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WELSH STATUTORY INSTRUMENTS

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**2018 No. 647**

**The Water Supply (Water Quality) Regulations 2018**

**PART 4**

**Monitoring of Water Supplies**

**Interpretation and application of Part 4**

5.—(1) In this Part “monitoring of a Group A parameter” means monitoring of a Group A parameter for the purpose of obtaining information at regular intervals—

- (a) as to the organoleptic and microbiological quality of water;
- (b) where relevant, as to the effectiveness of drinking water treatment, particularly for the purposes of disinfection, for the purposes referred to in paragraph (2); and
- (c) as regards indicator parameters, whether water supplied for regulation 4(1) purposes meets the specifications for those parameters.

(2) The purpose of monitoring of a Group A parameter is to determine whether the presence of such a parameter in water supplied for regulation 4(1) purposes satisfies the provisions of Part 3 or, if a departure has been authorised under Part 7 in relation to that supply, the provisions of Part 3 as read with the terms of that departure.

(3) In this Part, “monitoring of a Group B parameter” means monitoring of a Group B parameter for the purpose of obtaining information from which it may be established whether water supplied for regulation 4(1) purposes—

- (a) satisfies the provisions of Part 3 or, if a departure has been authorised under Part 7 in relation to that supply, the provisions of Part 3 as read with the terms of that departure;
- (b) meets the specifications for indicator parameters; and
- (c) in respect of other parameters identified as relevant by the Welsh Ministers under regulation 9, meets the specifications for those parameters.

(4) This Part applies to water supplied for regulation 4(1) purposes by a relevant supplier in the performance of its duties under Chapter III.

(5) Regulations 6 to 10 apply to a supplementary licensee in relation to samples taken from supply points as they apply to a water undertaker, but only in so far as the supplementary licensee is introducing water into a water supply zone in which the water undertaker takes samples under this Part (to the extent authorised by or under regulation 8) from supply points.

**Monitoring: general provisions**

6.—(1) Paragraph (2) applies for the purpose of determining whether water to which this Part applies satisfies the provisions of Part 3 or, if a departure has been authorised under Part 7 in relation to that supply, those provisions as read with the terms of that authorisation.

(2) A water undertaker must take or cause to be taken, and analyse or cause to be analysed, not less than the number of samples of the water within each of the water supply zones which it supplies specified in, or in accordance with the provisions of, this Part and Schedule 3.

(3) Except in a case to which paragraph (4) applies, the parameters listed in Tables A and B in Schedule 1 and the indicator parameters must be subject to—

- (a) monitoring of a Group A parameter if the parameter is one listed in column 2 of Table 1 in Schedule 3, and the circumstances specified in column 3 of that Table apply; and
- (b) monitoring of a Group B parameter in any other case.

(4) Where the distribution of water in any part of a water supply zone is by tanker and is (or is likely to be) an intermittent short-term supply, samples of water from each tanker from which the water is distributed must be taken—

- (a) at the commencement of the distribution from that tanker; and
- (b) every 48 hours thereafter until the distribution is discontinued.

(5) Of the samples taken in accordance with paragraph (3) in relation to each distribution—

- (a) the first sample must be analysed for compliance with the following parameters—
  - (i) *E. coli* (item 2 in Part 2 of Table A in Schedule 1); and
  - (ii) conductivity (item 6 in Schedule 2); and
- (b) the second and any subsequent samples must be analysed for compliance with those and every other parameter.

(6) For the purposes of the application of paragraph (3)(b) to the aluminium, iron and manganese parameters (items 1, 9 and 10 in Table 1 in Schedule 3, a supply which consists of both groundwater and surface water will be deemed to be a supply which consists only of surface water.

(7) Compliance samples for chemical parameters, including copper, lead and nickel must take the form of a random daytime sample of one litre volume taken at a consumer's tap without prior flushing.

(8) A water undertaker must monitor each water supply zone within its area of supply for the radioactive parameters contained in Schedule 2 in accordance with paragraphs (9) to (16).

(9) As regards the indicative dose parameter—

- (a) monitoring must be carried out where an artificial source of radionuclides or elevated natural radioactivity is present and it cannot be shown on the basis of other representative monitoring programmes or other investigations that the level of indicative dose is below the value specified in Schedule 2;
- (b) where monitoring for natural radionuclide levels is required, the Welsh Ministers must define the frequency of the monitoring of either gross alpha activity, gross beta activity or individual natural radionuclides, depending on the screening strategy adopted in accordance with Schedule 4;
- (c) where the monitoring frequency defined in accordance with sub-paragraph (b) requires one sample per year for naturally occurring radioactivity, a further sample must be taken where any change occurs in relation to the supply that is likely to influence the concentrations of radionuclides in water supplied for regulation 4(1) purposes;
- (d) in the case of naturally occurring radionuclides where the results of the monitoring referred to in sub-paragraph (b) show that the concentration of radionuclides in the supply is stable, the minimum sampling and analysis frequencies are to be decided by the Welsh Ministers and confirmed by notice to the water undertaker, taking into account the risk to human health;

- (e) a water undertaker may use a screening strategy for gross alpha, gross beta activity or individual radionuclides and, in the event that there is any exceedance of the value specified in Schedule 2, it must carry out an analysis of the specific radionuclides in accordance with Schedule 4.
- (10) As regards the radon parameter—
  - (a) a water undertaker must ensure that a representative survey is carried out in accordance with paragraph (11) to determine the likelihood of a supply failing the parametric value for radon specified in Schedule 2; and
  - (b) monitoring must be carried out where there is reason to believe, on the basis of the results of the representative surveys or other reliable information, that the parametric value for radon might be exceeded.
- (11) A representative survey must be designed in such a way—
  - (a) as to be capable of determining the scale and nature of likely exposures to radon in water intended for human consumption originating from different types of groundwater sources and wells in different geological areas; and
  - (b) that the underlying parameters, in particular the geology and hydrology of the area, radioactivity of rock or soil, and well type, can be identified and used to direct further action to areas of likely high exposure.
- (12) As regards the tritium parameter—
  - (a) monitoring must be carried out where an anthropogenic source of tritium or other artificial radionuclides is present within the catchment area and it cannot be shown on the basis of other surveillance programmes or investigations that the level of tritium is below the parametric value specified in Schedule 2; and
  - (b) if the concentration of tritium exceeds its parametric value, an investigation of the presence of other artificial radionuclides must be carried out.
- (13) Where a parametric value is exceeded in a particular sample, the Welsh Ministers must define the extent of re-sampling necessary to ensure that the measured values are representative of an average activity concentration for a full year.
- (14) The Welsh Ministers may notify a water undertaker which supplies water to a water supply zone that a radioactive parameter need not be monitored if the Welsh Ministers are satisfied that, for the period specified in the notice, the water supplied to that zone for regulation 4(1) purposes—
  - (a) gives rise to a calculated indicative dose that is below the parametric value specified in Schedule 2;
  - (b) contains levels of radon that are below the parametric value specified in Schedule 2;
  - (c) contains levels of tritium that are below the parametric value specified in Schedule 2.
- (15) Where paragraph (14) applies, the Welsh Ministers must communicate the grounds for the notification to the European Commission with the necessary documentation supporting the decision (including the findings of any surveys, monitoring or investigations carried out).
- (16) The Welsh Ministers must by notice in writing withdraw a notice under paragraph (14)—
  - (a) given in relation to the indicative dose parameter, if the Welsh Ministers believe that water supplied to the zone in question for regulation 4(1) purposes gives rise to a calculated indicative dose that is likely to exceed the parametric value specified in Schedule 2;
  - (b) given in relation to the radon parameter, if the Welsh Ministers believe that water supplied to the zone in question for regulation 4(1) purposes contains levels of radon that are likely to exceed the parametric value specified in Schedule 2;

- (c) given in relation to the tritium parameter, if the Welsh Ministers believe that water supplied to the zone in question for regulation 4(1) purposes contains levels of tritium that are likely to exceed the parametric value specified in Schedule 2.

(17) A water undertaker which receives a notice under paragraph (16) must monitor or cause to be monitored the indicative dose parameter or, as the case may be, the radon or tritium parameter, in accordance with Tables 8 to 13 (as applicable) in Schedule 3.

### **Sampling points**

7. Except in relation to water supplied from a tanker, sampling points in respect of every parameter, other than a parameter for which samples are taken from a supply point authorised by or under regulation 8, must be selected at random unless, by notice in writing to a water undertaker (whether or not on the application of the water undertaker), the Welsh Ministers otherwise determine.

### **Authorisation of supply points**

8.—(1) For those parameters specified as item 6 in column 1 of Table 1, and items 1 to 11 and 14 to 21 in column 1 of Table 3, in Schedule 3, samples may be taken from —

- (a) any blending point;
- (b) the water leaving any service reservoir which receives water from a treatment works before its supply to any consumer; and
- (c) the water leaving any treatment works.

(2) If the Welsh Ministers are satisfied that analysis of those samples will produce data which are unlikely to differ in any material respect from the data that would be produced from analysis within the sampling points, the Welsh Ministers may authorise the use for the purposes of regulation 6 of those samples taken for a water supply zone from a blending point, a service reservoir of that description or a treatment works.

(3) In respect of any water supply zone, the taking of samples from a supply point is not authorised by paragraph (2) where a supplementary licensee introduces water into the water supply zone unless the water quality within the water supply zone remains approximately uniform.

(4) Subject to paragraph (6), the Welsh Ministers may, in relation to any parameter not covered by an authorisation under paragraph (2), on the written application of a water undertaker or on the joint written application of a water undertaker and supplementary licensee, authorise the use for the purposes of regulation 6 of samples taken for a water supply zone otherwise than from a sampling point.

(5) An authorisation under paragraph (4) may extend to all samples in relation to that parameter or to such number or proportion of those samples as is specified in the authorisation.

(6) The Welsh Ministers must not grant an authorisation under paragraph (4) unless they are satisfied that analysis of samples taken from a point other than a sampling point will produce data in respect of the parameter in question which are unlikely to differ in any material respect from the data that would be produced in respect of that parameter from analysis of samples obtained from sampling points.

(7) Subject to paragraph (8), the Welsh Ministers may at any time modify or revoke an authorisation under paragraph (4).

(8) Unless it appears to the Welsh Ministers that the immediate modification or revocation of an authorisation under paragraph (4) is required in the interests of public health, they must not modify or revoke such an authorisation without giving to the water undertaker to which the authorisation relates at least 6 weeks' notice of their intention to modify or revoke.

(9) A water undertaker must notify the Welsh Ministers as soon as it has reasonable grounds for believing that an analysis of samples taken for a water supply zone from a point other than a sampling point would produce data in respect of the parameter in question which would differ in a material respect from the data produced by an analysis of samples taken from any of the sampling points within that zone.

(10) On being notified under paragraph (9) and without the need for prior notice to the water undertaker, the Welsh Ministers must revoke the authorisation.

### **Number of samples**

9.—(1) In each year a water undertaker must take or cause to be taken from its sampling points, or to the extent authorised under regulation 8, from its supply points, the standard number of samples for analysis of residual disinfectant and each parameter listed in—

- (a) column (2) of Table 1 in Schedule 3 (Group A parameters);
- (b) column (2) of Table 2 in Schedule 3 (Group B1 parameters);
- (c) column (2) of Table 3 in Schedule 3 (Group B2 parameters);
- (d) column (2) of Table 4 in Schedule 3 (Group A1 parameters);
- (e) column (2) of Table 5 in Schedule 3 (Group A2 parameters);
- (f) column (2) of Table 6 in Schedule 3 (Group A3 parameters); and
- (g) column (2) of Table 7 in Schedule 3 (Group A4 parameters).

(2) In respect of any parameter not referred to in paragraph (1), the Welsh Ministers may specify—

- (a) the number of samples which a water undertaker must take or cause to be taken from its sampling points in each year; and
- (b) its prescribed concentration or value.

(3) Samples required to be taken by this regulation must—

- (a) be taken at regular intervals;
- (b) in respect of sampling for chemical parameters in the distribution network other than sampling at a consumer's tap, be taken, and handled in accordance with ISO 5667-5 entitled "*Water quality. Sampling. Guidance on treatment of drinking water from treatment works and piped distribution systems.*"(1); and
- (c) in respect of microbiological parameters in the distribution network and at a consumer's tap, be taken and handled in accordance with European Standard EN ISO 19458, entitled "*Water Quality – Sampling for microbiological analysis*"(2), using sampling purpose A in the distribution network and sampling purpose B at a consumer's tap.

(4) Subject to paragraph (5) the Welsh Ministers may, in respect of any supplies of water by a water undertaker to a water supply zone, treatment works, supply point or a service reservoir, give the water undertaker written notice of any variation of—

- (a) the parameters subject to sampling (by the omission or addition of parameters); and
- (b) the number of samples which the undertaker must take in the period specified in the notice.

(5) Paragraph (4) does not apply in relation to *E.coli*.

(6) The Welsh Ministers may give a notice under paragraph (4)—

- (a) on the Welsh Ministers' own motion; or

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(1) This standard was approved by the International Organization for Standardization (ISO) on 15 April 2006. Under reference BS ISO 5667-5:2006 it is published as a UK standard by the British Standards Institution (ISBN 0 580 47140 3).

(2) This standard was approved by the European Committee for Standardization (CEN) on 1 July 2006. Under reference BS EN ISO 19458:2006, it is published as a UK standard by the British Standards Institution (ISBN 0 5804 49136 6).

- (b) where paragraph (8) applies, upon application by a water undertaker.
- (7) A notice under paragraph (4)—
- (a) must specify which parameters are subject to variation;
  - (b) must specify the extent of any variation from the standard number of samples required to be taken under paragraph (1) or from the number of samples required to be taken under paragraph (2);
  - (c) may require a risk assessment to be undertaken;
  - (d) may be revoked or varied by the Welsh Ministers.
- (8) This paragraph applies where—
- (a) a risk assessment complying with this regulation has been undertaken;
  - (b) the results of the risk assessment described in sub-paragraph (a) are considered, and that risk assessment indicates that no factor can be reasonably anticipated to be likely to cause deterioration of the quality of the water;
  - (c) in the case where the water undertaker seeks to cease monitoring a particular parameter, the results from samples taken in respect of the parameter collected at regular intervals over a period of at least 3 years are all at less than 30% of the parametric value of the parameter; and
  - (d) in the case where the water undertaker seeks to reduce the frequency of monitoring in respect of a particular parameter, the results from samples taken in respect of that parameter collected at regular intervals over a period of at least 3 years are all at less than 60% of the parametric value of the parameter.
- (9) The Welsh Ministers must by further written notice withdraw a notice under paragraph (4) if the Welsh Ministers believe that any parameter in the water supply to which the notice relates contravenes the prescribed concentration or value or is likely to do so.
- (10) A water undertaker given notice under paragraph (4) must institute a monitoring programme which must be kept under annual review.
- (11) A risk assessment complies with this regulation where—
- (a) it meets the principles of European standard EN 15975-2 entitled “*Security of drinking water supply - Guidelines for risk and crisis management - Part 2: Risk management*”(3) or of other equivalent standards accepted at international level;
  - (b) it is subject to a system of quality control which is checked from time to time by a suitably accredited body; and
  - (c) it takes into account the results of monitoring conducted under the second paragraph of Article 7(1) and Article 8 of [Directive 2000/60/EC](#) of the European Parliament and of the Council establishing a framework for Community action in the field of water policy(4).
- (12) In this regulation “the standard number” means the number of samples specified in Part 2 or Part 3 of Schedule 3 in respect of a parameter specified in Part 1 of that Schedule.

### **Sampling: further provisions**

**10.**—(1) Paragraph (2) applies as soon as a relevant supplier has reasonable grounds for believing that any element, organism or substance, other than a residual disinfectant or a parameter (whether alone or in combination with any parameter or any other element, organism or substance) may cause

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(3) This standard was approved by the European Committee for Standardization (CEN) on 5 July 2013. Under reference BS EN 15975-2:2013, it is published as a UK standard by the British Standards Institution (ISBN 978 0 580 84737 0).

(4) O.J. No L 327, 22.12.2000, p 1, as last amended by Commission [Directive 2014/101/EU](#) (OJ No L 311, 31.10.2014, p 32).

the supply within any of the water supply zones which it supplies to be a supply which does not satisfy—

- (a) the provisions of Part 3; or
- (b) if a departure has been authorised under Part 7, those provisions as read with the terms of that authorisation.

(2) Where this paragraph applies, the relevant supplier must take or cause to be taken sufficient samples from water within that zone (whether from a service reservoir, a treatment works or otherwise) in respect of any element, organism or substances, in order to establish whether that water is wholesome.