[^{F1}SCHEDULE 12

Monitoring of water bottled and labelled as "spring water" and bottled drinking water

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Textual Amendments

F1 Sch. 12 inserted (6.4.2018) by The Natural Mineral Water, Spring Water and Bottled Drinking Water (England) (Amendment) Regulations 2018 (S.I. 2018/352), reg. 1(1), **Sch. 2**

PART 9

Monitoring obligations relating to indicator parameters

SECTION 1

Parametric concentrations and values for indicator parameters

Parameter	Parametric concentration or value	Units of measurement	Further provision	Additional requirements
Aluminium	200	µg/l		
Ammonium	0.50	mg/l		
Chloride	250	mg/l		The water must not be aggressive.
Clostridium perfringens and spores of *Clostridium perfringens*	0	number/100ml	This parameter only needs to be checked if the water originates from, or is influenced by, surface water.	
Colour	Acceptable to consumers and no abnormal change			
Conductivity	2,500	µS cm^{-1} at 20°C		The water must not be aggressive.
Hydrogen ion concentration	9.5	pH units		The pH of the water must not be lower than 4.5. The water must not be aggressive.
Iron	200	µg/l		

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Parameter	Parametric concentration or value	Units of measurement	Further provision	Additional requirements
Manganese	50	µg/l		
Odour	Acceptable to consumers and no abnormal change			
Oxidisability	5.0	mg/l O_2	This parameter does not need to be checked if total organic carbon is analysed.	
Sulphate	250	mg/l		The water must not be aggressive.
Sodium	200	mg/l		
Taste	Acceptable to consumers and no abnormal change			
Colony Count 22° C	No abnormal change			
Coliform bacteria	0	number/250ml		
Total organic carbon	No abnormal change		This parameter does not need not be checked for supplies of less than 10,000m^3 a day.	
Turbidity	Acceptable to consumers and no abnormal change			

SECTION 2

Monitoring obligations

Analysis of sample

50.—(1) Each food authority must monitor the concentration or value (as the case may be) of each of the parameters specified in the first column of the table in Section 1 in water in its area to which this Schedule applies by analysing a sample of the water to determine whether—

(a) the concentration of, or value for, the parameter in the sample exceeds the concentration of, or value for, that parameter specified in the second column of the table—

(i) as measured, where relevant, by reference to the unit of measurement specified in the third column of the table, and

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(ii) as read, in relation to a parameter specified in the first column of the table for which there is an additional requirement specified in the fourth column of the table, with the provision relating to the need to check the parameter specified in the fourth column of the table, and

(b) in relation to a parameter specified in the first column of the table for which there is an additional requirement specified in the fifth column of the table, the water complies with that additional requirement.

(2) For the purpose of the determination required by sub-paragraph (1), the food authority must analyse the sample—

(a) in the case of *Clostridium perfringens*, and spores of *Clostridium perfringens*, using the method of analysis in BS EN ISO 14189:2016 entitled "Water quality — Enumeration of Clostridium perfringens — Method using membrane filtration (ISO 14189:2013)" (ISBN 978 0 580 92184 1), as amended by a corrigendum issued on 31st August 2016;

(b) in the case of coliform bacteria, using the method of analysis in—

(i) BS EN ISO 9308-1:2014+A1:2017 entitled "Water quality — Enumeration of Escherichia coli and coliform bacteria. Part 1: Membrane filtration method for waters with low bacterial background flora (ISO 9308-1:2014)" (ISBN 978 0 580 92379 1) published by the BSI on 31st October 2014, as amended on 28th February 2017, or

(ii) BS EN ISO 9308-2:2014 entitled "Water quality — Enumeration of Escherichia coli and coliform bacteria. Part 2: Most probable number method" (ISBN 978 0 580 84023 4) published by the BSI on 30th November 2013, as amended by a corrigendum issued on 30th June 2014;

(c) in the case of each of the other indicator parameters, using a method of analysis that complies with Section 3.

Clostridium perfringens

51. In a case where a food authority determines that a sample of water contains any *Clostridium perfringens*, or spores of *Clostridium perfringens*, the food authority must investigate the water supply to determine whether there is any potential danger to human health arising from the presence in the water of pathogenic microorganisms.

Uncertainty of measurement

52. A food authority must not use the uncertainty of measurement percentage specified in the second column of the table in Section 4 (which is concerned with whether a method of analysis complies with minimum performance characteristics) as an additional tolerance when determining whether the concentration of a parameter specified in the first column of the table in Section 1 in a sample of water exceeds the concentration for that parameter specified in the second column of the table in Section 1.

SECTION 3

Method of analysis

Method of analysis

53. In relation to a parameter specified in the first column of the table in Section 1—

(a) where there is a method of analysis that meets minimum performance characteristics that can be used by a food authority to analyse a sample for the purpose of making a

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determination in relation to that parameter under paragraph 50, the food authority must analyse the sample using that method of analysis (or using any one of them in a case where more than one method of analysis meets minimum performance characteristics);

(b) where there is no such method of analysis, the food authority must analyse a sample under paragraph 50 using the best available technique not entailing excessive cost.

Minimum performance characteristics

54.—(1) For the purpose of paragraph 53(a), a method of analysis for a parameter specified in the first column of the table in Section 4 (minimum performance characteristics for a method of analysis) is a method of analysis that complies with minimum performance characteristics if it is a method of analysis that—

(a) is capable of measuring values equal to the parametric concentration of that parameter with a limit of quantification of 30% or less of the relevant parametric concentration,

(b) has an uncertainty of measurement that does not exceed the percentage of the parametric concentration for the parameter specified in the second column of the table in Section 4, as read with any further provision relating to the calculation of the uncertainty of measurement specified in the third column of the table, and

(c) in the case of total organic carbon, complies with the requirement specified in the fourth column of the table.

(2) For the purpose of sub-paragraph (1)(b), the performance criterion for uncertainty of measurement (k = 2) for a parameter specified in the first column of the table in Section 4 is not less than the percentage specified in the second column of the table of the concentration or value for the parameter specified in the second column of the table in Section 1.

(3) A method of analysis for hydrogen ion concentration pH is a method of analysis that complies with minimum performance characteristics if it is a method of analysis that—

(a) is capable of measuring hydrogen ion concentration pH equal to 4.5 pH with a limit of quantification of 30% or less, and

(b) has an uncertainty of measurement that does not exceed 0.2 of a pH unit.

(4) For the purpose of sub-paragraph (3)(b), the performance criterion for uncertainty of measurement (k = 2) for hydrogen ion concentration pH is not less than 0.2 of a pH unit.

(5) Unless otherwise specified in the third column of the table in Section 4, food authorities must estimate uncertainty of measurement for a parameter specified in the first column of the table at the level of the concentration for the parameter specified in the second column of the table in Section 1.

(6) Where a method of analysis that complies with the requirements of sub-paragraph (1) is used to determine whether the concentration of a parameter specified in the first column of the table in Section 4 exceeds the concentration specified for that parameter in the second column of the table in Section 1, the result of the analysis carried out using that method of analysis must be expressed using at least the same number of significant figures as the number of significant figures used to specify that parametric concentration in the second column of the table in Section 1.

Alternative minimum performance characteristics

55.—(1) For the purpose of paragraph 53(a), until the end of 31st December 2019, a method of analysis for a parameter specified in the first column of the table in Section 5 (alternative minimum performance characteristics for a method of analysis that may be used until the end of 31st December 2019) is a method of analysis that complies with minimum performance characteristics if it is a method of analysis that—

(a) is capable of measuring concentrations with a trueness not less than the percentage of the parametric concentration specified in the second column of the table,

(b) is capable of measuring concentrations with a precision not less than the percentage of the parametric concentration specified in the third column of the table, and

(c) has a limit of detection that does not exceed the percentage of the parametric concentration specified in the fourth column of the table.

(2) For the purpose of paragraph 53(a), until the end of 31st December 2019, a method of analysis for hydrogen ion concentration pH is a method of analysis that complies with minimum performance characteristics if it is a method of analysis that is capable of measuring hydrogen ion concentration pH with—

(a) a trueness not less than 0.2 of a pH unit, and

(b) a precision not less than 0.2 of a pH unit.

(3) "Precision" is the same for the purposes of this paragraph, and the table in Section 5, as it is in paragraph 20(2).

(4) "Limit of detection" is the same for the purposes of this paragraph, and the table in Section 5, as it is in paragraph 20(3).

SECTION 4

Minimum performance characteristics for a method of analysis

Parameters	Uncertainty of measurement - percentage of the parametric concentration	Other requirements relating to the uncertainty of measurement	Other requirements
Aluminium	25		
Ammonium	40		
Chloride	15		
Conductivity	20		
Iron	30		
Manganese	30		
Oxidisability	50		
Sodium	15		
Sulphate	15		
Total organic carbon	30	The uncertainty of measurement must be estimated at the level of 3 mg/l of the total organic carbon.	BS EN 1484: 1997 entitled "Water analysis — Guidelines for the determination of total organic carbon (TOC) and dissolved organic carbon (DOC)" (ISBN 0 580 28372 0) published by the BSI on 15th October 1997 must be used.

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Parameters	Uncertainty of measurement - percentage of the parametric concentration	Other requirements relating to the uncertainty of measurement	Other requirements
Turbidity	30	The uncertainty of measurement must be estimated at the level of 1.0 nephelometric turbidity unit in accordance with BS EN ISO 7027-1:2016 entitled "Water quality — Determination of turbidity. Part 1: Quantitative methods (ISO 7027-1: 2016)" (ISBN 978 0 580 81961 2) published by the BSI on 31st July 2016.	

SECTION 5

Alternative minimum performance characteristics for a method
of analysis that may be used until the end of 31st December 2019

Parameters	Trueness - percentage of the parametric concentration	Precision - percentage of the parametric concentration	Limit of detection - percentage of the parametric concentration
Aluminium	10	10	10
Ammonium	10	10	10
Chloride	10	10	10
Conductivity	10	10	10
Iron	10	10	10
Manganese	10	10	10
Oxidisability	25	25	10
Sodium	10	10	10
Sulphate	10	10	10
Turbidity	25	25	25]