



**pennsylvania**

DEPARTMENT OF ENVIRONMENTAL PROTECTION



Office of Water Management

# Chemical Additives

[www.depweb.state.pa.us/chemicaladditives](http://www.depweb.state.pa.us/chemicaladditives)

# Implementation

- Definition of chemical additives in IW permits:
  - Chemical Additive means a chemical product (including products of disassociation and degradation, collectively “products”) introduced into a waste stream that is used for cleaning, disinfecting, or maintenance and which may be detected in effluent discharged to waters of the Commonwealth. The term generally excludes chemicals used for neutralization of waste streams, the production of goods, and treatment of wastewater.

# Implementation

- Examples of Chemical Additives:
  - Biocides
  - Chemicals used for maintenance of boilers and other equipment, e.g., prevention of corrosion, scaling, deposits, etc.
  - Chemicals used for cleaning and degreasing

NOTE – most chemicals added to cooling water or blowdown discharges would be considered chemical additives.

# Implementation

- Examples of Non-Chemical Additives:
  - Alum or ferric sulfide used for chemical precipitation
  - Chlorine used for final disinfection to meet fecal coliform limits in a permit
  - Sodium hydroxide used to adjust pH prior to discharge to meet pH limits in a permit

All three examples would be considered wastewater treatment chemicals not subject to the [Chemical Additives SOP](#) and permit language.

# Implementation

- Permits with “pre-SOP” language:
  - Status quo (follow instructions in Part C permit language for obtaining chemical additives approval)
  - Approvals through regional office
- Permits with “SOP” language:
  - Use of Approved Chemical Additives List, new forms
  - Approvals for new chemical additives through CO
  - Regional approvals for use of additives not required

# Implementation

- New Process (when new language is in permit):
  - Step 1: Is additive on DEP's [Approved List](#)? If Yes, go to Step 3, if No, go to Step 2
  - Step 2: Submit [New Chemical Additives Request form](#) to DEP's Central Office
  - Step 3: Submit [Chemical Additives Notification form](#) to DEP's regional office
  - Step 4: Report usage on [Chemical Additive Usage supplemental DMR](#)

# Approved Chemical Additives List

- [Approved Chemical Additives List](#) contains over 800 additives
- Chemicals on list will contain at least one “effect level” for aquatic life or human health OR may have no effect levels if it is determined there is NO potential for toxicity (in such cases follow product instructions)
- List will be maintained by DEP’s Central Office, Division of Planning and Permitting
- Only applies if “SOP” language is in permit

# New Additives Request Form

- The [New Chemical Additives Request Form](#) (3800-FM-BPNPSM0486) is the official form that permittees should submit to Central Office to add new additives to the List.
- If properly completed and an adequate MSDS is attached, it should contain the information necessary to evaluate and calculate aquatic life and human health effect levels. These levels are then used by permittees to calculate maximum safe usage rates for the additives.

# New Additives Request Form

- The New Chemical Additives Request Form is only required for new additives used for cleaning, disinfecting and maintenance, meeting the definition of a chemical additive (contact DEP's Central Office if clarification is needed).
  - Wastewater treatment chemicals used for flocculation, coagulation, and precipitation do not need to be listed prior to use.

# ▶ Chemical Additives Notification Form

- The [Chemical Additives Notification Form](#) (3800-FM-BPNPSM0487) is the official form that permittees should submit to DEP regional offices to provide notification of their intention to use an additive on the Approved List at the maximum usage rate indicated.
- Permittees will use all effect levels shown on the Approved List in PENTOXSD to calculate the most stringent WQBEL.
- Permittees will then back-calculate the maximum usage rate from the most stringent WQBEL using dilution and other factors (model printouts and calculations to be attached).

# Calculating Maximum Usage

- [Download the PENTOXSD model](#) from DEP's website
- Follow the [Instructions to the Approved List of Chemical Additives](#) for entering effect levels into the model
- Enter other input data using professional judgment or by using data available in DEP's fact sheet for your most recent permit renewal
- Run the model to determine the most stringent WQBEL
- Back-calculate the maximum usage rate by considering dilution, partitioning, and other reasonable factors using professional judgment
- Report maximum usage rate on Chemical Additives Notification Form that is submitted to regional office

# IW Permit Application

- Report all proposed chemical additives on the industrial waste (IW) permit application ([3850-PM-BPNPSM0008b](#)).
- Attach all Chemical Additives Notification forms to the application where the proposed additives are on the Approved List.
- Where proposed additives are not on the Approved List, submit New Chemical Additive Request forms to DEP's Central Office; then, once on Approved List, submit Notification forms to DEP's regional office to supplement application. NOTE – if a permit is issued and a Notification form is not received, use of the additive may constitute non-compliance.

# Contacts

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