

Lead in Drinking Water – DWQR Briefing

The Drinking Water Quality Regulator for Scotland (DWQR) has established a project to develop a policy for the reduction of exposure to lead in drinking water. The project will look to identify enablers and strengthen or introduce mechanisms with a range of stakeholders and influencers for the removal of lead service pipes and plumbing.

Why Lead is a problem

Lead is toxic to humans and it accumulates within the body over a lifetime through exposure to lead sources in the environment. Sources include lead-based paint, contaminated soil, dust, petrol, drinking water, food and related products. The World Health Organisation (WHO) has allocated 50% of lead exposure as arising from drinking water.

The limit for lead in drinking water has progressively reduced over the past 30 years to realise the ultimate standard set down in the 1998 EU directive on drinking water quality of 10µg/l (micrograms per litre), in December 2013.

Over the same period however, concerns have developed within Scotland's health professional community that even the 10 standard may be too high and there is an increasing view that we should strive to reduce lead levels in drinking water as far as is practicably possible.

Exposure to lead, either through long exposure to low levels or through high concentration may result in the development of signs and symptoms of lead toxicity. Whilst exposure has consequences to all, the impact is more acute in the early stages of life. The main concern is that even relatively low levels of lead can adversely affect brain and intellectual development. Consequently, those most at risk are women in pregnancy, fetuses, infants and young children.

How does it arise?

The major source of failures of the standard is the leaching of lead from lead pipes and storage cisterns in the supply route to consumers.

For properties connected to the public water mains, those built before 1970 are most likely to have had their supply delivered originally through lead pipes and over time, a proportion will have had those pipes replaced. Statistical investigations indicate approximately 4% of underground property service pipes remain likely to be lead material. The position with properties served by private water supplies is less certain since new build housing may have connected to old supply systems which may contain lead.

What can be done about it?

It needs to be recognized that lead is exceptional compared with other chemical hazards, in that most lead in drinking-water arises from plumbing in buildings, and the remedy consists principally of removing plumbing and fittings containing lead, which requires much time and money. It is important that all other practical measures to reduce total exposure to lead, including corrosion control at water treatment works, is implemented until that aim can be achieved and it is therefore timely to review Scotland's policy for lead in drinking water.

Who is responsible?

Control over the level of lead in drinking water supplies is a complex issue. The major source of failures of the drinking water quality standard is the leaching of lead from lead pipes and storage cisterns in the supply route to consumers.

Whilst the point of compliance with Regulations is at the consumer's tap, for those on the public water supply, the supply route is formed of pipes in the ownership of both Scottish Water and property owners. Scottish Water has responsibility for communication pipes (the part of the connection within the street). Supply pipes and any pipes internal to the property are the responsibility of the property owner(s).

Regulations set down the actions Scottish Water must take to minimise the level of lead in the supply but there is no requirement for property owners to remove lead plumbing unless there is a demonstrable failure of the water quality standard.

For properties on a Private Supply, the ownership of the pipes and the responsibilities for care and maintenance of supply systems and property connections is equally complex.

The Project

The project has Ministerial approval to produce a draft policy to address the reduction of lead in drinking water by the end of December 2014. The aims are to:

- Establish the current legislative drivers and guidance for the reduction of risk from exposure to lead to drinking water consumers in Scotland.
- Identify opportunities for convergence or bridging of policies across Government and sponsored bodies to deliver the removal of lead piping from the supply route.
- Identify costs and where they will be borne/funded
- Define an achievable time frame for the delivery of the policy with regard to exposure risks and cost.

Amongst the opportunities to be examined, we will look to identify enablers and strengthen or introduce mechanisms with relevant stakeholders for the removal of lead supply pipes and plumbing:

- in private housing at change of ownership.
- within Scottish Water ownership
- throughout public bodies property estate
- within child nursery premises
- within premises where the public may have access to, or be provided with drinking water or site-prepared food products.
- Provide better and clearer information to the public on the health aspects of lead in drinking water.
- Provide better information to householders and property owners to stimulate replacement of lead supply pipes and plumbing.

Key stakeholder organisations identified for communications and contributions in relation to the project include Scottish Government Health, Health Protection Scotland, CPHMs, EHOs, SG Water Industry, WICS, Scottish Water, SG Procurement, Housing, Building Standards SG Estate, Historic Scotland, Citizens Advice Scotland, Care Inspectorate, COSLA.

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