
SCOTTISH STATUTORY INSTRUMENTS

2014 No. 364

The Public Water Supplies (Scotland) Regulations 2014

PART 4

MONITORING OF PUBLIC WATER SUPPLIES

Application and interpretation

5.—(1) This Part applies only in relation to the supply of water for human consumption purposes by Scottish Water in the performance of its duties under Part VIA of the 1980 Act.

(2) In this Part—

“audit monitoring” means monitoring for the purpose of obtaining information from which it may be established, as regards a parameter in Table A, Table B or Table C, whether the concentration, value or state of the parameter in water supplied for human consumption purposes complies with the prescribed concentration or value for that parameter (at the point of compliance or, as the case may be, point of monitoring); and

“check monitoring” means monitoring for the purpose of obtaining information as to—

- (a) the organoleptic and microbiological quality of water; and
 - (b) the effectiveness of any drinking-water treatment used (particularly of disinfection),
- for the purpose of determining, as regards a parameter (in Table A, Table B or Table C) listed in Table 1, whether the concentration, value or state of the parameter in water supplied for human consumption purposes complies with the prescribed concentration or value for that parameter (at the point of compliance or, as the case may be, point of monitoring).

Monitoring: general provisions

6.—(1) For the purposes specified in paragraph (2), Scottish Water must, for each water supply zone—

- (a) take or have taken; and
- (b) analyse or have analysed,

not less than the number of samples of water required by this Part.

(2) The purposes are—

- (a) determining whether, within each water supply zone, water to which this Part applies satisfies the wholesomeness requirements of Part 3; and
- (b) establishing the quality of water to be supplied to each water supply zone.

(3) Subject to paragraph (4) and regulation 13 (water supplied by tanker), Scottish Water must carry out audit monitoring in relation to each parameter in Table A, Table B and Table C.

(4) Scottish Water must carry out check monitoring (instead of audit monitoring)—

- (a) in relation to each parameter in Table 1 for which there is no entry in column (3); and

- (b) in relation to each parameter in Table 1 for which there is an entry in column (3) but only when the circumstances in that entry apply.
- (5) In the application of paragraph (4)(b) to—
 - (a) aluminium (item 27) in Table B;
 - (b) iron (item 29) in Table B;
 - (c) manganese (item 30) in Table B; or
 - (d) *Clostridium perfringens* (item 3) in Table C,

a supply of water which consists of both groundwater and surface water is to be treated as if it were a supply which consists only of surface water.

- (6) The following parameters must be monitored in such manner as the Scottish Ministers may, by notice given to Scottish Water, specify—
 - (a) copper (item 10) in Table B;
 - (b) lead (item 15) in Table B;
 - (c) nickel (item 17) in Table B;
 - (d) subject to paragraph (7)(a), indicative dose (item 14) in Table C; and
 - (e) subject to paragraph (7)(b), tritium (item 15) in Table C.

(7) The Scottish Ministers must, by notice given to Scottish Water, inform it that indicative dose (item 14) or, as the case may be, tritium (item 15) in Table C need not be monitored in relation to a water supply zone if they are satisfied that the water supplied to that zone for human consumption purposes—

- (a) in the case of indicative dose, gives rise to a calculated indicative dose that is, in the opinion of the Scottish Ministers, significantly below the prescribed concentration or value for that parameter; or
- (b) in the case of tritium, contains levels of tritium that are, in the opinion of the Scottish Ministers, significantly below the prescribed concentration or value for that parameter.

(8) The Scottish Ministers must, by notice given to Scottish Water, withdraw a notice given under paragraph (7)—

- (a) in relation to indicative dose, if they are no longer of the opinion that water supplied to the zone for human consumption purposes gives rise to a calculated indicative dose that is significantly below the prescribed concentration or value for that parameter; and
- (b) in relation to tritium, if they are no longer of the opinion that water supplied to the zone for human consumption purposes contains levels of tritium that are significantly below the prescribed concentration or value for that parameter.

(9) Where Scottish Water receives a notice under paragraph (8), it must monitor the indicative dose or, as the case may be, tritium in accordance with any notice in relation to that parameter having effect for the time being under paragraph (6)(d) or, as the case may be, paragraph (6)(e).

Random samples from consumers' taps

7.—(1) Where a sample of water must, under this Part, be taken from a consumer's tap within a water supply zone, the tap must be selected at random unless the Scottish Ministers otherwise direct (in exercise of powers under section 56(3) of the Water Industry (Scotland) Act 2002(1)).

(2) Paragraph (1) does not apply if the sample is to be taken instead from an alternative point within the same water supply zone which is authorised for that purpose under regulation 8.

Authorisation of samples from alternative points

8.—(1) The Scottish Ministers may in relation to any parameter in Table A, Table B or Table C, on the application in writing (or in electronic form) of Scottish Water, authorise the use (for the purposes of regulation 6) of samples taken for a water supply zone otherwise than from a sampling point, and any such authorisation 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.

(2) The Scottish Ministers must not grant an authorisation under paragraph (1) unless they are satisfied that analysis of samples taken from any point to be so authorised (“supply 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 any sampling point within the same water supply zone.

(3) Subject to paragraph (4), the Scottish Ministers may at any time modify or revoke an authorisation under paragraph (1).

(4) Unless it appears to the Scottish Ministers that an immediate modification or revocation of an authorisation under paragraph (1) is required in the interests of public health, they must not modify or revoke such an authorisation without giving to Scottish Water at least 6 weeks’ notice of their intention to modify or revoke.

(5) Scottish Water must notify the Scottish Ministers as soon as it has reasonable grounds for believing that an analysis of samples taken for a water supply zone from a supply 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 sampling point within that zone.

(6) The Scottish Ministers must, on being notified under paragraph (5) and without the need for prior notice to Scottish Water, revoke the authorisation.

(7) In this regulation, “sampling point” means—

- (a) in the case of water supplied from a distribution network, a consumer’s tap; and
- (b) in the case of water supplied from a tanker, the point at which it emerges from the tanker.

Numbers of samples

9.—(1) Subject to regulations 11 and 12 and paragraph (2), in each year Scottish Water must take, or cause to be taken (for each water supply zone)—

- (a) from sampling points; or
- (b) to the extent authorised under regulation 8, from alternative supply points,

the standard number of samples for each parameter in Table 2 or, as the case may be, Table 3.

(2) Where, in respect of a parameter in Table A, Table B or Table C that is subject to check monitoring (in accordance with regulation 6(4) as read with the Tables 1 to 4 in Schedule 2)—

- (a) Scottish Water considers that the quality of water supplied by it to a water supply zone is unlikely to deteriorate; and
- (b) the conditions in paragraph (3) are met,

the number of samples to be taken in the following year for that parameter may be the reduced number of samples for that parameter in Table 2 or, as the case may be, Table 3.

(3) The conditions are that in each of two successive years—

- (a) the results of samples taken in accordance with these Regulations show no significant variation; and
- (b) if the parameter in question is—

- (i) *Escherichia coli* (item 2) in Table A, it has not exceeded 0;

- (ii) *Clostridium perfringens* (item 3) in Table C, it has not exceeded 0;
 - (iii) coliform bacteria (item 4) in Table C, it has not exceeded 0;
 - (iv) colony count (item 5) in Table C, it has shown no abnormal change;
 - (v) hydrogen ion (item 8) in Table C, it has maintained a pH value that is not less than 6.5 and not more than 9.5;
 - (vi) total organic carbon (item 12) in Table C, it has shown no abnormal change; or
 - (vii) any other parameter, it has maintained a concentration or value that is significantly lower than the prescribed concentration or value.
- (4) Samples required to be taken by this regulation must be taken at regular intervals.
- (5) In this regulation—
- (a) “sampling points” is to be construed in accordance with regulation 8(7);
 - (b) “the reduced number” means—
 - (i) for sampling points, the applicable number in column (4) of Table 2; and
 - (ii) for a supply point, the applicable number in column (4) of Table 3; and
 - (c) “the standard number” means—
 - (i) for sampling points, the applicable number in column (5) of Table 2; and
 - (ii) for a supply point, the applicable number in column (5) of Table 3.

Additional sampling

10. As soon as Scottish Water has reasonable grounds for believing that any element, organism or substance (other than residual disinfectant or a parameter in Table A, Table B or Table C), whether alone or in combination with any other such parameter or any other element, organism or substance, may cause the supply within a water supply zone to be a supply which does not satisfy the requirements of Part 3, it 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 that element, organism or substance to establish whether that water is wholesome.

Sampling at treatment works

11.—(1) Subject to paragraphs (2) and (3), in each year Scottish Water must take, or cause to be taken, from the point at which water leaves each treatment works which serves a water supply zone, the standard number of samples for analysis to determine—

- (a) the concentration of residual disinfectant;
- (b) whether water leaving the treatment works complies with the prescribed concentration or value for—
 - (i) coliform bacteria (item 3) in Table A;
 - (ii) *Escherichia coli* (item 4) in Table A; and
 - (iii) nitrite (item 19) in Table B (where the point of compliance is a treatment works);
 - (iv) colony count (item 5) in Table C; and
 - (v) turbidity (item 13) in Table C.

(2) Where, in each of two successive years, the analysis of samples taken in accordance with these Regulations establishes that—

- (a) for coliform bacteria, *Escherichia coli*, nitrite or turbidity (as the case may be), the prescribed concentration or value has not been exceeded; or

(b) for colony count, there has been no significant increase in the count, the number of samples to be taken in the following year in respect of that parameter from the point at which water leaves that treatment works may, subject to paragraph (3), be the reduced number.

(3) For coliform bacteria or, as the case may be, *Escherichia coli*, the reduced number of samples may be taken only if Scottish Water considers that—

(a) there is no foreseeable risk that the supply will exceed the prescribed concentration or value for that parameter; or

(b) the treatment works is designed to secure that, in the event of a failure of the disinfection process, water that has not been disinfected cannot enter the supply.

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

(5) Where a treatment works is in use for only part of a year, the number of samples that must, under this regulation, be taken during that year (from the point at which water leaves the works) may be reduced in proportion to the number of days in that year that the works has not been in use.

(6) In this regulation—

“the reduced number” means the applicable number (if any) in column (4) of Table 4; and

“the standard number” means the applicable number in column (5) of Table 4.

Sampling at service reservoirs

12. Scottish Water must take, or cause to be taken, from each of its service reservoirs in each week in which the service reservoir is in use, one sample for analysis—

(a) for determining the concentration of residual disinfectant;

(b) for testing for compliance with the prescribed concentration and value for—

(i) coliform bacteria (item 3) in Table A; and

(ii) *Escherichia coli* (item 4) in Table A; and

(c) for determining whether the prescribed concentration or value for colony count (item 5) in Table C (in so far as the point of monitoring is a service reservoir) is complied with.

Sampling: water supplied by tanker

13.—(1) 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) 48 hours after the commencement of the distribution from that tanker; and

(b) every 48 hours thereafter until the distribution is discontinued.

(2) The first sample taken in relation to each distribution must be analysed for compliance with—

(a) *Escherichia coli* (item 2) in Table A;

(b) conductivity (item 7) in Table C; and

(c) hydrogen ion (item 8) in Table C.

(3) The second and any subsequent samples must be analysed for compliance with every parameter in Table A, Table B and Table C.

Sampling: new sources

14.—(1) This regulation applies in relation to—

- (a) any source of water which has not been used for the supply of water by Scottish Water at any time during the period of 6 months preceding 1st January 2015; and
 - (b) any source of water which has been so used, but not so used during the period of 6 months preceding the date on which Scottish Water proposes to supply water from it.
- (2) Scottish Water must—
- (a) before it 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),
- take, or cause to be taken, in accordance with paragraph (3), such samples of that water as will enable it to establish—
- (i) whether water can be supplied from that source without contravening section 76A(1) of the 1980 Act (duties of water authorities with respect to water quality); and
 - (ii) the treatment necessary to ensure that section 76A(1) of the 1980 Act is complied with in relation to the supply of that water.
- (3) Samples must be taken—
- (a) in the case of a source of water mentioned in paragraph (1)(a), in respect of—
 - (i) the parameters in Table A, Table B and Table C; and
 - (ii) any other micro-organism, substance or parasite which may be present in, or any property of, the water which Scottish Water considers has the potential to cause a supply of water (from that source) to contravene section 76A(1) of the 1980 Act; and
 - (b) in the case of a source mentioned in paragraph (1)(b), in respect of—
 - (i) enterococci (item 1) in Table A;
 - (ii) *Escherichia coli* (item 2 and item 4) in Table A;
 - (iii) coliform bacteria (item 3) in Table A;
 - (iv) conductivity (item 7) in Table C;
 - (v) hydrogen ion (item 8) in Table C;
 - (vi) turbidity (item 13) in Table C; and
 - (vii) any other parameter in Table B or Table C in relation to which Scottish Water considers that the concentration or value of that parameter is likely to have altered since the last occasion on which water from that source was analysed.
- (4) Unless the conditions in paragraph (5) are satisfied, Scottish Water must not supply water for human consumption purposes from a source mentioned in paragraph (1)(a) until a period of one month has elapsed since the day on which Scottish Water complied with regulation 31(1) (as read with regulation 30) with respect to the source.
- (5) The conditions are that Scottish Water—
- (a) must supply water from the source as a matter of urgency in order to prevent an unexpected interruption in a piped supply of water to consumers; and
 - (b) before the supply is made, has carried out a risk assessment under regulation 30 specifically with respect to the source.
- (6) For the purposes of paragraph (4) (in so far as it requires compliance with regulation 31(1)) and paragraph (5)(b), regulation 30 applies in relation to each supply of water mentioned in those paragraphs as if “treatment works” includes the source from which the untreated water is supplied.

Collection and analysis of samples

15.—(1) Scottish Water 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 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 at the time of sampling;
- (b) the sample is not contaminated when being taken;
- (c) 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 or specification for the measurement or observation for which the sample is intended;
- (d) the sample is analysed as soon as may be 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; and
- (e) any laboratory at which samples are analysed has a system of analytical quality control that is subjected from time to time to checking by a person who is—
 - (i) not under the control of either the laboratory or Scottish Water; and
 - (ii) approved by the Scottish Ministers for that purpose.

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

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

(5) Subject to paragraph (7), for the purpose of establishing (within acceptable limits of deviation and detection) whether a sample contains a parameter in Table A, Table B or Table C at a concentration or value which contravenes the corresponding prescribed concentration or value—

- (a) the method of analysis specified in column (3) of Table M1 must be used for determining compliance with the parameter specified in relation to that method in column (2) of that table;
- (b) the method of analysis used for determining compliance with a parameter specified in column (2) of Table M2 must be capable, at the time of use—
 - (i) of measuring concentrations and values equal to the prescribed concentration or value with the trueness and precision specified in relation to that parameter in columns (3) and (4), respectively, of that table; and
 - (ii) of detecting the parameter at the limit of detection specified in relation to that parameter in column (5) of that table;
- (c) the methods of analysis used for—
 - (i) odour (item 9) in Table C; and
 - (ii) taste (item 11) in Table C,must be capable, at the time of use, of measuring values in relation to the prescribed concentration or value with a precision of 1 dilution number at 25°C; and
- (d) the method of analysis used for determining compliance with hydrogen ion (item 8) in Table C must be capable, at the time of use, of measuring concentrations equal to the

prescribed concentration or value with a trueness of 0.2 pH unit and a precision of 0.2 pH unit.

(6) For the purposes of paragraph (5)—

“limit of detection” is to be calculated as—

- (a) 3 times the relative within batch standard deviation of a natural sample containing a low concentration of the parameter; or
- (b) 5 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 result 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.

(7) Subject to paragraph (9), the Scottish Ministers may, on the application of any person, authorise, by notice given to Scottish Water, a method of analysis other than that mentioned in paragraph (5)(a) (“the prescribed method”).

(8) An application for the purpose of paragraph (7) must be made in writing (or in electronic form acceptable to the Scottish Ministers) and 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 method.

(9) The Scottish Ministers must not authorise the use of the method proposed in the application unless they are 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.

(10) An authorisation under paragraph (7) may be subject to such conditions as the Scottish Ministers think fit.

(11) The Scottish Ministers may, by notice given to Scottish Water, revoke an authorisation under paragraph (7) but no such notice is to be given later than 3 months before the date on which the revocation is stated to take effect.