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## **Algae Causes Drinking Water to Taste, Smell Strange**

Rising algae counts may lead to some customers detecting taste or odor in their drinking water right now, while others may not. What is important to remember is that the water is safe to drink, says Larry Lloyd P.E., Chief Operating Officer for Beaver Water District.

“Conditions in Beaver Lake sometimes promote more rapid growth of algae,” Lloyd said. “Excess nutrients can cause the growth. Then, the algae die. When they die, they may give off smelly chemicals that can cause unpleasant tastes in drinking water.”

Another cause of taste and odor, which typically happens in the fall, is what is commonly referred to as turnover. Turnover simply means that the water in the lake is mixed from top to bottom, Lloyd said. When this happens, compounds rise from the bottom of the lake to the top, which frequently leads to taste and odor problems.

“Many lakes are stratified in summer,” he explained. “That means there’s a separation of the warm surface and cool bottom water layers. When the temperature begins to get cooler in the fall, the cooler surface water begins to settle to the bottom. This causes the water to ‘turn over’ or mix from top to bottom. Various organic components may then be introduced into the raw water supply.”

To keep an eye on what is going on with algae conditions, the District samples for “MIB,” or 2-methylisoborneol. This organic compound is released by blue-green algae as part of the normal life cycle. Algal growth is spurred by sunlight, heat, and nutrients from watershed runoff. While it is hard to control these factors, it is possible for the public to help reduce the nutrients going into

watershed runoff. For example, homeowners should be mindful when applying fertilizer to the lawn. When too much fertilizer is applied, it runs off the land and into receiving streams and back to the lake, where it promotes algae growth. Where development is in process, construction sites need to be vigilant in maintaining the appropriate storm water pollution prevention controls, such as silt fences, that help keep the soil on the site rather than allowing it to run off during rain storms.

“MIB can cause unpleasant taste and odor in the water,” Lloyd said. “What makes this a challenging issue is the fact that the taste and odor threshold for MIB is 5 parts per trillion. That’s the equivalent of about 2.5 gallons of MIB poured into the lake. It’s a miniscule amount. However, some customers may not notice the taste and odor until the MIB reaches higher levels.”

To combat taste and odor, the District takes a number of steps, for example, adding potassium permanganate, which can reduce the levels of MIB.

“We continue to study the problem though. A recent study by an outside consultant showed that implementing new treatment schemes to potentially remove MIB at acceptable levels, would cost about \$4 to \$5 a month per household,” Lloyd said.

The good news is that taste and odor at the tap can be minimized in a variety of ways. For instance, chilling water and/or adding some lemon to the water will help. In addition, some people use carbon filters – the type used in water pitchers or attached to faucets.

“These taste and odor issues occur as a result of environmental conditions and also human actions. We want our customers to understand the cause of taste and odor and help us be proactive about taking care of Beaver Lake. The hope is that the more knowledgeable our customers are about nutrients and how they enter the lake, the more likely they will be to alter behaviors so that fewer nutrients enter the lake through over fertilization of lawns or runoff from construction sites, for example.”

Lloyd added that these issues are not unique to Northwest Arkansas and that taste and odor in drinking water is an aesthetic issue, not a health issue.

“Taste and odor or not, the water is safe to drink, and this episode will pass in a few weeks. It’s important to emphasize that clean drinking water that protects human health is one of the greatest achievements of the past century. According to Water for People (waterforpeople.org), an estimated 884 million people worldwide, the majority of them in developing countries, don’t have regular access to safe drinking water. To put it simply, clean drinking water is a matter of life and death. All of us at Beaver Water District take pride in the work we do and the product we deliver to our customers. “

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**About Beaver Water District**

Beaver Water District supplies drinking water to more than 250,000 people and industries in Fayetteville, Springdale, Rogers, Bentonville and surrounding areas. These cities then resell the water to surrounding towns and communities. The District's mission is to serve our customers in the Benton and Washington County area by providing high quality drinking water that meets or exceeds all federal and state regulatory requirements in such quantities as meets their demands and is economically priced consistent with our quality standards. For more information, visit [www.bwdh2o.org](http://www.bwdh2o.org).