Significant Legislative Rule Analysis

Selected Sections in Chapter 246-390 WAC
Drinking Water Laboratory Certification and Data Reporting

Department of Health
August 3, 2021

Section 1: Describe the proposed rule, including a brief history of the issue, and explain why the proposed rule is needed.

Background

More than 6.2 million Washington residents get their drinking water from Group A public water systems (Group A water systems). In Washington State, the State Board of Health (board) regulates Group A water systems under Revised Code of Washington (RCW) 43.20.050.

Under RCW 70A.125.080, the Washington State Department of Health (department) is directed to administer a Group A drinking water program with at least the elements necessary to assume primary enforcement responsibility of the federal Safe Drinking Water Act.

The department administers the Group A drinking water program and regulates Group A water systems with a formal agreement with the U.S. Environmental Protection Agency (EPA) known as "primacy". Part of the primacy agreement, under 40 Code of Federal Regulations (CFR) 142.10(b)(3)(i), requires the department to maintain a state program for the certification of laboratories (labs) that conduct analytical measurements of drinking water for federally regulated public water systems

The department's other authorities to regulate Group A water systems come from state laws, like those mentioned above, and Washington Administrative Code (WAC), like the Group A public water supplies rule, chapter 246-290 WAC (Group A rule) and chapter 246-390 WAC (Lab rule), which the board is proposing to amend at this time. The department and the board work closely together on rulemaking projects, with the department providing expertise, resources, and recommendations to the board. Ultimately, it is the board that has the authority to adopt the proposed amendments to the Group A rule.

The board accepted a petition from Toxic-Free Future and nine other organizations on October 11, 2017, to set drinking water standards for per- and polyfluoroalkyl substances (PFAS) in the Group A rule. On December 15, 2017 WSR# 18-01-080 was filed to start rulemaking to include PFAS compliance components to the Group A rule. Complementing this work on the Group A rule, the Board initiated companion updates to the Lab rule when it filed WSR# 20-05-032 on February 11, 2020.

PFAS are chemicals that have been used in industry and consumer products such as carpeting, apparels, upholstery, food paper wrappings, fire-fighting foams, and metal plating worldwide since the 1950s. Wide use combined with their persistent and bioaccumulative properties have led to widespread detection of perfluorooctanoic acid (PFOA), perfluorooctane sulfonic acid (PFOS), perfluorohexane sulfonic acid (PFHxS), and perfluorononanoic acid (PFNA) in the blood serum of the general U.S. population [1]. Average serum levels of PFAS may be more than 100 times higher than national norms in communities exposed via contaminated drinking water[2]. A recent Center for Disease Control (CDC)/Agency for Toxic Substances and Disease Registry (ATSDR) study in the community of Airway Heights, Washington showed that study participants had mean serum levels of PFHxS that were 60 times higher than national norms even two years after PFAS contamination had been fully mitigated in their community drinking

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[1] CDC - NHANES, Fourth Report on Human Exposure to Environmental Chemicals, Updated Tables, (January 2019), C.f.D.C.a. Prevention, Editor. 2019, U.S. Department of Health and Human Services, Centers for Disease Control and Prevention: Atlanta, GA.

[2] Frisbee, S.J., et al., *Perfluorooctanoic acid, perfluorooctanesulfonate, and serum lipids in children and adolescents: results from the C8 Health Project.* Arch Pediatr Adolesc Med, 2010. **164**(9): p. 860-9; Li, Y., et al., *Half-lives of PFOS, PFHxS and PFOA after end of exposure to contaminated drinking water.* Occup Environ Med, 2018. **75**(1): p. 46-51; Pitter, G., et al., *Serum Levels of Perfluoroalkyl Substances (PFAS) in Adolescents and Young Adults Exposed to Contaminated Drinking Water in the Veneto Region, Italy: A Cross-Sectional Study Based on a Health Surveillance Program.* Environ Health Perspect, 2020. **128**(2): doi.org/10.1289/EHP5337.

water[3]. Mean serum levels of PFOS and PFOA in participant's serum were 10 and six times higher than national norms, respectively.

Health concerns about PFAS stem from the wide range of adverse effects observed in animal testing. Effects of the best studied PFAS include liver, kidney, thyroid and immune toxicity; developmental and reproductive toxicity, hormone disruption and tumors in certain organs like the liver[4]. The specific profile of effects and the weight of evidence varies by the PFAS examined.

Health researchers are still learning about how environmental exposure to PFAS might affect people's health. The strongest evidence from epidemiology indicates that some PFAS may increase serum cholesterol levels[5], alter liver enzyme levels[6], slightly lower birth weights[7], and reduce immune response to childhood vaccines[8]. Outcomes with more limited evidence of an association with PFAS exposure include thyroid disease, hypertension disorders during pregnancy, reproductive problems, altered hormone levels, and metabolic issues[9]. There is some evidence from occupational and non-occupational

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[3] CDC/ATSDR PFAS Exposure Assessment Community Level Results for Spokane County (WA) near Fairchild Air Force Base, 2020 https://www.atsdr.cdc.gov/pfas/communities/factsheet/Spokane-County-Community-Level-Results-Factsheet.html

[4] Agency for Toxic Substances and Disease Registry (ATSDR), Toxicological Profile for Perfluoroalkyls May 2021, U.S. Department of Health and Human Services: Atlanta. p 993 https://www.atsdr.cdc.gov/toxprofiles/tp200.pdf; EPA, *Drinking Water Health Advisory for Perfluorooctanoic Acid (PFOA)*. 2016, Environmental Protection Agency: Washington, D.C. p. 103; EPA, *Drinking Water Health Advisory of Perfluoroctane Sulfonate (PFOS)*, O.o. Water, Editor. 2016, Environmental Protection Agency; U.S. EPA. Human Health Toxicity Values for Perfluorobutane Sulfonic Acid and Related Compound Potassium Perfluorobutane Sulfonate. U.S. Environmental Protection Agency, Washington, DC, EPA/600/R-20/345F, 2021 ;National Toxicology Program (NTP), NTP Technical Report on the Toxicity Studies of Perfluoroalkyl Carboxylates (Perfluorohexanoic Acid, Perfluorooctanoic Acid, Perfluorononanoic Acid, and Perfluorodecanoic Acid) Administered by Gavage to Sprague Dawley Rats P.H. Service, Editor. 2019, U.S. Department of Health and Human Services: Research Triangle park, NC; NJDWQI, Health-based Maximum Contaminant Level Support Document: Perfluorononanoic acid (PFNA) 2015, New Jersey Drinking Water Quality Institute Health Effects Subcommittee.

[5] Frisbee, S.J., et al., Perfluorooctanoic acid, perfluorooctanesulfonate, and serum lipids in children and adolescents: results from the C8 Health Project. Arch Pediatr Adolesc Med, 2010. 164(9): p. 860-9; Graber, J.M., et al., Per and polyfluoroalkyl substances (PFAS) blood levels after contamination of a community water supply and comparison with 2013-2014 NHANES. J Expo Sci Environ Epidemiol, 2019. 29(2): p. 172-182; Li, Y., et al., Associations between perfluoroalkyl substances and serum lipids in a Swedish adult population with contaminated drinking water. Environ Health, 2020. 19(1): p. 33.

[6] Bassler, J., et al., *Environmental perfluoroalkyl acid exposures are associated with liver disease characterized by apoptosis and altered serum adipocytokines.* Environ Pollut, 2019. **247**: p. 1055-1063; Salihovic, S., et al., *Changes in markers of liver function in relation to changes in perfluoroalkyl substances - A longitudinal study.* Environ Int, 2018. **117**: p. 196-203; Salihovic, S., et al., *Changes in markers of liver function in relation to changes in perfluoroalkyl substances - A longitudinal study.* Environ Int, 2018. **117**: p. 196-203; Gallo, V., et al., Serum perfluorooctanoate (PFOA) and perfluorooctane sulfonate (PFOS) concentrations and liver function biomarkers in a population with elevated PFOA exposure. Environ Health Perspect, 2012. 120(5): p. 655-60.

[7] Johnson, P.I., et al., The Navigation Guide - evidence-based medicine meets environmental health: systematic review of human evidence for PFOA effects on fetal growth. Environ Health Perspect, 2014. 122(10): p. 1028-39; Meng, Q., et al., Prenatal Exposure to Perfluoroalkyl Substances and Birth Outcomes; An Updated Analysis from the Danish National Birth Cohort. Int J Environ Res Public Health, 2018. 15(9); Wikstrom, S., et al., Maternal serum levels of perfluoroalkyl substances in early pregnancy and offspring birth weight. Pediatr Res, 2019.

[8] National Toxicology Program (NTP), Systematic Review of Immunotoxicity Associated with Exposure to Perfluorooctanoic acid (PFOA) or Perfluoroctane Sulfonate (PFOS). 2016, National Toxicology Program, U.S. Department of Health and Human Services; DeWitt, J.C., S.J. Blossom, and L.A. Schaider, Exposure to per-fluoroalkyl and polyfluoroalkyl substances leads to immunotoxicity: epidemiological and toxicological evidence. J Expo Sci Environ Epidemiol, 2019. 29(2): p. 148-156; Grandjean, P., et al., Serum Vaccine Antibody Concentrations in Adolescents Exposed to Perfluorinated Compounds. Environ Health Perspect, 2017. 125(7): p. 077018; Abraham, K., et al., Internal exposure to perfluoroalkyl substances (PFASs) and biological markers in 101 healthy 1-year-old children: associations between levels of perfluorooctanoic acid (PFOA) and vaccine response. Arch Toxicol, 2020; Timmermann, C.A.G., et al., Serum Perfluoroalkyl Substances, Vaccine Responses, and Morbidity in a Cohort of Guinea-Bissau Children. 2020. 128(8): p. 087002.

[9] Fenton, S.E., et al., Per- and Polyfluoroalkyl Substance Toxicity and Human Health Review: Current State of Knowledge and Strategies for Informing Future Research. Environ Toxicol Chem, 2021. 40(3): p. 606-630; C8 Science Panel. *C8 Probable Link Reports*. 2012 11/28/2013; Available from: http://www.c8sciencepanel.org/prob_link.html.

studies that PFOA may increase rates of kidney and testicular cancer[10]. Little data are available for other PFAS.

Starting in 2002, PFAS have been detected in drinking water in the United States, primarily near manufacturing facilities, local fire departments, military bases and airports. Between 2013 and 2015, EPA required a representative number of Group A water systems to measure for six PFAS as part of the third Unregulated Contaminant Monitoring Rule (UCMR3)[11].

In Washington State, this UCMR3 sampling included 132 water systems representing 94 percent of people served by Group A water systems. Additionally, voluntary testing by the Navy, Air Force, and Army has discovered additional drinking water contamination in private and public wells on or around four military bases between 2016 and 2020. Proactive testing by nearby public water systems has discovered additional wells that are impacted.

PFAS have been identified in drinking water in Issaquah and in private wells and public water systems at or near four military bases: Naval Air Station (NAS) Whidbey Island, Fairchild Air Force Base, Joint Base Lewis-McChord, and Navy Base Kitsap-Bangor. In each area, the sum of PFOA and PFOS in at least one drinking water well exceeded the lifetime health advisory level (HAL) of 70 parts per trillion (ppt) set by the U.S. EPA in May 2016. PFAS-based firefighting foam is the suspected source of contamination at all of these areas. Ongoing investigations may identify other contributing sources.

In Washington, while we know PFAS have been identified in multiple areas, we do not yet know the full extent of PFAS contamination in our drinking water supplies, and the science around PFAS is evolving quickly. In light of this, several Group A water systems have either installed treatment to reduce PFAS or are pursuing treatment.

As noted previously, in fall 2017 the Board initiated rulemaking to consider setting PFAS drinking water standards in the Group A rule. Among other matters addressed in the rulemaking, the department and Board explored options for the type of standard to be used—a state Maximum Contaminant Level (MCL) or State Advisory Level (SAL). The board directed the department to develop a SAL which is undergoing a concurrent name change to "state action level." Such revisions to the Group A rule necessitated changes to the companion Lab rule, including the addition of a new PFAS template for the purposes of data reporting, notification requirements when there are PFAS detections, and state detection reporting limits (SDRLs) for PFAS.

What does this rule require?

The Lab rule requires that all labs that elect to offer drinking water testing be certified in Washington by the Department of Ecology's Laboratory Accreditation Unit (LAU) to perform analysis on drinking water contaminants for water systems that are regulated by the department. This rule also requires that all labs that elect to offer drinking water testing submit data reports to the department and public water systems as outlined in the chapter. Data reporting requirements outlined in the chapter include prescribed reporting formats, reporting limits, notifying the department and water systems of exceedances, submitting results for required contaminants, and doing so in a timely manner. This rule does not prescribe which contaminants that labs must be certified for. Labs may choose which contaminants they test for.

[10] IARC, Some Chemicals Used as Solvents and in Polymer Manufacture, in IARC Monographs on the Identification of Carcinogenic Hazards to Humans. Volume 110. 2017, International Agency for Research on Cancer (IARC): Lyon, France; Shearer, J.J., et al., *Serum concentrations of per- and polyfluoroalkyl substances and risk of renal cell carcinoma.* J Natl Cancer Inst, 2020.

[11] EPAs UCMR3 Webpage: https://www.epa.gov/dwucmr/third-unregulated-contaminant-monitoring-rule

However, the rules do prescribe how they must report sample results to the department for contaminants they do analyze.

Why are changes to this rule needed?

PFAS contaminant results have never been reported directly to the department or public water systems and therefore have never been a required component of the Lab rule. The proposed changes to the Group A rule require corresponding changes to the Lab rule for explicit PFAS reporting requirements and add notification requirements for specific PFAS contaminants. The rule revision also includes technical and clarifying corrections as needed.

The proposed rulemaking will:

- Add the following:
  - A new template for reporting PFAS to the department in a revised guidance document: *Laboratory Reporting Guidance*, Publication DOH 331-530, December 2021;
  - A new electronic reporting format in a revised guidance document: *Electronic Reporting Guidance*, Publication 331-289, December 2021;
  - PFAS specific notification requirements;
  - PFAS specific SDRLs; and
  - PFAS specific required analytes.
- Make minor technical changes and clarifying corrections to existing rule language:
  - Clarifies requirements for a lab to report to a public water system when it contracts a sample out to another lab;
  - Requires the contracting lab must notate on the final report to the public water system which sample results were contracted out to another lab;
  - Changes the chronic contaminant reporting timeline from 45 business days to 30 calendar days; and
  - Lowers the SDRL for chloride from 20 milligrams per liter (mg/L) to 2 mg/L and sulfate from 50 mg/L to 2 mg/L.

Section 2: Is a Significant Analysis required for this rule?

Yes, as defined in RCW 34.05.328, portions of the proposed rule require a significant analysis. The proposed revisions establish new reporting requirements for PFAS to ensure accurate, consistent, and timely reporting of drinking water sample analysis reports to the department.

The department determined the proposed revisions include some significant legislative rule sections that are subject to the requirements of RCW 34.05.328(5). The proposed revisions include new sections and changes to existing sections.

This analysis evaluates each of the rule sections to determine whether the changes in each section are "significant" or "non-significant."

The following SA Table 1 identifies rule sections or portions of rule sections the department has determined are exempt from analysis based on the exemptions provided in RCW 34.05.328(5) (b) and (c):

SA Table 1. Sections determined to be non-significant

WAC Section and Title	Description of Proposed Changes	Rationale for Determination of Non-significance
WAC 246-390-010 Definitions, abbreviations, and acronyms	Definitions added where necessary, deleted when not used anymore, and modified to be consistent with other drinking water rules.	Changes to definitions are identified and are determined to be non-significant under RCW 34.05.328(5)(b)(iv).
WAC 246-390-065 Table 1 Notification requirements for routine compliance samples	Designed an easy to read table for existing requirements in lieu of paragraphs of text without changing its effect.	The changes are determined to be non-significant under RCW 34.05.328(5)(b)(iv).
WAC 246-390-085 Enforcement	Updated the language to reflect current terminology used in department compliance strategies without changing its effect.	The changes are determined to be non-significant under RCW 34.05.328(5)(b)(iv).
WAC 246-390-095 Revocation and Suspension	Updated the language to reflect current terminology used in department compliance strategies without changing its effect.	The changes are determined to be non-significant under RCW 34.05.328(5)(b)(iv).

The remaining sections are determined to be significant under RCW 34.05.328(5). The section-by-section analysis in Section 5 evaluates the probable benefits and costs of each section deemed significant.

Section 3: Clearly state in detail the general goals and specific objectives of the statute that the rule implements.

The general goal of RCW 43.20.050 is to adopt rules for Group A public water systems to protect public health by ensuring the people of Washington have safe and reliable drinking water and adopt rules for lab certification.

RCW 43.20.050(2)(a):

"(2) In order to protect public health, the state board of health shall:

(a) Adopt rules for group A public water systems, as defined in RCW 70.119A.020, necessary to assure safe and reliable public drinking water and to protect the public health. Such rules shall establish requirements regarding:

(i) The design and construction of public water system facilities, including proper sizing of pipes and storage for the number and type of customers;

(ii) Drinking water quality standards, monitoring requirements, **and laboratory certification requirements;**

(iii) Public water system management and reporting requirements;

(iv) Public water system planning and emergency response requirements;

(v) Public water system operation and maintenance requirements;

(vi) Water quality, reliability, and management of existing but inadequate public water systems; and

(vii) Quality standards for the source or supply, or both source and supply, of water for bottled water plants;"

The proposed revisions meet the general goals and specific objectives identified in RCW 43.20.050 (2)(a)(ii) by updating the rule for reporting drinking water sample analyses to the department.[12] The department assessed the proposed revisions to the Lab Rule and to the companion Group A rule and determined that rule amendments are needed to achieve the general goals and specific objectives of the statute.

Section 4: Explain how the department determined that the rule updates are needed to achieve these goals and specific objectives. Analyze alternatives to rulemaking and the consequences of not adopting the rule.

The Lab rule currently does not include requirements for reporting of sample analysis results for PFAS. Since the board is proposing to amend the Group A rule, requiring water systems to monitor for PFAS in drinking water, the Lab rule testing and reporting requirements must correspond with the Group A PFAS requirements so that the data is correctly shared with the department and public water systems. This will ensure that public water systems are able to respond quickly to water quality problems. In order to achieve this goal, there are no feasible alternatives to rulemaking.

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[12] **Safe Drinking Water Act** - Sec. 1413 State primary enforcement responsibility (Primacy).
40 CFR 142.10(b)(3)(i) - Establish and maintain a lab certification program (Primacy).
Manual for the Certification of Laboratories Analyzing Drinking Water, Fifth Edition, EPA 815-R-05-004, January 2005 - *14.1 Criteria for Downgrading Certification Status* - Failure to report compliance data to the public water system or the State drinking water program in a timely manner, thereby preventing compliance with Federal or State regulations and endangering public health. Data which may cause the system to exceed an MCL should be reported as soon as possible.
RCW 43.20.050(2)(a)(ii) – State Board of Health (board) authority to adopt rules for lab certification.

Section 5: Explain how the department determined that the probable benefits of the rule are greater than the probable costs, taking into account both the qualitative and quantitative benefits and costs and the specific directive of the statute being implemented.

Survey Methodology Description:

The department developed and sent surveys to the 134 labs that are certified to perform drinking water sample analysis for Washington State. Of these 134 certified labs, 16 are certified with Washington's Laboratory Accreditation Unit to perform EPA method 533 and/or EPA method 537.1 and can analyze Washington State drinking water samples for PFAS contaminants. None of the 16 are physically located in Washington State. Fourteen labs responded to the survey (8 small and 6 large businesses) and 6 of the fourteen labs are certified to analyze samples for PFAS contaminants. The department asked labs to identify new costs to implement the proposed and amended sections of this rule. That is, if the lab is already complying with the proposed requirement, the lab would not identify a new or additional cost.

This significant analysis includes new costs for labs already certified to test for PFAS(SA Table 2). As the department estimates there will be approximately 4,000 initial samples taken over the proposed three-year monitoring cycle (2023 – 2025), the department believes that no additional labs would need to gain certification to meet the Washington State demand for PFAS analysis. SA Table 3 focuses on costs for labs to adhere to the technical corrections to the rule and could affect all labs certified to run samples for water systems located in Washington State and not just those that are certified to run PFAS samples.

The costs presented in this analysis are estimates for one-time costs, unit costs, and annual costs for the categories of labor, equipment/supplies, and professional services. One-time costs are costs that a lab would incur only once to comply with the rule, such as paying a print shop to format the new lab report forms. Unit costs are costs of a single unit, such as the cost of testing each water sample, These unit costs presented in the analysis are contingent upon unknown outcomes, as neither the labs nor the department know how many samples a laboratory might receive in a given time period. the costs are for illustrative purposes and are therefore deemed indeterminate. Annual costs are costs that a lab will incur every year, such as the costs associated with annual renewal fees for certification requirements.

The department conducted follow-up interviews with labs when the responses were either incomplete or when the department needed to ask clarifying questions. In some cases, the respondents elected to revise their original responses for accuracy.

Based on the results of the survey, the department chose to revise WAC 246-390-075 (17) (e) and (f) to reduce the costs to labs and therefore the water systems. The proposed rule requirements that were revised appear as alternative versions of the rule that were considered, identified in Section 6.

Cost/Benefit Analysis:

The proposed rule amendments regulate how and when a lab should submit reports to the department and notify public water systems. The rule does not require that all labs be certified to run analyses for all PFAS contaminants that the department requires public water systems to monitor for. However, if a lab chooses to run an analysis for a specific PFAS, the rule sets requirements for how the results are sent to the department and the public water system.

WAC 246-390-065 and 246-390-075 (17):

The new costs to labs for the proposed addition of PFAS SAL exceedance and reporting requirements under WAC 246-390-065 and 246-390-075 (17) respectively. The costs analyzed are for those labs that already analyze for PFAS as this rule does not require labs to change their business practice to analyze for PFAS. Of the 16 labs that are certified to analyze for PFAS, 6 responded to the survey.

Costs:

SA Table 2. New costs reported from labs that are certified to analyze for PFAS contaminants and therefore required to adhere with PFAS additions to WAC 246-390-065 and 246-390-075 (17) (respondents=6)

Cost Category	# of Respondents	Cost or Average Cost*	Range*	Cost Description
Unit cost				
Labor	1	$75	n/a	To perform notifications for exceedances**
One-time cost				
Labor	3	$2342	$550-$5000	To update internal documents and programs
Annual cost				
Labor	1	$1000	n/a	To provide notification of exceedances**

*These costs should not be summed and should be analyzed as individual rows.
**Labor to perform notifications for exceedances are reflected under both unit and annual costs as respondents used a different method to estimate this cost.

Benefits:

Requiring that all labs report the results to the same reporting limit for PFAS ensures that data reported to the department and public water systems is consistent from lab to lab. Setting the SDRLs to the method detection limit is historically consistent with how the department has set all SDRLs that are currently in use for all contaminates that the department monitors. Setting an SDRL at the method detection limit allows the department to receive any detection of a detectible contaminant given all current methods and technological advances.

Costs and benefits for the proposed technical corrections: These anticipated costs apply to labs that are currently certified to do business in Washington. Of the 134 labs surveyed, the department received 14 responses.

WAC 246-390-055 (1) (b): Adds a requirement that the contracting lab must notify the public water system that the sample will be contracted to another lab at the time that the lab confirms that the sample will be contracted out to another lab.

WAC 246-390-055 (1) (e): Adds a requirement that the contracting lab must note on the final data report to the public water system which sample results were contracted to another lab and clearly identify the lab they were subcontracted to.

WAC 246-390-075 (6): Establishes a reporting timeline for chronic contaminants. The current language requires labs to submit chronic contaminant results to the department and the public water systems within 45 business days. The proposed rule reduces the timeframe, requiring that chronic contaminant results are received by the department and the public water system within 30 calendar days of the laboratory receiving the sample.

WAC 246-390-075 Table 4: Table 4 lists the SDRLs for inorganic contaminants. The current SDRL for chloride is 20 mg/L and the SDRL for sulfate is 50 mg/L. The proposal lowers both of these SDRLs to 2 mg/L.

Costs:

SA Table 3. New costs reported from labs to adhere to rule technical corrections (respondents=14)

Type of Cost	Proposed Rule Section Change	# of Respondents	Cost or Average Cost*	Range*	Cost Description
Annual cost					
Labor	246-390-055 (1)(b)	1	$500	n/a	To notify customers
Labor	246-390-055 (1)(e)	1	$500	n/a	To notate on customer reports
One-time cost					
Labor	246-390-075 (6)	1	$50	n/a	To update internal documents and programs
Labor	246-390-075 Table 4	6	$175	$0 - $1000	To update templates

*These costs should not be summed and should be analyzed as individual rows

Benefits:

Notifying the public water system that the sample is or is not going to be analyzed by the lab that received the sample allows the lab to be transparent with their client and allows the public water system to know that there might be a delay in receiving their results if the water sample needs to be shipped to another location. This also allows the public water system to understand which lab performed the analysis. Documenting the analyzing lab in the report will allow the department or public water system to work with the analyzing lab if there are any questions about the sample results.

Since 2018, when the Lab rule was last amended, the department determined the 45-business day reporting requirement to submit chronic contaminants did not allow the department sufficient time to review sample results and meet the required timeframes of the monitoring requirements which in some cases caused water system violations. This occurred because the department was unable to submit the required monitoring and reporting violation reports to EPA within EPA's given timelines. Reducing the amount of time the lab has to send chronic contaminant results to the department provides the department adequate time to receive, enter the information into the department's data system, and review monitoring and reporting violations for all public water systems. It also allows the department adequate time to submit the violations to EPA within EPA's required timeline.

Lowering SDRLs for chloride and sulfate will enable the department and water systems to take proactive public health protection steps to reduce corrosivity to help alleviate lead leaching into the water supply. The current reported results are often non-detect at the department's current SDRLs, so the department often requires water systems to perform additional monitoring for chloride or sulfate at lower SDRLs. With detections at the lower SDRLs the department can calculate a chloride sulfate mass ratio (CSMR). Research has shown that the ratio of chloride to sulfate in a surface water sample can indicate a potential release of lead into the drinking water supply due to corrosivity.[13] Stock cures such as increasing pH or dosing orthophosphate corrosion inhibitor were not able to reduce lead in water in some cases. Bench-scale tests conducted in this research unambiguously demonstrated that raising the CSMR increased lead leaching from lead plumbing materials, whereas lowering the CSMR decreased lead corrosion. Therefore, lowering the SDRLs for chloride and sulfate better protects public health from lead contamination in the water supply.

[13] Nguyen, C.K, Stone, K.R., Edwards, M.A., Journal AWWA:Chloride to sulfate mass ratio: Practical studies in galvanic corrosion of lead solder, 2011, Available from: https://awwa.onlinelibrary.wiley.com/doi/abs/10.1002/j.1551-8833.2011.tb11384.x

<u>Cost Benefit Summary</u>
The department sent surveys to the 134 labs that are certified to perform drinking water sample analysis for Washington State samples. Of the 134 labs, 16 labs are certified to perform analysis for PFAS contaminants, and of those 16 labs 6 responded of the survey (6/134 = 4.5%). Overall, of the 134 labs, fourteen labs (14/134 - 10.4%) responded to the survey.

Of the 14 labs that responded to the cost survey (six are currently certified to test for PFAS in water samples) 9 reported incurring new costs associated with either the proposed PFAS requirements or technical corrections. Based on data collected the department finds that all new costs are related to labor. By cost, the department finds:

- One-time costs ranged from $0 - $5000 and were associated with labor costs to update internal documentation like standard operating procedures, updating the laboratory information management systems, or updating reporting templates. These one-time costs should not be summed and should be considered individually as they may not all apply to each lab.

- Annual costs ranged from $500 - $1000 and were associated with providing notifications and notation on customer reports. These annual costs should not be summed and should be considered individually as they may not all apply to each lab.

- Unit costs are $75 and include new costs to perform notifications for exceedances. While the department does not know the exact number of units that will need to be run, these unit costs cannot be quantified as an annual cost.

The benefits of the proposed rule can be achieved with minor costs to the lab community. Therefore, the department determined that the total probable benefits of the proposed chapter revisions exceed the costs to implement them.

Section 6: Identify alternative versions of the rule that were considered and explain how the department determined that the rule being adopted is the least burdensome alternative for those required to comply with it that will achieve the general goals and specific objectives stated previously.

The department considered alternate versions of the rule. In considering each requirement, the department chose the version that is the most protective of public health and the least costly for certified labs, while meeting the federal and state mandates of the underlying statutes.

The following language was proposed in the initial draft of the language:

> WAC 246-390-075 (17):
> (e) A lab shall report to the department any tentatively identified compounds (TIC) that are detected while analyzing a PFAS sample.
> (f) A lab shall attach to the lab report a copy of the method specific QC results for any TIC detections that are reported to the department.

It was discussed in the cost survey that TICs could not be obtained during regular PFAS analysis. An additional analysis would be required. Traditionally, when a lab analyzes a sample for contaminants, TICs could be observed during a normal analytical "run". These "unlabeled" contaminants that would show up as a detection could be compared against an extensive library of analytes that be can be detected using the equipment and the method that the lab is using. PFAS are relatively "new" in the drinking water analysis arena so therefore there are not nearly as many references for labs to use. Given the relatively high cost to run PFAS samples ($796 mean costs per sample as determined in the Significant Analysis for the Group A rule) it was deemed that having the public water systems expend additional funds to actively look for TICs outweighed the benefit of receiving the additional information at this time. The draft rule language was updated so that TICs could be reported if future technological advances were made that allowed TICs to be identified during "normal" analytical analysis.

The department determined that the certification of new labs and associated costs was to be excluded from the cost/benefit analysis because the current number of labs that are certified for PFAS meets the expected capacity needs for analyzing PFAS. On average, a lab can analyze 40 samples for PFAS contaminants per week. Using this average, the 16 labs that are currently certified to run PFAS samples could run 640 samples per week or 33,280 samples per year. As previously reported, there will be approximately 4,000 initial samples taken over the proposed three-year monitoring cycle (2023 – 2025) and therefore the department believes that no additional labs would need to gain certification to meet the state's demand for PFAS analysis.

Section 7: Determine that the rule does not require those to whom it applies to take an action that violates requirements of another federal or state law.

The rule does not require those to whom it applies to take an action that violates requirements of federal or state law.

Section 8: Determine that the rule does not impose more stringent performance requirements on private entities than on public entities unless required to do so by federal or state law.

The rule will not impose more stringent performance requirements on private entities than on public entities. The changes in this rule apply equally to all certified labs, whether the lab is publicly or privately owned.

Section 9: Determine if the rule differs from any federal regulation or statute applicable to the same activity or subject matter and, if so, determine that the difference is justified by an explicit state statute or by substantial evidence that the difference is necessary.

The proposed rule does not differ from any applicable federal or state regulation or statute.

Section 10: Demonstrate that the rule has been coordinated, to the maximum extent practicable, with other federal, state, and local laws applicable to the same activity or subject matter.

The board and department are coordinating internally to address the necessary changes to the Lab rule, to align with the proposed amendments to the Group A Rule.

The department has been collaborating with the Department of Ecology and numerous other stakeholders since 2016 on a PFAS Chemical Action Plan (CAP). The PFAS CAP identifies, characterizes, and evaluates uses and releases of a specific Persistent Bioaccumulative Toxin (PBT), a group of PBTs, or metals of concern, and recommends actions to protect human health or the environment.

Ecology's PFAS CAP makes several recommendations to the legislature relevant to this rulemaking and the subsequent costs associated with ensuring safe and reliable drinking water.

Recommendation 1.1 states,

> "State agencies, the Washington State Legislature, and local water systems should work together to fund PFAS drinking water mitigation. These costs should be reimbursed by responsible parties under applicable laws. Once PFAS water contaminants are officially classified as hazardous substances by the federal government or by the state of Washington, they can be addressed under the state Model Toxics Control Act (MTCA) framework."

Recommendation 2.1, states,

> "Using existing authority under MTCA, Ecology will develop cleanup levels for PFOA and PFOS (and additional PFAS as appropriate). Ecology will use the State Board of Health's (SBOH) drinking water standards or other advisories adopted in rule to develop these cleanup levels."

As previously mentioned, the drinking water standards proposed in this rulemaking are foundational to other regulatory changes that are needed to protect Washingtonians health and the environment. The department is, and will continue, working closely with Ecology and others to coordinate our actions with others to accomplish the necessary next steps to addressing PFAS contamination in Washington State.