

Water Quality Standards Advisory Committee (WQSAC)

MEETING SUMMARY

Thursday, July 25, 2019 1:30 pm – 4:20 pm

NH Department of Environmental Services (NHDES)
29 Hazen Drive, Concord, NH
Rooms 112-114

Attendees

Name	Organization	Attended WQSAC Meeting?
Gregg Comstock	NHDES	√
Sarita Croce	Town of Merrimack	√
Sam Demeritt	NH Wildlife Federation	√
Ted Diers	NHDES	√
Ken Edwardson	NHDES	√
Hayley Franz	NHDES	√
Sen. J.P Gray	NH Senator	√
David Green	City of Rochester	√
Meredith Hatfield	CLF	√
Lisa King	Foss & O'Neil	√
Fred McNeill	City of Manchester	√
Tom O'Donovan	NHDES	√
Allan Palmer	Rivers Management Advisory Comm.	√
Kenneth Rhodes	Associated General Contractors of NH	√
William Schroeder	NH Lakes Association	√
Streg Spanos	NHDES	√
Paul Stacey	Consultant – Footprints in the Water	√
Sherry Young	Rath, Young, and Pignattali	√
Clifton Bell	Brown and Caldwell	√ webinar
Richard Carey	Mass DEP	√ webinar
Brian Malloy	Monadnock Paper Mills	√ webinar
Melissa Paly	CLF	√ webinar
Kathy Urffer	Connecticut River Conservancy	√ webinar
Jen Perry	Exeter PWD	√ webinar

Meeting Documents/Handouts

List of Meeting Documents for WQSAC meeting:

- Draft summary of April 11, 2019 WQSAC Meeting – [20180412-wqsac-mtgsum-DRAFT.pdf] (includes an updated List of Potential Future WQSAC Meeting Topics and Status)
- Jan. 2, 2019 Letter from Clifton Bell for GBMC regarding Oct. 2018 WQSAC materials (20190102-cb-for-gbmc.pdf)

- July 22, 2019 NHDES letter of response to GBMC's Jan 2, 2019 letter (20190722-nhdes-to-cb-gbmc.pdf)
- July 3, 2019 EPA letter to NHDES regarding DO and 7Q10 (20190703-epa-to-des-do-7q10.pdf)

From the April 11, 2019 WQSAC Meeting Discussion:

- Feb. 2019 MassDEP Presentation on their proposed aluminum criteria changes (201902-madeep-314cmr4-pres.pdf) (Discussed at April 11, 2019 meeting.)

Meeting Documents/Handouts available at [Publications | NH Department of Environmental Services](#)

Note: This meeting was also offered as a webinar via GoToMeeting paired with a dial-in number.

1) Introductions

The meeting began with a round of introductions including those who participated remotely via the webinar.

2) Discussion of the 4/11/19 Meeting Summary

Ken Edwardson opened up discussion of the April 11, 2019 meeting summary document. Ken Rhodes noted a spelling error. There was no further discussion. Ken noted to e-mail any additional comments to Kenneth.Edwardson@des.nh.gov by 8/8/19.

3) Legislative Updates

Ted Diers gave a budget update. NH is currently in a continuing resolution meaning that NHDES is operating under ¼ of the 2019 budget until September. There are several positions in the proposed budget that would be very helpful. A cyanobacteria position and three positions to build the core of the NPDES assistance team to provide help to communities, permit writers, and these water quality standards issues we discuss. Those three positions would be a scientist, a helper and a financial analyst.

Tom O'Donovan noted that the MCL for arsenic has dropped from 10 to 5 ug/L

Senator Gray noted that NHDES, communities, and the legislature will be discussing dissolved oxygen separately from the WQSAC.

4) EPA Updates

There were no EPA staff to provide an update.

Tom O'Donovan (NHDES) noted that he worked with EPA on three projects that week. 1) The CSO phase III consent decree discussions. 2) Draft WWTF permits for the Connecticut River related to TN and the Long Island Sound TMDL. 3) Conversations with EPA and Vermont regarding a TN trading plan. VT already has TP trading program that may extend to TN. CT has a TN trading program. Some type of trading program may be beneficial to NH.

Paul Stacey noted that LIS has funded region wide trading program evaluation with Enhancement grants. Could be a one or two-year study. Paul will keep us updated.

5) Dissolved Oxygen Update – EPA calculations

EPA was not on hand to give an update but Ken was able to sum up their process. NHF&G provided that last pieces of the marine species information to EPA two weeks ago. With that, EPA has run some

calculations for the VA Province DO Model and Great Bay data evaluation. Hopefully in next few weeks will have some kind of report from EPA. Ted noted that the NHDES will be bringing up DO to the WQSAC this fall.

6) Cyanobacteria

Ken Edwardson, NHDES

EPA finalized 304a guidance in May of 2019. EPA will want us to include in WQS or provide justification if we do not include. The 304(a) guidance covers just two toxins produced by cyanobacteria (microcystin, 8 ug/L and cylindrospermopsin, 15 ug/L) as they relate to the recreational use of waters by people. The guidance is based on toxins concentration, not cyanobacteria genera species identification and cell counts. While the guidance is to cover fresh and marine waters, the assumptions for marine water (water ingestion) seems questionable given that only incidental ingestion was used as the modeled exposure route for the final document.

The exposure endpoint is liver and kidney damage and the most sensitive person were children owing to their higher ingestion rates in part due to generally longer swim times. The guidance describes two different durations. For swimming advisories, a single exceedance of either concentration should result in an advisory posting. For water quality standards EPA recommended applying non-rolling 10-day exposure periods and a single exceedance in a 10-day period would count toward the whole 10-day period. A given site should not exceed more than three times per year. EPA did not address how the magnitude of a given exceedance should be addressed by states. The drinking water health advisory values are roughly 20x lower than the recreational guidance.

The Draft 2018 CALM relies on cell counts based on Env-Wq 1105.11(e), but the frequency, magnitude and duration concepts are in keeping with the 304(a) guidance. Cell counts are recognized as a difficult surrogate for toxin concentration (both over and under estimating). However, we test for few of the possible toxins and that testing is slower than cell identification.

Ken showed that there a variety of toxins found in NH waters and only two of those are covered by the 304(a) guidance. Further, given the common genera in NH waters, we see that many genera are capable of producing a suite of toxins that are not covered by the 304(a) guidance and ongoing research is always adding more to the list of produced toxins such as BMMA (linked to ALS) which may be produced by almost all genera.

Ken described the testing occurring in NH waters, both fresh and marine waters and where NHDES posts resources to track sampling and advisories including some samples and how the 304(a) guidance would be of limited utility. A review of the 2018 freshwater cyanobacteria sampling was provided with focus on the number and duration of the advisories.

Finally, a timeline of when NHDES might address the 304(a) guidance and how that might be used in conjunction with on Env-Wq 1105.11(e) during assessment.

- Clifton Bell noted that the ITRC [Interstate Technology & Regulatory Council] has a cyanobacteria project in the works for preventing and managing harmful algae blooms aimed at being a comprehensive resource. [[Strategies for Preventing and Managing Harmful Cyanobacterial Blooms \(Benthic\) - ITRC \(itrcweb.org\)](#)][Turns out that Amanda McQuaid (NHDES) is a member.]

- Paul Stacey asked if there was concurrence with areas of cyano blooms and impaired for eutrophication. Ken – generally see high chl a . UNH uses 10 ug/L TP as threshold below which should be ok. Temperature, timing, light, are important. Cyano are ubiquitous and opportunistic.
- Alan Palmer asked if we see blooms any pristine waters? Ken – usually not – usually see them where elevated TP
- Bill Schroeder asked about the Captains Pond example where counts reached 6.25 million cells/mL and when the count verses toxin concentration would apply. Ken - Currently if more than 70,000 and more than 50% is cyan we post an advisory whereas the 304(a) would only apply based on the toxin. However, the species present in the Captains pond example can produce toxins not covered by the 304(a) therefore the cell count. Ted noted that we are doing Elisa tests for microcystin and can get kits that tests for different enzymes but on cost (\$250) and time we are waiting till end of season then will run tests on all of them to see how EPA criteria would work. We are gathering data to inform decision on cyano and 304a. Bill – seems very costly, simple cell count simpler and protective. Ted – don't want to close a beach/lake we should not have or not close beach/lake that that should have. Evolving science of cyano.
- Sarita Croce asked about sample holding time. Ken – we now have a -40F freezer and once frozen they are good for long time.
- Paul Stacey – may want to think about pets as well. Ken described the 2018 cases in Florida and cost to treat dogs is expensive (thousands \$)
- David Greene asked if we are working closely with health industry? Ted D. – Dartmouth has done some work with regards to ALS/cyano link and we have had interactions with those researchers. Once we have cyanobacteria coordinator we can do better.
- Paul Stacey asked if anyone has been talking about *Pfiesteria*? 20 years ago was big. Hasn't reappeared. No one had heard about any new discussions.

7) PFAS Update

Ken Edwardson, NHDES

The final proposed MCLs passed JLCAR on two weeks ago at; PFOA = 12 ng/L, PFOS = 15 ng/L, PFHxS = 18 ng/L, and PFNA = 11 ng/L based on a variety of non-cancer health endpoints. The modeled exposures were based a mix of common central tendency assumptions and conservative (human health) assumptions. It is of note that breast feeding children drive the MCLs. For a full review of the modeling, see the Technical Background Summary Report, July 7, 2019.

The final rule has three main components; The MCLs under the Drinking Water Program Rules (Env-Dw), the AGQS under the Site Remediation Program Rules (Env-Or), and the applicability to the Groundwater Discharge Program Rules (Env-Wq). The rules passed JLCAR July 18, 2019. The rules may become effective September 30th such that sampling would begin in the fourth quarter which would help town have information to go to town meeting.

The MCLs were compared to select locations on the US. Minnesota, California, New Jersey, and New York have similar values. Sarita noted that the NY numbers were based on a committee's judgement, not straight science based.

We then moved on to the contents of the Draft plan to generate SWQS. Allan asked if the MCLs drove the need for SWQS. No, the 2018 legislation that required MCLs also required the SWQS plan. Vermont has a similar charge and NH has been working with them. The section of the Protection of Human Health is likely the largest section and part of the plan will be discussing the utility of the

different options. For example, it appears that there may be cases where the PFAS in the water is undetectable, but due to bioaccumulation the concentration in some fish may warrant a fish consumption advisory. Here a tissue based standard may be of best utility. The cost of NH building an aquatic life use standard may be prohibitive due to the lack of toxicity studies. The plan will likely have a section on recommendations including; sampling needs, emerging contaminant capacity building, local lab capacity, and regional research sharing. The plan wraps up with a timeline of when pieces could be done.

- Sarita asked about leaching procedures noting that labs use different methods (e.g. pH) for extraction. To do this before have approved EPA method, will this be considered before developing the plan. Ken – part of that would fall in section of toxokinetics. We may be able to add a section on methods.
- Ted noted that all of this is very complex and that’s why we usually rely on EPA 304a.
- Ken noted that in the recent EPA Aluminum document they used some ~165 toxicity test on freshwater species and couldn’t come up with criteria for marine waters as they only had ~60 toxicity studies. Right now PFOA has ~2.
- Ted – may not be able to figure out all – some will have to wait for years.
- Fred - What about cost of communities? Ted – not factored in WQS process.
- Sarita – will you use St Gobain data – fish tissue. Answer Yes. Also concerned about treatment cost.
- Ted – this is why the plan will likely be implemented over time. Phased in. Make sure it’s needed. We do have duty to protect ALUS and HH. Many feel that source control is major part but recognizes existing PFAS in the environment will persist.
- Ted – we’ll provide summary in November and final in January. Then we can talk about where we go from here. Sarita – can WWTF be included as we prepare the plan. She is really concerned about analytical method (lack of standards).
- David – landfill leachate goes to WWTF. Need to look at complete cycle. Need to find disposal method. Fred – Manchester is doing pilot testing at incinerator this fall to get at the full lifecycle/fate. Sarita – Merrimack has class A biosolid – no net cost now. But if that material suddenly could not be applied, there sewer rates would double.
- Bill S. - What’s being done in Europe or elsewhere in world? Ken – We hear quite a bit from Australia.
- Paul S – There was an ECOTOX webinar yesterday. 873,000 compounds in database (Ken was on call). **NHDES will send link once posted.**
-

8) Flow for Nutrient Permitting

Gregg Comstock, NHDES

Gregg initiated a series of mini-presentations revolving around the continued discussions on flows for nutrient permitting.

Background

The existing rules (those approved by EPA) require the use of 7Q10 for calculating permit limits. New Hampshire has narrative, not numeric, nutrient criteria. In 2017 the statute was changed to prohibit NHDES from using 7Q10 (or lower flows) for calculating nutrient permit limits. According to Rochester and Great Bay Municipal Coalition, “The 7Q10 was derived for toxics permitting and is inconsistent with the frequency/duration elements of nutrient-related impacts in streams” and some

other states use higher flows for nutrient permitting (examples are given). (9/2/16 letter from Brown and Coldwell to NHDES Commissioner). As statute has precedent over rule, NHDES cannot use the 7Q10 to certify that a nutrient permit limit will protect water quality.

Total phosphorus (TP) has been a focus of discussion as most NH WWTFs discharge directly to fresh surface waters and TP is usually the “limiting” nutrient controlling plant growth in freshwater systems. While TP is not toxic, excess TP can lead to a host of adverse responses including but not limited to: unsightly algal blooms, cyanobacteria outbreaks, violations of dissolved oxygen and/or pH criteria, and adverse impacts on the benthic community (bottom living community). The response of a given waterbody to TP load will vary based on a host of physical and biological variables. A healthy system will have greater remaining assimilative capacity for response variables.

The mass balance equation is the default methodology applied by EPA to calculate WWTF permit limits when site specific criteria (per Env-Wq 1704) or studies such as TMDLs are not available. The mass balance equation mixes the WWTFs design flow with the upstream 7Q10 flow and nutrient concentrations to predict the downstream concentration that with a 10% reserve will not exceed 90 ug/L TP in the downstream waters. There were three key points from EPA worth reiterating; 1) If flows higher than 7Q10 are used, then downstream target is likely to be lower than 100 ug/L (x 0.9 to reserve 10% AC) (from 1/11/18 WQSAC Meeting Summary, page 3, 3rd paragraph), 2) Facilities with existing TP permit limits cannot have less stringent limits due to federal “anti-backsliding” regulations, and 3) NPDES is a preventative program; limits must comply with EPA approved State Water Quality Standards (WQS). Further, Gregg reiterated that, “Permit limits are not equal to numeric nutrient criteria.”

States must submit water quality standard (WQS) revisions to EPA for approval [40 CFR 131.5 (a)]. If EPA does not approve a State WQS, they can promulgate (40 CFR 131.22). EPA is required to use the EPA approved State WQSs in NPDES permits. In January 2018 NHDES requested EPA approval of amendments to State statutes regarding WQS revisions to river flow for nutrient permitting (and dissolved oxygen). On July 3, 2019 EPA replied that although NHDES’ justification (“nutrients as opposed to toxics, do not create the type of short-term impacts that require use of the “worst case” scenario”) is helpful, “NHDES has not provided the scientific basis demonstrating that elimination of the 7Q10 flow for nutrient permitting would be protective of designated uses” and requested that NHDES submit the scientific rationale for this revision. NHDES needs to address EPA’s letter of 7/3/19.

NHDES’ original charge to address the change in statute was to determine an alternative flow that is greater than the 7Q10 for nutrient permitting. However, because waterbody response to nutrients is dependent on TP load, it is also necessary to determine appropriate ambient TP target(s) for nutrient permitting. Further, development of guidance to assist permit writers and permittees was also identified as worthwhile objective.

Alternative Flows

Gregg review the median percent of days of a year that flow is below 7Q10 (0.5%), August median flow (16.2%), and summer median flow (30.2%). One of the lingering questions is in regards to how many continuous days a given river falls below a given flow threshold. Focusing on just 10 gages on rivers in NH that receive WWTF effluent, the median (and range) number of days below 7Q10 is 4.5 days (1.9-6.8), below August median flow is 9.2 days (4.4-18.4), and below summer median flow is 13.9 days (6.5-19.3). Within a river the relationship between the 7Q10, August median flow, and summer median flow can be quite variable because of local hydrology and flow regulation. The median ratio of August median:7Q10 is 4.1, summer median:7Q10 is 8.1, and summer median:August median is 1.85.

Comparing systems that receive versus those that do not receive WWTF effluent, we see that the median ambient TP without upstream WWTFs is about 11-13 ug/L regardless of flow while the median ambient TP downstream of WWTFs almost doubles when flows are below the August Median

(19-21 ug/L) and almost triples (32 ug/L) when flows are near 7Q10 (conditions with no rain or stormwater influence). This shows how WWTFs impact ambient TP due to consistent TP loading as flow decreases (drier weather) and becomes more apparent around August median.

In the northeastern states 7Q10 is the most commonly used flow statistic for nutrient permitting. Vermont has already moved over to the August median and Maine is considering the 14Q10 or August median. NHDES has not made a final decision regarding an alternate flow to 7Q10, however we are leaning towards the August Median. Other state examples have been explored however those states do not have the same characteristics as the northeast states.

- Allan – So if a state were delegated, they can do what they want? Gregg – EPA still has to approve the states WQStds, so no.
- Melissa – Is this effort prompted by NHDES digging into the science or because of the statute change? Ted – The Gold Book rule of thumb has been around for a long time but seems to work. Overall, this was prompted by the statute change.

Ambient TP Target(s)

The response of a waterbody to nutrients is dependent on TP loading as well as other factors described in earlier part of the presentation. In cases where an EPA/NHDES approved Site Specific Criteria (Env-Wq 1704), or other studies such as TMDLs, have not been conducted, a default methodology for addressing reasonable potential and potentially setting nutrient permit limits is needed. Such default methods for nutrient permitting are not TP criteria. To that end, it is important to know existing conditions before setting targets. While a narrow range, we know that TP differs across the state and that the HUC8 areas with higher TP (median 25 ug/L) are more populated than those areas with lower TP (median 5.85 ug/L). Further, generally it is only in the river segments with WWTF effluent where TP increases as flows (dilution) decreases.

NHDES examined the TP in river segments as it relates to compliance with water quality criteria and thresholds for various response variables (chlorophyll a, cyanobacteria, dissolved oxygen, benthic macroinvertebrates, and fish). There was a significant difference between rivers with nutrient related impairments (median of 19.0 ug/L (n=60)) and those without (median of 12.3 ug/L (n=104)). For impoundments there was a non-significant difference between those with nutrient related impairments (median of 24.3 ug/L (n=10)) and those without (median of 20.5 ug/L (n=11)).

- Fred asked how we would deal with partitioning between point and non-point loading. Gregg – At low flows, point sources are the driver.

Within northeastern states, 100 ug/L at 7Q10 is the most commonly used target for nutrient permitting. Vermont's range of ambient TP criteria is 9 to 27 ug/L which are applied at the August median flow. Maine's draft criteria range from 18 to 33 ug/L and is considering the 14Q10 or August median as the ambient flow for permitting. With regards to allowable permitted ambient loading, MA and NH are the same, Vermont is ~1/2 to ~1/5 of MA and NH and the upper end of Maine's draft criteria is ~1/3 that of MA and NH. Minnesota, Ohio and New Jersey, which are not like the New England States have some higher allowable ambient TP loads.

- Clifton added that in general, algae do not grow differently in different parts of the country. Ken added that although all algae grows, the response in different systems can vary widely as a given load due to hydrology and trophic interactions.
- Ted – Water quality expectations differ in different parts of the country.
- Clifton – There are different responses by different systems.
- Paul – May be stretching the limits of what TP alone tells you. Load is a Stressor versus instream TP. CT has done some nice enrichment factor work. Ted – The base of that work was from wadeable stream and that work ended up with a ~90% load reduction target and no WWTFs get a load increase.

- Sarita – The Merrimack study showed we had no issues. Gregg- Merrimack study agreed with the existing WQ data in that WQ is generally good until you get down toward the NH/MA border, where there are chlorophyll a exceedances.

Vermont used the macroinvertebrate biological condition as the endpoint for setting ambient TP criteria (which have been approved by EPA). Maine used endpoints of; Algae metrics on tolerant/intolerant species, Macroinvertebrate Trophic Condition, Reference stream TP 90th percentile, TP 75th-90th percentile for all waters with no impairments (by class), Macroinvertebrate condition probability of attainment, TP and Minimum DO, 75th percentile for sites attaining macroinvertebrate thresholds, Percent algae cover, and the TP – Chlorophyll-a relationship.

Diatoms are the base of the food chain for many organisms and there are an increasing number of states that are setting ambient TP targets based on the Biological Condition Gradient (BCG) of diatoms. This approach is supported by EPA to develop regulatory guidelines for nutrients and defines levels of impairment due to human activities based on presence, absence, and relative abundance of several groups of taxa with various sensitivity to stressors as well as system connectivity and ecosystem attributes. As diatom species are directly sensitive to TP and the diatom community captures temporal variability of TP stream conditions they are useful in target setting. The acceptable range based on detailed studies in CT and NJ studies is ~ 20 ug/L to 50 ug/L with variability within that range based on the ecoregion. Significant change in diatoms from TP sensitive to TP tolerant species could violate NH Biological and Community Integrity water quality criteria.

For the October 2018 meeting NHDES calculated the predicted downstream TP at the August median flow for the WWFTs that have permitted TP limits. For all facilities, the predicted ambient downstream TP was less than 50 ug/L and have a median of ~30 ug/L applying a background of 13 ug/L. Some of these would change based on background, particularly where there are upstream dischargers.

NHDES has not made a final decision regarding Target TPs and may propose more than one TP target. The ambient data and literature indicates range of ~9 ug/L to ~50 ug/L depending on factors such as existing condition and response parameter.

- Clifton said that he is against the use of a diatom indicator believing that it is an academic exercise sensitive to so many environmental variables such as DOC and pH. Ted – The existing diatom indexes are based on a panel of experts, a Delphi process, to parse out the nuances for a given region. Paul said that he believes that the CT diatom work would be transferable to NH waters.
- Sarita said she did not see where the 9-50ug/L came from. Gregg reiterated points from the talk.
- Sen. Gray said that it looked like permittees would just get the same overall amount of TP but just tied to a different flow.
- Sherry said that the freshwater Cocheco and many WWFTs have loads and no problems. Gregg many WWFTs have no data to say one way or the other and where data exists it is not at limiting conditions.

Framework for Permit Guidance (Initial Discussion)

While the group did not go through the last group of slides as it was 4:00, Ted discussed where NHDES may be headed and that may be to a framework. Sites would get a default screening value and if that did not work out there would be a process to go through to get at a site-specific permit limit.

- Sherry – Don't the rules already allow for site-specific? Ted – Yes, but what we have heard in discussion and letters is that the GBMC wants more details. Clifton advocated for not making the process overly complex and asked that there not be included new indicators not already in the CALM. Ted reminded everyone that there is a difference between a permit limit and a determination for impairment. Permit limits are to prevent waters from becoming impaired.

Paul – The CWA required the protection of the biointegrity which is very complex. Impairment describes one piece that is a problem.

- Allan – So each facility would come up with a model and such? Ted – No. Many would be served perfectly well with a default value and NHDES has no time to review models for every facility. The rule of thumb is simple and reviewable. Models are massively resource intensive. Look at how long the Merrimack project took.

The possibility of a framework demonstration project with Rochester and an agreement to meet on the topic was discussed. All were asked to review the last group of slides and provide any thoughts they might like to share with NHDES.

9) Other Business

Next WQSAC meeting: The next WQSAC meeting is scheduled for October 10, 2019 at 1:30 pm.

List of Potential Future WQSAC meeting topics: A running list of potential future WQSAC meeting topics and their status (presented in no particular order) is attached.

10) Adjourn

The meeting was adjourned at approximately 4:20 pm.

List of Potential Future WQSAC Meeting Topics and Status
Last Updated 07/29/19

Topic	Description	Status
PFOA & PFOS Criteria in Env-Wq 1700	In October, 2016, NH adopted emergency rules to establish an ambient groundwater drinking water standard of 70 ppt for PFOA & PFOS. The emergency rule lasts 180 days. There are currently no criteria for PFOA or PFOS in Env-Wq 1700 for the protection of aquatic life or human health (added by NHDES in Sept 2017)	07/2018 <ul style="list-style-type: none"> • SB 309 – NHDES to make plan for WQStds. 12/2018 <ul style="list-style-type: none"> • Toxicologist and health risk assessor hired. 04/11/2019 WQSAC meeting <ul style="list-style-type: none"> • NHDES-Update 07/25/2019 WQSAC meeting <ul style="list-style-type: none"> • NHDES- Update Presentation
Acute and Chronic Toxicity definitions (Env-Wq 1702.02 and 1702.10)	Should the definitions be more broad? (from July 2016 comments on IP ¹ by OOE ² Error! Bookmark not defined.).	
Nuisance species (Env-Wq 1702.33 and 1703.03(c)(1)d)	Should nuisance species be better defined because it's too subjective? Should it include a list of "invasive" plants? How do you determine if a waterbody is degraded by development or if it's due to the natural lake aging process? (from July 2016 comments on IP by NHFG ³)	
Designated Uses (Env-Wq 1702.16 and 1703.01)	How should conflicts between designated uses be resolved (e.g., aquatic life (which depend on plants for habitat) and boating or swimming (which can be adversely impacted by too many plants)? (from July 2016 comments on IP by NHFG).	

¹ IP means Initial Proposal;

² OOE means Osprey Owl Environmental, Inc.

³ NHFG means New Hampshire Fish and Game Department

List of Potential Future WQSAC Meeting Topics and Status
Last Updated 07/29/19

Topic	Description	Status
Dissolved Oxygen Criteria (RSA 485-A:8 II, IIa., Env-Wq 1703.07)	In 2017, RSA 485-A:8, II was revised and 485-A:8, IIa., was added that requires DES Commissioner to adopt rules relative to DO water quality standards in a manner that is consistent with EPA guidance on fresh and tidal DO water criteria published pursuant to section 304(a) of the CWA, and other relevant scientific information. (from July 2016 comments on IP by GBMC ⁴ and others)	In progress. Subcommittee formed and first meeting held 10/13/16. 10/13/2016 <ul style="list-style-type: none"> • NHDES-Current Crit., History, Other NE States, Issues, Start 02/09/2017 • Pennsylvania Apprch. 04/13/2017 • NHDES-Why D.O. • NHDES-D.O. and temp. • NHF&G-FW Fish/Life stages • NHDES-EPA 1986 FW Crit. Doc. 09/08/2017 • SB127- a) D.O.%Sat. removed, b) NHDES to adopt D.O. criteria 10/12/2017 • EPA-Glen Thursby – Va. Prov. Apprch. 02/2018 – NHDES DO data to EPA 01/11/2018 WQSAC meeting • NHDES-Update. NHFG to generate species info. 04/12/18 WQSAC meeting • NHDES-Update 10/11/2018 • NHDES-Update 12/2018 – Marine Fish Info; NHFG to NHDES to EPA 04/11/2019 • NHDES-Marine Discussion 07/25/2019 WQSAC meeting • NHDES-Status of EPA work update
Tidal nutrient related assessment procedures (Env-Wq 1703.14)	Do the nutrient related assessment procedures for tidal waters for dissolved oxygen, chlorophyll a, water clarity, macrophytes, epiphytes and eelgrass need to be revisited? (from July 2016 comments on IP by GBMC).	
EPA Human Health Criteria methodology and assumptions (Env-Wq 1703.21, Table 1703-1)	Are the risk factors, body weight, drinking water intake rates, bioaccumulation factors used by EPA to develop 304(a) recommended human health criteria appropriate? Should DES adopt the EPA 304(a) recommended criteria for 94 chemicals finalized in 2015? (from July 2016 comments on IP by OOE).	

⁴ GBMC means Great Bay Municipal Coalition

List of Potential Future WQSAC Meeting Topics and Status
Last Updated 07/29/19

Topic	Description	Status
Chloride Criteria – (Env-Wq 1703.21, Table 1703-1)	Should chloride criteria be revised? Note - EPA disapproved Missouri’s proposal to adopt Iowa’s criteria in 2015 (not scientifically defensible and may not be protective based on recent toxicity tests using mussels).	
Aluminum Criteria – (Env-Wq 1703.21, Table 1703-1)	EPA issued draft freshwater criteria for aluminum in July 2017. The comment period closed 9/26/17. Should DES adopt the revised criteria once it is finalized? (from DES, 9/7/16).	12/2018 - EPA provided V2
Assimilative Capacity (Env-Wq 1705.01)	Should the 10% reserve for future growth be maintained? (from July 2016 comments on IP by City of Rochester).	
River flows for calculation of permit limits (Env-Wq 1705.02)	Should the 7Q10 river flow be used to calculate nutrient related permit limits or should a seasonal flow be used? (from July 2016 comments on IP by City of Rochester).	In progress. 09/08/2017 <ul style="list-style-type: none"> • SB127-Nutrient limits based on flow > 7Q10 10/12/2017 <ul style="list-style-type: none"> • Topic was introduced at WQSAC meeting. 01/11/2018 WQSAC meeting <ul style="list-style-type: none"> • NHDES-Background • EPA-Permit Calcs • Clifton Bell-Alternatives 04/12/2018 <ul style="list-style-type: none"> • NHDES-Recap & Applying other States to a NH permit site 10/11/2018 <ul style="list-style-type: none"> • NHDES-Alternative scenarios 04/11/2019 WQSAC meeting <ul style="list-style-type: none"> • NHDES-Update 07/25/2019 WQSAC meeting <ul style="list-style-type: none"> • NHDES-Presentation
Bacteria: Seasonal (versus year-round) disinfection of WWTF effluent	Current regulations require year-round disinfection of WWTF effluent. Some other NE states do not require disinfection during the winter months. Should NH WWTFs be allowed to do the same? Would require rule change and likely a statute change.	
Cyanobacteria Toxins 304(a)	In May 2019 EPA published its final microcystin and cylindrospermopsin 304(a) criteria to protect recreational uses of waters.	07/25/2019 WQSAC meeting <ul style="list-style-type: none"> • NHDES-Presentation
Presentation	NHDES Monitoring Strategy	
Presentation	Pollutant Tracking and Accounting Pilot Program (PTAPP) being developed for the coast	
Presentation	Trends of Mercury in Fish Tissue	
Presentation	River Order used in the Shoreland Protection Act	

List of Potential Future WQSAC Meeting Topics and Status
Last Updated 07/29/19

Topic	Description	Status
Variances	Should NHDES add variances to the WQStds per 40CFR131.14?	