Municipal Water System Compliance Related to Per- and Polyfluoroalkyl Substances (PFAS)

City Council Meeting

November 07, 2023

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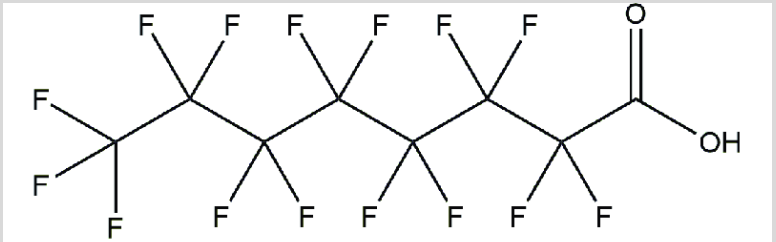
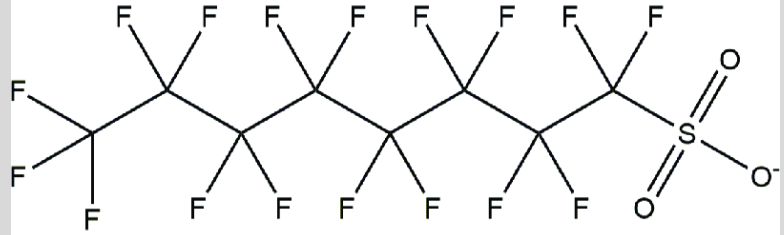
Background

- Per- and polyfluoroalkyl substances (PFAS) are a group of human-made chemicals
- More common forms:
  - Perfluorooctane sulfonica acid (PFOS)
  - Perfluorooctanoic acid (PFOA)
  - Perfluorohexansulfonic acid (PFHxS)
- Due to widespread use, PFAS are most commonly found in:
  - Water
  - Air
  - Fish
  - Soil
- PFAS Concerns:
  - Do not break down in environment
  - Resistant to heat, water, and oil
  - Can move through soil and into drinking water sources



Perfluorooctanoic acid (PFOA)



Perfluorooctane sulfonate (PFOS)

Why Did Monrovia Start Monitoring?

- In March 2019, the Division of Drinking Water (DDW) issued orders to test certain drinking water supply wells that were determined to be most vulnerable to PFAS contamination
  - The City received a PFAS Monitoring Order under this effort
- In August 2020, State Water Resources Control Board (Board) issued General Order No. DW 2020-0003-DDW to public water systems to monitor for PFAS
  - Effective October 2020, public water systems that showed PFAS detection in their 2019 monitoring results were required to expand monitoring for PFAS quarterly
  - As of December 31, 2020, it became the public water systems responsibility to sample for PFAS
  - Samples are required to be analyzed by an accredited laboratory

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Exposure to PFAS

- Most exposure comes from contaminated food and water
- PFAS found in the environment can enter the food supply through plants and animals grown, raised, or processed in contaminated areas
- Exposure to PFAS in food can come from the following sources:
  - Packaging
  - Processing
  - Cookware
- PFAS can also be found in :
  - Heat-resistant non-stick cooking surfaces
  - Surface cleaning agents
  - Industrial fluids
  - Fire suppression foam
  - Water-proofing agents

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PFAS Notification and Response Levels

- Notification levels (NLs) are non-regulatory levels established for contaminants in drinking water for which maximum containment level (MCL) has been established
- Response levels are set higher than NLs and recommend a water system consider taking water source out of service or provide treatment
- Water systems that detect levels of PFAS that exceed the response level are required to:
  - Take water service out of use
  - Treat delivered water
  - Provide public notification

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PFAS Notifications and Response Levels

Abbreviation	Chemical Name	Notificaiton Level ng/L (ppt)	Response Level ng/L (ppt)
PFOA	Perfluorooctanoic acid	5.1	10
PFOS	Perfluorooctane acid	6.5	40
PFBS	Perfluorobutane sulfonic acid	500	5,000
PFHxS	Perfluorohexane sulfonic acid	3	20

*ppt = parts per trillion
Equivalent to one gallon of contaminant per one trillion gallons of water.

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City of Monrovia Water Treatment Process

- Current water treatment process:
  1. Volatile organic compound (VOC) removal through air stripping
  2. Blending treatment for VOC, nitrate, perchlorate, and PFAS
  3. Daily chemical injection of the following chemicals:
     - 12.5% of Sodium Hypochlorite for bacteriological control
     - 16% of Sodium Hexametaphophate for corrosion control and VOC treatment in treatment towers

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Domestic Water Supply Permit Amendment

- Permit #1910090PA-005 amended in April 2022 to add PFOA and PFOS blending operation to existing treatment plant
- Blending operation is an approved treatment
- Blending operation has upgraded current treatment facility from T3 to a T4 treatment facility
- Permit amendment gives the City time to comply until new PFAS treatment facility is built and operational

Sampling

- City is required to sample source water monthly at the entry point of distribution system
  - PFOA and PFOS sampling is required every two weeks
- Samples are taken weekly by trained and certified City staff
- Sampling certifications required:
  - Water Treatment Operator Grade T2
  - Water Distribution Operator Grade D2
- Chief Operator has a T4 certification and D5 Certification

Contracted Sampling Laboratory

The City currently contracts with Eurofins Eaton Analytical, LLC as their State approved sampling laboratory.

eurofins

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Drinking Water State Revolving Loan Fund (DWSRF)

- State program offers low-cost financing for water quality projects
- Capable of financing projects from <$1 million to >$100 million
- Loans are traditionally low to no interest
- In 2022, the federal government announced funding for PFAS treatment
- California is using the loan fund application process to award and distribute these monies
- City submitted application on September 5, 2023
- Approximate application process is 12 months

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Settlement

- 3M and DuPont have proposed settlements with Public Water Systems
  - June 2023: DuPont proposed a settlement of $1.185 billion (estimated market share between 3-7%) and 3M proposes between $10.5 billion and $12.5 billion (estimated market share of 70%)
  - Settlement agreements remain under review by the Courts
  - Potential class members must now decide whether to participate in these settlements

PFAS in Southern California

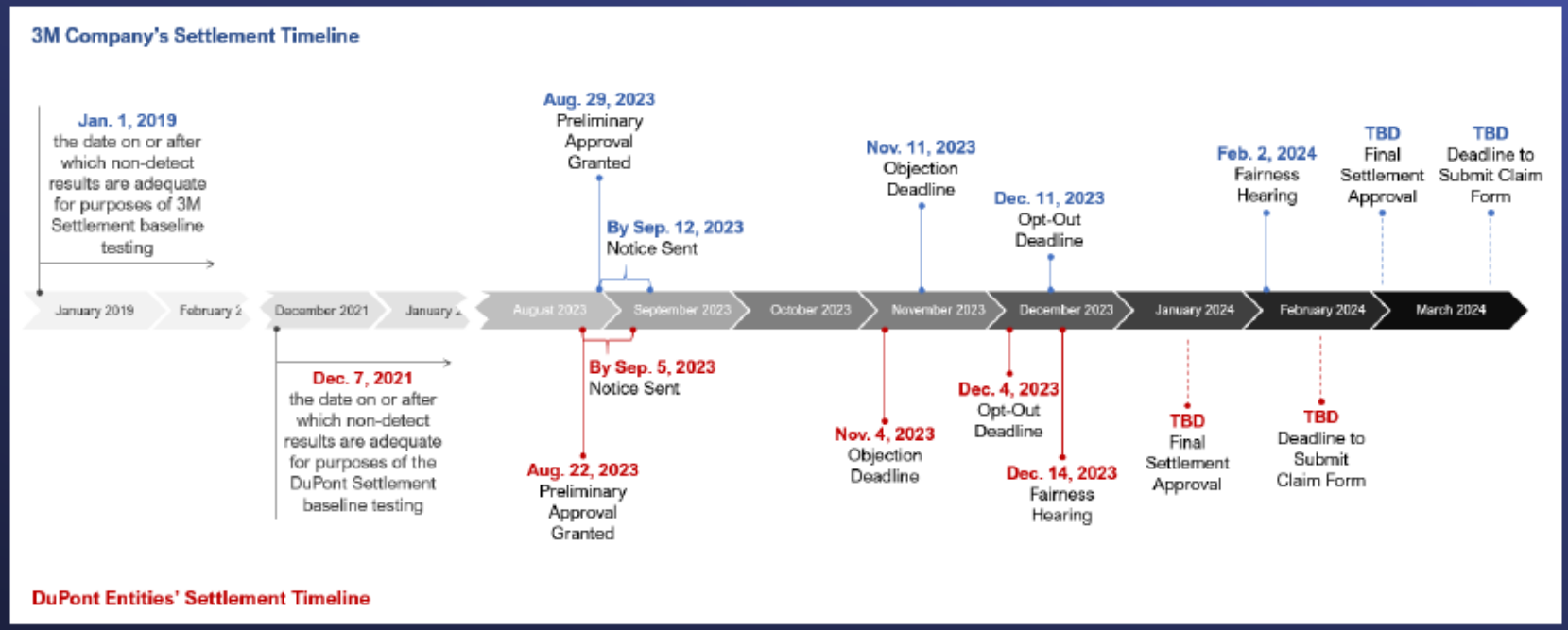
PFAS in USA

PFAS Across the United States

EPA PFAS Analytic Tools (PFAS Analytic Tools | ECHO | US EPA)

Settlement

Settlement Timelines



PFAS Treatment Facility

In last phase of design stage.

- Staff is anticipating initiating the bid process toward the end of FY23-24 and construction taking place in FY24-25.

Ongoing Maintenance to Water System

- Continued ongoing maintenance to water system:
  - Rehabilitation of wells 3, 4, and 5 over the past six years
  - Rehabilitation of well 6 at the end of fiscal year 2023
- Upgrading components of SCADA system to better manage system remotely

Additional Efforts

- By end of calendar year 2023, City staff will receive an update on PFAS and EPA's proposed determination an MCL.
- Presentation will including the following topics:
  - General knowledge of PFAS
  - PFAS characteristics
  - Sources of pollution
  - How PFAS enters and interacts with our water system
  - Best practices for navigating PFAS
- Will equip staff with knowledge and awareness to adjust current practices and prevent further PFAS pollution
- Staff attends San Gabriel Valley Council of Governments (SGVCOG) and Main San Gabriel Basin Watermaster monthly meetings
- Staff attends Upper San Gabriel Valley Municipal Water District quarterly meetings

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Questions?