

NPDES: WASTEWATER/ STORMWATER/PRETREATMENT

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INTRODUCTION:

FEDERAL WATER POLLUTION CONTROL ACT

IN NOVEMBER 1972, CONGRESS PASSED THE FEDERAL WATER POLLUTION CONTROL ACT (FWPCA) AMENDMENTS OF 1972, AND INITIATED THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES). UNDER NPDES, ANY FACILITY THAT DISCHARGES POLLUTANTS INTO THE WATERS OF THE U.S. IS REQUIRED TO OBTAIN A PERMIT. SINCE 1972, THE LAWS AND REGULATIONS HAVE CHANGED, BUT THE BASIC REQUIREMENT REMAINS: ANYONE THAT DISCHARGES POLLUTANTS INTO THE WATERS OF THE U.S. MUST OBTAIN A PERMIT. SAGE HELPS OUR CLIENTS OBTAIN, MANAGE, AND COMPLY WITH THESE PERMITS.

Some facilities do not discharge directly to the waters of the U.S.; rather, they discharge to a sewer treatment plant, described as a Publicly Owned Treatment Works (POTW) or, less often, a non-publicly owned (i.e., privately owned) Treatment Works (Non-POTW). Facilities that discharge to a POTW are not covered by NPDES because they do not directly discharge to the waters of the U.S. Still, they have the potential to impact water quality, because their pollutants interfere with or pass through the treatment works. Therefore, these facilities are required to get a pre-treatment permit through the POTW under a separate set of laws and regulations. We help obtain, manage, and comply with these pre-treatment permits, as well.

In most cases, EPA has delegated wastewater permitting to the states, and so the permitting authority is normally the state.

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There are three broad categories of wastewater permits: individual, general, and pre-treatment permits. The initial permit is issued before a new facility begins discharging (as opposed to an air permit, which must be issued before construction) or

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after a new regulation has been promulgated. Permits must be amended when significant changes are made. Permits must also be renewed periodically, typically every five years. We assist under all these conditions.

INDIVIDUAL PERMITS

The goal of NDPES is to eliminate water pollutant discharges. For an individual permit, we consider conventional, non-conventional, and toxic (or priority) pollutants. We must achieve both the technology-based effluent limits and the water quality-based effluent limits:

- **Technology-based limits** look at effluent quality at the end of the pipe. Is the pollutant concentration low enough to be considered “best practices?” Technology-based limits do not specify a particular technology to control a particular pollutant, but rather what the results of that technology should be.
- **Water quality-based limits** look to the effect a pollutant will have on the receiving stream.

The final permit limit for a pollutant will be based on the more stringent of the two types of limits.

Permit Application

When a facility decides to discharge pollutants to the waters of the state, we help develop the permit application. We first generally characterize the wastewater stream. Where will the discharge be? What volumes of discharge do we expect? What are the pollutants of concern? Next, we check the 303(d) list to see if the proposed receiving stream is impaired, and if there are is a Total Maximum Daily Load (TMDL) that impacts the facility. In some cases, this can be a “deal killer.” Typically, we conduct a pre-permit meeting with the client and the regulatory agency to discuss any of the state’s concerns or recommendations regarding the permit application.

Wastewater Characterization

Most clients need help preparing a new or renewal permit application due to the quantity of work it takes to prepare the document. A large portion of the application is characterization of the wastewater.

For a Permit Renewal

For a straight permit renewal, we look at the historical testing done on the wastewater for the Discharge Monitoring Reports (DMR). Additional testing assures that other potential pollutants are at low enough concentrations that they are not a concern. The types and the frequency of the additional testing depend on the nature of the process generating the pollution. We advise clients on the analytical requirements and oversee the collection and analysis of the samples. Once the samples are collected and analyzed, we compile the data and present it in the format required by the state to characterize the waste. Testing can take several months, so it’s important to begin the process well before the permit renewal application is required. The application is due six months before expiration; we recommend beginning the process about a year before the permit expires.

For a New Permit

When a new permit is issued or when there is a proposed modification to the existing system, there is no effluent to sample for the application. In these cases, we characterize the waste by comparing the proposed facility to similar existing facilities, by applying material balances, and by professional judgment. Likewise, if a permit is being modified, with or without a renewal, we need to use the tools we have to determine how the changes will affect the discharge.

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The Rest of the Application

There are other parts to the permit application that Sage also completes. We prepare certain administrative data, the location of the facility and the outfall(s), process descriptions of the waste generating process and the waste treatment system, material balance of the water system, material safety data sheets, and other items as required by the state. We propose language to any special conditions to the permit that we might expect to ensure that they comply with the regulation and are workable for the client.

Permit Limits

At this point, we ought to be able to advise the client as to the expected permit limits for each pollutant of concern. If the characterization of the waste suggests that pollutant discharges will exceed the limit, we advise the client, as such. We work with the facility and, possibly, the agency to develop alternatives for the discharge. Considerations include alternative wastewater treatment processes, substitution of chemicals in a process, relocation of the outfall, and other potential solutions. Particularly in the case of a renewal, we help develop a compliance plan for meeting limits that is incorporated into the permit.

The state will review the application and return a draft permit for review. We will want to review all the technical aspects of the permit and correct any errors that we might find. We will negotiate any special conditions of the permit to help the client comply more effectively and at a lower cost.

Monitoring and Reporting Requirements

All NPDES permits have monitoring and reporting requirements. We develop monitoring and reporting policies and procedures, and prepare the discharge monitoring reports (either electronic or paper), though many larger labs have LIMS and can probably do the work more cost effectively. We can also negotiate language for the permit that will make administering the permit easier for the client.

GENERAL PERMITS

General permits are simplified permits issued to categories of discharges with similar characteristics and a low probability of exceeding water quality standards. The cost for obtaining a general permit is significantly lower than for obtaining an individual permit. When a general permit is available, most facilities choose a general permit over an individual permit.

Application Process

The application process for a general permit is usually submission of a notice of intent (NOI), a rather minor task that we can complete for the facility. The greater issue for general permits is developing the policies and procedures necessary to comply with the permit. As stated above, all NPDES permits have monitoring and reporting requirements. We prepare the plans for monitoring and reporting, in addition to any reports the facility desires.

Stormwater General Permit

An important general permit is the stormwater general permit. Unless the facility and all materials are located under roof (no exposure), most industrial plants require a storm water general permit. This permit requires a storm water pollution prevention plan (SWP3). The SWP3 must include an inventory of exposed materials, identification of outfalls, a map of stormwater flows, a description of stormwater controls, and best management practices. There must be a periodic review to determine the effectiveness of the SWP3 with plans to improve performance, when necessary. The plan must

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also include procedures for monitoring and reporting, as required with all NPDES permits. Sage prepares these plans, generates the internal and/or external reports, and facilitates periodic review of the plan.

Construction General Permit

Any construction project that disturbs more than an acre of soil needs a stormwater permit for construction. If the project disturbs more than five acres, a more complex stormwater permit for construction is required. We have the same opportunities to help facilities with these construction permits as we do for stormwater permits, even though the requirements are different.

As with other general permits, facilities normally apply for the construction general permit with an NOI. General permits also normally require a Notice of Termination (NOT) when they are no longer required. It's important to remember the NOT for a construction permit since they are normally short-lived.

Other General Permits

Other general permits are available and vary by state. In Texas, the entire list of general permits can be found at <http://www.tceq.texas.gov/permitting/wastewater/general/index.html>. Specific facility requirements include the following:

- Ready-Mixed Concrete Plants, Concrete Products Plants, and their Associated Facilities General Permit (TXG110000)
- Petroleum Bulk Stations and Terminals General Permit (TXG340000)
- Hydrostatic Test Water General Permit (TXG670000)
- Petroleum Fuel or Petroleum Substances General Permit (TXG830000)
- Quarries in the John Graves Scenic Riverway Permit (TXG500000)

PRE-TREATMENT PERMITS

Facilities that do not discharge to the waters of the state but to another wastewater treatment facility (i.e., POTW or non-POTW) need a pre-treatment permit. In these cases, the POTW (or non-POTW) is the permitting authority. The focus is a little different for a pre-treatment permit in that the goal of the agency is compliance with the NPDES permit. Therefore, as with the individual permit, Sage generally characterizes the waste stream, and then meets with the treatment facility. After that, we assist the client with preparing the permit application, as required.

In some cases, we find that the treatment facility may need to modify or amend its NPDES permit to receive the waste stream. There may even be air permit aspects, as most POTWs have aeration systems that volatilize organic compounds. In these cases, we need to coordinate between the client, the treatment facility, and the state to ensure compliance for everyone and to expedite what may become a rather complex project.

SUMMARY:

SAGE'S SERVICES WITHIN THE NPDES OFFERING

In summary, anyone that discharges pollutants to the waters of the state must obtain a permit under NPDES. In most cases, EPA has delegated NPDES authority to the state. Individual permits require a complex application that Sage helps our clients develop. General permits require simpler applications, but still require plans for controlling pollution and for monitoring and reporting results. While technically not part of the NPDES program, pre-treatment permits protect POTWs from interference or pass-through of pollutants that would affect water quality. Pre-treatment permits can be complex if they are not within the existing environmental permits of the receiving treatment plant. In all cases, Sage helps our clients by characterizing waste streams, preparing applications, negotiating terms of the permit, developing policies and procedures to comply with the permit, and assisting with monitoring and reporting of the waste streams.