

Annex 3

Significant, serious and major drinking water quality events

Date and Duration	Area	Estimate of population affected	Nature and cause of the event	Main actions and findings from the Inspectorate investigation
01 Jan 2011 For 10 hours (UUT)	Ellesmere port, Sutton Hall and the Wirral	374,734	Turbidity due to deposits in contact tank.	<p>United Utilities Water Plc action:</p> <ul style="list-style-type: none"> • Review of procedures. • Sampled affected area. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate procedures. • High turbidity in final water caused by a disturbance of deposits within the contact tank following changes in flow through the works. <p>Risk classification: Significant.</p>
02 Jan 2011 For 5 days (NNE)	Stockton, Teeside	82,638	Brown discolouration.	<p>Northumbrian Water Ltd action:</p> <ul style="list-style-type: none"> • Flushed mains. • Sampled affected area. • Rezoned area (brought in water from different source). <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • This event was caused by changes in demand in the network due to leakage caused by extreme cold weather. • No recommendations or suggestions made. <p>Risk classification: Significant.</p>

Date and Duration	Area	Estimate of population affected	Nature and cause of the event	Main actions and findings from the Inspectorate investigation
03 Jan 2011 For 5 days (YKS)	Skipton, Grassington, North Yorkshire	58,000	Treatment failure.	<p>Yorkshire Water Services Ltd action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Review of procedures. • Closed the Nidd supply direct to the works, until the inlet flow meter could be replaced. • In the longer term, additional treatment stages and failsafe chlorination is to be installed. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Under dosing of ferric coagulant dosing due to high inlet flows caused by failure of inlet valve. • Critical that equipment was not identified. • Recommended inspection of windings and assessment of their condition as part of the commissioning process for any future changes to control arrangements at all the company's sites. <p>Risk classification: Significant.</p>

Date and Duration	Area	Estimate of population affected	Nature and cause of the event	Main actions and findings from the Inspectorate investigation
06 Jan 2011 For 24 hours (SVT)	Areas of Birmingham supplied by Frankley works	1,300,000	Treatment failure.	<p>Severn Trent Water Ltd action:</p> <ul style="list-style-type: none"> • Replaced faulty equipment. • Review of procedures. • Installation of a new uninterruptable power supply (UPS) system has been completed on schedule. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate treatment process – clarification. • Inadequate treatment process – dosing. • Inadequate treatment process – filtration. • Loss of dissolved air floatation saturators due to three power dips causing iron carryover and elevated chlorine in distribution. UPS units not operable. • Critical that the absence of an operable UPS system continued to leave the works vulnerable to power dips of short duration (<1 second). • A series of recommendations were made following audit of the Works carried out on 27 January 2011. • Notice in place requiring short-, medium- and long-term measures to comply with Regulation 26. • There have been a number of events at this site (29 November 2010, 8 February 2011, 9 March 2011 and 21 November 2011). <p>Risk classification: Significant.</p>

Date and Duration	Area	Estimate of population affected	Nature and cause of the event	Main actions and findings from the Inspectorate investigation
06 Jan 2011 For 1 hour (TMS)	Areas of west and south London supplied by Hampton works	4,020,000	Treatment failure due to planned work.	<p>Thames Water Utilities Ltd action:</p> <ul style="list-style-type: none"> • Increased chlorine residuals at Hampton treatment works. • Repaired faulty equipment. • Retrained staff. • Implemented a training programme with both internal and external water quality experts to improve disinfection knowledge. • ‘Responsible officers’ available 24 hours a day to assist control staff. • Revised procedures for loss of primary chlorination at sites that cannot be shut down and for bisulphite addition. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate training/competence of staff. • Did not keep customers informed. • Inadequate treatment process – dosing. • Recommended that the company reappraise their procedures for chemical dosing associated with disinfection processes. • Suggested that the company provides adequate technical support for the process controllers. <p>Risk classification: Significant.</p>
15 Jan 2011 For 6 hours (SVT)	Areas of Derby	24,000	Loss of supplies due to burst main.	<p>Severn Trent Water Ltd action:</p> <ul style="list-style-type: none"> • Rezoned area (brought in water from different source). • Sampled affected area. • Repaired main. • Increased chlorine residuals in the distribution system. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • There were no recommendations or suggestions made. <p>Risk classification: Significant.</p>

Date and Duration	Area	Estimate of population affected	Nature and cause of the event	Main actions and findings from the Inspectorate investigation
17 Jan 2011 For 7 days (SVT)	Tenbury wells and Ludlow, Shropshire	187,267	<i>Cryptosporidium.</i>	<p>Severn Trent Water Ltd action:</p> <ul style="list-style-type: none"> • Retrained staff. • Review of procedures. • Meeting with the Environment Agency to prioritise and discuss water quality risks within the catchment and to agree specific notification triggers. • Carried out a filter survey and concluded that the filters were in good condition. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate communication caused delay in response. • Inadequate investigations into root cause. • The Inspectorate concluded that the company needed to improve its liaison and interaction with stakeholders, in particular the Environment Agency, during times of slurry spreading, particularly when relaxations are in place. • An audit on 14 January 2011 suggested that streaming may occur across the impounding reservoir (see the <i>Technical audit activity</i> section). <p>Risk classification: Significant.</p>

Date and Duration	Area	Estimate of population affected	Nature and cause of the event	Main actions and findings from the Inspectorate investigation
20 Jan 2011 For 5 days (SRN)	Brighton, West Sussex	48,103	Treatment failure.	<p>Southern Water Services Ltd action:</p> <ul style="list-style-type: none"> • Retrained staff. • Review of procedures. • Sampled affected area. • Increased frequency of operational checks on the nitrate removal plant. • Arrangements put in place to ensure that when nitrate level alarms are received at the control room the required actions are visible to facilitate a timely response. • Nitrate monitor since installed and commissioned and automatic shutdown now in place. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate procedures. • Inadequate training/competence of staff. • Critical that despite checks being carried out three times a week the issue was not identified and escalated. • Critical of staff competency and plant configuration in relation to failure to meet requirements of Regulation 26. • Suggested update of risk assessment in light of learning from this event. <p>Risk classification: Significant.</p>

Date and Duration	Area	Estimate of population affected	Nature and cause of the event	Main actions and findings from the Inspectorate investigation
06 Feb 2011 For 2 days (NNE)	28 properties near Holy Island, Northumberland	70	Microbiological contamination.	<p>Northumbrian Water Ltd action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Review of procedures. • Bypassed service reservoir. • Laboratory audit. • Remedial work to service reservoir. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • <i>E.coli</i> detected in a routine water sample following heavy rainfall. The reservoir was taken out of supply and a subsequent inspection identified points of ingress, the site was repaired and returned to supply. • The Inspectorate suggested that the company pointed out that the regulatory risk assessment should be updated to reflect the event and actions. <p>Risk classification: Significant.</p>

Date and Duration	Area	Estimate of population affected	Nature and cause of the event	Main actions and findings from the Inspectorate investigation
07 Feb 2011 For 4 hours (UUT)	Tameside, Greater Manchester	177,370	Treatment failure and elevated turbidity.	<p>United Utilities Water Plc action:</p> <ul style="list-style-type: none"> • Review of procedures. • Installed new coagulation pH monitors (more reliable model). • Developed a checklist to be completed during valve maintenance to ensure status is correct and known. • Refresher training for operatives on coagulation best practise. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate treatment process – clarification. • Inadequate number of samples taken. • Critical of the length of time taken to gain control of the treatment process and concluded this impacted adversely on disinfection process. • Recommended update of procedures to ensure action is taken to restore water quality to normal in a timely manner. • Concluded that the root cause of the deterioration in raw water quality that triggered this event was linked to a malfunction of the wastewater plant, which was exacerbated by a closed actuated valve. • Recommended review of maintenance procedures to ensure that valves are not left in the wrong position and status is verified as part of the procedure for return to normal operation following maintenance or commissioning. <p>Risk classification: Significant.</p>

Date and Duration	Area	Estimate of population affected	Nature and cause of the event	Main actions and findings from the Inspectorate investigation
07 Feb 2011 For 3 days (UUT)	Southport, Sefton, Merseyside	143,169	Failure of the disinfection system due to plant failure.	<p>United Utilities Water Plc action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Shut down treatment works. • Repaired faulty equipment. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate treatment process – disinfection. • Inadequate investigations into root cause. • The company failed to identify that a failsafe system was not working as designed. The company were not able to alter software which provided the archive for site readings and records due to system not being compatible with existing equipment. • The Inspectorate was critical that the company has inadequate contingency plans. • The Inspectorate was critical of maintenance and planning relating to this event and also the sufficiency of the company reports. <p>Risk classification: Significant.</p>

Date and Duration	Area	Estimate of population affected	Nature and cause of the event	Main actions and findings from the Inspectorate investigation
08 Feb 2011 For 6 hours (SVT)	Areas of Birmingham supplied by Frankley works	1,300,000	Disinfection failure associated with power failure.	<p>Severn Trent Water Ltd action:</p> <ul style="list-style-type: none"> • Replaced faulty equipment. • Retrained staff. • A Notice is in place. • A number of short-term measures have been implemented with further medium- and long-term measures scheduled. The main mitigation measure is the installation of a new uninterruptable power supply system. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate treatment processes, clarification, disinfection, dosing and filtration. • Inadequate communication caused delay in response. • Recommended the company ensures that adequate control measures are implemented to prevent further instances of miscommunication during events. • Recommended the company reviews its Major Works Control System at all its works to guarantee the status of process equipment is correctly shown. • Suggested the company investigates the source of the deposits in sample lines and takes necessary steps to prevent any further formation or transfer of deposits into the sample line. • There have been a number of events at this site (29 November 2010, 6 January 2011, 9 March 2011 and 21 November 2011). <p>Risk classification: Significant.</p>

Date and Duration	Area	Estimate of population affected	Nature and cause of the event	Main actions and findings from the Inspectorate investigation
09 Feb 2011 For 1 hour (SRN)	Parts of Worthing, Sussex	98,456	Treatment failure due to planned work.	<p>Southern Water Services Ltd action:</p> <ul style="list-style-type: none"> • Repaired faulty equipment. • Review of procedures. • Retrained staff. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate follow-up sampling. • Unacceptable delay in notifying local/health authorities. • Unacceptable delay in notifying Inspectorate. • Critical that the duty/standby disinfection systems were not operational at the time of this event. • Critical that procedures in place at the time did not require a timescale for the operation of the disinfection override to be specified. • Recommended the company reviewed the maintenance schedule and planned activities relating to vacuum regulators for this and other relevant sites. • Recommended the company reviewed the actual granular activated carbon backwash frequency, and ensure the required frequency is maintained at all times. • Recommended site operators were provided with further formal training in the use of site overrides and the requirements of the regulations relating to water quality parameters including the requirements of Regulation 26. • Suggested the company consider the use of more appropriate terminology to assist in ensuring all operators have a full understanding of the potential implications to water quality of the use of the 'treatment bridge' at this works or other similar works. <p>Risk classification: Significant.</p>

Date and Duration	Area	Estimate of population affected	Nature and cause of the event	Main actions and findings from the Inspectorate investigation
17 Feb 2011 For 1 week (SVT)	Areas east of Nottingham	17,555	Chemical contamination (arsenic).	<p>Severn Trent Water Ltd action:</p> <ul style="list-style-type: none"> • Retrained staff. • Review of procedures. • Replaced faulty equipment. • Reviewed risk assessment and instigated plans and procedures to deal with severe cold weather and its potential impact on water quality. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate communication caused delay in response. • Inadequate treatment process – filtration. • Sampling was not timely enough. • Company slow to react to a rising trend of arsenic and failure occurred before the next scheduled media change at Burton Joyce works. • The freezing of the media in the arsenic removal plant was as a result of tariff management activities and therefore was avoidable. <p>Risk classification: Significant.</p>

Date and Duration	Area	Estimate of population affected	Nature and cause of the event	Main actions and findings from the Inspectorate investigation
09 Mar 2011 For 1 hour (SVT)	Areas of Birmingham supplied by Frankley works	1,300,000	Failure of disinfection system.	<p>Severn Trent Water Ltd action:</p> <ul style="list-style-type: none"> • Replaced faulty equipment. • Retrained staff. • Event linked to power problems, which are the subject of a Notice. • There have been a number of events at this site (29 November 2010, 6 January 2011, 8 February 2011, and 21 November 2011). <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate treatment process – disinfection. • Inadequate procedures. • Inadequate follow-up sampling. • Very critical that having made the manual control of lime dosing standard practice, the company had not put in place sufficient guidance and procedures to ensure the correct dose was maintained at all times. • Recommended the company ensures suitable control measures are introduced to ensure there is adequate control of pH through the treatment process at all times. • Recommended the company ensures that at sites where blending of water takes place it reviews the basis for on-site calculations relating to pH and takes steps to fully understand the chemistry of blended waters and the effect treatment has on it. • Emphasised previous recommendations following a similar event (29 November 2010) that the company ensures an adequate number of investigative water samples are taken from appropriate locations in a timely manner. • Very critical of the failure of the company to operate the lime dosing system in a satisfactory manner and conclude that this event was avoidable. <p>Risk classification: Significant.</p>

Date and Duration	Area	Estimate of population affected	Nature and cause of the event	Main actions and findings from the Inspectorate investigation
14 Mar 2011 For 2 weeks (UUT)	Manchester	250,000	Musty taste or odour.	<p>United Utilities Water Plc action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Shut down Denton works. • Retrained staff. • Review of procedures. • Installed granular activated carbon treatment subsequently. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate procedures. • Inaccurate customer contact data. • Inadequate raw water monitoring strategy to detect emerging issues. • The Inspectorate recommended that the learning points and findings be supplied following this event and suggested revision of procedures, and suggested that an undertaking be considered at this works to address methyl-isoborneol (MIB) and geosmin identified risks. <p>Risk classification: Significant.</p>
23 Mar 2011 For 3 days (UUT)	Anfield, Liverpool	75,384	Discolouration due to a burst main.	<p>United Utilities Water Plc action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Repaired main. • Flushed mains. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • This event involved the burst of two water mains and subsequent discolouration of supplies. • No recommendations or suggestions were made. <p>Risk classification: Significant.</p>

Date and Duration	Area	Estimate of population affected	Nature and cause of the event	Main actions and findings from the Inspectorate investigation
25 Mar 2011 For 12 hours (SRN)	Rownhams, Hampshire	6,250	Discolouration due to a burst main.	<p>Southern Water Services Ltd action:</p> <ul style="list-style-type: none"> • Repaired main. • Flushed affected area. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • No samples taken as required by Regulation 10. • Inadequate risk assessment therefore consumers were not forewarned. • Inadequate procedures. • Inadequate follow-up sampling. • Critical of the company for failure to follow model relating to the planned work. No investigative water quality samples were taken. • Prosecution initiated (see the <i>Drinking water quality events</i> section). <p>Risk classification: Significant.</p>
17 Apr 2011 For 1 hour (SRN)	Parts of Worthing, Sussex	98,456	Disinfection failure.	<p>Southern Water Services Ltd action:</p> <ul style="list-style-type: none"> • Repaired faulty equipment. • Sampled affected area. • Commitment to carry out hydraulic modelling of the distribution system including the operation of the cross over valve between the reservoirs. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate procedures. • Inadequate investigations into root cause. • Inadequate number of samples taken. • Critical that this is the second event in 2011 where the root cause of the loss of chlorine dosing was a vacuum regulator failure. • Very critical of the lack of any procedures for the operation of the gravity, cross connection valve. • Recommended the company consider formal procedures to control the use of a key valve at the site. • Suggested improvements of sampling arrangements (Regulation 10). <p>Risk classification: Significant.</p>

Date and Duration	Area	Estimate of population affected	Nature and cause of the event	Main actions and findings from the Inspectorate investigation
22 Apr 2011 For 13 hours (VCE)	Knaphill, Woking, Surrey	10,015	Loss of supplies due to a burst main.	<p>Veolia Water Central action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Repaired main. • Provided bottled water on request. • Proactively engaged the media to request consumers to conserve water where possible. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • This event was caused by a burst main and subsequent media interest. • No recommendations or suggestions were made. <p>Risk classification: Significant.</p>
26 Apr 2011 For 1 day (UUT)	Bolton, Lancashire	85,766	Discolouration.	<p>United Utilities Water Plc action:</p> <ul style="list-style-type: none"> • Rezoned area (brought in water from different source). • Sampled affected area. • Repaired faulty equipment. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Discolouration caused by mains failure. • No recommendations or suggestions made. <p>Risk classification: Significant.</p>

Date and Duration	Area	Estimate of population affected	Nature and cause of the event	Main actions and findings from the Inspectorate investigation
27 Apr 2011 For 5 days (NNE)	Shiremoor, Newcastle, Northumbria	25,200	Air in water (white) due to planned work.	<p>Northumbrian Water Ltd action:</p> <ul style="list-style-type: none"> • Review of procedures. • Sampled affected area. • Company intends to check and record the status of air valves before they are recharged and recommissioned. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate risk assessment. • Inadequate procedures. • Critical that the timing of the valve operations for both the recommissioning and decommissioning stages were not updated on the appropriate documents and therefore the risk assessment was not correct. • Very critical of poor communications and documentation as this is a repetitive cause of events associated with the company's distribution network operations. • Enforcement action to be considered if there are any further similar occurrences. <p>Risk classification: Significant.</p>

Date and Duration	Area	Estimate of population affected	Nature and cause of the event	Main actions and findings from the Inspectorate investigation
27 Apr 2011 For 24 hours (UUT)	Ellesmere port, Sutton Hall and the Wirral	374,734	<i>Cryptosporidium.</i>	<p>United Utilities Water Plc action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Review of procedures. • Replaced faulty equipment. • Developed a site-specific cause and effect chart for coagulation at Sutton Hall works to aid the operation of the treatment process. • Operators at Sutton Hall Works are to be trained in the optimisation of coagulant dosing during 2011. • Reviewed the coagulant dosing algorithm at this works. • Submitted a revised Wirral Demand Monitoring Zone Regulation 28 report to the Inspectorate. • Regulation 26 improvement work to improve the control of ferric aluminium sulphate dosing to a target flow set point at Sutton Hall works completed in June 2011. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate treatment process – clarification. • The Inspectorate is closely monitoring the company's progress with actions set out in regulatory risk assessment to improve the coagulation stage at this works and mitigate identified risks to water quality. <p>Risk classification: Significant.</p>
29 Apr 2011 For 3 days (SVT)	Rugby, Warwickshire	26,700	Loss of supplies due to burst main.	<p>Severn Trent Water Ltd action:</p> <ul style="list-style-type: none"> • Repaired main. • Sampled affected area. • Flushed mains. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • This event was associated with extensive flooding and media interest. • No recommendations or suggestions made. <p>Risk classification: Significant.</p>

Date and Duration	Area	Estimate of population affected	Nature and cause of the event	Main actions and findings from the Inspectorate investigation
09 May 2011 For 3 days (SVT)	Areas of Birmingham supplied by Frankley works	247,500	Elevated pH.	<p>Severn Trent Water Ltd action:</p> <ul style="list-style-type: none"> • Failures linked to event at Frankley works on 9 March 2011. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Critical that pH standard exceeded as a result of a miscommunication between a works operator and a contractor who had been working on-site to upgrade the carbon dioxide and lime plants Programmable Logic Controllers (PLCs). <p>Risk classification: Significant.</p>
12 May 2011 For 12 hours (NNE)	Consett, Stanley, Chopwell, Chester-le-Street and Lanchester, County Durham	184,000	Loss of ferric coagulant dosing due to plant failure.	<p>Northumbrian Water Ltd action:</p> <ul style="list-style-type: none"> • Repaired faulty equipment. • Review of procedures. • Sampled affected area. • Due to large quantity of stored water, clarifiers and filters were run to waste to recover the process before turbidities exceeded 1NTU. • Developed interim site-specific procedures. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate treatment process – clarification. • Inadequate communications caused delay in response. • The event was caused by sequential failure of coagulant dosing lines. • The staff were not adequately trained to carry out manual coagulant dosing. • Recommended update of regulatory risk assessment and <i>Cryptosporidium</i> monitoring, staff training and development of procedures. <p>Risk classification: Significant.</p>

Date and Duration	Area	Estimate of population affected	Nature and cause of the event	Main actions and findings from the Inspectorate investigation
17 May 2011 For 10 hours (SRN)	Cowes, Isle of Wight	3,500	Discolouration due to a burst main.	<p>Southern Water Services Ltd action:</p> <ul style="list-style-type: none"> • Repaired main. • Review of procedures. • Rezoned area (brought in water from different source). • Sampled affected area. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate procedures. • Inadequate risk assessment. • Inadequate training/competence of staff. • Recommended that appropriate risk assessments are always carried out prior to actions being taken on the distribution network. • Very critical that an almost identical event occurred in the same area in 2006 and that actions put in place following that event, such as the colour-coded discolouration risk lists, were clearly inadequate to prevent a recurrence. • Suggested that the company review the learning points from both events to ensure that effective measures are put in place to prevent a recurrence. • The event was caused by poor planning and execution of work and failures to sample appropriately in accordance with Regulation 10. <p>Risk classification: Significant.</p>

Date and Duration	Area	Estimate of population affected	Nature and cause of the event	Main actions and findings from the Inspectorate investigation
24 May 2011 For 24 hours (DWR)	Single property concessionary supply in Felindre, Swansea	3	Microbiological contamination.	<p>Dŵr Cymru Welsh Water action:</p> <ul style="list-style-type: none"> • Issued a boil water notice. • Sampled affected area. • Provided bottled water. • Adjusted inlet valve to point of use treatment device to improve contact time. • Investigating capital investment options for upgrading or replacing the point of use device. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate treatment process – disinfection. • Critical that this is the fourth occasion when this supply has been subject to boil water advice. • Noted that the owner had turned off the point of use device and this was the likely cause of the detection of <i>E.coli</i>. <p>Risk classification: Significant.</p>
24 May 2011 For 4 days (ESK)	Billericay, Essex	7,985	Loss of supplies due to burst main.	<p>Essex & Suffolk Water action:</p> <ul style="list-style-type: none"> • Repaired main. • Rezoned area (brought in water from different source). • Provided an alternative supply by tanker/bowser. • Sampled affected area. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • No recommendations or suggestions. <p>Risk classification: Significant.</p>

Date and Duration	Area	Estimate of population affected	Nature and cause of the event	Main actions and findings from the Inspectorate investigation
25 May 2011 For 36 hours (SWT)	City of Truro	11,250	Discolouration due to planned work.	<p>South West Water Ltd action:</p> <ul style="list-style-type: none"> • Repaired main. • Replaced faulty equipment. • Sampled affected area. • Flushed mains. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Suggested that the company annotates its mains records to ensure that appropriate warning flag put on the key valve. • Suggested that to meet the requirements of the Information Direction, where an event has a clear second phase, the company continues to keep stakeholders informed and acts in a proactive manner. • Company did not forewarn customers. • Recommended advance notification of consumers in planned work situations where risk of discolouration has been identified. • The company was reminded of the contents of Information Letter 16/2000 relating to warning consumers and carrying out work on the network resulting in discolouration to supplies. <p>Risk classification: Significant.</p>
31 May 2011 For 24 hours (UUT)	Haydock, Merseyside	3,793	Discolouration.	<p>United Utilities Water Plc action:</p> <ul style="list-style-type: none"> • Flushed mains. • Sampled affected area. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Probable illegal use of hydrant by third party. • No recommendations or suggestions made. <p>Risk classification: Significant.</p>

Date and Duration	Area	Estimate of population affected	Nature and cause of the event	Main actions and findings from the Inspectorate investigation
01 Jun 2011 For 50 hours (UUT)	Preston, Lancashire	5,718	Air in water (white) due to planned work.	<p>United Utilities Water Plc action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Flushed mains. • Liaised with local media about discolouration as a result of a planned air scour of the mains. • Aeration of supplies. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • No recommendations or suggestions made. <p>Risk classification: Significant.</p>
01 Jun 2011 For 12 hours (SRN)	Ryde, Isle of Wight	26,547	Discolouration: Brown	<p>Southern Water Services Ltd action:</p> <ul style="list-style-type: none"> • Retrained staff. • Sampled affected area. • Flushed mains. • Fire Service has now agreed to discuss training on use of hydrants with the District Manager in this area. • Reviewed the management of records relating to fire hydrant use and also provided additional training on fittings issues for its inspectors. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate training/competence of staff. • Critical that the company had allowed local meetings with the Fire Service to lapse. Good liaison and mutual understanding of each other's constraints will not occur if there is a lack of dialogue. • Reminded company that discolouration as a consequence of lack of adequate controls is a potential offence under section 70 of the Water Industry Act 1991. • Suggested that the company extends event learning to all districts where it liaises with the Fire Service. <p>Risk classification: Significant.</p>

Date and Duration	Area	Estimate of population affected	Nature and cause of the event	Main actions and findings from the Inspectorate investigation
05 Jun 2011 For 38 hours (BRL)	Burnham on Sea, Somerset	17,500	Loss of supplies with media interest.	<p>Bristol Water Plc action:</p> <ul style="list-style-type: none"> • Repaired main. • Sampled affected area. • Provided bottled water on request. • Flushed mains. • The company made a repair to a strategic main following large scale burst with media interest causing public concern. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Did not notify Inspectorate – the company chose to email the Inspectorate rather than use the cascade system. • Reminded company of telephone cascade system which must be used for first notification, e-mail is appropriate only for follow-on communications. <p>Risk classification: Significant.</p>
09 Jun 2011 For 3 days (UUT)	Tonge Moor Bolton, Lancashire	12,505	Discolouration due to third party damage.	<p>United Utilities Water Plc action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Repaired main. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate investigations into root cause. • Inadequate procedures. • Critical that the company did not use all tools available to identify root cause. • Recommended review of procedures to verify the quality of water being supplied to consumers during events. <p>Risk classification: Significant.</p>

Date and Duration	Area	Estimate of population affected	Nature and cause of the event	Main actions and findings from the Inspectorate investigation
17 Jun 2011 For 24 hours (SWT)	Exmouth and East Devon coastal area	93,085	Microbiological contamination.	<p>South West Water Ltd action:</p> <ul style="list-style-type: none"> • Increased chlorine residuals in the distribution system. • Sampled affected area. • Carried out a laboratory audit to verify the analytical procedure and staff competence. • Carried out sampler checks. • Inspections of treated water storage tanks. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Checks by company found nothing untoward. • The Inspectorate is content with the actions taken by the company. • No recommendations or suggestions made. <p>Risk classification: Significant.</p>
17 Jun 2011 For 24 hours (YKS)	Colburn, West of Catterick, North Yorkshire	3,392	Microbiological contamination.	<p>Yorkshire Water Services Ltd action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Increased chlorine residuals at service reservoir. • Carried out an internal and external inspection of both compartments and identified points of ingress. • Repaired defects. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • This event was caused by deterioration in the condition of the asset. • No recommendations or suggestions made. <p>Risk classification: Significant.</p>

Date and Duration	Area	Estimate of population affected	Nature and cause of the event	Main actions and findings from the Inspectorate investigation
22 Jun 2011 For 16 days (UUT)	Concessionary supply, Stockport, Manchester	3	Issue of a do not drink notice.	<p>United Utilities Water Plc action:</p> <ul style="list-style-type: none"> • Issued a do not drink notice. • Provided bottled water on request. • Sampled affected area. • Additional treatment by March 2012. • Monitoring for parameters of interest at this site (dieldrin and hydrocarbons). <p>•</p> <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • This event affected a concessionary supply and was caused by migration of contaminants in the ground through the pipework. • The Inspectorate is monitoring the company's progress towards finding a permanent solution to its concessionary supplies in this area with unsatisfactory water quality. <p>Risk classification: Significant.</p>
23 Jun 2011 For 3 weeks (UUT)	Manchester city centre	71,918	Discolouration due to reinstatement of burst main.	<p>United Utilities Water Plc action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Flushed mains. • Repaired main. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate briefing of staff and failure to inform consumers in advance of work that might give rise to discolouration. • See comments for event in Neston on the Wirral on 28 June 2011. <p>Risk classification: Significant.</p>

Date and Duration	Area	Estimate of population affected	Nature and cause of the event	Main actions and findings from the Inspectorate investigation
27 Jun 2011 For 48 hours (TMS)	Dartford and surrounding areas, Kent supplied by Lane End works	37,325	Treatment failure.	<p>Thames Water Utilities Ltd action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Review of procedures. • Repaired faulty equipment. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Sampling was not timely enough. • Inadequate treatment process – filtration. • Inadequate investigations into root cause. • Noted deficiencies with the operation of Lane End works prior to the event occurring (filter in permanent backwash and air scour without associated alarms to alert staff). • Inadequate sampling (as a consequence of delays). <p>Risk classification: Significant.</p>

Date and Duration	Area	Estimate of population affected	Nature and cause of the event	Main actions and findings from the Inspectorate investigation
28 Jun 2011 For 49 hours (UUT)	Neston on the Wirral	17,050	Discolouration due to planned work.	<p>United Utilities Water Plc action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Installed a valve and recharged main. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate risk assessment. • Did not inform customers. • Assessed in light of other previous similar discolouration events due to planned work in 2011 (23 June 2011 in Manchester and 28 June 2011 in the Crewe area). • Recommended company reminds staff of the need to carry out a full assessment of potential impact on water quality prior to work being carried out and to put in place appropriate mitigation measures. • Critical that consumers in Neston, Cheshire, did not receive copies of the letter because of error in risk assessment. • Recommended that the company use the information gained from this event to update Distribution Operation and Maintenance Strategy (DOMS) categorisation of risk for this area. • Critical of lack of communication between two areas of the water company as root cause of failure to address consumer concerns. • Suggested regulatory risk assessment is updated. <p>Risk classification: Significant.</p>

Date and Duration	Area	Estimate of population affected	Nature and cause of the event	Main actions and findings from the Inspectorate investigation
28 Jun 2011 For 4 days (UUT)	Crewe, South Cheshire	30,000	Discolouration.	<p>United Utilities Water Plc action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Review of procedures. • The company placed a message on its automatic messaging system to inform consumers of the situation, which was reviewed and updated regularly. • The company plans to introduce a refresher training on best practice from June 2012 and assess the competency of its network operatives. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Cause due to planned work. • Inadequate procedures. • Inadequate training/competence of staff. • See comments for event in Neston, Cheshire on 28 June 2011. <p>Risk classification: Significant.</p>
30 Jun 2011 For 1 week (UUT)	Areas to the north of Bolton, Greater Manchester supplied by Wayoh works	112,147	Chemical contamination (pesticides).	<p>United Utilities Water Plc action:</p> <ul style="list-style-type: none"> • Review of procedures. • Rezoned area (brought in water from different source). • Sampled affected area. • Dosed powdered activated carbon (PAC). <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate procedures. • This event related to the finding of MCPA pesticide in a routine sample. <p>Risk classification: Significant.</p>

Date and Duration	Area	Estimate of population affected	Nature and cause of the event	Main actions and findings from the Inspectorate investigation
01 Jul 2011 For 3 days (DVW)	Chester and North East Wales	102,000	Microbiological contamination.	<p>Dee Valley Water Plc action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Inspected reservoir. • Increased chlorine residuals leaving the works. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • During a post event audit the Inspectorate found significant deficiencies with storage of water in the tower. • The company had failed to act on the Inspectorate's recommendations from a previous audit and event assessment. • Notice in place and the company are currently working with the Inspectorate to agree the control measures and actions to mitigate a recurrence. <p>Risk classification: Significant.</p>
05 Jul 2011 For 3 hours (UUT)	Areas north of Skelmersdale, Lancashire	87,000	Treatment failure.	<p>United Utilities Water Plc action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Review of procedures. • Improvements made to visibility of treatment stages and optimisation of process. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • This event related to a failure in the coagulation stage of treatment. • Recommended simulate critical alarm settings to ensure they are fit for purpose in light of event. • Recommended routine testing and verification of correct operation of the coagulation failsafe shutdown. <p>Risk classification: Significant.</p>

Date and Duration	Area	Estimate of population affected	Nature and cause of the event	Main actions and findings from the Inspectorate investigation
11 Jul 2011 For 1 day (SST)	Walsall, West Midlands	88,444	Discolouration due to planned work.	<p>South Staffordshire Water Plc action:</p> <ul style="list-style-type: none"> • Repaired faulty equipment. • Flushed mains. • Review of procedures. • Rezoned area (brought in water from different source). <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Did not notify local/health authorities. • Inadequate follow-up sampling. • Lack of maintenance of equipment. • Inadequate procedures. • Recommended that the company ensure that records, including those of valve status, are accurate. • Recommended that before planned work is carried out on the distribution network that the actual status of key valve positions are checked. • DWI was minded to recommend that the company revises its Policy and Procedure Statement PPS 622, 'Permit to Work' procedure for planned operations, but noted that it has plans to do so as a part of an annual review of the procedure. • Suggested that the company reviews the efficacy of training to ensure its field staff adhere to agreed procedures and/or method statements. • Recommended that the company revises its notification procedures to ensure that all relevant stakeholders are notified of water quality events. • Suggested that the company makes its notification to stakeholders as soon as possible. <p>Risk classification: Significant.</p>

Date and Duration	Area	Estimate of population affected	Nature and cause of the event	Main actions and findings from the Inspectorate investigation
18 Jul 2011 For 3 months (CAM)	Gamlingay Village, Cambridge	15,725	Chlorine taste or odour.	<p>Cambridge Water Company Plc action:</p> <ul style="list-style-type: none"> • Review of procedures. • Sampled affected area. • Replaced faulty equipment. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Did not notify Inspectorate. • Inadequate communication caused delay in response. • Inadequate investigations into root cause. • Inadequate risk assessment. • Recommended that the company reviews its approach to risk assessment by considering historic data from the water supply zones. • Recommended that actions should be taken to characterise conditions downstream of the Croydon works and consider control measures to minimise conditions that may lead to organoleptic changes and consumer acceptability problems. <p>Risk classification: Significant.</p>

Date and Duration	Area	Estimate of population affected	Nature and cause of the event	Main actions and findings from the Inspectorate investigation
18 Jul 2011 For 4 days (UUT)	Huyton and central areas of Liverpool	203,000	Burst on a strategic 40" main.	<p>United Utilities Water Plc action:</p> <ul style="list-style-type: none"> • Repaired main. • Sampled affected area. • Inspected 40" trunk main and the mechanical bond fittings that had been used following the cement lining of this main in the 1990's. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Critical that it was unclear in company report how the flows and pressures on the main were currently maintained or how they would be maintained in the future. • Recommended the company should ensure that contingency plans are in place for the operation and management of this strategic main during normal and abnormal conditions. • Suggested learning from this event, about the specific make of mechanical bond coupling in terms of their maintenance and the need for replacement on other, strategic water mains. • Noted how the burst on this strategic main caused widespread flooding and dealing with this overshadowed all considerations of water quality by those responding to the event. <p>Risk classification: Significant.</p>
20 Jul 2011 For 20 days (DVW)	Glan Garth, Wrexham	3	Taste and odour, and illness complaint.	<p>Dee Valley Water Plc action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Flushed mains. • Carried out a water fittings inspection. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • No recommendations or suggestions made. • No link made between reported illness and water supply. <p>Risk classification: Significant.</p>

Date and Duration	Area	Estimate of population affected	Nature and cause of the event	Main actions and findings from the Inspectorate investigation
20 Jul 2011 For 24 hours (UUT)	Areas north of Manchester supplied by Lostock works	782,658	<i>Cryptosporidium.</i>	<p>United Utilities Water Plc action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Repaired faulty equipment. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • This event was caused by temporary failure of chemical dosing at the works leading to loss of filter performance. • No recommendations or suggestions made. <p>Risk classification: Significant.</p>
23 Jul 2011 For 73 hours (TMS)	Wycombe, Aylesbury, Marlow and Radnage, Buckinghamshire	216,000	Air in water.	<p>Thames Water Utilities Ltd action:</p> <ul style="list-style-type: none"> • Removed faulty air compressor from service. • Flushed mains. • Sampled affected area. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Suggested the company review learning from the event with reference to flushing activities. <p>Risk classification: Significant.</p>
25 Jul 2011 For 5 days (ESK)	Chelmsford, Essex	3,500	Risk of contamination due to back siphonage.	<p>Essex & Suffolk Water action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Water fittings inspection was conducted; identified defects notified to farm owner for rectification. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • The company acted in response to local authority environmental health office notification of concerns. • No recommendations or suggestions were made. <p>Risk classification: Significant.</p>

Date and Duration	Area	Estimate of population affected	Nature and cause of the event	Main actions and findings from the Inspectorate investigation
28 Jul 2011 For 24 hours (TMS)	North Cotswold areas, Gloucestershire,	8,223	Microbiological contamination.	<p>Thames Water Utilities Ltd action:</p> <ul style="list-style-type: none"> • Removed Icomb service reservoir from supply for internal inspection. • Replaced treated water sample facilities. • Sampled affected area. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • No recommendations or suggestions were made. <p>Risk classification: Significant.</p>
29 Jul 2011 For 3 days (SVT)	Eastwood, Selston and Underwood, Nottinghamshire	39,000	Discolouration due to a burst main.	<p>Severn Trent Water Ltd action:</p> <ul style="list-style-type: none"> • Repaired main. • Sampled affected area. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • No recommendations or suggestions made. <p>Risk classification: Significant.</p>
30 Jul 2011 For 24 hours (DWR)	Llangewydd, Bridgend	53	Microbiological contamination.	<p>Dŵr Cymru Welsh Water action:</p> <ul style="list-style-type: none"> • Flushed mains. • Sampled affected area. • Carried out several water fittings inspections at properties in the area. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • No recommendations or suggestions made. <p>Risk classification: Significant.</p>
04 Aug 2011 For 24 hours (TMS)	Bromley, Beckenham and areas of south east London supplied by Kangley Bridge works	98,000	Microbiological contamination.	<p>Thames Water Utilities Ltd action:</p> <ul style="list-style-type: none"> • Sampled the Kangley Bridge water treatment works, downstream assets and consumer properties. • Process investigation undertaken. • Review of procedures. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • No recommendations or suggestions were made. <p>Risk classification: Significant.</p>

Date and Duration	Area	Estimate of population affected	Nature and cause of the event	Main actions and findings from the Inspectorate investigation
05 Aug 2011 For 4 days (ANG)	Chantry and Stoke Park, Ipswich, Suffolk	9,100	Brown discolouration due to burst main.	<p>Anglian Water Services Ltd action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Flushed mains. • Repaired main. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • No recommendations or suggestions were made. <p>Risk classification: Significant.</p>
05 Aug 2011 For 24 hours (TMS)	Areas between Swindon and Oxford supplied by Folly Hill service reservoir	12,400	Microbiological contamination.	<p>Thames Water Utilities Ltd action:</p> <ul style="list-style-type: none"> • Removed one cell of service reservoir from supply. • Repaired faulty equipment. • Sampled affected area. • Recognised late that the water quality in the other cell was deteriorating (22 plate counts). • Improved sampling facility at site and introduced a programme for proactive review of plate counts at all service reservoirs. • Review all sampling facilities completed by March 2012. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate training/competence of staff. • Lack of maintenance of equipment. • Sampling was not timely enough. • Monitoring arrangements for colony counts at Folly Hill service reservoir did not comply with Regulation 18(1). • Recommended a revised monitoring regime that will allow emerging trends to be identified in a timely fashion for all indicator parameters in schedule 2 of the Water Supply (Water Quality) Regulations (2000) at all service reservoir sites. • Recommended that the company ensures that the sampling system and all its components including the silicon sample line are compliant with Regulation 31, before the reservoir is returned to service. • Recommended that the company reviews all sampling facilities with a similar design. <p>Risk classification: Significant.</p>

Date and Duration	Area	Estimate of population affected	Nature and cause of the event	Main actions and findings from the Inspectorate investigation
05 Aug 2011 For 24 hours (SEW)	Paddock Wood, Kent and surrounding areas supplied by Bewl works	44,094	Microbiological contamination.	<p>South East Water Plc action:</p> <ul style="list-style-type: none"> • Shut down Bewl works. • Sampled affected area. • Replaced and relocated sample line. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Cause of this event was the final water sampling arrangements which did not comply with the company's specification. • Noted the delay in the company conducting a full investigation of repetitive failures at this works in 2009, 2010 and 2011. • Recommended actions to comply with regulations on sampling and timeliness of investigations. <p>Risk classification: Significant.</p>
08 Aug 2011 For 2 days (NNE)	Blaydon and Winlaton, Gateshead, Tyne and Wear	80,922	Discolouration due to planned work.	<p>Northumbrian Water Ltd action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Repaired faulty equipment. • Provided an alternative supply by tanker/bowser. • Provided bottled water on request. • Flushed mains. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • This event was caused by inappropriate operation of a valve causing scouring of the main. • No recommendations or suggestions made. <p>Risk classification: Significant.</p>

Date and Duration	Area	Estimate of population affected	Nature and cause of the event	Main actions and findings from the Inspectorate investigation
16 Aug 2011 For 48 hours (SVT)	Redditch, Bromsgrove and Evesham, Worcestershire	193,000	Microbiological contamination.	<p>Severn Trent Water Ltd action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Review of procedures. • Removed service reservoir from supply. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • The company concluded that sampling tap defects contributed to the failure. • Critical that there were some ducting points on the reservoir that may have allowed ingress into the body of the reservoir and suggested that procedures be revised to prevent a recurrence of problems. • Suggested that the company incorporate learning from this event into their service reservoir maintenance strategy. <p>Risk classification: Significant.</p>
17 Aug 2011 For 1 day (DWR)	Areas of North East Wales supplied by Bretton and Alwen works	3	Microbiological contamination.	<p>Dŵr Cymru Welsh Water action:</p> <ul style="list-style-type: none"> • Collected follow-up samples. • Carried out laboratory audits. • Enhanced environmental monitoring of laboratory. • Modified procedures. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Critical of the origin of the problem (laboratory contamination) but content with the company handling of the event and actions taken. <p>Risk classification: Significant.</p>

Date and Duration	Area	Estimate of population affected	Nature and cause of the event	Main actions and findings from the Inspectorate investigation
18 Aug 2011 For 48 hours (TMS)	Areas of west and south London supplied by Hampton works	4,000,000	Microbiological contamination.	<p>Thames Water Utilities Ltd action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Investigation determined no traces of THMs were present in the final water sample, as expected, therefore concluded a sampling error had occurred. • Reviewed procedure and reminded relevant personnel of correct sampling procedures. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Recommended an enhanced frequency of audit and checks relating to the collection of samples to determine compliance with sampling procedures and the briefings initiated as a consequence this event. <p>Risk classification: Significant.</p>
21 Aug 2011 For 4 hours (NNE)	Walls end and Byker, Northumberland	32,000	Discolouration due to a burst main.	<p>Northumbrian Water Ltd action:</p> <ul style="list-style-type: none"> • Repaired main. • Rezoned area (brought in water from different source). • Sampled affected area. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • The company maintained supplies, but caused discoloured water by the early actions taken in dealing with this leak that threatened loss of supply to a large population. • Inadequate risk assessment. • Recommended that appropriate risk assessments are always carried out prior to actions being taken on the distribution network. <p>Risk classification: Significant.</p>

Date and Duration	Area	Estimate of population affected	Nature and cause of the event	Main actions and findings from the Inspectorate investigation
21 Aug 2011 For 4 days (SBW)	East End, Bucklers Hard and East Bolder Villages, New Forest, Hampshire	2,150	Failure of the disinfection system.	<p>Semcorp Bournemouth Water Ltd action:</p> <ul style="list-style-type: none"> • Flushed mains. • Sampled affected area. • Modified the system logic for the forward predictive dosing of sodium bisulphite to prevent further problems with chloramination. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Unacceptable delay in notifying local/health authorities. • Unacceptable delay in notifying Inspectorate. • Samples not analysed for appropriate parameters. • Sampling was not timely enough. • Inadequate risk assessment. • Recommended adequate and timely samples are collected as required by Regulation 10. • Recommended review and staff briefing about responding to a rapidly changing situation creating a large number of alarms, and putting in place a clear set of escalation procedures. • Critical of failure to notify appropriate stakeholders. • Critical of failure to provide accurate documentation to the Inspectorate. • Recommended that the company carry out a risk assessment including contingency measures, when control critical equipment is removed for maintenance. • Critical that such a key part of the process was so slow to react to changing conditions and that the company had failed to recognise this prior to the event. • Suggested that the company investigate any similar set-ups at other sites and make corrections as required. <p>Risk classification: Significant.</p>
24 Aug 2011 For 24 hours (VSE)	Paddlesworth, Kent and surrounding areas	32,345	Microbiological contamination.	<p>Veolia Water Southeast action:</p> <ul style="list-style-type: none"> • Rezoned area (brought in water from different source). • Sampled affected area. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • No recommendations or suggestions made. <p>Risk classification: Significant.</p>

Date and Duration	Area	Estimate of population affected	Nature and cause of the event	Main actions and findings from the Inspectorate investigation
26 Aug 2011 For 10 weeks (SEW)	Alton and Basingstoke, Hampshire	20,000	Risk of contamination due to fire at nearby waste recycling plant, including large battery store.	<p>South East Water Plc action:</p> <ul style="list-style-type: none"> • Shut down Lasham works. • Rezoned area (brought in water from different source). • Sampled affected area. • Drilled an observation borehole, hydraulically upstream of the works, to act as early warning of any potential pollution. • Enhanced monitoring ongoing. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • No pollution has been detected to date. • Suggested the company update their risk assessment for this site and supply system. <p>Risk classification: Significant.</p>
27 Aug 2011 For 36 hours (DWR)	North West Swansea, including Penllergaer, Pontardulais and Waunarlwyd and surrounding areas	231,000	Brown discolouration.	<p>Dŵr Cymru Welsh Water action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Flushed mains. • Repaired faulty equipment. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • This event was caused by a stuck ball valve in Cockett reservoir suddenly releasing causing a surge in flow. • No recommendations or suggestions made. <p>Risk classification: Significant.</p>

Date and Duration	Area	Estimate of population affected	Nature and cause of the event	Main actions and findings from the Inspectorate investigation
01 Sep 2011 For 3 days (BRL)	Long Ashton, North Somerset	3,292	Discolouration due to planned work.	<p>Bristol Water Plc action:</p> <ul style="list-style-type: none"> • Flushed mains. • Review of procedures. • Sampled affected area. • Improved procedures for updating GIS. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate contingency planning. • Samples not analysed for appropriate parameters in contravention of Regulation 10. • Inadequate risk assessment. • Inadequate procedures. • Critical that the risk assessment carried out in advance of the work was based on a short section of main and did not take into account the properties fed by the 24" trunk main downstream of the new pipework. The new pipework had been connected to an abandoned section of main, geographic information system (GIS) records were incorrect and the main had been inadequately capped off. • Recommendations were made in respect of risk assessment procedures, GIS records, main capping. <p>Risk classification: Significant.</p>

Date and Duration	Area	Estimate of population affected	Nature and cause of the event	Main actions and findings from the Inspectorate investigation
02 Sep 2011 For 6 days (SVT)	Chesterfield, Derbyshire supplied by Ogston works	203,060	Discolouration due to treatment failure.	<p>Severn Trent Water Ltd action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Removed the recently regenerated granular activated carbon vessel from supply. • Reviewed and updated procedures. • Provided bottled water on request. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Critical of the inadequate granular activated carbon (GAC) backwashing prior to return to supply. • Critical of the lack of GAC testing prior to return to supply. • Highly critical that water with excessive levels of manganese was allowed to leave the site for a period of several days. • Prosecution initiated (see the <i>Drinking water quality events</i> section). <p>Risk classification: Significant.</p>
02 Sep 2011 For 24 hours (UUT)	Stockport Greater Manchester and surrounding areas supplied by Wybersley works	294,683	Treatment failure.	<p>United Utilities Water Plc action:</p> <ul style="list-style-type: none"> • Revised procedures. • Sampled affected area. • Replaced faulty flow switches and made alterations to software and process control. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • This event was caused by a failure of ferric dosing at the works. • Suggested that maintenance activities for flow switches be recorded and that consideration is made to the configuration of critical dosing equipment at other sites with a review of arrangements to ensure that these are accessible for the purposes of maintenance. <p>Risk classification: Significant.</p>

Date and Duration	Area	Estimate of population affected	Nature and cause of the event	Main actions and findings from the Inspectorate investigation
06 Sep 2011 For 1 day (UUT)	Haslingden, Lancashire and surrounding areas supplied by Grane works	60,954	Treatment failure.	<p>United Utilities Water Plc action:</p> <ul style="list-style-type: none"> • Revised procedures. • Sampled affected area. • Repaired faulty equipment. • Reviewed filter management. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • This event was caused by suboptimal coagulation • Suggestions made on the manner in which backwash water is obtained and managed. • Inspectorate was critical of contingency planning and acknowledged company actions to add resilience. • The company has taken learning points for this event and reviewed the configuration of other sites. <p>Risk classification: Significant.</p>
19 Sep 2011 For 1 hour (SVT)	Areas of Derbyshire supplied by Melbourne works	1,000,000	Disinfection failure.	<p>Severn Trent Water Ltd action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Increased chlorine residuals at works. • Reviewed procedures. • Temporarily took Melbourne works out of supply. • Closed the contact tank bypass and removed the ability to remotely operate it. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Highly critical that the bypass on the contact tank was left open for 18 months allowing inadequately disinfected water to leave the site. • Highly critical that the labelling on the valve did not adequately alert potential users as to its purpose and implications of its use. • Critical of the very high number of alarms received at the control room at Melbourne. • Critical of the working practices in place at the time of the event which allowed for the loss of chlorine dosing due to maintenance on the duty and standby equipment. • Prosecution initiated. <p>Risk classification: Significant.</p>

Date and Duration	Area	Estimate of population affected	Nature and cause of the event	Main actions and findings from the Inspectorate investigation
19 Sep 2011 For 33 hours (UUT)	Hyde, Central Manchester	13,158	Discolouration due to a burst main.	<p>United Utilities Water Plc action:</p> <ul style="list-style-type: none"> • Rezoned area (brought in water from different source). • Sampled affected area. • Repaired main. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • No recommendations or suggestions made. <p>Risk classification: Significant.</p>
20 Sep 2011 For 24 hours (YKS)	Summerbridge and Darley, North Harrogate, North Yorkshire	1,288	Microbiological contamination.	<p>Yorkshire Water Services Ltd action:</p> <ul style="list-style-type: none"> • Increased chlorine residuals at service reservoir. • Removed service reservoir from supply. • Sampled affected area. • Repaired cable access and roof joint. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • No recommendations or suggestions made. <p>Risk classification: Significant.</p>
24 Sep 2011 For 4 days (UUT)	Heswall the Wirral, Merseyside	8,840	Loss of supplies.	<p>United Utilities Water Plc action:</p> <ul style="list-style-type: none"> • Provided bottled water on request. • Sampled affected area. • Maintained supplies by tankering in water to consumers. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • This event was caused by a telemetry fault causing booster pump at Heswall service reservoir to trip out. • Inadequate contingency planning. <p>Risk classification: Significant.</p>

Date and Duration	Area	Estimate of population affected	Nature and cause of the event	Main actions and findings from the Inspectorate investigation
25 Sep 2011 For 1 month (TMS)	Single property in Wimbledon, South West London	3	Chemical contamination (petro-chemical).	<p>Thames Water Utilities Ltd action:</p> <ul style="list-style-type: none"> • Issued a do not drink notice. • Carried out a fittings inspection. • Sampled the affected property. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Connection to a redundant, stagnant main identified. • Prosecution initiated. <p>Risk classification: Significant.</p>
27 Sep 2011 For 6 days (UUT)	Accrington, Lancashire	17,250	Loss of supplies due to burst main.	<p>United Utilities Water Plc action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Review of procedures. • The company carried out a post learning review and undertook analysis of the 800mm glass reinforced plastic (GRP) main. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • No recommendations or suggestions made. <p>Risk classification: Significant.</p>
28 Sep 2011 For 3 days (YKS)	Dinnington Anston area of Rotherham, South Yorkshire	30,000	Discolouration.	<p>Yorkshire Water Services Ltd action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Restored pumping and processes at Aughton pumping station. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • This event was caused by a failure of pumps at Aughton pumping station due to temporary power failure. • No recommendations or suggestions made. <p>Risk classification: Significant.</p>

Date and Duration	Area	Estimate of population affected	Nature and cause of the event	Main actions and findings from the Inspectorate investigation
02 Oct 2011 For 48 hours (SVT)	Much Wenlock, Shropshire	8,650	Loss of supplies due to plant failure.	<p>Severn Trent Water Ltd action:</p> <ul style="list-style-type: none"> • Flushed mains. • Increased chlorine residuals at treatment works. • Sampled affected area. • The Much Wenlock reservoir has been included in an undertaking given in May 2012 concerning telemetry at several sites. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate investigations into root cause. • Benthall Booster station was reset at the start of September to ignore alarms, Inspectorate is critical that company was unable to explain why this setting was initiated. <p>Risk classification: Significant.</p>
02 Oct 2011 For 48 hours (TMS)	Banbury, Oxfordshire	21,900	Loss of supplies due to pump failure.	<p>Thames Water Utilities Ltd action:</p> <ul style="list-style-type: none"> • Replaced faulty equipment. • Retrained staff. • Variable speed pumps failed as a consequence of corrosion caused by proximity to the chlorine dosing plant. These assets are to be relocated to avoid a repetition. • Briefing given to secure appropriate sampling as approved by a senior scientist during an event. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Lack of maintenance of equipment. • Significant media interest. <p>Risk classification: Significant.</p>

Date and Duration	Area	Estimate of population affected	Nature and cause of the event	Main actions and findings from the Inspectorate investigation
05 Oct 2011 For 24 hours (UUT)	Hindley and surrounding areas, Lancashire	18,500	Microbiological contamination.	<p>United Utilities Water Plc action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Removed service reservoir from supply. • Internally inspected the service reservoir and identified two points of ingress. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Reservoir will remain out of supply until repairs have been made. • Currently no plans to return asset to supply. <p>Risk classification: Significant.</p>
06 Oct 2011 For 24 hours (UUT)	Whitehaven and surrounding areas in Cumbria supplied by Ennerdale works	80,000	Treatment failure.	<p>United Utilities Water Plc action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Restored treatment processes. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • This event was caused by a valve failure on a membrane filtration unit which caused water with elevated pH to enter supply. • The Inspectorate audited this site in Feb 2012. • Investigation ongoing. <p>Risk classification: Significant.</p>
06 Oct 2011 For 72 hours (VCE)	Woking, Surrey	130,000	Media interest due to a burst main.	<p>Veolia Water Central action:</p> <ul style="list-style-type: none"> • Repaired main. • Main caused traffic disruption and local media attention because a car fell into the hole in the highway. • Company was commended by the local business affected by access to the site during the burst. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • No recommendations or suggestions were made. <p>Risk classification: Significant.</p>

Date and Duration	Area	Estimate of population affected	Nature and cause of the event	Main actions and findings from the Inspectorate investigation
07 Oct 2011 For 24 hours (SRN)	Southampton, Hampshire	236,761	Microbiological contamination.	<p>Southern Water Services Ltd action:</p> <ul style="list-style-type: none"> • Process investigation undertaken at Otterbourne works and laboratory facilities. • Sampled affected area. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate investigations into root cause. • Recommended that the company improves sampling response to events. • Suggested more frequent and larger volume samples in response to any future coliform positives at works. <p>Risk classification: Significant.</p>
08 Oct 2011 For 2 days (DWR)	Ely and Caerau areas of Cardiff	2,100	Discolouration due to a burst main and media interest.	<p>Dŵr Cymru Welsh Water action:</p> <ul style="list-style-type: none"> • Repaired main. • Sampled affected area. • Rezoned area (brought in water from different source). • Flushed the system to mitigate the effects of discoloured water. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate risk assessment. • Recommended that appropriate risk assessments are always carried out prior to actions being taken on the distribution network. <p>Risk classification: Significant.</p>

Date and Duration	Area	Estimate of population affected	Nature and cause of the event	Main actions and findings from the Inspectorate investigation
08 Oct 2011 For 12 hours (VCE)	Little Gaddesden, Berkhamsted, Hertfordshire	1,053	Microbiological contamination.	<p>Veolia Water Central action:</p> <ul style="list-style-type: none"> • Removed Ringshall service reservoir from supply. • Increased chlorine residuals at service reservoir. • By-passed service reservoir. • Sampled affected area. • Company has since agreed to comply with its own policy to inspect reservoirs at a minimum frequency of once every ten years and fully investigate adverse monitoring. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Lack of maintenance. • Recommended compliance with maintenance policy. • Noted that reservoir was internally examined in September 2008 by means of a remotely operated vehicle. This method would not detect ingress of water below the water line. Such methods may be useful in some situations, but should not be used as a substitute for full inspection. • It was suggested that the company reviews its risk assessments for Ringshall and all similar assets. <p>Risk classification: Significant.</p>
11 Oct 2011 For 2 days (YKS)	Bradford, Leeds Yorkshire	15,000	Discolouration due to a burst main.	<p>Yorkshire Water Services Ltd action:</p> <ul style="list-style-type: none"> • Repaired main. • Sampled affected area. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • No recommendations or suggestions made. <p>Risk classification: Significant.</p>

Date and Duration	Area	Estimate of population affected	Nature and cause of the event	Main actions and findings from the Inspectorate investigation
14 Oct 2011 For 1 week (UUT)	Concessionary supply in Chorley, Lancashire	3	Chemical contamination.	<p>United Utilities Water Plc action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Issued a do not use notice. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • This event relates to the nature of the water being aggressive towards copper plumbing. • Notice has been updated to take into account the ongoing work that United Utilities is doing to bring these supplies onto mains supply and also to protect public health when failures do occur. <p>Risk classification: Significant.</p>
15 Oct 2011 For 4 days (UUT)	Levenshulme, South Central Manchester	254,582	Discolouration due to a burst main.	<p>United Utilities Water Plc action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Flushed affected area. • Repaired main. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • No recommendations or suggestions made. <p>Risk classification: Significant.</p>
18 Oct 2011 For 2 days (SEW)	Herstmonceux, Nr Hailsham, East Sussex	3,225	Discolouration due to planned work.	<p>South East Water Plc action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Rezoned area (brought in water from different source). • Flushed mains. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate procedures. • Suggested that communications are improved with customer call centre being informed so that incoming calls related to the work can be identified and responded to appropriately. <p>Risk classification: Significant.</p>

Date and Duration	Area	Estimate of population affected	Nature and cause of the event	Main actions and findings from the Inspectorate investigation
19 Oct 2011 For 24 hours (YKS)	Harrogate area, North Yorkshire	103,241	Microbiological contamination.	<p>Yorkshire Water Services Ltd action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Replaced sampling facilities at Harlow Hill works. • Repairs at Eagle Hill and Harlow Hill service reservoirs and an air valve. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • The cause of <i>E.coli</i> failures were not verified, but a number of defects found during the investigation have been addressed. • Suggested that information from the most recent internal inspection and this event informs the company's approach to reservoir inspections to ensure inspection frequencies are appropriate. • Suggested updating the relevant regulatory risk assessments. <p>Risk classification: Significant.</p>
25 Oct 2011 For 4 weeks (SVT)	Six properties within a concessionary supply in Downton	15	Issue of a boil water notice.	<p>Severn Trent Water Ltd action:</p> <ul style="list-style-type: none"> • Issued a do not drink notice. • Sampled affected area. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Investigation ongoing. <p>Risk classification: Significant.</p>

Date and Duration	Area	Estimate of population affected	Nature and cause of the event	Main actions and findings from the Inspectorate investigation
25 Oct 2011 For 4 days (SWT)	Cornwall, west of Bodmin Moor, supplied by Restormel works	3,773	Musty taste or odour due to low levels of methyl-isoborneol and geosmin.	<p>South West Water Ltd action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Implemented/optimised powdered activated carbon dosing at both works. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • No recommendations or suggestions made. • Restormel works was subject to enforcement (undertaking) for pesticides prior to this event. The company has been evaluating the use of advanced oxidation processes in combination with granular activated carbon to provide a more robust barrier before making a decision on the final solution. The work is due to be completed by 31 March 2014. <p>Risk classification: Significant.</p>
26 Oct 2011 For 2 days (PRT)	Bognor, West Sussex and surrounding areas supplied by Eastergate works	79,549	Microbiological contamination.	<p>Portsmouth Water Plc action:</p> <ul style="list-style-type: none"> • Shutdown water treatment works during investigation. • Rectified deficiencies to the treated water sampling facilities. • Sampled affected area. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • No recommendations or suggestions were made. <p>Risk classification: Significant.</p>

Date and Duration	Area	Estimate of population affected	Nature and cause of the event	Main actions and findings from the Inspectorate investigation
28 Oct 2011 For 5 days (SVT)	Billesdon, Leicestershire	1,118	Issue of a boil water notice.	<p>Severn Trent Water Ltd action:</p> <ul style="list-style-type: none"> • Issued a boil water notice. • Repaired main. • Sampled affected area. • Provided an alternative supply by tanker/bowser. • Provided bottled water on request. • Increased chlorine residuals in the distribution system. • Review of escalation procedures for third party damage. • Review of chlorination procedures. • Review of boil water letter distribution procedures. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate training/competence of staff. • Inadequate communication caused delay in response and spreading of contamination wider. <p>Risk classification: Significant.</p>
26 Oct 2011 For 48 hours (ESK)	Areas of southern Essex supplied by Layer works	618,568	<i>Cryptosporidium.</i>	<p>Essex & Suffolk Water action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Thoroughly checked the raw water and processes at Layer works. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • No recommendations or suggestions were made. <p>Risk classification: Significant.</p>
01 Nov 2011 For 3 days (UUT)	Oldham, Greater Manchester	15,015	Air in water (white) due to planned work.	<p>United Utilities Water Plc action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Flushed mains. • Reviewed procedures. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • No recommendations or suggestions were made. <p>Risk classification: Significant.</p>

Date and Duration	Area	Estimate of population affected	Nature and cause of the event	Main actions and findings from the Inspectorate investigation
01 Nov 2011 For 12 hours (SRN)	Winchester area, Hampshire	4,673	Brown discolouration.	<p>Southern Water Services Ltd action:</p> <ul style="list-style-type: none"> • Reviewed and updated procedures. • Sampled affected area. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • This event occurred when the company was repairing leaks. • Inspectorate noted a new risk assessment process has been instigated following a number of discolouration events following planned work. <p>Risk classification: Significant.</p>
01 Nov 2011 For 10 days (SEW)	Areas of Cuckfield, West Sussex	14,408	Discolouration.	<p>South East Water Plc action:</p> <ul style="list-style-type: none"> • Process investigation undertaken. • Improved manganese removal at Shellbrook works. • Subsequently removed treatment works from supply. • Sampled affected area. • Flushed mains. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Event was caused by deterioration in raw water quality following very low storage reservoir levels. • Recommended the company ensure adequate records are maintained. • Recommended the company provide evidence to demonstrate compliance with Regulation 26. • Suggested the company review the relevant risk assessment. • Required the company to provide a performance report within one month of works returning to supply. <p>Risk classification: Significant.</p>

Date and Duration	Area	Estimate of population affected	Nature and cause of the event	Main actions and findings from the Inspectorate investigation
04 Nov 2011 For 16 hours (BRL)	Broom Hill Brislington, Bristol	6,163	Discolouration due to a burst main.	<p>Bristol Water Plc action:</p> <ul style="list-style-type: none"> • Repaired main. • Sampled affected area. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • The Inspectorate suggested that the company make a full risk assessment of any activity carried out by a third party to assess the risks posed to water quality by planned works and that these risks are fully documented and mitigated against. <p>Risk classification: Significant.</p>
04 Nov 2011 For 48 hours (SRN)	Southampton, Hampshire	55,000	Loss of supplies due to planned work.	<p>Southern Water Services Ltd action:</p> <ul style="list-style-type: none"> • Provided bottled water on request. • Rezoned area affected (brought in water from different source). • Flushed mains. • Sampled affected area. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Investigation ongoing. <p>Risk classification: Significant.</p>

Date and Duration	Area	Estimate of population affected	Nature and cause of the event	Main actions and findings from the Inspectorate investigation
05 Nov 2011 For 48 hours (SVT)	Newport, Shropshire	14,000	Loss of supplies due to plant failure.	<p>Severn Trent Water Ltd action:</p> <ul style="list-style-type: none"> • Sampled affected area. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Lack of maintenance of equipment. • The company consider the most likely cause of this event was telecommunications fault associated with private wires supporting the reservoir and associated sites. • Noted this was one of a series of events in 2011 where failure of the telemetry had led to loss of supplies to consumers. • Recommended that this site is included in the company's response to enforcement action initiated in relation to telemetry issues at service reservoirs. <p>Risk classification: Significant.</p>
09 Nov 2011 For 2 hours (SVT)	Rugby and a small part of Coventry	91,214	Disinfection failure.	<p>Severn Trent Water Ltd action:</p> <ul style="list-style-type: none"> • Shut down Draycote works. • Sampled affected area. • Disciplinary action taken against the operator who acted outside agreed procedures. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Investigation ongoing. • Critical of poor communication between operators and contractors. • Critical of lack of investigatory sampling. • Failure of treatment equipment and unauthorised use of works override. • Disciplinary action taken. • Review of procedures and further staff training provided. • Repair of faulty equipment. <p>Risk classification: Significant.</p>

Date and Duration	Area	Estimate of population affected	Nature and cause of the event	Main actions and findings from the Inspectorate investigation
11 Nov 2011 For 4 days (UUT)	Whitehaven and surrounding areas in Cumbria supplied by Ennerdale works	80,000	Treatment failure.	<p>United Utilities Water Plc action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Restored treatment. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • This event relates to high pH and low chlorine caused by issues with valving arrangements and configuration at site. • Investigation ongoing. <p>Risk classification: Significant.</p>
12 Nov 2011 For 4 days (SVT)	Cheddleton, Werrington, Bagnall and Weston Coyney, Staffordshire	46,683	<i>Cryptosporidium.</i>	<p>Severn Trent Water Ltd action:</p> <ul style="list-style-type: none"> • Shut down Wallmyers works. • Sampled affected area. • The company plan to install new ultraviolet disinfection before the site is returned to supply. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Recommended that the company update their risk assessment. <p>Risk classification: Significant.</p>

Date and Duration	Area	Estimate of population affected	Nature and cause of the event	Main actions and findings from the Inspectorate investigation
13 Nov 2011 For 1 week (SEW)	Burham works supplying areas north of Maidstone, Kent Bulk supply from Southern Water	2,050	<i>Cryptosporidium.</i>	<p>South East Water Plc action:</p> <ul style="list-style-type: none"> • Process investigation undertaken. • Sampled affected area. • Flushed mains. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate risk assessment. • Inadequate procedures. • Highly critical that the bulk supply agreement in place did not consider water quality or the management of water quality-related incidents. • Recommended the bulk supply agreement was reviewed and updated. • Recommended the company review the relevant risk assessments. • Recommended the company review parameters including in sampling, when contamination is suspected. <p>Risk classification: Significant.</p>
13 Nov 2011 For 2 days (TMS)	Walton works supplying, areas of south west London	198,441	<i>Cryptosporidium.</i>	<p>Thames Water Utilities Ltd action:</p> <ul style="list-style-type: none"> • Process investigation undertaken. • Sampled the Walton water treatment works, downstream assets and consumer properties. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • No recommendations or suggestions were made. <p>Risk classification: Significant.</p>
14 Nov 2011 For 6 hours (SVT)	Market Drayton, Shropshire	7,950	Loss of supplies due to plant failure.	<p>Severn Trent Water Ltd action:</p> <ul style="list-style-type: none"> • Manual checks of sensors. • Sampled affected area. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate investigation. • Blore reservoir has been included in an undertaking which requires the company to improve telemetry at several sites. <p>Risk classification: Significant.</p>

Date and Duration	Area	Estimate of population affected	Nature and cause of the event	Main actions and findings from the Inspectorate investigation
15 Nov 2011 For 1 week (SRN)	Burham works supplying areas north of Maidstone, Kent	2,050	<i>Cryptosporidium.</i>	<p>Southern Water Services Ltd action:</p> <ul style="list-style-type: none"> • Process investigation undertaken. • Review of procedures. • Sampled affected area. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Recommended the filter backwashes are regularly observed. • Highly critical that the bulk supply agreement in place did not consider water quality or the management of water quality-related incidents. Recommended the bulk supply agreement was reviewed and updated. • Suggested the company review the relevant risk assessment. <p>Risk classification: Significant.</p>
18 Nov 2011 For 5 days (ANG)	Irchester and Wollaston, Northamptonshire	10,678	Brown discolouration.	<p>Anglian Water Services Ltd action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Company altered valve arrangements to prevent third party intervention. • Actions taken to link alarms to the site to allow greater visibility of the network. • Rezoned area. • Flushed affected area. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Critical of the delay in notifying this event and recommended action to ensure notification is made in timely manner and relevant stakeholders informed. • Suggested review of similar valve arrangements and network configurations to prevent a recurrence of event. <p>Risk classification: Significant.</p>

Date and Duration	Area	Estimate of population affected	Nature and cause of the event	Main actions and findings from the Inspectorate investigation
21 Nov 2011 For 2 hours (SVT)	Areas of Birmingham supplied by Frankley works	1,300,000	Failure of coagulation treatment.	<p>Severn Trent Water Ltd action:</p> <ul style="list-style-type: none"> • Reviewed procedures. • Sampled affected area. • Modified procedures for maintenance of dissolved air flotation. • Review of online monitors. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Recommended review of maintenance work ensuring this is recorded. • Recommended improved filter management. • Recommended improvements in use of online monitoring and sampling analytical samples taken in response to events. • The Inspectorate has revised the Notice to allow prohibition of supplies. <p>Risk classification: Serious.</p>
24 Nov 2011 For 2 days (UUT)	Whitehaven and surrounding areas in Cumbria supplied by Ennerdale works	80,000	Treatment failure.	<p>United Utilities Water Plc action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Restored treatment. • Reviewed treatment process and alarm settings. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • This event was caused by the failure of the membrane filter unit. • Investigation ongoing. <p>Risk classification: Significant.</p>

Date and Duration	Area	Estimate of population affected	Nature and cause of the event	Main actions and findings from the Inspectorate investigation
26 Nov 2011 For 7 days (SVT)	Norton Lindsey, West Midlands	3	Issue of a boil water notice.	<p>Severn Trent Water Ltd action:</p> <ul style="list-style-type: none"> • Repaired main. • Issued a boil water notice. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Did not keep customers informed. • Company contractors did not communicate adequately with consumer. • Suggested that the company uses this event to reinforce the need for communication with customers at all stages of work, particularly by contractors. <p>Risk classification: Significant.</p>
26 Nov 2011 For 1 day (SVT)	Hucknall, Nottinghamshire	13,500	Discolouration due to planned work.	<p>Severn Trent Water Ltd action:</p> <ul style="list-style-type: none"> • Rezoned area (brought in water from different source). • Sampled affected area. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate risk assessment. • Recommended that the company undertakes a review of the methodology for assessing risks in planned works to ensure appropriate steps are taken to assess risks. Procedures and the factors to be provided to Inspectorate to demonstrate that learning has taken place. <p>Risk classification: Significant.</p>
28 Nov 2011 For 3 days (TMS)	Area of Tring, Hertfordshire supplied by Dancers End service reservoir	15,000	Ingress of contamination into service reservoir.	<p>Thames Water Utilities Ltd action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Removed reservoir from supply. • Increased chlorine residuals leaving the site. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Investigation ongoing. <p>Risk classification: Serious</p>

Date and Duration	Area	Estimate of population affected	Nature and cause of the event	Main actions and findings from the Inspectorate investigation
29 Nov 2011 For 12 hours (SRN)	Chatham, Kent	2,393	Discolouration due to planned work.	<p>Southern Water Services Ltd action:</p> <ul style="list-style-type: none"> • Review of procedures. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Did not forewarn customers. • Inadequate communication caused delay in response. • Inadequate procedures. • Inadequate risk assessment. • Inadequate training/competence of staff. • Deficiencies identified by company and measures put in place subsequently to prevent a recurrence. • Inspectorate recommended more timely sampling. <p>Risk classification: Significant.</p>
29 Nov 2011 For 48 hours (SVT)	Melton Mowbray and Market Harborough, Leicestershire	5,000	Loss of supplies due to telemetry failure.	<p>Severn Trent Water Ltd action:</p> <ul style="list-style-type: none"> • Manually restarted pumps. • Sampled affected area. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Telemetry failure caused pumps to shut down as they indicated the reservoir was full. • This reservoir has been included in an undertaking given in May 2012 concerning telemetry at several sites. • Investigation ongoing. <p>Risk classification: Significant.</p>
01 Dec 2011 For 5 days (SVT)	Market Warsop, Nottinghamshire	228	Issue of a do not drink notice.	<p>Severn Trent Water Ltd action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Flushed affected area. • Issued a do not drink notice. • Replaced consumer's boundary boxes. • Issued staff with reminders of hygienic best practice. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • The Inspectorate was content with the company actions taken to prevent a recurrence of this event and there were no recommendations or suggestions made. <p>Risk classification: Significant.</p>

Date and Duration	Area	Estimate of population affected	Nature and cause of the event	Main actions and findings from the Inspectorate investigation
02 Dec 2011 For 3 weeks (SWT)	Areas of Helston and the Lizard Peninsula supplied by Wendron works	22,500	Evidence of chemical contamination (mecoprop).	<p>South West Water Ltd action:</p> <ul style="list-style-type: none"> • By-passed service reservoir. • Flushed mains. • Sampled affected area. <p>DWI Comments and findings:</p> <ul style="list-style-type: none"> • Inadequate treatment process; no dedicated organic micro-pollutant barrier. • Powdered activated carbon dosing is in place as short-term mitigation. • Catchment investigation and enhanced monitoring being used to identify point sources of pollution and the company has enhanced water quality monitoring in place to identify any increases in pesticide levels at an early stage. <p>Risk classification: Significant.</p>
05 Dec 2011 For 3 days (WSX)	Trowbridge, Wiltshire	5,700	Loss of supplies due to a burst main.	<p>Wessex Water Services Ltd action:</p> <ul style="list-style-type: none"> • Repaired main. • Sampled affected area. • Provided an alternative supply by tanker/bowser. • The company rezoned the area and repaired the main that was damaged by a third party. • Alternative supply arrangements were provided and bottled water on request to those areas that could not be fed reliably during the repair operation. • Flushing operations cleared the discolouration within 48 hours. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • No recommendations or suggestions made. <p>Risk classification: Significant.</p>

Date and Duration	Area	Estimate of population affected	Nature and cause of the event	Main actions and findings from the Inspectorate investigation
08 Dec 2011 For 27 hours (SEW)	Langley, Maidstone, Kent	20,000	Loss of supplies due to a burst main.	<p>South East Water Plc action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Repaired main. • Flushed mains. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • The Inspectorate were critical that the company failed to meet the requirements of Regulation 17 and 18 and failed to take an adequate number of investigational samples and test them for appropriate parameters to determine the extent of the event and impact on consumers (Regulation 10). <p>Risk classification: Significant.</p>
08 Dec 2011 For 36 hours (UUT)	Hindley, Greater Manchester	8,485	Discolouration due to a burst main.	<p>United Utilities Water Plc action:</p> <ul style="list-style-type: none"> • Repaired main. • Sampled affected area. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • No recommendations or suggestions made. <p>Risk classification: Significant.</p>
11 Dec 2011 For 2 hours (DWR)	Areas to the south and east of Hereford supplied by Vowchurch works	7,500	Disinfection failure.	<p>Dŵr Cymru Welsh Water action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Shut down water treatment works. • Manual chlorine dosing of downstream reservoirs. • Restarted plant using ultraviolet (UV) as alternative means of primary disinfection. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Company has since reviewed contingency plans for this works. • Short lived event and normal operation of the works was resumed on the same day. <p>Risk classification: Significant.</p>

Date and Duration	Area	Estimate of population affected	Nature and cause of the event	Main actions and findings from the Inspectorate investigation
11 Dec 2011 For 12 hours (NNE)	Washington, Jarrow and South Shields	557,730	Treatment failure.	<p>Northumbrian Water Ltd action:</p> <ul style="list-style-type: none"> • Review of procedures. • Restored water treatment processes. • Sampled affected area. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • This event was caused by a blockage in the coagulant aid dosing arrangements. • Recommended that where starch is used as a coagulant aid that the dosing system used should be reliable and robust, and that this should be the case at all company sites. <p>Risk classification: Significant.</p>
13 Dec 2011 For 16 hours (BRL)	Churchill, Langford & Wrington, Bristol	4,250	Discolouration due to planned work.	<p>Bristol Water Plc action:</p> <ul style="list-style-type: none"> • Repaired main. • Sampled affected area. • Flushing operation cleared the discolouration within 48 hours. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Suggestion that the company considers making a full assessment of any activity involving third parties not under the direct control of the company and appraises the extent of potential risks to the planned operation and water quality, and that the company subsequently documents contingency and control measures arising from any identified risks. <p>Risk classification: Significant.</p>

Date and Duration	Area	Estimate of population affected	Nature and cause of the event	Main actions and findings from the Inspectorate investigation
13 Dec 2011 For 6 hours (NNE)	Durham , Middlesbro', Stockton, Hartlepool, Hambleton, Richmond, Darlington, Redcar and Cleveland, Northumber- land	544,700	Treatment failure.	<p>Northumbrian Water Ltd action:</p> <ul style="list-style-type: none"> • Review of procedures. • Restored water treatment processes. • Sampled affected area. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • This event was caused by problems with Starch dosing for coagulation at this works which disrupted treatment processes leading to elevated turbidity and discoloured water. • The Inspectorate recommended that changes be made to the starch dosing facility at this works to ensure that it can be continuously operated and is reliable. <p>Risk classification: Significant.</p>
14 Dec 2011 For 48 hours (SRN)	Horsham, West Sussex	7,500	Media interest due to a burst main.	<p>Southern Water Services Ltd action:</p> <ul style="list-style-type: none"> • Review of procedures. • Flushed mains. • Repaired main. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • No recommendations or suggestions were made. <p>Risk classification: Significant.</p>
15 Dec 2011 For 48 hours (YKS)	Scarborough and surrounding areas supplied by Irton works	30,000	<i>Cryptosporidium.</i>	<p>Yorkshire Water Services Ltd action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Increased chlorine residuals at treatment works and optimised treatment processes. • Treatment adjusted to take account of change in raw water quality. • Review of procedures. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • No recommendations or suggestions made. <p>Risk classification: Significant.</p>

Date and Duration	Area	Estimate of population affected	Nature and cause of the event	Main actions and findings from the Inspectorate investigation
20 Dec 2011 For 1 day (SWT)	Looe, St. Blazey, Liskeard and surrounding areas, Cornwall	10,000	Microbiological contamination.	<p>South West Water Ltd action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Company removed Bodolver service reservoir from service for cleaning and inspection. No issues were identified at the service reservoir. The company have started enabling works to allow the treated water tank at St Cleer to be removed from supply and inspected. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • No cause was identified for the microbiological failures. • Suggestion made that company should collect more frequent, larger volume samples in response to any future faecal coliform contamination detected at works. <p>Risk classification: Significant.</p>
20 Dec 2011 For 72 hours (TMS)	Reading, Berkshire supplied by Fobney works	510,000	<i>Cryptosporidium.</i>	<p>Thames Water Utilities Ltd action:</p> <ul style="list-style-type: none"> • Reviewed procedures. • Sampled affected area. • Reinstated pre-ozonation stage of treatment. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • The company has since reviewed its operation of the ozone plant at this works and put in place actions to prevent a recurrence with improvements made to the control of this stage of the process and associated alarms. • No recommendations or suggestions made. <p>Risk classification: Significant.</p>
22 Dec 2011 For 3 days (BRL)	Congyre Grove near Bristol	30	Microbiological contamination.	<p>Bristol Water Plc action:</p> <ul style="list-style-type: none"> • Repaired main. • Sampled affected area. • Made changes to company procedures. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • No recommendations or suggestions made. <p>Risk classification: Significant.</p>

Date and Duration	Area	Estimate of population affected	Nature and cause of the event	Main actions and findings from the Inspectorate investigation
29 Dec 2011 For 2 days (TMS)	Oxford and Swindon and surrounding areas supplied from Farmoor works	607,900	<i>Cryptosporidium.</i>	<p>Thames Water Utilities Ltd action:</p> <ul style="list-style-type: none"> • Reviewed procedures. • Sampled affected area. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • The Inspectorate concluded that this event occurred due to issues with continuous treatment at this works and has requested that the company submit further information to evidence that a recurrence is unlikely. • There was no evidence of impact on consumers. <p>Risk classification: Significant.</p>
29 Dec 2011 For 48 hours (TMS)	North Leigh service reservoir, supplying the north Oxfordshire area	90,000	Microbiological contamination.	<p>Thames Water Utilities Ltd action:</p> <ul style="list-style-type: none"> • Rectified deficiencies to the treated water sampling facilities. • Initiated an inspection of all sample facilities to remove any inappropriate valving configurations. • Sampled affected area. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Critical of the timescales for the investigation of all sample facilities to prevent a recurrence of this event. <p>Risk classification: Significant.</p>
30 Dec 2011 For 1 week (ANG)	Retford, Nottinghamshire	3	Do not drink notice issued due to ground contamination.	<p>Anglian Water Services Ltd action:</p> <ul style="list-style-type: none"> • Flushed mains. • Provided bottled water on request. • Sampled affected area. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • No recommendations or suggestions made. <p>Risk classification: Significant.</p>

Date and Duration	Area	Estimate of population affected	Nature and cause of the event	Main actions and findings from the Inspectorate investigation
30 Dec 2011 For 20 days (SRN)	Rochester, Kent	55	Chemical contamination (hydrocarbons).	<p>Southern Water Services Ltd action:</p> <ul style="list-style-type: none"> • Replaced main. • Sampled affected area. • Provided bottled water on request. • Issued a do not drink notice. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Deposits containing polycyclic aromatic hydrocarbons mobilised during repair of a nearby main. • No recommendations or suggestions made. <p>Risk classification: Significant.</p>
31 Dec 2011 For 1 day (SRN)	Areas north of Brighton	50	Loss of supplies due to burst main.	<p>Southern Water Services Ltd action:</p> <ul style="list-style-type: none"> • Repaired main. • Sampled affected area. • Provided bottled water on request. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate contingency planning. • Recommended that the company puts in place a suitable plan of action to prevent this reservoir from emptying again in an uncontrolled manner. <p>Risk classification: Significant.</p>

Events outstanding from 2010 completed in 2011

Date and duration	Area	Estimate of population affected	Nature and cause of the event	Main actions and findings from the Inspectorate investigation
15 Jul 2010 For 5 days (NNE)	Horsley works supplying Ashington, Lynemouth, Ellington, Blyth, Cramlington, Gosforth, Longbenton and Whitley Bay	500,000	Burst raw water main.	<p>Northumbrian Water Ltd action:</p> <ul style="list-style-type: none"> • Rezoned area and flushed mains. • Sampled affected area. • Deployed tankers and alternative supplies. • Repaired main. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Breaches of Regulation 4 and failure to complete Regulation 15 risk assessment prior to using obsolete source water. • Notice issued. • Prosecution initiated (see the <i>Drinking water quality events</i> section). <p>Risk classification: Significant.</p>

Date and duration	Area	Estimate of population affected	Nature and cause of the event	Main actions and findings from the Inspectorate investigation
22 Jul 2010 For 12 hours (SEW)	Trosley works, supplying the Borough Green and Ryarsh areas of Kent	37,700	Elevated turbidity.	<p>South East Water action:</p> <ul style="list-style-type: none"> • Did not adhere to internal procedures. • Sampled affected area. • Shut down works. • Retrained staff. • Revised procedures. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate training/competence of staff. • Recommended review of risk assessment. • Recommended a contingency plan and procedure for washing filters when more than two require washing at one time. This procedure should clearly document the actions to be taken and expected water quality targets. • Critical that the company failed to follow its own procedures and recommended staff training and checks of staff understanding of all procedures. • Recommended that all online instruments at this site and others where similar configurations apply are subject to a water quality alarm review and are appropriately scaled to enable true and accurate readings to be obtained. • Recommended that staff operating water treatment works are aware of the company's limits for key treatment parameters and suggested that these be displayed in a prominent position to enable easy cross referencing. • Recommended that the company implement a system of recording key events in a timely manner to enable both internal and external investigations to reach accurate conclusions. • Recommended the company improves the reporting of events to enable accurate and timely assessment to ensure compliance with Regulation 35(7).

Date and duration	Area	Estimate of population affected	Nature and cause of the event	Main actions and findings from the Inspectorate investigation
08 Dec 2010 For 24 hours (SVT)	Little Eaton works, Derbyshire	320,643	Treatment failure.	<p>Severn Trent Water Ltd Action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Review of procedures. • Issued precautionary boil water advice. • Replaced faulty equipment. • Shut down treatment works. • Sampled affected area. • Increased chlorine residuals at service reservoir. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate procedures. • Inadequate contingency planning. • Inadequate treatment dosing arrangements. • Company has since improved online monitoring, revised procedures, updated risk assessment and improved resilience at the treatment works. <p>Risk classification: Serious.</p>
17 Dec 2010 For 10 days (SVT)	Church Wilne Works, Nottinghamshire	366,449	<i>Cryptosporidium</i> .	<p>Severn Trent Water Ltd Action:</p> <ul style="list-style-type: none"> • Sampled affected area. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate investigations into root cause. • Key treatment (dissolved air flotation) not in use at time despite this being mitigation control for identified high risk from <i>Cryptosporidium</i>. • Flow was increased during a period of high risk contrary to previous assurances given to the Inspectorate. • Recommended review of adequacy of treatment regime in relation to raw water quality and periods of high risk and during cold weather periods. Notice served relating to monitoring for <i>Cryptosporidium</i>, filter performance and management of wash water. <p>Risk classification: Significant.</p>

Date and duration	Area	Estimate of population affected	Nature and cause of the event	Main actions and findings from the Inspectorate investigation
22 Dec 2010 For 8 hours (UUT)	Oldham, Lancashire and surrounding area	98,000	Disinfection failure.	<p>United Utilities Water Plc action:</p> <ul style="list-style-type: none"> • Reduced works output. • Cleaned the sulphuric acid dosing lines. • Notified Health Protection Unit and Environmental Health. • Replaced faulty equipment. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate treatment process – dosing. • Recommended company update scheduled maintenance task lists for dosing. • Recommended introduction of controls to mitigate dosing control risks. • Recommended prioritisation of upgrades planned for this works. <p>Risk classification: Significant.</p>
27 Dec 2010 For 9 days (SVT)	Long Eaton area, Derbyshire.	29	Sulphurous taste or odour.	<p>Severn Trent Water Ltd action:</p> <ul style="list-style-type: none"> • Review of water quality data. • Sampled affected area. • Review of treatment processes and water quality data. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • The Inspectorate was critical of the company consumer handling and advice provided to consumers. • The Inspectorate identified breaches of Regulation 4 with water being rejected by consumers for drinking, washing and cooking. • Prosecution initiated. <p>Risk classification: Significant.</p>