

## NATURAL RESOURCES DEFENSE COUNCIL

### NUTRIENT GUIDE FOR THE STATES OF THE MISSISSIPPI RIVER<sup>1</sup>

#### I. INTRODUCTION

##### **A. The Problem of Nutrient Pollution**

According to the U.S. Environmental Protection Agency (EPA), nutrient pollution is one of the major causes of impairment of U.S. waters.<sup>2</sup> Excess quantities of the macronutrients, nitrogen and phosphorus, pose significant water quality and public health concerns, threaten wildlife and aquatic ecosystems,<sup>3</sup> and impact drinking water quality and recreational use of our freshwater and marine resources.<sup>4</sup> Nutrient pollution is especially prevalent in the Mississippi River Basin.

In recent years, the Mississippi River has discharged as much as 1,000,000 metric tons of dissolved nitrate-nitrogen, and over 150,000 metric tons of phosphorus annually into the Gulf of Mexico.<sup>5</sup> According to the U.S. Geological Survey, nine states contribute more than 75 percent of the nitrogen and phosphorus discharged into the Gulf.<sup>6</sup> Of these, seven are Mississippi River states: Arkansas, Illinois, Iowa, Kentucky, Mississippi, Missouri, and Tennessee.<sup>7</sup>

One of the most significant problems associated with nutrient pollution is the production of toxic byproducts during drinking water treatment. Excess nutrients in the waterways promote algal blooms which rob the water of dissolved oxygen when they decompose—a process called eutrophication.<sup>8</sup> When the algae and its decomposition products present in the raw water supply are processed with chlorine and bromine during drinking water disinfection, they form trihalomethanes (THMs), a known carcinogen. The more nutrients there are present in the water, the more algae will grow, and the higher the level of THMs will be in the drinking water.

In addition to posing a threat to human health, nutrient pollution is also responsible for the creation of hypoxic “dead zones” in the Gulf of Mexico.<sup>9</sup> When the Mississippi River carries

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<sup>1</sup> The legal information in this white paper is being provided for informational purposes only and not as part of an attorney-client relationship. The information is not a substitute for expert legal or other professional advice tailored to your specific circumstances.

<sup>2</sup> US EPA, *An Urgent Call to Action: Report of the State-EPA Nutrient Innovations Task Group* (2009), at 7.

<sup>3</sup> Natural Resources Defense Council, Before the U.S. Environmental Protection Agency, *Petition for Rulemaking under the Clean Water Act: Secondary Treatment Standards for Nutrient Removal*, at 2-3.

<sup>4</sup> *Urgent Call to Action*.

<sup>5</sup> Natural Resources Defense Council (NRDC), *Missing Protection: Polluting the Mississippi River Basin's Small Streams and Wetlands*, an NRDC Issue Paper, October 2008.

<sup>6</sup> On average, the upper Mississippi and Ohio-Tennessee River subbasins represent about 31 percent of the total land area within the Mississippi-Atchafalaya River Basin, yet these areas contribute about 82 percent of the nitrate-nitrogen flux, 69 percent of the total Kjeldahl Nitrogen (sum of organic nitrogen, ammonia, and ammonium), and 58 percent of the total phosphorus flux. *Id.* at 14.

<sup>7</sup> *Id.* The other states are Indiana and Ohio.

<sup>8</sup> US EPA, Hypoxia 101, <http://water.epa.gov/type/watersheds/named/msbasin/hypoxia101.cfm>.

<sup>9</sup> In 2008, the dead zone in the Gulf of Mexico measured 7,988 square miles, or about the size of the state of Massachusetts. National Oceanic and Atmospheric Administration (NOAA), *Survey Cruise Records Second-Largest*

nitrogen and phosphorus to the Gulf, giant algal blooms occur, which rob the bottom layer of water of dissolved oxygen devastating the aquatic environment: mobile organisms flee, while those that cannot move die from lack of oxygen.<sup>10</sup> In addition, changes in the water's pH and chemical composition can cause the release of toxic metals and other harmful substances from underlying sediments.<sup>11</sup>

Municipal wastewater treatment plants, commonly known as publicly owned treatment works or POTWs, are important contributors of both nitrogen and phosphorus.<sup>12</sup> These nutrients are present in domestic sewage, and they are not typically removed during treatment prior to being discharged into rivers and streams.

Under the Clean Water Act (CWA), discharges to surface waterways are required to meet "secondary treatment" standards, as defined by EPA, but the current secondary treatment regulation only regulates pH, dissolved oxygen, and total suspended solids—not nutrients.<sup>13</sup> As of August 2009, "[o]f more than 16,500 municipal POTWs nationwide, only approximately 4% have numeric limits for nitrogen and 9.9% for phosphorus."<sup>14</sup> As a result, POTWs that are polluting the waterways with excess nutrients may not be violating their permits. Most states have regulations that prohibit dischargers from violating water quality standards or from lowering water quality through the permit process.

This Guide is designed to arm citizens with state-specific knowledge about water quality regulations in each of the states in the Mississippi River basin. With the information in this Guide, community members can compel POTWs to upgrade their treatment practices and yield real improvements in surface waters.

## **B. Goals and organization of the Nutrient Guide**

This Guide has two purposes. The first purpose is to educate citizens about the dangers of nutrient pollution in Mississippi River waterways, specifically from publicly owned treatment works. The second purpose is to provide information on opportunities to combat unnecessary nutrient pollution from these facilities.

In accordance with these goals, this Guide is divided into four main sections. The preceding section provided a general overview of the problem of nutrient pollution. The second section

*"Dead Zone" in Gulf of Mexico Since Measurements Began in 1985*, July 28, 2008,

[http://www.noaa.gov/stories/2008/20080728\\_deadzone.html](http://www.noaa.gov/stories/2008/20080728_deadzone.html); *see also* Mississippi River Gulf of Mexico Watershed Nutrient Task Force, Gulf Hypoxia Action Plan (2008), available at [http://water.epa.gov/type/watersheds/named/msbasin/upload/2008\\_8\\_28\\_msbasin\\_ghap2008\\_update082608.pdf](http://water.epa.gov/type/watersheds/named/msbasin/upload/2008_8_28_msbasin_ghap2008_update082608.pdf).

<sup>10</sup> *Id.*

<sup>11</sup> US EPA Nutrient Criteria, Technical Guidance Manual, Rivers and Streams, EPA-822-B-00-002, at pp. 4-5 (July 2000).

<sup>12</sup> Natural Resources Defense Council (NRDC), *Missing Protection: Polluting the Mississippi River Basin's Small Streams and Wetlands*, an NRDC Issue Paper, October 2008, at 14 ("Depending on the local ecological conditions and their relative contribution, POTW discharges can be a significant source of nutrients in some watersheds.").

<sup>13</sup> *See* 40 C.F.R. § 133.102.

<sup>14</sup> Natural Resources Defense Council (NRDC), *Missing Protection: Polluting the Mississippi River Basin's Small Streams and Wetlands*, an NRDC Issue Paper, October 2008, at 14.

provides an overview of the federal regulatory scheme and overlapping governmental regulatory frameworks (federal and state) that affect the regulation of nutrient pollution. The third section offers an overview of the state regulatory schemes of the ten states that border the Mississippi River. Finally, the appendix of definitions contains a list of terms that will be necessary to fully understand the issues addressed in this guide.

Each state regulatory section discusses (1) substantive state water pollution control requirements applicable to nutrient discharges from POTWs, and (2) the procedures by which those requirements are applied. The “Substance” section is divided into four subsections: “Effluent Regulations,” “Water Quality Standards,” “Anti-Degradation Policy,” and “TMDLs”. These subsections represent the kinds of regulatory structures that state clean water authorities use to regulate pollution discharges into surface waters. The “Procedure” section is divided into subsections on “Permit Requirements,” which discusses the general application process for POTWs, “Public Participation Procedures,” which discusses the ways in which individuals can become involved in the permitting process overseen by state environmental protection authorities, “Permit Renewals,” which describes the procedures states use in deciding whether to reissue a permit after it has expired, and “Permit Violations,” which describes the legal remedies available when a POTW violates its permit or applicable state or federal law.

## II. INTRODUCTORY FEDERAL MATERIALS

### A. THE CLEAN WATER ACT

Discharges of wastewater into the “waters of the United States” are extensively regulated by the Clean Water Act (CWA) through a “collaborative federal and state program of permits and standards.”<sup>15</sup> Those who are responsible for the discharge of pollutants from a “point source” are subject to regulation under the National Pollutant Discharge Elimination System (NPDES), in which discharge permits must be obtained from either the U.S. Environmental Protection Agency (EPA) or a state agency that has an EPA-approved permit system.<sup>16</sup> NPDES permits apply both technology-based and water-quality-based requirements to each discharger.<sup>17</sup>

Within the water-quality based requirements of the CWA, water quality standards (WQS) are adopted by states and must be submitted to the EPA for formal approval.<sup>18</sup> There are three basic elements of a water-quality standard: a) the designation of use or uses of a body of water, b) the water-quality criteria that are necessary to protect that use or uses, and c) an anti-degradation policy. WQS first take into account the uses of a body of water, such as propagation of fish and wildlife, recreation, agriculture, industry, and other purposes.<sup>19</sup> Based on those uses, criteria are established that limit how much pollution is allowed into the water body, either through numeric limits or narrative standards. Finally, anti-degradation regulations are established to ensure that existing water quality is protected.

### B. THE FEDERAL REGULATION OF POTWS

To promote the achievement of established water quality standards, point source dischargers like POTWs are regulated under the CWA through NPDES permits.

Domestic and industrial wastewater comprises most of the municipal wastewater in the United States.<sup>20</sup> The CWA’s POTW regulation focuses on three primary goals: (1) ensuring that wastewater is treated to meet *secondary treatment standards* for dissolved oxygen, suspended solids, and pH,<sup>21</sup> (2) establishing management programs for biosolids, and (3) ensuring that POTWs set and enforce specific pretreatment limits on wastewater received from industrial dischargers.<sup>22</sup>

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<sup>15</sup> *Clean Water Act Handbook*, American Bar Association, 2d Edition, at 1.

<sup>16</sup> *Id.*

<sup>17</sup> *Id.*

<sup>18</sup> 33 U.S.C. § 1313(c)(2).

<sup>19</sup> *Clean Water Act Handbook* at 3; *see also* 33 U.S.C. § 1313(c)(2).

<sup>20</sup> *See Clean Water Act Handbook* at 70.

<sup>21</sup> *See* 40 C.F.R. § 133.102. POTWs must first implement *primary treatment standards* for wastewater, which includes screening, sedimentation, and/or skimming of the water to remove oils, gases, and large solids (such as rags and debris). While primary treatment relies on basic physical interventions to remove suspended solids and some organic matter, secondary treatment uses a number of processes to break down biodegradable organic material and remove it from the water. Typical secondary treatment techniques include activated sludge systems, trickling filters, and rotating biological contractors. *Clean Water Act Handbook* at 69.

<sup>22</sup> *Clean Water Act Handbook* at 69.

The EPA is charged with defining “the degree of effluent reduction attainable through the application of secondary treatment.”<sup>23</sup> EPA’s current secondary treatment regulation specifies the minimum level of effluent quality for biochemical oxygen demand (BOD), total suspended solids (TSS), and pH.<sup>24</sup> Unfortunately, EPA’s current interpretation of secondary treatment does not apply specific limits to nutrients, but nutrient pollution can be addressed through the BOD standards and enforcement of applicable water quality standards (see next section, Water Quality Standards).

Depending on state and local laws, more advanced treatment may be required.<sup>25</sup> When treatment is complete, the discharge into the waterway can occur as long as it complies with state promulgated water quality standards. As mentioned above, a POTW may be discharging within its permit, but still be in violation of state water quality standards, therefore it is important for citizens to become aware of how states measure water quality to use their state WQS to advocate for improved POTW treatment requirements.

In addition to primary and secondary treatment standards applicable to POTWs, industrial dischargers are required to achieve *pretreatment standards* before discharging pollutants into the POTW. Virtually every state has a pretreatment program which spells out the conditions and limitations on the discharge of pollutants from outside users that discharge directly into POTW facilities. Usually, a POTW has legal authority enforceable in federal, state, or local courts, to apply and enforce the pretreatment standards required by sections 307(b), (c), and 402(b)(8) of the federal Clean Water Act.<sup>26</sup> POTWs must develop a compliance plan to make sure that industrial dischargers adhere to the pretreatment requirements and must have the power to

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<sup>23</sup> *Id.*

<sup>24</sup> *See id.* at 70. The federal standards listed at 40 C.F.R. § 133.102, which many states have adopted, include the following criteria:

(a) *BOD*<sub>5</sub>.

- (1) The 30-day average shall not exceed 30 mg/l.
- (2) The 7-day average shall not exceed 45 mg/l.
- (3) The 30-day average percent removal shall not be less than 85 percent.
- (4) At the option of the NPDES permitting authority, in lieu of the parameter BOD<sub>5</sub> and the levels of the effluent quality specified in paragraphs (a)(1), (a)(2) and (a)(3), [of the Code of Federal Regulations, 40 C.F.R. 133.102], the parameter CBOD<sub>5</sub> may be substituted with the following levels of the CBOD<sub>5</sub> effluent quality provided:
  - (i) The 30-day average shall not exceed 25 mg/l.
  - (ii) The 7-day average shall not exceed 40 mg/l.
  - (iii) The 30-day average percent removal shall not be less than 85 percent.

(b) *SS*.

- (1) The 30-day average shall not exceed 30 mg/l.
- (2) The 7-day average shall not exceed 45 mg/l.
- (3) The 30-day average percent removal shall not be less than 85 percent.

(c) *pH*.

The effluent values for pH shall be maintained within the limits of 6.0 to 9.0 unless the publicly owned treatment works demonstrates that: (1) Inorganic chemicals are not added to the waste stream as part of the treatment process; and (2) contributions from industrial sources do not cause the pH of the effluent to be less than 6.0 or greater than 9.0.

<sup>25</sup> *Clean Water Act Handbook* at 70.

<sup>26</sup> *See, e.g.,* Missouri Code of State Regulations, Title 10, Div. 20.6.100

identify and locate all industrial users that will be subject to the pretreatment program, identify the character and volume of the pollutants contributed to the POTW by industrial users, and notify all industrial users of the pretreatment requirements. In addition, the POTW must have the power to receive and analyze self-monitoring reports issued by industrial users, sample and analyze effluents, conduct surveillance and inspections, investigate allegations of non-compliance, and initiate public participation mechanisms. Finally, POTWs must maintain an effective enforcement response plan.<sup>27</sup>

### C. WATER QUALITY STANDARDS

Water quality standards (WQS) can be expressed numerically or narratively. Numeric standards set specific limitations on individual substances. For example, under § 303(c)(2)(B) of the Clean Water Act, states are required to set numeric criteria for toxic substances that are expected to interfere with designated uses of waterways.<sup>28</sup> Unfortunately, numeric criteria have yet to be developed for nutrients in many critical waters of the Mississippi River Basin.<sup>29</sup> In June 1998, EPA issued a *National Strategy for Development of Regional Nutrient Criteria* that was followed by a “national action plan for the development and establishment of numeric nutrient criteria,” and the issuance of technical guidance for developing numeric criteria for lakes and reservoirs (May 2000), rivers and streams (June 2000), and estuaries and coastal waters (October 2001). EPA then published recommended nutrient criteria for lakes and streams in 2001. While EPA’s action plan has spurred some development of nutrient regulation, to date, many states (e.g., Iowa, Louisiana, and Missouri) are still far behind in their development of numeric criteria.<sup>30</sup>

Fortunately, the lack of fixed numeric limitations on nitrogen and phosphorus does not mean that citizens are without recourse to combat nutrient pollution. Regardless of whether a state has set numeric criteria, each state sets narrative criteria that can serve as a powerful tool for citizens to pursue enforcement of water quality standards. In a nutshell, narrative water quality standards are descriptive standards that set minimum levels of water quality in terms of quantity, flow, appearance, smell, temperature, and presence or diversity of aquatic life. A discharge that causes or contributes to violation of the narrative criteria could be the basis for citizen action to improve nutrient controls.

States are mandated by CWA § 303(d) to identify waters where current effluent limits, “are not stringent enough to implement any water quality standard applicable....”<sup>31</sup> For water bodies on that list, a Total Maximum Daily Load (TMDL) is developed for particular pollutant(s) in that particular water body. The TMDL calculates the maximum amount of the pollutant allowed to enter the water body so that the water body can meet, and continue to meet, water quality

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<sup>27</sup> *See id.*

<sup>28</sup> 33 U.S.C. 1313 (c)(2)(B).

<sup>29</sup> Office of Water, U.S. Environmental Protection Agency, State Adoption of Numeric Nutrient Standards (1998-2008) (2008), available at <http://www.epa.gov/waterscience/criteria/nutrient/files/report1998-2008.pdf>.

<sup>29</sup> Iowa Admin. Code 567-62.1(8) (455B) (2010).

<sup>30</sup> For descriptions of EPA’s policies and state actions, see U.S. EPA, What is EPA’s National Nutrient Policy?, and the other web pages at <http://www.epa.gov/waterscience/criteria/nutrient/policy.html>.

<sup>31</sup> 33 U.S.C. 1212(d).

standards, and allocates the pollutant load to various point sources, assigning a wasteload allocation (WLA) to each point source.<sup>32</sup> It should be noted that while the 303(d) list is often referred to as an “impaired” waters list, it is not. It is a list of waters that need additional regulation in order to meet water quality standards. A water body does not need to be currently impaired to appear on that list.<sup>33</sup> Throughout this Guide “impaired” is used as an umbrella term covering both potential and current impairment.

The state-specific sections in this Guide describe the applicable numeric and narrative water quality standards that citizens can use to combat nutrient pollution from local POTWs.

#### **D. 40 C.F.R. § 131.12: FEDERAL ANTI-DEGRADATION REGULATION**

In accordance with the Clean Water Act, the federal anti-degradation regulation requires all states to develop an anti-degradation policy and associated implementation procedure. At a minimum, the anti-degradation policy should be consistent with the following:

- 1) Existing in-stream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected.
- 2) Where the quality of the waters exceeds levels necessary to support propagation of fish, shellfish, and wildlife, and recreation in and on the water, that quality shall be maintained and protected unless the State finds, after full satisfaction of the intergovernmental coordination and public participation provisions of the State's continuing planning process, that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located. In allowing such degradation or lower water quality, the State shall assure water quality adequate to protect existing uses fully. Further, the State shall assure that there shall be achieved the highest statutory and regulatory requirements for all new and existing point sources and all cost-effective and reasonable best management practices for nonpoint source control.
- 3) Where high quality waters constitute an outstanding National resource, such as waters of National and State parks and wildlife refuges and waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected.<sup>34</sup>

Anti-degradation frameworks have been developed in all of the Mississippi River Basin states, although some are more rigorous than others. As discussed above, many states still lack numeric nutrient criteria as part of their anti-degradation plan.

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<sup>32</sup> Nonpoint sources receive load allocations (LAs).

<sup>33</sup> 33 U.S.C. 1212(d)(1)(A).

<sup>34</sup> In cases where potential water quality impairment is associated with a thermal discharge, the anti-degradation policy and implementing method must be consistent with section 316 of the CWA.

**E. FEDERAL REMEDIES<sup>35</sup>**

Federal regulations provide that a person, such as an owner or operator of a POTW, who violates various sections of the federal Clean Water Act, or a POTW permit limitation or condition implementing the CWA's mandates, is subject to a civil penalty not to exceed \$37,500 per day for each violation. A person who *negligently* violates the CWA or the terms and conditions of a permit is subject to criminal penalties assessed per day of violation, imprisonment for up to 1 year, or both. In the case of a second negligent violation, the dollar amount and prison time increases substantially. A person who *knowingly* violates the CWA or permit limitations and conditions is subject to monetary criminal penalties, or imprisonment for up to 3 years, or both penalties. In the case of a second intentional violation, a person is subject to a substantially higher monetary criminal penalty assessed per day for each violation, or imprisonment for up to 6 years, or both. Similarly, any person "who knows at that time that he thereby places another person in imminent danger of death or serious bodily injury," will be subject to a fine of up to fines in excess of a quarter million dollars or imprisonment of up to 15 years, or both. Finally, an organization (non-governmental) can be fined as much as \$1,000,000 for the first "imminent danger" violation and up to \$2,000,000 for the second.

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<sup>35</sup> 40 C.F.R. § 122.41(a)(2) (2007).

### **III. THE STATES OF THE MISSISSIPPI RIVER**

what follows is a discussion of state requirements for the ten states that border the Mississippi River. Together, these requirements provide opportunities for citizens to have a real impact on water quality by advocating for improvements in the nutrient controls at individual POTWs even prior to action by EPA to improve the generally-applicable “secondary treatment” requirements. There are several such opportunities.

First, some states insist on technology-based pollution controls beyond those required by federal secondary treatment regulations. Citizen groups can advocate for thorough enforcement of technology-based control requirements at their local POTWs.

Second, POTW permits must ensure that discharges do not cause or contribute to a violation of water quality standards. Even though numeric nutrient limits are largely absent from state regulations, many states have narrative standards that apply to conditions related to nutrient pollution such as algae growth. States may also have standards for other endpoints, such as dissolved oxygen levels, that are affected by nutrient pollution. Citizens can advocate for effective monitoring and enforcement of water quality standards to protect their waters from POTW discharge.

Third, when TMDLs have been developed for water bodies impaired by nutrients and nutrient wasteload allocations (WLAs) exist, POTW permits must be consistent with those WLAs. Citizens can advocate for improved control requirements in permits when discharges violate applicable WLAs.

Finally, state anti-degradation requirements create a framework to protect existing water quality. Whenever new or increased discharges threaten to undermine a water body’s existing uses (including habitats), citizens can work to ensure appropriate state action to prevent further deterioration.

## ARKANSAS NUTRIENT GUIDE

### I. THE SUBSTANCE: THE ARKANSAS NUTRIENT REGULATORY FRAMEWORK

The Arkansas Department of Environmental Quality (ADEQ) is the major permitting, monitoring and enforcement agency for effluent regulations and water quality standards in the state.

#### A. Effluent Regulations

Arkansas requires all point sources which discharge into impaired waterways<sup>36</sup> to comply with the effluent limitations listed in the Regulations of the Arkansas Pollution Control & Ecology Commission.<sup>37</sup> For example, if phosphorus is the main cause of impairment to a waterway, the following discharge limits apply:<sup>38</sup>

Facility Design Flow <sup>39</sup> – millions of gallons per day (mgd)	Total Phosphorus discharge limit (mg/L)
= or > 15	Case by case
3 to <15	1.0
1 to <3	2.0
0.5 to <1.0	5.0
<0.5	Case by Case

The effluent limitations listed in the Arkansas regulations can vary depending on the size of the point source and the type of downstream water bodies affected. For phosphorus, discharges from point sources greater than 15 mgd may require a reduction of phosphorus discharges to below 1 mg/L depending on the mass of the phosphorus discharge and if current effluent limits “are causing impairments to special waters such as domestic water supplies, lakes or reservoirs or Extraordinary Resource Waters.”<sup>40</sup>

Arkansas has developed a standard for ammonia nitrogen as a toxin, because of its toxicity to fish, but the standard is not designed to protect waters against most of the effects of nutrient pollution (such as downstream eutrophication).<sup>41</sup>

Arkansas has also adopted a number of federal effluent regulations.<sup>42</sup> All new and existing sources of pollution are subject to the general federal pretreatment regulations of 40 C.F.R.

<sup>36</sup> See ARKANSAS DEPARTMENT OF ENVIRONMENTAL QUALITY, LIST OF IMPAIRED WATERWAYS (2008), [http://www.adeg.state.ar.us/water/branch\\_planning/pdfs/303d\\_list\\_2008.pdf](http://www.adeg.state.ar.us/water/branch_planning/pdfs/303d_list_2008.pdf) [hereinafter IMPAIRED WATERWAYS].

<sup>37</sup> Arkansas Pollution Control & Ecology Commission Regulations, Reg. 2.501–2.511, available at <http://www.adeg.state.ar.us/regs/> [hereinafter all regulations from the Arkansas Pollution Control & Ecology Commission will be cited as Reg. #].

<sup>38</sup> Reg. 2.509.

<sup>39</sup> A facility’s discharge flow of process wastewater that is authorized in a NPDES permit.

<sup>40</sup> Reg. 2.509.

<sup>41</sup> See Reg. 2.512.

403.<sup>43</sup> Additionally, Arkansas applies EPA’s secondary treatment requirements for BOD<sub>5</sub>, suspended solids, and pH to all POTW permit discharge applications.<sup>44</sup> The state does not require nutrient controls as part of the secondary treatment obligation.

## B. Water Quality Standards

The Arkansas Pollution Control & Ecology Commission Regulations contain narrative water quality standards for nutrient management. Substances which cause algal growth are prohibited in quantities sufficient to impair water bodies or cause harmful algal growth.<sup>45</sup> Factors such as water clarity, phytoplankton production, dissolved oxygen values, pH values, and aquatic-life community structure are used to determine whether nutrients are the cause of water body impairment.<sup>46</sup>

Arkansas regulations contain many other descriptive water quality standards that apply to discharges, nonpoint sources, and instream activities. These standards could provide the impetus for future nutrient limits in POTW permits. The most relevant regulations are:<sup>47</sup>

- (1) All waters shall be free from artificial substances “in concentrations that produce undesirable aquatic life or result in the dominance of nuisance species.”
- (2) Receiving waters should not have visible solids, scum, or foam. There should be no formation of slime, bottom deposits or sludge banks.
- (3) Discharges should not “cause toxicity to human, animal, plant or aquatic life or interfere with normal propagation, growth, and survival of aquatic biota.”

## C. Anti-Degradation Policy

Arkansas’ anti-degradation policy provides three different levels of protection for water bodies based on water quality: existing uses, high quality waters, and outstanding resource waters.<sup>48</sup> To determine the level of protection afforded to a particular waterway, the public can consult reports from ADEQ’s website that detail the water quality of each Arkansas waterway.<sup>49</sup>

<sup>42</sup> Reg. 6.104 incorporates many of the latest federal effluent regulations into the Arkansas Pollution Control & Ecology Commission Regulations.

<sup>43</sup> 40 C.F.R. § 403 (2010) *et seq.* (adopted verbatim by ADEQ in Reg. 6.104(11)).

<sup>44</sup> Secondary Treatment Regulation, 40 C.F.R. § 133.102, *available at* <http://www.epa.gov/lawsregs/search/40cfr.html> (adopted verbatim by ADEQ in Reg. 6.104(8)). Standards: BOD<sub>5</sub> (30 day average not to exceed 30 mg/l, 7 day average not to exceed 45 mg/l, 30 day average percent removal must not be less than 85%, NOTE: there exists a CBOD<sub>5</sub> substitute), SS (30 day average not to exceed 30 mg/l, 7 day average not to exceed 45 mg/l, 30 day average percent removal must not be less than 85%), pH (typically maintained between 6.0 and 9.0).

<sup>45</sup> Reg. 2.509.

<sup>46</sup> *Id.*

<sup>47</sup> Regs. 2.402, 2.408, and 2.409 respectively.

<sup>48</sup> Reg. 2.201.

<sup>49</sup> *See* IMPAIRED WATERWAYS; *see also* ADEQ, WATER QUALITY INVENTORY FOR ARKANSAS (2008), [http://www.adeg.state.ar.us/water/branch\\_planning/pdfs/WQ08-04-01.pdf](http://www.adeg.state.ar.us/water/branch_planning/pdfs/WQ08-04-01.pdf).

**Existing Uses:** This standard applies to all water bodies. The State must protect the water quality of all water bodies such that existing uses of the water can continue.

**High Quality Water:** The state must maintain and protect high quality waters. This standard applies to a water body if its water quality exceeds the standards necessary to support propagation of fish, shellfish, and wildlife, and recreation in and on the water. States may only lower the water quality for important economic or social development, and must protect all existing uses of the water. New and existing point sources are subject to the highest statutory and regulatory requirements, and nonpoint sources are subject to a Water Quality Management Plan.<sup>50</sup>

**Outstanding Resource Waters:** This standard applies to water bodies designated as extraordinary resource waters, ecologically sensitive waters, and natural or scenic waterways. States must implement the most stringent protections for outstanding resource waters. These include implementation of water quality controls, maintenance of natural flow regimes, protection of instream habitats, and encouragement of land management practices that protect the watershed.<sup>51</sup>

#### **D. Total Maximum Daily Loads (TMDLs)**

Section 303(d) of the Clean Water Act requires that states produce a list of waterways which do not meet water quality criteria despite effluent limitations.<sup>52</sup> These waters are designated “impaired” by the EPA. A Total Maximum Daily Load (TMDL) is a mathematical calculation which attempts to quantify the amount of a given pollutant that can be discharged into a particular water body without exceeding water quality standards. The term also refers to the document produced by state water agencies which sets limits on each pollutant discharged into an impaired waterway and lays out a plan for bringing that body of water into compliance with water quality standards. These limitations and the accompanying plans must be approved by the EPA.

Arkansas formulates TMDLs for waterways that do not meet water quality standards or are likely not to meet standards due to point source discharges.<sup>53</sup> Currently, there are 224 impaired waterways in Arkansas.<sup>54</sup> The EPA website maintains records on current TMDLs for specific waterways in Arkansas, including data on why a specific waterway is designated as impaired.<sup>55</sup> Excess nitrogen, phosphorus, and low dissolved oxygen levels are most commonly listed as causes of impairment.

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<sup>50</sup> Reg. 2.202.

<sup>51</sup> Reg. 2.203.

<sup>52</sup> 33 U.S.C. § 1313(d).

<sup>53</sup> ADEQ, Arkansas TMDLs, <http://www.adeg.state.ar.us/water/tmdls/default.htm>.

<sup>54</sup> EPA, Watershed Assessment, Tracking & Environmental Results, [http://iaspub.epa.gov/waters10/attains\\_nation\\_cy.control?p\\_report\\_type=T](http://iaspub.epa.gov/waters10/attains_nation_cy.control?p_report_type=T).

<sup>55</sup> EPA, Arkansas Impaired Waters, [http://iaspub.epa.gov/tmdl\\_waters10/attains\\_impaired\\_waters.control?p\\_state=AR](http://iaspub.epa.gov/tmdl_waters10/attains_impaired_waters.control?p_state=AR).

## II. THE PROCEDURE: THE PUBLICLY OWNED TREATMENT WORKS PERMIT PROCESS

### A. Permit Requirements

Arkansas requires a permit for all POTWs; in particular, “[a]ny person who desires to construct, operate or modify any disposal system which will discharge to the waters of the State or to discharge any sewage, industrial waste or other wastes into the waters of the State” must apply for a permit.<sup>56</sup> In order to receive a permit, applicants must conform to the federal permitting requirements of 40 C.F.R. parts 122, 123, and 124. These regulations require all permittees to comply with the federal Clean Water Act or applicable state law, and the water quality standards of all states affected by the discharge.<sup>57</sup>

In addition, dischargers must submit a permit application (Form 1) to ADEQ.<sup>58</sup> The following information is required in the application:<sup>59</sup>

- (1) Facility’s name, address, etc.
- (2) Applicant’s status as either owner or operator.
- (3) Documented history of applications for environmental permits.
- (4) Names and populations of any municipality served by the facility.
- (5) Geographic proximity to Native American communities.
- (6) The facility’s wastewater flow rate, annual average daily flow rate, and maximum daily flow rate for each of the previous 3 years.
- (7) Types of collection systems and an estimate of the percent of sewer line each type comprises.
- (8) Outfall information.
- (9) For facilities with flow rates greater than 0.1 mgd, operators must include average daily volumes of inflow and infiltration, steps the facility is taking to reduce inflow and infiltration, topographic maps, design schematics, and schedules of implementation/improvements.
- (10) All facilities must provide a description of receiving waters, information on effluent discharges, and effluent monitoring for specific parameters.

ADEQ may terminate a POTW permit for various reasons including noncompliance with the terms of the permit, failure to disclose all relevant facts in the application process, determinations that the permitted activity endangers human health or the environment, or changes in POTW conditions that require either temporary or permanent reductions of any discharge.<sup>60</sup>

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<sup>56</sup> Reg. 6.202.

<sup>57</sup> 40 C.F.R. § 122.4 (incorporated into state law by Reg. 6.104(A)(3)).

<sup>58</sup> Regs. 6.202, 6.104. Form 1 is available at [http://www.adeg.state.ar.us/water/branch\\_permits/individual\\_permits/industrial.htm](http://www.adeg.state.ar.us/water/branch_permits/individual_permits/industrial.htm).

<sup>59</sup> 40 C.F.R. § 122.21(j).

<sup>60</sup> 40 C.F.R. § 122.64.

## B. Permit Public Participation Procedures

By law, ADEQ provides opportunities for public participation in the permitting process. The following steps are measures that citizens can take to voice their views on POTW permits:<sup>61</sup>

**STEP ONE:** The permittee must publish notice of a POTW permit application. Any person can request a public hearing on the permit application within 10 business days of publication of the notice. ADEQ has the discretion, however, not to hold a hearing.

**STEP TWO:** ADEQ will provide public notice of its draft permitting decision, followed by a public comment period. Any person can submit comments or request a hearing on the draft permitting decision during this time. ADEQ has the discretion to provide a public meeting or hearing in response to the comments. The public comment period for a permit application is critical to public participation because only those persons who submit public comments can appeal a final decision by ADEQ.<sup>62</sup>

**STEP THREE:** ADEQ's final decision must respond to all issues raised in public comments and must provide the rationale for any analytical, technical or environmental standards imposed. Persons who submitted comments during the public comment period will receive notice of the final permitting decision and will have 30 days to appeal the decision to the Arkansas Pollution Control and Ecology Commission (Commission).

Note: Arkansas regulations do not require a public comment period for ADEQ decisions regarding: closure/post-closure plan approvals or modifications; the calculation of permit fees; exemptions, variances and waivers; certifications or licenses; minor modifications of permits; bond reductions or releases; or administrative permit amendments. In these circumstances, any person who reasonably considers himself or herself injured in his or her person, business, or property by any of these ADEQ decisions has standing to appeal the final permitting decision.

**STEP FOUR:** Any person injured by ADEQ's final permitting decisions can petition for judicial review of the agency decision (if his or her appeals to the Commission do not succeed).<sup>63</sup> Judicial review must be requested within 30 days after service of the agency's decision upon the petitioner.<sup>64</sup> The court's review is confined to the agency record and the court may reverse the findings of ADEQ only when the agency's decision is "(1) In violation of constitutional or statutory provisions; (2) In excess of the agency's statutory authority; (3) Made upon unlawful procedure; (4) Affected by other error or law; (5) Not supported by substantial evidence of record; or (6) Arbitrary, capricious, or characterized by abuse of discretion."<sup>65</sup>

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<sup>61</sup> Regs. 8.205-8.211, 8.214.

<sup>62</sup> Reg. 8.214.

<sup>63</sup> Ark. Code § 25-15-212.

<sup>64</sup> *Id.* at § 25-15-212(b).

<sup>65</sup> *Id.* at § 25-15-212(h).

### **C. Permit Renewals**

Permits remain valid while renewal is being sought. Renewals follow the same procedure as an initial permit application.<sup>66</sup> Permit renewals are subject to the same public participation requirements as the initial permitting process.<sup>67</sup>

### **D. Permit Violations**

Regulation 8.401 provides for “informal”, administrative, civil, and criminal enforcement of permit violations, although the regulation does not set specific penalties. Regulation 8.405 requires ADEQ to publish a list of all Notices of Violation issued and all Consent Administrative Orders entered into on the 10<sup>th</sup> and 25<sup>th</sup> of each month. Any person who submits written comments within the public comment period on the issuance of a Notice of Violation shall be given notice of any adjudicatory hearing to be held in the matter. Any person who comments on a proposed Consent Administrative Order settling an administrative enforcement action may petition the Commission within thirty (30) calendar days of the effective date of the order to set aside the order and provide an adjudicatory hearing.<sup>68</sup> The decision of the Commission will be final.

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<sup>66</sup> See Reg. 6.201.

<sup>67</sup> See Reg. 8.103(I), (BB). (Defining ‘applicant’ as any person who files an application for a permit or permit renewal and ‘permitting decision’ as a final administrative decision by ADEQ on all applications for permits and permit renewals). The public participation procedures outlined in Regs. 8.205-8.211, 8.214 thus refer to both processes.

<sup>68</sup> Reg. 8.406.

## ILLINOIS NUTRIENT GUIDE

### I. THE SUBSTANCE: THE ILLINOIS NUTRIENT REGULATORY FRAMEWORK

#### A. Effluent Regulations

POTW discharges in Illinois are regulated by the Illinois Environmental Protection Agency (Agency), which sets numeric effluent standards for discharges of phosphorus and nitrogen. All sources must comply with effluent regulations by the dates specified in their discharge permits.<sup>69</sup>

Phosphorus discharges into the Lake Michigan Basin may not exceed 1.0 mg/l.<sup>70</sup> Discharges into other specified lakes and reservoirs may not exceed 1.0 mg/l.<sup>71</sup> New or expanded discharges from POTWs into general use waters are subject to monthly average permit limits for total phosphorus that must not exceed 1.0 mg/l.<sup>72</sup> However, this standard only applies to POTWs with an average design flow of 1.0 million gallons per day or more, for those facilities receiving primarily municipal or domestic wastewater, and to any treatment works with a total phosphorus effluent load of 25 pounds per day or more, for those treating primarily other than municipal or domestic wastewater.<sup>73</sup> Further, POTWs are not subject to phosphorus limitations if they can demonstrate that phosphorus from the POTW is not the limiting nutrient in the receiving water. A POTW may apply for an alternative phosphorus effluent standard if “warranted by the aquatic environment in the receiving stream.”<sup>74</sup> Operators who discharge into a lake or reservoir may apply for an adjusted effluent standard so long as they can prove that the adjusted standard will not “contribute to cultural eutrophication, unnatural plant or algal growth, or dissolved oxygen deficiencies in the receiving lake or reservoir.”<sup>75</sup>

Illinois also sets a general numeric effluent standard for ammonia nitrogen. Discharges into the Illinois River, the Des Plaines River (downstream of its confluence with the Chicago River System), or the Calumet River System with an untreated waste load of 50,000 or more population equivalents<sup>76</sup> must not contain more than 2.5 mg/l of total ammonia nitrogen from

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<sup>69</sup> 35 Ill. Admin. Code § 304.123(e) (2010) [hereinafter all references to Title 35 of the Illinois Administrative Code will be indicated by “§ (section no.)”].

<sup>70</sup> *Id.* § 304.123(a).

<sup>71</sup> *Id.* § 304.123(b). This standard applies to lakes and reservoirs with a surface area greater than 20 acres or tributaries of those lakes and reservoirs meeting other specified criteria. *Id.* § 304.123(b); *see also* Digester Terminology, Abbreviations and Units, <http://www.biogas.psu.edu/terminology.html> (last visited June 28, 2010).

<sup>72</sup> A new discharge is from a treatment work constructed after February 2, 2006. An expanded discharge is a discharge greater than the flowrate permitted prior to February 2, 2006. § 304.123(g)(3).

<sup>73</sup> 35 Ill. Admin. Code § 304.123(g).

<sup>74</sup> *Id.* § 304.123(h).

<sup>75</sup> *Id.* § 304.123(c). An adjusted effluent standard is deemed to contribute to these conditions if “phosphorus is the limiting nutrient for biological growth in the lake or reservoir, taking into account the lake or reservoir limnology, morphological, physical and chemical characteristics, and sediment transport.”

<sup>76</sup> A “population equivalent” is “a term used to evaluate the impact of industrial or other waste on a treatment works or stream. One population equivalent is 100 gallons (380 liters) of sewage per day, containing 0.17 pounds (77 grams) of BOD (5) (five day biochemical oxygen demand) and 0.20 pounds (91 grams) of suspended solids. The impact on a treatment works is evaluated as the equivalent of the highest of the three parameters. Impact on a stream is the higher of the BOD (5) and suspended solids parameters.” 35 Ill. Adm. Code § 301.345.

April through October or 4 mg/l at all other times. POTWs whose untreated waste load cannot be computed using a population equivalent method comparable whose total ammonia nitrogen discharge exceeds 100 pounds per day must not discharge more than 3.0 mg/l of total ammonia nitrogen.<sup>77</sup>

## **B. Water Quality Standards**

Illinois sets a numeric phosphorus water quality standard: phosphorus must not exist in concentrations greater than 0.05 mg/l in any lake or reservoir with a surface area of 20 acres or more or in any stream at the point where the stream enters the lake.<sup>78</sup> Illinois also sets a numeric nitrogen standard: total ammonia nitrogen must not exceed 15 mg/l in any case.<sup>79</sup> In addition, Illinois has narrative water quality criteria stating that Illinois waters must “be free from any substances or combination of substances in concentrations toxic or harmful to human health, or to animal, plant or aquatic life.”<sup>80</sup>

## **C. Anti-Degradation Policy**

Illinois, like the other states bordering the Mississippi River, has an anti-degradation policy as a part of its water quality standards. The policy’s stated purpose is to “protect existing uses of all waters of the State of Illinois, maintain the quality of waters with quality that is better than water quality standards, and prevent unnecessary deterioration of waters of the State.”<sup>81</sup>

Illinois classifies its waterways into three categories:

Existing uses, classified as, “Uses actually attained in a surface water body or water body segment on or after November 28, 1975, whether or not they are included in the water quality standards, must be maintained and protected.”<sup>82</sup> Examples of degradation of existing uses include actions that deteriorate the existing aquatic community, or result in a loss of resident or indigenous species whose presence is necessary for commercial or recreational activities, or precludes the continued use as a public water supply or for commercial or recreational use.

Outstanding Resource Waters are waters designated pursuant to 35 Ill. Admin. Code § 303.205. Activities proposing to increase pollutants in Outstanding Resource Waters must fully protect existing uses, must be necessary for an activity that will improve water quality, and must not be practicably achievable without the proposed increase in pollutant. The water quality must not be lowered, with exceptions for short-term, temporary lowering or existing stormwater discharges that comply with applicable regulations and do not violate water quality standards. However, these exceptions must fully protect existing uses, and those exceptions requiring permits must comply with additional criteria under High Quality Waters.

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<sup>77</sup> *Id.* § 304.122.

<sup>78</sup> *Id.* § 302.205.

<sup>79</sup> *Id.* § 302.212(a).

<sup>80</sup> *Id.* § 302.210.

<sup>81</sup> *Id.* § 302.105.

<sup>82</sup> *Id.* § 302.105(a).

High Quality Waters are waters with an existing quality higher than other established standards. Such waters must be maintained in their present high quality, unless lowering is necessary for important economic or social development.<sup>83</sup>

The Illinois EPA's Bureau of Water published a 2008 report that includes a list of impaired waterways and an overall annual survey of water quality in all Illinois waterways. The list can be viewed at:

- <http://www.epa.state.il.us/water/tmdl/303-appendix/2008/2008-final-draft-303d.pdf>.

#### **D. Total Maximum Daily Loads (TMDLs)**

Section 303(d) of the Clean Water Act requires that states produce a list of waterways which do not meet water quality criteria despite effluent limitations.<sup>84</sup> These waters are designated "impaired" by the EPA. A Total Maximum Daily Load (TMDL) is a mathematical calculation which attempts to quantify the amount of a given pollutant that can be discharged into a particular water body without exceeding water quality standards. The term also refers to the document produced by state water agencies which sets limits on each pollutant discharged into an impaired waterway and lays out a plan for bringing that body of water into compliance with water quality standards. These limitations and the accompanying plans must be approved by the EPA.

Illinois formulates TMDLs for impaired waterways that do not meet water quality standards or do not fully support designated uses.<sup>85</sup> Currently, there are 1,058 impaired waterways in Illinois.<sup>86</sup> The U.S. Environmental Protection Agency's list of impaired waters<sup>87</sup> contains the current TMDLs for specific waterways in Illinois.<sup>88</sup> The Website lists the reasons the specific waterway is designated as impaired. Among the most common reasons that are related to nutrient pollution are excess nitrogen and phosphorus, and low dissolved oxygen concentrations.

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<sup>83</sup> *Id.*

<sup>84</sup> 33 U.S.C. § 1313(d).

<sup>85</sup> Illinois Environmental Protection Agency, The TMDL Process, <http://www.epa.state.il.us/water/tmdl/tmdl-process.html>.

<sup>86</sup> U.S. Department of Environmental Protection, 2006 Section 303(d) List Fact Sheet for Illinois, [http://iaspub.epa.gov/waters10/state\\_rept.control?p\\_state=IL&p\\_cycle=.](http://iaspub.epa.gov/waters10/state_rept.control?p_state=IL&p_cycle=)

<sup>87</sup> U.S. Department of Environmental Protection, Illinois Impaired Waters, [http://iaspub.epa.gov/tmdl\\_waters10/attains\\_impaired\\_waters.control?p\\_state=IL](http://iaspub.epa.gov/tmdl_waters10/attains_impaired_waters.control?p_state=IL).

<sup>88</sup> Citizens can use the following Website to look up the specific streams in Illinois which are connected to the Mississippi River: <http://www.epa.state.il.us/water/tmdl/>.

## II. THE PROCEDURE: THE PUBLICLY OWNED TREATMENT WORKS PERMIT PROCESS

### A. Permit Requirements

Illinois requires an NPDES permit for a discharge from a point source of any contaminant or pollutant into the surface waters of the state.<sup>89</sup> POTWs seeking a permit must submit an application to the Illinois Environmental Protection Agency. The Agency may also require the submission of plans and specifications for POTWs, summaries of design criteria, and other information reasonably needed to determine that the discharge or proposed discharge will comply with applicable state and federal requirements.<sup>90</sup>

Permits granted by the Agency must ensure compliance with the following conditions: (1) compliance with the effluent limitations, standards, prohibitions, and pretreatment requirements mandated by the federal Clean Water Act and corresponding state regulations; (2) standards of performance for new sources; (3) other limitations necessary to meet Illinois water quality standards, treatment standards, or schedules of compliance or necessary to meet any other federal law or regulation; and (4) any other more stringent requirements necessary to comply with a § 208(b) water quality management plan.<sup>91</sup> Permits for discharges of pollutants into the Lake Michigan Basin are required to follow more detailed terms and conditions that are outlined in the regulation and must be included in the permit.

Further, the Agency must include in POTW permits conditions requiring notice to the Agency of any of the following: (1) the new introduction of pollutants into the POTW from a “new source,” as defined in the regulation, (2) the introduction of pollutants into the POTW from a “point source,” as defined in the regulation, and (3) substantial changes in volume or character of pollutants introduced into the POTW.<sup>92</sup> Notices must include information on the quality and quantity of possible introduced wastewater and any anticipated impact in the quality or quantity of possible discharged effluent. These notice requirements are important to help the Agency determine whether the POTW is complying with state and federal regulations.

A permittee is required to take specific steps to achieve compliance in the shortest reasonable period of time.<sup>93</sup> If a schedule of compliance exceeds nine months, then interim steps, including periodic progress reports, must be established by the Agency to ensure compliance, with the time in between the interim steps not to exceed nine months.<sup>94</sup> All POTW permits are issued for no more than five years.<sup>95</sup>

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<sup>89</sup> 35 Ill. Admin. Code § 309.102(a).

<sup>90</sup> *Id.* § 309.103(a)(1) .

<sup>91</sup> *Id.* § 309.141.

<sup>92</sup> *Id.* § 309.149.

<sup>93</sup> *Id.* § 309.148.

<sup>94</sup> *Id.* § 309.148(b). A POTW that cannot possibly achieve compliance within the nine month interim period must submit progress reports, and dates will be specified for compliance by the Agency.

<sup>95</sup> *Id.* § 309.145.

## B. Permit Public Participation Procedures

Illinois' public participation procedure allows interested citizens to comment on proposed permits. Upon a tentative decision as to whether to issue or deny a discharge permit, completion of a draft permit, and not earlier than 10 days following notice to the applicant, the Agency must issue a public notice of the completion of an application for the discharge of pollutants into the waterways of the state.<sup>96</sup> The notice must be mailed to the applicant, circulated within the geographical area of the proposed discharge, mailed upon request, and mailed to entities that requested to be on the Agency's permit mailing list.<sup>97</sup> The Agency must provide at least 30 days after first publication of notice for the public to comment on a proposed permit. The Agency may extend the comment period in its discretion.<sup>98</sup> All comments must be considered in the Agency's final decision on the permit. If no public hearing is held, the Agency must issue or deny the permit after the comment period.<sup>99</sup> Any person, including the applicant, can request that the Agency hold a public hearing and the Agency must hold a public hearing if the Agency determines there is "a significant degree of public interest in the proposed permit or group of permits" to warrant holding a hearing.<sup>100</sup> The request must be filed within the 30-day public comment period and must include the interest of the requesting party and the reasons why a hearing is warranted. If the Agency determines that a public hearing is warranted, the hearing must be held in the geographical area affected by the discharge.<sup>101</sup> The Agency must issue public notice of the hearing at least 30 days prior to the hearing date.<sup>102</sup> The applicant or any person can submit oral and written comments for the hearing record.<sup>103</sup> After the hearing, the Agency will make its final decision on the proposed permit, including any modifications to the terms and conditions.<sup>104</sup>

Applicants can appeal the Agency's decision to deny or grant with conditions the permit by petitioning for a hearing before the Pollution Control Board within 35 days after being served with the Agency's decision.<sup>105</sup> An extension period for appealing the permit may be granted but cannot exceed 90 days. The Board must provide 21 days notice of the appeal hearing by publication in a newspaper of general circulation and to any person who has requested notice.<sup>106</sup> Third parties, other than the applicant, may also file an appeal challenging the Agency's permit decision by petitioning the Board within 35 days of the Agency's decision.<sup>107</sup> A third-party petition must include a demonstration that the third-party raised the petition's issues during the public notice period or during a public hearing and a demonstration that the third-party will be affected by the permitted facility. The Board must hear the petition exclusively on the basis of

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<sup>96</sup> *Id.* § 309.109.

<sup>97</sup> *Id.* § 309.109. Circulation within the geographical area of the proposed discharge can include posting in the post office or other public place, posting near the entrance of the applicant's premises, or publishing in local newspapers.

<sup>98</sup> *Id.* § 309.109.

<sup>99</sup> *Id.* § 309.112.

<sup>100</sup> *Id.* § 309.115. Instances of doubt are resolved in favor of a hearing.

<sup>101</sup> *Id.* § 309.115.

<sup>102</sup> *Id.* § 309.116. Notice for public hearings must be issued in the same way as notice for permit applications.

<sup>103</sup> *Id.* § 309.117. The Agency can limit oral comments and require statements in writing.

<sup>104</sup> *Id.* § 309.119.

<sup>105</sup> 415 Ill. Comp. Stat. 5/40(a)(1) (2010).

<sup>106</sup> *Id.*

<sup>107</sup> *Id.* at 5/40(e)(1).

the record before the Agency, and only if the Board finds that the third-party satisfied the requirements for the petition and that the petition is not duplicative or frivolous. The petitioner bears the burden of proof.<sup>108</sup>

Judicial review is available after final agency action. Any party to a Pollution Control Board hearing, any person who filed a complaint and was denied a hearing, any person denied a permit or variance, any party adversely affected by a final order or determination of the Board, and any person who participated in the public comment process may obtain judicial review of an agency determination by filing a petition for review within 35 days from the date of service of the final order on the party by the Agency.<sup>109</sup> Proper venue is the Appellate Court for the District in which the cause of action arose. A final order must be based on only the evidence in the record before the Agency and is invalid if it is against the “manifest weight of the evidence.”<sup>110</sup>

### C. Permit Renewals

A permittee must apply 180 days prior to the permit’s expiration if it wants to continue operating under the terms and conditions of the permit. The Agency must follow the same procedures for permit renewals as is required for permit applications.<sup>111</sup>

### D. Permit Violations

An NPDES permit may be revoked, suspended, modified, or reissued. A permit may be revoked for a violation of any of its terms or conditions or for obtaining a permit through misrepresentation or failure to disclose fully all relevant facts.<sup>112</sup> Remedies for violations include administrative, civil, and criminal penalties. Violations of a discharge permit’s terms and conditions are subject to a fine of not more than \$10,000 per day of violation.<sup>113</sup> Violators causing the death of fish or aquatic life are liable to the state for the reasonable value of the fish or aquatic life destroyed.<sup>114</sup> Injunctions can be issued by either the State Attorney for the county where the violation occurred or the Attorney General of Illinois when there is a substantial danger to the environment and public health.<sup>115</sup> Civil penalties include a fine of up to \$50,000 for the violation and an additional penalty of up to \$10,000 for each continuing day of the violation. Criminal penalties can include fines and community service. To knowingly make a false, fictitious, or fraudulent material statement to an Illinois agency delegated authority under federal law for responsibility over permits is a class 4 felony punishable of a fine of up to \$50,000. Subsequent violations are a class 3 felony.<sup>116</sup> To knowingly violate the terms and

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<sup>108</sup> *Id.* at 5/40(e)(2).

<sup>109</sup> *Id.* at 5/41.

<sup>110</sup> *Id.* See also *EPA v. Pollution Control Bd*, 503 N.E.2d 343, 346 (Ill. 1986) (articulating that the court’s responsibility is to “evaluate all of the evidence to determine whether the Board’s findings were against the manifest weight of the evidence”).

<sup>111</sup> 35 Ill Admin. Code § 309.104.

<sup>112</sup> *Id.* § 309.182.

<sup>113</sup> 415 Ill. Comp. Stat. 5/42(a), (b)(1) (2010).

<sup>114</sup> *Id.* at 5/42(c).

<sup>115</sup> *Id.* at 5/42(c), 5/43.

<sup>116</sup> *Id.* at 5/44(h)(8).

conditions of a NPDES permit is a class 4 felony punishable by a fine of up to \$25,000 per day.<sup>117</sup> A negligent violation of the terms and condition of a NPDES permit is punishable by a fine of up to \$10,000 per day.<sup>118</sup> In addition to fines, a court may order a convicted person to perform community service of no less than 100 hours and no more than 300 hours.<sup>119</sup>

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<sup>117</sup> *Id.* at 5/44(j)(1)(G), 5/44(j)(2).

<sup>118</sup> *Id.* at 5/44(j)(3)(E).

<sup>119</sup> *Id.* at 5/44(a).

## IOWA NUTRIENT GUIDE

### I. THE SUBSTANCE: THE IOWA NUTRIENT REGULATORY FRAMEWORK

#### A. Effluent Regulations

The Iowa Department of Natural Resources (Department) is required to develop a comprehensive nutrient management strategy for the state. This state-wide strategy must include a nutrient budget for each watershed based on maximum volume, frequency, and concentration of nutrients and must assess available control technologies for those nutrients. The Department is also required to establish a numeric water quality standard for phosphorus.<sup>120</sup> However, the Department has not set any numerical water quality standards for nutrients,<sup>121</sup> even though nitrogen and phosphorus levels in Iowa waters are generally two to ten times the levels considered appropriate for Midwest streams.<sup>122</sup>

POTWs must meet minimum levels of effluent quality for secondary treatment, with some exceptions.<sup>123</sup> Any effluent alone, or in combination with the effluent of other sources, must not cause a violation of any applicable water quality standard.<sup>124</sup> The Department may permit an effluent limitation less stringent than the “best practicable control technology” standard expressed in the effluent limitation guidelines.<sup>125</sup> However, the Department may also impose a limitation more stringent than the guidelines if the factors relating to the permit are fundamentally different from the factors considered in establishing the guidelines. Further, the Department may impose pretreatment requirements more stringent than the applicable pretreatment standards, if more stringent requirements are necessary to prevent violations of water quality standards, interference, or pass through.<sup>126</sup>

#### B. Water Quality Standards

Iowa imposes narrative (non-numerical) criteria for water quality. Generally, Iowa’s goal for water quality standards is to “protect and enhance the quality of all the waters of the state.”<sup>127</sup> Iowa also has general narrative criteria for the quality of surface waters that require that waters are free from sludge deposits, floating debris and materials that create a nuisance, objectionable

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<sup>120</sup> Iowa Code § 459.312 (2010).

<sup>121</sup> Iowa Department of Natural Resources, <http://www.iowadnr.gov/water/nonpoint/nps6.html>. In 2010, Iowa began public hearings to take comments on establishing criteria for transparency and chlorophyll-(a) to protect recreational uses in lakes with a mean depth of three meters or greater.

<sup>122</sup> Iowa Department of Natural Resources, Nutrients and Water Quality, <http://www.iowadnr.gov/water/nutrients/index.html>.

<sup>123</sup> Iowa Admin. Code 567-62.2 (455B) [hereinafter, all references to the Iowa Administrative Code will be indicated in the form “IAC #”]. Pollutant measurements include carbonaceous biochemical oxygen demand (CBOD<sub>5</sub>), suspended solids (SS), total suspended solids (TSS), and pH.

<sup>124</sup> IAC 567-62.8(2) (455B).

<sup>125</sup> IAC 567-62.7 (455B).

<sup>126</sup> IAC 567-62.8(3).

<sup>127</sup> IAC 567-61.2 (455B).

odor or color, concentrations or combinations acutely toxic to human, animal, or plant life, and substances producing undesirable or nuisance aquatic life.<sup>128</sup>

Iowa's waterways are classified for protection of "beneficial uses" as either a "general use segment" or a "designated use segment." General use segments are those waterways which are intermittent, flow for only short periods of time, do not support a viable aquatic community, and do not maintain pools during low flow conditions. General use segments must be protected for "livestock and wildlife watering, aquatic life, noncontact recreation, crop irrigation, and industrial, agricultural, domestic and other incidental water withdrawal uses." Designated use segments "flow throughout the year or contain sufficient pooled areas during intermittent flow periods to maintain a viable aquatic community." Within designated use segments there are different segment classifications: primary contact recreational use, secondary contact recreational use, children's recreational use, cold water aquatic life (types 1 and 2), high quality water, high quality resource water, warm water (types 1, 2, and 3), lakes, wetlands, human health, and drinking water supply. Waterway specific criteria are based on these designated use classifications.<sup>129</sup> In Iowa, the Mississippi River and its tributaries flow through three separate geographical classifications, the Skunk River Basin, Cedar River Basin, and Northeastern Iowa River Basin,<sup>130</sup> as well as a number of different classification segments based on the specific uses described above.

### C. Anti-Degradation Policy

The Department is required by 40 C.F.R. § 131.12(a) to develop and adopt a statewide anti-degradation policy and to identify procedures needed to implement this policy. Historically, Iowa had an informal policy that lacked an implementation infrastructure and was, therefore, not useful. However, the state has now completed rulemaking in order to implement procedures to address degradation, including establishing tiers of protection, determining existing water quality, identifying and assessing less degrading alternatives, determining whether important economic or social development justifies degradation, and establishing intergovernmental coordination and public participation procedures.<sup>131</sup> Information on the implementation of Iowa's anti-degradation policy can be found at:

- <http://www.iowadnr.gov/water/standards/antidegradation.html>.

The anti-degradation policy applies to all waters and is based on tiers of protection:

TIER 1 requires that existing surface water uses, and the level of water quality necessary for those uses, will be maintained and protected.

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<sup>128</sup> IAC 567-61.3 (455B).

<sup>129</sup> IAC 567-61.3.

<sup>130</sup> Water Resources Section, Iowa Department of Natural Resources, Surface Water Classification 50 (2009), available at <http://www.iowadnr.gov/water/standards/files/swcdoc.pdf>.

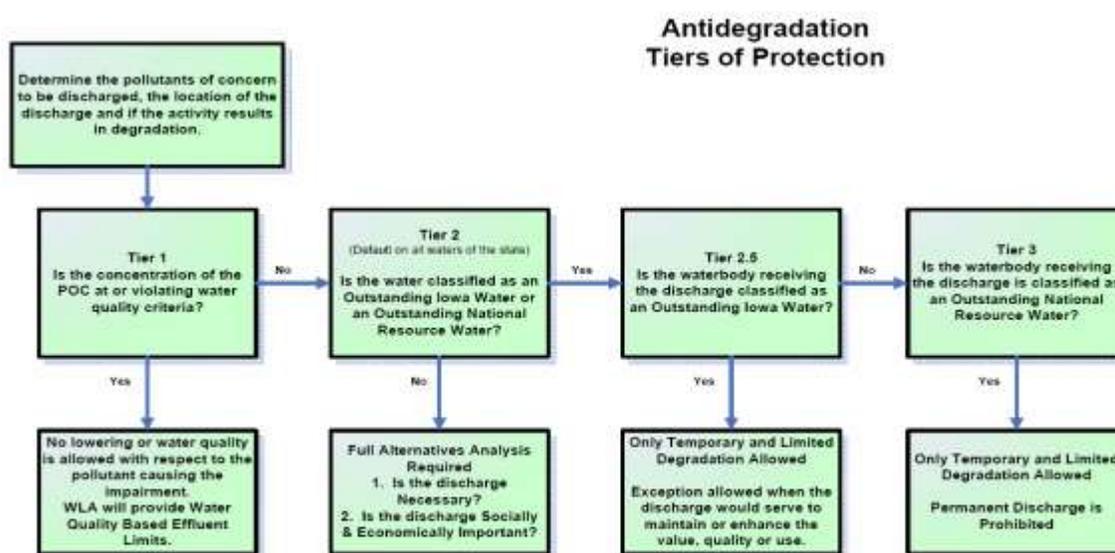
<sup>131</sup> 31 Iowa Admin. Bull. 1269 (Nov. 19, 2008), available at [http://search.legis.state.ia.us/nxt/gateway.dll/ar/iab/7992\\_\\_\\_2008%20administrative%20bulletins/79918881\\_\\_\\_11-19-2008/1\\_79918881\\_\\_\\_bulletin\\_11\\_19\\_2008.pdf?f=templates\\$fn=document-frame.htm\\$3.0](http://search.legis.state.ia.us/nxt/gateway.dll/ar/iab/7992___2008%20administrative%20bulletins/79918881___11-19-2008/1_79918881___bulletin_11_19_2008.pdf?f=templates$fn=document-frame.htm$3.0).

TIER 2 applies when the water quality exceeds the level necessary to support fish, wildlife, and shellfish populations and recreation in or on the water. This higher level must be maintained and protected unless the Department finds that lowering the water quality is necessary for important economic or social development. In order to lower water quality, the Department must (1) ensure that the resulting water quality adequately protects existing uses “fully”; (2) ensure the “highest statutory and regulatory requirements” for new and existing point sources; and (3) ensure cost-effective and reasonable best management practices for nonpoint sources.

TIER 2.5 applies to outstanding Iowa waters where “high quality waters constitute an outstanding *state* resource.” Water quality must be maintained and protected.

TIER 3 applies to outstanding *national* resource waters, such as waters within national and state parks and wildlife refuges or waters of exceptional recreational or ecological significance. The water quality must be maintained and protected, and any proposed activity that would create a permanent new or expanded pollutant source is prohibited.

Anti-degradation Implementation Procedure Illustration Chart:<sup>132</sup>



#### D. Total Maximum Daily Loads (TMDLs)

Section 303(d) of the Clean Water Act requires that states produce a list of waterways which do not meet water quality criteria despite effluent limitations.<sup>133</sup> These waters are designated “impaired” by the EPA. A Total Maximum Daily Load (TMDL) is a mathematical calculation which attempts to quantify the amount of a given pollutant that can be discharged into a

<sup>132</sup>Iowa Department of Natural Resources, Antidegradation Tiers of Protection 1 (2010), available at [http://www.iowadnr.gov/water/standards/files/tiers\\_protection.pdf](http://www.iowadnr.gov/water/standards/files/tiers_protection.pdf).

<sup>133</sup> 33 U.S.C. § 1313(d).

particular water body without exceeding water quality standards. The term also refers to the document produced by state water agencies which sets limits on each pollutant discharged into an impaired waterway and lays out a plan for bringing that body of water into compliance with water quality standards. These limitations and the accompanying plans must be approved by the EPA.

Iowa uses “water quality improvement plans” that include inventorying sources, setting TMDLs, and devising water quality restoration plans for impaired waters with the ultimate goal of improving water quality so that impaired waters can be delisted.<sup>134</sup> The goal of these plans is to identify water quality problems, locate the sources of the problems, and determine how to best solve the problems so that the impaired waters meet water quality standards.

Currently, there are 278 impaired waterways in Iowa.<sup>135</sup> Citizens can find a list of impaired waterways, including specific streams in Iowa connected to the Mississippi River, at:

- [http://iaspub.epa.gov/tmdl\\_waters10/attains\\_impaired\\_waters.control?p\\_state=IA](http://iaspub.epa.gov/tmdl_waters10/attains_impaired_waters.control?p_state=IA).<sup>136</sup>

The website lists the reasons why the specific waterway is designated as impaired. Among the most common reasons that are related to nutrient pollution are excess nitrogen, phosphorus, and low dissolved oxygen concentrations.

## II. THE PROCEDURE: THE PUBLICLY OWNED TREATMENT WORKS PERMIT PROCESS

### A. Permit Requirements

POTWs must apply for an Iowa National Pollutant Discharge Elimination System (“INPDES”) permit to operate. POTWs typically need individual permits.<sup>137</sup> An individual INPDES permit is not required for the introduction of sewage, industrial wastes or other pollutants into a POTW by indirect dischargers.<sup>138</sup> For POTWs the following are prohibited: (1) the discharge of wastewater into a POTW in excess of a section 567-64.3(5) permit or in excess of a local control mechanism in a pretreatment program approved by the Department and (2) wastes that interfere with the operation or performance of a POTW because the waste exceeds design capacity, causes interference or pass through, or reduces effluent quality below the permit limit.<sup>139</sup>

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<sup>134</sup> Iowa Department of Natural Resources, Water Quality Improvement Plans, <http://www.iowadnr.gov/water/watershed/tmdl/>.

<sup>135</sup> U.S. EPA, 2006 Section 303(d) List Fact Sheet for Iowa (2010), [http://iaspub.epa.gov/waters10/state\\_rept.control?p\\_state=IA&p\\_cycle=](http://iaspub.epa.gov/waters10/state_rept.control?p_state=IA&p_cycle=) .

<sup>136</sup> The Iowa Department of Natural Resources’ Website contains the current TMDLs for specific waterways in Iowa. Citizens can use the following Website to look up the specific streams in Iowa that are connected to the Mississippi River: <http://www.iowadnr.gov/water/watershed/pubs.html#draft>.

<sup>137</sup> See IAC 567-64.4(2) (455B). General permits, as opposed to individual permits, are available only for the following specified activities: (1) stormwater point sources, (2) private sewage disposal systems, (3) discharges from water well construction and related well services, and (4) mining or processing facilities’ discharges.

<sup>138</sup> IAC 567-64.4(1).

<sup>139</sup> IAC 567-62.1(1) (455B).

A prospective POTW permittee will most likely have to complete Form 30, the application form for POTWs applying for a discharge permit. A permit application is complete when all necessary questions on the application forms have been completed, when the application has been signed, and when all applicable portions of the application including the application fee have been submitted.<sup>140</sup> The Department may require the submission of additional information necessary to evaluate the application. A new application is due 180 days prior to the date the operation is scheduled to begin; however, a POTW may request permission to submit an application at a later date. To amend an operating permit, the permittee makes a written request in the form of a detailed letter to the Department. A permittee can also request (1) to amend a permit schedule of compliance (at least 30 days prior to next schedule compliance date); (2) to amend interim effluent limitations in an existing permit; and (3) to change the minimum monitoring requirements in an existing permit (requiring the submission of a variance request). For requests to amend interim effluent limitations, the Department must consider the capability of the disposal system to meet effluent limitations and deny the request when the system is incapable of meeting those limitations.<sup>141</sup>

The Department must direct the permittee to take specific steps to achieve compliance when any discharge is not in compliance with applicable effluent standards and limitations, water quality standards, or any other state or federal requirement. When there is no express legally-required schedule, the permittee must achieve these standards in the “shortest, reasonable period of time.” If the time needed for compliance is more than nine months, the Department must specify in the permit a schedule of compliance that includes interim requirements and dates for achievement no more than nine months apart. If this nine month limit is not possible, and the schedule of compliance cannot be divided into stages for completion, then the Department must specify interim dates for filing reports on progress towards completing the interim requirement. On the last days of February, May, August, and November, the Department must transmit to the EPA regional administrator a list of all permittees who fail or refuse to comply with an interim or final requirement. This list must be available to the public for inspection and copying.<sup>142</sup>

Each INPDES permit must contain the following, if applicable: an effluent limitation guideline; a standard of performance for new sources; an effluent standard, effluent prohibition, or pretreatment standard; a water quality related effluent limitation, any more stringent legally applicable requirements; and any additional limitations necessary to meet water quality standards, treatment or pretreatment standards, schedules of compliance, and the Iowa anti-degradation policy implementation plan. Additionally, limitations in the permit must control all pollutants or pollutant parameters that the Department determines could be discharged at a level that will, or has the potential to, cause a deviation from any applicable water standard, including narrative criteria. The Department must also specify in the permit the average and maximum daily quantitative limitations for pollutants in terms of weight. The Department has the discretion to specify other limits in the permit, such as average or maximum concentration limits.<sup>143</sup>

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<sup>140</sup> IAC 567-60.4(2)(a) (455B).

<sup>141</sup> IAC 567-60.4(2)(b).

<sup>142</sup> IAC 567-64.7(4) (455B) (2010).

<sup>143</sup> *Id.*

In addition to the usual NPDES permit requirements, the owner of a POTW must prepare and implement a plan of action to achieve and maintain compliance with the effluent limitations in its INPDES permit. The Department is required to notify a POTW of the plan of action requirements and of the opportunity to discuss the requirements with the Department. Within six months of this notice, the POTW is required to submit a plan of action. Plans of action can vary in length and complexity but must identify deficiencies and needs of the system and their causes, propose specific measures to correct the deficiencies or meet the needs, and address financing for those measures. Within 60 days after submission to the Department, the Department must make a decision on whether to approve the plan. The POTW's permit must be amended to include actions developed through the plan.<sup>144</sup>

### **B. Permit Public Participation Procedures**

Upon submission of a complete POTW permit application, the Department must make a tentative decision to issue or deny the permit. If the Department tentatively decides to issue a permit, it must prepare a permit rationale and draft permit and issue a public notice of the decision. If the Department tentatively decides to deny a permit, the Department must issue a public notice of the intent to deny the permit application. Public notice of tentative decisions must be "circulated in a manner designed to inform interested and potentially interested persons" of the decision. Public notice must be circulated in the geographically affected areas of the proposed discharge and must be sent to any person who requested the notice. The Department must provide at least 30 days for interested persons to submit written comments on the proposed permit and request a public hearing. All comments submitted during this time must be retained by the Department and must be considered by the Department in its final decision on the permit application. Further, "[p]ertinent and significant comments" must be responded to in a "responsiveness summary." Public hearings may be requested within the 30-day comment period by the applicant, an affected state, the EPA regional administrator, or any interested agency, person or group. The Department must hold an "informal and noncontested case hearing" if there is a "significant public interest" in holding the hearing, but the Department can deny frivolous or unsubstantial requests. Hearings must be held in the geographical area of the proposed discharge or, at the Department's discretion, another appropriate area. If the Department decides to hold a hearing, public notice must be given in the affected discharge area of the date and subject of the hearing. When a final permit is issued, the Department must also issue a summary of changes between the draft and final permit and a description and response to all significant and pertinent comments.<sup>145</sup>

Judicial review of the Department's actions is available to an "aggrieved" or "adversely affected party" who has exhausted all adequate administrative remedies within the Department of Natural Resources.<sup>146</sup> A party may begin the process for judicial review by filing a petition in either the Polk County district court or in the district court for the county where the petitioner resides or has the principal place of business. The petition for review must name the agency (the

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<sup>144</sup> *Id.*

<sup>145</sup> IAC 567-64.5 (455B).

<sup>146</sup> Iowa Code § 17A.19 (2010).

Department) as the respondent and must contain a concise statement of: (1) “[t]he nature of the agency action which is the subject of the petition;” (2) “[t]he particular agency action appealed from;” (3) “[t]he facts on which venue is based;” (4) “[t]he grounds on which relief is sought;” and (5) “[t]he relief sought.” A petitioner may request injunctive relief or a stay on a previously approved agency action on a permit.<sup>147</sup> The aggrieved party bears the burden of demonstrating the “required prejudice and the invalidity of agency action.” A court can invalidate a permit action by the Department of Natural Resources on any the bases listed in section 17A.19(10)(a)-(n) of the Iowa Administrative Procedure Act.<sup>148</sup>

### C. Permit Renewals

An application to renew a permit must be submitted to the Department 180 days prior to the expiration date of the current operating permit.<sup>149</sup> In addition to the renewal application, the POTW must demonstrate (1) compliance or substantial compliance with all terms, conditions, requirements and schedules of compliance in the existing permit; (2) current information on production levels, waste treatment practices, and the nature, contents, and frequency of the POTWs’ discharges; and (3) that the discharge is consistent with applicable effluent standards and limitations, water quality standards, and other legally applicable requirements. Notice and public participation procedures for renewal applications are the same as for initial applications, as outlined in § 567-64.5.<sup>150</sup> However, any new point source that is constructed to meet all applicable new source standards of performance will not be subject to more stringent standards during a ten-year period that starts at either the end of construction or the period of depreciation or amortization, whichever ends first.<sup>151</sup>

### D. Permit Violations

Each NPDES permit must ensure discharges are consistent with the terms and conditions of the permit. Facility expansions, production increases, or process modifications that result in new or increased discharges of pollutants require submission of a new application, or, if the discharge does not violate permit limits, require submission of notice to the Department. Discharge of any pollutant more frequently than, or at a level in excess of, that identified and authorized by the permit violates the permit. Permits may be amended, revoked and reissued, or terminated in whole or in part for the causes provided in § 567-64.3(11)(b).<sup>152</sup> Further, permittees must allow

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<sup>147</sup> *Id.*

<sup>148</sup> *Id.*

<sup>149</sup> IAC 567-60.4(2)(a)(1) (455B).

<sup>150</sup> IAC 567-64.8 (455B).

<sup>151</sup> *Id.* Depreciation or amortization are based on one or both §§ 167 or 169 of the Internal Revenue Code.

<sup>152</sup> (1) Violation of any term or condition of the permit.

(2) Obtaining a permit by misrepresentation of fact or failure to disclose fully all material facts.

(3) A change in any condition that requires either a temporary or permanent reduction or elimination of the permitted discharge.

(4) Failure to submit such records and information as the director shall require both generally and as a condition of the operation permit in order to ensure compliance with the discharge conditions specified in the permit.

(5) Failure or refusal of an NPDES permittee to carry out the requirements of 64.7(5) “c.”

(6) Failure to provide all the required application materials or appropriate fees.

the Department access to the premises and records, including access to copy records, to inspect monitoring equipment, and to sample discharges.<sup>153</sup>

The failure or refusal to comply with an interim or final requirement in a permit is a violation of the permit. For violations, the Department may modify, suspend, or revoke the permit or take direct enforcement action in the form of civil or criminal penalties.<sup>154</sup> Citizens can access information on permit compliance through the Iowa Department of Natural Resources. Citizens can find current listings of all permit holders at:

- <http://www.iowadnr.gov/water/npdes/holders.html>,

and can find more detailed information about permits through the Iowa Wastewater Permit Information Exchange at:

- <https://programs.iowadnr.gov/wwpie/>.

This Exchange is a database of all draft and final permits issued by Iowa. For more information on individual permits, e-mail Courtney Cswerko at the Iowa Department of Natural Resources at [courtney.cswercko@dnr.iowa.gov](mailto:courtney.cswercko@dnr.iowa.gov).

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(7) A request for a modification of a schedule of compliance, an interim effluent limitation, or the minimum monitoring requirements pursuant to 567—paragraph 60.4(2) “b.”

(8) Causes listed in 40 CFR 122.62 and 122.64.

<sup>153</sup> IAC 567-64.7(5) (455B).

<sup>154</sup> *Id.*

## KENTUCKY NUTRIENT GUIDE

### I. THE SUBSTANCE: THE KENTUCKY NUTRIENT REGULATORY FRAMEWORK

#### A. Effluent Regulations

Kentucky regulations designate specific limits on the effluents discharged into the waters of the state. The limits applicable to a given water body depend on the “beneficial uses” for which a given body of water is designated.<sup>155</sup> Beneficial uses for which a water body can be designated are: warm water aquatic habitat (WAH), cold water aquatic habitat (CAH), primary contact recreation (PCR), secondary contact recreation (SCR), domestic water supply (DWS) and outstanding state resource water (OSRW).<sup>156</sup> Most water bodies are designated for multiple beneficial uses. For instance, sections of the Mississippi river in Carlisle County are designated as WAH, PCR, SCR and OSRW.

State regulations set standards which must be met by any water body which is designated for a particular use.<sup>157</sup> However, the regulations specify that if stream flows are below the levels assumed when setting these standards (which will tend to increase the concentration of pollutants in the waters from discharges) a POTW will not be held to have contributed to any violations of the standards as long as it is in compliance with its permit. Exceptions to these requirements may be granted under certain limited circumstances, but exceptions must be reviewed at least every three years.<sup>158</sup> In addition to the “beneficial use” effluent regulations, state regulations also designate standards which apply specifically to the main stem of the Ohio River from its juncture with the Big Sandy River to its confluence with the Mississippi.

Finally, the regulations set general nutrient limits for lakes and reservoirs, their tributaries, “and other surface waters where eutrophication problems may exist.”<sup>159</sup> Eutrophication is defined in the regulations as “the enrichment of a surface water by the discharge or addition of a

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<sup>155</sup> Water bodies are listed along with their designated uses in Title 401 of the Kentucky Administrative Regulations, Chapter 10, Part 026, Section 5, Table C. 401 Ky. Admin. Regs. 10:026 § 5, tbl.C (2010). The full text of Title 401 can be accessed at: <http://www.lrc.ky.gov/kar/TITLE401.HTM>. [hereinafter all references to Title 401 of the Kentucky Administrative Regulations will be indicated by “chapter:part, § section”]

<sup>156</sup> Those water bodies which are not listed in 10:026 § 5 tbl.C are, by default, designated for the uses WAH, PCR, SCR and DWS. 10:026 § 5(2)(a). Many of these terms are further defined in 10:001.

<sup>157</sup> For instance, the subsection which designates additional requirements for waters designated WAH sets limits on the pH and temperature of the waters as well as on fluctuations in pH and temperature. It also requires a minimum concentration of dissolved oxygen, and regulates the levels of dissolved and suspended solids, ammonia, chlorine and other substances. 10:031 § 4(a). Each designated use has designated limits for different pollutants and the allowable levels also may differ.

<sup>158</sup> An exception can be made for a specific water body. Such an exception can only be granted if “water quality criteria cannot be reasonably achieved, either on a seasonal or year- round basis due to natural conditions or site-specific factors.” In this case the exception must be listed in 10:026 Table C. Currently, only two water bodies are excepted in Table C. An exception can also be made in the case of an individual discharger. This requires a discharger to show that compliance cannot be achieved because of one of a specific set of reasons listed at 10:026 § 2(4)(a)-(f).

<sup>159</sup> 10:031 § 1.

nutrient.”<sup>160</sup> However, the nutrient standards in those bodies of water to which the regulation applies are very general. The regulations require that nitrogen, phosphorus, carbon and other trace elements which contribute to eutrophication be: “limited in accordance with: (1) the scope of the problem; (2) the geography of the affected area; and (3) relative contributions from existing and proposed sources.”<sup>161</sup>

## **B. Water Quality Standards**

In addition to the specific effluent limitations discussed above, Kentucky regulations also set more general minimum standards for all surface waters in the state.<sup>162</sup> These rules require that all surface waters meet certain minimum criteria. Waters in the state must “not be aesthetically or otherwise degraded by substances that:

- Settle to form objectionable deposits;
- Float as debris, scum, oil, or other matter to form a nuisance;
- Produce objectionable color, odor, taste, or turbidity;
- Injure, are chronically or acutely toxic to or produce adverse physiological or behavioral responses in humans, animals, fish, and other aquatic life;
- Produce undesirable aquatic life or result in the dominance of nuisance species;
- Cause fish flesh tainting.”

## **C. Anti-Degradation Policy**

The state of Kentucky is required to develop a statewide “antidegradation policy” and to implement this policy. Antidegradation policies are designed to protect existing instream uses of water and the water quality necessary for those uses.<sup>163</sup> Kentucky state law delegates that task to the Energy and Environment Cabinet (EEC or Cabinet), which is the state agency charged with overseeing environmental issues.<sup>164</sup> The EEC has, in turn, promulgated regulations which lay out the requirements of the state’s antidegradation policy.<sup>165</sup> The regulations require that water quality be maintained at an adequate level to protect existing uses. The regulations also require the EEC to ensure that new and existing point sources of pollutants achieve “the highest statutory

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<sup>160</sup> 10:001 § 1(30).

<sup>161</sup> 10:031 § 1.

<sup>162</sup> These regulations can be found at 10:031. All of the water concentration limits in 10:031 § 6, Table 1 exclude “mixing zones” where the discharge and the receiving water first combine. However, the mixing zone limits do not apply if there are points in those zones where water is withdrawn for human consumption. 10:029 § 4 sets the maximum size of mixing zones and separate limits for the concentrations of pollutants in these zones.

<sup>163</sup> 40 C.F.R. §131.12(a).

<sup>164</sup> Ky. Rev. Stat. Ann. § 224.10-100 (2009).

<sup>165</sup> 10:029. This section of the administrative regulations sets out the framework for the antidegradation policy discussed in this section. Information on water body categorization and the implementation of the antidegradation policy can be found at 10:030.

and regulatory requirements for waste treatment” and that nonpoint sources be “controlled by application of all cost effective and reasonable best management practices.”<sup>166</sup>

Kentucky’s antidegradation policy categorizes each water body in the state into one of four separate categories: outstanding national resource water (ONRW), exceptional water, high quality water, and impaired water.<sup>167</sup> The level of protection afforded to the waters in each of the categories differs. Discharges into an ONRW may not result in any permanent or long-term changes in the water quality. Discharges which cause a short-term change are only allowed if they “do not have a demonstrable impact on the ability of the water to support the designated uses.” Discharges into impaired waters must meet the requirements for a permit under KPDES (see subsection II.A, below), and must assure that the level of water quality necessary to protect existing uses is not further degraded.

Discharges into exceptional and high quality waters are governed by the same requirements. A discharge may only occur if the permit application demonstrates that “the lowering of water quality is necessary to accommodate important economic or social development in the area in which the water is located.” The applicant must also demonstrate necessity by showing that there are no feasible alternatives that might produce the same benefits without affecting water quality.<sup>168</sup>

However, a number of exceptions exist to the requirement that a permittee demonstrate that a discharge is necessary to accommodate important economic or social development. The renewal of a permit that sets the same discharge limits need not meet the requirement. This is true even if the facility will increase pollutant loading under the new permit. As long as the old permit authorized an equivalent limit, the renewal application need not show that the facility will not increase its discharges, just that it will be within the limits of the old permit. Additionally, even a new or expanded discharge is exempt from the requirement if it will not consume more than ten percent of the “available assimilative capacity of the receiving stream . . . for each new or increased pollutant in the discharge.” The EEC may also provide an explanation accompanying the notice of approval of a general permit why the requirement is satisfied even without any demonstration by the permit applicant. Finally, the regulation allows the approval of a POTW’s regional facility plan to constitute compliance with the requirement.<sup>169</sup>

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<sup>166</sup> “Point source” is defined by 33 U.S.C. § 1362(14) (2006). “Nonpoint source” is any other source of pollution. 10:001. “Best management practices” is also further defined for both agricultural and non-agricultural operations. *See id.*

<sup>167</sup> The criteria used to determine a body of water’s categorization are listed in 10:030. The regulation also contains tables of all those waters classified as an ONRW or an exceptional water. There are very few waters classified as ONRWs (currently only 8) but quite a large number that qualify as exceptional (259). Impaired waters are those which do not “fully support[] any applicable designated uses,” but any water listed as an OSRW (*see* subsection A) cannot be designated as impaired. High quality waters are all those that do not meet the criteria for any of the other three categories.

<sup>168</sup> The application form which sets out the information required for each of these analyses is available at: <http://www.water.ky.gov/NR/rdonlyres/2B99062C-1F1D-4ACD-AC56-33096B4890C9/0/KPDESFORMSDAA51909.doc>.

<sup>169</sup> *See* 5:006 for more information on the requirements for a regional facility plan.

## D. Total Maximum Daily Loads (TMDLs)

Section 303(d) of the Clean Water Act requires that states produce a list of waterways which do not meet water quality criteria despite effluent limitations.<sup>170</sup> These waters are designated “impaired” by the EPA. (Note that the classification of “impaired water” under the antidegradation policy above need not correspond with whether a water is listed as impaired under 303(d) -- the remainder of this section shall use the term “impaired” to mean that the water is included on the 303(d) list.) As of 2008, there were 1,089 impaired water bodies in the state.<sup>171</sup>

A TMDL is a mathematical calculation which attempts to quantify the amount of a given pollutant that can be discharged into a particular water body without exceeding water quality standards. The term also refers to the document produced by the EEC which sets limits on each pollutant discharged into an impaired waterway and lays out a plan for bringing that body of water into compliance with water quality standards. These limitations and the accompanying plans must be approved by the EPA. Unfortunately, very few TMDL documents have been completed and approved thus far, but those that exist are available on the EEC Division of Water (DOW or Division) website.<sup>172</sup> The table on the DOW website also specifies the specific impairments. The most common impairments associated with nutrient pollution from POTWs are designated as “nutrients” and “organic enrichment.”

## II. THE PROCEDURE: THE PUBLICLY OWNED TREATMENT WORKS PERMIT PROCESS

### A. Permit Requirements

Kentucky regulations require anyone who wishes to construct or modify a facility that will discharge to the waters of the state to obtain a permit to do so.<sup>173</sup> In order to operate, any facility that will discharge pollutants must obtain a Kentucky Pollutant Discharge Elimination System (KPDES) operating permit,<sup>174</sup> which may be issued for a fixed term of five years or less.<sup>175</sup> The Clean Water Act prohibits the state from issuing a KPDES permit where the permit’s conditions do not ensure compliance with applicable water quality requirements.<sup>176</sup> However, Kentucky law also requires that no KPDES permit can impose an effluent limit, monitoring requirement or other condition that is more stringent than requirements imposed in federal permits.<sup>177</sup>

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<sup>170</sup> 33 U.S.C. § 1313(d).

<sup>171</sup> U.S. Environmental Protection Agency, Watershed Assessment, Tracking and Environmental Results, [http://iaspub.epa.gov/waters10/attains\\_nation\\_cy.control?p\\_report\\_type=T](http://iaspub.epa.gov/waters10/attains_nation_cy.control?p_report_type=T).

<sup>172</sup> Division of Water, Ky. Energy & Env’t Cabinet, Approved TMDLs, <http://water.ky.gov/waterquality/Pages/ApprovedTMDLs.aspx>.

<sup>173</sup> 5:005.

<sup>174</sup> 5:060.

<sup>175</sup> 5:070.

<sup>176</sup> CWA § 402, 33 U.S.C. § 1342.

<sup>177</sup> Ky. Rev. Stat. Ann. § 224.16-050(4) (2009).

All permits issued under KPDES must contain certain conditions, including requirements that:<sup>178</sup>

- The permittee has a duty to take all reasonable steps to minimize or prevent any discharge in violation of the permit if such a discharge has a reasonable likelihood of adversely affecting human health or the environment.
- The permit must be able to be modified or revoked for cause.
- The permittee must furnish information which is requested by the state in order to determine whether cause exists for modifying or revoking the permit.
- State authorities must be allowed to enter and inspect the premises and operations regulated under the permit, to monitor or sample, and to have access to monitoring records, which must be kept for at least the three prior years.
- The permittee has a duty to report any planned construction or modification of the facility which may result in new or increased discharges or may alter sludge use or disposal practices.

In addition to the general KPDES permit requirements, POTW permits must also require that EEC is notified if any new introduction of pollutants into the facility from an indirect discharger would require a permit if it were directly discharged, or if there is a “substantial change in the volume or character of pollutants” from an indirect discharger. This notice must include information about both the character and quantity of pollutants being introduced into the facility and the anticipated impact on the effluents likely to be discharged by the POTW.<sup>179</sup>

To apply for a permit, POTWs must complete KPDES Form 1 and Form A.<sup>180</sup> An application for a permit must be submitted at least 180 days before startup of a new facility or before expiration of a current permit. It must include an application fee, a topographic map noting the location of intake and discharge structures, a list of the other environmental permits the facility has or is planning to apply for, a process flow schematic indicating the treatment processes and the flows at each intake and outfall, and effluent testing information for each outfall via which effluent is discharged.

## **B. Permit Public Participation Procedures**

Upon receiving an application for a KPDES permit, the Cabinet shall make a tentative decision whether to prepare a draft permit or to issue a notice of intent to deny the application.<sup>181</sup> The Cabinet must also set forth the reason for its tentative decision to approve or deny a permit, and for the conditions imposed in the draft permit, if one is issued.<sup>182</sup> Under some circumstances, such as when the Cabinet must make a case-by-case determination or when the Cabinet decides

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<sup>178</sup> 5:065; 40 C.F.R. § 122.41.

<sup>179</sup> 5:065; 40 C.F.R. § 122.42(b).

<sup>180</sup> Form 1 is available at <http://www.dep.ky.gov/NR/rdonlyres/8825DC08-1F6F-470E-B67B-CDF9A1A2AE40/0/KPDESForm1andInstructionsFeb20092.pdf>.

Form A can be found at <http://www.dep.ky.gov/NR/rdonlyres/75B26F5A-9388-4C95-924E-1EBC62B87CB2/0/KPDESFormAandInstructionsFeb2009.doc>.

<sup>181</sup> 5:075 §3; 12 C.F.R. § 124.6.

<sup>182</sup> 40 C.F.R. §§ 123.25(a)(26), 124.6(e).

to waive normal monitoring requirements, it must publish a more detailed document called a “fact sheet” instead of the statement of basis.<sup>183</sup>

When a draft permit or a notice of intent to deny is issued, the Cabinet must provide public notice and allow comments on the decision for a period of at least 30 days.<sup>184</sup> This notice shall include, at least, mailing notice to the applicant, other relevant agencies and local governments, any people who request to be on a list either in reference to the particular action or for the geographic area where the permit will be issued, and publication of notice in a daily or weekly newspaper in the area.<sup>185</sup> The public notice must contain information concerning: the name and address of the facility, a description of the proposed discharge point and the receiving water, the address and telephone of the person to contact for further information such as the application and the fact sheet or statement of basis, the time and place of any public hearings to be held, and how to submit written comments.<sup>186</sup>

Any person may request a public hearing.<sup>187</sup> However, the Cabinet need only hold a hearing if it determines that there is “a significant degree of public interest in a draft permit(s)” or when it might help to clarify issues involved in the decision.<sup>188</sup> If a hearing is held, notice of at least 30 days must be given and the period for comment must be extended at least until the close of the hearing.<sup>189</sup>

The Cabinet will make its decision after the close of the public comment period. The Cabinet must publish a response to the comments made, specifying any provisions of the draft permit that were changed and the reasons for the change. If no comments were submitted requesting a change in the draft permit, the permit becomes effective on the day that the final permit is issued by the Cabinet. If changes were requested, the permit becomes effective 30 days after the final permit determination is issued unless it specifies a later date.

### **C. Permit Renewal or Modification**

A POTW applying to renew a KPDES permit must apply at least 180 days before expiration of the permit unless the Cabinet grants permission to apply at a later date.<sup>190</sup> Permit renewals are evaluated according to the same criteria upon which new permits are evaluated, but increased pollutant loading may be allowed when the renewal application sets the same discharge limits as the old permit. See section I.C., above for more information.

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<sup>183</sup> 5:075 § 4; 40 C.F.R. § 124.8. The full list of circumstances under which a fact sheet must be prepared is available at 40 C.F.R. §§ 124.8(a) and 124.56(b). A fact sheet must include a number of items listed at 40 C.F.R. §§ 124.8(b).

<sup>184</sup> 5:075 § 5; 40 C.F.R. § 124.10.

<sup>185</sup> 40 C.F.R. § 124.10.

<sup>186</sup> 40 C.F.R. § 124.10.

<sup>187</sup> 40 C.F.R. § 124.11.

<sup>188</sup> 40 C.F.R. § 124.12(a).

<sup>189</sup> 5:075 § 7, 40 C.F.R. § 124.12.

<sup>190</sup> 5:060 § 2(3); 40 C.F.R. § 122.21 (d)(1).

In order to change a permit's conditions, the permit may either be modified or revoked and reissued.<sup>191</sup> Modifications may only alter the specific conditions of the permit that are open for revision, as discussed below. If a permit is revoked and reissued, any provision may be altered but the standard requirements and processes for permit issuance must be followed, and the Cabinet may require an updated application.

A permit may not be modified nor reissued without cause, unless the modification is minor. Minor modifications to a permit may be approved by the Cabinet without issuance of a draft permit or opportunity for public review. Minor modifications may only be made in order to:

- correct typographical errors,
- require more frequent monitoring or reporting,
- extend an interim compliance deadline by no more than 120 days if the extension does not interfere with attainment of the final compliance deadline,
- allow for a change in ownership or operational control of a facility if no other change in the permit is necessary,
- change the construction schedule for a new source,
- delete a point source outfall if the discharge is terminated and does not result in discharge from other outfalls exceeding permit limits, or
- incorporate previously-approved or -modified conditions of a POTW pretreatment program as enforceable permit requirements.

All modifications which are not minor may only be made for cause. A number of circumstances may give cause to modify a permit, including: if there are substantial alterations to the facility, if new information has come to light since issuance of the permit that would have justified different permit conditions, if good cause exists to change a compliance schedule because of an event such as a labor strike or flood beyond the control of the permittee, or if the POTW qualifies for a change based on pollutants in a facility's intake water.<sup>192</sup> A variety of circumstances may justify revocation of the permit including: noncompliance, the applicant's failure to truthfully disclose all relevant facts during the permit process, or a determination that a permitted activity endangers the environment or public health.<sup>193</sup>

#### **D. Permit Violations**

Any violation of a KPDES permit issued by the Cabinet may be punishable by a civil fine of up to \$25,000 per day for the violation and may be subject to a court order prohibiting further

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<sup>191</sup> The provisions relating to modification or revocation and reissuance of permits discussed in the remainder of this section can be found at 5:070 § 6-7.

<sup>192</sup> The full list is at 5:070 § 6(2). The reasons for cause listed in this subsection may only be used to justify modification of the permit condition at issue. They may not be used to justify modification of other permit conditions or to justify revocation and reissuance. However, the Cabinet may determine based on a showing of cause listed to revoke and reissue a permit if the permittee agrees.

<sup>193</sup> The full list and other rules regarding revocation are available at 5:070 § 7. The cabinet must follow the procedures in 5:075 when revoking a permit unless the discharge is eliminated or the discharger ceases to discharge into a water of the state and instead discharges to a POTW.

violations.<sup>194</sup> In addition to civil fines, a violator may also be held liable for the costs of restocking fish or replenishing any wildlife that is injured or killed.<sup>195</sup> If a permittee knowingly violates a permit, knowingly provides false information, or tampers with monitoring equipment or methods so as to knowingly endanger human life, they may face criminal penalties including fines of up to \$25,000 and one to five years imprisonment.

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<sup>194</sup> Ky. Rev. Stat. Ann. § 224.99-010. Violations of a court order may, in turn, bring additional penalties.

<sup>195</sup> Ky. Rev. Stat. Ann. § 224.01-070.

## LOUISIANA NUTRIENT GUIDE

### I. THE SUBSTANCE: THE LOUISIANA NUTRIENT REGULATORY FRAMEWORK

The Louisiana Department of Environmental Quality (DEQ) is the major permitting, monitoring and enforcement agency for water quality standards in the state.

#### A. Effluent Regulations

The Louisiana Administrative Code, Title 33, Part IX, § 1113(B)(8) provides qualitative nutrient guidelines. The regulations require the maintenance of natural nitrogen-phosphorus ratios for all surface waters of the state, and restrictions on nutrient concentrations that produce harmful aquatic growth.<sup>196</sup> The regulation also commands the DEQ to use site specific studies to establish limits for nutrients.<sup>197</sup>

Louisiana has not set numeric criteria for nutrient pollution, however, and has fallen behind EPA's original timetable for the development of these standards.<sup>198</sup> EPA's original timeline required the State of Louisiana to develop nitrogen, phosphorus, and dissolved oxygen standards for rivers and streams by January 2009, and similar standards for freshwater wetlands, lakes, and reservoirs by January 2010.<sup>199</sup> To date, DEQ has not proposed any specific rules on nutrient criteria limits.<sup>200</sup>

Louisiana imposes technology-based effluent limitations for POTWs.<sup>201</sup> POTWs must use best conventional technology for conventional pollutants (typically those covered by secondary treatment) and best available control technology for non-conventional or toxic pollutants.<sup>202</sup>

The Louisiana DEQ may grant POTWs variances from technology-based treatment requirements<sup>203</sup> and give POTWs an extension of compliance deadlines under Section 301(i) of the federal Clean Water Act.<sup>204</sup> Technology-based standards may be adjusted to reflect credit for pollutants in the intake water.<sup>205</sup>

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<sup>196</sup> Louisiana Administrative Code, Title 33, Part IX, § 1113(B)(8), *available at* <http://www.deq.louisiana.gov/portal/Default.aspx?tabid=1674> [hereinafter all sections of Louisiana Administrative Code, Title 33, Part IX, will be cited as LAC § (section #)].

<sup>197</sup> *Id.*

<sup>198</sup> MATT ROTA ET AL., GULF RESTORATION NETWORK, CLEAN UP YOUR ACT! GULF STATES REPORT CARD 18 (2009), [http://www.healthygulf.org/images/stories/pdfs/reports/healthy\\_waters/gulf\\_states\\_report\\_card\\_2009.pdf](http://www.healthygulf.org/images/stories/pdfs/reports/healthy_waters/gulf_states_report_card_2009.pdf).

<sup>199</sup> LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY, DEVELOPING NUTRIENT CRITERIA FOR LOUISIANA (2006), <http://www.deq.louisiana.gov/portal/tabid/69/Default.aspx> (under heading "Surface Water").

<sup>200</sup> ROTA ET AL., *supra* note 198.

<sup>201</sup> *See* LAC § 2707.

<sup>202</sup> *See* LAC § 305.

<sup>203</sup> *See* 40 C.F.R. 125.56-68.

<sup>204</sup> *Id.*

<sup>205</sup> For a list of conditions as to when credit may be granted, see LAC § 305(F).

## B. Water Quality Standards

Louisiana regulations contain qualitative standards for state waterways. These water quality standards are designed to “promote restoration, maintenance, and protection of state waters.”<sup>206</sup> At all times, the surface waters of the state should:

- (1) be free from discharges that negatively affect the appearance, odor, turbidity, and toxicity of waters, produce negative physical or behavioral changes in humans, wildlife, and plants, or produce harmful aquatic growth;
- (2) be free from significant color changes from natural color levels;
- (3) be free from substances that alone or in combination will be toxic to human, plant, or animal life or significantly increase health risks from exposure or consumption of contaminated aquatic life;”
- (4) maintain their naturally occurring range of nitrogen-phosphorus ratios;
- (5) maintain their designated water uses and not develop turbidity (other than that of natural origin) that substantially impairs the natural appearance of the waters; and
- (6) maintain the integrity of their biological and community structure where feasible.<sup>207</sup>

## C. Anti-Degradation Policy

Federal regulations require all states to have an anti-degradation policy for their waterways.<sup>208</sup> Louisiana’s anti-degradation policy is codified in the Louisiana Administrative Code, Title 33, Part IX, § 1109(A), 1119. These regulations outline specific implementation procedures:<sup>209</sup>

- (1) If the quality of the water or existing uses cannot be maintained, a use attainability analysis must be conducted.<sup>210</sup>
- (2) If an activity will impact water quality through POTW discharges, the state must maintain existing uses of the water. If these discharges will degrade water quality, the state must adhere to the intergovernmental coordination and public participation provisions of the state’s Continuing Planning Process.<sup>211</sup>
- (3) The state must ensure that the public has notice of the possible lowering of water quality and the opportunity to comment on it. In the case of state or federal wastewater discharge permits, notice of the possible lowering of water quality in the public notice of the permit suffices.<sup>212</sup>

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<sup>206</sup> See LAC § 1113(A)(1).

<sup>207</sup> LAC § 1113(B).

<sup>208</sup> See 40 C.F.R. § 131.12.

<sup>209</sup> LAC § 1119.

<sup>210</sup> *Id.* at § 1119(C)(1). A use attainability analysis is a “structured scientific assessment of the factors (chemical, physical, biological, and economic) affecting the attainment of designated water uses in a water body.” LAC § 1105.

<sup>211</sup> LAC § 1119(C)(2). A state’s Continuing Planning Process (CPP) document “describes those administrative, technical, and programmatic processes used by the state to implement its water pollution control program.” LAC § 1119(B)(2)(g).

<sup>212</sup> *Id.* at § 1119(C)(3) (The following language must be included in the notice: “During the preparation of this permit, it has been determined that this discharge will have no adverse impact on the existing uses of the receiving water body. As with any discharge, however, some change in existing water quality may occur.”).

(4) The DEQ must not approve proposed discharges into an outstanding natural resource water body if it will cause degradation of the waterway. Discharges of treated sanitary wastewater may be allowed if there is no reasonable alternative discharge location or if the source of the discharge existed before the water body's designation as an outstanding natural resource water body.<sup>213</sup>

Currently, Louisiana is developing even more specific implementation procedures to support the state's anti-degradation policy. The draft anti-degradation implementation procedures call for a water body-by-water body approach for conventional pollutants and a parameter-by-parameter approach for toxic pollutants.<sup>214</sup> Water bodies will be reviewed as needed or at least once every four years. The draft implementation system also adopts a tiered review system for water quality:

**TIER 1 REVIEW:** The minimum water quality standard. If the DEQ determines that a waterway does not qualify for Tier 2 protection, it is subject to Tier 1 protection. Man-made waterways and/or those waterways with "limited aquatic life" are also considered Tier 1 waters. Tier 1 review requires the state to maintain existing instream water uses and the level of water quality necessary to protect the existing uses. The DEQ will evaluate the past 10 years of data to determine if a water body has the water quality to support the designated uses.

**TIER 2 REVIEW:** Tier 2 protection applies to waterways in which the water quality exceeds the levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the waterway. The DEQ determines if a water body requires Tier 2 protection based on the following guidelines:

- (i) **Reference Sites:** The Department can identify the least impacted water bodies for the purposes of refining or developing water quality standards. These reference sites require Tier 2 review. Natural lakes and streams can be used as reference sites only if they remain in a least-impacted state. Reference water bodies do not have to meet other water quality criteria as they have been evaluated to meet reference site selection criteria and have been selected to refine or develop water quality criteria.
- (ii) **Existing Water Quality Data:** A waterway can qualify as a Tier 2 water body if 90 percent of the ambient water quality data is better than the water quality criteria outlined by the Louisiana Administrative Code.<sup>215</sup>
- (iii) **Water Body Classification and Use:** Man-made water bodies, intermittent streams, effluent-dominated streams, or transportation/industrial corridor waterways are not Tier 2 water bodies.

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<sup>213</sup> LAC § 1119(C)(4) ("[D]egradation is defined as a statistically significant difference at the 90 percent confidence interval from existing physical, chemical, and biological conditions.")

<sup>214</sup> Louisiana Department of Environmental Quality, Draft Antidegradation Implementation Procedures (2009), <http://www.deq.state.la.us/portal/LinkClick.aspx?fileticket=2x5LTDhkLmE%3D&tabid=69>.

<sup>215</sup> Water quality criteria are available at LAC §1113(A)-(B), tbl. 1.

- (iv) **Named Water Bodies:** Water bodies become “named water bodies” if they are listed in the Louisiana Administrative Code §1123, Table 3. Named water bodies receive Tier 2 protection.<sup>216</sup> Any proposed discharge into an unnamed water body will receive a case-by-case evaluation. This evaluation will be based on availability of existing water chemistry and flow data, tier designation for the nearest downstream named water body, type and size of the proposed discharge, and land use information and presence of other sources. The state must not allow discharges into an unnamed body if it will violate water quality standards in the nearest, named downstream waterway.

The Department will conduct a Tier 2 Review when the proposed discharge includes organic toxic pollutants, pesticides, or measurable amounts of metals and ninety percent of the ambient water quality data is better than the criteria for these pollutants. Louisiana may allow degradation of Tier 2 water bodies under certain conditions.<sup>217</sup> If a proposed discharge will result in significant deterioration of a Tier 2 waterway, a discharger must submit information to DEQ for a Tier 2 review. The Department defines significant deterioration of a waterway as a measurable change in the water quality, such as:

- 1) Temperature increase of 0.3° C or greater
- 2) Dissolved oxygen decrease of 0.2 mg/L or greater
- 3) Bacteria level increase of 2 cfu/100 mL or greater
- 4) Turbidity increase of 0.5 NTU or greater
- 5) Any detectable increase in the concentration of a toxic or radioactive substance.

The DEQ then decides whether to allow or prohibit the proposed discharge based on a review of discharge alternatives,<sup>218</sup> the discharge’s potential to harm existing and designated uses of a water body, and the economic and social impacts on the area in which the water body is located and surrounding areas.

**TIER 3 REVIEW:** Tier 3 protections apply to outstanding natural resource waters, such as state and national park waters, wildlife refuges, and waters of exceptional recreational or ecological significance. If the waterway meets this classification, the water must be maintained and protected. The DEQ has the authority to designate which waterways constitute Outstanding Natural Resource waterways. Discharges proposed for an Outstanding Natural Resource waterway shall not be permitted if the new or increased discharge will cause significant degradation, as defined in the Louisiana Administrative

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<sup>216</sup> LAC §1123, tbl.3.

<sup>217</sup> 40 C.F.R. § 131.12(a)(2).

<sup>218</sup> The Department defines alternative discharges in the form of the following questions: “a. What, if any, alternative control strategies would result in zero discharge? b. What alternative control strategies would decrease the environmental impact of the discharge? c. Could the discharge be directed to another water body? d. Could the discharge be tied into an existing facility?” Louisiana Department of Environmental Quality, Draft Antidegradation Implementation Procedures, 6-7, <http://www.deq.state.la.us/portal/LinkClick.aspx?fileticket=2x5LTDhkLmE%3D&tabid=69>.

Code.<sup>219</sup> In limited circumstances, the DEQ will allow a discharge if it will cause only temporary and short term changes in water quality that do not impair existing uses, or if the activity is intended to implement the objectives of the Clean Water Act. Outstanding Natural Resource waters are listed in the Louisiana Administrative Code.<sup>220</sup> Currently, none of Louisiana’s waterways in the Mississippi River basin are classified as outstanding natural resource waters.<sup>221</sup>

The DEQ, pursuant to the Clean Water Act, maintains a Water Quality Inventory Report and a list of waterways which are impaired for one or more designated uses. These listings are available on the DEQ’s website.<sup>222</sup>

#### **D. Total Maximum Daily Loads (TMDLs)**

Section 303(d) of the Clean Water Act requires that states produce a list of waterways which do not meet water quality criteria despite effluent limitations.<sup>223</sup> These waters are designated “impaired” by the EPA. A Total Maximum Daily Load (TMDL) is a mathematical calculation which attempts to quantify the amount of a given pollutant that can be discharged into a particular water body without exceeding water quality standards. The term also refers to the document produced by state water agencies which sets limits on each pollutant discharged into an impaired waterway and lays out a plan for bringing that body of water into compliance with water quality standards. These limitations and the accompanying plans must be approved by the EPA.

Louisiana formulates TMDLs for waterways which do not meet state regulatory water quality standards even after the implementation of point source pollution controls.<sup>224</sup> Currently, there are 250 impaired waterways in Louisiana.<sup>225</sup> The EPA website maintains records on current TMDLs for specific waterways in Louisiana, and data on why a specific waterway is designated as impaired.<sup>226</sup> Excess nitrogen, phosphorus, and low dissolved oxygen are the most commonly listed nutrient pollutants.

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<sup>219</sup> LAC § 1119(C)(4) (“[A] statistically significant difference at the 90 percent confidence interval from existing physical, chemical, and biological conditions.”).

<sup>220</sup> LAC § 1123.

<sup>221</sup> *See id.*

<sup>222</sup> *See* Louisiana Department of Environmental Quality, Water Quality Assessments, <http://www.deq.state.la.us/portal/Default.aspx?tabid=2463>.

<sup>223</sup> 33 U.S.C. § 1313(d).

<sup>224</sup> Louisiana Department of Environmental Quality, TMDL Program Brochure, <http://www.deq.louisiana.gov/portal/Portals/0/technology/tmdl/TMDL-FactSheet.pdf>.

<sup>225</sup> EPA, Louisiana Impaired Waters, [http://iaspub.epa.gov/tmdl\\_waters10/attains\\_impaired\\_waters.control?p\\_state=LA](http://iaspub.epa.gov/tmdl_waters10/attains_impaired_waters.control?p_state=LA).

<sup>226</sup> *Id.*

## II. THE PROCEDURE: THE PUBLICLY OWNED TREATMENT WORKS PERMIT PROCESS

### A. Permit Requirements

Louisiana requires a Louisiana Pollutant Discharge Elimination System (LPDES) permit for all publicly owned treatment works (POTW).<sup>227</sup> Most permits issued in Louisiana come with attached conditions that provide additional protections for the environment and human health.<sup>228</sup> The LPDES permit incorporates the technology-based standards of federal and state effluent guidelines and the water-quality based standards of Louisiana's water quality rules.<sup>229</sup> If there are no applicable standards, DEQ can establish the appropriate limitations.<sup>230</sup> All applicants for LPDES permits must submit either state or EPA-approved permit application forms. When the facility is owned by one person but operated by another person, the operator has the duty to apply for the permit.<sup>231</sup> The state may require the facility to complete more than one application form depending on the number and types of discharges.<sup>232</sup> Dischargers may obtain application forms through the DEQ website.<sup>233</sup> The following information is required in the application:<sup>234</sup>

- (1) Name and address of the facility
- (2) Operator's name and parent corporation's name
- (3) A description of the nature of the business and activities which would require a LPDES permit
- (4) A history of all Louisiana or EPA permits received
- (5) A topographic map, discharge outlet information, and water-flow map within the facility
- (6) A narrative identification of each type of process within the facility
- (7) Information concerning whether the facility is located in Indian country and whether the facility discharges to a receiving stream that flows through Indian country
- (8) The facility's wastewater flow rate, annual average daily flow rate, and maximum daily flow rate for each of the previous 3 years
- (9) Types of collection systems and an estimate of the percent of sewer line each type comprises.

In addition, the LPDES application includes an environmental impact questionnaire. The questionnaire requires the permit applicant to consider the adverse environmental effects of the proposed facility, taking into account social and economic benefits of the project, possible alternative projects, alternative project sites, and environmental mitigation measures.

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<sup>227</sup> LAC §2311.

<sup>228</sup> A. ROGER GREENWAY, HOW TO OBTAIN WATER QUALITY PERMITS 178 (2004).

<sup>229</sup> *Id.*

<sup>230</sup> *Id.*

<sup>231</sup> *See* LAC § 2501.

<sup>232</sup> Louisiana Department of Environmental Quality, LPDES Water Permit Applications, <http://www.deq.louisiana.gov/portal/Default.aspx?tabid=1837>.

<sup>233</sup> *Id.*

<sup>234</sup> *See id.*

POTWs must provide adequate notice to the state administrative authority of any new introduction of pollutants into the POTW from an indirect discharger and any substantial change in the volume or character of pollutants being introduced into that POTW.<sup>235</sup> All POTWs must maintain records of the industries that discharge in the POTW, and annually inspect significant industrial users.<sup>236</sup> The POTW must submit an annual report to the DEQ, containing an updated list of the POTW's industrial users, summary of industrial user compliance, summary of enforcement activities, and any other information required by the LPDES permit.<sup>237</sup> POTWs must receive DEQ approval if they want to modify the terms of an active permit.<sup>238</sup> The DEQ only reviews the permit conditions subject to modification and not the entire permit. The DEQ can approve a modification if material and substantial alterations to a permitted facility or activity occurs after the issuance of a permit, new information justifies the application of new permit condition, or new state or federal regulations apply to the facility.<sup>239</sup> The EPA has the power to review state issued permits. EPA can also waive review of state issued permits. If EPA does not waive such review, Louisiana must forward copies of the draft permit, public notice, fact sheet, and other application materials to the EPA.<sup>240</sup> If Louisiana and the EPA agree on the terms of the permit, the state will give public notice of the draft permit.<sup>241</sup> However, if Louisiana and the EPA cannot agree on the terms of the permit, the permit transfers to EPA for its sole consideration.<sup>242</sup>

## B. Permit Public Participation Procedures

By law, DEQ must provide opportunities for public participation in the permitting process.<sup>243</sup> The following steps are measures that citizens can take to voice their views on POTW permits: STEP ONE: Once a POTW has submitted an application for a discharge permit to the DEQ, the DEQ must provide public notice of its tentative, draft permit decision.<sup>244</sup> When the DEQ denies a request for permit modification, revocation and reissuance, or termination, no public notice is required. Instead, written notice of the denial must be given to the requester and the permittee.<sup>245</sup>

STEP TWO: After the DEQ provides public notice of its draft permit decision, the agency must allow at least 30 days for public comment.<sup>246</sup> During the public comment period, any interested person may submit written comments to the DEQ and request a public hearing.<sup>247</sup> The DEQ must

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<sup>235</sup> LAC § 2703(B).

<sup>236</sup> HOW TO OBTAIN WATER QUALITY PERMITS 181.

<sup>237</sup> *Id.*

<sup>238</sup> LAC § 2903.

<sup>239</sup> *Id.*

<sup>240</sup> HOW TO OBTAIN WATER QUALITY PERMITS 178.

<sup>241</sup> *Id.*

<sup>242</sup> *Id.*

<sup>243</sup> LAC § 3113.

<sup>244</sup> *Id.* at §§ 3113(A)(1)(a), 3107(C).

<sup>245</sup> *Id.* at § 3113(A)(2).

<sup>246</sup> *Id.* at § 3113(B)(1).

<sup>247</sup> *Id.* at § 3115.

consider all comments received during this period in making a final decision on the discharge permit.<sup>248</sup>

STEP THREE: If a public hearing might clarify issues in the permit decision, the DEQ has the discretion to hold a public hearing.<sup>249</sup> The Department must hold a public hearing, however, if it finds a significant degree of public interest in the draft permit decision.<sup>250</sup> To ensure DEQ consideration and to preserve the right to appeal later, all interested persons must submit comments and raise all reasonably ascertainable issues before the close of the public comment period (including any public hearing).<sup>251</sup>

STEP FOUR: The DEQ must respond to all significant public comments when the agency issues its final permitting decision.<sup>252</sup> Permit applicants can petition the Secretary of DEQ for review of the permit decision no later than 30 days after notice of the final permit decision.<sup>253</sup>

STEP FIVE: If the Secretary of the DEQ denies review, any person aggrieved by the final permitting decision may petition for judicial review. Judicial review is available in the Nineteenth Judicial District Court.<sup>254</sup> The court's review is confined to the record the DEQ had before it when rendering the final permit decision.<sup>255</sup> The court may reverse the decision of the DEQ when it is: "(1) In violation of constitutional or statutory provisions; (2) In excess of the statutory authority of the agency; (3) Made upon unlawful procedure; (4) Affected by other error of law; (5) Arbitrary or capricious or characterized by abuse of discretion or clearly unwarranted exercise of discretion; or (6) Not supported and sustainable by a preponderance of evidence as determined by the reviewing court."<sup>256</sup>

STEP SIX: Citizens can always access permit information on the DEQ website.<sup>257</sup> Similarly, a citizen can find permit compliance documents by accessing the DEQ's Electronic Document Management System (EDMS).<sup>258</sup> If no records can be located on the DEQ website, a citizen can file a public records request with the Department.<sup>259</sup>

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<sup>248</sup> *Id.*

<sup>249</sup> *Id.* at § 3117(2).

<sup>250</sup> *Id.* at § 3117(A)(1).

<sup>251</sup> *Id.* at § 3119.

<sup>252</sup> *Id.* at § 3125.

<sup>253</sup> *See* La. Stats. § 30:2024.

<sup>254</sup> *See id.* at § 30:2050.21(A).

<sup>255</sup> *See id.* at § 49:964(F).

<sup>256</sup> *See id.* at § 49:964(G).

<sup>257</sup> *See* Louisiana Department of Environmental Quality, <http://www.deq.state.la.us/portal/tabid/2899/Default.aspx>.

For a list of all permit applications received by the Department, go to:

<http://www.deq.state.la.us/portal/tabid/2194/Default.aspx>.

<sup>258</sup> *See* Louisiana Department of Environmental Quality, <http://www.deq.louisiana.gov/portal/tabid/2604/Default.aspx>.

<sup>259</sup> For the online application form, see Louisiana Department of Environmental Quality, <https://www.deq.louisiana.gov/prr/RequestForm.aspx>.

### C. Permit Renewals

Each POTW must submit a new permit application at least 180 days before the expiration date of the existing permit, unless permission for a later date has been granted by the DEQ.<sup>260</sup> The DEQ cannot authorize permit renewals that POTWs submit after the expiration date of the existing permit.<sup>261</sup>

The DEQ may deny a POTW's request for renewal for several reasons. These include: failure to pay applicable fees, the current permitting conditions endanger human health or the environment, the facility has a history of violations and non-compliance, the facility has a change of ownership or operational control, or the facility is not financially secure.<sup>262</sup>

### D. Permit Violations

Louisiana authorizes citizen suits for damages alleging a violation of the state's law or regulations.<sup>263</sup> Citizen suits must be brought in the district court of the parish in which the violation occurred or in the district court of the area of residence of the alleged violator.<sup>264</sup>

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<sup>260</sup> LAC § 2501(D).

<sup>261</sup> *Id.*

<sup>262</sup> *Id.* at §§ 2907(A), 6509.

<sup>263</sup> La. Stats. at § 30:2026(A)(1).

<sup>264</sup> *Id.*

## MINNESOTA NUTRIENT GUIDE

### I. THE SUBSTANCE: THE MINNESOTA NUTRIENT REGULATORY FRAMEWORK

#### A. Effluent Regulations

Minnesota has established effluent limitations for numerous pollutants, including phosphorus. Because 80% of phosphorus effluent from point sources emanates from POTWs, Minnesota has taken measures to limit the amount of phosphorus influent from non-ingested (*i.e.* non-human waste) sources, including commercial, industrial, and residential waste. To reduce the amount of phosphorus influent, Minnesota has established limitations on the phosphorus content of laundry detergents and cleaning agents.<sup>265</sup> In response to a 2003 law stating that the goal for phosphorus reduction is at least a 50% reduction from the amounts measured in that year,<sup>266</sup> the state has published a *Detailed Assessment of Phosphorus Sources to Minnesota Watersheds*.<sup>267</sup>

Phosphorus from POTWs cannot be released into lakes, reservoirs or other specifically designated waters in concentrations greater than 1.0 mg/L.<sup>268</sup> The designated waters include the upper reaches of the Mississippi River.<sup>269</sup> Minnesota further requires that when this phosphorus limitation applies, all nutrients must be removed to the fullest extent practicable.<sup>270</sup> However, new or expanded POTWs can apply for an alternative limitation or no limitation.<sup>271</sup> (“New discharge” means that it was built after May 1, 2008 and discharges more than 1,800 pounds of phosphorus each year. “Expanded discharge” means that the POTW discharges more than 1,800 pounds of phosphorus each year after a modification.)<sup>272</sup> To receive a variance, these POTWs must show that they meet one of three requirements: (1) the POTW must discharge to, or upstream of, a water body that is on the impaired waters list and for which appropriate TMDLs are in place (in this case, a TMDL study determines the applicable phosphorus effluent limit); (2) the benefits of the limitations are outweighed by the environmental harm that results from meeting the limit; or (3) the POTW uses chemicals to achieve the 1.0 mg/L limit and discharges into certain watersheds, including the lower Mississippi River, and can therefore obtain a seasonal 1.0 mg/L limit.<sup>273</sup>

Minnesota has set the following standards that impact pollutants released in sewage, including that treated by POTWs:

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<sup>265</sup> MINN. R. 7100.0210 (2010).

<sup>266</sup> MINN. ST. ANN. § 115.425 (2010).

<sup>267</sup> Minn. Pollution Control Agency, *Detailed Assessment of Phosphorus Sources to Minnesota Watersheds* (2007), available at <http://www.pca.state.mn.us/index.php/about-mpca/legislative-issues/legislative-reports/detailed-assessment-of-phosphorus-sources-to-minnesota-watersheds-2004-legislative-report.html?menuid=&missing=0&redirect=1>.

<sup>268</sup> MINN. R. 7053.0255(3)(A).

<sup>269</sup> *Id.* at 7053.0255(5).

<sup>270</sup> *Id.*

<sup>271</sup> *Id.* at 7053.0255(4).

<sup>272</sup> *Id.* at 7053.0255(2)(C), (F).

<sup>273</sup> *Id.* at 7053.0255(4)(A)–(C).

- CBOD<sub>5</sub> concentration cannot exceed 25 mg/L monthly average or 40 mg/L weekly average,
- Total suspended solids (TSS) concentration cannot exceed 30 mg/L monthly average or 45 mg/L weekly average,
- Fecal coliform cannot exceed 200 organisms/100ml,
- The water must be “essentially free of visible oil,”
- pH range must be between 6.0 and 9.0,
- Toxic or corrosive pollutants cannot cause acute toxicity for humans, animals, or plants.

Three exceptions apply to these standards. First, for those POTWs in operation on January 1, 1987 that use a trickling filter, the monthly average concentrations for CBOD<sub>5</sub> and TSS are 40 mg/L and 45 mg/L, respectively. Second, the TSS limitations do not apply where the POTW operates a stabilization or aeration pond; here, too, the monthly average is raised to 45 mg/L.<sup>274</sup> Third, a more stringent limitation of 5 mg/L may be applied to CBOD<sub>5</sub> if the less stringent standard does not prevent pollution or if the dilution is inadequate to the point that the water quality standards are not met.<sup>275</sup>

For secondary treatment standards at POTWs, the commissioner of the Minnesota Pollution Control Agency (“MPCA”) must base calculations on the design flow of the treatment facility.<sup>276</sup> If the commissioner determines that it is not possible to set numeric limitations, the MPCA requires permittees to follow best management practices, which include schedules of activities, prohibitions of certain practices, and other management methods.<sup>277</sup>

For pretreatment at POTWs, Minnesota has adopted the federal limits for a variety of point sources.<sup>278</sup> Minnesota prohibits the introduction of pollutants that will cause either “pass-through” or “interference.” Pass-through is a discharge from a POTW that violates a water quality standard. Interference is a discharge that disrupts the operations of a POTW, thus leading to a violation. For example, Minnesota prohibits pollutants that cause structural damage to a POTW as well as pollutants that require high amounts of oxygen and are discharged at a rate or concentration that causes pass-through or interference.<sup>279</sup>

Like other states, Minnesota also sets general effluent limitations. These limitations apply to all discharges into waters of the state. For example, state regulations require the highest level of effluent quality that is achievable in continuous operation.<sup>280</sup> Additionally, mixing zones are required, and the state has the authority to set effluent limitations based on water quality

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<sup>274</sup> *Id.* at 7053.0215(1).

<sup>275</sup> *Id.* at 7053.0235(1). The less stringent 25 mg/L can be applied in this situation if the discharge of the effluent is limited to the spring runoff or other high flow periods.

<sup>276</sup> *Id.* at 7001.1080(2)(C)(1).

<sup>277</sup> *Id.* at 7001.1080(3); 7001.1020(5).

<sup>278</sup> *Id.* at 7049.0310. A list of sources along with the applicable federal regulation can be found at: <https://www.revisor.mn.gov/rules/?id=7049.0310>.

<sup>279</sup> MINN. R. 7049.0140(B), (D). High oxygen demand pollutants include biochemical oxygen demand.

<sup>280</sup> *Id.* at 7053.0205(4).

standards.<sup>281</sup> In particular, the state establishes a limit for ammonia based on the water quality standard for ammonia.<sup>282</sup>

The state has established specific discharge prohibitions for the stretch of the Mississippi River from the mouth of the Rum River to Minneapolis, approximately 20 miles downstream.<sup>283</sup> Raw sewage, treated sewage effluent, and industrial waste that would endanger the public health or impair the water are prohibited unless a variance for exceptional circumstances can be obtained.<sup>284</sup>

## B. Water Quality Standards

Water quality standards in Minnesota are designed to maintain the beneficial use of the state's water bodies.<sup>285</sup> The state has established numeric and narrative standards for seven different categories of water use: domestic consumption, aquatic life and recreation, industrial consumption, agriculture and livestock, aesthetic enjoyment, other uses, and limited resource value. Minnesota has not set numeric or narrative standards for nutrients, but the standards for other pollutants can be found by navigating from this website:

- <https://www.revisor.mn.gov/rules/?id=7050>.

The state has established particularly detailed water quality standards for the designated uses of aquatic life and recreation. A helpful compilation of applicable standards can be found here:

- <https://www.revisor.mn.gov/rules/?id=7050.0220>.

Similarly, the state has detailed narrative standards for aquatic life and recreation. A violation of the standards occurs if there is an increase in undesirable slime growths or algae or an increase in pesticide residue.<sup>286</sup> Nutrients are a central factor in measuring impairment due to undesirable slime or algae because, along with chlorophyll and light transparency, the state measures summer averages of phosphorus and nitrogen in the summer growing season.<sup>287</sup> The regulations further require that the aquatic habitat cannot be degraded by impairment to the fishery or biota that it depends on and that propagation and migration cannot be impeded.<sup>288</sup>

## C. Anti-Degradation Policy

Minnesota has applied what it calls “nondegradation” standards to its waters. The main goal of the nondegradation policy is to maintain and protect existing beneficial uses.<sup>289</sup> In general, this

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<sup>281</sup> *Id.* at 7053.0205(8).

<sup>282</sup> *Id.* at 7053.0205(9).

<sup>283</sup> *Id.* at 7053.0265(2).

<sup>284</sup> *Id.* at 7053.0265(2); 7053.0195.

<sup>285</sup> *Id.* at 7050.0150(1).

<sup>286</sup> *Id.* at 7050.0150(3).

<sup>287</sup> *Id.* at 7050.0150(5).

<sup>288</sup> *Id.* at 7050.0150(3).

<sup>289</sup> *Id.* at 7050.0185(1).

means that discharges must not exceed the effluent limitations or the water quality standards.<sup>290</sup> More specifically, the state has established standards for nondegradation of outstanding resource value waters. These waters include the Boundary Waters Canoe Area Wilderness, those areas designated as natural areas, wild, scenic or recreational river segments, as defined by the Department of Natural Resources, and other waters with wilderness characteristics, unique scientific or ecological significance, or exceptional recreational value. A list of existing outstanding resource value waters is available here:

- <https://www.revisor.mn.gov/rules/?id=7050.0180>.

To ensure the maintenance of these high quality waters, the state stringently controls new or expanded discharges, as defined above.

#### **D. Total Maximum Daily Loads (TMDLs)**

Section 303(d) of the Clean Water Act requires that states produce a list of waterways which need more stringent regulation in order to meet water quality criteria despite effluent limitations.<sup>291</sup> A Total Maximum Daily Load (TMDL) is a mathematical calculation which attempts to quantify the amount of a given pollutant that can be discharged into a particular water body without exceeding water quality standards. The term also refers to the document produced by state water agencies which sets limits on each pollutant discharged into an impaired waterway and lays out a plan for bringing that body of water into compliance with water quality standards. These limitations and the accompanying plans must be approved by the EPA.

Minnesota has issued a draft list of impaired waters for 2010. Minnesota's list includes 1,774 impaired water bodies that need TMDLs. However, as the state points out, the total number of impaired waters includes both those water bodies that have TMDLs and those that do not; that number is 3,049.<sup>292</sup> A list of impaired waters, including TMDLs for some water bodies, is available from the EPA:

- [http://iaspub.epa.gov/tmdl\\_waters10/attains\\_impaired\\_waters.control?p\\_state=MN](http://iaspub.epa.gov/tmdl_waters10/attains_impaired_waters.control?p_state=MN).

## **II. THE PROCEDURE: THE PUBLICLY OWNED TREATMENT WORKS PERMIT PROCESS**

### **A. Permit Requirements**

Facilities discharging into Minnesota's waters must obtain a National Pollutant Discharge Elimination System (NPDES) permit. This permit requirement does not apply to those discharging into a POTW, but POTWs must obtain permits.<sup>293</sup> POTWs applying for NPDES

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<sup>290</sup> *Id.* at 7050.0185(3).

<sup>291</sup> 33 U.S.C. § 1313(d).

<sup>292</sup> It is worth noting that the statewide mercury TMDL covers 1,096 water bodies that are still impaired, but have a TMDL.

<sup>293</sup> MINN. R. 7001.1030(2), 7001.1050(1).

permits must identify all of the pollutants that come into the POTW from indirect dischargers and provide a list of which indirect dischargers are subject to pretreatment standards.<sup>294</sup>

POTW permittees are subject to terms and conditions. A permittee has a duty to comply with the terms and conditions of the permit.<sup>295</sup> The permittee must properly operate and maintain its facilities, including backup and auxiliary facilities.<sup>296</sup> Permittees are allowed to modify their facilities, but in order to do so they must submit relevant reports to the commissioner and alterations that might result in non-compliance must be reported as soon as possible.<sup>297</sup> Furthermore, non-compliance with the permit conditions must be followed by notice to the commissioner of the facility's responses for avoiding adverse impacts to public health or the environment and non-compliance that leads to this type of impact must be reported.<sup>298</sup> Facilities must allow state agents to enter at reasonable times.<sup>299</sup>

Permits must include a compliance schedule, monitoring and testing requirements, and record-keeping requirements.<sup>300</sup> Permittees with an approved pretreatment program must incorporate it into the permit while permittees without a pretreatment program must include a compliance schedule for establishing a pretreatment program.<sup>301</sup> Furthermore, POTWs must control the discharge into the treatment facility from each industrial user and report significant industrial users and pretreatment activities.<sup>302</sup>

Minnesota has also established conditions related to bypasses, which are intentional diversions of waste streams from a facility. Bypasses that will not result in a violation of an effluent limitation can be allowed, but only if they are necessary for essential maintenance.<sup>303</sup> Bypasses that will result in a violation of the limitations are not allowed unless: (1) the diversion is unavoidable to prevent loss of life or severe property damage; (2) there is no feasible alternative; and (3) the commissioner has approved the bypass.<sup>304</sup> In the event of temporary non-compliance, a permittee has an affirmative defense if the non-compliance was caused by an unintentional incident that was beyond its control.<sup>305</sup>

A TMDL and general permit have been established for phosphorus discharge into the Lower Minnesota River because of the impairment caused by that nutrient. Phosphorus leads to algal blooms, and when the bloom decomposes it decreases the level of dissolved oxygen in the water. In 2005, Minnesota put into place the General Phosphorus Permit – Phase I for the Minnesota River. This permit set limits for phosphorus effluent from 40 large wastewater treatment

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<sup>294</sup> *Id.* at 7001.1050(1)(B).

<sup>295</sup> *Id.* at 7001.0150(3)(E).

<sup>296</sup> *Id.* at 7001.0150(3)(F).

<sup>297</sup> *Id.* at 7001.0150(3)(H), (M).

<sup>298</sup> *Id.* at 7001.0150(3)(J), (K).

<sup>299</sup> *Id.* at 7001.0150(3)(I).

<sup>300</sup> *Id.* at 7001.0150(2).

<sup>301</sup> *Id.* at 7001.1080(6)(A), (B).

<sup>302</sup> *Id.* at 7001.1090(3)(A).

<sup>303</sup> *Id.* at 7001.1090(1)(J).

<sup>304</sup> *Id.* at 7001.1090(1)(K).

<sup>305</sup> *Id.* at 7001.1090(1)(L).

facilities.<sup>306</sup> Phase 1 also requires new and expanding dischargers to apply for permit coverage, which allows for a 5-Month Mass Phosphorus Limit.<sup>307</sup>

## B. Permit Public Participation Procedures

Upon completion of a permit application, the MPCA commissioner must make a preliminary determination as to whether a permit should be issued or denied.<sup>308</sup> If the commissioner decides to issue the permit, he or she must also include a compliance schedule, “if a schedule is necessary to meet all applicable standards and limitations imposed by statute or rule,” and, if the source is a major one, a fact sheet.<sup>309</sup> If, on the other hand, the decision is to deny the permit, the commissioner must prepare a notice of intent for the state register.<sup>310</sup> In either case, the commissioner must issue and distribute a public notice.<sup>311</sup> The public notice establishes a public comment period lasting 30 days; within this period, an interested party may submit written comments.<sup>312</sup> For NPDES permits, the commissioner must respond, either orally or in writing, to significant comments made during the comment period.<sup>313</sup> Alternatively, the interested party may petition for an informational meeting or a contested case hearing.<sup>314</sup> If the commissioner determines that the permittee will comply with the schedule, limitations, and conditions, he or she must issue the permit.<sup>315</sup>

## C. Permit Renewals

Permits are valid for five years.<sup>316</sup> At the conclusion of this period, the MPCA can re-issue a permit as long as the effluent limitations, prohibitions, and conditions are at least as stringent as those in the previous permit.<sup>317</sup> If the permittee submits a timely application for renewal, the permittee can lawfully continue to operate under the terms of the old permit until MPCA takes final action.<sup>318</sup>

## D. Permit Violations

The commissioner can revoke a permit without reissuance for one of the following five reasons: (1) the facility is not in compliance with state and federal water pollution rules; (2) the permittee

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<sup>306</sup> Minnesota River Basin: General Phosphorus Permit – Phase I, <http://www.pca.state.mn.us/index.php/water/water-types-and-programs/surface-water/basins-and-watersheds/minnesota-river-basin/minnesota-river-basin-general-phosphorus-permit-phase-1.html?menuid=&missing=0&redirect=1>.

<sup>307</sup> *Id.*

<sup>308</sup> MINN. R. 7001.0100(1).

<sup>309</sup> *Id.* at 7001.0100(2)–(3); 7001.1070(2).

<sup>310</sup> *Id.* at 7001.0100(2).

<sup>311</sup> *Id.* at 7001.0100(4)–(5).

<sup>312</sup> *Id.* at 7001.0110(1).

<sup>313</sup> *Id.* at 7001.1070(3).

<sup>314</sup> *Id.*

<sup>315</sup> *Id.* at 7001.0140(1); 7001.1100(1).

<sup>316</sup> *Id.* at 7001.0150(1).

<sup>317</sup> *Id.* at 7001.1080(9).

<sup>318</sup> *Id.* at 7001.0160.

failed to disclose facts or submitted false information; (3) the facility endangers human health and that danger cannot be eliminated with modification; (4) the permittee failed to pay a water quality permit fee; or (5) the permittee failed to pay a penalty.<sup>319</sup>

Remedies for violations include damages, civil and criminal penalties, and injunctions.<sup>320</sup> Violators are subject to civil penalties of up to \$10,000/day with the possibility of higher fines to compensate for clean up or restoration costs.<sup>321</sup> A person who knowingly violates an effluent limitation may be imprisoned for up to a year or fined up to \$25,000/day.<sup>322</sup> The state has established defenses, which include an act of God, an act of war, negligence by the state of Minnesota, and sabotage or vandalism.<sup>323</sup> When specific sanctions do not apply, any person who willfully or negligently violates any provision of the discharging and permitting rules has committed a misdemeanor according to Minnesota law.<sup>324</sup>

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<sup>319</sup> *Id.* at 7001.0180.

<sup>320</sup> MINN. ST. ANN. § 115.071(1).

<sup>321</sup> *Id.* at § 115.071(3).

<sup>322</sup> *Id.* at § 609.671(8)(d).

<sup>323</sup> *Id.* at § 115.071(3).

<sup>324</sup> *Id.* at § 115.071(2).

## MISSISSIPPI NUTRIENT GUIDE

### I. THE SUBSTANCE: THE MISSISSIPPI NUTRIENT REGULATORY FRAMEWORK

#### A. Effluent Regulations

Mississippi has both technology-based and water quality-based effluent regulations. Technology-based effluent limitations are based on secondary treatment and the best practicable waste treatment technology.<sup>325</sup> Mississippi does not have numeric effluent nutrient criteria, but the state requires that effluent limitations in nutrient enriched waters be based on data from a water quality assessment.<sup>326</sup> Furthermore, Mississippi has established computer models for determining water-quality effluent limitations.<sup>327</sup> If the calculations for effluent limitations are completed and the allocated value is zero, limitations are determined based on effluent for conventional pollutants, though a permittee can obtain a less stringent limit by providing scientific information that supports its request for a variance.<sup>328</sup>

#### B. Water Quality Standards

In addition to effluent regulations, Mississippi has general water quality standards that POTW permittees must follow. Unlike other states, Mississippi does not have narrative water quality criteria for nutrients, but there are other general criteria that apply to nutrient pollution. In particular, the waters cannot contain municipal, industrial, agricultural, or other discharges that produce enough color, odor, taste, total suspended or dissolved solids, sediment, or turbidity to (1) create a nuisance; (2) impair public health, recreation, or aquatic life and wildlife; or (3) adversely affect the taste of fish, aesthetic quality, or a designated use.<sup>329</sup> Environmental groups can use the part of this standard relating to the creation of nuisances and injuries to public and aquatic health to advocate for more protections in POTW permits. This advocacy strategy could prove useful because of the well-documented evidence of the damage caused to aquatic life by nutrient loading.

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<sup>325</sup> See 40 C.F.R. 125.3(a) (2010); *see also* 08-030-007 MISS. CODE R. Ch. 1 § I(A)(67) (2010) (Technology based effluent limitation (TBEL) means “a minimum waste treatment requirement, established by the Department, based on treatment technology. The minimum treatment requirements may be set at levels more stringent than that which is necessary to meet water quality standards of the receiving water body as set out specifically in other sections of these regulations. TBELs shall be federal effluent guidelines if promulgated, otherwise TBELs shall be established in accordance with 40 C.F.R. 125 subpart A”).

<sup>326</sup> 08-030-007 MISS. CODE R. Ch. 2 § IV(D).

<sup>327</sup> In particular, Mississippi has established formulas for determining chlorine and ammonia allocations to ensure that the state’s water quality criteria are met. These formulas are available at: 08-030-007 MISS. CODE R. Ch. 2 Exhibit A § I(P), (R).

<sup>328</sup> *Id.* at Ch. 2 § III(A).

<sup>329</sup> 08-030-006 MISS. CODE R. § II(3) (2010).

### C. Anti-Degradation Policy

Mississippi's anti-degradation policy is designed to protect existing water quality and to upgrade water quality.<sup>330</sup> Citizens may use these standards to ensure that new and existing discharges into waterways meet the applicable state regulations for water quality. The following designations apply to all surface waterways in Mississippi:

**DEFAULT STANDARD:** Existing beneficial use designations must be maintained.<sup>331</sup> Beneficial uses are classifications of waterways that describe a primary use of a water body that benefits the state financially or otherwise. For example, common beneficial uses in Mississippi include agricultural, industrial, and fish and wildlife uses.<sup>332</sup>

**HIGH QUALITY WATERS:** High quality waters are waterways whose quality is better than what both federal and state standards require. The water quality in these waterways may not be lowered, unless it is shown that the lower water quality is necessary to accommodate important economic and social development in the affected area.<sup>333</sup>

**OUTSTANDING NATIONAL RESOURCE WATERS (ONRWs):** ONRWs are waterways of ecological, recreational, or historical significance. Waterways specifically designated as ONRWs must be maintained and protected.<sup>334</sup>

In determining the current status of waterways, Mississippi, in accordance with federal requirements, issues reports of the current chemical composition of waterways, which are called water quality assessments.<sup>335</sup> Mississippi's 2010 report on water quality is available on the Department of Environmental Quality's Website.<sup>336</sup>

### D. Total Maximum Daily Loads (TMDLs)

Section 303(d) of the Clean Water Act requires that states produce a list of waterways which do not meet water quality criteria despite effluent limitations.<sup>337</sup> These waters are designated "impaired" by the EPA. A Total Maximum Daily Load (TMDL) is a mathematical calculation which attempts to quantify the amount of a given pollutant that can be discharged into a particular water body without exceeding water quality standards. The term also refers to the document produced by state water agencies which sets limits on each pollutant discharged into

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<sup>330</sup> *Id.* at § I(1).

<sup>331</sup> *Id.*

<sup>332</sup> 08-020-001 MISS. CODE R. Ch. 1 § I(E).

<sup>333</sup> 08-030-006 MISS. CODE R. § I(1).

<sup>334</sup> *Id.*; 08-030-007 MISS. CODE R. Ch. 2 Exhibit E § II.

<sup>335</sup> Mississippi Department of Environmental Quality, Surface Water Quality Assessments, [http://www.deq.state.ms.us/MDEQ.nsf/page/FS\\_SurfaceWaterQualityAssessments?OpenDocument](http://www.deq.state.ms.us/MDEQ.nsf/page/FS_SurfaceWaterQualityAssessments?OpenDocument).

<sup>336</sup> State of Mississippi Water Quality Assessment 2010 Section 305(b) Report, *available at* [http://www.deq.state.ms.us/MDEQ.nsf/pdf/FS\\_MS\\_2010\\_305\\_b\\_report/\\$File/MS\\_2010\\_305\\_b\\_Report.pdf?OpenElement](http://www.deq.state.ms.us/MDEQ.nsf/pdf/FS_MS_2010_305_b_report/$File/MS_2010_305_b_Report.pdf?OpenElement).

<sup>337</sup> 33 U.S.C. § 1313(d).

an impaired waterway and lays out a plan for bringing that body of water into compliance with water quality standards. These limitations and the accompanying plans must be approved by the EPA.

Mississippi establishes TMDLs for waterways that do not meet water quality standards or are in danger of not meeting water quality standards.<sup>338</sup> Currently, there are 197 impaired waterways in Mississippi.<sup>339</sup> The Websites of the U.S. Environmental Protection Agency and the Mississippi Department of Environmental Quality contain the current TMDLs for some of these waterways:

- [http://iaspub.epa.gov/tmdl\\_waters10/attains\\_impaired\\_waters.control?p\\_state=MS](http://iaspub.epa.gov/tmdl_waters10/attains_impaired_waters.control?p_state=MS)
- [http://www.deq.state.ms.us/MDEQ.nsf/page/TWB\\_TMDLs?OpenDocument](http://www.deq.state.ms.us/MDEQ.nsf/page/TWB_TMDLs?OpenDocument)

The Websites list the pollutants impairing each body of water. Among the most common causes of impairment are excess nitrogen and phosphorus and low dissolved oxygen concentrations.

## **II. THE PROCEDURE: THE PUBLICLY OWNED TREATMENT WORKS PERMIT PROCESS**

### **A. Permit Requirements**

Mississippi requires an NPDES permit for any person proposing to discharge waste into Mississippi waterways.<sup>340</sup> An applicant must submit an application at least 180 days before starting to discharge waste.<sup>341</sup> Those who obtain a permit must abide by all permit limitations and conditions.<sup>342</sup> Basic federal permit conditions include limiting the duration of permits to five years, allowing for the creation of schedules that permittees must follow, and requiring technology-based effluent limitations and descriptions of monitoring practices.<sup>343</sup>

Mississippi also reserves the right to set more restrictive effluent limitations in some circumstances.<sup>344</sup> For example, the state can set more stringent limitations when they are necessary to meet the water quality standards set under the Clean Water Act, including any narrative criteria established by the state.<sup>345</sup>

### **B. Permit Public Participation Procedures**

The following steps are measures citizens can undertake in order to have an impact on POTW permits:

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<sup>338</sup> Mississippi Department of Environmental Quality, Total Maximum Daily Load Program, [http://www.deq.state.ms.us/MDEQ.nsf/page/TWB\\_Total\\_Maximum\\_Daily\\_Load\\_Section](http://www.deq.state.ms.us/MDEQ.nsf/page/TWB_Total_Maximum_Daily_Load_Section).

<sup>339</sup> U.S. Environmental Protection Agency, 2008 Section 303(d) List Fact Sheet for Mississippi, [http://iaspub.epa.gov/waters10/state\\_rept.control?p\\_state=MS&p\\_cycle=](http://iaspub.epa.gov/waters10/state_rept.control?p_state=MS&p_cycle=).

<sup>340</sup> 08-030-007 MISS. CODE R. Ch. 1 § I(B)(1).

<sup>341</sup> *Id.*

<sup>342</sup> *Id.* at Ch. 1 § IV(A)(2).

<sup>343</sup> *Id.* at Ch. 1 § IV(A)(3); 40 C.F.R. 122.43 – 122.44, 122.46 – 122.48 (2010).

<sup>344</sup> 08-030-007 MISS. CODE R. Ch. 1 § IV(A)(3).

<sup>345</sup> *Id.* at Ch. 1 § IV(A)(3)(a).

STEP ONE: The Mississippi Department of Environmental Quality makes a preliminary determination of whether to issue or deny a proposed permit.<sup>346</sup> This draft decision is then made public.<sup>347</sup>

STEP TWO: For 30 days after public notice of the decision, any person can submit his or her views on the draft permit.<sup>348</sup> All comments must be considered by the Department in rendering a final decision.<sup>349</sup> The public must be afforded access to application documents, draft permits, permit fact sheets, written comments not deemed as classified (e.g., a trade secret), and effluent data concerning water quality.<sup>350</sup>

STEP THREE: Within the comment period, an applicant, governmental agency, or interested person may petition the Mississippi Permit Board for a public hearing on a draft permit.<sup>351</sup> The petition must indicate the reasons why a hearing is requested, the petitioner's interest in the draft permit or the existing or proposed discharge, and the portions of the draft permit that warrant a hearing.<sup>352</sup> If the Permit Board determines that a petition states sufficient cause or that there is significant public interest in a public hearing, the Board may schedule one.<sup>353</sup> If a hearing is held, the Department must issue public notice of the date, time, and subjects to be covered at the hearing, and, in issuing a final decision on the permit, the Department must consider the written comments from Step Two and the public hearing record.<sup>354</sup>

STEP FOUR: Those who want to appeal the granting or denial of a permit must request a formal evidentiary hearing before the Permit Board within 30 days.<sup>355</sup> At this hearing, the Board may subpoena witnesses, administer oaths, and examine witnesses under oath.<sup>356</sup> The decision made at the formal hearing represents final agency action. Judicial review by a chancery court is available if an interested party appeals within 20 days.<sup>357</sup>

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<sup>346</sup> *Id.* at Ch. 1 § III(A)(1)–(4). As a part of this decision, the Department must include a draft permit with proposed effluent limitations, schedules of compliance, and a description of any “other proposed restrictions or other conditions determined necessary or appropriate by the [Department] which will significantly affect the discharge.”

<sup>347</sup> *Id.* at Ch. 1 § III(B)(1).

<sup>348</sup> *Id.* at Ch. 1 § III(C)(2)(a). The time for public comment may be extended by the Permit Board if the Board decides that an extension will facilitate additional public comment.

<sup>349</sup> *Id.* at Ch. 1 § III(C)(2)(b).

<sup>350</sup> *Id.* at Ch. 1 § III(E)–(F).

<sup>351</sup> *Id.* at Ch. 1 § III(G)(1)(a).

<sup>352</sup> *Id.*

<sup>353</sup> *Id.*

<sup>354</sup> *Id.* at Ch. 1 § III(H)(3).

<sup>355</sup> *Id.* at Ch. 1 § III(H)(4); MISS. CODE ANN. § 49-17-29(4)(b) (2009).

<sup>356</sup> MISS. CODE ANN. § 49-17-29(4)(b).

<sup>357</sup> *Id.* at § 49-17-29(4)(b), (5)(b). “The chancery court shall review all questions of law and fact. If no prejudicial error is found, the [decision must] be affirmed. If prejudicial error is found the decision of the [B]oard [must] be reversed and the chancery court [must] remand the matter to the Permit Board for appropriate action as may be indicated or necessary under the circumstances.”

### C. Permit Renewals

At least 180 days before the expiration of a permit, a permittee who wishes to continue operation must file an application with the Mississippi Permit Board.<sup>358</sup> The Board will reissue a permit only if the applicant meets these criteria: (1) the permittee has met or substantially met all the terms and conditions of the original permit; (2) the Board has up-to-date information on the permittee's production levels and waste treatment practices as well as the nature, contents, and frequency of discharge; and (3) the discharge satisfies effluent standards and limitations and water quality standards.<sup>359</sup>

### D. Permit Violations

Permit violations are subject to a civil penalty of not more than \$25,000.00 for each violation. Violators are also liable for any clean up costs associated with the violation. The state reserves the right to reduce penalties where the violation was discovered and promptly reported and corrected by the POTW.<sup>360</sup>

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<sup>358</sup> 08-030-007 MISS. CODE R. Ch. 1 § V(B)(1).

<sup>359</sup> *Id.* at Ch. 1 § V(B)(2).

<sup>360</sup> Miss. Code Ann. § 49-17-43(1-8).

## MISSOURI NUTRIENT GUIDE

### I. THE SUBSTANCE: THE MISSOURI NUTRIENT REGULATORY FRAMEWORK

#### A. Effluent Regulations

The state of Missouri has issued limitations for discharges of effluent into the Missouri and Mississippi Rivers.<sup>361</sup> Unfortunately, the state does not set numeric limits on nutrient pollution, but state regulations do set limits on Biochemical Oxygen Demand (BOD<sub>5</sub>), nonfilterable residues (NFRs), fecal coliform, sludges and pH.<sup>362</sup> The limit set for sludges is currently zero—sludges must be discharged by POTWs in accordance with a sludge management practice approved by the Missouri Department of Natural Resources (“Department” or “DNR”).

The pollutant limits set for POTWs are higher for those facilities which utilize a trickling filter or wastewater lagoon system. However, the Department has the discretion to lower the limits for POTWs utilizing these systems based on a facility’s capability to comply. Higher BOD<sub>5</sub> and NFR limits also apply during a “precipitation event” for wastewater in excess of the capacity of the POTW. Missouri regulations provide that the limits must be modified to comply with a total maximum daily load study, if one is conducted.<sup>363</sup>

The regulations also set monitoring requirements which POTWs must meet. Sampling requirements must be established in the facility’s permit that must include a sludge sampling system. Required sampling frequencies are determined based on the output of the facility. These requirements range from requiring only an annual report (for facilities that discharge less than 25,000 gallons per day) to collecting at least twenty samples per year (for facilities that discharge more than 1 million gallons per day).

#### B. Water Quality Standards

While specific nutrient limits do not exist for rivers, permits for new water pollution sources such as POTWs may not cause or contribute to violations of general water quality standards set by the state.<sup>364</sup> All water contaminants, including nutrients, which are introduced into the waters of the state must therefore meet certain criteria. The relevant criteria prohibit any water contaminant or combination of contaminants from preventing the maintenance of beneficial uses of the waters, or from causing:<sup>365</sup>

- the formation of putrescent, unsightly, or harmful bottom deposits,

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<sup>361</sup> Those limitations can be found at Mo. Code of State Regs, tit. 10, § 20-7.015 [hereinafter, all references to the Mo. Code of State Regs. will be indicated as “MCSR #”]. The regulation sets specific limits for discharges into many categories of waters, including 1) the Missouri and Mississippi rivers, 2) lakes and reservoirs, 3) streams, 4) metropolitan “no-discharge streams,” 5) specific wild and scenic rivers and streams, 6) aquifers, and 7) other waters.

<sup>362</sup> For more information on the limits and the exceptions described in the remainder of this subsection, see MCSR, tit. 10, § 20-7.015(2).

<sup>363</sup> For further information on Total Maximum Daily Loads, see section I.D below.

<sup>364</sup> MCSR tit. 10, § 20-6.010(9)(G).

<sup>365</sup> For a complete list of the general criteria, see MCSR, tit. 10, § 20-7.031(3).

- oil, scum, and floating debris in sufficient amounts to be unsightly,
- unsightly color or turbidity, or offensive odor,
- conditions that result in toxicity to human, animal, or aquatic life, or
- physical, chemical, or hydrologic changes that would impair the natural biological community.

### C. Anti-Degradation Policy

The Department of Natural Resources in Missouri is required to develop and implement a statewide antidegradation policy to protect existing instream uses of water and the water quality necessary to support those uses.<sup>366</sup> Missouri's antidegradation policy and a more detailed Implementation Document published by DNR require that any proposal which would create new or expanded discharges be evaluated under one of three "tiers" of review.<sup>367</sup> Waters which qualify as an "Outstanding National Resource Water" ("ONRW") or an Outstanding State Resource Water ("OSRW") are given Tier 3 review that prohibits any degradation of a water body that is not temporary.<sup>368</sup>

Unlike Tier 3 review, which prevents a specific water body from being degraded, Tier 1 and Tier 2 reviews are conducted on a *pollutant-by-pollutant* basis. Thus, the overall quality of a water body is not directly relevant to reviews under Tier 1 and 2, but only the concentration of the pollutant in question. Tier 1 review occurs where the concentration of a particular pollutant in the water body is already at, near, or exceeds the maximum allowable level under the state's water quality standards. Under Tier 1 review, new discharges will be allowed if they would not cause or contribute to a violation of the state's water quality standards.<sup>369</sup>

Tier 2 review occurs in any water body where the existing concentration of a pollutant is better than the minimum water quality criteria. By default, waters of the state are reviewed under Tier 2.<sup>370</sup> In a Tier 2 review, DNR will first determine whether a discharge will "significantly degrade" water quality. In general, unless a discharge is so limited that it will not increase the concentration of a pollutant in the water or will result in only a temporary increase, the discharge will be assumed to significantly degrade the water quality.<sup>371</sup>

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<sup>366</sup> 40 C.F.R. §131.12(a).

<sup>367</sup> The Implementation Document ("Missouri Antidegradation Rule and Implementation Procedure" last revised May, 7, 2008) can be accessed at: <http://www.dnr.missouri.gov/env/wpp/docs/aip-cwc-appr-050708.pdf>. The text of the anti-degradation regulation (MCSR, tit. 10, § 20-7.031(2)) is set forth on page 11-12 of the document. The regulation also explicitly incorporates the implementation document, so that the implementation document itself must be followed as a part of the regulations. MCSR, tit. 10, § 20-7.031(2)(D).

<sup>368</sup> Waters which have been designated ONRWs and OSRWs are listed at MCSR, tit. 10, § 20-7.031, tables D and E, respectively. The tables can be viewed at page 31 of <http://sos.mo.gov/adrules/csr/current/10csr/10c20-7A-G.pdf>.

<sup>369</sup> Implementation Document at 13.

<sup>370</sup> The Implementation Document specifies that DNR may simply proceed with tier 2 review in the absence of data that would compel tier 1 review. See Implementation Document Appendix 1, Antidegradation Decision Diagram, reproduced at page 4 of the report.

<sup>371</sup> Implementation Document at 15-16.

Assuming the discharge is found to be significant, DNR will then determine whether the proposed discharge is “necessary.” In order to do this, DNR will first require a permit applicant to identify possible pollution control measures and other possible designs (e.g., alternate discharge locations, improved operation and maintenance of the treatment facility, seasonal or controlled discharges, etc.) that would be practicable, affordable and economically efficient.<sup>372</sup> If DNR determines that no reasonable alternatives exist to prevent significant degradation, it will then look to whether allowing the discharge is “necessary to allow important economic and social development in the geographical area in which the waters are located.”<sup>373</sup> If DNR determines that the project is necessary to create social and economic benefit, and that no reasonable alternatives exist, it will issue the permit.

Under the federal Clean Water Act, DNR also maintains a Water Quality Inventory Report and a list of waterways which are impaired for one or more designated uses on a pollutant-by-pollutant basis. These listings may be useful in determining whether a Tier 1 review is appropriate since they contain a list of waterways that have not yet met the applicable mandatory federal and state water quality criteria. The 2008 lists are available on the Missouri Department of Natural Resources’ website:

- <http://www.dnr.mo.gov/env/wpp/waterquality/303d/2008/2008-303d-final.pdf>.<sup>374</sup>

The overall Water Quality Inventory Report is available at:

- <http://www.dnr.mo.gov/env/wpp/waterquality/305b/index.html>.

Missouri Anti-degradation Decision Diagram: The following chart depicts the anti-degradation review process in Missouri.<sup>375</sup> Section numbers referred to in the diagram are sections of the Implementation Document and acronyms used are defined in the Implementation Document’s glossary.

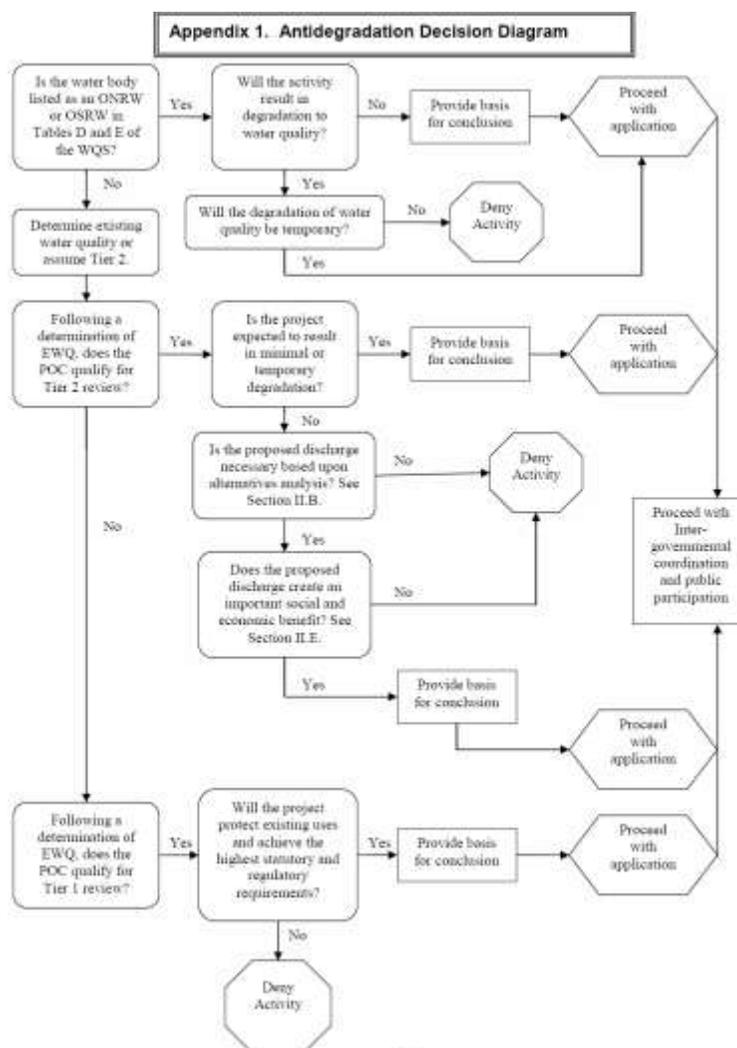
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<sup>372</sup> The Implementation Document gives an overview of the procedure for identifying and evaluating alternatives at pages 23–28.

<sup>373</sup> MCSR, tit. 10, § 20-7.031(2)(B), reproduced in the Implementation Document at 11–12. The Implementation Document discusses the process by which DNR may determine that the issuance of a permit will have social and economic benefits at pages 29–31.

<sup>374</sup> When complete, the 2010 list will be located at: <http://www.dnr.mo.gov/env/wpp/waterquality/303d.htm>.

<sup>375</sup> Implementation Document at 40.



**Figure 1**

#### D. Total Maximum Daily Loads (TMDLs)

Section 303(d) of the Clean Water Act requires that states produce a list of waterways which do not meet water quality criteria despite effluent limitations.<sup>376</sup> These waters are designated “impaired” by the EPA. A Total Maximum Daily Load (TMDL) is a mathematical calculation which attempts to quantify the amount of a given pollutant that can be discharged into a particular water body without exceeding water quality standards. The term also refers to the document produced by state water agencies which sets limits on each pollutant discharged into an impaired waterway and lays out a plan for bringing that body of water into compliance with water quality standards.<sup>377</sup> These limitations and the accompanying plans must be approved by the EPA.

<sup>376</sup> 33 U.S.C. § 1313(d).

<sup>377</sup> More information on TMDLs in Missouri is available at: <http://www.dnr.mo.gov/env/wpp/tmdl/index.html>.

As of 2008, there were 204 impaired waterways in Missouri, at least four of which are impaired for nutrients.<sup>378</sup> Though DNR has not completed individual TMDL documents for every impaired waterway, those that do exist are available on the DNR website.<sup>379</sup> The documents also list the reasons why a specific waterway is designated as impaired. The most common problems associated with nutrient pollution are excess nitrogen and phosphorus and low dissolved oxygen concentrations.

## II. THE PROCEDURE: THE PUBLICLY OWNED TREATMENT WORKS PERMIT PROCESS

### A. Permit Requirements

Missouri regulations require water pollution sources to have National Pollutant Discharge Elimination System (“NPDES”) permits. NPDES permits must be obtained for any construction, alteration or operation of a pollution source.<sup>380</sup> Officials at POTWs or other facilities must obtain separate construction and operating permits and must have been granted the permit before any discharge occurs. Missouri rules prohibit the Department from issuing a permit if the terms of a permit would cause a violation of state or federal laws or regulations or where the permit’s conditions do not ensure compliance with applicable water quality requirements in other states.

An application for a construction permit must be submitted at least 180 days before construction is scheduled to begin or must include a detailed justification why there should be a shorter timeline.<sup>381</sup> The application must include plans and specifications for the proposal, a detailed engineer’s report, a scale drawing showing the location of all outfalls, a flowchart indicating each process which contributes to an outfall, the application form, fee, and any other information that DNR requires to determine if the facility will comply with clean water laws.

Applications for an operating permit must be received at least 30 days before a POTW begins to receive wastewater.<sup>382</sup> The application must include an application form and fee, a scale drawing and flowchart similar to those required for the construction permit, and certification by an engineer that the project was completed according to the plans and specifications approved in the construction permit.

POTWs must also be able to identify any substance or pollutant (or combination of substances or pollutants) that would disrupt the treatment process or that would cause the POTW to violate water quality standards.<sup>383</sup> DNR may inspect a facility in order to ensure that the POTW adheres to the plans provided to the Department and to clean water laws generally. POTWs that have

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<sup>378</sup> US Environmental Protection Agency, Watershed Assessment, Tracking and Environmental Results, [http://iaspub.epa.gov/waters10/attains\\_nation\\_cy.control?p\\_report\\_type=T](http://iaspub.epa.gov/waters10/attains_nation_cy.control?p_report_type=T).

<sup>379</sup> <http://www.dnr.mo.gov/env/wpp/tmdl/wpc-tmdl-EPA-Appr.htm>.

<sup>380</sup> The rules governing construction and operation permits are set forth at MCSR tit. 10, § 20-6.010.

<sup>381</sup> The text provides only an overview of the requirements for a construction permit. The complete list can be found at MCSR tit. 10, § 20-6.010(4).

<sup>382</sup> The discussion of operating permits in this section provides most of the relevant permit requirements. For those interested in the complete list, see MCSR tit. 10, § 20-6.010(5).

<sup>383</sup> There are a number of requirements that apply specifically to POTWs. These requirements (in addition to being summarized above) are enumerated at MCSR tit. 10, § 20-6.010(8).

been granted permits are required to give the DNR notice if new pollutants are introduced into their facility or if there is a substantial change in the volume or character of a pollutant that is already present. This notice must include any anticipated impacts on the quantity or quality of the effluent the POTW discharges.

## **B. Permit Public Participation Procedures**

Once a complete application has been submitted to the Department, DNR reviews the application to make a preliminary determination of whether a permit should be issued. If the Department decides to issue an operating permit, then a draft operating permit or “permit pending” is normally created containing the proposed terms and conditions of the permit, effluent limitations and standards, applicable compliance schedules, and monitoring requirements.<sup>384</sup> The Department is also required to provide public notice and allow comment on the proposal to build a POTW before issuing a construction permit.<sup>385</sup> Comments must be accepted for at least 30 days, and the Department must give consideration to the comments before issuing its decision.

Other states that may be affected by issuance of a permit must also be given a chance to provide written comment. If another state recommends changes to a permit, DNR must either incorporate those recommendations or send the state a written explanation of its decision not to do so. In general, the public must be granted access to permit applications, draft permits, supporting documents, and reports concerning these documents, except where publication of these documents would lead to the disclosure of trade secrets.

When “significant water quality concerns are raised during the comment period,” DNR may hold a meeting to discuss the application and for the public to offer input.<sup>386</sup> This hearing must occur near the proposed discharge and notice must be given to the public of the time, place and subjects to be covered in the hearing at least 30 days in advance. A public hearing may also be requested by an interested party. The Department must grant that request if there is “significant technical merit and concern related to the responsibilities of the Missouri Clean Water Law.”<sup>387</sup> In “instances of doubt,” the DNR should opt to hold the hearing.

Within 30 days of DNR’s decision to issue or deny a permit, an appeal may be made to the Missouri Clean Water Commission. Appeals may be brought by the permit applicant or by any other party who has an interest that may be adversely affected by the Department’s decision. Appeals must adhere to a specific format, as outlined in the Missouri Code of State Regulations.<sup>388</sup>

If the administrative appeals process is unsuccessful, a party may also challenge the permitting decision in court.<sup>389</sup> However, the agency decision will be overturned only in very limited

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<sup>384</sup> MCSR tit. 10, § 20-6.020(4)(F).

<sup>385</sup> Detailed requirements for public notice and comment can be found at MCSR tit. 10, § 20-6.020.

<sup>386</sup> MCSR tit. 10, § 20-6.020(1)(H).

<sup>387</sup> MCSR tit. 10, § 20-6.020(4)(A).

<sup>388</sup> MCSR tit. 10, § 20-6.020(7). Appeals must be filed with the secretary of the Commission and must set forth the reasons why the appellant believes the actions of the Department or Commission should be reversed or modified.

<sup>389</sup> Missouri Annotated Statutes (MAS) at § 536.100.

circumstances. These include instances in which the permit was in violation of the law or of constitutional provisions, where the agency failed to follow the legal procedural requirements in making its decision, where the decision was “unsupported by competent and substantial evidence,” or where it was “arbitrary, capricious, unreasonable, . . . or involve[d] an abuse of discretion.”<sup>390</sup> Citizen suits are also available to compel compliance with a permit and to recover damages for violations.<sup>391</sup>

### C. Permit Renewal or Modification

Permits may be renewed by applying at least 180 days before their expiration.<sup>392</sup> Permit renewals are evaluated according to the same criteria upon which new permits are evaluated. A permit can be modified after proper public notice and opportunity for comment if a “wasteload allocation study” has shown that more stringent limitations are necessary to protect instream water quality.

### D. Permit Violations

If any of the terms or conditions of a permit are violated, an administrative or monetary penalty may be levied on the violator up to a statutory maximum. The magnitude of the penalty will depend on an assessment of the gravity of the violation and may include such factors as whether the violation occurred for multiple days and whether there were economic benefits of non-compliance. This “gravity-based assessment” evaluates the degree of the potential harm that a violation could have caused and “the extent to which the violation deviates from the requirements of the Missouri Clean Water Law.”<sup>393</sup> Criminal penalties may also be assessed against violators.

All POTWs have the power to obtain a remedy for non-compliance by an industrial user. POTWs can seek a court order requiring the industrial user to cease noncompliance or may ask the court to assess civil or criminal penalties of \$1,000 per day or more for each violation of pretreatment standards and requirements unless state law otherwise limits such penalties.<sup>394</sup>

Citizens can access information on specific permits via the Missouri Department of Natural Resources’ Website.<sup>395</sup> For further information about permit compliance, citizens can e-mail [cleanwater@dnr.mo.gov](mailto:cleanwater@dnr.mo.gov).

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<sup>390</sup> See MAS at § 536.140(2).

<sup>391</sup> See MAS at § 444.880.

<sup>392</sup> MCSR tit. 10, §20-6.010.

<sup>393</sup> The full procedure for determining penalties can be found at MCSR tit. 10, §20-3.010.

<sup>394</sup> MCSR tit. 10, § 20-6.100(F).

<sup>395</sup> For proposed permits, see <http://www.dnr.mo.gov/env/wpp/permits/permit-pn.htm>, for final permits, see <http://www.dnr.mo.gov/env/wpp/permits/wpcpermits-issued.htm>.

## TENNESSEE NUTRIENT GUIDE

### I. THE SUBSTANCE: THE TENNESSEE NUTRIENT REGULATORY FRAMEWORK

#### A. Effluent Regulations

Effluent limitations for publicly owned treatment works require the application of the best practicable waste treatment technology.<sup>396</sup> For pretreatment, Tennessee requires standards that prevent the introduction of pollutants that could interfere with, pass through, or otherwise be incompatible with POTWs.<sup>397</sup>

In addition to these specific requirements for POTWs, all effluent limitations and standards must meet or exceed the standards set by the U.S. EPA.<sup>398</sup> Similarly, all pollutants must receive the treatment or corrective action required by the effluent limitations and water quality standards established by the U.S. EPA.<sup>399</sup> When numeric effluent limitations are not feasible, Tennessee calls for the application of best management practices, which normally include the development of compliance schedules, maintenance procedures, treatment requirements, operating procedures, and other methods for controlling waste discharges.<sup>400</sup> Although Tennessee regulations do not include strict requirements for these practices, they do adopt a ceiling; for example, compliance schedules dictate that the schedule must be met “as soon as possible,” but no later than the deadline under federal law.<sup>401</sup>

Permit effluent limitations for POTWs are calculated on the basis of design flow, which is the wastewater flow rate the plant was built to handle.<sup>402</sup> Permit effluent limitations for continuous discharges must be expressed as maximum daily and monthly averages. Continuous discharges from POTWs require a weekly average,<sup>403</sup> and effluent limitations for non-continuous discharges must be based on frequency, total mass, maximum rate of discharge, and concentration of specified pollutants.<sup>404</sup> All of these limitations must be based on a reasonable measure of actual production.<sup>405</sup>

Municipal and domestic wastewater treatment plants must achieve technology-based, maximum secondary treatment effluent limitations.<sup>406</sup> These limitations must include monthly and weekly average concentrations, daily maximum amounts, and daily maximum amounts for five-day,

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<sup>396</sup> Rules of the Tennessee Department of Environment & Conservation R. 1200-04-05-.08(1)(c) (2010) [hereinafter, all references to the Rules of the Tennessee Department of Environment & Conservation will be indicated in the form “rule-chapter.subchapter”]

<sup>397</sup> 1200-04-05.08(1)(e).

<sup>398</sup> 1200-04-05.08(1)(f).

<sup>399</sup> 1200-04-05.08(1)(g).

<sup>400</sup> 1200-04-05.08(1)(i); 40 C.F.R. 122.2 (2010).

<sup>401</sup> 1200-04-05-.08(1)(h).

<sup>402</sup> 1200-04-05-.08(1)(l).

<sup>403</sup> 1200-04-05-.08(1)(m).

<sup>404</sup> 1200-04-05-.08(1)(n).

<sup>405</sup> 1200-04-05-.08(1)(o).

<sup>406</sup> 1200-04-05.09(1)(a).

20°C biochemical or carbonaceous biochemical oxygen demand (BOD<sub>5</sub> or CBOD<sub>5</sub>) and suspended solids.<sup>407</sup>

For BOD<sub>5</sub>/CBOD<sub>5</sub>, the state requires:

- a monthly average concentration of 30/25 mg/l,
- a weekly average concentration of 40/35 mg/l,
- a daily maximum concentration of 45/40 mg/l, and
- a monthly average removal of 85%.<sup>408</sup>

For suspended solids, the state has established:

- a monthly average concentration of 30 mg/l,
- a weekly average concentration of 40 mg/l,
- a daily maximum concentration of 45 mg/l, and
- a monthly average removal of 85%.<sup>409</sup>

In addition, where harmful materials are acquired in a collection system, effluent limitations applicable to the treatment system must be met.<sup>410</sup> Limitations on chlorine may also be required to prevent harmful amounts of its discharge to the receiving waters.<sup>411</sup>

## B. Water Quality Standards

Tennessee divides its water quality criteria into different categories according to designated uses. These categories are domestic water supply, industrial water supply, fish and aquatic life, recreation, irrigation, livestock watering and wildlife, and navigation.<sup>412</sup> These uses have different standards for odor, color, pH levels, dissolved oxygen levels, and other kinds of traditional pollutants. Even though Tennessee has not established a complete list of formal nutrient criteria, numeric criteria have been developed for some nutrient pollutants, and nutrient pollution conditions in the permitting process are to be set in accordance with the *Development of Regionally-Based Interpretations of Tennessee's Narrative Nutrient Criterion*.<sup>413</sup> Moreover, the state has established non-numeric criteria for nutrients in the designated use categories of fish and aquatic life as well as recreation.<sup>414</sup> For each, the waters cannot contain nutrients in

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<sup>407</sup> “In some cases, the daily maximum amount may be replaced by a minimum daily percent removal requirement.”  
*Id.*

<sup>408</sup> 1200-04-05-.09(1)(a)(1).

<sup>409</sup> *Id.*

<sup>410</sup> 1200-04-05-.09(1)(a).

<sup>411</sup> *Id.*

<sup>412</sup> 1200-04-03-.03.

<sup>413</sup> TENNESSEE DEPARTMENT OF ENVIRONMENT & CONSERVATION, DEVELOPMENT OF REGIONALLY-BASED INTERPRETATIONS OF TENNESSEE'S NARRATIVE NUTRIENT CRITERIA, [http://www.state.tn.us/environment/wpc/publications/pdf/nutrient\\_final.pdf](http://www.state.tn.us/environment/wpc/publications/pdf/nutrient_final.pdf). For a timeline of the development of these standards and future goals, see TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION, TENNESSEE'S PLAN FOR NUTRIENT CRITERIA DEVELOPMENT 29–34 (2004), *available at* <http://www.state.tn.us/environment/wpc/publications/pdf/NutrientCriteriaWorkplanRev.pdf>.

<sup>414</sup> 1200-04-03-.03(3)(k), (4)(h).

concentrations that stimulate aquatic plant and/or algae growth such that either aquatic habitat substantially decreases or the public's recreational use of waterways is detrimentally affected.<sup>415</sup>

### C. Anti-Degradation Policy

The following categories comprise the anti-degradation framework for Tennessee.

**UNAVAILABLE CONDITIONS:** This condition exists when water quality is at or fails to meet the criterion for one or more of the pollutant parameters.<sup>416</sup> Discharges that would cause or contribute to a condition of impairment are prohibited, and where habitat alteration leads to impairment, additional loss of that habitat is prohibited unless the impact can be minimized.<sup>417</sup>

**AVAILABLE CONDITIONS:** This condition exists when water quality is better than the applicable parameter standard.<sup>418</sup> New or additional degradation will only be allowed if the applicant demonstrates that reasonable alternatives are not feasible.<sup>419</sup> The alternatives analysis must include an assessment of all potential alternatives as well as social and economic considerations and environmental consequence.<sup>420</sup>

**EXCEPTIONAL TENNESSEE WATERS:** These waterways include the following seven categories: (1) state or national parks, wildlife refuges, forests, wilderness areas, or natural areas; (2) State Scenic Rivers or Federal Wild and Scenic Rivers; (3) federally-designated critical habitat or other waters with threatened or endangered aquatic plants or animals; (4) waters within areas designated as Lands Unsuitable for Mining; (5) waters with naturally reproducing trout; (6) waters with exceptional biological diversity; or (7) other waters with outstanding ecological, or recreational value.<sup>421</sup> Degradation of these waters is prohibited unless it can be shown that a change is needed for economic or social development and that the change will not interfere with the existing uses of the waters.<sup>422</sup>

**OUTSTANDING NATIONAL RESOURCE WATERS:** These high-quality waterways represent outstanding national resources, including waters of National and State parks and wildlife refuges or waters with exceptional recreational or ecological significance.<sup>423</sup> New discharges, expansions of existing discharges, and mixing zones are prohibited unless they do not lead to measurable degradation of the water quality.<sup>424</sup>

In determining which framework for anti-degradation review is applicable to a given waterway, citizens can consult *The Status of Water Quality in Tennessee* for the water quality compliance

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<sup>415</sup> *Id.*

<sup>416</sup> 1200-04-03-.06(2).

<sup>417</sup> *Id.*

<sup>418</sup> 1200-04-03-.06(3).

<sup>419</sup> *Id.*

<sup>420</sup> 1200-04-03-.06(3)(a).

<sup>421</sup> 1200-04-03-.06(4)(a).

<sup>422</sup> 1200-04-03-.06(4)(c).

<sup>423</sup> 1200-04-03-.06(5).

<sup>424</sup> *Id.*

for all waterways in the state as of 2008.<sup>425</sup> For a listing of all impaired waterways in the state, citizens can consult the *Draft 2010 303(d) List of Impaired Waters in Tennessee*.<sup>426</sup>

#### **D. Total Maximum Daily Loads (TMDLs)**

Section 303(d) of the Clean Water Act requires that states produce a list of waterways which do not meet water quality criteria despite effluent limitations.<sup>427</sup> A Total Maximum Daily Load (TMDL) is a mathematical calculation which attempts to quantify the amount of a given pollutant that can be discharged into a particular water body without exceeding water quality standards. The term also refers to the document produced by state water agencies which sets limits on each pollutant discharged into an impaired waterway and lays out a plan for bringing that body of water into compliance with water quality standards. These limitations and the accompanying plans must be approved by the EPA.

Tennessee establishes TMDLs for waterways that do not meet water quality standards.<sup>428</sup> Currently, there are 900 impaired waterways in Tennessee.<sup>429</sup> The websites of the U.S. Environmental Protection Agency and the Tennessee Department of Environment and Conservation contain the current TMDLs for specific waterways:

- [http://iaspub.epa.gov/tmdl\\_waters10/attains\\_impaired\\_waters.control?p\\_state=TN](http://iaspub.epa.gov/tmdl_waters10/attains_impaired_waters.control?p_state=TN)
- <http://www.state.tn.us/environment/wpc/tmdl/approved.shtml>

### **III. THE PROCEDURE: THE PUBLICLY OWNED TREATMENT WORKS PERMIT PROCESS**

#### **A. Permit Requirements**

To discharge pollutants from point sources directly into the surface waters of Tennessee, a person must obtain a National Pollutant Discharge Elimination System (NPDES) permit from the Tennessee Division of Water Pollution Control (WPC).<sup>430</sup> In Tennessee, industries that send their waste to POTWs are considered indirect dischargers and therefore are not required to get a NPDES permit.<sup>431</sup> However, indirect discharges to POTWs are subject to the permitting structure of the municipalities in which they are located.<sup>432</sup> When a POTW discharges wastewater, it is required to use the Environmental Protection Agency's NPDES Application 2A,

<sup>425</sup> TENNESSEE DEPARTMENT OF ENVIRONMENT & CONSERVATION, 2008 305(B) REPORT: THE STATUS OF WATER QUALITY IN TENNESSEE, [http://tn.gov/environment/wpc/publications/pdf/2008\\_305b.pdf](http://tn.gov/environment/wpc/publications/pdf/2008_305b.pdf).

<sup>426</sup> TENNESSEE DEPARTMENT OF ENVIRONMENT & CONSERVATION, DRAFT 2010 303(D) LIST OF IMPAIRED WATERS IN TENNESSEE, <http://tn.gov/environment/wpc/publications/pdf/2008pf303dlist.pdf>.

<sup>427</sup> 33 U.S.C. § 1313(d).

<sup>428</sup> Tennessee Department of Environment & Conservation, Division of Water Pollution Control, Total Maximum Daily Load, <http://www.state.tn.us/environment/wpc/tmdl/>.

<sup>429</sup> U.S. Environmental Protection Agency, [http://iaspub.epa.gov/waters10/attains\\_state.control?p\\_state=TN&p\\_cycle=2008](http://iaspub.epa.gov/waters10/attains_state.control?p_state=TN&p_cycle=2008).

<sup>430</sup> Tennessee Department of Environment & Conservation, National Pollutant Discharge Elimination System (NPDES) Permits, <http://www.tn.gov/environment/permits/npdes.shtml>.

<sup>431</sup> *Id.*

<sup>432</sup> *Id.*

which can be downloaded from the Tennessee Department of Environment and Conservation's website: <http://www.state.tn.us/environment/permits/h2oforms.shtml>.

Permits for discharging from POTWs are subject to terms and conditions, and permittees have a duty to comply with them.<sup>433</sup> Permittees can file for a modification, revocation and reissuance, or termination of the permit for cause. Permits are not transferrable unless notice is given to the commissioner of the Department of Environment and Conservation.<sup>434</sup> Permittees must properly operate and maintain their facilities and the commissioner has the right to enter, inspect, sample, or monitor the facilities and have access to any applicable records.<sup>435</sup> Permittees must also provide notice to the department of any physical alterations or additions to the facility.<sup>436</sup>

The terms and conditions prohibit both bypasses, which are intentional diversions of waste streams from a facility, and sanitary sewer overflows. However, bypasses are allowed if they are unavoidable or there are no feasible alternatives, and a bypass that does not exceed effluent limitations is allowed only if it is essential for operations. Additionally, non-compliance that threatens human health or the environment must be reported within 24 hours.<sup>437</sup> However, "upsets", which are exceptional incidents beyond the control of the permittee, can be used as a defense against an action brought by the state for non-compliance by the permittee.<sup>438</sup> When non-compliance occurs, permittees must minimize the adverse impact(s) on Tennessee's waters.<sup>439</sup> Finally, permittees must give notice to the commissioner whenever new pollutants are introduced into POTWs from a source that would be considered a new source if it were discharging pollutants directly and, more broadly, from any sources, new or existing, that would require a permit if the source was discharging pollutants directly.<sup>440</sup> Additionally, notification is required for POTWs if there is any substantial change in the volume or character of the pollutants treated.<sup>441</sup>

The commissioner has the discretion to specify average and maximum daily quantitative limitations for the level of pollutants in the discharge measured by weight.<sup>442</sup> The commissioner may also impose daily average and daily maximum concentration limits for pollutants.<sup>443</sup> And more stringent effluent limitations may be imposed in order to comply with an area-wide waste treatment management plan or to comply with applicable federal and state laws or regulations.<sup>444</sup>

## B. Permit Public Participation Procedures

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<sup>433</sup> 1200-04-05-.07(1)(a), (2)(a).

<sup>434</sup> 1200-04-05-.07(2)(d), (k).

<sup>435</sup> 1200-04-05-.07(2)(c), (g), (h).

<sup>436</sup> 1200-04-05-.07(2)(j).

<sup>437</sup> 1200-04-05-.07(2)(o).

<sup>438</sup> 1200-04-05-.07(2)(p).

<sup>439</sup> 1200-04-05-.07(2)(q).

<sup>440</sup> 1200-04-05-.07(2)(s).

<sup>441</sup> *Id.*

<sup>442</sup> 1200-04-05-.07(1)(c).

<sup>443</sup> *Id.*

<sup>444</sup> 1200-04-05-.07(1)(a).

Once a discharge application is submitted to the Department of Environment and Conservation, the applicant must notify the public of the filing of the application.<sup>445</sup> After reviewing the application, the Department must make a tentative decision to issue or deny the permit.<sup>446</sup> If the Department decides to issue the permit, a draft permit with effluent limitations and a compliance schedule must be issued.<sup>447</sup> Public notice of the tentative decision is required and the Department must allow 30 days for public comment on the decision.<sup>448</sup> If any interested persons provide comments, those comments must be considered when making the final permit determination.<sup>449</sup> An interested party can also request a public hearing on any application, though that request must be filed within the period allowed for public comment and must indicate the reasons why a hearing is warranted.<sup>450</sup> If there is a substantial public interest in a hearing, the commissioner must hold one in the geographic area of the proposed discharge.<sup>451</sup>

Applicants for permits who disagree with the denial, terms, or conditions of a permit can request review by the Tennessee Water Quality Control Board.<sup>452</sup> To qualify for review, denied applicants, permittees and other aggrieved persons must meet four criteria: they must (1) have submitted a written comment during the public comment period on the permit; (2) have engaged in other direct communication with the Department regarding the proposed action; (3) given testimony at a formal public hearing on the permit; or (4) attended a public hearing.<sup>453</sup> All appeals must be filed within 30 days after notice of the permit issuance, denial, or modification.<sup>454</sup>

Judicial review of the Department's final decision is available if all administrative appeals have been exhausted.<sup>455</sup> The first step involves filing a petition for review in the chancery court of Davidson County within 60 days of the Department's final action.<sup>456</sup>

### C. Permit Renewals

Permits are granted for up to five years.<sup>457</sup> A permittee seeking to continue to operate under the terms of a permit must re-apply.<sup>458</sup> In determining whether to re-issue a permit, the Department must insure that the permittee is in compliance with the existing permit, that the Department has current records of production, waste treatment practices, nature, contents, and frequency of the

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<sup>445</sup> 1200-04-05-.06(1).

<sup>446</sup> 1200-04-05-.06(2).

<sup>447</sup> *Id.*

<sup>448</sup> 1200-04-05-.06(7). No notice is necessary if the application is denied. 1200-04-05-.06(5)(a).

<sup>449</sup> 1200-04-05-.06(11).

<sup>450</sup> 1200-04-05-.06(12).

<sup>451</sup> 1200-04-05-.06(12).

<sup>452</sup> 1200-04-05-.12(1).

<sup>453</sup> 1200-04-05-.12(3)(a)-(d).

<sup>454</sup> 1200-04-05-.12(5).

<sup>455</sup> TENN. CODE ANN. § 4-5-322 (2010).

<sup>456</sup> *Id.* at § 4-5-322(b)(1)(A).

<sup>457</sup> 1200-04-05-.11(1).

<sup>458</sup> 1200-04-05-.11(2).

permittee's discharges, and that the discharges are consistent with the effluent limitations as well as state and federal water quality standards.<sup>459</sup>

When renewing a permit, effluent limitations must be at least as stringent as the previous limitations unless the following factors are present: (1) the circumstances have changed substantially since the permit was first issued; (2) substantial alternations or additions to the permitted facility would justify a less stringent effluent limitation; (3) new information is available that would have resulted in a less stringent effluent limitation or (4) technical errors or incorrect interpretations of law were made when the permit was issued; (5) uncontrollable circumstances for which no remedy is available or (6) if the permittee has installed and operated the treatment facilities required to meet the effluent limitations and still cannot achieve the previous effluent limitations, the limitations in the reviewed permit may reflect the pollution control actually achieved.<sup>460</sup> These exceptions do not apply, however, if a less stringent limitation would lead to a violation of a water quality standard.<sup>461</sup>

#### **D. Permit Violations**

If a permittee fails to comply with the terms and conditions, the permittee will be in violation of the Tennessee Water Quality Control Act.<sup>462</sup> Remedies for violations include damages, civil and criminal penalties, and injunctions.<sup>463</sup> The commissioner can assess damages for the cost of investigating and enforcing the regulations, the cost of removing, correcting, and terminating any pollution, and any loss or destruction of wildlife, fish, or aquatic life caused by the pollution or violation.<sup>464</sup> Penalties can be assessed for violation of an effluent limitation, the terms and conditions of a permit, the failure to complete a filing or reporting false information to the Department, failing to allow inspection of the facility, violation of a final order of the Department, or when an industrial user violates pretreatment standards or fails to pay recovery charges.<sup>465</sup> Civil penalties can be assessed up to \$10,000 per day for as long as the violation continues.<sup>466</sup> Citizens can access enforcement data using the Tennessee Department of Environment and Conservation's Enforcement Database.<sup>467</sup>

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<sup>459</sup> 1200-04-05-.11(3).

<sup>460</sup> 1200-04-05-.08(1)(j).

<sup>461</sup> 1200-04-05-.08(1)(j)(8).

<sup>462</sup> 1200-04-05-.07(1)(a), (2)(a).

<sup>463</sup> 1200-04-01-.03(1)(c).

<sup>464</sup> TENN. CODE ANN. § 69-3-116(c) (2009).

<sup>465</sup> *Id.* at § 69-3-115(a)(1).

<sup>466</sup> *Id.*

<sup>467</sup> Tennessee Department of Environment and Conservation, [http://environment-online.state.tn.us:7654/pls/enf\\_reports/f?p=9001:610:669905059076452](http://environment-online.state.tn.us:7654/pls/enf_reports/f?p=9001:610:669905059076452).

## WISCONSIN NUTRIENT GUIDE

### I. THE SUBSTANCE: THE WISCONSIN NUTRIENT REGULATORY FRAMEWORK

#### A. Effluent Regulations

The Wisconsin Department of Natural Resources (Department) is required by law to set a numeric limit for phosphorus in the absence of federal standards. The Department is not required to set limitations for nitrogen but can in its discretion.<sup>468</sup> For phosphorus, publicly owned treatment works (POTWs) whose wastewater discharge contains more than 150 pounds of total phosphorus per month are limited to an effluent discharge of 1mg/L of total phosphorus as a monthly average.<sup>469</sup> The Department must determine whether the permittee is discharging more than this limit based on the amount of phosphorus contained in the wastewater effluent during periods of discharge or operation.<sup>470</sup> Further, the Department may also require any discharger to remove excess amounts of phosphorus when the Department determines, in its best professional judgment, that this requirement will improve water quality or preserve water quality when long-term discharge may impair water quality.<sup>471</sup>

A permittee may request an alternative effluent limitation in cases (1) where the 1.0 mg/L standard is not “practically achievable;” (2) where biological removal technologies will “achieve a level of performance equivalent to” the 1.0 mg/L effluent standard; (3) where phosphorus-deficient wastewaters require adding phosphorus to comply with other effluent limitations; and (4) for discharges not into the basins of the Great Lakes or the Fox (Illinois) River where achieving the 1 mg/L effluent standard would not significantly improve water quality or the attainment of water quality standards for the receiving water.<sup>472</sup> The Department determines whether to grant an alternative limitation using its “best professional judgment.”

The Department must include in the permit a reasonable compliance schedule that cannot extend beyond three years from the date of permit issuance or reissuance, unless the Department determines that circumstances beyond the permittee’s control require additional time. If these circumstances exist, the permittee must comply with the phosphorus standards no longer than five years from the date of permit issuance or reissuance.<sup>473</sup>

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<sup>468</sup> Wisc. Stat. Ann. § 283.11(3) (West 2010).

<sup>469</sup> Wis. Admin. Code [Dept. of Natural Resources] § 217.04(1)(a)(1) (2010) [hereinafter, all references to the Wisconsin Administrative Code, Department of Natural Resources, will be indicated by “WAC § (#)”. This applies to all POTWs which discharge wastewater into surface waters. WAC § 210.02.

<sup>470</sup> WAC § 217.04(1)(a)(6). To determine if the permit limit is being violated, the Department must examine the data available or require monitoring.

<sup>471</sup> WAC § 102.06. The Department can establish limitations for total phosphorus based on surface water quality, and these limitations must include an evaluation of the discharges from all sources and a “consideration of a margin of safety.”

<sup>472</sup> WAC § 217.04(2)(1). The Department must consider “treatment technologies, process changes, and phosphorus minimization steps” and take into account “energy, economic and environmental impacts.”

<sup>473</sup> *Id.* In practice, the Department renews these compliance schedules and variances from meeting the standard in subsequent permit reissuance reviews.

## B. Water Quality Standards

Wisconsin has the general goal of preserving and enhancing the quality of waters. Further, activities must be controlled so that all waters meet four conditions at all times and under all flow conditions: First, substances that result in deposits on shore or in the bed of a body of water must not be present in amounts that interfere with public rights in waters of the state. Second, floating or submerged material must not be present in amounts that interfere with public rights in waters of the state. Third, materials that produce color, odor, taste, or unsightliness must not be present in amounts that interfere with public rights in waters of the state. Fourth, concentrations or combinations of substances that are toxic or harmful to humans must not be present in amounts of public health significance, and substances must not be present in amounts that are acutely harmful to animal, plant, or aquatic life.<sup>474</sup>

The Department has issued a Guidance Document that directs permit drafters to rely more on the effluent limitations for phosphorus as opposed to the more general water quality standards.<sup>475</sup>

## C. Anti-Degradation Policy

Water quality cannot be lowered unless it has been “affirmatively demonstrated” to the Department that the lowering is necessary for economic and social development and that the new or increased effluent does not interfere with, or become injurious to, current uses or presently possible uses.<sup>476</sup> The Department’s purpose for its anti-degradation rule is to address new or increased discharges to surface waters.<sup>477</sup> A new discharge is a point source that did not have a discharge permit as of March 1, 1989. Increased discharges are changes in concentrations, levels, or mass loadings of a particular pollutant that exceed the limit in the discharge permit.

Wisconsin classifies state waterways in groups based on designated uses: (1) Outstanding resource waters; (2) Exceptional resource waters; (3) Great Lakes system waters; (4) Fish and aquatic life waters; and (5) specific waterways listed in the Wisconsin Administrative Code, Department of Natural Resources chapter, §§ 104.05 to 104.10, tables 3 to 8.<sup>478</sup> The rules for new or increased discharges depend on the type of use.

Outstanding resource waters are listed in § 102.10 of the Wisconsin Administrative Code, and new or increased discharges are allowed only if they maintain existing water quality. Exceptional resource waters are listed in § 102.11 of the Wisconsin Administrative Code. New discharges are only allowed if they maintain existing water quality and only if the discharge is not needed to prevent or correct an existing surface water contamination problem. However, increased

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<sup>474</sup> WAC § 102.04.

<sup>475</sup> Wisconsin Department of Natural Resources, Determining Reasonable Potential for Narrative Standards (2006).

<sup>476</sup> WAC § 102.05(1)(a).

<sup>477</sup> See Wisconsin Department of Natural Resources, Antidegradation (2009),

<http://dnr.wi.gov/org/water/wm/wqs/antideg.htm> (providing an explanation of Wisconsin’s anti-degradation policy).

<sup>478</sup> WAC § 102.05(1)(b).

discharges or new discharges needed to prevent or correct existing contamination problems are treated like discharges within fish and aquatic uses waters.

Waters designated for fishing and aquatic uses, as well as Great Lakes system waters, are governed by three standards. First, for increased discharges that exceed the limits in an existing permit, the existing discharge must exceed or approach the current permit limits while the facility is maintained in good working condition and operated efficiently as possible. If new limits are not needed, the permit cannot be changed. Second, a new or increased discharge that lowers water quality is permitted if the discharger demonstrates to the Department that the discharge accommodates social or economic development. If the permittee does not show the discharge helps social or economic development, then the permittee is not allowed to lower water quality. Third, if the new or increased discharge results in a significant lowering of water quality, the discharger must demonstrate to the Department whether the lowering can be prevented in a cost effective manner or from discharging to a different location. The resulting limits will depend on this demonstration, the social and economic demonstration, and if lowered limits can still meet water quality standards.<sup>479</sup> Specific waterways are listed in the Wisconsin Administrative Code, Department of Natural Resources chapter, § 104.05 to 104.10, tables 3 to 8.<sup>480</sup>

#### **D. Total Maximum Daily Loads (TMDLs)**

Section 303(d) of the Clean Water Act requires that states produce a list of waterways which do not meet water quality criteria despite effluent limitations.<sup>481</sup> These waters are designated “impaired” by the EPA. A Total Maximum Daily Load (TMDL) is a mathematical calculation which attempts to quantify the amount of a given pollutant that can be discharged into a particular water body without exceeding water quality standards. The term also refers to the document produced by state water agencies which sets limits on each pollutant discharged into an impaired waterway and lays out a plan for bringing that body of water into compliance with water quality standards. These limitations and the accompanying plans must be approved by the EPA.

Wisconsin formulates TMDLs to address polluted or impaired waters.<sup>482</sup> Currently, there are 593 impaired waterways in Wisconsin.<sup>483</sup> The EPA maintains a Website that lists Wisconsin’s

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<sup>479</sup> Wisconsin Department of Natural Resources, Antidegradation (2009), <http://dnr.wi.gov/org/water/wm/wqs/antideg.htm>.

<sup>480</sup> WAC § 207.03 (providing that the discharger must demonstrate whether the discharge will result in significant lowering of water quality in fish and aquatic life waters or Great Lakes system waters or lowering of water quality of downstream outstanding or exceptional resource waters).

<sup>481</sup> 33 U.S.C. § 1313(d).

<sup>482</sup> Wisconsin Department of Natural Resources, Total Maximum Daily Loads (TMDLs) (2009), <http://dnr.wi.gov/org/water/wm/wqs/303d/TMDL.html>. See also Wisconsin Department of Natural Resources, Impaired Waters Program 2 (2009), available at <http://dnr.wi.gov/org/water/wm/wqs/303d/pdf/TMDLOverviewFactSheet.pdf> (providing an overview of TMDLs).

<sup>483</sup> U.S. Environmental Protection Agency, 2005 Section 303(d) List Fact Sheet for Wisconsin, [http://iaspub.epa.gov/waters10/state\\_rept.control?p\\_state=WI&p\\_cycle=](http://iaspub.epa.gov/waters10/state_rept.control?p_state=WI&p_cycle=).

impaired waters and the Wisconsin Department of Natural Resources provides a Website that contains the current EPA-approved TMDLs for specific waterways in Wisconsin.

- [http://iaspub.epa.gov/tmdl\\_waters10/attains\\_impaired\\_waters.control?p\\_state=WI](http://iaspub.epa.gov/tmdl_waters10/attains_impaired_waters.control?p_state=WI)
- [http://dnr.wi.gov/org/water/wm/wqs/303d/Approved\\_TMDLs.html](http://dnr.wi.gov/org/water/wm/wqs/303d/Approved_TMDLs.html)

The EPA's Website includes information on why the specific waterway is designated as impaired. Among the most common reasons that are related to nutrient pollution are excess nitrogen and phosphorus, and low dissolved oxygen concentrations.

## II. THE PROCEDURE: THE PUBLICLY OWNED TREATMENT WORKS PERMIT PROCESS

### A. Permit Requirements

Any person who intends to discharge pollutants from a point source into the surface waters of Wisconsin must apply for a discharge permit. POTWs seeking to discharge pollutants into the surface waters of Wisconsin must have a complete application on file with the Department 180 days prior to the start of the proposed discharge.<sup>484</sup> A POTW with an existing application that proposes a new discharge must file a new complete application with the Department 180 days prior to the date the operator plans to start the new discharge.<sup>485</sup> Similarly, a permittee who plans a facility expansion, a production increase, or a process modification must provide notice to the Department 180 days prior to the start of any of these activities.<sup>486</sup>

The Department may not issue an permit if: (1) the permit will result in the discharge of any radiological, chemical, or biological warfare agents or high-level radioactive waste; (2) the permit will impede anchorage or navigation of the waterway; (3) the EPA objects in writing to the issuance of the permit; or (4) the discharge from the POTW is in conflict with an existing area-wide waste treatment management program.<sup>487</sup> The Department may condition a POTW's permit so that the discharge will meet all of the following: (1) effluent limitations; (2) standards of performance for new sources; (3) effluent standards, effluent prohibitions, and pretreatment standards; (4) any more stringent limitations; (5) any more stringent legally applicable requirements of an approved area wide waste treatment management plan; and (6) groundwater protection standards.<sup>488</sup>

Other conditions must be included in all Wisconsin issued permits. A discharge more frequently than permitted or in excess of the limit authorized by the permit violates the permit. New or

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<sup>484</sup> WAC § 200.04.

<sup>485</sup> WAC § 200.05.

<sup>486</sup> WAC § 200.05(1). If the new or increased discharge will exceed or violate the existing permit's limits, the permittee must file a new application to modify the existing permit or apply for a new permit. If the new or increased discharge will not exceed or violate an existing permit's limits, the permittee must give the Department notice of the proposed expansion, production increase, or process modification.

<sup>487</sup> Wisc. Stat. Ann. § 283.31.

<sup>488</sup> *Id.* Stringent limitations include those necessary to meet federal law, regulation, or water quality standards or those necessary to avoid exceeding total maximum daily loads.

increased discharges from facility expansions, production increases, or process modifications at frequencies or levels not permitted must be reported to the Department. Permittees must allow authorized Department representatives to enter the premises of the discharge source or where records are kept. The permittee must maintain its facilities or systems of control in good working order and must operate “as efficiently as possible.” POTWs must inform the Department of any new introduction of pollutants into the treatment works, and industrial users must comply with sections 283.21(2), 283.55, and 283.57 of the Wisconsin Statutes. Each permit must specify maximum levels of discharges based on the “reasonably foreseeable” projection of maximum frequency or maximum level of discharge, including changes from production increases or process modifications during the term of the permit. Permits limiting the discharge of one or more pollutants may require that the location, design, construction, and capacity of the permittee’s operations reflect the “best technology available for minimizing adverse environmental impact.”<sup>489</sup>

### **B. Permit Public Participation Procedures**

The Department is required to allow public access to “completed permit application forms, fact sheets, draft permits, or any public document thereon.”<sup>490</sup> Further, any records or other information provided to or obtained by the Department must be publicly available.<sup>491</sup>

The Department is required to provide the public with written notice of every completed permit application. The goal of this notice is to inform the public of the completed application and of the public’s right to obtain additional information, submit written comments, or request a public hearing.<sup>492</sup> There must be a 30-day public comment period and a 30-day period to request an informational public hearing. The Department is required to schedule a public hearing if requested by the EPA or by any state affected by the discharge, upon receipt of a petition signed by 5 or more persons, or if the Department determines there is significant public interest.<sup>493</sup> The Department can schedule a public hearing in its discretion if requested by the applicant, a state agency, a federal agency other than the EPA, a person, or any group of persons less than five. Hearing requests must be submitted in writing and must describe the interest of the party filing the request and the issues the party wants considered at the hearing.<sup>494</sup>

If the Department grants a hearing, it must issue notice of the hearing in writing that identifies the subject of the notice and the application number.<sup>495</sup> Further, to the extent possible, hearings must be held “in the area affected by the proposed discharge.”<sup>496</sup> Interested members of the

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<sup>489</sup> *Id.*

<sup>490</sup> Wisc. Stat. Ann. § 283.43.

<sup>491</sup> Wisc. Stat. Ann. § 283.55(2)(c). However, dischargers can protect confidential information if they demonstrate to the Department that the documents in question contain information relating to a trade secret. *Id.* at § 283.43; § 283.55(2)(c).

<sup>492</sup> WAC § 203.02 (2010). Additional criteria for the content of the notice are detailed in § 203.02(3).

<sup>493</sup> WAC § 203.05(2).

<sup>494</sup> WAC § 203.05(1), (3).

<sup>495</sup> WAC § 203.06. Notice must also include, among other things, a statement of the issues raised by the requesting persons and a brief description of the nature of the hearing including procedural rules.

<sup>496</sup> WAC § 203.07.

public and representatives of government agencies may participate in the hearing, with some restrictions, and need not be represented by legal counsel.<sup>497</sup> The Department has discretion to consider “statements by the public or by government agencies” when making its final determination on the permit.<sup>498</sup> The Department must provide notice of its decision on the permit, must specify changes made to the permit since publication of the draft permit, and must mail notice to permit applicants and those individuals who completed appearance slips at the public informational hearing and/or submitted comments on the proposed permit.<sup>499</sup>

After the Department gives notice of a final determination, a permit applicant, permittee, state affected or to be affected by a discharge, or five or more persons may petition for administrative review, which must be filed within 60 days after notice by the Department of any action.<sup>500</sup> The Department is authorized to review a limited number of issues, including (1) the denial, modification, suspension, or revocation of a permit pursuant to sections 283.31, 283.33, 283.35, or 283.53 of the Wisconsin Statutes; (2) the reasonableness of or necessity for terms or conditions in the permit; (3) the formation of proposed thermal effluent limitations pursuant to section 283.15(4) of the Wisconsin Statutes; or (4) the formation of proposed water quality related limitations pursuant to section 283.15(1) of the Wisconsin Statutes.<sup>501</sup> The form of the petition should include the following information: specific issues requested to be reviewed; the specific interest of the petitioner; and the reasons a hearing is warranted.<sup>502</sup>

If the Department holds a review hearing, then notice of the hearing must be issued in writing, at least 30 days prior to the hearing, and must include the details of the hearing.<sup>503</sup> The Department must make a final decision within 90 days of the hearing.<sup>504</sup>

### **C. Permit Renewals**

Any permittee who wishes to continue permitted activities under an existing permit must file an application for reissuance at least 180 days prior to the permit’s expiration. The Department reviews applications for reissuance to ensure (1) that the permittee is in substantial compliance with the expiring permit; (2) that the Department has current information on the permittee’s production, waste treatment practices, and discharge; and (3) that the discharge is consistent with effluent limitations and standards, water quality standards, and any other applicable legal standards. If these requirements are not met, the Department must not reissue the permit. The reissuance process is subject to the same public participation requirements detailed above.<sup>505</sup>

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<sup>497</sup> WAC §§ 203.08, 203.10.

<sup>498</sup> WAC § 203.12. The Department can also consider required standards, the application, and any other pertinent information when making a determination on the permit.

<sup>499</sup> WAC § 203.13.

<sup>500</sup> WAC § 203.16.

<sup>501</sup> WAC § 203.15.

<sup>502</sup> WAC § 203.17.

<sup>503</sup> WAC § 203.18. Like the permit hearings, review hearings must be held in the area affected by the proposed discharge, whenever possible. WAC § 203.19.

<sup>504</sup> WAC § 203.20.

<sup>505</sup> Wisc. Stat. Ann. § 283.53.

#### D. Permit Violations

A permit may be revoked for a violation of any of its terms or conditions, for obtaining a permit through misrepresentation, or failure to disclose fully all relevant facts.<sup>506</sup> Violations can be pursued civilly, criminally, and administratively. The Wisconsin Department of Justice can initiate a civil action for a temporary or permanent injunction for violations of the permit or violations of the laws or regulations governing the permit discharge system. Further, violations can incur a fine of up to \$10,000 for each day of a violation. Criminal actions are based on willful or negligent violations of the permit or violations of the laws or regulations governing the permit discharge system, and include a fine of up to \$25,000 for each day of a violation and/or imprisonment for no more than six months. Subsequent convictions result in fines of up to \$50,000 for each day of a violation and/or imprisonment for no more than one year. Fines are assessed based on the actual and substantial deterrent to the action that was the basis of the conviction. A person who knowingly makes false statements or representations is subject to fines of up to \$10,000 and/or imprisonment for no more than six months. Those found guilty of violations may be subject to additional penalties, including attorneys' fees and the cost of investigation, monitoring, and prosecution.<sup>507</sup> Administrative remedies include the revocation or suspension of the permit.

Citizens can monitor current wastewater permits in Wisconsin using the Wisconsin Department of Natural Resources' Website. The Website includes a list of current permit holders<sup>508</sup> and current public notices of new permit applications or existing permit renewals.<sup>509</sup> For further information, contact the Department at the following e-mail address: [behmk@dnr.state.wi.us](mailto:behmk@dnr.state.wi.us).

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<sup>506</sup> *Id.*

<sup>507</sup> Wisc. Stat. Ann. § 283.91.

<sup>508</sup> Wisconsin Department of Natural Resources, Current WPDES Wastewater Permit Holders (2010) <http://www.dnr.state.wi.us/org/water/wm/ww/permlists.htm>.

<sup>509</sup> Wisconsin Department of Natural Resources, WPDES Permits on Public Notice (2010) <http://www.dnr.state.wi.us/org/water/wm/ww/DRAFTS/PUBNOT.htm>.

## GLOSSARY

These definitions explain how these terms are used in this Nutrient Guide. Some terms may be used differently by States in State-specific water quality requirements, so it is important to consult each State's provisions to understand the governing standards in your area.

- 1) Anti-degradation Policy: Anti-degradation refers to federal regulations designed to *maintain* and *protect* high quality waters, and existing water quality in other waters, from unnecessary pollution.<sup>510</sup>
- 2) Average Weekly Discharge Elimination: "The highest allowable average of daily discharges over a calendar week, calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week."<sup>511</sup>
- 3) Biochemical Oxygen Demand (BOD): "A measurement of the amount of oxygen utilized by the decomposition of organic material, over a specified time period (usually 5 days) in a wastewater sample; it is used as a measurement of the readily decomposable organic content of a wastewater."<sup>512</sup>
- 4) Clean Water Act (CWA): A federal law which establishes a comprehensive protective framework for water pollution regulation in the United States.
- 5) Code of Federal Regulations (C.F.R.): The location of legally-binding regulations issued by federal agencies. Title 40 contains environmental regulations.
- 6) Compliance Schedule: "A schedule of remedial measures included in a permit, including a sequence of interim requirements (for example, actions, operations, or milestone events) that lead to compliance with the CWA and [applicable state] regulations."<sup>513</sup>
- 7) Criteria: "The numeric values and the narrative standards that represent contaminant concentrations that [must] not be exceeded in the receiving environmental media (surface water, ground water, sediment) to protect beneficial uses."<sup>514</sup>
- 8) Design Flow: A facility's discharge flow rate of process wastewater that is authorized in an NPDES permit. Design flows may be hydrologically based (meaning they are calculated to account for the effect of low flow events on water supply) or biologically based (meaning they are calculated to account for the effect of low flow events on aquatic life).<sup>515</sup>
- 9) Effluent Limitation: "Any restriction imposed by the [permitting authority] on quantities, discharge rates, and concentrations of pollutants

<sup>510</sup> See U.S. EPA. NPDES Glossary, [http://cfpub.epa.gov/npdes/glossary.cfm?program\\_id=0#P](http://cfpub.epa.gov/npdes/glossary.cfm?program_id=0#P).

<sup>511</sup> *Id.*

<sup>512</sup> *Id.*

<sup>513</sup> *Id.*

<sup>514</sup> *Id.*

<sup>515</sup> U.S. EPA, DFLOW: A Tool for Low Flow Analysis, <http://www.epa.gov/waterscience/models/dflow/flow101.htm#methods>.

which are discharged from point sources into waters of the United States, the waters of the contiguous zone, or the ocean.”<sup>516</sup> Effluent limitations may be technology-based (which is based on the capability of a treatment method to mitigate the pollutant effect) or water quality based.

- 10) Environmental Protection Agency (EPA): The agency charged with administering the Clean Water Act and many other environmental laws of the United States.
- 11) Eutrophication: A process that results from nutrient pollution in which organic material builds up in the water body and eventually decays, leading to hypoxia, or depletion of the oxygen needed to sustain aquatic life.
- 12) Fact Sheet: “A document that must be prepared for all draft individual permits for NPDES major dischargers, NPDES general permits, NPDES permits that contain variances, NPDES permits that contain sewage sludge land application plans and several other classes of permittees. The document summarizes the principal facts and the significant factual, legal, methodological and policy questions considered in preparing the draft permit and tells how the public may comment (40 C.F.R. 124.8 and 124.56). Where a fact sheet is not required, a statement of basis must be prepared (40 C.F.R. 124.7).”<sup>517</sup>
- 13) General permit: “An NPDES permit issued under 40 CFR 122.28 that authorizes a category of discharges under the CWA within a geographical area. A general permit is not specifically tailored for an individual discharger.”<sup>518</sup>
- 14) Indirect Discharge: “The introduction of pollutants into a municipal sewage treatment system from any nondomestic source (i.e., any industrial or commercial facility) regulated under Section 307(b), (c), or (d) of the CWA.”<sup>519</sup>
- 15) Individual permit: An individual permit is a permit issued under the CWA (or applicable state water pollution control act) to a specified person to discharge at a specific location.<sup>520</sup>
- 16) Industrial Sources: Generally, non-municipal sources. “The types of wastewaters generated at a facility depend on the specific activities undertaken at a particular site, and may include manufacturing or process wastewaters, cooling waters, sanitary wastewater, and stormwater runoff.”<sup>521</sup>
- 17) Loading: Pollutant loading refers to the total quantity, as opposed to the concentration, of a pollutant contained in effluent.

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<sup>516</sup> U.S. EPA. NPDES Glossary, [http://cfpub.epa.gov/npdes/glossary.cfm?program\\_id=0#P](http://cfpub.epa.gov/npdes/glossary.cfm?program_id=0#P).

<sup>517</sup> *Id.*

<sup>518</sup> *Id.*

<sup>519</sup> *Id.*

<sup>520</sup> *See, e.g.*, Tenn. Div. Water Pollution Control Rule 1200-4-10-.02(5).

<sup>521</sup> *Id.*

- 18) National Pollutant Discharge Elimination System (NPDES): The permitting system, created by the Clean Water Act, which regulates discharges by point sources into the waters of the United States.
- 19) Nonpoint Source: Nonpoint sources of nutrients come from different sources in a landscape and can be difficult to pinpoint. For example, stormwater runoff from farm fields that drains nutrients into streams is commonly considered “nonpoint source” pollution.
- 20) Nutrient: A variety of elements that are needed by living organisms, including nitrogen, phosphorus, calcium, magnesium, sodium, potassium, iron, copper, manganese, boron, and zinc. Excess nutrients can have deleterious effects on the aquatic environment. This guide focuses on nitrogen and phosphorus.
- 21) pH: A measure of the water’s acidity or alkalinity. pH 7 is neutral, below 7 is acidic, and above 7 is alkaline (“basic”).
- 22) Point Source: “[A]ny discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged [into the surface waters of a state].”<sup>522</sup>
- 23) Pollutant: “Dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial, municipal, and agricultural waste discharged into water.”<sup>523</sup>
- 24) Pretreatment Standard: “Any regulation promulgated by the EPA in accordance with Sections 307(b) and (c) of the [Clean Water Act] that applies to a specific category of industrial users and provides limitations on the introduction of pollutants into publicly owned treatment works.”<sup>524</sup>
- 25) Primary Treatment: “The practice of removing some portion of the suspended solids and organic matter in a wastewater through sedimentation. Common usage of this term also includes preliminary treatment to remove wastewater constituents that may cause maintenance or operational problems in the system [grit, debris, etc.]”<sup>525</sup>
- 26) Publicly Owned Treatment Works (POTW): A publicly owned treatment works, as defined by Section 212 of the Clean Water Act, is owned by a state or municipality. This definition includes any devices and systems used in the storage, treatment, recycling, and reclamation of municipal sewage or industrial wastes of a liquid nature. It also includes sewers, pipes, and other conveyances only if they convey wastewater to a POTW treatment plant [40 C.F.R. § 403.3]. A POTW is a point source.

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<sup>522</sup> Clean Water Act, § 502 (Definitions).

<sup>523</sup> 40 C.F.R. § 122.2.

<sup>524</sup> U.S. EPA. NPDES Glossary, [http://cfpub.epa.gov/npdes/glossary.cfm?program\\_id=0#P](http://cfpub.epa.gov/npdes/glossary.cfm?program_id=0#P).

<sup>525</sup> *Id.*

- 27) Secondary Treatment: “Technology-based requirements for direct discharging municipal sewage treatment facilities.” As currently implemented in federal regulations, the “standard is based on a combination of physical and biological processes typical for the treatment of pollutants in municipal sewage. Standards are expressed as a minimum level of effluent quality in terms of: BOD 5 [Biochemical Oxygen Demand], suspended solids (SS), and pH (except as provided for special considerations and treatment equivalent to secondary treatment).”<sup>526</sup>
- 28) Stream Loads: The amount of nitrogen or phosphorus carried downstream by a stream or river over a period of time.
- 29) Total Suspended Solids (TSS): “A measure of the filterable solids present in a sample, as determined by the method specified in 40 C.F.R. Part 136.”<sup>527</sup>
- 30) Turbidity: Turbidity is a measure of water clarity. Suspended solids, such as clay, silt, sand, algae, plankton, and microbes, block the transmission of light and increase water temperature because suspended particles absorb more heat. This reduces the concentration of dissolved oxygen because warm water holds less oxygen than cold. Suspended materials can clog fish gills, reduce resistance to disease in aquatic species, and smother fish eggs.
- 31) Wasteload Allocation (WLA): The proportion of a water body’s TMDL that is allocated to one of its existing or future pointsources of pollution.<sup>528</sup>
- 32) Water Quality Standards (WQS): Legal standards that set the beneficial uses of a water body, the numeric or narrative (descriptive) water quality criteria that are necessary to protect the uses of the water body, and an anti-degradation statement.<sup>529</sup>
- 33) Watershed: All of the land that drains into a stream or river.

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<sup>526</sup> *Id.*

<sup>527</sup> *Id.*

<sup>528</sup> *Id.*

<sup>529</sup> *Id.*