

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 5 – Monitoring Additional Provisions

**Regulation 12 [11]:
Sampling for particular substances and parameters**

**Regulation 13 [12]:
Sampling at treatment works**

**Regulation 14 [13]:
Sampling at service reservoirs**

DOCUMENT CONTROL

The only controlled version of this document can be accessed on the DWI Website – <http://www.dwi.gov.uk/stakeholders/guidance-and-codes-of-practice/wwq/index.html>
Printed copies of this document, together with electronic copies held on local computers and other storage devices are uncontrolled.

PART 5 – MONITORING ADDITIONAL PROVISIONS

Regulations 12 [11] – Sampling for particular substances and parameters

The former regulation 11 has been removed by the 2018 amending regulations in England, and its requirement no longer exists in the 2018 Welsh regulations. Regulation 12 [11] establishes the requirement that samples must be taken from treatment works and service reservoirs.

Regulations 13 [12] and 14 [13] set out the sampling requirements for water treatment works and service reservoirs, in particular the parameters which must be sampled for. These are national requirements and are additional to those covering monitoring in water supply zones, covered by Part 4 of this guidance. All suppliers are responsible for monitoring their own treatment works and service reservoirs.

Regulation 13 [12] - Sampling at treatment works (Table 5, Group A2 parameters)

- 13.1 Treated water is the point at which, following abstraction and treatment, water is suitable for human consumption and is wholesome as defined by regulation 4. Where controlled blending is in place to achieve compliance with a parametric value, this is defined as treatment. Booster rechlorination in the network is not defined as treatment since this does not meet the definition of disinfection as specified in regulation 26.
- 13.2 Regulation 13(1) [12(1)] requires water companies to take samples for ***E.coli*, coliform bacteria, colony counts at 22°C, nitrite, residual disinfectant and turbidity** at the required flow-related frequency from the point at which water leaves each treatment works. These frequencies are specified in Table 11 of Schedule 3.
- 13.3 Where chloramination is practised, nitrite should be sampled at the frequency specified in Table 5 of Schedule 3 of the Regulations (group A2 parameters). If chloramination is not practised, the frequency for nitrite should be as specified in Table 13 of Schedule 3 (group B2 parameters). Nitrite is not classed as a conservative parameter, and therefore monitoring at consumers' taps is also required (as specified in Tables 8 and 9 of Schedule 3).
- 13.4 Regulation 13 [12] allows monitoring variation notices to be issued for all the parameters referred to in paragraph 13.2. Under regulation 9(4) (qv in Part 4), the Inspectorate may issue monitoring variation notices for parameters, microorganisms and substances that are not covered by regulation 13 [12].
- 13.5 Applications for reduced or exemption from sampling will not be approved for any of the parameters referred to in 13.2 above with the exception of nitrite on condition that chloramination is not practised. Reduced monitoring will be 50% of the standard frequency.
- 13.6 The Inspectorate may issue a notice requiring increased monitoring for any parameter covered by regulation 13 [12], if deemed necessary. Refer also to Table 9 in Part 4 of this guidance.
- 13.3 Where a monitoring variation notice is in place, companies must revert to the reduced or standard frequency as applicable, immediately on a pro rata basis for the remainder

of that year once it is established that a specified condition is no longer applicable, and inform the Inspectorate accordingly. A template pro forma will be provided for companies to use for this purpose.

- 13.4 Regulation 13(5) [12(2)] specifies that samples must be taken at regular intervals (refer to guidance given in Part 4, paragraph 9.19).
- 13.5 Sampling frequencies should be based on the average daily output from the works during the previous year except where it is known that the current sampling year's average daily output will be significantly different.
- 13.6 Compliance sampling points at treatment works must be downstream of final disinfection and contact, final chemical dosing to prepare the water for onward supply to consumers (for example dechlorination, pH correction, phosphate dosing, artificial fluoridation) and blending.
- 13.7 Where the treatment stream within a works divides in such a way that a single final water compliance point is not representative of all water leaving the works (i.e. there are different treatment streams which leave the works through different outlet mains), then more than one sampling point is required. In these situations, although on the same site, each treatment stream is regarded as a separate water treatment works for the purposes of the compliance monitoring requirements.
- 13.8 Where there is more than one outlet at a treatment works requiring separate sampling points, the sampling frequency should be determined separately for each sampling point based on the average daily output at each point.
- 13.9 If a treatment works has been operational for part of a year, the number of samples taken (whether at reduced or standard frequency) should be in the same proportion as the number of days (midnight to midnight) in the year that the works was in use.
- 13.10 Tanks on water treatment works that are used for treatment, for example contact with chlorine or blending to alter the concentration of a parameter, are not covered by the new definition of a service reservoir. Where the volume and retention time of a contact main or tank situated on a works site are used to calculate the Ct value for that works, the final sample point should be situated downstream of these assets.
- 13.11 Point-of-use treatment units used to treat water prior to supply to a single property or group of properties must be designated as water treatment works and monitored in accordance with the requirements of regulation 13 [12]. Since privatisation in 1989, water companies have been phasing out concessionary supplies that have point-of-use treatment units. The Inspectorate supports this and considers this approach to be good practice since these types of supply generally expose consumers to greater risks of receiving unwholesome water.
- 13.12 Chemical dosing points (for example phosphate and booster chlorination) and blending points at service reservoirs and other points within the distribution network that are not on a treatment works site are not defined as water treatment works (with reference to definitions in regulations 2 and 26), and do not require monitoring in accordance with regulation 13.
- 13.13 Refer also to guidance on regulation 16 [15] which requires that samples are representative of the water quality at the time of sampling.
- 13.14 It is expected that companies will meet their full regulatory sampling programme. Where samples have been missed during any period it is expected that companies will make reasonable effort to re-schedule them before the end of the year. Where shortfalls do occur due consideration will be given by the Inspectorate to the reasons for those shortfalls in deciding whether, and if so what, enforcement action is

appropriate. The Inspectorate may also acknowledge the role of exceptional conditions, for example periods of extreme weather, when doing so.

- 13.15 Where scheduled samples at treatment works have been missed and the sampling frequency is less than 365 per annum, it is expected that companies should attempt to re-schedule those samples so that the required annual sampling frequency is met. Companies should have regard to the requirement that samples must be taken at regular intervals, when doing so.

Regulation 14 [13] – Sampling at service reservoirs

- 14.1 The definition of a service reservoir is included in regulation 2 (3) and (4) [2(4) and (5)]. Guidance on this definition is provided in Part 1 – General Regulations. Service reservoirs situated on water treatment works sites that are used solely for storage of the final treated water prior to onward supply to consumers (i.e. without any further blending or treatment on the works' site, and which are not used for chlorine contact) must be designated and sampled as service reservoirs. In these situations the treatment works compliance sampling point(s) must be upstream of the service reservoir.
- 14.2 Regulation 14 [13] requires water companies to take a minimum of one sample from every service reservoir every week it is in use. These samples must be analysed for coliform bacteria, *E.coli*, colony counts and residual disinfectant. A week covers 7 days, inclusive, and if water is supplied from a reservoir at any time during a given week, then a regulatory compliance sample must be taken.
- 14.3 The Inspectorate may consider issuing a monitoring variation notice for service reservoirs if deemed appropriate, as permitted by regulation 14 [13]. For example if a company notifies the Inspectorate of an event where water within a service reservoir has been contaminated because of a structural defect, the Inspectorate may issue a notice to the company requiring the sampling frequency to be increased. Applications for reduced or exemption from sampling at service reservoirs will not be approved for any parameter.
- 14.4 Samples from reservoirs should not be taken on the same day each week, and companies should ensure that random selection of sampling dates is built into their sample programming procedures.
- 14.5 Where a service reservoir has more than one compartment with its own water inlet and outlet and the compartments are not connected hydraulically to any other compartments, then each compartment must be regarded as a single service reservoir.
- 14.6 Where a service reservoir has more than one compartment but the compartments are hydraulically connected and which combine into a single common outlet main, then the connected compartments may collectively be regarded as a single service reservoir and be sampled from the common outlet.
- 14.7 Where a service reservoir has a single main that serves as a common inlet and outlet, the water company must have arrangements in place to ensure that samples are taken only when the main is acting as an outlet and the water quality is therefore representative of water that has been stored within the service reservoir. Where this is not achievable, alternative representative sampling arrangements should be made.
- 14.8 Refer also to guidance on regulation 16 [15] which requires that samples are representative of the water quality at the time of sampling. For compliance purposes,

samples should only be taken from designated taps that are representative of the water that has been stored in the service reservoir or water tower. Sampling facilities should be designed to enable a representative sample to be obtained at all times, regardless of water level, temperature or other reasonably foreseeable weather conditions. Sampling points should be sited such that they are not exposed to any contamination that may compromise the purpose for which the samples are taken. It is, therefore, vital that sampling points are adequately maintained to ensure that the requirement for weekly sampling can be met. Surrogate samples taken from alternative locations and dip samples shall not fulfil the requirements set out in this regulation

- 14.9 Companies should not re-schedule missed samples at service reservoirs unless they can be taken in the same seven day period. Where it has not been possible to take a representative sample from a designated sampling point, companies are encouraged to take operational samples downstream to verify the quality of water supplied from the reservoir, but these will not be accepted as compliance samples.

Revision notes:

Version	Revision	Date
1.0	First major version covering the 2016 Regulations	July 2016
1.1	Paragraph numbering corrected 13.3.1	April 2017
1.2	Added para 13.15, 13.16, 14.8 - guidance for routine monitoring under exceptional conditions, e.g. extreme weather and recovering shortfalls	August 2017
2.0	Updated following publication of the 2018 amendment regulations in England and the 2018 Welsh Regulations. Paragraph 13.11 added: Point-of-use treatment units must be designated as treatment works and sampled accordingly. Paragraph 14.8 added, which includes more detail about requirements for service reservoir sampling facilities.	September 2018
2.1	Amended following publication of the Environment, Food and Rural Affairs (Miscellaneous Amendments etc.) Regulations 2019	April 2019
3.0	New version following UK's exit from the European Union. Paragraph 13.12 added to clarify that doing and blending points at service reservoirs and other points in the network do not require regulation 13 monitoring.	April 2020