Response to Comments on the Draft NPDES Potable Water Treatment Facility General Permits (PWTF GPs) for Massachusetts (MAG640000) and New Hampshire (NHG640000)

Introduction

In accordance with the provisions of 40 C.F.R. Part 124.17, this document presents EPA's responses to comments received on the Draft NPDES Potable Water Treatment Facility General Permits (PWTF GPs) for Massachusetts (MAG640000) and New Hampshire (NHG640000). This Response to Comments (RTC) document explains and supports the EPA determinations that form the basis of the Final General Permits. For simplicity, the two General Permits will hereafter be referred to as the "PWTF GP" in the remainder of this document. The notice of availability of the Draft PWTF GP was published in the Federal Register on April 27, 2009, and the public comment period expired on May 27, 2009. During the public comment period, EPA received comments from the following individuals on behalf of various organizations or themselves.

1. Laura Stevens
2. Carol Kelley
3. Judith Gibbs
4. Jacqueline Tolosko
5. Phil Guerin, Director of Environmental Systems, Worcester Department of Public Works and Parks (Worcester DPW&P)
6. Robert Pariseau, Director of Water Resources, Town of Amherst Department of Public Works (Amherst DPW)
7. Trina Picardi, Massachusetts Regional Sales Manager, Hach Company
8. Jane Brooks, Laboratory/Regulatory Manager, Springfield Water and Sewer Commission (SWSC)
9. Jennifer Pederson, Executive Director, Massachusetts Water Works Association (MWWA)
10. Thomas W. Knowlton, Superintendent, Salem and Beverly Water Supply Board (Salem/Beverly)

The comments do not result in any substantial changes from the Draft PWTF GP. EPA did note several corrections to language in the Draft PWTF GP, which are listed below and included in the Final PWTF GP. Responses to individual comments submitted by the aforementioned parties are included below, and are structured using the following topic outline.

1. Terminology
2. Aluminum
3. Dilution
4. Total Residual Chlorine
5. Other

Attachment A – Re-evaluation of Discharge Monitoring Report Aluminum Data

Changes Made to the Final Permit as a Result of Public Comments

1. Footnote 8 on page 5 and footnote 5 on page 13 of the General Permit were corrected to reference standard method 4500 CL-G and the first sentence of each footnote was rephrased for clarity.

2. Footnote 9 on page 5 and footnote 6 on page 13 of the General Permit were changed to read that monitoring for total recoverable aluminum is only required for PWTFs that use an aluminum based coagulant.

3. Part C.3 on Page 3 of Appendix IV – Notice of Intent Instructions and Suggested Form, was edited and a new entry numbered Part C.7 was added to be consistent with the requirement at Part 4.4.5 of the General Permit that all applicants must include the required total recoverable aluminum laboratory results in the NOI.

4. Part C.8 on Page 3 of Appendix IV – Notice of Intent Instructions and Suggested Form was renumbered from C.7 to C.8.

5. Part C.9 on Page 4 of Appendix IV – Notice of Intent Instructions and Suggested Form, was renumbered from C.8 to C.9 and corrected to reference Appendix VII for dilution calculations.

6. Parts D.1, D.4 and E.1 of Appendix IV – Notice of Intent Instructions and Suggested Form, were corrected to reference Part II and Part III of Appendix I for descriptions of the ESA and Part III of Appendix III for NHP criteria.

Responses to Comments

1. Terminology

Comment 1.i from Laura Stevens of Middleboro, MA

I am writing to comment on the use of the term "Indian Country Lands" in the Draft NPDES General Permit MAG640000. There has never been in the Commonwealth of Massachusetts "Indian Country" nor can there ever be. There is no legal authority to put "land into trust" in Massachusetts. Massachusetts as one of the 13 original colonies has pre-emptive sovereign authority over all the lands within its boundaries.

In addition, all of the tribes in Massachusetts were recognized after 1934 and thus are not eligible for land into trust (see Carcieri vs. Salazar decision.)

The use of the term is misleading since by law there can be no land into trust for a tribe recognized after 1934; and no land into trust at all in Massachusetts. I ask you to remove the term "Indian Country Lands" from the Draft NPDES General Permit MAG640000.

Comment 1.ii from Carol Kelley of Plymouth, MA

RE: Notice of Availability of Draft NPDES General Permits MAG640000 and NHG640000 for Discharges from Potable Water Treatment Facilities in the Commonwealth of Massachusetts (Including Both Commonwealth and Indian Country Lands) and the State of New Hampshire: the Potable Water Treatment Facility General Permit (PWTF GP)

The above paragraph mistakenly identifies "Indian Country" lands in New England.
This is illegal, unconstitutional and against the law. The Indian Trade and Intercourse Act of 1834 clearly states that there is no Indian Country east of the Mississippi River and because of recent Supreme Court decisions (Carcieri v Salazar) (07-526) and Hawaii v. Office of Hawaiian Affairs (07-1372) those areas designated on your website are definitely in violation of the law. Please remove the term Indian Country lands from the Draft NPDES.

Comment 1.iii from Judith Gibbs of Lakeville, MA

With all due respect to your position would you please correct your mistake of using the phrase, "Indian Country" that you used in your draft.

In doing over two years of research on American Indian Reservations I have discovered that term does not now or ever did apply to Massachusetts, one of the states in the thirteen colonies.

Comment 1.iv from Jacqueline Tolosko of Cohasset, MA

With all due respect to your position would you please correct your mistake of using the phrase, "Indian Country" that you used in your draft below.

http://www.epa.gov/fedrgstr/EPA-WATER/2009/April/Day-27/w9577.htm

By law no "Indian Country" can exist in Massachusetts. Using the term is misleading. There can be no Indian reservations in the original 13 colonies, Massachusetts is included as one of the original colonies.

Response to Comments 1.i-1.iv

The term "Indian country" is defined by statute as:

(a) all land within the limits of any Indian reservation under the jurisdiction of the United States Government. . .,
(b) all dependent Indian communities within the borders of the United States whether within the original or subsequently acquired territory thereof, and whether within or without the limits of a state, and
(c) all Indian allotments, the Indian titles to which have not been extinguished, including rights-of-way running through the same.

18 U.S.C. § 1151. Although this definition by its terms relates only to federal criminal jurisdiction, the Supreme Court has recognized that it also generally applies to questions of civil jurisdiction. *See Alaska v. Native Village of Venetie Tribal Gov't*, 522 U.S. 520, 526-27 (1998).

The term "Indian country" appears in the Draft Potable Water Treatment Facility General Permit, its accompanying fact sheet, and Federal Register notice in a handful of places. See, e.g., Draft General Permit at Page 3 ("[T]he following general permit authorizes discharges of wastewater from potable water treatment facilities (PWTF and PWTFs) in Massachusetts (including both Commonwealth and Indian Country lands) to all waters . . . ."); *see also id.* at Pages 1, 19, and 27; Fact Sheet at Page 3 ("…EPA New England is reissuing the general permits for discharges from potable water treatment facilities to certain waters of the Commonwealth of Massachusetts (including both Commonwealth and Indian country lands) . . . ."); 74 Fed. Reg. 19,081, 19,081 (Apr. 27, 2009) (similar). EPA has historically used similar language for other NPDES general permits in Massachusetts. *See, e.g.,* Final Reissuance of NPDES General Permit for Construction Dewatering Activity Discharges in the States of Massachusetts and New Hampshire, 67 Fed. Reg. 59,503, 59,503, 59,512 (Sept. 23, 2002); Final Reissuance of National Pollutant Discharge Elimination System (NPDES) Storm Water Multi-Sector General Permit for Industrial Activities, 65 Fed. Reg. 64,746, 64,748 (Oct. 30, 2000).

There are two federally recognized Indian tribes in Massachusetts: the Mashpee Wampanoag Tribe, and the Wampanoag Tribe of Gay Head (Aquinnah). The Department of Interior has taken land in the Town of Gay Head, Massachusetts, into trust for the Wampanoag Tribal Council of Gay Head, Inc., as authorized by the Wampanoag Tribal Council of Gay Head, Inc., Indian Claims Settlement Act of 1987. *See* 25 U.S.C. §§ 1771-1771i; Filing of Plat of Dependent Resurvey of the Land Held in Trust for the Wampanoag Tribal Council of Gay Head, Inc., 59 Fed. Reg., 6,290, 6,290 (Dep't of Interior Feb. 10, 1994); Compliance with Section 5 of Pub. L. 100-95, the Wampanoag Tribal Council of Gay Head, Inc., Indian Claims Settlement Act of 1987, 53 Fed. Reg. 2,295 (Dep't of Interior Jan. 27, 1988). The United States does not presently hold any land in trust for the Mashpee Wampanoag Tribe.

At present, EPA is unaware of the existence of any potable water treatment facilities that are eligible for coverage under the general permit and which are located on land in Massachusetts that constitutes "Indian country" under 18 U.S.C. § 1151. The purpose of these general references to Indian country is to emphasize that a facility which is otherwise eligible for coverage under the general permit will not be rendered ineligible for coverage solely by virtue of being located within a reservation for a federally recognized Indian tribe, including trust lands. Thus, these references simply clarify that the general permit will apply throughout Massachusetts.

2. Aluminum

Comment 2.i from MWWA

Our major concern revolves around monitoring for Aluminum. In discussions that MWWA had with both EPA and Massachusetts Department of Environmental Protection (MassDEP) it was communicated by the agencies that there was concern about the high levels of aluminum that

some systems were reporting. MWWA also reviewed the data set and questioned whether all of the data that was submitted to MassDEP was accurate and/or assembled properly. MWWA is concerned that determinations affecting the proposed permit are being made on what could potentially be a flawed data set. We request that a full evaluation of the data be presented prior to proceeding with the issuance of the permit.

Response to Comment 2.i

EPA has re-evaluated the aluminum (Al) data collected from facilities covered under the Expired Water Treatment Facility General Permit. A summary of these data is included in Attachment A. The re-evaluation includes additional data for each facility previously evaluated, as well as seven additional MA facilities and three additional NH facilities. Where possible, data from EPA's on-line DMR database was compared with hard copy DMRs to minimize errors due to data entry. Errors in the data due to incorrect sampling or analytical methods, or the incorrect recording of results on the DMRs were not investigated during this re-evaluation. The information presented in this re-evaluation is described below in further detail.

Comment 2.ii from Worcester DPW&P

While aluminum is not directly regulated through the draft permit, the water quality standard for aluminum together with recent discharge data will determine applicability of the general permit versus individual permits. The terms of an individual permit are not known at this time. Based on compiled discharge data from DEP, the majority of facilities using aluminum-based coagulants (27 of 34 facilities) would exceed the chronic aluminum WQBEL of 87 µg/L, making them ineligible for the General Permit. Thus, for a large number of water treatment facilities the General Permit is not available. This seems to contradict the intent of a general permit which is to improve the efficiency of regulations.

Response to Comment 2.ii

As stated in Response to Comment 2.i, EPA has re-evaluated the Al data submitted under the Expired General Permit, the results of which are presented in Attachment A. The data shows that 61 MA facilities and 10 NH facilities are currently covered under the Expired PWTF GP. Of these facilities, 43 in MA and 7 in NH use Al based coagulants (including emergency dischargers), and 41 MA facilities and 4 NH facilities submitted sampling data for Al to EPA. Although the addition of more data has affected the numbers for individual facilities, the overall results are substantially similar to the previous evaluation.

The re-evaluation indicates that, in MA, 22 of the 61 facilities are expected to exceed the acute water quality based effluent limit (WQBEL) at least once, while 35 of the facilities are expected to exceed the chronic WQBEL at least once. In NH, 2 of the 10 facilities are expected to exceed the acute WQBEL at least once, while 4 of the 10 facilities are expected to exceed the chronic WQBEL at least once.

EPA expects that facilities will be able to decrease the Al concentration in their discharge by implementing best management practices (BMPs), including those referenced in Parts 1.2.9 and

2.2.9 of the PWTF GP. This will allow facilities that are currently ineligible, according to their DMR data, to potentially become eligible prior to applying for the new PWTF GP. EPA will consider the sampling conducted under the Notice of Intent and evaluate whether a facility is eligible for coverage. Also, as discussed below in Response to Comments 3.i-3.ii, MassDEP is re-evaluating its mixing zone guidance as it applies to water treatment facilities that discharge to lakes or reservoirs. Until this evaluation is complete (estimated to be approximately 6 months from the time of permit finalization) the MassDEP will allow a 10 to 1 dilution factor for such facilities. The dilution factor may be adjusted after the mixing zone evaluation is completed.

After the initial evaluation of the DMR data, EPA concluded that those facilities with the potential to exceed WQBELs would be more appropriately controlled under individual permits. Two of the criteria for covering facilities under a general permit, as stated on Page 4 of the Fact Sheet, are that they "require the same effluent limitations or operating conditions, and require the same or similar monitoring requirements." The DMR data in Appendix A indicates that not all the PWTFs meet these criteria, as some of them have low levels of Al and require monitoring, while others have high levels of Al and may require numerical effluent limits. Therefore, EPA concludes that discharges from PWTFs which contain high levels of aluminum and have a reasonable potential to violate aluminum water quality standards are not eligible for coverage under the PWTF GP because they require different effluent limitations and/or monitoring requirements to control the discharge of that waste. These facilities will be able to apply for individual permits, which will contain site specific requirements.

Comment 2.iii from Worcester DPW&P

The water quality standards for aluminum play an important role in this General Permit but need reevaluation based on current science. It has been reported that the Canadian Ministers of the Environment and Health recently concluded that aluminum salts used for drinking water treatment are "not entering the environment in a quantity or concentration or under conditions that have or may have an immediate or long-term harmful effect on the environment or on its biological diversity or that constitute or may constitute a danger to the environment on which life depends."[1] EPA even endorses the direct application of aluminum salts to lakes in New England for lake restoration by sediment phosphorous inactivation.[2] The current standards fail to consider the pH and hardness of receiving waters, parameters that have been shown to influence aluminum toxicity. There is also a lack of consideration of the form of aluminum, dissolved or particulate, which can also influence its toxicity. In fact, there is inconsistency nationally relative to this key point and its application to water quality standards. West Virginia, for instance, has applied the 87 ppb standard, with EPA's endorsement, as dissolved aluminum. Toxicity tests of aluminum on aquatic organisms show a broad range of values. West Virginia has been allowed by EPA to establish different limits on dissolved aluminum for warm water and cold water fisheries based on toxicity test results which show cold water fish (Brook trout) to be more susceptible than warm water fish.

[1] http://gazette.gc.ca/rp-pr/p1/2009/2009-02-07/html/notice-avis-eng.html#d116

[2] USEPA website: Clean Lakes>Watershed Protection: Clean Lakes Case Study-Phosphorus Inactivation and Wetland Manipulation Improve Kezar Lake, NH (EPA 841-F-95-002) (Office of Water 4503F)

Comment 2.iv from MWWA

MWWA feels that the water quality standards for Aluminum, which must be met in order to qualify for the general permit, need reevaluation based on current science. MWWA previously provided EPA with some reports that question the necessity for such stringent aluminum criteria. On February 7, 2009 the Canadian Ministers of the Environment and Health concluded after an eight year study, "Based on the information available for human health and environment, it is proposed to conclude that the three aluminum salts, aluminum chloride, aluminum nitrate, aluminum sulphate, are not entering the environment in a quantity or concentration or under conditions that have or may have an immediate or long-term harmful effect on the environment or on its biological diversity or that constitute or may constitute a danger to the environment on which life depends. It is also proposed to conclude that aluminum from aluminum chloride, aluminum nitrate and aluminum sulphate is not entering the environment in a quantity or concentration or under conditions that constitute or may constitute a danger in Canada to human life or health."[1] MWWA wants to be sure that the best science is being used for the basis of the Aluminum standard. It currently appears to us that meeting 87 ppb of Aluminum neglects current background levels of Aluminum already present. More analysis should be conducted on what the background levels of Aluminum are around the state and what the source of this metal may be. The current standard also fails to consider pH and hardness of the receiving waters, parameters that have been shown to influence aluminum toxicity. There is also a lack of consideration of the form of aluminum, dissolved or particulate, which can also influence its toxicity. In fact, there is inconsistency nationally relative to this key point and its application to water quality standards. West Virginia, for instance, has applied the 87 ppb standard, with EPA's endorsement, as dissolved aluminum. Toxicity tests of aluminum on aquatic organisms show a broad range of values. West Virginia has been allowed by EPA to establish different limits on dissolved aluminum for warm water and cold water fisheries based on toxicity test results which show cold water fish (Brook trout) to be much more susceptible than warm water fish.

Sampling conducted by a number of purveyors indicates that naturally occurring levels of aluminum in relatively pristine watersheds exceed EPA's published standards. This is caused by a high level of aluminum in the surface soils[3], and acidic runoff[4]. Presented below are frequency distributions of aluminum concentrations in sampling sites in the upper Nashua River and upper Blackstone River basins in watershed substantially un-impacted by local development. The observed aluminum concentrations frequently exceed the chronic criterion.

[3] See Element Concentrations in Soil and Other Surficial Materials of the Conterminous United States, USGS Professional Paper 1270

[4] See http:/www.umass.edu/tei/wrrc/arm/armreport.html

This is consistent with underlying a hypothesis of researchers investigating causes of declines in Salmon fisheries in New England. The authors start their article by saying:

> "…As a result of their underlying geology, many rivers and streams in these [New England] regions have low concentrations of base cations (Ca2+, Mg2+) and consequent poor buffering capacity making them vulnerable to increases in acidity during episodic acidification events such as spring snowmelts and fall storms. During episodic acidification, [aluminum] is mobilized from the soil and enters the surrounding water leading to elevated [aluminum] concentrations."[5]

And the authors conclude by saying:

> "…The heightened sensitivity of the smolt life-stage has substantial implications for salmon populations in regions affected by acid precipitation, as this critical developmental period occurs in the spring when episodic acidification due to seasonal rainfall and snowmelt may be greatest…."[5]

All of these issues raise concern that the water quality standard for aluminum is questionable as applied. Application of this standard (87 ppb total recoverable Al as chronic; 750 ppb total recoverable Al as acute) could place an unnecessary burden on public water systems while providing no meaningful environmental protection.

[5] See Monette and McCormick in Aquatic Toxicology, 86 (2008) p 216 and 224

Comment 2.v from Salem/Beverly

Although the Water Board removes significant quantities of settleable material from [their] waste stream (total suspended solids in the water returned to the reservoir are consistently well below permitted levels), the total aluminum content is above the proposed levels. The Water Board questions the science behind the proposed levels for total aluminum, the most common metal in the earth's crust, in the final backwash water recycle stream. The proposed levels seem well below the naturally occurring levels found in many rather pristine watersheds in Massachusetts. In addition, the proposed levels do not seem to be supportable by some extensive current research. The Water Board also questions why the proposed levels are of concern when the backwash water is soon returned to the treatment plant to be treated again with aluminum salts, as is the case when water suppliers return backwash water to the terminal reservoirs.

The Water Board asks the EPA to delay setting a standard for total aluminum in the NPDES general permit for water treatment plant backwash water until the science surrounding this issue can be further clarified. To set an unrealistic standard at this time could result in both ecologic and economic harm and could lead to severe unintended consequences should it force water suppliers to attempt to change coagulants to compounds with unknown effects.

Response to Comments 2.iii-2.v

EPA's Office of Water is planning to conduct a general review of the national water quality criteria to determine which criteria need updating. The aluminum criteria will be included in this review; however, the studies needed to update all the criteria, including aluminum, are expected to take at least several years. EPA – Region 1 will use the current water quality criteria for aluminum until the Office of Water publishes new criteria that are adopted by the States, at which time EPA will use the most recent criteria.

EPA does allow States to develop their own criteria, if they are able to demonstrate a scientific basis for site-specific alternate criteria. If the physical or chemical properties at a site affect the pollutant bioavailability, a State may calculate site-specific limits using the Water-Effect Ratio (WER) procedure, which quantifies the difference between pollutant toxicity in site water as compared to lab water. If the species at a site are more or less sensitive than species used to calculate the national criteria, the State may use the Species Recalculation Procedure, which allows the States to add or remove species toxicity data based on water body specific information. If both of these conditions exist, the State may use the Resident Species Procedure to calculate site-specific criteria, which is a combination of the WER and Recalculation procedures. Specifically regarding the aluminum criteria, Footnote L of the National Recommended Water Quality Criteria for Non Priority Pollutants states:

"There are three major reasons why the use of Water-Effect Ratios might be appropriate. (1)The value of 87 [µg/l] is based on a toxicity test with the striped bass in water with pH= 6.5-6.6 and hardness <10 mg/L. Data in "Aluminum Water-Effect Ratio for the 3M Plant Effluent Discharge, Middleway, West Virginia" (May 1994) indicate that aluminum is substantially less toxic at higher pH and hardness, but the effects of pH and hardness are not well quantified at this time. (2) In tests with the brook trout at low pH and hardness, effects increased with

increasing concentrations of total aluminum even though the concentration of dissolved aluminum was constant, indicating that total recoverable is a more appropriate measurement than dissolved, at least when particulate aluminum is primarily aluminum hydroxide particles. In surface waters, however, the total recoverable procedure might measure aluminum associated with clay particles, which might be less toxic than aluminum associated with aluminum hydroxide. (3) EPA is aware of field data indicating that many high quality waters in the U.S. contain more than 87 [µg/l of aluminum], when either total recoverable or dissolved is measured."

In West Virginia, several studies were submitted by the State to demonstrate the scientific basis for the current site-specific criteria. After several studies were disapproved by EPA, the final alternate criteria were set at a dissolved chronic aluminum criterion of 87 µg/l for all trout waters and 750 µg/l for all other waters of the State. EPA approved these values as interim criteria on January 9, 2006 and as final criteria in July of 2007.

The Draft General Permit contains monitoring and eligibility criteria for aluminum based on its presence in the discharge and its potential toxicity. EPA is especially concerned with the additive levels of aluminum in the discharge and receiving water, in cases where the backwash water is returned to the treatment plant to be treated again with aluminum salts. Although the application of aluminum salts is an approved method for phosphorus inactivation in lakes impaired for nutrients, the procedure uses controlled dosages of aluminum along with monitoring for pH, alkalinity, and aluminum concentrations to avoid adverse impacts to aquatic organisms. These measures are outside the scope of the general permit, as discharges from PWTFs do not contain controlled dosages of aluminum for the purposes of inactivating phosphorus and the receiving waters are not all impaired for nutrients. As stated in the Draft PWTF GP, eligibility will be determined using the "…state water quality criteria and any available dilution…" which provides EPA the ability to use any new criteria adopted by the states during the effective term of the general permit. This language will be retained in the Final PWTF GP.

Comment 2.vi from Worcester DPW&P

Application of the current water quality standard for aluminum also neglects to account for background levels of aluminum in the aquatic environment. Substantial data collected by water systems in Massachusetts point toward levels of aluminum in protected streams that are many times higher than the chronic aluminum criterion and often higher than the acute criterion (see attachments). Further, there appears to be a seasonal trend and an association between high aluminum values and low pH. Certainly this data should prompt further assessment of natural background levels of aluminum. It makes little sense to regulate the discharge of aluminum to extremely low levels from water and wastewater treatment facilities when receiving waters are already subjected to much higher natural background levels. Application of this standard (87 ppb total recoverable Al as chronic; 750 ppb total recoverable Al as acute) could place an unnecessary burden on public water systems while providing no meaningful environmental protection.

Comment 2.vii from SWSC

Section 1.1 #9. [of the Draft Permit] says that monitoring for total recoverable aluminum is only required for PWTF's that use an aluminum based coagulant **or** whose discharge contains aluminum.

Question: If a PWTF does not use an aluminum based coagulant but naturally occurring aluminum is present in the discharge at levels above 0.02 mg/L, i.e. 0.03 – 0.04 mg/L, then is monitoring required for the NOI and then monthly?

Comment: Monitoring should only be required for those PWTF's that use aluminum based coagulants. The current language requires any discharge that contains aluminum to monitor. Aluminum is present in all natural waters and even those that don't use aluminum based coagulants would discharge a measurable amount of aluminum. In the EPA "National Recommended Water Quality Criteria" document, page 17, footnote L. (3), states, "EPA is aware of field data indicating that many high quality waters in the U.S. contain more than 87 ug/L aluminum, when either total recoverable or dissolved is measured."

Response to Comments 2.vi-2.vii

EPA acknowledges that aluminum is often found in background samples of surface water. For all applicants, the NOI must include the required total recoverable aluminum laboratory results, however, the draft permit has been changed to only require facilities that use aluminum based coagulants to monitor for total recoverable aluminum and submit the results in the DMR. Specifically, footnote 9 on page 5 and footnote 6 on page 13 of the General Permit have been changed to read "Monitoring for total recoverable aluminum is only required for PWTFs that use an aluminum based coagulant."

Comment 2.viii from Worcester DPW&P

While the draft General Permit does not propose an Aluminum limit it is clear that EPA is trying to move water suppliers away from Aluminum-based coagulants. Limiting the applicability of the General Permit to systems with discharges that are always below the 87 ppb standard and implementation of BMPs to reduce Aluminum in discharges clearly point to EPA's desire that Aluminum-based products used for drinking water treatment be limited. Before EPA furthers this agenda, it and DEP need to carefully assess the implications of such a change on water systems and drinking water quality. Coagulant changes (such as to iron-based coagulants) could be both a costly and lengthy process which may have significant operational impacts. Systems that change coagulants to meet Aluminum limits may have problems with other Safe Drinking Water Act requirements; they may have to reassess their lead and copper corrosion control program as one example. Technical assistance will need to be provided to systems making changes given that there will be implications on other rules. Does MassDEP have the necessary staff to advise and approve changes to coagulants? Will a shift away from aluminum-based coagulants to some other compounds create a new water quality issue in both the drinking water and discharge receiving waters?

Comment 2.ix from MWWA

While the draft General Permit does not propose an Aluminum limit, it is clear that EPA is trying to move water suppliers away from Aluminum-based coagulants. Limiting the applicability of the General Permit to systems with discharges that are always below the 87 ppb standard and implementation of BMPs to reduce Aluminum in discharges clearly point to EPA's desire that Aluminum-based products no longer be used for drinking water treatment. EPA and MassDEP need to carefully assess the implications of such a change on water systems and drinking water quality. Coagulant changes (such as to iron-based coagulants) could be both a costly and lengthy process which may have significant operational impacts. Systems that change coagulants to meet Aluminum limits may have problems with other Safe Drinking Water Act requirements; they may have to reassess their lead and copper corrosion control program as one example. Technical assistance will need to be provided to systems making changes given that there will be implications on other rules. Does MassDEP have the necessary staff to advise and approve changes to coagulants?

Response to Comments 2.viii-2.ix

The Clean Water Act requires that surface waters be protected from pollution. The National Pollutant Discharge Elimination System (NPDES) permitting program is a critical component of the CWA and requires, among other things, that dischargers do not cause or contribute to surface water quality violations. Water quality-based criteria are required in NPDES permits when EPA and the State determine that effluent limits more stringent than technology-based limits are necessary to maintain or achieve state or federal water-quality standards (See Section 301(b)(1)(C) of the CWA).

It is not the intent of the Draft PWTF GP to dissuade water suppliers from using aluminum-based coagulants. In fact, EPA expects that the best management practices (BMPs), included in the Draft PWTF GP, will help to decrease the concentrations of aluminum in the discharge so that facilities will be eligible for the general permit without having to change coagulants.

The Draft PWTF GP requirements are designed to address pollutants for which there is a concern regarding water quality. Iron is not expected to pose a threat to the quality of the receiving water, and therefore the Draft PWTF GP does not include monitoring or limits for total recoverable iron. In the future, if iron, or any other pollutant associated with coagulation or PWTFs, is expected to cause or contribute to a violation of water quality standard the Final PWTF GP will be modified to include requirements for that pollutant.

3. Dilution

Comment 3.i from Worcester DPW&P

The issue of dilution factors in standing waters needs to be resolved. For discharges to reservoirs and lakes it is clear to all that dilution is occurring so to not allow for a dilution factor would be illogical. Before this General Permit goes forward, dischargers need to know what they can expect for dilution factors as that determination will, for many water systems, guide their next

steps (General Permit vs. Individual permit; compliance vs. non-compliance). DEP should establish a minimum dilution factor for all discharges to standing waters. Systems should then be allowed to perform the needed studies to support even higher dilution. A dilution factor of one (1) as is currently applied to standing waters is unreasonable and unrealistic. Perhaps a 10:1 dilution factor, as the State of Michigan has been allowed to apply by EPA, would be a reasonable starting point as a minimum for standing waters.

Comment 3.ii from MWWA

EPA is proposing to issue a permit where many of the components are vague and/or undetermined. How will a system determine if they are eligible for a general permit or will need to apply for an individual permit when it is not clearly stated what the dilution factor will be? What requirements will be included in an individual permit? This permit draft talks about dilution factors and mixing zone interpretations that will be developed by MassDEP. What will be the process for MWWA to review and to comment on any of the work that will be done by MassDEP? For discharges to reservoirs and lakes it is clear to all that dilution is occurring so to not allow for a dilution factor would be illogical. MWWA suggests that at a minimum a 10:1 dilution factor should be considered for lake and reservoir discharges and systems should also have the opportunity to apply a higher dilution factor by submitting site specific criteria and analysis that supports this finding.

Response to Comments 3.i-3.ii

EPA has not included specific dilution factors in the general permit, as the dilution factor for each facility will vary according to the flow from that facility and the characteristics of the receiving water. According to the General Policies at 40 CFR Part 131.13, "States may, at their discretion, include in their state standards policies generally affecting their application and implementation, such as mixing zones, low flows and variances. Such policies are subject to EPA review and approval." As referenced in Part III.I of the Fact Sheet, MassDEP is re-evaluating its mixing zone policy relevant to lakes and reservoirs. This interpretation is being produced in collaboration with US Geological Survey (USGS), and is expected to contain a minimum dilution factor for the aforementioned waterbody types, to be completed within 6 months of final permit issuance. In the interim, the MassDEP is allowing a dilution of 10 to1 for discharges into lakes and reservoirs.

EPA agrees that applicants are allowed to apply for a higher dilution factor than the minimum set by MassDEP, provided they include in their NOI additional studies or calculations in support of the applicable dilution factor. Specifically, Parts 1.2.3 and 2.2.3 of the Draft and Final PWTF GP allow that, "For discharges to freshwater lakes and reservoirs and marine waters, the permittee may provide to EPA in the NOI a study or calculations in support of the applicable dilution factor." Although these parts pertain to calculating the dilution factor as part of determining WQBELs for total residual chlorine, the provision applies to any dilution factor or mixing zone calculation for the general permit. Applicants with questions regarding the dilution factor for their facility should contact EPA or the appropriate State office.

4. Total Residual Chlorine

Comment 4.i from Amherst DPW

We have a small water treatment plant MA640000 with a small discharge into a brook about 1/4 mile away. In order to meet EPA draft requirements for chlorine monitoring it looks like it would cost us over $3000 to purchase the equipment to run this analysis at the specified accuracy. I urge EPA to look at the treatment plants on a site specific basic and not draft a blanket regulation. If we were a large treatment facility, with a laboratory staff and discharging a major volume of water to a receiving stream this requirement would be justified, but I fail to see the benefit of measuring chlorine to microgram accuracy for all facilities. I[n] th [ese] hard economic times consideration should be given to the cost, benefit and common sense of such a requirement. This discharge has not been a problem in the past and there is no need to change our requirement!

Response to Comment 4.i

The required minimum level of 20 micrograms per liter (µg/l) for total residual chlorine (TRC) is based on the same rational as used in establishing the required minimum level for TRC in EPA's Remediation General Permit. This limit is also included in many wastewater treatment facility permits. For facilities with little or no dilution and whose TRC limits are therefore close to the water quality criteria of 19 µg/l and 11 µg/l, it is important to have a minimum level of 20 µg/l in order to accurately determine whether the facility is in compliance with the permit and meeting water quality standards. Any facilities that are eligible for coverage under the PWTF GP may instead choose to apply for an individual permit, which will include site-specific numerical limits and monitoring requirements. Therefore, the Final Permit will retain the required minimum level of 20 µg/l for all TRC samples.

Comment 4.ii from Hach Company

In reading this draft document and recommended standard methods to follow for TRC analysis, I need some clarification.

Is it supposed to be 4500 CL - G instead of 450?

Response to Comment 4.ii

EPA agrees that footnote 8 on Page 5 of the Draft General Permit should reference standard method 4500 CL-G. The correction has been made in the footnote on page 5 and footnote 5 on page 15 of Final General Permit. Further, the first sentence of each footnote was rephrased slightly to clarify the option of methods available to the permittee.

5. Other

Comment 5.i from SWSC

Question: What is EPA's rationale for the maximum flow value of 1.0 mgd? The Fact Sheet does not explain how that number was derived. If the value was set at 1 mgd rather than 1.0 mgd then that would allow a margin of safety (based on rounding of number) for an occasional excursion above 1.0 mgd.

Comment: The maximum flow rate of 1.0 mgd should be changed to 1 mgd.

Response to Comment 5.i

The maximum flow limit of 1.0 million gallons per day (MGD) is based on similar requirements for other EPA general permits, such as the Non-Contact Cooling Water General Permit. EPA does not agree that the maximum flow limit should be increased to 1 MGD, as the increased flow due to rounding will also result in a higher mass load of pollutants such as total suspended solids and total residual chlorine. As stated in the Fact Sheet, facilities that are expected to exceed this maximum limit must apply for an individual permit, which will contain effluent limits and narrative requirements specific to that facility.

Comment 5.ii from MWWA

MWWA is concerned that there is no flexibility in the monitoring limits for the parameters required. We propose that EPA allow a percentage of samples to exceed compliance limits similar to what the Safe Drinking Water Act allows for turbidity (meet standard in 95% of monthly samples) or total coliform (no more than 5% of monthly samples can be positive).

Response to Comment 5.ii

EPA does include flexibility in NPDES permit requirements where allowed by water quality standards. For example, based on the Massachusetts and New Hampshire Water Quality Standards, the Draft PWTF GP allows a change in the permitted pH range, provided the permittee is able to demonstrate the change does not alter the natural pH of the receiving water. EPA does not agree that additional effluent parameters in the PWTF GP require a margin of safety for compliance. Numerical effluent limits for total suspended solids (TSS) are technology based limits, derived using best professional judgment (BPJ) from the levels achievable by technologies in the industry. There is no reason to expect that these technologies will not meet the numerical limits. Numerical effluent limits for total residual chlorine (TRC) are water quality-based effluent limits based on the Massachusetts and New Hampshire Surface Water Quality Standards. The Commonwealth of Massachusetts and State of New Hampshire do not provide for the type of flexibility the commenter is referring to in their water quality standards. Therefore EPA may not provide such an allowance.

Comment 5.iii from MWWA

MWWA respectfully asks EPA to maintain the requirements of the existing (expired) general permit with the additions of arsenic monitoring as proposed and the BMP Plan as proposed. Further, EPA should allow all WTP dischargers to utilize the General Permit regardless of Aluminum levels in the discharge. Over the next five years the Commonwealth of Massachusetts working with public water suppliers and EPA can reevaluate the Aluminum water quality standards and finalize the mixing zone analysis and dilution factors. Then when the next General Permit is to be re-issued the best available science can be applied to ensure reasonable and effective protection of the nation's waters. MWWA has appreciated the opportunity to work with EPA and MassDEP prior to the release of the draft permit. We would be happy to answer any questions related to our comments.

Response to Comment 5.iii

EPA agrees that the Final PWTF GP should retain the proposed arsenic monitoring and BMP Plan as included in the Draft PWTF GP. Aside from these two substantive changes, the only other new requirements included in the Draft PWTF GP are: 1) numerical effluent limits for total residual chlorine (TRC) based on water quality criteria and available dilution, and 2) a demonstration that a facility's discharge does not have the reasonable potential for violating water quality standards for aluminum using past analytical data. The Final PWTF GP will retain the numerical TRC limits from the Draft PWTF GP, as these limits are included in all relevant NPDES permits, including both industrial and municipal facilities, for which the discharge may contain chlorine. If new information regarding mixing zones and dilution factors becomes available, then the TRC limits will adjust accordingly.

Regarding the second new requirement, all NPDES permits require that the discharges covered under that permit shall not, either individually or in combination, cause a violation of State Water Quality Standards of the receiving waters which have been or may be promulgated. EPA recognizes that some water treatment facilities do not have a reasonable potential for violating water quality standards, and therefore these facilities are eligible for coverage under the Final PWTF GP. Facilities that do have a reasonable potential to violate water quality standards are required to apply for individual permits, which will include site-specific requirements based on the operations at those facilities that will better control the discharge of pollutants from that facility. A determination of reasonable potential will be made by comparing State water quality criteria and available dilution with existing data from the facility. The approach EPA has taken in the Draft PWTF GP provides flexibility in this determination such that, if Massachusetts or New Hampshire adopt site-specific aluminum criteria or if EPA publishes new aluminum criteria that are adopted by the States, EPA will use the new criteria to make reasonable potential determinations for the remainder of the effective period of the Final PWTF GP. Additionally, as stated above, if new information regarding mixing zones and dilution factors becomes available, then the eligibility and monitoring thresholds will adjust accordingly. The Final PWTF GP will retain the aluminum requirements and language from the Draft PWTF GP.

Attachment A: Re-evaluation of Discharge Monitoring Reporting Aluminum Data