



DRINKING WATER INSPECTORATE

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Information Letter 02/2017

To: Board Level and Day to Day contacts of Water and Sewerage Companies and Water Companies in England and Wales

Dear Sir/Madam

FURTHER GUIDANCE ON CHROMIUM IN DRINKING WATER

Background

1. Information Letter 4/2015 informed water companies of the publication of Drinking Water Inspectorate (DWI) research on chromium VI and gave advice on the actions to take. Subsequently, DWI requested companies submit the information gathered in response to that letter and it has now reviewed that information.

Purpose

2. The purpose of this letter is to:
 - a) inform companies of the levels found across England and Wales; and
 - b) reiterate and expand on the advice DWI has received from Public Health England (PHE) and the guidance to water companies.

Information provided by water companies

3. Overall the monitoring conducted by water companies was reassuring. At no water treatment works was the concentration of chromium in water leaving the site above 10 µg/L. This value is the most stringent drinking water standard that has been established so far, it is the maximum contaminant level (MCL) for chromium VI recently adopted in California.

4. At three water treatment works the average concentration of chromium leaving the site was above 3 µg/L.

Health advice

5. The advice from Public Health England (PHE) remains that chromium VI is considered carcinogenic and genotoxic, there is no identifiable threshold for adverse effects therefore exposure should be reduced to as low as reasonably practicable.

6. PHE has recommended that the European Food Standards Agency (EFSA) Bench Mark Dose Level (BMDL₁₀) of 1.0 mg Cr(VI)/kg b.w. per day be used as reference point for calculating margins of exposure and for health risk assessment. According to the UK expert Committee on Carcinogenicity, a margin of exposure of less than 10,000 between the BMDL₁₀ and the estimated human exposure 'may be of concern' for a genotoxic carcinogen but a margin of exposure greater than 10,000 is "unlikely to be of concern". Thus an exposure of 0.1 µg Cr(VI)/kg b.w. per day is at the boundary between "may be of concern" and is "unlikely to be of concern". Assuming drinking water is the only exposure (note: EFSA consider there is no Cr VI in food) and applying standard assumptions (a 60kg adult consuming two litres per day) this corresponds to 3 µg/L. However, there are various uncertainties in the health risk assessment of Cr VI exposure from drinking water.

7. Given these uncertainties, DWI's guidance is companies should continue to gather further data and if these reveal that the most stringent standard established to date (10 µg/L for chromium VI) is exceeded then further action should be taken. DWI will continue to keep this guidance under review, particularly in light of decisions by other regulators and international bodies such as the World Health Organisation.

Action for water companies

8. Companies should continue to monitor and review their data for chromium. For sites where concentrations of chromium are usually below 3 µg/L no further action need be taken.

9. For sites that regularly exceed 3 µg/L but never exceed 10 µg/L, companies should conduct monitoring of their sources for chromium or chromium VI and liaise with the Environment Agency to determine possible sources and investigate catchment solutions. Companies should review their risk assessments to check that chromium is included in their risk assessment methodology. In cases where chromium VI regularly exceeds 3 µg/L and catchment solutions are not possible companies may wish to consider installing blending or treatment.

10. For sites that regularly exceed 10 µg/L as chromium VI, in addition to the steps described above, companies should implement any short term steps to reduce the levels and notify DWI as soon as possible.

Enquiries

11. Any enquiries regarding this letter should be made to Dr Peter Marsden, Principal Inspector – risk analysis.

12. This letter is being sent electronically to Board Level and day to day contacts. Please acknowledge receipt by email to dwi.enquiries@defra.gsi.gov.uk. Hard copies are not being sent but the letter may be freely copied.

13. Copies of this letter are being sent to Michael Roberts, Chief Executive, Water UK; Catherine Harrold, Water Resources Management, Efficiency, Innovation, Drainage & Sewers, Department for Environment, Food and Rural Affairs; Eifiona Williams, Water Management Team, Welsh Government; Sue Petch, Drinking Water Quality Regulator for Scotland; Catriona Davis, Drinking Water Inspectorate for Northern Ireland; Tony Smith and Chairs of the Regional Consumer Council for Water; Nicci Russell, Ofwat; Paul Hickey, Environment Agency; Liz Stretton, Food Standards Agency; and Stephen Robjohns at Public Health England.

Yours sincerely



Milo Purcell
Deputy Chief Inspector