



Chapter 4

Permits, the Clean Water Act and How It All Fits Together

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When dealing with NPDES permits, there are a few broader Clean Water Act policies you should understand. Among these is the difference between water quality standards and effluent limits, and how dischargers and permit agencies monitor compliance with both. In addition, a basic understanding of **Total Maximum Daily Load** clean-up plans, **mixing zones**, and state certification of federal permits will be useful.

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4.1 How Water Quality Standards Fit into Permit Development

Water Quality Standards

Water quality standards are a critical piece of the development of appropriate effluent limits in permits. Permits cannot be granted if they cause or contribute to a violation of water quality standards.³¹

Water quality standards have three components:

USES – The uses of the water dictate how each waterbody will be protected. The state or tribal water quality agency must designate uses to be protected on each waterbody in their jurisdiction. If you

know of existing uses that are not designated, you should bring them to the attention of the agency. Documentation of the uses (e.g., through photos, fishing or boating licenses or species inventories) may be necessary to prove a use exists that your state agency must consider and protect.³²

CRITERIA – To protect all uses of the receiving waterbody, water quality criteria are developed. These criteria (both numeric and narrative) identify the minimum chemical, physical and biological characteristics necessary to support uses in the waterbody.³³

If a new, renewed or modified permit based on technology standards would impair the uses or violate the criteria of the receiving waterbody, a water quality-based effluent limit will be required.³⁴

With data you collect or obtain from other sources, it may be easier to prove the proposed permit will violate specific numeric or narrative criteria than to determine that a use will be impaired.

ANTIDEGRADATION – The antidegradation policy, discussed earlier, is the means to protect the quality of water that has been maintained or restored. This provision requires review of every permit to evaluate whether it will impair existing uses or degrade water quality that is better than the minimum criteria set to protect all uses.³⁵ This review is not consistently or sufficiently applied in any state.



Three tiers or principles are associated with the antidegradation review:

Tier 1 – Protect all existing uses.

Existing uses must be protected if they have been present or in existence at any time since November 28, 1975 (the date federal Clean Water Act regulations went into effect).

An existing use could be any of the following:

- ▣ Life supported by the stream – fish, shellfish and other organisms³⁶
- ▣ Commercial and recreational fishing
- ▣ Recreational activities like boating, swimming and paddling
- ▣ Drinking water

Existing uses include 1) actual uses, even if they are not officially designated or even if the water quality is not sufficient to support them (e.g., if your children swim in a creek, that creek must be protected for swimming even if the official designation does not include recreation) and 2) those uses for which adequate water quality exists, regardless of whether they are practiced (e.g., if a creek has levels of fecal bacteria low enough for safe swimming, that must be protected even if no one uses it for swimming).

The 1975 benchmark was created to eliminate the “oops” factor. If this date were not included, a discharger might unintentionally eliminate an existing use and say, “Oops!” Once the use is eliminated they could argue there is no reason to continue protecting water quality necessary to support that use. Because we protect existing uses, the discharger would instead be required to make an effort to restore that use, or at least continue operating in a manner consistent with its existence or restoration.

Tier 1 of the antidegradation review must ensure that no discharge authorized under an NPDES permit will harm an existing use. Think of this as an absolute “floor” of protection for all waterbodies.

Tier 2 – Maintain and protect “high quality” waters.

High quality waters are those that have better water quality, pollutant by pollutant, than the minimum criteria set to protect **designated uses**. For example, a waterbody could have cool temperatures and very little sediment, measuring much better than the criteria set to protect aquatic species. At the same time, it could violate the criteria for copper. This waterbody would need to be given a Tier 2 review regarding temperature and sediment before the permit is issued. (It would also need a Total Maximum Daily Load cleanup plan for copper.)



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New or increased discharges into high quality waters should be prevented wherever possible. The antidegradation review must evaluate alternatives to the discharge, prove the necessity of the discharge and demonstrate that the social and economic benefits of the discharge outweigh the ecological and social costs of lower water quality. If and when any lowering of water quality is allowed, it must be limited to an amount that will not harm an existing use – this is again the Tier 1 “floor” of protection for all waterbodies.

Tier 3 – Protect Outstanding National Resource Waters.

Tier 3 is the most protective category assigned to our special rivers, lakes and coastal waters. Waters do not have to be pristine to fit into this category. Instead, all waters with recreational or ecological significance can earn Outstanding National Resource Waters (ONRW) designation. This is the only antidegradation tier that must be specifically designated to receive the protection.



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Many states have developed an Outstanding State Waters or Outstanding Resource Waters category that is less protective than Tier 3. Be aware that this category, called Tier 2.5, will sometimes not even afford the full protection in Tier 2.

Additional direct discharges to ONRWs are prohibited. Management plans to protect high water quality and resource values are encouraged.

Questions to Consider

Is the permit going to harm existing uses or violate water quality criteria?

Existing uses must be protected at all times. Find out what uses have been designated by the state and document what uses are occurring downstream of the discharge. Insist on an antidegradation review of existing uses. Find out what water quality criteria apply where the discharge is to occur. If the discharge may cause a violation of a criterion or in any other way harm existing uses, insist that the antidegradation policy does not allow such a violation under any circumstances.



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Is the permit going to reduce existing high water quality?

If the discharge will not violate any standards or harm existing uses, but it will erode existing water quality, Tier 2 of the antidegradation policy requires that alternatives to the discharge be evaluated, and the necessity and social and economic justification of the discharge be proven.

Did the agency evaluate the socio-economic costs and benefits of the discharge?

Discharges into high quality waterways are only allowed if there is a significant socio-economic benefit to the local community. This usually gets glossed over by states, but you can require them to research and document such an evaluation.

Effluent Limitations

Effluent limits are established in NPDES permits to restrict the amount of pollution released from a facility. The types of pollutants that are regulated and the quantity of pollution that can be released are established (as mentioned in Chapter 2, page 20) through either technology-based effluent limits or water quality-based effluent limits. Technology-based limits are assigned by category of discharge based on the amount of pollution that can be removed by the best available technology. Water quality-based limits must be developed when there are already problems with certain pollutants or in other special circumstances such as places where modeling shows a likelihood that standards could be violated if technology-based limits alone were imposed. They may also be necessary when the receiving stream is so small that the effluent may dominate the streamflow and create problems with the pollutants that are discharged. Water quality standards should be taken into consideration when effluent limits are developed for each discharge.



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Questions to Consider

Has the agency noted the relevant water quality criteria applicable to the receiving waterbody?

The permit should note water quality criteria for the parameters being discharged. There should be some discussion or reference to studies indicating how they determined no water quality standards would be violated.

Has the agency developed water quality-based effluent limits when necessary?

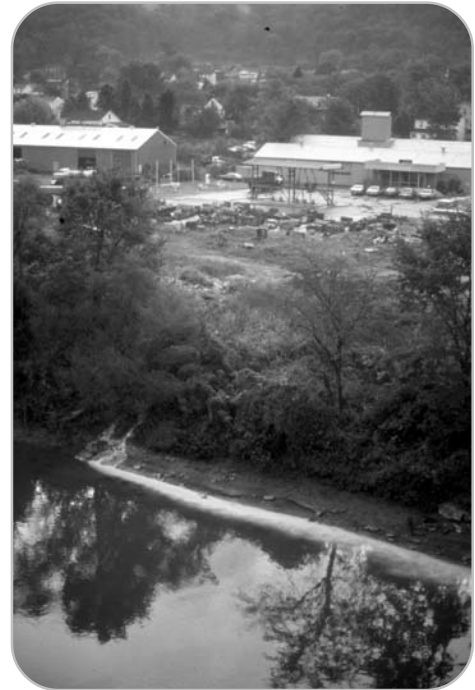
If monitoring or the “reasonable potential analysis” (see Chapter 2) shows that waters receiving a discharge are close to or already violating water quality standards, the agency must develop water quality-based effluent limits that are more stringent than the industry-wide technology-based limits.

4.2 Total Maximum Daily Loads and Permitting

The Clean Water Act requires your state to identify rivers, streams, lakes and coastal waters that are threatened or don't meet basic water quality standards. The state has to create a list, commonly known as the 303(d) list, of these threatened and impaired waterbodies every two years and report that list to the U.S. EPA and the public. The list identifies which waters are polluted, what the problem pollutant is and how soon the waterbody is scheduled for clean-up.

Once threatened and impaired waters are identified, the state agency must develop a plan to bring the waterbody back into compliance with standards. This plan for clean-up is known as a Total Maximum Daily Load or TMDL. In many waterbodies, changes to permits represent a significant portion of the plan to restore or protect water quality. Implementation of these plans must be monitored, because required changes to existing and proposed permits are seldom made in a timely fashion. It is therefore critical that citizens understand how to review and comment on discharge permits in order to speed the recovery of impaired waterbodies.

All existing and new permits issued after a TMDL is developed should reflect the requirements spelled out in the TMDL. Those requirements have, in effect, become the standards for the waterbody.



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Questions to Consider

Is the permit being issued in an impaired waterbody? If so, is there a TMDL developed already?

It is important that you know the status of the receiving waterbody. The permit should discuss it in the fact sheet, at least. If the waterbody is already impaired, new pollutant loading is not allowed unless a TMDL has been developed. If a TMDL has been developed, the permit is only allowed if the discharge complies with the TMDL's requirements.

Is the permit revision supposed to be based on a TMDL that has been developed?

An existing permit may be subject to change based on developed TMDLs. Permits are usually not adjusted quickly to reflect TMDL requirements. Insist that required permit modifications are made.

Is the limit set by the TMDL correctly translated into the permit?

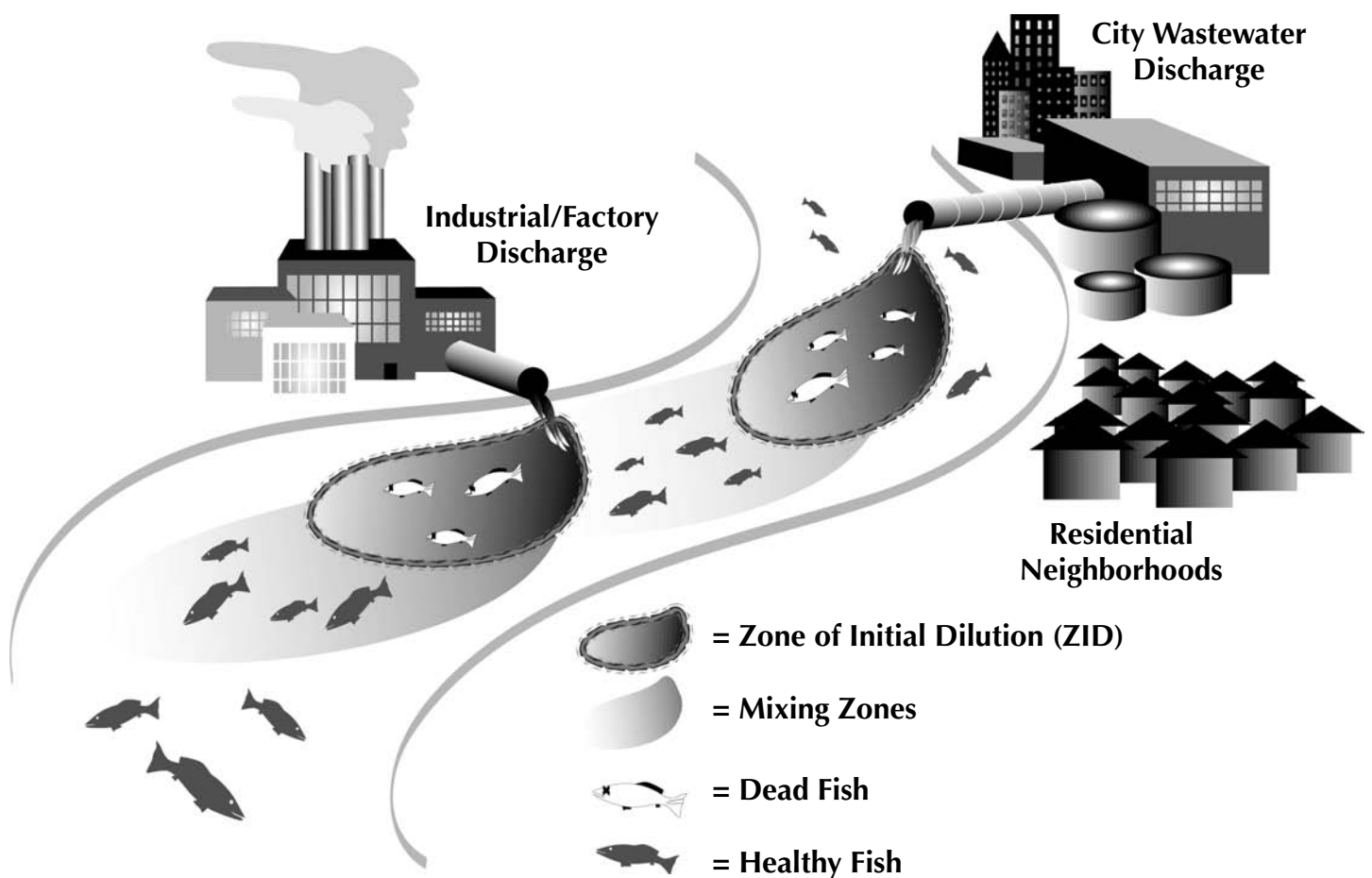
A TMDL sets an overall load limit for a particular pollutant in a watershed. This load is usually expressed in pounds per day. The overall load is then divided among all the dischargers in the area. Each discharger gets a piece of the pie, and that new limit must be incorporated into the permit. However, it pays to check on how that process transpired. Although the TMDL sets a *daily* limit, permits have often been written that use the daily number as a *weekly* limit or even a weekly average!³⁷

4.3 Mixing Zones and Permits

You might have assumed effluent limits are the same as the water quality standards that apply to the receiving stream. As previously noted, that is usually not the case. Federal regulations allow for a certain mixing area within the receiving waterbody, *before* water quality standards must be met.³⁸ These areas are called mixing zones. Mixing zones are not required by the Clean Water Act, but most states have a mixing zone policy.

Mixing zones are areas beyond the end of the pipe where the discharger and the regulators decide it is okay to violate water quality standards while the discharge is mixing with the streamflow. Once outside the mixing zone, the wastes will be more diluted and are expected to meet water quality standards. Mixing zones are supposed to be as small as possible and should be defined in the permit, but many states do not explicitly do so. Little or no attention is paid to cumulative impacts of mixing zones in a receiving waterbody.

Some states establish mixing zone parameters within their state water quality standards. Other states establish rules for them in the permit regulations.



Questions to Consider

Is a mixing zone explicitly described in the permit?

Insist that details of the mixing zone be included in the permit – the area, the specific pollutant(s) it applies to and the concentration limits within the zone. In that way, you are better able to monitor whether any violations occur within or outside it.

Are existing uses protected within it?

Antidegradation policy requires that existing uses be protected at all times, even within the mixing zone. Many states have included this statement in their water quality standards. Ask for it to be added during the next Triennial Review of your standards.

Is the mixing zone as small as possible given the flow and toxicity of the discharge? Is it adequate at all times — even during critical flows?

The agency should perform an analysis to determine the size of mixing zone necessary to allow sufficient dilution of the discharge at all flow levels. Ask for this analysis, and if it doesn't exist, insist it be performed.



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4.4 State Certification of EPA-Issued Permits

In most states, the U.S. Environmental Protection Agency has delegated the NPDES program to the state water quality agency. U.S. EPA retains an oversight role. The NPDES permit program has not been delegated to six states (AK, AZ, ID, MA, NH, NM), any tribal government, the District of Columbia, Puerto Rico or the Pacific Territories. This means the U.S. EPA must issue all discharge permits in those areas.

Section 401 of the Clean Water Act allows states to review all federal permits and licenses for compliance with state water quality standards, and it applies in areas where U.S. EPA has retained permit authority. Dischargers must therefore apply for state water quality certification of their permits. The state may 1) waive the privilege to review this federal permit, 2) grant a certification that it meets water quality standards, 3) condition the permit or 4) deny the certification. If state water quality standards are strong, and the state chooses to perform these reviews, this process can be powerful. Where this is an applicable tool, citizens should pressure their state agency to thoroughly exercise their privilege.



Questions to Consider

Did U.S. EPA write the NPDES permit? If so, is there a 401 certification from the state assuring water quality standards will be met?

Ask the state agency to exercise their 401 certification privilege and encourage them to evaluate the impact of the discharge (including the mixing zone) and the stormwater practices of the discharger.

If there is a 401 certification process, what conditions may be placed on the permit to benefit the receiving stream?

Suggest conditions to the permit that could address the impact of the discharge during the most sensitive times of the year and on the most sensitive uses of the waterbody. For example, the permit should address discharge at both low flow and high flow and for all life stages of existing aquatic species.

Conclusion

Congratulations — you are now a bona fide permit review expert. We’ve walked through the background of permitting, how to gather your review tools, how to analyze what you find inside and outside the permit and how to translate all your findings into action.

Remember, don’t let the details overwhelm you. Get your hands on your first draft permit and try tackling the tasks on the **Quick Start Permit Action List** on page iv. If you dig into those ten questions and write comments, you’ll be doing your river a huge favor. If you find two friends to submit comments too, you’ll be starting a river revolution!

You are ready to take up the duty of protecting your favorite creek, river or lake. Jump right in and make some waves!



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Endnotes

- 1/ Webster's New World Dictionaries, *Webster's New World Compact School and Office Dictionary*, 1989.
- 2/ Discussion paraphrased from *The Clean Water Act: An Owner's Manual* by River Network (March 1999). Clean Water Act quotes from section 502 (14).
- 3/ Clean Water Act (CWA) section 101(a)(1).
- 4/ Clean Water Act, Section 402 and 40 CFR 122.23.
- 5/ Clean Water Act, Section 402 and 40 CFR 122.
- 6/ 40 CFR 122.28(b)(3), "The Director may require any discharger authorized by a general permit to apply for and obtain an individual NPDES permit. Any interested person may petition the Director to take action under this paragraph." The cite goes on to list cases where an individual permit may be required.
- 7/ Clean Water Act section 505. Also, see the box on standing on page 44.
- 8/ 40 CFR 122.46(a) for EPA permits and 40 CFR 123.25 for state permits.
- 9/ For more information about state fee structures, see Companion Resources to *Permitting an End to Pollution* at www.cwn.org.
- 10/ U.S.EPA NPDES Permit Writers Manual, December 1996. (EPA-833-B-96-003).
- 11/ U.S.EPA NPDES Permit Writers Manual, December 1996. (EPA-833-B-96-003).
- 12/ EPA regional offices retain permit authority in Massachusetts, New Hampshire, Idaho, New Mexico, Arizona, Alaska, District of Columbia, tribal reservation land and U.S. territories.
- 13/ 40 CFR 124.8(a).
- 14/ Although the permit term is limited to 5 years, permits may be "administratively continued" for years beyond their term. An administratively continued permit is allowed when a permittee applies for a renewal of a permit on time, but the agency does not get around to renewing the permit. These types of permits are often referred to as the "permit backlog."
- 15/ 40 CFR 122.4(i).
- 16/ 40 CFR 122.62(a).
- 17/ 40 CFR 400 through 471.
- 18/ 40 CFR 122.44(d).
- 19/ The conversion factor assumes you are converting mg/l and MGD to lbs/day.
- 20/ 40 CFR 122.4(d).
- 21/ 40 CFR 122.4(i).
- 22/ Clean Water Act, Section 402(o)(1).
- 23/ 40 CFR 131.12.
- 24/ For more detailed on special conditions, see the *U.S. EPA NPDES Permit Writers Manual*, 12/96, Chapter 8. (EPA-833-B-96-003).
- 25/ U.S. EPA, Office of Water, *U.S. EPA NPDES Permit Writers Manual*, 12/96, page 148. (EPA-833-B-96-003).
- 26/ 40 CFR 403 and 40 CFR 122.44(j).
- 27/ Existing uses are those uses attained any time since November 28, 1975 (regardless of whether water quality supports them or whether they have been officially designated in water quality standards), as well as the potential uses that water quality supports regardless of whether they have been attained.
- 28/ 40 CFR 122.44.
- 29/ For more information on reasonable potential analyses, read *U.S. EPA's Technical Support Document for Water Quality-based Toxics Control* (EPA 505-2-90-001). You can order this for free at <http://www.epa.gov/waterscience/pc/orderpubs.html>.
- 30/ Mullin, Elizabeth. *The Art of Commenting*. Environmental Law Institute. Order online at www.eli.org.
- 31/ 40 CFR 122.4.
- 32/ Clean Water Act, Section 303(c)(2)(A), 40 CFR 131.7
- 33/ Ibid.
- 34/ Clean Water Act, Section 302.
- 35/ 40 CFR 131.12. See www.cwn.org for the text of the federal antidegradation policy.
- 36/ U.S. EPA, *Questions and Answers on Antidegradation*, August 1993. This U.S. EPA guidance on antidegradation specifies that no mortality, no impacts on growth or reproduction, no reduction in diversity and no shifts in the balance of the aquatic community will be allowed.
- 37/ For more on translating TMDL load limits into permit limits, see *The Ripple Effect*, Clean Water Network, 2001, page 30. Find *The Ripple Effect* at: www.cwn.org by clicking on "impaired waters."
- 38/ 40 CFR 131.13.

