



DRINKING WATER INSPECTORATE

Room M06, 55 Whitehall
London, SW1A 2EY

Enquiries: 030 0068 6400
DWI Website: <http://www.dwi.gov.uk>

29 June 2010

To: Jane Davidson AM

Minister for Environment Sustainability and Housing
Welsh Assembly Government

The annual report on drinking water quality in England and Wales will be published on 1 July 2010. It provides a comprehensive independent commentary on the quality and safety of drinking water during 2009 and comes in seven parts, one of which covers Wales. I will be discussing the content of the report with the Consumer Council for Water for Wales at a meeting in July.

The role of drinking water inspectors appointed under the Water Industry Act 1991 is to independently scrutinise the quality of drinking water. Drinking water must be wholesome and fit for human consumption at all times. Inspectors take action to require improvements to water supplies when there is sound evidence of a risk of a particular water supply failing to meet the drinking water standards. The annual drinking water report publically records the work of inspectors together with measures indicating how well the water industry is meeting the desired outcomes of drinking water policy¹ which are:

- Water suppliers deliver water that is safe and clean
- The public have confidence in their drinking water

¹ Securing Safe Drinking Water for All: Drinking Water Inspectorate Strategic Objectives 2010-2015:
ISBN 978-905852-50-5

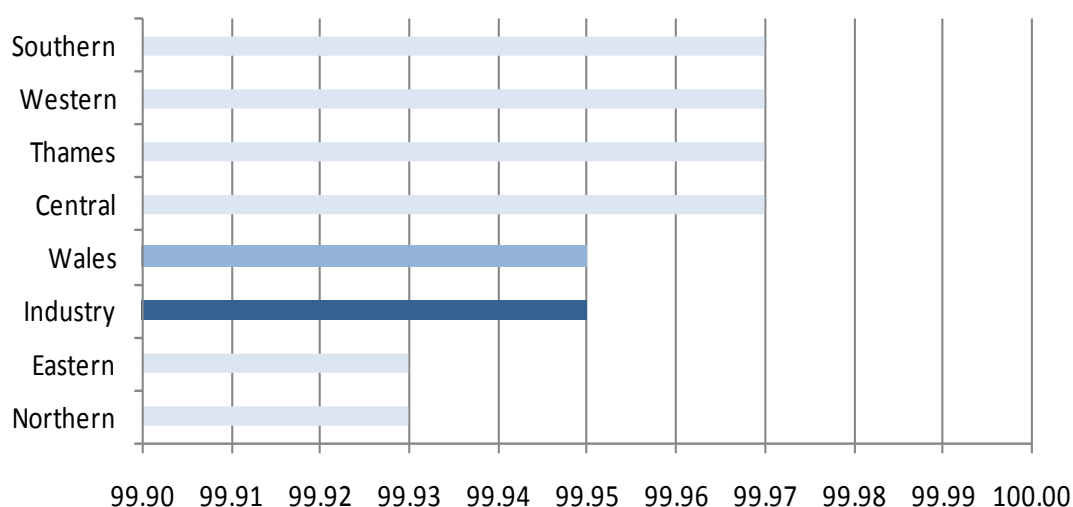
Drinking water quality

The results of testing at consumers' taps in 2009 demonstrated the overall good quality of drinking water. The combined water industry

figure for compliance with drinking water standards was 99.95%, only marginally down on the figure of 99.96% reported in each of the previous three years. This figure is made up of the results of over 2 million tests for 39 different parameters on samples collected by the companies from consumers' taps in each of the 1,643 water supply zones in England and Wales.

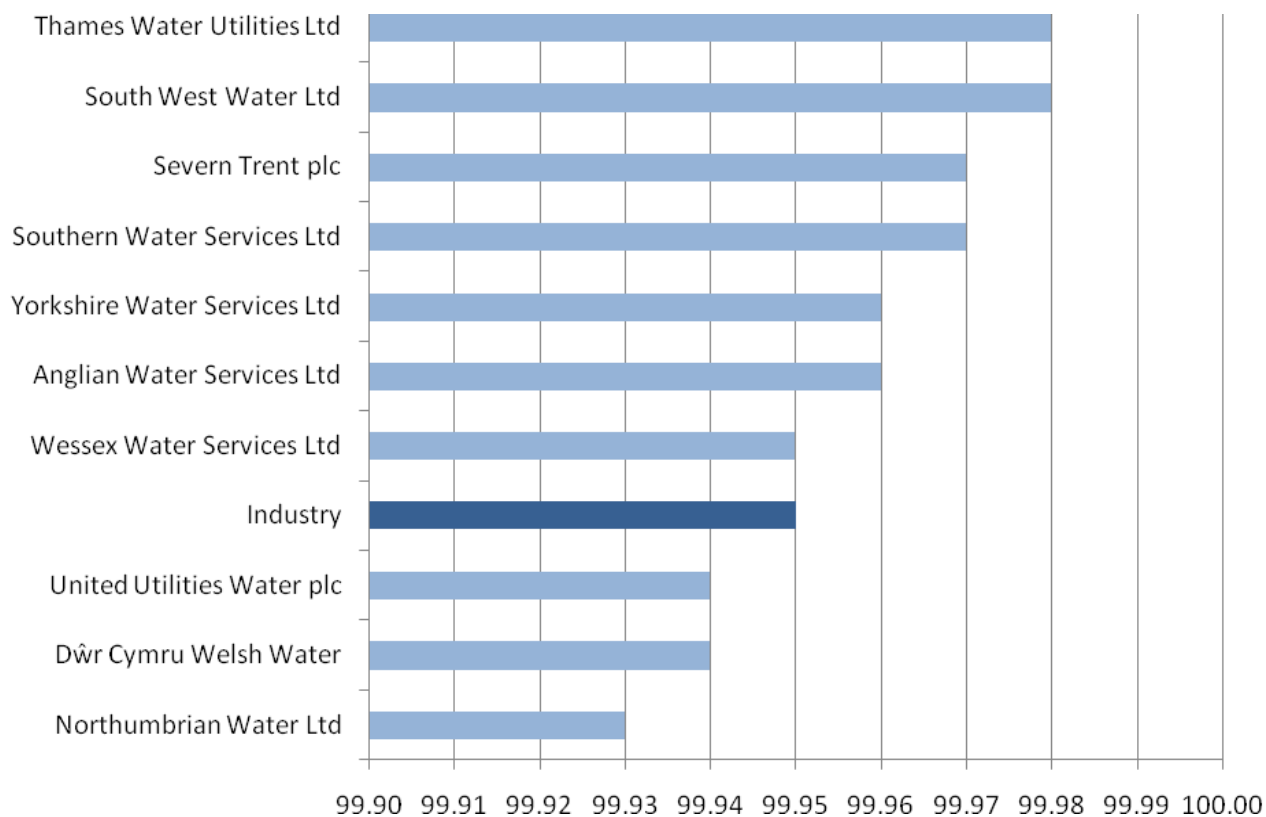
Looking more closely at the quality of tap water in Wales, the improvement reported last year has been maintained and is reflected by the figure of 99.95% which equals the industry average and betters the figures for two of the six regions of England (Figure 1). In 76 out of the total of 101 zones in Wales, all the tests passed every standard. In zones where failures were recorded, the remedial action taken or planned is described in the report.

Figure 1: Regional compliance with standards



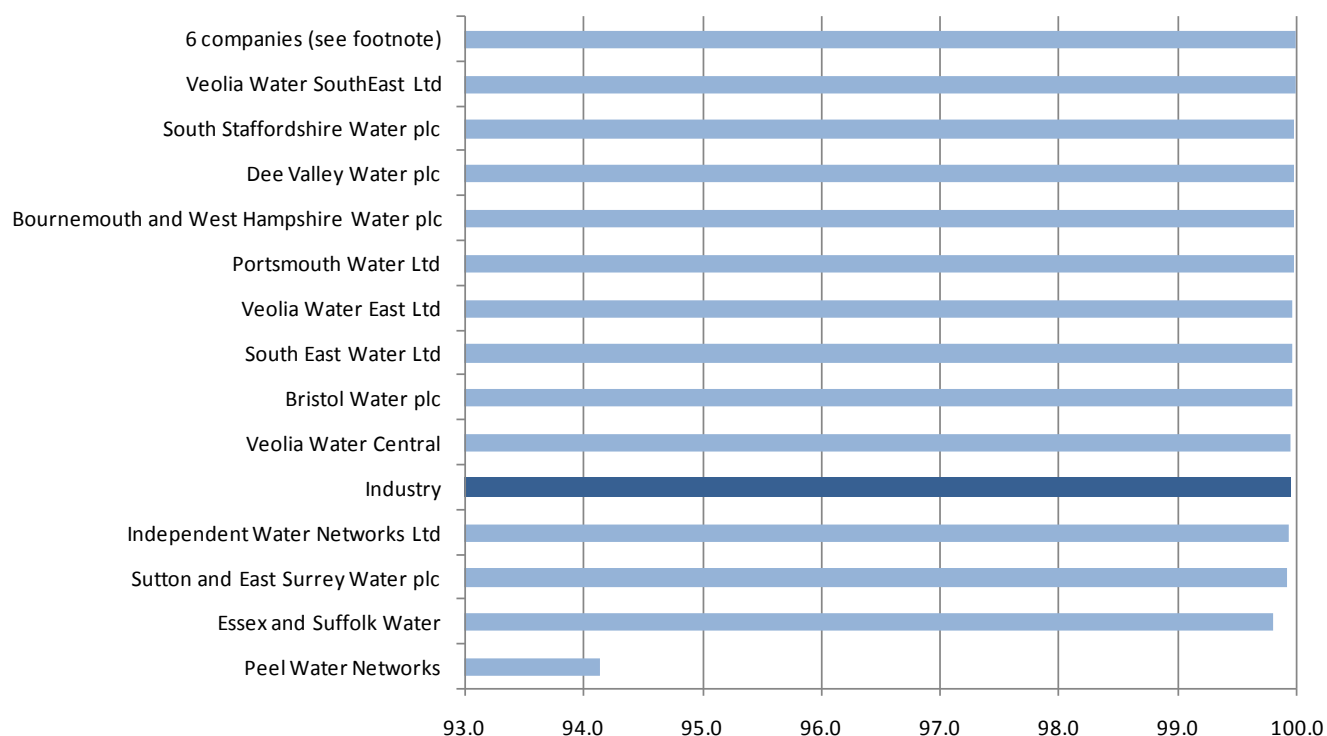
At water company level, figures for the 'combined water sewage companies' ranged from 99.93% to 99.98% (Figure 2). The figure for Dŵr Cymru Welsh Water was 99.94%, slightly lower than last year and below the industry average, although equal to United Utilities and better than Northumbrian Water.

Figure 2: Water and Sewage companies – compliance with standards



Among the ‘water only’ companies and licensees the figures ranged from 94.14% to 100% (Figure 3). Dee Valley Water was one of the four companies exhibiting improvement in 2009, recording a figure of 99.99%, now above the industry average and up from 99.92% last year.

Figure 3: Water only companies – compliance with standards



Footnote: 6 companies achieved 100% compliance: Albion Water, Cambridge Water plc, Cholderton and District Water Company Ltd, Hartlepool Water plc, SSE Water plc. Veolia Water Projects Ltd

Water supply quality management

Continuous provision of safe clean drinking water depends on sound operation and maintenance practices being applied by companies at every stage of water supply from source to tap. The Inspectorate has four indices of water quality which provide insights into how well the industry is managing the quality of drinking water supplies (Figures 4 to 7). Each index looks in turn at different core components; water treatment, service reservoir integrity and distribution maintenance.

In 2009, there was little change in the indices at industry level however this masks changes at regional or company level. For example, in Wales, problems in 2009 with water treatment process control at several works in Wales saw the figure decline to 99.95%, down from 99.99% in 2008. However there was improvement in the disinfection figure, which is now better than average at 99.98%. The integrity of service reservoirs (99.94%) remained below average and this figure is below that recorded for all English regions in 2009. The

distribution maintenance figure was down markedly to 99.72% and now stands below the figure recorded four years ago when the indexes were first introduced.

Figure 4: Process control at treatment works

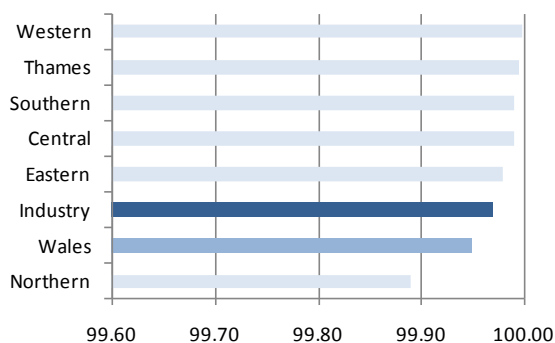


Figure 5: Disinfection at treatment works

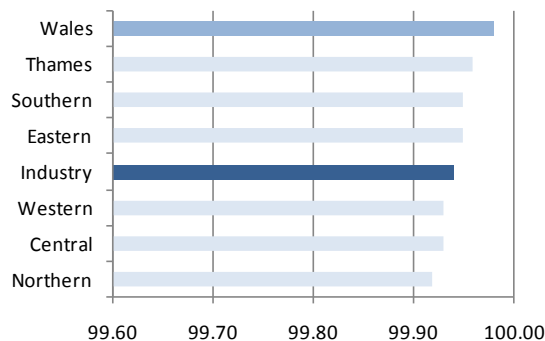


Figure 6: Integrity of service reservoirs

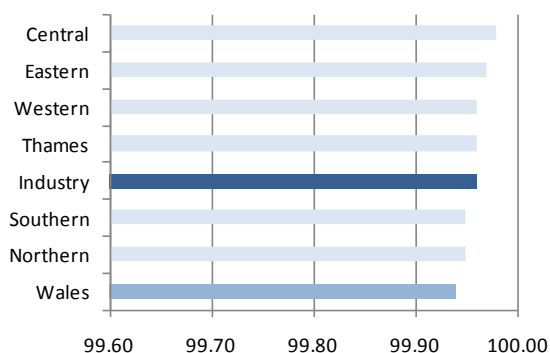
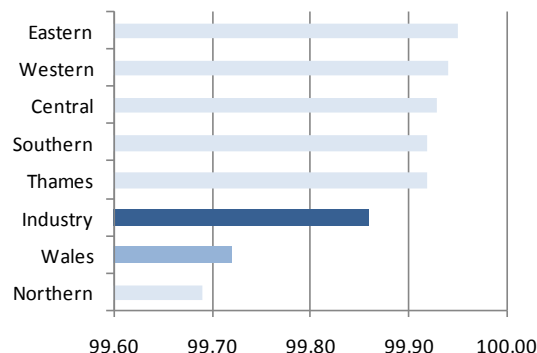


Figure 7: Distribution maintenance



Challenges in meeting the European drinking water standards for lead and pesticides

Looking forward the water industry faces two specific challenges in meeting the European Drinking Water Standards as discussed below.

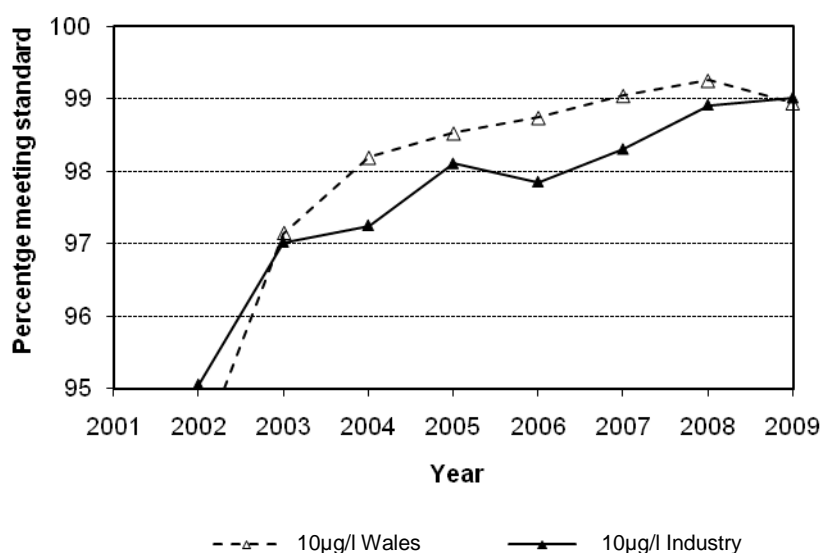
Generally the water industry in Wales is less affected in these respects than companies providing water supplies in England.

Lead

The health-based standard for lead becomes stricter across Europe in 2013. Lead is found in tap water only in those properties with older underground service pipes and plumbing. Good progress has been made towards meeting the future stricter health-based standard through companies being required to introduce water treatment in

1,285 out of 1,670 water supply zones over the last decade. Specifically in Wales, water treatment has been introduced in 59 out of 101 water supply zones. The water treatment acts by building up a protective coating on the internal surface of pipes which over time minimises release of lead into water. This water treatment policy has been targeted to those water supply zones where testing at taps verified an ongoing risk. The graph shows the benefit accruing from this public health policy in terms of the progressive year-on-year improvement in samples meeting the future standard for lead. Generally exposure of the population to lead through drinking water has fallen as evidenced by the mean annual concentration of lead falling to 1µg/l in 2009 compared to 2µg/l four years ago.

Figure 8: Percentage of samples meeting the future standard for lead



The Inspectorate has calculated that if the stricter standard for lead had been in force in 2009 then the industry figure for overall compliance with all drinking water standards would have been 99.93%, instead of 99.95%. This demonstrates water treatment alone is insufficient to secure safe drinking water for all. Accordingly the Inspectorate has required water companies to prioritise collaborative work with local authorities and health professionals to address consumer exposure to lead in drinking water in those areas where the risk from older housing stock remains. Studies have shown that

replacement of the company's section of a lead service pipe is not an effective remedy if old lead plumbing is allowed to remain within a property. The expectation of the Inspectorate is a step change by companies in the scope and pace of delivery of community water safety action plans on lead in drinking water.

Pesticides

A single parameter, pesticides, was responsible for the industry's slight downturn in overall compliance with drinking water standards reported this year. Pesticide failures accounted for one third (387) out of the total of 1,103 failures of standards in 2009 and the cause was a single substance, metaldehyde, used in some pellets for the control of slugs on arable crops. In Wales, metaldehyde has not exceeded the standard and its detection in raw water has been confirmed, to date, in six abstraction points.

This substance has a low mammalian toxicological profile and it is a valuable agricultural product. Unsurprisingly the water catchments most affected by this hazard are mainly in arable farming areas in the Central, Eastern and South Eastern regions of England. Since the problem was first recognised towards the end of 2007 there has been co-ordinated catchment management action by regulators, industry and agronomists and this is now resulting in improvements in farming practice and river water quality. At the levels found in drinking water, the Health Protection Agency has advised that metaldehyde does not pose any risk to human health however, it cannot readily be removed by today's water treatment technology and its presence in drinking water has an adverse impact on public confidence because it breaches the very strict European drinking water standard which applies to all pesticides irrespective of their differing profiles of risk to human health.

For all the above reasons the Inspectorate has taken a risk based remedial approach by putting in place legally binding programmes of work for companies to carry out catchment control, raw water monitoring and research into water treatment technology in relation to directly affected water supplies. During 2009 companies have reported that concentrations of metaldehyde in raw water have been falling. Additionally slug pellet sales were approximately 70% lower than in 2008. Awareness of the issue among farmers is rising and practices relating to the supply, use and spreading of slug pellets are improving generally. It remains to be seen whether this catchment management approach will be sufficient to bring the affected water supplies back into compliance with the pesticide standard within the timescales set.

Drinking water quality events

This is the first year of reporting on water quality events using the Inspectorate's new risk based approach to classification and assessment. Events are classified into five categories: Not Significant, Minor, Significant, Serious and Major. In total, there were 422 events across the industry and 50 of these were in Wales. Around one third (146) of all events were of a type that necessitated a detailed investigation by an inspector but only five were serious and just one necessitated a major investigation. Three of these occurred in Wales. Problems with disinfection at Alwen works operated by Dŵr Cymru Welsh Water resulted in a boil water notice affecting not only their own customers but also those of Dee Valley Water. An event at Dŵr Cymru Welsh Water's Maerdy works resulted in discoloured tap water affecting 22,000 consumers for up to five days. As described in the body of the report, in 2009, Dŵr Cymru Welsh Water admitted supplying water unfit for human consumption and was cautioned by the Inspectorate. The event, at Oxwich, near Swansea, involved the connection of the water supply in a new property to the local sewer instead of the water main.

The report summarises and shares the lessons learnt from all investigations by inspectors during the year. In terms of the Inspectorate's risk based focus, in 2009 a major area of work of inspectors has been auditing and enforcing improvement in relation to the adequacy of disinfection arrangements. In particular but not exclusively, this has necessitated high level regular dialogue with three companies; Southern Water, United Utilities and Dŵr Cymru Welsh Water. These companies are responding positively with programmes of work to improve assets, maintenance or monitoring arrangements at many treatment works.

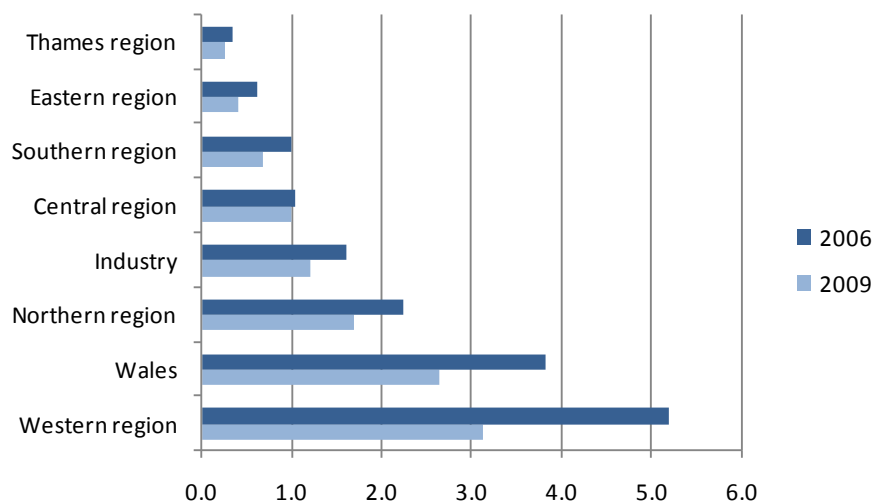
The Inspectorate has recently brought a successful prosecution of an English water company (Southern Water) in relation to the three new offences of failing to adequately prepare, disinfect and continuously operate an adequate treatment process at Matts Hill works in November 2008 in contravention of Regulation 26(1)(a) and 26(1)(b) and 26(3). This was an important prosecution which should assist the industry's understanding of the arrangements that must be in place to demonstrate that public health is being safeguarded and the risk of outbreaks of waterborne disease is being kept as low as practicable. The Inspectorate will be taking this learning forward through a workshop with the industry.

Public confidence in drinking water

There is a longer term and positive improving trend in public confidence in drinking water quality in Wales, as measured by consumers. The Inspectorate receives data on the number of people contacting water companies to express concern about the quality of their tap water. The number of such contacts in Wales in 2009 was noticeably lower (4.1 per 1,000 population) compared to three years ago when accurate data was first reported and the figure stood at 5.7 per 1,000 population (Figure 9).

Discoloured water has been a pronounced problem for many years in parts of Wales, and also in the South West and North of England. The figures for 2009 are encouraging and demonstrate the benefit flowing from water companies' long term strategic investment programmes in water mains refurbishment which commenced after privatisation and are now all complete. Overall the number of consumers reporting discoloured water in Wales is down to 8,097 compared to 11,272 recorded three years ago. The report contains maps to illustrate the generally improving situation and also those areas where localised problems persist and need to be dealt with by companies through ongoing distribution operation and maintenance strategies.

Figure 9: Regional consumer contact rate per 1,000 population for discolouration in 2006 and 2009.



Also included in the report is information describing all the schemes of work that companies have delivered to improve drinking water quality in 2009 together with details of the further work planned for completion over the next five years. The evidence of need for each scheme of work is independently assessed by the Inspectorate before it is

confirmed as necessary through the putting in place of legally binding agreements detailing the work the company intends to undertake and the timetable for delivery. The independent scrutiny of the Inspectorate ensures that the public can be confident that local deficiencies in drinking water quality are being identified and addressed in the most cost effective and technically appropriate way by water companies.

Fit for purpose drinking water quality regulation.

During 2009 the Welsh Assembly Government took steps to safeguard those consumers who are served by about 8,600 private water supplies in Wales. Similar legislation was introduced by the government in England. Details of the new risk-based regulations and how they will work are described in this report, together with a case example showing how the new powers have been put into immediate and good effect by one local authority in England. This change marks an important step forward; action can more readily be taken by local authorities and private supply owners together, to improve those private supplies that are known to pose a risk to health and the information provided to the Inspectorate will enable open reporting on all drinking water supplies. Also, in relation to larger private water supplies, the Inspectorate will now be able to report fully to Europe on compliance with Drinking Water Directive, which is a legal duty of the UK as a member state.

Late in 2009, the European Commission notified the UK government of the need to rectify deficiencies in some aspects of how the 1998 Drinking Water Directive had been transposed into law in England, Wales, Northern Ireland, Scotland and Gibraltar. The major issue was the delayed introduction of appropriate legislation covering private water supplies in England and Wales. However, the Commission also identified gaps in the enforcement regime when standards are not met in public buildings and also in relation to minimising by-products of disinfection. The Inspectorate provided expert technical and regulatory advice to the devolved administrations, Defra, and equivalent regulators in Scotland and Northern Ireland. The Inspectorate also undertook for the Welsh Assembly Government and Defra urgent consultations on the issues with local authorities and the water industry. The required changes to the regulations came into force by the end of April 2010 as required by the Commission.

Also in 2009, the Better Regulation Executive (BRE) audited the Inspectorate for compliance with the Statutory Code of Practice for

Regulators. In its published report, BRE was very positive stating that the Inspectorate is 'a well-respected regulator held in high regard by the industry it regulates'. BRE also concluded that 'the Inspectorate has produced a targeted and proportionate approach to inspection focused on high-risk areas'.

The Inspectorate's risk-based approach to drinking water regulation has been recognised internationally in two ways: the Inspectorate has been awarded collaborating centre status by the World Health Organisation for drinking water safety and regulation; and risk assessment is currently being evaluated for adoption across Europe in the next revision of the European Drinking Water Directive planned for 2011.

Our robust fit-for-purpose regulatory arrangements will continue to be important in order to address the anticipated challenges to maintaining the safety and quality of drinking water going forwards.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Jeni Colbourne', with a long horizontal line extending to the right.

Prof. Jeni Colbourne MBE
Chief Inspector of Drinking Water