ENSURING GROUNDWATER AND DRINKING WATER SUPPLIES MEET EPA’S HEALTH ADVISORY FOR PFOA AND PFOS

BACKGROUND ON UNREGULATED CHEMICALS: PFOA & PFOS

Perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS) are fluorinated organic chemicals used to make carpets, clothing, fabrics for furniture, paper packaging for food and other materials (e.g., cookware) that are resistant to water, grease or stains. They are also used for firefighting at airfields and in a number of industrial processes. Between 2000 and 2002, PFOS was voluntarily phased out of production in the U.S. by its primary manufacturer. In 2006, eight major companies in the U.S. voluntarily agreed to phase out U.S. production of these chemicals.

Though not yet regulated, the Environmental Protection Agency (EPA) issued a health advisory in 2009 of 400 parts per trillion (ppt) for PFOA and 200 ppt for PFOS for short term exposure to these compounds. Based on additional studies and expert peer review of health risks, on May 19, 2016 the EPA issued an updated health advisory for lifetime exposure to these compounds set at a combined 70 ppt for the sum of PFOA and PFOS concentrations in drinking water. The health advisory level offers a margin of protection from adverse health effects resulting from exposure to PFOA and PFOS in drinking water, including sensitive populations such as infants and pregnant mothers.

OCWD will continue to assist local groundwater producers to help ensure that drinking water meets the EPA’s new health advisory.

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PFOA AND PFOS TEST RESULTS – IS MY WATER SAFE?

The EPA collects occurrence data for potential contaminants that may be present in drinking water, but do not have enforceable drinking water standards, under its Unregulated Contaminant Monitoring program. Recently, EPA implemented its third Unregulated Contaminant Monitoring Rule (UCMR3), which included testing for PFOA and PFOS. The UCMR data served as a primary source of occurrence and exposure information that EPA uses to develop regulatory decisions.

Based on preliminary information from EPA, 63 water suppliers in the United States detected PFOA and PFOS in their drinking water supplies. Twenty-six of these water systems are located in California.

From 2013 through 2015, OCWD performed UCMR3 testing for Orange County groundwater retail agencies (producers). OCWD collected and analyzed samples for PFOA and PFOS from 135 locations within its service area. Based on UCMR3 results, 14 water providers within the District did not detect PFOA or PFOS in their drinking water systems. Five water agencies in OCWD’s service area found low level detections of these compounds and include Anaheim Public Utilities, the city of Fullerton, the city of Garden Grove, the city of Orange and the Yorba Linda Water District. All detections were well below EPA’s 2009 health advisory.

Under the EPA’s new 2016 lifetime health advisory of 70 ppt for the combined concentrations of PFOA and PFOS, one well in Anaheim and two in Orange tested above the health advisory level and were taken out of service. Wells in the cities of Fullerton and Garden Grove had detections well below the new health advisory level, and Yorba Linda’s combined reservoir blend was below the advisory level.

Both a 2012 Water Research Foundation - sponsored research study with the Southern Nevada Water Authority and 2013 - 2014 testing by the OCWD Advanced Water Quality Assurance Laboratory using UCMR3 methods, did not detect PFOA or PFOS in OCWD’s Groundwater Replenishment System (GWRS) finished product water. GWRS finished product water is used for groundwater recharge and injection.

Impacted wells were taken out of service or were blended with other water supplies to meet the EPA health advisory for PFOA and PFOS. Only drinking water that meets the new health advisory is being served in OCWD’s service area.
EXPOSURE, HEALTH IMPACTS AND PFOA AND PFOS DRINKING WATER HEALTH ADVISORIES

Because these chemicals have been used in many consumer products, most people have been exposed to them. Scientists have found PFOA and PFOS in the blood of nearly all the people they tested, but recent studies show that the levels of PFOA and PFOS in blood have been decreasing.

EPA’s health advisories are based on the best available peer-reviewed studies of the effects of PFOA and PFOS on laboratory animals (rats and mice) and were also informed by epidemiological studies of human populations that have been exposed to high levels of these compounds. These studies indicate that exposure to PFOA and PFOS over certain levels may result in adverse health effects, including developmental effects to fetuses during pregnancy or to breastfed infants (e.g., low birth weight, accelerated puberty, skeletal variations), cancer (e.g., testicular, kidney), liver effects (e.g., tissue damage), immune effects (e.g., antibody production and immunity), thyroid effects, and other effects (e.g., cholesterol changes).

EPA’s health advisory levels were calculated to offer a margin of protection against adverse health effects to the most sensitive populations: fetuses during pregnancy and breastfed infants. The health advisory levels were calculated based on the drinking water intake of lactating women, who drink more water than other people and can pass these chemicals along to nursing infants through breast milk.
NEXT STEPS: CONTINUED MONITORING/FINDING THE SOURCE(S)

The health advisory is just that, “advisory.” Though these levels are non-enforceable and non-regulatory, OCWD and its producers are committed to serve water that meets the health advisory and to continue monitoring levels of these compounds.

If levels are detected above the 70 ppt threshold, EPA has recommended that:

- Water systems quickly undertake additional sampling to confirm and assess the level, scope and localized source of contamination.
- Water systems promptly notify their state drinking water safety agency (i.e. in California, the State Water Resources Control Board, Division of Drinking Water (DDW)) and consult with the DDW on the best approach to conduct additional sampling.
- Drinking water systems and public health officials promptly provide consumers with information about the levels of PFOA and PFOS in their drinking water.

The safety of the groundwater and public health are top priorities for OCWD and in order to continue to proactively monitor and protect the groundwater supply, its next steps include, but are not limited to:

- Assessing potential PFOA and PFOS sources to the affected groundwater
- Creating a work group with impacted water providers
- Being transparent and communicating regularly with stakeholders
- Working with independent labs to do further testing to identify potential sources

Additional information on EPA’s 2016 PFOA & PFOS Health Advisories may be found at: https://www.epa.gov/ground-water-and-drinking-water/drinking-water-health-advisories-pfoa-and-pfos

ABOUT OCWD

Created in 1933 to protect and manage the Orange County Groundwater Basin, which supplies 75% of north and central Orange County’s water needs, OCWD is internationally recognized as a leader in water quality testing. OCWD tests water from about 1,500 locations throughout the basin, taking more than 20,000 samples and conducting over 400,000 analyses of these samples each year.

While OCWD and its producers provide some of the cleanest drinking water in the world, they know that their work is never done. OCWD is committed to ensuring that the community is knowledgeable and has the resources available to understand local water quality. To help achieve this, OCWD makes sure that water quality test results are publicly available and sent routinely to producers.

For more information about OCWD, visit www.OCWD.com