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STATUTORY RULES OF NORTHERN IRELAND

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**2017 No. 212**

**The Water Supply (Water Quality)  
Regulations (Northern Ireland) 2017**

**PART 5**

**MONITORING – ADDITIONAL PROVISIONS**

**Interpretation of Part 5**

**13.** In this Part, in relation to residual disinfectant or a parameter specified as item 1, 2, 3, 4 or 6 in column (1) of Table 3 in Schedule 3, and the supply of a volume of water within one of the ranges shown in column (3) of that Table “the number of samples per year” means the applicable number shown in column (4) of that Table.

**Sampling for particular substances and parameters**

**14.** For the purposes of establishing the quality of water to be supplied to any of its water supply zones, a water undertaker must take, or cause to be taken, and analyse, or cause to be analysed, not less than the number of samples specified in this Part.

**Sampling at treatment works**

**15.—**(1) Subject to paragraph (3), in each year a water undertaker must take, or cause to be taken, from the point at which water leaves each treatment works which it uses to supply water to water supply zones, the number of samples per year for analysis—

- (a) for determining the concentration of residual disinfectant;
- (b) for determining whether, in relation to the colony counts and turbidity parameters, water leaving treatment works meets the specifications for those parameters set out in Schedule 2; and
- (c) for testing for compliance with the prescribed concentrations or values in respect of the coliform bacteria, *Escherichia coli* (*E. coli*), and nitrite parameters for water leaving treatment works.

(2) Samples required to be taken by this regulation must be taken at regular intervals.

(3) Where a particular treatment works is in use for part only of a year, the minimum number of samples to be taken from that works in that year must bear to “the number of samples per year” the same proportion as the number of days in that year in which the treatment works has been in use bears to 365.

**Sampling at service reservoirs**

**16.** A water undertaker must take, or cause to be taken, from each of its service reservoirs in each week in which the reservoir is in use, one sample for analysis—

- (a) for testing for compliance with the prescribed concentrations or values in respect of the coliform bacteria and *Escherichia coli* (*E. coli*) parameters;
- (b) for determining the concentration of residual disinfectant; and
- (c) for determining whether the specification in relation to the colony counts parameter is met.

**Sampling: new sources**

- 17.—(1) This regulation applies to—
- (a) any source which has not been used for the supply of water by a water undertaker; and
  - (b) any source which has been so used but not so used for a period of six months preceding the date on which the water undertaker proposes to supply water from it.
- (2) A water undertaker must take or cause to be taken in accordance with paragraphs (3) and (4), such samples of water as enable it to establish—
- (a) whether water can be supplied from that source without contravening Article 108(1) of the 2006 Order; and
  - (b) the treatment necessary to ensure that Article 108(1) of the 2006 Order is complied with in relation to the supply of that water.
- (3) The samples must be taken or cause to be taken—
- (a) before a water undertaker supplies water from a source mentioned in paragraph (1)(a); and
  - (b) as soon as is reasonably practicable after it has begun to supply water from a source mentioned in paragraph (1)(b).
- (4) Samples must be taken—
- (a) in the case of a source mentioned in paragraph (1)(a), in respect of—
    - (i) the parameters listed in Schedules 1 and 2;
    - (ii) any other element, organism or substance which, in the opinion of the water undertaker, may cause the supply to contravene Article 108(1) of the 2006 Order; and
    - (iii) any other element, organism or substance required to be monitored by a risk assessment.
  - (b) in the case of a source mentioned in paragraph (1)(b), in respect of—
    - (i) the parameters listed in Table A in Schedule 1;
    - (ii) the conductivity, hydrogen ion and turbidity parameters; and
    - (iii) any other parameter as regards which the water undertaker is of the opinion that its concentration or value is likely to have altered since the last occasion on which water from that source was analysed.
- (5) Unless the conditions in paragraph (6) are satisfied, a water undertaker must not supply water from a source mentioned in paragraph (1)(a) for regulation 5(1) purposes until one month has passed following the day on which the water undertaker complied with regulation 31(1) with respect to the source.
- (6) The conditions are that a water undertaker—
- (a) must supply water from the source as a matter of urgency in order to prevent an unexpected interruption in piped supply to consumers; and
  - (b) before the supply is made, has carried out a risk assessment specifically with respect to the source.
- (7) For the purposes of paragraph (6)(b), regulation 30 must apply for supplies made as a matter of urgency as if “treatment works” includes a source from which untreated water is supplied.

## Collection and analysis of samples

18.—(1) A water undertaker must ensure, so far as is reasonably practicable, that in taking, handling, transporting, storing and analysing any sample required to be taken for the purposes of Part 4 or this Part, or causing any such sample to be taken handled, transported, stored and analysed, the appropriate requirements are satisfied.

(2) In paragraph (1) “the appropriate requirements” means such of the following requirements as are applicable—

- (a) the sample is representative of the quality of the water being supplied at the time of sampling;
- (b) the sample taken for certain chemical parameters (in particular copper, lead and nickel) must be taken at the consumer’s tap without prior flushing as a random daytime sample of one litre volume.
- (c) the sample taken in the distribution network, with the exception of sampling at the consumer’s tap, and with exception to sampling for microbiological parameters must be taken in accordance with EN ISO 5667-5.
- (d) the sample taken for the monitoring of microbiological parameters in the distribution network is taken and handled according to EN ISO 19458, sampling purpose A and for all other samples taken for the monitoring of microbiological parameters at other points of compliance, is taken and handled according to EN ISO 19458, sampling purpose B;
- (e) the sample is not contaminated when being taken;
- (f) the sample is kept at such temperature and in such conditions as will secure that there is no material alteration of the concentration or value for the measurement or observation of which the sample is intended;
- (g) the sample is analysed as soon as may be possible after it has been taken—
  - (i) by or under the supervision of a person who is competent to perform that task; and
  - (ii) with the use of such equipment as is suitable for the purpose;
- (h) any laboratory at which samples are analysed has a system of analytical quality control in accordance with EN ISO/IEC 17025 or other equivalent standards accepted at international level and by the Department and is subjected from time to time to checking by a person who is—
  - (i) not under the control of either the laboratory or the water undertaker; and
  - (ii) approved by the Department for that purpose;
- (i) the analysis methods used for analysing samples are validated and documented in accordance with EN ISO/IEC 17025 or other equivalent standards accepted at international level and by the Department.

(3) For the purposes of paragraph (2)(h), “laboratory” includes a person who undertakes the analysis of samples for the purposes of Part 4 or this Part, whether at the time and place at which the samples are taken or otherwise.

(4) A water undertaker must maintain such records as are sufficient to enable it to establish, in relation to each sample taken for the purposes of Part 4 or this Part, that such of the appropriate requirements as are applicable to that sample have been satisfied.

(5) Subject to paragraph (12), for the purpose of establishing, within acceptable limits of deviation and detection, whether the sample contains concentrations or values which contravene the prescribed concentrations or values, or exceed the specifications for indicator parameters—

- (a) the method of analysis specified in column (2) of Table A in Schedule 4 “Table A” must be used for the parameter specified in relation to that method in column (1) of Table A;

- (b) the method of analysis must be capable of measuring concentrations equal to the parametric value with a limit of quantification of 30% or less of the relevant parametric value set in Schedule 2 and an uncertainty of measurement as specified in column (2) of Table B in Schedule 4 “Table B”.
- (6) The uncertainty of measurement in Table B must not be used as an additional tolerance to the parametric values set in Schedule 1 and 2.
- (7) For hydrogen ion, a method of analysis must be capable at the time of use of measuring a value with a trueness of 0.2 pH unit and a precision of 0.2 pH unit.
- (8) The result of analysis of parameters under this regulation must be expressed using at least the same number of significant figures as for the associated parametric values in Schedule 1 and Schedule 2.
- (9) For these purposes—
- “limit of quantification” is to be calculated using an appropriate standard or sample, and may be obtained from the lowest calibration point on the calibration curve, excluding the blank;
- “uncertainty of measurement” is defined as a non-negative parameter characterising the dispersion of the quantity values being attributed to a measure and, based on the information used; and
- measurement uncertainty must be estimated at the level of the parametric value, unless otherwise specified.
- (10) The Department may, until 31 December 2019, allow the water undertaker to use “trueness”, “precision” and “limit of detection” as specified in Table C Schedule 4 “Table C” as an alternative set of performance characteristics to “limit of quantification” and “uncertainty of measurement” specified in Table B provided that—
- (a) the method of analysis specified in column (2) of Table A in Schedule 4 must be used for the parameter specified in relation to that method in column (1);
- (b) the method of analysis used for a parameter specified in column (1) of Table C in that Schedule must be capable, at the time of use—
- (i) of measuring concentrations and values equal to the parametric value with the trueness and precision specified in relation to that parameter in columns (2) and (3) of that Table; and
- (ii) of detecting the parameter at the limit of detection specified in relation to that parameter in column (4) of that Table;
- (c) the method of analysis used for determining compliance with the hydrogen ion parameter must be capable, at the time of use, of measuring concentrations equal to the parametric value with a trueness of 0.2 pH unit and a precision of 0.2 pH unit; and
- (d) the method of analysis used for the odour and taste parameters must be capable, at the time of use, of measuring values equal to the parametric value with a precision of 1 dilution number at 25°C.
- (11) For the purposes of paragraph (10)—
- “limit of detection” is to be calculated as—
- (a) three times the relative within batch standard deviation of a natural sample containing a low concentration of the parameter; or
- (b) five times the relative within batch standard deviation of a blank sample;
- “precision” (the random error) is to be calculated as twice the standard deviation (within a batch and between batches) of the spread of results about the mean; and

“trueness” (the systematic error) is to be calculated as the difference between the mean value of the large number of repeated measurements and the true value.

(12) Subject to paragraph (14), the Department may, on the application by a water undertaker, authorise a method of analysis other than that specified in paragraph (5)(a) (“the prescribed Table A method”).

(13) In the absence of an analytical method meeting the minimum performance criteria set out in Table B and Table C of Schedule 4 and subject to paragraph 14, the Department may, on the application by a water undertaker, authorise a method of analysis other than that specified in those Tables (“the prescribed Table B or Table C method”) which are best available techniques not entailing excessive costs

(14) An application for the purposes of paragraph (12) and (13) must be made in writing and must be accompanied by—

- (a) a description of the method of analysis; and
- (b) the results of the tests carried out to demonstrate the reliability of that method and its equivalence to the prescribed Table A method; or
- (c) the results of the tests carried out to demonstrate the reliability of that method and its equivalence to the prescribed Table B or Table C method.

(15) The Department must not authorise the use of the method proposed in the application unless it is satisfied that the results obtained by the use of that method are at least as reliable as those produced by the use of the prescribed method.

(16) An authorisation under paragraphs (12) and (13) may be subject to such conditions as the Department thinks fit.

(17) The Department may at any time, by notice in writing served on the water undertaker to which an authorisation under paragraphs (12) and (13) has been given, revoke the authorisation, but no such notice must be served later than three months before the date on which the revocation is stated to take effect.

(18) The Department shall provide the European Commission with relevant information concerning such methods authorised in paragraph (12) and their equivalence.