RESPONSE TO COMMENTS

Region 1 Aquaculture General Permit
NPDES Permit # MAG130000, NHG130000, VTG130000

The U.S. Environmental Protection Agency's Region 1 (EPA) is issuing a Final National Pollutant Discharge Elimination System (NPDES) General Permit for aquaculture and related facilities in Massachusetts, New Hampshire, and Vermont (AQUAGP). This permit is being issued under the Federal Clean Water Act (CWA), 33 U.S.C., §§ 1251 et. seq.

In accordance with the provisions of 40 CFR §124.17, this document presents EPA's responses to comments received on the draft NPDES AQUAGP (the Draft AQUAGP). The Response to Comments explains and supports EPA's determinations that form the basis of the final permit (the Final Permit). From May 11, 2020 through July 10, 2020, EPA solicited public comments on the Draft Permit for the issuance of the AQUAGP.

EPA received comments from the following parties:

- Caleb Slater, Massachusetts Division of Fisheries and Wildlife
- Shane Hanlon, North Attleboro National Fish Hatchery
- Henry Bouchard, U.S. Fish and Wildlife Service on behalf of Dwight D. Eisenhower National Fish Hatchery
- Henry Bouchard, U.S. Fish and Wildlife Service on behalf of White River National Fish Hatchery
- Jason Smith, New Hampshire Fish and Game Department
- Vikki Spruill, New England Aquarium
- Kathryn Ford, Massachusetts Division of Marine Fisheries
- David Simmons, U.S. Fish and Wildlife Service
- Fred Quimby
- Chelsea Kendall, Conservation Law Foundation
- James Glover, New Hampshire Animal Rights League
- Meredith Stevenson, Center for Food Safety; Hallie Templeton, Friends of the Earth; Marianne Cufone, Recirculating Farms Coalition; and Zach Corrigan, Food & Water Watch
- Friends of the Earth: Form Letter from 19,223 individuals
- In Defense of Animals: Form Letter from ~4,891 individuals
- Beth Marino
- Jean Publiee

Although EPA's decision-making process has benefited from the comments submitted, the information and arguments presented did not raise any substantial new questions concerning the permit that warrants EPA exercising its discretion to reopen the public comment period. EPA did, however, make certain changes in response to the public comments EPA received on the Draft Permit, listed in Part I, below. The analyses underlying these changes are explained in the responses to individual comments in Part II, below, and are reflected in the Final Permit. EPA

maintains that the Final Permit is a "logical outgrowth" of the Draft Permit that was available for public comment.

A copy of the Final Permit and this response to comments document will be posted on the EPA Region 1 web site: https://www.epa.gov/npdes-permits/region-1-final-aquaculture-general-permit.

A copy of the Final Permit may be also obtained by writing or calling Nathan Chien, U.S. EPA, 5 Post Office Square, Suite 100 (Mail Code: 06-4), Boston, MA 02109-3912; Telephone: (617) 918-1649; Email chien.nathan@epa.gov.

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I. Summary of Changes to the Final Permit

1. Parts 1.1, 2.1, and 3.1. The discharge limitation for Flow was changed from "Variable" to "Report" and Footnote 7 of the Draft Permit was removed. See Response to Comment II.J.4.3.

2. Parts 1.1, 2.1, and 3.1. Maximum daily numeric limits were established for total suspended solids (TSS) and 5-day biochemical oxygen demand (BOD). Footnote 9 in Parts 1.1, 2.1, and 3.1 of the Draft Permit was removed. See Response to Comment II.J.2.1.

3. Parts 1.1, 2.1, and 3.1. The monitoring frequency for total nitrogen and total phosphorus has been increased to 2/Month during June through September. See Responses to Comments II.I.1 and II.J.3.1.

4. Footnote 14 in Parts 1.1 and 3.1 was added specifying that total phosphorus sampling must be completed using a Part 136 method that achieves a minimum level of 10 µg/L consistent with Part 2.1, footnote 15. See Response to Comment II.J.3.1.

5. Parts 1.1, 2.1, and 3.1. Upstream and downstream ambient monitoring requirements were established for nitrogen, total phosphorus, and chlorophyll-a during the months of June through September and corresponding footnotes were added. Footnote 11 in Parts 1.1 and 3.1 and Footnote 14 in Part 2.1 was revised to require nutrient optimization reporting for all facilities. See Response to Comment II.J.3.1.

6. Part 1.1. The Effluent Characteristic description for Dissolved Oxygen was revised to clarify the numeric limits for cold and warm water fisheries. Part 1.1 footnotes 20 and 21 in the Draft Permit were combined to a single footnote (19) referencing the definition of cold and warm water fishery in the Massachusetts Surface Water Quality Standards See Response to Comment II.J.4.3.

7. Footnote 6 in Parts 1.1, 2.1, and 3.1 was revised to include the option to request an alternative composite sampling schedule and a requirement for EPA to notify a Permittee when an alternative sampling procedure is authorized. See Response to Comment II.B.1.

8. Part 1.1 footnote 13 was revised to carry forward the site-specific total nitrogen limit of 32.4 pounds per day for the Charles L. McLaughlin State Fish Hatchery consistent with the current, individual permit (MA0110043). See Response to Comment II.A.1.

9. Part 1.3 (Requirements for Discharges from Aquariums and Other Facilities that Hold or Produce Aquatic Organisms for Research) was eliminated. See Response to Comment II.F.

10. Part 1.3.q was added requiring facilities discharging to tidal waters to notify Massachusetts Division of Marine Fisheries in conjunction with certain state notification procedures. See Response to Comment II.G.3.

11. Part 2.1. The requirement to monitor effluent temperature has been changed from weekly to monthly to match the frequency of dissolved oxygen monitoring.

12. Part 2.1 footnote 25 was revised to require that ambient monitoring locations be reviewed by NHDES. See Response to Comment II.I.4.

13. Part 3.2 The name of the Pittsford National Fish Hatchery has been changed to the Dwight D. Eisenhower National Fish Hatchery. See Response to Comment II.C.1.

14. Part 3.2. The monitoring frequency for total phosphorus has been changed from 2/Month to 1/Month from October through May. See Response to Comment II.C.3.

15. Part 6.3.a. has been modified to read "Facilities defined as 'New sources' are not eligible for coverage…" to clarify that new sources are not eligible for coverage. See Response to Comment II.G.2.

16. Parts 6 and 8 have been modified to reflect the electronic reporting requirement that applicants submit NOIs through EPA's NPDES electronic reporting Tool (NeT) at https://cdx.epa.gov. Additionally, Massachusetts requires submittal of the NOI and fee (if applicable) via the ePlace portal, instructions are available at https://www.mass.gov/how-to/wm-15-npdes-general-permit-notice-of-intent.

17. Appendices for the Notice of Intent to Discharge (Appendix 4), Notice of Termination (Appendix 5), and Notice of Change (Appendix 7) have been condensed to one form (Appendix 4) and edited to reflect the required electronic submission process. All appendices have been renumbered to reflect this change.

18. Appendices 6, 7, and 8 for state-specific dilution factor and WQBEL calculations has been modified to remove the example for copper (Massachusetts) and add in that Total Residual Chlorine (TRC) limitations are calculated using the same WQBEL equations (all 3 States). See Response to Comment II.F.

II. Responses to Comments

Comments are reproduced below as received; they have not been edited.

A. Comments from Caleb Slater, Massachusetts Division of Fisheries and Wildlife

Comment 1

The Massachusetts Division of Fisheries and Wildlife (MassWildlife) is the agency responsible for the protection and management of the inland fish and wildlife resources of the Commonwealth. Pursuant to these management goals, MassWildlife maintains trout hatcheries which qualify as Concentrated Aquatic Animal Production Facilities under the Draft NPDES Aquaculture General Permit published in the Federal Register on May 11, 2020. Maintaining the quality of the Commonwealth's water resources is key to our core mission and MassWildlife has worked closely with both the US EPA and the MA Department of Environmental Protection to maintain compliance with the current individual NPDES permits for these facilities.

Having reviewed the Draft National Pollutant Discharge Elimination System (NPDES) Aquaculture General Permit (AQUAGP) for Concentrated Aquatic Animal Production (CAAP) Facilities and Other Related Facilities in Massachusetts, New Hampshire and Vermont. MassWildlife has the following comments.

The transition from individual NPDES permits to a General NPDES Permit for all MassWildlife facilities appears to be very straightforward. All the current discharge limits for individual facilities are carried forward into the general permit, except for the total daily Nitrogen limit for the McLaughlin hatchery (32.4 lbs/day). It appears that discharges into the Long Island Sound Watershed are now covered under a Nitrogen TMDL where total daily discharges less than 35 lbs are deemed "not significant" and require monthly testing and an annual nitrogen optimization report for limiting nitrogen discharges to the watershed rather than strict daily limits.

Response to Comment A.1

The Final AQUAGP carries forward all of the current, site-specific discharge limits from facilities' individual permits. In drafting the AQUAGP, EPA wanted to ensure that transferring facilities to a general permit would lead to no less stringent permit limitations and conditions than required in facilities' individual permits in accordance with applicable anti-backsliding regulations. *See* CWA §§ 402(o) and 303(d)(4) and also 40 CFR §122.44(l). In response to comments received, the Final AQUAGP establishes a numeric, technology-based limit of 10 mg/L for TSS and BOD tailored to the specific operations of the class of facilities eligible for the general permit coverage. All hatcheries that seek authorization to discharge under the AQUAGP are subject to the BPJ-based numeric limits, which ensures a consistent permitting approach for hatcheries in the eligible geographic area. *See* Response to Comment II.J.2.1. The AQUAGP also maintains the narrative, technology-based effluent limits (in the form of BMPs) consistent with the ELGs referenced in the comment to control the release of TSS, BOD, nutrients, and related pollutants from hatcheries.

In addition, the Draft AQUAGP inadvertently omitted the site-specific, average monthly numeric nitrogen limit of 32.4 pounds per day for the Charles L. Mclaughlin State Fish Hatchery (NPDES Permit No. MA0110043). While it was a deliberate choice to not add new nitrogen limits for discharges to the Long Island Sound watershed (see Section 3.10.1 of the Fact Sheet), those facilities with current nitrogen limits are expected to retain those limits in accordance with anti-backsliding provisions. *See also* Response to Comment II.J.3.1. The Final AQUAGP includes the nitrogen limit from individual permit MA0110043.

Comment 2

We do have questions about the requirements for the Sandwich hatchery. The current individual permit and the Draft General Permit both have a daily total nitrogen discharge limit of 14 lbs. However, this limit does not take into account the fact that water coming into the facility is very high in total nitrogen (the majority from wastewater[1]). In fact, average inflow to the hatchery already includes over 80% of our daily allowed total Nitrogen (11.9 lbs of the 14 lbs allowed). Consequently, we often have difficulty meeting the requirements of the current permit even though we produce only about 35% of the total daily nitrogen discharged (See table 1).

Table 1.
Sandwich SFH
Total Nitrogen (lbs/day)

Date	Influent	Effluent	Difference
1st Qtr 2019	11.5	26.3	14.8
2nd Qtr 2019	11.2	13.3	2.1
3rd Qtr 2019	18.0	22.5	4.5
4th Qtr 2019	12.6	20.5	7.9
1st Qtr 2020	11.4	17.3	5.9
2nd Qtr 2020	6.6	13.8	7.2
Median	11.5	18.9	6.5
Average	11.9	19.0	7.1

While we understand that we are responsible for ALL the nitrogen leaving our facility, we believe there should be some way to prorate for the nitrogen in the groundwater. It is not as though we are pumping from deep wells and introducing water (and nitrogen) to the surface that would not otherwise find its way there. This facility was built in this location over 100 years ago when there were no wells or electric pumps so that it could take advantage of the shallow aquafer, utilizing surface water and natural springs that still provide flow to the facility today (up to 10% of total effluent depending on pump flows). While we now pump the majority of the water the exits the facility, we contend that much of that water (and the nitrogen) would be naturally discharged to the surface from this shallow aquafer anyway.

Just based on the gross nitrogen balance, we would have to reduce the number of fish we grow by 60% to 70% to meet the current permit requirements. Such a reduction would make the

facility nonviable – we would be forced to close it and loose nearly 15% of our statewide production total, and the only hatchery in the SE part of the state.

We believe there should be some way to create a nitrogen limit for the Sandwich Hatchery that respects the anti-backsliding provisions of the Clean Water Act while allowing us to produce the current number of fish while meeting the spirit of the law by continuing to control our nitrogen discharge through best management practices. In fact, you could cut the total daily nitrogen discharge limit substantially IF it were reported as nitrogen added (difference between effluent and influent) rather than simply the total in effluent.

[1] Nitrogen Loading technical bulletin 91-001 (final) Cape Cod Commission https://capecodcommission.org/resource-library/file/?url=/dept/commission/team/Website_Resources/regulatory/NitrogenLoadTechbulletin.pdf

Response to Comment A.2

The commenter requests a change to the site-specific TN limit carried forward in the Draft AQUAGP from the 2015 Individual Permit for the Sandwich State Fish Hatchery (NPDES Permit No. MA0110027). Draft AQUAGP Part 1.1, footnote (fn) 15. According to the 2015 Fact Sheet, EPA considered the nitrogen load from the hatchery with respect to efforts to reduce nitrogen loading on Cape Cod and required the hatchery to maintain an effluent load of 14 pounds per day based on EPA's estimation of the TN load at the time of permit issuance. EPA recognized at the time that the effluent load from the hatchery includes some contribution of TN that is already present in the source water. *See* AR-48. The comment along with follow-up correspondence[1] asserts that the hatchery may exceed the permitted load for several reasons, including that TN was underestimated before December 2012 and/or that the influent TN (which is not added by the hatchery) "makes up a majority" of the TN discharged. Prior to December 2012, the contracted laboratory was using a method with higher Total Kjeldahl Nitrogen (TKN) reporting limits (1.0 mg/l), meaning that any value less than 1.0 mg/L would be recorded as "non-detect" and estimated as "0" when EPA calculated the current load during development of the 2015 Permit. For this reason, the calculated "average load" used as the basis for the permit limit may not have been representative of the actual load and may have resulted in a lower limit than merited by a "hold the load" approach. EPA did consider during the last permit issuance that the source water for the hatchery likely already contains nitrogen; monitoring over the last permit term confirms the presence of nitrogen in the influent. At the same time, EPA based the "hold the load" limit on the reported effluent concentration at the outfall, which included the contribution of nitrogen in the source water and, as such, is not itself a reason to increase the limit.

Since issuance of the current, individual permit, there has been further analysis of nitrogen loading to the receiving water. The Sandwich hatchery discharges to an unnamed tributary to Dock Creek (MA96-86) which flows eventually out to the Sandwich Harbor Estuary within the

[1] While reviewing the requested change in TN limit for Sandwich State Fish Hatchery, EPA requested clarification on historical TN data at the hatchery from the Massachusetts Division of Fisheries and Wildlife (MADFW). During this exchange, MADFW elaborated on historical total nitrogen concentrations and flow explaining some of the reasons for historical variation. See AR-54.

Cape Cod Drainage Area. Dock Creek is not listed as impaired for nitrogen in the Massachusetts Year 2016 Integrated List of Waters (303(d) list). The most recent analysis of the Sandwich Harbor Estuary, which occurred after the issuance of the current permit, indicates that current estimated loading to Sandwich Harbor is well below the threshold nitrogen level that would impact water quality. *See* AR-49 Executive Summary pp. 1-10. The Massachusetts Estuaries Project *Linked Watershed-Embayment Model to Determine Critical Nitrogen Thresholds for the Sandwich Harbor Estuary* indicated that the current levels of nitrogen in Dock Creek are consistent with the water quality standards within embayment waters. *See Id.*

Together, this body of evidence may support the Hatchery's comments regarding its TN load limit. However, EPA does not have a sufficient record before it to determine whether a limit that considers intake credits (which apply only for technology-based limits and require certain factual predicates to be established; *see* 40 CFR § 122.45(g)) and/or a less stringent limit is warranted. Considering that the 2015 limit may be underestimated, calculation of a new TN load limit will result in a higher TN load than allowed under the current permit. Permits may not be renewed, reissued, or modified to contain effluent limitations which are less stringent than the comparable effluent limitations in the previous permit except in compliance with Section 402(0) of the CWA. *See also* 40 CFR § 122.44(l). Effluent limitations may only be made less stringent in accordance with limited exceptions, such as material and substantial alterations or additions to the facility, new information, or technical mistakes. *See* CWA 402(o)(A) through (E). *See also* 40 CFR § 122.44(l)(2). In addition, for discharges subject to a water quality-based effluent limit where the receiving water is meeting water quality standards (as is the case here), the limit may only be made less stringent if the new limit will continue to be consistent with the State's antidegradation policy. *See* CWA Section 303(d)(4)(B).

EPA cannot complete the level of analysis and review required to evaluate and propose a new, less stringent, site-specific effluent limit for a single facility in accordance with anti-backsliding regulations during this stage of a general permit. For this reason, the Final AQUAGP carries forward the current TN load limit for the Sandwich Hatchery. However, the Sandwich Hatchery may elect to maintain an individual permit rather than seek general permit coverage. In this case, EPA would issue a new individual Draft Permit for public notice. EPA expects that a new Draft Permit will be nearly identical to the conditions and requirements of the AQUAGP. However, in development of a new Draft Permit, EPA would consider whether a change to the TN load limit is warranted and provide a justification for its determination for public notice and comment, including an antidegradation review by MassDEP if required.

B. Comments from Shane Hanlon, North Attleboro National Fish Hatchery

Comment 1

The proposed general permit requires several changes from the current permit (permit No. MA0005398) that NANFH is operating under. The cumulative changes presents some challenges to NANFH as it will increase workload related to monitoring and reporting. Below is a list of comments and questions specific to those changes:

Current permit requires reporting a grab sample 1/quarter for both TSS and BOD. The proposed permit will require a composite sample for both TSS and BOD over a consecutive 24 hr period. Composite sampling presents challenges with additional burden of workload and/or sampling equipment (auto samplers) that we do not have on station. The NANFH would be collecting samples manually over the course of a 24 hr period, an unreasonable request of staff to achieve data that could be otherwise achieved within an 8 hr work day. I would like clarity on any flexibility with respect to acceptable and reasonable strategies to develop composite samples (e.g. hourly sampling over the course of an 8 hr period), particularly in light of past monitoring results (as indicated in the Fact Sheet Page 20-21) that show compliance less than 10 mg/L as a result of existing wastewater treatment and control technologies and through implementation of BMPs. If implemented in the general permit, NANFH may attempt to demonstrate that a grab sample is sufficient for adequate monitoring.

Response to Comment B.1

24-hour composite sampling is included in the permit for TSS, BOD, and nutrients because of the variability that is likely to occur over the course of a day for these pollutants. Cleaning operations can cause releases of solids that may be missed by grab samples alone; conversely, a single grab sample may over or underestimate the pollutant load from a facility on a given day. Composite sampling is required for all of the other hatcheries in Massachusetts and these hatcheries are able to comply. At the same time, there is extra burden placed on both facility time and resources by requiring composite sampling. In addition, EPA recognizes that non-workday hours are unlikely to correspond to times when pollutant load from the Facility is greatest, for example, because cleaning operations, which may introduce variability in discharges, do not occur during this time.

The Draft AQUAGP in footnote 6 of Parts 1.1, 2.1, and 3.1 provided a condition to request grab sampling in lieu of composite sampling subject to a demonstration that the flow and waste stream characteristics are relatively constant. In response to the comment, the Final AQUAGP has been revised to also allow a request for an alternative composite timeframe. If permittees believe that an alternative sampling procedure, such as eight grab samples evenly spaced over an 8-hour shift, will properly characterize effluent discharges, permittees may submit such a request as an attachment on their notice of intent (NOI) to discharge form. The following information are examples of information that will aid EPA in processing the permittee's request:

- A description of the grab sampling procedure.

- Information on residence times in treatment units or other factors that would cause the characteristics of the waste stream to remain relatively constant.
- Monitoring data showing TSS, BOD, total nitrogen, total ammonia, and total phosphorus concentrations from a 24-hour composite sample and from a grab sample on the same day, preferably on a day with cleaning operations. Or, monitoring data from multiple grab samples conducted over a 24-hour period.

If EPA is satisfied by the information provided that a Permittee's alternative sampling procedure will accurately characterize the effluent discharges, EPA will notify the permittee in writing, authorizing the alternative approach.

Comment 2

Current permit limits for pH is 6.0 – 8.3 standard units and requires reporting a grab sample 1/quarter. The proposed permit limits pH to 6.5 – 8.3 and will require a grab sample 1/wk. Source water for NANFH can naturally run low. We often get readings below 6.5, however, never below 6. With the new limits, we will occasionally be out of compliance. NANFH will be requesting alternative pH limits through the NOI. Currently and in the past, NANFH has relied on a third party to conduct monthly analysis on water quality parameters that we report to EPA and DEM for compliance. Requiring pH to be reported weekly will increase costs substantially if we continue to use a third party for this simple test. Alternatively, we can easily acquire readings in-house. We would like to have clarity and/or guidelines on employing in-house capabilities to perform monitoring that is required for compliance reporting.

Response to Comment B.2

For alternate pH limitations, please see instructions in Part 1.5, State Permit Conditions. Permittees in Massachusetts should reach out to MassDEP prior to submitting their NOI to confirm what information is needed to be granted an alternate pH limitation.

There are no restrictions on using in-house capabilities to test for pH or for any other analyte with required monitoring. More information on monitoring and reporting requirements for the AQUAGP can be found in Appendix 6, Standard Conditions Parts C and D, respectively. In addition, Table IB in 40 CFR § 136.3 contains a list of approved inorganic test procedures with methods for measuring the Hydrogen ion (pH) using electrometric measurement or an automated electrode. If questions remain after reviewing this information, contact EPA Water Divison at the phone number or email address provided in page 2 of this document.

Comment 3

Current permit does not require reporting total nitrogen, total ammonia nitrogen. The proposed permit will require composite samples for both of these parameters. Similar to the aforementioned comment 1, composite sampling adds a level of complexity that will increase monitoring costs.

Response to Comment B.3

Fish hatcheries primarily discharge solids and nutrients (phosphorus and nitrogen, including ammonia) in effluent from fish production systems. Elevated concentrations of nutrients can result in eutrophication, where nutrient concentrations lead to excessive plant and algal growth, reduce dissolved oxygen, and degrade habitat quality. *See* Fact Sheet p. 29. Other commenters have raised concerns that the levels of nutrients in hatchery discharges could impact water quality of the receiving waters. See, e.g., Comment II.J.3.1. Most hatcheries in MA, NH, and VT are already required to monitor and report total nitrogen and, for the related reasons stated, EPA maintains that it is reasonable to require TN monitoring for all hatcheries. The AQUAGP establishes consistent total nitrogen monitoring requirements for all hatcheries, including the North Attleboro Hatchery, to ensure that discharges continue to meet water quality standards in receiving waters. EPA addressed alternative sampling procedures for composite sampling in Response to Comment B.1.

Comment 4

Current permit does not require reporting fish biomass on hand, Fish feed used, or efficiency of fish feed used. Proposed general permit requires these reporting each month. This requirement does not align with NANFH planned data collection for these parameters. Requiring monthly reporting will increase workload and may provide challenges with conflicting schedules with planned sampling to calculate biomass. These parameters seem more reasonable and appropriate for annual reporting or quarterly reporting at most. Please provide clarification as to why this information is being required and how it will be used.

Response to Comment B.4

The commenter cites three reporting conditions included in the AQUAGP that were not previously included in Massachusetts individual NPDES permits for hatcheries. However, these conditions have been a requirement of New Hampshire individual state hatchery permits (e.g. see NH0000744, NH0000710, NH0000752, NH0110001) for several permit cycles and no hatcheries have raised concerns about reporting this information.

Fish biomass on hand is a measure of the total mass of fish contained at a hatchery averaged across a given month. Fish feed used is a measure of the total mass of fish feed added to the hatchery and, consequently, the receiving water. From a regulatory perspective, both these metrics allow EPA to quantify the size of a hatchery operation relative to definitions at 40 CFR Part 122 Appendix C. From a pollution prevention perspective, these metrics allow EPA to see whether monthly variations in fish biomass and fish feed are correlated with changes in pollutant loads from the hatchery. The efficiency of fish feed used is derived from fish biomass on hand and fish feed used and is similar to the "Feed Conversion Ratio" used by most aquaculture production facilities to manage feed. This metric is useful to both EPA and facilities to assess whether the feed management and feeding strategies, which are the primary BMPs for solids control, need to be re-evaluated and improved upon.

EPA disagrees with the commenter that these monitoring requirements are particularly onerous. Knowing the amount of fish held at a hatchery and the amount of feed used are necessary to

evaluate the commercial extent of hatchery operations, and as stated above, the environmental impact. The solids control BMP at Part 5.4.a.i of the Draft AQUAGP, which is consistent with Part I.B.4.a.i of the North Attleboro Hatchery's current, individual permit, requires that feeding strategies limit feed to the minimum amount necessary to achieve production goals and sustain targeted growth rates. If implemented properly, EPA expects that this BMP will require hatcheries to track production and growth rates on a more frequent basis than quarterly or annually to gain a full and accurate understanding of the appropriate amount of feed. While some precision is expected in the estimates of fish biomass on hand and fish feed used, permittees can estimate monthly values based on quarterly or annual summaries as needed. Any unique estimation or calculation methods for these parameters should be noted in a facility's NOI and/or on their monthly DMRs.

C. Comments from Henry Bouchard, U.S. Fish and Wildlife Service on Behalf of Dwight D. Eisenhower National Fish Hatchery

Comment 1

Congress changed the name of the Pittsford National Fish Hatchery in 2009 to the Dwight D. Eisenhower National Fish Hatchery.

Response to Comment C.1

EPA appreciates the updated information. When submitting a notice of intent for coverage under the AQUAGP (NOI) please verify that the correct name is used on that form. The remainder of this Response to Comment document refers to the Dwight D. Eisenhower National Fish Hatchery. Part 3.2 of the AQUAGP has been changed from "Pittsford National Fish Hatchery" to "Dwight D. Eisenhower National Fish Hatchery."

Comment 2

pH Range test frequency: historic records show very little variance in pH. Could testing frequency be decreased to 2/month from 1/week.

Response to Comment C.2

The AQUAGP is a general permit meant to cover facilities in similar industries with similar operations using consistent permit conditions. pH monitoring at a frequency of once per week was deemed appropriate based on a review of pH monitoring requirements from facilities across all three states eligible for coverage under the AQUAGP.

EPA reviewed the effluent pH data for the Dwight D. Eisenhower National Fish Hatchery's individual NPDES permit (VT0000451). The current permit requires monthly monitoring for pH with a pH range of 6.5 to 8.5. Based on data provided by VTDEC, from January 2010 through February 2020 pH has ranged from 6.82 S.U. to 8.44 S.U. While EPA agrees that effluent pH variability has been relatively low, the pH has approached the effluent limits. Furthermore, the AQUAGP aims to make consistent monitoring requirements across all hatcheries. Therefore, the pH monitoring frequency remains unchanged in the Final AQUAGP.

Comment 3

The Eisenhower NFH has had Total Phosphorus levels well below the 1523 lbs/year. Is it possible to reduce the 2/month sampling frequency to 1/month. 2019 annual Total Phosphorus was 235lbs.

Response to Comment C.3

EPA reviewed the total phosphorus DMR data for the Eisenhower National Fish Hatchery (Permit No. VT0000451) for total phosphorus provided by VTDEC. From January 1, 2010,

through February 29, 2020, monthly average total phosphorus has ranged from below laboratory minimum levels to 0.82 mg/L, with a mean value of 0.087 mg/L over the ~10 years. Monthly average total phosphorus exceeded the 0.80 mg/L effluent limitation once in August 2012. However, values are generally much lower than the monthly average limit. Over that time period, the rolling annual average total phosphorus load limitation of 1,523 pounds per year was not exceeded with the three highest annual loads equal to 1,156 lbs/yr, 670 lbs/yr, and 353 lbs/yr. Over the last five years total annual average phosphorus load has remained below 350 lbs/yr. Given this information, EPA finds that decreased monitoring frequency may be warranted. At the same time, the numeric TP limit at this hatchery was established based on the Lake Champlain TMDL and the reasonable potential for discharges from this Facility to cause or contribute to water quality impairments in Lake Champlain. For this reason, an accurate and representative sample of the effluent is necessary to ensure that water quality standards continue to be met, especially during the growing season where receiving waters are most vulnerable to eutrophication (note that the one historical exceedance in August 2012 occurred during the growing season). EPA has determined, consistent with the monitoring frequency for other facilities under the Final AQUAGP, that a monitoring frequency may be decreased to 1/month during the non-growing season (October through May) while maintaining 2/month monitoring during the growing season from June through September. Therefore, Part 3.2 of the Final Permit AQUAGP was changed to decrease monitoring frequency to once per month for total phosphorus for the Dwight D. Eisenhower Hatchery during the months of October through May.

Comment 4

Would the use of dilution for formaldehyde be possible? Treating at the USDA label approved levels is not possible under the draft permit levels.

Response to Comment C.4

Yes, dilution will be accounted for when calculating final effluent limitations for formaldehyde. See Part 3.1 footnote 18 and Appendix 8 of the AQUAGP. After submitting an NOI, EPA will determine the appropriate dilution for a given facility based on streamflow data and the facility's permitted flow limits.

Also, in order to meet effluent limits for formaldehyde, some hatchery facilities segregate fish in a closed bath, treat the fish with formaldehyde, and then discharge to the ground or back to the main effluent stream at a low enough flow rate that water quality standards for formaldehyde will be met. EPA recommends this approach when discharging permitted drugs and chemicals.

Comment 5

The DDENFH has combined the four discharge points referenced in draft permit VT0000451 Section B into a single point by combining all outlets with a manifold. A Representative Sampling Plan is no longer required.

Response to Comment C.5

The Commenter cites a special condition of individual NPDES Permit No. VT0000451 – Part I.B. Representative Sampling Method. This special requirement was not included in the Draft AQUAGP nor the Final. In addition, since the hatchery no longer has separate discharge points, the special condition is no longer applicable. Please provide an updated flow diagram and narrative description of the changes made to hatchery flow when submitting a notice of intent for coverage under the AQUAGP (NOI).

D. Comments from Henry Bouchard, U.S. Fish and Wildlife Service on behalf of White River National Fish Hatchery

Comment 1

The current address of the WRNFH is 2086 River Rd, Bethel, VT 05032

Response to Comment D.1

EPA appreciates the updated information. When submitting a notice of intent for coverage under the AQUAGP (NOI) please verify that the correct address is used on that form.

Comment 2

pH Range test frequency: historic records show very little variance in pH. Could testing frequency be decreased to 2/month from 1/week.

Response to Comment D.2

The AQUAGP is a general permit meant to cover facilities in similar industries with similar operations using consistent permit conditions. pH monitoring at a frequency of once per week was deemed appropriate based on a review of pH monitoring requirements from facilities across all three states eligible for coverage under the AQUAGP. EPA addressed similar comments on pH in Response to Comment II.C.2.

EPA reviewed the effluent pH data for White River National Fish Hatchery's individual NPDES permit (VT0020711). The current permit requires monthly monitoring for pH with a pH range of 6.5 to 8.5. Based on data provided by VTDEC, from January 2010 through January 2020 (the facility was not operational from January 2012 through December 2016) pH has ranged from 6.3 S.U. to 8.2 S.U., twice falling below the lower pH limitation. EPA remains convinced that effluent pH is sufficiently variable to merit once per week monitoring. Furthermore, the AQUAGP aims to make consistent monitoring requirements across all hatcheries. Therefore, the pH monitoring frequency remains unchanged in the Final AQUAGP.

Comment 3

Would dilution for formaldehyde be possible? Treating at the USDA label approved levels is not possible under the draft permit levels. Is the use of dilution possible?

Response to Comment D.3

Dilution will be accounted for when calculating final effluent limitations for formaldehyde. *See* Part 3.1 footnote 18 and Appendix 8 of the AQUAGP. EPA addressed similar comments in Response to Comment II.C.4.

Comment 4

Why is the Whole Effluent Toxicity testing a requirement for WRNFH?

Response to Comment D.4

Whole effluent toxicity (WET) testing is not a requirement of the Vermont General Permit. WET testing requirements are listed in Part 1.2 of the General Permit and apply only to hatcheries which had individual permits that included WET requirements (specifically, the Sandwich, Sunderland, and Montague Fish Hatcheries in Massachusetts).

E. Comments from Jason Smith, New Hampshire Fish and Game Department

Comment 1

Thank you for the opportunity to review and comment on the draft general NPDES permit for New Hampshire Fish and Game Department's Twin Mountain, Warren, New Hampton and Milford State Fish Hatcheries. After reviewing the draft permit, we would first like to know if two of our hatcheries (Twin Mountain and Warren Hatcheries) could be exempt from the requirement to have NPDES permits if operations at the facilities were adjusted to remain below the thresholds to qualify as Concentrated Aquatic Animal Production Facilities under the definition listed below:

Concentrated Aquatic Animal Production Facilities (CAAP) (40 CFR Part 122.24) -- A "hatchery, fish farm, or other facility" which is designated by EPA (40 CFR 122.25) or which satisfies the following criteria in Appendix C (40 CFR Part 122):

- A hatchery, fish farm, or other facility is a concentrated aquatic animal production facility for purposes of § 122.24 if it contains, grows, or holds cold water fish species or other cold water aquatic animals in ponds, raceways, or other similar structures which discharge at least 30 days per year, but does not include:
    1. Facilities which produce less than 9.090 harvest weight kilograms (20,000 pounds) of aquatic animals per year; and
    2. Facilities which feed less than 2,272 kilograms (5,000 pounds) of food during the calendar month of maximum feeding.

Response to Comment E.1

CAAP facilities as defined above and in Appendix C (40 CFR Part 122) as well as those facilities designated as CAAPs by their NPDES permitting authority (*see* 40 CFR §122.25) are required to obtain a NPDES permit. Fish farms, hatcheries and other aquatic animal production facilities that produce less than levels specified in the definition of a CAAP still may require NPDES permits for discharging wastewater and/or be designated as a CAAP on a case-by-case basis.

As the NPDES permitting authority in New Hampshire, EPA issues NPDES permits for the discharge of pollutants from a point source into Waters of the United Sates. 40 CFR § 122.1(b)(1). EPA may also designate any aquatic animal production facility a CAAP on a case-by-case basis considering the factors found at 40 CFR §122.24(c) and has done so for individual hatcheries that fall below production thresholds in individual permits. See, e.g., North Attleboro National Fish Hatchery (NPDES Permit No. MA0005398) and Nashua National Fish Hatchery (NPDES Permit No. NH0023515). Twin Mountain State Fish Hatchery (NH0000744) and Milford State Fish Hatchery (NH0110001) are currently designated as CAAP facilities based on the existing production thresholds. However, even if operational changes resulted in these hatcheries falling below these thresholds, these facilities would continue to add pollutants from a point source to a water of the U.S. and would require a NPDES permit. In addition, EPA would likely designate these facilities as CAAP facilities on a case-by-case basis considering the nature

of the effluent and operations and both would still be eligible for coverage under the AQUAGP as explained in Part 4.1 of the AQUAGP.

Comment 2

Secondly, the NHFG request that the range of pH values in the permits be adjusted from a range of 6.5-8.0 s.u. to 6.0-8.0 s.u. per section 2.3 of the draft permit under State Permit Conditions. In the past, some of our NHFG Hatchery NPDES permits have included these parameters after collecting data demonstrating naturally occurring conditions. Many of our hatchery influents are already below this 6.5 s.u and generally do not change much prior to discharge. Although the draft permit allows the facility to demonstrate compliance by determining that the outfall is within 0.5 s.u. of the influent pH, NHFG feels that lowering the allowable pH range to 6.0-8.0 would more accurately reflect the conditions of the water source and receiving water and would reduce the need for additional sampling and reporting. According to the chart included in the document "Environmental Fact Sheet, Acid Rain (Deposition), NHDES 2019", acid deposition for central New Hampshire still falls below 5.0 s.u. and should be considered.

https://www.des.nh.gov/organization/commissioner/pip/factsheets/ard/documents/ard-32.pdf

Response to Comment E.2

In order for a facility to be eligible for an alternate pH range, the permittee must provide a demonstration as defined in Part 2.3.a of the AQUAGP. Typically, this will require pH sampling of the effluent and the receiving water. Permittees should contact NHDES to receive approval for such a demonstration. The comment's citation of a regional study on acid rain deposition is not a sufficient demonstration that the facility's discharge will not significantly alter the pH of the receiving water.

F. **Comments from Vikki Spruill, New England Aquarium**

In response to the *Notice of Availability of Draft NPDES General Permit MAG130000, NHG130000, and VTG130000*, the New England Aquarium (NEAq) submits these comments for the U.S. Environmental Protection Agency's (EPA) consideration regarding NEAq's willingness and ability to comply with proposed new discharge requirements and additional monitoring, recordkeeping, and reporting requirements.

Founded in 1969, NEAq is a global leader in ocean research, marine conservation, and animal welfare, and a catalyst for global change through public engagement, commitment to marine animal conservation, leadership in education, innovative scientific research, and effective advocacy for a vital and vibrant ocean. In pursuit of our mission to protect the blue planet, NEAq values our partnerships with the EPA and Massachusetts Department of Environmental Protection (MassDEP) to comply with and uphold the Federal Clean Water Act and the Massachusetts Clean Waters Act to ensure that our business operations meet the highest standards of environmental quality.

NEAq appreciates this opportunity to provide specific comments on changes to our organizational operations resulting from the transition from our existing individual permits to a general permit. We acknowledge the need to streamline the process and welcome changes that will make it easier for the Aquarium to renew our NPDES permit with a Notice of Intent in the future. We're grateful that the fees to do so are likely to be more cost effective for NEAq, as well.

NEAq has two facilities that will operate under this permit—our primary aquarium facility on Central Wharf in Boston, MA, and our Animal Care Center in Quincy, MA. Our operations are different between the sites so the changes to the permit will be site-specific rather than organization-wide.

Per the *Notice of Availability*, the below represent changes to our protocol that will require us to modify our process to ensure that we comply with the standards.

Biological Oxygen Demand (BOD). We currently do not monitor and report BOD and understand there may be an option to substitute a dissolved oxygen (DO) measurement for BOD. If possible, we would like to monitor and report DO instead of BOD.

We do not currently measure or report total nitrogen; however, we do measure ammonia, although this information is not included in our monthly reporting requirements. Measuring total nitrogen will represent a change to our protocol.

We currently do not measure or report total phosphorus. Measuring and reporting total phosphorus will represent a change to our protocol.

We currently are not subject to a limit for Fecal Coliform Bacteria for our Central Wharf facility. Having a limit will represent a change to our protocol.

EPA acknowledges that the fecal coliform limitations would be new requirements for the Central Wharf facility discharging into Boston Harbor (current NPDES Permit No. MA0003123). As discussed further in the fact sheet, these requirements are included as part of the Boston Harbor Pathogen TMDL since the Central Wharf facility is a known source of fecal coliform to Boston Harbor.

We do not measure or report chlorine at our Quincy facility because we don't discharge chlorine there. At our Central Wharf facility, dilution factors were applied to our reported chlorine measurements after we submitted the data. Applying dilution factors before reporting will represent a change to our protocol.

We have been reporting copper measurements without applying a dilution factor and without a limit. Applying dilution factors before reporting and having a limit will represent a change to our protocol.

In addition to the above noted changes to our protocol, NEAq requests clarity on the below questions to ensure we can come into compliance with the new requirements as soon as possible.

QUESTION on dilution factor: Since no dilution factor was applied when evaluating the data NEAq reported in the past relative to the limit provided in the permit, what is the dilution factor NEAq should use for future reporting requirements? Our Central Wharf facility discharges directly into Boston Harbor and our Quincy facility discharges directly into the (Weymouth) Fore River. Knowing this factor is critical for evaluation of our current processes to make sure we will be able to meet the new limits.

QUESTION on using certified lab instead of needing to procure in-house capabilities: After being required by the state to be closed to the public for nearly 16 weeks due to COVID-19 safety precautions, NEAq's annual budget has been severely challenged by a lack of visitor related revenue that historically represents roughly 80% of our total revenue. As we look forward to reopening to the public this July, NEAq anticipates ongoing operating losses associated with the slow ramp of visitor-related revenue due to ongoing state restrictions. Our capacity to purchase new lab equipment to test new parameters is likely to remain limited in the near term, and we will likely need to use certified labs to obtain these results (noting the same expense challenges for outsourcing these measurements).

QUESTION on BOD measurements: We currently are unable to measure BOD due to lack of necessary testing equipment. As noted above, if the option is available, NEAq would like to request being allowed to report DO in lieu of BOD. BOD reporting is required twice a month, which is significantly more often than the quarterly requirements for nitrogen and phosphorus. We appreciate your consideration of this request.

We look forward to working closely with the EPA and MA DEP to ensure that NEAq adheres to our new measurement and reporting requirements under the general permit. We thank you in advance for your guidance and patience as we transition to the new protocol.

Response to Comment F

After considering this and other comments received on the Draft AQUAGP, EPA has determined that the two New England Aquarium (NEAq) facilities would best be addressed by individual permits. As the comment points out, most of the permit conditions and requirements in the Draft AQUAGP are entirely new for these two facilities. In contrast, the requirements for the fish hatcheries likely to seek coverage are generally consistent with the requirements in their existing individual permits. The primary purpose of the NEAq facilities is research and education, rather than fish production. As a result, these facilities hold a wider variety of animals and administer a wider variety of feed, medications, and cleaning agents than traditional hatcheries. For example, bacteria monitoring requirements were proposed only for the NEAq facilities because only these facilities hold mammals that could be a source of bacteria. In addition, both NEAq facilities discharge directly to coastal waters. As the comment points out, determining an appropriate dilution factor for direct discharges to coastal waters is more complex than the approach outlined in Appendix 8 of the Draft AQUAGP, which is intended for rivers and streams. The dilution factor affects the water quality-based effluent limitations, such as those for copper and total residual chlorine. EPA determined an individual permit is more suitable when the calculation of a dilution factor is more complex and will significantly impact the water quality-based effluent limitations applicable to the facility. In sum, the NEAq facilities do not "involve the same or substantially similar types of operations" as the fish hatcheries covered by the AQUAGP, and therefore are not appropriate for coverage under this general permit. *See* 40 CFR § 122.28(a)(2). As a result, Part 1.3 ("Requirements for Discharges from Aquariums and Other Facilities that Hold or Produce Aquatic Organisms for Research") has been eliminated from the Final AQUAGP and EPA plans to re-issue the individual permits covering the two NEAq facilities. In addition, EPA has revised Appendix 6 of the Final AQUAGP to be consistent with Appendix 7 and 8 as there is no copper limit in the Final AQUAGP.

G. Comments from Kathryn Ford, Massachusetts Division of Marine Fisheries

Comment G.1

The Massachusetts Division of Marine Fisheries (MA DMF) has reviewed the National Pollutant Discharge Elimination System (NPDES) Draft General Permit for Aquaculture Facilities AQUAGP). The purpose of the AQUAGP is to establish effluent limitations and requirements, effluent and ambient monitoring requirements, reporting requirements, and standard conditions for 14 eligible Concentrated Aquatic Animal Production (CAAP) facilities that are currently covered by individual NPDES permits, 7 in Massachusetts, 5 in New Hampshire, and 2 in Vermont. The Massachusetts facilities are the Sunderland State Fish Hatchery, the Charles L. McLaughlin State Fish Hatchery, the Montague State Fish Hatchery, the North Attleboro National Fish Hatchery, the Sandwich State Fish Hatchery, the New England Aquarium, and the New England Aquarium Off-Site Holding Facility. At this time, academic facilities such as UMass Dartmouth, UMass Boston, Northeastern University, and Woods Hole Oceanographic Institution do not produce enough animals or discharge into waterways that would require a NPDES permit.

The draft AQUAGP also indicates that new or increased discharges into ORWs, Wild and Scenic Rivers, Ocean Sanctuaries, any Publicly Owned Treatment Works, and discharges from net pen aquaculture are not eligible under the AQUAGP.

Response to Comment G.1

The intent of the AQUAGP is to establish effluent limits and requirements for land-based concentrated aquatic animal production (CAAP) facilities or other, similar facilities located in Massachusetts and New Hampshire and for federally-owned facilities in Vermont. See Parts 4.1 and 4.2 of the Draft AQUAGP. Eligible facilities include, but are not limited to, the facilities listed in the Fact Sheet (Attachments 2, 3, and 4) and which are currently authorized under individual NPDES permits. Any facility which meets the requirements at Part 4 of the AQUAGP may seek coverage under this General Permit. It should be noted that due to comments received, EPA has chosen not to regulate the New England Aquarium and New England Aquarium Off-Site Holding Facility through the AQUAGP; rather, EPA intends to re-issue individual NDPES permits for these two facilities. *See* Response to Comment II.F.1 above.

The regulations at 40 CFR § 122.24 and in Part 122 Appendix C define CAAP facilities based on the amount of fish produced *and* on a case-by-case basis. In other words, a fish production (or similar) facility that does not meet the threshold levels of production in Part 122 Appendix C may still be subject to NPDES permitting on a case-by-case basis. *See* 40 CFR § 122.24(c). *See also* Fact Sheet p. 4 and Draft AQUAGP Part 4.1. In addition, NPDES permits are required for "the discharge of pollutants from any point source into waters of the United States." 40 CFR § 122.1(b). In other words, if an aquatic animal holding facility discharges pollutants to a water of the United States it must obtain NPDES permit coverage.

A facility that discharges pollutants to a water of the U.S. is not exempt from seeking coverage simply because they "do not produce enough animals" as the commenter suggests. *See also*

Response to Comment E.2. Facilities that discharge from a point source in a water of the U.S. but which hold or produce aquatic animals at levels below the thresholds defined at 40 CFR Part 122 Appendix C should contact Region 1's NPDES program to determine whether a permit is required, as Northeastern University and Woods Hole Oceanographic Institution have done in the past. EPA has determined that Woods Hole Oceanographic Institution does not contribute pollutants from a point source to a water of the U.S. and therefore is not required to obtain coverage under a NPDES permit. EPA is currently assessing whether Northeastern University is a significant contributor of pollutants. EPA will continue to make case-by-case determinations for small aquatic production facilities and, where appropriate, will direct facilities to seek coverage under the AQUAGP or an individual permit.

Comment G.2

As written, it is unclear if the AQUAGP applies only to the 14 facilities mentioned, or if new discharges can submit for the AQUAGP. In Section 4.1, page 37, the document states that eligible discharges under AQUAGP include "all land-based CAAP facilities and other, similar facilities that contain, grow, or hold aquatic animals in ponds, raceways, or other similar structures in Massachusetts, New Hampshire, and Vermont (federal facilities only)." However, in Section 6.3, page 47, the document states that "Facilities with proposed new discharges are not eligible for coverage under this General Permit." MA DMF recommends clarifying if new discharges can apply for the AQUAGP.

Response to Comment G.2

The AQUAGP does not only apply to the facilities listed in the Fact Sheet (Attachments 2, 3, and 4). Existing facilities not currently covered by individual permits that meet the Part 4 requirements could be covered under the general permit. Comments II.G.1 and II.J.4.1 cite additional examples: UMass Dartmouth, UMass Boston, and Northeastern University.

Part 4.3.l specifies that "new source" dischargers are not eligible for coverage under the AQUAGP. "New source" is defined at 40 CFR § 122.2 as "any building, structure, facility, or installation from which there is or may be a 'discharge of pollutants,' the construction of which commenced: (a) After promulgation of standards of performance under section 306 of the CWA which are applicable to such source, or (b) After proposal of standards of performance in accordance with section 306 which are applicable to such source, but only if the standards are promulgated in accordance with section 306 within 120 days of their proposal." As explained at Part 4.3.1 of the Draft AQUAGP, new sources are subject to New Source Performance Standards and National Environmental Policy Act (NEPA) review procedures at 40 CFR 6.2. The review procedures require additional information and consultations not required by existing sources and which are better addressed through an individual permit. New sources become existing after the first individual permit is issued and may be eligible for general permit coverage at that point.

As the comment points out, Part 6.3.a of the Draft AQUAGP requires clarification. Part 6.3.a of the Final AQUAGP states that "New Sources" (and not "proposed new dischargers," as was contained in the Draft) are not eligible for coverage under the general permit. "New dischargers,"

which are also defined at 40 CFR §122.2 (and are not "new sources") may be eligible for coverage under the AQUAGP.

Comment G.3

MA DMF is responsible for ensuring that shellfish sanitary standards are met in Massachusetts. The AQUAGP includes the following conditions which satisfies MA DMF concerns about potential aquatic harm:

- 1.4.a. The discharge shall not cause a violation of the water quality standards of the receiving waters.
- 1.4.b. The discharge shall be free from pollutants in concentrations or combinations that, in the receiving water, settle to form objectionable deposits; float as debris, scum or other matter to form nuisances; produce objectionable odor, color, taste or turbidity; or produce undesirable or nuisance species of aquatic life.
- 1.4.f. No components of the effluent shall result in any demonstrable harm to aquatic life or violate any water quality standard which has been or may be promulgated. Upon promulgation of any such standard, this General Permit may be revised or amended in accordance with such standards, with the Permittee being so notified.
- 5.4. The Permittee must implement and maintain a BMP Plan on site.

For situations in which effluent discharges exceed permitted amounts or contain new discharges, there are notification requirements. As written, notification goes to EPA and the State. MA DMF recommends that the AQUAGP specify in the Massachusetts conditions the specific state agencies that should notified, and that MA DMF be one of the agencies notified.

Response to Comment G.3

As requested, EPA has revised the Final AQUAGP to require that facilities discharging to tidal waters in Massachusetts notify the Massachusetts Division of Marine Fisheries (at FWE-DL-DMFSeniorManagers@mass.gov) when permit limitations are exceeded or if new discharges are released. *See* Final AQUAGP Parts 1.3.h., 1.3.i., 1.3.l., and 1.3.p. EPA notes that since the two aquarium facilities are not being covered by the general permit (see Response to Comment F), the only remaining existing, coastal facility is the Sandwich State Fish Hatchery.

H. **Comments from David Simmons, U.S. Fish and Wildlife Service**

As indicated in the Federal Register notice included with the ER [Environmental Review], the EPA, and possibly other Federal action agencies (e.g., US Army Corps of Engineers), will evaluate each project individually for impacts to species listed under the Endangered Species Act. The Service and the action agency will address impacts to listed species and other natural resource from each project during this interagency cooperation under section 7 of the ESA. We do not have any additional comments to provide at this time.

Response to Comment H.

The Fact Sheet explains that for species under the jurisdiction of USFWS, EPA designated the applicants as non-Federal representatives for the purposes of carrying out ESA consultations. Fact Sheet p. 43. When submitting an NOI, each individual applicant must certify that it meets one of the eligibility criteria listed in Part B of Appendix 2 and submit any documentation and/or communication with the USFWS. Any facility which cannot certify that one of the USFWS eligibility criteria are met will not be eligible for coverage. *See* Final AQUAGP Part 4.4.a. The comment above indicates agreement from USFWS with the AQUAGP's ESA consultation requirements.

I. Comments from Fred Quimby

Comment I.1

On review of this draft permit I would like to begin by thanking the EPA for including more clarification on the timing of sample collection-section 7.2; the greater frequency of sampling, especially nutrients-Section 2.1; and the requirements for all NOIs to be accompanied by a nutrient-stressor response monitoring plan (Section 2.3 and Appendix 13) in the DGP. These additions will aid in the identification of potential problems which may require individual permits and lead to tighter control over the release of pollutants in discharges.

My comments on the Draft General Permit are as follows:

DGP Section 2.1

Table-Requirements for Discharges from Hatcheries (page 18). Hatchery discharge sampling for Total Phosphorus(TP) (June-September) Total Nitrogen(TN) (June-September) 2 samples / month; given the reliance of TSS as a surrogate for nutrients in the implementation of the solids management plan, shouldn't the monitoring schedule for TSS be the same as that for total nitrogen and total phosphorus?

Footnote 14. State requirements for hatcheries to monitor Upstream and Downstream of the receiving water and develop a nutrient stressor-response monitoring plan (NSRMP) as described in Part 2.3 Is it the State's intent to have the benthic macroinvertebrate study performed at the same site as the downstream phosphorus and nitrogen monitoring site? I see that the algal studies are accompanied with this information already and it seemed useful to compare changes in TP and TN with changes in macroinvertebrates at the site.

Attached algae study. If the project Manager for specimen collection is not the NH DES, an address where the equipment and supplies can be purchased may be useful.

Given that multiple sites in New Hampshire lakes and ponds have been identified with metalimnetic cyanobacteria blooms of Planktothrix isothrix which rarely bloom on the surface, is there any plan to identify these sites below hatcheries?

Impounded rivers and natural ponds immediately downstream from hatcheries seem particularly prone to pollution-induced changes in phytoplankton populations especially in stratified waters with hypoxia at the lower levels of the water column. It is hoped that these waterbodies will be examined as part of this survey?

Downstream sites for sampling attached algae and macroinvertebrates may be to difficult to perform depending on the amount of total suspended solids released by the hatchery. EPA-ECHO database may be helpful in determining this.

Response to Comment I.1

The comment recommends a number of changes to the monitoring requirements for the AQUAGP in New Hampshire, many of which are related to the proposed State Conditions at Part 2.3 of the Draft AQUAGP. EPA has considered the comments and referred many to NHDES for their review. As the comment notes, solids are the primary source of pollutants in hatchery discharges and the BMPs targeting solids management among other operations are intended to control the levels of TSS as well as nutrients. The Final AQUAGP has been revised to harmonize the monitoring frequency for TSS during the growing season (June to September) to the frequency for TN and TP. Part 2.1 of the Final AQUAGP requires a monitoring frequency for all parameters from June to September of 2/month.

The comment also questions if the algal and macroinvertebrate sampling required in Part 2.3.d of the AQUAGP will be conducted at the same sites as the ambient TN and TP sampling. While continuity in biological and chemical sampling may be desirable, it may not be possible to collect samples for all parameters and response variables from the same location. Nutrient samples are collected more frequently than biological samples and, as such, accessibility is a primary consideration for these sites. Part 2.3.d of the Final AQUAGP requires Permittees to submit an ambient nutrient-stressor response monitoring plan to NHDES for approval. One component of this review will be to ensure that biological monitoring locations are suitable and reflective of the nutrient concentrations in the receiving water downstream of each hatchery's discharge. NHDES expects that sampling locations will be selected based on site-specific knowledge of existing conditions at a finer scale than would be available through the use of a federal database such as ECHO. A second component of this review will ensure that the information necessary to carry out sampling, including where to procure equipment, is communicated between NHDES and the Permittee.

Finally, the comment raises several questions about how the nutrient-stressor response monitoring plan will consider monitoring of cyanobacteria and phytoplankton in lakes and ponds or downstream impoundments. The biological sampling plan at Part 2.3.d is for attached algae in order to provide a relative measure of algal abundance and a coarse measure of major algal types, not free-floating pelagic cyanobacteria such as *Planktothrix isothrix*. NHDES does not have a routine sampling program for cyanobacteria because blooms are episodic in nature and the vast majority of cyanobacteria investigations result from complaints by water body users. No eligible hatchery has been identified as discharging to a downstream impoundment, let alone an impoundment that is known to have recurring blooms of any type. That being said, ambient data on periphyton and nutrients at each hatchery will enable NHDES and others will be able to focus future monitoring on those places with clear nutrient impacts.

Comment I.2

Footnote 15. While I am not aware of any NH hatchery discharging into the Piscataqua River Watershed, should not this footnote include this watershed as noted in section F2 of the NOI (Appendix 4)?

Response to Comment I.2

Parts 1.1 Footnote 14 (for MA facilities), 2.1 Footnote 15 (for NH facilities), and 3.1 Footnote 13 (for VT facilities) of the Draft AQUAGP require Permittees in the Long Island Sound watershed to monitor total nitrogen on a monthly basis and establishes an annual nitrogen optimization reporting requirement (explained in Part 5.4) in order to minimize the annual average mass discharge of total nitrogen. This requirement is consistent with EPA's systemic, state-by-state approach to reduce out-of-basin loading of nitrogen pollution into Long Island Sound from POTW point sources in Massachusetts, New Hampshire, and Vermont, through the coordinated issuance of individual NPDES permits ("Out-of-Basin Permitting Approach"). *See* Appendix A. *See also* Response to Comment II.J.3.1.

The comment suggests that Footnote 15 (at Part 2.1), which establishes the nitrogen optimization requirement applicable to NH facilities, also be required of facilities that discharge to the Piscataqua River watershed because this watershed is also listed in section F.2 of Appendix 4 (NOI instructions). The question in Appendix 4, Draft NOI form, section F2 requires facilities to identify whether they are located in 1) areas where species listed as threatened or endangered under the Endangered Species Act (ESA) are present or 2) areas designated as critical habitat under the ESA for the Atlantic sturgeon (the Connecticut River between the Massachusetts/Connecticut state line and Turners Falls, MA; the Taunton River; the Merrimack River between Lawrence, MA and the Atlantic Ocean; and the Piscataqua River including the Salmon Falls and Cocheco Rivers). *See* Fact Sheet pp. 42-44. *See also* 82 Fed. Reg. 39160 (August 17, 2017). The nitrogen optimization requirement is grounded in the Long Island Sound TMDL and in EPA's approach to reducing nitrogen loading to this watershed, whereas Section F.2 of Appendix 4 refers to ESA species and critical habitat (including the Connecticut River).

As the comment points out, there are currently no known fish hatcheries eligible for coverage in the Piscataqua River watershed. Moreover, as many of the waterbodies in the Piscataqua River watershed are listed as impaired for total nitrogen, hatcheries located on these rivers would likely not be eligible for coverage under the AQUAGP based on the requirements at Section 4.3.f, which generally prohibits discharges of pollutants identified as the cause of an impairment to a receiving waterbody. Finally, the nitrogen optimization requirements were developed considering the Long Island Sound TMDL and based on evaluation of the specific pollutant loads and sources in that watershed and, as a result, may not be directly applicable to facilities in another watershed. The Final Permit limits the nitrogen optimization requirements to only those dischargers in the Long Island Sound watershed.

Comment I.3

Footnote 16. There are approved tests which can reliably quantitate phosphorus to 1 ug/L, cannot the EPA approve of a more sensitive test?

Response to Comment I.3

In accordance with 40 CFR §122.44(i)(1)(iv), Permittees are required to analyze pollutant using sufficiently sensitive methods approved under 40 CFR Part 136 or 40 CFR chapter I, subchapter N, or subchapter O. A method is sufficiently sensitive if the method minimum level (ML) is at or

below the level of the effluent limitation for the measured pollutant, or if the method has the lowest ML of the analytical methods approved under 40 CFR Part 136. *See, e.g.,* Draft AQUAGP Part 2.1 footnote 2. The ML refers to either the sample concentration equivalent to the lowest calibration point in a method or a multiple of the method detection limit, whichever is higher. The comment requests that the permit require a detection limit for total phosphorus lower than the limit of 10 µg/L that can be achieved with a test method in 40 CFR Part 136. The comment suggests that laboratories "reliably quantitate" test water at detection levels as low as 1 µg/L but does not specify which test method(s) achieve this level. There are many EPA-approved methods listed in 40 CFR Part 136 that achieve a ML of 10 µg/L. It is difficult to remove the background levels of phosphorus when analyzing a sample, which is why low values are difficult to obtain. A ML of 5 µg/L is possible if the laboratory uses dedicated, acid washed glassware and disposable digestion tubes to eliminate interference. Personal Communication with B. Patel, EPA. *See* AR-58. Nevertheless, EPA has determined that this level of testing is more than what is warranted to adequately understand the nature of the discharge and its compliance with the permit, especially in light of the significant added complexity and resources this method requires. The AQUAGP maintains the requirement to use a test method from 40 CFR Part 136 that achieves an ML of no more than 10 µg/L.

Comment I.4

Footnote 25. "Downstream is a location representative of the receiving water after complete mixing with the effluent from the hatchery". Should this also state that this site should be selected before additional tributaries contribute to the mixing?

Response to Comment I.4

Footnote 25 in Part 2.1 of the Draft AQUAGP specifies where ambient samples for total nitrogen (TN) and total phosphorus (TP) in the receiving water should be collected. Upstream samples must be collected prior to mixing with hatchery effluent. Downstream samples must be collected at a location representative of the receiving water "after complete mixing with the effluent from the hatchery." The commenter suggests that the downstream sampling should be collected at a location prior to any additional mixing from tributaries. Downstream sampling is intended to be representative of the receiving water and effluent to determine the in-stream nutrient levels, including the addition of any nutrients from the facility. If tributaries join the receiving water downstream from the facility's outfalls this flow will offer additional mixing. On the one hand, this mixing is representative of the actual conditions of the river and would not necessarily be "overestimating" the mixing in the river. On the other hand, an ambient sample collected at a location far downstream, past the point where a tributary offers additional mixing, may not be representative of the facility's potential impact on the immediate receiving water. In addition, the requirement to sample "after complete mixing" may be a challenge to implement and enforce. The Final AQUAGP adds that the location of ambient monitoring stations, which are related to the State Conditions, be reviewed by NHDES.

Comment I.5

Footnote 26. “Collected following a minimum of 72 hours with no precipitation…”. Collection report shall state the hours or days since the last precipitation and/or note whether melting snow is still contributing to water flow at the test site.

Response to Comment I.5

Footnote 26 in Part 2.1 of the Draft AQUAGP specifies that ambient samples for total nitrogen (TN) and total phosphorus (TP) in the receiving water should be collected at the same time as the effluent samples and, to the extent practicable, following a minimum of 72 hours with no precipitation. Ambient water samples are only required to be collected from June through September, when impacts due to snow melt are highly unlikely.

Comment I.6

Given the requirement for Downstream sampling and a nutrient-stressor response monitoring plan, it may be advisable for the Permittee, before sending the notice of intent (NOI) to at least conduct an upstream/ downstream test for TN and TP with results to be include with the NOI. This could alert the reviewers to the necessity for a vigorous NSRMP.

Response to Comment I.6

Part 2.3.d of the Draft AQUAGP (State Conditions) requires that each Facility in New Hampshire submit an ambient nutrient-stressor response monitoring plan to NHDES for approval within 6 months of permit authorization. This requirement has been retained in the Final AQUAGP and the State certified that the AQUAGP meets water quality standards in accordance with Section 401 of the CWA. *See* AR-28. Ambient monitoring prior to the Notice of Intent would not affect either the number of facilities subject to this requirement or the amount of time allotted to each facility to complete a plan, nor does the comment indicate otherwise. The comment is similarly unclear what is meant by a “vigorous” plan. As every facility in New Hampshire seeking coverage under the Final AQUAGP must submit a nutrient-stressor response plan regardless of existing upstream/downstream concentrations at the time of authorization, the general permit has not been revised to require additional, pre-authorization ambient monitoring.

Comment I.7

5.4 Best Management Practices Plan (BMPP).

(a-ii) Solids Control. It seems appropriate here to say something about the need for properly designed and constructed fish rearing units for the efficient and effective removal of solids. Likewise this paragraph refers to “routine cleaning” of solids; nowhere in my reading in the Federal Register (40 CFR 451) nor in the supporting documents have I seen a study performed which documented the effects of cleaning frequency on TSS discharge levels. I recommend the EPA fund such a study which would aid the hatchery operators in the recognition of manpower and time needs to effectively reduce solids in the discharge.

Response to Comment I.7

The AQUAGP proposes a multi-pronged approach to solids control. First, the Final AQUAGP establishes a numeric, technology-based limit of 10 mg/L for TSS and BOD tailored to the specific operations of the class of facilities eligible for the AQUAGP. All hatcheries that seek authorization to discharge under the AQUAGP are subject to the BPJ-based numeric limits, which ensures a consistent permitting approach for hatcheries in the eligible geographic area. In addition, the narrative, technology-based effluent limits in Part 5.4 of the Final AQUAGP, including the requirement to implement procedures for "routine cleaning" are in accordance with the effluent limitations guidelines (ELGs) for the CAAP point source category. 40 CFR Part 451. The best management practices (BMPs) allow sufficient flexibility for Permittees to use the most effective fish rearing designs for each individual facility but ensures consistent, enforceable limits targeting the discharges of solids from rearing units, including focusing on reducing the amount of solids introduced to the system (through feed management) and procedures for cleaning designed to minimize the discharge of accumulated solids. The AQUAGP also prohibits the discharge of untreated wastewaters from cleaning activities. Finally, the Standard Conditions (Part II.B.1) included as Appendix 6 of the Final AQUAGP requires that all facilities and systems of treatment and control are properly operated and maintained, which includes properly designed and constructed fish rearing units.

EPA believes that, in combination, the proposed requirements for solids control consistent with the ELGs for this point source category, the benchmark TSS requirement, the prohibition on discharging untreated cleaning waters, and the standard conditions for properly maintaining and operating systems, ensure that the BMPs are properly implemented and are sufficient to ensure that the receiving waters are protected and water quality standards will be met.

Comment I.8

After approval of the BMPP by the EPA, I recommend that the EPA or State Enforcement Agency make periodic unannounced inspections of each hatchery to be sure the BMP are being carried out explicitly, particularly the removal of TSS from rearing sites and its final disposal. Included in this review should be visits to any off-site disposal facility (such as an agricultural field for land application of fish manure) where the frequency and dates manure was received can be confirmed by the landowner.

Response to Comment I.8

Section 308 of the CWA authorizes inspections, monitoring, and information gathering to ensure that a facility is complying with the conditions and requirements of its NPDES permit issued in compliance with Section 402 and in accordance with Section 301 of the Act. Section 308 provides both for self-monitoring and reporting (e.g., discharge monitoring reports) and monitoring by EPA or the state. With its state partners, EPA has developed and implemented a comprehensive compliance monitoring program to verify compliance with existing NPDES permits and to determine if discharges are occurring without authorization. This monitoring program includes on-site visits by qualified inspectors and reviews of the discharge monitoring reports and best management practices annual reports required by the NPDES permit. The 2017

Interim Revised U.S. EPA NPDES Inspection Manual[2] provides inspectors with guidance on compliance inspections. While there are not specific requirements for CAAP facilities, the objectives for Concentrated Animal Feeding Operation (CAFO) inspections include on-site inspection of the structural integrity, maintenance condition of the facility. In addition, the inspection will review land application protocols and other factors relevant to evaluating the land application areas. Inspections of facilities covered under the AQUAGP will be conducted by EPA's Enforcement and Compliance Assistance Division and/or the state's enforcement division.

Comment I.9

The Draft permit should include a statement which specifically prohibits a State facility in one State from purposefully contracting with a facility in another state if the State rearing the fish has less stringent effluent discharge rules than the State releasing the fish into their waters.

Response to Comment I.9

Section 301(a) of the Clean Water Act (CWA or the Act) provides that the discharge of pollutants is unlawful except in accordance with a NPDES permit unless such a discharge is otherwise authorized by the Act. The NPDES program requires permits for the discharge of pollutants from a point source into waters of the United States. *See* 40 CFR § 122.1(b). The condition suggested by the commenters is outside of the boundaries of the NPDES program.

Comment I.10

5.5 Benchmark Requirements for TSS

(a,b) 10 mg/L. I have had a difficult time tracking where exactly this number originally came from, it is pre-2002 and the Federal Register August 23,2004, Part II, EPA 40 CRF Part 451 cited in the Fact Sheet. The Powder Mill State Fish Hatchery rarely ever exceeded this benchmark but according to the EPA ECHO database they discharged 90 tons of TSS over the past 5 years. Perhaps it was due to the natural pond within the receiving waters and the impoundment below that pond but this clearly was too much TSS for the receiving waterbody to handle. It may be prudent to look at receiving waters below discharge outfalls and see if the fluid dynamics of these waters can handle anything close to this level of TSS. Remember the discharge of 5 mg/L per day in a facility discharging 6 MGD will be 45 tons of TSS per year!

Response to Comment I.10

The Draft AQUAGP proposed a TSS benchmark to provide for consistent permit requirements across facilities in MA, NH, and VT (federal facilities only). Discharges in excess of the benchmark indicate that improved treatment and/or BMPs may be necessary to effectively control the discharge of TSS and consequently BOD5. The Fact Sheet (pp. 19-20) explains the basis for the TSS benchmark. For the Final Effluent Limitations Guidelines (ELGs) for the

[2] https://www.epa.gov/compliance/compliance-inspection-manual-national-pollutant-discharge-elimination-system

CAAP Point Source Category, EPA elected to promulgate qualitative BPT limitations for all types of facilities and treatment systems in the form of BMPs, including specific solids control BMPs targeting the discharge of TSS. However, the proposed ELGs proposed to establish numeric, BPT limitations for TSS of 10 to 11 mg/L (maximum daily) at flow-through facilities (depending on annual production levels) while also requiring narrative best management practices. See 67 FR 57926-57927 (August 12, 2002). The basis for these numeric TSS limits is explained in the *Technical Development Document for the Final Effluent Limitations Guidelines and New Source Performance Standards for the Concentrated Aquatic Animal Production Point Source Category* (Revised August 2004). In addition, many of the individual permits for fish hatcheries in MA and NH, as well as elsewhere in the U.S., included BPJ-based, maximum daily effluent limitations around 10 mg/L. Based on this information, EPA concluded that the BMPs in Part 5.4 of the Draft AQUAGP and the operations and treatment common among hatcheries in New England (i.e., quiescent zones and regular cleaning and maintenance practices) are likely to meet a TSS concentration of 10 mg/L.

As explained in Response to Comment II.J.2.1, below, the Final AQUAGP establishes a numeric, technology-based limit of 10 mg/L for TSS and BOD tailored to the specific operations of the class of facilities eligible for the general permit coverage. All hatcheries that seek authorization to discharge under the AQUAGP are subject to the BPJ-based numeric limits, which ensures a consistent permitting approach for hatcheries in the eligible geographic area. In addition, the Final AQUAGP carries forward site-specific limits at two hatcheries that are currently subject to more TSS and BOD limits that are more stringent than the AQUAGP in accordance with regulations at 40 CFR § 122.44(l)(1): an average monthly TSS and BOD limit of 5 mg/L at the North Attleboro Fish Hatchery and a maximum daily BOD limit of 5 mg/L at the Sandwich State Fish Hatchery. The AQUAGP also maintains the narrative, technology-based effluent limits (in the form of BMPs) consistent with the ELGs referenced in the comment as the primary method of controlling the release of TSS, BOD, nutrients, and related pollutants from hatcheries.

Finally, the comment suggests that the levels of TSS typically discharged from hatcheries is likely to cause water quality impairments, such as the cyanobacteria-related issues observed downstream from the Powder Mill State Fish Hatchery in New Durham, NH. First, nearly all of the hatcheries report TSS concentrations well below 10 mg/L (even below detection limits in many cases). Second, the comment provides no evidence that the discharge of TSS was the cause of the water quality impairments at the Powder Mill Hatchery or that similar impairments are expected from the discharge of TSS at any hatchery expected to be covered under the AQUAGP. In fact, the impairments at issue in the case of Powder Mill (cyanobacteria) were caused by excessive phosphorus loading to the system. EPA maintains that the narrative, technology-based effluent limits (in the form of BMPs) consistent with the ELGs combined with the numeric limits for TSS and BOD for this class of point sources will control the release of TSS such that more stringent, water quality-based limits are not warranted. See also Response to Comment II.J.2.1.

Comment I.11

Appendix 4 Suggested Notice of Intent Format and Restrictions.

B.4. “If the applicant answers yes to B.2.has the …”, Question B.2. asks for the waterbody classification of the receiving water, there is no “yes or no” answer in this question. I think this section B should also ask if the receiving water is a natural pond or a pond or impoundment within a river. Special consideration must be given to waste volumes, especially TSS, under these circumstances.

Response to Comment I.11

The comment points out a typographical error in the Draft AQUAGP Appendix 4 Question B.4. The question should be “If the applicant answers yes to ***B.3***…” Question B.3 asks the applicant to identify whether the receiving water is listed in the State’s Integrated List of Waters, which is a yes or no question. If yes, the applicant would identify any impairments to the designated uses of the waters, the sources of the impairments, and whether a total maximum daily load (TMDL) is available. However, for the Final AQUAGP, EPA has developed an electronic system for submitting Notices of Intent (NOIs), the “NPDES electronic reporting Tool (NeT)” and a new Appendix corresponding to the NeT system. As such, the typographical error identified in the comment has been removed from the Final AQUAGP.

The commenter also requests that the applicant identify if the discharge is to a natural pond or impoundment. The NeT system for New Hampshire requires applicants to identify if the discharge is to a pond or lake in order to assess eligibility in accordance with Part 4.3.h of the Final AQUAGP.

Comment I.12

Draft Fact Sheet (DFS): 1.4 Limitations of Coverage.

1.2.1 Definition of cold-water fish CAAP. If a state has an existing facility which produces 39,000 pounds of trout per year and decided to replace it with two facilities each raising 19,500 pounds of trout per year can they evade the need to register as a CAAP?

Response to Comment I.12

A facility may not “evade” the need for NPDES permit authorization for discharges of pollutants from a point source to a water of the U.S. simply by dropping production levels below the defined thresholds in 40 CFR Part 122 Appendix C. A fish production (or similar) facility that produces less biomass than CAAP facilities defined at Appendix C may still be subject to NPDES permitting on a case-by-case basis. *See* 40 CFR § 122.24(c). *See also* Fact Sheet p. 4 and Draft AQUAGP Part 4.1. In addition, NPDES permits are required for “the discharge of pollutants from any point source into waters of the United States.” 40 CFR § 122.1(b). EPA addressed similar comments on the thresholds for CAAP facilities and the need to seek NPDES permit authorization in Response to Comment II.G.1.

Comment I.13

2.1.1 State Certification

2.1.1 paragraph 4 (p.11) “Failure to provide such a citation waives the right to certify as to that condition”. This is confusing as written. My interpretation of this is -should a state not realize at the time a Permittee sends in the NOI that the facility is discharging too much phosphorus into the receiving waterbody then discovers this to be the case later, it cannot take additional action. This should be state more clearly.

Response to Comment I.13

Part 2.1.1 of the Fact Sheet (pp. 10-11) explains that under Section 301(b)(1)(C) of the CWA, discharges authorized under the NPDES program are subject to effluent limitations based on water quality standards as well as any conditions of State Certification. Under CWA Section 401(a)(1), EPA may not issue an NPDES permit until a certification is granted or waived in accordance with the CWA by the State in which the discharge originates or will originate. See 40 CFR § 122.23(a). The certification must include conditions necessary to assure compliance with the applicable provisions of CWA sections 208(e), 301, 302, 303, 306, and 307 and with appropriate requirements of state law.

The excerpt referenced in the comment states:

> If the State believes that any conditions more stringent than those contained in the Draft Permit are necessary to meet the requirements of either the CWA §§ 208(e), 301, 302, 303, 306 and 307, and the appropriate requirements of State law, the State should include such conditions in its State Certification and, in each case, cite the CWA or State law reference upon which that condition is based. Failure to provide such a citation waives the right to certify as to that condition.

Fact Sheet p. 11. During development of the Draft AQUAGP, the New Hampshire Department of Environmental Services (NHDES) requested certain monitoring requirements be incorporated into the General Permit. These monitoring requirements are included in Part 2.3 of the Draft AQUAGP, which include certain requirements to ensure that the discharge meets narrative water quality standards. By letter dated June 11, 2020, EPA requested that the State of New Hampshire certify the Draft AQUAGP within 60 days. NHDES provided its state certification on August 10, 2020. The State certified that the conditions of the AQUAGP, including the requirements incorporated as State Conditions at Part 2.3, will ensure that the requirements in Title L RSA 485-A and New Hampshire Code of Administrative Rules Env-Wq 1700 (Surface Water Quality Standards) are met.

The State’s certification of the AQUAGP does not prohibit either EPA or the State from taking action should, for example, monitoring prior to or in compliance with the conditions of the General Permit indicate that the discharge from a facility has reasonable potential to cause or contribute to an excursion of water quality standards. The Fact Sheet (p. 9) explains that any person authorized by the General Permit may be required to apply for and obtain an individual permit. *See* 40 CFR § 122.28(b)(3). In particular, an individual permit may be required when the discharge is a significant contributor of pollutants (e.g., by “discharging too much phosphorus”). *See* 40 CFR § 122.28(b)(3)(G). In this case, EPA would require that the facility obtain individual

permit coverage which could include more stringent pollutant-specific limitations than the General Permit.

Comment I.14

General Comment: Throughout the Fact Sheet there is continual reference to the data upon which certain statements are made, such statements as, “EPA has chosen to replace numeric limits in the existing permits with technology-based BMP requirements which have proven effective for controlling pollutants in the existing facilities” (Anti-backsliding, p14). “The EPA is replacing the numeric limits with equivalent, narrative, technology-based effluent limits”, “the change from numeric to narrative limits is not less stringent” (p14). ‘The EPA did conclude during the development of the ELGs that control of TSS would also effectively control concentrations of other pollutants of concern such as BODs, metals, and nutrients because other pollutants either bound to solids or where incorporated into them”(p19). The reference used is 69 FR 51899,51920 Federal Register August 23, 2004 Part II-40 CRF Part 451. The source information for this document is found in two other documents called technical Development Document For the Final Effluent Limitation Guidelines and New Source Performance Standards for CAAP and the Economic and Environmental Benefits Analysis of the Final Effluent Limitation Guidelines and Standards for CAAP each published in 2004. Data supporting these documents were collected in 1998-2002. While I can neither prove nor disprove the above statements were true and accurate in 2002, I am struck by the fact that this Fact Sheet relies on information at least 18 years old. Given that the aquaculture industry has, over the past 4 decades, grown at a rate of 7% per year on average each year (1), being faster compared to other sectors in the animal food production industry (2), it seems a review of technologies and procedures used in 200 would be warranted. I quickly identified several recent reviews on this subject and I am impressed with the technologies in practice and studies taking place, especially for recirculating systems, dealing with effluent treatment technologies (3,4,5). Furthermore, if there are remaining questions as to the efficacy of procedures recommended in this report as well as the 10 mg/L bench mark for TSS, I recommend that both University-based Research Grants and Small Business Innovation Research Grants sponsored by the EPA (perhaps in collaboration with the USDA) be focused on filling in the gaps in this information.

1. Hastein, T. et al. Food safety hazards that occur during the production stage: challenges for fish farming and the fish industry. Revue Scientifique et Technique de l’OIE, vol. 25, no.2, pp.607-625,2006.
2. Su, X. et al. Sensors, biosensors, and analytical techniques for aquaculture water quality. AAAS Research vol.2020,Article ID 8272705,15 pages, https://doi.org/10.34133/2020/8272705.
3. Dauda A.B., et al. Waste production in aquaculture: sources, components, and managements in different culture systems. Aquaculture and Fisheries vol.4, pp.81-88, 2019.
4. Castine S.A., et al. Wastewater treatment for land-based aquaculture: improvements and value-added alternatives in model systems from Australia. Agriculture Environment Interactions. Vol. 4, pp.285-300,2013.
5. Snow A., et al. Flow-through land-based aquaculture wastewater and its treatment in subsurface flow constructed wetlands. Environmental Reviews, vol.20, pp54-69, 2012.

Response to Comment I.14

As explained in Response to Comment II.J.2.1, below, the Final AQUAGP establishes a numeric, technology-based limit of 10 mg/L for TSS and BOD tailored to the specific operations of the class of facilities eligible for the general permit coverage. All hatcheries that seek authorization to discharge under the AQUAGP are subject to the BPJ-based numeric limits, which will ensure a consistent permitting approach for hatcheries in the eligible geographic area. In addition, the Final AQUAGP carries forward site-specific limits at two hatcheries that are currently subject to TSS and BOD limits that are more stringent than the AQUAGP in accordance with regulations at 40 CFR § 122.44(l)(1).

The AQUAGP also maintains the narrative, technology-based effluent limits (in the form of BMPs) consistent with the ELGs referenced in the comment as the primary method of controlling the release of TSS, BOD, nutrients, and related pollutants from hatcheries. EPA regulations at 40 CFR § 125.3(c) govern the application of technology-based effluent limitations (TBELs) in NPDES permits. EPA has promulgated technology-based ELGs for discharges from concentrated aquatic animal production (CAAP) facilities as defined at 40 CFR § 122.24 and Appendix C of 40 CFR Part 122. 40 CFR Part 451. *See also* 69 Fed. Reg. 51,892 (August 23, 2004) and 2019 Fact Sheet pp. 12, 17-19. The ELGs apply to discharges from CAAP facilities that produce more than 100,000 pounds of aquatic animals per year in flow-through, recirculating, net pen, or submerged cage systems. 40 CFR § 451.1. EPA established these BMPs as the "best practicable control technology currently available" (BPT), the "best conventional pollutant control technology" (BCT), and the "best available technology economically achievable" (BAT). 69 Fed. Reg. 51,907-10. Part 5.4 of the Draft AQUAGP establishes BMPs in accordance with the ELGs. The Draft AQUAGP conservatively applies these narrative TBELs for facilities producing less than 100,000 pounds of aquatic animals per year on a best professional judgment (BPJ) basis. The comment suggests that these ELGs should be reassessed given the advances in technologies in the aquaculture industry and the growth of the industry. ELGs are periodically reconsidered and EPA may choose to review the CAAP ELGs in the future, in part for the reasons raised in the comment. EPA acknowledges the research referenced in the comment, which may be of interest to newly built hatcheries (defined as new sources and not eligible for general permit coverage at this time) when designing treatment systems. EPA can impose more stringent effluent limitations based on *water-quality* considerations. *See* CWA Sections 301 and 402. However, the commenter does not make an argument that a more stringent water quality-based effluent limit is warranted.

J. Comments from Chelsea Kendall, Conservation Law Foundation

Conservation Law Foundation ("CLF") appreciates the opportunity to comment on the above-referenced draft aquaculture facility general permit ("AQUAGP") under the National Pollutant Discharge Elimination System ("NPDES"). CLF is a non-profit environmental advocacy organization working to protect New England's environment for the benefit of all people. Working in Massachusetts, New Hampshire, Vermont, and states across the region, we seek solutions to protect our natural resources, build healthy communities, and sustain a vibrant economy. For years, CLF has engaged in advocacy under the Clean Water Act to ensure our waters benefit from the full protection of the law. CLF works to protect New England's waters from nutrient pollution, including through its ongoing lawsuit over discharges from the Powder Mill State Fish Hatchery in New Durham, New Hampshire, and its comment on the Powder Mill facility's draft NPDES permit.

CLF is greatly concerned about the significant adverse impacts of nutrient pollution from fish hatcheries on downstream waterbodies. Many if not most of the fish hatcheries that would be covered by the draft AQUAGP do not adequately treat their wastewater to remove phosphorus, nitrogen, and fish waste solids. Consequently, the waterbodies downstream from the covered hatcheries are at risk from outbreaks of toxic cyanobacteria and eutrophication.

The proposed AQUAGP does not adequately protect these vulnerable waterbodies from the potentially devastating consequences of nutrient pollution. As set forth in greater detail below, CLF recommends that EPA (1) set robust quantitative limits and more frequent monitoring for pollutant criteria relating to nutrient pollution; (2) require ambient testing of the waters downstream from the covered hatcheries for indicia of eutrophication; (3) mandate objective and robust Best Management Practices; and (4) issue individual NPDES permits for the covered hatcheries rather than a general permit.

In particular, CLF is alarmed at the AQUAGP's elimination of crucial quantitative limits for nine of the twelve covered fish hatcheries. This backsliding is prohibited by the Clean Water Act.

Comment J.1

Overview: Inadequately Treated Fish Hatchery Wastewater is a Serious Contributor to Cyanobacteria and Nutrient Pollution.

In the course of raising large numbers of fish, the twelve fish hatcheries that would be covered by the draft AQUAGP produce large amounts of waste in the form of fish feces and uneaten fish food. This waste contains phosphorus and nitrogen – two "nutrients" that can devastate waterbodies when present in large amounts. Nutrient pollution can cause blooms of toxic cyanobacteria, which can be lethal to people, wildlife, and pets. It can also cause eutrophication, a state characterized by cloudy water, overgrown algae and other plant life, low dissolved oxygen levels, all of which lead to the loss of balanced, naturally occurring aquatic life communities. Eutrophic waterbodies have high levels of phosphorus, nitrogen, and chlorophyll-a, as well as low levels of dissolved oxygen and low Secchi Disc transparency (a measurement of turbidity).

The key pollutant characteristics associated with nutrient pollution are total phosphorus, total nitrogen (including total ammonia), total suspended solids ("TSS") – which in this context, largely consist of fish feces and uneaten fish food which release phosphorus and nitrogen as they dissolve – and biological oxygen demand ("BOD") – i.e. how much oxygen will be consumed as the organic material discharged in the wastewater decomposes.

The example of the Merrymeeting River demonstrates just how badly untreated or inadequately treated nutrient pollution from fish hatcheries can degrade their receiving waters. The citizens of New Durham, New Hampshire have seen the consequences of seventy years of nearly unchecked nutrient pollution from the Powder Mill State Fish Hatchery on the Merrymeeting River and its downstream ponds. What was previously a beautiful series of ponds beloved for its great swimming, boating, and fishing has become virtually unusable. Recurring cyanobacteria blooms each summer have resulted in waters being listed as impaired under Section 303(d) of the Clean Water Act, and prevent people from enjoying the water, forcing local residents to pull their docks out of the water to keep their children and grandchildren away from the dangers. Even pets are susceptible to the harms of cyanobacteria and must be prevented from swimming in or drinking from the contaminated ponds. Overgrown filamentous green algae clog the ponds, ensnaring the motors of boats and the limbs of swimmers with its long strands. Invasive milfoil has proliferated. The waters have turned a murky green and are covered in duckweed, marring even the view of the water from the shore.

Given the serious consequences of discharging untreated or inadequately treated hatchery wastewater, EPA should revise the AQUAGP as discussed below to limit the discharge of nutrient pollution and protect the water quality of the waters downstream from the covered hatcheries – particularly given that many if not most of the covered hatcheries do not have adequate wastewater treatment facilities and are therefore discharging alarmingly high amounts of nutrient-laden pollutants.

Response to Comment J.1

There is an abundance of evidence demonstrating that an excess of nutrients can lead to the water quality impairments described in the comment. Fish hatcheries such as those expected to be covered under the AQUAGP discharge, among other pollutants, nitrogen and phosphorus from fish feces and uneaten fish feed. The comment, however, does not demonstrate either that the technology-based effluent limitations in Part 5 of the AQUAGP are not stringent enough to protect the receiving waters or that the discharge of nutrients from fish hatcheries will cause or contribute to an excursion of water quality standards such that effluent limits more stringent than those proposed in the Draft AQUAGP are necessary to protect water quality of the waters downstream from the eligible hatcheries.

In support of its position, the comment points to the Powder Mill State Fish Hatchery in New Hampshire. This comment is off-point, as that facility is not eligible for coverage under the AQUAGP because the hatchery's discharge has been identified as the primary source of an impairment in the receiving water (cyanobacteria). *See* 2019 Fact Sheet for NH0000710 p. 25 and 2020 Response to Comments p. 53. This hatchery is required to obtain an individual NPDES

permit which establishes more stringent, numeric water quality-based limits on total phosphorus to meet water quality standards. Similarly, EPA did not include the Berlin State Fish Hatchery (NH0000621) as eligible for authorization under the AQUGP because DMR data indicates that the hatchery discharges phosphorus to a receiving water segment that is impaired for that phosphorus at levels that are not at or below a concentration that meets water quality standards. *See* Draft AQUAGP Attachments 1 and 3. Should any other facility that is likewise a source of a downstream impairment seek to obtain coverage under this permit, EPA would not allow such coverage and instead would require an individual permit. *See* 40 C.F.R. § 122.28(b)(3).

Comment J.2

The Draft AQUAGP Violates the Anti-Backsliding Provision of the Clean Water Act by Removing Numeric Effluent Limits.

Under the anti-backsliding provision of the Clean Water Act, EPA is not permitted to issue a new permit which contains requirements less stringent that those in the permit it is replacing. Once effluent limitations have been established, "a permit may not be renewed, reissued, or modified . . . to contain effluent limitations which are less stringent than the comparable effluent limitations in the previous permit." 33 U.S.C. § 1342(o)(1).

Response to Comment J.2

EPA addresses each of the commenter's concerns about antibacksliding in response to the detailed comments in II.J.2.1 to J.2.3, below.

Comment J.2.1

The draft AQUAGP would remove numeric effluent limits for important pollutant criteria in nine hatcheries.

The Draft AQUAGP violates the anti-backsliding provision in the Clean Water Act, as it proposes removing crucial quantitative effluent limits for a number of important pollutant characteristics relating to nutrient pollution, including limits on total ammonia, total suspended solids ("TSS"), and biological oxygen demand ("BOD"). In particular:

- The **Charles L. McLaughlin State Fish Hatchery** is currently operating under NPDES permit MA0110043 which sets quantitative limits for phosphorus (0.26 milligrams per Liter monthly average), TSS and BOD (10 milligrams per Liter and 584 pounds per day daily maximum). Although the Draft AQUAGP does appropriately include an average monthly total phosphorus limit of 0.24 milligrams per Liter for the Charles L. McLaughlin State Fish Hatchery, which is at least as robust as the current limit, it would remove the Hatchery's current quantitative limits for TSS, and BOD.
- The **Montague State Fish Hatchery** (also known as the Bitzer Hatchery) is currently operating under NPDES permit MA0110051 which sets quantitative limits for TSS and BOD (10 milligrams per Liter and 116 pounds per day daily maximum). The Draft

AQUAGP would remove the Montague State Fish Hatchery's current quantitative limits for TSS and BOD.

- The **North Attleboro National Fish Hatchery** is currently operating under NPDES permit MA0005398 which sets quantitative limits for TSS and BOD (10 milligrams per Liter daily maximum and 5 milligrams per Liter monthly average). The Draft AQUAGP would remove the North Attleboro National Fish Hatchery's current quantitative limits for TSS and BOD.
- The **Sandwich State Fish Hatchery** is currently operating under NPDES permit MA0110027 which sets quantitative limits for TSS (10 milligrams per Liter daily maximum and 116 pounds per day daily maximum) and BOD (5 milligrams per Liter daily maximum and 58 pounds per day daily maximum). The permit also sets limits for total ammonia (6 milligrams per Liter monthly average and 10 milligrams per Liter daily maximum). The Draft AQUAGP would set a new rolling annual average total nitrogen limit of 14 pounds per day, but it would remove the current stricter quantitative limits for total ammonia, TSS, and BOD.
- The **Sunderland State Fish Hatchery** is currently operating under NPDES permit MA0110035 which sets quantitative limits for TSS and BOD (10 milligrams per Liter and 97 pounds per day daily maximum). The Draft AQUAGP would remove the Sunderland State Fish Hatchery's current quantitative limits for TSS and BOD.
- The **Milford State Fish Hatchery** is currently operating under NPDES permit NH0110001 which sets quantitative limits for TSS (10 milligrams per Liter monthly average and 15 milligrams per Liter daily maximum). The Draft AQUAGP would remove the Milford State Fish Hatchery's current quantitative limits for TSS.
- The **New Hampton State Fish Hatchery** is currently operating under NPDES permit NH0000752 which sets quantitative limits for TSS (10 milligrams per Liter monthly average and 15 milligrams per Liter daily maximum). The Draft AQUAGP would remove the New Hampton State Fish Hatchery's current quantitative limits for TSS.
- The **Pittsford National Fish Hatchery** (also known as the Dwight D. Eisenhower National Fish Hatchery) is currently operating under NPDES permit VT0000451 which sets quantitative limits for TSS and BOD (10 milligrams per Liter daily maximum and 250 pounds per day daily maximum). The permit sets limits for total ammonia (1.6 milligrams per Liter monthly average and 6.9 milligrams per Liter daily maximum) and total phosphorus (1,523 pounds per year). The Draft AQUAGP would lower the daily maximum total ammonia limit for the Pittsford National Fish Hatchery to 0.7 milligrams per Liter monthly average and 3.4 milligrams per Liter; however, it would remove the current quantitative limits for TSS and BOD.
- The **White River National Fish Hatchery** is currently operating under NPDES permit VT0020711 which sets quantitative limits for TSS and BOD (10 milligrams per Liter daily maximum and 588 pounds per day daily maximum). The permit sets limits for total ammonia (5.0 milligrams per Liter monthly average). The Draft AQUAGP would lower the monthly average total ammonia limit for the White River National Fish Hatchery to 2.3 milligrams per Liter; however, it would remove the current quantitative limits for TSS and BOD.

EPA's removal of effluent limits from the permits for the above nine hatcheries constitutes a plain violation of the Clean Water Act's anti-backsliding provision. Where a numeric effluent limit has been eliminated as it has here, this absence of a numeric limit is "less stringent than the comparable effluent limitations in the previous permit." 33 U.S.C. § 1342(o)(1).

None of the permitted exceptions to the anti-backsliding provision apply to the above-listed hatcheries. 33 U.S.C. § 1342 (o)(2). The Fact Sheet does not mention any (A) alterations or additions to these facilities, (B) new previously unavailable information or mistakes in the original permit; (C) events over which the permittees have no control; (D) permit modifications; or (E) inability to meet the previous effluent limitations. *Id.*

Response to Comment J.2.1

The Draft AQUAGP proposes to carry forward hatchery-specific, numeric effluent limitations for total nitrogen, total phosphorus, and ammonia nitrogen from the facilities' current individual permits. In addition, the Final AQUAGP has been revised to correct the omission of two additional, site-specific effluent limits: a rolling average total nitrogen limit of 32.4 pounds per day at the McLaughlin State Fish Hatchery and the minimum daily, in-stream dissolved oxygen limit at the Sandwich State Fish Hatchery which applies seasonally from May 1 to September 30. The comment also claims that the Draft AQUAGP would remove quantitative limits for total ammonia that are included in the current, individual permit for the Sandwich State Fish Hatchery. The current, individual permit for the Sandwich State Fish Hatchery does not include numeric limits for total ammonia; therefore, a numeric ammonia limit was not included in the AQUAGP for this hatchery. *See* AR-48, 2015 Final Permit for the Sandwich State Fish Hatchery (MA0110027).

Part 5 of the Draft AQUAGP (Narrative Effluent Limitation Requirements) established technology-based limits for total suspended solids (TSS) and 5-day biochemical oxygen demand (BOD) in accordance with the technology-based effluent limitations guidelines (ELGs) for the CAAP point source category for flow-through and recirculating systems. 40 CFR Part 451 Subpart A. *See also* 40 CFR § 125.3(c)(1). The ELGs apply to facilities that produce 100,000 pounds or more per year of aquatic animals. The BMPs are the best practicable control technology current available (BPT) for flow-through and recirculating systems at fish hatcheries. 40 CFR § 451.11. The BPT limitations at 40 CFR § 451.11 are also the best available technology (BAT) and new source performance standards (NSPS). 40 CFR §§ 451.12 and 451.14. In addition, the Draft AQUAGP also established technology-based limits consistent with the ELGs on a case-by-case basis for facilities that produce less than 100,000 pounds of fish per year. As these case-by-case, BPJ-based limits are consistent with the technology-based limits imposed in individual permits issued to hatcheries in MA, NH, and VT, EPA expects that facilities can already meet these requirements.

As the comment points out, some individual permits issued to hatcheries in MA, NH, and VT established numeric, technology-based limits for TSS and BOD on a best professional judgement (BPJ) basis in addition to BMPs. The BPJ-based numeric limits preceded the promulgation of the narrative ELGs for CAAP facilities and were not consistently applied to all of the hatcheries for which EPA is the permitting authority in Region 1. Most of these individual permits set a

maximum daily limit of 10 mg/L for both TSS and BOD, though some set slightly less stringent limits (a maximum daily limit of 15 mg/L) and some slightly more stringent (an average monthly limit of 5 mg/L at one facility and a maximum daily BOD limit of 5 mg/L at another). To ensure that the technology-based limits were implemented and effective for controlling the discharge of solids, the Draft AQUAGP also proposed a single, daily maximum benchmark concentration of 10 mg/L for TSS in lieu of the variable effluent limitations established in certain individual permits. These narrative limits and benchmark would ensure that hatcheries continue to implement the management practices in accordance with 40 CFR § 125.3(c) to achieve consistently low levels of TSS and BOD, regardless of whether the hatchery has been subject to numeric limits.

The comment indicates that eliminating the numeric technology-based TSS and BOD limits for some facilities is backsliding (i.e., the benchmark and narrative limits in the Draft AQUAGP are less stringent than the numeric TSS and BOD limits in certain individual permits). EPA proposed to establish the benchmark and BMPs in order to provide for consistent permit requirements across the universe of hatcheries in New England for which EPA is the permitting authority. *See* Fact Sheet p. 20. EPA expects that hatcheries will continue to discharge effluent at concentrations less than 10 mg/L (the most commonly applied numeric limit in individual permits in MA and VT) as they have under individual permits by implementing and maintaining solids control management BMPs regardless of whether the individual permits include numeric limits.[3]

In response to this comment, EPA has re-evaluated whether there is another option to improve consistency of permit requirements across this class of facilities and to streamline administration of the general permit. Although EPA decided not to establish national numeric limits for TSS as the ELGs for the CAAP point source category, EPA did not restrict a permit writer's authority to impose site-specific numeric effluent limits on TSS or other pollutants in appropriate circumstances. *See* 69 Fed. Reg. at 51899 ("EPA's decision to not establish national numeric limits for TSS will not restrict a permit writer's authority to impose site-specific numeric effluent limits on the discharge of TSS or other pollutants in appropriate circumstances."). EPA explicitly enumerated "general permits applicable to classes of facilities" as a circumstance where numeric limits may be appropriate. *See Id*.

[3] A review of DMR data for hatcheries in MA and NH over the past five years demonstrates that TSS and BOD concentrations at all hatcheries are consistently well below the BPJ-based numeric limits. For example, the McLaughlin State Fish Hatchery (MA0110043), which is subject to numeric limits, consistently reports TSS and BOD concentrations between 1.5 and 4 mg/L with a maximum reported TSS concentration of 5.2 mg/L. The Twin Mountain State Fish Hatchery (NH0000744), which is *not* subject to numeric limits but is required to implement BMPs, consistently reports TSS and BOD concentrations below a minimum level of 2 mg/L (i.e., non-detect) with a maximum reported TSS concentration of 2 mg/L. In fact, out of 408 quarterly TSS and BOD sampling events between December 2015 and September 2020 at hatcheries likely to seek general permit coverage in MA and NH, just one sample exceeded 10 mg/L (a TSS concentration of 12 mg/L at Warren State Fish Hatchery in March 2018). Among all the hatcheries, the average TSS concentration was 1.5 mg/L and the average BOD concentration was 1.4 mg/L. The discharge monitoring data confirms that the narrative, technology-based requirements implemented by every hatchery in MA and NH is the primary driver controlling TSS and BOD levels in the effluent.

Of the twelve hatcheries expected to seek coverage under the AQUAGP, all are currently subject to the narrative BMPs and nine are subject to BPJ-based, numeric TSS and BOD limits in their individual permits. The hatcheries employ the same technologies to control the discharge of solids, including by optimizing feed management to limit the amount of solids introduced to the system and employing systems for solids settling: either in quiescent zones located at the end of each raceway, in raceways at the end of a series dedicated to settling, or in settling ponds or lagoons. *See* Fact Sheet p. 20. Settled solids are removed by vacuuming or by draining though standpipes in the quiescent zone. Collected solids may be discharged off-site or to larger settling basins. *Id*. The feed optimization, flow-through production systems, settling systems, and cleaning procedures, which are implemented in accordance with technology-based BMPs at all of the hatcheries expected to seek coverage under the AQUAGP, consistently achieve low levels of TSS (below 10 mg/L). Establishing numeric, technology-based limits in the AQUAGP consistent with the performance of BMPs to control solids (based on the best practicable control technology currently available (BPT) for the CAAP point source category) and the BPJ-based limits already in place in most of the existing individual permits will not require hatcheries to install or operate any new technology. As explained above, all of the hatcheries currently meet the BPJ-based numeric limits; the hatcheries will meet numeric limits without additional cost or effort beyond what the Draft AQUAGP required with respect to the factors for setting case-by-case limitations. 40 CFR § 125.3(d)(2).

Therefore, the Final AQUAGP establishes a numeric, technology-based limit of 10 mg/L for both TSS and BOD tailored to the specific operations of the class of facilities eligible for the AQUAGP.[4] All hatcheries that seek authorization to discharge under the AQUAGP are subject to the BPJ-based numeric limits, which ensures a consistent permitting approach for hatcheries in the eligible geographic area. The Final AQUAGP also carries forward mass-based TSS and BOD limits for those facilities which are currently subject to mass-based limits in individual permits. Finally, the Final AQUAGP carries forward site-specific limits at two hatcheries that are currently subject to TSS and BOD limits that are more stringent than the AQUAGP in accordance with regulations at 40 CFR § 122.44(l)(1): an average monthly TSS and BOD limit of 5 mg/L at the North Attleboro Fish Hatchery and a maximum daily BOD limit of 5 mg/L at the Sandwich State Fish Hatchery.

Comment J.2.2

EPA fails to adequately justify its removal of numeric effluent limits in the draft AQUAGP in light of the Clean Water Act's Anti-Backsliding Provision.

EPA attempts to justify its impermissible backsliding with the dubious argument that vague and subjective BMPs are the equivalent of robust enforceable quantitative effluent limits:

> EPA has chosen to replace the numeric limits in the existing permits with technology-based BMPs requirements which have proven effective for controlling pollutants such as

[4] The numeric TSS and BOD limits replace the proposed monitoring and benchmark in the Draft AQUAGP. As a result, footnote 9 in Parts 1.1, 2.1, and 3.1, as well as Part 5.5 of the Draft AQUAGP (Benchmark Requirements for TSS) were eliminated in the Final General Permit.

> TSS and BOD for these facilities. Since the data shows that the Permittees' existing numeric limits are met with BMPs, EPA is replacing the numeric limits with equivalent, narrative, technology-based effluent limits in the form of BMPs and is including a TSS benchmark reporting requirement to monitor the effectiveness of the BMPs. Because the narrative limits are equivalent to the numeric limits and EPA has included a benchmark requirement to ensure compliance with the narrative limits, the change from numeric to narrative limits is not less stringent. Fact Sheet at 14-15.

EPA's argument here is flawed for the following four reasons:

> (1) These nine hatcheries all already have BMP requirements in their current permits. The BMP requirement therefore cannot be a replacement for the numeric limits, for the simple reason that they are not being added to the requirements hatcheries must follow. With the removal of the above effluent limits, these ten hatcheries have fewer requirements to follow – even when considering the BMP requirements.
>
> (2) Narrative limits like BMPs are too different from quantitative effluent limits to possibly be an adequate substitute, even when they include unenforceable benchmarks.[1] Quantitative effluent limits provide a concrete goal for hatcheries to strive for in their waste management process, as well as real incentives for the hatcheries to meet this goal. Violations of effluent limits are self-reported through DMRs, unlike violations of BMPs or other narrative limits, which allows EPA or citizen groups like CLF to more easily be aware of violations and to hold polluters accountable for them. In contrast, ensuring compliance with the BMP-dependent draft AQUAGP would require the expenditure of significant EPA resources to conduct more frequent inspections.
>
> (3) EPA fallaciously assumes that because these nine hatcheries have used BMP Plans to remain in compliance with the numeric limits in their current permits, that these BMP Plans alone would be sufficient to protect water quality – even in the absence of robust numeric limits. It is much more likely that for these hatcheries, their enforceable numeric limits were the driving force for compliance, not their difficult-to-enforce BMP requirements. EPA's argument is illogical – if the nine hatcheries above have been able to meet their numeric limits, there is no reason to remove them. The Clean Water Act does not allow EPA to reward compliant facilities by relaxing their limits.
>
> (4) Furthermore, as discussed below, even if it were possible for a BMP requirement to be sufficiently protective of downstream water quality in the absence of numeric limits, the BMPs in the AQUAGP are not. The BMPs here are written with vague and subjective language, and therefore would be difficult to enforce and unlikely to motivate compliance.

Response to Comment J.2.2

As explained in Response to Comment II.J.2.1, above, the Final AQUAGP establishes a numeric, technology-based limit of 10 mg/L for TSS and BOD tailored to the specific operations of the class of facilities eligible for the general permit coverage. All hatcheries that seek

authorization to discharge under the AQUAGP are subject to the BPJ-based numeric limits, which ensures a consistent permitting approach for hatcheries in the eligible geographic area. In addition, the Final AQUAGP carries forward site-specific limits at two hatcheries that are currently subject to TSS and BOD limits that are more stringent than the AQUAGP in accordance with regulations at 40 CFR § 122.44(l)(1): an average monthly TSS and BOD limit of 5 mg/L at the North Attleboro Fish Hatchery and a maximum daily BOD limit of 5 mg/L at the Sandwich State Fish Hatchery. Having established numeric TSS and BOD limits in the Final AQUAGP, the general permit is as stringent or more stringent than the current, individual hatchery permits and, as such, address the comments associated with anti-backsliding.

The technology-based limits in the AQUAGP, which are based on the performance of the BMPs implemented by the hatcheries in MA, NH, and VT, will improve consistency and streamline administration of the general permit. At the same time, the concerns that the narrative, technology-based BMPs are not sufficiently protective of water quality are unfounded. The BPJ-based numeric limits in some individual permits issued to hatcheries preceded the promulgation of the narrative ELGs for CAAP facilities and were based on a review of effluent data from hatcheries in MA and NH as well as effluent limits for hatchery general permits including those issued in Idaho and Oregon. In this way, the numeric, BPJ-based technology-based limits were based on the operations and best management practices required in individual permits, which are consistent with the BMPs established as permit requirements at Part 5 of the Draft AQUAGP. Discharge monitoring data indicates that the narrative, technology-based requirements implemented by every hatchery in MA and NH, including requirements for solids control, feed management, and cleaning procedures, is the primary driver controlling TSS and BOD levels in the effluent and not the numeric limits.

Comment J.2.3

EPA fails to adequately justify its removal of numeric effluent limits in the draft AQUAGP in light of 40 C.F.R. § 122.44(d).

In section 2.3.1 of the Fact Sheet, EPA acknowledges that the draft AQUAGP "must limit any pollutant or pollutant parameter . . . that is or may be discharged at a level that 'causes, or has the reasonable potential to cause, or contribute' to an excursion above any water quality standards." Fact Sheet at 13 (citing 40 C.F.R. § 122.44(d)). EPA goes on to conclude that "[t]he effluent limits and narrative requirement established in the Draft AQUAGP assure that the water quality standards of the receiving waters will be protected, maintained, and/or attained." *Id.* The evidence to support this broad statement is disjointed and widely scattered throughout the draft AQUAGP among different facilities with different requirements and conditions. EPA does not provide sufficient evidence to prove that each of the twelve receiving waters covered by the draft AQUAGP will be able to maintain their water quality standards despite the lack of quantitative effluent limits for many crucial pollutant criteria relating to nutrient pollution for most of the covered hatcheries.

Most concerningly, EPA does not explain how it is able to conclude that adding nitrogen to the Long Island Sound watershed does not or will not cause or have the reasonable potential to cause

or contribute to the watershed's failure to meet its water quality standards. The Long Island Sound watershed is subject to a TMDL for nitrogen and is suffering from excess nitrogen pollution; however, under the draft AQUAGP, two of the Massachusetts hatcheries that discharge into it (the Sunderland Fish Hatchery, and the Montague Fish Hatchery [also known as the Bitzer Hatchery]) as well as the Twin Mountain State Fish Hatchery in New Hampshire do not have any effluent limits for either nitrogen or ammonia. EPA instead assumes that unenforceable BMPs will enable the Hatcheries to reach WLAs set by the Long Island Sound Watershed TMDL without providing convincing evidence. *See, e.g.* Fact Sheet at 30 ("Proper implementation of BMPs will go towards minimizing nitrogen discharges to the Long Island Sound watershed."). This will allow additional nitrogen to enter the Long Island Sound watershed, which does not currently attain water quality standards for dissolved oxygen due to excess nitrogen.

When issuing permits for permittees who discharge into waterbodies or watersheds with TMDLs (or tributaries to waterbodies with TMDLs), including Long Island Sound, the Lake Champlain Watershed, the Ten Mile River Watershed, the Sandwich Harbor Watershed, and the Nashua River, EPA should justify and enumerate specific reductions in Waste Load Allocation (WLA) to reduce the load of nutrient pollutant entering the water. EPA does not require WLA reductions in the draft AQUAGP. When drafting the final permit or permits, EPA should reevaluate and look for opportunities to require enforceable reductions in the pollution load from hatcheries discharging into waters with TMDLs.

Response to Comment J.2.3

The AQUAGP will ensure that water quality standards of the receiving waters for facilities covered by the general permit are met. The comment offers no technical information or analysis that any of the facilities that are expected to seek coverage under the AQUAGP, or any other facility that might be eligible, would require numeric, water quality-based effluent limitations for any parameter because the technology-based effluent limits or existing numeric limits in the AQUAGP are insufficient to ensure that water quality standards are met. EPA addressed similar comments about water quality impacts in Response to Comment II.J.3.1. To ensure that water quality standards continue to be met, the Final AQUAGP requires ambient monitoring for total phosphorus, total nitrogen, and chlorophyll-a during the growing season (June through September). New Hampshire State Conditions also require facilities to develop an ambient monitoring plan including appropriate response indicators. Should monitoring data collected during the term of this permit indicate that a facility may have the reasonable potential to cause or contribute to a violation of WQS, EPA will reevaluate such a facility's discharge to determine whether it is appropriate for coverage under this General Permit and/or whether a specific WQBEL is necessary.

The comment suggests EPA justify WLAs to reduce the discharge of nutrients for receiving water with TMDLs, including Long Island Sound, the Lake Champlain Watershed, the Ten Mile River Watershed, the Sandwich Harbor Watershed, and the Nashua River. A TMDL defines the amount of a pollutant that a waterbody can assimilate without exceeding the state's water quality standard for that waterbody. CWA § 303(d)(1)(C), 33 U.S.C. § 1313(d)(1)(C). TMDLs are set at a level that incorporates seasonal variations of the waterbody and a margin of safety that takes

into account gaps in knowledge. *Id*. The TMDL then allocates a portion of the receiving water's pollutant loading capacity among facilities discharging to the impaired waterbody. 40 C.F.R. §§ 130.2(h). These wasteload allocations ("WLAs") for point sources, which are based on the underlying water quality standards, may serve as a basis for water quality-based effluent limitations in permits. For the AQUAGP, EPA carried forward the numeric TP limit for the Dwight D. Eisenhower National Fish Hatchery consistent with the WLA in the Lake Champlain TMDL. *See* Part 3.2 of the Final AQUAGP. *See also* 2008 Fact Sheet for VT0000451 pp. 6-7 and 2002 Lake Champlain TMDL pp. 23, 26. The Final AQUAGP also sets appropriate requirements for facilities in the Long Island Sound watershed consistent with the Long Island Sound TMDL and with the EPA's nitrogen reduction strategy for facilities that discharge to the Long Island Sound watershed. *See* Part 5.5. *See also* Response to Comment II.J.3.1. The Rhode Island Department of Environmental Management (RIDEM) developed an EPA-approved TMDL for the Ten Mile River watershed, but the TMDL does not set a WLA for the North Attleboro National Fish Hatchery. EPA addresses concerns raised about the discharge to the Bungay River in Response to Comment II.J.3.1. Finally, neither the Nashua River nor Sandwich Harbor currently have a TMDL for nutrients that could be used to inform water quality-based limits for hatcheries in those watersheds. The AQUAGP can be reissued or modified in the future if either water body has an approved TMDL for nutrients that establishes WLAs for point source reductions.

Comment J.3

The Draft AQUAGP Fails to Establish Effluent Limitations, Monitoring Frequencies, or Best Management Practices That Will Ensure Attainment of Water Quality Standards.

Comment J.3.1

The AQUAGP should set mass and concentration-based quantitative water quality-based effluent limitations, more frequent monitoring, and ambient water quality testing for the covered hatcheries.

As EPA writes in the Draft AQUAGP Fact Sheet ("Fact Sheet"), Water Quality-Based Effluent Limitations ("WQBELs") "are required in NPDES permits when EPA and the States determine that effluent limitations more stringent than technology-based effluent limitations are necessary to attain or maintain State or Federal water quality standards." Fact Sheet at 13 (citing 33 U.S.C. § 1311(b)(1)(C)). Due to the harmful and ecologically disruptive nature of nutrient pollution, EPA should add individual WQBELs for nutrient pollution-related criteria (phosphorus, nitrogen, ammonia, TSS, and BOD) for all of the covered hatcheries.

In particular, EPA should be sure to set mass and concentration-based WQBELs for the below hatcheries which discharge into watersheds or into tributaries of waterbodies that have TMDLs for phosphorus or nitrogen, are impaired for nutrient pollution, and/or have experienced cyanobacteria blooms in the past:

- The **Pittsford National Fish Hatchery** (also known as the Dwight D. Eisenhower National Fish Hatchery) discharges to Furnace Brook in the Lake Champlain watershed, which has a TMDL for phosphorus. The draft AQUAGP has a total phosphorus concentration limit specific to the Pittsford Hatchery; however, it is lacking a mass-based phosphorus limit. The Lake Champlain Watershed TMDL is based on total mass of phosphorus discharged, not concentration, so EPA should add mass-based total phosphorus limits for Pittsford Hatchery to the AQUAGP. The AQUAGP should also include mass and concentration-based numeric effluent limits for TSS from the Pittsford Hatchery, as it would be the main driver for phosphorus.
- The **White River National Fish Hatchery**, the **Charles L. McLaughlin State Fish Hatchery**, the **Sunderland Fish Hatchery**, the **Montague Fish Hatchery** (also known as the Bitzer Hatchery), and the **Twin Mountain State Fish Hatchery** all discharge into the Long Island Sound Watershed, which has a TMDL for nitrogen and as a result of excess nitrogen, currently does not attain water quality standards for dissolved oxygen. Although the draft AQUAGP includes a specific numeric limit for ammonia from the White River Hatchery, it does not include one for the McLaughlin, Sunderland, or Montague Hatcheries. The draft AQUAGP also does not include numeric effluent limits for TSS or total nitrogen for any of the four hatcheries. The AQUAGP should include both mass and concentration-based numeric effluent limits for ammonia, total nitrogen, and TSS for the White River, McLaughlin, Sunderland, and Montague Hatcheries.
- The **Sunderland State Fish Hatchery** discharges into Russellville Brook in the Connecticut River Watershed. **Twin Mountain State Fish Hatchery** discharges into a tributary to Carroll Stream, a tributary of the Johns River, which flows into the Connecticut River. Many waterbodies within the Connecticut River Watershed, including segments of the Connecticut River itself, are listed as impaired for nutrients and require a TMDL. Russellville Brook is currently being monitored for nutrients and dissolved oxygen through MassDEP's Division of Watershed Management's Surface Water Monitoring Program. EPA should add to the AQUAGP mass and concentration-based quantitative effluent limits for total phosphorus and total nitrogen, as well as for TSS and BOD for the Sunderland Hatchery and the Twin Mountain Hatchery.
- The **North Attleboro National Fish Hatchery** discharges into the Bungay River, a tributary of the Ten Mile River. The Ten Mile River Watershed has a TMDL for phosphorus and frequently experiences cyanobacteria and algal blooms. Ten Mile River TMDL at 34. Impoundments along the River have been classified as eutrophic. *Id.* at 35. In 2012, the Ten Mile River and its tributaries were listed as impaired for phosphorus on the Rhode Island 303(d) list. The draft AQUAGP does not include numeric effluent limits for BOD, TSS, or total phosphorus for the North Attleboro Hatchery, despite the "potential" for the hatchery to be "a significant source of phosphorus." *Id.* at 69. The AQUAGP should therefore include both mass and concentration-based numeric effluent limits for BOD, TSS, and total phosphorus for the North Attleboro Hatchery.
- The **Sandwich State Fish Hatchery** discharges into Dock Creek, which is part of the Sandwich Harbor Estuary within the Sandwich Harbor Watershed. The Sandwich Harbor Watershed currently has a TMDL for nutrients in progress. The draft AQUAGP only includes a numeric effluent limit for nitrogen for the Sandwich Hatchery. Given that the scope of the TMDL will extend beyond nitrogen (as well as the driving role that TSS

plays in nutrient pollution), EPA should add to the AQUAGP mass and concentration-based quantitative effluent limits for total phosphorus and total ammonia, as well as for TSS and BOD for the Sandwich Hatchery.

- The **Milford State Fish Hatchery** discharges into Purgatory Brook, which, after a short distance, flows into the Souhegan River, a tributary of the Merrimack River. The Souhegan River is listed as impaired for dissolved oxygen, a type of impairment which is exacerbated by eutrophication from nutrient pollution. Segments of the Merrimack River downstream from the Hatchery are also impaired for dissolved oxygen, dissolved oxygen saturation, and/or total phosphorus. EPA should add to the AQUAGP mass and concentration-based quantitative effluent limits for total phosphorus and total nitrogen, as well as for TSS and BOD for the Milford State Fish Hatchery.
- The **Nashua National Fish Hatchery** discharges into a wetland adjacent to the Nashua River. The Nashua River has experienced cyanobacteria outbreaks and was under a New Hampshire DES cyanobacteria warming from August 3-28 2018. NHDES, *State REMOVES Cynobacteria Warning for Mine Falls on the Nashua River in Nashua, NH* (August 28, 2018), https://www.des.nh.gov/media/pr/2018/20180828-cyanobacteria-nashua.htm. Segments of Nashua River are listed as impaired for dissolved oxygen, dissolved oxygen saturation, and chlorophyll-a (an indicator of eutrophication from nutrient pollution). The Nashua River in Massachusetts has a TMDL for phosphorus, prepared by MassDEP in 2007. EPA should add to the AQUAGP mass and concentration-based quantitative effluent limits for total phosphorus and total nitrogen, as well as for TSS and BOD for the Nashua National Fish Hatchery.

EPA should require more frequent monitoring of phosphorus, nitrogen, ammonia, TSS, and BOD in the AQUAGP. By limiting the testing of these important effluent characteristics to only once per month or once per quarter, EPA will have less data and a lower resolution picture of precisely how much nutrient pollution is entering the receiving waters. More frequent testing (at a rate of once per week or once every two weeks) would also provide greater deterrence for the covered hatcheries, as it allows for more opportunities for potential violations to be detected.

EPA should also require the covered hatcheries to test their receiving waters for indicia of eutrophication at least twice per month. These indicia include total phosphorus, total nitrogen, chlorophyll-a, dissolved oxygen, and Secchi Disc transparency. These ambient characteristics serve as a warning sign for eutrophication and provide a concrete metric for evaluating whether water quality standards are being met. EPA can use the results of this water quality testing to ensure that the receiving waters for the covered hatcheries are fulfilling state water quality standards and to add or modify WQBELs accordingly when standards are not being met.

Response to Comment J.3.1

EPA maintains that the technology-based effluent limitations and monitoring requirements, including narrative limits consistent with the ELGs for the CAAP point source category, as well as the improved consistency in the regulation of hatcheries for which EPA is the permitting authority in MA, NH, and VT, provide appropriate and meaningful water quality protections. The AQUAGP also establishes water quality-based effluent limitations for pollutants associated with drugs and chemicals (total residual chlorine, formaldehyde, and hydrogen peroxide) to

ensure effluent will meet the water quality criteria after consideration of dilution. In addition, in response to comments received, the Final AQUAGP establishes a numeric, technology-based limit of 10 mg/L for TSS and BOD tailored to the specific operations of the class of facilities eligible for the general permit coverage. All hatcheries that seek authorization to discharge under the AQUAGP are subject to the BPJ-based numeric limits, which ensures a consistent permitting approach for hatcheries in the eligible geographic area. *See* Response to Comments in II.J.2.1. The numeric, concentration-based TSS and BOD limits will ensure that the BMPs effectively manage solids and are consistent with the technology-based limits set in individual permits for hatcheries in Massachusetts and Vermont. EPA has determined that concentration-based limits are appropriate for these facilities in light of the variable incoming flow, which in many cases is outside the control of the facility (e.g., natural spring-fed facilities), the inability of the systems to simply add flow for dilution purposes immediately before discharge due to the manner in which aquaculture facilities are physically situated, and the fact that available monitoring demonstrates the facilities' discharges consistently fall well below this numeric limit (and as such, well below any load based on this concentration).

EPA may impose effluent limitations based on water-quality considerations in NPDES permits when EPA and the States determine that effluent limitations more stringent than technology-based effluent limitations are necessary to attain or maintain State or Federal water quality standards. *See* CWA §301(b)(1)(C) and 40 CFR §§ 122.44(d)(1), 122.44(d)(5), 125.84(e), and 125.94(i). The comment asserts that the AQUAGP should establish numeric, water quality-based limits for hatcheries which discharge into watersheds or into tributaries of waterbodies that have TMDLs for phosphorus or nitrogen, are impaired for nutrient pollution, and/or have experienced cyanobacteria blooms in the past.

Effluent Limits Based on TMDLs

First, the AQUAGP establishes appropriate water quality-based effluent limitations for hatcheries which discharge into watersheds or into tributaries of waterbodies that have TMDLs for phosphorus or nitrogen. The Draft AQUAGP established numeric, water quality-based effluent limitations for the Dwight D. Eisenhower (formerly Pittsford) National Fish Hatchery based on Vermont water quality standards and the Lake Champlain TMDL. *See* Part 3.2 of the Draft AQUAGP and Fact Sheet p. 32. The numeric TP limits in this case, which are based on the TMDL, are consistent with water quality standards. *See* Environmental Protection Rule Chapter 29A-302(2)(C).The comment requests that the Final AQUAGP "add mass-based total phosphorus limits" for the Eisenhower National Fish Hatchery, but the Draft AQUAGP already includes an annual mass-based total phosphorus (TP) limit of 1,523 pounds per year, which is based on the waste load allocation for the hatchery in the Lake Champlain TMDL. *See also* Response to Comment II.J.2.3.

In addition, the Draft AQUAGP established narrative, water quality-based effluent limits for hatcheries discharging to Long Island Sound (LIS) consistent with EPA's approach to the LIS TMDL for publicly owned treatment works (POTWs). EPA has adopted a systemic, state-by-state approach to reduce out-of-basin loading of nitrogen pollution into Long Island Sound from POTW point sources in Massachusetts, New Hampshire, and Vermont, through the coordinated issuance of individual NPDES permits ("Out-of-Basin Permitting Approach"). *See* Appendix A.

That approach prioritizes effluent limits for major POTW facilities with design flow greater than 1 MGD. POTW facilities above 1 MGD account for approximately 80% of the total out-of-basin load. EPA determined that the facilities smaller than 1 MGD collectively account for a relatively small amount of the total load, nitrogen optimization is a reasonable point of departure, given their comparatively small loads and user bases. Similar to POTWs smaller than 1 MGD, all industrial users in MA and NH represent less than 5% of the total load of the out-of-basin dischargers to LIS. *See* Appendix B. Of that small industrial load, hatcheries eligible for coverage under the AQUAGP represents an even smaller subset (about 1% of the total load of out-of-basin dischargers to LIS). Accordingly, EPA has determined that nitrogen optimization is a reasonable approach for these facilities. The optimization requirements in the Final AQUAGP ensure that TN discharges remain at or below current levels and will prevent future increases that could cause or contribute to further degradation of Long Island Sound.

The comment also recommends that EPA establish numeric, water quality-based effluent limits for two additional hatcheries consistent with a TMDL: the North Attleboro National Fish Hatchery (which discharges to the Ten Mile River watershed) and the Sandwich State Fish Hatchery (which ultimately discharges to Sandwich Harbor). In 2014, the Rhode Island Department of Environmental Management (RIDEM) developed a TMDL addressing multiple pollutants, including total phosphorus, for the Ten Mile River watershed in Rhode Island. According to the TMDL, the majority of baseflow of the Ten Mile River at the MA/RI state line consists of treated effluent from two municipal wastewater treatment facilities in MA. The TMDL recommends efforts to improve water quality in the effluent discharged from the two MA WWTFs[5] and focuses on urban stormwater runoff, nuisance waterfowl populations, and fertilizer applications in RI. The TMDL did not determine that the North Attleboro Hatchery is a significant source of phosphorus and did not set a WLA for the hatchery. *See* AR-51 p. 117 ("Under baseflow conditions (including 7Q10) there are no significant sources of phosphorus to the upper Ten Mile River, other than two wastewater treatment facility discharges located in Massachusetts.").

The comment provides no references for its statement that Sandwich Harbor "currently has a TMDL for nutrients in progress" and EPA is not aware of any draft or final TMDL for Sandwich Harbor for use in setting water quality-based numeric limits for nutrients. In 2015, the Massachusetts Estuaries Project developed a watershed-embayment model for nitrogen loading thresholds in Sandwich Harbor Estuary, which assisted with the Town of Sandwich's ongoing nitrogen management decisions and development of its 2017 Comprehensive Water Resources Management Plan. *See* AR-49, AR-50. Based on the modeling, Sandwich Harbor (including inputs from Dock Creek) is estimated to be well below the threshold nitrogen level that would cause water quality impacts. *See id*. Executive Summary pp. 9, 125, 128, 133. The current levels of nitrogen loading to Dock Creek and to Sandwich Harbor support a healthy salt march ecosystem. Based on currently available information, it does not appear that nutrient discharges to Dock Creek are impacting water quality.

[5] The TMDL establishes allowable phosphorus loads for the Massachusetts portion of the watershed for the purposes of the 7Q10 analysis but does not assign a load or wasteload allocation. AR-XX p. 121.

EPA maintains that the Final AQUAGP establishes water quality-based effluent limits consistent with TMDLs for the Lake Champlain and Long Island Sound TMDLs. At this time, these are the only two TMDLs that set an appropriate basis for effluent limits for discharges from hatcheries. If, in the future, a TMDL establishes a WLA or sets a numeric limit for nutrients that can be used to inform a water quality-based effluent limit for a covered facility, the facility may be required to seek individual permit coverage. *See* Final AQUAGP Part 6.6.

Water Quality-based Effluent Limits

The water quality standards for nutrients in MA and NH are narrative and generally prohibit discharges of phosphorus and/or nitrogen at concentrations that would cause or contribute to impairment of any existing or designated uses. *See* Massachusetts Surface Water Quality Standards 314 CMR 4.05(5)(c), New Hampshire Surface Water Quality Standards Env-Wq 1703.14. Both states assess these narrative standards using "response" indicators of nutrient-related impacts, such as the presence of nuisance growth of algae or other aquatic plants (including cyanobacteria), changes in benthic macroinvertebrate community structure, diel fluctuations in dissolved oxygen, and chlorophyll-a concentrations. *See* AR-61, AR-52. Vermont Surface Water Quality Standards for rivers include narrative criteria for phosphorus limiting phosphorus loadings to levels that will not contribute to acceleration of eutrophication or prevent the full support of existing or designated uses. *See* Environmental Protection Rule Chapter 29A-302(2)(A). In addition, Vermont State law 10 V.S.A. § 1266a ("Discharges of Phosphorus") establishes numeric phosphorus criteria for direct discharges into the drainage basins of Lake Champlain or Lake Memphremagog.

The comment recommends establishing water quality-based effluent limitations for nutrient-related criteria (phosphorus, nitrogen, ammonia, TSS, and BOD) for hatcheries which "are impaired for nutrient pollution, and/or have experienced cyanobacteria blooms in the past." Effluent limitations must control pollutants that are or may be discharged at levels which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including narrative criteria for water quality. 40 CFR § 122.44(d)(1)(i). In response to the comment, EPA reassessed the record to determine if the discharges covered under the AQUAGP are likely to have reasonable potential to cause or contribute to excursions of water quality standards in the receiving waters and whether the technology-based limits in the AQUAGP sufficiently control levels of pollutants to ensure protection of the water quality of the downstream waters. Notably, previous permits did not require ambient data for these facilities and thus EPA does not have a robust record for the immediate downstream impacts from these dischargers.

In the absence of numeric water quality standards for nitrogen and phosphorus, and given the lack of available ambient data, EPA has elected to use a weight-of-evidence approach to evaluate reasonable potential. EPA looked for occurrences of excessive algal growth or harmful algal blooms in the receiving waters as evidence that the discharges may have reasonable potential to cause or contribute to excursions of narrative standards for nutrients. None of the hatcheries expected to seek coverage under the general permit discharge directly to a receiving water that is identified on the Commonwealth of Massachusetts, the State of New Hampshire, or the State of Vermont approved 303(d) lists as impaired due to total nitrogen (TN) or total phosphorus (TP).

However, some hatcheries discharge to receiving waters that exhibit impacts related to excessive nutrients and many more discharge to tributaries of rivers or to watersheds which exhibit impacts related to excessive nutrients or are impaired for nutrients. As the comment points out, water quality issues related to excess nutrients (e.g., dissolved oxygen, chlorophyll-a, cyanobacteria blooms) and/or nutrient impairments have been identified in waterbodies downstream of hatcheries located in the Long Island Sound, Lake Champlain, Merrimack, and Ten Mile River watersheds. Discharges of nutrients from eligible hatcheries may reasonably contribute to water quality issues in watersheds that are experiencing impacts from excessive nutrient levels, including growth of non-native aquatic plants, changes in macroinvertebrate communities, algal blooms.

At this time, there is insufficient information to characterize nutrients in the effluent and in the receiving water for a quantitative assessment of reasonable potential and to serve as a basis for numeric nutrient limits. Parts 1.3.a to 1.3f, 2.2.a to 2.2.d, and 3.3.a to 3.3.e ensure that the narrative State water quality standards are met. In addition, BMPs may be expressly incorporated into a permit on a case-by-case basis where it is determined that they are necessary to achieve effluent limitations and standards or to carry out the purpose and intent of the CWA under § 402(a)(1). *See* 40 CFR § 122.44(k). *See also* Fact Sheet p. 35. Part 5.4 of the Final AQUAGP establishes BMPs for controlling pollutant loads, including nutrients. The Fact Sheet (p. 35) explains that the BMPs were intended to ensure that discharges from the hatcheries meet State water quality standards pursuant to CWA § 301(b)(1)(C) and 40 CFR § 122.44(d)(1).

After reviewing the record and in response to the comment, EPA finds that additional protection for downstream waters is warranted given that hatcheries are known to discharge nutrients and could potentially contribute to nutrient or nutrient-related impacts downstream of the receiving waters. Part 5.4.h of the Draft AQUAGP proposed additional, water quality-based BMPs for optimizing the removal of nitrogen for those facilities which discharge to the Long Island Sound watershed consistent with EPA's "out-of-basin permitting approach." This provision requires hatcheries to review existing BMPs and enhance or implement new BMPs that target nitrogen reductions, and then track nitrogen loads through the permit term to ensure that reductions are maintained. Part 5.5 of the Final AQUAGP expands these provisions to target reductions in both total nitrogen and total phosphorus for all hatcheries covered under the general permit. In addition, the Final AQUAGP requires Permittees to conduct upstream and downstream ambient monitoring for total phosphorus, chlorophyll-a, and total nitrogen twice per month during the growing season (June through September). This ambient data will inform future reasonable potential analysis to determine if additional BMPs and/or numeric water quality-based limits are warranted.

Conclusion

Based on the available technical information and data, the narrative, technology-based and water quality-based effluent limits in the Final AQUAGP will ensure that discharges do not cause or contribute to an exceedance of narrative water quality standards related to nutrients and water quality standards of the receiving waters will be protected, maintained, and/or attained. Under the AQUAGP, hatcheries will consistently monitor and report TN and TP in addition to TSS and BOD. EPA and the States can review monitoring data considering any changes in 303(d) listings

for impaired waterbodies. In addition, the Final AQUAGP requires ambient monitoring for total phosphorus, chlorophyll-a, and total nitrogen during the growing season (June through September). This ambient data will inform a quantitative reasonable potential analysis for future issuance to determine if impacts from any discharge warrant either enhanced water quality-based BMPs or a numeric, water quality-based effluent limit for nutrients. EPA may require any discharger authorized by the AQUAGP to obtain individual permit coverage if circumstances of the receiving water change. 40 CFR § 122.28(b)(3)(E) and (G). In addition, there may be additional hatcheries that seek coverage under the AQUAGP that are not currently authorized under individual permits. In this case, EPA would consider the size of the discharge, the quantity and nature of the effluent, and the location with respect to impaired waters when determining if the facility is eligible for coverage. Finally, the limitations on coverage in the AQUAGP exclude discharges of pollutants identified as the cause of an impairment to receiving water segments unless the concentration is at or below a concentration that meets water quality standards.

Comment J.3.2

The best management practices in the draft AQUAGP are not protective of water quality standards and should be rewritten to be robust and enforceable.

As discussed above, EPA proposes to replace numeric effluent limitations for nutrient pollution-related pollutants with "technology-based BMPs requirements." Fact Sheet at 14. This is problematic, given the vague language and poorly defined criteria of the BMPs which would make enforcement of these conditions nearly impossible. BMP violations are not self-reported on DMRs in the same way that violations of numeric effluent limits are, so EPA would likely only discover them by doing infrequent inspections with its limited staff. By replacing easily enforceable numeric effluent limits with unenforceable or challenging-to-enforce narrative standards, EPA removes much of the incentive for the covered hatcheries to comply.

Furthermore, the supposedly "technology-based BMPs requirements" are in fact reliant upon human action, judgment, and decision-making. Adherence with the BMPs will require regular and consistent choices by each hatchery to carry out labor-intensive tasks like cleaning, vacuuming, and hauling wastewater and waste, rather than automated or machine-controlled processes. The human-dependent nature of the BMPs increases the likelihood that human error, laziness, inadequate staffing, or cost-avoidance will introduce problems or result in non-compliance. Without enforceable limits to make noncompliance costly, hatchery managers and staff are more likely to choose the easier and less expensive route of forgoing cleanings.

The problematically vague or otherwise unenforceable BMP-related standards in the draft AQUAGP include the following:

- The benchmark of 10 milligrams per Liter for TSS is unenforceable. If exceeded, it simply requires that "the Permittee shall evaluate its best management practices (BMPs) and implement corrective actions necessary to reduce the effluent concentration below the appropriate benchmark." Draft AQUAGP at 6 fn 9, 20 -21 fn 9, 31 fn 9. EPA should

replace this unenforceable TSS benchmark with an enforceable numeric effluent limit on TSS.

- Under the draft AQUAGP, the BMPs for hatcheries discharging into the Long Island Sound watershed must document the facility's efforts to "optimize the removal of nitrogen," without defining the criteria to be optimized or setting constraints on this optimization. Draft AQUAGP at 42, 44. Without clear constraints or criteria, optimization is inherently subjective – arguably, unclear language regarding optimization could allow hatchery personnel to decide that a solution is too expensive or too much effort and therefore not optimal.
- The draft AQUAGP includes the requirement that the hatcheries' BMP Plan "[i]n order to minimize the discharge of accumulated solids . . . identify and implement . . . procedures to minimize any discharge of accumulated solids." Draft AQUAGP at 42. This sentence is poorly written and without practical guidance – a requirement that facilities must minimize their discharges of solids by minimizing their discharges is a tautology.
- The requirements for the BMP Plan laid out in the draft AQUAGP require facilities to "minimize" a number of variables without providing adequate explanation of what kind of minimization is required. Draft AQUAGP at 11, n. 13 ("minimize the use of chlorine"), 42 ("minimize potential discharges of uneaten feed and waste products" and "minimize the discharge of accumulated solids"), 44 ("minimize the annual average mass discharge of total nitrogen"). EPA should clarify whether it is requiring minimization to the maximum extent possible, practicable, or economically feasible. If the latter, EPA should further define how significant an expenditure can be while still qualifying as economically feasible.

Response to Comment J.3.2

The Final AQUAGP establishes a numeric, technology-based limit of 10 mg/L for TSS and BOD tailored to the specific operations of the class of facilities eligible for the general permit coverage. All hatcheries that seek authorization to discharge under the AQUAGP are subject to the BPJ-based numeric limits, which ensures a consistent permitting approach for hatcheries in the eligible geographic area. EPA addressed detailed comments on the inclusion of these numeric limits in Response to Comment II.J.2.1 and 2.2 and comments about establishing more stringent, water quality-based effluent limits in Response to Comment II.J.3.1. EPA also addressed comments about discharges to the Long Island Sound in Response to Comment II.J.3.1. For the hatcheries in the watershed expected to seek coverage under the AQUAGP, optimization requirements will ensure that the existing, relatively low nitrogen loads are maintained or reduced consistent with the Long Island Sound TMDL without assigning site-specific, quantifiable constraints.

The remainder of the comment raises concerns about the narrative, technology-based effluent limits that EPA established in the ELGs for the CAAP point source category. Although the ELGs are only applicable to facilities that produce more than 100,000 pounds of fish per year, EPA applied these narrative requirements to all facilities in the Draft AQUAGP based on BPJ. All of the hatcheries expected to seek coverage under the AQUAGP are already subject to these narrative requirements in individual permits. Each facility must develop a plan that describes and

documents management activities that are implemented to control the discharge of solids, nutrients, and chemicals and describes how facility personnel are controlling accidental escape and preventing the accidental discharge of stored material and dead aquatic animals. Consistent monitoring in combination with the numeric TSS and BOD limits established in the AQUAGP will ensure that the BMPs designed to control discharges of pollutants are sufficiently protective of the receiving water.

The comment argues that Draft AQUAGP Part 5.4.a.ii is "poorly written and without practical guidance." The commenter suggests the a "requirement that facilities must minimize their discharges of solids by minimizing their discharges is a tautology" but the comment misrepresents the language of the BMP. Draft AQUAGP Part 5.4.a.ii is taken directly from the ELGs for the CAAP point source category at 40 CFR § 451.11(a)(2) and reads:

> In order to minimize the discharge of accumulated solids from settling tanks, basins and production systems, identify and implement procedures for routine cleaning of rearing units and settling tanks, and procedures to minimize any discharge of accumulated solids during the inventorying, grading and harvesting of aquatic animals in the production system.

The requirement is to minimize the discharge of solids through procedures for routing cleaning of settling tanks, basins, and production systems and through procedures to minimize disturbing solids during inventorying, grading, and harvesting. Fish fecal matter and waste feed are the major source of total suspended solids from culture in flow-through and recirculating systems. EPA developed guidance available to assist in developing a plan and specific control practices for each facility to ensure compliance with the narrative requirements of the ELGs. *See* EPA's 2006 Compliance Guide for the Concentrated Aquatic Animal Production Point Source Category (AR-53). Solids must be removed from settling areas, including quiescent zones, with a sufficient frequency to prevent cohesion and limit release of solids-bound nutrients. Solids settling in rearing units can be remove and managed through routine cleaning. "Routine" frequency is defined by site-specific conditions, including the level of feed application, season, settling efficiency, relative storage capacity, and labor availability. Disturbance of settled solids during inventorying, grading, or harvesting can also result in discharge of solids. This BMP requires that the Permittee implement procedures to ensure that these activities are conducted gently with minimal disturbance of accumulated solids. The AQUAGP allow flexibility for each individual hatchery to determine how best to implement the BMPs to achieve low levels of TSS and associated pollutants.

The AQUAGP does not specify that minimization must be "to the maximum extent possible, practicable, or economically feasible." EPA recognizes that these qualifiers are common in NPDES permits where a specific level of performance is necessary. EPA disagrees that such a qualifier is required in the AQUAGP. The numeric limits for TSS and BOD, and reporting of associated pollutants will ensure that facilities are effectively implementing technologies (i.e., BMPs) to manage solids.

Comment J.4

A General Permit is Inappropriate for the Facilities to Be Covered by the Draft AQUAGP.

Comment J.4.1

The draft AQUAGP would not cover all the hatcheries or aquarium facilities within its confined existing geographic area.

Under 40 C.F.R. § 122.28(a)(1), general permits must "cover one or more categories . . . of discharges . . . except those covered by individual permits, within a geographic area. The area should correspond to existing geographic or political boundaries such as: . . . (iii) City, county, or State political boundaries . . . or (vii) Any other appropriate division or combination of boundaries." The general permit is designed as a catch-all tool, an easy way to regulate a number of similar small facilities in the same geographic area.

A general permit is not the appropriate tool for regulating the fourteen facilities which the draft AQUAP proposes to cover. The draft AQUAGP would not cover all or even most of the fish hatcheries and aquarium facilities in Massachusetts, New Hampshire, and Vermont. The covered facilities do not include: three Massachusetts hatcheries (the Berkshire National Fish Hatchery, the Richard Cronin Aquatics Resource Center, and the Roger Reed Hatchery), two New Hampshire hatcheries (the Powder Mill State Fish Hatchery and the Berlin Fish Hatchery) and the five Vermont state fish hatcheries (Bald Hill Fish Culture Station, Bennington Fish Culture Station, Ed Weed Fish Culture Station, Roxbury Fish Culture Station, and Salisbury Fish Culture Station). The only aquariums or marine research centers in Massachusetts, New Hampshire, or Vermont that are included are the two New England Aquarium facilities.

EPA gives no explanation in the Fact Sheet as to why the twelve covered hatcheries would be covered under the draft AQUAGP, while ten hatcheries in the Massachusetts, New Hampshire, and Vermont would not be and would remain covered under their individual NPDES permits. Finally, EPA does not explain why New England Aquarium's facilities are given their own section of the draft AQUAGP rather than just being issued individual NPDES permits.

Response to Comment J.4.1

After considering the comments received on the Draft AQUAGP, EPA maintains that a general permit is the appropriate tool for regulating on-land hatcheries for which EPA is the regulatory authority in Massachusetts, New Hampshire, and Vermont. EPA has addressed similar comments on the applicability of a general permit to this category of point sources in Response to Comment II.J.4.2, 4.3, and 4.4, below.

As the comment points out, not every fish hatchery in the geographic area will be eligible for coverage under this General Permit. The AQUAGP is only available to facilities in Vermont for which EPA is the regulatory authority, which includes only the two federally-run (United States Fish and Wildlife) facilities. The Vermont Department of Environmental Conservation is the permitting authority for all other hatcheries in Vermont, including the state hatcheries referenced in the comment. The existence of hatcheries in the geographic area which are outside of EPA's

permitting authority is not sufficient reason to conclude that a general permit is not appropriate for the other hatcheries for which EPA is the permitting authority.

In addition, certain individual facilities for which EPA is the permitting authority will not be eligible based on the criteria at Part 4.3 of the Draft AQUAGP including the Berlin and Powder Mill State Fish Hatchery referenced in the comment. EPA regulations clearly state that it may require certain facilities to apply for an obtain an individual NPDPES permit, rather than obtain coverage via the applicable general permit. *See* 40 CFR § 122.28(b)(3)(ii). The Draft AQUAGP excludes from coverage facilities that discharge pollutants identified as the cause of an impairment to receiving water segments unless the pollutant concentration is at or below a concentration that meets water quality standards. Facilities that discharge pollutants identified as the cause of an impairment to receiving water segments may require site-specific, water quality-based numeric limits to address the contribution to water quality impairments that are best addressed through individual permits. The Berlin State Fish Hatchery discharges phosphorus to York Pond. The Berlin State Fish Hatchery is excluded from AQUAGP coverage because York Pond is listed in the State's 2018 303(d) listed as impaired due to phosphorus, chlorophyll-a, and cyanobacteria hepatotoxic microcystins, a total maximum daily load (TMDL) has not yet been developed, and the industrial point source discharge from the hatchery is identified as the source of the impairments. *See* AR-59. Similarly, the Powder Mill State Fish Hatchery discharges to the Merrymeeting River and discharges from this hatchery have been identified as the source of nutrient-related impairments in downstream ponds and impoundments. EPA recently issued an individual permit for the Powder Mill State Fish Hatchery (NH0000710) which established stringent, numeric water quality limits for phosphorus to address downstream impairments. Excluding facilities that discharge pollutants identified as the cause of an impairment to receiving water segments is common among Region 1 General Permits and is not sufficient reason to conclude that a general permit is inappropriate for this point source category. *See*, *e.g*., the 2014 Non-contact Cooling Water General Permit, the 2016 Pesticide General Permit, and the 2017 Potable Water Treatment Facility General Permit.

Finally, the comment also highlights the benefit of having a general permit to streamline NPDES permit authorization for a category of point sources. Additional facilities may seek authorization for discharges under the General Permit. The availability of the general permit can raise awareness of the NPDES program for the targeted category of point sources and capture additional facilities that may not currently have individual permits. If not for the general permit, potential applicants for NPDES coverage must self-identify or the public notify EPA of possible unauthorized discharges, which can be time- and resource-dependent. At a minimum, EPA will reach out to the three additional Massachusetts facilities referenced in the comment to determine if they should submit an NOI and obtain permit coverage.

Comment J.4.2

The facilities that the draft AQUAGP would cover are not similar enough to justify a general permit.

According to 40 CFR § 122.28(a)(2), general permits are only appropriate for a large number of similar facilities in similar circumstances.

> The general permit may be written to regulate one or more categories or subcategories of discharges . . . where the sources within a covered subcategory of discharges are . . . [o]ne or more categories or subcategories of point sources other than storm water point sources . . . if the sources . . . within each category or subcategory all:
>
> (A) Involve the same or substantially similar types of operations;
>
> (B) Discharge the same types of wastes . . . ;
>
> (C) Require the same effluent limitations, [or] operating conditions . . . ;
>
> (D) Require the same or similar monitoring; and
>
> (E) In the opinion of the Director, are more appropriately controlled under a general permit than under individual permits.

Although all of the facilities to be covered under the draft AQUAGP raise fish, the similarities stop there. The aquarium facilities discharge very different wastes than the fish hatcheries: while the hatcheries' effluent characteristics are flow, TSS, BOD, pH, nitrogen, ammonia nitrogen, phosphorus, formaldehyde, hydrogen peroxide, chlorine, fish biomass, fish feed used, and efficiency of fish feed used; the aquarium facilities' effluent characteristics also include *enterococci* bacteria, fecal coliform bacteria, and copper. Draft AQUAGP at 4-5, 9. The aquarium facilities' effluent characteristics, unlike those of the hatcheries, do not include ammonia nitrogen, fish biomass, fish feed used, or efficiency of fish feed used.

The operations at the covered hatcheries are also quite different. The draft AQUAGP would cover both cold and warm water hatcheries of different sizes that are engaged in raising different types of fish with different rearing requirements. While the types of waste generated by the covered hatcheries are similar, the hatcheries deal with this waste differently. The covered hatcheries use a wide range of treatment technologies, or a lack thereof, including settlement basins, off-line treatment ponds, and baffles to create quiescent zones.

As the draft AQUAGP makes immediately apparent, the twelve different covered hatcheries require different effluent limitations. Massachusetts, New Hampshire, and Vermont each have their own state water quality standards which permittees in each state must comply with and which the draft AQUAGP lists out separately. Furthermore, each hatchery is discharging into different receiving waters with different vulnerabilities and characteristics. Some discharge into freshwater and some saltwater; some Class A, some Class B, some Class SA, and some Class SB; some where TMDLs have been completed and some where they have not.

The covered facilities are simply too different to be lumped together under a general permit. They have different operations, they discharge different wastes, and they require different effluent limitation and standards. These facilities simply do not meet the criteria under 40 CFR § 122.28 for the issuance of a general permit. EPA should not permit these facilities under the proposed AQUAGP, but it should instead return to its practice of issuing individual NPDES permits for each facility.

Response to Comment J.4.2

EPA disagrees that the fish hatcheries and similar facilities that will be eligible for coverage under this AQUAGP are "simply too different to be lumped together under a general permit." As explained below, the fish hatcheries clearly meet the circumstances identified as appropriate for general permits listed at 40 CFR § 122.28(a)(2)(ii).

At the same time, after considering this comment and comments submitted by the New England Aquarium, EPA has concluded that the two aquariums are better suited to individual permits. As the comment points out, the purpose and operation of these facilities, as well as the types of animals held is different than a fish hatchery. In addition, the aquariums have certain limitations that do not apply to the point source category generally (i.e., bacteria) and water quality-based limits based on dilution which is best addressed on a site-specific basis. *See* Response to Comment II.F.1. Accordingly, EPA has eliminated the portions of the AQUAGP that applied to aquariums. *See* Draft AQUAGP at Part 1.3. Should an aquarium seek permit coverage under this Permit, EPA anticipates requiring such a facility to obtain individual permit coverage.

For the land-based hatcheries, EPA maintains that a general NPDES permit is the appropriate regulatory vehicle to streamline the permitting process, provide timely permit coverage, and to allocate resources in a more efficient manner. Contrary to the comment, there is no requirement that general permits "are only appropriate for a large number of facilities" or that general permits may only be issued to a "large" number of facilities. In accordance with 40 CFR § 122.28(a)(2), general permits may be written to cover point source discharges having common elements. EPA explains how each of these elements is substantially similar for the fish hatcheries eligible for coverage under the AQUAGP.

Fish hatcheries involve the same or substantially similar types of operations: the purpose is to raise fish for human consumption or to stock streams for fishing, in ponds, flow-through or recirculating systems. The twelve hatcheries initially identified for coverage under the AQUAGP are all state hatchery programs that raise fish for stocking.

Fish hatcheries discharge the same types of wastes: the production of aquatic animals primarily contributes pollutants such as total suspended solids, biochemical oxygen demand, and nutrients (nitrogen and phosphorus). The quantity and quality of effluents are driven by the amount and type of feed, the volume and frequency of discharge, solids management, and settling systems. The majority of the hatcheries that operate in MA and NH (as well as the two hatcheries in VT) and are expected to seek coverage under the AQUAGP raise native trout species, are similarly sized, use common operational practices, and use similar types and amounts of feed.

Fish hatcheries require the same effluent limitations or operating conditions: the effluent at eligible facilities, which is comprised solely of flow-through or recirculating water for the purposes of raising fish, is substantially similar such that the effluent limitations and operating conditions should be consistent among facilities. Indeed, the similarities among the permit conditions and requirements in the existing individual permits covering the 12 hatcheries expected to seek coverage under the AQUAGP supports the use of a general permit.

Fish hatcheries require the same monitoring and tiered conditions are used for differences among the size of hatcheries based on fish production: the Draft AQUAGP proposed a consistent suite

of permit conditions and requirements for all hatcheries. In addition, the Draft AQUAGP proposed more frequent monitoring of certain parameters (TSS, BOD, TN) for larger hatcheries (production levels of 100,000 pounds or more per year) or those located in the Long Island Sound watershed.

Beyond vague generalities (e.g., "different types of fish with different rearing requirements"), the comment fails to explain why the relatively minor differences among hatcheries should preclude EPA from issuing a general permit. For example, there is no evidence that raising cold water fish or warm water fish affects the nature of the effluent or the pollutants of interest, nor is there evidence that using settling ponds, off-line settling basins, or quiescent zones substantially affects the effluent limitations such that different limitations would be required depending on treatment. In fact, EPA considered many types of aquaculture facilities and treatment technologies in developing the technology-based effluent limitation guidelines for the CAAP point source category and determined that best management practices were the preferred option for controlling pollutants from flow-through and recirculating systems together. *See* 69 Fed. Reg. 51892 (August 23, 2004). Part 5 of the Final AQUAGP incorporates these technology-based, narrative requirements for all facilities. Perhaps the clearest evidence that fish hatcheries are suitable for general permit coverage is the many general NPDES permits issued to this same point source category in the United States. As of 2019, EPA and States have issued general permits to fish hatcheries in many states and tribal lands, including Alaska, Montana, Maine, Pennsylvania, North Carolina, Utah, Washington, Colorado, California, and Idaho.

Finally, the differences among surface water quality standards and waterbody classifications in the three states eligible for general permit coverage do not stand as a reason not to offer general permit coverage. Region 1 consistently issues general permits for facilities in New Hampshire and Massachusetts despite the differences in water quality standards in each state. *See, e.g.*, the 2017 Remediation General Permit (MAG910000 and NHG910000) and the Potable Water Treatment Facility General Permit (MAG640000 and NHG640000). Because the general permits are issued independently in each state, any minor differences in water quality standards that could affect the effluent limitations and conditions can be addressed in each state's NPDES permit or through the state certification process. For example, Part 2.4 of the Final AQUAGP, includes in-stream and effluent monitoring requirements established as State Conditions by NHDES specific to addressing its narrative nutrient criteria.

In sum, EPA maintains that the fish hatcheries that will seek coverage under the Final AQUAGP are substantially similar and are appropriately regulated by a general permit. The general permit will ensure a consistent approach to the regulation of fish hatcheries for which EPA is the permitting authority in Massachusetts, New Hampshire, and Vermont.

Comment J.4.3

The form of a general permit is not suited for the many different effluent limits that must be included in the draft AQUAGP.

The draft AQUAGP is extremely complex, as it must incorporate the different discharge standards and limits for each facility and receiving water. It is very hard to discern the relevant

technical differences, the different state requirements, the different individual limits, and WET testing requirements. Further confusion is introduced by those few quantitative effluent limits that EPA has carried over from past individual permits into the draft AQUAGP, including for those for facilities discharging into receiving waters where a TMDL has been completed. Crucial quantitative effluent limits are hidden in footnotes where they could be easily overlooked.

The confusing provisions where it would be easy to miss or not understand individual requirements that relate to particular hatcheries include:

- The draft AQUAGP does not include any numeric flow limits in its text; however, the Fact Sheet notes that "[t]he specific flow limitations will be specified in the written notice of authorization from EPA. For existing facilities, the effluent flow limitations will be the same as those in their individual permit, unless the Permittee has requested an increased flow limit and EPA and the State determine that the increased discharge is consistent with antidegradation requirements." Fact Sheet at 17. Not only is it misleading that these effluent flow limits will not be included in the text of AQUAGP itself, the procedure EPA proposes here would not provide sufficient opportunity for notice and comment when setting these limits.
- On pages 4-5, the draft AQUAGP sets four separate limits for dissolved oxygen when formalin is being used: it sets a different limit for each of four relevant classes of receiving water. The AQUAGP does not explain which of these DO limits apply to which Massachusetts hatcheries, making it challenging to determine which DO limit is in effect for a particular hatchery using the permit alone.
- Page 7 of the draft AQUAGP lists an annual average total nitrogen limit of 14 pounds per day for the Sandwich State Fish Hatchery in footnote 15.
- On page 7 of the draft AQUAGP, the average monthly total phosphorus limit for the Charles L. McLaughlin State Fish Hatchery is buried in footnote 16.
- The draft AQUAGP has an ammonia limit for the Pittsford National Fish Hatchery (also known as the Dwight D. Eisenhower National Fish Hatchery) hidden in footnote 15 on page 31, as well as an entire section (3.2) specific to the Pittsford Hatchery on page 33.
- The White River National Fish Hatchery has a numeric limit for total ammonia, located in footnote 14 on page 31 of the draft AQUAGP.
- The White River National Hatchery in Vermont and three Massachusetts hatcheries (the Charles L. McLaughlin Fish Hatchery, Sunderland Fish Hatchery, and Montague Fish Hatchery [also known as the Bitzer Hatchery]) discharge into the Long Island Sound watershed, which has a TMDL for nitrogen. The draft AQUAGP includes Long Island Sound watershed-specific requirements for nitrogen monitoring and reporting, however these are called out only in footnotes, mixed in with other broader requirements. Draft AQUAGP at 6 fn 14, 21 fn 15, and 31 fn 13. The draft AQUAGP never identifies by name which hatcheries discharge into the Long Island Sound watershed and for whom these requirements apply.
- Three Massachusetts facilities – Charles L. McLaughlin Fish Hatchery, Sunderland Fish Hatchery, and Montague Fish Hatchery (also known as the Bitzer Hatchery) also must conduct Whole Effluent Toxicity (WET) testing "in accordance with WET limitations

established in individual permits previously issued to these facilities." Draft AQUAGP at 8. These WET limitations are not reproduced in the draft AQUAGP.

The twelve hatcheries to be covered by the draft AQUAGP would be better served by individual NPDES permits that include only those effluent limitations and state water quality standards that apply to them. EPA should therefore issue individual permits for these facilities, and thereby eliminate the needless confusion generated by the many disparate requirements packed into the draft AQUAGP.

Response to Comment J.4.3

The AQUAGP may differ from other general permits Region 1 has issued in recent years because many of the facilities are already known and covered by individual permits and will be converted to a general permit, rather than being authorized for the first time under a general permit. As the comment points out, converting individual permits to general permits introduces additional complexity because some of the individual permits have numeric limits based on best professional judgement which generally must be carried forward to the general permit in accordance with the restrictions on antibacksliding at 40 CFR § 122.44(l)(1). However, EPA disagrees that including BPJ-based numeric limits for certain facilities results in a permit that is extremely complex or confusing to the extent that a general permit would not be appropriate for the facilities in this point source category.

The Draft AQUAGP specifies that the discharge flow may not exceed the limitations specified in the written notice of authorization. *See* Draft AQUAGP footnote 7 to Parts 1.1. 2.1, and 3.1. The comment suggests that setting flow limits through the NOI authorization does not allow for notice and comment on the limits. Flow limits are established in NPDES permits to ensure compliance with permit limitations, requirements, and conditions, including water-quality-based effluent limitations. *See* CWA §§ 402(a)(2) and 301(b)(1)(C); 40 CFR §§ 122.43 and 122.44(d). Most of the effluent limits in the AQUAGP are either narrative limits, concentration-based numeric limits, or numeric limits carried forward from individual permits. *See* Final AQUAGP Part 5.4 and Appendix 12. The Final AQUAGP also establishes water quality-based effluent limits for all hatcheries for pH, dissolved oxygen (DO), formaldehyde, hydrogen peroxide, and total residual chlorine (TRC). Establishing a flow value is a critical design condition for deriving numeric, water quality-based limits which consider available dilution. *See* AR-55 p. 6-17, 21. The Draft AQUAGP explained that the flow values provided in the NOI would be used to calculate a dilution factor for each facility.[6] Water quality-based limits for formaldehyde, hydrogen peroxide, and TRC would be then be calculated as the product of the water quality criterion and the dilution factor. *See* Draft AQUAGP Appendices 8, 9, and 10. While EPA did not establish site-specific flow limits at each facility in the Draft Permit, it provided sufficient information to determine how flow values provided with the NOI will be used to establish water quality-based effluent limits that will be protective of water quality criteria in the receiving

[6] EPA notes that many hatcheries have zero available dilution based on the low flow of the receiving water. In such cases, the dilution factor of 1 resulting in an end-of-pipe, water quality-based limit equal to the criterion. For example, none of the New Hampshire hatcheries expected to seek coverage under the AQUAGP have available dilution, nor does the Montague State Fish Hatchery.

water. In particular, the WQBELs based on a dilution factor automatically factors in the effluent flow and the water quality criterion to ensure that that water quality standards are met.

The Draft AQUAGP also indicates that a request to increase a flow limit could be granted if the increase is consistent with antidegradation requirements. In response to the comment, EPA has reconsidered and agrees that an increase in flow, and corresponding antidegradation review, is better addressed through the individual permit process. Therefore, the Final AQUAGP carries forward the existing limits from individual permits for those hatcheries subject to existing flow limits. *See* Appendix 12. Hatcheries which were not subject to flow limitations previously will continue to report average monthly and maximum daily flow under the Final AQUAGP. EPA explained above how flow is used to set end-of-pipe effluent limits equivalent to the water quality criterion considering available dilution. As EPA also noted, few of the existing hatcheries expected to seek coverage under the AQUAGP have available dilution based on the flow of the receiving water. The narrative, technology- and water quality-based limits (i.e., BMPs) are not influenced by flow. In addition, EPA has set numeric TSS and BOD limits to ensure that all hatcheries continue to implement and maintain BMPs to control the discharge of solids and other pollutants. For these reasons, the Final AQUAGP requires hatcheries to report flow (rather than establish flow limitations) with the exception of the few facilities that currently have flow limits carried forward from individual permits.

The comment suggests that it is challenging to determine which of the four possible dissolved oxygen (DO) limits is in effect at an individual Massachusetts hatchery based on the permit alone. EPA reviewed the DO limits for Massachusetts facilities in Part 1.1 and footnotes 20 and 21 of Draft AQUAGP. The DO limits, which apply only during the use of formalin, are consistent with Massachusetts surface water quality standards. 314 CMR 4.05(3) and 4.05(4). DO standards for Class A and B waters are dependent on the classification of the fishery (cold or warm water), which was not clear in the footnotes of the Draft Permit. Part 1.1 of the Final AQUAGP was revised to clarify that the DO limit for Class A and B waters is ≥ 6.0 mg/L for cold water fisheries and ≥ 5.0 mg/L for warm water fisheries. The DO limits for Class SA and SB waters are unchanged. The revision in response to the comment clarifies the DO limits for MA hatcheries and provides the necessary information to determine whether the requirements of the Draft AQUAGP are. It is not necessary to list which DO limit applies to each individual hatchery in the permit itself because 1) it is clear where the limits apply (e.g., any hatchery located in a Class B warm water fishery must meet a DO limit of ≥ 5.0 mg/L) and 2) the water quality-based limits specific to the waterbody classification are sufficiently protective of the receiving waters.

The commenter also identifies that certain facility-specific conditions could be presented more clearly. One of the primary comments is that the facility-specific requirements carried forward from individual permits are “hidden” in footnotes. EPA endeavored to make the Draft AQUAGP requirements as clear as possible, for example, by including some facility-specific requirements as separate Parts of the permit. *See, e.g.*, Part 1.2 (WET requirements for certain MA hatcheries) and Part 3.2 (TP limits for the Dwight D. Eisenhower Hatchery). Still, EPA reconsidered how the AQUAGP presented these individual limits and, in response to the comment, included a new appendix which clearly lists all of the hatcheries and corresponding site-specific limits carried

forward from individual permits in accordance with 40 CFR § 122.44(l)(1). *See* Final AQUAGP Appendix 12.

Comment J.4.4

The individual circumstances would best be covered by individual NPDES permits, as was past practice.

As discussed below, EPA should establish quantitative limits for all of the effluent criteria relating to nutrient pollution (total phosphorus, total nitrogen, total ammonia, TSS, BOD, and flow) in order to protect the health of the waters downstream from the covered hatcheries. These quantitative limits should be calculated based on the conditions of each facility's receiving waters. Therefore, each facility would ideally have different quantitative limits (in terms of both concentration and load), depending on its individual circumstance. It would be ill-advised to issue a general permit that included twelve sets of different numeric effluent limits.

Even if EPA does not currently have the resources or inclination to set quantitative limits for each of these hatcheries, it may wish to do so in the future. Environmental harms stemming from nutrient pollution, such as eutrophication and cyanobacteria, have only gotten worse in recent years as summers become warmer and waterbodies like Merrymeeting River lose their capacity to assimilate more nutrients following decades of pollution. EPA's recent draft permit issued for the Powder Mill State Fish Hatchery in New Hampshire, which has added new numeric limits for total phosphorus and flow, is indicative of this trend.

By continuing to issue individual NPDES permits, EPA will more easily be able to add numeric effluent limits for the covered hatcheries in the future as necessary without adding to the general permit's complexity and incomprehensibility.

CLF urges EPA to amend its approach to regulating fish hatcheries and aquarium facilities as described above to ensure that the covered facilities do not discharge in a way that threatens the health of receiving waters. Phosphorus and nitrogen pollution from fish hatcheries pose a real threat to downstream waters, and robust, quantitative effluent limits and enforceable BMPs are necessary to prevent or mitigate eutrophication and harmful cyanobacteria blooms. We appreciate your consideration of these comments.

Response to Comment J.4.4

The Draft AQUAGP Fact Sheet (pp. 12-13) explains that the CWA requires that all discharges, at a minimum, meet effluent limitations based on pollutant reduction technologies that are available to the industry to control pollutants in their discharge. Technology-based treatment requirements represent the minimum level of control that must be imposed under Sections 301(b) and 402 of the CWA (See 40 CFR § 125 Subpart A). On August 23, 2004, EPA promulgated technology-based effluent limitations guidelines (ELGs) for the CAAP Point Source Category at 40 CFR Part 451, Subpart A, Flow-through and Recirculating Systems Subcategory for facilities that contain, hold, or produce more than 100,000 pounds of aquatic animals per year (69 FR 51906). The ELGs became effective on September 22, 2004. The promulgated ELGs contain

narrative effluent limitations with specific provisions for solids control, materials storage, structural maintenance, recordkeeping, and training. Part 5 of the Draft AQUAGP includes narrative effluent limitation requirements, including requirements for development and implementation of a Best Management Practices (BMP) Plan containing the elements specified in the ELGs at 40 CFR § 451.11. These limitations represent application of BPT, BAT, and BCT for flow-through and recirculating CAAP facilities. In addition, Part 5 of the Draft AQUAGP requires facilities that do not meet the production or feeding thresholds specified in the ELGs (i.e., less than 100,000 pounds per year) to also comply with narrative, technology-based effluent limitations based on BPJ. In addition, the Final AQUAGP establishes a numeric, technology-based limit of 10 mg/L for TSS and BOD tailored to the specific operations of the class of facilities eligible for the general permit coverage (unless the current, individual permit has a more stringent TSS and/or BOD limit). See Response to Comment II.J.2.1. All hatcheries that seek authorization to discharge under the AQUAGP are subject to the BPJ-based numeric limits, which ensures a consistent permitting approach for hatcheries in the eligible geographic area.

EPA may impose more stringent effluent limitations based on *water-quality* considerations. *See* CWA Sections 301, 402. Water quality-based effluent limitations are required in NPDES permits when EPA and the States determine that effluent limitations more stringent than technology-based effluent limitations are necessary to attain or maintain State or Federal water quality standards. See CWA §301(b)(1)(C) and 40 CFR §§ 122.44(d)(1), 122.44(d)(5), 125.84(e), and 125.94(i). In particular, NPDES permits establish water quality-based effluent limitations for any pollutant or pollutant parameter (conventional, non-conventional, and toxic) that is or may be discharged at a level that "causes, or has the reasonable potential to cause, or contribute" to an excursion above any water quality standard. 40 CFR § 122.44(d). EPA addressed comments about water quality-based effluent limits in Response to Comment II.J.3.1. In response to comments on the Draft Permit, EPA established new, narrative effluent limits at Part 5.5 of the Final AQUAGP to target reductions in both total nitrogen and total phosphorus for all hatcheries covered under the general permit. In addition, the Final AQUAGP requires Permittees to conduct upstream and downstream ambient monitoring for total phosphorus, chlorophyll-a, and total nitrogen twice per month during the growing season (June through September). This ambient data will inform future reasonable potential analysis to determine if additional BMPs and/or numeric water quality-based limits are warranted. Based on the available technical information and data, the narrative, technology and water quality-based effluent limits in the AQUAGP will ensure that discharges do not cause or contribute to an exceedance of narrative water quality standards related to nutrients and water quality standards of the receiving waters will be protected, maintained, and/or attained.

The comment correctly points out that a general permit is likely not the best regulatory tool for establishing site-specific numeric, water quality-based effluent limitations for each fish hatchery. For this reason, the AQUAGP eligibility requirements are intended to avoid just this circumstance. Part 4.3.f excludes facilities which discharge pollutants identified as the cause of an impairment to receiving water segments on the States' approved 303(d) lists from seeking coverage under the Draft AQUAGP. Facilities which discharge a pollutant to a receiving water which is impaired for that pollutant may have reasonable potential to cause or contribute to an excursion of water quality standards and will require a site-specific water quality-based effluent limitation. For example, the Berlin and Powder Mill State Fish Hatcheries in New Hampshire

have been identified as the source of nutrient impairments or nutrient-related impairments (e.g., cyanobacteria) in receiving waters and, as a result, must seek individual permit coverage. If any additional facility, including any of those named in the Fact Sheet (Attachment 1), is identified in the future as causing or contributing to an excursion of water quality standards, EPA would require the Permittee to seek individual permit coverage. In accordance with 40 CFR § 122.28(b)(3), EPA may require any discharger authorized by a general permit to apply for and obtain an individual NPDES permit, including because "circumstances have changed since the time of the request to be covered so that the discharger is no longer appropriately controlled under the general permit…" *See* 40 CFR § 122.28(b)(3)(i)(E). In other words, if EPA wishes to set water-quality based quantitative limits on any hatchery in the future there is no reason why it cannot do so.

K. Comments from James Glover, New Hampshire Animal Rights League

Comment K.1

I am writing on behalf of the New Hampshire Animal Rights League with comments on the above-referenced draft aquaculture general permit.

As it is the mission of our organization to help animals, changes to the rules regulating fish hatcheries concern us for a number of reasons.

First, removing limits for some critical pollutants produced by fish hatcheries operating in New Hampshire, as the draft general permit proposes, would allow for the possibility that the covered facilities could pollute in even greater amounts than they do currently. More nutrient pollution would increase the risk of environmental harms such as toxic algae and oxygen depletion that could sicken or kill fish and amphibians who live downstream, as well as wildlife, pets, and other domestic animals who drink from contaminated waterbodies.

We have seen from the case of the Powder Mill State Fish Hatchery in Durham, NH what can happen when discharge levels are not kept in check.

Quantitative effluent limits should remain in place at the covered New Hampshire hatcheries and any other waste-producing fish hatchery within the purview of the EPA. Crowding and confining fish inevitably leads to a concentration of waste, not unlike the "manure lagoons" created by land-based factory farms. Without measurable goals, the fish hatcheries have no incentive to closely monitor their waste management process.

Response to Comment K.1

The AQUAGP implements Section 301(a) of the CWA that requires any discharge of pollutants to Waters of the United States to obtain a NPDES permit. This general permit does not remove limits, as asserted by the comment, and is consistent with CWA principles of antibacksliding and antidegradation which ensure that receiving waters maintain the water quality they currently achieve. The general permit is designed to more effectively, consistently, and efficiently regulate multiple facilities in the same industry with shared environmental concerns. As described in 40 CFR §122.28, EPA may issue a general permit in such cases. As noted above, fish hatcheries are commonly governed by general permits elsewhere in the country.

EPA infers that the comment's reference to the removal of limits for critical pollutants for New Hampshire hatcheries is related to the replacement of quantitative TSS and BOD limitations with narrative BMP requirements and a TSS benchmark. EPA has addressed this concern in Response to Comment II.J.2.1. In addition, a discussion of the relevance of the Powder Mill Fish Hatchery permit to the AQUAGP is addressed in Responses to Comments II.I.10 and II.J.1.

Comment K.2

New Hampshire's fish hatcheries concern us for other reasons as well. Along with generating great quantities of waste, the system of artificially supplying New Hampshire's lakes, rivers, and streams with catchable fish puts native fish at risk and raises other animal welfare concerns.

Once released into waterbodies, hatchery fish may be ill-equipped to survive, or, alternatively, may outcompete native fish for food. The factory-hatched fish may also bring with them diseases and/or parasites that fish raised in crowded conditions commonly endure.

Response to Comment K.2

Please see response II.L.6.7 regarding the comment on the release of aquaculture-raised fish.

Comment K.3

It is worth noting that the hatcheries do not benefit the public at large but rather exist to serve a small segment of the population, those who want to sell fishing licenses and those who expect a predictable supply of fish in return for their license fee. In serving the interests of this small group, the fish hatcheries pollute resources held in the public trust and pass the externalized costs of their operations on to all of us.

Ideally, fish hatcheries would not exist at all, but to the extent that they still do, we ask that the EPA fulfill its obligation to enforce the Clean Water Act by retaining clear and measurable effluent limits for each and every fish hatchery — in New Hampshire and beyond.

Response to Comment K.3

This comment on the public value of fish hatcheries is beyond the scope of the NPDES permit program as it is not a comment on the requirements and conditions of the Draft AQUAGP. The removal of effluent limitations referenced in this comment has been addressed in the Response to Comment II.K.1 above and elsewhere in this Response.

L. Comments from Meredith Stevenson, Center for Food Safety; Hallie Templeton, Friends of the Earth; Marianne Cufone, Recirculating Farms Coalition; and Zach Corrigan, Food & Water Watch

Comment L.1

Thank you for the opportunity to comment on the Environmental Protection Agency's (EPA) Notice of Availability for the Draft National Pollutant Discharge Elimination System (NPDES) Aquaculture General Permit (AQUAGP) for discharges from Concentrated Aquatic Animal Production (CAAP) facilities and other related federal facilities to certain waters of the Commonwealth of Massachusetts, State of New Hampshire, and State of Vermont. These comments are submitted on behalf of Center for Food Safety (CFS), Friends of the Earth (FOE), Food and Water Watch (FWW), and Recirculating Farms Coalition to identify a number of legal issues associated with the proposed permit and facility. We thank you for granting an extension of the comment period and reassert our prior request for the EPA to schedule a public hearing on the permit once it is safer for the public to gather or in the alternative, host at least one virtual public hearing where the public is able to see and hear all presented comments.

Introduction

CFS is a nonprofit, public interest organization with a mission to protect public health and the environment by curbing the proliferation of harmful food production technologies, such as industrial aquaculture practices, and by promoting sustainable forms of food production. CFS represents over 950,000 members who reside in every state across the country, who support safe, sustainable food production. CFS has long had a specific aquaculture program, dedicated to addressing the adverse environmental and public health impacts of industrial aquaculture, including numerous policy, scientific, and legal staff. In its program, CFS strives to ensure and improve aquaculture oversight, furthering policy and cultural dialogue with regulatory agencies, consumers, chefs, landowners, and legislators on the critical need to protect public health and the environment from industrial aquaculture and to promote and protect more sustainable alternatives.

FOE fights to protect our environment and create a healthy and just world by promoting clean energy and solutions to climate change, keeping toxic and risky technologies out of the food we eat and products we use, and protecting marine ecosystems and the people who live and work near them. FOE's sustainable aquaculture campaign specifically focuses on highlighting the dangers of industrial ocean fish farming and supporting sustainable seafood production alternatives. We are nearly 1.7 million members and activists across all 50 states working to make these visions a reality. We are part of the Friends of the Earth International federation, a network in 74 countries working for social and environmental justice.

The Recirculating Farms Coalition is a collaborative group of farmers, educators, food justice advocates and many others committed to building community health, by developing new sources of fresh, accessible food. Through training, outreach and advocacy, we run ecologically and socially responsible programs that grow local, affordable food, and create stable jobs in green businesses, in diverse communities, to foster physical, mental and financial wellness.

FWW is a national, non-profit, public interest, advocacy organization that works to create a healthy future for all people and generations to come—a world where everyone has food they can trust, clean drinking water and a livable climate. The organization has approximately 284,000 dues-paying members in the United States.

Response to Comment L.1

In a letter dated April 6, 2020, from a number of organizations including the four commenters, EPA was requested to (1) extend the comment period for the draft permit until 60 days after the covid-19 national emergency is lifted; and (2) schedule a public hearing once it is safe for the public to gather. Prior to receiving this request, EPA had already extended the public comment period an extra 30 days due to a separate request. EPA denied the request for an extension of the public comment period and a public hearing in a letter dated June 9, 2020, addressed to Hallie Templeton at Friends of the Earth. EPA reiterates some of that letter's central point's here.

EPA Region 1 does not believe that an open-ended suspension of permit proceedings is warranted here. The extension request linked both the public comment extension request and public hearing request to the end of the emergency precipitated by the pandemic. Under the NPDES permitting program, however, EPA's regulatory efforts must be imbued with a spirit of expedition rather than delay, as permits under the Clean Water Act are to be revisited at regular intervals not to exceed five years. The uncertainty and delay associated with the proposal is not consistent with this statutory imperative, which advances the goal of restoring the Nation's waters. Further, the Region's periodic reevaluation of expired permits often results in new draft permits that are more environmentally protective than their predecessors, as is the case here. The Region does not wish to forestall, after due consideration of any comments received, a final decision on these new controls.

Finally, the permitting action here has regional impacts only and is not as the requesters suggested a "rulemaking" with wider, national implications. NPDES permit decisions are made on a case-by-case basis, and do not create binding precedent for future actions. The General Permit is also limited in scope of coverage. For instance, the AQUAGP will not authorize discharges of pollutants that are the cause of impairment for a given water body at levels above water quality standards and does not cover discharges from net pen facilities (*i.e.*, ocean aquaculture). EPA did not receive any other request for a public hearing from any person or entity in New England, indicating a lack of significant interest from those members of the public most immediately impacted by this permitting action.

Moreover, EPA notes that to the extent the Commenter's request is motivated by a desire to "see and hear" all comments, this Response to Comments provides access to all comments received.

Comment L.2

Approval of this Draft General Permit for operators of concentrated aquatic animal production (CAAP) facilities (AQUAGP) would allow operators of these facilities to discharge pollutants to waters of the Commonwealth of Massachusetts, State of New Hampshire, and State of Vermont.

This would include up to 12 facilities currently regulated by individual permits and may be extended to CAAP facilities not covered by existing individual permits. Authorization of this general permit will allow the discharge of multiple harmful pollutants such as formaldehyde, nitrogen, phosphorus, ammonia, chlorine, and other toxic pollutants.[1] Yet, EPA plans to authorize this general permit without meeting even basic procedural requirements to consider, analyze, and disclose the adverse environmental consequences of these discharges on the waters of New Hampshire, Vermont, and Massachusetts.

Indeed, EPA seeks to authorize the general permit for five years without completing formal programmatic Endangered Species Act (ESA) consultation, Marine Mammal Protection Act (MMPA) consultation, or Magnuson-Stevens Act (MSA) consultation to ensure that these discharges are not likely to jeopardize the continued existence of endangered species, protected marine mammals, fisheries, or essential fish habitat. The EPA has, therefore, failed to ensure that CAAPs covered under the AQUAGP will not, separately or cumulatively, harm species or habitat in the waters of Vermont, New Hampshire, or Massachusetts.[2] EPA's general permit conditions do not go nearly far enough to protect ecosystems in the New England region from environmentally destructive CAAP practices.

[1] EPA, Draft AQUAGP Fact Sheet, at 5.
[2] 33 U.S.C. § 1344(e)(1).

Response to Comment L.2

First, EPA evaluated the water quality impacts from discharges of pollutants of concerns from eligible facilities in detail. *See* Fact Sheet pp. 17-36. The comment raises no specific concerns and requests to changes to the AQUAGP based on these analyses.

Second, EPA completed the appropriate consultations for ESA and EFH and determined that a consultation for MMPA was not necessary. For a thorough discussion of both these consultations, the commenters are referred to Section 5.1 and 5.2 of the Fact Sheet. Furthermore, Appendix 1 and 2 of the Draft Permit outline the procedures that facilities seeking coverage under the AQUAGP must follow in order to determine if they are eligible for coverage given ESA and EFH considerations.

Prior to obtaining coverage under the AQUAGP, applicants must meet the ESA eligibility provisions at Part 4.4 of the AQUAGP and complete the required steps outlined in Appendix 2 of the AQUAGP. For species under jurisdiction of the U.S. Fish and Wildlife Service (USFWS), applicants must document that one of the eligibility criteria is met at the time the NOI is submitted. USFWS submitted Comment II.H.1 above, agreeing to review individual projects during the NOI approval process to ensure that one of the criteria is met. For species under jurisdiction of NOAA Fisheries, EPA and NOAA Fisheries have been in discussions about ESA since the public comment period, culminating in EPA sending an official ESA consultation letter to the Greater Atlantic Regional Fisheries Office (NOAA Fisheries) Protected Resources Division, dated December 10, 2020, requesting concurrence that the proposed issuance is not likely to adversely impact any listed threatened or endangered species or designated critical habitat under the jurisdiction of NOAA Fisheries. In the letter, EPA noted that a "formal

consultation", as defined in the ESA (*See* 50 CFR § 402.02(d)) was not warranted. NOAA Fisheries agreed in a letter dated December 23, 2020, providing official concurrence with EPA's informal consultation conclusion. *See* AR-57 and AR-60. *See also* Response to Comment II.L.4.

For EFH, EPA and NOAA Fisheries began consultation proceedings when EPA informed them of the Public Notice of the AQUAGP and EPA's EFH assessment on May 11, 2020. EPA explained its assessment of the potential impacts of EFH in Part 5.1 of the Fact Sheet and submitted an EFH Memo summarizing these findings to the Greater Atlantic Regional Fisheries Office (NOAA Fisheries) Habitat and Ecosystem Services Division on July 16, 2020. NOAA Fisheries acknowledged the receipt of EPA's EFH findings in a correspondence dated January 13, 2021. In the correspondence, NOAA Fisheries did not propose additional mitigation measures for the protection of EFH. *See* 50 CFR § 600.920. *See* AR-56.

Third, the Marine Mammal Protection Act (MMPA), administered by NOAA Fisheries and the USFWS, establishes a national policy to prevent the decline of marine mammal populations. The MMPA prohibits, with certain exceptions, the take of marine mammals and the importation of marine mammals and products into the U.S. There is no consultation required under the MMPA for NPDES permitting. *See* AR-55 Section 11.1. The Services must be contacted when a planned activity is likely to result in harassment, serious injury, or take of marine mammals. The authorization of discharges of treated hatchery culture water under the Final AQUAGP will not result in the harassment or take of marine mammals. As such, no "consultation" under the MMPA is required. Furthermore, after removal of the New England Aquarium facilities from AQUAGP coverage (see Response to Comment II.F.1), Sandwich State Fish Hatchery in Sandwich, Massachusetts is the only facility discharging to a coastal zone water and that could therefore even potentially impact marine mammals. Sandwich discharges to an unnamed tributary of Dock Creek which is defined in the Massachusetts Water Quality Standards as a Class SA water, see 314 CMR 4.06. Dock Creek leads to Sandwich Harbor a discharge point into Cape Cod Bay. EPA has no reason to believe that discharges of hatchery effluent to the unnamed headwaters of Dock Creek will affect marine mammals and notes that the commenter didn't specify what such effects would be. Finally, marine mammals listed as endangered species (the North Atlantic Right Whale and Fin Whale) have been assessed as part of ESA consultation.

Comment L.3

Commenters urge EPA to instead continue to issue individual permits that take into account the unique ecological considerations of each CAAP site. Further, commenters urge a prohibition on the use of pesticides and other chemicals, such as neonicotinoids, emamectin benzoate, and formaldehyde, and also the implementation of more stringent effluent limits for other toxins. Such action is necessary to ensure the AQUAGP restores and maintains the water quality of receiving waters, as required by the Clean Water Act (CWA), particularly given the unlimited number of CAAP facilities this general permit could cover in the New England region.

Response to Comment L.3

EPA has addressed the decision to issue a general permit for these facilities in Responses to Comments II.J.4.

The AQUAGP includes a number of conditions to protect against the discharge of chemicals in toxic amounts including pesticides. Any facility applying for coverage under the AQUAGP must submit to EPA information on all projected aquaculture drugs and chemicals (see Appendix 4). The facility's BMP Plan must include a list of all aquaculture drugs and chemicals including all INAD and extra-label drugs which will be reviewed by EPA prior to authorizing coverage (see Section 5.4.g.). The permittee must notify EPA of any changes in the use of chemicals or additives during the course of the permit term (see Final AQUAGP Sections 1.4(l), 2.2(n), and 3.3(l)); and, interested parties have the authority to petition EPA to strip general permit coverage from the facility, *see* 40 CFR § 122.28(b)(3). If upon receiving notice of the use of a given chemical or additive, EPA is authorized to request additional information including, for example, whole effluent toxicity monitoring through the CWA § 308. Such a request could lead to a prohibition on the discharge of that chemical or removal of the facility from the general permit. The discharge of chemicals in toxic amounts is prohibited under the AQUAGP (see Final AQUAGP Section 1.4.d., 2.2.d., 3.3.d.). For those pesticides and chemicals that are widely used at hatcheries in Region 1 (e.g. formaldehyde-containing drugs), the AQUAGP contains specific limitations for controlling their discharge to ensure State WQSs are not violated. Together, these conditions provide EPA with sufficient information and basis to make a site-specific assessment of whether a discharge of a pesticide or chemical should be authorized. EPA Region 1 is not aware of the use of neonicotinoids or emamectin benzoate-containing products at any of the eligible aquaculture facilities.

The AQUAGP does not grant coverage to an "unlimited number of CAAP facilities." There are a number of eligibility restrictions on coverage, including a prohibition on new sources (see discussion in Section 1.4 of the Fact Sheet). The 12 hatcheries listed in Attachment 1 of the Fact Sheet are the only facilities EPA has identified as being readily transferable to the general permit.

Comment L.4

Moreover, prior to issuing the permit, EPA must prepare an Environmental Impact Statement (EIS) under the National Environmental Policy Act (NEPA) and must engage in formal consultation under the Endangered Species Act (ESA). These evaluations under NEPA and the ESA are necessary to ensure that EPA carefully considers the risks and harms inherent in discharging excess nutrients, chlorine, and formaldehyde and that the public is made aware of such risks; and the marine environment and imperiled marine species are sufficiently protected from the myriad dangerous pollutants discharged by CAAPs. Failure to do so would violate federal environmental law.

Response to Comment L.4

A NEPA review is only required when EPA issues a NPDES permit for a "new source" under the CWA. *See* CWA 511(c). *See also* 40 CFR § 122.29(c). New sources are ineligible for coverage under the AQUAGP; therefore, there is no requirement to prepare an EIS under NEPA for discharges that may be authorize under the AQUAGP.

EPA must ensure that the federal action (i.e., permit authorization) is not likely to jeopardize the continued existence of any endangered or threatened species or adversely affect its critical habitat. *See* 40 CFR § 122.49(c). A thorough discussion of ESA consultations is provided in the Fact Sheet, section 5.2.1. Formal ESA consultations are only required when EPA assesses that the discharge is likely to adversely affect a threatened or endangered species or its critical habitat. When EPA finds that a discharge is not likely to adversely affect listed species and/or critical habitat, an informal consultation is prepared.[7] In this case, EPA engaged in an informal consultation with NOAA Fisheries based on a finding that the impacts from the discharges under AQUAGP on coastal and anadromous listed species and critical habitat would be insignificant or discountable. *See* AR-57. NOAA Fisheries concurred. *See* AR-60. EPA has addressed additional concerns about ESA consultations in Response to Comment II.L.2.

Comment L.5

I. EPA's proposed AQUAGP fails to comply with the CWA.

The proposed AQUAGP does not adequately protect water quality and therefore fails to comply with the CWA. Congress enacted the CWA in order "to restore and maintain the chemical, physical, and biological integrity of the nation's waters" and guarantee "water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation."[3] To achieve these goals, the Clean Water Act establishes the NPDES permitting program under which "the discharge of any pollutants by any person shall be unlawful" unless the discharger meets one of several exceptions, including obtaining a permit under Section 402.[4]

The effluent limits in a NPDES permit must "restore" and "maintain" the receiving water body.[5] To accomplish this, the CWA requires EPA to set technology based effluent limits that reflect the ability of available technologies to reduce and ultimately eliminate pollutant discharges.[6] All sources and all pollutants must be subject to technology based effluent limits unless more stringent water quality based effluent limits are required to avoid exceedances of water quality standards.[7] EPA is required to exercise the agency's best professional judgment regarding case by case technology based effluent limits for pollutants in NPDES permits.[8]

As an alternative to the NPDES permit established by the CWA, the EPA passed regulations allowing the issuance of general permits "to cover one or more categories or subcategories of discharges . . . within a geographical area."[9] A general permit "is a single NPDES permit that covers a number of individual discharges that would otherwise require individual NPDES permits."[10] General NPDES permits such as this are not developed based on facility-specific information. Instead, they are developed based on data that characterize the type of operations being addressed and the pollutants being discharged.

Here, the proposed AQUAGP does not adequately protect water quality because it does not take into account site specific conditions. EPA must implement substantial changes to the terms and conditions of the proposed AQUAGP prior to its issuance, including preventing other similar

[7] NOAA Fisheries Greater Atlantic Region Guidance on Types of ESA Consultations. Available at https://www.fisheries.noaa.gov/insight/section-7-types-endangered-species-act-consultations-greater-atlantic-region

facilities from automatically falling under the general permit. While we understand one of the purposes of a general permit is to streamline permitting, in this instance it is inappropriate, as the activities, production and sites while perhaps of the same nature, are not identical and certainly will not have the same discharges nor impacts.

Further, a general permit also often means less detailed environmental review, public awareness, and participation. Without a required deep dive into the many possible issues related to development of such facilities, meaningful public awareness and participation in reviewing such potential point-sources on a case-by-case basis is impossible. The local community and nation as a whole lose the ability to understand and provide comment on major federal actions that significantly affect the quality of the human environment, a cornerstone of natural resources management in the U.S. Agencies are not always aware of many important local concerns and how they connect more generally to the larger national environmental landscape. Taking away the expectation of environmental scrutiny for New England projects that are merely alike to the existing 14 facilities could have a serious and significant impact both locally and nationally.

[3] *Id.* § 1251(a).
[4] *Id.* § 1301(a).
[5] *Id.* § 1251(a).
[6] *See* 33 U.S.C. § 1311.
[7] *See id.* §§ 1311(b)(2)(A).
[8] *Id.*
[9] 40 C.F.R. 122.28(a)(1).
[10] *Ohio Val. Envtl. Coalition v Horinko*, 279 F Supp 2d 732, 758 (S.D. W. Va. 2003); *see also Environmental Defense Ctr., Inc. v United States Envtl. Protection Agency*, 344 F3d 832, 853 (9th Cir. 2003) ("A general permit is a tool by which EPA regulates a large number of similar dischargers").

Response to Comment L.5

Congress enacted the Federal Water Pollution Control Act, codified at 33 U.S.C. §§ 1251 – 1387 and commonly known as the Clean Water Act (CWA), "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." CWA § 101(a). To achieve this objective, the CWA makes it unlawful for any person to discharge any pollutant into the waters of the United States from any point source, except as authorized by specific permitting sections of the CWA, one of which is § 402 which established the NPDES Permit Program. *See* CWA §§ 301(a), 402(a). *See also* 33 U.S.C. § 1342. Under this section, EPA may "issue a permit for the discharge of any pollutant or combination of pollutants" in accordance with certain conditions. CWA § 402(a). A general permit is established under the statutory authority of the CWA and is not an "alternative to the NPDES permit established by the CWA" as the comment asserts. *See* 40 CFR § 122.28.

CWA §§ 301 and 306 provide for two types of effluent limitations to be included in NPDES permits: "technology-based" effluent limitations (TBELs) and "water quality-based" effluent limitations (WQBELs). *See* CWA §§ 301, and 304(b); 40 CFR §§ 122, 125, and 131; 33 U.S.C. §§ 1311(b)(1) and 1312. Subpart A of 40 CFR Part 125 establishes criteria and standards for the imposition of technology-based treatment requirements in permits under § 301(b) of the CWA, including by 1) applying EPA-promulgated effluent limitation guidelines (ELGs) developed

under section 304 of the CWA to discharges by category or subcategory; 2) on a case-by-case basis under section 402(a)(1) of the CWA to the extent that EPA-promulgated effluent limits are inapplicable; 3) through a combination of these two methods where promulgated effluent limits only apply to certain aspects of the discharger's operation or to certain pollutants; or 4) through limitations in terms of toxicity. *See* 40 CFR § 122.44(a)(1), 40 CFR § 125.3(c). Effluent guidelines promulgated by EPA are implemented through NPDES permits as authorized in CWA sections 301(a), 301(b), and 402. The regulations make clear that "[a]pplication of EPA-promulgated effluent limitations developed under section 304 of the Act to discharges by category or subcategory" is the default approach where applicable, unless an exception applies. EPA summarized the statutory and regulatory authority for NPDES permits in the Fact Sheet (p. 10). As there are technology-based effluent limitations guidelines for the CAAP point source category, the AQUAGP establishes narrative, technology-based limits (BMPs) consistent with these requirements.

The comment asserts that the AQUAGP fails to protect water quality because it is a general permit that does not take into account site-specific conditions. The comment indicates that "substantial changes to the terms and conditions" of the AQUAGP are required but does not elaborate or request any specific change other than suggesting that "similar facilities" be prevented from automatically falling under the general permit. First, EPA disagrees that the AQUAGP is not protective of water quality. In Responses to Comments II.J.2.1 and J.3.1, EPA addressed detailed comments on the technology- and water quality-based effluent limits in the Final AQUAGP and explained how the permit requirements will ensure that receiving waters in MA, NH, and VT are protected from the discharge of pollutants from fish hatcheries. Second, applicants seeking coverage are not "automatically" authorized by the general permit. Rather, applicants (including those hatcheries already identified as eligible for permit coverage and "other similar facilities") must submit a Notice of Intent (NOI) in accordance with the requirements in Appendix 4 of the AQUAGP. Authorization is not effective until EPA and the respective State have reviewed the NOI (including the eligibility criteria), made a determination that coverage under the AQUAGP is warranted, and notified the operator in writing of its determination. *See* Fact Sheet pp. 37-38. EPA may require any facility to apply for and obtain an individual NPDES permit in certain circumstances, including, but not limited to, a discharge that is a significant contributor or pollutants or in violation of State water quality standards. *See* 40 CFR § 122.28(b)(3). *See also* Fact Sheet p. 37. Finally, general permits are not limited only to "identical" discharges. Indeed, such a limitation would be antithetical to the issuance of any general permit. EPA has addressed comments about the applicability of a general permit to this class of dischargers in Response to Comment II.J.4.

Finally, the comment ends by suggesting that the drawbacks to issuing a general permit include less detailed environmental review, public awareness, and participation. EPA has issued the Draft AQUAGP and Fact Sheet with multiple supporting appendices and attachments, followed by the Final AQUAGP and this Response to Comment, which together form a record of hundreds of pages of environmental review which support the conclusion that the permit limits and conditions of the Final AQUAGP will control discharges from eligible facilities and be sufficiently protective of receiving waters in MA, NH, and VT. The Draft Permit conditions, and justification for those decisions, was given the same level of public outreach and awareness as

afforded any other permit, general or individual, in accordance with the regulations for public participation. *See* 40 CFR § 124.10.

Comment L.6

A. The Draft AQUAGP fails to acknowledge all the potential negative impacts of the discharges of CAAP facilities that will be permitted.

The Draft AQUAGP fails to fully acknowledge the breadth of environmental problems associated with the hatcheries and other CAAP facilities that the general permit will cover. Even if each facility adhered to effluent limitations and best management practices, these numerous CAAP facilities will still have harmful environmental impacts on the waters of Vermont, New Hampshire, and Massachusetts. CAAP facilities discharge organic and inorganic solids, nutrients, and chemicals used in the prevention and treatment of various diseases.[11] Any of these constituents could impair the water quality in receiving waters.[12] Issuing the permit despite these clear problems would be premature and would leave the permit vulnerable to legal challenge.

[11] ESA Assessment, Sunderland State Fish Hatchery (2015), at 4, available at https://www3.epa.gov/region1/npdes/permits/2015/finalma0110035permit.pdf.
[12] *Id*.

Response to Comment L.6

EPA disagrees that adherence to the conditions of the AQUAGP would still lead to harmful environmental impacts. The AQUAGP contains permit conditions as stringent as the eligible facilities' current individual permits that are meeting State WQSs. The comment references a statement in the Sunderland State Fish Hatchery's ESA Assessment that "CAAP facilities discharge organic and inorganic solids, nutrients, and chemicals used in the prevention and treatment of various diseases." EPA evaluated the potential water quality impacts of discharges from eligible CAAP facilities and explains how the limits and conditions in the Draft AQUAGP were derived to protect the receiving waters from harmful environmental impacts and ensure that receiving waters continue to meet water quality standards. *See* Fact Sheet pp. 16-36. EPA addresses each of the commenter's concerns about these water quality impacts in response to the detailed comments in II.L.6.1 to L.6.X, below.

Comment L.6.1

The discharge of Total Suspended Solids (TSS) harms species in receiving waters.

The discharge of TSS can harm aquatic life by reducing a species' growth rate or resistance to disease, preventing the successful development of fish eggs and larvae, modifying natural movements and migration, and reducing the abundance of available food.[13] These effects are caused by TSS decreasing light penetration and by burial of the benthos.[14] Eggs and larvae are most vulnerable to increases in solids.[15] Thus, species such as brook trout, which tend to be sight

feeders, can be particularly susceptible to moderate turbidity levels caused by TSS because turbidity can interfere with their ability to locate food.[16]

[13] *Id*. at 8.
[14] *Id*.
[15] *Id*.
[16] *Id*.

Response to Comment L.6.1

EPA agrees that the discharge of solids can harm aquatic organisms. EPA addresses these concerns in Section 3.3 of the Fact Sheet and Response to Comment II.I.7. EPA addresses the removal of TSS limits in Response to Comment J.2.1 above. The AQUAGP includes multiple conditions to control solids discharges; these include (1) a Solids Control BMP consistent with the CAAP ELGs for all facilities covered by the AQUAGP; and (2) a numeric, technology-based limit of 10 mg/L for TSS and BOD tailored to the specific operations of the class of facilities eligible for the general permit coverage. All hatcheries that seek authorization to discharge under the AQUAGP are subject to the BPJ-based numeric limits, which ensures a consistent permitting approach for hatcheries in the eligible geographic area. EPA finds these conditions are sufficiently protective of receiving waterbodies receiving effluent from hatcheries in MA, NH, and VT.

Comment L.6.2

The discharge of nutrients depletes oxygen levels in receiving waters.

The fish hatcheries and other CAAPs covered under the general permit will also discharge substantial amounts of nutrients (primarily nitrogen and phosphorus) into the receiving waters.[17] Uneaten feed, dissolved ammonia excretions, and waste solids are the primary sources of added nitrogen in the effluent from hatcheries.[18] These discharges encourage the growth of nuisance algae and aquatic plants.[19] Further, when these plants and algae undergo their decay processes, they generate strong odors, depress dissolved oxygen levels in the river, and impair benthic habitat.[20]

In the case of Sandwich State Fish Hatchery, one of the CAAPs covered by the draft AQUAGP, excessive nitrogen has already led to decreases in the water quality of coastal rivers, ponds, and harbors in its receiving waters in Cape Cod.[21] The decline in water quality in coastal areas like Cape Cod can result in loss of eelgrass beds, increases in macroalgal abundance, periodic extreme decreases in dissolved oxygen, reductions in aquatic diversity of benthic animal populations, and periodic algal blooms.[22] Excessive algal growth as a result of nitrogen has also occurred in North Attleboro National Fish Hatchery's receiving waters and will continue without more stringent standards.[23] Independently and in combination, these issues threaten aquatic life throughout the New England region.[24]

[17] Draft NPDES Permit Fact Sheet, North Attleboro National Fish Hatchery (2012), at 11, *available at* https://www3.epa.gov/region1/npdes/permits/2012/finalma0005398permit.pdf; NPDES Permit Fact

Sheet, Twin Mountain State Fish Hatchery (2012), *available at* https://www3.epa.gov/region1/npdes/permits/draft/2012/draftnh0000744permit.pdf; NPDES Permit Fact Sheet, Sandwich State Fish Hatchery (2015), at 14, *available at* https://www3.epa.gov/region1/npdes/permits/2015/finalma0110027permit.pdf.
[18] NPDES Permit Fact Sheet, Sandwich State Fish Hatchery (2015), at 13, *available at* https://www3.epa.gov/region1/npdes/permits/2015/finalma0110027permit.pdf.
[19] *Id*. at 14.
[20] *Id*.
[21] *Id*. at 13.
[22] *Id*.
[23] *Id*. at 11.
[24] *Id*. at 13.

Response to Comment L.6.2

EPA agrees that excessive nutrient discharges can lead to eutrophication and depletion of oxygen in surface waters. The AQUAGP contains conditions to control solids, the primary source of nutrients from hatcheries, and to monitor the discharge of nutrients from permitted hatcheries. All hatcheries must sample their effluent for nitrogen and phosphorus. *See* Response to Comment II.L.8. However, EPA disagrees that the discharges from the two hatcheries referenced in the comment (the Sandwich and North Attleboro Hatcheries) have resulted in declines in water quality of the receiving waters. EPA addressed concerns about the water quality impacts from specific hatchery discharges, including the Sandwich and North Attleboro hatcheries, in Response to Comment II.J.3.1.

If any receiving water, including Dock Creek or the Bungay River, is or becomes impaired for nutrients in the future, the hatchery discharging to that receiving water would no longer be eligible for coverage unless the discharge is at or below a level that meets water quality standards. See Part 4.3.f. At this time, without a TMDL or evidence that the discharges have reasonable potential to cause or contribute to excursions of water quality standards in the river, no change to the AQUAGP is warranted in response to this comment.

Comment L.6.3

The discharge of ammonia further impacts aquatic life.

In receiving waters, oxidation of ammonia by nitrifying bacteria can also deplete oxygen concentrations and cause harm.[25] At elevated concentrations, ammonia can even be toxic to aquatic life.[26] Ammonia is easily converted to nitrate, which can increase growth of algae, which in turn, depletes dissolved oxygen. For the Milford State Fish Hatchery, this could be especially detrimental, as the Souhegan River downstream of the confluence with Purgatory Brook is currently listed as impaired for dissolved oxygen in the 2010 Section 303(d) Surface Water Quality List.[27]

[25] *Id*. at 12.
[26] *Id*.

[27] NPDES Permit Fact Sheet, Milford State Fish Hatchery (2011), at 14, *available at* https://www3.epa.gov/region1/npdes/permits/draft/2011/draftnh0110001permit.pdf

Response to Comment L.6.3

EPA agrees that discharges of ammonia can contribute to dissolved oxygen problems when left unregulated. The AQUAGP includes Total Ammonia Nitrogen monitoring requirements to ensure that hatcheries are not contributing concentrations of ammonia above State WQSs. None of the hatcheries eligible for coverage under the AQUAGP are discharging to waters that are impaired for ammonia. As discussed on Pages 17-18 of the Fact Sheet, ammonia data for Milford State Fish Hatchery was assessed and EPA found no reasonable potential for ammonia discharges to cause or contribute to an exceedance of WQSs. Ammonia data for all hatcheries applying for coverage will be reassessed during the NOI review process. EPA addressed similar concerns about the discharges from the Milford State Fish Hatchery in Response to Comment II.J.3.1.

Comment L.6.4

The discharge of chlorine could exceed water quality criteria and harm aquatic species.

These facilities will also discharge chlorine into the region.[28] CAAP facilities use hypochlorite solutions to clean/disinfect rearing units and hatchery equipment and use chlorine to treat bacterial gill disease.[29] Chlorine can be toxic to aquatic species, and the draft AQUAGP admits that "EPA New England finds that the facilities to be covered by the Draft AQUAGP have a reasonable potential to cause or contribute to an exceedance of the applicable water quality criteria for total residual chlorine."[30] Thus without more stringent standards, the facilities' discharge of chlorine [SIC].

[28] NPDES Permit Fact Sheet, Twin Mountain State Fish Hatchery (2012), *available at* https://www3.epa.gov/region1/npdes/permits/draft/2012/draftnh0000744permit.pdf; NPDES Fact Sheet, Warren State Fish Hatchery (2011), at 13-17, *available at* https://www3.epa.gov/region1/npdes/permits/2011/finalnh0000736permit.pdf; Draft NPDES Permit, White River National Fish Hatchery (2008), *available at* https://www3.epa.gov/region1/npdes/permits/2009/finalvt0020711.pdf.
[29] EPA, Draft AQUAGP, at 32.
[30] *Id*.

Response to Comment L.6.4

The commenter's claims that chlorine is discharged by CAAP facilities and can be toxic to aquatic organisms is correct. The AQUAGP requires all hatcheries that use chlorine to meet numeric TRC limits set at the water quality standard after considering available dilution for the discharge. *See* AQUAGP Parts 1.1, 2.1, and 3.1. It is not clear from the comment if the commenter understood that chlorine limits were included in the AQUAGP or if they are asserting that more stringent chlorine limitations are necessary, and it appears that the comment on chlorine was not completed. EPA reiterates that chlorine will be limited for those hatcheries that use it and that limitations will be protective of State WQSs for chlorine.

Comment L.6.5

The discharge of formalin is toxic to invertebrate species.

The AQUAGP also allows for the discharge of biocides, specifically formalin products such as Paracide-F, Formalin-F or Parasite-S, which contain approximately 37 % by weight of formaldehyde gas.[31] Formalin poses risks to both public health and the marine ecosystem. Because it is formulated to selectively kill or remove certain attached organisms, but not the finfish themselves when properly applied, formalin is more toxic to invertebrate species than to vertebrates.[32] Additionally, formaldehyde is a "probable human carcinogen" and would pose a risk to public health.[33] The EPA acknowledged that "The facilities to be covered by the Draft AQUAGP have a reasonable potential to cause or contribute to an exceedance of the narrative toxicity criterion for formaldehyde based on the potential use of formalin at the facilities to be covered under the Draft AQUAGP."[34] Thus the discharge of excessive amounts of toxic formalin could impact invertebrate species, integral to the food chain, and pose a massive risk to the public.

[31] NPDES Permit Fact Sheet, Sandwich State Fish Hatchery (2015), at 15-16, *available at* https://www3.epa.gov/region1/npdes/permits/2015/finalma0110027permit.pdf; NPDES Permit Fact Sheet, Milford State Fish Hatchery (2011), at 16, *available at* https://www3.epa.gov/region1/npdes/permits/draft/2011/draftnh0110001permit.pdf; NPDES Permit Fact Sheet, Twin Mountain State Fish Hatchery (2012), *available at* https://www3.epa.gov/region1/npdes/permits/draft/2012/draftnh0000744permit.pdf; NPDES Fact Sheet, New Hampton State Fish Hatchery (2011),at 6-7, *available at* https://www3.epa.gov/region1/npdes/permits/draft/2011/draftnh0000752permit.pdf; NPDES Fact Sheet, Warren State Fish Hatchery (2011), at 13-17, *available at* https://www3.epa.gov/region1/npdes/permits/2011/finalnh0000736permit.pdf. Draft NPDES Permit, White River National Fish Hatchery (2008), *available at* https://www3.epa.gov/region1/npdes/permits/2009/finalvt0020711.pdf.
[32] NPDES Permit Fact Sheet, Sandwich State Fish Hatchery (2015), at 15-16, *available at* https://www3.epa.gov/region1/npdes/permits/2015/finalma0110027permit.pdf.
[33] American Cancer Society, *Formaldehyde* (May 23, 2014), https://www.cancer.org/cancer/cancer-causes/formaldehyde.html#:~:text=The%20EPA%20has%20classified%20formaldehyde,particularly%20myeloid%20leukemia%2C%20in%20humans.
[34] EPA, Draft AQUAGP, at 25.

Response to Comment L.6.5

Formaldehyde may be discharged by CAAP facilities that use formalin to treat fish and can be toxic to aquatic organisms and human health. See Fact Sheet pp. 25-28. The AQUAGP requires all hatcheries that use formalin to meet numeric formaldehyde limits established to protect water quality after considering available dilution for the discharge. *See* AQUAGP Parts 1.1, 2.1, and 3.1. All facilities that use formaldehyde containing products will be subject to formaldehyde limitations to prevent the discharge of toxic quantities of formaldehyde. The comment does not address the Permit's formaldehyde limits or suggest they are inadequate.

Comment L.6.6

The discharge of antibiotics will harm the marine ecosystem and threaten public health.

Further, in regard to diseases, commenters have significant concerns over the pervasive use of antibiotics in aquaculture facilities, which pose both environmental and public health concerns. The crowded nature of these proposed CAAPs will inevitably breed pests and disease for which antibiotics will likely be used. This use will not only leave residues in seafood, but it will also leach into the ocean, contaminating nearby water and marine life. For example, the salmon aquaculture industry widely uses Emamectin benzoate to treat sea lice, which could result in drug resistance.[35] In Nova Scotia, the use of this antibiotic resulted in "widespread damage to wildlife," including "substantial, wide-scale reductions" in crabs, lobsters and other crustaceans close to marine finfish facilities.[36] In fact, up to 75% of antibiotics used by the industrial ocean fish farming industry are directly absorbed into the surrounding environment.[37] Such impacts could harm marine life throughout the entire New England region.

[35] Chun Ting Lam, et. al, *Sea lice exposure to non-lethal levels of emamectin benzoate after treatments: a potential risk factor for drug resistance* (Jan. 22, 2020), *available at* https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6976678/.
[36] Rob Edwards, The Sunday Herald, *Scottish government accused of colluding with drug giant over pesticides scandal* (June 2, 2017), http://www.heraldscotland.com/news/15326945.Scottish_government_accused_of_colluding_with_drug_giant_over_pesticides_scandal/.
[37] United Nations, Fro*ntiers 2017: Emerging Issues of Environmental Concern*, at 15 (2017), https://www.unenvironment.org/resources/frontiers.

Response to Comment L.6.6

The comment raises a valid concern related to unchecked use and discharge of antibiotics by aquaculture facilities. The studies and news reports cited underscore these concerns. EPA emphasizes here that the AQUAGP does not allow unregulated discharges of toxic chemicals, including antibiotics, to receiving waters. For those chemicals that are used by multiple different facilities, such as chlorine and formalin discussed above, the AQUAGP includes chemical-specific, water quality-based effluent limitations. In addition, the AQUAGP only authorizes use of aquaculture drugs and chemicals approved by the USFDA and in accordance with measures intended to ensure EPA and the State are notified of their use, can limit and/or prohibit them if necessary, and that the use of these drugs are in accordance with USFDA guidance. *See* Parts 1.3.k, 2.3.l, 3.3.k, and 5.1 of the AQUGP. *See also* Response to Comment II.L.3 for a discussion of specific conditions meant to address these concerns. In addition, only land-based CAAPs are eligible for coverage under the AQUAGP. The comment mainly references the marine ecosystem and gives an example of offshore salmon aquaculture. Offshore net pens, such as the systems referenced in the comment, are not eligible for the AQUAGP. *See* Part 4.3.m of the AQUAGP. Finally, EPA has no evidence that the 12 hatcheries eligible for coverage use Emamectin benzoate.

Comment L.6.7

Fish escapes threaten wild fish.

The unlimited number of CAAPs approved in the AQUAGP could result in numerous fish escapes, which the AQUAGP fails to address. Hatcheries and other aquaculture operations

routinely result in escapes of juvenile and adult fish that adversely affect wild fish stocks.[38] For example, escaped parr and smolts from hatcheries that provide feedstock for Atlantic salmon aquaculture operations compete with and displace juvenile salmon. Further, escaped fish increase competition with wild stocks for food, habitat, and spawning areas. Reliance on the sterility of farmed fish to prevent interbreeding is *never* 100% guaranteed; therefore, the "long-term consequences of continued farmed [fish] escapes and subsequent interbreeding . . . include a loss of genetic diversity."[39]

[38] Effluent Limitation Guidelines and New Source Performance Standards for the Concentrated Aquatic Animal Production Point Source Category, 67 Fed. Reg. 57,872, 57,877 (proposal Sept. 12, 2002) (to be codified at 40 C.F.R. pt. 451.35(c)).
[39] Fisheries and Oceans Canada, *Newfoundland and Labrador Region, Stock Assessment of Newfoundland and Labrador Atlantic Salmon* (2016), *available at* http://waves-vagues.dfo-mpo.gc.ca/Library/40619655.pdf ("Genetic analysis of juvenile Atlantic Salmon from southern Newfoundland revealed that hybridization between wild and farmed salmon was extensive throughout Fortune Bay and Bay d'Espoir (17 of 18 locations), with one-third of all juvenile salmon sampled being of hybrid ancestry."); *see also* Mark Quinn, *DFO study confirms 'widespread' mating of farmed, wild salmon in N.L.,* CBC News (Sept. 21, 2016), https://www.cbc.ca/news/canada/newfoundland-labrador/farmed-salmon-mating-with-wild-in-nl-dfo-study-1.3770864.

Response to Comment L.6.7

An unlimited number of CAAPs have not been approved by the AQUAGP, see Response to Comment II.L.3. The Biological Control BMP in Part 5.4.b. of the AQUAGP requires facilities to protect native species by developing strategies to control biological pollution and ensure provisions are in place to prevent non-native or non-naturalized species from being released. In addition, Part 5.2 of the AQUAGP requires reporting any failures of culture units that may lead to, among other issues, the release of the aquatic animals being reared.

The hatcheries expected to seek coverage under the AQUAGP raise native and/or naturalized fish primarily to release into the natural environment for restoration purposes or to maintain local stocks. All the hatcheries currently covered by individual permits and expected to seek general permit coverage are operated by State or Federal wildlife programs that raise and release trout species in flow-through systems to support sportfishing in MA, NH, and VT. Although EPA has put in place permit provisions to prevent the release of non-native or naturalized species, EPA does not have a technical basis at this time for putting in place further restrictions on the release of native or naturalized species on the basis of their impacts on wild species, particularly as the hatcheries expected to seek coverage for raising trout with the intention of releasing them for stocking local rivers and lakes.

The comment references the Proposed ELGs for the CAAP point source category (fn 38). The preamble to the proposed ELGs indicates that the release of non-native species, particularly from commercial production facilities, has the potential to introduce invasive species that can outcompete native species and threaten their survival or introduce diseases. *See* 67 Fed. Reg. 57879. EPA ultimately, however, explicitly declined to include "any requirements specifically addressing the release of non-native species" in the final ELG. 69 Fed. Reg. at 51913. Moreover, fish stocking programs, such as those supported by the hatcheries that are the target of the AQUAGP, are not known to be sources of introductions of non-native species. Should a new

facility that raises non-native fish seek coverage under the AQUAGP it is likely such facility would not be eligible for coverage as a result of being a "new source."

The comment does not recommend any specific changes to the AQUAGP to better control fish escapes. EPA believes the AQUAGP is sufficiently protective of native species given the nature of the known hatcheries and the BMPs addressed above.

Comment L.6.8

Pesticides threaten the marine ecosystem.

Commenters urge EPA to include a prohibition on the pesticide, Imidacloprid, in the NPDES permit. Use of this pesticide has been expanding in Norway, Chile, and Scotland as part of a water purification system aimed at removing treatment-resistant sea lice from discharges before releasing the water into the receiving waters.[40] However, Imidacloprid is a neonicotinoid insecticide, which works by interfering with the transmission of stimuli in the insect nervous system, resulting in the insect's paralysis and eventual death.[41] Neonicotinoid pesticides such as Imidacloprid are highly toxic to bees and other wildlife and should be banned from use in the CAAPs covered under this permit.

[40] Pål Mugaas Jensen, *Benchmark sea lice treatment identity revealed* (March 17, 2020), https://www.fishfarmingexpert.com/article/benchmark-sea-lice-treatment-revealed-in-asc-submission/.
[41] *Id*.

Response to Comment L.6.8

Imidacloprid is not currently an approved aquaculture drug;[8] therefore, its use is currently prohibited by the AQUAGP. *See* Part 1.4.k., Part 2.2.m, Part 3.3.k, and Part 5.1 of the AQUAGP for restrictions on drug and chemical use.

Comment L.7

B. EPA's analysis of the discharge from the proposed CAAPs is inadequate.

Despite all of these foreseeable discharges, EPA fails to analyze the discharge of several significant pollutants from the proposed facilities including fish escapes, pesticides, antibiotics and other chemicals in violation of the CWA. The CWA broadly defines "pollutant" to include a range of substances, such as "solid waste . . . sewage, garbage, . . . chemical wastes, biological materials, . . . wrecked or discarded equipment, . . . and industrial . . . and agricultural waste."[42] Courts have interpreted "pollutant" to also include "substances not specifically enumerated but subsumed under the broad generic terms" listed in § 1362(6) of the CWA.[43] Thus, prior to issuing the AQUAGP, EPA must analyze these additional discharges and set effluent limitations to ensure that the permit "restores" and "maintains" the water quality of the region.

[8] See https://www.fda.gov/animal-veterinary/aquaculture/approved-aquaculture-drugs.

[42] 33 U.S.C. § 1362(6).
[43] *See, e.g., Hudson River Fishermen's Ass'n v. City of N.Y.,* 751 F. Supp. 1088, 1101 (D. N.Y. 1990), aff'd, 940 F.2d 649 (2nd Cir. 1991)(citing *United States v. Hamel*, 551 F.2d 107 (6th Cir. 1977)).

Response to Comment L.7

EPA directs the commenter to the responses to comments in II.L.6, above, which speak to a wide variety of pollutants regulated by the AQUAGP. The AQUAGP contains both technology-based effluent limitations to control solids directly and nutrients indirectly and water-quality based effluent limitations to control the discharges of pollutants that would contribute or cause impairments of water quality. For those pollutants that the commenter has called out where effluent limitations are not included in the AQUAGP, it is because the hatcheries eligible for coverage do not currently discharge pollutants at levels that would cause or contribute to impairments or the pollutants are already prohibited.

Comment L.8

EPA must comply with the Ocean Discharge Criteria

Further, this NPDES permit must also incorporate Ocean Discharge Criteria (ODC) pursuant to § 403(c) of the Act because some CAAP facilities will discharge into the ocean.[44] The EPA's ODC guidelines require it to determine, after considering a number of factors, whether a discharge will cause unreasonable degradation of the marine environment.[45] The EPA may not issue a NPDES permit where it determines that the discharge will cause an unreasonable degradation of the marine environment.[46] Here, EPA's failure to analyze escaped fish, pharmaceuticals, pesticides, and other chemicals as potential pollutants violates the CWA's anti-degradation policy.

[44] 33 U.S.C. § 1343 (c).
[45] 40 C.F.R. §§ 125.120-125.124.
[46] 40 C.F.R. § 125.123(b)-(d).

Response to Comment L.8

Ocean Discharge Criteria apply to the discharge of pollutants from a point source into the territorial seas, the contiguous zone, and the oceans. *See* 33 U.S.C. § 1343(a). *See also* 40 CFR § 125.120. None of the current CAAP facilities in Massachusetts, New Hampshire, or Vermont that are expected to seek coverage under this general permit discharge to a territorial sea, the contiguous zone, or the ocean. Both new sources and net pen aquaculture facilities, which is the system most likely to discharge to these waters, are excluded from AQUAGP coverage and would be required to get an individual permit. Therefore, there are no CAAP facilities that would be covered under the AQUAGP are be subject to Ocean Discharge Criteria.

Comment L.9

Individual NPDES permits would be more appropriate.

Given the massive region that this general NPDES permit would cover, EPA should instead continue to require individual permits (using a set of conditions that could be altered for each individual permittee according to need). Under a general permit, new CAAPs will be able to circumvent entirely the individualized assessments contemplated by the individualized permit system, despite the different ecological considerations throughout these three states. Even within Massachusetts, CAAPs located on Boston Harbor will have different considerations than a CAAP located discharging into a tributary stream designated as EFH for Atlantic salmon. Individual permits are therefore better suited to addressing the needs of each area, unlike the general permit where no individualized analysis has been done at all.

Response to Comment L.9

EPA addressed comments for the applicability of a general permit in Response to Comment II.J.4. New sources are not eligible for coverage under the AQUAGP so there would be no way to "circumvent" individual assessments as the comment claims. The AQUAGP appropriately accounts for factors unique to individual facilities where necessary. For instance, discharges to coastal waters have different limitations than those to freshwater, based on the differing state WQSs between these systems. Notably, in response to comments, EPA re-evaluated the two aquarium facilities and revised the AQUAGP and eliminated these dischargers from coverage because their operation, species held, and the nature of the pollutants was dissimilar from the other CAAP facilities (i.e., trout hatcheries) covered. *See* Response to Comment II.F. NOI review provides an additional step for EPA to assess individual, site-specific circumstances and approve/deny general permit coverage as appropriate. *See* 40 CFR § 122.28(b)(3). The comments claim that no individualized analysis has been done is refuted by both the responses contained in this document and the original fact sheet justifications for permit conditions.

Comment L.10

II. EPA must complete all consultations and procedural requirements prior to issuing the general NPDES permit.

Before even considering issuance of the AQUAGP, EPA must consider these numerous impacts and comply with mandatory procedures under federal law. Thus far, the EPA has failed to complete an Environmental Impact Statement (EIS) under the National Environmental Policy Act (NEPA), and the EPA has failed to consult with the National Marine Fisheries Service (NMFS) or Fish and Wildlife Service (FWS) as required under the Endangered Species Act (ESA), the Marine Mammal Protection Act (MMPA), and the Magnuson-Stevens Act (MSA).

Response to Comment L.10

These procedures have been addressed in previous responses. For ESA, MMPA, and MSA (EFH), see Response to Comment II.L.2. For NEPA see Response to Comment II.L.4. As needed, EPA addresses detailed comments on specific consultations below.

Comment L.11

EPA must comply with NEPA prior to issuing the permit.

The National Environmental Policy Act, 42 U.S.C. § 4321 *et seq.*, serves as "our basic national charter for protection of the environment,"[47] by requiring federal agencies to assess the environmental and socioeconomic impacts of projects to ensure that their decisions are fully informed.[48] NEPA requires federal agencies to prepare an EIS for all "major Federal actions significantly affecting the quality of the human environment."[49] The NEPA procedure begins with preparation of an Environmental Assessment (EA), which must include a "high quality," "accurate scientific analysis" of the proposed project.[50] This analysis must include a discussion of "appropriate alternatives" as well as a discussion of environmental impacts with sufficient evidence and analysis to determine whether to prepare an EIS or a finding of no significant impact.[51] In preparing an EA, an agency must take a "hard look" at the environmental impacts of the proposed action and alternatives.[52] NEPA "ensures that the agency . . . will have available, and will carefully consider, detailed information concerning significant environmental impacts; it also guarantees that the relevant information will be made available to the larger [public] audience."[53]

1. Prior to issuing the permit, EPA is obligated to prepare an EIS that comprehensively analyzes a reasonable range of alternative actions and the direct, indirect, and cumulative impacts that all the facilities covered under the general permit could have on the human environment.

EPA has not yet provided the public with detailed information about the cumulative impacts of the AQUAGP in an EA. The EA must "provide sufficient evidence and analysis for determining whether to prepare an EIS or a finding of no significant impact."[54] NEPA regulations require the agency to analyze (take a hard look at) all direct, indirect, and cumulative impacts.[55] Cumulative impacts include the incremental impact of the proposed action when added to all past, present, and reasonably foreseeable actions, taken not just by the agency, but by any entity.[56] A thorough consideration of cumulative impacts is required in the preparation of an EA.[57] Whether an action is significant requires consideration of the "context" and "intensity" factors, and an action may be "significant" if even one of the factors is present.[58]

Here, in approving the AQUAGP, EPA would continue to open the doors to additional CAAP facilities in New England which will cumulatively result in significant harm to habitat and dangers to species. Prior to doing so, EPA must comprehensively analyze a reasonable range of alternative actions and the direct, indirect, and cumulative impacts of this proposed project.

a. Indirect and Direct Effects

NEPA mandates that EPA assess both the direct and indirect effects of approval of the AQUAGP on the environment. For example, the EPA must assess the direct and indirect effects of Total Suspended Solids from CAAPs, which can affect aquatic life by reducing light penetration necessary to locate food and preventing the successful development of fish eggs and larvae. EPA

must also assess the effects of the CAAPs' discharges of phosphorus, ammonia, nitrogen, chlorine, and formalin on water quality.

b. Cumulative Impacts

Additionally, EPA must assess the cumulative impacts of the general permit. Impacts to the species in receiving waters will result in cumulative impacts to a larger scale community. For example, formalin is toxic to invertebrate species, which are an integral part of the food chain for finfish.[59] In this way, the discharge of formalin into receiving waters could potentially affect species beyond the receiving waters as well.

c. Reasonable Alternatives

The alternatives are the "heart" of the NEPA analysis, and they are required in an EA, including a "no action" alternative and other reasonable alternatives.[60] Commenters urge EPA to consider alternatives such foregoing the general permit and continuing to issue individual permits to take into account site-specific impacts.

2. The significant impacts of the general permit require the preparation of an EIS.

Here the high risks to species and impairment of water quality are more than sufficient impacts to necessitate the preparation of an EIS. Under NEPA, if the federal action *may* significantly affect the environment, EPA *must* prepare an EIS.[61] There is no doubt that an unlimited number of CAAP facilities discharging formalin, ammonia, chlorine, TSS, nitrogen, and phosphorus *may* impact the waters of the region. Thus EPA must prepare an EIS and provide this information for the public to further comment upon.

[47] *Id*. § 1500.1(a).
[48] 42 U.S.C. §§ 4321-4332; 40 C.F.R. §§ 1502.1, 1503.1.
[49] 42 U.S.C, § 4332(2)(C).
[50] 40 C.F.R. § 1500.1(b).
[51] 40 C.F.R. § 1508.9(a).
[52] *See Id*. §§ 1508.8, 1508.9, 1508.13, 1508.18, 1508.27.
[53] *Robertson v. Methow Valley Citizens Council,* 490 U.S. 332, 349 (1989).
[54] *Save the Yaak v. Block*, 840 F.2d 714, 717 (9th Cir. 1988).
[55] *See* 40 C.F.R. §§ 1508.8, 1508.9, 1508.13, 1508.18, 1508.27.
[56] *Id*. § 1508.7.
[57] See, e.g., *Kern v. Bureau of Land Mgmt*., 284 F.3d 1062, 1075 (9th Cir. 2002).
[58] 40 C.F.R. § 1508.27; *Ocean Advocates v. U.S. Army Corps of Eng'rs*, 361 F.3d 1108, 1125 (9th Cir. 2004); see *Nat'l Parks & Conservation Ass'n v. Babbitt*, 241 F.3d 722, 731 (9th Cir. 2001) (either degree of uncertainty or controversy "may be sufficient to require preparation of an EIS in appropriate circumstances").
[59] NPDES Permit Fact Sheet, Sandwich State Fish Hatchery (2015), at 15-16, *available at* https://www3.epa.gov/region1/npdes/permits/2015/finalma0110027permit.pdf.
[60] 40 C.F.R. § 1508.25(b).
[61] *Idaho Sporting Cong. v. Thomas*, 137 F.3d 1146, 1150 (9th Cir. 1998) (citation omitted); *Steamboaters v. U.S. Fed. Energy Regulatory Comm.*, 759 F.2d 1382, 1392 (9th Cir. 1985).

Response to Comment L.11

A NEPA review is only required when EPA issues a NPDES permit for a "new source" under the CWA. *See* CWA 511(c). *See also* 40 CFR § 122.29(c). New sources are ineligible for coverage under the AQUAGP and, as a result, NEPA is not applicable to those CAAP facilities seeking coverage under this general permit. *See* AQUAGP Part 4.3.l. EPA has addressed similar comments on applicability of NEPA to the AQUAGP in Response to Comment II.L.4.

Comment L.12

The presence of endangered species near existing CAAPs covered by the AQUAGP and throughout the states' waters necessitates compliance with the ESA.

As recognized by the U.S. Supreme Court, the ESA is "the most comprehensive legislation for the preservation of endangered species ever enacted by any nation" and "reveals a conscious decision by Congress to give endangered species priority over the 'primary missions' of federal agencies."[62]

Section 7(a)(2) of the ESA requires every federal agency to consult with the appropriate federal fish and wildlife agency (the Services, NMFS or FWS) to "insure" that the agency's actions are not likely "to jeopardize the continued existence" of any listed species or "result in the destruction or adverse modification" of critical habitat.[63]

To facilitate compliance with section 7(a)(2)'s prohibitions on jeopardy and adverse modification, the ESA requires each federal agency that plans to undertake an action to request information from the Services regarding "whether any species which is listed or proposed to be listed [as an endangered species or a threatened species] may be present in the area of such proposed action."[64] Pursuant to this process, each federal agency must review its "actions" "at the earliest possible time" to determine whether an action may affect listed species or critical habitat.[65] If the Service advises the agency that listed species or species proposed to be listed may be present, the agency must then prepare a biological assessment for the purpose of identifying any such species that are likely to be affected by the proposed agency action.[66] If an agency determines that its proposed action "may affect" any listed species and/or their critical habitat, the agency generally must engage in formal consultation with FWS or NMFS.[67] The only way to forego formal consultation is a written concurrence from the Services with a "not likely to adversely affect" determination by the action agency, after informal consultation.[68] At the end of the formal consultation, the Services must provide the agency with a "biological opinion" detailing how the proposed action will affect the threatened or endangered species and/or critical habitats, including a jeopardy opinion and any conservation or mitigation measures and an incidental take statement.[69]

1. The EPA must initiate formal programmatic ESA Section 7 consultation on the issuance of the AQUAGP and prepare a Biological Assessment.

The EPA acknowledges that numerous listed species may be present throughout these states and near the CAAPs covered under the AQUAGP, yet the agency has yet to consult with the Services or prepare a biological assessment as required by 16 U.S.C. § 1536(c)(1). Instead, EPA has reached the flawed conclusion that potential threats from authorization of the AQUAGP "may

affect but are not likely to adversely affect" listed species and critical habitat, averring that each individual applicant must consult in the future and ensure its activities will not affect endangered or threatened species.[70] This argument is directly contradicted by ESA regulations, which state that "[a]ny request for formal consultation may encompass . . . a number of similar individual actions within a given geographical area or a segment of a comprehensive plan. This does not relieve the Federal agency of the requirements for considering the effects of the action as a whole."[71]

As detailed above, CAAPs present serious environmental concerns, both on an individual level and cumulatively. Based on this fact and the ESA regulations, it is therefore unequivocal that project-specific consultation does not relieve the EPA of its duty to consult on the issuance of the AQUAGP on a programmatic level. While project-specific consultation is also clearly required for any project that may affect listed species, the EPA cannot justify its determination for the issuance of the general permit based on that later, site-specific consultation. Relying only on site-specific consultation fails to capture the cumulative impacts that the AQUAGP may have on listed species. The only way to ensure that the issuance of the AQUAGP will not jeopardize listed species is to complete a programmatic consultation – otherwise the Services are not provided the opportunity to identify which facilities may be problematic for listed species, and to provide reasonable and prudent measures to minimize harm, such as measures to ensure that the EPA gathers and analyzes sufficient data to prevent jeopardy to listed species.

2. Numerous endangered and threatened species would be threatened by authorization of the AQUAGP.

EPA's Endangered Species Act Guidance and Eligibility Criteria documents numerous threatened and endangered species in Vermont, Massachusetts, and New Hampshire vulnerable to the discharges of CAAPs under the AQUAGP. These species include the Atlantic sturgeon (Acipenser oxyrinchus), Shortnose sturgeon (Acipenser brevirostrum), Dwarf wedgemussel (Alasmidonta heterodon), along with several species of turtles, whales, and birds.[72]

Specifically, several of the individual NPDES permits for the fourteen facilities covered by the general permit identified endangered species located near the hatcheries. For example, the piping plover (Charadrius melodus) and the North Atlantic right whale (Eubalaena glacialis), may occur near the Sandwich State Fish Hatchery.[73] Additionally, the shortnose sturgeon (Acipenser brevirostrum) and the Atlantic sturgeon (Acipenser oxyrinchus oxyrinchus) are present in the vicinity of the Sunderland Hatchery and its receiving waters in Russellville Brook.[74] The New England Aquarium Corporation will discharge into Boston Harbor, which could affect endangered marine mammals, sea turtles, and anadromous fish.[75]

3. Authorization of the AQUAGP poses a risk of direct, indirect, and cumulative adverse impacts on listed species.

Authorization of the AQUAGP would thus pose a risk of direct and cumulative adverse harm to these ESA listed species, which, as discussed above, must be analyzed through formal consultation. Discharges from CAAP operations contain organic and inorganic solids, nutrients, and chemicals used in the prevention and treatment of various diseases.[76] For example, EPA

admits that there is the potential for discharges of total suspended solids, pH levels different from ambient levels, total nitrogen, total phosphorus, formaldehyde, hydrogen peroxide and total residual chlorine associated with the wastewaters authorized by this permit.[77] Any of these constituents could impair the water quality in the receiving water and harm endangered species.[78] At elevated concentrations, chlorine and ammonia are toxic to aquatic life, while discharged nutrients could cause periodic extreme decreases in dissolved oxygen.[79] These impacts must be assessed on a programmatic level to ensure the protection of endangered species.

4. EPA cannot commit resources to the proposed project without first consulting with the Services.

Under Section 7(d) of the ESA, the EPA may not issue a permit until the agency consults with NMFS/FWS and NMFS/FWS concurs with EPA's determination. Section 7(d) of the ESA provides that, once a federal agency initiates consultation on an action under the ESA, the agency, as well as any applicant for a federal permit, "shall not make any irreversible or irretrievable commitment of resources with respect to the agency action which has the effect of foreclosing the formulation or implementation of any reasonable and prudent alternative measures which would not violate subsection (a)(2) of this section."[80]

Since the purpose of Section 7(d) is to maintain the environmental status quo pending the completion of consultation, Section 7(d) prohibitions remain in effect while EPA completes its programmatic consultation. These prohibitions must also remain in effect throughout the consultation period and until the federal agency has satisfied its duty under Section 7(a)(2) to insure that the action will not result in jeopardy to listed species or adverse modification of critical habitat. Hence, EPA may not authorize the general permit until it has complied with the statutory mandates of the ESA.

5. EPA must consult with the Expert Services for a Biological Opinion prior to approving this general permit.

Due to the far-reaching nature of this permit and its multiple impacts on species throughout the New England region, EPA will also need to prepare a Biological Opinion ("BiOp"). The result of formal consultation is the preparation of a BiOp by the expert wildlife agencies (FWS and NMFS) which provide their analysis of the best available scientific data on the status of the species and how it would be affected by the proposed action.[81] Additionally, a BiOp must include a description of the proposed action, a review of the status of the species and critical habitat, a discussion of the environmental baseline, and an analysis of the direct and indirect effects of the proposed action and the cumulative effects of reasonably certain future state, tribal, local, and private actions.[82]

6. Incidental take statements must be prepared on an individual level.

While formal programmatic consultation is required, it would be improper and unlawful for any incidental take statement to be issued as part of the Services' biological opinion.[83] Numerous different ESA-protected species and their designated critical habitats are likely to be adversely affected. It remains unclear whether sufficient protections at the programmatic level will be

implemented to ensure that listed species are not jeopardized by cumulative impacts from activities covered by the general permit.

Moreover, there is no feasible way that the Services can predict, let alone quantify, the amount of incidental take of currently-listed species that will result from CAAP discharges throughout New England under the AQUAGP in the years to come. Further, the Services could not possibly analyze or quantify incidental take for future-listed species that will be adversely affected by activities authorized by the general permit. Rather, incidental take can only occur, and can only be analyzed and appropriately permitted, at the site-specific and species-specific level. Therefore, the programmatic consultation on the EPA's general permit should acknowledge that it is a framework programmatic consultation under which any incidental take will be subsequently authorized under a permit-specific Section 7 or Section 10 process.[84]

[62] *Tenn. Valley Authority v. Hill*, 437 U.S. 153, 180, 185 (1978).
[63] 16 U.S.C. § 1536(a)(2); *see also* 50 C.F.R. § 402.01(b).
[64] *Id*. § 1536(c)(1).
[65] 50 C.F.R. § 402.14.
[66] Id.
[67] *Id*. § 402.14.
[68] *Id.* § 402.13.
[69] 16 U.S.C. § 1536(b); 50 C.F.R. § 402.14.
[70] EPA, AQUAGP Fact Sheet, at 41-42.
[71] *Nat'l Wildlife Fed'n v. Brownlee*, 402 F. Supp. 2d 1, 10 (D.D.C. 2005) (citing 50 C.F.R. § 402.14(c)).
[72] EPA, Endangered Species Act Guidance and Eligibility Criteria, *available at* https://www3.epa.gov/region1/npdes/aquagp/draft-aquagp-app-2.pdf.
[73] NPDES Permit Fact Sheet, Sandwich State Fish Hatchery (2015), at 19-20, *available at* https://www3.epa.gov/region1/npdes/permits/2015/finalma0110027permit.pdf.
[74] NPDES Permit Fact Sheet, Sunderland State Fish Hatchery (2015), at 22, *available at* https://www3.epa.gov/region1/npdes/permits/2015/finalma0110035permit.pdf
[75] NPDES Permit Fact Sheet, New England Aquarium Corporation (2013), *available at* https://www3.epa.gov/region1/npdes/permits/2013/finalma0003123permit.pdf.
[76] ESA Assessment, Sunderland State Fish Hatchery (2015), at 4.
[77] Endangered Species Act Guidance and Eligibility Criteria, at 7.
[78] ESA Assessment, Sunderland State Fish Hatchery (2015), at 4.
[79] NPDES Permit Fact Sheet, Sandwich State Fish Hatchery (2015), at 13.
[80] 16 U.S.C. § 1536(d).
[81] When preparing a biological opinion, the consulting agency must (1) "review all relevant information," (2) "evaluate the current status of the listed species," and (3) "evaluate the effects of the action and cumulative effects on the listed species," 50 C.F.R. § 402.14, using "the best scientific and commercial data available," 16 U.S.C. § 1536(a)(2); *see also Greenpeace v. Nat'l Marine Fisheries Serv.*, 80 F. Supp. 2d 1137, 1149-50 (W. D. Wash. 2000) (remanding biological opinion where agency failed to "meaningfully analyze" the risks to the species and the key issues).
[82] *See* Consultation Handbook at 4-14 to 4-31.
[83] It is well-settled that programmatic biological opinions do not require an incidental take statement where those opinions explicitly mandate future site-specific consultations for take authorizations. *See Gifford Pinchot Task Force v.USFWS,* 378 F.3d 1059, 1067–68 (9th Cir.) *am. by* 387 F.3d 968 (9th Cir. 2004); *Forest Serv. Employees for Envtl. Ethics*, 726 F. Supp. 2d at 1224–1225; *W. Watersheds Project v. BLM*, 552 F. Supp. 2d 1113, 1139 (D. Nev. 2008); *Swan View Coal., Inc. v. Turner,* 824 F. Supp. 923, 934–35 (D. Mont. 1992). Here, should the Services issue a no-jeopardy opinion on the NWP program, it should not be accompanied by an incidental take statement because all incidental take should only be authorized, if at all, via a Section 10 permit or Section 7 consultation.
[84] *See* 80 Fed. Reg. 26,832 (May 11, 2015) (adding definition of "framework programmatic action" to 50 C.F.R. § 402.02 and adding 50 C.F.R. § 402.14(i)(1)(6) on incidental take statements not being required at the programmatic

level where subsequent actions resulting in incidental take will be separately consulted on). *see also* Interagency Handbook at 4-50-51 (stating that in programmatic consultations that cannot determine anticipated levels of incidental take "the incidental take statement should indicate that the issue will be reexamined during the consultation process for site-specific actions under the umbrella of the larger planning document.").

Response to Comment L.12

EPA addressed similar issues regarding ESA consultation in Response to Comment II.L.2. As the comment recognizes, an informal consultation, rather than formal consultation, is appropriate where a "not likely to adversely affect" finding is made by the action agency. In this case, EPA has received a written concurrence from NOAA Fisheries with its preliminary finding that the AQUAGP is not likely to adversely affect listed species and/or critical habitat under its jurisdiction. *See* AR-57, AR-60. This finding is also consistent with previous concurrences by NOAA Fisheries that the eligible hatcheries' permits do not pose an adverse impact to listed species or critical habitat. EPA notes that the AQUAGP is as stringent if not more stringent than those hatcheries' current individual permits.

In addition, for species under jurisdiction of the U.S. Fish and Wildlife Service (USFWS), applicants must certify that the ESA eligibility provisions at Part 4.4 of the AQUAGP are met at the time the NOI is submitted and complete the required steps outlined in Appendix 2 of the AQUAGP. Any facility with a discharge in the proximity of listed species must either complete formal or informal consultation with the USFWS or must determine (in consultation with EPA) that discharges will not affect listed species. USFWS submitted Comment H.1 above agreeing to review each individual project during the NOI approval process to ensure that one of the criteria is met. *See* Response to Comment II.L.2.

Comment L.13

EPA must also comply with the Marine Mammal Protection Act.

The MMPA established a federal responsibility to conserve marine mammals.[85] Under the MMPA, it is illegal to "take" a marine mammal without proper authorization from NMFS.[86] "Take" is defined as "harass, hunt, capture or kill, or attempt to harass, hunt, capture or kill any marine mammal."[87] "Harassment" is defined as any act of pursuit, torment, or annoyance, which has the potential to injure a marine mammal in the wild, or has the potential to injure or disturb a marine mammal in the wild by disrupting behavioral patterns including migration, breathing, nursing, breeding, feeding, or sheltering."[88] Based on the laundry list of harms we have identified, and the location of several facilities, it is likely that the issuance of this general permit will harass marine mammals.

[85] 16 U.S.C. § 1361 *et seq*.
[86] *Id*. §§ 1372, 1374.
[87] *Id*. § 1362 (13).
[88] *Id*. § 1362 (18)(a).

1. "Takes" of marine mammals could occur if the AQUAGP is approved.

Due to potential "takes" of marine mammals, EPA must obtain proper authorization from NMFS before authorizing this permit. CAAPs approved under this permit could be located in state waters on the coast and result in harassment of whales. For example, the individual NPDES permit for Sandwich State Fish Hatchery indicates that the North Atlantic right whale (Eubalaena glacialis) may occur near the facility.[89] Thus, EPA must complete an accurate assessment of risks posed by this project to marine mammals in state waters.

[89] NPDES Permit Fact Sheet, Sandwich State Fish Hatchery (2015), at 19-20, *available at* https://www3.epa.gov/region1/npdes/permits/2015/finalma0110027permit.pdf.

Response to Comment L.13

The AQUAGP authorized discharges of treated fish culture water from land-based hatcheries. As such, EPA determined that there will be no "take" of any marine mammal associated with the general permit. *See* Response to Comment II.L.2. The comment does not offer any instances where take would occur under the conditions of the AQUAGP. The Sandwich State Fish Hatchery Fact Sheet referenced in the comment (p. 19) explains that the North Atlantic right whale is not likely to occur in the vicinity of the hatchery discharge and is not likely to be affected by the effluent.

Therefore, EPA determined that this permit action is consistent with the protections specified in the MMPA and that a permit authorizing a "take" under Section 101(a)(5) (A-D) of the MMPA is not warranted. Further, EPA completed an informal Endangered Species Act section 7 consultation with NOAA Fisheries, which included an analysis of potential effects to the North Atlantic right whale and the fin whale. Both species are also protected by the MMPA. NOAA Fisheries concurred with EPA's finding that the permitted discharges were not likely to adversely affect the two whale species. *See* Response to Comment II.L.2

Comment L.14

EPA must also consult under the Magnuson-Stevenson Act due to the adverse effects of the project on Essential Fish Habitat.

The MSA established procedures to identify, conserve, and enhance Essential Fish Habitat (EFH) for species regulated under a federal Fisheries Management Plan.[90] The MSA requires consultation with NMFS on all actions, including proposed actions, which may adversely affect EFH.[91] To "adversely affect" means any impact that reduces the quality and/or quantity of EFH, and may include direct (e.g., contamination or physical disruption), indirect (e.g., loss of prey or reduction in species fecundity), site-specific, or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions.[92] When NMFS is consulted on impacts to EFH under this Act, it must "recommend to such agency measures that can be taken by such agency to conserve such habitat," and, should the action agency fail to adopt those measures, it must explain its reasons for not following those measures.[93]

[90] 16 U.S.C. §§ 1801 *et seq.*
[91] *Id*. § 1855(b)(2).
[92] 50 C.F.R. § 600.810.

[93] 16 U.S.C. § 1855(4).

1. Several of the individually permitted sites included in this general permit are located within EFH.

Several individually permitted, pre-existing CAAPs are located within EFH for various federally managed fish species (and the General Permit would apply to future CAAPs that may be located within EFH). For example, the tidal marshes and Cape Cod Bay near the Sandwich State Fish Hatchery are designated by NMFS as EFH for twenty five species including Atlantic cod, Atlantic sea herring, and Bluefin tuna.[94] The receiving waters of the New England Aquarium Corporation include EFH for 23 managed species within the NMFS boundaries encompassing Massachusetts Bay.[95]

Additionally, several sites will affect EFH for Atlantic salmon. Sunderland State Fish Hatchery discharges to a tributary of the Connecticut River, Russellville Brook, and is thus designated by NOAA Fisheries as EFH for Atlantic salmon, which migrate up the River and its tributaries to spawn.[96] Twin Mountain State Fish Hatchery, Warren State Fish Hatchery, and Milford State Fish Hatchery also discharge into tributary streams designated as EFH for Atlantic salmon.[97]

[94] NPDES Permit Fact Sheet, Sunderland State Fish Hatchery (2015), at 17-19.
[95] NPDES Permit Fact Sheet, New England Aquarium Corporation (2013), at 16-17.
[96] NPDES Permit Fact Sheet, Sunderland State Fish Hatchery (2015), at 20-21.
[97] NPDES Permit Fact Sheet, Twin Mountain State Fish Hatchery (2012), at 18; NPDES Fact Sheet, Warren State Fish Hatchery (2011); NPDES Permit Fact Sheet, Milford State Fish Hatchery (2011), at 20.

2. The AQUAGP could adversely affect EFH.

EPA acknowledges that authorization of the general permit will allow discharges into EFH, yet has failed to consult with NMFS.[98] The proposed AQUAGP has the potential to harm EFH through discharges of formalin, nitrogen, phosphorus, chlorine, and ammonia. Yet the EPA concludes, without consultation, that effluent limitations, conditions, and monitoring requirements contained in the Draft AQUAGP minimize adverse effects to aquatic organisms, including those with designated EFH in the receiving waters, rendering consultation unnecessary.[99] CAAPs under this general permit will "adversely affect" water quality in these EFHs both individually and cumulatively; thus, this permit cannot be approved without consultation.

[98] EPA, Draft AQUAGP Fact Sheet (2020), at 41.
[99] *Id*.

Response to Comment L.14

EPA addressed its consultation regarding EFH with NOAA Fisheries for the AQUAGP in Response to Comment II.L.2.

Comment L.15

Approval of the AQUAGP would be arbitrary and capricious in violation of the CWA and the Administrative Procedure Act.

Issuance of a general permit is a final agency action under the Administrative Procedure Act (APA), which requires the court to "hold unlawful and set aside" any agency action that it concludes is "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law."[100] For substantive APA violations, a court evaluates whether the agency "examine[d] the relevant data and articulate[d] a satisfactory explanation for its action including a rational connection between the facts found and the choice made."[101] Due to the numerous significant adverse impacts on water quality resulting from these CAAPs, issuance of a general permit without first complying with mandatory procedures under federal law would violate these standards, and the issuance of the permit would be arbitrary and capricious.[102]

Conclusion

EPA must fully comply with NEPA, the ESA, the MMPA, and the MSA prior to issuing the AQUAGP. The undersigned urge EPA to take a close look at the individual and cumulative impacts of CAAP facilities in New Hampshire, Massachusetts, and Vermont before approving the general permit, as required by federal law. Failure to do so will result in final agency action that is vulnerable to legal challenge.

[100] 5 U.S.C. §§ 702, 704, 706(2).
[101] *Motor Vehicle Mfrs. Ass'n of U.S. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983) (internal quotation marks omitted).
[102] 5 U.S.C. §§ 701-706.

Response to Comment L.15

EPA evaluated the potential impacts from discharges of pollutants of concerns from eligible facilities and explained the technical basis for each permit condition in the Draft AQUAGP in detail over many pages. *See* Fact Sheet pp. 17-36. EPA has also responded in detail to the many comments and provided detailed, legally and technically sound explanations for each of the changes in the Final AQUAGP in the Response to Comment document. Finally, EPA explained that it has completed the appropriate consultations under EFH and ESA and that issuance of the AQUAGP is in compliance with NEPA and the MMPA in the responses to comments above. As such, issuance of the AQUAGP has fully complied with all of the regulatory requirements referenced in the comment.

M. **Comments submitted via form prepared by Friends of the Earth.**

EPA received thousands of comments from different individuals of the following form.

I am writing to share my opposition to the EPA's draft NPDES general permit for Concentrated Aquatic Animal Production (CAAP) Facilities in Massachusetts, New Hampshire, and Vermont.

Whether on land or at sea, large-scale finfish aquaculture facilities pose extreme risks to the environment and public health. When based in water, these operations routinely cause massive, catastrophic fish spills -- like the release of more than 263,000 Atlantic salmon from a floating feedlot in Washington State in 2017 -- which spread disease, risk genetic degradation, and create unnecessary competition with our already struggling native fish stocks. They attract and harm predators and other wildlife.

On land, these facilities can be equally disruptive. They are incredibly resource intensive, requiring massive amounts of water and energy to operate. Large-scale facilities do not have any requirements to utilize renewable energy or recirculate the majority of their water. Indeed, the very program at issue here-- NPDES water discharge permits for CAAP facilities-- was created with this in mind. These large operations also take a toll on nearby communities and the infrastructure.

Finally, whether on land or at sea, this industry is corporate-driven, which only means higher profits at the expense of sustainable operations and quality products. These factory seafood farms are leading to the demise of our wild fishing communities and related industries by placing downward pressure on fishing prices, and when in the ocean, they create competition for limited marine space. It is clear that these impacts far outweigh the benefit to fish farming corporations, which stand to profit off external costs to nearby communities and the environment.

Because of these impacts, the EPA should not support a streamlined path for permitting of the industry. Regulatory processes and environmental protection measures should not be truncated. Moreover, the United States should be supporting responsible and sustainable seafood production instead of streamlining permits for an industry that has clear, documented, longstanding harm.

Based on the above concerns, I urge you to cease all attempts to create a general NPDES permit for concentrated aquaculture facilities-- in New England and across the United States. Thank you for considering my opinion.

Response to Comment M

The comment does not raise specific concerns about the limitations or conditions of the Draft AQUAGP, but rather expresses general concerns about the ecologic and environmental harm from the aquaculture industry, particularly from “large-scale finfish aquaculture facilities.” The AQUAGP proposes to regulate the discharge from certain land-based hatcheries in MA, NH, and VT into waters of the United States. The AQUAGP contains a number of restrictions limiting coverage and will not be eligible to every CAAP facility in this geographic area. *See* Part 4 of the

AQUAGP. For example, the AQUAGP is only available to land-based facilities (*e.g.*, marine net pens are NOT eligible for coverage), does not permit discharges of pollutants to waters impaired for that pollutant, and does not cover "new sources." New sources are defined at 40 CFR §122.2 and include dischargers from a facility whose construction commenced after promulgations of ELGs applicable to such source. EPA is not aware of any large-scale, commercial seafood production facilities that appear to be the focus of this comment in the eligible geographic area. Any new facility would likely be subject to the CAAP ELGs promulgated in 2004 and, as such, would be a "new source" and not eligible for coverage under the AQUAGP.

EPA maintains that a general NPDES permit is the appropriate regulatory vehicle to streamline the permitting process for these and similar facilities, provide timely permit coverage, and to allocate resources in a more efficient manner. The existing, land-based hatcheries expected to seek coverage under this general permit (listed in Attachment 1 of the Fact Sheet and further refined in response to comments received) are trout hatcheries operated by State Fish and Game Commissions or the USFWS. Given all the restrictions in Part 4, EPA identified as many as eleven hatcheries that could qualify for coverage with the potential to add one or two additional, existing land-based hatcheries (e.g., Roger Reed State Fish Hatchery in Palmer, MA). The AQUAGP establishes consistent permitting conditions for these similar operations and discharges, while also carrying forward conditions from individual permits in accordance with antibacksliding requirements at 40 CFR § 122.44(l). The hatcheries covered by the AQUAGP stand in stark contrast to the "large-scale" "corporate-driven" facilities described in the comment.

Finally, the general permit process has an additional step where EPA and the State review the Permittees' notice of intent to discharge (NOI), similar to an application review. At this time, EPA may make a further determination whether any individual applicant should be authorized under the general permit or seek individual permit coverage. *See* 40 CFR § 122.28(b)(3). EPA affirms that the general permit procedures and the conditions and requirements in the AQUAGP will protect water quality and improve efficiency to assess and respond to water quality impacts from hatcheries in MA, NH, and VT.

N. **Comments submitted via form prepared by In Defense of Animals.**

EPA received thousands of comments from different individuals of the following form.

I urge the EPA to strengthen pollution restrictions in its Draft General Permits for Concentrated Aquatic Animal Production (CAAP) facilities in New Hampshire, Vermont, and Massachusetts. These facilities are presently devastating downstream water bodies via nutrient pollution which causes eutrophication and cyanobacteria outbreaks. The pollution results from inadequate treatment of wastewater to remove nitrogen, phosphorus, and fish waste. The conditions of any permits issued for the CAAPs' continued operation should eliminate or minimize this harm.

The draft general permits presently do not include adequate protections for downstream water bodies. They remove quantitative effluent limits for pollutant characteristics relevant to nutrient pollution (e.g. total ammonia, total suspended solids, biological oxygen demands) which were in place under previous permits. The quantitative limits are replaced with weaker limitations grounded in vague technology based Best Management Practices (BMPs). This is a violation of the Clean Water Act's backsliding provision. The facilities already have such BMPs in place and employ them to comply with quantitative limits. Removing the quantitative limits qualifies as downgrading effluent limits and will decrease CAAP facilities' incentive to comply with pollution restrictions. Furthermore, it is inappropriate to assign general permits for the covered hatcheries given their diversity. They raise different species, discharge different kinds of waste, and have different systems for handling waste.

The draft permits should be modified so they include strong, quantitative, numeric limits for all pollutant criteria relevant to nutrient pollution. They should also require more frequent monitoring for pollutant criteria and require ambient testing for eutrophication indicators in downstream water bodies. The BMPs need to be modified so they are more specific and enforceable. Issuing individualized National Pollutant Discharge Elimination System permits for each facility is also more suitable then issuing general permits.

CAAP facilities are inherently unsustainable. When many animals are crowded into dirty facilities it is inevitable that they will produce filth to the detriment of surrounding areas. Beyond these direct environmental harms, the fish raised in hatcheries cause additional destruction when they are released into water bodies and threaten native fish via competition for resources, disease spreading, and predation. Preventing the construction of CAAP facilities is most aligned with the EPA's mandate but the agency should at least minimize the harm they cause.

Response to Comment N

The comment raises similar concerns raised in other comments received on the Draft AQUAGP. EPA addressed concerns related to the potential for hatcheries covered by the AQUAGP to contribute nutrients to receiving waters in Reponses to Comments II.J.3.1. The Final AQUAGP establishes a numeric, technology-based limit of 10 mg/L for TSS and BOD tailored to the specific operations of the class of facilities eligible for the general permit coverage and carries forward all of the site-specific limits from existing, individual permits in accordance with regulations at 40 CFR § 122.44(l)(1). As a result, the Final AQUAGP is as stringent or more

stringent than the current, individual hatchery permits and, as such, address the comments associated with anti-backsliding. *See* Response to Comment II.J.2.1. EPA addressed concerns about the enforceability of BMPs in Responses to Comments II.J.2.2 and J.3.2.

More frequent monitoring may facility the ability to characterize effluent but is not always necessary when effluent variability is low. After reviewing comment received, EPA revised the Final AQUAGP to require upstream and downstream ambient monitoring for total phosphorus, chlorophyll-a, and total nitrogen twice per month during the growing season (June through September). This ambient data will inform future reasonable potential analysis to determine if additional BMPs and/or numeric water quality-based limits are warranted. In addition, facilities in New Hampshire are subject to ambient monitoring under the AQUAGP in order to comply with the State Conditions imposed by the State's certification under Section 401 of the CWA. *See* Final AQUAGP Parts 2.1, 2.3, and AR-28. Finally, States will continue to conduct routine ambient monitoring in the receiving water consistent with their CWA 303(d) programs, in which states periodically assess the quality of waters within their boundaries.

Finally, the general permit process has an additional step where EPA and the State review the Permittees' notice of intent to discharge (NOI), similar to an application review. At this time, EPA may make a further determination whether any individual applicant should be authorized under the general permit or seek individual permit coverage. *See* 40 CFR § 122.28(b)(3). EPA affirms that the general permit procedures and the conditions and requirements in the AQUAGP will protect water quality and improve efficiency to assess and respond to water quality impacts from hatcheries in MA, NH, and VT.

O. **Comments from Beth Marino, Goffstown, NH**

The Environmental Protection Agency (EPA) is currently drafting permits that will allow **14** industrial fish farms in New Hampshire, Vermont, and Massachusetts to pollute local bodies of water with toxic scum. These underwater factory farms are part of a cycle of suffering and environmental destruction which hurts the animals inside them, wild animals, and local communities.

The poor treatment of animals in fish hatcheries inevitably leads to unsustainable and environmentally hazardous conditions. Large numbers of animals are crowded into dirty facilities and produce masses of filth to the detriment of neighbors. Fish hatcheries discharge high amounts of phosphorus pollution in local bodies of water in the form of fish waste and feed. This stimulates the growth of bacterial blooms which degrade water quality and creates a foul scum on the water surface. Many bodies of water, or portions of them, have been closed off to recreation due to these toxic conditions.

What EPA needs to do is preserve and protect our native wildlife and the ecosystem that supports them. As of this correspondence the NH Fish and Game Department is being sued for the pollution of waterways as a consequence of these fisheries. Based on that fact alone, the EPA should deny these permits and close any existing fisheries in the tri-county area.

Please protect the environment. Under the current administration, the EPA has not scored any points with the public. This could be a huge step in gaining back the confidence and trust of those who have to live with the terrible consequences of these fisheries. Please do the right thing. Thank you for your time.

Response to Comment O

EPA maintains that a general NPDES permit is the appropriate regulatory vehicle to streamline the permitting process for these and similar facilities, provide timely permit coverage, and to allocate resources in a more efficient manner. The existing, land-based hatcheries expected to seek coverage under this general permit (listed in Attachment 1 of the Fact Sheet and further refined in response to comments received) are trout hatcheries operated by State Fish and Game Commissions or the USFWS. Given all the restrictions in Part 4, EPA identified as many as 12 hatcheries that could qualify for coverage with the potential to add one or two additional, existing land-based hatcheries (e.g., Roger Reed State Fish Hatchery in Palmer, MA). EPA has addressed comments about water quality impacts in Response to Comment II.J.3.1. EPA has responded to similar comments about the environmental impacts of hatcheries like those expected to seek coverage under the AQUAGP in Responses to Comments II.J.1 and II.L.1.

P. **Comments from Jean Publiee**

i am totally against allowing aquaculture, which is nothing but disease from diseased fish which are inferior to real natural fish, to dump its pollutants into streams in nh ma or vt. i do not agree with taxpayers paying for fake fish being raised in hatcheries. it is fakery to raise them since they are so inferior to natural fish and then the pollutants dumped into the streams will kill any natural fish that are trying to live in them. hatcheries are full of massive tons of crap, fish pollutants, dead food that was not eaten, they dump some of it on their grounds and the rains wash it off too besides the pollutant in their emission systems. close down hatcheries.

Response to Comment P

The comment raises general concerns about the environmental impacts of aquaculture. EPA does not have the regulatory authority to close down hatcheries. The NPDES permit program authorizes discharges of pollutants from point sources to waters of the U.S. The AQUAGP was written according to federal and state statutes to regulate the discharge of pollutants to prevent adverse environmental impacts and meet state water quality standards. The comment raises no concerns about specific parts of the NPDES permit, nor does it request any specific changes to the permit. EPA has responded to similar comments about the environmental impacts of hatcheries like those expected to seek coverage under the AQUAGP in Responses to Comments II.J.1 and II.L.1. EPA has addressed comments about water quality impacts in Response to Comment II.J.3.1.

APPENDIX A

GENERAL RESPONSE TO COMMENTS ON LONG ISLAND SOUND ("LIS") NPDES OUT-OF-BASIN TOTAL NITROGEN PERMITTING APPROACH

Numerous comments were received regarding the new total nitrogen ("TN") effluent limits. This General Nitrogen Response ("General Response") provides a comprehensive explanation of the overall approach EPA has adopted to address TN effluent limitations for out-of-basin POTWs discharging to Long Island Sound, taking into account the Clean Water Act (CWA or "the Act"), implementing regulations, case law and varied technical and policy considerations. It addresses the comments received regarding the new TN effluent limits and is referenced in many of the responses to those specific comments.

While this permitting approach governs the application of TN effluent limits in the specific permit here and allows EPA to place those limits within a wider frame of reference in order to explain their derivation, EPA underscores that NPDES permits are adjudicated on a case-by-case, permit-specific basis. The limits imposed here, in other words, do not set a precedent for other permittees, and do not bind the Region, or other regulated entities, in future permit proceedings, which will be adjudicated based on their own administrative records.

I. Introduction and Description of Permitting Approach[1]

EPA has adopted a systemic, state-by-state approach to reduce out-of-basin loading of nitrogen pollution into Long Island Sound from POTW point sources in Massachusetts, New Hampshire, and Vermont, through the coordinated issuance of individual NPDES permits ("Out-of-Basin Permitting Approach"). These out-of-basin facilities have not been assigned waste load allocations ("WLAs") under the Long Island Sound Total Maximum Daily Load[2] ("TMDL") approved by EPA in 2001. The task of allocating nitrogen loads among these facilities in a manner that ensures compliance with water quality standards, as required under Section 301 of

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[1] The NPDES out-of-basin permitting approach described here is distinct from the Long Island Sound Nitrogen Reduction Strategy. In December 2015, EPA sent a letter to the environmental agency commissioners of MA, CT, NY, VT and NH setting forth a post-TMDL EPA Long Island Sound Nitrogen Reduction Strategy (the "LIS Strategy") for waters in the LIS watershed. The strategy recognizes that more work may need to be done to reduce nitrogen levels, further improve dissolved oxygen ("DO") conditions, and attain other related water quality standards in LIS, particularly in coastal embayments and the estuarine portions of rivers that flow into the Sound. EPA is working to establish nitrogen thresholds for Western LIS and several coastal embayments, including the mouth of the Housatonic River. Currently, EPA is responding to comments on our threshold modelling methodology from the public, external technical reviewers and our state and county partners. Documents regarding the LIS Strategy are available for public access on EPA's Long Island Sound website (http://longislandsoundstudy.net/issues-actions/water-quality/nitrogen-strategy/). Upon completion of establishing thresholds and assessing the water quality conditions of the estuarine waters of the Connecticut River, allocations of total nitrogen loadings may be lowered if further reductions are necessary. Thus, while EPA's current systemic NPDES permitting approach discussed in this general comment, and embodied in this permit, does not currently rely on data from the LIS Strategy, future efforts to establish permit limits could be informed by relevant data and recommendations that result from the LIS Strategy effort. If reductions are needed for this particular discharge, a lower water quality-based effluent limit will be added in a future permit cycle. If so, EPA anticipates exploring possible trading approaches for nitrogen loading in the Massachusetts portion of the Connecticut River watershed.

[2] Connecticut Department of Environmental Protection and New York State Department of Environmental Conservation, *A Total Maximum Daily Load Analysis to Achieve Water Quality Standards for Dissolved Oxygen in Long Island Sound* (LIS TMDL), December 2000.

the Act, falls to EPA. That EPA would implement any necessary reductions through the issuance and oversight of NPDES permits was expressly assumed by the TMDL. Uncontested on the record before EPA in this permit proceeding are two facts: first, that significant amounts of nitrogen from out-of-basin facilities are discharged to the LIS watershed (as much as 6 million pounds per year, based on the sum of the maximum annual discharge from each out-of-basin discharger from 2013 to 2017), and, second, that ongoing nitrogen-driven water quality impairments exist in LIS.

When confronting the difficult environmental regulatory problem of controlling or accounting for dozens of discharges into a complex water body like Long Island Sound, EPA was presented with a variety of potential permitting approaches. Long Island Sound is a nitrogen-impaired water body spanning 1,268 square miles that implicates the sometimes divergent interests of five states, dozens of municipalities and numerous non-governmental organizations ("NGOs"), along with interested members of the public. In developing its overarching permitting approach, as well as each individual permit, EPA carefully considered, but ultimately rejected, several possible alternatives, on two principal grounds: (1) that they were not sufficiently protective to assure that all the applicable requirements of the Act would be met (*i.e.*, they lacked enforceable TN effluent limitations to *ensure* as a matter of law that nitrogen loads would be maintained at protective levels), or (2) that they would entail unwarranted uncertainty and delay (*i.e.*, they called for the development of new or revised TMDLs or for development of extensive new data collection or modelling in an attempt refine or pinpoint necessary targets and loads, even though the permits at issue have long-since expired and water quality impairments are ongoing).

Rather than approach this complex permitting task on an *ad hoc* basis, EPA instead fashioned a systemic permitting approach designed to comprehensively regulate nitrogen loading from out-of-basin nitrogen sources on a gross, basin-level scale. EPA addressed the existing TN loading to ensure achievement of the following overarching objectives:

- the overall out-of-basin TN load does not increase, given that the LIS is already nitrogen impaired;
- effluent limits are annual average mass-based, consistent with the assumptions of the TMDL;
- no individual facility is left with an effluent limit that is not achievable using readily available treatment technology at the facility's design flow; and
- smaller facilities can achieve their limits through optimization.

EPA's derivation of effluent limitations to implement these objectives, based on its best professional judgment and information reasonably available to the permit writer at the time of permit issuance, consists of three essential parts:

- First, EPA *identified* the existing aggregate load from all contributing facilities in a given state.

- Second, because Long Island Sound is already nitrogen impaired and failing to achieve applicable water quality standards,[3] EPA *capped* that load to avoid contributing to further impairments and fully protect existing uses.

- Third, EPA *allocated* the load according to a water quality-related consideration rationally related to achieving water quality standards in Long Island Sound and carrying out the objectives of the Act.

In the case of Massachusetts, that consideration was facility *size*, with loads distributed based on the design flow of the POTW treatment plants. In deriving design-flow-based effluent limitations, EPA utilized the following methodology:

- EPA estimated the current maximum out-of-basin annual point source load using data for the five years prior to the year of the Draft Permit, consistent with Region 1's ordinary practice of using the most recent five years of data in the derivation of effluent limits for permits, which is in accordance with the recommendation in EPA guidance to use three to five years and, by use of the longer timeframe, is intended to more fully capture a representative data set[4] (see estimate of recent effluent loadings appended to the Fact Sheet);

- It prioritized effluent limits for major POTW facilities with design flow greater than 1 MGD, consistent with the definition of major facility in 40 CFR §122.2;[5]

- It developed mass-based rolling annual average TN effluent limits based on design flow (consistent with 40 CFR § 122.45(b)(1)) and effluent concentrations that can achieved by means of currently available nitrogen removal technology for all facilities and the design flow for each facility, where effluent limit (lb/day) = Concentration (mg/L) x Design Flow (MGD) x 8.345;

- For POTW facilities with design flow less than 10 MGD, EPA based limits on concentrations that can typically be achieved through optimization, with more aggressive optimization expected for facilities with design flow greater than 5 MGD; and,

- For the four POTW facilities with design flow greater than 10 MGD (which together comprise more than half of the total Massachusetts load to LIS), EPA based limits on concentrations achievable through optimization or upgrades.

EPA's intention in establishing a total nitrogen limit in this and future permits for out-of-basin dischargers is not specifically to achieve greater nitrogen reductions, but rather to cap the out-of-basin contribution in a manner that provides assurance to the downstream state that total nitrogen loading will not increase with population or economic development. That assurance is provided by means of enforceable effluent limits.

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[3] CTDEEP, Interstate Environmental Commission, EPA, *2019 Long Island Sound Hypoxia Season Review*, available at: http://www.iec-nynjct.org/sites/default/files/2020-07/FINAL_LISound-Hypoxia-2019-Combined-Report_april2020.pdf

[4] *NPDES Permit Writer's Manual*, EPA-833-K-10-001, September 2010, page 5-30, available at: https://www.epa.gov/sites/production/files/2015-09/documents/pwm_2010.pdf, page.

[5] *NPDES Permit Writer's Manual*, EPA-833-K-10-001, September 2010, page 2-17, available at: https://www.epa.gov/sites/production/files/2015-09/documents/pwm_2010.pdf

Although EPA considered caps for individual dischargers at their current loadings, that approach was rejected because these effluent limits are subject to statutory antibacksliding requirements of CWA § 402(o) which would prevent a limit from being increased if flows increase due to new residential or industrial development. Therefore, a facility currently discharging well below its design flow, could be unable to meet the loading limit if, for example, a new industrial discharger were to tie in, even if that discharger were willing to invest in readily available treatment technology. EPA examined out-of-basin loads across the watershed and developed effluent limits that are achievable through optimization or readily available treatment technologies for all facilities, even if they are operating at their design flow. EPA has determined that this approach will be protective of water quality and will monitor receiving water response over the permit term and adjust as necessary in future permit cycles. EPA believes that this approach reasonably balances the need to hold overall TN loadings constant to avoid exacerbating ongoing nitrogen-driven environmental degradation against the inherent scientific and technical uncertainty associated with receiving water response in a water body as complex as LIS.

The basis for establishing mass-based effluent limits using facility design flow and 5, 8 and 10 mg/L as total nitrogen concentrations that facilities can meet by means of optimization or, for the four largest facilities, readily available treatment technology, meets the legal requirements of the CWA, as described in this General Response, section III, but was derived in order to balance the burden of treatment with the four largest facilities (currently generating approximately 51 to 58 % of the Massachusetts out-of-basin load) required to meet 5 mg/L concentration at design flow, and the remaining facilities with effluent limits that can be achieved through system optimization. In tiering the facilities, EPA considered the relative magnitude of flows from these facilities and observed that there was a significant divide between the four largest facilities and the remaining facilities (67 MGD for Springfield, 17.5 MGD for Holyoke, 17 MGD for Pittsfield and 15 MGD for Chicopee compared to 8.6 MGD for North Hampton). The four largest facilities contribute 53% of the design flow for the out-of-basin watershed. EPA also observed that three of these facilities are on the main stem of the Connecticut River and Pittsfield is on the mainstem of the Housatonic, so there is little or no attenuation of nitrogen. All of these factors, in EPA's technical judgment, warranted the further additional assurance of meeting water quality standards provided by a more stringent numeric cap in loading that may necessitate a facility upgrade, as opposed to limits achievable through optimization only. (EPA also notes that the four larger facilities will be able to spread the cost of any upgrade over a much larger user base).

While both 8 mg/L and 10 mg/L are within the range of total nitrogen concentrations achievable through low cost system modification,[6] EPA chose the next cut off at 5 MGD partly on the assumption POTWs of greater than that size are likely to already possess the technical capability, operator sophistication and administrative capacity needed to achieve more stringent effluent limitations via optimization requirements. (To this point, EPA took notice of the fact that the 5 MGD threshold has some regulatory significance under EPA's regulations implementing the NPDES program, specifically pretreatment, where EPA determined that facilities of that size are significantly large enough to require a pretreatment program). EPA, of course, also took into

[6] EPA, *Case Studies on Implementing Low-Cost Modifications to Improve Nutrient Reduction at Wastewater Treatment Plants,* EPA-841-R-15-004, August 2015, page 32.

account the relatively large magnitude of the loads associated with these facilities. Finally, EPA also took note of the fact that these facilities, though not serving communities as large as Springfield, Holyoke, Pittsfield and Chicopee, still have considerable ability to spread costs over user bases of considerable size.

EPA chose the 1 MGD cut off because that corresponds to the definition of major POTW under NPDES regulations. Facilities above 1 MGD account for approximately 80% of the total out-of-basin load. Because the many (41) facilities smaller than 1 MGD collectively account for a relatively small amount of the total load, EPA believes that optimization is a reasonable point of departure for these facilities, given their comparatively small loads and user bases.

Finally, those facilities under 0.1 MGD are required to monitor and report data that may be used in future permitting cycles.

Thus, in arriving at its tiering determination, EPA considered a series of technical and environmental factors within its expertise, and also took into account equitable considerations. EPA acknowledges that the chosen tiers are not the only way to divide the out-of-basin TN allocations, but was not presented with any alternatives that capped the existing load based on design flow through the imposition of enforceable permit limits. For example, EPA considered, and rejected, the option to apply a limit based on 8 mg/L effluent limit for all facilities with design flow greater than 1 MGD (at their respective design flows) because that would result in an increase in the current loading and place a greater burden on facilities that service relatively small communities. The combined design flow for the 29 MA POTW facilities with design flow greater than 1 MGD is 196 MGD. Of this combined design flow, 60%, or 117 MGD consists of the design flow for the four largest POTWs. Under the selected permitting approach, the proportion of the permitted load from the four largest facilities will be 60% of the combined permitted load for all 29 MA facilities, consistent with the proportion of design flow. If all POTWs with design flow over 1 MGD had a concentration-based limit of 8 mg/L (or a load based limit based on 8 mg/L and design flow), the proportion of the permitted load coming from the four largest facilities would increase from 60% of the total permitted load to 90%, shifting the burden of treatment significantly from larger to smaller facilities. In addition, the total permitted TN loading from those 29 facilities would increase from 8,100 lb/day under the chosen approach to 8,600 lb/day.

II. Statutory, Regulation and Environmental Context for EPA's Chosen Out-of-Basin Permitting Approach

Below, EPA explains the applicable statutory and regulatory structure, as well as the rationale for adopting this particular approach in lieu of others advanced on the record.

A. National Pollutant Discharge Elimination System Permits Generally

NPDES permits use two statutory mechanisms to protect water quality: (1) water quality standards, and (2) effluent limitations. *See generally* CWA §§ 301, 303, 304(b); 40 CFR pts. 122, 125, 131. Water quality standards are promulgated by states and approved by EPA. *See* CWA § 303(c)(2)(A); 40 CFR §§ 131.10-.12. The CWA and its implementing regulations require permitting authorities to ensure that any permit issued complies with the CWA and the water quality standards of all states affected by the discharge, which in this case are comprised of

Massachusetts, Connecticut and New York. *See* CWA §§ 301(b)(1)(C), 401(a)(1)-(2); 40 CFR §§ 122.4(d), .44(d)(1).

Effluent limitations serve as the primary mechanism in NPDES permits for ensuring compliance with a state's water quality standards by imposing limits on the types and amounts of particular pollutants that a permitted entity may lawfully discharge. *See* CWA §§ 301(b)(1)(C), 401(a)(1)-(2). Effluent limitations for pollutants are based on the control technology available or are based on achieving the water quality standards for the receiving water. CWA § 301(b)(1)(a)-(c). The nutrient limits here are water quality-based effluent limitation, commonly referred to as "WQBELs".

B. Impaired Waters and Total Maximum Daily Load

The CWA establishes a process by which states identify and manage waters where pollution control technologies alone are not stringent enough to achieve applicable water quality standards. CWA § 303(d). These identified waters, where the applicable water quality standards have not yet been attained, are commonly referred to as "impaired" waters or "nonattainment" waters and are prioritized by the states on a list that is commonly referred to as a "303(d) list." *Id.* Once a water is identified on a 303(d) list, the state develops a management plan for bringing these waters into compliance with water quality standards. CWA § 303(d)(1)(C)-(D). This process includes setting priorities for establishing TMDLs for individual pollutants in the impaired waters. *Id.*

A TMDL defines the amount of a pollutant that a waterbody can assimilate without exceeding the state's water quality standard for that waterbody. CWA § 303(d)(1)(C). TMDLs are set at a level that incorporates seasonal variations of the waterbody and a margin of safety that takes into account gaps in knowledge. *Id.* The TMDL then allocates a portion of the receiving water's pollutant loading capacity among facilities discharging to the impaired waterbody. 40 CFR §§ 130.2(h), 130.7. These wasteload allocations ("WLAs") for point sources, which are based on the underlying water quality standards, serve as a basis for water quality-based effluent limitations in permits. In addition to wasteload allocations for point sources, TMDLs include load allocations ("LAs") for background and nonpoint sources, a margin of safety, and possibly a reserve allocation (for example, for future growth). CWA § 303(d)(1)(C); *see also* 40 CFR § 130.7; Office of Water, U.S. EPA, Doc. No. EPA-833-K-10-001, *NPDES Permit Writers' Manual* §§ 6.2.1.2, 6.4.1.1, at 6-14, -31 (Sept. 2010) ("*2010 Permit Writers' Manual*").

Although EPA initially approached the development of TMDLs one water segment at a time, EPA has long supported and encouraged states to develop TMDLs on a watershed-wide basis to more comprehensively assess and allocate pollutant loads across hydrologically-linked water segments at the same time. *See* Office of Wetlands, Oceans & Watersheds, U.S. EPA, *Handbook for Developing Watershed TMDLs* 1, 6-8 (draft Dec. 15, 2008) ("*Watershed TMDL Handbook*"); *see also* CWA § 303(d)(1); 40 CFR §§ 130.7, 131.3(h). Watershed TMDLs follow the same general process as a "single-segment TMDL," but the watershed TMDL involves larger-scale considerations and "often provides greater flexibility in developing source allocations." *Watershed TMDL Handbook* at 69. This approach is reflected in the LIS TMDL.

In addition to TMDLs, the furthering of impairment is prohibited by the antidegradation provisions of State water quality standards. One of the principal objectives of the CWA,

articulated in CWA § 101(a) is to "maintain the chemical, physical and biological integrity of the Nation's waters." The antidegradation requirements in federal regulations at 40 CFR § 131.12 provide a framework for maintaining and protecting water quality that has already been achieved and require states to adopt provisions in their water quality standards that prevent further degradation of both degraded and waters which are meeting or exceeding the water quality necessary to protect designated and existing uses. Since the receiving water at issue here is in Connecticut, we look to Connecticut antidegradation requirements which state, in paragraph 2 of the Connecticut Water Quality Standards:

> Existing and designated uses such as propagation of fish, shellfish and wildlife, recreation, public water supply, and agriculture, industrial use and navigation, and the water quality necessary for their protection is to be maintained and protected.

As the Massachusetts point source dischargers are substantially upstream of the impaired receiving water EPA is applying the antidegradation requirement by capping the aggregate loading of nitrogen to the Long Island Sound from Massachusetts dischargers. This allows EPA to ensure that the nitrogen limits are applied fairly and in a technologically feasible manner while ensuring that antidegradation provisions of Connecticut's water quality standards are being met.

C. The Relationship Between NPDES Permitting and TMDLs

This permit concerns the interrelationship between two key mechanisms prescribed by the CWA for protecting and improving water quality: (1) the facility-specific effluent limits established by NPDES permits issued pursuant to section 402, and (2) the TMDL WLAs, and the assumptions underlying them, developed by states pursuant to section 303(d) to limit and allocate pollution loads among facilities discharging to impaired water bodies. The statute does not specify how NPDES permits should incorporate or reflect WLAs. EPA's implementing regulations, however, require permitting authorities to ensure that permit effluent limits are "*consistent with the assumptions and requirements* of any available [WLA] for the discharge prepared by the State and approved by EPA." 40 CFR § 122.44(d)(1)(vii)(B) (emphasis added).

As detailed below, EPA is obligated to regulate discharges that have the reasonable potential to cause or contribute to water quality standards violations through the imposition of WQBELs in NPDES permits, even where a TMDL has not yet been issued or updated. In so regulating, EPA may also impose limitations that are at once consistent as well as more stringent than the *assumptions* of a wasteload allocation in a TMDL based on new information. Finally, a permitting authority may derive a limit based on both a TMDL and the relevant water quality standard.

It has long been settled in the EAB and the First Circuit that EPA has the discretion to regulate discharge through the imposition of a WQBEL where a TMDL has not yet been issued or revised. As the Board explained in *In re Upper Blackstone Water Pollution Abatement Dist.*, 14 E.A.D. 577, 604-06 (EAB 2010):

> Regulations implementing the NPDES permitting program specifically contemplate that permit issuers will establish numeric permit limits when there is no TMDL or wasteload allocation. Subsection (vii) requires the permitting authority to "ensure" that effluent limits are consistent with "any *available* wasteload allocation." 40 CFR §

122.44(d)(1)(vii) (emphasis added). By using the phrase "any available," the regulations expressly recognize that a TMDL or wasteload allocation may not be available. This reading of the regulation is compelled by the Agency's interpretation set forth in the preamble to 40 CFR § 122.44(d)(1), which expressly outlines the relationship between subsections (vi) governing the setting of limits based on narrative criteria and (vii), which requires consistency with "any available" waste load allocation or TMDL:

> The final point about paragraph (vi) is that, *in the majority of cases where paragraph (vi) applies, waste load allocations and total maximum daily loads will not be available* for the pollutant of concern. Nonetheless, any effluent limit derived under paragraph (vi) must satisfy the requirements of paragraph (vii). Paragraph (vii) requires that all water quality-based effluent limitations comply with "appropriate water quality standards," and be consistent with "available" waste load allocations. *Thus for the purposes of complying with paragraph (vii), where a wasteload allocation is unavailable, effluent limits derived under paragraph (vi) must comply with narrative water quality criteria and other applicable water quality standards.*

54 Fed. Reg. 23,868, 23,878 (June 2, 1989) (emphases added). This formal Agency interpretation set forth in the preamble at the time the regulation was promulgated expresses the Agency's expectation that, while wasteload allocations may not uniformly be available, effluent limits must be established without waiting for a TMDL or wasteload allocation.

The Board's decision was upheld in *Upper Blackstone Water Pollution Abatement Dist. v. EPA*, 690 F.3d 9, 26 (1st Cir. 2012), *cert. denied*, 569 U.S. 972 (2013), where the court similarly rejected the notion that permit issuers must wait until a TMDL or wasteload allocation is developed before setting an effluent limit in a permit and reiterated that scientific uncertainty is not a basis for delay in issuing an NPDES permit. *Accord In re City of Ruidoso Downs,* 17 E.A.D. 697, 733 (EAB 2019), *appeal docketed sub nom. Rio Hondo Land & Cattle Co. v. EPA*, No. 19-9531 (10th Cir. May 23, 2019); *In re City of Taunton,* 17 E.A.D. 105, 144 (EAB 2016) *aff'd*, 895 F.3d 120 (1st Cir. 2018), *cert. denied*, 139 S. Ct. 1240 (Feb. 19, 2019).

EPA, in addition, has the discretion to deviate from a wasteload allocation in a TMDL, if such a departure is warranted by the record. Significantly, WLAs are not permit limits *per se*; rather they still require translation into permit limits (*i.e.*, WQBELs). While section 122.44(d)(1)(vii) prescribes minimum requirements for developing WQBELs, it does not prescribe detailed procedures for their development. Permit limits need not be identical to the wasteload allocation established by the TMDL. *See In re City of Homedale Wastewater Treatment Plant*, 16 E.A.D. 421, 432 (EAB 2014) (upholding as "consistent with the assumptions and requirements of the…TMDL" permitting authority's decision to include monthly and weekly average effluent limits for phosphorus, rather than daily maximum contained in applicable TMDL). Rather, permit issuers have flexibility to determine appropriate effluent limits for permits within the parameters of the statutory and regulatory scheme. *See* 54 Fed. Reg. 23,868, 23,879 (June 2, 1989) (clarifying in preamble to 40 CFR § 122.44 that, in not imposing detailed procedures for establishing permit limits, EPA intended to "give[] the permitting authority the flexibility to

determine the appropriate procedures for developing water quality-based effluent limits"). Accordingly, the Board has rejected the argument that the EPA permit writer, in calculating permit limits for a wastewater treatment plant, erred by using a facility's current, known design flow in developing effluent limits, rather than higher flow rate referenced in the TMDL. *In re City of Moscow*, 10 E.A.D. 135, 146-48 (EAB 2001). Thus, "TMDLs are by definition maximum limits; permit-specific limits like those at hand, which are more conservative than the TMDL maxima, are not inconsistent with those maxima, or the WLA upon which they are based." *City of Moscow*, 10 E.A.D. at146-48. *See also City of Taunton v. EPA*, 895 F.3d 120, 139-40 (1st Cir. 2018) (upholding Agency's decision to establish necessary permit limits to comply with water quality standards based on available information at the time of permit reissuance (citing *Upper Blackstone Water Pollution Abatement Dist. v. EPA*, 690 F.3d 9, 26 (1st Cir. 2012), *cert. denied*, 569 U.S. 972 (2013))), *cert. denied*, 139 S. Ct.___ (Feb. 19, 2019)).

Additionally, neither the CWA nor its implementing regulations provide a basis for concluding that a permitting authority cannot derive a limit based on *both* a TMDL *and* the relevant water quality standard if there is a record justification to warrant that approach. *In re City of Ruidoso Downs,* 17 E.A.D. 697, 733 (EAB 2019), *appeal docketed sub nom. Rio Hondo Land & Cattle Co. v. EPA*, No. 19-9531 (10th Cir. May 23, 2019); *see also* NPDES Surface Water Toxics Control Program, 54 Fed. Reg. 23,868, 23,879 (June 2, 1989) (incorporating language into the regulations that requires water quality-based effluent limits to be derived from water quality standards because that "is the only reliable method for developing water quality-based effluent limits that protect aquatic life and human health"). To be sure, Sections 301 and 303 have different purposes; each represents a distinct aspect of the CWA statutory scheme that is implemented under a separate set of regulatory authorities. *Compare* 40 CFR § 122.44 (containing NPDES permitting regulations) *with* 40 CFR § 130.7 (containing CWA section 303(d) and TMDL regulations). *See In re City of Taunton Dep't of Pub. Works*, 17 E.A.D. 105, 142-144 (EAB 2016), aff'd, 895 F.3d 120, 136 (1st Cir. 2018), cert. denied, 139 S. Ct. ___ (Feb. 19, 2019) (explaining distinction between CWA § 303(d) listing process and the NPDES permitting process, and observing that, "The 303(d) listing proc ess represents a statutory *response* to water pollution" while "NPDES permitting under CWA section 301 applies to individual discharges and represents a more *preventative* component of the regulatory scheme in that, under section 301, no discharge is allowed except in accordance with a permit.") (emphasis in original). But TMDLs, wasteload allocations developed from TMDLs, and water quality-based effluent limits in permits share a common foundation in that all are required to take into account and assure that relevant water quality standards will be met. This conclusion is reflected in the applicable NPDES regulation at 40 CFR § 122.44(d)(1)(vii)(A)-(B):

> (vii) When developing water quality-based effluent limits under this paragraph the permitting authority shall ensure that:
>
> > (A) The level of water quality to be achieved by limits on point sources established under this paragraph is derived from, and complies with all applicable water quality standards; *and* [emphasis added]
> >
> > (B) Effluent limits developed to protect a narrative water quality criterion, a numeric water quality criterion, or both, are consistent with the assumptions and

requirements of any available wasteload allocation for the discharge prepared by the State and approved by EPA pursuant to 40 CFR 130.7.

These two provisions are not to be read in isolation; rather, as indicated by the word "and," these requirements must be read in conjunction with one another. This is in in keeping with other provisions of the NPDES regulations implementing the NPDES program and CWA § 301, including 40 CFR 122.4(a) ("No permit may be issued…[w]hen the conditions of the permit do not provide for compliance with the applicable requirements of the CWA, or promulgations promulgated under CWA'); 122.44(d)(4) (requiring NPDES permits to include "any requirements in addition to or more stringent than promulgated effluent limitation guidelines or standards under sections 301…of the CWA necessary to…[c]onform to applicable water quality requirements under section 401(a)(2) of CWA when the discharge affects a State other than the certifying State") and 122.44(d)(5) (requiring NPDES to "Incorporate any more stringent limitations, treatment standards, or schedule of compliance requirements established under Federal or State Law or regulations in accordance with section 301(b)(1)(C) of the CWA"). *See also* NPDES Surface Water Toxics Control Program, 54 Fed. Reg. 23,868, 23,879 (June 2, 1989) (incorporating language into the regulations that requires water quality-based effluent limits to be derived from water quality standards because that "is the only reliable method for developing water quality-based effluent limits that protect aquatic life and human health"). *See City of Taunton v. EPA*, 895 F.3d 120, 139-40 (1st Cir. 2018) (upholding EPA's decision to establish necessary permit limits to comply with water quality standards based on available information (citing *Upper Blackstone Water Pollution Abatement Dist. v. EPA*, 690 F.3d 9, 26 (1st Cir. 2012), *cert. denied*, 569 U.S. 972 (2013).

D. The Nutrient Limits Are Consistent with the Assumptions and Requirements of the LIS TMDL

It is undisputed that excessive nitrogen loadings are causing significant water quality problems in Long Island Sound, including low dissolved oxygen. In December 2000, the Connecticut Department of Environmental Protection ("CT DEP"), now known as the Connecticut Department of Energy and Environmental Protection ("CT DEEP"), and New York State Department of Environmental Conservation ("NYSDEC"), completed a TMDL for addressing nitrogen-driven eutrophication impacts in Long Island Sound. The TMDL includes a WLA for point sources and a load allocation ("LA") for non-point sources. The point source WLAs for in-basin sources (Connecticut and New York State) are allocated facility-by facility and were developed to achieve an aggregate 60% reduction in point source loading from those two states. The point source WLA in the TMDL *assumes* an aggregate 25% reduction from the baseline total nitrogen loading estimated in the TMDL for out-of-basin sources (Massachusetts, New Hampshire and Vermont wastewater facilities discharging to the Connecticut, Housatonic and Thames River watersheds), but does not allocate loads by facility. *See* TMDL--A Total Maximum Daily Load Analysis to Achieve Water Quality Standards for Dissolved Oxygen in Long Island Sound (CT DEP 2000, page 33).

Although the facility's discharge has not been assigned a specific WLA, it is still subject to the assumptions incorporated into the LIS TMDL under Section 303 of the Act, and implementing regulations, as well as compliance with applicable water quality standards under Section 301 of the Act. The nitrogen load limit in the permit is necessary to meet federal regulations at 40 CFR § 122.44(d)(1)(vii)(A), which as explained require that effluent limits be consistent the

assumptions and requirements of any available approved wasteload allocation, and 40 CFR § 122.44(d)(1)(vii)(B), which require compliance with state water quality standards. In its 2001 LIS TMDL approval letter and attached review memo, EPA acknowledged the TMDL assumption that a 25% reduction of the out-of-basin point source load was a reasonable, necessary condition for approving the LIS TMDL. It committed to using its NPDES authorities to implement this reduction. EPA discussed the out-of-basin nitrogen loads as follows:

> The TMDL identifies wasteload allocations for out-of-basin nitrogen loads (i.e., tributary loads) that would be achieved through the implementation of Phase IV reduction targets. Specifically, the Phase IV targets include a 25 percent reduction in point source nitrogen loads, based on the clear role that these sources have on water quality in Long Island Sound.
>
> As discussed above, EPA is not approving the out-of-basin nitrogen reductions as formal allocations but rather as reasonable assumptions on which the in-basin reductions are based. In this case, the states' estimated 25 percent reduction in nitrogen loads from point sources (primarily POTWs) is reasonable because this level of reduction has been demonstrated as feasible through Biological Nutrient Removal (BNR) retrofits of existing facilities. These low-cost retrofits were implemented at numerous Connecticut POTWs during Phase II of the Long Island Sound nitrogen reduction program. The reductions achieved by these retrofits support the predicted 25 percent reduction by out-of-basin sources. EPA believes that these estimates of future reductions make sense. Moreover, as discussed in the Reasonable Assurance section below, EPA is prepared to use its authorities when issuing NPDES permits to dischargers in Massachusetts and New Hampshire, and in overseeing permit issuance in Vermont, to translate the nitrogen reductions into facility specific requirements in order to achieve the overall 25 percent reduction level. EPA has already begun to include nitrogen monitoring requirements in Massachusetts permits.

Review Memo Section 5.B (page 13, emphasis added).[7] Therefore, EPA's approval of the 2000 TMDL included a commitment on EPA's part to use its NPDES permitting and oversight authorities to reasonably assure that the assumption regarding out-of-basin load reductions identified in the TMDL would occur, consistent with the regulatory requirements. In this and other documents, EPA refers to that commitment as the out-of-basin WLA, consistent with the language in the TMDL.

The annual loading effluent limit is consistent with the assumptions used to derive the WLA for both in-basin and out-of-basin dischargers in the LIS TMDL, because the maximum estimated total out-of-basin point source load is assured to be less than the out-of-basin WLA assumed by the 2000 TMDL. As TN increases may be driven by population increases (the estimated

[7] TMDL Approval Letter from the Long Island Sound Office of the U.S. EPA to the states of New York and Connecticut, with enclosure entitled: EPA New England and EPA Region 2 TMDL Review for TMDL in Long Island Sound, Connecticut and New York, Final Status, Impairment/Pollutant is Hypoxia (low dissolved oxygen) due to nitrogen, dated April 3, 2001.

wastewater TN loading is 10 pounds per person per year[8]), TN effluent limits are necessary to assure that the aggregate out-of-basin loading is not exceeded due to population. EPA anticipates that forthcoming out-of-basin permits in Massachusetts will include average annual loading nitrogen limits for facilities with design flow greater than 1 MGD, along with TN optimization requirements in all permits for dischargers greater than 100,000 gpd, and monitoring for all dischargers, in order to assure that TN loadings will be not increase over time to levels that exceed the WLA assumption in the TMDL.

E. The Nutrient Limits are Imposed Based on a Finding of Reasonable Potential to Cause or Contribute to an Exceedance of Water Quality Standards; Constitute a Translation of the States' Narrative Nutrient Water Quality Standards; and Are Necessary to Ensure Compliance with Water Quality Standards, Including Antidegradation

Narrative standards have the same force and effect as other state water quality standards; unlike numeric criteria, however, narrative water quality standards are necessarily subject to translation prior to their application. *See American Paper Inst. v. United States EPA*, 996 F.2d 346, 351 (D.C. Cir. 1993). As explained by the D.C. Circuit:

> As long as narrative criteria are permissible…and must be enforced through limitations in particular permits, a permit writer will inevitably have some discretion in applying the criteria to a particular case. The general language of narrative criteria can only take the permit writer so far in her task. Of course, that does not mean that the language of a narrative criterion does not cabin the permit writer's authority at all; rather, it is an acknowledgement that the writer will have to engage in some kind of interpretation to determine what chemical-specific numeric criteria—and thus what effluent limitations—are most consistent with the state's intent as evinced in its generic standard.

See American Paper Inst., 996 F.2d at 351 (citations omitted). This process of translating a narrative criterion is governed under EPA regulations by 40 CFR § 122.44(d)(1)(vi), which implements Sections 301 and 402 of the Act. Subsection (A) of that provision mandates at the outset a calculation of a protective ambient threshold concentration for the pollutant:

> Where a State has not established a water quality criterion for a specific chemical pollutant that is present in an effluent at a concentration that causes, has the reasonable potential to cause, or contributes to an excursion above a narrative criterion within an applicable State water quality standard, the permitting authority must establish effluent limits using one or more of the following options:
>
> > (A) Establish effluent limits using a calculated numeric water quality criterion [emphasis added] for the pollutant which the permitting authority demonstrates will attain and maintain applicable narrative water quality criteria and will fully protect the designated use.

[8] Unit loading from residences has been estimated at an average of 0.027 lb/capita/d or 10 lb/capita/year. See EPA Manual – Nitrogen Control, September 1993, EPA/625/R-93/010, Page 10.

See also Upper Blackstone Water Pollution Abatement Dist. v. United States EPA, 690 F.3d at 23. Because both Connecticut and New York employ narrative water quality criteria for the relevant pollutants, EPA relied in the first instance on the TMDL (a sophisticated and resource-intensive modeling and technical effort representing the input of five states and EPA) as a translation of these criteria under 40 CFR § 122.44(d)(1)(vi), and supplemented that reliance with an analysis of subsequent water quality monitoring data and other information related to LIS nutrient-driven impairments.[9]

As the Board and First Circuit have held, EPA has a significant amount of flexibility within the bounds of the CWA in determining whether a particular discharge has a reasonable potential to cause an excursion above a water quality criterion. *In re City of Taunton Dep't of Pub. Works*, 17 E.A.D. 105, 144 (EAB 2016), aff'd, 895 F.3d 120, 136 (1st Cir. 2018), cert. denied, 139 S. Ct. ___ (Feb. 19, 2019)*; Upper Blackstone Water Pollution Abatement Dist. v. U.S. Envtl. Prot. Agency*, 14 E.A.D. 577, aff'd, 690 F.3d 9 (1st Cir. 2012), cert. denied, 133 S. Ct. 2382 (2013); *In re Town of Newmarket*, 16 E.A.D. 18 (EAB 2013); *In re City of Attleboro Wastewater Treatment Plant*, 14 E.A.D. 398 (EAB 2009). The requirement to impose a permit limit is triggered by a finding that the facility may discharge a pollutant at a level that "contributes" to or has the "reasonable potential" to cause a water quality standard violation. *Upper Blackstone*, 14 E.A.D. at 599 & n.29; *see also* 40 CFR § 122.44(d). To establish a "reasonable potential" the permitting authority must show some level of certainty greater than a mere possibility in the technical judgment of the permitting authority. *Upper Blackstone*, 14 E.A.D. at 599 n.29 (explaining that "'[r]easonable potential' requires some degree of certainty greater than a mere possibility, but it leaves to the permit writer's scientific and technical judgment how much certainty is necessary"). Additionally, the reasonable potential analysis must be based on "worst-case" effluent conditions. *Id*. at 599. Thus, as explained previously, this analysis requires "a precautionary approach when determining whether the permit must contain a water quality-based effluent limit for a particular pollutant," rather than "certainty of an existing causal link between a specific discharge and a particular violation of water quality standards" *Id*.

Although nitrogen driven impairments in LIS have been reduced, they have not been eliminated, and remain significant. In EPA's technical and scientific judgment, the current quantity of nitrogen in LIS exceeds the narrative and numeric nutrient-related criteria applicable to LIS, and existing uses are not being protected, based on analyses of water quality data and information in the administrative record.[10] The out-of-basin loads, whose magnitude is described above, necessarily contribute, or have the reasonable potential to contribute, to these violations. Designated uses for the marine waters of Long Island Sound (Class SA) include "habitat for marine fish, other aquatic life and wildlife." *See* RCSA § 22a-426-(f) and (g). Connecticut's WQS protect those uses from excessive nutrient pollution by means of the following narrative criteria: "The loading of nutrients, principally phosphorus and nitrogen, to any surface water

[9] NY and CT have narrative nutrient criteria, as well as numeric DO criteria, along with antidegradation requirements protecting existing uses. LIS was listed due to low DO. The use impairment includes: decrease in bathing area quality, an increase in unhealthy areas for aquatic marine life, an increase in mortality of sensitive organisms, poor water clarity for scuba divers, a reduction in commercial and sport fisheries values, a reduction in wildlife habitat value, degradation of seagrass beds, impacts on tourism and real estate, and poorer aesthetics. See TMDL at p. 9.

[10] *See* e.g. Long Island Sound Report Card 2018, at https://www.ctenvironment.org/wp content/uploads/2018/09/ReportCard2018-BestView.pdf

body shall not exceed that which supports maintenance or attainment of designated uses." Although there have been significant reductions in the size of the hypoxic zone in LIS due largely to in-basin point source TN reductions, LIS continues to be impaired.[11] As noted, it is undisputed that significant amounts of nitrogen from out-of-basin facilities are discharged to the LIS watershed (as much as 6 million pounds per year, based on the sum of the maximum annual discharge from each out-of-basin discharger from 2013 to 2017).

Since the LIS TMDL was approved by EPA in 2001, the study of water quality conditions in LIS and the nitrogen loadings that contribute to hypoxia and other impairments there has continued. Annual monitoring of hypoxia and dissolved oxygen conditions in Long Island continues, as most recently documented in the *2019 Long Island Sound Hypoxia Season Review*[12] which notes that while the area of hypoxia has been reduced, water quality standards have not yet been met.[13]

In 2015, the Long Island Sound Study (LISS)[14] updated its Long Island Sound Comprehensive Conservation and Management Plan (CCMP)[15] which sets watershed targets, implementation actions to meet those targets, and monitoring strategies. One of the objectives of the CCMP is to improve water quality by further reducing nitrogen pollution from sources that are more distant from the Sound,[16] such as wastewater treatment plants in Massachusetts.

A study published in 2008 used both measurements and mass-balance modeling to evaluate the potential for nitrogen attenuation in the main stem of the Connecticut River in April and August 2005. One of the reaches studied was a 55 km stretch of the Connecticut River in Massachusetts. The study found no nitrogen loss in that reach either in April or August, most likely due to the depth and higher velocities in the main stem of the river compared to the shallower, slower tributaries where previous models and studies had demonstrated varying degrees of nitrogen attenuation.[17]

In addition, subsequent studies refined the understanding of out-of-basin baseline nitrogen loading which suggest lower out-of-basin baseline point source loading to the Connecticut River than the 21,672 lb/day assumed in the 2000 TMDL. In 2013, the United States Geological Survey (USGS) published an estimation of the total nitrogen load to Long Island Sound from Connecticut and contributing areas to the north for October 1998 to September 2009.[18] Available

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[11] Long Island Sound Study, *A Healthier Long Island Sound: Nitrogen Pollution*, 2019, page 2.
[12] CTDEEP, Interstate Environmental Commission, EPA, *2019 Long Island Sound Hypoxia Season Review*, available at: http://www.iec-nynjct.org/sites/default/files/2020-07/FINAL_LISound-Hypoxia-2019-Combined-Report_april2020.pdf
[13] *2019 Long Island Sound Hypoxia Season Review* (page 13)
[14] The Long Island Sound Study (LISS) is a bi-state partnership, formed by EPA, New York and Connecticut in 1985, consisting of federal and state agencies, user groups, concerned organizations, and individuals dedicated to restoring and protecting the Long Island Sound. For more information see https://longislandsoundstudy.net/
[15] LISS, Long Island Sound Comprehensive Conservation and Management Plan 2015 Returning the Urban Sea to Abundance (CCMP), 2015.
[16] CCMP, page 19.
[17] Smith, Thor E., et al, *Nitrogen Attenuation in the Connecticut River, Northeastern USA; A Comparison of Mass Balance and N_2 Production Modeling Approaches, Biogeochemistry*, Mar., 2008, Vol. 87, No. 3 (Mar., 2008), pp. 311-323
[18] Mullaney, J.R., and Schwarz, G.E., 2013, Estimated Nitrogen Loads from Selected Tributaries in Connecticut Draining to Long Island Sound, 1999–2009: U.S. Geological Survey Scientific Investigations Report 2013–5171, 65

total nitrogen and continuous flow data from 37 water-quality monitoring stations in the LIS watershed, for some or all of these years, were used to compute total annual nitrogen yields and loads. In order to extract the non-point source loadings from the total nitrogen measured, the authors relied on point source estimates from the SPARROW model of nutrient delivery to waters in the Northeastern and Mid-Atlantic states in 2002, including the Connecticut River, that was published by Moore and others in 2011[19]. The SPARROW model estimated that 1,776.7 metric tons per year (MT/yr) (or annual average 10,820 lb/day) of total nitrogen was discharged to the Connecticut River from Massachusetts, New Hampshire and Vermont in 2002[20]. These estimates were based on an approach by Maupin and Ivahnenko, published the same year, which used discharge monitoring data available from EPA's Permit Compliance System (PCS) database for 2002.[21,22] Where no data was available, an estimated typical pollutant concentration (TPC) and flow was used to approximate nitrogen loading from point sources according to their industrial category.[23]

The permit conditions at issue here were fashioned to ensure full implementation of CWA §§ 301(b)(1)(C) and 402, as well as consistency with the assumptions of the LIS WLA. A permitting authority has considerable discretion to determine appropriate effluent limits for a permit. "Congress has vested in the Administrator [of EPA] broad discretion to establish conditions for NPDES permits" in order to achieve these statutory mandates of establishing effluent limitations, including narrative permit conditions, to attain and maintain water quality standards. *Arkansas v. Oklahoma*, 503 U.S. 91, 105 (1992). Section 402 provides that a permit may be issued upon condition "that such discharge will meet either all applicable requirements under sections 301, 302, 306, 307, 308 and 403 of this Act, or prior to taking of necessary implementing actions relating to all such requirements, such conditions as the Administrator determines are necessary to carry out the provisions of this Act." 33 U.S.C. §1342(a). "This provision gives EPA considerable flexibility in framing the permit to achieve a desired reduction in pollutant discharges." *Id.* The D.C. Circuit has described the CWA's balance when confronted with a difficult situation and the obligation to eliminate water quality impairments: "EPA may issue permits with conditions designed to reduce the level of effluent discharges to acceptable levels. This may well mean opting for a gross reduction in pollutant discharge rather than the fine-tuning suggested by numerical limitations. *But this ambitious statute is not hospitable to the concept that the appropriate response to a difficult pollution problem is not to try at all.*" *Natural Resources Defense Council, Inc. v. Costle,* 568 F.2d 1369, 1380 (D.C. Cir. 1977) (emphasis added) (finding unlawful a rule that would have exempted certain discharges from permitting requirements based on the difficulty in setting limits).

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[19] Moore, Richard B., Craig M. Johnston, Richard A. Smith, and Bryan Milstead, 2011. Source and Delivery of Nutrients to Receiving Waters in the Northeastern and Mid-Atlantic Regions of the United States. Journal of the American Water Resources Association (JAWRA) 47(5):965-990. DOI: 10.1111/j.1752-1688.2011.00582.x

[20] Extrapolated from Moore, et.al 2011, Table 3 on page 977 which estimated that for 2002 an 33.2 % of the total 4,553 MT/yr Massachusetts nitrogen load was from point sources, 2.5% of the total 3,795 MT/yr Vermont nitrogen load was from point sources and 6.1 percent of the total 2,790 MT/yr New Hampshire nitrogen load was from point sources.

[21] Moore (2011), page 968.

[22] Maupin, Molly A. and Tamara Ivahnenko, 2011. Nutrient Loadings to Streams of the Continental United States From Municipal and Industrial Effluent. *Journal of the American Water Resources Association* (JAWRA) 47(5):950-964.

[23] Maupin (2011), page 954.

Finally, antidegradation provisions of State water quality standards require that existing uses be fully maintained and protected, which is an additional basis for the limit. EPA does not believe that increased nitrogen loading into an impaired water body that is suffering the ongoing effects of cultural eutrophication would be consistent with applicable antidegradation requirements. One of the principal objectives of the CWA, articulated in CWA § 101(a) is to "maintain the chemical, physical and biological integrity of the Nation's waters." The antidegradation requirements in federal regulations at 40 CFR § 131.12 provide a framework for maintaining and protecting water quality that has already been achieved and require states to adopt provisions in their water quality standards that prevent further degradation of both degraded and waters which are meeting or exceeding the water quality necessary to protect designated and existing uses. Since the receiving water at issue here is in Connecticut, EPA looked to Connecticut antidegradation requirements which state, in paragraph 2 of the Connecticut Water Quality Standards:

> Existing and designated uses such as propagation of fish, shellfish and wildlife, recreation, public water supply, and agriculture, industrial use and navigation, and the water quality necessary for their protection is to be maintained and protected.[24]

As the Massachusetts point source dischargers are substantially upstream of the impaired receiving water EPA is applying an effluent limitation consistent with antidegradation requirements by capping the aggregate loading of nitrogen to the Long Island Sound from Massachusetts dischargers, to prevent further degradation of the receiving waters that would result from increased loading from the Springfield facility, given that nitrogen-driven cultural eutrophication, and the deleterious effects on existing and designated uses that attend this process, is still underway in LIS. This allows EPA to ensure that the nitrogen limits are applied fairly and in a technologically feasible manner while ensuring that antidegradation provisions of Connecticut's water quality standards are being met.

In order to assure compliance with water quality standards, and fully implement and translate the states' narrative nutrient and related criteria, in EPA's judgment, out-of-basin should not be increased, because water quality data indicates that the assimilative capacity for nitrogen has been reached in portions of LIS and cultural eutrophication, the impacts of which include hypoxia, is ongoing. It is reasonable, in EPA's view, to issue permits to out-of-basin dischargers that hold loads constant and in so doing curtail the potential for these out-of-basin loadings to contribute to further impairment and degradation of a water that is already beyond its assimilative capacity for nitrogen. The TN effluent limits and optimization requirements are necessary to assure that the out-of-basin load does not cause or contribute to further violation of water quality criteria in the downstream LIS. Holding these loads level, in conjunction with significant nitrogen pollution reduction efforts being pursued by in-basin dischargers will, under EPA's analysis, be sufficient to make a finding that the out-of-basin permits taken as a whole contain nutrient controls sufficient to ensure that the discharges comply with water quality standards under Section 301 of the Act, based on information in the record currently before EPA. This conclusion will be tested for the term of the permit through monitoring programs in LIS and

[24] Connecticut DEEP, 2011, Connecticut Water Quality Standards, page 2. Available at: https://portal.ct.gov/-/media/DEEP/water/water_quality_standards/wqsfinaladopted22511pdf.pdf.

will be adjusted as necessary in future permit cycles. This review and potential tightening of the conditions in NPDES permits is a basic feature of the CWA.

III. Principal Objections to EPA's Chosen Out-of-Basin Permitting Approach

Overall, commenters objecting to the approach adopted by EPA misapprehend the legal framework governing EPA's derivation of NPDES effluent limitations under CWA § 402, which under federal regulations must not only be consistent with the assumptions and requirements of any available WLA, but also must ensure compliance with applicable water quality standards pursuant to CWA § 301, based on information reasonably available to EPA at the time of permit reissuance.

A. Effluent limits may be more stringent than a TMDL WLA

Several commenters argue that compliance with the nitrogen reductions assumed by the LIS TMDL preclude the imposition of further nitrogen controls on the facility, or rely on the closely-related proposition that EPA must await the development and approval of new, facility-specific WLAs for the out-of-basin POTWs prior to imposing effluent limitations, even if there is evidence of ongoing water quality impairments in the receiving waters (a fact not disputed on the permit record). These positions, however, are unfounded, as the Environmental Appeals Board and United States Court of Appeals for the First Circuit have repeatedly and unambiguously held that EPA need *not* await development of an EPA-approved, facility-specific WLA, or collection of new water quality data or creation of new models, in order to independently develop and impose a water quality-based effluent limitation stringent enough to satisfy CWA § 301 at the time of permit reissuance. *See City of Taunton v. U.S. Envtl. Prot. Agency,* 895 F.3d 120 (1st Cir. 2018), cert. denied, 139 S. CT. 120 (2019); *Upper Blackstone Water Pollution Abatement Dist. v. U.S. Envtl. Prot. Agency*, 690 F.3d 9 (1st Cir. 2012), cert. denied, 133 S. Ct. 2382 (2013).

Additionally, some commenters appear to misconstrue the basis for the permit limits for the out-of-basin dischargers, improperly characterizing that foundation as the WLA established for POTWs discharging directly into Long Island Sound. By this, they imply that the permit need only comply with the WLA, as opposed to the Act as a whole. This view is incorrect in at least two ways. First, as a factual matter, the out-of-basin dischargers were not assigned a WLA; reductions from these sources were an *assumption* of the LIS WLA. Second, EPA's permit limits were not only developed to be consistent with the LIS WLA, but also derived from water quality standards under CWA § 303, which may lead to the imposition to more stringent effluent limitations necessary to achieve those standards, as EPA is obligated to do under CWA § 301. Thus, in accordance with the Act and EPA's implementing regulations, they have been: (1) written to be "consistent" with the assumptions and requirements of the LIS WLA, which was established based on an assumption that out-of-basin sources of nitrogen would be reduced by 25%, and (2) made more stringent than that assumption in order to comply with CWA § 301, based on information available to EPA at the time of permit reissuance, specifically, evidence of ongoing nitrogen-driven impairments in LIS.

B. EPA need not await a TMDL update before it can incorporate new information relevant to nitrogen loading and receiving water quality in an NPDES permit, and consideration of new information does not amount to a de facto TMDL update

Some commenters argued that EPA must await development of a new TMDL prior to considering updated information when developing NPDES permits. This view improperly subordinates the NPDES program to the TMDL program. In fact, they are coordinate programs. TMDLs establish pollutant maxima under Section 303 of the Act, and do not preclude the imposition of a more stringent limit pursuant to an NPDES permit under Section 402. While NPDES permits must be consistent with the assumptions and requirements of any available WLA pursuant to EPA regulations, EPA has an independent obligation to write NPDES permits that ensure compliance with Section 301, using the best information available at the time of permit reissuance, which in this case includes an evaluation of TMDL implementation and current receiving water quality in LIS. While the TMDL represented, as a commenter notes, "the best scientific and legal approach for meeting water quality standards in the LIS" at the time, EPA may supplement its scientific and technical record for the purposes of NPDES permitting, including through refining its knowledge of TMDL inputs and assumptions, such as baseline loads, which are inherently dynamic and vary from permit cycle to cycle, as well as an evaluation of instream monitoring and data that reflect the extent to which the TMDL endpoints are being achieved. Contrary to some commenters' assertions, EPA is not attempting to modify the TMDL through issuance of a permit; EPA, rather, is implementing the TMDL by issuing a permit consistent with the assumptions and requirements of that TMDL as required by the federal regulations, and pursuant to its independent obligations under Section 402 and 301 of the Act. *See* 40 CFR 122.44(d)(1)(vii)(A)-(B).

TMDLs are in a sense fixed in a moment in time, but that attribute of TMDLs does not suspend consideration of new information or preclude new analysis consistent with the TMDL under other regulatory programs, such as the NPDES permit program, if the permit record calls for such an evaluation. This stands to reason, given that a person is authorized to discharge, if at all, through an NPDES permit, not a TMDL, and the issuance of an NPDES permit that does not assure attainment of water quality standards is prohibited under the Act and regulations implementing the NPDES program. EPA is obligated under the Act to revisit NPDES permit requirements and generate updated record bases for decision at periodic intervals not to exceed five years. TMDLS, on the other hand, are planning documents and not independently enforceable. Rather, they are implemented though the regular issuance of NPDES permits, and at each NPDES permit reissuance, the permit issuer *must* demonstrate that the discharge will not cause or contribute to a water quality standards violation. Reassessing the baseline load, which was based on estimated point source loads from over 30 years ago, is one component of this process. This evaluation is a function of the NPDES permitting process and does not amount to an "update" of the TMDL. EPA is obligated to ensure not only that the NPDES WQBELs are consistent with the assumptions and requirements of any available WLA, but to ensure that the permit complies with the requirements of Section 301. Given the lapse of time between TMDL approval, and derivation of the baseline assumptions underlying the TMDL, this type of inquiry is reasonable, and indeed has been squarely requested of EPA through comments on the record, including but not limited to those from a downstream affected state. (Even commenters objecting to this reassessment recognize that the NPDES permits necessarily incorporate more

recent data and information, given the structure of Section 301 and 402; in objecting to a proposed benchmark, the commenter states, "It does not represent the most recent data available to the Agency at the time of permit renewal.")

C. The optimization requirement is not vague and is within EPA's authority

Some commenters argued that that a special condition, such as the optimization requirement, is not anticipated by rule, guidance or definition. EPA is authorized to impose narrative conditions in permits to abate the discharge of pollutants when, for example, "The practices are reasonably necessary to achieve effluent limitations and standards or to carry out the purposes and intent of the CWA." 40 CFR § 122.44(k)(4). Special conditions are defined in EPA's NPDES Permit Writer's Manual as those which,

> "supplement numeric effluent limitations and require the permittee to undertake activities designed to reduce the overall quantity of pollutants being discharged to waters of the United States, to reduce the potential for discharges of pollutants, or to collect information that could be used in determining future permit requirements." (*NPDES Permit Writers' Manual, Chapter 9,* USEPA September 2010 [EPA833-K-10-001]).

As the optimization requirement supplements the TN annual average load limit and is designed to reduce the overall quantity of nitrogen being discharged, it clearly fits within this definition. The requirement is not overly prescriptive, because it is intended to afford the permittee with the latitude to develop the optimization strategy that best meets the configuration and operation of the facility. EPA in imposing the optimization requirement is not dictating specific operational measures at the facility.

EPA disagrees that the optimization is vague. Optimization has been defined, for example, as the process of identifying the most efficient or highest quality outcome, given current constraints, by maximizing positive factors and minimizing negative factors. A permittee applying this or other definition in common usage would not be at risk of arbitrary enforcement. Rather, this condition gives a person of ordinary intelligence a reasonable opportunity to know what is prohibited and comply with the requirement by considering objective factors, so that they may act accordingly. The operators of the facility, as evidenced their comments, have a deep and nuanced expertise in nutrient removal capabilities and constraints of the plant, and of the factors that impact plant performance.

It is intended that during the first year of the permit, alternative methods of operating the facility to optimize nitrogen removal will be evaluated. At the end of the year the permittee will submit a report to the EPA and MassDEP of its findings. The optimal operational method will be self-implementing by the permittee at the beginning of the second year and does not require EPA or MassDEP approval. It is the intent of EPA and MassDEP that treatment facilities optimize nitrogen removal and, at a minimum, the facilities must not increase their nitrogen discharge loadings.

D. Voluntary reductions in Total Nitrogen discharge will not assure attainment of water quality standards

Certain commenters suggest that *voluntary* reductions by the out-of-basin dischargers are sufficient to ensure compliance with applicable water quality standards under Section 301 of the

Act. The Region disagrees. One long-standing principle is that permits must "ensure" compliance with water quality requirements. *See* 40 CFR § 122.4(d); *In re City of Marlborough*, 12 E.A.D. 235, 250 (EAB) (2005) (finding that "possible" compliance is not the same as "ensuring" compliance); *In re Gov't of D.C. Mun. Separate Storm Sewer Sys.*, 10 E.A.D. 323,342 (EAB 2002) (finding that "reasonably capable" does not comport with the "ensure" standard). EPA has similarly interpreted the CWA to prohibit it from issuing an NPDES permit "[w]hen the imposition of conditions cannot ensure compliance with the applicable water quality requirements of *all affected States*." 40 CFR § 122.4(d) (emphasis added); *accord Arkansas v. Oklahoma*, 503 U.S. 91, 105 (1992) (noting that the regulation dates back from 1973). EPA has promulgated two other regulations with similar requirements. The first requires each NPDES permit to include conditions necessary to "[a]chieve [WQSs] established under section 303 of the CWA, including State narrative criteria for water quality." 40 CFR § 122.44(d)(1). The second requires each NPDES permit to "[i]ncorporate any more stringent limitations…established under Federal or State law or regulations in accordance with section 301(b)(1)(C)." 40 CFR § 122.44(d)(5). Pollutant controls that may be set aside, for any reason, at the sole election of the discharger—even if those increased loadings will contribute to further violations of water quality standards—cannot be said to "ensure" compliance with these standards. EPA is thus obligated under Section 301 of the Act and implementing regulations to include enforceable limits in the permit.

E. There is a reasonable level of scientific certainty given the facts in the record to establish an effluent limit

Some commenters argued that more data and modeling is necessary before determining whether further nitrogen controls from out-basin-dischargers would be necessary and, if so, the precise extent of those reductions. While there will always be an irreducible amount of uncertainty given the varied sources of nitrogen loading into LIS and the size and complexity of that water body, EPA is nevertheless obligated to exercise its scientific expertise and apply its technical judgment based on the information it has at the time of permit reissuance, which under the Act is called for at regular intervals not to exceed five years. *See Upper Blackstone*, 690 F.3d at 22 ("[N]either the CWA nor EPA regulations permit the EPA to delay issuance of a new permit indefinitely until better science can be developed, even where there is some uncertainty in the existing data."); *Ethyl Corp. v. EPA,* 541 F.2d 1, 28 (D.C.Cir.1976) (en banc) ("[R]ecognizing ... the developing nature of [the field].... [t]he [EPA] Administrator may apply his expertise to draw conclusions from suspected, but not completely substantiated, relationships between facts, from trends among facts, from theoretical projections from imperfect data, from probative preliminary data not yet certifiable as 'fact,' and the like."). But here, once again, what remains certain and undisputed on the record before EPA is the fact that large amounts of nitrogen from out-of-basin dischargers contribute to ongoing nitrogen water quality impairments in LIS. *Miami–Dade County v. EPA,* 529 F.3d 1049, 1065 (11th Cir.2008) (holding that the "EPA is compelled to exercise its judgment in the face of scientific uncertainty unless that uncertainty is so profound that it precludes any reasoned judgment"). In light of this fact and applicable case law construing the Act, EPA is more than entitled under the Act to proceed with the imposition of reasonable permit effluent limits, designed to achieve gross reductions, on the out-of-basin dischargers.

F. There has been sufficient opportunity for public comment

Finally, contrary to several commenters' assertions, the permitting approach underlying this proceeding has been subject to a very significant degree of public process, input and scrutiny.

MassDEP and EPA held two public meetings for Massachusetts permittees in the Long Island Sound watershed to explain the approach on June 7, 2019 in Springfield, MA and on June 21, 2019 in Greenfield, MA. EPA has received substantial public comments regarding proposed numeric TN effluent limits as a result of extended (60 days) public notice for the 2018 Draft Permit for Springfield Water and Sewer Commission and regarding numeric effluent limits. Doubling the time for comment required by regulations governing the permit issuance was reasonable, especially given that the permit is long expired, water quality impairments are ongoing (and tend to intensify over time when nutrient inputs continue unabated), and Springfield is a large contributor of nitrogen to LIS.

AUTHORIZATION TO DISCHARGE UNDER THE

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Federal Clean Water Act as amended, 33 U.S.C. §§ 1251 et seq. (the "CWA"),

Town of Athol, Massachusetts

is authorized to discharge from the facility located at

Athol Wastewater Treatment Plant
Jones Street
Athol, MA 01000

to receiving water named

Millers River
Connecticut River Watershed

in accordance with effluent limitations, monitoring requirements and other conditions set forth herein.

This permit shall become effective on the first day of the calendar month immediately following 60 days after signature.[1]

This permit expires at midnight, five years from the last day of the month preceding the effective date.

This permit supersedes the permit issued on June 30, 2008.

This permit consists of **Part I** including the cover page(s), **Attachment A** (Freshwater Acute Toxicity Test Procedure and Protocol, February 2011), **Attachment B** (Freshwater Chronic Toxicity Test Procedure and Protocol, March 2013), and **Part II (**NPDES Part II Standard Conditions, April 2018).

Signed this day of

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Ken Moraff, Director
Water Division
Environmental Protection Agency
Region 1
Boston, MA

[1] Pursuant to 40 Code of Federal Regulations (CFR) § 124.15(b)(3), if no comments requesting a change to the Draft Permit are received, the permit will become effective upon the date of signature. Procedures for appealing EPA's Final Permit decision may be found at 40 CFR § 124.19.

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning on the effective date and lasting through the expiration date, the Permittee is authorized to discharge treated effluent through Outfall Serial Number 001 to Millers River. The discharge shall be limited and monitored as specified below; the receiving water and the influent shall be monitored as specified below.

Effluent Characteristic	Effluent Limitation			Monitoring Requirements[1,2,3]	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type[4]
Rolling Average Effluent Flow[5]	1.75 MGD[5]	---	---	Continuous	Recorder
Effluent Flow[5]	Report MGD	---	Report MGD	Continuous	Recorder
BOD_5	30 mg/L 438 lb/day	45 mg/L 657 lb/day	Report mg/L	1/week	Composite
BOD_5 Removal	≥ 85 %	---	---	---	Calculation
TSS	30 mg/L 438 lb/day	45 mg/L 657 lb/day	Report mg/L	1/week	Composite
TSS Removal	≥ 85 %	---	---	---	Calculation
pH Range[6]	6.5 - 8.3 S.U.			1/day	Grab
Escherichia coli[7] (April 1 – October 31)	126 cfu/100 mL	---	409 cfu/100 mL	1/week	Grab
Dissolved Oxygen (April 1 - October 31)	≥ 6.0 mg/L			1/day	Grab
Total Kjeldahl Nitrogen[8]	Report mg/L	---	Report mg/L	1/month	Composite
Nitrate + Nitrite[8]	Report mg/L	---	Report mg/L	1/month	Composite
Rolling Average Total Nitrogen[8]	146 lb/day	---	---	1/month	Composite
Total Nitrogen[8]	Report mg/L	---	Report mg/L	1/month	Composite
Total Phosphorus (April 1 – October 31)	0.52 mg/L	---	Report mg/L	1/week	Composite
Total Phosphorus (November 1 – March 31)	1.0 mg/L	---	Report mg/L	1/week	Composite

Effluent Characteristic	Effluent Limitation			Monitoring Requirements[1,2,3]	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type[4]
Total Aluminum[9]	87 µg/L	---	Report µg/L	1/month	Composite
Total Copper	28.4 µg/L	---	18.7 µg/L	1/month	Composite
Total Lead[10]	0.4 µg/L	---	Report µg/L	1/month	Composite
Perfluorohexanesulfonic acid (PFHxS)[11,12]	---	---	Report ng/L	1/quarter	Composite
Perfluoroheptanoic acid (PFHpA)[11,12]	---	---	Report ng/L	1/quarter	Composite
Perfluorononanoic acid (PFNA)[11,12]	---	---	Report ng/L	1/quarter	Composite
Perfluorooctanesulfonic acid (PFOS)[11,12]	---	---	Report ng/L	1/quarter	Composite
Perfluorooctanoic acid (PFOA)[11,12]	---	---	Report ng/L	1/quarter	Composite
Perfluorodecanoic acid (PFDA)[11,12]	---	---	Report ng/L	1/quarter	Composite
Whole Effluent Toxicity (WET) Testing[13,14]					
LC_{50}	---	---	≥ 100 %	1/quarter	Composite
C-NOEC	---	---	≥ 10 %	1/quarter	Composite
Hardness	---	---	Report mg/L	1/quarter	Composite
Ammonia Nitrogen	---	---	Report mg/L	1/quarter	Composite
Total Aluminum	---	---	Report mg/L	1/quarter	Composite
Total Cadmium	---	---	Report mg/L	1/quarter	Composite
Total Copper	---	---	Report mg/L	1/quarter	Composite
Total Nickel	---	---	Report mg/L	1/quarter	Composite
Total Lead	---	---	Report mg/L	1/quarter	Composite
Total Zinc	---	---	Report mg/L	1/quarter	Composite
Total Organic Carbon	---	---	Report mg/L	1/quarter	Composite

Ambient Characteristic[16]	Reporting Requirements			Monitoring Requirements[1,2,3]	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type[4]
Hardness	---	---	Report mg/L	1/quarter	Grab
Ammonia Nitrogen	---	---	Report mg/L	1/quarter	Grab
Total Aluminum	---	---	Report mg/L	1/quarter	Grab
Total Cadmium	---	---	Report mg/L	1/quarter	Grab
Total Copper	---	---	Report mg/L	1/quarter	Grab
Total Nickel	---	---	Report mg/L	1/quarter	Grab
Total Lead	---	---	Report mg/L	1/quarter	Grab
Total Zinc	---	---	Report mg/L	1/quarter	Grab
Total Organic Carbon	---	---	Report mg/L	1/quarter	Grab
Dissolved Organic Carbon[15]	---	---	Report mg/L	1/quarter	Grab
pH[17]	---	---	Report S.U.	1/quarter	Grab
Temperature[17]	---	---	Report °C	1/quarter	Grab
Total Phosphorus[18] (April 1 – October 31)	---	---	Report mg/L	1/month	Grab

Influent Characteristic	Reporting Requirements			Monitoring Requirements[1,2,3]	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type[4]
BOD_5	Report mg/L	---	---	2/month	Composite
TSS	Report mg/L	---	---	2/month	Composite
Perfluorohexanesulfonic acid (PFHxS)[11,12]	---	---	Report ng/L	1/quarter	Composite
Perfluoroheptanoic acid (PFHpA)[11,12]	---	---	Report ng/L	1/quarter	Composite
Perfluorononanoic acid (PFNA)[11,12]	---	---	Report ng/L	1/quarter	Composite
Perfluorooctanesulfonic acid (PFOS)[11,12]	---	---	Report ng/L	1/quarter	Composite

Perfluorooctanoic acid (PFOA)[11,12]	---	---	Report ng/L	1/quarter	Composite
Perfluorodecanoic acid (PFDA)[11,12]	---	---	Report ng/L	1/quarter	Composite

Sludge Characteristic	**Reporting Requirements**			**Monitoring Requirements[1,2,3]**	
	Average Monthly	**Average Weekly**	**Maximum Daily**	**Measurement Frequency**	**Sample Type[4]**
Perfluorohexanesulfonic acid (PFHxS)[11,12]	---	---	Report ng/L	1/quarter	Composite
Perfluoroheptanoic acid (PFHpA)[11,12]	---	---	Report ng/L	1/quarter	Composite
Perfluorononanoic acid (PFNA)[11,12]	---	---	Report ng/L	1/quarter	Composite
Perfluorooctanesulfonic acid (PFOS)[11,12]	---	---	Report ng/L	1/quarter	Composite
Perfluorooctanoic acid (PFOA)[11,12]	---	---	Report ng/L	1/quarter	Composite
Perfluorodecanoic acid (PFDA)[11,12]	---	---	Report ng/L	1/quarter	Composite

Footnotes:

1. Effluent samples shall yield data representative of the discharge. A routine sampling program shall be developed in which samples are taken at the same location, same time and same days of the week each month. The Permittee shall report the results to the Environmental Protection Agency Region 1 (EPA) and the State of any additional testing above that required herein, if testing is in accordance with 40 CFR Part 136.

2. In accordance with 40 CFR § 122.44(i)(1)(iv), the Permittee shall monitor according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR Part 136 or required under 40 CFR chapter I, subchapter N or O, for the analysis of pollutants or pollutant parameters (except WET). A method is "sufficiently sensitive" when: 1) The method minimum level (ML) is at or below the level of the effluent limitation established in the permit for the measured pollutant or pollutant parameter; or 2) The method has the lowest ML of the analytical methods approved under 40 CFR Part 136 or required under 40 CFR chapter I, subchapter N or O for the measured pollutant or pollutant parameter. The term "minimum level" refers to either the sample concentration equivalent to the lowest calibration point in a method or a multiple of the method detection limit (MDL), whichever is higher. Minimum levels may be obtained in several ways: They may be published in a method; they may be based on the lowest acceptable calibration point used by a laboratory; or they may be calculated by multiplying the MDL in a method, or the MDL determined by a laboratory, by a factor.

3. When a parameter is not detected above the ML, the Permittee must report the data qualifier signifying less than the ML for that parameter (e.g., < 50 µg/L, if the ML for a parameter is 50 µg/L). For reporting an average based on a mix of values detected and not detected, assign a value of "0" to all non-detects for that reporting period and report the average of all the results.

4. A "grab" sample is an individual sample collected in a period of less than 15 minutes.

   A "composite" sample is a composite of at least twenty-four (24) grab samples taken during one consecutive 24-hour period, either collected at equal intervals and combined proportional to flow or continuously collected proportional to flow.

5. The limit is a rolling annual average, reported in million gallons per day (MGD), which will be calculated as the arithmetic mean of the monthly average flow for the reporting month and the monthly average flows of the previous eleven months. Also, report monthly average and maximum daily flow in MGD.

6. The pH shall be within the specified range at all times. The minimum and maximum pH sample measurement values for the month shall be reported in standard units (S.U.).

7. The monthly average limit for *E. coli* is expressed as a geometric mean. *E. coli* monitoring shall be conducted concurrently with TRC monitoring, if TRC monitoring is required.

8. Total Kjeldahl nitrogen and nitrate + nitrite samples shall be collected concurrently. The results of these analyses shall be used to calculate both the concentration and mass loadings of total nitrogen, as follows.

   Total Nitrogen (mg/L) = Total Kjeldahl Nitrogen (mg/L) + Nitrate + Nitrite (mg/L)

   Total Nitrogen (lb/day) = [(average monthly Total Nitrogen (mg/L) * total monthly effluent flow (Millions of Gallons (MG)) / # of days in the month] * 8.345

   The total nitrogen limit is an annual average mass-based limit (lb/day), which shall be reported as a rolling average. The value will be calculated as the arithmetic mean of the monthly average total nitrogen for the reporting month and the monthly average total nitrogen of the previous eleven months.

   For nitrogen optimization requirements, see Part I.G.1.

9. For the aluminum compliance schedule, see Part I.G.2.

10. Lead analysis must be completed using a test method in 40 CFR Part 136 that achieves a minimum level no greater than 0.5 µg/L. The compliance level shall be 0.5 µg/L. The limit shall become effective in accordance with the compliance schedule found at Part I.G.3.

11. This reporting requirement for the listed PFAS parameters takes effect 6 months after EPA's multi-lab validated method for wastewater is made available to the public on EPA's CWA methods program website. See https://www.epa.gov/cwa-methods/other-clean-water-act-test-methods-chemical and https://www.epa.gov/cwa-methods.

12. This reporting requirement for the listed PFAS parameters takes effect 6 months after EPA's multi-lab validated method for biosolids is made available to the public on EPA's CWA methods program website. See https://www.epa.gov/cwa-methods/other-clean-water-act-test-methods-biosolids and https://www.epa.gov/cwa-methods.

13. The Permittee shall conduct acute toxicity tests (LC_{50}) and chronic toxicity tests (C-NOEC) in accordance with test procedures and protocols

specified in **Attachment A and B** of this permit. LC_{50} and C-NOEC are defined in Part II.E. of this permit. The Permittee shall test the daphnid, *Ceriodaphnia dubia*, only. Toxicity test samples shall be collected and tests completed during the same weeks each time of calendar quarters ending March 31, June 30, September 30, and December 31. The complete report for each toxicity test shall be submitted as an attachment to the DMR submittal which includes the results for that toxicity test.

14. For Part I.A.1., Whole Effluent Toxicity Testing, the Permittee shall conduct the analyses specified in **Attachment A and B**, Part VI. CHEMICAL ANALYSIS for the effluent sample. If toxicity test(s) using the receiving water as diluent show the receiving water to be toxic or unreliable, the Permittee shall follow procedures outlined in **Attachment A and B**, Section IV., DILUTION WATER. Minimum levels and test methods are specified in **Attachment A and B**, Part VI. CHEMICAL ANALYSIS.

15. Monitoring and reporting for dissolved organic carbon (DOC) are not requirements of the Whole Effluent Toxicity (WET) tests but are additional requirements. The Permittee may analyze the WET samples for DOC or may collect separate samples for DOC concurrently with WET sampling.

16. For Part I.A.1, Ambient Characteristic, the Permittee shall conduct the analyses specified in **Attachment A and B**, Part VI. CHEMICAL ANALYSIS for the receiving water sample collected as part of the WET testing requirements. Such samples shall be taken from the receiving water at a point immediately upstream of the permitted discharge's zone of influence at a reasonably accessible location, as specified in **Attachment A and B**. Minimum levels and test methods are specified in **Attachment A and B**, Part VI. CHEMICAL ANALYSIS.

17. A pH and temperature measurement shall be taken of each receiving water sample at the time of collection and the results reported on the appropriate DMR. These pH and temperature measurements are independent from any pH and temperature measurements required by the WET testing protocols.

18. See Part I.G.4 for special conditions regarding ambient phosphorus monitoring.

Part I.A. continued.

2. The discharge shall not cause a violation of the water quality standards of the receiving water.

3. The discharge shall be free from pollutants in concentrations or combinations that, in the receiving water, settle to form objectionable deposits; float as debris, scum or other matter to

form nuisances; produce objectionable odor, color, taste or turbidity; or produce undesirable or nuisance species of aquatic life.

4. The discharge shall be free from pollutants in concentrations or combinations that adversely affect the physical, chemical, or biological nature of the bottom.

5. The discharge shall not result in pollutants in concentrations or combinations in the receiving water that are toxic to humans, aquatic life or wildlife.

6. The discharge shall be free from floating, suspended and settleable solids in concentrations or combinations that would impair any use assigned to the receiving water.

7. The discharge shall be free from oil, grease and petrochemicals that produce a visible film on the surface of the water, impart an oily taste to the water or an oily or other undesirable taste to the edible portions of aquatic life, coat the banks or bottom of the water course, or are deleterious or become toxic to aquatic life.

8. The Permittee must provide adequate notice to EPA-Region 1 and the State of the following:

   a. Any new introduction of pollutants into the POTW from an indirect discharger which would be subject to Part 301 or Part 306 of the Clean Water Act if it were directly discharging those pollutants or in a primary industry category (see 40 CFR Part 122 Appendix A as amended) discharging process water; and

   b. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.

   c. For purposes of this paragraph, adequate notice shall include information on:

      i. The quantity and quality of effluent introduced into the POTW; and
      ii. Any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

9. Pollutants introduced into the POTW by a non-domestic source (user) shall not pass through the POTW or interfere with the operation or performance of the works.

B. UNAUTHORIZED DISCHARGES

1. This permit authorizes discharges only from the outfall listed in Part I.A.1, in accordance with the terms and conditions of this permit. Discharges of wastewater from any other point sources, including sanitary sewer overflows (SSOs), are not authorized by this permit in accordance with Part II.D.1.e.(1) (24-hour reporting). See Part I.H below for reporting requirements.

2. Starting December 21, 2020, the Permittee must provide notification to the public within 24 hours of becoming aware of any unauthorized discharge, except SSOs that do not impact a surface water or the public, on a publicly available website, and it shall remain on the website

for a minimum of 12 months. Such notification shall include the location and description of the discharge; estimated volume; the period of noncompliance, including exact dates and times, and, if the noncompliance has not been corrected, the anticipated time it is expected to continue.

3. Notification of SSOs to MassDEP shall be made on its SSO Reporting Form (which includes MassDEP Regional Office telephone numbers). The reporting form and instruction for its completion may be found on-line at https://www.mass.gov/how-to/sanitary-sewer-overflowbypassbackup-notification.

C. OPERATION AND MAINTENANCE OF THE SEWER SYSTEM

Operation and maintenance (O&M) of the sewer system shall be in compliance with the Standard Conditions of Part II and the following terms and conditions. The Permittee shall complete the following activities for the collection system which it owns:

1. Maintenance Staff

   The Permittee shall provide an adequate staff to carry out the operation, maintenance, repair, and testing functions required to ensure compliance with the terms and conditions of this permit. Provisions to meet this requirement shall be described in the Collection System O&M Plan required pursuant to Section C.5. below.

2. Preventive Maintenance Program

   The Permittee shall maintain an ongoing preventive maintenance program to prevent overflows and bypasses caused by malfunctions or failures of the sewer system infrastructure. The program shall include an inspection program designed to identify all potential and actual unauthorized discharges. Plans and programs to meet this requirement shall be described in the Collection System O&M Plan required pursuant to Section C.5. below.

3. Infiltration/Inflow

   The Permittee shall control infiltration and inflow (I/I) into the sewer system as necessary to prevent high flow related unauthorized discharges from their collection systems and high flow related violations of the wastewater treatment plant's effluent limitations. Plans and programs to control I/I shall be described in the Collection System O&M Plan required pursuant to Section C.5. below.

4. Collection System Mapping

   Within 30 months of the effective date of this permit, the Permittee shall prepare a map of the sewer collection system it owns. The map shall be on a street map of the community, with sufficient detail and at a scale to allow easy interpretation. The collection system information shown on the map shall be based on current conditions and shall be kept up-to-date and available for review by federal, state, or local agencies. Such map(s) shall include, but not be limited to the following:

a. All sanitary sewer lines and related manholes;

b. All combined sewer lines, related manholes, and catch basins;

c. All combined sewer regulators and any known or suspected connections between the sanitary sewer and storm drain systems (e.g. combination manholes);

d. All outfalls, including the treatment plant outfall(s), CSOs, and any known or suspected SSOs, including stormwater outfalls that are connected to combination manholes;

e. All pump stations and force mains;

f. The wastewater treatment facility(ies);

g. All surface waters (labeled);

h. Other major appurtenances such as inverted siphons and air release valves;

i. A numbering system which uniquely identifies manholes, catch basins, overflow points, regulators and outfalls;

j. The scale and a north arrow; and

k. The pipe diameter, date of installation, type of material, distance between manholes, and the direction of flow.

5. Collection System O&M Plan

The Permittee shall develop and implement a Collection System O&M Plan.

a. Within six (6) months of the effective date of the permit, the Permittee shall submit to EPA and the State:

(1) A description of the collection system management goals, staffing, information management, and legal authorities;
(2) A description of the collection system and the overall condition of the collection system including a list of all pump stations and a description of recent studies and construction activities; and
(3) A schedule for the development and implementation of the full Collection System O&M Plan including the elements in paragraphs b.1. through b.8. below.

b. The full Collection System O&M Plan shall be completed, implemented and submitted to EPA and the State within twenty-four (24) months from the effective date of this permit. The Plan shall include:

(1) The required submittal from paragraph 5.a. above, updated to reflect current information;
(2) A preventive maintenance and monitoring program for the collection system;

APPENDIX B

NH, VT, MA Nitrogen Discharges to Long Island Sound Watershed

Summary of Massachusetts Out-Of-Basin Wastewater Treatment Plant and Industrial Discharger Total Nitrogen Effluent Data

Permit #	Name	Type	Design Flow (MGD)	2014-2018 Avg Flow (MGD)	2014 Average Load (lb/day)	2015 Average Load (lb/day)	2016 Average Load (lb/day)	2017 Average Load (lb/day)	2018 Average Load (lb/day)	2014-2018 Avg Load (lb/year)
Total Massachusetts Out-of-Basin Load			**262**	**146**	**11,528**	**11,215**	**9,767**	**10,557**	**10,631**	**10,740**
Total Massachusetts Connecticut River Load			**179.6**	**98**	**9,184**	**8,945**	**7,695**	**8,390**	**8,341**	**8,511**
MA0101613	SPRINGFIELD REGIONAL WTP	POTW	67.00	36.26	2,303	2,377	1,643	1,953	1,684	1,992
MA0101508	CHICOPEE WPC	POTW	15.50	7.83	2,220	2,092	1,854	1,872	1,895	1,987
MA0101630	HOLYOKE WPCF	POTW	17.50	8.05	584	644	687	747	593	651
MA0101214	GREENFIELD WPCF	POTW	3.20	3.23	436	467	460	386	482	446
MA0100994	GARDNER WWTF	POTW	5.00	2.89	413	470	377	455	404	424
MA0101818	NORTHAMPTON WWTP	POTW	8.60	3.85	489	412	355	393	453	420
MA0100218	AMHERST WWTP	POTW	7.10	3.76	456	411	335	342	377	384
MA0100455	SOUTH HADLEY WWTF	POTW	4.20	2.37	393	325	288	364	315	337
MA0101478	EASTHAMPTON WWTP	POTW	3.80	3.44	202	186	262	329	639	324
MA0101800	WESTFIELD WWTP	POTW	6.10	2.88	276	225	221	189	211	224
MA0110264	AUSTRALIS AQUACULTURE, LLC	IND	0.30	0.13	149	138	116	107	74	117
MA0101168	PALMER WPCF	POTW	5.60	1.47	142	92	84	100	125	109
MA0100137	MONTAGUE WWTF	POTW	1.80	0.84	107	78	55	215	78	107
MA0100099	HADLEY WWTP	POTW	0.54	0.38	73	76	65	109	67	78
MA0100889	WARE WWTP	POTW	1.00	0.55	62	89	87	72	78	77
MA0101257	ORANGE WWTP	POTW	1.10	0.98	72	62	58	91	91	75
MA0003697	BARNHARDT MANUFACTURING	IND	0.89	0.33	58	78	49	54	96	67
MA0103152	BARRE WWTF	POTW	0.30	0.19	77	81	50	50	49	61
MA0101567	WARREN WWTP	POTW	1.50	0.26	45	42	124	38	55	61
MA0000469	SEAMAN PAPER OF MASSACHUSETTS	IND	1.10	0.83	26	97	53	62	46	57
MA0100005	ATHOL WWTF	POTW	1.75	0.79	76	56	40	39	44	51
MA0101061	NORTH BROOKFIELD WWTP	POTW	0.62	0.32	62	51	40	47	50	50
MA0110043	MCLAUGHLIN STATE TROUT HATCHERY	IND	7.50	7.12	39	44	43	41	37	41
MA0100919	SPENCER WWTP	POTW	1.08	0.35	28	33	31	29	71	38

NH, VT, MA Nitrogen Discharges to Long Island Sound Watershed

Summary of Massachusetts Out-Of-Basin Wastewater Treatment Plant and Industrial Discharger Total Nitrogen Effluent Data

Permit #	Name	Type	Design Flow (MGD)	2014-2018 Avg Flow (MGD)	2014 Average Load (lb/day)	2015 Average Load (lb/day)	2016 Average Load (lb/day)	2017 Average Load (lb/day)	2018 Average Load (lb/day)	2014-2018 Avg Load (lb/year)
MA0100862	WINCHENDON WPCF	POTW	1.10	0.50	25	33	29	48	40	35
MA0101290	HATFIELD WWTF	POTW	0.50	0.17	51	37	28	28	27	34
MA0101052	ERVING WWTP #2	POTW	2.70	1.78	35	38	38	33	25	34
MA0100340	TEMPLETON WWTF	POTW	2.80	0.27	19	35	18	21	35	26
MAG580004	SOUTH DEERFIELD WWTP	POTW	0.85	0.37	15	33	18	18	27	22
MA0040207	CHANG FARMS INC	IND	0.65	0.22	22	15	34	20	20	22
MA0110035	MCLAUGHLIN/SUNDERLAND STATE FISH HATCHERY	IND	2.10	2.16	25	22	19	20	25	22
MA0102148	BELCHERTOWN WRF	POTW	1.00	0.36	61	13	11	11	5.6	20
MAG580002	SHELBURNE WWTF	POTW	0.25	0.16	15	13	17	17	21	17
MAG580005	SUNDERLAND WWTF	POTW	0.50	0.17	20	12	13	10	9.3	13
MAG580001	OLD DEERFIELD WWTP	POTW	0.25	0.068	13	14	13	12	12	13
MA0110051	MCLAUGHLIN/BITZER STATE TROUT HATCHERY	IND	1.43	1.70	23	12	12	8.2	8.2	13
MA0032573	NORTHFIELD MT HERMON SCHOOL WWTP	POTW	0.45	0.072	22	7.6	15	10	10	13
MA0100102	HARDWICK WPCF	POTW	0.23	0.12	8.2	5.9	13	4.3	17	10
MA0100200	NORTHFIELD WWTF	POTW	0.28	0.080	3.8	6.8	6.5	10	14	8.1
MA0101516	ERVING WWTP #1	POTW	1.02	0.14	7.2	6.1	3.7	10	7.5	6.9
MA0102776	ERVING WWTP #3	POTW	0.010	0.0049	6.1	2.9	6.9	8.0	7.5	6.3
MA0102431	HARDWICK WWTP	POTW	0.040	0.016	7.4	1.5	11	6.9	2.3	5.9
MAG580003	CHARLEMONT WWTF	POTW	0.050	0.016	7.5	4.2	4.8	4.8	4.8	5.2
MA0101265	HUNTINGTON WWTP	POTW	0.20	0.067	4.6	4.1	5.6	4.3	5.2	4.7
MA0100188	MONROE WWTF	POTW	0.020	0.013	*1.4*	1.4	1.2	2.3	1.7	1.6
MA0000272	PAN AM RAILWAYS YARD	IND	0.015	0.011	0.06	0.13	0.12	0.47	0.18	0.19
MA0001350	LS STARRETT PRECISION TOOLS	IND	0.025	0.014	0.03	0.0	0.08	0.07	0.04	0.05
MA0100161	ROYALSTON WWTP	POTW	0.039	0.01298	*0.9*	0.49	0.43	0.49	0.60	0.59
Total Massachusetts Housatonic Load			**29.4**	**18**	**1,667**	**1,605**	**1,509**	**1,612**	**1,707**	**1,626**
MA0101681	PITTSFIELD WWTF	POTW	17.00	10.55	1,179	1,176	1,145	1,245	1,319	1,213
MA0000671	CRANE WWTP	POTW	3.10	3.07	155	142	108	116	107	126

NH, VT, MA Nitrogen Discharges to Long Island Sound Watershed

Summary of Massachusetts Out-Of-Basin Wastewater Treatment Plant and Industrial Discharger Total Nitrogen Effluent Data

Permit #	Name	Type	Design Flow (MGD)	2014-2018 Avg Flow (MGD)	2014 Average Load (lb/day)	2015 Average Load (lb/day)	2016 Average Load (lb/day)	2017 Average Load (lb/day)	2018 Average Load (lb/day)	2014-2018 Avg Load (lb/year)
MA0101524	GREAT BARRINGTON WWTF	POTW	3.20	0.97	110	120	100	99	124	111
MA0100935	LENOX CENTER WWTF	POTW	1.19	0.61	49	67	59	71	78	65
MA0001848	ONYX SPECIALTY PAPERS INC - WILLOW MILL	IND	1.10	0.94	51	39	44	33	22	38
MA0005011	PAPERLOGIC TURNERS FALLS MILL(6)	IND	0.70	0.73	85	17	12	6.5	Term	30
MA0100153	LEE WWTF	POTW	1.25	0.64	18	17	14	15	35	20
MA0101087	STOCKBRIDGE WWTP	POTW	0.30	0.15	10	15	16	13	10	13
MA0103110	WEST STOCKBRIDGE WWWTF	POTW	0.076	0.014	*5.3*	*3.8*	4.3	5.0	3.7	4.4
MA0001716	MEADWESTVACO CUSTOM PAPERS LAUREL MILL	IND	1.5	0.34	4.3	7.9	5.7	7.2	7.8	6.6
Total Massachusetts Thames River Load			**11.8**	**6**	**677**	**666**	**564**	**556**	**583**	**609**
MA0100439	WEBSTER WWTF	POTW	6.00	2.97	389	393	328	292	344	349
MA0100901	SOUTHBRIDGE WWTF	POTW	3.77	1.97	*178*	149	154	151	130	152
MA0101141	CHARLTON WWTF	POTW	0.45	0.21	40	75	41	68	70	59
MA0100421	STURBRIDGE WPCF	POTW	0.75	0.51	44	21	18	19	20	24
MA0101796	LEICESTER WATER SUPPLY WWTF	POTW	0.35	0.19	24	27	22	26	19	24
MA0100170	OXFORD ROCHDALE WWTP	POTW	0.50	0.24	2.4	1.0	0.23	0.57	0.49	0.9

NOTES:

1) italics = estimated load based on average conc & flow from other years, or if no data for any years, assumed concentration of 19.6 mg/L.

2) The loads represent annual totals, based on annual daily average flow and daily average nitrogen concentration.

3) Term = Permit was terminated in that year

4) This summary only includes POTWs and Industrial sources for which there was nitrogen monitoring at the outfalls for treated effluent and/or process wastewater.

NH, VT, MA Nitrogen Discharges to Long Island Sound Watershed

Summary of New Hampshire Out-Of-Basin Wastewater Treatment Plant and Industrial Discharger Total Nitrogen Effluent Data

Permit #	Name	Type	Design Flow (MGD)	2014-2018 Avg Flow (MGD)	2014 Average Load (lb/day)	2015 Average Load (lb/day)	2016 Average Load (lb/day)	2017 Average Load (lb/day)	2018 Average Load (lb/day)	2014-2018 Avg Load (lb/day)
Total New Hampshire Out-of-Basin Load			**31.5**	**18.6**	**1,662**	**1,457**	**1,370**	**1,555**	**1,154**	**1,440**
NH0000621	BERLIN STATE FISH HATCHERY	IND	6.1	6.30	8.8	13	13	15	8.7	12
NH0000744	NH DES (TWIN MTN STATE FISH HATCHERY)	IND	1.0	0.78	2.0	5.8	6.2	5.5	5.1	4.9
NH0100099	HANOVER WWTF	POTW	2.3	1.30	*341*	*341*	313	350	361	341
NH0100145	LANCASTER WWTF	POTW	1.2	0.79	84	78	45	72	63	68
NH0100153	LITTLETON WWTP	POTW	1.5	0.69	32	36	24	31	45	34
NH0100200	NEWPORT WWTF	POTW	1.3	0.59	97	63	80	80	79	80
NH0100366	LEBANON WWTF	POTW	3.2	1.49	*136*	*136*	132	127	152	137
NH0100382	HINSDALE WWTP	POTW	0.3	0.19	*18*	17	11	20	16	16
NH0100510	WHITEFIELD WWTF	POTW	0.2	0.08	35	22	15	18	24	23
NH0100544	SUNAPEE WWTF	POTW	0.6	0.40	*32*	*32*	*32*	50	33	35
NH0100765	CHARLESTOWN WWTP	POTW	1.1	0.28	22	13	12	19	22	17
NH0100790	KEENE WWTF	POTW	6.0	2.89	*533*	*397*	*394*	*452*	40	363
NH0101052	TROY WWTF	POTW	0.3	0.08	23	15	12	13	25	18
NH0101150	WEST SWANZEY WWTP	POTW	0.2	0.07	6.1	6.4	7.8	7.8	15	8.7
NH0101168	MERIDEN VILLAGE WATER DISTRICT	POTW	0.1	0.03	0.53	2.5	1.4	2.9	1.3	1.7
NH0101257	CLAREMONT WWTF	POTW	3.9	1.51	*161*	*161*	*161*	163	146	158
NH0101392	BETHLEHEM VILLAGE WWTP (1)	POTW	0.3	0.21	25	26	25	29	25	26
NHG580226	GROVETON WWTP	POTW	0.4	0.12	18	13	10	12	14	13
NHG580315	COLEBROOK WWTP	POTW	0.5	0.22	26	23	21	31	31	26
NHG580391	CHESHIRE COUNTY MAPLEWOOD NURSING HOME	POTW	0.040	0.02	2.1	1.6	1.3	1.5	1.3	1.5
NHG580404	WINCHESTER WWTP	POTW	0.28	0.14	6.1	11	3.9	13	8.3	8.3
NHG580421	LISBON WWTF	POTW	0.3	0.12	26	23	19	17	17	20
NHG580536	STRATFORD VILLAGE SYSTEM	POTW	0.1	0.01	2.2	1.9	3.9	2.5	2.8	2.7
NHG580978	WOODSVILLE WWTF	POTW	0.3	0.19	22	15	19	19	13	18
NHG581206	NORTHUMBERLAND VILLAGE WPCF	POTW	0.1	0.04	2.7	3.3	3.5	2.6	3.1	3.0
NHG581214	STRATFORD-MILL HOUSE	POTW	0.0	0.01	1.4	1.5	2.2	1.8	2.3	1.8
NHG581249	LANCASTER GRANGE WWTP	POTW	0.0	0.00	0.45	0.53	0.45	0.49	0.44	0.47

NOTES:

1) italics = estimated load based on average conc & flow from other years, or if no data for any years, assumed concentration of 19.6 mg/L.

2) The loads represent annual totals, based on annual daily average flow and daily average nitrogen concentration.

3) Term = Permit was terminated in that year

4) This summary only includes POTWs and Industrial sources for which there was nitrogen monitoring at the outfalls for treated effluent and/or process wastewater.

NH, VT, MA Nitrogen Discharges to Long Island Sound Watershed

Summary of Vermont Out-Of-Basin Wastewater Treatment Plant and Industrial Discharger Total Nitrogen Effluent Data

Permit #	Name	Type	Design Flow (MGD)	2014-2018 Avg Flow (MGD)	2014 load (lb/day)	2015 load (lb/day)	2016 load (lb/day)	2017 load (lb/day)	2018 load (lb/day)	2014-2018 Avg Load (lb/day)
	Total Vermont Out-of-Basin Load		**18.3**	**7.8**	**1,273**	**1,255**	**1,146**	**1,221**	**1,421**	**1,263**
VT0000019	WEIDMANN ELECTRICAL TECHNOLOGY INC	IND	0.25	0.15	2.4	1.4	1.4	1.2	1.7	1.6
VT0000108	PUTNEY PAPER COMPANY MILL & LAGOONS	IND	0.28	0.16	22	26	20	22	17	22
VT0000248	FIBERMARK	IND	2.00	1.06	117	82	89	106	92	97
VT0100013	BELLOWS FALLS WWTF	POTW	1.40	0.44	136	136	136	102	179	138
VT0100048	BETHEL	POTW	0.13	0.06	10.4	4.0	2.4	6.5	3.5	5.4
VT0100064	BRATTLEBORO WWTF	POTW	3.01	1.27	487	487	446	501	421	469
VT0100081	CHESTER MTP	POTW	0.19	0.16	16	5.0	4.5	5.6	7.6	7.6
VT0100145	LUDLOW WWTF	POTW	0.71	0.37	35	27	35	41	42	36
VT0100277	PUTNEY	POTW	0.09	0.05	16	16	11	16	21	16
VT0100285	RANDOLPH	POTW	0.41	0.17	23	23	21	20	28	23
VT0100374	SPRINGFIELD WWTF	POTW	2.20	0.98	133	133	133	120	130	130
VT0100447	WINDSOR-WESTON HEIGHTS	POTW	0.02	0.01	0.40	0.53	1.2	0.88	1.0	0.8
VT0100579	ST JOHNSBURY	POTW	1.60	0.83	34	23	13	24	146	48
VT0100595	LYNDON WWTP	POTW	0.76	0.15	21	21	16	24	21	20
VT0100625	CANAAN MTP	POTW	0.19	0.10	17	15	16	19	17	17
VT0100633	DANVILLE WPCF	POTW	0.07	0.03	2.9	3.5	7.6	4.4	4.3	4.5
VT0100706	WILMINGTON WWTP	POTW	0.15	0.08	3.8	15.9	10.0	4.7	17.2	10
VT0100731	READSBORO WPC	POTW	0.76	0.04	3.6	3.2	2.8	3.8	4.0	3.5
VT0100749	S. WOODSTOCK WWTF	POTW	0.06	0.01	1.9	1.9	0.7	1.2	3.9	1.9
VT0100757	WOODSTOCK WWTP	POTW	0.46	0.22	25	23	24	26	22	24
VT0100765	WOODSTOCK - TAFTSVILLE	POTW	0.02	0.00	0.32	0.24	0.20	0.55	0.87	0.44
VT0100803	BRADFORD WPCP	POTW	0.15	0.08	9.1	9.1	7.7	9.4	8.5	8.8
VT0100846	BRIDGEWATER WWTF	POTW	0.05	0.01	1.1	0.91	1.0	1.1	1.1	1.1
VT0100854	ROYALTON WWTF	POTW	0.08	0.02	5.2	4.6	4.7	7.7	5.0	5.4
VT0100862	CAVENDISH WWTF	POTW	0.16	0.06	15	10	9	11	15	12
VT0100919	WINDSOR WWTF	POTW	1.13	0.25	69	69	66	65	71	68
VT0100943	CHELSEA WWTF	POTW	0.07	0.02	8.2	8.2	4.8	8.9	9.9	8.0
VT0100951	RYEGATE FIRE DEPARTMENT .#2	POTW	0.01	0.00	0.55	1.1	1.9	2.1	0.76	1.3
VT0100978	HARTFORD - QUECHEE	POTW	0.31	0.22	24	53	12	12	10	22
VT0101010	HARTFORD WWTF	POTW	1.23	0.61	11	31	30	34	89	39
VT0101044	WHITINGHAM(JACKSONVILLE)	POTW	0.06	0.02	3.2	3.5	3.4	2.8	3.1	3.2
VT0101061	LUNENBURG FIRE DISTRICT #2	POTW	0.09	0.06	7.6	6.9	5.6	3.2	7.8	6.2
VT0101109	WHITINGHAM	POTW	0.02	0.01	1.2	1.4	1.5	1.2	3.0	1.7
VT0101141	SHERBURNE WPCF	POTW	0.31	0.08	8.9	8.3	7.7	10	16	10

NOTES:

1) italics = estimated load based on average conc & flow from other years, or if no data for any years, assumed concentration of 19.6 mg/L.

2) The loads represent annual totals, based on annual daily average flow and daily average nitrogen concentration.

3) Term = Permit was terminated in that year

4) This summary only includes POTWs and Industrial sources for which there was nitrogen monitoring at the outfalls for treated effluent and/or process wastewater.