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Texas Agricultural Extension Service

Home Water Quality Problems— Causes and Treatments

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Many areas in Texas have water containing chemical or organic impurities from natural or man-made sources. These impurities may cause health problems, damage equipment, stain laundry and emit odors. Water-related problems will be found primarily in homes serviced by a private water supply, although a few of them will also be found in water from municipal water supplies. Those impurities which cause health problems should be attended to immediately; other problems caused by water impurities can be corrected by the treatments suggested below.

SYMPTOMS	PROBABLE CAUSES	SUGGESTED TREATMENTS
Intestinal disorders. Water may or may not have "off" taste or odor.	Contamination due to surface runoff containing fertilizer, pesticides or manure. Unprotected cross connections. Sewage infiltration.	Have water analyzed to determine type of contamination. Disinfect water supply with strong chlorine solution and install automatic chlorinator if appropriate. Install check valves or other protection at cross connections and maintain air gaps between faucets and any possible source of contamination.
Soap doesn't lather well. Greasy, grimy rings in tubs and sinks. Dingy laundry with a harsh feel and possibly white or gray streaks. Milky film or spots on dishes washed in automatic dishwasher. Scale build-up in hot water heater. Scale build-up in pipes and reduced water flow.	Hard water due to calcium and magnesium compounds dissolved from rocks and minerals in the earth. The most commonly used description is: 0-3 grains per gallon = Soft 4-9 grains per gallon = Average over 10 grains per gallon — Hard	Install a water softener or reverse osmosis system for both hot and cold water, bypassing outside water lines. Kitchen cold water line may be bypassed if water softener is selected and sodium in the diet is a concern. Alternatively, soften water in washer, tub and basins by adding non-precipitating water conditioners. Special scale filters may be attached to the cold water supply lines to appliances.
Reddish-brown stains in sinks, toilets, tubs, dishwashers and dishes. Reddish-brown stains or yellowing of laundry, especially after using chlorine bleach. Water tastes metallic. Fluffy brown sediment in standing water. (See also reddish slime.)	Dissolved iron in the water that is oxidized by air to form iron oxide, which is insoluble. (See also iron bacteria.)	Have water analyzed to determine type and amount of iron problem, then select appropriate iron removal equipment such as chlorinator and sand filter, high capacity water softener or manganese greensand filter. Equipment for removing iron from water should be purchased from a reliable dealer who has training in this particular problem.
Reddish slime on walls of toilet flush tank and reduced water flow. Slimy material suspended in clear water.	Iron bacteria, which live on iron in the water and eventually harden into scale.	Install a chlorinator to feed into the well near the pump intake and a filter to remove excess chlorine and other objectionable tastes or odors.

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SYMPTOMS	PROBABLE CAUSES	SUGGESTED TREATMENTS
Iron pipes rust. Water dripping from corroded galvanized pipe has a rusty color. Corroded copper or brass pipes causes blue-green stains on sinks. Laundry may have red, reddish-brown or blue-green stains. Metallic taste.	Low pH, commonly called acid water; often caused by a high concentration of carbon dioxide.	Have water analyzed to determine the extent of the problem, then use appropriate chemical treatments and filters, such as aeration, caustic soda, soda ash or calcuim carbonate filter.
Rotten egg odor from both hot and cold water pipes. Copper and silver turn black in the water. Iron, steel or copper parts of pumps, pipes and fixtures corroded. Black stains on laundry and porcelain. Black particles in water.	Hydrogen sulfide, sulfate reducing bacteria or sulfur bacteria.	Compounds such as iron sulfide, calcium sulfide and sodium sulfide can interfere with hydrogen sulfide removal. Have water analyzed then select appropriate treatment such as chlorination or aeration followed by filtration through a sand filter.
Rotten egg odor from hot water only.	Chemical reaction of anti-corrosion magnesium rod in electric water heater.	Remove magnesuim rod and replace with chemical solution feeder to protect water heater from corrosion or chlorinate water.
Objectionable taste or odor other than hydrogen sulfide.	Decaying organic matter, pollution from surface drainage, insufficient chlorine being used to disinfect water.	Install activated carbon filter or automatic chlorinator followed by activated carbon filter or reverse osmosis system.
Turbid, cloudy or dirty water. Dingy laundry.	Silt, sediment, small organisms or organic matter suspended in the water.	Install a fiber filter, a sand filter or a reverse osmosis system.
Black stains on sinks, tubs and laundry. Water may feel greasy.	Manganese (often appears with iron).	Iron removal treatment also removes manganese.

The problems listed above are not the only ones possible. Other impurities such as nitrates, flouride, arsenic, chlorides, detergents and organic materials may contaminate water with or without visible symptoms. If there is reason to believe your water may have been contaminated and is dangerous or if impurities are simply a nuisance, have the water analyzed, read the report carefully and take appropriate action as indicated above.

References

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