



guardians of drinking water quality  
DRINKING WATER INSPECTORATE

## Discoloured water

Drinking water is normally clear and bright in appearance but very occasionally for a brief period it may appear discoloured or contain particles. This is usually as a consequence of essential maintenance on the network of pipes that bring water from the treatment work to homes. For example the repair of a burst water main. However, sometimes when the problem keeps occurring it is a sign that the underground supply pipe which brings water from the main in the highway into your property is in poor condition or that harmless deposits have accumulated over time in areas of low flow in the local water main.

### **What causes discoloured water?**

There are two main causes of discolouration, disturbance of harmless deposits accumulated over time in the water pipes making the water brown/black or orange and air/chalk making the water appear white. The root cause is a change in the direction or speed of water flow in local pipes or the entrainment of air due to operation of pumps and valves in the local network. Common causes of such events are listed below;

- a burst on water main or pump;
- the opening or closing of valves;
- reinstatement of a main after repairs;
- changing of the settings of valves to bring water into the local network from another part of the system in order to maintain supplies due to increased consumer demand;
- the use of water by third parties such as fire fighting and cleaning of drains;
- the laying on of a new supply in the neighbourhood.

Sometimes discolouration is not due to water company operations and pipes and instead it is caused by:

- the condition of the service pipe connecting a property to the water main;
- the condition of internal plumbing inside a property;
- in high rise properties the operation of internal booster pumps;
- operation of outside or inside stop cocks to facilitate the installation of new plumbing or to effect plumbing repairs.

All these situations may turn the water yellow, orange, brown, grey or white. Additionally there may be brown, red or black particles in the water. It may also be white as a result of chalk deposits or excess air.

White water can be easily diagnosed by filling a glass of water from the tap and observing it for a few minutes. If the cloudiness clears from the bottom up on standing this is air and it is not something to worry about. However, if it occurs repeatedly then it should still be reported to your water company as this will help them to diagnose and fix any problems within the local system.

### **Why are there deposits in the water mains?**

There are two basic reasons for the build up of deposits.

- a) Most of the older water mains in this country are cast iron. Originally these were unlined and over time they corrode giving rise to iron particles (rust) which become loose and are carried along with the water flow until they lodge in areas of low flow in the network (known as dead ends or null points).
- b) Some ground waters and soft surface water sources contain naturally occurring iron and manganese. A lack of water treatment historically will have resulted in iron and manganese entering the mains network. Similarly in very hard water areas there can be a build up of chalk in the mains.

### **Are these deposits harmful to health?**

If your tap water is suddenly discoloured you should not assume that it is safe to drink until you have sought advice from your water company. If you live in an area where it is known there is a problem with iron, manganese or chalk, the water company will be able to tell you if there is a short term incident affecting your supply and also advise you of any programme of work to clean and refurbish water mains in your area. In these circumstances, if you have run your tap until the water becomes clear, it will then be safe to use unless the water company has issued a warning notice asking consumers to boil the water or restrict usage. In these situations the water company will tell you when you can stop taking any precautions.

### **Is anything being done about this?**

Water companies maintain their distribution systems to minimise the build up of deposits in the mains by carrying out flushing and by careful operation of valves and giving licences to third party operators. Water companies are tackling the problem of iron corrosion by identifying the affected mains and then lining or replacing them. The worst affected areas are prioritised over others. Long term 10 – 20 year programmes of mains refurbishment have been in place since 1995. However there are about 315,000 kilometres of water mains in England and Wales and maintaining them will always be an ongoing process.

### **What should I do if I get discoloured water?**

If you and your neighbours experience discoloured tap water then contact your water company immediately. Enquiry and emergency numbers are listed under WATER in your telephone directory or on the back of your water bill. You can also find a general number for your water company on our website.

It is always a good idea to put aside a sample of the discoloured water in a clean glass bottle or jar, seal it and store in the fridge so you can show it to the water company when they visit. Please make a note of the date and time you took the sample. It is also helpful if you make a note of each time you notice the problem.

If the water company does not give you a satisfactory explanation or the problem persists after any corrective action (flushing, mains repair) and you have checked that the problem is not due to pipes and water fittings for which you or the property owner is responsible then you should contact your local Consumer Council for Water (CCWater) office. You will find their contact details [here](#). CCWater may ask the Drinking Water Inspectorate to investigate your complaint.

Your water company is required by law to notify the Inspectorate of any widespread incident involving discoloured water. We then investigate the water company's activities and assess whether these have been appropriate. If necessary the Inspectorate will require the company to take further action to remedy matters.

When yours is the only property in your street that is affected by discoloured water then you will need to contact a qualified plumber to help you identify and rectify any defects. You should always use a plumber registered with the [Institute of Plumbing](#) or approved by your water company to ensure their work complies with regulations and your plumbing does not give rise to contamination or waste of water.

### **What will the Inspectorate do if I get discoloured water?**

When we investigate a discoloured water incident or complaint, we independently audit the water company's technical records and we have the powers to require the water company to carry out any work needed to rectify the problem and prevent it from happening again.

Exceptionally we may start a prosecution if:

- we can show that the drinking water supplied was unfit for human consumption;
- we consider that the water company did not do all that it might reasonably have been expected to do to prevent the discoloured water.

For those cases that do not justify full Court proceedings we can issue a caution. The Court can take cautions into account in any future offences.

In bringing a prosecution we may ask for your help by agreeing to be interviewed by one of our Inspectors to prepare a witness statement about the quality of your drinking water, in particular what you observed and when and the consequences for you e.g. whether you used or consumed the water.

### **What about compensation?**

We are not able to assist with any claims for compensation from water companies. You should contact the [Consumer Council for Water](#) for such enquiries.

Last Updated: January 2010