Public Health and Health Planning Council

Codes, Regulations and Legislation Committee Meeting Agenda
December 8, 2022
10:00 AM

90 Church Street, Conference Rooms 4 A/B, NYC

Empire State Plaza, Concourse Level, Meeting Room 6, Albany

I. WELCOME AND INTRODUCTION

Thomas Holt, Chair of the Committee on Codes, Regulations and Legislation

II. REGULATIONS

For Emergency Adoption

20-06 Amendment of Part 2, Section 405.3 and Addition of Section 58-1.14 to Title 10 NYCRR
(Investigation of Communicable Disease)

20-07 Addition of Section 2.60 to Title 10 NYCRR
(Face Coverings for COVID-19 Prevention)

For Information

22-16 Amendment of Subpart 5-1 of Title 10 NYCRR
(Maximum Contaminant Levels (MCLs))

For Adoption

22-11 Amendment of Subpart 5-1 of Title 10 NYCRR
(Public Water Systems)

III. ADJOURNMENT

******Agenda items may be called in an order that differs from above******

Pursuant to the authority vested in the Public Health and Health Planning Council and the Commissioner of Health by Sections 225, 576, and 2803 of the Public Health Law, Sections 2.1 and 2.5 of Title 10 (Health) of the Official Compilation of Codes, Rules and Regulations of the State of New York are amended, Section 2.6 is repealed and a new Section 2.6 is added, Section 405.3 is amended and a new Section 58-1.14 is added, to be effective upon filing with the Secretary of State, to read as follows:

Subdivision (a) of section 2.1 is amended to read as follows:

(a) When used in the Public Health Law and in this Chapter, the term infectious, contagious or communicable disease, shall be held to include the following diseases and any other disease which the commissioner, in the reasonable exercise of his or her medical judgment, determines to be communicable, rapidly emergent or a significant threat to public health, provided that the disease which is added to this list solely by the commissioner's authority shall remain on the list only if confirmed by the Public Health and Health Planning Council at its next scheduled meeting:

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[Monkeypox] <u>Mpox</u>

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Section 2.5 is amended to read as follows:

A physician in attendance on a person affected with or suspected of being affected with any of the diseases mentioned in this section shall submit to an approved laboratory, or to the laboratory

of the State Department of Health, for examination of such specimens as may be designated by the State Commissioner of Health, together with data concerning the history and clinical manifestations pertinent to the examination:

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[Monkeypox] Mpox

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Section 2.6 is repealed and replaced as follows:

2.6 Investigations and Response Activities.

(a) Except where other procedures are specifically provided in law, every local health authority, either personally or through a qualified representative, shall immediately upon receiving a report of a case, suspected case, outbreak, or unusual disease, investigate the circumstances of such report at any and all public and private places in which the local health authority has reason to believe, based on epidemiological or other relevant information available, that such places are associated with such disease. Such investigations and response activities shall, consistent with any direction that the State Commissioner of Health may issue:

(1) Verify the existence of a disease or condition;

(2) Ascertain the source of the disease-causing agent or condition;

(3) Identify unreported cases;

(4) Locate and evaluate contacts of cases and suspected cases, as well as those reasonably expected to have been exposed to the disease;

(5) Collect and submit, or cause to be collected or submitted, for laboratory examination such specimens as may furnish necessary or appropriate information for determining the

source of disease, or to assist with diagnosis; and furnish or cause to be furnished with such specimens pertinent data on forms prescribed by the State Commissioner of Health, including but not limited to the history of cases, physical findings and details of the epidemiological investigation;

(6) With the training or assistance of the State Department of Health, examine the processes, structures, conditions, machines, apparatus, devices, equipment, records, and material within such places that may be relevant to the investigation of disease or condition;

(7) Instruct a responsible member of a household or entity, as applicable, to implement appropriate actions to prevent further spread of a disease; and

(8) Take any other steps to reduce morbidity and mortality that the local health authority determines to be appropriate.

(b) When a case or suspected case of a disease, condition, outbreak, or unusual disease occurs in any business, organization, institution, or private home, the person in charge of the business, organization, institution or the home owner, as well as any individuals or entities required to report pursuant to sections 2.10 and 2.12 of this Part, shall cooperate with the State Department of Health and local health authorities in the investigation of such disease, condition, outbreak, or unusual disease.

(c) Investigation Updates and Reports.

(1) Upon request of the State Department of Health, the local health authority shall submit updates and reports on outbreak investigations to the State Department of Health. The

content, timeframe, and manner of submission of such updates shall be determined by the State Department of Health.

(2) The local health authority shall complete investigation reports of outbreaks within 30 days of the conclusion of the investigation in a manner prescribed by the State Commissioner of Health, unless the State Commissioner of Health prescribes a different time period.

(d) Commissioner authority to lead investigation and response activities.

(1) The State Commissioner of Health may elect to lead investigation and response activities where:

(i) Residents of multiple jurisdictions within the State are affected by an outbreak of a reportable disease, condition, or unusual disease; or

(ii) Residents in a jurisdiction or jurisdictions within the State and in another state or states are affected by an outbreak of a reportable disease, condition, or unusual disease; or

(iii) An outbreak of an unusual disease or a reportable disease or condition involves a single jurisdiction with the high potential for statewide impact.

(2) Where the State Commissioner of Health elects to lead investigation and response activities pursuant to paragraph (1) of this subdivision, local health authorities shall take all reasonable steps to assist in such investigation and response, including supply of personnel, equipment or information. Provided further that the local health authority shall take any such action as the State Commissioner of Health deems appropriate and that is within the jurisdiction of the local health authority. Any continued investigation or

response by the local health authority shall be solely pursuant to the direction of the State Commissioner of Health, and the State Commissioner of Health shall have access to any investigative materials which were heretofore created by the local health authority.

Paragraph (11) of subdivision (d) of section 405.3 is amended, paragraph (12) is renumbered paragraph (13), and a new paragraph (12) is added, to read as follows:

(d) Records and reports. Any information, records or documents provided to the department shall be subject to the applicable provisions of the Public Health Law, Mental Hygiene Law, Education Law, and the Public Officers Law in relation to disclosure. The hospital shall maintain and furnish to the Department of Health, immediately upon written request, copies of all documents, including but not limited to:

* * *

(11) written minutes of each committee's proceedings. These minutes shall include at least the following:

(i) attendance;

(ii) date and duration of the meeting;

(iii) synopsis of issues discussed and actions or recommendations made; [and]

(12) whenever the commissioner determines that there exists an outbreak of a highly contagious communicable disease pursuant to Part 2 of this Title or other public health emergency, such syndromic and disease surveillance data as the commissioner deems appropriate, which the hospital shall submit in the manner and form determined by the commissioner; and

(13) any record required to be kept by the provisions of this Part.

* * *

Section 405.3 is amended by adding a new subdivision (g) as follows:

(g) Whenever the commissioner determines that there exists an outbreak of a highly contagious communicable disease pursuant to Part 2 of this Title or other public health emergency, the commissioner may direct general hospitals, as defined in Article 28 of the public health law, and consistent with the federal Emergency Medical Treatment and Labor Act (EMTALA), to accept patients pursuant to such procedures and conditions as the commissioner may determine appropriate.

New section 58-1.14 is added to read as follows:

Section 58-1.14 Reporting of certain communicable diseases.

(a) The commissioner shall designate those communicable diseases, as defined by section 2.1 of the Sanitary Code, that require prompt action, and shall make available on the Department's website a list of such communicable diseases.

(b) Laboratories performing tests for screening, diagnosis or monitoring of communicable diseases requiring prompt action pursuant to subdivision (a) of this section, for New York State residents and/or New York State health care providers, shall:

(i) immediately report to the commissioner all positive results for such communicable diseases in a manner and format as prescribed by the commissioner; and

(ii) report all results, including positive, negative and indeterminate results, to the commissioner in a time and manner consistent with Public Health Law § 576-c.

REGULATORY IMPACT STATEMENT

Statutory Authority:

The statutory authority for the regulatory amendments to Part 2 of Title 10 of the Official Compilation of Codes, Rules and Regulations of the State of New York is Section 225 of the Public Health Law (PHL), which authorizes the Public Health and Health Planning Council (PHHPC), subject to the approval of the Commissioner of Health (Commissioner), to establish and amend the State Sanitary Code (SSC) provisions related to any matters affecting the security of life or health or the preservation and improvement of public health in the State of New York. Additionally, Section 2103 of the PHL requires all local health officers to report cases of communicable disease to the New York State Department of Health (Department).

The statutory authority for the proposed amendments to section 405.3 of Title 10 of the Official Compilation of Codes, Rules and Regulations of the State of New York is section 2803 of the PHL, which authorizes PHHPC to adopt and amend rules and regulations, subject to the approval of the Commissioner, to implement the purposes and provisions of PHL Article 28, and to establish minimum standards governing the operation of health care facilities.

The statutory authority for the proposed new section 58-1.14 of Title 10 of the Official Compilation of Codes, Rules and Regulations of the State of New York is section 576 of the PHL, which authorizes the Department to adopt regulations prescribing the requirements for the proper operation of a clinical laboratory, including the methods and the manner in which testing or analyses of samples shall be performed and reports submitted.

Legislative Objectives:

The legislative objective of PHL § 225 is, in part, to protect the public health by authorizing PHHPC, with the approval of the Commissioner, to amend the SSC to address public health issues related to communicable disease.

The legislative objective of PHL § 2803 includes, among other objectives, authorizing PHHPC, with the approval of the Commissioner, to adopt regulations concerning the operation of facilities licensed pursuant to Article 28 of the PHL, including general hospitals.

The legislative objective of PHL § 576 is, in part, to promote public health by establishing minimum standards for clinical laboratory testing and reporting of test results, including to the Department for purposes of taking prompt action to address outbreaks of disease.

Needs and Benefits:

These regulations update, clarify and strengthen the Department's authority as well as that of local health departments to take specific actions to monitor the spread of disease, including actions related to investigation and response to a disease outbreak.

The following is a summary of the amendments to the Department's regulations:

Part 2 Amendments:

- Amend sections 2.1 and 2.5 to reflect The World Health Organization's (WHO) decision to change the name of "monkeypox" to "Mpox" in an effort to reduce the stigma that monkeypox comes with and deal with possible misinformation falsely suggesting that monkeys are the main source of spreading the virus.
- Repeal and replace current section 2.6, related to investigations, to clarify existing local health department authority.

- Sets forth specific actions that local health departments must take to investigate a case, suspected case, outbreak, or unusual disease.
- Requires individuals and entities subject to a public health investigation to cooperate with the Department and local health departments.
- While the Department works collaboratively with local health departments on a variety of public health issues, including disease control, this regulation clarifies the authority for the Commissioner to lead disease investigation activities under certain circumstances (i.e., where there is potential for statewide impact, multiple jurisdictions impacted, or impact on one or more New York State jurisdictions and another state or states), while working collaboratively with impacted local health departments. In all other situations, local health departments retain the primary authority and responsibility to control communicable disease within their respective jurisdictions, with the Department providing assistance as needed.
- Codify in regulation the requirement that local health departments send reports to the Department during an outbreak.

Part 405 Amendments

- Mandates hospitals to report syndromic surveillance data during an outbreak of a highly contagious communicable disease.
- Permits the Commissioner to direct hospitals to take patients during an outbreak of a highly contagious communicable disease, which is consistent with the federal Emergency Medical Treatment and Labor Act (EMTALA).

Part 58 Amendments

- New section 58-1.14 added clarifying reporting requirements for certain communicable diseases
    - Requires the Commissioner to designate those communicable diseases that require prompt action, and to make available a list of such diseases on the State Department of Health website.
    - Requires clinical laboratories to immediately report positive test results for communicable diseases identified as requiring prompt attention, in a manner and format identified by the Commissioner.
    - Requires clinical laboratories to report all test results, including negative and indeterminate results, for communicable diseases identified as requiring prompt attention, via the Electronic Clinical Laboratory Reporting System (ECLRS).

COSTS:

Costs to Regulated Parties:

Although there are costs associated with disease investigation and response for any outbreak, these regulations clarify and strengthen the existing authorities and responsibilities of local governments. As such, these regulations do not impose any substantial additional costs beyond what local health departments would incur in the absence of these regulations.

The requirement that hospitals submit syndromic surveillance reports when requested during an outbreak is not expected to result in any substantial costs. Hospitals are already regularly and voluntarily submitting data to the Department, and nearly all of them submit such reports electronically. With regard to the Commissioner directing general hospitals to accept

patients during an outbreak of a highly contagious communicable disease, hospitals are already required to adhere to the federal Emergency Medical Treatment and Labor Act (EMTALA). Accordingly, both of these proposed amendments will not impose any substantial additional cost to hospitals.

Clinical laboratories must already report communicable disease testing results using the ECLRS and must also immediately report communicable diseases pursuant to PHL § 2102. The regulation simply clarifies existing requirements and is not anticipated to imposes any substantial additional costs beyond those costs that laboratories would incur in the absence of these regulations.

Costs to Local and State Governments:

Although there are costs associated with disease investigation and response for any outbreak, these regulations clarify and strengthen the existing authorities and responsibilities of local governments. As such, these regulations do not impose any substantial additional costs beyond what local health departments would incur in the absence of these regulations. Further, making explicit the Department's authority to lead investigation activities will result in increased coordination of resources, likely resulting in a cost-savings for State and local governments.

Any clinical laboratories operated by a local government must already report communicable disease testing results using the ECLRS and must also immediately report communicable diseases pursuant to PHL § 2102. The regulation simply clarifies existing requirements and is not anticipated to imposes any substantial additional costs beyond those costs that laboratories would incur in the absence of these regulations.

Paperwork:

Some hospitals may be required to make additional syndromic surveillance reports that they are not already making. Otherwise, these regulations do not require any additional paperwork.

Local Government Mandates:

Under existing regulation, local health departments already have the authority and responsibility to take actions to control the spread of disease within their jurisdictions. The proposed amendments clarify these existing authorities and duties.

Duplication:

There is no duplication in existing State or federal law.

Alternatives:

The alternative would be to leave in place the current regulations on disease investigation. However, many of these regulatory provisions have not been updated in fifty years and should be modernized to ensure appropriate response to a disease outbreak, such as COVID-19.

Federal Standards:

States and local governments have primary authority for controlling disease within their respective jurisdictions. Accordingly, there are no federal statutes or regulations that apply to disease control within NYS.

Compliance Schedule:

These emergency regulations will become effective upon filing with the Department of State and will expire, unless renewed, 90 days from the date of filing. As the COVID-19 pandemic is consistently and rapidly changing, it is not possible to determine the expected duration of need at this point in time. The Department will continuously evaluate the expected duration of these emergency regulations throughout the aforementioned 90-day effective period in making determinations on the need for continuing this regulation on an emergency basis or issuing a notice of proposed rulemaking for permanent adoption. This notice does not constitute a notice of proposed or revised rule making for permanent adoption.

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REGULATORY FLEXIBILITY ANALYSIS

Effect on Small Business and Local Government:

Under existing regulation, local health departments already have the authority and responsibility to take actions to control the spread of disease within their jurisdictions. The proposed amendments clarify these existing authorities and duties.

Compliance Requirements:

Under existing regulation, local health departments already have the authority and responsibility to take actions to control the spread of disease within their jurisdictions. The proposed amendments clarify these existing authorities and duties. With respect to mandating syndromic surveillance reporting during an outbreak of a highly infectious communicable disease, hospitals are already reporting syndromic surveillance data regularly and voluntarily. With respect to clinical laboratories, they must already report communicable disease testing results using the ECLRS and must also immediately report communicable diseases pursuant to PHL § 2102. The regulation simply clarifies existing requirements and is not anticipated to imposes any substantial additional costs beyond those costs that laboratories would incur in the absence of these regulations.

Professional Services:

It is not expected that any professional services will be needed to comply with this rule.

Compliance Costs:

Although there are costs associated with disease investigation and response for any outbreak, these regulations clarify and strengthen the existing authorities and responsibilities of local governments. As such, these regulations do not impose any substantial additional costs beyond what local health departments would incur in the absence of these regulations.

Further, making explicit the Department's authority to lead investigation activities will result in increased coordination of resources, likely resulting in a cost-savings for State and local governments.

Economic and Technological Feasibility:

There are no economic or technological impediments to the rule changes.

Minimizing Adverse Impact:

As the proposed regulations largely clarify existing responsibility and duties among regulated entities and individuals, any adverse impacts are expected to be minimal. The Department, however, will work with regulated entities to ensure they are aware of the new regulations and have the information necessary to comply.

Small Business and Local Government Participation:

Due to the emergent nature of COVID-19, small business and local governments were not consulted. If these regulations are proposed for permanent adoption, all parties will have an opportunity provided comments during the notice and comment period.

RURAL AREA FLEXIBILITY ANALYSIS

Type and Estimated Numbers of Rural Areas:

While this rule applies uniformly throughout the state, including rural areas, for the purposes of this Rural Area Flexibility Analysis (RAFA), "rural area" means areas of the state defined by Exec. Law § 481(7) (SAPA § 102(10)). Per Exec. Law § 481(7), rural areas are defined as "counties within the state having less than two hundred thousand population, and the municipalities, individuals, institutions, communities, and programs and such other entities or resources found therein. In counties of two hundred thousand or greater population 'rural areas' means towns with population densities of one hundred fifty persons or less per square mile, and the villages, individuals, institutions, communities, programs and such other entities or resources as are found therein."

The following 44 counties have a population of less than 200,000 based upon 2020 United States Census data:

Allegany County
Broome County
Cattaraugus County
Cayuga County
Chautauqua County
Chemung County
Chenango County
Clinton County
Columbia County
Cortland County
Delaware County
Essex County
Franklin County
Fulton County
Genesee County
Greene County
Hamilton County
Herkimer County
Jefferson County
Lewis County
Livingston County
Madison County
Montgomery County
Ontario County
Orleans County
Oswego County
Otsego County
Putnam County
Rensselaer County
Schenectady County
Schoharie County
Schuyler County
Seneca County
St. Lawrence County
Steuben County
Sullivan County
Tioga County
Tompkins County
Ulster County
Warren County
Washington County
Wayne County
Wyoming County
Yates County

The following counties of have population of 200,000 or greater, and towns with population densities of 150 person or fewer per square mile, based upon the United States Census estimated county populations for 2010:

Albany County	Monroe County	Orange County
Dutchess County	Niagara County	Saratoga County
Erie County	Oneida County	Suffolk County
	Onondaga County	

Reporting, Recordkeeping, and Other Compliance Requirements; and Professional Services:

As the proposed regulations largely clarify existing responsibilities and duties among regulated entities and individuals, no additional recordkeeping, compliance requirements, or professional services are expected. With respect to mandating syndromic surveillance reporting during an outbreak of a highly infectious communicable disease, hospitals are already reporting syndromic surveillance data regularly and voluntarily. Additionally, the requirement for local health departments to continually report to the Department during an outbreak is historically a practice that already occurs. With respect to clinical laboratories, they must already report communicable disease testing results using the ECLRS and must also immediately report communicable diseases pursuant to PHL § 2102.

Compliance Costs:

As the proposed regulations largely clarify existing responsibility and duties among regulated entities and individuals, no initial or annual capital costs of compliance are expected above and beyond the cost of compliance for the requirements currently in Parts 2, 405 and 58.

Economic and Technological Feasibility:

There are no economic or technological impediments to the rule changes.

Minimizing Adverse Impact:

As the proposed regulations largely clarify existing responsibility and duties among regulated entities and individuals, any adverse impacts are expected to be minimal. The Department, however, will work with local health departments to ensure they are aware of the new regulations and have the information necessary to comply.

Rural Area Participation:

Due to the emergent nature of COVID-19, parties representing rural areas were not consulted. If these regulations are proposed for permanent adoption, all parties will have an opportunity provided comments during the notice and comment period.

JOB IMPACT STATEMENT

The Department of Health has determined that this regulatory change will not have a substantial adverse impact on jobs and employment, based upon its nature and purpose.

EMERGENCY JUSTIFICATION

Where compliance with routine administrative procedures would be contrary to public interest, the State Administrative Procedure Act (SAPA) § 202(6) empowers state agencies to adopt emergency regulations necessary for the preservation of public health, safety, or general welfare. In this case, compliance with SAPA for filing of this regulation on a non-emergency basis, including the requirement for a period of time for public comment, cannot be met because to do so would be detrimental to the health and safety of the general public.

New York continues to experience significant community levels of COVID-19 disease with very densely populated areas at “high” and many highly populated counties at “medium.” New York still has a 7-day average of over 3,400 cases per day, and over 2,700 people in the hospital affected by COVID each day. Regrettably, New York still averages 31 deaths per day associated with COVID-19.

Severe Acute Respiratory Syndrome Coronavirus -2 (SARS-CoV2) still mutates, although the current dominant strain is BQ1, a subvariant of Omicron, new more contagious variants continue to emerge, with CH1 the latest to emerge in New York and the country. The threat from emerging variants includes their unknown virulence affecting morbidity and mortality. It is also unknown how well existing vaccines or pharmacotherapeutics will protect against emerging variants.

New York is currently experiencing widespread Influenza cases and hospitalizations. Review of the Weekly Surveillance Report, week ending November 19, 2022 demonstrate this increase. Influenza, (Flu), has multiple strains, currently, in New York, Flu A, H3 strain is more common and has arrived much earlier than preceding years. Cases of Flu are increasing all over the state with largest increases currently in the Western Region. The increase of Flu, along with

COVID and other respiratory viruses has presented undue stress on the health care system in the state.

New York is also addressing the impact of Ebola Virus Disease, Sudan strain and the impact on the country. New York is at higher risk, since although there are only 5 airports where individuals from the affected area arrive in the United States, two of these airports (JFK and Newark) are in the greater metropolitan New York area. At present, over 350 people have been screened and over 50 people are being monitored; however, there are currently no active cases.

Furthermore, as stated in the declaration of the State disaster emergency Executive Order 21, a polio outbreak has affected multiple counties in the State of New York, with one paralytic case and detections of genetically related virus in six counties, indicating circulation and transmission of the virus likely in hundreds of people.

The emergency regulations are needed to continue requiring clinical laboratories to report all test results, including negative and indeterminate results, for communicable diseases such as COVID-19, polio and Ebola; mandate hospitals to report syndromic surveillance data; and permit the Commissioner to direct hospitals to take patients during a disease outbreak such as COVID-19 or Ebola.

Based on the ongoing burden of multiple outbreaks seen across the state, the Department has determined that these regulations are necessary to promulgate on an emergency basis to control the spread of highly contagious communicable diseases in New York State. Accordingly, current circumstances necessitate immediate action, and pursuant to the State Administrative Procedure Act Section 206(6), a delay in the issuance of these emergency regulations would be contrary to public interest.

Pursuant to the authority vested in the Public Health and Health Planning Council and the Commissioner of Health by Sections 201, 206, and 225 of the Public Health Law, Title 10 (Health) of the Official Compilation of Codes, Rules and Regulations of the State of New York is amended by adding a new Section 2.60, to be effective upon filing with the Secretary of State, to read as follows:

Section 2.60 is added to read as follows:

2.60. Face Coverings for COVID-19 Prevention.

(a) As determined by the Commissioner based on COVID-19 incidence and prevalence, as well as any other public health and/or clinical risk factors related to COVID-19 disease spread, any person who is two years of age or older and able to medically tolerate a face-covering may be required to cover their nose and mouth with a mask or face-covering when: (1) in a public place and unable to maintain, or when not maintaining, physical distance; or (2) in certain settings as determined by the Commissioner, which may include schools, public transit, homeless shelters, correctional facilities, nursing homes, and health care settings, and which may distinguish between individuals who are vaccinated against COVID-19 and those that are not vaccinated. The Commissioner shall issue findings regarding the necessity of face-covering requirements at the time such requirements are announced.

(b) Businesses must provide, at their expense, face-coverings for their employees required to wear a mask or face-covering pursuant to subdivision (a) of this section.

(c) large-scale indoor event venues with more than five thousand attendees shall require patrons to wear face coverings consistent with subdivision (a) of this section; may require all patrons to wear a face covering irrespective of vaccination status; and may deny admittance to any person who fails to comply. This regulation shall be applied in a manner consistent with the federal Americans with Disabilities Act, New York State or New York City Human Rights Law, and any other applicable provision of law.

(d) No business owner shall deny employment or services to or discriminate against any person on the basis that such person elects to wear a face-covering that is designed to inhibit the transmission of COVID-19, but that is not designed to otherwise obscure the identity of the individual.

(e) For purposes of this section face-coverings shall include, but are not limited to, cloth masks, surgical masks, and N-95 respirators that are worn to completely cover a person's nose and mouth.

(f) Penalities and enforcement.

(i) A violation of any provision of this Section is subject to all civil and criminal penalties as provided for by law. Individuals or entities that violate this Section are subject to a maximum fine of $1,000 for each violation. For purposes of civil penalties, each day that an entity operates in a manner inconsistent with the Section shall constitute a separate violation under this Section.

(ii) All local health officers shall take such steps as may be necessary to enforce the provisions of this Section accordance with the Public Health Law and this Title.

REGULATORY IMPACT STATEMENT

Statutory Authority:

The statutory authority for adding a new Section 2.60 is sections 201, 206, and 225 of the Public Health Law.

Legislative Objectives:

The legislative objective of PHL § 201 includes authorizing the New York State Department of Health ("Department") to control and promote the control of communicable diseases to reduce their spread. Likewise, the legislative objective of PHL § 206 includes authorizing the Commissioner of Health to take cognizance of the interests of health and life of the people of the state, and of all matters pertaining thereto and exercise the functions, powers and duties of the department prescribed by law, including control of communicable diseases. The legislative objective of Public Health Law § 225 is, in part, to protect the public health by authorizing PHHPC, with the approval of the Commissioner, to amend the State Sanitary Code to address public health issues related to communicable disease.

Needs and Benefits:

The 2019 Coronavirus (COVID-19) is a disease that causes mild to severe respiratory and other symptoms, including fever, cough, and difficulty breathing. People infected with COVID-19 have had symptoms ranging from those that are mild (like a common cold) to severe pneumonia that requires medical care in a general hospital and can be fatal, with a disproportionate risk of severe illness for older adults, those who have serious underlying medical health conditions and those who are unvaccinated.

On January 30, 2020, the World Health Organization (WHO) designated the COVID-19 outbreak as a Public Health Emergency of International Concern. On a national level, the Secretary of Health and Human Services determined on January 31, 2020 that as a result of confirmed cases of COVID-19 in the United States, a public health emergency existed and had existed since January 27, 2020, nationwide. Thereafter, the situation rapidly evolved throughout the world, with many countries, including the United States, quickly progressing from the identification of travel-associated cases to person-to-person transmission among close contacts of travel-associated cases, and finally to widespread community transmission of COVID-19.

Now, more than two years after the first cases were identified in the United States COVID-19 continues to impact New York State. Beyond the ongoing COVID-19 burden in communities, certain settings such as nursing homes and health care settings, have been at increased risk for transmission. These regulations provide that masking may be required under certain circumstances, as determined by the Commissioner based on COVID-19 incidence and prevalence, as well as any other public health and/or clinical risk factors related to COVID-19 disease spread. The regulations are necessary to permit flexibility to allow the Department to quickly adapt to changing circumstances related to the spread of COVID-19 and increasing transmission rates.

COSTS:

Costs to Regulated Parties:

As part of ongoing efforts to address COVID-19, regulated parties have been a partner in implementing measures to limit the spread and/or mitigate the impact of COVID-19 within the

state since March of 2020. Accordingly, this regulation does not impose additional costs to regulated parties.

Costs to Local and State Governments:

State and local government are authorized to enforce civil and criminal penalties related to the violation of these regulations, and there may be some cost of enforcement, however such costs are anticipated to be minimal as these provisions continue existing enforcement requirements.

Paperwork:

This regulation imposes no additional paperwork.

Local Government Mandates:

As part of ongoing efforts to address COVID-19, local governments have been partners in implementing and enforcing measures to limit the spread and/or mitigate the impact of COVID-19 within their jurisdictions since March of 2020. Further, local governments have separate authority and responsibilities to control disease within their jurisdictions pursuant to PHL § 2100 and Part 2 of the State Sanitary Code.

Duplication:

There is no duplication of federal law.

Alternatives:

The alternative would be to not promulgate these emergency regulations. However, this alternative was rejected, as the Department believes this regulation will facilitate the Department's ability to respond to the evolving nature of this serious and ongoing communicable disease outbreak.

Federal Standards:

States and local governments have primary authority for controlling disease within their respective jurisdictions. Accordingly, there are no federal statutes or regulations that apply to disease control within NYS.

Compliance Schedule:

The regulations will become effective upon filing with the Department of State and will expire, unless renewed, 60 days from the date of filing. As COVID-19 is consistently and rapidly changing, it is not possible to determine the expected duration of need at this point in time. The Department will continuously evaluate the expected duration of these emergency regulations throughout the aforementioned 60-day effective period in making determinations on the need for continuing this regulation on an emergency basis or issuing a notice of proposed ruling-making for permanent adoption. This notice does not constitute a notice of proposed or revised rule making for permanent adoption.

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REGULATORY FLEXIBILITY ANALYSIS

Effect on Small Business and Local Government:

As part of ongoing efforts to address COVID-19, businesses and local government have been a partner in implementing measures to limit the spread and/or mitigate the impact of COVID-19 within the state since March of 2020. Accordingly, this regulation will not have a significant impact on or cost to small business and local government.

Compliance Requirements:

These regulations update previously filed emergency regulations to provide that masking may be required under certain circumstances, as determined by the Commissioner based on COVID-19 incidence and prevalence, as well as any other public health and/or clinical risk factors related to COVID-19 disease spread.

Professional Services:

It is not expected that any professional services will be needed to comply with this rule.

Compliance Costs:

As part of ongoing efforts to address COVID-19, regulated parties have been a partner in implementing measures to limit the spread and/or mitigate the impact of COVID-19 within the state since March of 2020. Accordingly, this regulation will not have a significant impact.

Economic and Technological Feasibility:

There are no economic or technological impediments to the rule changes.

Minimizing Adverse Impact:

As part of ongoing efforts to address COVID-19, regulated parties have been a partner in implementing measures to limit the spread and/or mitigate the impact of COVID-19 within the state since March of 2020. Accordingly, any adverse impacts are expected to be minimal.

Small Business and Local Government Participation:

Due to the emergent nature of COVID-19, small business and local governments were not consulted.

RURAL AREA FLEXIBILITY ANALYSIS

Type and Estimated Numbers of Rural Areas:

While this rule applies uniformly throughout the state, including rural areas, for the purposes of this Rural Area Flexibility Analysis (RAFA), "rural area" means areas of the state defined by Exec. Law § 481(7) (SAPA § 102(10)). Per Exec. Law § 481(7), rural areas are defined as "counties within the state having less than two hundred thousand population, and the municipalities, individuals, institutions, communities, and programs and such other entities or resources found therein. In counties of two hundred thousand or greater population 'rural areas' means towns with population densities of one hundred fifty persons or less per square mile, and the villages, individuals, institutions, communities, programs and such other entities or resources as are found therein."

The following 44 counties have an estimated population of less than 200,000 based upon the 2019 United States Census county populations projections:

Allegany County	Greene County	Schoharie County
Broome County	Hamilton County	Schuyler County
Cattaraugus County	Herkimer County	Seneca County
Cayuga County	Jefferson County	St. Lawrence County
Chautauqua County	Lewis County	Steuben County
Chemung County	Livingston County	Sullivan County
Chenango County	Madison County	Tioga County
Clinton County	Montgomery County	Tompkins County
Columbia County	Ontario County	Ulster County
Cortland County	Orleans County	Warren County
Delaware County		

Essex County	Oswego County	Washington County
Franklin County	Otsego County	Wayne County
Fulton County	Putnam County	Wyoming County
Genesee County	Rensselaer County	Yates County
	Schenectady County	

The following counties of have population of 200,000 or greater, and towns with population densities of 150 person or fewer per square mile, based upon the 2019 United States Census population projections:

Albany County	Niagara County	Saratoga County
Dutchess County	Oneida County	Suffolk County
Erie County	Onondaga County	
Monroe County	Orange County	

Reporting, recordkeeping, and other compliance requirements; and professional services:

These regulations update previously filed emergency regulations to provide that masking may be required under certain circumstances, as determined by the Commissioner based on COVID-19 incidence and prevalence, as well as any other public health and/or clinical risk factors related to COVID-19 disease spread.

Compliance Costs:

As part of ongoing efforts to address COVID-19, regulated parties have been a partner in implementing measures to limit the spread and/or mitigate the impact of COVID-19 within the

state since March of 2020. Accordingly, this regulation does not impose additional costs to regulated parties.

Economic and Technological Feasibility:

There are no economic or technological impediments to the rule changes.

Minimizing Adverse Impact:

As part of ongoing efforts to address COVID-19, regulated parties have been a partner in implementing measures to limit the spread and/or mitigate the impact of COVID-19 within the state since March of 2020. Accordingly, adverse impacts are expected to be minimal.

Rural Area Participation:

Due to the emergent nature of COVID-19, parties representing rural areas were not consulted.

JOB IMPACT STATEMENT

The Department of Health has determined that this regulatory change is necessary to prevent further complete closure of the businesses impacted, and therefore, while there may be lost revenue for many businesses, the public health impacts of continued spread of COVID-19 are much greater.

EMERGENCY JUSTIFICATION

The 2019 Coronavirus (COVID-19) is a disease that causes mild to severe respiratory and other symptoms, including fever, cough, and difficulty breathing. People infected with COVID-19 have had symptoms ranging from those that are mild (like a common cold) to severe pneumonia that requires medical care in a general hospital and can be fatal, with a disproportionate risk of severe illness for older adults and/or those who have serious underlying medical health conditions.

On January 30, 2020, the World Health Organization (WHO) designated the COVID-19 outbreak as a Public Health Emergency of International Concern. On a national level, the Secretary of Health and Human Services determined on January 31, 2020 that as a result of confirmed cases of COVID-19 in the United States, a public health emergency existed and had existed since January 27, 2020, nationwide. Thereafter, the situation rapidly evolved throughout the world, with many countries, including the United States, quickly progressing from the identification of travel-associated cases to person-to-person transmission among close contacts of travel-associated cases, and finally to widespread community transmission of COVID-19.

Now, more than two years after the first cases were identified in the United States, New York continues to experience significant community levels of COVID-19 disease with very densely populated areas at “high” and many highly populated counties at “medium.” New York still has a 7-day average of over 3,400 cases per day, and over 2,700 people in the hospital affected by COVID each day. Regrettably, New York still averages 31 deaths per day associated with COVID-19. Beyond the ongoing COVID-19 burden in communities, certain settings such as nursing homes and health care settings, have been at increased risk for transmission.

Severe Acute Respiratory Syndrome Coronavirus -2 (SARS-CoV2) still mutates, although the current dominant strain is BQ1, a subvariant of Omicron, new more contagious variants continue to emerge, with CH1 the latest to emerge in New York and the country. The threat from emerging variants includes their unknown virulence affecting morbidity and mortality. It is also unknown how well existing vaccines or pharmacotherapeutics will protect against emerging variants.

To that end, these regulations provide that masking may be required under certain circumstances, as determined by the Commissioner based on COVID-19 incidence and prevalence, as well as any other public health and/or clinical risk factors related to COVID-19 disease spread. Based on the foregoing, the Department has determined that these emergency regulations are necessary to permit flexibility to quickly adapt to changing circumstances and increasing transmission rates and control the spread of COVID-19, necessitating immediate action. Accordingly, pursuant to the State Administrative Procedure Act Section 202(6), a delay in the issuance of these emergency regulations would be contrary to public interest.

SUMMARY OF EXPRESS TERMS

This notice of proposed rulemaking amends 10 NYCRR Subpart 5-1 to include individual maximum contaminant levels (MCL) of 0.0000100 mg/L or 10 parts per trillion (ppt) for perfluorodecanoic acid (PFDA) perfluoroheptanoic acid (PFHpA), perfluorohexane sulfonic acid (PFHxS) and perfluorononanoic Acid (PFNA); includes a combined MCL of 0.0000300 mg/L or 30 ppt for PFDA, PFHpA, PFHxS, PFNA, perfluorooctanic acid (PFOA) and perfluorooctane sulfonic acid (PFOS) referred to collectively as perfluoroalkyl substances-6 (PFAS6); and establishes the first list of emerging contaminants (ECs) as well as notification levels for this list of ECs in accordance with Public Health Law § 1112. New sections, subdivisions, paragraphs and tables were added, and additional updates made to ensure clarity with implementation. This regulation applies to all community water systems and all non-transient noncommunity water systems.

Pursuant to the authority vested in the Public Health and Health Planning Council and the Commissioner of Health by sections 201, 225 and 1112 of the Public Health Law, Subpart 5-1 of Title 10 (Health) of the Official Compilation of Codes, Rules and Regulations of the State of New York is amended, to be effective April 1, 2023 for emerging contaminant monitoring, notification levels, and changes to maximum contaminant level monitoring requirements for perfluoroalkyl substances, and January 1, 2025 for maximum contaminant levels, to read as follows:

Existing subdivisions (ai)-(bn), (bo) and (bp)-(dn) of section 5-1.1 are re-lettered to be subdivisions (aj)-(bo), (bq) and (bs)-(dq), respectively. New subdivisions (ai), (bp), and (br) are added to section 5-1.1 to read as follows:

(ai) *Emerging Contaminant* means any physical, chemical, microbiological or radiological substance listed as an emerging contaminant pursuant to section 5-1.52 Table 3B of this Subpart.

(bp) *Notification Level* means the concentration level of an emerging contaminant in drinking water that the Commissioner has determined, based on available scientific information, warrants public notification and may require actions, which may include enhanced monitoring and activities to reduce exposure, pursuant to section 5-1.102 of this Subpart.

(br) *perfluoroalkyl substance-6 (PFAS6)* means the sum of the concentration of perfluorooctanoic acid (PFOA), perfluorooctanesulfonic acid (PFOS), perfluorononanonic acid (PFNA), perfluorodecanoic acid (PFDA), perfluorohexanesulfonic acid (PFHxS) and perfluoroheptanoic acid (PFHpA).

* * *

Subdivision 5-1.30(d) is modified to read as follows:

(d) Notwithstanding anything to the contrary in section 5-1.12, 5-1.23, 5-1.51 or 5-1.77 of this Subpart, if the public water system fails to comply with the treatment technique and/or the monitoring requirements of subdivision (a), (b), (c) or (g) of this section, fails to install the filtration and/or disinfection treatment required by this section or fails to comply with the avoidance criteria requirements contained in subdivision (c) of this section, the system violates this Subpart and shall make State and public notification, including any required mandatory health effects language. Pursuant to subdivision (c) of this section, if at any time the raw water turbidity exceeds five nephelometric turbidity units, the system shall consult with the State within 24 hours of learning of the exceedance. Based on this consultation, the State may determine that the exceedance constitutes a public health hazard, [as found]as defined in section 5-1.1[(bz)](cc)(4) of this Subpart, which requires a Tier 1 notification. When consultation does not take place within the 24-hour period, the water system must distribute a Tier 1 notification no later than 48 hours after the system learns of the violation. Ground water systems that are required to provide 4-log virus treatment, surface water systems and ground water under the direct influence of surface water (GWUDI) systems that use chemical disinfection must notify the State whenever residual disinfectant levels in the water entering the distribution system are less than the specified concentration pursuant to subdivisions (b) and (c) of this section. Any water system that uses chemical disinfection must make State notification whenever disinfectant residual levels entering the distribution system are not restored within four hours.

* * *

Subdivision 5-1.51(a) is modified to read as follows:

(a) The maximum contaminant levels, maximum residual disinfectant levels, notification levels and treatment technique requirements are listed in section 5-1.52 tables 1 through 7 of this Subpart. In the case where an MCL, MRDL or treatment technique requirement is exceeded, notwithstanding anything to the contrary contained in section 5-1.12 of this Subpart, the supplier of water will take the necessary steps to comply with this section, to ensure the protection of the public health, including the undertaking of remedial feasibility studies and the installation of a suitable treatment process. Compliance with the MCLs, MRDLs, notification levels and treatment technique requirements shall be determined by the procedures contained in section 5-1.52 tables 1 through 7 of this Subpart.

Subdivision 5-1.51(b) is modified to read as follows:

(b) The minimum monitoring requirements for each contaminant are listed in section 5-1.52 tables 8A through 12 and 15A of this Subpart. Unless otherwise specified, [except for] monitoring at public water systems with fewer than 15 service connections and which serve fewer than 25 persons, [where monitoring] will be at State discretion. For this section, State discretion shall mean requiring monitoring when the State has reason to believe an MCL, MRDL or treatment technique requirement has been violated, the potential exists for an MCL, MRDL or treatment technique violation, a contaminant level is equal to or exceeds a notification level or a contaminant may present a risk to public health.

Subdivision 5-1.51 (g) is amended to read as follows:

(g) Monitoring and reporting frequencies for specific contaminants may be established at State discretion whenever the State believes that a potential exists for an MCL or MRDL violation, for

emerging contaminants at or above a notification level or a contaminant may present a risk to public health.

A new subdivision (q) is added to section 5-1.51 as follows:

(q) The effective date of the PFAS6 MCL and the MCLs for PFNA, PFHxS, PFHpA and PFDA in section 5-1.52 table 3 is April 1, 2023. The supplier of water must comply with all requirements of this Subpart no later than January 1, 2025, except between April 1, 2023, and December 31, 2024 the supplier of water shall comply with 5-1.78(d) and (e) of this Subpart when an MCL is exceeded.

A new subdivision (r) is added to section 5-1.51 as follows:

(r) The Department, at its discretion, may provide financial assistance for compliance with the monitoring requirements in section 5-1.52 table 9E, to any public water system serving fewer than 10,000 persons upon showing that the costs associated with testing drinking water in compliance with this section would impose a financial hardship.

Section 5-1.52, Table 3 is amended to read as follows:

Table 3. Organic Chemicals Maximum Contaminant Level Determination

Contaminants	MCL (mg/L)	Type of water system	Determination of MCL violation
General organic chemicals		Community, NTNC and Transient [N]noncommunity (TNC)	If the results of a monitoring sample analysis exceed the MCL, the supplier of water shall collect one to three more samples from the same sampling point, as soon as practical, but within 30 days. An MCL violation occurs when at least one of the confirming samples is positive[1] and the average of the initial sample and all confirming samples exceeds the MCL.
Principal organic contaminant (POC)	0.005		
Unspecified organic contaminant (UOC)	0.05		
Total POCs and UOCs	0.1		
Perfluoroalkyl substance-6 (PFAS6)[6]	0.0000300	Community, NTNC and TNC	If the results of a monitoring sample analysis exceed the MCL for PFAS6 as defined in Subdivision 5-1.1(br) of this Subpart, the supplier of water shall collect one to three more samples from the same sampling point, as soon as practical, but within 30 days. An MCL violation occurs when each of the PFAS6 confirming samples is positive[7] and the average of the initial PFAS6 sample and all confirming samples exceeds the MCL.[8]
Disinfection byproducts[2,3]		Community and NTNC	For systems required to monitor quarterly, the results of all analyses at each monitoring location per quarter shall be arithmetically averaged and shall be reported to the State within 30 days of the public water system's receipt of the analyses. A violation occurs if the average of the four most recent sets of quarterly samples at a particular monitoring location (12-month locational running annual average (LRAA)) exceeds the MCL. If a system collects more than one sample per quarter at a monitoring location, the system shall average all samples taken in the quarter at that location to determine a quarterly average to be used in the LRAA calculation. If a system fails to complete four consecutive quarters of monitoring, compliance with the MCL will be based on an average of the available data from the most recent four quarters. An MCL violation for systems on annual or less frequent monitoring that have been increased to quarterly monitoring as outlined in Table 9A, is determined after four quarterly samples are taken.
Total trihalomethanes	0.080		
Haloacetic acids	0.060		
		Transient noncommunity	Not applicable.

Table 3. Organic Chemicals Maximum Contaminant Level Determination (continued)

Contaminants	MCL (mg/L)	Type of water system	Determination of MCL violation
Specific Organic Chemicals		Community, NTNC and Transient [N]noncommunity	If the results of a monitoring sample analysis exceed the MCL, the supplier of water shall collect one to three more samples from the same sampling point, as soon as practical, but within 30 days. An MCL violation occurs when at least one of the confirming samples is positive[1] and the average of the initial sample and all confirming samples exceeds the MCL.
Alachlor	0.002		
Aldicarb	0.003		
Aldicarb sulfone	0.002		
Aldicarb sulfoxide	0.004		
Atrazine[4]	0.003		
Benzo(a)pyrene	0.0002		
Carbofuran	0.04		
Chlordane	0.002		
Di(2-ethylhexyl)phthalate	0.006		
Dibromochloropropane (DBCP)	0.0002		
2,4-D	0.05		
1,4-Dioxane	0.0010		
Dinoseb	0.007		
Diquat	0.02		
Endrin	0.002		
Ethylene dibromide (EDB)	0.00005		
Heptachlor	0.0004		
Heptachlor epoxide	0.0002		
Hexachlorobenzene	0.001		
Lindane	0.0002		
Methoxychlor	0.04		
Methyl-tertiary-buty-ether(MTBE)	0.010		
Pentachlorophenol	0.001		
Perfluorodecanoic acid (PFDA)[6]	0.0000100		
Perfluoroheptanoic acid (PFHpA)[6]	0.0000100		
Perfluorohexanesulfonic acid (PFHxS)[6]	0.0000100		
Perfluorononanoic acid (PFNA)[6]	0.0000100		
Perfluorooctanesulfonic acid (PFOS)[6]	0.0000100		
Perfluorooctanoic acid (PFOA)[6]	0.0000100		
Polychlorinated biphenyls (PCBs)[5]	0.0005		
Propylene glycol	1.0		
Simazine	0.004		
Toxaphene	0.003		
2,4,5-TP (Silvex)	0.01		
2,3,7,8-TCDD (dioxin)	0.00000003		
Vinyl chloride	0.002		

[1] A sample is considered positive when the quantity reported by the State approved laboratory is greater than or equal to the method detection limit.

[2] For systems monitoring yearly or less frequently, the sample results for each monitoring location is considered the LRAA for that monitoring location. Systems required to conduct monitoring at a frequency that is less than quarterly shall monitor in the calendar month identified in the monitoring plan developed under section 5-1.51(c). Compliance calculations shall be made beginning with the first compliance sample taken after the compliance date.

[3] Systems that are demonstrating compliance with the avoidance criteria in section 5-1.30(c), shall comply with the TTHM and HAA5 LRAA MCLs; however the LRAA MCLs are not considered for avoidance purposes. For avoidance purposes, TTHMs and HAA5s are based on a running annual average of analyses from all monitoring locations.

[4] Syngenta Method AG–625, "Atrazine in Drinking Water by Immunoassay," February 2001, available from Syngenta Crop Protection, Inc., 410 Swing Road, P.O. Box 18300, Greensboro, NC 27419. Telephone: 336–632–6000, may not be used for the analysis of atrazine in any system where chlorine dioxide is used for drinking water treatment. In samples from all other systems, any result for atrazine generated by Method AG–625 that is greater than one-half the maximum contaminant level (MCL) (in other words, greater than 0.0015mg/L or 1.5 µg/L) must be confirmed using another approved method for this contaminant and should use additional volume of the original sample collected for compliance monitoring. In instances where a result from Method AG–625 triggers such confirmatory testing, the confirmatory result is to be used to determine compliance

[5] If PCBs (as one of seven Aroclors) are detected in any sample analyzed using USEPA Method 505 or 508, the system shall reanalyze the sample using USEPA Method 508A to quantitate PCBs (as decachlorobiphenyl). Compliance with the PCB MCL shall be determined based upon the quantitative results of analyses using Method 508A.

[6] Monitoring, reporting and public notification requirements are effective April 1, 2023. The supplier of water shall comply with the MCL requirements by January 1, 2025.

[7] A sample is considered positive when the quantity reported by the State approved laboratory is greater than or equal to the method detection limit for any of the PFAS6 analytes.

[8] When averaging PFAS6 samples, each compound must be confirmed when performing the PFAS6 compliance calculation. Only results greater than or equal to the method detection limit can be used when calculating averages for each individual compound.

A new Table 3B is added to section 5-1.52 as follows

Table 3B. Emerging Contaminants – Notification Level Determination (Effective Date April 1, 2023)

Contaminant[1]	Abbreviation	Notification Level (mg/L)	Notification Level Determination
List 1			
Perfluorododecanoic acid	PFDoA	0.0000300	If the sum of the concentration of these compounds in a monitoring sample is equal to or exceeds 0.0000300 mg/L, the supplier of water shall collect one to three more samples from the same sampling point, as soon as practical, but within 30 days. Public notification is required when at least one of the confirming samples is positive[2] and the average of the initial sample and all confirming samples is at or above a notification level.[3,4]
Perfluoroundecanoic acid	PFUnA		
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	11Cl-PF3OUdS		
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	9Cl-PF3ONS		
Hexafluoropropylene oxide dimer acid	HFPO-DA (GenX)		
Perfluoroheptanesulfonic acid	PFHpS		
Perfluorobutanesulfonic acid	PFBS	0.0001000	If the sum of the concentration of these compounds in a monitoring sample is equal to or exceeds 0.0001000 mg/L, the supplier of water shall collect one to three more samples from the same sampling point, as soon as practical, but within 30 days. Public notification is required when at least one of the confirming samples is positive[2] and the average of the initial sample and all confirming samples is at or above a notification level.[3]
Perfluorohexanoic acid	PFHxA		
4,8-Dioxa-3H-perfluorononanoic acid	ADONA		
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid	4:2FTS		
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid	6:2FTS		
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid	8:2FTS		
Nonafluoro-3,6-dioxaheptanoic acid	NFDHA		
Perfluorobutanoic acid	PFBA		
Perfluoro (2-ethoxyethane) sulfonic acid	PFEESA		
Perfluoro-4-methoxybutanoic acid	PFMBA		
Perfluoro-3-methoxypropanoic acid	PFMPA		
Perfluoropentanoic acid	PFPeA		

Perfluoropentanesulfonic	PFPeS		

1 Sample collection shall begin during the 3-year monitoring period starting April 1, 2023. Samples collected to satisfy the requirements of 40 CFR 141.140 shall satisfy the requirements of this Subpart, provided samples are collected in accordance with Appendix 5-C of this Subpart.
2 A sample is considered positive when the quantity reported by the State approved laboratory is greater than or equal to the minimum reporting level established in 40 CFR 141.140 for any analyte on List 1.
3 When averaging emerging contaminant samples, each compound must be confirmed when performing the emerging contaminant notification level calculation. Only results greater than or equal to the minimum reporting level established in 40 CFR 141.140 may be used when calculating averages for each individual compound.
4 Notification is required if the average concentration of HFPO-DA (GenX) is equal to or exceeds 0.000010 mg/L.

Section 5-1.52, Table 9C is repealed and replaced with a new Table 9C to read as follows:

Table 9C. Additional Organic Chemicals – Minimum Monitoring Requirements

Contaminant		Type of water system	Initial requirement	Continuing requirement where detected[1,2,3,4]	Continuing requirement where not detected[1]
Synthetic Organic Compounds					
Alachlor	Endothall	Community and Nontransient noncommunity serving 3,300 or more persons.	Quarterly sample per source, for one year[1,5]	Quarterly	One sample every eighteen months per source[6,7,8]
Aldicarb	Endrin				
Aldicarb sulfone	Glyphosate				
Aldicarb sulfoxide	Heptachlor				
Aldrin	Heptachlor epoxide				
Atrazine	Hexachlorobenzene				
Benzo(a)pyrene	Hexachlorocyclopentadiene				
Butachlor	3-Hydroxycarbofuran				
Carbaryl	Lindane				
Carbofuran	Methomyl				
Chlordane	Methoxychlor	Community and Nontransient noncommunity serving fewer than 3,300 persons.	Quarterly samples per entry point for one year[6,7,8]	Quarterly	Once per entry point every three years[6,7,8]
Dalapon	Metribuzin				
Di(2-ethylhexyl) adipate	Oxamyl (vydate)				
Di(2-ethylhexyl) phthalate	Pentachlorophenol				
Dibromochloropropane	Picloram				
Dicamba	Polychlorinated byphenyls				
2,4-D	Propachlor				
Dieldrin	Simazine				
Dinoseb	2,3,7,8-TCDD (Dioxin)				
1,4-Dioxane	2,4,5-TP (Silvex)	Transient noncommuity excluding NTNC	State discretion[9]	State discretion[9]	State discretion[9]
Diquat	Toxaphene				
Perfluoroalkyl substances[10]					
Perfluorodecanoic acid (PFDA) Perfluoroheptanoic acid (PFHpA) Perfluorohexanesulfonic acid (PFHxS) Perfluorononanoic acid (PFNA)		Community and nontransient noncommunity serving 3,300 or more persons	Quarterly samples per source for one year[1,8,10]	Quarterly	One sample every eighteen months per source[6,7,8]

Perfluorooctanesulfonic acid (PFOS) Perfluorooctanoic acid (PFOA)	Community and Nontransient noncommunity serving fewer than 3,300 persons	Quarterly samples per source for one year[1,8,10]	Quarterly	Once per entry point every three years[6,7,8]
	Community serving fewer than 15 service connections or 25 persons	State discretion	State discretion[9]	State discretion[9]
	Transient noncommunity	State discretion[9]	State discretion[9]	State discretion[9]

1 The location for sampling of each ground water source of supply shall be representative of each source between the individual well and at or before the first service connection and before mixing with other sources, unless otherwise specified by the State to be at the entry point. Public water systems which take water from a surface water body or watercourse shall sample at points in the distribution system representative of each source or at entry point or points to the distribution system after any water treatment plant.

2 The State may decrease the quarterly monitoring requirement to annually provided that system is reliably and consistently below the MCL based on a minimum of two quarterly samples from a ground water source and four quarterly samples from a surface water source. Systems which monitor annually must monitor during the quarter that previously yielded the highest analytical result. Systems serving fewer than 3,300 persons and which have three consecutive annual samples without detection may apply to the State for a waiver in accordance with footnote 6.

3 If a contaminant is detected, repeat analysis must include all analytes contained in the approved analytical method for the detected contaminant.

4 Detected as used in the table shall be defined as reported by the State approved laboratory to be greater than or equal to the method detection limit.

5 The State may allow a system to postpone monitoring for a maximum of two years, if an approved laboratory is not reasonably available to do a required analysis within the scheduled monitoring period.

6 The State may waive the monitoring requirement for a public water system that submits information every three years to demonstrate that a contaminant or contaminants was not used, transported, stored or disposed within the watershed or zone of influence of the system.

7 The State may reduce the monitoring requirement for a public water system that submits information every three years to demonstrate that the public water system is invulnerable to contamination. If previous use of the contaminant is unknown or it has been used previously, then the following factors shall be used to determine whether a waiver is granted.
a. Previous analytical results.
b. The proximity of the system to a potential point or nonpoint source of contamination. Point sources include spills and leaks of chemicals at or near a water treatment facility or at manufacturing, distribution, or storage facilities, or from hazardous and municipal waste landfills and other waste handling or treatment facilities. Nonpoint sources include the use of pesticides to control insect and weed pests on agricultural areas, forest lands, home and gardens, and other land application uses.
c. The environmental persistence and transport of the pesticide, PCBs, PFAS6 or 1,4-dioxane.
d. How well the water source is protected against contamination due to such factors as depth of the well and the type of soil and the integrity of the well casing.
e. Elevated nitrate levels at the water supply source.
f. Use of PCBs in equipment used in production, storage or distribution of water.

8 The State may allow systems to composite samples in accordance with the conditions in Appendix 5-C of this Title.

9 State discretion shall mean requiring monitoring when the State has reason to believe the MCL has been violated, the potential exists for an MCL violation, emerging contaminants are at or above the notification level or the contaminant may present a risk to public health.

10 All samples must be analyzed using USEPA method 533: Determination of Per- and Polyfluoroalklyl Substances in Drinking Water by Isotope Dilution Anion Exchange Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry or USEPA method 537.1: Determination of Selected Per- and Polyfluoroalkyl Substances in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS). All compounds analyzed shall be reported to the State along with all pertinent information from the laboratory performing the analysis. Failure to report all compounds in the approved analytical method is a monitoring and reporting violation. All PFAS results are subject to the Department's review. Invalidated results shall not be used in determining compliance with the MCLs. If a sample is invalidated, the supplier of water shall collect and analyze a replacement sample.

A new Table 9E is added to section 5-1.52 as follows:

Table 9E. Emerging Contaminants – Minimum monitoring requirements

Contaminant[1]	**Abbreviation**	**Type of Water System**	**Initial Requirement**[3]	**Continuing requirement at or above Notification Level**[4]
List 1 (Effective date April 1, 2023)				
Perfluorododecanoic acid	PFDoA	Community water system serving 25 or more persons.	One sample per entry point.[2]	One sample per entry point per year.
Perfluoroundecanoic acid	PFUnA			
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	11Cl-PF3OUdS			
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	9Cl-PF3ONS			
Hexafluoropropylene oxide dimer acid	HFPO-DA (GenX)			
Perfluoroheptanesulfonic acid	PFHpS	Community water system serving fewer than 25 persons.	One sample per entry point.[5]	One sample per entry point per year.[5]
Perfluorobutanesulfonic acid	PFBS			
Perfluorohexanoic acid	PFHxA			
4,8-Dioxa-3H-perfluorononanoic acid	ADONA			
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid	4:2FTS			
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid	6:2FTS			
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid	8:2FTS	Nontransient noncommunity water systems.	One sample per entry point.	One sample per entry point per year.
Nonafluoro-3,6-dioxaheptanoic acid	NFDHA			
Perfluorobutanoic acid	PFBA			
Perfluoro (2-ethoxyethane) sulfonic acid	PFEESA			
Perfluoro-4-methoxybutanoic acid	PFMBA			
Perfluoro-3-methoxypropanoic acid	PFMPA			
Perfluoropentanoic acid	PFPeA			
Perfluoropentanesulfonic	PFPeS			

1 Every covered public water system shall monitor drinking water for the presence of emerging contaminants within three years of the List effective date.
2 Public water systems that are required to monitor in accordance with 40 CFR sections 141.40-141.42 (UCMR) shall submit all sample results to the Department.
3 The supplier of water shall notify the Department within 24-hours of receiving confirmed sample results at or above the NL.
4 If sampling confirms that contaminants are present at or above the notification level during initial monitoring, subsequent confirmation samples are not needed during required continuing monitoring.
5 Results for PFAS6 must also be reported, and compliance determination made in accordance with table 3A.

Section 5-1.52 Table 13 has been amended to read as follows:

Table 13 – REQUIRED NOTIFICATIONS

Contaminant/Situation (Subpart 5-1 citations	**Single sample exceeds MCL/MRDL[1]**	**MCL/MRDL/TT[1] Violation and other notification requirements**	**Failure to meet monitoring requirements and/or failure to use applicable testing procedure**
Public Health Hazard (Section 5-1.1(bz))[2]	Not applicable	State Tier 1	State Tier 1
Escherichia coli (E. coli) in distribution system (Section 5-1.52, Tables 6, 11 and 11B)	State[3] Not applicable, or Tier 1[4]	State Tier 1	State Tier 3, or Tier 1[5]
Total coliform in distribution system (Section 5-1.52, Tables 6, 11 and 11B)	Not applicable	State[8] Tier 2, or Tier 1[9]	State Tier 3, or Tier 2 as directed by State
Entry Point Turbidity monthly average (Section 5-1.52, Tables 4 and 10)	State[10]	State Tier 2	State Tier 3
Entry Point Turbidity two-day average (Section 5-1.52, Tables 4 and 10)	State	State Tier 2, or Tier 1[11]	State Tier 3
Raw Water Turbidity (Subdivision 5-1.30(d) and Section 5-1.52, Table 10A)	State	State Tier 2, or Tier 1[11]	State Tier 3
Filtered Water Turbidity Single exceedance of the maximum allowable Turbidity level (Section 5-1.52, Tables 4A and 10A)	State	State Tier 2, or Tier 1[11]	State Tier 3
Filtered Water Turbidity Treatment Technique violation (Section 5-1.52, Tables 4A and 10A)	Not applicable	State Tier 2	State Tier 3
Distribution Point Turbidity (Section 5-1.52, Tables 5, 10 and 10A)	Not applicable	State Tier 2	State Tier 3
Treatment Technique violations other than turbidity12,13 (Sections 5-1.12, 5-1.30, 5-1.32, 5-1.81, and 5-1.83 and Subdivision 5-1.71(d))	Not applicable	State Tier 2, or Tier 1[2,13]	State Tier 3[13], or Tier 2[12]
Free chlorine residual less than 0.2 mg/L at the entry point[14] (Subdivision 5-1.30(d))	Not applicable	State	Not applicable
Free chlorine residual less than required minimum for a ground water system or ground water source required to provide 4-log virus treatment15 (Subdivision 5-1.30(a))	Not applicable	State Tier 2, or Tier 1[9]	Tier 2
Inorganic chemicals and physical characteristics listed in Tables 8A and 8B (Section 5-1.52, Tables 1, 8A, and 8B)	State	State Tier 2	State Tier 3
Chloride, iron, manganese, silver, sulfate, and zinc (Section 5-1.52, Tables 1 and 8D)	Not applicable	State Tier 3	State Tier 3
Sodium (Section 5-1.52, Tables 1 and 8D)	State if the level exceeds 20 mg/L	Tier 2 if the level exceeds 270 mg/L	Tier 3
Nitrate, Nitrite, Total Nitrate and Nitrite (Section 5-1.52, Tables 2 and 8C)	State	State Tier 1	State Tier 1, or Tier 3[16]
Lead and Copper (Sections 5-1.40 to 1.48)	Not applicable	State	State

		Tier 2	Tier 3
Organic Chemicals [Group 1 and 2] (Section 5-1.52, Table 9C)	State	State Tier 2	State Tier 3
Principal Organic Contaminants Unspecified Organic Contaminants Total POCs and UOCs (Section 5-1.52, Tables 3, 9B and 9D)	State	State Tier 2	State Tier 3
Radiological Contaminants (Section 5-1.52, Tables 7 and 12)	State	State Tier 2	State Tier 3
Monitoring and Control of Disinfection Byproduct Precursors (Sections 5-1.60 to 5-1.64)	Not applicable	State Tier 2	State Tier 3
Disinfectant residuals Chlorine and Chloramine (Section 5-1.52, Tables 3A and 15A)	State	State Tier 2	State Tier 3
Disinfectant residual Chlorine dioxide at entry point (Section 5-1.52, Tables 3A, 15 and 15A)	State	State Tier 2	State Tier 3, or Tier 2[17]
Disinfectant residual Chlorine dioxide in distribution system (Section 5-1.52, Tables 3A, 15 and 15A)	State	State Tier 1[18]	State Tier 1[18]
Disinfection byproducts Trihalomethanes Haloacetic acids (Section 5-1.52, Tables 3 and 9A) and Bromate and Chlorite (Section 5-1.52, Tables 1 and 8B)	Not applicable	State Tier 2	State Tier 3
Acrylamide and Epichlorohydrin (Subdivision 5-1.51(m))	Not applicable	State Tier 2	Not applicable
Operation under a variance, exemption or deferral (Sections 5-1.90 to 5-1.96 and section 5-1.51(p))	Not applicable	Tier 3	Not applicable
Violation of conditions of a variance, exemption or deferral (Sections 5-1.90 to 5-1.96 and section 5-1.51(p))	Not applicable	State Tier 2	Not applicable
Disruption of water service of four hours or more (Subdivision 5-1.23(b))	Not applicable	State[19]	Not applicable
Emerging contaminants confirmed at or above the notification level	State[8]	State Other[20]	State Tier 3

1 MCL – maximum contaminant level, MRDL – maximum residual disinfectant level, TT-treatment technique

2 Community systems must describe in their annual water supply statement (see section 5-1.72(e) and (f)) any Public Health Hazard that is determined to be a violation, and any uncorrected significant deficiency, and must indicate whether corrective action has been completed. This notice must be repeated every year until the annual report documents that corrective action has been completed in accordance with section 5-1.22 of this Subpart.

3 State notification must be made by the supplier of water within 24 hours of learning of an E. Coli positive sample

4 Public notification normally does not have to be issued for an *E. Coli* positive sample prior to the results of repeat samples. However, there may be situations where the State determines that a Tier 1 notification is necessary to protect public health. The supplier of water must provide the Tier 1 notification no later than 24 hours after learning of the State's determination.

5 Failure to test for *E. Coli* requires a Tier 1 notification if testing is not performed after any repeat sample tests positive for coliform. All other *E. coli* monitoring and testing procedure violations require Tier 3 notification.

6 At a ground water system, Tier 1 notification is required after initial detection of E. coli or other fecal indicator in raw source water, if the system does not provide 4-log virus treatment and process compliance monitoring. Confirmation of E. coli or other fecal indicator in the source water requires Tier 1 notification. Failure to take confirmatory samples may be a public health hazard requiring Tier 1 notification.

7 Notice of the fecal indicator positive raw water sample must be made in the annual water supply statement (see section 5-1.72(e)), until the annual report documents that corrective action has been completed.

8 State notification must be made by the supplier of water within 24 hours of learning of the violation or emerging contaminants at or above the notification level.

9 Tier 2 notification is normally required; however, there may be situations where the State determines that a Tier 1 notification is necessary to protect the public health. The supplier of water must provide the Tier 1 notification no later than 24 hours after learning of the State's determination.

10 If the daily entry point analysis exceeds one NTU, a repeat sample must be taken as soon as practicable, and preferably within one hour. If the repeat sample exceeds one NTU, the supplier of water must make state notification.

11 Systems must consult with the State within 24 hours after learning of the violation. Based on this consultation, the State may subsequently decide to elevate the violation from a Tier 2 to a Tier 1 notification. If consultation does not take place within the 24-hour period, the water system must distribute a Tier 1 notification no later than 48 hours after the system learns of the violation.

12 These violations include the following: failure to comply with the treatment technique or monitoring requirements in section 5-1.30(a), (b), (c), and (g) of this Subpart; failure to comply with the avoidance criteria in section 5-1.30(c) of this Subpart; failure to cover a finished water storage facility or treat its discharge required in section 5-1.32 of this Subpart; failure to report to the state information required in section 5-1.72(c)(3) of this Subpart; failure to maintain records required in section 5-1.72(d)(7) of this Subpart; and failure to meet the treatment and bin classification requirements associated with Cryptosporidium in section 5-1.83 of this Subpart. Failure to collect three or more samples for Cryptosporidium analysis as required in section 5-1.81 of this Subpart is a Tier 2 violation requiring public notification. Failure to perform any other monitoring and testing procedure as required in section 5-1.81 of this Subpart is a Tier 3 violation.

13 Any significant deficiency that is not corrected, or where correction has not begun according to a State-approved corrective action plan within 120 days, or as directed by the State, is a TTV and must be addressed in accordance with section 5-1.12. If the deficiency is a public health hazard, the deficiency must be addressed as directed by the State and Tier 1 notification is required.

14 Applies to systems that have surface water or groundwater directly influenced by surface water as a source and use chlorine. The system must make State notification whether the residual was restored to at least 0.2 mg/L within four hours.

15 Required minimum chlorine residual at point that demonstrates adequate CT for disinfected water from ground water sources at first customer.

16 Failure to take a confirmation sample within 24 hours for nitrate or nitrite after an initial sample exceeds the MCL requires a Tier 1 notification. Other monitoring violations for nitrate or nitrite require a Tier 3 notification.

17 Failure to monitor for chlorine dioxide at the entrance to the distribution system the day after exceeding the MRDL at the entrance to the distribution system requires a Tier 2 notification. Other monitoring violations for chlorine dioxide at the entrance to the distribution system require a Tier 3 notification.

18 If any daily sample taken at the entrance to the distribution system exceeds the MRDL for chlorine dioxide and one or more samples taken in the distribution system the next day exceed the MRDL, Tier 1 notification is required. Failure to take the required samples in the distribution system the day after the MRDL is exceeded at the entry point also triggers Tier 1 notification.

19 Tier 1 notification is required if the situation meets the definition of a public health hazard.

20 Whenever one or more emerging contaminants is confirmed to be present in drinking water at concentrations at or above a notification level, the supplier of water for community and nontransient noncommunity water systems must provide public notification to owners of real property no later than ninety days after the system learns of samples at or above the notification level in accordance with paragraph 5-1.78(f) of this Subpart.

* * *

Section 5-1.70 is amended as follows:

5-1.70 Applicability. Sections 5-1.70 through 5-1.79 of this Subpart shall be applicable to all public water systems, provided the systems serve 15 or more service connections or serve 25 or more persons. Subdivisions 5-1.71 (c) and (d), subdivision 5-1.72 (c), [and] paragraph 5-1.78(a)(4), paragraph 5-1.78(b) (3), and subdivision 5-1.78 (f) of this [Part]Subpart apply to all public water systems.

Subdivision (f) of section 5-1.72 is amended to read as follows:

(f) The report shall contain such information as is required in this subdivision and any additional information required by the State, except that paragraph [(7)](8) and subparagraphs [(13)](14)(vii) through (xi) of this subdivision shall not apply to systems serving fewer than 1,000 service connections. The information required to be included in the report is described below.

* * *

(5) Definitions for emerging contaminant and notification level. Each report must include the definitions set forth using the following language:

(i) Emerging Contaminant (EC). Any physical, chemical, microbiological or radiological substance listed as an emerging contaminant pursuant to 10 NYCRR Part 5, Subpart 5-1, Section 5-1.52 Table 3B that does not have a MCL listed in accordance with 10 NYCRR Part 5, Subpart 5-1, Section 5-1.52 Table 3.

(ii) Notification Level (NL). The concentration level of an emerging contaminant in drinking water that the Commissioner has determined, based on available scientific information, warrants

public notification and may require actions, which may include enhanced monitoring and activities to reduce exposure.

[(5)] (6) Information on detected contaminants from sampling used to determine compliance. For the purpose of this subdivision (except Cryptosporidium, Giardia and radon monitoring), detected means: at or above the contaminant's method detection limit (MDL), as defined in section 5-1.1[(bl)](bm) of this Subpart, or as prescribed by the State. Any contaminants specified in sections 5-l.41 (lead and copper) and 5-1.51 of this Subpart and section 5-1.52 tables 8A, 8B, 8C, 8D, 9A, 9B, 9C, 9D, 9E, 10, 10A, 11, 11A, 11B, 12, 16 and 17 of this Subpart that are detected during compliance monitoring shall be displayed in one table or in several adjacent tables. Additionally, the report shall include detected monitoring results for samples collected and analyzed by the State and/or detected monitoring results of additional samples required by the State. If a system is allowed to monitor for specific contaminants less often than once a year, the table shall include the date and results of the most recent sampling and the report shall include a brief statement indicating that the data presented in the report are from the most recent testing done in accordance with the regulations. No data older than five years need be included. For the contaminants listed in section 5-1.52 tables 8A, 8B, 8C, 8D, 9A, 9B, 9C, 9D, 10, 10A, 11, 11B, 12, 16 and 17 of this Subpart the table(s) shall contain:

* * *

Existing paragraphs (6) – (17) of subdivision 5-1.72(f) are renumbered to paragraphs (7) – (18) and new paragraph (19) is added to read as follows:

(19) Any contaminants listed in section 5-1.52 Table 3B of this Subpart that are detected during monitoring shall be displayed in one table or in several adjacent tables. Additionally, the report

shall include detected monitoring results for samples collected and analyzed by the State and/or detected monitoring results of additional samples required by the State. The table shall include the date and results of the most recent sampling and the report shall include a brief statement indicating that the data presented in the report are from the most recent testing done in accordance with the regulations. For the contaminants listed in section 5-1.52 Table 3B of this Subpart, the table(s) shall contain:

(i) the notification level for that contaminant expressed as a number equal to or greater than 1.0;

(ii) the highest contaminant level detected and the range of detected levels.

Subparagraph 5-1.72(g)(1)(v) is amended to read as follows:

(v) If a supplement is prepared in accordance with paragraph (f)[(7)](8) of this section, the report must contain a statement that describes that the analytical results for source water samples not used to determine compliance are contained in a supplement and that the supplement is available to the customer on request. The supplement shall also be:

Paragraph 5-1.72(h)(5) is amended to read as follows:

(5) A community water system that sells water to another community water system, must deliver the applicable information required in paragraphs (f)(1), [(5)](6)-[(10)](11) and [(13)](14) of this section to the buyer system:

Subdivision 5-1.74(c) is amended to read as follows:

(c)The owner of a water system shall ensure that all analyses performed by the [approved] environmental laboratory [performing the analyses sends laboratory results to the department]

certified in accordance with Subpart 55-2 of this title, are sent to the State [department] electronically in a manner prescribed by the department.

Subdivisions (a) and (b) of section 5-1.77 are amended to read as follows:

(a) The supplier of water shall make State notification within 24 hours of learning of the existence or potential existence of a public health hazard, analytical results that are equal to or exceed a notification level, or within 48 hours for any other violation or situation that may pose a risk to public health. Section 5-1.52 Table 13 of this Subpart lists violations and situations that require State notification.

(b) The information provided in a State notification shall include, but not be limited to, the following:

(1) a description of the violation, notification level or situation, including the contaminant(s) of concern, and (as applicable) the contaminant level;

(2) when the violation, notification level or situation occurred;

(3) what the system is doing to correct the violation, notification level or situation; and

(4) as applicable, when the water system expects to return to compliance.

Subdivision 5-1.78(a) has been amended to read as follows:

(a) General public notification requirements. Each owner or operator of a public water system must provide public notification for public health hazards, and for all MCL, MRDL, treatment technique, monitoring and testing procedure violations, emerging contaminants at or above the notification level and for other situations posing a risk to public health. Public notification requirements are divided into three tiers to take into account the seriousness of the violation or

situation and any potential adverse health effects that may be involved. The form, manner, frequency, and other requirements for each tier and notification requirements for emerging contaminants at or above the notification level are described in subdivisions (c)-[(e)](h) of this section. Section 5-1.52 table 13 of this Subpart lists the required public notification (Tier 1, Tier 2,[or] Tier 3 or notification requirements for emerging contaminants) for specific violations and other situations posing a risk to public health.

Subdivision (b) of section 5-1.78 is amended to read as follows:

(b) Content, presentation, and standard language requirements for all public notifications.

* * *

(3) When a public water system confirms one or more emerging contaminants is present in drinking water at or above the notification level, the public notice must contain the following elements:

(i) a description of emerging contaminants and notification levels, including the contaminants of concern, and the contaminant level;

(ii) when the samples were collected;

(iii) available health effects information as provided by the Department;

(iv) any actions required by the Department, which may include enhanced monitoring and activities to reduce exposure;

(v) the phone number of the water system owner, operator, or designee of the public water system as a source of additional information concerning the notice; and

(vi) the phone number of the county or district health department which has jurisdiction over the water system.

[(3)](4) Notice presentation. Each public notice required by this section:

* * *

[(4)](5) Standard Language.

* * *

A new subdivision (f) is added to section 5-1.78 and existing subdivisions (f) – (h) are amended to read as follows:

(f) Notification requirements for emerging contaminants

(1) Whenever one or more emerging contaminants is confirmed to be present in drinking water at concentrations at or above a notification level, the supplier of water for community and nontransient noncommunity water systems must provide public notification to owners of real property no later than ninety days after the system learns of samples at or above the notification level.

(2) The supplier of water may use a single public notice for multiple violations, emerging contaminants confirmed to be at or above the notification level or situations that require public notification, as long as the timing requirements of paragraph (1) of this subdivision are met. Community water systems may use the Annual Water Supply Statement (report) (see section 5-1.72(e)-(h) of this Subpart) to provide public notice about emerging contaminants confirmed to be at or above the notification level as long as the requirements of paragraph (1) are met.

(3) The supplier of water must provide public notices in a form and manner reasonably expected to reach all persons served by the water system.

(i) Community water systems must provide notice by mail or other delivery method(s) approved by the Department to each customer receiving a bill, and to other service connections to which

water is delivered by the public water system; and by any other method reasonably expected to reach other persons served by the system.

(ii) Unless directed otherwise by the State in writing, noncommunity water systems must provide notice by posting the notice in conspicuous locations, and by any other method(s) reasonably expected to reach other persons served by the system if they would not normally be reached by posting.

[(f)](g) Notice to new billing units or new customers. Community water systems must give a copy of the most recent public notice for any continuing violation, the existence of a variance or exemption, emerging contaminants at or above the notification level or other ongoing situations requiring a public notice to all new billing units or new customers prior to or at the time service begins.

[(g)](h) Information on unregulated contaminants.

* * *

[(h)](i) Notice by the State on behalf of the public water system.

* * *

Subdivision (d) of section 5-1.91 is amended to read as follows:

(d) The technologies listed in this section are the best technology, treatment techniques, or other means available for achieving compliance with the maximum contaminant levels for organic chemicals listed in section 5-1.52 table 3 of this Subpart:

Contaminant	Best Available Technologies		
Alachlor	**PTA[1]**	**GAC[2]**	**OX[3]**
Aldicarb		X	
Aldicarb sulfone		X	
Aldicarb sulfoxide		X	
Atrazine		X	
Benzene	X	X	

Benzo(a)pyrene		X	
Carbofuran		X	
Carbon tetrachloride	X	X	
Chlordane		X	
Dalapon		X	
Di(2-ethylhexyl)adipate	X	X	
Di(2-ethylhexyl)phthalate		X	
Dibromochloropropane	X	X	
1,1-Dichloroethylene	X	X	
para-Dichlorobenzene	X	X	
o-Dichlorobenzene	X	X	
1,2-Dichloroethane	X	X	
cis-1,2-Dichloroethylene	X	X	
trans-1,2-Dichloroethylene	X	X	
Dichloromethane	X		
1,2-Dichloropropane	X	X	
Dinsoeb		X	
1,4-Dioxane			X
Endothal		X	
Endrin		X	
Ethylbenzene	X	X	
Ethylene dibromide	X	X	
Glyphosate			X
Heptachlor		X	
Heptachlor epoxide		X	
Hexachlorobenzene		X	
Hexachlorocyclopentadiene	X	X	
Lindane		X	
Methoxychlor		X	
Monochlorobenzene	X	X	
Oxamyl (Vydate)		X	
PCBs		X	
Pentachlorophenol		X	
PFAS6		X	
Picloram		X	
Simazine		X	
Styrene	X	X	
2,3,7,8 -TCDD (Dioxin)		X	
Tetrachloroethylene	X	X	
Toluene	X	X	
Toxaphene		X	
2,4,5 -TP		X	
1,2,4 -Trichlorobenzene	X	X	
1,1,1 -Trichloroethane	X	X	
1,1,2 -Trichloroethane	X	X	
Trichloroethylene	X	X	
Vinyl chloride	X		
Xylenes (total)	X	X	
TTHM, HAA5, Bromate, Chlorite[4]			

1 Packed Tower Aeration

2 Granular Activated Carbon

3 Oxidation (Chlorination or Ozonation) and Advanced Oxidation Process (AOP)

4 For surface water systems or ground water systems influenced by surface water, GAC10, as defined in section 5-1.1 of this Subpart, is the BAT for compliance with the TTHM and HAA5 MCL as a Running Annual Average (RAA). The other BAT for RAA compliance is

enhanced coagulation for TTHM and HAA5 precursor removal, as described in section 5-1.60 of this Subpart. For compliance with the MCLs for TTHM and HAA5 as LRAAs, the following are the BATs: enhanced coagulation or enhanced softening, plus GAC10; GAC20, as defined in section 5-1.1 of this Subpart;
or nanofiltration with a molecular weight cutoff less than or equal to 100 Daltons. Refer to section 5-1.65 of this Subpart for BATs for TTHM, HAA5, Bromate, and Chlorite.

Section 5-1.100 is renumbered to section 5-1.110 and new sections 5-1.100 through 5-1.102 are added, to read as follows:

§ 5-1.100 Applicability. The provisions of this section and sections 5-1.101 and 5-1.102 of this Subpart shall become effective on April 1, 2023 and apply to any public water system that serves at least five service connections used by year-round residents or that regularly serves at least twenty-five year-round residents; or a public water system that regularly serves at least twenty-five of the same people, four hours or more per day, for four or more days per week, for twenty-six or more weeks per year.

§ 5-1.101 Monitoring requirements for emerging contaminants.

(a) The minimum monitoring requirements for emerging contaminants are listed in section 5-1.52 table 9E of this Subpart. Samples collected in accordance with 40 CFR sections 141.40-141.42 may be used to satisfy the requirements of this subdivision, notwithstanding the requirements of subdivision (c) of this section.

(b) Unless the Department notifies the supplier of water in writing that samples shall be collected at an alternate location, all samples shall be collected in accordance with section 5-1.52 table 9E of this Subpart.

(c) Every test conducted in accordance with section 5-1.52 table 9E of this Subpart shall be conducted by an environmental laboratory approved pursuant to Subpart 55-2 of this Title.

Laboratories shall submit such results electronically to the Department, in accordance with subdivision 5-1.74(c) of this Subpart.

(d) The Department may collect and analyze water samples from any public water system for emerging contaminants at any time, either by its own personnel or by contract with others.

§ 5-1.102 Notification Levels

(a) The notification levels are located in 5-1.52 table 3B of this Subpart. Whenever one or more emerging contaminants is confirmed to be present in drinking water at concentrations at or above a notification level established pursuant to this Subpart, the supplier of water shall take the following actions:

(1) The water supplier shall notify the State electronically within twenty-four hours in a manner acceptable to the Department.

(2) the water supplier shall issue public notification in accordance with subdivision 5-1.78(f) of this Subpart.

(3) The State may directly notify such owners of real property if it is determined that the public's interest would be best served by such notification, or if the State determines that the covered public water system is not acting or cannot act in a timely manner.

(b) Notwithstanding anything contrary to this Subpart, the Commissioner may, by declaration, add any physical, chemical, microbiological or radiological substance to the list of emerging contaminants in section 5-1.52 Table 3B of this Subpart, establish a notification level, and require monitoring for such substance, if the Commissioner determines that: (i) such substance poses or has the potential to pose a significant hazard to human health when present in drinking water; (ii) such substance was recently detected in a public water system and has the potential to

be present in other public water systems; and (iii) it appears to be prejudicial to the interests of the people to delay action by preparing and filing regulations. The Commissioner shall, however, promulgate regulations adding such new emerging contaminant or establishing such notification level within one year of such declaration. Such declaration shall clearly state where and the date by which such monitoring must occur. After the Commissioner promulgates regulations adding such emerging contaminant, such regulations shall supersede the declaration issued pursuant to this subdivision.

(c) the Commissioner may require that the covered public water system take such actions as may be appropriate to reduce exposure to emerging contaminants. If the Commissioner determines that the concentration of the emerging contaminant constitutes an actual or potential threat to public health in accordance with subdivision 5-1.1(cc) of this Subpart, based on the best available scientific information, the Commissioner shall consult with the Commissioner of the Department of Environmental Conservation regarding any further action that may be appropriate, including but not limited to actions pursuant to title twelve of article twenty-seven of the Environmental Conservation Law.

The title of subdivision (B) of section (II) of Appendix 5-C is amended to read as follows: B. Water Sample Compositing Requirements for Pesticides, Dioxin, PCBs, [PFOA, PFOS,] Per- and Polyfluoroalkyl Substances and 1,4-Dioxane.

SUMMARY OF REGULATORY IMPACT STATEMENT

Statutory Authority:

Section 201(1)(l) of the PHL establishes the powers and duties of the New York State Department of Health (Department), which include the regulation of the sanitary aspects of public water systems (PWS). Section 225 of the PHL sets forth the powers and duties of the Public Health and Health Planning Council (PHHPC), which include the authority to establish, amend and repeal sanitary regulations to be known as the State Sanitary Code (SSC), subject to the approval of the Commissioner of Health. Section 1112 establishes the authority to require monitoring for emerging contaminants and establish notification levels.

Legislative Objective:

The legislative objective of section 1112 of the PHL is to ensure that the Department promulgates regulations for emerging contaminants and establishes notification levels for those contaminants. This amendment will update the SSC per the recommendations of the Drinking Water Quality Council, by establishing MCLs for four (4) additional perfluoroalkyl substances, modifying reporting requirements, requiring monitoring for emerging contaminants and establishing notification levels.

Needs and Benefits:

Emerging Contaminants Monitoring Requirements (ECMR): Public Health Law Section 1112 (PHL 1112) requires the Department to adopt ECMR. The effective date of the monitoring requirements will be April 1, 2023.

Notification Levels (NL): PHL § 1112 requires that NL be established for twenty-three PFAS designated as emerging contaminants. The first category is a sum of 6 compounds to 0.0000300 mg/L (30 ppt) with a 10 ppt notification level for hexafluoropropylene oxide-dimer acid (HFPO-DA/GenX) and the second category is a sum of 13 compounds to 0.000100 mg/L (100 ppt). Decisions on each PFAS chemical's notification category were made based on an evaluation of liver toxicity effect levels, human half-lives, established reference doses, and chemical structure similarities. The 30 ppt notification levels applies to the sum of six (6) PFAS compounds and the 100 ppt NL applies to the sum 13 PFAS compounds. Confirmed sample results that are at or above either NL will prioritize evaluations of the public water system, allow for exposure reduction recommendations based on those evaluations, and provide advanced communication to the community served by the water system.

Maximum Contaminant Levels (MCL): The Department proposes MCLs of 10 ppt each for perfluorohexanesulfonic acid (PFHxS), perfluoroheptanoic acid (PFHpA), perfluorononanoic acid (PFNA), and perfluorodecanoic acid (PFDA). A combined MCL of 30 ppt is proposed for the sum of PFOA, PFOS, PFHxS, PFHpA, PFNA and PFDA (PFAS6). The Department estimates a 1.46 percent increase in MCL violations if MCLs for PFHxS, PFHpA, PFNA, and PFDA are promulgated at 10 ppt each.

Costs

Compliance Costs

ECMR: PHL § 1112 applies to both community water systems (CWS) and nontransient noncommunity water systems (NTNC). The cost of analysis is estimated to be between $350

and $700 per sample. The cost to the average water system, based on 1.7 entry points per system, is between $595 and $1,190.

NL: The Department estimates a notification cost of $5, including labor, fees and postage, per service connection that needs to be notified. Four (4) water systems are expected to distribute public notification for the first category and 26 water systems are expected to exceed the NL for the second category.

MCL: There are approximately 3,000 PWS that will be required to routinely monitor for PFNA, PFDA, PFHxS and PFHpA. Initial monitoring for PFAS6 compounds must be completed by December 31, 2023. Each PWS will be required to comply with the MCL by January 1, 2025. This proposal modifies the analytical requirements by mandating reporting all compounds in EPA 537.1 or EPA 533. The Department estimates that the cost of the full analytical method will be between $350 and $700 per sample. The number of samples required is based on number of sources, and compliance monitoring results. Less sampling is required when no contaminants are detected.

Costs to Private Regulated Parties

ECMR: The ECMR apply to CWS) and NTNC water systems, including private water systems. It is estimated that a significant percentage of the approximately 2,200 PWS that serve less than 1,000 people are privately owned. The total estimated cost to these PWS is $1,309,000 and $2,618,000. There are approximately 550 PWS that serve fewer than 25 people or five service connections that will be required to comply. The total cost to these water systems is anticipated to be $327,250-$654,500. These exact costs are dependent on variables such as the

number of sources and/or entry points, the source water type the level of contaminants detected and are therefore difficult to estimate. The costs are dependent the number of sources and/or entry points, the source water type and the level of contaminants detected.

NL: The cost of notices is estimated to be $5 per connection.

MCL: Monitoring and treatment costs for each privately-owned PWS is dependent upon the system size, the number of affected entry points/sources and the concentration of each contaminant. The cost for a single sample for emerging contaminants is between $350-$700 per sample using either USEPAUSEPA method 533 or 537.1, including field reagent blank costs. Compliance monitoring for PFNA, PFHxS, PFDA and PFHpS can be conducted using either USEPA method 533 or 537.1.

Privately-owned water systems with MCL violations will be required to take actions to come into compliance, which may require the installation of treatment. The U.S. Environmental Protection Agency (USEPA) has developed a cost estimating tool for different PFAS treatment options. Total annualized costs using this costing tool include capital costs for the purchase of treatment system components (amortized over an approximately 20-year period) and annual operation and maintenance costs. The cost estimating tool approximates that total annualized costs for systems serving 501 to 3,330 persons could range from $87,700 to $134,000, systems serving 3,301 to 10,000 persons could range from $335,000 to $489,500, systems serving 10,001 to 50,000 persons could range from $1,016,000 to $1,476,900, systems serving 50,001 to 100,000 persons could range from $2,281,900 to $3,316,800, and systems serving more than 100,000 persons could range from $7,255,600 to $10,640,000 based on 2020 dollars and the use of granular activated carbon (GAC) treatment. The approximate total annualized cost for GAC

treatment for these very small systems could range from $19,800 to $33,300, and the approximate costs for providing point-of-use units could range from $1,700 to $33,800

Cost to State Government:

ECMR: Approximately 250 state operated facilities will be required to comply. The cost of monitoring is anticipated to be between $350 and $750 per entry point. The cost per average water system, based on 1.7 entry points per system is between $595 and $1,190 per water system for a total financial impact to the State of between $148,750 and $295,500.

The Department will incur costs to implement the ECMR. The cost to the Department will range from $682,000 for salary, fringe and information technology for regulatory implementation and enforcement only. The estimated cost is $9,000,000 for a program that includes monitoring assistance for small and disadvantaged communities that serve fewer than 3,300 people.

NL: The Department estimates that the cost per notice will be $5 per connection.

MCL: State agencies that operate a PWS will be required to comply with the proposed amendments. There are approximately 250 State-owned or operated facilities.

Costs will include monitoring and treatment in the event of a MCL exceedance. These potential costs will be the same as the costs to private regulated parties.

The proposed regulation will also create administrative costs to the Department as well as costs to the NYS Department of Environmental Conservation (NYSDEC).

Cost to Local Government:

The regulations will apply to local governments which own or operate a PWS.

ECMR: There are approximately 1,500 PWS that are owned or operated by local governments. The cost per average water system, based on 1.7 entry points per system is between $595 and $1,190 per water system. As a result, the total cost to local government for monitoring is expected to be between $892,500 and $1,785,000. Water systems with more entry points will have a proportionally higher cost.

NL: There are approximately 1,500 PWS that are owned or operated by local governments. It is expected that 13 notifications will be required. The Department estimates a cost of $5 per connection.

MCL: The regulations will apply to local governments. There are approximately 1,500 PWS that are owned or operated by local governments. Costs will include monitoring for PFHxS, PFHpA, PFNA, PFDA and/or PFAS6, and treatment in the event of a MCL violation.

Local health departments that regulate drinking water will also incur administrative costs related to local implementation and oversight.

Local Government Mandates:

Local governments will be required to comply with this regulation as noted above.

Paperwork:

ECMR and NL: The ECMR and NL are new monitoring and regulatory programs with associated paperwork, tracking and enforcement.

MCL: The additional monitoring, reporting, recordkeeping and paperwork needed for PFAS6 is expected to be minimal. The reporting and recordkeeping requirements will increase if MCLs are exceeded and/or treatment is required.

Duplication:

The ECMR is duplicative with the federal Unregulated Contaminant Monitoring Rule (UCMR) for each PWS that serves 3,300 or more people. For NL and MCL, there will be no duplication.

Alternatives:

Three alternatives to MCLs were considered: 1. maintain the existing MCL of 0.05 mg/L that applies to all organic chemicals when no chemical specific MCL exists for PFNA, PFHxS, PFHpA and PFDA; 2. wait for the US USEPA to issue a federal MCL; or 3. promulgate an MCL for PFNA, PFHxS, PFHpA and PFDA at 10 ppt each. Based on deliberations of the DWQC and the additional toxicological analysis conducted by the Department it was determined that the current MCL of 0.05 mg/L is not protective of public health for these four specific chemicals. Waiting for the USEPA to set a new MCL was impractical due to the prevalence and concerns surrounding these compounds combined with the timeframes required under the Safe Drinking Water Act.

The 10 ppt standard, while health protective, will allow for a total concentration of upwards of 60 ppt, which is not sufficiently health protective. Therefore, the Department determined that adoption of the MCLs as recommended by DWQC for PFNA, PFHxS, PFHpA

and PFDA, as well as establishing PFAS6 MCL is in the best interest of protecting the public health.

Federal Standards:

The ECMR proposal is similar to UCMR5 but expands the scope by extending applicability to PWS that serve fewer than 3,300 persons. There are no federal standards for NL and MCL.

Compliance Schedule:

Each PWS will begin monitoring for emerging contaminants beginning April 1, 2023. A PWS may monitor in accordance with the schedule established by USEPA for UCMR5. The effective date for NLs is April 1, 2023. Public notification is required for a PWS that detects or has detected emerging contaminants at or above the NL. For MCL, all water systems must begin monitoring for PFAS6 and report all compounds in the analytical method beginning April 1, 2023. If the MCL is exceeded or compounds are detected at or above a NL, public notification is required. Compliance with the MCL is required by January 1, 2025.

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REGULATORY IMPACT STATEMENT

Statutory Authority:

The statutory authority for the proposed regulations is set forth in Public Health Law (PHL) Sections 201, 225 and 1112. Section 201(1)(l) of the PHL establishes the powers and duties of the New York State Department of Health (Department), which include the supervision and regulation of the sanitary aspects of public water system (PWS). Section 225 of the PHL sets forth the powers and duties of the Public Health and Health Planning Council (PHHPC), which include the authority to establish, amend and repeal sanitary regulations to be known as the State Sanitary Code (SSC), subject to the approval of the Commissioner of Health. Further, section 225(5)(a) of the PHL allows the SSC to deal with any matter affecting the security of life or health, or the preservation or improvement of public health, in New York State and allows the Department to establish Maximum Contaminant Levels (MCL). Section 1112 establishes the authority to require monitoring for emerging contaminants and establish notification levels.

Legislative Objective:

The legislative objective of sections 201 and 225 of the PHL is to ensure that the Department and PHHPC, in conjunction with the Commissioner of Health, protect public health by adopting drinking water sanitary standards. The legislative objective of section 1112 of the PHL is to ensure that the Department promulgates regulations defining the monitoring requirements for emerging contaminants and establishes notification levels for those contaminants. In accordance with those objectives, this regulation amends the SSC by revising Part 5 to enhance current protections governing PWS. Furthermore, this amendment will update the SSC in accordance with the recommendations of the Drinking Water Quality Council

(DWQC), by establishing MCLs for four (4) additional perfluoroalkyl substances and modifying reporting requirements, requiring monitoring for the emerging contaminants listed in the PHL and establishing notification levels.

Needs and Benefits:

PHL § 1112 specifically lists 23 per- and polyfluoroalkyl substances (PFAS) as emerging contaminants, for which the Department must adopt monitoring and public notification requirements for every covered public water system. PFAS are a group of synthetic organic chemicals that have been manufactured or used throughout the United States in a wide range of consumer products and industrial applications. They have been used in non-stick cookware, water-repellent clothing, stain-resistant fabrics and carpets, cosmetics, firefighting foams, electroplating, and products that resist grease, water, and oil.

The DWQC, established pursuant to PHL § 1113, is charged with making recommendations to the Department on which compounds should be listed as emerging contaminants and their corresponding notification levels. After discussion and deliberation spanning several meetings, the DWQC voted to accept the Department's recommendation to proceed with regulations adopting the first list of emerging contaminants with two notification level categories; adopt MCLs of 10 ppt for PFHxS, PFHpA, PFNA and PFDA; and have the Department evaluate the feasibility of an MCL that is the sum of six (6) PFAS compounds. PHL § 1112 directs that, through regulation, any substance can be removed from the list of emerging contaminants upon adopting a maximum contaminant level for such substance. Available toxicology information and occurrence data support the Department's recommendation to

exclude PFHxS, PFHpA, PFNA and PFDA from the first emerging contaminants list in favor of substance specific MCLs.

Emerging Contaminants Monitoring Requirements:

In 2021, PHL § 1112 was amended to include the first list of emerging contaminants and required that the commissioner publish regulations to adopt the following compounds as emerging contaminants within 180 days: perfluorononanoic acid (PFNA); perfluorohexanesulfonic acid (PFHxS); perfluoroheptanoic acid (PFHpA); perfluorobutanesulfonic acid (PFBS); hexafluoropropylene oxide dimer acid (HFPO-DA); Perfluorodecanoic acid (PFDA); Perfluorododecanoic acid (PFDoA); Perfluorohexanoic acid (PFHxA); Perfluoroundecanoic acid (PFUnA); 11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS); 9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS); 4,8-dioxa-3H-perfluorononanoic acid (ADONA); Nonafluoro-3,6-dioxaheptanoic acid (NFDHA); Perfluorobutanoic acid (PFBA); 1H, 1H, 2H, 2HPerfluorodecane sulfonic acid (8:2FTS); Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA); Perfluoroheptanesulfonic acid (PFHpS); 1H,1H, 2H, 2H-Perfluorohexane sulfonic acid (4:2FTS); Perfluoro-3-methoxypropanoic acid (PFMPA); Perfluoro-4-methoxybutanoic acid (PFMBA); 1H,1H, 2H, 2H-Perfluorooctane sulfonic acid (6:2FTS); and Perfluoropentanoic acid (PFPeA); Perfluoropentanesulfonic acid (PFPeS).

The Department is amending 10 NYCRR Part 5 to establish monitoring requirements for the emerging contaminants listed above, except for PFHxS, PFHpA, PFNA and PFDA. As described above, an MCL will be established for these compounds, and monitoring will be

conducted in accordance with the MCL. Per PHL § 1112, establishing an MCL will remove these compounds from the emerging contaminant list.

Notification Levels for Emerging Contaminants:

In 2021, PHL § 1112 was amended to require the Commissioner to promulgate regulations establishing notification levels for any listed emerging contaminant. The PHL requires notification levels be equal to or lower than any federal lifetime health advisory level established pursuant to the federal Safe Drinking Water Act (42 U.S.C. § 300g-1), if available. For the current compounds listed as emerging contaminants, there are no federal lifetime health advisory levels.

Based on a review of available scientific literature, the Department presented two categories of notification levels to the DWQC on May 2, 2022. The first category is the prioritized PFAS notification level category and is a sum of six chemicals to 0.0000300 mg/L (30 ppt) with a 10 ppt notification level for hexafluoropropylene oxide-dimer acid (HFPO-DA/GenX) and the second category is a sum of 13 compounds to 0.000100 mg/L (100 ppt). The remaining PFAS notification level category is the sum of 13 chemicals to 0.000100 mg/L (100 ppt). These chemicals are listed in Table 1.

Table 1 – Summary of Notification Level Categories

Prioritized PFAS Notification Level Category	Remaining PFAS Notification Level Category	
Notification Level = 30 ppt Sum of 6 Chemicals	**Notification Level = 100 ppt Sum of 13 Chemicals**	
PFHpS	PFBA	4:2FTS
PFUnA	PFBS	6:2FTS
PFDoA	PFPeA	8:2FTS
GenX*	PFPeS	NFDHA
9Cl-PF3ONS	PFHxA	PFEESA
11Cl-PF3OUdS	ADONA	PFMPA
		PFMBA
* Notification is required if HFPO-DA (GenX) is equal to or exceeds 0.000010 mg/L or 10 ppt.		

New York State currently has MCLs for perfluorooctane sulfonic acid (PFOS) and perfluorooctanoic acid (PFOA) at 0.0000100 milligrams-per-liter (mg/L) or 10 parts-per-trillion (ppt) each. Monitoring for PFOA and PFOS has been conducted since 2020-2021 for the 3,000 PWS required to monitor. When the MCL for PFOA or PFOS is exceeded, the existing regulation requires the water system to collect between one and three follow up samples to confirm the levels of the compound in drinking water. The confirmation samples are required to include all analytes reported in the approved analytical method. Similarly, when either PFOS or PFOA are detected above the method detection limit, regulations require that subsequent quarterly monitoring includes all analytes contained in the approved analytical method. As such, the Department has a robust dataset on the occurrence of additional PFAS compounds, based on analytical data reported by approximately 1,000 PWS.

Based on an evaluation of the existing monitoring data, it was determined that the six compounds in the prioritized PFAS notification level category occurred at levels between 2.1 and 10 ppt in 13 PWS; 10.1-20 ppt in four (4) PWS; 20.1-30 ppt in one (1) PWS; and 50.1-75 ppt in one (1) PWS. The thirteen compounds in the remaining PFAS notification level category occurred at levels between 2.1-10 ppt in 286 PWS; 10.1-20 in 89 PWS; 20.1-30 ppt in 32 PWS; 30.1-40 ppt in 17 PWS; 40.1-50 ppt in 7 PWS; 50.1-75 ppt in 12 PWS; 75.1-100 ppt in 5 PWS; and >100 ppt in 13 PWS. As such 0.12% of PWS or four (4) PWS would be required to provide

public notification due to the presence of compounds at or above the notification level in the first category and 2.45% of PWS or 87 PWS would be required to provide public notification due to presence of compounds at or above the notification level in in the second category.

During a public meeting of the DWQC on May 2, 2022, the Department presented detailed technical information on the toxicology of emerging contaminants, as well as on the general methods used to derive health-based drinking water concentrations that are protective against noncancer health effects. These presentations included key citations to the extensive, publicly available scientific literature upon which the Department relied.

Notification levels rather than chemical specific MCLs are implemented for these 19 emerging PFAS because the available toxicity information for most of these chemicals does not inform derivation of chemical-specific health-based drinking water values, which is an important step in the MCL derivation process. There are also limited state-specific occurrence data for most of the 19 PFAS. Implementing notification levels for these emerging PFAS will provide occurrence data to inform future prioritization of chemical-specific drinking water standards and will identify drinking water systems for possible exposure reduction measures. Notification levels will also provide advance communication to the community served by the water system if such a level is exceeded.

The Department presented an approach to the DWQC that separates the 19 emerging PFAS into two notification level categories. The notification level categories are based on differences in the available toxicity[1] and human half-life information for the 19 emerging PFAS. One category is designated for emerging PFAS having toxicity and half-life information indicating the need for prioritization and notification at a lower water concentration. The second

[1] Studies evaluating the carcinogenicity of most of the 19 emerging PFAS are not available. Therefore, noncancer toxicity information was used for this notification level approach.

category is designated for the remaining emerging PFAS, for which the currently available toxicity and half-life information is either insufficient or does not indicate a need for including in the group of prioritized PFAS chemicals.

The Department identified chemicals for the prioritized lower notification level category based on four criteria:

- A low liver toxicity effect level observed in laboratory animal studies
- A long-estimated half-life in humans
- A low reference dose established by one or more authoritative bodies
- A chemical structure similar to chemicals with low toxicity effect levels, long human half-lives, or low reference doses.

If the available information for the emerging PFAS satisfied any of these criteria, the Department included the chemical in the prioritized notification level category. The Department used the liver toxicity effect level because it provides a consistent means of comparison across several of the 19 emerging PFAS, and is a well-established, sensitive endpoint for this group of chemicals. Liver toxicity was consistently observed in two comparative rat toxicity studies of seven short- and long-chain PFAS conducted by the National Toxicology Program (NTP 2018a,b). The NTP reported that liver toxicity was induced at lower dose levels of long-chain PFAS (PFHxS, PFOA, PFOS, PFNA, and PFDA) compared to the short-chain PFAS (PFBS and PFHxA). Chemicals with lower effect levels are considered more toxic than those with higher effect levels, and therefore PFAS with relatively low effect levels for liver toxicity were prioritized for the lower notification level category.

The human half-life is a measure of how long a chemical remains in the body. Long-chain PFAS have been shown to have substantially longer half-lives in humans when compared

to short-chain PFAS (ATSDR 2021). Longer human half-lives among PFAS are generally associated with greater toxicity, and therefore provide a basis for prioritizing emerging PFAS for the lower notification level category.

The reference dose is an estimate of the daily oral lifetime human exposure to a chemical that is not expected to result in adverse noncancer health effects. Reference doses are set at exposure levels much lower than those known or estimated to cause health effects. A low reference dose indicates a higher degree of toxicity for a chemical than one with a higher reference dose. Reference doses for several of the emerging PFAS have been derived by authoritative bodies, and therefore the Department prioritized emerging PFAS that have a relatively low reference dose (indicating a greater degree of toxicity) for the lower notification level category.

If data on effect levels and human half-life were not available or insufficient, and if a reference dose was not available, similarities in chemical structure to other PFAS having more information on these parameters were also used as a basis for selecting the notification level category for the chemical.

Of the 19 emerging PFAS that were considered for the notification level approach, six met the criteria to be prioritized for the lower notification level. The available toxicity, half-life, and reference dose information for each of these six chemicals is provided in Table 2.

Table 2. Toxicity, Human Half-life, and Reference Dose Information for Six Emerging PFAS Prioritized for the Lower Notification Level Category

Emerging PFAS	Liver Toxicity Effect Level (mg/kg/day)	Estimated Human Half-Life	Reference Dose (ng/kg/day)
PFHpS [a]	-	1.46 – 4.7 years (Xu et al. 2020; Li et al. 2019)	-
PFUnA	0.3 (Takahashi et al. 2014)	4.5 – 12 years (Zhang et al. 2013, as cited in ATSDR 2021)	-
PFDoA [b]	0.5 (Kato et al. 2015)	-	-

Gen-X [c]	0.5 (Dupont 2010, as cited in US USEPA 2021a)	81 hours (US USEPA 2021a using data from Clark 2021)	3 (US USEPA 2021a)
9Cl-PF3ONS	0.04 (Zhang et al. 2018)	15.3 years (Shi et al. 2016)	-
11Cl-PF3OUdS [d]	-	> 15.3 years (Shi et al. 2016)	-

[a] Toxicity studies are limited for PFHpS and a liver toxicity effect level is not available. The estimated PFHpS human half-life is long (measured in multiple years), and PFHpS is structurally similar to fully fluorinated, straight-chain perfluoro sulfonic acids that have low effect levels and long human half-lives (e.g., PFHxS, PFOS). PFHpS differs from PFHxS and PFOS by only one carbon atom in the fully fluorinated carbon chain. Therefore, PFHpS is included in the prioritized, lower notification level category.

[b] Human half-life estimates for PFDoA are not available. The liver toxicity effect level is similar to PFUnA, which is a structurally similar long-chain PFAS with a long estimated human half-life. Therefore, PFDoA is included in the prioritized, lower notification level category.

[c] Gen-X has a short estimated human half-life, but a low effect level for liver toxicity. The Gen-X reference dose is consistent with established reference doses for PFAS having a greater degree of relative toxicity (reference doses for PFOA, PFOS, PFHxS, PFHpA, PFNA, and PFDA are all lower than 5 ng/kg/day). Therefore, Gen-X is included in the prioritized, lower notification level category.

[d] Toxicity studies are limited for 11Cl-PF3OUdS, and a liver toxicity effect level is not available. One study suggests that the 11Cl-PF3OUdS human half-life is expected to be longer than the structurally similar 9Cl-PF3ONS. 11Cl-PF3OUdS differs from 9Cl-PF3ONS only in that it has two additional fully fluorinated carbons in the carbon chain. Therefore, 11Cl-PF3OUdS is included in the prioritized, lower notification level category.

The remaining 13 emerging PFAS are placed in a second notification level category. For these chemicals, the available information suggests higher effect levels, (higher doses of the chemical are required to cause an adverse health effect) and shorter human half-lives (the chemical is removed from the body faster) than are reported for chemicals in the prioritized notification level category. Additionally, the established reference doses for three of these 13 PFAS (PFBA, PFBS, PFHxA) are much higher than reference doses of the long-chain identified for the chemical-specific MCL approach (reference doses were all below 5 ng/kg/day for PFHxS, PFHpA, PFNA, and PFDA), as well the reference doses for the currently regulated PFAS (PFOA and PFOS). These considerations support grouping the 13-remaining emerging PFAS in a second and higher notification level category. Toxicity, half-life, and reference dose information for the remaining 13 emerging PFAS is summarized in Table 3.

Table 3. Toxicity, Human Half-life, and Reference Dose Information for the Remaining 13 Emerging PFAS for the Second Notification Level Category

Emerging PFAS	Liver Toxicity Effect Level (mg/kg/day)	Estimated Human Half-Life	Reference Dose (ng/kg/day)
PFBA	30 (Butenhoff et al. 2012)	3 days (Change et al. 2008, as cited in ATSDR 2021)	1000 (US USEPA 2021b)

PFBS	62.6 (NTP 2019a)	44 days (Xu et al. 2020, as cited in US USEPA 2021c)	300 (US USEPA 2021c)
PFPeA	-	< 14 days (Xu et al. 2020)	-
PFPeS [a]	-	223 – 365 days (Xu et al. 2020; Li et al. 2019)	-
PFHxA	125 (NTP 2019b)	11.5 days (Nilsson et al. 2013, as cited in US USEPA 2022)	500 (US USEPA 2022)
ADONA	30 (Gordon et al 2011)	16 – 31 days (EFSA 2011)	-
4:2 FTS [b]	-	-	-
6:2 FTS [b]	5 (Sheng et al 2017)	-	-
8:2 FTS [b]	-	-	-
NFDHA [c]	-	-	-
PFEESA [c]	-	-	-
PFMPA [c]	-	-	-
PFMBA [c]	-	-	-

[a] The human half-life data for PFPeS suggest a half-life approaching one year, rather than multiple years as for the emerging PFAS prioritized for a lower notification level (Table 1). Therefore, PFPeS has been identified for the second, higher notification level category.

[b] Of the three fluorotelomer sulfonates identified as emerging PFAS (4:2, 6:2, and 8:2 FTS), only 6:2 FTS has comparative toxicity information. The liver toxicity effect level is higher than effect levels observed for the prioritized notification level category (Table 1). Human half-life data were not available for 6:2 FTS, however, the European Chemical Agency (ECHA 2020) noted that urinary excretion times in rats suggest a half-life of 20-24 hours. Rat half-life data suggest that short-chain PFAS have half-lives in the range of 2 – 13 hours, whereas long-chain PFAS have rat half-lives on the order of weeks to months (ATSDR 2021). A comparison of the rat half-life information suggests that the half-life of 6:2 FTS is comparable with that of other short-chain PFAS that have been identified for the second, higher notification level category. The 4:2 and 8:2 FTS are included in this second notification level category based on their structural similarity with the 6:2 FTS.

[c] Comparative information was not identified for NFDHA, PFEESA, PFMPA, and PFMBA. These PFAS contain shorter fluorinated carbon chains (≤ 4 carbons) than chemicals that have been prioritized for the lower notification level category (Table 1). Therefore, these PFAS have been included in the second, higher notification level category.

The prioritized notification level category is set at a drinking water concentration of 30 ppt, which applies to the combined concentration of the emerging PFAS identified for this category with a 10 ppt notification level for hexafluoropropylene oxide-dimer acid (HFPO-DA/GenX). Six PFAS were designated for the 30 ppt category based on chemical-specific information that suggest these chemicals have a higher degree of toxicity when compared to other chemicals in the group of 19 emerging PFAS. These six prioritized chemicals have low liver toxicity effect levels, long human half-lives, or low reference doses, or they are structurally

similar to other emerging PFAS with known toxicity. These parameters suggest that notification is needed at a lower water concentration.

The notification level of 30 ppt was also evaluated in the context of available drinking water standards and guidelines established by other states for chemicals in this prioritized notification level category, which are generally set a health-protective levels that are much lower than levels known to cause health effects. Of the six emerging PFAS in this group, Gen-X is the only chemical with established drinking water standards and guidelines. The range of these values is 21-370 ppt (Table 4). The notification level of 30 ppt is at the low end of this range.

Table 4. State Drinking Water Standards and Guidelines Established for Gen-X

State Agency	Year Established	Drinking Water Standard or Guideline (ppt)
Ohio Environmental Protection Agency	2022	21
Michigan Department of Environment, Great Lakes, and Energy	2020	370
North Carolina Department of Health and Human Services	2017	140

Finally, the notification level of 30 ppt was evaluated in the context of analytical detection limits. The total concentration of six chemicals would be used to determine if the notification level is exceeded, and analytical methods used to measure these chemicals in drinking water have limitations and variations in the concentration of the chemical that can be reliably reported. The notification level value cannot be set below the level that is reliably reported by the analytical method. The analytical method must be able to reliably report each of the six prioritized emerging PFAS at 5 ppt. Based on analytical methods developed by US USEPA (US USEPA 2019b, 2020b), a notification level of 30 ppt for the total concentration of six PFAS should retain confidence in the analytical results.

The remaining 13 PFAS have been placed in a second category with a notification level of 100 ppt for the total concentration of the PFAS in the group. The notification level of 100 ppt was selected by evaluating drinking water standards and guidelines established by other states for chemicals in this category, with consideration of analytical detection limits. Drinking water standards and guidelines have been established for PFBA, PFBS, and PFHxA, and the values range from 100 to 560,000 ppt (Table 5). The notification level of 100 ppt is the low end of this range. Further, a level of 100 ppt is indicative of a significant source of contamination at which notification is needed for the community served by the water system.

Table 5. State Drinking Water Standards and Guidelines Established for PFBA, PFBS, and PFHxA

State Agency	Year(s) Established	Drinking Water Standard or Guideline (ppt)		
		PFBA	PFBS	PFHxA
Minnesota Department of Health	2018-2022	7000	100	200
California Water Boards	2022		500	
Illinois Environmental Protection Agency	2021		2,100	560,000
Michigan Department of Environment, Great Lakes, and Energy	2020		420	400,000
Ohio Environmental Protection Agency	2019		2,100	

The notification level of 100 ppt was evaluated in the context of analytical detection limits. As was discussed above for the prioritized notification level, the total concentration of chemicals in the category would be used to determine if the notification level is exceeded. For the 100 ppt notification category, the analytical method must be able to reliably report each of the 13 emerging PFAS at 8 ppt. Based on analytical methods developed by US USEPA (US USEPA 2019b, 2020b), a notification level of 100 ppt for the total concentration of these 13 PFAS should retain confidence in the analytical results.

The Department is proposing to amend 10 NYCRR Part 5 to establish a notification level of 30 ppt for the sum of PFHps, PFUnA, PFDoA, GenX, 9Cl PF3ONS and 11ClPF3OUdS; and a

notification level of 100 ppt for the sum of PFBA, PFBS, PFPeA, PFPeS, PFHxA, ADONA 4:2FTS, 6:2FTS, 8:2FTS, NFDHA, PFEESA, PFMPA and PFMBA. The notification levels will apply to all public water systems regulated by the Department and will reduce lifetime exposure through drinking water for the general population.

Maximum Contaminant Levels:

New York State currently has MCLs for perfluorooctane sulfonic acid (PFOS) and perfluorooctanoic acid (PFOA) at 0.0000100 milligrams-per-liter (mg/L) or 10 parts-per-trillion (ppt) each. Monitoring for PFOA and PFOS has been conducted since 2020-2021 for the 3,000 PWS required to monitor. When the MCL for PFOA or PFOS is exceeded, the existing regulation requires the water system to collect between one and three follow up samples to confirm the levels of the compound in drinking water. The confirmation samples are required to include all analytes reported in the approved analytical method. Similarly, when either PFOS or PFOA are detected above the method detection limit, regulations require that subsequent quarterly monitoring includes all analytes contained in the approved analytical method. As such, the Department has a robust dataset on the occurrence of additional PFAS compounds, based on analytical data reported by approximately 1,000 PWS.

Based on the evaluation of existing monitoring data, it was determined that PFDA has been detected in two (2) PWS greater than 10 ppt. Twelve (12) PWS have reported PFDA at concentrations less than 10 ppt. PFHpA has been detected in 39 PWS greater than 10 ppt. A total of 206 PWS have reported PFHpA at concentrations less than 10 ppt. PFHxS has been detected in 29 PWS greater than 10 ppt. A total of 146 PWS have reported PFHxS at concentrations less than 10 ppt. PFNA has been detected in 30 PWS greater than 10 ppt. A total of 56 PWS have

reported PFNA at concentrations less than 10 ppt. A total of 139 PWS have total concentrations of PFAS6 greater than 30 ppt. As such, approximately 7% of water systems would be required to undertake corrective action as a result of promulgating individual MCL of 10 ppt. Some systems were found to exceed multiple compounds listed above. Many PWS in this category already exceed the MCL for PFOA and/or PFOS or have an enforcement deferral for these compounds and are working towards or have achieved corrective action that is expected to also address these compounds. Based on this occurrence data, the Department estimates an overall 1.46 percent increase in the number MCL violations for PFAS if MCLs for PFHxS, PFHpA, PFNA, and PFDA are promulgated at 10 ppt each. Therefore, it is anticipated that 44 water systems will exceed the proposed MCL for these compounds requiring corrective actions not already triggered due to exceedances of other PFAS compounds.

During public meetings of the DWQC on March 10, 2022, and May 2, 2022, the Department presented detailed technical information on the toxicology of PFHxS, PFHpA, PFNA, and PFDA, as well as on the general methods used to derive health-based drinking water concentrations that are protective against noncancer health effects. These presentations included key citations to the extensive, publicly available scientific literature upon which the Department relied.

The toxicity of PFOA, PFOS, PFHxS, PFHpA, PFNA, and PFDA has been reviewed and summarized by several authoritative state, national, and international bodies (US USEPA 2016a,b, 2021a,b,c, 2022; ATSDR 2021; EFSA 2011, 2018, 2020; NTP 2016, 2018a,b; NJ DEP 2015, 2019a,b, MA DEP 2019, CA OEHHA 2022). These reviews identify important studies on the health effects associated with exposure to these chemicals, including studies on cancer and non-cancer, developmental, and reproductive effects observed in humans and animals.

Human studies show associations between increased PFOA exposure and an increased risk for several health effects. These include effects on the liver, kidney, immune system, thyroid gland, cholesterol levels, pre-eclampsia (a complication of pregnancy that includes high blood pressure), and kidney and testicular cancer (C8 Science Panel 2017; Darrow et al. 2013; Steenland et al. 2012; Steenland et al. 2013; Winquist and Steenland 2014; Barry et al. 2013; Costa 2009; Darrow et al. 2016; Shearer et al. 2021). Human studies also show associations between increased PFOS exposure and an increased risk for several health effects, including increases in total cholesterol in serum (i.e., the fluid portion of blood that contains components not used in clotting), triglycerides, and uric acid, as well as effects on the immune system, reproduction and development (Olsen et al. 2003; Steenland et al. 2009; Gleason et al. 2015; Grandjean et al. 2012; Grandjean et al. 2017; Fei et al. 2012; Verner et al. 2015).

Exposure to PFOA or PFOS has been shown to cause several types of adverse health effects in numerous studies of laboratory animals. PFOA caused cancer of the liver, pancreas, and testis in male rats exposed for their lifetimes (Butenhoff et al. 2012a; NTP 2020). Non-cancer health effects caused by PFOA exposure in animals include liver toxicity, developmental toxicity, and immune system toxicity (Macon et al. 2011; Loveless et al. 2006; Lau et al. 2006; DeWitt et al. 2015). PFOS caused liver and thyroid cancer in rats exposed for their lifetimes (Butenhoff et al. 2012b). PFOS also causes several non-cancer health effects in animals, including adverse effects on the immune system, reduced offspring body weight, and effects on the developing nervous system (Dong et al. 2009; Luebker et al. 2005; Butenhoff et al. 2009).

Studies in humans show associations between exposures to PFHxS, PFHpA, PFNA and PFDA and an increased risk for several health effects. These include effects on serum lipids, cardiovascular function, liver enzymes, the immune system, the reproductive system, and thyroid

hormone levels (ATSDR 2021, CA OEHHA 2022, Cakmak et al. 2022, Guo et al. 2021, Kvalem et al. 2020, Shen et al. 2022, Wang et al. 2021). Human studies have also identified associations between exposures to PFHxS, PFHpA, PFNA and PFDA and an increased risk for breast cancer (Velarde et al. 2022, Wielsøe et al. 2017, Feng et al. 2022), and exposures to PFHxS and PFDA have been associated with an increased prostate cancer risk among those with hereditary risk (Hardell et al. 2014).

PFHxS, PFHpA, PFNA and PFDA cause several types of adverse health effects in studies of laboratory animals exposed to these chemicals. Each of the chemicals causes liver and reproductive toxicity in animals (ATSDR 2021, NTP 2018a,b, Han et al. 2020, Li et al. 2021). PFHxS, PFNA, and PFDA also cause thyroid and developmental toxicity, and PFNA and PFDA cause immune toxicity (ATSDR 2021, NTP 2018a,b). Animal studies that evaluate the carcinogenicity of PFHxS, PFHpA, PFNA and PFDA are not available.

The Department evaluated the toxicity of the six PFAS (PFOA, PFOS, PFHxS, PFHpA, PFNA, and PFDA). Based on similarities in chemical structure, common health endpoints and available data on modes of action, the health effects from these six PFAS are expected to be additive when present in mixtures. This is consistent with the basis for the drinking water health advisory for the sum of PFOA and PFOS derived by the US USEPA (US USEPA 2016c), and the approaches used for multiple PFAS by Massachusetts (MA DEP 2019), Vermont (VT DOH 2018), Connecticut (CT DPH 2020), Rhode Island (RI 2021), Maine (ME DHHS 2021), and Oregon (Oregon Health Authority).

The Department also evaluated the level of 30 ppt in the context of analytical detection limits. The total concentration of six chemicals would be used to determine if the summed MCL is exceeded, and analytical methods used to measure these chemicals in drinking water have

limitations and variations in the concentration of the chemical that can be reliably reported. The MCL cannot be set below the level that is reliably reported by the analytical method. The analytical method must be able to reliably report each of the six PFAS at 5 ppt. Based on analytical methods developed by US USEPA (US USEPA 2019b, 2020b), a level of 30 ppt for the total concentration of six PFAS should retain confidence in the analytical results.

Based on analysis of available toxicological data, the Department determined that summing six PFAS compounds to 30 ppt addresses the additive toxicity of the chemicals in situations where they are present as mixtures, and is also operationally feasible. It is expected that approximately 2.14% of PWS will either exceed the proposed MCL of 10 ppt for PFHxS, PFHpA, PFNA and PFDA or the PFAS6 MCL, for a total of 64 PWS.

The toxicity of PFHxS, PFHpA, PFNA and PFDA has been discussed above. The results of the human and animal studies on PFHxS, PFHpA, PFNA and PFDA and their structural similarity to PFOA and PFOS provide an overall weight of evidence that indicates human exposure to these chemicals at currently observed environmental levels can increase the risk for health effects, and that public health actions to minimize such exposures are needed.

The general methods presented by Department staff to the DWQC for deriving health-based drinking water concentrations that are protective against noncancer health effects have been regularly used by the United States Environmental Protection Agency (US USEPA) and other health agencies since the 1980s (US USEPA 2000, US USEPA 2020a, US USEPA 1984, MDH 2008).

The methods include:

1. Identifying an exposure level or point of departure that represents the most sensitive noncancer health effect caused by the contaminant in the most sensitive species;
2. Deriving a reference dose (a lifetime exposure at which noncancer health effects are unlikely) by dividing the point of departure by uncertainty factors that compensate for limitations in the quality and quantity of scientific information on the chemical and provide a margin of protection against the most sensitive health effects;
3. Dividing the reference dose by a water consumption rate to obtain a drinking water exposure equivalence level; and
4. Multiplying the drinking water equivalence level by a relative source contribution that adjusts for the percentage of exposure to the contaminant from drinking water compared to other sources (e.g., food, soil).

On March 10, 2022, Department staff presented reference doses and health-based drinking water concentrations for PFHxS, PFHpA, PFNA, and PFDA to the DWQC.

The Department presented a PFHxS reference dose derived by the New Hampshire Department of Environmental Services (NH DES 2019), based on a study by Chang et al. (2018) that reported decreased litter size in mice exposed to PFHxS before mating and throughout gestation. The Department presented this reference dose because it was based on an effect that occurred at the lowest dose identified in a high-quality animal study. New Hampshire Department of Environmental Services derived this reference dose from a benchmark serum level (13,900 ng/mL), which was converted to a human equivalent dose of 1,200 ng/kg/day using a chemical specific clearance value of 0.086 mL/kg/day. This human equivalent dose was

divided by a total uncertainty factor of 300 to account for human variability (10), interspecies differences (3), duration of exposure (3), and database deficiencies (3) to obtain a reference dose of 4.0 ng/kg/day (NH DES 2019).

The Department presented a PFNA reference dose derived by the Michigan Science Advisory Workgroup (MI SAW 2019), based on a study by Das et al. (2015) that reported decreased body weight and developmental delays in offspring of mice exposed during gestational days 1-17. The Department presented this reference dose because it is based on a sensitive effect during a vulnerable life stage identified in a high-quality animal study. The Michigan Science Advisory Workgroup derived this reference dose from a serum concentration corresponding to a no-observed adverse effect level for decreased body weight gain and delayed eye opening, preputial separation, and vaginal opening in offspring of exposed mice (6,800 ng/mL). The Michigan Science Advisory Workgroup converted this serum concentration to a human equivalent dose of 665 ng/kg/day using a chemical specific clearance value of 0.098 mL/kg/day. This human equivalent dose was divided by a total uncertainty factor of 300 to account for human variability (10), interspecies differences (3), and database deficiencies (10) to obtain a reference dose of 2.2 ng/kg/day (MI SAW 2019).

Reference doses for PFHpA and PFDA are not available. For these PFAS, the Department presented reference doses based on PFAS with similar chemical structures, consistent with approaches used by Massachusetts, Maine, Rhode Island, Vermont, and Connecticut (MA DEP 2019, ME DHHS 2021, RI 2021, VT DOH 2018, CT DPH 2020).

In the absence of sufficient information to derive a PFHpA reference dose, the Department proposed using the reference dose for PFOA to obtain a health-based water value for this chemical. PFHpA is structurally similar to PFOA, and has a relatively long human half-life

of 1.1-1.5 years (Zhang et al. 2013), similar to 2 to 3.5 years for PFOA (Bartell et al. 2010, Olsen et al. 2007). These considerations suggest that it would have similar potency to PFOA. A PFOA reference dose of 1.5 ng/kg/day derived by the Department and presented to the DWQC on October 17, 2018 (NYS DOH 2018), was used as the basis for health-based drinking water values for PFHpA. This reference dose is based on increased liver weight in the offspring of mice exposed to PFOA during pregnancy (Macon et al., 2011). The measured serum level corresponding to a lowest-observed effect level (4,980 ng/mL) was converted to a human equivalent dose of 460 ng/kg/day using a chemical specific clearance value of 0.092 mL/kg/day. The human equivalent dose was divided by a total uncertainty factor of 300 to account for sensitive humans (10), interspecies differences (3), the use of a LOEL (3) and database deficiencies (3) to obtain a final reference dose of 1.5 ng/kg/day.

In the absence of sufficient information to derive a PFDA reference dose, the Department proposed using the reference dose for PFNA to obtain a health-based water value for this chemical. PFDA is structurally similar to PFNA and has a relatively long half-life of 4 to 12 years (Zhang et al. 2013), as does PFNA (2.5 to 4.4 years) (Zhang et al. 2013). In addition, a comparative toxicity study conducted by The National Toxicology Program (NTP 2018b) reported that PFDA induced liver and thyroid toxicity in laboratory animals at exposure levels comparable to PFNA, which suggests that PFDA and PFNA have similar toxic potency. Thus, the previously summarized reference dose for PFNA was used to calculate health-based values for PFDA.

To obtain the corresponding drinking water equivalence levels for PFHxS, PFHpA, PFNA and PFDA, the reference doses were divided by water consumption rates of 0.035, 0.047 and 0.143 liters per kilogram body weight per day for adults, lactating women, and infants,

respectively (US USEPA 2019a). The drinking water equivalence levels for each chemical are presented in Table 6.

The drinking water equivalence levels, which represent the reference doses expressed as water concentrations for different members of the population, were then multiplied by a relative source contribution of 0.5. The relative source contribution accounts for the percentage of contaminant exposure from drinking water compared to other sources when setting drinking water standards and guidelines based on noncancer toxicological endpoints.

The US USEPA drinking water program applies a default relative source contribution factor of 0.2 to the reference dose in the absence of chemical-specific information (US USEPA 2020a). This default allows 20% of the reference dose to be applied to drinking water exposure sources and 80% of the reference dose to be reserved for other environmental exposure sources. However, data from the National Health and Nutrition Examination Survey (CDC 2021) provide a source of chemical-specific information on the individual levels of PFHxS, PFHpA, PFNA and PFDA in the blood of the general US population. These blood levels for the general US population are much lower than the serum levels corresponding to each of the four reference doses for PFHxS, PFHpA, PFNA, and PFDA. This suggests that environmental background exposures (e.g., exposures other than drinking water) to these four PFAS account for a smaller portion of the reference dose than the US USEPA default relative source contribution allocates. Thus, the chemical-specific information for PFHxS, PFHpA, PFNA and PFDA supports using a relative source contribution of 0.5. This value is higher than the default of 0.2, but below the 0.8 ceiling recommended by the US USEPA to account for possible unknown sources of exposure to these chemicals (US USEPA 2020a). The Minnesota Department of Health (MDH 2020a,b,c) the Michigan Science Advisory Workgroup (MI SAW 2019), New Jersey Department of

Environmental Protection (NJ DEP 2015), New Hampshire Department of Environmental Services (NH DES 2019), and Washington State Department of Health (WA DOH 2019), have also used a relative source contribution of 0.5 in developing health-based drinking water concentrations for PFAS.

The resulting health-based water concentrations presented in Table 6, ranged from 14 to 57 ppt for PFHxS, 5 to 21 ppt for PFHpA, and 8 to 31 ppt for both PFNA and PFDA. From these health-based water concentrations, the Department provided information to the Drinking Water Quality Council indicating that a chemical-specific maximum contaminant level of 10 ppt each for PFHxS, PFHpA, PFNA and PFDA would be sufficiently protective of human health. The Department also presented information indicating that a level of 10 ppt would be analytically achievable for laboratories and would retain confidence in the analytical result. On May 2, 2022, the Drinking Water Quality Council recommended maximum contaminant levels of 10 ppt each for PFHxS, PFHpA, PFNA, and PFDA.

Table 6 Health-Based Drinking Water Values for PFHxS, PFHpA, PFNA and PFDA

Chemical	Reference Dose (ng/kg/day)	Drinking Water Ingestion Rates (L/kg/day)	Drinking Water Equivalency Level (ppt)	Relative Source Contribution	Health-Based Drinking Water Value (ppt)
PFHxS	4.0	0.143 (infants) 0.047 (lactating women) 0.035 (adults	28-114	0.5	14-57
PFHpA	1.5		10-43		5-21
PFNA	2.2		15-63		8-31
PFDA	2.2		15-63		8-31

The Department evaluated the margin of protection against health effects provided by the recommended maximum contaminant level by comparing the exposure at 10 ppt each of PFHxS, PFHpA, PFNA and PFDA for infants (the population that would receive the largest contaminant dose per body weight at 10 ppt) to the human equivalent doses corresponding to the lowest

exposure that causes health effects in animal studies. The margins of protection are provided in Table 7 and ranged from 300 to 850, meaning that exposures at the proposed maximum contaminant levels would be 300 to 850 times lower than PFHxS, PFHpA, PFNA and PFDA exposures estimated to cause health effects in humans.

Table 7 Margins of Protection at 10 ppt of PFHxS, PFHpA, PFNA and PFDA

Chemical	Effect	Effect Level (human equivalent dose, ng/kg/day)	Drinking Water Dose at 10 ppt (infant, ng/kg/day)	Margin of Protection
PFHxS	Reduced litter size in mice exposed before mating and throughout gestation (Chang et al. 2018, NH DES 2019)	1200	1.4	857
PFHpA	Increased relative liver weight in offspring of mice exposed to PFOA on gestational days 1-17 (Macon et al. 2011)	460	1.4	329
PFNA	Increased relative liver weight in pregnant mice exposed to PFNA (Das et al. 2015, NJ DEP 2015)	431	1.4	308
PFDA	Increased relative liver weight in pregnant mice exposed to PFNA (Das et al. 2015, NJ DEP 2015)	431	1.4	308

The Department concluded that the margins of protection provided by the proposed maximum contaminant level are sufficiently protective of public health. The proposed maximum contaminant levels are also consistent with long-standing US USEPA practice for development of drinking water standards, specifically, that health-based concentrations, or maximum contaminant level goals for contaminants be set at levels where no known or anticipated adverse effect on the health of persons would occur, allowing an adequate margin of safety, and that the maximum contaminant levels be set as close to the maximum contaminant level goals as feasible (US USEPA 2020a).

The Department is amending 10 NYCRR Part 5 to establish individual MCLs for PFHxS, PFHpA, PFNA and PFDA, as well as a combined MCL for PFAS6. The Department is proposing an MCL of 0.0000100 mg/L (10 ppt) for PFHxS, PFHpA, PFNA and PFDA as individual contaminants, and 0.0000300 mg/L (30 ppt) for PFAS6. These MCLs will apply to all public water systems regulated by the Department and provide a sufficient margin of protection against adverse health effects in the most sensitive populations, including fetuses during pregnancy, breastfed infants, and infants bottle fed with formula reconstituted using tap water. In addition, the MCLs provide a sufficient margin of protection for lifetime exposure through drinking water for the general population.

References

ATSDR (Agency for Toxic Substances and Disease Registry). 2021. Toxicological Profile for Perfluoroalkyls. Atlanta, GA: Agency for Toxic Substances and Disease Registry, U.S. Department of Health and Human Services, Public Health Service. May 2021. https://www.atsdr.cdc.gov/toxprofiles/tp200.pdf.

Barry V, Winquist A, Steenland K. 2013. Perfluorooctanoic acid (PFOA) exposures and incident cancers among adults living near a chemical plant. *Environmental Health Perspectives*; 121:1313-1318.

Bartell SM, Calafat AM, Lyu C, Kato K, Ryan PB, Steenland K. 2010. Rate of decline in serum PFOA concentrations after granular activated carbon filtration at two public water systems in Ohio and West Virginia. *Environmental Health Perspectives*; 118(2):222-8.

Butenhoff JL, Ehresman DJ, Chang S-C, Parker GA, Stump DG. 2009. Gestational and lactational exposure to potassium perfluorooctanesulfonate (K+PFOS) in rats: Developmental neurotoxicity. *Reproductive Toxicology*; 27:319-330.

Butenhoff JL, Kennedy Jr GL, Chang S-C, Olsen GW. 2012a. Chronic dietary toxicity and carcinogenicity study with ammonium perfluorooctanoate in Sprague-Dawley rats. *Toxicology*; 298:1-13.

Butenhoff JL, Chang S-C, Olsen GW, Thomford PJ. 2012b. Chronic dietary toxicity and carcinogenicity study with potassium perfluorooctanesulfonate in Sprague Dawley rats. *Toxicology*; 293:1-15.

C8 Science Panel. 2017. The Science Panel Website. http://www.c8sciencepanel.org/index.html.

CA OEHHA (California Office of Environmental Health Hazard Assessment). 2022. Notification Level Recommendation for Perflourohexane Sulfonic Acid in Drinking Water. Accessed 5/12/2022 https://oehha.ca.gov/media/downloads/water/document/pfhxsnl031722.pdf

Cakmak S, Lukina A, Karthikeyan S, Atlas E, Dales R. 2022. The association between blood PFAS concentrations and clinical biochemical measures of organ function and metabolism in participants of the Canadian Health Measures Survey (CHMS). *Sci. Total Environ.*; 827:153900.

CDC (Centers for Disease Control and Prevention). 2021. Fourth National Report on Human Exposure to Environmental Chemicals Vol. 1 (Updated Tables, March 2021). https://www.cdc.gov/exposurereport/index.html

Chang S, Butenhoff JL, Parker GA, Coder PS, Zitzow JD, Krisko RM, Bjork JA, Wallace KB, Seed JG. 2018. Reproductive and developmental toxicity of potassium perfluorohexanesulfonate in CD-1 mice. *Reprod. Toxicol.*; 78:150-168.

Clark, Dawn (The Chemours Company). 2021, March 17. Letter to USEPA, Office of Pollution Prevention and Toxics regarding propanoic acid, 2,3,3,3-tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-CAS RN 13252-13-6 (also known as HFPO-DA). https://heronet.USEPA.gov/heronet/index.cfm/reference/details/reference_id/8631852.

Costa G. 2009. Thirty years of medical surveillance in perfluooctanoic acid production workers. *Journal of Occupational and Envtl Medicine*; 51:364-372.

CT DPH (Connecticut Department of Public Health). 2020. Accessed 5/12/2022 https://www.ctwater.com/water-quality/what-are-pfas

Darrow L, Stein CR, Steenland K. 2013. Serum perfluorooctanoic acid and perfluorooctane sulfonate concentrations in relation to birth outcomes in the mid-Ohio valley, 2005-2010. *Environ. Health Perspectives*; 121:1207-1213.

Darrow L, Groth AC, Winquist A, Shin H-M, Bartell SM, Steenland K. 2016. Modeled perfluorooctanoic acid (PFOA) exposure and liver function in a mid-Ohio Valley community. *Environ. Health Perspectives*; 124:1227–1233.

Das KP, Grey BE, Rosen MB, Wood CR, Tatum-Gibbs KR, Zehr RD, Strynar MJ, Lindstrom AB, Lau C. 2015. Developmental toxicity of perfluorononanoic acid in mice. *Reprod Toxicol;* 51:133-144.

DeWitt JC, Williams WC, Creech NJ, Luebke RW. 2015. Suppression of antigen-specific antibody responses in mice exposed to perfluorooctanoic acid: Role of PPARα and T- and B-cell targeting. *Journal of Immunotoxicology*; 13:38-45.

Dong G-H, Zhang Y-H, Zheng L, Liu W, Jin Y-H, He Q-C. 2009. Chronic effects of perfluorooctane sulfonate exposure on immunotoxicity in adult male C57BL/6 mice. *Archives of Toxicology*; 83:805–815.

DuPont-18405-1307: E.I. du Pont de Nemours and Company. 2010. H-28548: Subchronic Toxicity 90-Day Gavage Study in Mice. OECD Test Guideline 408. Study conducted by E.I. du Pont de Nemours and Company (Study Completion Date: February 19, 2010), Newark, DE.

ECHA (European Chemical Agency). 2020. Registration Dossier for 3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctanesulphonic acid (CAS No. 27619-27-2). Published in accordance with the Registration, Evaluation, Authorisation and Restriction of Chemicals (i.e., REACH) legislation. https://echa.europa.eu/registration-dossier/-/registered-dossier/24637/7/6/2

EFSA (European Food Safety Authority). 2011. Scientific Opinion of the Panel on Food Contact Materials, Enzymes, Flavourings and Processing Aids on the safety evaluation of the substance, 3H-perfluoro-3-[(3-methoxy-propoxy)propanoic acid], ammonium salt, CAS No. 958445-44-8, for use in food contact materials. EFSA Journal.

EFSA (European Food Safety Authority). 2018. Panel on Contaminants in the Food Chain, Scientific Opinion: Risk to human health related to the presence of perfluorooctane sulfonic acid and perfluorooctanoic acid in food. EFSA Journal; 16:5194.

EFSA (European Food Safety Authority). 2020. Scientific Opinion of the Panel on Contaminants in the Food Chain: Risk to human health related to the presence of perfluoroalkyl substances in food. EFSA Journal. https://doi.org/10.2903/j.efsa.2020.6223

Fei C, Weinberg CR, Olsen J. 2012. Commentary: Perfluorinated chemicals and time to pregnancy: A link based on reverse causation? *Epidemiology*; 23:264-266.

Feng Y, Bai Y, Lu Y, Chen M, Fu M, Guan X, Cao Q, Yuan F, Jie J, Li M, Meng H, Wang C, Hong S, Zhou Y, Zhang X, He M, Guo H. 2022. Plasma perfluoroalkyl substance exposure and incidence risk of breast cancer: A case-cohort study in the Dongfeng-Tongji cohort. *Environ Pollut*; 306:119345.

Gleason JA, Post GB, Fagliano JA. 2015. Associations of perfluorinated chemical serum concentrations and biomarkers of liver function and uric acid in the US population (NHANES), 2007-2010. *Envtl. Research*; 136:8-14.

Gordon SC. 2011. Toxicological evaluation of ammonium 4,8-dioxa-3H-perfluorononanoate, a new emulsifier to replace ammonium perfluorooctanoate in fluoropolymer manufacturing. *Regul Toxicol Pharmacol*. 2011 Feb;59(1):64-80.

Grandjean P, Andersen EW, Budtz-Jørgensen E, Nielsen F, Mølbak K, Weihe P, Heilmann C. 2012. Serum vaccine antibody concentrations in children exposed to perfluorinated compounds. *Journal of the Am. Med. Assn*; 307:391-397.

Grandjean P, Heilmann C, Weihe P, Flemming N, Mogensen UB, Budtz-Jørgensen E. 2017. Serum vaccine antibody concentrations in adolescents exposed to perfluorinated compounds. *Envtl. Health Perspectives*; 125:077018.

Guo J, Zhang J, Wang Z, Zhang L, Qi X, Zhang Y, Chang X, Wu C, Zhou Z. 2021. Umbilical cord serum perfluoroalkyl substance mixtures in relation to thyroid function of newborns: Findings from Sheyang Mini Birth Cohort Study. *Chemosphere*; 273:129664.

Han J-S, Jang S, Son H-Y, Kim Y-B, Kim Y, Noh J-H, Kim M-J, Lee B-S. 2020. Subacute dermal toxicity of perfluoroalkyl carboxylic acids: comparison with different carbon-chain lengths in human skin

equivalents and systemic effects of perfluoroheptanoic acid in Sprague Dawley rats. *Archives of Toxicology*; 94:523-539.

Hardell E, Kärrman A, van Bavel B, Bao J, Carlberg M, Hardell L. 2014. Case-control study on perfluorinated alkyl acids (PFAAs) and the risk of prostate cancer. *Environ Int.*; 63:35-9.

Kato H, Fujii S, Takahashi M, Matsumoto M, Hirata-Koizumi M, Ono A, Hirose A. 2015. Repeated dose and reproductive/developmental toxicity of perfluorodecanoic acid in rats. *Environ Toxicol*. 30(11):1244

Kvalem HE, Nygaard UC, Lødrup Carlsen KC, Carlsen KH, Haug LS, Granum B. 2020 Perfluoroalkyl substances, airways infections, allergy and asthma related health outcomes - implications of gender, exposure period and study design. *Environ Int.*; 134:105259.

Lau C, Thibodeaux JR, Hanson RG, Narotsky MG, Rogers JM, Lindstrom AB, Strynar MJ. 2006. Effects of perfluorooctanoic acid exposure during pregnancy in the mouse. *Toxicological Sciences*; 90:510-518.

Li Y, Xu Y, Scott K, Lindh C, Jakobsson K, Fletcher T. 2019. Half-lives of PFOA, PFPeS, PFHxS, PFHpS and PFOS after end of exposure to contaminated drinking water. *Environmental Epidemiology*; 3:237.

Li Z, Li C, Wen Z, Yan H, Zou C, Li Y, Tian L, Lei Z, Li H, Wang Y, Zhong Y, G R-S. 2021. Perfluoroheptanoic acid induces Leydig cell hyperplasia but inhibits spermatogenesis in rats after pubertal exposure. *Toxicology.* 448(2021): 152633

Loveless S, Finlay C, Everds NE, Frame SR, Gillies PJ, O'Connor JC, Powley CR, Kennedy GL. 2006. Comparative responses of rats and mice exposed to linear/branched, linear, or branched ammonium perfluorooctanoate (APFO). *Toxicology*; 220:203–217.

Luebker DJ, Case MT, York RG, Moore JA, Hansen KJ, Butenhoff JL. 2005. Two-generation reproduction and cross-foster studies of perfluorooctanesulfonate (PFOS) in rats. *Toxicology*; 2015:126-148.

MA DEP (Massachusetts Department of Environmental Protection). 2019. Technical Support Document: Per- and Polyfluoroalkyl Substances (PFAS): An Updated Subgroup Approach to Groundwater and Drinking Water Values. Accessed 5/10/2022 https://www.mass.gov/doc/per-and-polyfluoroalkyl-substances-pfas-an-updated-subgroup-approach-to-groundwater-and/download

Macon MB, Villanueva LR, Tatum-Gibbs K, Zehr RD, Strynar MJ, Stanko JP, White SS, Helfant L, and Fenton SE. 2011. Prenatal perfluorooctanoic acid exposure in CD-1 mice: Low dose developmental effects and internal dosimetry. *Toxicological Sciences;* 121(1):134–145.

MDH (Minnesota Department of Health). 2008. Statement of Need and Reasonableness (SONAR) in the Matter of Proposed Rules Relating to Health Risk Limits of Groundwater. Accessed 5/12/2022 https://www.leg.mn.gov/archive/sonar/SONAR-03733.pdf#page=2 .

MDH (Minnesota Department of Health). 2020a. Toxicological Summary for: Perfluorooctanoate. Accessed 5/16/2022 https://www.health.state.mn.us/communities/environment/risk/docs/guidance/gw/pfoa.pdf

MDH (Minnesota Department of Health). 2020b. Toxicological Summary for: Perfluorooctane sulfonate. Accessed 5/16/2022 https://www.health.state.mn.us/communities/environment/risk/docs/guidance/gw/pfos.pdf

MDH (Minnesota Department of Health). 2020c. Toxicological Summary for: Perfluorohexane sulfonate. Accessed 5/16/2022 https://www.health.state.mn.us/communities/environment/risk/docs/guidance/gw/pfhxs.pdf

ME DHHS (Maine Department of Human Health Services). 2021 http://www.mainelegislature.org/legis/bills/getPDF.asp?paper=SP0064&item=3&snum=130

MI SAW (Michigan Science Advisory Workgroup). 2019. Health-Based Drinking Water Value Recommendations for PFAS in Michigan. Accessed 5/12/2022 https://www.michigan.gov/pfasresponse/-/media/Project/Websites/PFAS-Response/Documents/MPART/Reports/2019-Health-Based-Drinking-Water-Value-Recommendations-PFAS-MI.pdf

NH DES (New Hampshire Department of Environmental Services). 2019. Technical Background Report for the June 2019 Proposed Maximum Contaminant Levels (MCLs) and Ambient Groundwater Quality Standards (AGQSs) for Perfluorooctane sulfonic Acid (PFOS), Perfluorooctanoic Acid (PFOA), Perfluorononanoic Acid (PFNA), and Perfluorohexane sulfonic Acid (PFHxS). Accessed 5/10/2022 https://www4.des.state.nh.us/nh-pfas-investigation/wp-content/uploads/June-PFAS-MCL-Technical-Support-Document-FINAL.pdf

NJ DEP (New Jersey Department of Environmental Protection) & New Jersey Drinking Water Quality Institute Health Effects Subcommittee. 2015. Health-Based Maximum Contaminant Level Support Document: Perfluorononanoic Acid (PFNA). Accessed 5/12/2022 https://www.nj.gov/dep/watersupply/pdf/pfna-health-effects.pdf

NJ DEP (New Jersey Department of Environmental Protection). 2019a. Technical Support Document: Interim Specific Ground Water Criterion for Perfluorooctanoic Acid (PFOA, C8). https://www.nj.gov/dep/dsr/supportdocs/PFOA_TSD.pdf .

NJ DEP (New Jersey Department of Environmental Protection). 2019b. Technical Support Document: Interim Specific Ground Water Criterion for Perfluorooctane Sulfonate (PFOS). https://www.nj.gov/dep/dsr/supportdocs/PFOS_TSD.pdf .

NTP (National Toxicology Program). 2016. Monograph on Immunotoxicity Associated with Exposure to Perfluorooctanoic acid (PFOA) and Perfluorooctane Sulfonate (PFOS). Research Triangle Park, NC: National Toxicology Program https://ntp.niehs.nih.gov/ntp/ohat/pfoa_pfos/pfoa_pfosmonograph_508.pdf .

NTP (National Toxicology Program). 2018a. TOX-96: 1-Perfluorobutanesulfonic acid (375-73-5), Potassium perfluorohexanesulfonate (3871-99-6), Perfluorooctane sulfonate (1763-23-1), WY-14643 (50892-23-4). Chemical Effects in Biological Systems (CEBS). Research Triangle Park, NC (USA): National Toxicology Program (NTP). Accessed 2022-03-08 https://cebs.niehs.nih.gov/cebs/publication/TOX-96

NTP (National Toxicology Program). 2018b. TOX-97: Perfluorohexanoic acid (307-24-4), Perfluorooctanoic acid (335-67-1), Perfluorononanoic acid (375-95-1), Perfluorodecanoic acid (335-76-2), WY-14643 (50892-23-4). Chemical Effects in Biological Systems (CEBS). Research Triangle Park,

NC (USA): National Toxicology Program (NTP). Accessed 2022-03-08. https://cebs.niehs.nih.gov/cebs/publication/TOX-97NTP

NTP (National Toxicology Program). 2020. NTP technical report on the toxicology and carcinogenesis studies of perfluorooctanoic acid (CASRN 335-67-1) administered in feed to Sprague Dawley (Hsd:Sprague Dawley SD) rats. https://doi.org/10.22427/NTP-TR-598 .

NYS DOH (New York State Department of Health) October 17, 2018 https://www.health.ny.gov/environmental/water/drinking/dwqc/

Olsen GW, Burris JM, Burlew MM, Mandel JH. 2003. Epidemiologic assessment of worker serum perfluorooctanesulfonate (PFOS) and perfluorooctanoate (PFOA) concentrations and medical surveillance examinations. *Journal of Occupational and Envtl. Medicine*; 45:260-270.

Olsen GW, Burris JM, Ehresman DJ, Froehlich JW, Seacat AM, Butenhoff JL, Zobel LR. 2007. Half-life of serum elimination of perfluorooctanesulfonate,perfluorohexanesulfonate, and perfluorooctanoate in retired fluorochemical production workers. *Environ Health Perspect*; 115(9):1298-305.

Oregon Health Authority. Per – and Polyfluoroalkyl Substances (PFAS) PFAS Drinking Water Health Advisory Levels. Accessed 5/12/2022 https://www.oregon.gov/oha/PH/HEALTHYENVIRONMENTS/DRINKINGWATER/OPERATIONS/Pages/PFAS.aspx

RI (Rhode Island) 2021. PFAS in Drinking Water, Groundwater and Surface Waters. http://webserver.rilin.state.ri.us/BillText21/SenateText21/S0107.pdf

Shearer JJ, Callahan CL, Calafat AM, Huang W-Y, Jones RR, Sabbisetti VS, Freedman ND, Sampson JN, Silverman DT, Purdue MP, Hofmann JN. 2021. Serum Concentrations of Per- and Polyfluoroalkyl Substances and Risk of Renal Cell Carcinoma. *Journal of the Natl. Cancer Inst.*; 113(5):580-587.

Shen M, Xiao Y, Huang Y, Jing D, Su J, Luo D, Duan Y, Xiao S, Li J, Chen X. 2022. Perfluoroalkyl substances are linked to incident chronic spontaneous urticaria: A nested case-control study. *Chemosphere*; 287(Pt 3):132358.

Sheng N, Zhou X, Zheng1 F,·Pan Y, Guo X ,·Guo Y, Sun Y. 2017. Comparative hepatotoxicity of 6:2 fluorotelomer carboxylic acid and 6:2 fluorotelomer sulfonic acid, two fluorinated alternatives to longchain- perfluoroalkyl acids, on adult male mice. *Arch Toxicol*; 91(8):2909–2919.

Shi Y, Vestergren R, Xu L, Zhou Z, Li C, Liang Y, Cai Y. 2016. Human Exposure and Elimination Kinetics of Chlorinated Polyfluoroalkyl Ether Sulfonic Acids (Cl-PFESAs). *Environ. Sci. Technol.*; 50(5):2396-2404.

Steenland K, Tinker S, Frisbee S, Ducatman A, Vaccarino V. 2009. Association of perfluorooctanoic acid and perfluorooctane sulfonate with serum lipids among adults living near a chemical plant. *Am. Journal of Epidemiology*; 170:1268-1278.

Steenland K, Woskie S. 2012. Cohort mortality study of workers exposed to perfluorooctanoic acid. *Am. Journal of Epidemiology;* 176:909-917.

Steenland K, Zhao L, Winquist A, Parks C. 2013. Ulcerative colitis and perfluorooctanoic acid (PFOA) in a highly exposed population of community residents and workers in the mid-Ohio valley. *Envtl. Health Perspectives*; 121: 900-905.

Takahashi M, Ishida S, Hirata-Koizumi M, Ono A, Hirose A. 2014. Repeated dose and reproductive/developmental toxicity of perfluoroundecanoic acid in rats. *The Journal of Toxicological Sciences*; 39(1):97-108.

US USEPA (United States Environmental Protection Agency). 1984. National Primary Drinking Water Regulations: Volatile Synthetic Organic Chemicals, 49 Fed Reg 24330-24355.

US USEPA (United States Environmental Protection Agency). 2000. Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health USEPA-822-B-00-004, https://www.USEPA.gov/sites/production/files/2018-10/documents/methodology-wqcprotection-hh-2000.pdf

US USEPA (United States Environmental Protection Agency). 2016a. Health Effects Support Document for Perfluorooctanoic Acid (PFOA), USEPA 822-R-16-003. https://www.USEPA.gov/sites/production/files/2016-05/documents/pfoa_hesd_final_508.pdf .

US USEPA (United States Environmental Protection Agency). 2016b. Health Effects Support Document for Perfluorooctane Sulfonate (PFOS), USEPA 822-R-16-002. https://www.USEPA.gov/sites/production/files/2016-05/documents/pfos_hesd_final_508.pdf .

US USEPA (United States Environmental Protection Agency). 2016c. Fact Sheet: PFOA and PFOS Drinking Water Health Advisories. Accessed 5/17/2022 https://www.USEPA.gov/sites/default/files/2016-06/documents/drinkingwaterhealthadvisories_pfoa_pfos_updated_5.31.16.pdf

US USEPA (United States Environmental Protection Agency). 2019a. Update for Chapter 3 of the Exposure Factors Handbook: Ingestion of Water and Other Select Liquids. Accessed 5/17/2022 https://www.USEPA.gov/sites/default/files/2019-02/documents/efh_-_chapter_3_update.pdf

US USEPA (United States Environmental Protection Agency). 2019b. Method 533: Determination of Per- and Polyfluoroalkyl Substances in Drinking Water by Isotope Dilution Anion Exchange Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry. USEPA Document Number 815-B-19-020. December 2019. https://www.USEPA.gov/dwanalyticalmethods/method-533-determination-and-polyfluoroalkyl-substances-drinking-water-isotope

US USEPA (United States Environmental Protection Agency). 2020a. USEPA Regulates Drinking Water Contaminants https://www.USEPA.gov/sdwa/how-USEPA-regulates-drinking-water-contaminants
US USEPA (United States Environmental Protection Agency). 2020b. UCMR5 Laboratory Approval Manual. Version 1.0. USEPA Document Number 815-B-20-007. December 2020. https://www.USEPA.gov/dwucmr/laboratory-approval-program-unregulated-contaminant-monitoring-rule-ucmr-5

US USEPA (United States Environmental Protection Agency). 2021a. Human Health Toxicity Values for Hexafluoropropylene Oxide (HFPO) Dimer Acid and Its Ammonium Salt (CASRN 13252-13-6 and CASRN 62037-80-3): Also Known as "GenX Chemicals." USEPA Document Number 822R-21-010. October 2021.

US USEPA (United States Environmental Protection Agency). 2021b. IRIS Toxicological Review of Perfluorobutanoic Acid (PFBA) and Related Salts (Public Comment and External Review Draft, 2021). U.S. Environmental Protection Agency, Washington, DC, USEPA/635/R-20/424, 2021.

US USEPA (United States Environmental Protection Agency). 2021c. Human Health Toxicity Values for Perfluorobutane Sulfonic Acid (CASRN 375-73-5) and Related Compound Potassium Perfluorobutane Sulfonate (CASRN 29420-49-3). USEPA Document Number USEPA/600/R-20/345F. April 2021.

US USEPA (United States Environmental Protection Agency). 2022. IRIS Toxicological Review of Perfluorohexanoic Acid (PFHxA) and Related Salts (Public Comment and External Review Draft). U.S. Environmental Protection Agency, Washington, DC. USEPA Document Number USEPA/635/R-21/312. February 2022.

Velarde MC, Chan AFO, Sajo MEJV, Zakharevich I, Melamed J, Uy GLB, Teves JMY, Corachea AJM, Valparaiso AP, Macalindong SS, Cabaluna ND, Dofitas RB, Giudice LC, Gerona RR. 2022. Elevated levels of perfluoroalkyl substances in breast cancer patients within the Greater Manila Area. *Chemosphere*; 286(Pt 1):131545.

Verner M-A, Loccisano AE, Morken N-H, Yoon M, Wu H, McDougall R, Maisonet M, Marcus M, Kishi R, Miyashita C, Chen M-H, Hsieh W-S, Andersen ME, Clewell 3rd HJ, Longnecker MP. 2015. Associations of perfluoroalkyl substances (PFAS) with lower birth weight: An evaluation of potential confounding by glomerular filtration rate using a physiologically based pharmacokinetic model (PBPK). *Envtl. Health Perspectives*; 123:1317-1324.

VT DOH (Vermont Department of Health). 2018. Drinking Water Health Advisory for Five PFAS (per- and polyfluorinated alkyl substances). Accessed 5/12/2022 https://www.healthvermont.gov/sites/default/files/documents/pdf/ENV_DW_PFAS_HealthAdvisory.pdf

WA DOH (Washington Department of Health). 2019. Draft Recommended State Action Levels for Per- and Polyfluoroalkyl Substances (PFAS) in Drinking Water: Approach, Methods and Supporting Information. Accessed 10/13/2021 at: https://www.doh.wa.gov/Portals/1/Documents/4200/PFASToxicologicalAssessment.pdf

Wang B, Fu J, Gao K, Liu Q, Zhuang L, Zhang G, Long M, Na J, Ren M, Wang A, Liang R, Shen G, Li Z, Lu Q. 2021. Early pregnancy loss: Do Per- and polyfluoroalkyl substances matter? *Environ Int*.; 157:106837.

Wielsøe M, Kern P, Bonefeld-Jørgensen EC. 2017. Serum levels of environmental pollutants is a risk factor for breast cancer in Inuit: a case control study. *Environ Health.*; 16(1):56.

Winquist and Steenland. 2014. Perfluorooctanoic acid exposure and thyroid disease in community and worker cohorts. *Epidemiology*; 25:255-264.

Xu Y, Fletcher T, Pineda D, Lindh CH, Nilsson C, Glynn A, Vogs C, Norstrom K, Lilja K, Jakobsson K, Li Y. 2020. Serum half-lives for short- and long-chain perfluoroalkyl acids after ceasing exposure from drinking water contaminated by firefighting foam. *Environmental Health Perspectives*; 128(7):077004-1.

Zhang Y, Beesoon S, Zhu L, Martin JW. 2013. Biomonitoring of perfluoroalkyl acids in human urine and estimates of biological half-life. *Environ Sci Technol*; 47(18):10619-10627.

Zhang H, Zhou NS, Cui R, Cui Q, Guo H, Guo Y, Sun Y, Dai J. 2018. Subchronic Hepatotoxicity Effects of 6:2 Chlorinated Polyfluorinated Ether Sulfonate (6:2 Cl-PFESA), a Novel Perfluorooctanesulfonate (PFOS) Alternative, on Adult Male Mice. *Environ. Sci. Technol.*; 52(21):12809.

Costs:

Compliance Costs for the Implementation of, and Continuing Compliance with the Regulation to the Regulated Entity

The proposed regulation will require compliance with emerging contaminant monitoring, emerging contaminant notification levels and monitoring and treatment associated with the proposed PFAS MCLs. An overview of cost information for each of these elements is presented below.

Emerging Contaminants Monitoring Requirements (ECMR):

PHL § 1112, and thus the ECMR, applies to each PWS that serves at least five service connections used by year-round residents or that regularly serves at least 25 year-round residents, defined in the SSC as a community water system (CWS); or a PWS that regularly serves at least twenty-five of the same people, four hours or more per day, for four or more days per week, for 26 or more weeks per year, defined in the SSC as a nontransient noncommunity water system (NTNC). The ECMR applies to approximately 3,550 PWS that may be either privately owned or publicly owned. The cost of the ECMR includes the cost of laboratory analysis for each PWS as well as the cost to the Department for administering the ECMR program.

The ECMR will be modeled after the Environmental Protection Agency's (USEPA) fifth Unregulated Contaminant Monitoring Rule, 40 CFR 141.40 (UCMR5), to allow samples collected under UCMR5 to be used to satisfy the requirements of the ECMR. Consistent with UCMR5, ECMR will require that one sample set be collected per entry point. It is estimated that approximately 3,550 PWS will be required to monitor at 5,247 locations. All PWS must use USEPA Method 533: Determination of Per- and Polyfluoroalkyl Substances in Drinking Water by Isotope Dilution Anion Exchange Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry to comply with this requirement. The cost of analysis for this method may vary based on the laboratory selected, and whether a field reagent blank is analyzed in accordance with the approved method. It is estimated to cost between $350 and $700 per sample. Estimated sampling costs are based on estimates prepared by USEPA and surveys of laboratories certified by the ELAP. This estimate does not include the cost of labor to collect and transport the sample. The cost per average water system, based on 1.7 entry points per system is between $595 and $1,190 per PWS; total costs will be proportional to the number of entry points. The number of entry points does not always correspond with system size, meaning, large water systems may have one entry point where small systems may have multiple. Table 8 provides a range of sampling costs based on the estimated number of samples that will be required.

Table 8: Impacts on the regulated community – Emerging Contaminants Monitoring Requirements

System Type	Number of water systems	Estimated number of samples	Low cost per sample ($350)	High cost per sample ($700)
Community Water Systems	2,837	4,797	1,678,950	3,357,900
Nontransient noncommunity	713	1,084	379,400	758,800
Total			$2,058,350	$4,116,700

The UCMR5 requires each PWS serving more than 10,000 people to monitor at their own expense. For PWS serving between 3,300 and 10,000 people, amendments to the American Water Infrastructure Act (AWIA) Section 2021(a) required that USEPA collect monitoring data from all systems serving more than 3,300 people "subject to the availability of appropriations". Similarly, USEPA is required under the Safe Drinking Water Act (SDWA) Section 1445(a)(2)(C)(ii) to pay the "reasonable cost of such testing and laboratory analysis" for all applicable PWS serving 25 to 10,000 people. This means that if appropriations are made, the USEPA will pay the cost of analysis for each PWS that serves between 3,300 and 10,000 people as well as a small national subset of PWS serving 25 to 3,300 people.

The effective date of this ECMR program has been established to align with the UCMR5 to ensure that the cost of analysis is minimized by allowing a PWS to use the same samples under both programs. For the ECMR, pursuant to PHL § 1112, samples must be collected by a laboratory certified by the Department's Environmental Laboratory Approval Program (ELAP). Not all laboratories certified under UCMR5 are ELAP certified. There are no similar programs available currently for each PWS that serves 3,300 people or fewer. These water systems generally do not participate in UCMR5 and will be required to pay for their own monitoring under the ECMR.

The cost of continued compliance will depend on many factors, including the concentration of compounds detected during initial monitoring and whether any MCLs are exceeded. The cost per sample is expected to be the same for continued compliance as it is for initial monitoring.

Notification Levels (NL):

There are 3,549 PWS that will be required to monitor for emerging contaminants and must provide public notification when levels are confirmed to be at or above the notification level. The Department estimates that 0.12% or four (4) PWS that monitor for emerging contaminants will have monitoring results that are equal to or exceed the category 1 notification level of 30 ppt and 2.5% or 87 PWS will have monitoring results that are equal to or exceed the notification level of 100 ppt. The Department estimates a notification cost of $5 per service connection unit including labor, fees and postage, however larger systems may pay a much lower per unit cost for notification. Similarly, a water system that can hand deliver notices may pay a lower per unit cost. Many PWS that will provide notification are currently providing public notification due to an MCL exceedance. The cost per water system will vary significantly depending on the size of the water system and the method of notification selected. Table 9 demonstrates the expected number of PWS that will exceed both the category 1 and category 2 notification levels.

Table 9 – Expected Number of Systems at or Above the Notification Level

System Type	Number of water systems	Category 1 Notifications	Category 2 Notifications
Community Water Systems	2,837	3	70
Nontransient noncommunity	713	1	17
Total		4	87

Maximum Contaminant Levels (MCL):

Community Water Systems (CWS) and non-transient noncommunity (NTNC) water systems will begin monitoring for PFNA, PFDA, PFHxS, PFHpA beginning April 1 of 2023. There are approximately 3,000 PWS that will be required to routinely monitor for these

compounds. Water systems that have previously monitored for these compounds and have confirmed the data by collecting between one and three follow-up samples can use existing data to determine whether an MCL is exceeded. If a PWS has not monitored for these compounds previously or if the presence of these compounds has not been confirmed, the PWS will be required to collect samples in 2023. Each PWS will be required to comply with the MCL by completing a State approved corrective action by January 1, 2025. A PWS that is not in compliance by this date will be considered in violation of the MCL.

The proposed regulation also modifies the analytical and reporting requirements. Effective April 1, 2023, each PWS must use USEPA 537.1: Determination of Selected Per- and Polyfluorinated Alkyl Substances in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS) or USEPA 533: Determination of Per- and Polyfluoroalkyl Substances in Drinking Water by Isotope Dilution Anion Exchange Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry. All compounds in the approved analytical method must be reported to the State by the laboratory conducting the analysis to ensure that the State can review quality assurance/quality control information and any case narrative prepared by the laboratory. This change in monitoring requirements will require any laboratory that subcontracts analytical services to provide documentation from the laboratory conducting the analysis in addition to any summary that is prepared. The Department estimates that the cost of the full analytical method using either USEPA 537.1 or USEPA 533 will be between $350 and $700 per sample. It is difficult to estimate the cost for each water system, since each water system has a different number of sources. In addition, the total number of samples from each source that a PWS must collect is unknown since the number of samples

required is based on compliance monitoring results, with less sampling required when no contaminants are detected versus when contaminants are detected above and below the MCL.

This proposal includes modifications which clarify requirements that initial monitoring for PFAS compounds are at the source for all water systems regardless of size. The proposal gives the State discretion to move the compliance point to entry point based on specific system operation or the presence of treatment for PFAS compounds. There are 6,312 active sources in the Safe Drinking Water Information System (SDWIS). Table 10 provides a range of sample costs by source water type, based on the minimum number of samples required.

Table 10: Analytical Costs of sampling for PFNA, PFDA, PFHxS, PFHpA and PFAS6 for 3,000 public water systems

Source Type	Minimum Number of samples required	Number of sources	Cost per source type low ($)	Cost per source type high ($)
Surface Water	4	306	428,400	856,800
Ground Water	2	5,888	4,121,600	8,243,200
Spring	2	111	77,700	155,400
Other	4	7	9,800	19,600
Total		**6,312**	**$4,637,500**	**$9,275,000**

Costs to Private Regulated Parties:

There are approximately 7,200 privately owned PWS in NYS. Of these, an estimated 2,100 systems serve residential suburban areas, manufactured housing communities and apartment buildings, residential and non-residential health care facilities, industrial and commercial buildings, private schools and colleges, and other facilities. The remaining 5,100 privately owned PWS serve restaurants, convenient stores, motels, campsites and other transient systems.

Emerging Contaminants Monitoring Requirements (ECMR):

The ECMR apply to approximately 3,500 CWS and NTNC. Mobile home parks, homeowners' associations that operate their own PWS, daycares, private schools, office buildings and investor-owned utilities are the types of private parties regulated by the Department and will be required to monitor for emerging contaminants. The exact costs for monitoring for emerging contaminants for each PWS, including privately-owned PWS, cannot be determined due to several variables. Monitoring costs for a privately-owned PWS is dependent upon the system size, the number of affected entry points and the levels of each contaminant. The Department does not maintain ownership records for each PWS, but it is estimated that a significant percentage of the approximately 2,200 PWS that serve less than 1,000 people are privately owned. Pursuant to PHL § 1112 the proposed regulation requires sampling of water systems that serve as few as five service connections and serve fewer than 25 people. These very small systems are typically privately owned and represent primarily mobile home parks or a small group of residents with a common source of drinking water. There are approximately 550 very small PWS that will be required to comply with these requirements. The total cost to the 550 very small water systems is anticipated to be $327,250-$654,500 or between $595 and $1,190 per water system based on 1.7 entry points. The total estimated cost to water systems that serves less than 1,000 people is $1,309,000 and $2,618,000, or similarly between $595 and $1,190 per PWS based on an average of 1.7 entry points.

Notification Levels (NL):

The cost of notices is estimated to be $5 per service connection, depending on the size of the PWS, which includes privately owned PWS.

Maximum Contaminant Levels (MCL):

The costs to private regulated parties include monitoring and notification costs for community water systems and nontransient noncommunity water systems; routine compliance monitoring for PFAS6, and treatment costs for each PWS that exceeds the MCLs.

Monitoring and treatment costs for each privately-owned PWS is dependent upon the system size, the number of affected entry points/sources and the concentration of each contaminant. The exact costs to PWS, including privately-owned PWS, for monitoring and treatment for emerging contaminants as well as PFAS6 cannot be determined due to several variables. The cost for a single sample for emerging contaminants is between $350-$700 per sample using USEPA method 537.1 or 533, including the cost of field reagent blank.

It is estimated that 14% of water systems would exceed the PFAS6 MCL of 30 ppt; however, many of these PWS already exceed the MCL for PFOA and/or PFOS or have an enforcement deferral for these compounds and are working towards or have achieved corrective action that is expected to also address these compounds. It is expected that an additional 46 PWS or 1.56% will exceed the MCL of 30 ppt for PFAS6. It is expected that approximately 2.14% of PWS will either exceed the proposed MCL of 10 ppt for PFHxS, PFHpA, PFNA and PFDA or the PFAS6 MCL, for a total of 64 PWS. These PWS may be either publicly owned or private.

The USEPA has developed a Work Breakdown Structure (WBS) cost estimating tool for different PFAS treatment options. Depending on the treatment option selected and the size of the system, USEPA's WBS tool provides estimated annualized costs per system size as shown in Table 11.

Table 11 – Estimate Annualized Costs for Treatment

Total Annualized Costs (Direct, indirect and add-on capital plus annual operation and maintenance)		Population Served ≤500	Population Served 501 to 3,300	Population Served 3,301 to 10,000	Population Served 10,001 to 50,000	Population Served 50,001 to 100,000	Population Served 100,001 to 500,000
Treatment Costs: Granular Activated Carbon	Midpoint Estimate	$25,000	$110,900	$412,200	$1,246,400	$2,799,400	$8,947,800
	Range	$19,800 to $30,300	$87,700 to $134,000	$335,000 to $489,500	$1,016,000 to $1,476,900	$2,281,900 to $3,316,800	$7,255,600 to $10,640,000
Treatment Costs: Ion Exchange	Midpoint Estimate	$19,500	$74,000	$262,400	$869,700	$2,036,400	$7,339,100
	Range	$15,000 to $24,000	$59,100 to $88,900	$212,400 to $312,300	$692,700 to $1,046,600	$1,623,400 to $2,449,300	$5,777,400 to $8,900,800
Treatment Costs: Point of Use Reverse Osmosis	Midpoint Estimate	$17,800	$128,500	$449,600	Not applicable	Not applicable	Not applicable
	Range	$1,700 to $33,800	$33,800 to $223,100	$223,100 to $676,000			

These estimated costs are based on 2020 dollars and incorporate a 3% discounting rate over approximately 20 years. Given recent supply-chain challenges for different components of these treatment systems and higher inflationary pressures, actual annualized estimates could be higher than the ranges presented by USEPA.

Each PWS will likely make rate adjustments to accommodate these additional capital and operational costs. Municipally owned PWSs may qualify for federal or state loans or grants to offset some of the capital investment for treatment system components or upgrades. Most privately owned water systems do not qualify for grants but are able to take advantage of loans.

Cost to the Department of Health:

Emerging Contaminants Monitoring Requirements:

The Department will incur costs to implement the ECMR. The Department's responsibilities will involve regulatory oversight, program implementation, enforcement and limited sampling assistance to the smallest water systems. Three employees will need to be hired at a cost of $397,000 to the Department. This cost includes salary, fringe and indirect costs. The

Department will also need to procure equipment for data management at a cost of $285,000. The total anticipated cost to the Department is $682,000.

Notification Levels:

The Department will incur costs associated with tracking public notices and completing enforcement if notices are not delivered. The cost of these services is included in the $397,000 cost for personnel detailed above.

Maximum Contaminant Levels:

The proposed regulation will also create administrative costs to the Department and local health departments related to implementation and oversight of the drinking water monitoring requirements including review and approval of sampling schedules; review and reporting of sample results; providing technical assistance to the PWS; review and approval of engineering plans (i.e., treatment plans); and activities associated with enforcement and public notification. The cost to the State for these services is included in the $397,000 cost for personnel detailed above. The cost to local health departments that provide environmental health services on behalf of the Department will vary significantly, depending on the number of PWS in a county and how many of the PWS exceed the MCL.

Additionally, the Department and NYS Department of Environmental Conservation (NYSDEC) will incur costs associated with the investigation, remediation, and long-term monitoring associated with the release of these contaminants.

Although the proposed regulations do not apply to private wells, costs will be incurred by NYSDEC, as the lead agency for investigating, remediating, and monitoring of contaminated

sites, as the MCLs will be used by the NYSDEC as guidance to determine whether a private well in NYS is contaminated by PFHxS, PFHpA, PFNA, PFDA and/or PFAS6. There are an estimated 800,000 private water supply wells in NYS. At this time, it is not possible to estimate the number of private wells that might be affected by contamination and therefore costs to NYSDEC cannot be determined.

Cost to State and Local Government:

The regulations will apply to local governments—including towns, villages, counties, cities, and authorities or area wide improvement districts—which own or operate a PWS subject to this regulation. There are approximately 1,500 PWS that are owned or operated by local governments.

In addition, State agencies that operate a PWS will be required to comply with the proposed amendments. There are approximately 250 State-owned or operated facilities with a PWS. Examples of such facilities are State-owned schools, office buildings, correctional facilities, Thruway service areas, and any other State-owned structure or property.

Emerging Contaminants Monitoring Requirements:

The cost per average water system, based on 1.7 entry points per system is between $595 and $1,190 per water system. As a result, the total cost to State and local government is expected to be between $1,041,250 and $2,082,500. Alignment with the Federal UCMR5 will decrease the overall cost burden to local government, by reducing duplication of effort. Local governments with water systems that serve 3,300 and fewer people will be required to pay for monitoring as well as a PWS that serves between 3,300 and 10,000 that either do not have USEPA funded

samples analyzed by a ELAP certified laboratory or if USEPA is unable to support the analytical costs associated with UCMR5 for a PWS that serve between 3,300 and 10,000 people.

Notification Levels:

Department estimates a notification cost of $5 per service connection unit including labor, fees and postage; however, larger systems may pay a much lower per unit cost for notification. Similarly, a water system that can hand deliver notices may pay a lower per unit cost. The cost per water system will vary significantly depending on the size of the water system and the method of notification selected.

Maximum Contaminant Levels:

The costs to state and local government owned PWS include monitoring and notification costs for CWS and NTNC water systems; routine compliance monitoring for PFAS6, and treatment costs for each PWS that exceeds the MCLs. There are approximately 1,500 PWS owned by local government and 250 PWS owned by State government.

Monitoring and treatment costs for each PWS owned by local government is dependent upon the system size, the number of affected entry points/sources and the concentration of each contaminant. The exact costs for monitoring and treatment for emerging contaminants as well as PFAS6 for the PWS, including a PWS owned by local government, cannot be determined due to several variables. The cost for a single sample is between $350-$700 per sample using USEPA Method 537.1 or 533, including the cost of field reagent blank.

It is estimated that 14% of water systems would exceed the PFAS6 MCL of 30 ppt; however, many of these PWS already exceed the MCL for PFOA and/or PFOS or have an

enforcement deferral for these compounds and are working towards or have achieved corrective action that is expected to also address these compounds. It is expected that an additional 27 PWS owned by state or local government or 1.56% is expected to exceed the MCL of 30 ppt for PFAS6. It is expected that approximately 2.14% of PWS will either exceed the proposed MCL of 10 ppt for PFHxS, PFHpA, PFNA and PFDA or the PFAS6 MCL, for a total of 37 PWS owned by State or local government.

The USEPA has developed a Work Breakdown Structure (WBS) cost estimating tool for different PFAS treatment options. Depending on the treatment option selected and the size of the system, USEPA's WBS tool provides estimated annualized costs per system size as shown in Table 11.

Local health departments that regulate drinking water will also incur administrative costs related to local implementation and oversight of the drinking water monitoring requirements including review and approval of sampling schedules; review and reporting of sample results; providing technical assistance to the PWS; review and approval of plans (i.e., treatment plans); and activities associated with enforcement and public notification of MCL exceedances.

Each PWS owned by local government will likely make rate adjustments to accommodate these additional capital and operational costs. Municipally owned PWSs may qualify for federal or state loans or grants to offset some of the capital investment for treatment system components or upgrades. Most PWS owned by State government, such as correctional facilities or schools, do not have ratepayers.

Local Government Mandates:

Local governments that own or operate a PWS will be required to comply with this regulation as noted above for ECMR, notification levels and MCLs. There will be no impacts to local governments that do not own or maintain a PWS.

Paperwork:

Emerging Contaminants Monitoring Requirements (ECMR) and Notification Levels (NL):

The ECMR creates a new monitoring and regulatory program with associated paperwork, tracking and enforcement. Each PWS will be required to monitor for emerging contaminants and submit these results to the Department. They will be required to perform additional calculations to determine if they are in violation of any MCL as well as report any compounds at or above the notification level to the Department within 24 hours. The Department will be required to track water system compliance with these new regulations, and initiate enforcement when a water system fails to meet its regulatory obligations. This will require careful record keeping ensuring successful enforcement and ultimate compliance with the regulatory requirements.

Maximum Contaminant Levels:

The additional monitoring, reporting, recordkeeping and paperwork needed for PFAS6 is expected to be minimal because operators of a PWS are currently required to keep such records for existing MCLs, and these regulations add four additional chemicals. The reporting and recordkeeping requirements will increase if MCLs are exceeded and/or treatment is required.

Duplication:

Emerging Contaminants Monitoring Requirements:

The ECMR is duplicative with the UCMR5 requirements for a PWS that serves 3,300 or more people. To minimize duplication, the monitoring period in the proposed regulation has been aligned with the UCMR where possible, and samples collected under UCMR will count towards ECMR monitoring requirements when samples collected under UCMR are analyzed by an ELAP approved laboratory.

Notification Levels:

There will be no duplication of existing State or federal regulations.

Maximum Contaminant Levels:

There will be no duplication of existing State or federal regulations.

Alternatives:

Emerging Contaminants Monitoring Requirements:

The ECMR has been adopted into PHL § 1112, which requires the Commissioner to adopt regulations. No other alternatives were considered. The financial impact to a PWS that serves fewer than 3,300 people can be mitigated if the Department implements the program directly and assists small PWS with the cost of monitoring.

Notification Levels:

The NL program has been adopted into PHL § 1112, which requires the Commissioner to adopt regulations. The notification levels in the regulation were developed by the Department and recommended by the DWQC based on the best available scientific data. No other alternatives were considered.

Maximum Contaminant Levels:

Three alternatives to MCLs were considered:

1. maintain the existing MCL of 0.05 mg/L that applies to all unspecified organic chemicals when no chemical specific MCL exists for PFNA, PFHxS, PFHpA and PFDA;

2. wait for the US USEPA to issue a federal MCL; or

3. promulgate an MCL for PFNA, PFHxS, PFHpA and PFDA at 10 ppt each.

Based on deliberations of the DWQC and the additional toxicological analysis conducted by the Department it was determined that the current MCL of 0.05 mg/L, which is a generic standard for a broad class of organic chemicals, is not protective of public health for these four specific chemicals. Waiting for the USEPA to set a new MCL was impractical due to the prevalence and concerns surrounding PFNA, PFHxS, PFHpA and PFDA combined with the timeframes required under the Safe Drinking Water Act.

The 10 ppt standard, while health protective, will allow for a total concentration of upwards of 60 ppt, which is not sufficiently health protective.

The DWQC recommended that the Department review scientific data and propose a regulatory approach to sum PFOA, PFOS, PFDA, PFHxS, PFNA, and PFHpA. This has been called PFAS6. Based on a review of the occurrence of these compounds and available toxicological data, the Department proposes MCLs of 10 ppt each for perfluorohexanesulfonic acid (PFHxS), perfluoroheptanoic acid (PFHpA), perfluorononanoic acid (PFNA), and perfluorodecanoic acid (PFDA). Based on available health effects information, the Department also proposes a MCL of 30 ppt for the sum of PFOA, PFOS, PFHxS, PFHpA, PFNA and PFDA.

The Department determined that summing six PFAS compounds to 30 ppt addresses the additive toxicity of the chemicals in situations where they are present as mixtures and is also operationally feasible.

Federal Standards:

Emerging Contaminants Monitoring Requirements

This proposal is similar to UCMR5 in that it is a monitoring rule for unregulated contaminants in drinking water. This proposal expands the scope of UCMR5 by extending applicability to a PWS that serves fewer than 3,300 persons.

Notification Levels:

There are no federal standards for notification levels.

Maximum Contaminant Levels:

There are no federal MCLs for PFDA, PFHpA, PFHxS, PFNA or PFAS6.

Compliance Schedule:

Emerging Contaminants Monitoring Requirements (ECMR):

Each PWS will begin monitoring for emerging contaminants beginning April 1, 2023. A PWS may monitor in accordance with the schedule established by USEPA for UCMR. A PWS that is not required to participate in UCMR5 will have a monitoring schedule issued by the Department.

Notification Levels:

The effective date for NLs is April 1, 2023. Public notification is required for each PWS that detects emerging contaminants at or above the notification level on or after this date.

Maximum Contaminant Levels:

All water systems must begin monitoring for PFAS6 beginning April 1, 2023. A PWS that has conducted monitoring prior to April 1, 2023 for PFAS as a result of the MCLs for PFOA and PFOS may count this monitoring towards the this requirement as long as this monitoring meets all the requirements of this proposed regulation. For example, there must be at least two quarters of monitoring with all of the compounds in the analytical method reported; USEPA methods 537.1 or 533 must be used; and analysis must be performed by an ELAP approved laboratory. If the MCL is exceeded or compounds are detected at or above the notification level, public notification is required. The requirement to report all compounds in the approved analytical method will begin on April 1, 2023. Water systems must implement corrective action and be in compliance with the MCLs by January 1, 2025.

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REGULATORY FLEXIBILITY ANALYSIS FOR SMALL BUSINESS AND LOCAL GOVERNMENTS

Effects on Small Business and Local Governments:

Many of the public water systems (PWS) affected by the proposal are owned or operated by small businesses or local government. The Department does not maintain information on the number of the PWS owned by small businesses. There are approximately 1,500 PWS owned by local governments.

Emerging Contaminants Monitoring Requirements (ECMR): Small businesses will be affected. The cost of analysis is estimated to be between $350 and $700 per sample. The cost per average PWS, based on 1.7 entry points per system is between $595 and $1,190 per water system. The cost to local governments will be between $892,500 and $1,785,000. Costs will likely be absorbed by rate payers, tenants and business owners.

Notification Levels (NL): The Department estimates a notification cost of $5 per service connection including labor, fees and postage. Costs will likely be absorbed by rate payers, tenants and business owners.

Maximum Contaminant Levels (MCL)**:** Each PWS owned and operated by small businesses or local governments must comply with the MCLs and will incur the same impacts as other PWS. Costs will likely be absorbed by rate payers, tenants and business owners.

Reporting and Recordkeeping and Other Compliance Requirements:

Emerging Contaminants Monitoring Requirements and Notification Levels: The ECMR creates a new regulatory program with paperwork, tracking and enforcement. A PWS owned and operated by small businesses or local governments will incur the same costs as other PWS.

Maximum Contaminant Levels: The additional paperwork needed is expected to be minimal because a PWS is required to keep such records for existing MCLs. The paperwork requirements will increase if MCLs are exceeded and/or treatment is required. A PWS owned and operated by small businesses or local governments will incur the same costs as other PWS.

Professional Services:

Emerging Contaminants Monitoring Requirements and Maximum Contaminant Levels: Each PWS will require the services of a laboratory to analyze samples for emerging contaminants. The laboratory must be approved for USEPA Method 533 by the Department under its Environmental Laboratory Approval Program (ELAP). Sufficient laboratory capability and capacity is anticipated to be available. If an MCL is exceeded, a professional will be required to design changes to the PWS to meet the MCL. A PWS owned and operated by small businesses or local governments will incur the same costs as other PWS.

Notification Levels: No professional services are required.

Compliance Costs:

Emerging Contaminants Monitoring Requirements: PHL 1112, and thus the ECMR, applies to CWS and NTNC. The ECMR applies to approximately 3,550 PWS that may be either privately owned or publicly owned. The cost of the ECMR includes the cost of laboratory analysis for each PWS as well as the cost to the Department for administering the ECMR program. Local governments own or operate approximately 1,500 PWS. The remaining 2,050 are expected to be privately owned and could include small businesses. The Department does not track how many PWS are owned by small businesses.

The ECMR will be modeled after the Environmental Protection Agency's (USEPA) fifth Unregulated Contaminant Monitoring Rule, 40 CFR 141.40 (UCMR5), to allow samples collected under UCMR5 to be used to satisfy the requirements of the ECMR. It is estimated that approximately 3,550 PWS will be required to monitor. All PWS must use USEPA Method 533 to comply with this requirement. The cost of analysis for this method may vary based on the laboratory selected, and whether a field reagent blank is analyzed in accordance with the approved method. It is estimated to cost between $350 and $700 per sample. The cost per average water system, based on 1.7 entry points per system is between $595 and $1,190 per PWS; total costs will be proportional to the number of entry points.

The UCMR5 requires each PWS serving more than 10,000 people to monitor at their own expense. For PWS serving between 3,300 and 10,000 people, statutory amendments required that USEPA collect monitoring data from all systems serving more than 3,300 people "subject to the availability of appropriations". Similarly, USEPA is required under the Safe Drinking Water Act (SDWA) § 1445(a)(2)(C)(ii) to pay the "reasonable cost of such testing and laboratory analysis" for all applicable PWS serving 25 to 10,000 people. This means that if appropriations

are made, the USEPA will pay the cost of analysis for each PWS that serves between 3,300 and 10,000 people.

The effective date of this ECMR program has been established to align with the UCMR5 to minimize by allowing a PWS to use the same samples under both programs. For the ECMR, samples must be collected by a laboratory certified by ELAP. Not all laboratories certified under UCMR5 are ELAP certified. PWS serving 3,300 people or fewer generally do not participate in UCMR5 and will be required to pay for their own monitoring under the ECMR.

The cost of continued compliance will depend on the concentration of compounds detected during initial monitoring and whether any MCLs are exceeded.

Notification Levels: PHL § 1112, applies to CWS or NTNC or 3,550 PWS. There are 3,549 PWS that will be required to monitor for emerging contaminants and provide public notification when levels are confirmed to be at or above the notification level.

The Department estimates that 0.12% or four PWS that monitor for emerging contaminants will have results that are equal to or exceed the category 1 notification level of 30 ppt and 2.5% or 87 PWS will have results that are equal to or exceed the notification level of 100 ppt. These PWS may be operated by small business or local government. The Department estimates a notification cost of $5 per service connection. The cost per water system will vary significantly depending on the size of the water system and the method of notification selected.

Maximum Contaminant Levels: The costs include monitoring and notification costs for CWS and NTNC; routine compliance monitoring for PFAS6, and treatment costs for each PWS that exceeds the MCLs. There are approximately 1,500 PWS owned by local government.

Monitoring and treatment costs is dependent upon the system size, the number of affected entry points/sources and the concentration of each contaminant. The cost for a single sample is between $350-$700 per sample using USEPA method 537.1 or 533, including the cost of field reagent blank.

It is estimated that 14% of PWS would exceed the PFAS6 MCL of 30 ppt; however, many of these PWS already exceed the MCL for PFOA and/or PFOS or have an enforcement deferral for these compounds and are working towards or have achieved corrective action that is expected to also address these compounds. It is expected that an additional 1.56% will exceed the MCL of 30 ppt for PFAS6. It is expected that approximately 2.14% of PWS will either exceed the proposed MCL of 10 ppt for PFHxS, PFHpA, PFNA and PFDA or the PFAS6 MCL. These PWS may be owned by either a small business or local government. The Department does not track how many PWS are owned or operated by small business.

The USEPA has developed a cost estimating tool for different PFAS treatment options. Depending on the treatment option selected and the size of the system, USEPA's tool provides estimated annualized costs per system size as shown in Table 1.

Table 1 – Estimate Annualized Costs for Treatment

Total Annualized Costs (Direct, indirect and add-on capital plus annual operation and maintenance)		Population Served ≤500	Population Served 501 to 3,300	Population Served 3,301 to 10,000	Population Served 10,001 to 50,000	Population Served 50,001 to 100,000	Population Served 100,001 to 500,000
Treatment Costs: Granular Activated Carbon	Midpoint Estimate	$25,000	$110,900	$412,200	$1,246,400	$2,799,400	$8,947,800
	Range	$19,800 to $30,300	$87,700 to $134,000	$335,000 to $489,500	$1,016,000 to $1,476,900	$2,281,900 to $3,316,800	$7,255,600 to $10,640,000
Treatment Costs: Ion Exchange	Midpoint Estimate	$19,500	$74,000	$262,400	$869,700	$2,036,400	$7,339,100
	Range	$15,000 to $24,000	$59,100 to $88,900	$212,400 to $312,300	$692,700 to $1,046,600	$1,623,400 to $2,449,300	$5,777,400 to $8,900,800
Treatment Costs: Point	Midpoint Estimate	$17,800	$128,500	$449,600	Not applicable	Not applicable	Not applicable

of Use Reverse Osmosis	Range	$1,700 to $33,800	$33,800 to $223,100	$223,100 to $676,000			

These estimated costs are based on 2020 dollars and incorporate a 3% discounting rate over approximately 20 years. Given recent supply-chain challenges and inflationary pressures, actual annualized estimates could be higher than the ranges presented by USEPA.

Each PWS will likely make rate adjustments to accommodate these additional capital and operational costs. Municipally owned PWSs may qualify for federal or state loans or grants to offset some of the capital investment costs. Most privately owned PWS do not qualify for grant but may receive loans. Municipally owned PWS may need to comply with cross-cutters such as Davis-Bacon Act of 1931/ NY Prevailing Wage Rates, American Iron and Steel and/or Buy American Build American Requirements and federal equivalency requirements for environmental assessment when receiving federal assistance, such as funding from the Drinking Water State Revolving Fund (DWSRF). Small businesses that do not pursue DWSRF funding may not need to comply with these cross cutters.

Economic and Technological Feasibility:

Emerging Contaminants Monitoring Requirements and Notification Levels: The proposed requirements are economically and technologically feasible for small businesses and local governments. Analytical methods exist for accurate sample analysis to detect the list of emerging contaminants.

Maximum Contaminant Levels: There are technologically feasible treatment solutions for all PFAS6 contaminants. Many small and rural PWS are currently pursuing treatment for PFOA and PFOS. The treatment technologies for PFAS6 are the same as PFOA and PFOS. Treatment

may present a greater challenge to smaller systems that typically have less resources including financial and technical expertise than larger systems.

Minimizing Adverse Impact:

Emerging Contaminants Monitoring Requirements: The Department is minimizing adverse impact by aligning monitoring requirements with the UCMR. This reduces the amount of duplicative sampling. The Department has the authority to provide monitoring assistance to a PWS, and directly implement the program should funding for both analysis and staffing become available. This option would decrease the financial burden of sampling on small businesses such as mobile home parks or daycares.

Notification Levels: Adverse impacts are expected to be minimal.

Maximum Contaminant Levels**:** The Department has included several provisions that minimize the impacts on regulated parties. Previous testing conducted using an ELAP approved method and laboratory may satisfy some or all of the initial monitoring requirements; and sampling frequency will decrease after the first year if the contaminants are not detected at a PWS.

New York State offers programs to support PWS with infrastructure investments including but not limited to treatment and development/connection to alternate sources of water. Programs include the DWSRF which provides market rate, low to no interest loans and grants available to many municipally and some privately-owned PWS based on need and financial hardship. In addition, the New York State Clean Water Infrastructure Act of 2017 invests $2.5 billion in clean and drinking water infrastructure projects and water quality protection across the State. The New York State Water Infrastructure Improvement Act (WIIA) provides competitive

grants to help municipalities fund water quality infrastructure projects. The Infrastructure Investment and Jobs Act (IIJA) passed by Congress and signed by President Biden in 2021 includes funding specifically targeted towards emerging contaminants with a focus on per- and polyfluoroalkyl substances.

Small Business and Local Government Participation:

Small business and local governments were not specifically consulted on this proposal. The Department will send the notice of proposed rulemaking to American Water Works Association, the New York Rural Water Association and the Association of Towns and Conference of Mayors. Emerging contaminant monitoring and notification levels are requirements of PHL § 1112. The NL categories and MCLs set forth in this proposed rule were recommendations from the Drinking Water Quality Council (DWQC) which met numerous times in a public forum and were also recorded and publicly available. During each DWQC meeting, members of the public were allowed to comment, and comments were provided to the Department outside of the meetings. Based on the information available it is not possible to determine the number of small businesses that participated during the meetings or provided comments. All comments provided by the public were made available to the DWQC for their consideration.

RURAL AREA FLEXIBILITY ANALYSIS

Types and Estimated Rural Areas:

These regulations apply to rural areas of the state, where approximately 6,400 small public water supplies (PWS) are located.

Emerging Contaminants Monitoring Requirements (ECMR): There are more PWS in rural areas than urban areas, and those PWS are typically smaller. This regulation applies to community water systems (CWS) which serve at least five service connections used by year-round residents or regularly serve at least 25 year-round residents as well as nontransient noncommunity water systems (NTNC) that regularly serve at least 25 of the same people, four hours or more per day, for four or more days per week, for 26 or more weeks per year. There are approximately 2,200 CWS and NTNC water systems that serve less than 1,000 persons and approximately 335 PWS that serve between 1,000 and 3,300 persons. Most of those water systems are in rural areas. Costs can be mitigated if the Department directly implements the program and provides monitoring assistance to small water supplies.

Notification Levels (NL): It is expected that NLs will impact rural areas in the same manner as the rest of the State.

Maximum Contaminant Levels (MCL)**:** The cost of monitoring may impact rural areas of the State more than urban and suburban areas of the state since rural areas were less likely to detect PFOA and PFOS during 2020 and 2021. These water systems may have expected to be able to reduce monitoring to once every three years for only PFOA and PFOS. These regulations require sampling for the full analytical method and will require monitoring for up to four additional quarters depending on source water type.

Reporting, Recordkeeping and Other Compliance Requirements

Reporting and Recordkeeping:

The obligations imposed on rural area PWS are the same as for all owners or operators of PWS.

Professional Services:

ECMR: Each PWS impacted by the amended regulations will require the Environmental Laboratory Approval Program (ELAP) approved services in accord with USEPA method 533 to analyze samples for emerging contaminants. Sufficient laboratory capability and capacity is anticipated to be available. If an MCL is exceeded, a licensed professional will be required to design changes to the PWS to meet the MCL. A PWS in a rural area will incur the same costs as other PWS.

NL: Most rural area PWS will not need professional services to conduct public notification when a water system confirms the presence of emerging contaminants at or above the notification level.

MCL: If an MCL is exceeded, a licensed professional will be required to design changes to the PWS to meet the MCL.

Compliance Costs:

ECMR: Pursuant to PHL § 1112 the ECMR applies to each PWS that serves at least five service connections used by year-round residents or regularly serves at least 25 year-round residents, defined in the SSC as a community water system (CWS); or a PWS that regularly serves at least 25 of the same people, four hours or more per day, for four or more days per

week, for 26 or more weeks per year, defined in the SSC as a nontransient noncommunity water system (NTNC). The ECMR applies to approximately 3,550 PWS, many of which are located in rural areas. The cost of the ECMR includes the cost of laboratory analysis for each PWS as well as the cost to the Department for administering the ECMR program.

The ECMR will be modeled after the US Environmental Protection Agency's (USEPA) fifth Unregulated Contaminant Monitoring Rule, 40 CFR 141.40 (UCMR5), to allow samples collected under UCMR5 to be used to satisfy the requirements of the ECMR. Consistent with UCMR5, ECMR will require that one sample set be collected per entry point. It is estimated that approximately 3,550 PWS will be required to monitor at 5,247 locations. All PWS must use USEPA Method 533 to comply with this requirement. All PWS must use USEPA Method 533: Determination of Per- and Polyfluoroalkyl Substances in Drinking Water by Isotope Dilution Anion Exchange Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry to comply with this requirement. The cost of analysis for this method may vary based on the laboratory selected, and whether a field reagent blank is analyzed in accordance with the approved method. It is estimated to cost between $350 and $700 per sample. Estimated sampling costs are based on estimates prepared by USEPA and surveys of laboratories certified by the ELAP. This estimate does not include the cost of labor to collect and transport the sample. The expected cost per average water system, based on 1.7 entry points per system is between $595 and $1,190; total costs will be proportional to the number of entry points. Table 1 provides a range of sampling costs based on the estimated number of samples that will be required.

Table 1: Impacts on the regulated community – Emerging Contaminants Monitoring Requirements

System Type	Number of water systems	Estimated number of samples	Low cost per sample ($350)	High cost per sample ($700)
Community Water Systems	2,837	4,797	1,678,950	3,357,900
Nontransient noncommunity	713	1,084	379,400	758,800

Total			$2,058,350	$4,116,700

The UCMR5 requires each PWS serving more than 10,000 people to monitor at their own expense. For PWS serving between 3,300 and 10,000 people, amendments to the American Water Infrastructure Act (AWIA) Section 2021(a) required that USEPA collect monitoring data from all systems serving more than 3,300 people "subject to the availability of appropriations". For PWS serving between 3,300 and 10,000 people, amendments to the American Water Infrastructure Act (AWIA) Section 2021(a) required that USEPA collect monitoring data from all systems serving more than 3,300 people "subject to the availability of appropriations." Similarly, USEPA is required under the Safe Drinking Water Act (SDWA) Section 1445(a)(2)(C)(ii) to pay the "reasonable cost of such testing and laboratory analysis" for all applicable PWS serving 25 to 10,000 people. This means that if appropriations are made, the USEPA will pay the cost of analysis for each PWS that serves between 3,300 and 10,000 people as well as a small national subset of PWS serving 25 to 3,300 people.

The ECMR program effective date aligns with the UCMR5 to ensure that costs are minimized by allowing a PWS to use the same samples under both programs. For the ECMR, samples must be collected by a laboratory certified by the Department's Environmental Laboratory Approval Program (ELAP). Not all laboratories certified under UCMR5 are ELAP-certified. There are no similar programs available currently for each PWS that serves 3,300 people or fewer. These water systems generally do not participate in UCMR5 and will be required to pay for their own monitoring under the ECMR. Many of the PWS that serve 3,300 people or fewer are in rural areas, and most PWS that serve less than 1,000 people are in rural areas.

The cost of continued compliance will depend on many factors, including the concentration of compounds detected during initial monitoring and whether any MCLs are exceeded. The cost per sample is expected to be the same for continued compliance as it is for initial monitoring.

NL: The Department estimates that 0.12% of PWS that monitor for emerging contaminants will have monitoring results that are equal to or exceed the category 1 notification level of 30 ppt and 2.5% will have monitoring results that are equal to or exceed the notification level of 100 ppt. The Department estimates an average cost of $5 per service connection to send out proper notifications, which includes labor, fees and postage; however, larger systems may pay a much lower per unit cost for notification. Similarly, a water system that can hand deliver notices may pay a lower per unit cost. The cost per water system will vary significantly depending on the size of the water system and the method of notification selected. Table 9 demonstrates the expected number of PWS that will exceed both the category 1 and category 2 notification levels.

MCL: The costs to PWS in rural areas include monitoring and notification costs for CWS and NTNC; routine compliance monitoring for PFAS6, and treatment costs for each PWS that exceeds the MCLs.

Monitoring and treatment costs for each rural PWS is dependent upon the system size, number of affected entry points/sources and the concentration of each contaminant. The cost for a single sample for emerging contaminants is between $350-$700 per sample using USEPA method 537.1 or 533, including the cost of field reagent blank. The cost of a single sample for

emerging contaminants is between $350-$700 using USEPA method 537.1 or 533, including the cost of field reagent blank.

It is estimated that 14% of water systems would exceed the PFAS6 MCL of 30 ppt; however, many of these PWS already exceed the MCL for PFOA and/or PFOS or have an enforcement deferral for these compounds and are working towards or have achieved corrective action that is expected to also address these compounds. It is expected that an additional 1.56% of PWS will exceed the MCL of 30 ppt for PFAS6. It is expected that approximately 2.14% of PWS will either exceed the proposed MCL of 10 ppt for PFHxS, PFHpA, PFNA and PFDA or the PFAS6 MCL.

The USEPA has developed a Work Breakdown Structure (WBS) cost estimating tool for different PFAS treatment options. Depending on the treatment option selected and the size of the system, USEPA's WBS tool provides estimated annualized costs per system size as shown in Table 2.

Table 2 – Estimate Annualized Costs for Treatment

Total Annualized Costs (Direct, indirect and add-on capital plus annual operation and maintenance)		Population Served ≤500	Population Served 501 to 3,300	Population Served 3,301 to 10,000	Population Served 10,001 to 50,000	Population Served 50,001 to 100,000	Population Served 100,001 to 500,000
Treatment Costs: Granular Activated Carbon	Midpoint Estimate	$25,000	$110,900	$412,200	$1,246,400	$2,799,400	$8,947,800
	Range	$19,800 to $30,300	$87,700 to $134,000	$335,000 to $489,500	$1,016,000 to $1,476,900	$2,281,900 to $3,316,800	$7,255,600 to $10,640,000
Treatment Costs: Ion Exchange	Midpoint Estimate	$19,500	$74,000	$262,400	$869,700	$2,036,400	$7,339,100
	Range	$15,000 to $24,000	$59,100 to $88,900	$212,400 to $312,300	$692,700 to $1,046,600	$1,623,400 to $2,449,300	$5,777,400 to $8,900,800
Treatment Costs: Point of Use Reverse Osmosis	Midpoint Estimate	$17,800	$128,500	$449,600	Not applicable	Not applicable	Not applicable
	Range	$1,700 to $33,800	$33,800 to $223,100	$223,100 to $676,000			

These estimated costs are based on 2020 dollars and incorporate a 3% discounting rate over approximately 20 years. Given recent supply-chain challenges and higher inflationary pressures, actual annualized estimates could be higher than the ranges presented by USEPA.

Each PWS will likely make rate or rent adjustments to accommodate these additional capital and operational costs. Municipally owned PWSs may qualify for federal or state loans or grants to offset some of the capital investment for treatment system components or upgrades. Most privately owned water systems do not qualify for grant but are able to take advantage of loans.

Economic and Technological Feasibility

ECMR: The ECMR is economically and technologically feasible for rural area PWS. Analytical methods exist for accurate sample analysis to detect emerging contaminants.

NL: The NLs are economically and technologically feasible for rural area PWS. The cost of notices is estimated to be $5 per service connection. This should be feasible for any water system that detects emerging contaminants at or above the notification level.

MCL: Many small and rural water systems are currently pursuing treatment for PFOA and PFOS using treatment technologies that can also abate PFAS6. Treatment may present a greater challenge to smaller systems that typically have less resources than larger systems.

Rural Area Participation:

The Department made presentations outlining the requirements of Public Health Law to rural operators at the New York Rural Water Association conference on May 24, 2022; the Southeastern NY Water Works Conference on June 9, 2022 and the American Water Works Association New York Conference on April 13, 2022. The proposal was discussed during the Drinking Water Quality Council meeting on May 2, 2022. This meeting was open to the public, was broadcast live on the internet, and is available on the Department's website.

JOB IMPACT STATEMENT

Nature of the Impact:

The Department expects there to be a positive impact on jobs and employment opportunities. A subset of public water system (PWS) owners will hire engineering/architectural firms or individuals to assist with regulatory compliance. Each PWS impacted by this amendment will require the professional services of a certified or approved laboratory to perform the analyses for PFAS6 and emerging contaminants, which may create a need for additional laboratory capability and capacity. A PWS that confirms levels of emerging contaminants at or above the notification level may need copy or printing services. Additionally, a subset of owners will require the services of a licensed professional engineer to design facilities to meet the MCLs through treatment, or to access an alternate source.

Categories and Numbers Affected:

The Department anticipates no negative impact on jobs or employment opportunities as a result of the proposed regulations.

Regions of Adverse Impact:

The Department anticipates no negative impact on jobs or employment opportunities as a result of the proposed regulations.

Minimizing Adverse Impact:

Not applicable.

Pursuant to the authority vested in the Public Health and Health Planning Council and the Commissioner of Health by section 225 of the Public Health Law, Subpart 5-1 of Title 10 (Health) of the Official Compilation of Codes, Rules and Regulations of the State of New York is amended, to be effective upon publication of a Notice of Adoption in the New York State Register, to read as follows:

Subparagraph 5-1.43(c)(2)(i) is amended to read as follows:

(i) Any water system that maintains the range of State-specified values for the water quality parameters reflecting optimal corrosion control treatment during three consecutive years of monitoring in accordance with paragraph (1) of this subdivision may reduce the frequency with which it collects the number of distribution system samples for applicable water quality parameters specified in paragraph (1) of this subdivision from every six months to annually. This sampling shall begin during the calendar year immediately following the end of the monitoring period in which the third consecutive year of six-month monitoring occurs. Any water system that maintains the range of State-specified values for the water quality parameters reflecting optimal corrosion control treatment during three consecutive years of annual monitoring under this paragraph may reduce the frequency with which it collects the number of distribution system samples for applicable water quality parameters specified in paragraph (1) of this subdivision from annually to every three years. <u>This sampling begins no later than the third calendar year following the end of the monitoring period in which the third consecutive year of monitoring occurs.</u>

Subparagraph 5-1.47(b)(2)(ii)(b)(1) is amended to read as follows:

(1) contact the State for [information regarding] a list of community based organizations serving target populations, even if they are not located within the water system's service area, and deliver education materials to all appropriate organizations along with an informational notice that encourages distribution to all the organization's potentially affected customers or community water system's users as determined in consultation with the State[;]. The water system must contact the State directly by phone or in person;

Repeal Table 6 of section 5-1.52 and replace with a new Table 6 to read as follows:

Table 6. Microbiological Contaminants Maximum Contaminant Level (MCL)/Treatment Technique Trigger (TTT)/ Treatment Technique Violation (TTV) Determination[1]

Contaminant/ Trigger/Violation	Sample Location	MCL or TTT or TTV	Performance Standard	Determination of MCL/TTV and TTT[10]
Total coliform[2]	Distribution Sample Sites	TTT[3]	No positive sample[4,5]	A Level 1 TTT occurs at systems collecting 40 or more samples per month when more than 5.0 percent of the samples are total coliform positive.[11]
		TTT[3]		A Level 1 TTT occurs at systems collecting less than 40 samples per month when two or more samples are total coliform positive.[11]
		TTT[3]		A Level 1 TTT occurs at any system that fails to collect every required repeat sample after any single total coliform positive sample.[11]
		TTT[6]		A Level 2 TTT occurs at any system that has a second Level 1 trigger within a rolling 12-month period, unless the State has determined a likely reason that the samples that caused the first Level 1 TTT were total coliform positive and has established that the system has corrected the problem.[11]
Escherichia coli (E. Coli)		MCL/ TTT[4,6]	No positive sample[5,7]	An MCL violation and Level 2 TTT occurs when a total coliform sample is positive for *E. coli* and a repeat total coliform sample is positive.[13]
		MCL/ TTT[4,6]	No positive sample[5,7]	An MCL violation and Level 2 TTT occurs when a total coliform sample is positive for total coliform but negative for *E. coli* and a repeat total coliform sample is positive for *E. coli.*[13]
		MCL/ TTT[4,6]		An MCL violation and Level 2 TTT occurs when a total coliform sample is positive for total coliform but negative for *E. coli* and a repeat total coliform positive sample is not analyzed for *E. coli.*[13]

		MCL/ TTT[4,6]		An MCL violation occurs when a system fails to collect every required repeat sample after any *E. coli* positive routine sample.
Fecal indicator: *E. coli*, and/or enterococci, and/or coliphage[8]	Untreated Water from a Ground Water Source	TTV	No fecal indicator in samples collected from raw source water from a ground water source.[9,10]	A TTV occurs when a raw water sample is positive for the fecal indicator contaminant and system does not provide and document, through process compliance monitoring, 4-log virus treatment during peak flow at first customer. If repeat sampling of the raw water is directed by the State and all additional samples are negative for fecal indicator, there is no TTV.[9,13]
Other trigger or violation		TTV[4]		A TTV occurs when a system exceeds a TTT and then fails to conduct the required assessment or corrective actions.[12]
		TTV[4]		A TTV occurs when a seasonal system fails to complete a State-approved start-up procedure prior to serving water to the public.[14]

[1] All samples collected in accordance with Table 11 footnotes 1 and 2 and Table 11B of this section and samples collected in accordance with subdivision 5-1.51(g) of this Subpart shall be included in determining compliance with the MCL, TTT, and/or TTV unless any of the samples have been invalidated by the State. In accordance with 40 CFR 141.852(a)(2) systems need only determine the presence or absence of total coliforms and *E. coli*; a determination of density is not required.

[2] Total coliform method additions or modifications to approved methods

For total coliform (TC) samples collected from untreated surface water or GWUDI sources, the time from sample collection to initiation of analysis may not exceed 8 hours and the samples must be held below 10 degrees C during transit to the laboratory. For other TC samples, the time from collection to initiation of analysis may not exceed 30 hours. Systems are encouraged, but not required, to hold TC samples below 10 degrees C during transit.

- If the Total Coliform Fermentation Technique using standard methods 9221A or B is used, and if inverted tubes are used to detect gas production, the media should cover these tubes at least one half to two-thirds after the sample is added. Also, no requirement exists to run the completed phase on 10 percent of all TC-positive confirmed tubes. Additionally, lactose broth, as commercially available, may be used in lieu of lauryl tryptose broth, if the system conducts at least 25 parallel tests between this medium and lauryl tryptose broth using the water normally tested, and this comparison demonstrates that the false-positive rate and false-negative rate for TC, using lactose broth, is less than 10 percent.
- If Membrane Filter Technique Standard Methods 9222A, B, and optionally C are used, MI agar also may be used. Verification of colonies is not required.
- If the Standard Methods Presence-Absence (P-A) Coliform Test, 9221D is used, six-times formulation strength may be used if the medium is filter-sterilized rather than autoclaved.
- If the Total Coliform Membrane Filter Technique, Standard Methods 9222 A, B, C is used, MI agar also may be used. Verification of colonies is not required.
- For any TC testing it is strongly recommended that laboratories evaluate the false-positive and negative rates for the method(s) they use for monitoring TC. Laboratories are also encouraged to establish false-positive and false-negative rates within their own laboratory and sample matrix (drinking water or source water) with the intent that if the method they choose has an unacceptable false-positive or negative rate, another method can be used. It is

suggested that laboratories perform these studies on a minimum of 5% of all TC-positive samples, except for those methods where verification/ confirmation is already required. Methods for establishing false-positive and negative-rates may be based on lactose fermentation, the rapid test for β-galactosidase and cytochrome oxidase, multi-test identification systems, or equivalent confirmation tests. False-positive and false-negative information is often available in published studies and/or from the manufacturer(s).

3 The system must complete a Level 1 assessment as soon as practical after exceeding a Level 1 TTT. The system must submit the completed Level 1 assessment form to the State within 30 days after the system learns that it has exceeded a trigger. Corrective actions shall be addressed in accordance with section 5-1.71(e) of this Subpart.

4 See Table 13 for public notification requirements

5 If any total coliform or *E. Coli* sample is positive, repeat samples must be collected in accordance with Table 11B of this section.

6 A Level 2 assessment must be completed within 30 days after the system learns that it has exceeded a trigger. Corrective actions shall be addressed in accordance with section 5-1.71(e) of this Subpart.

7 For notification purposes, an E. coli MCL violation in the distribution system is a public health hazard requiring Tier 1 notification. At a ground water system, Tier 1 notification is required after initial detection of *E. coli* or other fecal indicator in raw source water, if the system does not provide 4-log virus treatment and process compliance monitoring, even if not confirmed with additional sampling

8 For any fecal indicator sample collected as described in section 5-1.52, Table 6, the time from sample collection to initiation of analysis may not exceed 30 hours. The system is encouraged but is not required to hold samples below 10 °C during transit.

9 If raw water source sample is fecal indicator positive, the water system, in consultation with the State, may collect an additional 5 samples within 24 hours at each source that tested fecal indicator positive. If none of the additional samples are fecal indicator positive, then there is no TTV. Note that Tier 1 notification must be made after the initial raw water fecal indicator positive sample, even if it is not confirmed with additional sampling.

10 Failure to take every required routine or additional routine sample in a compliance period is a monitoring violation.

11 Failure to analyze for *E. coli* following a total coliform positive routine sample is a monitoring violation.

12 Failure to submit a monitoring report or completed assessment form after a system properly conducts monitoring or assessment in a timely manner is a reporting violation.

13 Failure to notify the State following an *E. coli*-positive sample as required by 5-1.52 Table 13 and 5-1.77(a) of this Subpart in a timely manner is a reporting violation.

14 Failure to submit certification of completion of State approved start-up procedure by a seasonal system is a reporting violation.

Footnote 4 of section 5-1.52 Table 11A is amended to read as follows:

[4] Samples must be taken and analyzed every day the system serves water to the public and the turbidity of the raw water exceeds [1.49]1 NTU. The samples count toward the weekly sampling requirement.

Section 5-1.80 is amended to read as follows:

The provisions of this section, and sections 5-1.81 through 5-1.83 of this Subpart apply to all public water systems, as defined in paragraph 5-1.1(cb) of this Subpart, supplied by a surface water source(s) or ground water source(s) directly influenced by surface water, provided the system serves 15 or more service connections or serves 25 or more persons. The requirements in this section for filtered systems apply to any system with a surface water or GWUDI source that is required to provide filtration, regardless of whether the system is currently operating a filtration system. All treatment must comply with the requirements of the Microbial Toolbox Components as described in 40 CFR 141.715 through 40 CFR 141.720. Any unfiltered systems that are in compliance with the filtration avoidance criteria in section 5-1.30(c) of this Subpart, are subject to the requirements in sections 5-1.80 through 5-1.83 of this Subpart pertaining to unfiltered systems. Wholesale system compliance with sections 5-1.81 through 5-1.83 of this Subpart is based on the population of the largest system in the combined distribution system. The above systems shall comply with the following requirements:

Subparagraph 5-1.81(a)(1)(iii)(c) is repealed and replaced with the following:

(c) shall sample their source water for *Cryptosporidium* at least twice per month for 12 months, or at least monthly for 24 months, if, based on monitoring conducted under this subparagraph, they meet one of the following criteria:

(1) For systems using lake/reservoir sources, the annual mean *E. coli* concentration is greater than 10 E. coli/100 mL;

(2) For systems using flowing stream sources, the annual mean *E. coli* concentration is greater than 50 E. *coli/*100 mL; or

(3) The system does not conduct *E. Coli* monitoring once every two weeks for 12 months.

(4) Systems using ground water under the direct influence of surface water (GWUDI) must comply with the requirements of subclause (1) through (3) of this clause based on the *E. coli* level that applies to the nearest surface water body. If no surface water body is nearby, the system must comply based on the requirements that apply to systems using lake/reservoir sources.

(5) the State may approve an alternative to the *E. coli* concentration specified in subclause (1) and subclause (2) of this clause to trigger *Cryptosporidium* monitoring. This approval by the State will be provided to the system in writing and will include the basis for the State's determination that the alternative trigger concentration will provide a more accurate identification of whether a system will exceed the Bin 1 *Cryptosporidium* level specified in section 5-1.83(a)(2) of this Subpart.

Subdivision 5-1.92(a) is amended to read as follows:

(a) The supplier of water may request, and the department may grant, one or more exemptions from any treatment technique requirement, except for filtration and disinfection of a surface water source in accordance with 5-1.30(b), (c) and (g) of this Subpart, and/or any MCL, except for *Escherichia coli (E. coli*). Exemptions may be granted to any public water system based on a finding that:

* * *

(4) The supplier of water has not been granted a variance under section 5-1.90 of this Subpart.

NOTICE OF CONSENSUS RULEMAKING

Statutory Authority:

The Public Health and Health Planning Council, subject to the approval of the Commissioner of Health, is authorized by section 225 of the Public Health Law to establish, and from time to time, amend and repeal sanitary regulations, known as the sanitary code of the State of New York.

Basis:

The proposed regulatory amendments are non-substantive and non-controversial. The amendment of 10 NYCRR Subpart 5-1 "Public Water Systems" of the State Sanitary code will correct typographic errors, update references and make minor technical revisions to conform the regulation with federal requirements to obtain primacy for the implementation and enforcement of federal drinking water regulations from U.S. Environmental Protection Agency.

JOB IMPACT STATEMENT

The Department of Health has determined that the proposed revisions will not have substantial adverse impact on jobs or employment opportunities. These correct mainly typographic errors and do not change the requirements water systems need to follow to implement the regulation.