MINNESOTA MDH DEPARTMENT OF HEALTH

Oakdale Wells FAQ's (frequently asked questions) **January 24, 2005**

QUESTIONS ABOUT THE OAKDALE PUBLIC WATER SUPPLY

Which wells have PFOS and PFOA? How much?
Samples were collected from the active city wells, numbered 1, 2, 3, 5, 7, and 8 in late December 2004 under the oversight of City of Oakdale and MDH staff. Well #3, located north of MN Highway 5, showed no detection of PFOS or PFOA. Wells #1 and #2, located at the southern edge of the city, had the lowest concentrations of PFOS and PFOA, less than 0.1 parts per billion (ppb). Wells #5, #7, and #8 had higher concentrations, up to 0.97 ppb PFOS and 0.86 ppb PFOA. Well #9, located near well #5, was not sampled at that time due to a mechanical problem. Future sampling efforts will include well #9, and may include other public and private wells in the area as well.

The concentrations detected are below the MDH Health Based Values (HBVs) for PFOS and PFOA of 1 ppb and 7 ppb, respectively. MDH considers the HBVs to be protective for all users of the water.

What is the concentration of PFOS and PFOA in the water at my home/apartment/workplace?
Because of the constant mixing that occurs in the system, we expect that the concentration of PFOS and PFOA at any particular location in the city should be somewhere between the lowest and highest levels detected in the individual wells. Given that the well with the highest concentration of PFOS and PFOA are below the HBV, no users should be receiving water that has PFOS or PFOA at concentrations above the HBV. The chemicals will not "build up" in the storage tanks or system.

How was the problem of PFCs in the Oakdale wells discovered?
MDH often consults and advises MPCA in the investigation of Superfund sites throughout Minnesota. MDH specifically evaluates the impacts the site may have on people living nearby and advises on ways that exposures to people can be prevented or reduced. In the course of routine evaluation of the 3M Cottage Grove plant, PFCs were discovered in the groundwater beneath the plant.

This led to further investigation of sites where production wastes containing PFCs were disposed, such as the Washington County Landfill, and the Abresch site in Oakdale. PFCs were subsequently detected in the groundwater at these two sites, which led to the sampling of the Oakdale city wells. The actual source of the PFCs in the Oakdale wells is not known.

Is there a test to see if I have been exposed?
PFOS (and to a lesser extent PFOA) have been detected in the blood of people living in the United States and other countries. 3M has been monitoring these chemicals in the blood of Cottage Grove plant employees since the 1970's. Concentrations of PFOS and PFOA in the blood of the general population are many times less than that of the 3M

employees. The way these chemicals get into human blood is not known at this time. People could be exposed through food, water, use of commercial products, in the workplace, and/or from the environment. We know from studies of retired 3M employees that PFOS and PFOA stay in the human body for many years.

A blood test could determine if you have been exposed to PFOS and PFOA. These tests are expensive and not widely available. Furthermore, because all of us are exposed to these chemicals through a variety of pathways, interpreting the results is generally difficult. Exposure through the Oakdale water supply likely represents a minor pathway. For these reasons, we are not recommending that people have their blood tested.

Can I limit my exposure to PFCs?
The concentrations of PFOS and PFOA found in the Oakdale public water supply wells are below MDH Health-Based Values, so the water is considered safe for all users, including infants, children and pregnant women. Frequent testing will be conducted to ensure the water supply system remains safe. On the basis of their physical properties, PFOS and PFOA are non-volatile, and will not evaporate from water. However, they may be absorbed through the skin.

If, for personal reasons you would like to reduce your exposure to PFOS and PFOA through the Oakdale water supply, there are some simple steps you could take. You could use bottled water for part or all of your drinking or cooking needs. However, we are not aware of any testing of bottled water for PFCs.

While its effectiveness in household use has not been demonstrated, filters containing granular activated carbon (GAC) have been shown to be effective at removing higher concentrations of PFOS and PFOA from one water supply where they have been used and tested. It is not clear that charcoal will remove trace amounts, such as has been found in the Oakdale water supply. It is unknown if other types of common water treatment systems, such as water softeners or reverse osmosis units, could remove PFCs. Boiling the water will not remove the PFCs.

Beware of "fly by night' water treatment sellers. If you are interested in installing a water treatment system of any sort, be sure to work with a reputable supplier. Check references.

What happens if the concentrations of PFCs increase in the Oakdale wells?
The wells will be monitored by MDH on a frequent basis. If the concentration of PFOS and/or PFOA were to rise to levels that were consistently above the MDH HBVs, the city could limit the use of the affected well, or consider treatment of the water before it enters the system.

What about people in Oakdale who have private wells used for drinking water? Used for watering lawns?

If you are in the city of Oakdale and have a private well, we ask that you contact MDH to discuss whether your well needs to be tested. Results and recommended actions, if any, will be mailed to you.

QUESTIONS ABOUT PERFLUOROCHEMICALS

What are PFOS and PFOA?
Perfluorooctane sulfonate (PFOS; $C_8F_{17}SO_3^-$) and perfluorooctanoic acid (PFOA; $C_8F_{15}O_2H$) are chemicals that were made and used by 3M and other companies around the world in the production of stain repellents, lubricants, fire retardants and suppressants, and pesticides, and as industrial surfactants and emulsifiers.

The chemical structures of PFOA and PFOS make them extremely resistant to breakdown in the environment. As a result, they are persistent in the environment and are capable of moving over long distances.

Both PFOA and PFOA belong to a larger class of chemicals known as perfluorochemicals or PFCs.

Are PFCs found in everyday products used by people?
PFCs are used both as an ingredient in the manufacturing process as well as being part of some finished products. It is unclear if PFCs are released from the final commercial product during normal use.

Do PFCs occur naturally or are they man-made?
PFCs are man-made chemicals, and do not occur naturally.

How long have PFCs been around? The process for producing PFCs was developed in the 1940s, and 3M began producing PFCs shortly thereafter. Through monitoring in PFC production plants, 3M became aware of PFCs in the blood of their employees. This led to further research and the discovery of PFCs in the blood of people in the general population and in Arctic mammals and fish-eating birds. The route by which PFCs enters the blood of non-employees is still not known. Because of these concerns, 3M elected to phase out production of PFCs, ending in 2002. Other companies located outside of Minnesota continue to use PFCs.

How do PFCs get into the environment?
Experts have suggested several routes by which PFCs may get into the environment, but there is little definite information.

How do PFCs affect people & health?
PFCs are a relatively new group of chemicals and our knowledge of how they move in air, water, soil and food is limited. The number of studies of PFCs and health effects in people is also limited, and is mainly from studies of 3M employees. There have been a number of studies of lab animals. Due to limited information and the persistence of PFCs, the health criteria for concentrations of PFCs in water are conservative.

What is known about the health effects of exposure to PFOS and PFOA?
This family of chemicals is relatively new and there are not many studies of health effects in people. In animals, high concentrations of PFOS and PFOA cause harm to the liver and other organs. Exposures to high concentrations of PFOA over a long period of time also cause cancer in animals. Developmental problems have been seen in the offspring of rats exposed to PFOS and PFOA while pregnant.

Epidemiological studies by 3M of workers exposed to PFOS and PFOA during manufacture show no apparent impact on their health. There is no similar epidemiological information on the general population.

Can PFCs be avoided?
Because little is know about how PFCs move in the environment and how non-employees are exposed, ways to reduce exposure are limited and untested. Granular activated charcoal is effective at removing high concentrations from one water system that has been tested. It is not clear that charcoal will remove trace amounts, such as in the Oakdale water supply. It is unknown if other types of common water treatment systems, such as water softeners or reverse osmosis units, could remove PFCs. Boiling the water will not remove the PFCs.

Do short-term (acute) exposures to PFCs show the same health effects as long-term (chronic) exposures?
No short-term effects from exposure are expected at these concentrations.

Are there any laws that prohibit or regulate how often/how many PFCs can be released into the environment?
Currently, the discharge of these chemicals from at least one industrial facility is being regulated by the MPCA. The problem is that there are few point sources to regulate, and the sources of PFCs to the general environment are unknown. EPA is working to try to answer some of these questions.

Who can I contact for more information? The following contacts are available:

MDH (health issues):		
Jim Kelly	Health Risk Assessor	(651) 215-0913
Ginny Yingling	Hydrogeologist	(651) 215-0917
Helen Goeden	Research Scientist	(651) 215-0874
Chad Kolstad	Engineer	(651) 643-2103
Stew Thornley	Health Educator	(651) 215-0771
Tannie Eshenaur	Health Educator	(651) 215-0916
MPCA (site investigation):		
Gary Krueger	Project Manager	(651) 296-6139
Mark Rys	Hydrogeologist	(651) 296-7706
Ingrid Verhagen	Hydrogeologist	(651) 296-7266
Mike Rafferty	Information Officer	(651) 297-8294
Washington County (general groundwater issues):		
Cindy Weckwerth	Public Health & Environment	(651) 430-6703
City of Oakdale (utility operator):		
Brian Bachmeier	Public Works Director	(651) 730-2730
Craig Waldron	City Administrator	(651) 730-2705