



guardians of drinking water quality

## DRINKING WATER INSPECTORATE

Area 4A, Ergon House  
Horseferry Road  
London SW1P 2AL

Direct Line: 030 0068 6424  
Enquiries: 030 0068 6400

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

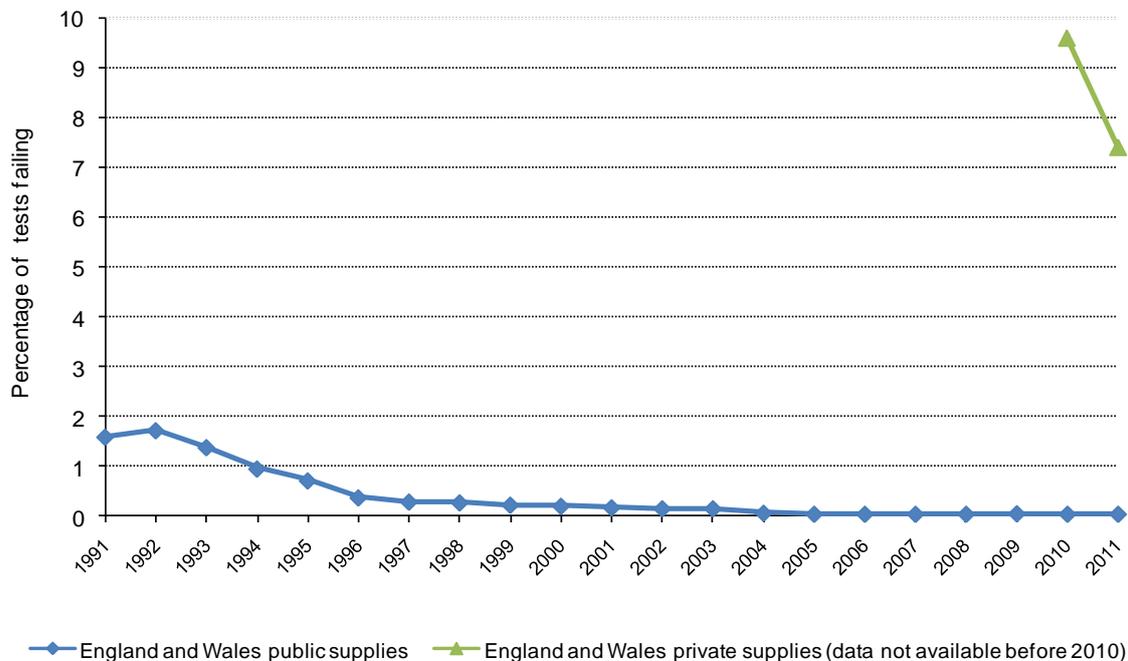
3 July 2012

To: John Griffiths AM,  
Minister for the Environment and Sustainability

I am pleased to inform you that the annual report on drinking water quality is to be published on 12 July 2012. *Drinking Water 2011* is published as a series of seven reports; two describing the quality of public and private water supplies in Wales and five covering the situation in England. Each report presents information for the calendar year of 2011. I will be presenting the report for Wales at a seminar hosted by the Consumer Council for Water on 17 July 2012.

The good quality of public water supplies in England and Wales was maintained in 2011 and the improvement since 1991 is shown in Figure 1.

**Figure 1: Percentage of tests from public and private supplies failing the drinking water standards (England and Wales combined)**



Compliance with the EU Drinking Water Directive for England and Wales combined was the same as the previous year at 99.96% with only 0.04% of 1.9 million tests failing to meet one of the chemical or microbiological standards. The figure for Wales was 99.95% marginally down on the previous year's figure of 99.96%. Also shown are the equivalent test results for private water supplies in England and Wales. Whilst better than reported in 2010, the quality of private supplies falls well short of acceptable with 7.2% of 103,143 tests failing to meet drinking water standards in 2011.

## **Public supplies**

With effect from the beginning of 2010, the regulations were changed in two respects to address deficiencies in the transposition of the Drinking Water Directive into national law. The infraction case by the European Commission was closed subsequently in September 2011. The purpose of the changes was twofold: to make it mandatory for failures of standards in public buildings to be remedied and to make clear the duty to minimise disinfection by-products. This is the first year of reporting on these specific aspects of the EU Drinking Water Directive and the overall position is set out below.

In 2011, out of 43,000 tests on samples collected from public buildings just 35 tests (one in Wales) failed to meet a standard or an indicator parameter value. In 2012, the Inspectorate will be closely checking the veracity of monitoring arrangements for public buildings.

In relation to the requirement to keep disinfection by-products as low as possible, this has been assessed by the Inspectorate in relation to one group of these substances, known as trihalomethanes, which may arise when chlorine is used in water treatment. In 2011, across England and Wales, the annual average concentration of total trihalomethanes was 9.9µg/l in groundwater supplies and 27.9µg/l in surface water influenced supplies, compared to the standard of 100µg/l. Overall therefore, the level of disinfection by-products in public water supplies is being well controlled by the water industry. However this preliminary assessment by the Inspectorate did identify 37 zones (out of a total of 1,682) operated by 11 water companies where the annual average figure for total trihalomethanes in 2011 exceeded 50% of the standard. Eight of these zones were in Wales. Water companies are required to demonstrate by risk assessment that disinfection by-products are being minimised, ensuring any additional control measures considered necessary are documented.

In previous years my reports have highlighted that although overall the quality of drinking water is good, not all consumers enjoy the same

quality due to regional variations. The results for 2011 show how targeted risk-based investment over the last five years (AMP4 period) has gone a long way toward addressing this issue. Drinking water quality in Wales now stands at 99.95%, the same as recorded in the Northern region of England, and much closer to the figure of 99.97% achieved elsewhere in England. The drinking water quality compliance figure is made up of tests for 39 different microbiological and chemical parameters and for the majority of these parameters (26) the standard is now being met in relation to every test carried out in England and Wales. Table 2 highlights the parameters responsible for ongoing failures and puts these into context; in particular, it differentiates between those parameters where failures continue to be common throughout the country from those where failures are infrequent or confined to specific parts of the country, sometimes affecting just a single water supply.

**Table 2: Parameters exhibiting one or more failure of a standard at consumer taps**

Parameters	Wales	England			
		Central and Eastern region	London and South East region	Northern region	Western region
Microbiological parameters					
<i>E.coli</i>		✓	✓	✓	✓
Enterococci		✓			
Physical/Chemical parameters					
Odour	✓	✓	✓	✓	✓
Taste	✓	✓	✓	✓	✓
Aluminium	✓	✓	✓	✓	✓
Iron	✓	✓	✓	✓	✓
Manganese	✓	✓	✓	✓	✓
Lead	✓	✓	✓	✓	✓
Turbidity		✓	✓	✓	✓
Nickel		✓	✓	✓	✓
Benzo(a)pyrene		✓		✓	
Copper		✓	✓		
Nitrite	✓				
Bromate	✓				
Chlortoluron <sup>1</sup>			✓	✓	
Clopyralid <sup>1</sup>		✓			
Glyphosate <sup>1</sup>				✓	
MCPA <sup>1</sup>				✓	
MCPP <sup>1</sup>			✓		✓
Metaldehyde <sup>1</sup>		✓	✓	✓	
Propyzamide <sup>1</sup>			✓		
<sup>1</sup> These parameters are pesticides					

Annexes in '*Drinking Water 2011*' set out the individual water quality performance compliance figures and other indices for each water company. These more detailed figures, together with other information, form the basis of the Inspectorate's risk based approach to technical audit ensuring Inspector resources and activities are focused efficiently delivering the greatest benefit. For example, Yorkshire Water, Essex and Suffolk Water and Veolia Water Central show an improving three year trend (2009 – 2011) in mean zonal compliance figures compared to a declining trend over the same time period exhibited by South East Water, Cambridge Water and South Staffordshire Water.

Looking in turn at each of the Inspectorate's four indices of water quality performance for 2011, United Utilities recorded an improving three year trend in relation to both of the water treatment indices (process control and disinfection) and the disinfection figure for Wessex Water likewise displayed an improving trend, whereas Dee Valley Water and Sutton and East Surrey Water stands out for its declining trend in relation to the disinfection index. The service reservoir integrity index for Dŵr Cymru Welsh Water displayed an improving trend contrasting with the declining three year trend in this index for Yorkshire Water.

The index of greatest relevance to how consumers perceive the quality of water at the tap is the distribution maintenance index and this remains the weakest area of performance for the industry with figures of 99.87% for England and 99.72% for Wales. Investment in distribution system refurbishment or replacement by United Utilities and Northumbrian Water has clearly benefited consumers in the Northern region as evidenced by improving trends for figures for each company and the region as a whole. However, a three year improving trend for Dŵr Cymru Welsh Water has not fed through to result in an upward trend in the distribution index for Wales as a whole, and this is probably because of a sharp decline in this index for Dee Valley Water in 2011. Elsewhere in England just one company, Sutton and East Surrey Water, recorded an improving trend and two companies stand out for deteriorating trends in the distribution maintenance index (Severn Trent Water and South East Water). The actions that companies are required to deliver by 2015 (AMP5) to ensure that, in future, all consumers receive the same good quality drinking water are detailed in the report.

Another important area of water industry performance relates to how well the companies manage water supplies. Operational events such as burst mains will always happen therefore what matters is whether any particular event was avoidable, and whether appropriate action

was taken promptly to safeguard public health and restore supplies to normal. In 2011, there were a similar number of events affecting water quality compared to the previous year (388 compared to 391 in 2010) but only around one-third (35%) were of a type that necessitated a detailed investigation by an Inspector. This compares favourably with the situation in 2010 when more than two fifths (43%) of events warranted an investigation independent of that carried out by the water company. However, out of the total of 136 incident investigations by my inspectors in 2011, several identified deficiencies of a sufficiently serious nature to warrant enforcement action by the Inspectorate to prevent a recurrence and in six cases I concluded that the sanction of prosecution was in the public interest: Northumbrian Water (1), Severn Trent Water (3), Southern Water (1) and Thames Water (1). No prosecutions are currently under consideration for events in Wales. Uniquely, in one single incident the circumstances were such that there was evidence that all five of the separate offences in drinking water law had been committed by the company (Severn Trent Water). A number of the incidents that occurred in 2011 are summarised in the report together with learning points for the industry as a whole.

In 2010, the Inspectorate reported on an incident that resulted in water with an objectionable taste and odour being supplied to around half a million consumers of Thames Water and Essex and Suffolk Water. The taste and odour was due to chemicals that gained access to a large raw water reservoir managed by Thames Water and providing raw water to two treatment works one of which was operated by Essex and Suffolk Water through a bulk supply arrangement. One of the lessons learned from this event was that historic bulk supply agreements between companies generally made no mention of water quality hindering effective water quality management and communications. I am pleased to record that Thames Water and Essex and Suffolk Water have since acted on the Inspectorate's recommendations putting in place an annex to the bulk supply agreement between the two companies to address water quality requirements. There is now regular sharing of water quality information in relation to this particular bulk supply and both companies have promoted wider learning across the industry; specifically there is a Water UK project underway to secure similar improvements to all bulk supply agreements.

### **Private supplies**

In Wales local authority records now show that 70,454 people live or work in premises which rely on a private water supply but many more people are exposed to private supplies when they are travelling through, or taking a holiday in, more rural areas of the country. In addition there are probably in excess of 25,000 people living in the

13,506 single domestic dwellings served by private supplies exempt from regulatory monitoring and a further 80,343 people attend festivals, shows and other events served by a temporary private water supply. The quality and safety of these water supplies is controlled by the Private Water Supply Regulations, which implement the EU Drinking Water Directive and are based risk assessment and risk management.

Across Europe as a whole the EU Commission has reported in 2011 that its review of small water supply data provided by 19 member states shows that fewer than 60% met the microbiological standards in the Drinking Water Directive. As a consequence the EU Commission has concluded that action is needed to improve the safety of these small supplies and has committed to developing a best practice framework for action by 2013 drawing on the experience of those member states, including the UK, that have implemented a risk assessment and risk management approach to improving small water supplies. After two years of implementation of a risk management regulatory approach in England and Wales the microbiological failure rate of small (private) supplies stands at 10.6% for *E.coli*, down from the figure of 13.7% reported in 2010. Whilst these figures are encouraging, they also confirm the continuing and substantive risk to public health that remains to be mitigated by local authorities before the end of 2014. The report shows that by the end of 2011 approximately one-quarter of private supplies in Wales had been risk assessed.

Private supplies vary greatly in their nature ranging from springs and boreholes serving individual properties, to larger groundwater or surface water supplies serving hotels, businesses, holiday accommodation, leisure facilities, country parks, military sites and villages. However not all are to be found in the countryside, many can be found in larger towns and cities serving factories, business parks, educational centres, shopping centres, visitor attractions and healthcare premises. During 2011 local authorities improved the completeness and accuracy of their private supply records providing the Inspectorate with details of an additional 3,506 supplies in Wales bringing the total of those registered to 17,718. However it should be noted that these figures continue not to represent the totality of private supplies because there were nine local authorities in England (none in Wales) that have yet to provide records to the Inspectorate, as required. Notwithstanding this deficiency in records, the sufficiency of information is now such that it is possible for the first time, this year, to produce reasonably robust figures in relation to the number of private supplies in the UK as a whole. Overall there are records for 85,090 private supplies in the UK of which more than half (52%) can

be found in England. The region with the most private supplies is Scotland (23%) closely followed by Wales (21%) and South West England (18%). Fewer but nonetheless significant numbers of private supplies are located in Mid and West Wales (13%), West Midlands (8%), North West England (8%), East of England (6%), Yorkshire and Humberside (6%) and North Wales (5%).

One of the main changes introduced by the new regulations was the setting up of arrangements for oversight, reporting and technical support. Since 1 January 2010 the Inspectorate has had a supervising role in relation to how well local authorities are carrying out their new duties of risk assessment, monitoring and requiring improvements to safeguard public health. The information published in last year's report reflected the baseline position and discussed early implementation issues. This year's report records how things have changed after a further year of local authority activity and also summarises key supporting activities of the Inspectorate during the year.

In the body of the report the Inspectorate has provided a series of case studies building on those published in '*Drinking water 2010*'. Feedback from local authorities and our wider audience was positive about our use of case studies both as a learning tool and also as a means of acknowledging best practice by local authorities. New in this year's report are Annexes detailing the guidance and advice the Inspectorate has made available to local authorities, private supply owners and other interested parties; and also details of the Inspectorate's private supply technical enquiry service which shows that in the five years preceding the coming into force of the new private supply regulations the Inspectorate received and answered an average of 45 private supply enquiries annually and this compares to 444 enquiries handled during 2011. Whilst the majority (79%) of enquiries continue to come from local authorities, the Inspectorate's advisory service is being accessed increasingly by a wider group of private supply stakeholders, particularly private supply owners which represent 8% of the total number of enquiries in 2011. The demand on the Inspectorate's technical enquiry service has been delivered through improved efficiency with no additional resources reflecting the strength of its knowledge and information systems, as recognised by its status as a designated WHO Collaborating Centre for Drinking Water Safety and Quality.

### **Private supply charging regime**

The private supply regulations provide for local authorities to charge supply owners for the reasonable cost of carrying out certain drinking water regulation activities. Schedule 5 of the regulations sets out the

chargeable activities and sets a maximum fee for each. Where more than one relevant person is responsible for a private supply, the local authority can apportion the costs pro rata and in doing so must have regard for any documentation about the terms on which the water is made available to users. This policy is in line with that of public water supplies where consumers pay for drinking water quality monitoring and risk management as part of the water bill.

In '*Drinking Water 2010*' the Inspectorate published an example of a charging schedule illustrating local authority best practice at that time. The purpose of this example was to encourage all local authorities to make the fees transparent to private supply owners and to improve communications on this subject. In July 2011, as part of the Red Tape Challenge on the Hospitality Theme, ministers asked the Inspectorate to audit the information published by local authorities on websites and to publish the findings with a view to promoting best practice.

In November 2011, the Inspectorate wrote to the nominated private water supply contact in every local authority to raise awareness about the need for up to date information about the private supply regulations and details of associated services and charges to be published on websites. This letter also advised local authorities that the Inspectorate would be auditing this website content in January 2012. Inspectors carrying out the website audit looked at ease of access as well as the format and content of the information found on local authority websites in response to entering the search phrase 'private water supplies'. In relation to content, inspectors were looking for two features: comprehensive and accurate background information, and a schedule of charges. During the month of January, inspectors audited a total of 346 local authority websites across England and Wales (including 22 in Wales). The findings of this audit are published in '*Drinking Water 2011*'.

The general results of the audit were that one third of local authorities (119 out of 346) were providing comprehensive information with schedule of charges. In Wales, the figures were nine out of 22. A further fifth (81) of local authority website searches produced comprehensive information but no charging schedule (seven out of 22 in Wales). The results of the remaining searches revealed 48 websites (five in Wales) displaying limited information together with details of who to contact for further information, 3 websites containing no information but a 'work in progress' message, and 12 websites where the information was out of date. There were also 83 websites (one in Wales) that contained no information at all on private water supplies.

When evaluating the audit results the Inspectorate considered underpinning reasons that might explain the relatively low rate of

publication (34%) of comprehensive information with a charging schedule. The occurrence of private supplies varies geographically therefore the involvement of local authorities with the regulation of private supplies differs considerably. To examine whether scale of activity is a factor that may be driving local authorities to publish information, the Inspectorate analysed the activity level of each of the 119 local authorities displaying comprehensive charging information. This analysis confirmed that the number of registered private supplies does influence decisions about publication of information. For example, close to 45% of published charging schedules were from authorities dealing with more than 100 private supplies and a further 35% were from local authorities dealing with between 11 and 100 private supplies. Together these two higher activity categories represented 80% of the total. In Wales the activity level was less of an influence with only 41% of charging schedules being published by local authorities dealing with more than 11 private supplies. However it was also noted that some local authorities are driven more by a policy of good communications practice as exemplified by the good website information of four local authorities with no registered private supplies.

When considering the transparency of charging information, the Inspectorate's audit considered not only accessibility to information but also the quality of the content and its presentation. This aspect of the audit revealed that just over a half (54%) of the published charging schedules were presented in the best practice format published in *Drinking Water 2010*. Just three out of 9 Welsh charging schedules were in best practice format. Out of the remainder, 15% (18 in total, of which 3 were in Wales) comprised just a list of the maximum fees allowable under the regulations and therefore gave no information about the actual fees being charged and 31% (37 in total, of which four were in Wales) were in a different format and of variable quality.

A feature of best practice in communicating fees is to make the underpinning policy transparent by, for example, showing the components of the fee (e.g. hourly rate x time or hourly rate plus mileage and details of the rates currently in force) and setting out the actual or a typical fee charged alongside the maximum permitted in the regulations. To evaluate local authority charging policies, inspectors selected two particular fees for detailed analysis: the risk assessment charge and the sampling charge. The findings revealed a lack of consistency between activities. For example one third (37) of local authorities set a flat fee for sampling whereas far fewer (14) used a flat fee approach for risk assessment. The majority (58%) of fees for risk assessment were shown as being based on hourly rate compared to only 27% of sample charges. There were 18 local authorities (of which three were in Wales) apparently charging the maximum

permitted fee for sampling regardless of the type of supply in contrast to best practice examples where there was differentiation according to the type of supply and the typical sampling fee was half the maximum permitted. The basis of risk assessment fees was unclear in 31 cases (of which three were in Wales) when compared to examples of best practice where there was differentiation between supply types or a clear explanation of the activity components and typical timescales related to hourly rates. The Inspectorate was particularly concerned that some charging schedules implied that the maximum £500 charge was being applied when it was evident from best practice examples that the typical cost was in the range of £117 – £170 for a small domestic supply (some set a minimum fee in the range of £40 to £50) and for a large commercial supply the typical cost was £270 to £300.

A common fault that limited the transparency of many of the charging schedules was a failure to display the hourly rate. It is evident from enquiries to the Inspectorate that there is a very small but vocal minority of private supply owners who do not trust local authorities and such views are often based on an assumption that local authority staff costs are high, relative to a comparable service that could be commissioned from the private sector (consultants, laboratories, maintenance companies). The Inspectorate found no evidence that private sector service costs are lower than local authority costs for a comparable quality of science service and the Inspectorate has concluded that it is the failure to publish hourly rates that is the driver of these complaints; it is reasonable that owners should have access to such information to allow them to make an informed choice.

The Inspectorate is pleased to report that the audit found some exemplary examples of local authority website pages displaying good quality information about private water supplies and these are listed in '*Drinking water 2011*' with features of merit. The three website pages judged to be the best (Bury Metropolitan Borough Council; South Oxfordshire District Council; Northumberland County Council) were very accessible requiring only two mouse clicks from the website homepage from a search on 'private water supplies. The pages displayed comprehensive background information without the use of links to reach further details, contained a charging schedule in the best practice format published in Annex 3 of *Drinking water 2010* and again this was accessible without further mouse clicks or searching. The Inspectorate also commends a further two website pages (Taunton Deane Borough Council; Shropshire Council) which required only two mouse clicks from the home page but where links took the searcher to information leaflets or other relevant national advice or guidance websites. Though slightly less convenient to use, overall the information on these websites was relatively quick and easy to access

and good quality background information was presented along with clear comprehensive charging information. The remaining eight websites highlighted in the report are informative but the content is not as extensive as the aforementioned and the charging schedule not necessarily in best practice format. Although inspectors did not find any Welsh local authority website of an equivalent standard to those mentioned above, inspectors considered that one (Torfaen County Council) stood out as being of reasonable quality in relation to the charging information provided.

Overall the Inspectorate has concluded that many local authorities should and could do more to provide complete and accurate information to private supply owners and the general public. In arriving at this conclusion, the Inspectorate acknowledges that the situation has improved since the time of the audit, when some website pages were under construction. Nonetheless it is a matter of fact that a substantial number of local authorities (about 140) fall well short in terms of providing a member of the public with the information that they might reasonably expect and need. Publication of this report, which gives access to best practice examples, is intended to facilitate improvement and to incentivise those local authorities that have been identified as not yet providing accurate and complete information to the Inspectorate about the quality of private water supplies in their area.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Jeni Colbourne', written over a horizontal line.

Prof. Jeni Colbourne MBE  
Chief Inspector of Drinking Water