



guardians of drinking water quality

**DRINKING WATER INSPECTORATE**

Room M08, 55 Whitehall  
London SW1A 2EY

Direct Line: 020 7082 8042  
Enquiries: 020 7082 8024  
Facsimile: 020 7082 8028

E-mail: [john.gray@defra.gsi.gov.uk](mailto:john.gray@defra.gsi.gov.uk)  
DWI Website: <http://www.dwi.gov.uk>

4 December 2006

Information Letter 11/06

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

**TECHNICAL AUDIT OF WATER COMPANIES UNDER SECTION 86 OF THE WATER INDUSTRY ACT 1991: SUMMARY REPORT FOR THE VERTICAL AUDITS FOR NON - MICROBIOLOGICAL PARAMETERS, 2005**

Dear Sir or Madam

**1. BACKGROUND**

- 1.1 The annual inspection process has always included a number of vertical audit trails for selected parameters. In recent years the Inspectorate has refined the process to take account of the number of parameters audited in relation to the size of the company and also the way in which the parameters are selected.
- 1.2 Dr Peter Whittle, a consultant appointed as a DWI Temporary Inspector, was commissioned to carry out the non-microbiological audits in 2005. A risk based approach was taken on the number of samples to be audited, based on the relative size of the company in terms of population supplied and findings from the 2004 audits.
- 1.3 A total of 151 parameters were audited, involving some 85 samples. Dr Whittle made 56 recommendations on matters which, in his opinion, could result in a foreseeable risk of breaching a regulatory duty. Dr Whittle also made 17 company-specific recommendations to the Inspectorate and 5 recommendations in the summary report.
- 1.4 The Inspectorate endorses Dr Whittle's findings and recommendations and will be taking action on these recommendations.

## **2. PURPOSE**

- 2.1 Dr Whittle summarised the findings of his audits for the Inspectorate. The purpose of this letter is to communicate to the industry recurrent themes and deficiencies which were identified and to inform the industry that the report is available on the Inspectorate's website at <http://www.dwi.gov.uk/regs/infolett/2006/info1106AnnexA.pdf> . Reference to individual companies and their laboratories has been removed.

## **3. OVERALL CONCLUSIONS**

- 3.1 A substantial number (18) of the recommendations were linked to deficiencies arising from the changes to sample scheduling and sampling under the Regulations. Dr Whittle considered that there had not been an improvement in this area; indeed the number of recommendations in relation to the number of audits for 2005 was higher than in 2004. In respect of analysis, there was an overall improvement since the 2004 audits, but there were still serious deficiencies in a couple of laboratories; indeed 27 out of 38 analytical recommendations related to just two laboratories. While a number of the analytical recommendations were repeated across several companies using the same laboratories, there were also instances where Dr Whittle was 'minded to make recommendations', but didn't, due to a subsequent change in contract laboratory.
- 3.2 The presentation of the audit data was generally excellent.
- 3.3 A number of companies are still not satisfying the requirements of the new regulations in respect of sample scheduling and regularity of sampling.
- 3.4 For the majority of companies/laboratories the standard of analysis was very good, and showed further improvement since 2004. However, there were major deficiencies in two laboratories, primarily relating to quality control.
- 3.5 Dr Whittle was surprised to find that two companies were still analysing for free cyanide rather than total, indicating poor communication between the analysing laboratory and the companies involved.
- 3.6 The analysis of 1,2-dichloroethane and total trihalomethanes was generally of a high standard.
- 3.7 The analysis of iron, manganese and lead was generally of a high standard, although there was a wide variation in the sample digestion process employed across laboratories.

- 3.8 The analysis of hydrogen ion largely confirmed the general impression from 2004, that the parameter was not treated with sufficient respect and sample stability was still of concern.
- 3.9 Reporting was largely satisfactory, but there were many free cyanide results that needed flagging. There were some problems with limits of detection (LOD) not relating to the actual LOD achieved in the analysis and a failure of companies to notice, or laboratories to notify companies of, changes in LODs due, for example, to changes in methodology or re-validation.

#### **4. RECURRING ISSUES THAT RESULTED IN RECOMMENDATIONS AND SUGGESTIONS TO THE INDUSTRY**

- 4.1 Dr Whittle found that the implementation of the Regulations was still variable particularly in respect of regularity of scheduling and sampling which led to eight recommendations made for failure to comply with Regulation 9 (4).
- 4.2 Dr Whittle used the same approach to defining regularity as in the 2004 audits and identified a single minor infringement in the scheduling. He made a recommendation for multiple or more serious deviations.
- 4.3 In other respects, the implementation of the Regulations was well established in all but two companies.
- 4.4 Dr Whittle considered samplers' records to be generally good and improved on 2004 although there were occasional problems associated with inadequate chains of custody records.
- 4.5 Dr Whittle found sample storage was still an ongoing problem and considered this worthy of further investigation in the future. Preservation of cyanide samples was a particular issue, resulting in seven recommendations being made.
- 4.6 Dr Whittle considered that analytical quality control had generally improved, with two exceptions. Dr Whittle reminded laboratories that the purpose of control chart reviews is not just to check that the limits are appropriate, but also to review the on-going performance of the method in relation to its validated performance and client requirements, as well as identifying any trends and anomalies.
- 4.7 In his report on the 2004 audits, Dr Whittle noted the use of fixed control limits by some laboratories and provided a detailed explanation as to the unacceptability of the practice. Dr Whittle observed that AQC failure investigations were frequently minimal and considered that it would be worthwhile undertaking and documenting thorough investigations. Dr Whittle was very concerned that there were two laboratories with serious deficiencies in quality control and that some fundamental principles were being ignored or not understood.

- 4.8 Dr Whittle was pleased to report that that in the main, proficiency testing results were again very good, and reflected the generally high standard of analysis in potable water testing laboratories. However, there were a few examples of failures not being adequately investigated and underlying problems not being detected and resolved.
- 4.9 Dr Whittle expressed concern that the decreasing number of laboratories perhaps increased the risk of failure to comply with the regulations across a larger number of companies.

## **5. RECOMMENDATIONS TO DWI**

5.1 Dr Whittle recommended that the Inspectorate:

- pays particular attention to justification of sample stability relating to sample storage times;
- follows up in the audits to be carried out in 2006 the serious deficiencies identified in two laboratories, with a rigorous audit of the quality control procedures in particular;
- investigates further the stability and preservation of total cyanide;
- discusses control levels for individual haloforms with the companies after publishing revised Guidance, to ascertain that the analysing laboratory applies control at levels appropriate to the companies' requirements; and
- discusses with companies compliance with the Guidance on 'Sample Preservation and Preparation for Metals Analysis of Drinking Water' issued by DWI during August 2005 (Information letter 12/05).

5.2 The Inspectorate will be taking appropriate action in respect of these recommendations.

## **6. ENQUIRIES**

Copies of this letter are being sent to Pamela Taylor, Chief Executive, Water UK; Richard Wood, Water Supply and Regulation Division, Department for Environment, Food and Rural Affairs; Matthew Quinn, Environment Division, Welsh Assembly Government; Colin McLaren, Drinking Water Quality Regulator for Scotland; Randal Scott, Drinking Water Inspectorate for Northern Ireland; Tony Smith and Chairs of the Regional Consumer Council for Water; Rowena Tye for Office of Water Services; Tony Warn, Environment Agency; Nigel Harrison, Food Standards Agency; and Gary Coleman at the Health Protection Agency.

Yours sincerely

A handwritten signature in black ink that reads "John Gray". The signature is written in a cursive style with a large initial 'J' and 'G'.

Dr John Gray  
Deputy Chief Inspector (Operations)