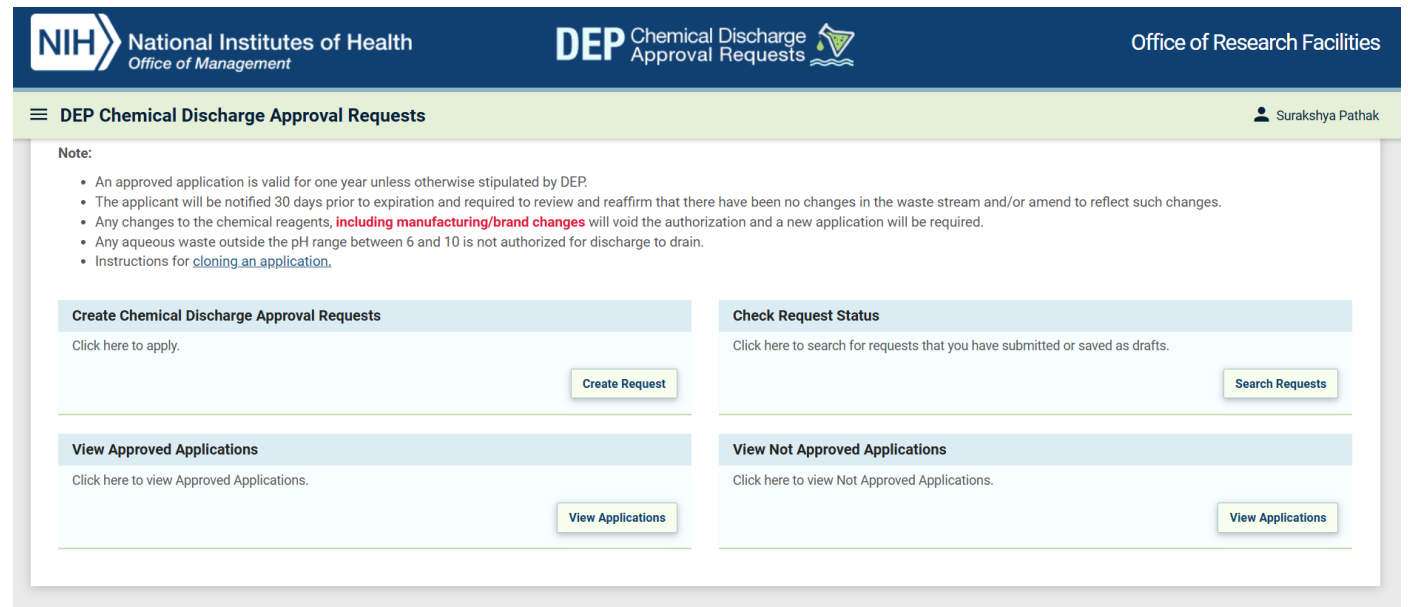
- **Safety Data Sheet (SDS) information**
 - Provides chemical constituents, pH levels, and disposal recommendations.
- **Aquatic toxicity**
 - The goal is to prevent negative impacts on receiving waters downstream from wastewater treatment plants.
- **RCRA compliance**
 - Hazardous waste discharge into 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 screenshot displays the user interface of the 'DEP Chemical Discharge Approval Requests' application. The top navigation bar includes the NIH logo, 'National Institutes of Health Office of Management', 'DEP Chemical Discharge Approval Requests' with a green flask icon, and 'Office of Research Facilities'. Below this, a green header bar shows the title 'DEP Chemical Discharge Approval Requests' and the user name 'Surakshya Pathak'. The main content area features a 'Note' section with four bullet points regarding application validity, notification, changes, and pH restrictions. Below the note are four light blue boxes, each with a title, a description, and a button: '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), and 'View Not Approved Applications' (Click here to view Not Approved Applications. View Applications).

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](#)

NEWS YOU CAN USE

Down the Drain

Tips for Keeping Hazardous Waste Out of the Sanitary Sewers

BY CHARIS J. TSON, MD

"There's not more sort of magic poison that can remove everything we put down the drain."
David Sadiak, 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,

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/v2903/news-you-can-use>.

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

<https://irp.nih.gov/catalyst/v2903/news-you-can-use>

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 (gloves, goggles, 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://nems.nih.gov/DEP/authorizations/SinkPages/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](#)

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

NIH Green Zone Newsletter (November 2020)

Questions?

Questions about Drain Discharge Program?

- Contact Josh Haines at joshua.haines@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](#)