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News Release

For Immediate Release: March 2, 2006
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Drought Affects Drinking Water

Public water systems that use reservoirs or streams as the raw water supply for a community may be experiencing problems due to lack of rain. When water levels are very low, iron and manganese, which are normally found toward the bottom of a water body, can be picked up by the water pumping system.

Iron and manganese are naturally occurring elements. While neither poses a health hazard in drinking water, these elements can cause water to look dirty or make clothes turn reddish brown when washed due to interaction with bleach products.

In water systems that are not designed to remove iron and manganese, the elements pass through the water treatment plant and out into the drinking water system. Chlorine, which is added during treatment to kill bacteria, oxidizes the iron and manganese, causing the elements to flocculate, or stick together. This concentrates the elements and discolors the water.

Water treatment plants can control iron and manganese in drinking water by adding polyphosphates to keep the elements in suspension, or by adding potassium permanganate before treatment to flocculate the elements so they can be filtered out. Also helpful are efforts to keep the pH of the water neutral or slightly acidic along with scheduled water line flushing programs. Drinking water customers who find that their water looks dirty or have had clothes stained in the laundry should ask their water plant manager to employ these relatively simple solutions.

In light of recent drought conditions, the Oklahoma Department of Environmental Quality (DEQ) has advised all water systems to flush their lines. DEQ staff also provides on-site technical assistance to water systems. Of course, a good rain that would raise water levels in reservoirs would improve the quality of the water and solve much of the "brown water" problem.

For more information about the presence of iron and manganese in your drinking water you may contact your local water system or the DEQ at 1-800-869-1400. Information regarding your water system can be found at <http://sdwis.deq.state.ok.us/>.

Additional information:

The U.S. Environmental Protection Agency (EPA) sets standards for public drinking water supplies. Primary drinking water standards are health-related and are legally enforceable. Public water supplies must comply with primary standards. Secondary

drinking water standards affect the quality of the water in terms of aesthetics such as color and odor, but do not cause human health effects. A secondary drinking water standard is a suggested level above which the water may have a color or odor that may be objectionable, but will not cause adverse health effects. Iron and manganese do not have primary drinking water standards but do have secondary standards. Secondary standards are not enforceable.

Iron

Iron is a naturally occurring element. The EPA secondary drinking water standard for iron is 300 microgram per liter (ug/l) {1 ug/l is equal to 1 part per billion}. Above 300 ug/l water may develop a red-orange color. As the amount of iron in the water increases, the color also increases. A public drinking water supply cannot be required to supply water with iron below any particular level. However, drinking water systems are advised that iron over 300 ug/l will cause their water to be discolored.

Manganese

Manganese is another naturally occurring element that can often be detected in drinking water. The EPA secondary drinking water standard for manganese is 50 ug/l. At this level and above, water may be cloudy, form black precipitates, contribute to mineral depositing in pipes or cause the darkening of clothing during washing. There is not a published level at which manganese causes health problems. At 50 ug/l of manganese, drinking water systems are advised that problems with taste and color of water can occur.