

Policy Position Statement

Aesthetic Drinking Water Quality

Purpose

This information sheet sets out the potential causes of a consumer's concerns with the aesthetics of their drinking water, for example, in terms of colour, taste or cloudiness.

If a consumer believes there is something wrong with the drinking water in their home or workplace they should contact their water company, or in the case of private supplies, their local authority environmental health department.

Context

Water from the tap, whether from public or private supplies, should be not only chemically and microbiologically safe but also meet certain aesthetic (i.e. not health-related) water quality standards which are discussed briefly below. A noticeable change in these aesthetic parameters may also be an indicator of a change in the safety of the water to drink, although water that is free of these aesthetic problems is not necessarily safe to drink.

Aesthetic Parameters

Tastes and odours may be caused by a range of organic substances such as algal products (e.g. geosmin or 2-methylisoborneol, imparting an earthy or musty odour) and inorganic substances including copper, zinc, iron, manganese (imparting metallic tastes) or chloride (salty taste). Tastes and odours are somewhat subjective; some people are more sensitive, and when people travel to other areas they often notice that tap waters taste differently than their normal sources. Many of the chemical substances that cause tastes and odours are regulated with maximum concentration levels which have been set to reduce the effects to below what most people will notice.

Colour may indicate the presence of metals such as iron (imparting a rusty colour), manganese (imparting a black or brown colour), or copper (blue and green), or dissolved organic matter. Colour changes at the tap are more commonly associated with effects occurring within the water distribution network (e.g. re-introduction of flow following an interruption) rather than problems at the water treatment works.

Turbidity is a measure of the cloudiness of the water, caused by small suspended solids in the water. As with colour, this is more commonly associated with disturbances occurring in water distribution networks, such as re-suspension of sediment in water mains due to hydraulic pressure transients. Sometimes entrained fine air bubbles cause a temporary cloudiness in the water and this disappears on standing.

Scale is a mineral deposit which builds up on the inside of household appliances such as boilers, water heaters, kettles and in hot water pipes, which can restrict or even blocking flow over time. While water companies must ensure that tap water falls within certain ranges of hardness and total dissolved solids, in some locations water softeners may still be recommended to minimise scaling effects.

Corrosivity, for example due to low water pH, can lead to corrosion of iron and copper in pipes and may thereby lead to staining of household fixtures and impart tastes, odours, and colours to the water.

Further Information

The following websites provide further useful information about these and other aesthetic water quality issues, their causes, and correction measures:

United States Environmental Protection Agency. Secondary Drinking Water Regulations.

<http://water.epa.gov/drink/contaminants/secondarystandards.cfm>

Water UK. Looking After Water in Your Home.

http://www.water.org.uk/Looking_after_water_in_your_home

Drinking Water Inspectorate and Health Protection Agency. Drinking Water Safety: Guidance to Health and Water Professionals.

http://dwi.defra.gov.uk/stakeholders/information-letters/2009/09_2009Annex.pdf

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Note: CIWEM Policy Position Statements (PPS) represents the Institution's views on issues at a particular point in time. It is accepted that situations change as research provides new evidence. It should be understood, therefore, that CIWEM PPS's are under constant review, that previously held views may alter and lead to revised PPS's. PPSs are produced as a consensus report and do not represent the view of individual members of CIWEM.