

ANR-790-2.3.5

ALABAMA A &amp; M AND AUBURN UNIVERSITIES

## Typical Contaminants And Problems

### Color, Odor, And Taste Problems

**F**rom the clouds to the tap, water contacts and carries many substances, including gases, minerals, and organic matter. Many of these are impurities that interfere with water use by humans. Some of these impurities are completely dissolved; others are solid suspended particles in the water that cause objectionable color, odor, and taste.

Color makes water unpleasant for drinking and cooking and causes staining. A rotten egg odor or taste in water means hydrogen sulfide is present. Even a very low concentration will result in strong, obnoxious odors. Highly mineralized water tastes salty or metallic, and the taste can easily be detected in foods and beverages. For a pleasant taste, water should have some dissolved minerals. Water without minerals tastes bland.

#### Causes Of Color, Odor, And Taste Problems

The color in water is most often caused by dissolved matter from decaying organic materials. Some color is almost always present in surface water and can occur in well water also. Organic matter often contributes to the tastes and odors in water giving it a musty odor and unpleasant taste. A major cause of taste and odor problems is metabolites produced by algae or other microorganisms, but a distinctive “rotten egg” odor indicates the presence of hydrogen sulfide.

Hydrogen sulfide can cause more than a taste and odor problem. It is very corrosive, and it can combine with other minerals to cause black water and black stains. Iron sulfide is quite common when iron and hydrogen sulfide are both present. Iron sulfide forms a black precipitate that causes severe staining and laundry problems. Sulfur reducing bacteria can also cause problems by developing black slime materials in pipes, fixtures, and toilet flush tanks.

#### Treatment Of Color, Odor, And Taste Problems

Chlorination and activated carbon filters will remove colors, odors, and tastes from water with any

amount of contaminants. When a small quantity of contaminant is present, other methods are sufficient.

Faucet aerators can improve taste and help remove obnoxious gases. They work by putting oxygen in water.

When only small amounts of hydrogen sulfide are involved, an oxidizing filter or a carbon filter will remove the sulfur satisfactorily. If concentrations are higher, the hydrogen sulfide can be removed by chlorination followed by filtration through a mechanical (sand) filter. The chlorine will oxidize the sulfur changing it to an insoluble form, and the filter will remove the suspended yellow particles. The chlorine will also kill sulfur bacteria if they are present.

#### At A Glance

##### *Color*

**Symptoms:** Red, yellow, blue, or black tinge to water.

**Causes Of The Problem:** Suspended organic matter; various dissolved minerals; iron (red or yellow color), copper (blue color), manganese (black color); sulfate-reducing bacteria (black color).

**Suggested Treatments:** Chlorination followed by activated carbon filter (for organic matter); oxidizing filters; reverse osmosis.

##### *Rotten Egg Odor And Taste*

**Symptoms:** Corrosion of iron, steel, and copper plumbing and pumps; black water (if both iron and sulfur are in the water); blackened silverware.

**Causes Of The Problem:** Hydrogen sulfide; sulfate-reducing bacteria; sulfur bacteria.

**Suggested Treatments:** Chlorination followed by mechanical (sand) filter (for hydrogen sulfide up to 5 ppm); chlorination followed by activated carbon filter (for any amount of contaminant); oxidizing filters.

ANR-790

Water Quality 2.3.5

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**Prevention:** Replace or clean clogged and corroded plumbing.

**Other Off Flavors**

**Symptoms:** Bitter, brackish, oily, salty, or chlorine odor or taste.

**Causes Of The Problem:** Extreme mineral content; organic matter; excess chlorine; travel through oily or salty water.

**Suggested Treatments:** Chlorination followed by activated carbon filter (to remove organic matter and iron and to eliminate metallic taste); reverse osmosis (to remove salty taste); activated carbon filter (to remove chlorine odor or taste).

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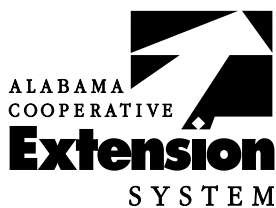
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ANR-790-2.3.5

This publication, supported in part by a grant from the Alabama Department of Environmental Management and the Tennessee Valley Authority, was prepared by James E. Hairston, *Extension Water Quality Scientist*, assisted by Leigh Stribling, *Technical Writer*.

**For more information,** call your county Extension office. Look in your telephone directory under your county's name to find the number.

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UPS, **New June 1995**, Water Quality 2.3.5