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FACT SHEET

DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) GENERAL PERMIT TO DISCHARGE WASTEWATER FROM POTABLE WATER TREATMENT FACILITIES TO CERTAIN WATERS OF THE COMMONWEALTH OF MASSACHUSETTS AND THE STATE OF NEW HAMPSHIRE

NPDES GENERAL PERMITS: MAG640000 AND NHG640000

Table of Contents

I. Coverage Under this Permit

A. Introduction

The Director of the Office of Ecosystem Protection, EPA Region I, is reissuing the General Permit for discharges from potable water treatment facilities (PWTFs) to certain waters of the Commonwealth of Massachusetts and the State of New Hampshire. The General Permit MAG640000 applies to discharges in Massachusetts while the General Permit NHG640000 applies to discharges in New Hampshire. Collectively, in this fact sheet and in the General Permit, the two permits are referred to, in the singular, as the PWTF GP. The PWTF GP will replace the Expired PWTF GP that was signed on September 25, 2009 and published in the Federal Register on October 2, 2009. Currently, there are approximately 62 facilities, including 56 in Massachusetts and 6 in New Hampshire, covered by the Expired PWTF GP.

The draft PWTF GP contains the following changes relative to the 2009 PWTF GP:

- Facilities that were previously excluded from the 2009 PWTF GP solely because of aluminum may now be eligible for PWTF GP coverage. Additional NOI sampling requirements for those facilities that use aluminum in their water treatment process and were *not* covered under the 2009 PWTF GP have been established. The details, which include the submission of 12 effluent samples and 10 upstream ambient water samples, are in Section III.C.12 of Appendix IV (NOI). Facilities in New Hampshire will analyze the samples for total recoverable Al with the conservative assumption that the entire fraction of measured total recoverable aluminum is in the acid soluble form. Facilities in Massachusetts will be required to analyze the samples for total recoverable Al. This additional monitoring information will be used by the Agency to conduct reasonable potential analysis in reviewing the NOI and in future permitting actions.

- Requiring additional aluminum monitoring (of both effluent and now of *ambient* water) for facilities that use aluminum-based products as part of their treatment processes. Facilities in both Massachusetts and New Hampshire that use aluminum will be required to monitor for total recoverable aluminum on a monthly basis. As previously stated above for *New Hampshire* facilities, the assumption will be made that the entire fraction of measured total recoverable aluminum is in the acid soluble form.

- A new provision of the General Permit (Section 2.1.2.10 and 3.1.2.10) has been added. It allows EPA to require, if necessary, a Water Quality Based Effluent Limit (WQBEL) for aluminum or other parameters as a written condition of authorization after reviewing an applicant's NOI and/or other relevant information.

- New permit condition that requires applicants that discharge on an intermittent or continuous basis (i.e., either Category II or Category III facilities) to conduct one chronic and one acute WET (Whole Effluent Toxicity) test on an annual basis.

- Requiring new monthly monitoring for iron for facilities that use iron-based coagulants.

- Requiring new monthly monitoring for phosphorus for facilities that use phosphorus-containing chemicals *and* discharge into a Massachusetts waterbody impaired for (total) phosphorus or nutrient/eutrophication biological indicators, as identified in Massachusetts 2014 Integrated List of Waters *or* discharge into a New Hampshire waterbody impaired for the following pollutants: (total) phosphorus, invasive aquatic algae, excess algal growth, cyanobacteria hepatotoxic microsystins, dissolved oxygen (saturation), or chlorophyll-a, as listed in the New Hampshire 2012 Section 305(b) and 303(d) Surface Water Quality Report.

- EPA and the appropriate state will consider approval for a facility that discharges a volume greater than the 1.0 MGD threshold on a case-by-case basis.

- Incorporating revised requirements for compliance with the Endangered Species Act and inclusion of newly listed species of concern. (See Appendix III)

B. Coverage of General Permits

Section 301(a) of the Clean Water Act (CWA) provides that the discharge of pollutants is unlawful except in accordance with a National Pollutant Discharge Elimination System (NPDES) permit unless such a discharge is otherwise authorized by the CWA. Although such permits are generally issued to individual discharges, EPA's regulations authorize the issuance of "General Permits" to categories of discharges. (See 40 CFR § 122.28). Violation of a condition of a General Permit constitutes a violation of the CWA and subjects the discharger to the penalties in Section 309 of the CWA.

The Director of an NPDES permit program is authorized to issue a General Permit if there are a number of point sources operating in a geographic area that:

- Involve the same or substantially similar types of operations;
- Discharge the same types of wastes;
- Require the same effluent limitations or operating conditions;
- Require the same or similar monitoring requirements; and
- In the opinion of the Director, are more appropriately controlled under a General Permit than under individual permits.

Based on these factors, EPA believes that discharges from potable water treatment facilities (PWTFs) warrant coverage under a General Permit. First, all point sources covered under this General Permit are located in the same geographic area (i.e., Massachusetts or New Hampshire). Second, these point sources are all generated by substantially similar operations, which involve the removal of solid particles and other pollutants from the source water and the disinfection of the clarified water prior to distribution for public consumption. Third, the wastewater generated from these point sources is similar in composition. Fourth, the same or similar effluent limitations and monitoring requirements are required for these point sources. Finally, these point sources represent multiple facilities that would not be efficiently regulated under individual permits and therefore are more appropriately controlled under a General Permit.

When reissued, the PWTF GP will enable eligible facilities to maintain compliance with the CWA and will provide an efficient method to extend environmental and regulatory controls to

new permittees. Use of the PWTF GP will also provide timely responses to the permitting needs of the potable water treatment industry and will continue to help reduce the current backlog of NPDES permit applications.

C. Eligibility

Under this General Permit, owners and operators of PWTFs located in Massachusetts and New Hampshire which discharge wastewater from one or more of the treatment processes listed below are eligible to be covered by this permit, if the facility discharges less than or equal to 1.0 million gallons of effluent per day (MGD). However on a case-by-case basis, EPA will consider approval for a facility that discharges a volume greater than the 1.0 MGD threshold on a case by case basis.

The treatment processes covered include:

- Clarification,
- Coagulation,
- Media Filtration,
- Membrane filtration (not including reverse osmosis), and
- Disinfection.

Discharges from other potable drinking water treatment processes may be included if they are reported in the NOI and attain the effluent limits and other conditions of this permit. Such discharges may include, but are not limited to: those necessary to complete regular reoccurring maintenance or non-reoccurring maintenance, repair, testing or construction which assures efficient operation and/or prevents loss of life, personal injury, or severe property damage.

Only discharges which are *not* a significant cause of pollution are eligible under this General Permit. For pollutants (e.g., aluminum) without numerical effluent limits in Parts 2.1.1 or 3.1.1 of the permit, EPA will make this eligibility determination based on NOI information, receiving water quality criteria for the pollutant, and other information. An exception to this eligibility requirement is possible if EPA invokes conditions 2.1.2.10 or 3.1.2.10 of the General Permit.

This General Permit is designed to cover discharges from potable water treatment facilities. However the frequency of discharge might vary. Discharges may occur on an emergency or infrequent basis, on a batch (intermittent) basis[1] or on a continuous[2] basis (as defined under 40 CFR §122.2). Therefore, EPA has categorized eligible facilities into one of the following categories:

[1] According to EPA's Drinking Water Treatment Plant Residuals Management Technical Report (EPA 820-R-11-003), a batch (intermittent) discharge is "a discrete volume or mass of liquid or solid residuals that are collected and discharged periodically."

[2] According to 40 CFR §122.2, a "continuous discharge" is defined as a "discharge" which occurs without interruption throughout the operating hours of the facility, except for infrequent shutdowns for maintenance, process changes, or other similar activities.

1. **Category I: PWTFs that discharge only in case of emergency or on an infrequent basis**

Facilities that fall under Category I discharge only in case of emergency or on an infrequent basis (i.e., on an annual or bi-annual basis during routine maintenance.) These facilities must adhere to all discharge limits, monitoring requirement, and special conditions. However, due to the infrequent nature of the discharge, these facilities are not required to conduct WET testing. Any facility whose discharge does not meet the Category I description would be considered a Category II or Category III facility.

2. **Category II: PWTFs that discharge on an intermittent (batch) or continuous basis; No Aluminum Use**

Facilities in Category II discharge on an intermittent (i.e., batch) or continuous basis; however they do not use an aluminum-based coagulant (nor do they use an aluminum-based product for algae control.) As such, these facilities would not need to monitor for aluminum nor include the aluminum minimization program in the Best Management Practices (BMP) Plan.

3. **Category III: PWTFs that discharge on an intermittent (batch) or continuous basis; Aluminum Use**

Category III facilities discharge on an intermittent (i.e., batch) or continuous basis. Since they do use an aluminum-based coagulant (or an aluminum-based product for algae control), these facilities are expected to have aluminum in their discharge. In addition to all relevant limits, monitoring requirements, and special conditions, Category III PWTFs would need to monitor for aluminum and include an aluminum minimization program in the BMP Plan, as specified in the permit.

Category III can be further segregated into 1) facilities that use aluminum and were covered under the last PWTF GP and 2) facilities that use aluminum but were excluded under the last General Permit because of the elevated concentration of aluminum present in their effluent. In an effort to open this General Permit's eligibility to additional facilities, the draft permit does not establish a numeric eligibility requirement based on a set effluent aluminum concentration. However, for those facilities that use aluminum and were excluded from the last PWTF GP, the draft permit requires additional information in the NOI to inform the authorization determination, and, if authorized, possible authorization conditions. This NOI data set, which includes both effluent and ambient water data, will be reviewed to inform EPA's reasonable potential analysis and resultant decision regarding the authorization of the discharge under the PWTF GP. (Refer to Part C.12 of Appendix IV: NOI.) If it is demonstrated that a facility has reasonable potential to exceed Aluminum Water Quality Standards, the facility may still be authorized under the PWTF GP on the condition that an appropriate Water Quality Based Effluent Limit (WQBEL) for aluminum is set.

D. Limitations on Coverage

The following discharges are excluded from coverage under this General Permit:

1. *Discharges to Outstanding Resource Waters and/or High Quality Waters*

a. *In Massachusetts*, as defined by 314 CMR 4.06(3)[3], 314 CMR 4.06(1)(d)4, and 314 CMR 4.06(1)(d)2, including Public Water Supplies (314 CMR 4.06(1)(d)1), which have been designated by the state as Class A waters, *unless* the facility receives an authorization or has previously been granted an authorization by the Massachusetts Department of Environmental Protection (MassDEP) under 314 CMR 4.04(3)(b). In the event an applicant is proposing to discharge to an Outstanding Resource Water or High Quality Water, MassDEP should be contacted directly at the address listed in Appendix VI to this General Permit. Additional state requirements may be required in order to be covered under this General Permit.

b. *In New Hampshire*, as defined in New Hampshire under Env-Wq 1708.05(a), unless allowed by the New Hampshire Department of Environmental Services (NH DES) under Env-Wq 1708.05(b).

2. *Discharges to Class A waters in New Hampshire*, in accordance with RSA 485-A:8 I. and Env-Wq 1708.06. To determine if the proposed receiving water is a Class A waterbody, contact the NHDES at the address listed in Appendix VI to this General Permit.

3. *Discharges that the United States Fish and Wildlife Service (USFWS) and/or the National Marine Fisheries Service (NMFS) determines may adversely affect the continued existence of any federally-listed endangered or threatened species or may adversely impact or destroy critical habitat of such species are excluded for coverage* under this General Permit unless the requirements specified in this permit are fulfilled. Procedures for determining whether this exclusion applies to a PWTF and additional information on the ESA are found in Appendix III.

4. *Discharges to receiving waters of pollutants identified as a cause of impairment on the Commonwealth of Massachusetts' or the State of New Hampshire's approved 303(d) lists*, unless the pollutant is discharged at or below a concentration that meets water quality standards for the listed pollutants. Permittees must include information in their NOI about impairments to receiving waterbodies. Upon review of the NOI, EPA may require the permittee to conduct additional effluent sampling to determine if the PWTF discharge is contributing to the receiving waterbody impairment.

   Massachusetts 2014 list of impaired waters can be found at:
   http://www.mass.gov/eea/docs/dep/water/resources/07v5/14list2.pdf

   New Hampshire 2012 list of impaired waters available at:
   http://des.nh.gov/organization/divisions/water/wmb/swqa/2012/documents/a08-303d-list.pdf

5. *Discharges to a Publicly-Owned Treatment Works (POTW)* which is permitted under Section 402 of the CWA (NPDES).

6. *Discharges to Ocean Sanctuaries in Massachusetts*, as defined at 302 CMR 5.00.

[3] 314 CMR 4.00 Massachusetts Surface Water Quality Standards can be found at http://www.mass.gov/eea/agencies/massdep/water/regulations/314-cmr-4-00-mass-surface-water-quality-standards.html; Outstanding Resource Waters in Massachusetts are found in the Tables and Figures section at http://www.mass.gov/eea/docs/dep/water/laws/i-thru-z/tblfig.pdf

7. *Discharges to territorial seas*, as defined by Section 502 of the CWA.

8. *Discharges which adversely affect properties listed or eligible for listing in the National Registry of Historic Places under the National Historic Preservation Act of 1966*, 16 USC Sections 470 et seq. Procedures for determining whether this exclusion applies to a PWTF and additional information on Historic Preservation are found in Appendix II**.**

9. *Discharges which are inconsistent with the State Coastal Zone Management Program*.

10. *Any facility whose new or increased discharge is not in compliance with the appropriate state's antidegradation policy* (or the New Hampshire Water Conservation Rules (Env-Wq 2101, or as amended.)

11. *"New Source" dischargers*, as defined in 40 CFR § 122.2. This is due to the site-specific nature of the environmental review required by the National Environmental Policy Act of 1969 (NEPA), 33 U.S.C. 4321 et seq. for those facilities. "New Sources" must comply with New Source Performance Standards (NSPS) and are subject to the NEPA process in 40 CFR § 6.600. Consequently EPA has determined that it would be more appropriate to address "New Sources" through the individual permit process.

12. *Facilities which are designed to remove Radium or other radioactive substances* from raw water sources to comply with drinking water standards.

13. *Discharges for which the Director makes a determination that an individual permit is required* under 40 CFR § 122.28(b)(3). See Part 4.5 of the General Permit for more information.

14. *The construction of any water resources project that would have a direct, adverse effect on the values for which a national Wild and Scenic River was established*, in accordance with 40 CFR § 122.49. The Wildcat River and Lamprey River in New Hampshire and the Assabet, Concord, Sudbury, Taunton and Westfield Rivers in Massachusetts, have been designated as Wild and Scenic Rivers. (See http://www.rivers.gov/ for current National and/or State designations and additional information)

15. *Discharges to designated areas under the Essential Fish Habitat Act (EFH)* unless the requirements specified in this permit are fulfilled. See Part IV.B of this Fact Sheet for additional EFH information.

II. Permit Basis: Statutory and Regulatory Authority

A. Statutory Requirements

The Clean Water Act (CWA) prohibits the discharge of pollutants to waters of the United States without a NPDES permit unless such a discharge is otherwise authorized by the CWA. The NPDES permit is the mechanism used to implement technology and water quality-based

effluent limitations and other requirements including monitoring and reporting. This NPDES PWTF General Permit was developed in accordance with various statutory and regulatory requirements established pursuant to the CWA and applicable State regulations.

During development of this draft General Permit, EPA considered the most recent technology- based treatment requirements, water quality-based requirements, and all limitations and requirements in the Expired PWTF GP. The regulations governing the NPDES permit program are generally found at 40 CFR §§ 122, 124, 125, and 136. The standard conditions of the draft PWTF GP are based on 40 CFR §122.41 and consist primarily of management requirements common to all permits. The effluent monitoring requirements have been established to yield data representative of the discharge under authority of Section 308(a) of the CWA in accordance with 40 CFR §122.41(j), §122.44(i) and §122.48.

B. Technology-based Requirements

Subpart A of 40 CFR §125 establishes criteria and standards for the imposition of technology- based treatment requirements in permits under § 301(b) of the CWA, including the application of EPA promulgated effluent limitations and case-by-case determinations of effluent limitations under § 402(a)(1) of the CWA.

Technology-based treatment requirements represent the minimum level of control that must be imposed under §§ 301(b) and 402 of the CWA (See 40 CFR §125 Subpart A) to meet best practicable control technology currently available (BPT) for conventional pollutants and some metals, best conventional control technology (BCT) for conventional pollutants, and best available technology economically achievable (BAT) for toxic and non-conventional pollutants. In general, technology-based effluent guidelines must be complied with as expeditiously as practicable but in no case later than three years after the date such limitations are established and in no case later than March 31, 1989 [See 40 CFR §125.3(a)(2)]. Compliance schedules and deadlines not in accordance with the statutory provisions of the CWA cannot be authorized by a NPDES permit.

Although EPA did conduct an extensive review of residuals generation, treatment, and disposal at large community water systems, whose results are summarized in the 2011 Drinking Water Treatment Plant Residuals Management Technical Report[4], EPA has not promulgated National Effluent Guidelines for those discharges authorized by the PWTF GP. In the absence of effluent guidelines for this industry, technology-based standards are determined by the permit writer on a case-by-case basis, in accordance with the statutory factors specified in CWA §§ 301(b)(2) and 304(b). Therefore, as provided in § 402(a)(1) of the Act, EPA has established technology-based limitations in this General Permit utilizing Best Professional Judgment ("BPJ") to meet the above state criteria for BAT/BCT described in §304(b) of the CWA.

[4] Drinking Water Treatment Plant Residuals Management Technical Report: Summary of Residuals Generation, Treatment, and Disposal at Large Community Water Systems. EPA 820-R-11-003, December 2011; 377 pp.

C. Water Quality Based Requirements

Water quality-based limitations 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 §301(b)(1)(C) of the CWA). Water quality-based criteria consist of three (3) parts: 1) beneficial designated uses for a surface water body or a segment of a water body; 2) numeric and/or narrative water quality criteria sufficient to protect the assigned designated use(s) of the water body; and 3) anti-degradation requirements to ensure that once a use is attained it will not be degraded. EPA regulations pertaining to permit limits based upon water quality standards and state requirements are contained in 40 CFR §122.44(d).

The effluent limits established in the draft PWTF General Permit assure that the surface water quality standards of the receiving water are protected, maintained, and/or attained. The effluent limits established in the permit are based on the Massachusetts Water Quality Standards 314 CMR 4.05 and New Hampshire Water Quality Standards Env-Wq 1703 in accordance with RSA 485-A:8.

D. Antidegradation Provisions

The conditions of the PWTF GP reflect the goals of the CWA and EPA to achieve and maintain water quality standards. The environmental regulations pertaining to the State Antidegradation Policies which protect the State's surface waters from degradation of water quality are found in the following provisions: Massachusetts Water Quality Standards 314 CMR § 4.04 Antidegradation Provisions and New Hampshire RSA 485-A:8,VI, Part Env-Wq 1708 "Antidegradation."

As part of the § 401 certification process, each state will conduct an anti-degradation review of the PWTF GP before its final issuance and inform EPA of the results of the review. This anti-degradation review will specifically consider those facilities covered under the Expired PWTF GP. In addition, the Commonwealth of Massachusetts and the State of New Hampshire will conduct anti-degradation reviews for notices of intent which are filed under the PWTF GP for new or increased discharges from PWTFs. EPA will not authorize such new or increased discharges under the PWTF GP until it receives a favorable anti-degradation review and certification from the appropriate state.

E. Monitoring and Reporting Requirements

Operators of facilities authorized to discharge under the final PWTF GP will be required to submit, both to EPA-Region I and to the appropriate state authority, Discharge Monitoring Reports (DMRs) containing effluent data. The frequency of reporting is determined in accordance with each state's provisions as described in Part 5 (Monitoring, Reporting and Recordkeeping Requirements) of the PWTF GP. The monitoring requirements have been established to yield data representative of the discharge under authority of § 308(a) of the CWA and 40 CFR §§ 122.41(j), 122.44(i) and 122.48, and as certified by the State.

Permittees should ensure that monitoring results are reported in the appropriate units (e.g. µg/l for TRC, Al, As), as specified in Section 2.1.1 and 3.1.1 of the permit. All samples must be analyzed using a sufficiently sensitive method that will detect the concentration of the parameter if it is present. The *National Pollutant Discharge Elimination System (NPDES): Use of Sufficiently Sensitive Test Methods for Permit Applications and Reporting* rule[5] requires that, where EPA-approved methods exist, NPDES applicants must use sufficiently sensitive EPA-approved analytical methods when quantifying the presence of pollutants in a discharge and that the Director must prescribe that only sufficiently sensitive EPA-approved methods be used for analyses of pollutants or pollutant parameters under the permit. The NPDES regulations at 40 CFR §122.21(e)(3) (completeness), 40 CFR §122.44(i)(1)(iv) (monitoring requirements) and/or as cross referenced at 40 CFR §136.1 indicate that an EPA-approved method is sufficiently sensitive where:

- The method minimum level (ML) is at or below the level of the applicable water quality criterion or permit limitation for the measured pollutant or pollutant parameter; or
- In the case of permit applications, the ML is above the applicable water quality criterion, but the amount of the pollutant or pollutant parameter in a site's discharge is high enough that the method detects and quantifies the level of the pollutant or parameter in the discharge; or
- The method has the lowest ML of the EPA-approved analytical methods.

The footnotes in Section 2.1.1 and 3.1.1 of the permit specify the MLs for aluminum, TRC, and arsenic, where applicable. The MLs for the chemicals analyzed as part of the WET test protocols may be viewed at http://www.epa.gov/region1/npdes/epa_attach.html.

Facilities in Massachusetts and New Hampshire that discharge intermittently and do not discharge during a particular month must submit a DMR for that month to EPA and the appropriate state, indicating that no discharge occurred. If the report is submitted electronically (via NetDMR), the recipient does not need to submit a separate report to NH DES.

The Draft Permit includes new provisions related to DMR submittal through NetDMR, a national web-based tool that allows permittees to submit DMRs electronically via a secure internet application to EPA. NetDMR allows participants to discontinue mailing in hard copies of DMRs. For more information on the timeline for NetDMR implementation and opt-out requests from the system, see Parts 5.1 through 5.3 of the General Permit. **By December 21, 2016**, permittees shall submit DMRs and reports required under this permit electronically to EPA using NetDMR, unless the facility has applied for an "opt-out request" and received written approval by EPA.

III. Explanation of the Permit Effluent Limitations

This section includes the numeric technology-based and water-quality based limits for all discharges authorized in this PWTF GP, along with the non-numeric effluent limits (Best Management Practices, or BMPs) for PWTFs.

[5] Federal Register, Vol. 79, No. 160, Tuesday, August 19, 2014; FR Doc. 2014–19557.

A. Pollutants Associated with PWTF Discharges

1. Flow

A daily maximum flow limit of up to 1.0 million gallons per day (MGD) applies to all dischargers covered by this General Permit, unless an alternative flow is approved by EPA and the appropriate State on a case-by-case basis. The operator for each facility shall not exceed the *design flow capacity* of the treatment system, determined by the component of the treatment train with the most restricted flow, and as reported in the Notice of Intent, up to a maximum of 1.0 MGD. Nonetheless, EPA believes that PWTFs will rarely exceed this discharge flow. The PWTF GP is intended for facilities with smaller wastewater discharges that are less likely to impact surface water quality, especially in consideration of the effluent limits set forth in the permit. If there is a case where this maximum flow is consistently exceeded, an individual permit may be required.

2. Total Suspended Solids (TSS)

Solids are the most common pollutant in water treatment plant residuals and could include inorganic (e.g., silt, sand, clay, and insoluble hydrated metal oxides) and organic matter (e.g., flocculated colloids and compounds that contribute to color). Solids residuals primarily come from the source water, but the addition of treatment chemicals can add to the measured value (e.g., metals present in coagulants). Suspended solids may settle to form bottom deposits in the receiving water, potentially causing benthic smothering. Suspended solids also increase turbidity in receiving waters and reduce light penetration through the water column. This can limit the growth of rooted aquatic vegetation that serves as a critical habitat for fish and other aquatic organisms and/or can clog fish gills, resulting in an increase in susceptibility to infection or asphyxiation. Suspended solids also provide a medium for the transport of other sorbed pollutants, including nutrients, pathogens, and metals, which may accumulate in settled deposits that may have a long-term impact on the water column through cycles of re-suspension.

The Draft PWTF GP contains monthly average and maximum daily Total Suspended Solids (TSS) limitations of 30 mg/l and 50 mg/l, respectively, as continued from the Expired PWTF GP. This is in accordance with anti-backsliding requirements found in 40 CFR § 122.44(1). These limitations were established using best professional judgment (BPJ) pursuant to § 402(a)(1) of the CWA. The limits are based upon the TSS concentrations estimated to be achievable by using sedimentation basins/tanks/ponds to treat filter backwash and other wastewaters from PWTFs. They are consistent with the TSS limits found in other PWTF general permits throughout the nation, as highlighted in EPA's Drinking Water Treatment Plant Residuals Management Technical Report[6]. The limits are also sufficiently stringent to achieve the water quality standards of Massachusetts and New Hampshire. Coverage under the PWTF GP will not be granted for any discharges for which EPA or the applicable State believes a more stringent water quality-based TSS limit is needed.

[6] Drinking Water Treatment Plant Residuals Management Technical Report: Summary of Residuals Generation, Treatment, and Disposal at Large Community Water Systems. EPA 820-R-11-003, December 2011; 377 pp.

3. pH

The hydrogen-ion (H-) concentration in an aqueous solution is represented by the pH using a logarithmic scale of 0 to 14 standard units ("S.U."). Solutions with pH 7.0 S.U. are neutral, while those with pH less than 7.0 S.U. are acidic and those with pH greater than 7.0 S.U. are basic. Effluent with pH values markedly different from the receiving water pH can have a detrimental effect on the environment. Sudden pH changes can kill aquatic life.

The effluent limits for pH in the Draft Permit are established to be consistent with water quality standards in Massachusetts, namely 314 CMR 4.05(3)(a)(3), 4.05(3)(b)(3), 4.05(4)(a)(3) and 4.05(4)(b)(3), and water quality standards in New Hampshire (Env-Wq 1703.18). Additionally, these limits are continued from the Expired PWTF GP. Based on these water-quality standards, the Draft Permit contains the following limits for the indicated waterbody classifications.

Massachusetts Class A and B: 6.5 – 8.3 standard units
Massachusetts Class SA and SB: 6.5 – 8.5 standard units
New Hampshire Class B: 6.5 – 8.0 standard units

EPA, with State approval, may expand the pH range to the federal standard of 6.0-9.0 standard units, where the more restrictive pH limits cannot be consistently achieved by the treatment facility, and where receiving water quality and dilution characteristics allow state water quality standards to be achieved (see Parts 2.1.1 and 3.1.1 of the General Permit.)

Sources of data that could be used to justify a change in the pH range limit include, but are not limited to, sampling results from the discharge, sampling results from the ambient receiving water, and dilution and/or mixing zone calculations. Chemicals may be used for pH neutralization and/or dechlorination, provided that EPA and the appropriate state are notified of its use in either the NOI or in a subsequent communication.

4. Water Treatment Residuals

Treatment chemicals used at drinking water treatment facilities, such as coagulants, contain active ingredients (e.g., aluminum, iron) and impurities (e.g., chromium, nickel, zinc). Certain types of treatment (e.g., disinfection) can result in residual chemicals and/or the generation of chemical by-products (e.g., chlorides, ammonia). Pollutants that may be generated as a result of water treatment may include: chlorine (disinfection residual), ammonia (disinfection by-product), and aluminum (coagulation residual)

The *Drinking Water Treatment Plant Residuals Management Technical Report*[7] attributes over 98% of chemical specific releases from water treatment facilities to chlorides, calcium, magnesium, lead and aluminum in descending order by mass loading. In addition, 85% of the toxic-weighted pound equivalent for the annual loadings are attributable to total residual chlorine, aluminum, copper, manganese and fluoride in descending order by mass loading. As will be described below, the General

[7] Drinking Water Treatment Plant Residuals Management Technical Report: Summary of Residuals Generation, Treatment, and Disposal at Large Community Water Systems. EPA 820-R-11-003, December 2011; pp.9-1 to 9-3.

Permit already imposes limitations and/or monitoring requirements for total residual chlorine, aluminum, and arsenic.

EPA has limited information about the concentrations of potential pollutants[8] in the effluent of PWTFs. As described in Section III.A.5, all PTWFs that discharge intermittently or continuously will be required to conduct one chronic and one acute WET (Whole Effluent Toxicity) test on an annual basis. EPA believes this is necessary in order to determine any potential pollutants of concern for PWTFs authorized under the GP. The information will be considered in the *next* reissuance of this General Permit.

a. Total Residual Chlorine (TRC)

Chlorine and chlorine compounds are toxic to aquatic life. Free chlorine is directly toxic to aquatic organisms and can react with naturally occurring organic compounds in receiving waters to form toxic compounds such as trihalomethane. Potable water sources are typically chlorinated to minimize or eliminate pathogens. 40 CFR §141.72(a)(3) stipulates that a public water system's residual disinfectant concentration in the water entering the distribution system cannot be less than 0.2 mg/L for more than four hours.

The draft permit contains effluent limits for total residual chlorine (TRC), as continued from the expired permit in accordance with anti-backsliding requirements found in 40 CFR § 122.44(1). The TRC limits apply to facilities whose discharges contain water which has been previously chlorinated or which contain residual chlorine. Since it is common for the final treated water containing residual disinfectant to be used for filter backwashing, the wastewater discharges from PWTFs have the potential to exceed water quality standards for TRC (as explained below).

Massachusetts and New Hampshire have narrative criteria in their water quality regulations that prohibit toxic discharges in toxic amounts (Massachusetts 314 CMR 4.05 (5)(e) and New Hampshire Env-Wq 1703.21(a)). The proposed limits on chlorine will ensure that chlorine is not discharged in toxic amounts. The Commonwealth of Massachusetts' surface water quality standards require the use of federal water quality criteria where a specific pollutant could reasonably be expected to adversely affect existing or designated uses. The Massachusetts Water Quality Standards Implementation Policy for the Control of Toxic Pollutants in Surface Waters, dated February 23, 1990, states that waters shall be protected from unnecessary discharges of excess chlorine. The State of New Hampshire's water quality standards for chlorine, found at Chapter 1700, Surface Water Quality Regulations, Part Env-Wq 1703.21(b), are the same as the recommended federal water quality criteria.

The Draft Permit contains water quality-based daily maximum and monthly average TRC limits, up to a maximum of 1.0 mg/l. Water quality-based effluent limits are based on the federal water quality criteria, which are listed below:

- Freshwater acute (Class A or B*) = 19 µg/l (0.019 mg/l); use for daily maximum

[8] Drinking Water Treatment Plant Residuals Management Technical Report: Summary of Residuals Generation, Treatment, and Disposal at Large Community Water Systems. EPA 820-R-11-003, December 2011;

- Freshwater chronic (Class A or B*) = 11 µg/l (0.011 mg/l); use for average monthly
- Marine acute (Class SA or SB*) = 13 µg/l (0.013 mg/l); use for daily maximum
- Marine chronic (Class SA or SB*) = 7.5 µg/l (0.0075 mg/l); use for average monthly

(* Only Class B waters in New Hampshire are eligible for coverage under this general permit. Class A waters in New Hampshire are not eligible.)

The daily maximum and monthly average concentrations allowed in the effluent are calculated using the appropriate water-quality criterion and the available dilution (see Part III.C. of this Fact Sheet) in the receiving water using the following equation:

Effluent Limit = (Dilution Factor) x (Water-Quality Criterion)

The daily maximum TRC limit shall be calculated using the appropriate dilution factor and the appropriate daily maximum water quality criteria listed above while the average monthly TRC limit shall be calculated using the appropriate dilution factor and the average monthly water quality criteria listed above. For discharges to freshwater streams, the dilution factor is determined using the 7Q10 of the receiving water and appropriate discharge rate from the facility (See Appendix VII). For discharges to freshwater lakes and reservoirs and to marine waters, the permittee may provide to EPA in the NOI a study or calculations in support of the applicable dilution factor. EPA will provide the permittee with the appropriately determined limits when notified of permit coverage.

As previously mentioned, the Massachusetts Water Quality Standards Implementation Policy for the Control of Toxic Pollutants in Surface Waters, dated February 23, 1990, states that waters shall be protected from unnecessary discharges of excess chlorine. It states that the maximum effluent concentration of chlorine shall not exceed 1.0 mg/l TRC. In Massachusetts and New Hampshire, the TRC limits established for discharges with high dilution factors will be capped at 1.0 mg/L based on this policy. EPA believes that this upper TRC effluent limit will adequately protect aquatic organisms from toxic amounts of chlorine.

If the receiving water provides no available dilution, the acute and chronic criteria listed above are applied as the daily maximum and average monthly limits, respectively. EPA notes that, for practical purposes, it may be necessary in some cases to use the minimum level for the TRC test when determining compliance with the permit limits. For the purposes of this PWTF GP, the ML for TRC is 20 µg/l. Refer to Footnote 10 of Part 2.1.1 and Footnote 8 of Part 3.1.1 of the General Permit for additional information, including how to properly report on DMRs.

b. Aluminum

Aluminum-based coagulants, such as alum and poly-aluminum chloride, are commonly used in coagulation and clarification to remove solid particles from raw water sources at PWTFs. Due to filter backwashing following the coagulation/clarification processes, there is a likely potential for elevated levels of aluminum in the discharges. In addition, the aluminum can be found in some source waters in New England, including many high quality waters. It is

typically present because of the chemistry of local surficial or bedrock geology and weathering processes.

EPA recognizes the potential adverse impacts of elevated aluminum concentrations. Aluminum is toxic in the aquatic environment. The aluminum levels that cause toxicity depends on water chemistry, the aquatic organism affected, and the effects being monitored. Studies on the toxic effects of aluminum in the aquatic environment has shown that inorganic aluminum can be toxic to several freshwater species of fish, invertebrates, bacteria, and algae, particularly at pH conditions less than 6.0 SU.[9] For those facilities that use an aluminum-based coagulant in the water treatment process or an alum-based product for algae control (e.g., if the receiving water is a lake), the Draft Permit continues to contain monthly monitoring requirements for total recoverable aluminum as well as best management practices (BMPs) to minimize the discharge of aluminum. (See Section 2.1.3 and 3.1.3 of the permit.) As part of the monthly monitoring requirements for aluminum, permittees must report *both* the average monthly and maximum daily result for aluminum[10]. Monthly sampling must be taken of the effluent, as well as ambient water upstream of the discharge. This sampling of ambient/background levels of aluminum is a new requirement in the permit. The Minimum Level (or ML) for aluminum has also been revised in the draft PWTF GP, based on information obtained from EPA Region I's laboratory.

As previously mentioned, relevant facilities (i.e., those that use an aluminum-based coagulant or an alum-based product for algae control) in both Massachusetts and New Hampshire will be required to monitor for total recoverable aluminum. However for facilities in New Hampshire, it will be assumed that the entire fraction of measured total recoverable aluminum is in the acid soluble form. This is a conservative assumption that is more protective of water quality standards. Although the water quality criteria for most metals is presented as either dissolved or total recoverable, in a letter from NHDES to EPA (dated July 1, 2014), NHDES stated that the *aluminum criteria* presented in the New Hampshire water quality regulations (Env-Wq-1700) should be applied in terms of *acid-soluble aluminum*. The letter goes on to say:

> *New Hampshire's aluminum criteria are based on EPA's 1988 ambient water quality criteria document for aluminum[11]. According to this document, acid-soluble aluminum is operationally defined as "[a]luminum that passes through a 0.45 um membrane filter after the sample has been acidified to a pH at between 1.5 and 2.0 with nitric acid"[12]. For the many reasons listed in the "Implementation" section of the EPA document, acid-soluble aluminum is considered a better measurement of the forms that are toxic to aquatic life or that can be readily converted to toxic forms under natural conditions.*

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[9] Summarized from U.S. Environmental Protection Agency, *Drinking Water Treatment Plant Residuals Management Technical Report*, EPA 820-R-11-003; U.S. Environmental Protection Agency, Entry: Causal Analysis/Diagnosis Decision Information System, Volume 2: Sources, Stressors & Responses, Metals and pH; and Agency for Toxic Substances and Disease Registry, *Toxicological Profile for Aluminum*, September, 2008.

[10] The average monthly value and maximum daily value will be the same when monitoring on a monthly basis.

[11] *Ambient Water Quality Criteria for Aluminum - 1988*. United Stated Environmental Protection Agency. EPA 440/5-86-008. August 1988.: 2002, EPA-822-R-02-047

[12] NHDES protocols require the sample to be acidified to this low pH and allowed to stand for l6 hours before analysis.

It should be noted that individual facilities in New Hampshire can establish a site-specific ratio of acid soluble to total aluminum, if desired. Each facility would have to contact both NHDES and EPA to receive approval and formalize the process.

The Massachusetts Department of Environmental Protection (MassDEP) anticipates proposing changes to the Massachusetts Surface Water Quality Standards Regulations (314 CMR 4.00) pertaining to aluminum. This proposed change will express water quality criteria for the protection of aquatic life in terms of the acid-soluble fraction of aluminum present in surface waters. EPA guidance indicates that acid-soluble aluminum (ASA) is the toxic component of total recoverable aluminum (TRA). Federal regulations require that NPDES permits for aluminum be written in terms of TRA criteria. MassDEP's revised standards are expected to be released for public comment by fall of 2016. Once the standards are incorporated into regulations, facilities subject to aluminum limits under an individual or general permit may choose to collect data to support the development of ASA/TRA Aluminum Translators. Facilities interested in collecting these data should consult with MassDEP and EPA. Until that time, relevant facilities in Massachusetts will monitor for total recoverable aluminum.

As previously mentioned, EPA recognizes that aluminum is sometimes present in receiving waters in concentrations approaching or exceeding EPA's Water Quality Criteria for aluminum even when there is no proximate point source discharge. Thus, where there are high ambient levels of aluminum, there can be limited assimilative capacity for additional aluminum pollutant loadings. Thus, determining a facility's potential to contribute to an exceedance of ambient water quality standards is based on whether the facility uses aluminum and, if it does, a reasonable potential analysis that takes into account the aluminum concentration of *both* the effluent and ambient receiving water. Thus, for facilities that use aluminum **and** are not covered under the 2009 PWTF GP (because there were concerns of aluminum WQS exceedances), EPA is requiring these permittees to submit *additional* aluminum data as part of the NOI for this PWTF GP. This additional information includes a data set of 12 effluent samples and 10 upstream (ambient) samples, which must be analyzed for total recoverable Al. For facilities in New Hampshire, the assumption will be made that the entire fraction of measured total recoverable aluminum is in the acid soluble form.

This category of facilities that use aluminum was excluded under the last General Permit because of the concentration of aluminum present in their effluent. In an effort to broaden this General Permit's eligible facilities, the draft General Permit now requires additional data for those facilities that use aluminum and were excluded from the last PWTF GP. This data set, which includes both effluent and ambient water data, will be required as part of the Notice of Intent. This approach for these previously excluded facilities will enable EPA to determine whether or not there is reasonable potential for the aluminum discharge to cause or contribute to an exceedance of water quality standards. If it is determined that there is no reasonable potential to cause or contribute to an exceedance of water quality standards, the facility will be eligible under the PWTF GP and will be required to follow the same monitoring requirements and Best Management Practices, as stated above. If EPA determines that a facility has reasonable potential to cause or contribute to an exceedance of Aluminum Water Quality Standards, the facility may still be authorized under the PWTF GP on the condition that an appropriate Water Quality Based Effluent Limit (WQBEL) for aluminum is set. Or, as discussed in Section IV.E of this Fact Sheet, an owner or operator of a facility may apply for an individual permit. Another

possible result of this assessment is that EPA may inform the facility that the PWTF GP is not available and that an individual permit coverage is required to obtain authorization to discharge.

c. Iron

Iron salts are the active ingredients in some coagulants, which can be used to remove solid particles from raw water sources at PWTFs. As stated in the *Drinking Water Treatment Plant Residuals Management Technical Report*, iron was listed as a pollutant of concern for certain PWTFs. Therefore, the draft PWTF GP has established a new monthly monitoring requirement for iron. This monitoring requirement is only applicable to facilities that use iron-based coagulants in their treatment stream and is intended to assess whether the metal is present at levels of concern in the discharges from those facilities. This is to ensure that a facility does not simply replace one coagulant that contains a pollutant of concern (i.e., alum-based coagulant) for another coagulant that is a potential pollutant of concern (i.e., iron-based coagulant). Although iron is an essential trace element required by both plants and animals, the ferrous (Fe^{+2}) and the ferric (Fe^{+3}) forms of the metal are the primary forms of concern in the aquatic environment.

d. Ammonia

High levels of ammonia in the water column can be toxic to fish by making it more difficult for fish to excrete this chemical via passive diffusion from gill tissues. Ammonia can also lower dissolved oxygen levels by conversion to nitrate/nitrate, which consumes oxygen. This can lead to the development of eutrophic conditions in the receiving water. The chemical form of ammonia in water consists of two species, the ammonium ion (NH_4^+) and the ammonia (NH_3) molecule. Generally, as values of pH and temperature increase, the concentration of NH_3 increases and the concentration of NH_4^+ decreases. The toxicity of total ammonia increases as pH increases.[13]

Depending upon the type of disinfection process a PWTF employs, a plant may discharge residual disinfectants that contain chloramines, formed primarily by chlorine and ammonia. At times chemical treatment applied prior to the effluent being discharged can cause the chloramines to be re-suspended in solution as ammonia and chlorides. Existing data at EPA from PWTFs with individual permits suggests that some facilities have elevated concentrations of ammonia in their effluent. In order to determine the extent of this potential pollutant in PWTFs covered under this General Permit, as a whole, EPA is requiring facilities (falling under Category II and III) to conduct annual chronic and acute Whole Effluent Toxicity (WET) tests. Ammonia-nitrogen is one of the parameters tested under the chemical analysis portion of the WET test. Analysis of this new set of data will inform any *future* permitting actions such as determining if routine monitoring or a limit for ammonia nitrogen is necessary.

5. Intake Water Residuals

Drinking water treatment facilities provide treatment to remove pollutants in the raw source water, including groundwater sources, which are at levels which exceed the requirements of the Safe Drinking Water Act ("SDWA"). The SDWA establishes a maximum contaminant level ("MCL") for the majority of these pollutants. As mentioned in *The Drinking Water Treatment Plant Residuals Management*

[13] Aquatic Life Ambient Water Quality Criteria for Ammonia – Freshwater. EPA 822-R-13-001, April 2013.

Technical Report, pollutants for which a PWTF might treat its intake water include (among others) arsenic, iron, copper, cadmium, lead, nickel, zinc, and magnesium**.**

The 2009 PWTF GP did not require monitoring for the majority of these pollutants commonly removed from raw water by potable water treatment facilities or chemical impurities typically found in treatment chemicals such as coagulants. The only exception was for arsenic which will be discussed in Section III.A.6, below. EPA does not currently have information regarding the concentrations of these potential pollutants in the effluent from the PWTFs seeking coverage under this General permit. Therefore, EPA has established two additional monitoring requirements. As discussed in Section III.A.4.c, above, facilities that use iron-based coagulant must monitor monthly. In addition, any facility that discharges intermittently or continuously (i.e., Category II and III facilities) must conduct annual chronic and acute Whole Effluent Toxicity (WET) tests, as specified in Part 2.1.1 and Part 3.1.1 of the draft permit. Copper, cadmium, lead, nickel, zinc, and magnesium are parameters included in the effluent and ambient water chemical analyses portions of the WET test. Analysis of this new set of data, representing the effluent as a whole, will inform any future issuance of the PWTF General Permit to determine if routine monitoring or a limit for any of these chemicals is necessary in the future.

6. **Arsenic**

As originally established in the expired permit, the requirement to monitor monthly for arsenic will remain in this draft permit. This monitoring requirement is only applicable to facilities who provide treatment to remove arsenic from the raw water source. Arsenic, a toxicant, can be present at high levels in raw source water, including groundwater sources. As stated in the *Drinking Water Treatment Plant Residuals Management Technical Report,* arsenic was listed as a pollutant of concern for certain PWTFs. Therefore, this monitoring requirement is intended to assess whether arsenic is present at levels of concern in the discharges from those facilities. Most systems in the Northeast have arsenic levels between 2 and 10 µg/L.[14] The *National Recommended Water Quality Criteria* for acute and chronic arsenic in freshwater are 340 µg/L and 150 µg/L, respectively. The current levels in the Northeast are below criteria, however due to the potential toxic effects associate with arsenic, monitoring is included for those facilities that treat for arsenic.

7. **Phosphorus**

Phosphorus is an essential nutrient for plant growth but excessive amounts of phosphorus in a water body has the potential to create problems. For example it can accelerate stream eutrophication, a condition that is characterized by excessive plant growth, low dissolved oxygen and, large diurnal swings in dissolved oxygen in the water body. In addition, phosphorus is the nutrient typically limiting primary productivity in freshwater ecosystems.

As stated in the *Drinking Water Treatment Plant Residuals Management Technical Report,* phosphorus-containing chemicals can be used by PWTFs to treat for scale and corrosion control. The discharge of phosphorus into a receiving water can be problematic, especially if the waterbody is already listed as being Phosphorus-impaired. Massachusetts Surface Water Quality Standards at 314 CMR 4.05(5)(c) state "Unless naturally occurring, all surface waters shall be free from nutrients in concentrations that would cause or contribute to impairment of existing or designated uses and shall not exceed the site

[14] EPA 820-R-11-003

specific criteria developed in a TMDL or as otherwise established by the Department pursuant to 314 CMR 4.00." Likewise, according to New Hampshire's Surface Water Quality Regulations at Env-Wq 1703.14, Class B waters "shall contain no phosphorus or nitrogen in such concentrations that would impair any existing or designated uses, unless naturally occurring." (Class A waters in New Hampshire are not covered by this permit.)

The draft PWTF General Permit has included new language regarding this parameter. Facilities which use phosphorus-containing chemicals *and* discharge into a waterbody impaired (as documented in each state's Integrated List of Waters) for phosphorus or a related pollutant (e.g., nutrient/eutrophication biological indicators, excess algal growth, invasive aquatic algae) will be required to monitor their effluent for phosphorus on a monthly basis. Monitoring will be required during the growing season of April 1st to October 31st. This data will be evaluated to determine if a facility should be subject to more stringent requirements or numeric limits for phosphorus in the next reissuance of the permit. In addition, these select facilities will also be required to evaluate potential measures that will reduce and/or eliminate the discharge of phosphorus into the receiving water (i.e., evaluation of other chemicals which could reduce or eliminate the use of phosphorus-containing chemicals while still maintaining drinking water standards.)

8. **Whole Effluent Toxicity Testing (LC_{50} and C-NOEC)**

Both Massachusetts and New Hampshire have narrative criteria in their water quality regulations (See Massachusetts 314 CMR 4.05(5)(e) and New Hampshire Part Env- Ws 1703.21) that prohibit toxic discharges in toxic amounts. The PWTF GP prohibits the addition of toxic materials or chemicals in concentrations that would make the discharge toxic to aquatic life. EPA also retains the right to issue a CWA § 308 letter to permittees which would request additional information (such as the results of Whole Effluent Toxicity (WET) testing of the effluent) necessary for "[d]eveloping or assisting in the development of any effluent limitation, or other limitation, prohibition, or effluent standard" under the CWA.

Category II and Category III PWTFs will be required to conduct annual *acute* and *chronic* Whole Effluent Toxicity (WET) Testing. In order to ensure that testing is representative of any seasonal or other variations, testing should be conducted in different calendar quarters for 4 successive years. Based on EPA's knowledge of potable water treatment facilities that have obtained individual permits, facilities in this industry can generally be considered low risk in regards to toxicity. However EPA needs to gather sufficient data to ensure that the discharges from the facilities covered under this general permit, as a whole, do not demonstrate reasonable potential to cause or contribute pollutants in concentrations or combinations that are toxic to aquatic life. Under the general permit's toxicity testing scheme, EPA would have between 80 and 100 acute and chronic data points that can be used to evaluate toxicity at Category II and Category III PWTFs. EPA should then be able to make a determination as to the degree to which these PWTFs exhibit toxicity, whether additional testing and/or limits are necessary at individual plants, or whether no additional action(s) is necessary. This new requirement for Category II and Category III PWTFs to conduct annual acute and chronic WET testing will provide this necessary data.

EPA is requiring the testing of one species, *Ceriodaphnia dubia* for the freshwater WET testing (both acute and chronic). The vast majority of PWTFs under this General Permit are freshwater.

Since *C.dubia* is the most sensitive species, this represents a conservative approach in determining any toxicity from a facility's effluent. If a facility discharges into a coastal/marine area, annual acute and chronic saltwater WET Tests must be conducted instead. Likewise, testing of only one species, Inland Silverside (*Menidia beryllina)* for saltwater WET testing (both acute and chronic) is required because of its sensitivity. Toxicity test protocols may be viewed at http://www.epa.gov/region1/npdes/epa_attach.html. Sections 2.1.1 and 3.1.1 of the draft General Permit provide additional information.

WET Testing is conducted to determine whether certain effluents, which may contain potentially toxic pollutants, are discharged in a combination which produces a toxic effect in the receiving water. The principal advantages of biological techniques, like WET testing, are: (1) the effects of complex discharges of many known and unknown constituents can be measured only by biological analyses; (2) bioavailability of pollutants after discharge is best measured by toxicity testing including any synergistic effects of pollutants; and (3) pollutants for which there are inadequate chemical analytical methods or criteria can be addressed. For acute WET testing, the LC_{50} is the concentration of the effluent that causes mortality to 50% of the test organisms at a specific time of observation. For chronic WET testing, C-NOEC (chronic-no observed effect concentration) is defined as the highest tested concentration of an effluent or a toxicant at which no adverse effects are observed on the aquatic test organisms at a specified time of observation.

In addition to the acute and chronic Whole Effluent Toxicity, the WET testing requires chemical analysis for the following parameters: hardness, total residual chlorine, alkalinity, pH, specific conductance, total solids, total dissolved solids, ammonia, total organic carbon, total recoverable cadmium, total recoverable lead, total recoverable copper, total recoverable zinc, total recoverable nickel, total recoverable magnesium, and total recoverable aluminum. As previously mentioned in III.5, these are several potential pollutants that may be present in PWTF effluent. Analysis of this new set of data, representing the effluent as a whole, will inform any future issuance of the PWTF General Permit to determine if routine monitoring or a limit for any of these chemicals is necessary in the future. Additionally, these data will inform the WET test monitoring and limit provisions established in future permitting actions.

B. Best Management Practices

The Draft Permit contains several non-numeric technology-based effluent limitations in addition to numeric effluent limitations. It retains requirements for the permittee to develop, implement, and maintain a Best Management Practices (BMP) Plan for wastewater discharges from the PWTF and to document how both the non-numeric technology-based and numeric effluent limitations are being met through the selection, design, installation, and implementation of control measures (including BMPs). The purpose of the BMP Plan is to prevent or minimize the concentration of pollutants (biological, chemical and physical) in the wastewater discharged to surface waters. The BMP Plan will ensure that not only is the drinking water produced by PWTFs safe for human consumption, but also that the wastewater produced by PWTFs is protective of the quality of the receiving water.

The BMP Plan also includes specific language requiring the implementation of an aluminum minimization program (if a PWTF uses aluminum). Part 2.1.3 and Part 3.1.3 of the General

Permit highlight these requirements. At a minimum, this program must include the procedures used for the removal of solids, including sludge, and the procedures used to minimize the discharge of aluminum to surface waters, while maintaining compliance with the Safe Drinking Water Act (SDWA) requirements, including 40 CFR 141.135, for removal of contaminants during treatment of raw water for drinking. Additional best management practices include an evaluation of using non-aluminum based coagulants, a description of alternate procedures or improvements to increase the efficiency of solids and/or aluminum removal, and a consideration of the design standards used for devices that treat residuals. As an example, the design standards for lagoons, which are a widely used control measure for treatment of residuals at water treatment facilities, typically require the device to include[15]:

- A location free from flooding;
- Where necessary, dikes, reflecting gutters, or other means of diverting surface water so that it does not flow into the lagoon;
- A minimum usable depth of five feet;
- Adequate freeboard of at least two feet;
- An adjustable decanting device;
- An effluent sampling point;
- Sizing appropriate to the expected volume of water and sludge;
- Adequate safety provisions (such as fencing); and
- A minimum of two cells, each with appropriate inlet/outlet structures to facilitate independent filling/dewatering operations.

The aluminum minimization program should list any of the required design standards that are already incorporated into the design of the PWTF. If the implementation of any of the standards is impracticable, the BMP plan should provide an evaluation and explanation to support this determination. Explanations may include space restrictions, retrofitting requirements, and/or lack of necessity due to low concentrations of aluminum or alternate, equally adequate, design measures.

The permittee will need to certify at least annually that the facility is in compliance with the requirements of the BMP plan and that training of employees has occurred on an annual basis.

C. Dilution Factors and Mixing Zones

The available dilution at a specified critical low flow condition (7Q10) in the receiving water and a facility's discharge flow are used in computing the dilution factor. The 7Q10 is the lowest observed mean river flow for seven (7) consecutive days, occurring over a 10-year recurrence interval. For Massachusetts, the regulations for calculating dilution factors and mixing zones are located at 314 CMR 4.03 and in the Massachusetts Water Quality Standards Implementation Policy for Mixing Zones. For New Hampshire, these regulations are located at Env-Wq 1705 and Env –Wq 1707. In all cases, mixing zones in Massachusetts must meet

[15] The Commonwealth of Massachusetts Department of Environmental Protection, Bureau of Resource Protection, Drinking Water Program, Guidelines and Policies for Public Water Supplies: http://www.mass.gov/eea/agencies/massdep/water/regulations/guidelines-for-public-water-systems.html

the criteria at 314 CMR 4.03(2) and mixing zones in New Hampshire must meet the minimum criteria presented in Env-Wq 1707.02.

For discharges to freshwater, the water quality standards for each state establish the lowest flow conditions in the rivers and streams to meet the water-quality criteria as the 7Q10 low flow. This flow condition is found at 314 CMR 4.03(3)(a) in the Massachusetts water quality standards and at Part Env-Wq 1705.02(d) in the New Hampshire regulations. Because 10 percent of the river's assimilative capacity is held for future needs in New Hampshire, in accordance with Env-Ws 1705.01, the dilution factor is multiplied by 0.90 prior to use in permit limit calculations.

For marine waters in Massachusetts, the critical hydrologic condition at which water-quality must be met is established on a case-by-case basis. Existing uses are to be protected and the selected hydrologic condition is not to interfere with the attainment of designated uses (See 314 CMR 4.03(3)(c)). For Massachusetts waters that are regulated by dams or similar structures and for tidal waters in New Hampshire, the low flow condition shall be equivalent to the conditions that result in a dilution that is exceeded 99 percent of the time. These requirements are found at 314 CMR 4.03(3)(b) in the Massachusetts water quality standards and at Part Env-Wq 1705.02(c) in the New Hampshire water quality standards.

Dilution factors are calculated by mixing zone modeling in accordance with the NHDES Mixing Zone Policy for freshwater receiving waters. In order to satisfy Massachusetts and New Hampshire regulations, EPA uses the 7-day 10-year low flow statistic for rivers and streams to calculate dilution factors.

Additionally, MassDEP has developed an interpretation of its mixing zone regulations relevant to lakes and reservoirs. This was supported by Scientific Investigations Report 2011-5136, which was prepared by USGS in cooperation with MassDEP and entitled, "Determination of Dilution Factors for Discharge of Aluminum-Containing Wastes by Public Water-Supply Treatment Facilities into Lakes and Reservoirs in Massachusetts." For facilities that discharge to a lake or pond, the calculation of the dilution factor will be based on this report. Massachusetts permittees who discharge to these types of waterbodies should contact MassDEP at the address listed in Appendix VI of the PWTF GP for additional information.

The equations used to calculate the dilution factors are provided in Appendix VII of the PWTF GP. Applicants that discharge in New Hampshire must contact the state agency at the address listed in Appendix VI of the PWTF GP to determine the 7Q10 flow and dilution factor (or other appropriate hydrologic condition, or to request consideration of diffuser dilution) for the facility *prior* to completing the NOI requirements for the PWTF GP. Applicants that discharge in Massachusetts are highly recommended to contact their respective state agency, as well.

IV. Notice of Intent Requirements and Regulatory Provisions Intent

A. Notice of Intent (NOI)

1. NOI Information

To obtain coverage under the PWTF GP, owners or operators of facilities whose discharge or discharges are identified in Part I.C. of this Fact Sheet are required to submit notices of intent (NOI) to EPA and the appropriate state at the addresses listed in Appendix VI. All NOIs submitted **after December 21, 2020** must be submitted electronically. Only Massachusetts facilities that are seeking coverage under the PWTF General Permit for the first time *and* discharge to Outstanding Resource Waters (ORW) or High Quality Waters must submit the NOI to the state *after* first contacting MassDEP. Submission of a complete and accurate NOI eliminates the need to apply for an individual permit for a regulated discharge, unless the facility does not meet the eligibility requirements or EPA specifically notifies the owner or operator that an individual permit application must be submitted. The NOI consists of either the suggested NOI format in Appendix IV of the PWTF GP or another form of official correspondence containing all of the information required in Appendix IV of the PWTF GP.

In general, this information includes:

a. General Facility Information;
b. Discharge Information;
c. Effluent Characteristics;
d. Determination of Endangered Species Act Eligibility;
e. Documentation of National Historic Preservation Act Eligibility;
f. Supplemental Information;
g. Signature requirements; and
h. "Opt-Out Request"

2. NOI Timeframes

a. *Proposed New Discharges:* Facilities which were not covered under the Expired PWTF GP (which expired on October 2, 2014) and that are seeking coverage under the new PWTF GP, must submit an NOI to EPA and the appropriate state, post-marked at least 60 days prior to the commencement of discharge. Only Massachusetts facilities that are seeking coverage under the PWTF General Permit for the first time *and* are discharging to Outstanding Resource Waters (ORW) and High Quality Waters must submit the NOI to the MassDEP *after* first contacting them. In the case of a proposed new discharge to New Hampshire waters, additional lead time may be necessary. These facilities should contact the NHDES at the address listed in Appendix VI of the PWTF GP to determine whether additional lead time (i.e., 180 days/six months) is necessary.

b. *Existing Permitted Discharges (Re-Application):* Facilities which were covered under the Expired PWTF GP, which expired on October 2, 2014, and that wish to seek coverage under the new PWTF GP, must submit an NOI to EPA and the respective State (as applicable) within 90 days after the effective date of the PWTF GP. For enforcement purposes, facilities which fail

to submit an NOI within 90 days after the effective date of the PWTF GP for a discharge covered under the Expired PWTF GP will be considered to be discharging without a permit. An NOI is not required if the permittee submits a notice of termination (NOT), as set forth in Part V.A. of this Fact Sheet before the 90 day time frame expires.

c. *Facilities with Existing Discharges Not Authorized Under Last PWTF GP and which Use Aluminum in Treatment Process:* Facilities that use aluminum in their treatment process but were not authorized under the PWTF General Permit that expired on October 2, 2014 (and submitted an application for an Individual Permit instead) are eligible to seek coverage under this General Permit. Facilities must file an NOI to EPA and NHDES, if applicable, for coverage under this General Permit within 6 months of the effective date of this permit. Since facilities under this category will be required to submit more extensive water quality sampling (i.e., aluminum) than the other categories, additional time to submit the NOI has been granted.

B. Essential Fish Habitat

Background: Under the 1996 Amendments (PL 104-267) to the Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. §§ 1801 et seq. (1998)), EPA is required to consult with NOAA Fisheries Service (also known as the National Marine Fisheries Service, NMFS) if EPA's actions or proposed actions that it funds, permits or undertakes, "may adversely impact any essential fish habitat." (16 U.S.C. § 1855(b)) The amendments broadly define "essential fish habitat" (EFH) as "waters and substrate necessary to fish for spawning, breeding, feeding or growth to maturity." (16 U.S.C. § 1802(10)) Adverse impact means any impact which reduces the quality and/or quantity of EFH. (See 50 CFR § 600.910(a)) Adverse effects may include direct (e.g., contamination or physical disruption), indirect (e.g., loss of prey, reduction in species' fecundity), site-specific or habitat-wide impacts, including individual, cumulative or synergistic consequences of actions.

An EFH designation is only available where a Federal Fisheries Management Plan exists. (See 16 U.S.C. § 1855(b)(1)(A)) EFH designations for New England were approved by the US Department of Commerce on March 3, 1999. In a letter to EPA- New England dated October 10, 2000, NOAA Fisheries Service agreed that for NPDES permit actions, EFH notification for purposes of consultation can be accomplished in the EFH section of the permit's Fact Sheet or Federal Register Notice.

Proposed Action: EPA is reissuing the National Pollutant Discharge Elimination System (NPDES) General Permit for potable water treatment facilities (PWTFs). The PWTF GP provides coverage to facilities located in Massachusetts and New Hampshire whose discharge consists of wastewaters described in Part I.C. of this Fact Sheet. Please refer to Part I.A. of this Fact Sheet for a more detailed explanation of the proposed changes to the Expired PWTF GP. *Resources:* Part I.D. of this Fact Sheet lists the specific discharges excluded from coverage, including discharges to ocean sanctuaries, territorial seas, Class A waters in New Hampshire, and designated areas under the Essential Fish Habitat Act unless the requirements specified in this General Permit are fulfilled. The General Permit does not however specifically exclude facilities that discharge into other tidal waters. (However, it should be noted that the vast majority of PWTFs discharge into freshwater bodies.) Therefore,

EPA's EFH assessment considers all 40 federally managed species with designated EFH in the coastal and inland waters of Massachusetts and New Hampshire.

The following is a list of the EFH species and applicable lifestage(s) for the area that includes Massachusetts, New Hampshire and the adjacent marine waters:

Species	Eggs	Larvae	Juveniles	Adults
Atlantic Salmon (*Salmo salar*)			X	X
Atlantic Cod (*Gadus morhua*)	X	X	X	X
Haddock (*Melanogrammus aeglefinus*)	X	X	X	X
pollock (*Pollachius virens*)	X	X	X	X
whiting (*Merluccius bilinearis*)	X	X	X	X
offshore hake (*Merluccius albidus*)				
red hake (*Urophycis chuss*)	X	X	X	X
white hake (*Urophycis tenuis*)	X	X	X	X
redfish (*Sebastes fasciatus*)	n/a	X	X	X
witch flounder (*Glyptocephalus cynoglossus*)	X	X		
winter flounder (*Pleuronectes americanus*)	X	X	X	X
yellowtail flounder (*Pleuronectes ferruginea*)	X	X	X	X
windowpane flounder (*Scopthalmus aquosus*)	X	X	X	X
American plaice (*Hippoglossoides platessoides*)	X	X	X	X
ocean pout (*Macrozoarces americanus*)	X	X	X	X
Atlantic halibut (*Hippoglossus hippoglossus*)	X	X	X	X
Atlantic sea scallop (*Placopecten magellanicus*)	X	X	X	X
Atlantic sea herring (*Clupea harengus*)	X	X	X	X
monkfish (*Lophius americanus*)	X	X	X	X
bluefish (*Pomatomis saltatrix*)			X	X
long finned squid (*Loligo pealei*)	n/a	n/a	X	X
short finned squid (*Illex illecebrosus*)	n/a	n/a	X	X

Atlantic butterfish (*Peprilus triacanthus*)	X	X	X	X
Atlantic mackerel (*Scomber scombrus*)	X	X	X	X
summer flounder (*Paralicthys dentatus*)	X	X	X	X
scup (*Stenotomus chrysops*)	n/a	n/a	X	X
black sea bass (*Centropristus striata*)	n/a	X	X	X
surf clam (*Spisula solidissima*)	n/a	n/a	X	X
ocean quahog (*Artica islandica*)	n/a	n/a		
spiny dogfish (*Squalus acanthias*)	n/a	n/a	X	X
tilefish (*Lopholatilus chamaeleonticeps*)				
king mackerel (*Scomberomorus cavalla*)	X	X	X	X
Spanish mackerel (*Scomberomorus maculatus*)	X	X	X	X
cobia (*Rachycentron canadum*)	X	X	X	X
sand tiger shark (*Odontaspis taurus*)		X		
blue shark (*Prionace glauca*)		X		X
dusky shark (*Charcharinus obscurus*)			X	
shortfin mako shark (*Isurus oxyrhyncus*)			X	
sandbar shark (*Charcharinus plumbeus*)			X	X
bluefin tuna (*Thunnus thynnus*)			X	X

Source: NOAA Fisheries Services http://www.nero.noaa.gov

EPA has identified 62 likely candidates for coverage under the PWTF GP, including 56 in Massachusetts and 6 in New Hampshire. Although the PWTF GP is available to additional facilities, this assessment considers these 62 representative facilities, all of which were covered under the Expired PWTF GP.

None of the potential applicants discharge into marine waters; however, one (at Newburyport) discharges to somewhat saline waters of the lower Merrimack River in Massachusetts.

Regarding freshwater, 4 PWTFs covered under the last PWTF GP had discharges along the Connecticut River, 5 discharged along the Merrimack River, and 1 PWTF discharged near Great Bay (up until 2009). All three of these water bodies are designated EFH for Atlantic salmon (*Salmo salar*)[16].

[16] http://www.greateratlantic.fisheries.noaa.gov/hcd/salmon.pdf

Analysis of Effects: As described above, the PWTF GP covers a variety of potential discharges which could occur anywhere in Massachusetts and New Hampshire, except into those waters excluded in Part I.D of this Fact Sheet. EPA has identified the following potential sources of impact to aquatic species associated with discharges from PWTFs:

(a) Effluent Toxicity: Certain chemicals used in potable water treatment processes have the potential to cause toxicity in the receiving water. In particular, disinfection (by addition of chemicals designed to kill pathogens) has the potential for the toxic agent to be present in the discharges. The disinfection is commonly done by chlorination. Therefore, the PWTF GP establishes monitoring and limits for Total Residual Chlorine (TRC) in cases where wastewater has previously been chlorinated or which may contain TRC. The TRC limits are based on the states' water quality standards to protect against toxicity to aquatic species.

Coagulation, which removes dirt and other particles suspended in water, is commonly carried out at PWTFs. Facilities may use aluminum-based coagulants, which results in the presence of aluminum in wastewater discharges. Based on the potential toxicity of aluminum towards aquatic life, the PWTF GP requires the permittee to monitor for total recoverable aluminum (both effluent and ambient water) and to implement a Best Management Practices Plan, which includes requirements to minimize the discharge of aluminum where it is used as a coagulant in the water treatment process.

Additionally, the PWTF GP requires monitoring for arsenic when the PWTF is providing treatment to remove arsenic from the raw water source. Based on a review of the facilities covered under the last PWTF GP, none of the facilities were required to remove arsenic.

The PWTF GP prohibits the discharge of pollutants in amounts that would be toxic to aquatic life. It prohibits any discharge that violates State or Federal water quality standards. Finally, it prohibits the discharge of any water treatment additives without notification of the regulatory agencies. Examples of water treatment additives that potentially could be found within discharged wastewater include chemicals used for coagulation, pH neutralization, dechlorination, control of biological growth, and control of corrosion and scale in water pipes.

To further ensure that PWTFs covered under the General Permit are not discharging toxics into receiving water or adversely impacting aquatic life, EPA has added several additional monitoring requirements. Facilities that use iron-based coagulants or facilities that discharge into Phosphorus-Impaired waters and use phosphorus-containing chemicals must monitor and report each respective parameter on a monthly basis. Another significant requirement of this draft PWTF GP is that all PWTFs that discharge on an intermittent or continuous basis will be required to conduct annual acute and chronic Whole Effluent Toxicity (WET) Tests. WET Testing, a type of biological test, is conducted to determine whether certain effluents, which may contain potentially toxic pollutants, are discharged in a combination which produces a toxic amount of pollutants in the receiving water.

EPA is requiring the testing of one species, *Ceriodaphnia dubia,* for the freshwater WET testing (both acute and chronic). As previously mentioned, the vast majority of PWTFs under this General Permit are freshwater and *C.dubia* is the most sensitive species for freshwater. If a facility discharges into a coastal/marine area, one acute and one chronic saltwater WET Test must be conducted instead. Likewise, testing of one species, Inland Silverside (*Menidia beryllina)* for saltwater WET testing (both acute and chronic) is required because of its sensitivity. If necessary, the PWTF GP also allows EPA

or a relevant State to require that a facility conduct toxicity testing when needed to verify that the discharge is not having toxic impacts on sensitive species.

(b) Discharge of Solids: Solids are commonly removed from raw source water at PWTFs. These have the potential to settle and cover bottom habitat areas, potentially causing benthic smothering. Suspended solids can also cause turbidity in the receiving waters if discharged at high levels, which could reduce light penetration and limit the growth of rooted aquatic vegetation that serves as a critical habitat for fish and other aquatic organisms. The PWTF GP contains effluent limits for total suspended solids that can be achieved by well-operated wastewater treatment facilities. The monthly average and maximum daily limitation for TSS are 30 mg/l and 50 mg/l, respectively. These are sufficiently stringent to achieve the water quality standards of Massachusetts and New Hampshire. Additionally, the permit contains narrative prohibitions on the discharge of settleable solids and unacceptable color in the receiving water.

EPA's Opinion of Potential Impacts: EPA believes that the discharges authorized under the PWTF GP will have minimal adverse effects to EFH for a number of reasons, including:

- This is a re-issuance of an existing permit;
- The effluent limitations established in the PWTF GP ensure protection of aquatic life and maintenance of the receiving water as an aquatic habitat;
- The proposed limits and coverage requirements for the PWTF GP are sufficiently stringent to assure that state and federal water quality standards will be met and the permit prohibits violation of these standards;
- The PWTF GP specifically excludes coverage to facilities whose discharge may adversely affect threatened or endangered species or their habitat; and
- The PWTF GP includes water quality -based limits for total residual chlorine (TRC); monitoring requirements for arsenic, iron, and phosphorus (where applicable); monitoring requirements for aluminum; requirements to design, implement, and maintain a Best Management Practices Plan, which will require facilities to minimize the discharge of aluminum where it is used as a coagulant in the water treatment process, and a new requirement for PWTFs that discharge on an intermittent or continuous basis to conduct annual acute and chronic WET tests during the permit term.

EPA concludes that the effluent limitations, conditions, and monitoring requirements contained in the PWTF GP minimize adverse effects to aquatic organisms, including EFH species, as well as their habitat and forage species.

Proposed Mitigation: Mitigation for unavoidable impacts associated with re-issuance of the PWTF GP is not warranted at this time because it is EPA's opinion that impacts will be negligible if the PWTF GP conditions are followed. If adverse impacts to EFH do occur, either as a result of non-compliance or from unanticipated effects from this activity, authorization to discharge under the PWTF GP can be revoked.

Furthermore, the General Permit contains provisions that require the applicant to perform toxicity testing and/or a priority pollutant scan if EPA or the State believes it is warranted and/or to require that an individual permit be issued if actual environmental conditions are not adequately covered by the

General Permit. Should new information become available that changes the basis for EPA's assessment, then consultation with NMFS under the appropriate statute(s) will be reinitiated.

C. Endangered Species

The Endangered Species Act (ESA) of 1973 requires federal agencies such as EPA to ensure, in consultation with the U.S. Fish and Wildlife Service (USFWS) and NOAA's National Marine Fisheries Service (NMFS), also known collectively as "the Services", that any actions authorized, funded, or carried out by the EPA (e.g., EPA issued NPDES permits authorizing discharges to waters of the United States) are not likely to jeopardize the continued existence of any Federally-listed endangered or threatened species or adversely modify or destroy critical habitat of such species (see 16 U.S.C. 1536(a)(2), 50 CFR § 402 and 40 CFR § 122.49(c)).

Section 7 Consultations

Section 7 of the ESA provides for formal and informal consultation with the Services. For NPDES permits issued in Massachusetts and New Hampshire where EPA is the permit issuing agency, draft NPDES permits and Fact Sheets are routinely submitted to the Services for informal consultation prior to issuance. EPA will initiate an informal consultation with the Services through the Draft Permit and Fact Sheet during the General Permit's public comment period. Based on EPA's working experience with the Services on numerous prior permits and identification of certain endangered species, general geographic areas of concern in the States and the potentially affected waters, including critical habitats, EPA has prepared this draft PWTF GP to ensure adequate protection of listed threatened or endangered species or the critical habitat of such species protected under the ESA.

The discharges authorized under the PWTF GP are described in Part I.C. of this Fact Sheet. The PWTF GP specifically excludes coverage to facilities whose discharge(s) are likely to jeopardize the continued existence of listed threatened or endangered species or the critical habitat of such species. The PWTF GP effluent limits are sufficiently stringent to assure that water quality standards protect both aquatic life and human health. The effluent limitations established in the PWTF GP ensure protection of aquatic life and maintenance of the receiving water as an aquatic habitat. Further, the PWTF GP requires the permittee to develop best management practices and requires that individual permits be issued if actual environmental conditions (including the preservation of endangered species) are not adequately covered by the PWTF GP. In addition, the General Permit contains a new provision that requires Category II and Category III facilities to conduct annual acute and chronic Whole Effluent Toxicity Tests. The requirements in this General Permit are consistent with information previously provided by the Services to EPA during the development of other recently issued general permits. Therefore, EPA Region I finds that adoption of the PWTF GP is not likely to adversely affect any threatened or endangered species or its critical habitat. The following are ESA species of concern in Massachusetts and New Hampshire:

Massachusetts (15)	**New Hampshire (12)**
Dwarf wedgemussel (*Alasmidonta heterodon*)	Dwarf wedgemussel (*Alasmidonta heterodon*)
Northeastern bulrush (*Scirpus ancistrochaetus*)	Northeastern bulrush (*Scirpus ancistrochaetus*)

Sandplain gerardia (*Agalinis acuta*)
Piping Plover (*Charadrius melodus*)
Red Knot (*((Calidris canutus rufa))*
Roseate Tern (*Sterna dougallii dougallii*)
Plymouth redbelly turtle (*Pseudemys rubriventis bangsi*)
Bog Turtle (*Clemmys muhlenbergii*)
Small whorled Pogonia (*Isotria medeoloides*)
Puritan tiger beetle (*Cicindela puritana*)
American burying beetle (*Nicrophorus americanus*)
Northeastern beach tiger beetle (*Cicindela dorsalis dorsalis*)
Northern long-eared Bat *(Myotis septentrionalis)*
Atlantic Sturgeon (Acipenser oxyrinchus)*
Shortnose Sturgeon (Acipenser brevirostrum)*

Piping Plover (Charadrius melodus)
Red Knot (*((Calidris canutus rufa))*
Roseate Tern (*Sterna dougallii dougallii*)
Small whorled Pogonia (*Isotria medeoloides*)
Karner Blue butterfly *(Lycaeides melissa samuelis)*
Canada Lynx *(Lynx canadensis)*
Jesup's milk-vetch (Astragalus robbinsii var. jesupii)
Northern long-eared Bat *(Myotis septentrionalis)*
Atlantic Sturgeon (Acipenser oxyrinchus)*
Shortnose Sturgeon (Acipenser brevirostrum)*

* These species are listed under the jurisdiction of NMFS, while all others are listed under the jurisdiction of USFWS

Any facility seeking coverage under the Potable Water Treatment Facility General Permit may need to consult with the Services. EPA may designate the applicants as non-Federal representatives for the general permit for the purpose of carrying out formal or informal consultation with the Services to determine whether a Federal action is likely to have an adverse impacted on listed species or critical habitat. By terms of this permit, EPA *has* automatically designated operators as non-Federal representatives for the purpose of conducting formal or informal consultations with the *United States Fish and Wildlife Service*. (See 50 CFR § 402.08 and § 402.13). However EPA will coordinate with the *National Marine Fisheries Service* regarding the marine species under its jurisdiction to determine that the terms of the permit adequately prevent adverse effects or the take of listed species and adverse effects on critical habitat due to PWTF discharges.

Discharges that are located in areas in which listed endangered or threatened species may be present are not automatically covered under this General Permit. Appendix III of the General Permit details how applicants determine the listed species or critical habitat located near their proposed PWTF discharge. Applicants whose discharges may affect listed species or critical habitat may need to contact the Services to determine whether or not additional consultation is needed. In order to be eligible for coverage under the PWTF General Permits, applicants must certify that they meet one of the three USFWS Eligibility Criteria (A, B, and C) related to listed species and critical habitat under the jurisdiction of the U.S. Fish and Wildlife Service. This must be provided on the NOI.

If any permittee initiates contact with the Services, they must submit a copy of any communication from the Services with the NOI as directed. Applicants who cannot certify compliance with the ESA requirements on the NOI must contact EPA to determine if eligibility for an individual NPDES permit is possible or to discuss other possible options for the proposed discharge.

For facilities that meet USFWS Eligibility Criteria B in Appendix III (i.e., they cannot meet Criteria A or C); or for facilities that cannot meet any of the FWS ESA Eligibility Criteria in Appendix III, coverage under the General Permit is available **only if the applicant contacts USFWS** under § 7 of the

Endangered Species Act, and it is confirmed that the applicant's discharges are not likely to affect listed species, or the communication results in a written concurrence by the Service(s) on a finding that the applicant's discharges are not likely to adversely affect listed species.

For facilities that meet Criteria C, EPA has determined that five endangered species and their critical habitat are not likely to be adversely affected by actions authorized under the permit because they are terrestrial animals or plants that are not likely to have significant interaction with the permitted activities (waterbody discharges). These species are: Canada Lynx, Sandplain gerardia, Small whorled Pogonia, Karner Blue butterfly, and American burying beetle.

For facilities covered under the expired General Permit, EPA will initiate consultation with NMFS during the public comment period of the draft General Permit to ensure that listed species are not affected by the discharges expected to be covered under the PWTF General Permit. For facilities not previously covered under the General Permit (i.e., new permittees), EPA will consult (formally or informally) with NMFS if necessary to ensure that the listed species under their jurisdiction are not affected by the proposed discharge. These permittees must respond to all questions in Part D of the NOI.

Services Contact Information:

US Fish and Wildlife Service
New England Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5087
Phone: (603) 223-2541

National Marine Fisheries Service
Greater Atlantic Region Fisheries Office
Protected Resources Division
55 Great Republic Drive
Gloucester, MA 01930-2298
Phone: (978) 281-9300 ext. 6505

D. Historic Preservation

Facilities which adversely affect properties listed or eligible for listing in the National Registry of Historic Places under the National Historic Preservation Act of 1966 (NHPA), 16 USC §§470 et seq. are **not** authorized to discharge under the PWTF GP. Applicants must determine whether their discharge(s) or implementation of best management practices (BMPs) to control such discharges, authorized under this General Permit, have the potential to affect a property that is either listed or eligible for listing on the National Register of Historic Places. The applicant must certify the criterion used to determine permit eligibility and indicate it in the space provided on the NOI.

Electronic listings of National and State Registers of Historic Places are maintained by the National Park Service (http://www.nps.gov/nr/), the Massachusetts Historical Commission (http://www.sec.state.ma.us/mhc/mhcidx.htm) and the New Hampshire Historical Commission (http://www.nh.gov/nhdhr/programs/national_register.html). For additional information regarding the requirements pertaining to historic places, see Appendix II of the PWTF GP.

Applicants must also comply with applicable State, Tribal and local laws concerning the protection of historic properties and places and applicants are required to coordinate with the State Historic Preservation Officer (SHPO) and others regarding effects of any discharge(s) covered by this permit on historic properties.

MA SHPO address:

MA State Historic Preservation Officer (SHPO)
MA Historical Commission
220 Morrissey Blvd.
Boston, MA 02125
T: (617) 727-8470
F: (617) 727-5128

NH SHPO address:

State Historic Preservation Officer
New Hampshire Division of Historical Resources
19 Pillsbury Street
Concord, NH 03301-3570
T: (603) 271-8850
F: 603-271-3433

E. Requiring Coverage Under an Individual Permit or Other General Permit

1. When the Director May Require Application for an Individual NPDES Permit

The PWTF GP provides that, for any applicant, EPA may require an individual permit or recommend coverage under a separate General Permit according to 40 CFR § 122.28(b)(3). These regulations also provide that any interested party may petition EPA to take such an action. The issuance of the individual permit or other General Permit would be in accordance with 40 CFR § 124 and would provide for public comment and appeal of any final permit decision. Circumstances under which the Director may require an individual permit are described in 40 CFR § 122.28(b)(3)(i)(A-G).

The Director may require any person authorized by this permit to apply for and obtain an individual NPDES permit. Instances where an individual permit may be required include the following:

a. A determination under 40 CFR § 122.28(b)(3);
b. The discharge(s) is a significant contributor of pollution or is in violation of State Water Quality Standards for the receiving water;
c. The discharger is not in compliance with the conditions of the PWTF GP;
d. A change has occurred in the availability of the demonstrated technology or practices for the control or abatement of pollutants applicable to the point source(s);
e. Effluent limitation guidelines are promulgated for the point source(s) covered by the

PWTF GP;

f. A Water Quality Management Plan or Total Maximum Daily Load containing requirements applicable to such point source(s) is approved and inconsistent with the PWTF GP or with the conditions of EPA's authorization to discharge;
g. The point source(s) covered by the PWTF GP no longer:
    i. Involves the same or substantially similar types of operations;
    ii. Discharges the same types of wastes;
    iii. Requires the same effluent limitations or operating conditions;
    iv. Requires the same or similar monitoring; and/or,
h. In the opinion of the Director, the discharge is more appropriately controlled under an individual or alternate General Permit.

If the Director requires an individual permit, the permittee will be notified in writing that an individual permit is required, and will be given a brief explanation of the reasons for this decision. When an individual NPDES permit is issued to an operator otherwise subject to the PWTF GP, the applicability of the PWTF GP to that owner or operator is automatically terminated on the effective date of the individual permit (see 40 CFR §122.28(b)(3)(iv)).

2. When an Individual NPDES Permit may be Requested

Any owner or operator of a facility may request to be excluded from coverage of the PWTF GP by applying for an individual permit. This request may be made by submitting a NPDES permit application along with the reasons for requesting coverage under an individual permit to EPA – Region I and the appropriate state agency. When an individual NPDES permit is issued to an operator otherwise subject to the PWTF GP, the applicability of the PWTF GP to that owner or operator is automatically terminated on the effective date of the individual permit (see 40 CFR §122.28(b)(3)(iv)).

F. EPA Determination of Coverage

Any applicant may request to be included under this General Permit but the final authority for determination of coverage rests with the EPA. Coverage under the PWTF GP will not be effective until EPA and the appropriate State (where applicable) have reviewed the NOI, made a determination that coverage under the PWTF GP is authorized, and provided the operator with written notification of authorization. The effective date of coverage will be the date of signature of the authorization letter by the EPA. Any applicant who is denied coverage or who fails to submit to EPA and the appropriate State (where applicable) an NOI and/or fails to receive written notification of permit coverage from EPA is not authorized to discharge to receiving waters under the PWTF GP.

V. Administrative Requirements

A. Termination of Coverage

1. Requirement to Notify

Permittees must submit a completed Notice of Termination (NOT) that is signed and certified when one or more of the following conditions have been met:

1) All discharges covered by the PWTF GP have been terminated;
2) Coverage under an individual or alternative general NPDES permit has been obtained; or
3) Another operator has assumed control over all discharges;

2. Notice of Termination (NOT) Suggested Format and Information

Permittees shall notify EPA and the appropriate State agency in writing of the termination of the discharge(s) authorized under this General Permit. The Notice of Termination (NOT) may be completed using either the suggested form provided by EPA (found in Appendix V of the PWTF GP), or any other form of official correspondence that incorporates all of the information required in Appendix V of the PWTF GP. NOT forms and attachments must be submitted to EPA and the appropriate State agency at the addresses listed in Appendix VI of the PWTF GP.

The NOT must include:

1) The name, mailing address, and discharge location of the facility or site for which the notification is submitted;
2) The name, address, and telephone number of the operator addressed by the NOT;
3) The NPDES assigned permit number;
4) The basis for submission of the NOT, including: an indication that the discharge has been permanently terminated and the reason for the termination; and
5) A certification statement signed and dated by an authorized representative according to 40 CFR § 122.22 (see Appendix V of the PWTF GP).

The NOT must be completed and submitted within 30 days of the permanent cessation of the discharge(s) authorized under the PWTF GP.

B. Continuation of the Expired General Permit

If the PWTF GP is not reissued or replaced prior to the expiration date, it will be administratively continued in accordance with the Administrative Procedure Act (5 U.S.C. 558(c)) and 40 CFR §122.6 and remain in force and effect for discharges that were covered prior to expiration. After the expiration date of the PWTF GP, EPA cannot provide written authorization of coverage for new projects who submit an NOI to EPA until a replacement permit is issued. Any permittee who was granted permit coverage prior to the expiration date will automatically remain covered by the continued permit until the earliest of:

a. Authorization for coverage under a reissued permit or a replacement of this permit following the timely and appropriate submittal of a complete NOI requesting authorization to discharge under the new permit and compliance with the requirements of the new permit; or
b. Submittal of a Notice of Termination; or
c. Issuance or denial of an individual permit for the facility's discharges; or
d. A formal permit decision by EPA not to reissue this General Permit, at which time EPA will identify a reasonable time period for covered dischargers to seek coverage under an alternative general permit or an individual permit. Coverage under this permit will cease at the end of this time period.

VI. Standard Permit Conditions

Permittees must meet the standard permit requirements of 40 CFR §§ 122.41 and 122.42, as applicable to their discharge activities. Specific language concerning these requirements is provided in Appendix I of the PWTF GP.

VII. Other Legal Requirements

A. Section 401 Certifications

Section 401 of the CWA provides that no Federal license or permit, including NPDES permits, to conduct any activity that may result in any discharge into navigable waters shall be granted until the State in which the discharge originates certifies that the discharge will comply with the applicable provisions of §§ 301, 302, 303, 306, and 307 of the CWA. EPA will request that the Commonwealth of Massachusetts and the State of New Hampshire conduct §401 review and issue State certifications. In addition, it is anticipated that EPA and the Commonwealth of Massachusetts will jointly issue the final PWTF GP.

B. The Coastal Zone Management Act

The Coastal Zone Management Act (CZMA), 16 USC §1451 et seq., and its implementing regulations (15 CFR Part 930) require that any federally licensed activity affecting a State's coastal zone be consistent with the enforceable policies of approved State management programs. In the case of general permits, EPA has the responsibility for making the consistency certification and submitting it to the States for concurrence. EPA must certify that the activities authorized by this general permit comply with the enforceable policies of the States' approved programs and that the activities authorized by this general permit will be conducted in a manner consistent with the programs.

The Massachusetts CZM program has established enforceable polices that address natural, cultural, social, and economic resources. Mass CZM has eight categories of enforceable policies: water quality; habitat; protected area; coastal hazard; port and harbor infrastructure; public access; energy; and ocean resources. A complete description of the enforceable policies is available at http://www.mass.gov/czm. EPA believes that the conditions in the 2016 PWTF GP are consistent with the enforceable policies because the general permit contains numeric and non-numeric effluent limitations and requirements to address water quality (Section 2.1.1 of the permit) and requirements to implement control measures, including BMPs (Section 2.1.3 of the permit). One such requirement is for facilities to develop,

implement, and maintain a Best Management Practices Plan, which will be designed to eliminate or minimize the discharge of pollutants (including aluminum) to the receiving water and meet additional water quality requirements. The 2016 PWTF GP EPA has requested State concurrence with this determination for this general permit from the Executive Office of Energy and Environmental Affairs, Massachusetts CZM.

The New Hampshire CZM program has also established enforceable policies, which are listed below. EPA has addressed the policies identified as applicable by New Hampshire CZM to EPA's action (i.e., reissuance of this general permit). Policies that were not applicable are noted with "N/A". EPA has requested State concurrence with this determination for this general permit from the Federal Consistency Officer, New Hampshire Coastal Program.

Protection of Coastal Resources:

Policy #1: Protect and preserve and, where appropriate, restore the water and related land resources of the coastal and estuarine environments. The resources of primary concern are coastal and estuarine waters, tidal and freshwater, wetlands, beaches, sand dunes, and rocky shores.

The PWTF GP is consistent to the maximum extent practicable with this enforceable policy by prohibiting any discharge that EPA determines will have the reasonable potential to cause or contribute to an excursion above any applicable water quality standards, requiring sampling of the discharge to ensure compliance with numerical limits, and requiring the development and implementation of best management practices (BMPs) to reduce the discharge of pollutants. The 2016 PWTF GP authorizes discharges from potable drinking water treatment processes (listed in Part 1.1 of the permit) and related discharges (i.e., from regular maintenance of PWTF facilities). Discharges authorized under the 2016 PWTF must meet chemical-specific effluent limitations at or below WQC necessary to protect aquatic life. These include limits on TSS, pH, Total Residual Chlorine (if applicable), and aluminum (if applicable). The full list of effluent limitations and monitoring requirements are found in Part 3.1.1 of the permit. The PWTF GP also establishes control measures, including BMPs (Section 3.1.3 of the permit). One such requirement is for facilities to develop, implement, and maintain a Best Management Practices Plan, which will be designed to eliminate or minimize the discharge of pollutants (including aluminum) to the receiving water and meet additional water quality requirements.

Policy #2: Manage, conserve and, where appropriate, undertake measures to maintain, restore, and enhance the fish and wildlife resources of the state.

The 2016 PWTF GP is consistent to the maximum extent practicable with this enforceable policy by prohibiting any discharge that EPA determines will cause, have the reasonable potential to cause, or contribute to an excursion above any applicable water quality standards such that discharges will not interfere with the attainment and maintenance of water quality. Discharges authorized under the 2016 PWTF GP must meet chemical-specific effluent limitations at or below WQC necessary for the protection of aquatic life. Additionally, discharges authorized under the 2016 PWTF GP must comply with additional non-numeric limitations and conditions. This includes the development, implementation, and maintenance of a Best Management Practices Plan, which will be designed to eliminate or minimize the discharge of pollutants (including aluminum) to the receiving water and meet additional water quality requirements. These requirements in the 2016 PWTF GP are designed to maintain fish and wildlife resources by preventing the discharge of pollutants to surface waters of the

United States. The entrainment and impingement of aquatic organisms is not expected in association with this general permit, as sites covered under this general permit do not utilize cooling water intake structures.

Policy #3: Regulate the mining of sand and gravel resources in offshore and onshore locations so as to ensure protection of submerged lands, and marine and estuarine life. Ensure adherence to minimum standards for restoring natural resources impacted from onshore sand and gravel operations. **N/A**

Policy #4: Undertake oil spill prevention measures, safe oil handling procedures and when necessary, expedite the cleanup of oil spillage that will contaminate public waters. Institute legal action to collect damages from liable parties in accordance with state law. **N/A**

Policy #5: Encourage investigations of the distribution, habitat needs, and limiting factors or rare and endangered animal species and undertake conservation programs to ensure their continued perpetuation.

The PWTF GP is consistent to the maximum extent practicable with this enforceable policy by prohibiting any discharge that EPA determines will cause, have the reasonable potential to cause, or contribute to a violation of water quality standards. The draft permit requires permittees to meet water quality-based effluent limitations for New Hampshire in Part 3.1.1 of the permit. In addition, coverage under this permit is only allowed if the discharges from a potable water treatment facility are not likely to adversely affect the continued existence of any species that are federally-listed as endangered or threatened under the Endangered Species Act (ESA) or result in the adverse modification or destruction of habitat that is federally-designated as critical under the ESA. Applicants must determine eligibility prior to submission of a Notice of Intent and must maintain eligibility from authorization to discharge through termination of discharges or expiration of general permit coverage. The PWTF GP provides 3 criteria for eligibility, as outlined in Appendix III of the draft PWTF GP.

Policy #6: Identify, designate, and preserve unique and rare plant and animal species and geologic formations which constitute the natural heritage of the state. Encourage measures, including acquisition strategies, to ensure their protection.

Please see response to Policy #5, above.

Recreation and Public Access:

Policy #7: Provide a wide range of outdoor recreational opportunities including public access in the seacoast through the maintenance and improvement of the existing public facilities and the acquisition and development of new recreational areas and public access. – **N/A**

Managing Coastal Development:

Policy #8: Preserve the rural character and scenic beauty of the Great Bay estuary by limiting public investment in infrastructure within the coastal zone in order to limit development to a mixture of low and moderate density. – **N/A**

Policy #9: *Reduce the risk of flood loss, to minimize the impact of floods on human safety, health and welfare, and to preserve the natural and beneficial value of floodplains, through the implementation of the National Flood Insurance Program and applicable state laws and regulations, and local building codes and zoning ordinances.* – **N/A**

Policy #10: *Maintain the air resources in the coastal area by ensuring that the ambient air pollution level, established by the New Hampshire State Implementation Plan pursuant to the Clean Air Act, as amended, is not exceeded.* – **N/A**

Policy #11: *Protect and preserve the chemical, physical, and biological integrity of coastal water resources, both surface and groundwater.*

The PWTF GP is consistent to the maximum extent practicable with this enforceable policy by prohibiting any discharge that EPA determines will cause, have the reasonable potential to cause or contribute to an excursion above any applicable water quality standards (WQSs) such that discharges will not interfere with the attainment and maintenance of water quality (i.e., the chemical, physical, and biological integrity of water resources). Discharges authorized under the 2016 PWTF GP must meet chemical-specific effluent limitations at or below WQC necessary for the protection of the coastal and estuarine environment and to meet WQSs for the designated uses of coastal water resources. Additionally, discharges authorized under the 2016 PWTF GP must comply with additional non-numeric limitations and conditions to protect the chemical, physical, and biological integrity of the receiving waters. The full list of effluent limitations and monitoring requirements for the facilities in New Hampshire are found in Part 3.1.1 of the permit. Section 3.1.3 of the permit highlights the control measures, including BMPS, established by the PWTF GP. Also, the 2016 PWTF GP prohibits the discharge of any toxic pollutant in toxic amounts, as well as limiting the discharges (in general) to a maximum flow of 1.0 MGD. In addition, regulations only allow EPA to permit discharges to surface waters, not groundwater. Due to these reasons, EPA does not expect the discharges from PWTFs covered under this General Permit to adversely affect coastal groundwater or surface water resources.

Policy #12: *Ensure that the siting of any proposed energy facility in the coast will consider the national interest and will not unduly interfere with the orderly development of the region and will not have an unreasonable adverse impact on aesthetics, historic sites, coastal and estuarine waters, air and water quality, the natural environment and the public health and safety.* – **N/A**

Coastal Dependent Uses:

Policy #13: *Allow only water dependent uses and structures on state properties in Portsmouth-Little Harbor, Rye Harbor, and Hampton-Seabrook Harbor, at state port and fish pier facilities and state beaches (except those uses or structures which directly support the public recreation purpose). For new development, allow only water dependent uses and structures over waters and wetlands of the state. Allow repair of existing over-water structures within guidelines. Encourage the siting of water dependent uses adjacent to public waters.* – **N/A**

Policy #14: *Preserve and protect coastal and tidal waters and fish and wildlife resources from adverse effects of dredging and dredge disposal, while ensuring the availability of navigable waters to coastal-dependent uses. Encourage beach renourishment and wildlife habitat restoration as a means of dredge disposal whenever compatible.* – **N/A**

Preservation of Historic and Cultural Resources:

Policy #15: Support the preservation, management, and interpretation of historic and culturally significant structures, sites and districts along the Atlantic coast and in the Great Bay area.

The 2016 PWTF GP is consistent to the maximum extent practicable with this enforceable policy by requiring that prior to submission of a Notice of Intent (NOI), the permittee must certify eligibility with regard to protection of historic properties listed or eligible for listing in the National Registry of Historic Places. (See Part 1.1.4 of the permit and Appendix II).

Marine and Estuarine Research and Education:

Policy #16: Promote and support marine and estuarine research and education that will directly benefit coastal resource management. – **N/A**

C. Section 404 Dredge and Fill Operations

The PWTF GP does not constitute authorization under 33 USC § 1344 (§ 404 of the Clean Water Act) of any stream dredging or filling operations.

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Ken Moraff, Director
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