To study the occurrence of PFOA in New Jersey public drinking water systems, following detection of PFOA in a public water system at up to 0.19 ug/L in 2006.

**ABSTRACT**

Using both surface and ground water sources, concentrations of PFOA in New Jersey drinking water are evaluated in order to determine the health-based drinking water guidance for long-chain perfluoroalkyl acids (PFAAs). These drinking water criteria are compared to the New Jersey drinking water guidance as well as to the Federal water criteria developed by NJDEP.

**DEVELOPMENT OF HEALTH-BASED DRINKING WATER GUIDANCE**

- The development of health-based drinking water guidelines for PFOA is based on the National Research Council (NRC) (2005) guidelines. The NRC guidelines recommend the use of the non-carcinogenic approach to risk assessment, which is based on the no observed adverse effect level (NOAEL) or the lowest observed adverse effect level (LOAEL).
- The most sensitive endpoints were decreased body weight and hematological effects in female rats. The hazard index (HI) is determined by dividing the predicted human exposure by the NOAEL or the LOAEL. HI values above 1 indicate potential concern for adverse health effects.
- The hazard index for PFOA in New Jersey drinking water is calculated using the ratio of half-lives instead of the standard uncertainty factor (100:1), which results in a more conservative approach to risk assessment.

**POTENTIAL IMPACTS OF PFOA ON DATA AND HEALTH**

- PFOA has been shown to affect the liver, kidneys, and reproductive systems in laboratory animals.
- Chronic exposure to PFOA has been associated with increased risk of cancer and liver tumors in animals.
- PFOA exposure has been linked to increased risk of elevated cholesterol and uric acid in adults with high exposure to PFOA.
- PFOA exposure has been associated with increased risk of myocardial infarction and stroke in humans.

**CONCLUSION**

- The health-based drinking water guidance is 0.04 ug/L based on target human serum level of 4 ug/L, which is 5 times lower than the Federal water criteria.
- The development of health-based drinking water guidelines for PFOA is critical to protect public health and ensure safe drinking water for all communities.

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