



Overview and Update on the National Pollutant Discharge Elimination System (NPDES) for NH

Air & Water Regulatory Conference

September 16, 2020

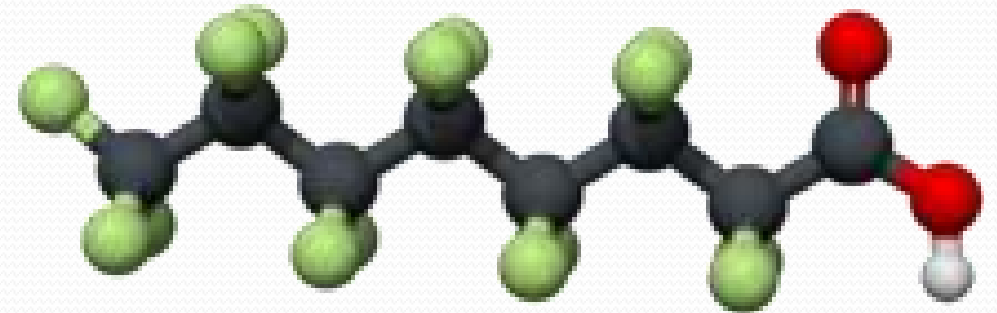


AGENDA

- Regulatory Standards of PFAS Compounds in Groundwater, Surface Water and Biosolids
- What can you do? & NHDES Pollution Prevention Program
- NHDES PFAS Sampling/Screening Survey at NHs POTWs
- Draft PFAS Language in NPDES Permits
- Nitrogen Limits for Connecticut River/LIS Watersheds
- Nitrogen Limits for Great Bay Watershed
- NPDES Delegation Update
- NPDES Aluminum Update
- Other Surface Water Quality Updates
- Questions/Discussion

Regulatory Standards of PFAS compounds in Groundwater

- 2016, NHDES adopts EPA's health advisory for PFOA and PFOS as an Ambient Groundwater Quality Standard (AGQS) – 70 ppt combined
- 2018, Senate Bill 309 (aka Chapter 368 Laws of 2018)
 - By January 1, 2019 NHDES shall initiate rulemaking to adopt Drinking Water Maximum Contaminant Levels (MCLs) for four per- and polyfluoroalkyl substances (PFAS)
 - perfluorooctanoic acid (PFOA)
 - perfluorooctanesulfonic acid (PFOS)
 - perfluorononanoic acid (PFNA)
 - perfluorohexanesulfonic acid (PFHxS)
 - Once adopted, MCLs then become the AGQSs by law



Regulatory Standards of PFAS compounds in Groundwater

- On December 31, 2018, using the most recent and best science available, NHDES proposed the following drinking water standards and that are protective of the most sensitive populations over a lifetime:

PFAS	Proposed MCL and AGQS
PFOA	38 ppt
PFOS	70 ppt
PFOA & PFOS (combined)	70 ppt
PFHxS	85 ppt
PFNA	23 ppt

- NHDES released a summary report on the development of the drinking water standards (MCLs) including an explanation of the health risk assessment for each compound and information on cost, benefit, occurrence, and ability to detect and treat these chemicals.
- NHDES held public hearings on the proposed MCLs in southern NH, at Pease Tradeport, and at the NHDES offices in Concord in early March 2019.

Regulatory Standards of PFAS compounds in Groundwater

- In July 2019 the original proposed MCLs for the four PFAS compounds were revised.

PFAS	Proposed MCL and AGQS	Revised MCL and AGQS
PFOA	38 ppt	12 ppt
PFOS	70 ppt	15 ppt
PFOA & PFOS (combined)	70 ppt	N/A
PFHxS	85 ppt	18 ppt
PFNA	23 ppt	11 ppt

- The major factor was NHDES evaluation of *technical comments supporting the use of an exposure model to account for pregnant women and breastfed infants*.
- The legislation required NHDES to set criteria for the **most sensitive life stages** (i.e. breastfed infants in this case).
- The model was **published in the January** (after the initial proposal was developed), and included revisions following peer-review that were not available earlier.
- This model was **originally developed by Minnesota** who has extensive experience with PFAS, and **recently used by Michigan** in the development of their MCLs.

Regulatory Standards of PFAS compounds in Groundwater

- On July 23rd, 2020 the Governor signed HB 1264 into law. This legislation established in statute PFAS MCLs that were previously established by NHDES in rule.
- These MCLs are drinking water quality standards that non-transient public water systems, i.e. water systems serving the same 25 people at least 60 days a year must comply with.
- An AGQS is the standard used to require remedial action and the provision of alternative drinking water at a contaminated site.

Regulatory Standards of PFAS compounds in Surface Water

- 2018, Senate Bill 309 (aka Chapter 368 Laws of 2018)
 - By January 1, 2020 NHDES shall develop a plan, including a schedule and cost estimates, to establish surface water quality standards for four per- and polyfluoroalkyl substances (PFAS). This plan was delivered on December 31, 2019.
 - perfluorooctanoic acid (PFOA)
 - perfluorooctanesulfonic acid (PFOS)
 - perfluorononanoic acid (PFNA)
 - perfluorohexanesulfonic acid (PFHxS)
 - For **all** designated uses.



	Development Costs	*to Rulemaking	Meeting Criteria*
MCL adoption as Water Consumption Criteria - Waters within 20 miles upstream of surface drinking water supplies	\$25,000	4-8 months	\$97,000 for two-rounds of samples (Covers the 59 surface water supplies)
Establish Fish Consumption Advisory - Determines how many fish meals are safe to eat in a week or month	\$9,000	2-3 months	\$500,000 - \$6,300,000 (Based on a 100 waterbodies probabilistic survey sampling strategy and added sampling costs based on initial sampling results)
Fish/Shellfish Tissue Criteria - Tissue consumption safety based on amount of PFAS in fish/shellfish	\$34,000 - \$120,000 (National or NH consumption rates)	5-24 months	\$500,000 - \$6,300,000 (Based on a 100 waterbody sampling strategy and added sampling costs based on initial sampling results)
Fish/Shellfish Water Criteria - Assess tissue consumption safety (water sample)	\$75,000 - \$741,000 (Literature or NH BAFS)	18-36 months	\$148,000 for two-rounds of samples (Covers 100 waterbodies targeting at-risk and high-use waterbodies)
Fish/Shellfish Consumption PLUS Water Consumption Criteria - Amount of fish AND water that is safe to consume (water sample)	Combination of those seen for MCL adoption as Water and Fish/Shellfish Consumption Criteria (line 1) and Water Concentration Criteria to Protect Fish Consumption (line 4).		
	\$750,000	18-36 months	\$148,000 for two-rounds of samples (Covers 100 waterbodies targeting at-risk and high-use waterbodies)
Recreational Contact - Assess water samples for acceptable levels for physical contact with surface water	\$34,000 - \$120,000 (Literature or NH recreation rates)	6-18 months	\$510,000 for two-rounds of samples (Covers the 381 designated beaches)
Aquatic Life Use - Assesses levels of PFAS that will impact fish and other aquatic life**	\$2,525,000 - \$43,225,000 (Contributing or filling all data gaps)	3-8 years	\$148,000 for two-rounds of samples (Covers 100 waterbodies targeting at-risk and high-use waterbodies)

Regulatory Standards of PFAS compounds in Surface Water

- Full surface water quality standards for PFAS could yield nine different criteria for each PFAS compound depending upon the end-point to be protected (human health or aquatic life health), the route of exposure (water consumption, tissue consumption or both), and the criteria type (acute or chronic for aquatic life health).
- Some of the criteria have lower development costs but very high assessment costs, while others have higher development costs but lower assessment costs.
- NHDES anticipates that the final decision on which criterion to pursue will be a matter of discussion and debate in the legislature, and will impact the cost estimates. The total development and assessment costs will largely be determined by two factors – 1) the type of criteria chosen, and 2) how many waterbodies are assessed.
- Further action regarding this plan, if any, will await enabling legislation and funding.
- The plan is at <https://www.des.nh.gov/organization/divisions/water/wmb/wqs/documents/r-wd-19-30.pdf>

Regulatory Standards for PFAS Compounds in Biosolids

- Biosolids are used for Beneficial Reuse
 - The taking advantage of the nutrient content or soil conditioning properties, or both, of quality-certified sludge, by supplying agronomic or soil conditioning benefits, such as the nitrogen, phosphorus, micronutrients, or organic matter needs for crops, forested land, or reclamation by land applying the sludge in accordance with these rules so as to not pose a significant risk to public health or the environment.
- Since SQC program inception in 1999 NHDES has worked to have a strong program to protect NHs groundwaters and surface waters.
- NHDES rules are more stringent than the EPA 503 Rules.



Regulatory Standards for PFAS Compounds in Biosolids

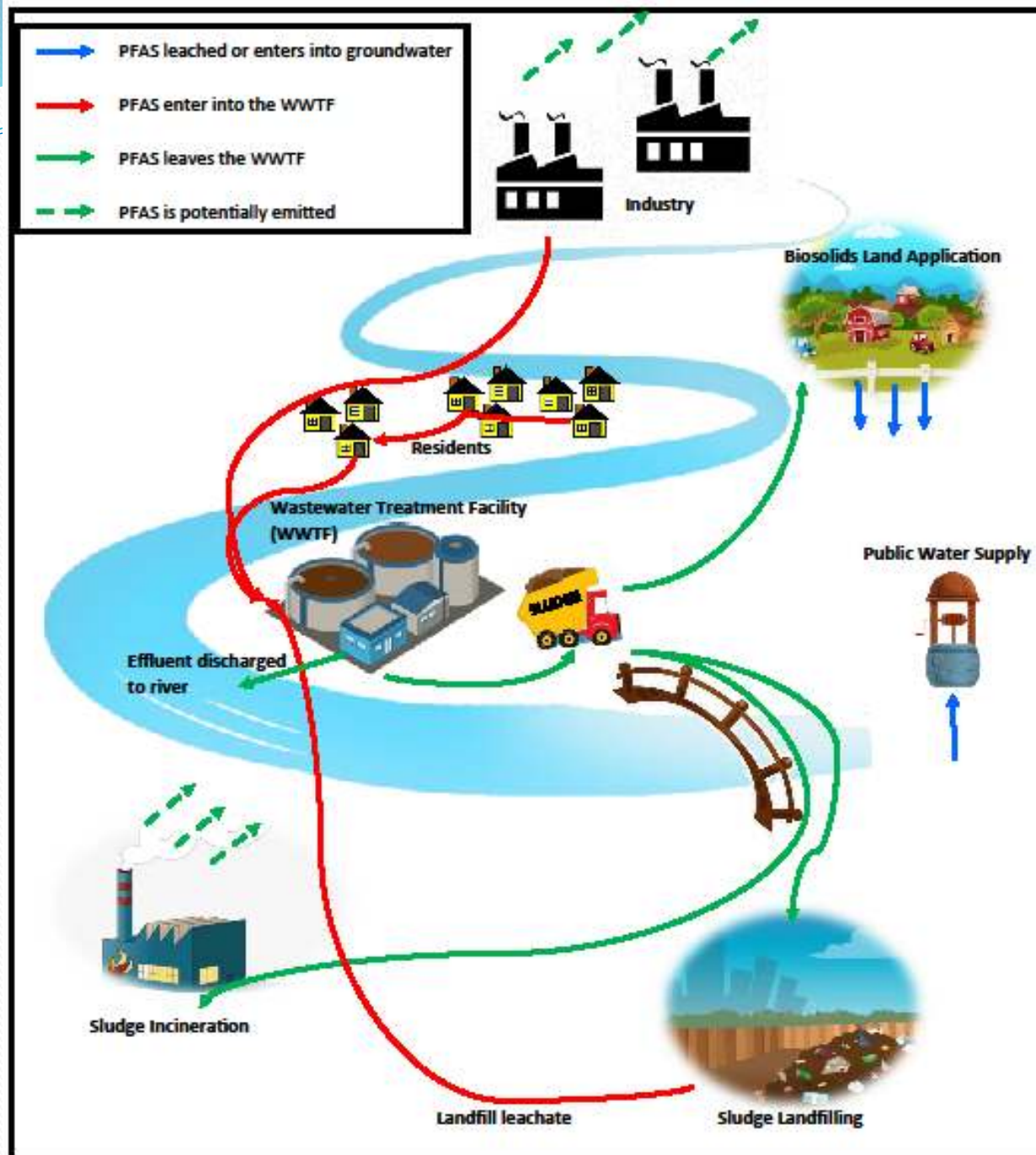
- USGS PFAS Soil Leaching Study
 - To help determine a PFAS biosolids standard for the NHDES Sludge Quality Certification (SQC) program.
 - Assess the occurrence of PFAS in shallow soil in locations throughout NH, and identify leaching potential for various PFAS in several types of NH soils.



NHDES Response - Biosolids

- As of May 2019 started annual PFAS sampling of SQC permittees and their biosolids.
- Conducted One on One training with all SQC permittees for developing a proper PFAS sampling SOP, and implementing PFAS sampling into their facility sampling and analysis plan.
- Average concentration of wastewater biosolids has been between 10 – 20 ppb. Paper fiber from paper mills has been 5 ppb or less.
- EPA has yet to approve a PFAS sludge testing method, but require isotope dilution to be conducted when analyzing sludge for PFAS. Isotope dilution is known to produce the most accurate results for PFAS in sludge.
- The Biosolids Improvement Program. This workgroup is a northeast regional workgroup comprised of wastewater, residual, & septage hauler managers, state agencies, municipal authorities, and privately run engineering firms. The group's objective is to create education outreach material for the public and business on the impacts PFAS has on wastewater and biosolids management programs.





How does PFAS effect your local wastewater treatment management and YOU?

Written by:

The Northeast Biosolids Improvement Program Workgroup

What can you do?

Where does your business/industry discharge? Direct vs. indirect discharges

- Direct
 - NPDES Permit
 - Groundwater Discharge Permit
 - Septic System – Leach Field
- Indirect
 - POTW
 - Septic System - Tank
- Impacts of industrial and commercial discharges



What can you do?

NHDES Pollution Prevention Program

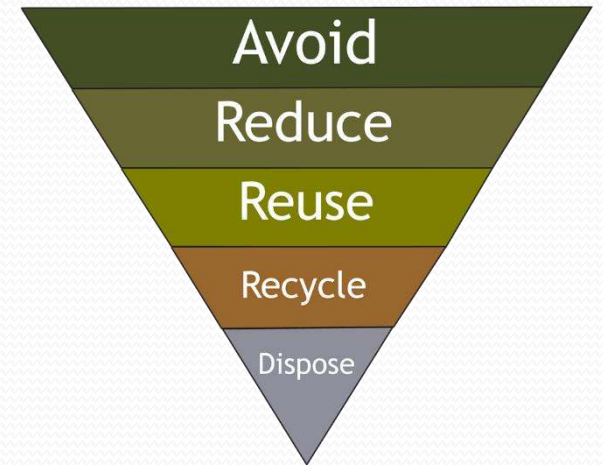
- Free
- Confidential
- Non-enforcement
- Pollution prevention and compliance assistance program available to all NH businesses, institutions, municipalities and agencies.
- <https://www.youtube.com/watch?v=RQqCksp6kDY>



Pollution Prevention

- Eliminate or reduce pollution at the source
- Instead of managing that waste after it is generated

Pollution Prevention Hierarchy



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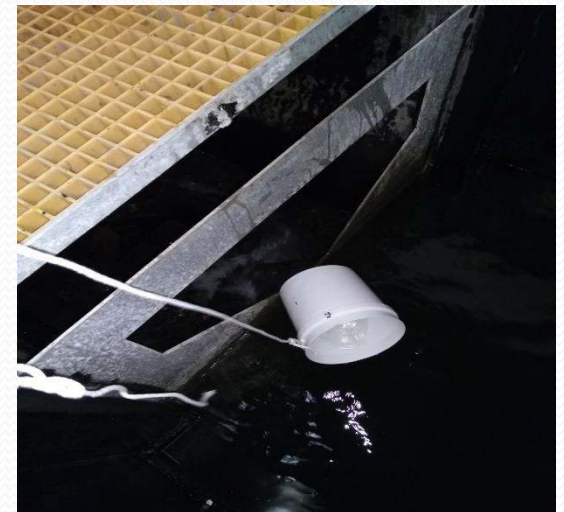
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PFAS sampling/screening survey at NHs POTWs

- Purpose: Initial screening of all municipal WWTFs and select industrial WWTFs with NPDES permits.
- Grab sample of influent and effluent – snap shot in time – limited data analysis
- Sampled for 23 PFAS compounds including PFOA, PFOS, PFHxS, PFNA
- Sampling commenced the week of 3/6/20, suspended as of 3/16/20 due to COVID, reinstated week of 6/8/20 and now complete with the exception of a few facilities who do not discharge on a regular basis
- 72 municipal WWTFs and 25 industrial facilities included in survey
- As results are received, conveying individually to each facility
- Potential source identification and elimination
- What is background or baseline?



DRAFT PFAS Language in NPDES Permits

- For all POTWs – Quarterly sampling of influent, effluent and sludge for 4 NH regulated PFAS compounds.
- For all POTWs - Annual sampling of certain types of industrial discharges into the POTW.
 - Platers/Metal Finishers, Paper and Packaging Manufacturers, Tanneries and Leather/Fabric/Carpet Treaters, Manufacturers of Parts with Polytetrafluoroethylene (PTFE) or teflon type coatings (i.e. bearings), Landfill Leachate, Contaminated Sites, Fire Fighting Training Facilities, Airports, and any other known or expected sources of PFAS.
- For all Industrial Discharges – Quarterly sampling of effluent for all 4 NH regulated PFAS compounds.
- This reporting requirement for the listed PFAS parameters takes effect 6 months after EPA's multi-lab validated method for wastewater or biosolids, as applicable; 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>.

Nitrogen Limits for CT River/LIS Watershed

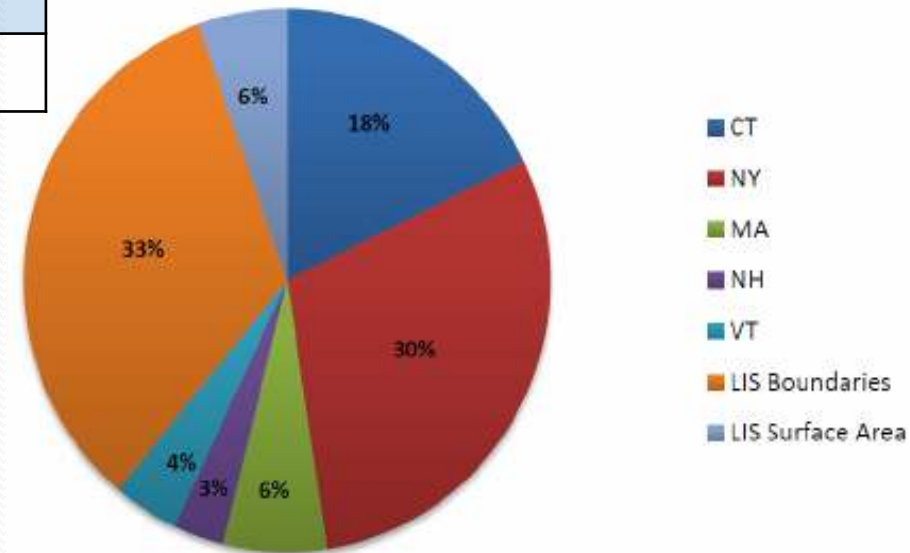
POTW Dischargers to CT River/Long Island Sound Watershed

Facility Design Flow, QD (MGD)	# of NH Facilities	Annual Average TN Limit (lb/day)
QD > 6	0	QD (MGD) * 8 mg/L*8.345 + optimize
1.5 ≤ QD ≤ 6	5*	QD (MGD) * 10 mg/L*8.345 + optimize
0.1 ≤ QD <1.5	14**	Optimize
QD < 0.1	6***	TN monitoring only

*Keene, Claremont, Lebanon, Hanover, Littleton

**Bethlehem Village, Charlestown, Colebrook, Groveton, Hinsdale, Lancaster, Lisbon, Newport, Sunapee, Troy, West Swanzey, Whitefield, Winchester, Woodsville

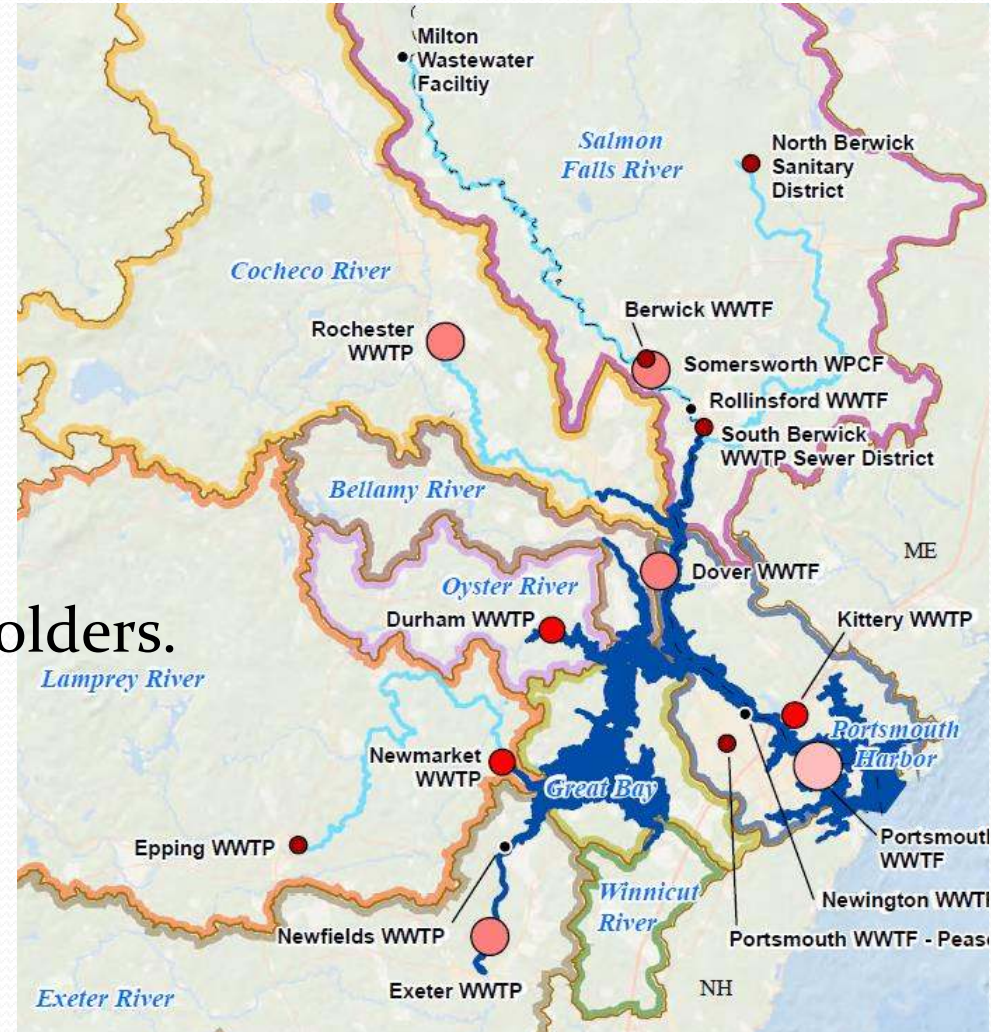
***Cheshire County, Lancaster Grange, Meriden Village Water District, Northumberland, Stratford Mill House, and Stratford Village



(Graphic from NEIWPCC, 2010)

Nitrogen Limits for Great Bay Watershed

- Draft Great Bay Total Nitrogen General Permit for 13 WWTFs (not Maine)
- Only TN other stuff in individual NPDES permits.
 - Effluent limitations,
 - effluent and ambient monitoring requirements,
 - goals for nonpoint source reductions,
 - adaptive management framework.
- Status -- Comments being reviewed.
- Expect final permit in late 2020 or early 2021.
- Ongoing discussions with communities and stakeholders.
- Eligible facilities: Dover, Durham, Epping, Exeter, Milton, Newfields, Newington, Newmarket, Pease, Portsmouth, Rochester, Rollinsford, and Somersworth.

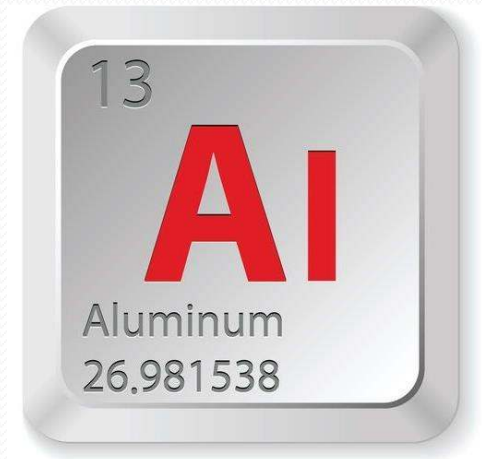


NPDES Delegation Update

- NPDES Program Delegation
 - 2017, Senate Bill 121 - delegation of MS4 program alone not permissible all NPDES program elements must be taken.
 - 2018, Senate Bill 450 established NPDES advisory commission and required final report by November 1, 2019 but no money was appropriated for hiring a consultant.
 - Status – no funds appropriated for hiring a consultant, commission dormant.
- NPDES Program Assistance
 - 3 of 5 requested staff positions to provide NPDES technical assistance including MS4 assistance have been established.
 - Two positions filled, one on currently on hold.

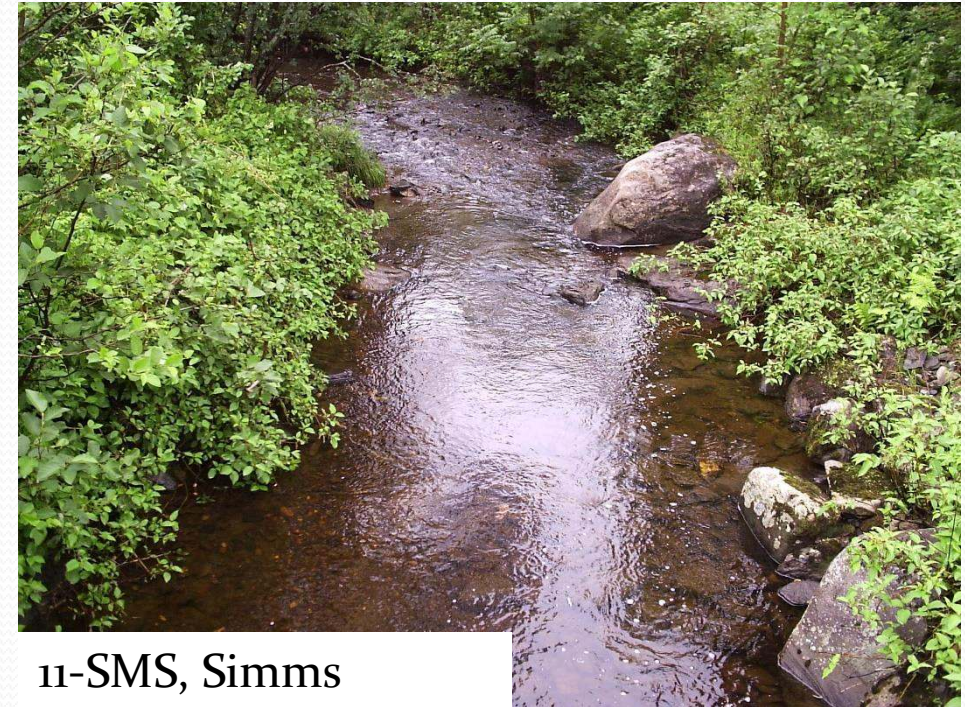
NPDES Aluminum Update

- Aluminum Limits
 - NHDES letter to EPA on July 1, 2017 - NH standard is interpreted as acid soluble aluminum.
 - More flexibility for dischargers.
- EPA issued final 2018 aluminum criteria allows for site specific criteria as function of pH, dissolved organic carbon (DOC), and total hardness.
- NHDES will likely adopt the new criteria.
- New permit language – ambient sampling.
- NHDES Watershed Sampling Efforts.



Other Surface Water Quality Updates

- 401 Rules and WOTUS
- Standards –
 - 2018 update status
 - Dissolved Oxygen
 - 7Q10 effluent limit issue
 - EPA – chlorides
- Instream Flow – Cold and Warner Rivers



11-SMS, Simms
Stream

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**AND
NOW
IT IS TIME FOR SOME
CLOSING
REMARKS**

End of Webinar

Thank You!