

NOTIFICATION LEVEL ISSUANCE

Contaminant(s):	Perfluorohexane Sulfonic Acid (PFHxS)
Proposed Notification Level:	3 nanograms per liter (ng/L)
Proposed Response Level:	20 nanograms per liter (ng/L)
Analytical Method:	EPA Methods 537.1 and 533
Toxicological Endpoint:	Decreased total thyroid hormone in male rats

FINDINGS:

1. Health and Safety Code section 116455 authorizes the State Water Resources Control Board (State Water Board) to issue notification and response levels for contaminants in drinking water delivered for human consumption before a maximum contaminant level (MCL) has been adopted. Pursuant to subdivision (k)(2) of section 116271 of the Health and Safety Code, the Deputy Director of the Division of Drinking Water (DDW) is delegated the State Water Board's authority to issue notification and response levels.
2. Notification levels are nonregulatory, health-based advisory levels for contaminants that are established as precautionary measures.
3. Response levels are established in conjunction with notification levels and represent the concentration of a drinking water contaminant at which additional steps, beyond notification, are recommended to reduce public exposure. For contaminants with non-cancer health risks, a response level up to 10 times the toxicological endpoint is consistent with an acceptable margin of safety.
4. Information on notification and response levels is available at https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/NotificationLevels.html.
5. PFHxS is a member of a large class of chemicals known as per- and polyfluoroalkyl substances (PFAS). PFHxS is a six-carbon fluorocarbon with a functional group that acts as an anionic surfactant that can be used in numerous commercial products to offer water- and stain-repellent properties and in fire-fighting foams. It does not occur naturally, and its presence in the environment is due to anthropogenic activity. Due to its saturation with highly stable carbon-fluorine bonds, the PFHxS molecule is resistant to degradation. As a result, this compound persists in the environment and in biological organisms. PFHxS adversely affects the growth and development in fetuses, infants, and young children.



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6. The establishment of notification and response levels does not require public water systems to monitor for the contaminant, except when water systems are subject to recycled water regulations at Title 22, California Code of Regulations, division 4, chapter 3. Some water systems, however, will sample for constituents in addition to those contaminants for which there are maximum contaminant levels, and if those monitoring results indicate that a notification level or response level has been exceeded, the water system must comply with Health and Safety Code section 116455.
7. Health and Safety Code section 116378 requires community and nontransient noncommunity water systems, when ordered to monitor for any PFAS with a notification level, to
 - A. Report detected results in the water system's annual consumer confidence report,
 - B. Notify the water system's governing body if a notification level is exceeded, and
 - C. Either remove a water source from use or provide public notification within 30 days if a response level is exceeded.
8. In addition to the requirements for notification in sections 116378 and 116455 requirements, DDW recommends that a public water system inform its customers and consumers about the exceedance of notification levels and response levels, as well as associated health concerns.
9. In February 2020, DDW requested that the Office of Health Hazard and Assessment (OEHHA) prepare a recommendation for a notification level for PFHxS.
10. On March 17, 2022, OEHHA provided a memorandum and technical document entitled *Perfluorohexane Sulfonic Acid in Drinking Water*. The recommended notification level of 2 ng/L or parts per trillion (ppt) represents the concentration of PFHxS in drinking water that would not pose any significant health risk.
11. In accordance with Health and Safety Code section 116456, DDW posted the proposed PFHxS notification and response levels on its website, along with links to peer-reviewed studies relied upon and OEHHA's recommendation. DDW provided notice of the proposed notification and response levels, with supporting documentation, via email on July 7, 2022. Documents related to development of the notification and response levels are available at https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/NotificationLevels.html.
12. On July 7, 2022, DDW provided public notice of proposed notification and response levels for PFHxS of 2 ng/L and 20 ng/L, respectively.
13. On August 17, 2022, DDW presented an informational item on the proposed notification and response levels during the regularly noticed meeting of the State Water Board.



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14. According to the 2022-2026 Unregulated Contaminant Monitoring Rule (UCMR 5), [U.S. EPA Method 533](#) will be used to analyze for PFHxS in drinking water samples and has a minimum reporting level of 3 ng/L.
15. Based on laboratory capacity, the Deputy Director finds that a notification level of 3 ng/L is more appropriate for statewide sampling needs.
16. For the purposes of U.S. EPA Method 533, field duplicates are separate samples collected at the same time and sampling location, shipped and stored under identical conditions, to support potential repeat analyses (if the original field sample is lost or if there are quality control failures associated with the analysis of the original field sample).
17. Because PFHxS adversely affects fetal and infant development, DDW recommends that:
 - A. The laboratory notify the public water system within 48 hours of obtaining a result that exceeds the notification and/or response level, and
 - B. A field duplicate be collected for potential sample confirmation.
18. PFHxS detections will be evaluated for notification and response level exceedance using one of the following:
 - A. Through confirmation of a positive detection by analysis of a field duplicate collected with the initial sample, or
 - B. Using the single initial positive sample result, if the water system chooses not to analyze a field duplicate for confirmation.
19. If the average of the initial and field duplicate PFHxS sample results, or the initial positive sample result if the water system chooses not to analyze a field duplicate for confirmation, exceeds the notification or response level, the water system must conduct the public notification and actions specified in Health and Safety Code section 116455 and, if ordered to monitor pursuant to section 116378, in section 116378. If the average or initial sample result does not exceed the notification or response level, the water system should inform the State Water Board of the results.

Therefore, the Deputy Director of DDW establishes a notification level of 3 ng/L and response level of 20 ng/L for PFHxS.

Approved:

Darrin Polhemus, P.E.
Deputy Director, Division of Drinking Water
State Water Resources Control Board

Date