



GUIDANCE ON THE IMPLEMENTATION OF THE WATER SUPPLY (WATER QUALITY) REGULATIONS 2016 (as amended) IN ENGLAND AND THE WATER SUPPLY (WATER QUALITY) REGULATIONS (WALES) 2018

The Regulations

Part 7 – Investigations, authorisation of departures & remedial action

Regulation 18: Investigations, Schedule 1 parameters

Regulation 19: Investigations, indicator parameters

Regulations 20 and 22 to 25: Authorisations

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PART 7 – INVESTIGATIONS, AUTHORISATION OF DEPARTURES & REMEDIAL ACTION

18. Regulation 18 – Investigations: Schedule 1 parameters

- 18.1 Regulation 18(1) requires that as soon as a water supplier has reason to believe that the water supplied fails, or is likely to fail, to meet the standards of wholesomeness specified in regulation 4 and Schedule 1, it must immediately investigate the cause of that failure or likely failure.
- 18.2 This regulation includes where coliform bacteria or *E.coli* are identified in any sample of water supplied from a treatment works, and where *E.coli* is identified in a sample of water supplied from a service reservoir. If coliform bacteria are identified in a service reservoir sample, in the absence of *E.coli*, companies should follow the requirements of regulation 18 to establish that the water supply is not likely to become unwholesome.
- 18.3 Regulation 18(2) sets out the actions that a water company is required to take, including establishing the cause and extent of the failure, the Schedule 1 parameter(s) failing (or likely to fail) a PCV and whether the failure is related to the domestic distribution system (regulation 18(2)(c)).
- 18.4 Regulation 18 requires that the root cause of the failure (or apprehended failure) and the extent of the failure is ascertained. Therefore on being informed of a failure by a laboratory companies should:
- i. Take any immediate actions necessary to protect public health (refer to [WHO technical brief on boil water advice](#) available on the Inspectorate's website)
 - ii. Carry out an immediate risk assessment to establish whether there have been any activities or operational issues in the supply system that could have caused or contributed to the failure.
 - iii. Ascertain whether there have been any recent consumer complaints about drinking water quality in the supply system that could be related to the failure.
 - iv. Carry out an immediate investigation into the cause and extent, taking an appropriate number of investigatory samples from the sampling point, the associated distribution system and upstream and downstream assets as necessary, informed by the risk assessment.
 - v. Identify the cause and restore a wholesome supply as soon as possible.
 - vi. Take steps to prevent a recurrence of the failure.
 - vii. If the failure is associated with a consumer's tap sample, then the company has a duty to investigate whether the failure is caused by the private domestic system of the property. This is likely to involve, for example, taking investigatory samples from additional taps in the property, pre and post-disinfection samples from the original tap in the case of microbiological failures and carrying out an inspection of the plumbing materials and fittings used in the private system.
- 18.5 Regulation 18(5)(a) requires water suppliers to notify the Inspectorate of the failure, the actions taken to investigate the failure and to prevent a recurrence, as soon as possible after it has reason to believe there has been a failure. Unless the failure constitutes an event reportable under the requirements of regulation 35(6) that is, or is

likely to give rise to, a significant risk to public health, the Inspectorate accepts reports appended to the companies' monthly data returns, as required by the Water Industry (Suppliers' Information) Direction as fulfilment of this requirement. A copy of any advice notice (see paragraph 18.7 below), and any formal section 75 notice issued to consumers must be appended to these reports, in order to comply with regulation 18(8) [18(6)(b)]. This regulation also requires copies of these notices to be sent to the local environmental health officer. [Information Letter 11/2004](#) sets out the requirements for these reports, with a reporting template and format for supplementary information provided in its Annexes A and B.

- 18.6 Regulation 18(5)(b) requires that companies, as soon as possible, notify other relevant suppliers who are likely to be affected by a failure, for example, recipients of bulk exports and retail service providers. The notification must include the parameter that has failed and whether the failure is likely to recur (i.e. if remedial action is required in the medium to long-term to permanently mitigate the risk), and, if the failure was a consumer's tap failure caused by the private domestic system, any action taken by the company in relation to the failure. The last requirement would generally only apply where the consumer is either a customer of a retail licensee, or receives a private regulation 8 supply¹. Exporting and importing companies should ensure that they have communication plans in place so that risks to drinking water quality can be acted upon immediately by bulk supply recipients.
- 18.7 Regulation 18(6) requires that where the private domestic distribution system has been established as the cause or most likely cause of a failure, companies must provide written advice (referred to as notice in writing) to the consumer (and other affected consumers, for example on the same shared service, or in multi-occupancy premises) on actions that can be taken to remove or mitigate the risk:
- 18.7.1 The advice notice should include:
- i. the parameter that has failed;
 - ii. the concentration or value of that parameter in the sample taken;
 - iii. the prescribed concentration or value of that parameter;
 - iv. the significance of the failure (e.g. if the water company considers that advice on health matters should be sought); and
 - v. the reason for the failure.
- 18.7.2 In the case of failures of the copper, lead and nickel parameters, companies should, as part of their investigation, establish whether running/flushing the tap before use for regulation 4 purposes reduces the concentration of the parameter to below the PCV, so that this advice can be provided along with written advice to correct the root cause(s) of the failure.
- 18.7.3 Similar advice may be appropriate for taste and odour failures associated with unapproved materials, and where iron and turbidity have exceeded the PCV because of the condition of the private supply pipe.
- 18.7.4 Microbiological failures attributed to the hygienic condition of the tap should be followed up with written advice to the consumer about maintaining tap cleanliness.

¹ Regulation 8 of the Private Water Supplies (England) Regulations 2016, as amended and the Private Water Supplies (Wales) Regulations 2017. A Regulation 8 supply, or private onward distribution system, is where a premises owner and bill payer who is not an undertaker or licensed supplier, supplies water for domestic purposes to other (secondary) premises.

- 18.7.5 The written advice notice should also be sent to any other relevant supplier that uses the private domestic supply system for supplying water to consumers who might be affected. This might include, for example, a retail licensee, or the owner or operator of a private regulation 8¹ supply. The relevant supplier should then make the notice available to its own consumers, as required by regulation 18(9).
- 18.7.6 Failure to provide appropriate written advice to the consumer under these requirements constitutes a failure to comply fully with regulation 18.
- 18.8 In situations where a failure is caused by a private domestic system in a building that is not a public building (see regulation 21), and where the failure is indicative of a significant risk to health, companies should seek to ensure that the defect is corrected, if necessary using their powers to prevent contamination, as vested in them by section 75(2) of the Act. Companies should exercise judgement in these situations, and ensure that any formal action they take is proportionate to the identified risk to health. Remedial action that can easily be carried out by the water company, for example cleaning a tap, does not warrant the issue of a section 75(2) notice.
- 18.9 Companies may consider it appropriate to issue section 75(2) notices to landlords of private domestic properties that are rented to tenants, to correct plumbing defects that could cause a risk to health, where the tenant is not empowered to correct the defect themselves. This is because, under section 73 of the Act, the tenant may be committing an offence through no fault of their own.
- 18.10 Companies should also have robust communication arrangements in place with retail companies, to ensure that their customers can be provided with appropriate advice in the event of a drinking water quality emergency.
- 18.11 Regulation 18(10) [18(8)] establishes that if a company has submitted a report to the Inspectorate under the requirements of regulations 18(5) and 18(6), then they do not need to comply with the requirements of regulation 35(6)(a)(iv) in respect of the same failure.
- 18.12 Regulation 18(11) [18(9)] relates to failures of copper and lead. Where there has been a failure of either of these parameters, or where the responsible company has identified a likelihood of failure, the company must replace any part of the service pipe that is owned by the company and which may contribute to the cause of the failure. Typically, this will be where the company's communication pipe is made from lead, or more rarely, copper. The presence of galvanised iron can also increase the risk of lead failures, and brass fittings may impart lead into the drinking water supply, so companies should investigate and, where necessary, replace, any such pipes and fittings that they own to comply with this regulation.

19. Regulation 19 – Investigations: indicator parameters

- 19.1 Regulation 19(1) requires that as soon as a water supplier has reason to believe that the water supplied does not meet, or is unlikely to meet, the specification for an indicator parameter it must **immediately** investigate the cause. As with regulation 18, this regulation applies to any sample (regulatory or operational).
- 19.2 Regulation 19(1) requires that the root cause of the failure (or likely failure) is ascertained in order to establish whether the failure is indicative of an unwholesome supply. Therefore investigation of indicator parameter failures requires a similar approach to investigating failures of Schedule 1 parameters, although the risk to

human health is likely to be lower, and it may be that the scope of the company's investigation can be reduced.

- 19.3 If the failure is associated with a consumers' tap sample, then, as with Schedule 1 parameters, the company has a duty to establish whether the failure is caused by the private domestic distribution system of the property. The investigatory steps required would, therefore, be similar to those outlined in paragraph 18.4 above.
- 19.4 Regulation 19(3)(a) requires that where the private domestic distribution system has been established as the cause or most likely cause of a failure, companies must provide written advice (referred to as notice in writing) to the consumer (and other affected consumers) on actions that can be taken to remove or mitigate the risk:
- 19.4.1 The advice notice should include:
- i. the indicator parameter that has failed;
 - ii. the concentration or value of that indicator parameter in the sample taken;
 - iii. the specified concentration or value of that indicator parameter;
 - iv. the significance of the failure (e.g. if the water company considers that advice on health matters should be sought); and
 - v. the reason for the failure.
- 19.4.2 Microbiological failures attributed to the hygienic condition of the tap should be followed up with written advice to the consumer about maintaining tap cleanliness.
- 19.4.3 The written advice notice should also be sent to any other relevant supplier that uses the private domestic supply system for supplying water to consumers who might be affected. This might include, for example, a retail licensee, or the owner or operator of a Regulation 8¹ supply.
- 19.4.4 The relevant supplier should then make the notice available to its own consumers, as required by regulation 19(5) [19(4)].
- 19.4.5 Failure to provide appropriate written advice to the consumer under these requirements constitutes a failure to comply fully with regulation 19.
- 19.5 Companies may determine that the failure of an indicator parameter attributed to a private domestic system does not justify use of its powers under section 75(2) of the Act.
- 19.6 Regulation 19(2)(a) requires water suppliers to notify the Inspectorate of the failure, the actions taken by the company to investigate the failure and actions taken to prevent a recurrence, as soon as possible after the failure. The Inspectorate accepts reports appended to the companies' monthly data returns, as required by the Water Industry (Suppliers' Information) Direction 2017 as complying with this requirement. A copy of any advice notice issued to consumers must be appended to these reports, in order to comply with regulation 19(3)(b). Regulation 19(3)(b) [19(4)(b)] also requires copies of these notices to be sent to the local environmental health officer.
- 19.7 Regulation 19(2)(b) [19(4)] requires that companies notify other relevant suppliers who are likely to be affected by a failure, for example, recipients of bulk exports and retail licensees. Refer to paragraph 18.6 above.
- 19.8 **Turbidity** – turbidity is an indicator parameter which is required to be measured at treatment works sample points, as well as in water supply zones. The specification for turbidity at treatment works is 1 NTU, whereas in water supply zones a national standard of 4 NTU applies.

- 19.8.1 An exceedance of the turbidity indicator specification at a treatment works outlet does not in itself represent a direct risk to human health. The specification is applied because an elevated level of turbidity may compromise the effectiveness of chemical and ultra violet disinfection.
- 19.8.2 Additionally, the importance of optimising the operation of water treatment works to effectively remove *Cryptosporidium* oocysts has been published in the expert group reports on “*Cryptosporidium* in water supplies” (see under references in Section 1 – Introduction). An important element of this is controlling the effectiveness of particle removal by reference to the turbidity of filtered and final waters. Therefore any exceedance of the indicator specification at a treatment works should initiate an investigation into the cause in line with the recommendations in the aforementioned reports.
- 19.9 Radioactivity Investigations.** Regulation 19(1)(d) requires that failures of the specification for tritium (100 Bq/l) are followed up with an investigation into the source of the tritium, and an assessment of the risk that this poses to public health. The following paragraphs cover this requirement with additional general guidance for investigating the presence of radioactivity in water supplies:
- 19.9.1 Data available to the Inspectorate indicates that it is very unlikely that any public water supply in England or Wales is at risk of failing the specification for tritium, and that most supplies will qualify for monitoring exemption notices, issued under the provisions of regulation 6(12) [6(14)].
- 19.9.2 Where a failure of the specified value for tritium occurs, whether in a regulatory compliance sample, or in an operational sample, the company should carry out a catchment risk assessment to identify possible sources of the radioactivity, and monitor for additional radionuclides based on risk assessment. Tritium is associated with artificial sources of radioactivity, and Schedule 4 of the Regulations lists some of the more common radionuclides associated with artificial sources. The risk assessment should include consulting with the Environment Agency or Natural Resources Wales to ascertain whether there have been any recent discharges of radioactive substances into the catchment, or any new potential sources.
- 19.9.3 The investigation into the source of tritium should, therefore, include investigatory monitoring for Indicative Dose (gross alpha and gross beta activity and any additional radionuclides indicated from the risk assessment). If any radionuclide detected exceeds the derived concentration given in the table of derived concentrations in Schedule 4, then the Inspectorate should be informed, and advice sought from Public Health England (PHE) or Public Health Wales (PHW) to determine whether any action is needed to protect human health. [The UK Recovery Handbooks for Radiation Incidents 2015, Drinking Water Supplies Handbook](#), version 4 (published by PHE), shall be followed for the investigation.
- 19.9.4 If the indicative dose calculated from the derived concentrations of all radionuclides detected exceeds 0.1mSv, then the Inspectorate should be informed and advice should be sought from PHE or PHW to determine whether any action is needed to protect human health.
- 19.9.5 It is likely that more than one set of investigatory samples will be required in order to confirm the risk. Follow-up investigatory samples should be taken every few days, or at least once per week, for a minimum period of one month, to confirm the activity level. Samples taken as part of the investigation should be representative of the water being consumed and analysed appropriately in accordance with half-life decay pathways.

- 19.9.6 Regulation 19(1) does not make any specific reference to Indicative Dose (ID) or radon, which are the other radioactivity indicator parameters. Information available to the Inspectorate from companies' monitoring and risk assessments indicates that most public water supplies in England and Wales are not at risk of exceeding the specified values for either of these parameters.
- 19.9.7 If radon is detected at levels greater than 100Bq/l, then investigatory monitoring should be undertaken at consumers' taps in addition to enhanced monitoring at the treatment works, and if the level detected is a cause for concern, based on advice from PHE, PHW or the Inspectorate, then the company should investigate actions necessary to reduce the concentration in water supplied to consumers. Any result greater than 1,000Bq/l must be reported to the Inspectorate as an event, as required by regulation 35(6) and remedial action will be secured through a regulation 20(4) notice.
- 19.9.8 Guidance on investigating ID is provided previously in Part 4, paragraph 6.8.5, with additional information in the *UK Recovery Handbooks for Radiation Incidents 2015, Drinking Water Supplies Handbook*, as cited above. If ID is found to exceed 0.1mSv, then this should be reported to the Inspectorate as an event, as required by regulation 35(6).
- 19.9.9 If any isotopes of uranium are detected through a company's radioactivity monitoring activities, the company should analyse samples for uranium in µg/l to ensure that the concentrations of uranium present do not present a risk to wholesomeness by virtue of the element's chemical toxicity. The WHO guideline value (GV) for uranium is 30µg/l. If uranium is detected at a concentration exceeding the GV, then it should be reported to the Inspectorate as an event and PHE or PHW should be consulted to determine whether any action is needed to protect human health.

20. Regulation 20, 22, 23, 24, 25 – Action by the Secretary of State / Welsh Ministers - Authorisations

- 20.1 Authorised departures from the prescribed or specified concentrations or values are permitted under regulation 20 for certain parameters, and these regulations set out the process for issue, publication, terms and conditions and revocation.
- 20.2 If circumstances warrant, the Inspectorate will consider issuing authorisations, assessed on a case by case basis.
- 20.3 Regulation 20(4) imposes a duty on the Inspectorate to issue notices requiring action to be taken in respect of failures of indicator parameters, where the Inspectorate considers that the failure poses a potential danger to human health. The Notice may require the company to take remedial action to ensure that the failure does not recur.

21. Regulation 21 – Failure attributable to domestic distribution system where water is supplied to the public

- 21.1 Water supplied for domestic purposes in buildings where the water is made available to the members of the public must be wholesome. Regulation 21 specifies the response required where a failure of a Schedule 1 parameter or a Schedule 2

(indicator) parameter is attributable to the private domestic distribution system in such premises, commonly referred to as “public buildings”. The regulation requires the Inspectorate to ensure that, where necessary, remedial action is taken to prevent recurrence.

- 21.2 Companies should aim to take a percentage of randomly selected zonal samples from public buildings that reflects the proportion of premises in the supply zone that fall within the definition of a public building. Samples taken from public buildings must be identified in monthly compliance data returns through the use of the “PB” flag (see Annex B of the Water Industry (Suppliers’ Information) Direction).
- 21.3 Companies should exercise judgement when deciding whether premises fall within the definition of a public building. Regulation 21(1)(a) specifies that schools, hospitals and restaurants are included in the definition. Essentially, however, public buildings include any premises where a member of the public could reasonably expect to be served with a drink made with tap water, or where a drinks vending machine that is connected to the cold water system is available for members of the public to use. This includes community centres, village halls and places of worship that have kitchens or utility areas where refreshments are prepared for consumption by the public. It also includes premises such as hair dressers and sports centres which may or may not serve drinks made with tap water to members of the public, but make water available, for example for washing and showering. Appendix 21.1 includes a list of the most common types of premises that are considered to fall within the definition of a public building.
- 21.4 The list in Appendix 21.1 is not exhaustive. Other types of premises may fall within the definition of a public building. When a sample is taken from any premises where a commercial or public service activity is undertaken, it is the responsibility of the water company to determine whether it should be defined as a public building for the purposes of regulation 21.
- 21.5 Samples taken in public buildings should be taken from a tap that is normally used for the preparation of food and drinks for public consumption. In the case of premises such as hair dressers and sports centres (as referred to in 21.3 above), judgement should be exercised as to the most appropriate tap to take a sample from. Companies should apply the same sampling method to taps in public buildings as they do to taps in domestic premises.
- 21.6 If a sample taken at a public building fails for a parameter or an indicator parameter, Regulations 18 and 19 must be followed in their entirety. Where the company’s investigation identifies that a failure is attributable to the private domestic system or the maintenance of that system, water companies must consider whether the problem can be adequately addressed within a reasonably short timescale through advice to the building occupier or owner, or if action is required by them or the building owner under Sections 74 and/or 75 of the Water Industry Act, if necessary using their powers of enforcement as vested by the Act.
- 21.7 It is anticipated that remedial action to prevent a failure recurring can be normally be achieved through local agreement. However, under regulation 21, where the Inspectorate considers any such failures to be:
 - i. not trivial,
 - ii. likely to recur,
 - iii. and, in the case of an indicator parameter, pose a potential danger to human health;

the Inspectorate must serve a notice on the water company supplying the premises that requires the supplier to exercise its powers under section 75(2) of the Act. The

requirement to comply with a notice from the Inspectorate is enforceable under section 18 of the Act.

- 21.7 A section 75(2) notice served as a result of a regulation 21 notice must require the consumer (building owner or occupier) to take the steps specified in the notice to prevent a recurrence of the failure, or the likelihood of a failure. If the consumer fails to take the remedial action specified then the supplier must take the remedial action itself and is entitled to recover necessary costs from the consumer.
- 21.8 Regulation 21(6) requires a water supplier which has served a section 75 notice following a notice served on it under regulation 21, to inform all affected consumers of the action that it has taken. This must include a copy of any notice that the company has served on the building owner/occupier. Suppliers should work with the building owners/occupiers or facilities management representatives to ensure that appropriate steps are taken to make consumers aware of the remedial action taken – for example placing the notice on a public information board, or in the proximity of the main drinking water facilities.
- 21.9 Regulation 21(7) relates to failures that are attributed to factors relating to regulation 8¹ private supplies, where there is the onward distribution of water to secondary premises by a person(s) other than a water undertaker or licensed water supplier. Premises in this instance are a parcel of land and any buildings on it. The primary premises is that supplied directly and metered by the wholesaler. Local authorities must carry out monitoring of secondary premises on the basis of risk assessment. In the event of a failure associated with the water supply to secondary premises, the Inspectorate advises (through published [Guidance](#)) that, in the first instance, the local authority should liaise with the local water supplier to confirm billing arrangements and any upstream hazards. If the failure is attributable to a domestic distribution system supplying or within a public building on secondary premises, and the local authority cannot obtain the information or assistance it requires from a water company to enable it to enforce the requirements of the Private Water Supplies Regulations, then the Inspectorate must serve a notice on the water company requiring the provision of the necessary information by the water company to the local authority.
- 21.10 The Inspectorate expects that sharing of relevant information will form part of the discussion between local authorities and water companies and the need to serve such a notice would be limited to exceptional circumstances. An example of this might be where the local authority needs information from the water supplier on where the water company's network meets the private distribution system in order to identify which assets come under the private water supplies' regulations, and the necessary information has not been made readily available or communication channels have broken down preventing resolution of the drinking water quality issue.

APPENDIX 21.1 – CATEGORIES OF PUBLIC BUILDINGS IN ENGLAND AND WALES

Education	School / college University Further education Pre-school nursery
Medical	Hospital GP surgery Dentist surgery Residential care home / retirement home Health centre / clinic
Hospitality	Nursing home Restaurant Hotel / Hostel Bed and Breakfast Public House Guest House Banquet / function Café Wine bar Campsite Holiday village / park
Exhibition	Museum Public art gallery Exhibition centre Conference centre
Sports	Sports ground / Stadium Leisure centre Gym Swimming pool Health club / fitness centre
Entertainment	Tourist attraction Nightclub Theatre / concert hall Ice rink Cinema
Miscellaneous	Festival park – temporary or permanent Prison / detention centre Community centre Village hall Job centre Housing centre Residential childrens' home Public toilet Place of worship

Revision notes:

Version	Revision	Date
1.0	First major version covering the 2016 Regulations	July 2016
1.1	Updated for 2017 Information Direction; paragraph numbering corrected paras 18.7 (and sub-paragraphs) to 18.12. Para 18.8 – retail licensees replaced with retail service providers.	April 2017
1.2	Para 18.4 link to WHO boil notice guidance added	August 2017
2.0	Updated following publication of the 2018 amendment regulations in England and the 2018 Welsh Regulations.	September 2018
3.0	Updated following EU Exit. Reference to IL 10/2004 removed from paragraph 21.2, and appendix 21.1 added. Paragraph 21.3 amended and 24.4 added. Other paragraph numbers consequentially changed.	April 2020