

# Nutrients Issue Paper

Legal Discussion

August, 2009



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## I. Introduction

### A. Summary of NRDC's Petition

The National Resources Defense Council (NRDC) petitioned the U.S. Environmental Protection Agency (EPA) in November 2007 to modify the Agency's current secondary treatment regulations under the Clean Water Act (CWA).<sup>1</sup> These regulations specify control levels for all POTWs for three parameters: biological oxygen demand, suspended solids and pH. NRDC's petition requests that the Agency revise the definition of secondary treatment to establish a new, technology-based standard for nutrient removal for every POTW. Specifically, NRDC requests that EPA establish uniform total phosphorus (TP) limits of 0.3 mg/l and total nitrogen (TN) limits of 3 mg/l, or other alternative limits if EPA finds that these specific proposed limits are not warranted. NRDC presents information on various nutrient removal technologies in advocating that EPA should consider these advanced nutrient removal technologies part of secondary treatment. NRDC also sets forth its opinion that these technologies are feasible, cost-effective and reliably meet the proposed new nutrient limits.

NRDC argues that its request is justified because there are widespread water quality impairments across the nation due to nutrients, and that EPA's water quality-based programs to control nutrients are not working fast enough due to the complexities of nutrients in various water bodies and the inaction of EPA, States and Tribes. In addition to these assertions, NRDC alleges that EPA has violated the CWA's secondary treatment requirements in two respects.

First, NRDC argues that EPA has failed to publish information on the degree of nutrient effluent reduction attainable through secondary treatment, allegedly in violation of CWA section 304(d)(1), which provides that

The Administrator, after consultation with appropriate Federal and State agencies and other interested persons, shall publish within sixty days after October 18, 1972 (and from time to time thereafter) information, in terms of amounts of constituents and chemical, physical, and biological characteristics of pollutants, on the degree of effluent reduction attainable through the application of secondary treatment.<sup>2</sup>

NRDC contends that in order to comply with this provision of the CWA, EPA must publish information on the extent of nutrient removal attainable by POTWs through secondary treatment.<sup>3</sup> NRDC further alleges that EPA has not published information on

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<sup>1</sup> NRDC, *Petition for Rulemaking Under the Clean Water Act, Secondary Treatment Standards for Nutrient Removal* (Nov. 27, 2007) (hereinafter *Petition*). The NRDC's Petition was submitted on behalf of several different advocacy groups.

<sup>2</sup> 33 U.S.C. § 1314(d)(1).

<sup>3</sup> *Petition*, at 42-44.

the degree of effluent reduction attainable by secondary treatment in over 20 years, and contends that this is an unreasonably long time for EPA to act.

Second, NRDC argues that EPA's supposed duty to publish information on the extent of nutrient removal attainable through secondary treatment is co-extensive with a requirement to issue new effluent limitations requiring all POTWs to achieve nutrient removal as part of secondary treatment, based on the published information.<sup>4</sup> NRDC asserts this requirement can be found in CWA section 301(b)(1)(B), which provides that "there shall be achieved:"

for publicly owned treatment works effluent limitations based upon secondary treatment as defined by the Administrator pursuant to section 304(d)(1) of this Act.<sup>5</sup>

NRDC requests that EPA establish new nutrient standards as part of secondary treatment as either (i) TP of 0.3 mg/L and TN of 3.0 mg/L, which NRDC states are "currently achievable" using various chemical and biological processes or (ii) TP of 1 mg/L and TN of 8 mg/L on an annual basis, which NRDC argues are required even if EPA "were to look no further than purely biological processes...."<sup>6</sup> In the further alternative, NRDC requests that, if EPA concludes that NRDC's proposed limits are inappropriate as uniform technology standards for all POTWs based on "technological achievability concerns or cost," that EPA nevertheless should "consider the levels of controls for nutrients that can be readily and cost-effectively achieved by wastewater treatment plants using 'secondary treatment,' and include those control levels in the agency's secondary treatment regulations as generally-applicable effluent limitations."<sup>7</sup>

In sum, NRDC requests that EPA redefine secondary treatment to include nutrient removal of some type, and to explain its rationale regardless of the specific levels of nutrient removal selected by the Agency.

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<sup>4</sup> *Petition*, at 45.

<sup>5</sup> 33 U.S.C. § 1311(b)(1)(B).

<sup>6</sup> *Petition* at 52. NRDC's Petition thus acknowledges Congress' intent to limit secondary treatment to biological treatment processes.

<sup>7</sup> *Id.* at 53. NRDC also suggests that EPA might conclude (i) that either TP or TN, but not both, could be controlled "with current processes and at justifiable costs," in which case NRDC argues that EPA must specify the degree of control and appropriate limits, or (ii) that "effluent limits weaker than 1.0 mg/L TP and 8.0 mg/L TN are all that can be reasonably accomplished," in which case NRDC argues that EPA "must say so and establish the relevant limits as effluent limitations for all wastewater treatment plants." *Id.*

## B. Summary of NACWA's Response

### 1. NRDC's Legal Analysis is Fundamentally Flawed

NRDC's assertions are erroneous in numerous respects, as this Issue Paper discusses in detail. A key flaw is that NRDC overstates the scope of the CWA's secondary treatment requirements, and thus ignores the limits on the program that Congress authorized EPA to implement. Most fundamentally, NRDC is mistaken that nutrient removal is attainable by the application of secondary treatment technologies. The reality is that nutrient removal technologies are additional to secondary treatment technologies and are designed to accomplish pollutant reductions that secondary treatment cannot achieve. The nutrient limits proffered by NRDC could only be met if POTWs added new biological and chemical treatment processes, at considerable cost, to existing secondary treatment facilities. Such advanced treatment is not "based upon" or attainable by secondary treatment. Therefore, NRDC is simply wrong that nutrient removal can be accomplished by, and therefore deemed to be part of, secondary treatment.

Moreover, nutrient removal technologies were considered by Congress to be advanced wastewater treatment technologies that could have been considered by EPA only under a former program that was funded by the now-defunct construction grants program. This advanced technology program for POTWs, known as Best Practicable Waste Treatment Technology ("BPWTT"), was repealed in 1981. As a result, NRDC is flat wrong in asserting that the CWA requires EPA to consider uniform nutrient removal technology for POTWs as part of secondary treatment. In fact, the CWA provides EPA no authority to do so, as part of secondary treatment or otherwise.

NRDC's arguments also ignore the findings of the only court to have addressed the CWA's secondary treatment requirements.<sup>8</sup> The *Maier* court found that EPA has broad discretion to reject petitions like NRDC's for the very reasons that EPA has consistently done so. Contrary to NRDC's assertions, its Petition does not raise any new considerations that distinguish its request from similar petitions rejected by EPA in the past.

In addition, NRDC argues, unconvincingly, that Congress established the secondary treatment program as "technology-forcing," and suggests that EPA should apply by analogy the CWA's technology-based framework for industrial point sources in reviewing NRDC's requests.<sup>9</sup> This argument is misplaced, because the statutory requirements for POTWs and industrial point sources contain important differences that EPA's regulations properly recognize.

Finally, NRDC seems to suggest that EPA should abandon its water quality-based programs for nutrients because these programs are not, in NRDC's view, effective.

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<sup>8</sup> *Maier v. EPA*, 114 F.3d 1032 (10th Cir. 1997).

<sup>9</sup> This echoes a request made by ASWIPCA to EPA, also in November 2007, requesting that the Agency engage in a BAT-like review of nutrient technology issues for POTWs. The CWA does not authorize or require EPA to conduct analyses of possible POTW effluent limitations using the statutory framework established for industrial point sources.

However, EPA lacks authority to ignore its water quality-based responsibilities under the CWA and focus only on imposing new technology requirements on POTWs. NRDC also argues that technology-based requirements must follow what it views as EPA's failed attempts at a water quality-based approach. NRDC's arguments are contrary to the CWA's clear sequence of implementing technology-based requirements first, to be followed by water quality-based measures where needed to attain water quality standards.

In sum, all of NRDC's legal arguments run counter to the secondary treatment requirements of the CWA and should be rejected. Although NRDC complains about EPA's lack of action to reconsider secondary treatment technologies in over twenty years, EPA's actions are in fact consistent with congressional directives on these issues throughout the 1970s, 1980s and beyond. EPA has acted properly to implement the secondary treatment program as directed by Congress, and has not violated the CWA.

## 2. NRDC's Technical and Policy Arguments Ignore Critical Facts and Fail to Support its Claims

NRDC's technical discussion is also misguided, as it tries, on the one hand, to argue that nutrient removal technology is part of secondary treatment, while nevertheless acknowledging throughout the Petition that such technology is a significant addition to secondary treatment. Although NRDC tries to downplay this difference by referring to such additional technology as "minor retrofits," "improvements to conventional biological treatment," and the like, such characterizations are misleading. This is because the type of nutrient removal technology that would be required to meet NRDC's preferred effluent limits for phosphorus and nitrogen would require POTWs and their communities to spend billions of dollars in new construction, operation and maintenance costs over and above secondary treatment costs. NRDC's proposed technology would not merely tweak secondary treatment, it would add an entirely new treatment process.

In addition, NRDC's assessment of nutrient removal technology erroneously suggests that adding this technology at all POTWs is uniformly cost-effective. Because the costs and benefits of nutrient removal are highly dependent on site-specific factors, NRDC's generalizations about the costs and effectiveness of these new technologies are unconvincing. NRDC also overstates the reliability of such technology to meet design effluent limits. Finally, the Petition ignores important costs such as the significant increase in energy consumption and the resulting increased carbon footprint that nutrient reduction technologies require.

Furthermore, the Petition is silent on a critical issue -- namely, the fact that most of the national, widespread nutrient water quality problems NRDC complains of are caused by non-point sources ("NPS"). In doing so, NRDC proposes a solution -- extending technology-based nutrient controls to all POTWs on a uniform basis -- that demonstrably will not solve these problems. By ignoring this critical element of nutrient water quality issues, NRDC's proposal significantly overstates the beneficial effects on water quality that implementation of its very expensive proposal could potentially accomplish. It also ignores NPS nutrient reduction measures that are far more effective in addressing the nutrient problem in many water bodies and often at a lower cost.

In sum, the measures advocated by NRDC are not technically justified and would not solve the water quality problems cited by NRDC. Thus, EPA must reject the expensive and impractical “one size fits all” approach that NRDC has proposed.

This Issue Paper addresses these points in detail and incorporates by reference and attachment hereto NACWA’s previous letter to EPA on these issues dated February 29, 2008. The review of NRDC’s Petition in this Issue Paper demonstrates that EPA’s actions with respect to secondary treatment and nutrient reduction are consistent with the CWA and that EPA must reject NRDC’s Petition. Part II of this Issue Paper addresses NRDC’s legal arguments, while Part III addresses the remaining technical and policy arguments NRDC has advanced in support of its requests. Part IV then summarizes the reasons that EPA should reject NRDC’s Petition in its entirety.

## **II. The CWA’s Secondary Treatment Requirements do not Include Nutrient Removal and Therefore, EPA is Required to Deny NRDC’s Petition**

The original 1972 CWA provisions regarding technology-based standards for POTWs contained requirements for two phases of effluent control to be implemented by EPA over time: secondary treatment and advanced treatment. Nutrient removal was to be considered by EPA -- if at all -- as part of the advanced treatment phase of controls at POTWs. Congress repealed this requirement in 1981, except for POTWs that were seeking funding under the then-existing construction grants program. Congress then replaced the construction grants program with the State Revolving Fund (SRF) program.

As a result, the CWA’s secondary treatment provisions for POTWs do not require advanced treatment technologies at any POTW, and indeed, prohibit EPA from granting NRDC’s request for EPA to redefine secondary treatment to include nutrient removal technology. This conclusion results from a straightforward review of the Clean Water Act and its legislative history. It is also supported by EPA’s longstanding and consistent regulatory actions under the CWA’s secondary treatment provisions.

As noted, NRDC asserts that EPA has violated two CWA provisions -- a duty to publish claim and a duty to regulate claim. With respect to the duty to publish claim, EPA has no duty to publish nutrient removal technology information as part of its secondary treatment responsibilities, because nutrient removal is attainable only through advanced technologies, not secondary treatment. Therefore, the publication requirement in CWA section 304(d)(1) does not apply to nutrient removal technologies. NRDC’s duty to publish claim is without merit.<sup>10</sup>

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<sup>10</sup> Even if CWA section 304(d)(1) arguably applied to nutrient removal technology, EPA satisfied any obligation by publishing in 2008 a current review of nutrient removal technologies at POTWs. EPA’s 2008 publication satisfies any obligation EPA may have to “publish information on the degree of effluent reduction attainable through the application of secondary treatment,” since the publication demonstrates that nutrient removal is attainable not through secondary treatment but through advanced nutrient removal



NRDC's second claim asserts that whenever EPA publishes information under the CWA's secondary treatment provisions, it is automatically obligated to develop effluent limitations based on the latest information. NRDC's argument is incorrect for several reasons. First, the secondary treatment publication and regulation provisions are two distinct requirements. The *Maier* court dismissed the argument that EPA is required to establish new effluent limitations simply because new technology exists that could meet such limits. Under this reasoning, even if EPA published information on the degree of effluent reduction attainable by a new secondary treatment technology under section 304(d)(1), it would not be required to establish new limits based on this technology under section 301(b)(1)(B). This is entirely consistent with the discretion Congress provided EPA to define secondary treatment, rather than mandating a specific definition or set of considerations EPA must take into account in defining secondary treatment, in stark contrast to the approach established by Congress for industrial point sources. NRDC's regulation claim also fails for the same reason that its publication claim must fail, namely, the nutrient removal technologies are not part of secondary treatment and, therefore, EPA lacks authority to establish effluent limits for nutrients under CWA section 301(b)(1)(B). NRDC's second claim is, therefore, equally without merit.

The discussion below elaborates on these conclusions. Part A provides an overview of the CWA's original two-phase technology-based program for POTWs. Part B details the legislative history regarding these requirements, including the repeal of advanced wastewater treatment requirements for POTWs. Part C summarizes EPA's regulatory actions consistent with these requirements, highlighting both the Agency's rulemaking activities as well as its response to two prior nutrient removal technology petitions, which, like NRDC's Petition, were argued as warranted by the CWA's secondary treatment provisions. Part D addresses NRDC's flawed assertion that the CWA is technology-forcing for POTWs and its erroneous view of the relationship between technology and water quality-based effluent requirements under the Act. Finally, Part E addresses NRDC's arguments regarding the alleged ineffectiveness of the CWA's water quality requirements as a basis for imposing technology-based requirements on POTWs.

#### A. Overview of CWA Technology-Based Requirements for POTWs

The CWA directs EPA to establish effluent limitations for POTWs pursuant to section 301(b)(1)(B), which provides that effluent limitations are to be "based upon secondary treatment as defined by the Administrator pursuant to section 304(d)(1)."<sup>11</sup> Section 304(d)(1) does not define secondary treatment. Section 304(d)(1) directs the Administrator to "publish within sixty days after October 18, 1972 (and from time to time thereafter) *information*, in terms of amounts of constituents and chemical, physical, and biological characteristics of pollutants, *on the degree of effluent reduction attainable* through the

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technologies. Indeed, EPA's 2008 publication indicates its long-standing evaluation that the degree of nitrogen and phosphorus removal attainable by secondary treatment is negligible. Therefore, NRDC's duty to publish claim, even under a more generous reading of the CWA, is, at best, moot.

<sup>11</sup> 33 U.S.C. § 1311(b)(1)(B).

*application of secondary treatment.*”<sup>12</sup> While the statute does not define secondary treatment, there is extensive legislative history indicating Congress’ understanding that secondary treatment addresses suspended solids and biological oxygen demand (BOD) through biological treatment.

EPA’s secondary treatment rules have consistently defined the applicable requirements in accordance with Congress’ clear intent. As EPA has stated:

Secondary treatment is not otherwise defined in the Act, although legislative history from 1972 does indicate secondary treatment (1) involves a range of removals of suspended solids and BOD, (2) secondary treatment involves removal efficiencies between 50% and 90%, and (3) the definition of secondary treatment is to be technology-based rather than water quality-based.<sup>13</sup>

The limited scope of secondary treatment was reinforced by Congress in a series of amendments to the CWA in the 1970s and 1980s. Most significantly, Congress originally required in the 1972 Act, and in 1981 repealed, a requirement for EPA to establish effluent limitations for all POTWs that were based on advanced treatment technology. These more stringent limits were called “best practicable waste treatment technology,” or BPWTT, a term also not defined in the CWA. Specifically, the 1972 Amendments included a requirement in section 301(b)(2)(B) for all POTWs to achieve the higher level of technology-based requirements by July 1, 1983.<sup>14</sup> Legislative history indicates that BPWTT was to include consideration of “new and improved treatment techniques....ready for full-scale application,” including technologies for phosphorous and nitrogen removal.<sup>15</sup> As noted, in 1981, Congress repealed the requirement that POTWs meet the advanced technology or BPWTT standards.<sup>16</sup> Moreover, while Congress preserved the BPWTT requirement for POTWs that seek federal construction grant money,<sup>17</sup> the federal construction grants program was phased out and replaced in the late 1980s by the current

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<sup>12</sup> 33 U.S.C. § 1314(d)(1)(emphasis added).

<sup>13</sup> EPA, Decision on Petition for Rulemaking to Address Nutrient Pollution from Significant Point Sources in the Chesapeake Bay Watershed 22 (2005), *available at* <http://www.epa.gov/water/cbfpetition/petition.pdf> (hereinafter EPA Denial of CBF Petition).]

<sup>14</sup> Federal Water Pollution Control Act Amendments of 1972, Pub. L. No. 92-500, § 301(b)(2)(B), 86 Stat. 816, 845 (1972). In addition, section 201(g)(2)(A) required that POTWs seeking federal grants for construction demonstrate that “alternative waste management techniques have been studied and evaluated and the works proposed for grant assistance will provide for the application of the *best practicable waste treatment technology* over the life of the works consistent with the purposes of this title.” 33 U.S.C. § 1281(g)(2)(A) (emphasis added).

<sup>15</sup> Report of the Committee on Public Works, United States House of Representatives, with Additional and Supplemental Views, Federal Water Pollution Control Act Amendments of 1972, H.Rep. No. 92-911, at 87 (Mar. 11, 1972).

<sup>16</sup> Municipal Wastewater Treatment Construction Grant Amendments of 1981, Pub. L. No. 97-117, § 21(b), 95 Stat. 1623, 1623 (1981).

<sup>17</sup> 33 U.S.C. § 1281(g)(2)(A).

State Revolving Fund (SRF) program.<sup>18</sup> Thus, by the end of the 1980s, Congress had limited the national technology-based effluent limits for POTWs to secondary treatment.<sup>19</sup> Because Congress considered nutrient removal an advanced treatment technology to be pursued under BPWTT, it cannot be considered part of secondary treatment. A detailed review of the legislative history demonstrates these conclusions.

## B. CWA Legislative History Regarding Technology-Based Requirements for POTWs

### 1. 1972 Act

As noted, Congress originally required POTWs to attain two phases of technology-based effluent reductions, namely, secondary treatment by 1977 followed by BPWTT by 1983. The POTW two-phase approach was similar in concept to the phased approach adopted for industrial wastewater dischargers, but very different in the nature and scope of so-called “technology-forcing” requirements, a critical point that NRDC’s petition attempts to ignore.<sup>20</sup>

The Report of the Senate Committee on Public Works states that under Phase I, POTWs would be required to implement secondary treatment, while under Phase II, POTWs would have to implement “best practicable treatment” as set forth in section 201.<sup>21</sup> The legislative history shows that, to the extent Congress intended to impose advanced technologies like nutrient removal on POTWs, it intended to do so through the BPWTT requirements of section 201.

The legislative history of the 1972 Act contains several statements indicating Congress’ understanding and intent with respect to secondary treatment. This history demonstrates that the first phase of technology for POTWs, secondary treatment, was to achieve significant reduction beyond primary treatment for suspended solids and biological oxygen demand. The Report of the House Committee on Public Works, for example, states that secondary treatment is “generally concerned with suspended solids and biologically degradable, oxygen demanding materials (BOD).”<sup>22</sup> The Report of the Senate Committee on Public Works indicates that the construction grant program in section 201, incorporating the more stringent BPWTT standard, was designed, in part, to address

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<sup>18</sup> See Water Quality Act of 1987, Pub. L. No. 100-4, 101 Stat. 7 (1987). The provisions relating to State Water Pollution Control Revolving Funds are contained at 33 U.S.C. §§ 1381-87. The new stimulus funding for the SRF program does not require compliance with BPWTT requirements.

<sup>19</sup> The former provision required POTWs to attain, as EPA has described it, “additional, higher levels of technology-based effluent reduction,” identified as “best practicable waste treatment technology” (BPWTT), by July 1, 1983. EPA Denial of CBF Petition, *supra*, note 13.

<sup>20</sup> See part III.D, herein.

<sup>21</sup> *Id.*

<sup>22</sup> *Id.* at 101.

pollutant reductions that were not attainable through the application of secondary treatment, such as nutrient removal.<sup>23</sup>

This history also reflects that Congress understood that nutrients from POTWs would not be fully controlled by secondary treatment and that the issue of nutrient control would be addressed, if at all, under the future BPWTT standards. For example, the Report of the House Committee on Public Works states that: “In defining ‘best practicable waste treatment technology’ for a given case, consideration must be given to new or improved treatment techniques which have been developed and are now considered to be ready for full-scale application. These include land disposal, use of pure oxygen in the activated sludge process, physical-chemical treatment as a replacement for biological treatment, *phosphorous and nitrogen removal* . . .”<sup>24</sup>

This legislative history indicates that, in 1972, Congress was aware that nutrient levels in effluent from POTWs could, in some circumstances, lead to water quality problems. Congress also recognized that secondary treatment could not address nutrient levels in POTW effluent. Thus, in the 1972 CWA Amendments, Congress intended that if nutrient removal were to be required at all POTWs as a national technology standard -- and it must be emphasized that Congress discussed only the *possibility* of requiring POTWs to remove nutrients from their effluent as part of advanced treatment -- it would be through the development of the BPWTT standard, not through the secondary treatment requirement.

## 2. 1977 Amendments

After the 1972 Act, EPA convened a work group to assist it in defining secondary treatment and published proposed rules with various modifications in the 1973-1977 timeframe. The EPA’s initial rule defined secondary treatment to require controls for BOD, pH, suspended solids, and fecal coliform. Legislative history to the 1977 CWA amendments indicates Congress was well aware of EPA’s rule and how it had defined secondary treatment pursuant to the 1972 Act. For instance, the Report of the House Public Works and Transportation Committee states that “EPA’s definition of secondary treatment in regulations includes limitations on BOD, suspended solids, pH, and fecal coliform bacteria.”<sup>25</sup>

The 1977 Amendments to the Clean Water Act made several changes pertaining to POTWs, including increases in appropriations for the construction of secondary treatment works

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

<sup>24</sup> Report of the Committee on Public Works, United States House of Representatives, with Additional and Supplemental Views, Federal Water Pollution Control Act Amendments of 1972, H. Rep. No. 92-911, at 87 (Mar. 11, 1972) (emphasis added).

<sup>25</sup> See Report of the House Public Works and Transportation Committee, Federal Water Pollution Control Act Amendments of 1977, H. Rep. No. 95-139 at 16 (March 29, 1977). In a 1976 rulemaking discussed further herein, EPA eliminated fecal coliform requirements and limited the applicability of the pH requirements under the secondary treatment rule.

and the waiver for direct ocean discharges.<sup>26</sup> Congress also allowed for further extensions of time, in certain instances, for POTWs to meet the secondary treatment standards.<sup>27</sup> The 1977 amendments reflected growing concern in Congress about the amount of time and money that was needed for municipalities to comply with the 1972 Act's secondary treatment requirements, using EPA's promulgated definition of secondary treatment (BOD, SS, pH and fecal coliform). Indeed, at this time, Congress established a national study commission to advise it on whether to maintain the Phase II BPWTT requirement, given the delays and funding issues with meeting the Phase I secondary treatment standards by the 1977 deadline.

### 3. 1981 Amendments

By the time the CWA was again amended in 1981, about half of the covered POTWs were not in compliance with the 1977 deadline for secondary treatment due to funding issues. Congress extended the deadline for achieving secondary treatment standards to 1988 on a case-by-case basis, and, at the same time, repealed the requirement that all POTWs meet the more advanced treatment requirements represented by BPWTT.<sup>28</sup> These changes were based on the recommendations of the national study commission and ongoing funding concerns. In addition, Congress expanded the CWA section 301(h) waiver provision by which POTWs discharging to the ocean could be exempted from secondary treatment requirements.<sup>29</sup> Congress was motivated to expand the waiver in large part because of decreased federal funding for POTWs and the increased cost of secondary treatment.<sup>30</sup> The extension of the deadline for POTWs to meet secondary treatment standards<sup>31</sup> reflected recognition that, in many cases, federal funding was not available for the necessary construction of facilities or the construction could not be completed in time. Senate Report 97-204 states that Congress was extending the deadline for meeting secondary treatment standards and repealing the requirement to establish BPWTT standards for all POTWs for the same reason – insufficient funding:

The 1972 Act originally required municipal plants to comply with effluent limitations based on secondary treatment by 1977. This deadline proved to be difficult, and in many cases impossible to meet, largely because of insufficient

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<sup>26</sup> Clean Water Act of 1977, Pub. L. No. 95-217, 91 Stat. 1566 (1977).

<sup>27</sup> Pub. L. No. 95-217, § 45.

<sup>28</sup> Pub L. No. 97-117, § 21(b).

<sup>29</sup> Pub L. No. 97-117, § 22, 95 Stat 1623, 1632 (1981).

<sup>30</sup> See Report of the Committee on Public Works and Transportation, H. Rep. No 97-270, *reprinted in* 1981 U.S.C.A.N. 1669, 2645-46; Implementation of the Federal Water Pollution Control Act Concerning the Performance of the Municipal Wastewater Treatment Construction Grants Program, Report by the Subcommittee on Investigation and Oversight of the Committee on Public Works and Transportation, House of Representatives, 97th Congress, 1st Session, H. Rep. No. 97-30, at 3, 35, 47-51 (Oct. 1981).

<sup>31</sup> Pub. L. No. 97-117, § 21(a), codified at 33 U.S.C. § 1311(i).

funding. The 1977 amendments, therefore, permitted extension of the deadline to municipalities acting in good faith which were unable to meet this requirement. Such extensions were to be in no case later than July 1, 1983.

With the projected shortfall in Federal expenditures, and the reduced Federal share for the construction grant program, it is once more apparent that many communities will be unable to meet the 1983 deadline. This legislation thus extends the deadline to 1988 for communities which cannot meet earlier deadlines because Federal funds are not available. The Committee emphasizes that the same good faith requirements now in existing law are also extended facilities seeking the new extension.

For the same reasons, this section also amends section 301(b)(2) to remove the 1983 deadline for achievement of best practical waste treatment technology standards for municipalities. No new deadline is substituted.<sup>32</sup>

In the 1981 amendments, Congress indicated that it was well aware of EPA's then-existing definition of secondary treatment. For example, the Report of the House Committee on Environment and Public Works stated that “[u]nder authority of existing law, the Administrator of the Environmental Protection Agency has defined the term ‘secondary treatment’ as the removal of 85% of biological oxygen demand (BOD) and the attainment of an effluent containing not more than 30 milligrams per liter of suspended solids over a 30 day period. Methods of achieving secondary treatment are also at the discretion of the Administrator.”<sup>33</sup>

All of this demonstrates that, with the 1981 amendments, Congress removed advanced technology-based requirements for POTWs, including nutrient removal, and ratified EPA's definition of secondary treatment as focused primarily on BOD and TSS.

#### 4. Summary of CWA Secondary Treatment Requirements for POTWs

Thus, the 1972 Act and the subsequent 1977 and 1981 amendments, taken together, demonstrate that Congress started with a two-phased, technology-based program for EPA to develop effluent limitations for POTWs. Secondary treatment to address solids and biological oxygen demand would be implemented first, followed later by more advanced treatment technologies that had been demonstrated as uniformly viable and “ready for full-scale application.” Over time, Congress reduced the secondary treatment requirements for POTWs on a national scale and in some instances on a case-by-case basis, and repealed the advanced treatment or BPWTT requirements altogether. With this series of measures, Congress demonstrated its intent to continue indefinitely EPA's secondary treatment requirements as they existed at the culmination of these statutory changes. As a

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<sup>32</sup> Report of the Senate Committee on Environment and Public Works, Clean Water Act Amendments of 1981, S. Rep. No. 97-204 at 17 (Oct. 7, 1981).

<sup>33</sup> *Id.*

result, EPA lacks authority to pursue uniform advanced treatment requirements for POTWs.

NRDC asserts that since the 1981 Amendments repealed the BPWTT requirement for all POTWs, it is more important than ever that EPA redefine secondary treatment to include nutrient removal.<sup>34</sup> NRDC argues that: (1) Congress established two separate regulatory programs for POTWs, the secondary treatment and BPWTT programs; (2) Congress repealed the requirement that all POTWs achieve BPWTT; and (3) now that BPWTT no longer exists, EPA should re-define secondary treatment to include BPWTT. These arguments defy logic: NRDC is arguing that EPA “should” do something that Congress has said EPA cannot do. NRDC is in essence asking EPA to ignore Congress’ directives and to use the repeal of BPWTT authority as the basis to impose requirements for advanced treatment technologies through the guise of secondary treatment. NRDC has argued that EPA has a mandatory duty to do so, when, in fact, EPA demonstrably lacks authority to do so. NRDC’s dissatisfaction with the status quo is clear, but its arguments in this regard are erroneous.

For all of these reasons, EPA cannot revise its secondary treatment requirements to include nutrient removal achievable only by advanced treatment technologies. Instead, as a result of this series of Congressional actions, EPA’s discretion to define secondary treatment under existing CWA authorities is quite limited. EPA has no authority to impose uniform nutrient effluent limitations that are not attainable through the application of secondary treatment.

This leaves the question of what EPA does have authority to do under the existing CWA secondary treatment provisions, given the constraints Congress placed on this authority. EPA is required to define secondary treatment based on “the degree of effluent reduction attainable through the application of secondary treatment.” EPA’s responsibility is to determine which pollutants in municipal wastewater can be reduced by secondary treatment technology, to use its discretion to determine which of these pollutants needs to be regulated with an effluent limit, and to establish a level of reduction for the selected pollutants that is achievable using secondary treatment technology. The pollutants that EPA may regulate, and the degree of reduction that EPA may impose as effluent limitations, are required to be based on the performance of secondary treatment technology – that is, what can this technology accomplish in terms of reducing X pollutants. EPA’s Permit Writer’s Manual, Ch. 5, among other sources, lays this out very clearly. EPA also recognized this in its early regulations, explaining in its 1973 proposed rule (discussed further, below) that the secondary treatment regulation is to be based on “the capabilities of secondary treatment technology.”

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<sup>34</sup> *Petition*, at 46 (“That the second phase of this planned program [the requirement that all POTWs meet the BPWTT standard] was later deleted (due in large part to funding problems), only reinforces the need for EPA to take seriously its obligation to revisit its ‘secondary treatment’ standards periodically.”) (internal citation omitted).

In looking at the nutrients issue, therefore, EPA must ask – what degree of nutrient effluent reduction is attainable with the "application of" – or, performance or capabilities of – secondary treatment technology. EPA has already answered this question for nutrients many times, most recently in its 2008 technology report, in which it states that nutrient reductions achievable by secondary treatment technology are “negligible.”

Thus, EPA has authority to review what degree of nutrient reduction is capable of being achieved by the use of secondary treatment technology, and the discretion to develop effluent limits for that degree of reduction. With respect to nutrients, EPA has determined that secondary treatment technology has very limited capability to reduce nutrients (e.g., "negligible"). Writing an effluent limit for phosphorus and nitrogen, where the effluent limits would reflect only the “negligible” reductions achievable by secondary treatment technology, would be a poor use of Agency resources, but EPA has authority and discretion to do so, as a response to NRDC’s Petition.

In sum, EPA’s authority is also limited by Congress’s recognition that secondary treatment was focused on biological treatment technology that follows primary separation technology in a treatment train. Congress did not define secondary treatment to include physical, chemical or other types of treatment technology. So, if a pollutant cannot be reduced by traditional biological treatment technology, it cannot be regulated as part of secondary treatment. EPA does not have authority, as part of secondary treatment, to establish limits for nutrient reductions (or any other pollutants) that are achievable by technology other than secondary treatment technology. Such requirements would have been part of BPWTT, had Congress not repealed it in 1981. The types of nutrient limits advocated by NRDC in its petition are not capable of being achieved by secondary treatment technology, and instead, require advanced treatment technologies. Therefore, EPA does not have authority to define secondary treatment to include nutrient or any other pollutant reductions that are achievable only by some other form of treatment.

### C. EPA’s Regulatory Actions are Consistent with the CWA

#### 1. EPA’s Rulemaking Efforts

EPA’s regulations defining secondary treatment are contained at 40 C.F.R. Part 133. EPA first issued a final rule establishing secondary treatment regulations in 1973, and amended the regulations in 1976, 1977, 1984, 1985, and 1989. EPA has – in the early years, following the 1981 repeal of BPWTT, and more recently – consistently indicated its understanding that Congress’ intent was to define secondary treatment to address suspended solids and biologically degradable, oxygen demanding material, with between 50 - 90% removal of organic materials achieved by secondary treatment, and without regard to receiving water quality.

The 1973 final rule defined secondary treatment to include four parameters: BOD, SS, fecal coliform bacteria, and pH.<sup>35</sup> Although EPA received comments that effluent limitations

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<sup>35</sup> 38 Fed. Reg. 22,297, 22,298 (Aug. 17, 1973)(emphasis added).



for POTWs should be based on water quality standards, EPA rejected this view, stating that “[n]o change has been made in the regulations because the Act and its legislative history clearly show that the regulation is to be *based on the capabilities of secondary treatment technology* and not ambient water quality effects.”<sup>36</sup> Thus, for over thirty years, EPA has understood that water quality impacts are irrelevant to the establishment of secondary treatment standards. NRDC’s focus on nutrient water quality issues as a driver for expanding secondary treatment to include advanced nutrient removal technology is, therefore, completely misplaced.

The EPA’s initial rulemaking effort included a proposal to establish fecal coliform limits using disinfection technology as part of secondary treatment. Several commenters noted that EPA did not have authority to include limits for fecal coliform based on disinfection technology as part of secondary treatment, because it was a different technology. EPA ultimately withdrew the proposed technology-based fecal limits in favor of a water quality-based approach, citing among other reasons its discretion to regulate pollutants on site-specific rather than uniform basis where discharges of wastewater chlorinated to treat fecal coliform had variable water quality effects and the need to provide for chlorination treatment varied based on local needs and conditions. This is exactly the approach later upheld in *Maier* for NOD and that EPA relied upon in denying the CBF nutrient petition in 2005, as discussed further below. The initial rulemaking effort also shows that EPA has history of looking at energy and chemical demands as well as cost in determining that a uniform effluent limit under secondary treatment is not appropriate.

The fecal coliform decision by EPA also supports the conclusion that the Agency’s secondary treatment authority is limited to secondary treatment technology and pollutants capable of being removed by this technology. Although EPA did not need to decide the issue raised by commenters that challenged the proposed inclusion of disinfection technology as part of secondary treatment, the history of the secondary treatment rule from this first effort onward reflects the reality that EPA has never expanded the definition of secondary treatment to include other types of technology. This is entirely consistent with the way Congress defined EPA’s secondary treatment authority in the statute. Furthermore, over time, Congress sanctioned deviations from biological secondary treatment only for facilities meeting certain “equivalency” factors. Finally, as discussed above, Congress narrowed EPA’s secondary treatment authority over time and removed BPWTT. To the extent the fecal coliform/disinfection technology proposal was an early attempt by EPA to read its secondary treatment authority expansively, it ultimately did not do so, and since then, Congress has placed considerable limits on the scope of this authority.

In 1975, EPA proposed to change the secondary treatment regulations based on the research of an EPA task force which had concluded that the use of chlorine in wastewater disinfection posed risks to human health and aquatic life.<sup>37</sup> As a result of the task force’s

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<sup>36</sup> *Id.*

<sup>37</sup> 40 Fed. Reg. 34,333, 34,522 (Aug. 15, 1975).

findings, EPA proposed to eliminate the fecal coliform bacteria parameter from the definition of secondary treatment.<sup>38</sup> The Federal Register notice explains that the use of chlorine was costly and energy-intensive for POTWs. In 1976, EPA finalized the final rule eliminating the fecal coliform bacteria parameter from secondary treatment, and clarifying the pH parameter.<sup>39</sup> EPA instead determined that regulation of fecal coliform bacteria in POTW effluent should be accomplished on a case-by-case basis using water-quality standards.<sup>40</sup> Importantly, EPA made this change in part because the need for chlorination of POTW effluent varied according to local conditions, and thus disinfection standards were more appropriately established on a case-by-case basis. “The Agency also believes that because of the potential problems associated with the unnecessary use of disinfectants and the variable need for disinfection from one area of the country to another or one season to another, it is best to set disinfection requirements for POTWs on a case-by-case basis.”<sup>41</sup>

In the 1977, 1984, 1985 and 1989 rule modifications, EPA relaxed the suspended solids treatment requirements for smaller wastewater treatment facilities,<sup>42</sup> amended the regulations governing treatment equivalent to secondary treatment pursuant to section 304(d)(4),<sup>43</sup> relaxed percent removal requirements for certain parameters out of concern that the existing removal requirements would prove overly costly, and that technology did not exist to allow all facilities to meet the requirements,<sup>44</sup> and altered secondary treatment percent removal requirements during dry weather for treatment facilities served by separate sewers.<sup>45</sup>

This rulemaking history demonstrates two important points. First, EPA has consistently interpreted secondary treatment to focus primarily on removal of solids and biological oxygen demand, as Congress intended. Indeed, in its 2005 denial of a petition by the Chesapeake Bay Foundation (CBF) to revise secondary treatment requirements to include nutrient removal, EPA summarized its longstanding interpretation of the CWA’s secondary treatment authority as follows:

Historically, EPA distinguishes between “primary” and “secondary” treatment processes based on pollutants removed and the means by which pollutant removal

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<sup>38</sup> *Id.*

<sup>39</sup> 41 Fed. Reg. 30,583, 30,786 (July 26, 1976).

<sup>40</sup> *Id.* “Reliance on water quality standards for establishment of disinfection requirements for POTW’s [sic] in lieu of limitations in 40 CFR Part 133 was selected by the agency because . . .”

<sup>41</sup> *Id.*

<sup>42</sup> 42 Fed. Reg. 54,529, 54,664 (Oct. 7, 1977).

<sup>43</sup> 49 Fed. Reg. 36,986, 36,986 (Sept. 20, 1984).

<sup>44</sup> 50 Fed. Reg. 23,382, 23,382 (June 3, 1985).

<sup>45</sup> 54 Fed. Reg. 4,224 (Jan 27, 1989). The final rule amended 40 C.F.R. § 133.103(e).

was accomplished. Primary treatment removes pollutants through liquid-solid separation techniques. Secondary treatment, in turn, biologically removes degradable organic materials from wastewater and became synonymous with the biological treatment of wastewater for the removal of carbonaceous material. “Nutrients,” such as phosphorus and nitrates (NO<sub>3</sub>), were not specified for inclusion as pollutant parameters to be regulated under secondary treatment because, under normal conditions, secondary treatment does not effectively or consistently remove them.<sup>46</sup>

Second, in every instance where Congress has directed a narrowing of POTW obligations under secondary treatment, EPA has responded by modifying its secondary treatment requirements to account for factors such as cost, variable need based on water quality impacts, energy usage and technical feasibility. The changes to secondary treatment directed by Congress and implemented by EPA over time dispel any notion that secondary treatment is a “one size fits all”, technology-forcing standard. Instead, this series of rulemakings, like the legislative history, reflect a trend towards *reducing* expectations and requirements for the scope of secondary treatment, in recognition of an overall concern regarding whether expensive, uniform technology-based solutions provided sufficient water quality benefits to justify their cost in all cases.

Contrary to NRDC’s suggestion that Congress intended the secondary treatment program to someday include advanced treatment requirements, the legislative history and EPA’s responses to Congress demonstrate the very opposite. Congress consistently placed limits on the nature and scope of secondary treatment requirements, and ultimately repealed any requirement for EPA to consider advanced technology such as nutrient removal at POTWs.<sup>47</sup>

## 2. EPA Properly Denied Prior Petitions to Revise Secondary Treatment Standards to Include Nutrients

NRDC’s current effort to have EPA revisit the well-established secondary treatment regulatory program is not novel. EPA has twice considered similar petitions to revise its secondary treatment regulations to include new nutrient-driven effluent limits and has twice rejected such requests as contrary to the CWA, legislative intent and EPA’s interpretation of its regulatory responsibilities under the CWA. EPA’s rejection of one of these petitions was challenged in court and upheld by the Tenth Circuit Court of Appeals. *Maier v. EPA*, 114 F.3d 1032 (10th Cir. 1997). EPA denied a similar petition by CBF in 2005, using similar reasoning as upheld by *Maier*. NRDC’s arguments in its 2007 petition are not new, and have been rejected by the only court to consider the issues, as well as by EPA. As with these past petitions, EPA should reject NRDC’s current petition.<sup>48</sup>

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<sup>46</sup> EPA Denial of CBF Petition, *supra* note 13, at 25 (citations omitted).

<sup>47</sup> Notably, the significant amendments to the CWA in 1987 did not revisit the secondary treatment issue for POTWs, further indicating Congress’ ratification of EPA’s approach to these requirements.

<sup>48</sup> The *Maier* decision relied primarily upon principles of statutory interpretation to reach its conclusion. In the years since *Maier* was decided, there have been no legislative amendments or judicial

a. *Maier v. EPA* (1997)

In 1993, several environmental organizations and individuals petitioned EPA to initiate rulemaking to establish nutrient limits as part of the secondary treatment regulations for POTWs.<sup>49</sup> EPA denied the petition, and the petitioners appealed EPA's decision to the Tenth Circuit Court of Appeals. *Maier* involved facts very similar to the present petition by NRDC. The petitioners argued that new treatment technology made it “feasible and cost-effective” to control nitrogenous biochemical oxygen demand (“NOD”), and therefore, that EPA was required to revise its definition of secondary treatment to include new effluent limitations for NOD.<sup>50</sup>

The court rejected the argument that the mere availability of new technology for controlling NOD meant that EPA must issue generally-applicable effluent limitations to control NOD.<sup>51</sup> The court found that the CWA did not require EPA to include NOD reductions in the definition of secondary treatment, even if it were feasible to control NOD through secondary treatment. Instead, the Court found that the CWA gave EPA discretion in defining secondary treatment, and that EPA could consider factors other than technological feasibility in exercising this discretion.<sup>52</sup>

Additionally, the court held that even if NOD could be reduced by the application of secondary treatment technology, EPA was not required to establish new effluent limitations for NOD.<sup>53</sup> “Contrary to Mr. Maier's assertion, the statute does not on its face require that the generally-applicable effluent limitations address all pollutants that might be reduced by secondary treatment.”<sup>54</sup> Thus, the court rejected the claim “that § 1314(d)(1) requires the Administrator to publish secondary treatment regulations for any pollutant that can be controlled via secondary treatment.”<sup>55</sup> Similarly, NRDC's claim that EPA is required to address all pollutants that secondary treatment technology might reduce is erroneous.

The court also held that EPA can consider the variable effects of a pollutant on water quality in determining whether to set effluent limitations for all POTWs to control

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opinions which would in any way undermine the reasoning of the *Maier* court as to the interpretation of the Clean Water Act's secondary treatment provisions.

<sup>49</sup> See *Maier v. EPA*, 114 F.3d 1032, 1036 (10th Cir. 1997).

<sup>50</sup> *Id.* at 1036.

<sup>51</sup> *Id.* at 1041.

<sup>52</sup> *Id.* at 1041-42.

<sup>53</sup> *Id.* at 1043.

<sup>54</sup> *Id.*

<sup>55</sup> *Id.* at 1041.

discharges of that pollutant.<sup>56</sup> As such, the court upheld EPA's denial of the petition on the basis that NOD varies greatly in its effects on water quality, depending on the characteristics of receiving waters, and thus did not warrant a national technology standard.<sup>57</sup> NRDC has similarly argued that EPA should not consider the fact that nutrients have differing effects based upon the characteristics of receiving waters, because this reasoning applies equally to all pollutants, including those which are currently part of secondary treatment.<sup>58</sup> NRDC's arguments fail under *Maier*.

The court also found reasonable EPA's approach to regulating nutrient discharges from some POTWs on a case-by-case basis under the CWA's water quality-based programs.<sup>59</sup> NRDC takes issue with EPA's long-standing position that generally-applicable effluent limitations for nutrients will lead to over-regulation in some areas where nutrients do not cause serious water quality impacts, but under-regulation in some areas where nutrients do have serious impacts.<sup>60</sup> NRDC contends that such a rationale is arbitrary because it applies with equal force to the regulation of any pollutant, including those which are part of the secondary treatment standards.<sup>61</sup> However, as noted, NRDC's position is contrary to the holding in *Maier*. Furthermore, the *Maier* court also endorsed EPA's variable impacts analysis by finding that EPA acted properly in deciding not to impose effluent limitations for nutrients based in part on EPA's concern that doing so would impose costly controls on certain POTWs with little benefit to the water quality in some areas.<sup>62</sup> EPA reasserted this position in its 2005 denial of the CBF petition, and this conclusion remains true today. Although *Maier* did not involve a duty to publish claim, the court recognized that any duty to publish is separate from a duty to regulate. The court also explicitly found that, regardless of whether EPA has a duty to publish information on the level of nutrient reduction attainable by secondary treatment, EPA does not have a duty to issue secondary treatment regulations limiting the discharge of nutrients. Therefore, NRDC is incorrect in its assertion that any duty EPA may have to publish information on the degree of nutrient removal attainable through secondary treatment is co-extensive with a duty to regulate nutrients through the secondary treatment regulations.

In sum, *Maier* found that CWA section 301(b)(1)(B) does not require EPA to include in the definition of secondary treatment every pollutant that might be reduced by secondary

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<sup>56</sup> *Id.* at 1044-45.

<sup>57</sup> *Id.* at 1045.

<sup>58</sup> *Petition*, at 48-49.

<sup>59</sup> "EPA makes a reasoned argument that where NOD is a problem, it may be addressed in terms of a POTW's permit, and points out that 53% of major secondary treatment facilities across the country now have such requirements." *Id.*

<sup>60</sup> *See* EPA Denial of CBF Petition, at 25.

<sup>61</sup> *Petition*, at 49-50.

<sup>62</sup> *See Maier*, 114 F.3d at 1044.

treatment technology, or to respond to new technology developments with new secondary treatment regulations. In addition, *Maier* upheld EPA's approach of considering the variable effects of a pollutant on water quality and its authority to exclude such pollutants from effluent limitations applicable to all POTWs.

b. CBF Petition (2005)

In 2003, the Chesapeake Bay Foundation ("CBF") petitioned EPA to institute rulemaking to amend a host of Clean Water Act regulations applicable to the Chesapeake Bay.<sup>63</sup> One of CBF's requests was for EPA to amend the secondary treatment regulations to establish technology-based effluent limitations for nitrogen removal at 3 mg/l.<sup>64</sup> In 2005, EPA denied CBF's petition overall, and in particular, explicitly declined to institute rulemaking to revise the secondary treatment regulations to include nitrogen removal.<sup>65</sup>

In its denial, EPA discussed the *Maier* decision as supporting the Agency's interpretation of its secondary treatment authorities. First, the CWA does not require EPA to address all pollutants that might be reduced by secondary treatment as part of generally applicable effluent limitations for POTWs. Second, EPA has discretion to control specific parameters that might be capable of removal through secondary treatment through water-quality-based limits in individual permits, rather than through a generally applicable standard. Furthermore, in exercising this discretion, EPA may consider the fact that a specific parameter has highly variable impacts on water quality, and that control of the specific parameter by individual permit is an adequate, even preferable, means of regulation.<sup>66</sup> Finally, the mere existence of new technology for nutrient removal that might in some cases be cost-effective is an insufficient basis to trigger development of a generally applicable technology-based standard, because EPA has discretion to determine that certain technologically achievable standards might be appropriate for some but not all POTWs.<sup>67</sup>

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<sup>63</sup> Chesapeake Bay Foundation, *Petition for Rulemaking* (December 1, 2003).

<sup>64</sup> *Id.* at 21.

<sup>65</sup> EPA, *Decision on Petition for Rulemaking to Address Nutrient Pollution from Significant Point Sources in the Chesapeake Bay Watershed* (2005), available at <http://www.epa.gov/water/cbfpetition/petition.pdf>

<sup>66</sup> NRDC appears to take the position that if a water quality-based approach to nutrient removal is not working to NRDC's satisfaction, EPA must switch to a technology-based approach to nutrient removal. NRDC's argument is contradicted by the fact that CWA imposes technology-based standards first, to be followed by water-quality based effluent-limited on a case-by-case basis where technology standards prove insufficient to protect particular receiving streams. EPA's approach to regulating nutrients at POTWs already requires nutrient removal in addition to secondary treatment where justified on a case-by-case basis taking into account local water quality requirements. There is no provision in the Clean Water Act that would require, or allow, EPA to impose technology based nutrient removal requirements if the Agency were to conclude that the water quality-based program is inadequate. These issues are discussed in further detail in Section III.D., below.

<sup>67</sup> EPA Denial of CBF Petition, *supra* note 8, at 26-27.

Consistent with these principles, EPA denied CBF's petition with respect to seeking specific effluent limitations for nitrogen removal as part of secondary treatment. EPA provided four specific reasons for its decision. First, EPA explained that the impact of nutrients on water quality varies based on the characteristics of the receiving water body.<sup>68</sup> As a result, limitations on the discharge of nitrogen from POTWs should not be uniform, but rather, evaluated on a case-by-case basis, based on the characteristics of the receiving water body.<sup>69</sup> Otherwise, nationally-applicable limitations would impose costly controls with little benefit in many situations.<sup>70</sup>

Second, EPA pointed out that its programs were already regulating nutrient discharges from POTWs on a case-by-case basis.<sup>71</sup> Third, the agency determined that its limited resources were better spent on matters other than initiating rulemaking to impose nutrient limits on POTWs.<sup>72</sup> And finally, EPA stated that, even if it did institute rulemaking to impose a nationally applicable limit on nutrients, EPA would not set such a limit at 3 mg/L.<sup>73</sup> EPA concluded that technology was not currently available to achieve a limit of 3 mg/L on a uniform basis at all POTWs, and that, even if such technology were available, such technology would be extremely expensive.<sup>74</sup>

In sum, NRDC has not presented any new information that would lead to different conclusions than those made by EPA recently in response to the CBF Petition. Furthermore, NRDC's arguments have been rejected by EPA twice in responding to the prior petitions, and are contrary to the court's analysis in *Maier*. The reasons EPA provided to deny the prior petitions remain valid bases today for rejecting NRDC's petition. In addition, the other information discussed in this Issue Paper indicates that the CWA requires EPA to deny NRDC's petition for denying NRDC's requests. The discussion below addresses additional technical and policy reasons that EPA should reject NRDC's Petition.

#### D. Technology-Forcing and the Role of Water Quality Standards

NRDC argues that the CWA's secondary treatment requirements were intended to be technology-forcing and that EPA is required to supplement its water quality programs with technology-based standards if those programs are failing or moving too slowly. Both of these arguments are without merit.

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<sup>68</sup> *Id.* at 26.

<sup>69</sup> *Id.*

<sup>70</sup> *Id.*

<sup>71</sup> *Id.* at 26-27.

<sup>72</sup> *Id.* at 27.

<sup>73</sup> *Id.*

<sup>74</sup> *Id.* at 28-29.

## 1. The CWA is not Technology-Forcing for POTWs

The legislative history of the 1972 Amendments indicates that Congress originally intended to establish a two-phase approach to effluent limitations for industrial and municipal point sources. In Phase I, point sources other than POTWs would meet best practicable technology (“BPT”) standards.<sup>75</sup> In Phase II, point sources other than POTWs would meet best available technology (“BAT”) standards.<sup>76</sup> The scheme for POTWs was different: in Phase I, POTWs would meet secondary treatment standards.<sup>77</sup> In Phase II, POTWs would meet BPWTT standards.<sup>78</sup> Thus, both industrial and municipal point sources were originally to have two phases of technology-based standards. In the case of POTWs, Congress repealed the second phase requirements and funding subsequent to the 1972 Act. By contrast, EPA undertook the two phase program for industrial sources, as these authorities remained intact.<sup>79</sup>

The legislative history of the 1972 Amendments demonstrates that Congress intended the effluent limitations to be technology-forcing for industrial dischargers. However, there is little discussion of a technology-forcing approach for POTWs. For example, in discussing the effluent limitations under section 301, the Report of the Senate Committee on Public Works states that “the Administrator will have the capability and the mandate to press technology and economics to achieve those levels of effluent reduction which he believes to be practicable in the first instance and attainable in the second.”<sup>80</sup> The Report then states that “the program established by this section requires increasingly tougher controls on *industry*.”<sup>81</sup> The U.S. Supreme Court recently affirmed the CWA’s approach of increasing the stringency of technology-based effluent requirements for industrial point sources.<sup>82</sup> There is no parallel approach for POTWs under the CWA.

Furthermore, unlike the CWA’s distinction between existing and new sources of industrial dischargers, for which different standards are required, Congress made secondary treatment applicable to *all* POTWs. This has a significant impact on any request to revise

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<sup>75</sup> Pub. L. No. 92-500, § 301(b)(1)(A), codified at 33 U.S.C. § 1311(b)(1)(A).

<sup>76</sup> Pub. L. No. 92-500, § 301(b)(2)(A), codified at 33 U.S.C. § 1311(b)(2)(A).

<sup>77</sup> Pub. L. No. 92-500, § 301(b)(1)(B), codified at 33 U.S.C. § 1311(b)(1)(B).

<sup>78</sup> Pub. L. No. 92-500, § 301(b)(2)(B), codified at 33 U.S.C. § 1311(b)(2)(B).

<sup>79</sup> Indeed, the detailed approach to increased technology-based requirements for industrial point sources was recently acknowledged by the Supreme Court’s analysis of the CWA’s cooling water intake requirements in *Entergy Corp. v. Riverkeeper, Inc.* 556 U.S. \_\_\_\_ (2009) (Appendix citing to phased technology limits for industrial point sources).

<sup>80</sup> S. Rep. No. 92-414 (1971), reprinted in 1972 U.S.C.C.A.N. 1773, 3709.

<sup>81</sup> *Id.* (emphasis added).

<sup>82</sup> *Entergy*, at 10 and Appendix.



the secondary treatment requirements, because any change in the definition of secondary treatment will affect *all* POTWs, not just new facilities. Congress used technology-forcing measures with industry taking into account differences in the capabilities and costs associated with implementation of more advanced technologies at new versus existing facilities. NRDC's generic references to "technology-forcing" ignore this important distinction.

Moreover, the language and structure of the Act make no sense if secondary treatment is interpreted as technology-forcing. When Congress intended to impose technology-forcing standards, it used the terms "best practicable technology" and "best available technology." Congress could easily have used the "BPT" standard for POTWs in Phase I and thereby subjected POTWs to the same type of regulatory scheme as industrial dischargers. Congress instead decided to use an entirely separate standard: secondary treatment. Thus, in contrast to industrial point sources, which were subject to the technology-forcing BPT standard in Phase I, POTWs were not subject to technology-forcing regulation until Phase II, when the best practicable wastewater treatment technology ("BPWTT") requirements would go into effect. These requirements were then repealed by Congress.

## 2. Technology Limits Precede, Not Follow, Water Quality Limits

NRDC also mischaracterizes the required sequence of effluent limitation requirements in the CWA. Specifically, NRDC argues that EPA should issue new technology-based effluent limitations for POTWs for nutrients because NRDC believes EPA's water quality-based approach is not working.<sup>83</sup> NRDC's specific suggestion is that EPA should enact nutrient reduction technology standards for POTWs to replace its current water quality approach, arguing that EPA has too long relied on a water quality approach and it is time to turn to technology.

NRDC's argument is simply erroneous under the CWA. The structure of the CWA requires EPA to establish minimum technology-based standards for POTWs and for industrial point sources under the authorities discussed above. For POTWs, these technology standards are the secondary treatment standards. Once these standards have been implemented, the CWA requires EPA to determine whether water quality-based effluent limitations are needed for any particular point source in order to attain water quality standards in the receiving waters. This is by definition a site specific analysis that can lead to more stringent controls than the secondary treatment standards.

Thus, contrary to NRDC's claim, the CWA contemplates that water quality based effluent limitations will follow initial technology standards, not the other way around. There is no

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<sup>83</sup> Substantively, NRDC does not seem to take issue with the results achieved for individual POTWs with EPA's current water quality approach, but merely attacks the overall program as too slow. Indeed, many of the technology outcomes advanced by NRDC are in place at individual POTWs as a result of EPA's water quality-based programs, thereby casting doubt on NRDC's position that the program is ineffective.

provision in the CWA that requires or authorizes EPA to turn back to uniform technology standards if its water quality standard-setting process is criticized or found to be failing. In sum, the additional CWA arguments NRDC presents in support of its arguments represent gross mischaracterizations of the CWA and therefore are unpersuasive.

### **III. Additional Technical and Policy Arguments Advanced by NRDC are Inaccurate or Contrary to the CWA and Should be Rejected**

NRDC's technical discussion and its presentations of "facts" concerning nutrient pollution contain numerous errors that seriously undermine its technical and policy suggestions. The most significant of these is NRDC's argument that nutrient removal technology is tantamount to, or a mere extension of, secondary treatment. The fact is that nutrient removal technology is a distinct type of wastewater treatment technology that is in addition to, not an extension of, secondary treatment technology. Thus, POTWs with secondary treatment processes would incur significant increased capital and operating costs to implement new nutrient removal technology that would provide a separate treatment process in addition to secondary treatment.

Second, NRDC's assertion that nutrient removal technology designed to meet its proposed limits of 3.0 mg/L total nitrogen and 0.30 mg/L total phosphorous is available uniformly at a reasonable cost is inaccurate. Instead, the costs for nutrient removal at the levels preferred by NRDC will be very expensive with questionable water quality benefits at many POTWs. The lower the nutrient reduction targets, the higher the marginal costs become, meaning that incremental gains in effluent reductions come at significant costs. Variables affecting cost include the type, size and condition of existing treatment facilities and the technology selected to meet the new limits, as well as water quality in the receiving waters and the effects of non-point sources in a particular water body. All of these factors vary to a degree that precludes uniform conclusions about whether and to what extent technology to remove nutrients is warranted. This variability underscores the reasonableness of EPA's approach requiring a detailed evaluation of nutrient removal issues at each POTW on a site-specific basis.

Finally, NRDC's discussion of the problems associated with nutrient pollution fail to acknowledge the significant role that non-point sources play in these problems and the relatively small contribution of nutrients represented by POTWs on a nationwide basis. The fact is that nutrient driven water quality impairment is complex and loadings vary significantly from watershed to watershed across the country. Thresholds for nutrient enrichment vary, as do the magnitude of point and non point source loadings, and individual water body responses. For these reasons, a nutrient reduction treatment technology appropriate in one location may be overly restrictive in another, or not protective enough in a more sensitive watershed. As such, the potential water quality benefits from nutrient removal at POTWs vary widely and depend largely on site specific circumstances in individual watersheds. NRDC's approach tries to simplify a complex problem by focusing on an expensive but narrow outcome that would ensure additional

costs for every POTW without coming close to solving the widespread nutrient problem described in its Petition.

#### A. Nutrient Removal Technology is not Secondary Treatment

NRDC's argument that nutrient removal can be seen as a form of secondary treatment lacks technical credibility. Primary and secondary treatment processes are well known and understood in the wastewater industry by utilities, engineering designers, plant operators, and regulators. Primary and secondary treatment are focused on BOD and suspended solids removal. Common definitions of primary and secondary treatment are as follows:

- **Primary Treatment:** The first stage of wastewater treatment that removes settleable and floating solids. Generally, primary treatment removes approximately 40 to 60 percent of the suspended solids and 30 to 40 percent of BOD.
- **Secondary Treatment:** The second stage of wastewater treatment used to convert dissolved and suspended pollutants into a form that can be removed, producing a highly treated effluent. Secondary treatment normally utilizes biological treatment processes, such as activated sludge or trickling filters, followed by settling in clarifiers to remove approximately 85 percent of the BOD and suspended solids in wastewater.

Secondary treatment processes do not remove nutrients from wastewater, except for a small fraction of nitrogen and phosphorus required for biological growth. Instead, additional types and levels of treatment beyond biological secondary treatment are required for ammonia nitrification and for nitrogen and phosphorus removal. The advanced treatment processes necessary for such reductions are commonly known as advanced treatment, nutrient removal, and tertiary treatment. These terms are used to describe the capital investments required for additional unit processes and biological treatment modifications required to accomplish nutrient removal.

Nutrient removal also requires additional energy, chemicals, maintenance materials, and labor which increase operation and maintenance costs. When chemicals are added for nutrient removal, additional solids must be processed in the treatment plant and managed in biosolids utilization or disposal programs. Increases in solids loadings also increase capital, operating, and disposal costs for wastewater treatment. In short, nutrient removal technology represents types and levels of treatment well beyond the established scope of secondary treatment.

As EPA recently summarized:

[C]onventional secondary treatment biological treatment processes do not remove the phosphorus and nitrogen to any substantial extent. Tertiary treatment can remove nitrogen and phosphorus through carefully designed chemical reactions that generate easily isolated products such as precipitates and gases, though it is considered a costly technology....Advanced treatment technologies can be

extensions of conventional secondary treatment to remove nitrogen and phosphorus.<sup>84</sup>

Thus, EPA has already concluded that nutrient removal is not part of secondary treatment because it involves separately engineered processes and removes levels of nitrogen and phosphorus that secondary biological treatment is incapable of removing.

Some concrete examples help to illustrate that nutrient removal is a complex and costly addition to secondary treatment and is not, as NRDC asserts, merely an extension of secondary treatment technology. Phosphorus removal in wastewater treatment can be accomplished biologically or chemically. The technology necessary to accomplish biological phosphorus removal includes additional anaerobic zones in the activated sludge process, modified sludge return pumping and piping, aeration modifications, and production of a readily degradable carbon source. None of these features are included in secondary treatment plants and, instead, must be separately engineered, constructed, operated and maintained. Similarly, the technology required to accomplish chemical phosphorus removal involves a number of steps not used in secondary treatment, including chemical addition (alum or ferric) to precipitate ortho-phosphate and remove the phosphorus precipitants by either settling or filtration, along with physical requirements such as chemical feed systems and effluent filters for lower levels of effluent phosphorus. None of these features are included in secondary treatment plants. Additional solids handling capacity is also required since chemical treatment may generate 15 to 25 percent more solids than secondary treatment. NRDC is simply wrong when it suggests that all of these additional treatment processes and facilities are part of secondary treatment technology.

A comparison of nitrogen removal technology with secondary treatment technology yields similar conclusions. Nitrogen removal in wastewater treatment can be accomplished biologically in the activated sludge process by nitrification and denitrification. Nitrification requires substantially larger treatment process tankage and aeration systems that may be 50 to 100 percent larger than that required for secondary treatment alone. Nitrification treatment processes are temperature dependant and cooler winter season wastewater temperatures require larger reactors to compensate for slower reaction kinetics in the biological treatment process. Denitrification can be accomplished in the activated sludge process in simultaneous nitrification/denitrification reactors, or in subsequent process steps, including separate denitrification filters. In either approach, a supplemental source of readily available carbon is required to drive the biological process since secondary treatment depletes the carbon source available in the wastewater by BOD removal. Common external carbon sources include methanol, an industrial chemical that is fed to the liquid stream treatment process. In addition to the biological reactor, storage facilities, pumping systems and controls are needed to carefully match process requirements for carbon and maintain effluent quality. Physical requirements for process

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<sup>84</sup> EPA, Municipal Nutrient Removal Technologies Reference Document, Volume 1 – Technical Report, at I-2 (2008).

pumping, piping and aeration are all beyond those required for secondary treatment. Operating costs for nitrogen removal are substantially higher than for secondary treatment due to the additional power costs for aeration and process pumping, and supplemental carbon sources.

Furthermore, nutrient removal treatment also results in the concentration of nitrogen and phosphorus in the solids stream where recycle returns from thickening and dewatering can impact overall plant performance. As a result, recycle side stream treatment facilities are required to mitigate the impact on liquid stream treatment, especially when meeting low effluent nutrient limits. Because high concentrations of ammonia nitrogen and phosphorus can consume substantial portions of plant capacity and cause process upsets, equalization is required to spread out recycle returns and dampen the impact on liquid stream treatment. Chemical precipitation and prenitritification facilities may be important to add to optimize liquid and solids stream treatment performance. These facilities are not included in secondary treatment plants.

In short, adding nutrient removal technology to secondary treatment facilities involves significantly different technological and physical processes and facilities and creates additional waste streams and chemical and energy usage not required by secondary treatment. NRDC's attempts to downplay these significant differences by claiming that such changes would be "minor retrofits" or mere "improvements to conventional biological treatment" are unpersuasive, if not misleading.

NRDC tries to mask this reality further by arguing that it has presented new information on technologies available for removing nitrogen and phosphorus that secondary treatment processes are capable of achieving. But it is not secondary treatment technology that accomplishes the nutrient removal described by NRDC – it is advanced nutrient removal technology that EPA has repeatedly and correctly concluded is not part of secondary treatment.<sup>85</sup> Indeed, EPA's September 2008 report considered the nitrogen removal technologies discussed in NRDC's petition as well as several technologies that were not even mentioned in NRDC's petition.<sup>86</sup> Thus, contrary to NRDC's argument, it has not presented any new information that EPA has not already considered in continuing to conclude, as recently as the 2008 report, that nutrient removal is not attainable by application of secondary treatment technology.

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<sup>85</sup> See *Petition* at pp. 19-36.

<sup>86</sup> Compare *Petition* at pp. 19-25 (discussing the Modified Ludzack-Ettinger, Step Feed, Sequencing Batch Reactor, 4-Stage Bardenpho, Oxidation Ditch, and Attached Growth Systems) with *EPA Nutrient Removal Report* at pp. 2-11 to 2-26 (discussing the Modified Ludzack-Ettinger, Cyclically Aerated Activated Sludge, 4-Stage Bardenpho, Oxidation Ditch, Fixed Film, Moving Bed Biofilm, Membrane Bioreactor, Step Feed, Schreiber, Sequencing Batch Reactor and SHARON processes). Compare *Petition* at pp. 29-35 (discussing the A<sup>2</sup>O, 5-Stage Bardenpho, University of Cape Town, Oxidation Ditch, and Virginia Initiative Plant processes) with *EPA Nutrient Removal Report* at pp. 2-50 to 2-56 (discussing the A<sup>2</sup>O, 5-Stage Bardenpho, University of Cape Town, Virginia Initiative Plant, Bardenpho, Blue Plains, and Westbank processes).

In sum, NRDC's attempt to suggest that nutrient removal technology is practically co-extensive with or a minor extension of secondary treatment is factually inaccurate. Instead, nutrient removal technology and secondary treatment technology are separate engineered processes that address different pollutants for entirely different purposes. NRDC's Petition ignores this reality. In fact, NRDC's arguments demonstrate that new technology beyond secondary treatment technology is necessary to achieve the nitrogen and phosphorus limits it has proposed.

#### B. Evaluating the Costs and Benefits of Nutrient Removal Requires Site-Specific not Uniform Approach

Costs, water quality benefits and community benefits were all important to Congress in defining POTWs' obligations under the CWA. NRDC's petition distorts this balance by advocating for nutrient removal technology that would impose huge costs on POTWs but produce limited benefits for water quality and communities. Thus, while NRDC suggests the costs it has cited are reasonable, evaluating costs without looking at the benefits that would result from imposing these costs is meaningless. Costs for new or retrofitted treatment plant nutrient removal technology are highly dependent upon existing infrastructure and the extent to which facility modifications are required to meet effluent nitrogen and phosphorus limits. For these reasons, it is difficult to accurately generalize, as NRDC has attempted, about the costs for modifications required for uniform nutrient removal. Instead, this must be done on a site-by-site basis, as EPA is doing through its water quality programs.

As EPA has recognized, proper evaluation of the potential costs and benefits of imposing nutrient removal requirements is a complex process that does not lend itself to a uniform, one-size-fits-all approach. NRDC's Petition acknowledges this but, rather than addressing the complexities, merely criticizes the approach as too slow. In doing so, NRDC glosses over critical elements of an appropriate analysis of nutrient reduction issues.

For example, NRDC recites information which purports to show that nutrient removal technologies are cost-effective, and goes so far to argue that there could be cost savings from implementing such technology. However, NRDC's claims are refuted by the experiences of POTWs in studying and implementing nutrient removal technologies in a variety of settings. Moreover, as discussed below, while NRDC has presented information demonstrating the high overall costs for POTWs to implement its proposals, it has presented very little information about the effectiveness such expensive controls would have on improving water quality. In addition, NRDC makes sweeping statements about the reliability of these newer technologies to achieve design effluent limits, with little support for its statements. The experience in the field, however, demonstrates that design limits are often difficult to achieve even after large expenditures.

Along with not showing that its proposal for uniform nutrient limits would be effective in significantly improving water quality, NRDC's arguments fail to account for the negative environmental impacts of requiring intensive new treatment processes at all POTWs, regardless of need. NRDC's proposed standards would have detrimental consequences in terms of secondary environmental impacts (energy use, chemical use, green house gas

emissions) and could skew development patterns in a way that increases nonpoint source loadings.

EPA's recently published Municipal Nutrient Removal Technologies Reference Document evaluated the performance and costs of facilities removing nitrogen and phosphorus. EPA examined effluent nitrogen and phosphorus performance at 29 full scale treatment plants in the United States and one in Canada. Detailed process information and costs were analyzed for more than 40 different treatment technologies for removing nitrogen and phosphorus from municipal wastewater. Nine facilities were studied in depth with case studies presented in an appendix. The case studies used performance data from a one year period to identify the factors influencing performance, reliability, and costs. Although presented as a reference document, EPA's efforts demonstrate the complexity of evaluating the costs, performance and benefits of nutrient removal technology. EPA's report also underscores the reality that these analyses are highly dependent on site-specific factors, contrary to NRDC's argument that a uniform approach is warranted.

### C. NRDC Ignores Non-point Source Pollution as a Primary Element of EPA's Water Quality- Based Programs

Lastly, NRDC asserts a number of "facts" to demonstrate the problem of nutrient pollution and argues that it would be unreasonable for EPA not to impose uniform nutrient effluent limitations on all POTWs. NRDC argues that nutrients are causing serious problems in many water bodies, and that the current regulatory scheme is not addressing the problem adequately.<sup>87</sup> NRDC appears to acknowledge that nutrients from POTWs are relatively small sources of the water quality problems it describes. Tellingly, however, NRDC's proposed solution is silent on the substantial contributions made by non-point sources to these problems. As such, NRDC's suggestion that EPA abandon the water quality approach in order to work on writing new effluent limits for POTWs fails to address the most significant part of the problem.

As a result, NRDC's proposed actions, in addition to being contrary to law and science, are likely to be completely ineffective in addressing the widespread nutrient pollution problem set forth in detail in the Petition. Indeed, NRDC's proposed solution is unreasonable, because it bears little relationship to solving the problems NRDC has described. Placing a uniform nutrient removal limits on POTWs will not vastly improve the widespread nutrient water quality problems described in NRDC's Petition and instead will slow the progress of the EPA programs that NRDC complains are already too slow. Thus, it would be arbitrary and capricious for EPA to grant NRDC's requests.

In most waterbodies, point source wastewater discharges are only a part of the total nutrient loading to the watershed. According to EPA, most watersheds are impaired by a combination of point sources and nonpoint sources, or are predominately nonpoint sources. Without nonpoint nutrient controls, technology based nutrient standards for

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<sup>87</sup> *Petition*, at 51-52.

wastewater discharges would have limited benefit for waterbodies nationally.<sup>88</sup> Thus, a uniform, nationally applicable effluent limitation for nitrogen and phosphorus would lead to highly variable impacts on water quality for two reasons: (1) point source wastewater discharges are responsible for only a fraction of the nutrient discharges nationwide, and (2) water bodies vary widely in their concentrations of nitrogen and phosphorus. Indeed, in some watersheds, nonpoint source nutrient loadings outweigh point sources to a degree that advanced treatment for nutrient removal would have little effect on water quality.

The variability of nutrient sources and loadings to different water bodies highlights the need for careful consideration of site specific water quality conditions and the selection of localized management tools to protect and improve water quality. EPA reasonably and appropriately recognized this long ago and fashioned a rational program for addressing nutrient water quality issues caused by both point source and non-point sources. This complexity is further complicated by the CWA's provision of limited tools to regulate non-point sources. EPA's approach is a rational response to evidence indicating that site-specific nutrient controls are more appropriate than uniform national standards. NRDC's proposal, by contrast, targets the relatively small contributions of POTWs for regulatory action and in doing, so, undermines the very progress EPA is trying to make.

In sum, NRDC's dissatisfaction with the current CWA framework for addressing nutrients is apparent, but is an issue only Congress can resolve.

## IV. Summary and Conclusions

### A. EPA Has Not Violated Any Duty to Publish

NRDC is incorrect that EPA has a present duty under CWA section 304(d)(1) to publish information regarding the level of nutrient reduction attainable through the application of secondary treatment.

First, section 304(d)(1) does not apply to nutrient removal, because nutrient removal is not attainable using secondary treatment technology. Crucially, section 304(d)(1) does not require EPA to publish information on how POTWs can achieve effluent reduction of every conceivable pollutant, through any treatment process. EPA's obligations under section 304(d)(1) are limited to effluent reductions attainable by secondary treatment, which does not include nutrient removal technology. As a result, NRDC's duty-to-publish claim should be rejected.

Second, even if some level of nutrient removal were considered attainable by secondary treatment technology, EPA has complied with any duty to publish information regarding nutrient removal at POTWs with its publication of the September 2008 two volume

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<sup>88</sup> EPA-Region 4, Total Maximum Daily Load Program (2001), *available at* [http://www.p2ad.org/files\\_pdf/EPA\\_TMDL\\_Presentation.pdf](http://www.p2ad.org/files_pdf/EPA_TMDL_Presentation.pdf).



reference document. This report provides a detailed study of available technologies for removing nutrients from POTW effluent.<sup>89</sup> As a result, even if EPA has a duty to publish information on the degree of nutrient removal attainable by secondary treatment technology, EPA has complied with this duty by releasing the September 2008 report.

**B. EPA Has No Authority to Define Secondary Treatment to Include Nutrient Removal, and Lacking Such Authority, Must Reject NRDC's Petition**

A straightforward reading of the Clean Water Act and its legislative history indicates that Congress considered nutrient removal to be an advanced treatment technology that was separate from, not part of, secondary treatment. Congress originally intended that nutrient removal at POTWs would be addressed, if at all, through the development of the BPWTT standards -- not through secondary treatment. In 1981, Congress repealed the BPWTT requirements and thereby limited uniform technology requirements for POTWs to secondary treatment. EPA thus lacks legal authority to define secondary treatment to include any form of advanced wastewater technology, including nutrient removal. Since Congress has spoken clearly on the issue, EPA cannot define secondary treatment to include nutrient removal.

For the reasons set forth in this Issue Paper, NRDC's Petition is based on legal and technical arguments that are fundamentally flawed, and its proposed solution is unreasonable. Therefore, EPA must and should deny the Petition.

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<sup>89</sup> EPA, Municipal Nutrient Removal Technologies Reference Document, Volumes 1 & 2 (September 2008) [hereinafter *EPA Nutrient Removal Report*].