

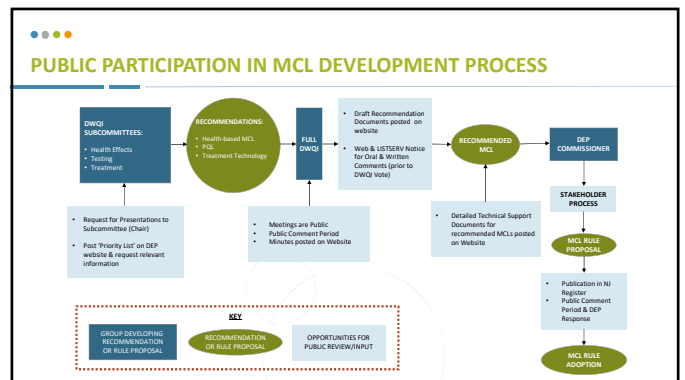
OVERVIEW

- ◆ New MCL for 1,2,3-Trichloropropane (1,2,3-TCP) of 30 ppt (0.030 µg/l)
- ◆ New MCL for Perfluorononanoic Acid (PFNA) of 13 ppt (0.013 µg/l)
- ◆ Monitoring Requirements for all Community and Non-Transient Non-Community Water Systems
- ◆ Status of other contaminants of concern
- ◆ Additional Rule Changes

<https://www.nj.gov/dep/rules/adoptions.html>

DRINKING WATER QUALITY INSTITUTE (DWQI)

- ◆ Established under 1984 SDWA amendments and charged with recommending MCLs
- ◆ Meeting information including agendas at: www.nj.gov/dep/watersupply/g_boards_dwqi.html
- ◆ Three subcommittees: Health, Treatment & Testing



New Jersey Rule Process

- ◆ Stakeholder process
- ◆ Draft rule proposal
- ◆ Proposal published in NJ Register
- ◆ Public hearings and comment period
- ◆ Adoption within one year
- ◆ Effective date noted upon publication

PFNA AND 1,2,3-TCP

THE ROAD TO REGULATION OF TWO CONTAMINANTS

QUICK FACTS:
1,2,3-TRICHLOROPROPANE

- ◆ Uses: pesticides (as an impurity), industrial solvent, cleaning & degreasing agent, paint remover
- ◆ Evaporates from surface water but leaches through soil to groundwater
- ◆ Potent carcinogen. Causes mutations and DNA damage.
- ◆ Detected in UCMR3 between 0.03 - 0.051 µg/l

TIMELINE: 1,2,3-TRICHLOROPROPANE

- 1999: NJ develops guidance of 25 ng/L
- 2002: NJ Nominates 123-TCP for EPA IRIS
- 2005: NJ Adopts GWQS of 30 ng/L
- 2008: NJ's comments lead to EPA revising 123-TCP as carcinogenic in reference material
- 2009: DQWJ Recommendation of 30 ppt (0.030 µg/l)
- 2015: DQWJ updated recommendation of 30 ppt (0.030 µg/l)

MONITORING FRAMEWORK
1,2,3-TRICHLOROPROPANE

1,2,3-TRICHLOROPROPANE

Monitoring required at:

- ◆ 1st Quarter 2019:
 - ◆ All Community Water Systems ≤10K using groundwater and all Non-Transient Non-Community Water Systems
- ◆ 1st Quarter 2020:
 - ◆ All Community Water Systems >10K and all Community Water Systems using a surface water source
- ◆ Private Wells under PWTA

SOC MONITORING FRAMEWORK

- ◆ If three consecutive annual samples have no detections system can be issued a waiver
- ◆ PWS <3,300 may reduce sampling to 1 quarterly sample during each compliance period with no detections
- ◆ Monitoring period in the three year cycle is determined by population and type of water system (N.J.A.C. 7:10-5.2(a)7)

MDL

- ◆ MDL must be 10 ng/L or less
- ◆ Lowest calibration standard should be no higher than 21 ng/L
- ◆ Lowest calibration standard is used as the R&C value for reducing monitoring
- ◆ If the result is between the MDL and the lowest calibration standard, enter a "J" and the lowest calibration standard in the comment field.
- ◆ For Example:
 - MDL – 10 ng/L
 - Lowest Calibration Standard – 20 ng/L
 - Result is 18 ng/L
 - Result = 18 ng/L
 - Comment Field = J – 20 ng/L

ANALYTICAL METHODS

NOTE: Methods 524.3 and 504.1 used to test for 1,2,3-TCP **also detect EDB and DBCP.**

QUICK FACTS: EDB AND DBCP

- Health Effects:
 - EDB/DBCP - Potent carcinogens. Causes mutations and DNA damage.
- Federally regulated SOCs
 - EDB - MCL of 0.05 µg/l
 - DBCP - MCL 0.2 µg/l
- Systems can receive waivers under the following three year monitoring cycles:
 - 2017-2019
 - 2020-2022

No waivers will be granted for these two SOCs during the compliance cycle when the water system is testing for 1,2,3-TCP.

MCL DEVELOPMENT

PERFLUORONONANOIC ACID

QUICK FACTS: PERFLUORONONANOIC ACID (PFNA)

- Used in manufacturing of consumer goods
- Does not break down in the environmental and is water soluble
- Detected in UCMR3 in NJ
 - EPA MRL = 20 ng/L
 - Detected in 7/1456 samples (0.5%); 4/175 systems (2%)

NJ VERSUS NATIONAL PFAS DETECTIONS IN UCMR3 (2013-15)

- PFOA, PFNA, and "any PFAS" - much more frequent in NJ than nationally.
 - PFNA - Gloucester and Camden Counties
 - PFOA - Various locations
- Other PFAS - occurrence similar or slightly higher in NJ than nationally.

| Compound | Reporting Level (ng/L) | New Jersey PWS # Detects* | New Jersey PWS % Detects | National PWS # Detects (other than NJ)** | National PWS % Detects (other than NJ) |
|--------------|------------------------|---------------------------|--------------------------|--|--|
| PFOA (C8) | 20 | 18/175 | 10.3% | 98/4745 | 2.1% |
| PFNA (C9) | 20 | 4/175 | 2.3% | 10/4745 | 0.2% |
| PFOS (C8-S) | 40 | 6/175 | 3.4% | 89/4745 | 1.9% |
| PFHxS (C6-S) | 30 | 2/175 | 1.1% | 53/4745 | 1.1% |
| PFBS (C4-S) | 90 | 0/175 | 0% | 8/4745 | 0.2% |
| PFHpA (C7) | 10 | 6/175 | 3.4% | 80/4745 | 1.7% |
| Any PFC | | 25/175 | 14.3% | 169/4745*** | 3.6%*** |

* New Jersey data as of 10/14/16.
 ** USEPA data posted online as of 7/16.
 *** Based on Hu et al. (2016).

TIMELINE: PERFLUORONONANOIC ACID

- 2009: NJDEP PFC Occurrence Study
- 2013: Literature search revealed PFNA levels in NJ exceeded any others reported worldwide
- 2013-2015: UCMR3 Testing detects PFNA in NJ more frequently than nationally
- 2014: DWQI Recommendation of 13 ppt (0.013 µg/l)
- 2014: NJDEP Guidance Issued to South Jersey residents
- 2018: NJDEP adoption of MCL

MONITORING FRAMEWORK

PERFLUORONONANOIC ACID

PERFLUORONONANOIC ACID

Monitoring required at:

- All Community Water Systems
- All Non-Transient Non-Community Water Systems

Monitoring not required this time at:

- Transient Water Systems
- Private Wells under PWTA

VOC MONITORING FRAMEWORK

- If three consecutive annual samples have no detections system can be placed on triennial monitoring
- Monitoring period in the three year cycle is determined by population and type of water system (N.J.A.C. 7:10-5.2(a)7)

MDL

- Labs will need to:
- Conduct an MDL study where they need to obtain an MDL of 2 ng/L or less
- Demonstrate they can meet the MRL of 5 or less performing a MRL Confirmation for a MRL of 5 ng/L
- Collect field blanks and analyze if the MRL of the PFNA is over the lab's MRL of 5 ng/L
- Indicate a result is between the MRL and MDL by putting a "J" in the **result comment field** not the sample comment field

NOTE: PFOA/PFOS

- Water systems reporting data for PFNA are encouraged to also report data for PFOA and PFOS
- If MCLs are adopted in the future, results submitted may be evaluated as "grandfathered data" and used to reduce monitoring frequency.

MONITORING SCHEDULES

2019 Monitoring Schedules will be available on Drinking Water Watch by November

- Letters will be sent to all water systems confirming monitoring schedules

MONITORING SCHEDULES

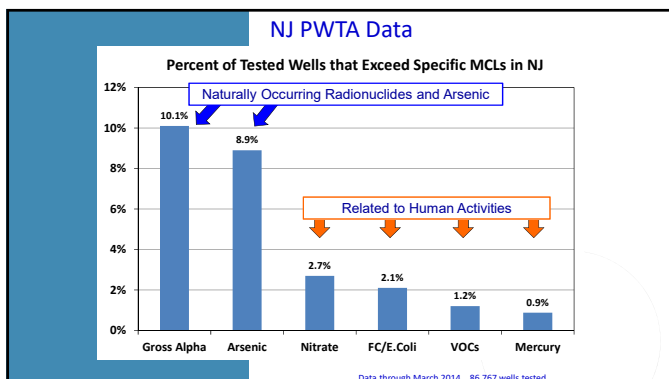
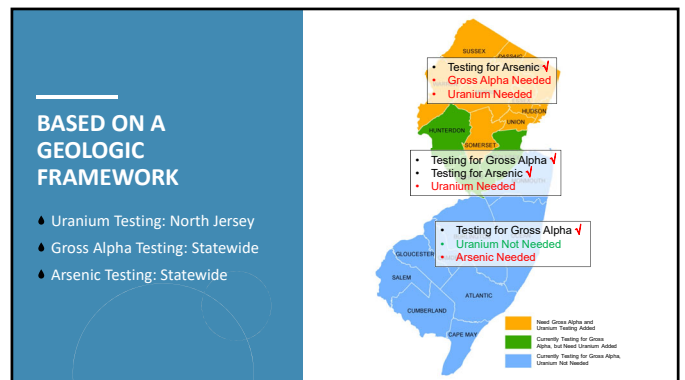
Monitoring Schedules are available on Drinking Water Watch

| Sample Point ID | Analyte Name | Schedule Starts | Sampling Year | Requirements |
|-----------------|-------------------------------|-----------------|---------------|-----------------------|
| DS | PH | 07/01/2018 | 2018 | 20 Sample(s)/Every 6M |
| P001004 | 1,2,3-TRICHLOROPROPANE | 01/01/2020 | 2020 | 1 Sample(s)/QT |
| P001004 | 1,2-DIBROMO-3-CHLOROPROPANE | 01/01/2020 | 2020 | 1 Sample(s)/QT |
| P001004 | CARBON, TOTAL | 01/01/2002 | 2018 | 1 Sample(s)/Month |
| P001004 | ETHYLENE DIBROMIDE | 01/01/2020 | 2020 | 1 Sample(s)/QT |
| P001004 | NITRATE | 01/01/2003 | 2018 | 1 Sample(s)/M |
| P001004 | PERFLUORONONANOIC ACID (PFNA) | 01/01/2020 | 2020 | 1 Sample(s)/QT |
| P001004 | PH | 07/01/2018 | 2018 | 1 Sample(s)/Every 2W |
| P001004 | TURBIDITY | 01/01/2002 | 2018 | 1 Sample(s)/Month |

NEW JERSEY SUMMARY

| Contaminant | Stage in Process |
|--|---|
| PFNA 1,2,3 - TCP | Rule adopted and effective September 4, 2018 |
| PFOA | DWQI recommended MCL in March 2017, Rulemaking process initiated |
| PFOS | DWQI recommended MCL in May 2018, Rulemaking process initiated |
| Chrome (VI) Chlorate Tertiary Butyl Alcohol 1,4 Dioxane | Commissioner asked DWQI to consider starting the process of setting an appropriate MCL. |

- ### OTHER RULE CHANGES
- 1st Quarter 2019: Radionuclides testing for non transient non-community water systems
 - Notice of Administrative Change to the GWQS
 - CCR Requirements for PFNA/1,2,3-TCP
 - PWTA Changes
 - New one time testing for newly constructed non-community or non-public wells

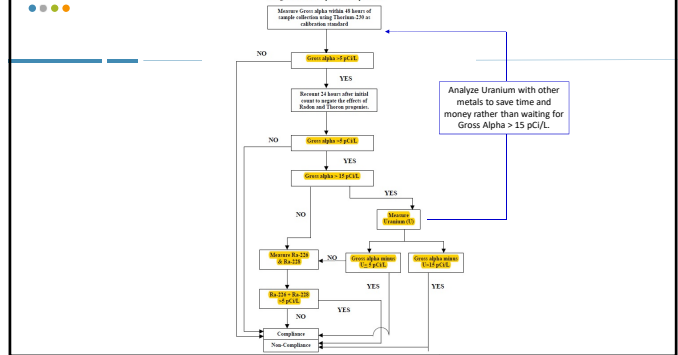


- ### EXPANSION OF ARSENIC TESTING REQUIREMENT TO SOUTHERN COUNTIES
- Arsenic has been detected in southern NJ private wells.
 - Arsenic is naturally occurring in the greensand formations.
 - Arsenic is a common contaminant at Superfund and other waste sites.
 - Arsenic was a common pesticide historically.
 - The percentage of MCL exceedance should be lower than in the north, but still substantial.

GROSS ALPHA & URANIUM

- Gross alpha has the highest percentage of MCL exceedance in PWTA.
- NJ's PWTA phased in Gross Alpha due to lab capacity issues.
- Radioactive elements are common in many NJ geologic formations.
- NJDEP commissioned USGS for a study on radioactive elements in northern NJ.
- A 2016 NJGWS Sussex County study confirmed the need for expanded testing.

Figure 1: Flow Chart for Typical Drinking Water Compliance Testing Scheme



GROSS ALPHA COMPLIANCE

To determine compliance with the gross alpha MCL, the total uranium activity is subtracted from the measured gross alpha activity, resulting in the "Adjusted Gross Alpha".

Adjusted Gross Alpha MCL: 15 pCi/L

$$= \text{Gross Alpha} - \text{U (ug/L)} \times 0.67 \text{ pCi/ug}$$

Example:

Gross Alpha = 24 pCi/L
 Uranium mass = 22 ug/L
 Uranium activity = 22 x 0.67 = 15 pCi/L
 Adj Gross Alpha = 24-15 = 9 pCi/L

In this case, no MCL exceedance for Uranium or Gross Alpha

TREATMENT

- It is important to know which radionuclides are present to select an appropriate treatment option.
- A gross-alpha test alone does not provide adequate guidance.
- Anion exchange systems successfully removed uranium while cation exchange systems (water softeners) successfully removed radium.

UPCOMING TRAINING

November 20, 28 and December 6, 2018
 SDWA Updates focusing on new MCLs and more!

Registration: www.njwater.org

IMPORTANT RESOURCES – TREATMENT FUNDING

◆ Spill Funds Claims under the Spill Compensation and Control Act

NJDEP Site Remediation Program: <https://www.nj.gov/dep/srp/>
Fund Management Section at 609-984-2076 or
Publicly Funded Response Element at 609-984-3074

◆ New Jersey Drinking Water State Revolving Fund

Bureau of Safe Drinking Water at (609) 292-5550

IMPORTANT RESOURCES

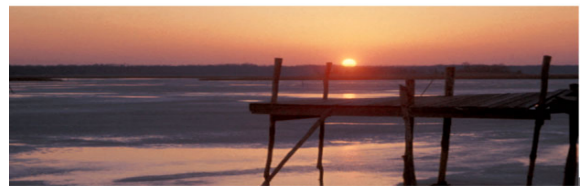
◆ EPA Rule Actions: <https://www.epa.gov/pfas/epa-actions-address-pfas>

◆ Interstate Technology and Regulatory Committee Factsheets: <https://pfas-1.itrcweb.org/fact-sheets/>

◆ Unregulated Contaminant Monitoring Rule: <https://www.epa.gov/dwucmr/third-unregulated-contaminant-monitoring-rule>

SUMMARY OF KEY DATES

- ◆ Rule Adopted: **September 4, 2018**
- ◆ Sampling begins for all nontransient noncommunity water systems: **1st Quarter 2019**
- ◆ Sampling begins for community water systems: **1st Quarter 2019 or 1st Quarter 2020**
- ◆ Start of PWTA requirements for gross alpha, uranium, arsenic: **September 4, 2018**
- ◆ Start of PWTA requirements for 1,2,3-TCP, EDB and DBCP: **March 3, 2019**



QUESTIONS?

watersupply@dep.nj.gov

609-292-5550 (phone)