



STATE OF NEW HAMPSHIRE

Date: March 13, 2017

At (OFFICE): DES-EHP

From: Dennis Pinski, M.P.H.

To: Craig Wright, Director
DES-ARD

Subject: *Health Effects Summary for the perfluoroalkyl substances perfluorooctanoic acid (PFOA) and perfluorosulfonic acid (PFOS)*

The Department of Environmental Services, Environmental Health Program (EHP) has reviewed the US Environmental Protection Agency's (EPA) *Drinking Water Health Advisory for Perfluorooctanoic Acid (PFOA)* and *Drinking Water Health Advisory for Perfluorooctane Sulfonate (PFOS)* that were released by the EPA in May, 2016.

PFOA and PFOS are fluorinated organic chemicals that are part of a much larger group of chemicals referred to as perfluoroalkyl substances. PFOA and PFOS have been the most extensively produced and studied of these chemicals. EPA developed drinking water health advisories to provide information on the adverse health effects associated with ingestion of these chemicals in drinking water. Scientific studies have shown exposure to PFOA and PFOS in drinking water to be associated with the following effects:

- Developmental effects
 - decreased bone formation
 - accelerated puberty in males
 - reduced newborn body weight
- Liver toxicity
- Thyroid effects
- Immune system effects
- Cancer

With respect to cancer, EPA determined that there is "suggestive evidence of carcinogenic potential" for both PFOA and PFOS under EPA's 2005 *Guidelines for Carcinogen Risk Assessment*. Although EPA has judged that the evidence for cancer in humans and animals from PFOS exposure is limited, the evidence for cancer from PFOA exposure is stronger. Human studies suggest that PFOA exposure could lead to increased risk for kidney and testicular cancer. Animal studies have indicated that PFOA exposure could result in increased risk of liver, testicular, and pancreatic tumors.

In addition to the information provided above, the following excerpts from the *Drinking Water Health Advisory for Perfluorooctanoic Acid (PFOA)* and *Drinking Water Health Advisory for Perfluorooctane Sulfonate (PFOS)* are included to provide additional information the adverse human health effects that have been shown to be associated with exposure to these chemicals.

Drinking Water Health Advisory for Perfluorooctanoic Acid (PFOA) EPA 822-R-16-005 May, 2016
https://www.epa.gov/sites/production/files/2016-05/documents/pfoa_health_advisory_final_508.pdf

Drinking Water Health Advisory for Perfluorooctane Sulfonate (PFOS) EPA 822-R-16-004 May, 2016
https://www.epa.gov/sites/production/files/2016-05/documents/pfos_health_advisory_final_508.pdf

Please let me know if you have any questions or if you require any additional information relative the toxicity of these chemicals.