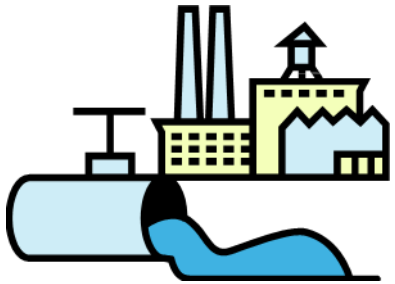
NPDES Permitting
February 6, 2025-Nick Coco
February 18, 2025- Karen Preston

NPDES - Background

National Pollution Discharge Elimination System

- Acronym: NPDES
- Created in 1972 by the Clean Water Act
  - Designed to protect our water by implementing treatment practices at sources of pollution by limiting their discharges
  - Regulates domestic wastewater, industrial process wastewater, municipal wastewater, groundwater remediation, water treatment plants and stormwater
- North Carolina was granted NPDES permitting authority in 1975



NPDES Wastewater Permitting

Wastewaters Permitted Through NPDES Program

- √ Domestic wastewater
- √ Industrial process wastewater and comingled process area stormwater
- √ Municipal wastewater
- √ Groundwater remediation
- √ Water treatment plants

NPDES in NC

North Carolina has roughly 1,100 active NPDES Individual Permits

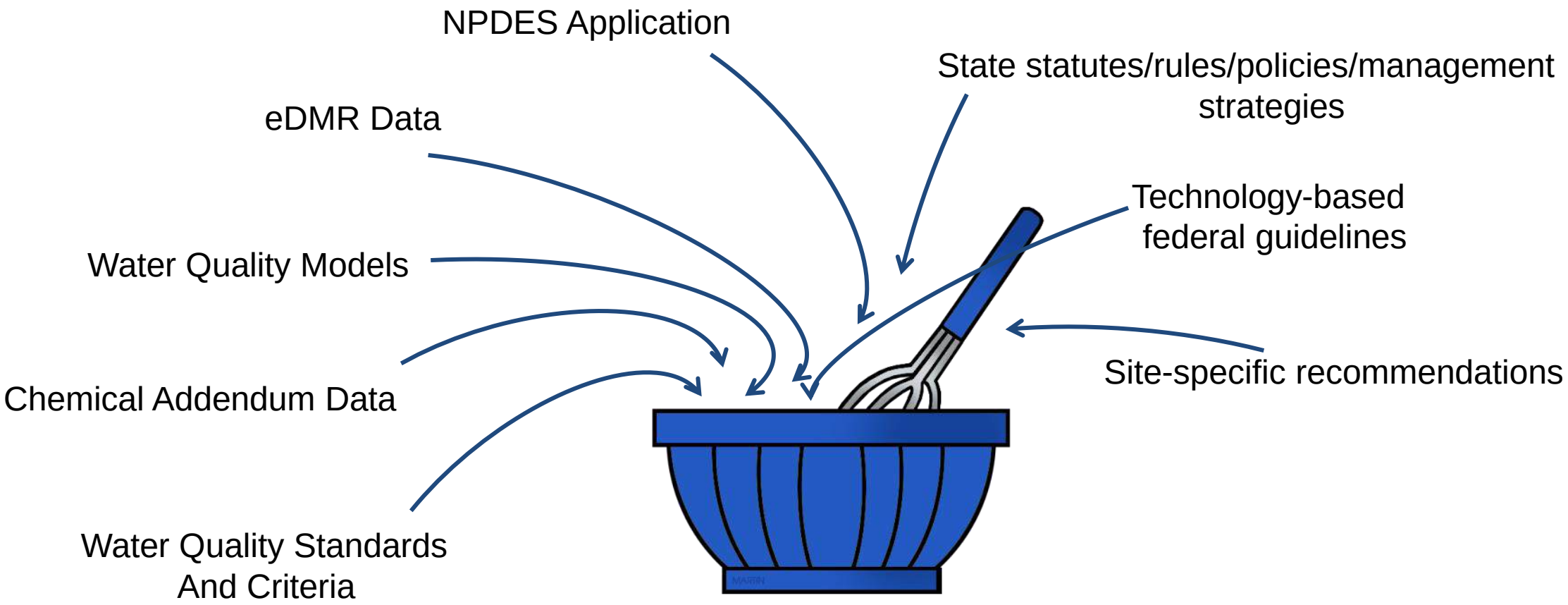
Of those 1,100, The Municipal and Industrial Permitting Units handle ~300 permits (majors and complex minors):

- 222 Major dischargers
  - Municipal Facilities
  - Industrial Facilities
- 72 Minor dischargers (<1.0 MGD)
  - Municipal Facilities (with Pretreatment Programs for SIUs)
  - Industrial Facilities
  - 100% Domestic Dischargers
  - Groundwater Remediation Facilities

NPDES Permits

- Allow for discharge of treated wastewater to an identified receiving stream at a specified outfall location
- Denote the components used at the permitted facility
- Set treatment requirements/limits
- Incorporate Special Conditions for additional needs

Basis for Limits



Reasonable Potential Analysis (RPA)

- Part of the NPDES permit review
- Statistical analysis based on EPA guidelines
- Determine the maximum concentration of a pollutant that could be expected based on available data
- Determine the allowable discharge concentration
- Compare and assess need for limits based on application data

Reasonable Potential Analysis (RPA) - continued

- Allowable Discharge Concentrations
  - Based on applicable water quality standard or criterion
  - Accounts for dilution via application of the Instream Waste Concentration (IWC)

- Maximum Predicted Concentration
  - Uses available discharge data and calculated coefficient of variation (CV)
  - Based on a 95th percentile of a lognormal distribution of effluent concentrations

RPA – Logic Behind Requirements

RPA Condition	Permit Requirement
1. RP Exists	Monitor Monthly and add Permit Limit
2a. RP Exists but Dataset Limited (n < 8 or 9 samples)	Monitor Quarterly
2b. RP Exists Dataset Limited, but 2 values > allowable Cw	Monitor Monthly and add Permit Limit
3. No RP exists, but predicted maximum concentration > 50% Cw	Monitor Quarterly
4. No RP exists, and predicted maximum concentration < 50% Cw	No Monitoring

*To be used as a guideline of typical conditions but may vary for specific conditions and circumstances

Public Notice

- Permit writer produces necessary documents to be made available as part of the public notice process.
  - Draft permit
  - Cover letter
  - Fact Sheet

- Documents are also loaded on Laserfiche for public review

Public Notice (continued)

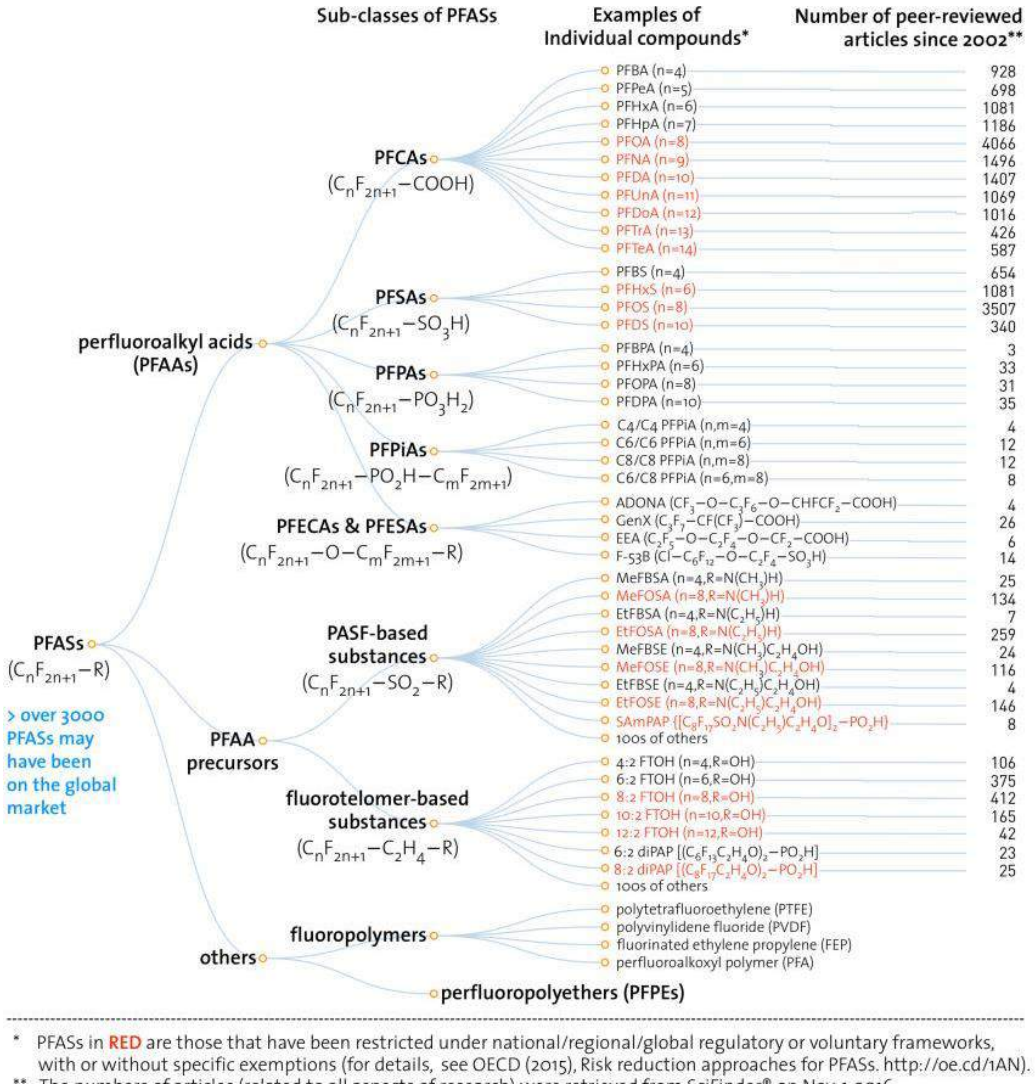
- 15A NCAC 02H .0109 requires the Division of Water Resources to provide public notice of permitting actions through local newspapers
- Public Notice Comment period lasts 30 days starting from publication of the notice in the local newspaper
- The Division typically does not make a final decision on issuance of the NPDES permit until 15 days after the close of the Public Notice Comment period
- If sufficient comments are received, then a Public Hearing will be held in accordance with 15A NCAC 02H .0109(b)

Pretreatment Program

- A Publicly Owned Treatment Works (e.g. Sanitary District or municipality) which accepts wastewater from a Significant Industrial User (SIU) must develop a pretreatment program (40 CFR 403).
    - Could be local permit (not necessarily an SIU, but the POTW found reason to permit the facility)
    - Requirement of NPDES permit
- The purpose of the Pretreatment Program
    - Protect the stream (meet NPDES permit limits and water quality standards)
    - Protect the Wastewater Treatment Plant (WWTP) (healthy microorganisms)
    - Allow for Beneficial reuse of biosolids

Interlude- Questions?

Emerging Compounds - PFAS



- PFAS - Per and Polyfluoroalkyl Substances - is a **class** of over 5000 manufactured chemicals
- Synthetic, used extensively since late 1940s
- Useful properties: oil-and water-resistance
- **Emerging** pollutants: science about the chemicals and impacts is being developed

PFAS in NC

Unregulated Contaminants Monitoring Rule (UCMR)

- EPA collects data for chemicals and microbes that may be present in drinking water, but are not currently subject to EPA drinking water regulations
- UCMR3 (2012-2016) indicated elevated levels of PFAS and 1,4-dioxane in the Cape Fear River Basin

2018 DWR Emerging Compounds Reports

- B. Everett Jordan Reservoir and its immediate watershed
- Falls Lake and its immediate watershed
- various public water supply (PWS) reservoirs in the Cape Fear, New and Watauga River Basins.

2019 Cape Fear River Basin NPDES Investigation

- Division requested monitoring from municipal and industrial dischargers for PFAS compounds

PFAS Industries

- EPA identified Industry categories known or suspected to discharge PFAS in their October 2021 PFAS Strategic Roadmap:
  - organic chemicals, plastics & synthetic fibers (OCPSF);
  - metal finishing;
  - electroplating;
  - electric and electronic components;
  - landfills; pulp, paper &paperboard;
  - leather tanning & finishing;
  - plastics molding & forming;
  - textile mills;
  - paint formulating;
  - Centralized Waste Treatment (CWT);
  - and Airports.

EPA Recommendations- December 2022 Memo

- Influent, Effluent and Biosolids Monitoring
  - NPDES facilities to monitor each of the 40 PFAS parameters detectable by Method 1633A (updated December 2024) and be conducted at least quarterly – recommended use of wastewater method 1633A until method is finalized
- Pretreatment:
  - Update IU Inventory
  - Utilize BMPs and pollution prevention
- Biosolids Assessment
- Notification of Downstream Public Water Systems of PFAS permits

PFAS Wastewater Analysis

- **August 2021: EPA posted the initial draft of Method 1633 using the data from the single laboratory validation.**
- **June 2022: Second draft of Method 1633 included clarification on issues brought up during multi-laboratory validation.**
- **December 2022: Third draft of Method 1633 includes multi-laboratory validation data for the wastewater matrix.**
- **July 2023: Fourth draft of Method 1633 will incorporate the final QC acceptance criteria for all aqueous matrices.**
- **January 2024: Method 1633 (final) will include the final QC acceptance for all eight environmental matrices.**
- **December 2024: Method 1633A (EPA update technical correction) was proposed for rule and is open for public comment until 2/20/24.**

PFAS in NPDES

- A Special Condition for PFAS monitoring is being added to large municipal facilities and facilities with industrial sources
- If facility is discharging entirely domestic wastewater, receives wastewater from industrial users not associated with PFAS, and/or does not discharge above any WS waters, monitoring is typically delayed until a 40 CFR 136 Method is published in the *Federal Register*
- If facility receives wastewater from industrial users associated with PFAS, and discharges above WS waters:
  - Monitoring is required using the 3rd draft method or more recent (until published in 40 CFR 136)
  - Municipality is to investigate and monitor industrial users within their PT program and identify indirect dischargers who are contributing PFAS to the facility

Questions and Contact Information

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