

ANNEX III

SPECIFICATIONS FOR THE ANALYSIS OF PARAMETERS

Member States shall ensure that the methods of analysis used for the purposes of monitoring and demonstrating compliance with this Directive, with the exception of turbidity, are validated and documented in accordance with EN ISO/IEC 17025 or other equivalent standards accepted at international level. Member States shall ensure that laboratories or parties contracted by laboratories apply quality management system practices in accordance with EN ISO/IEC 17025 or other equivalent standards accepted at international level.

For the purposes of assessing the equivalence of alternative methods with the methods laid down in this Annex, Member States may use standard EN ISO 17994, established as the standard on the equivalence of microbiological methods, or standard EN ISO 16140 or any other similar internationally accepted protocols, to establish the equivalence of methods based on principles other than culturing, which are beyond the scope of EN ISO 17994.

In the absence of an analytical method meeting the minimum performance criteria set out in Part B, Member States shall ensure that monitoring is carried out using the best available techniques not entailing excessive costs.

Part A

Microbiological parameters for which methods of analysis are specified

The methods of analysis for microbiological parameters are:

- (a) *Escherichia coli* (*E. coli*) and coliform bacteria (EN ISO 9308-1 or EN ISO 9308-2);
- (b) intestinal enterococci (EN ISO 7899-2);
- (c) colony count or heterotrophic plate counts at 22 °C (EN ISO 6222);
- (d) *Clostridium perfringens* including spores (EN ISO 14189);
- (e) *Legionella* (EN ISO 11731 for compliance with the value in Part D of Annex I);
for risk-based verification monitoring and to complement culture methods, in addition methods, such as ISO/TS 12869, rapid culture methods, non-culture-based methods, and molecular-based methods, in particular qPCR, can be used;
- (f) somatic coliphages;
for operational monitoring, Part A of Annex II, EN ISO 10705-2, and EN ISO 10705-3 can be used.

Part B

Chemical and indicator parameters for which performance characteristics are specified

1. Chemical and indicator parameters

For the parameters set out in Table 1 of this Annex, the method of analysis used shall, as a minimum, be capable of measuring concentrations equal to the parametric value with a limit of quantification, as defined in point (2) of Article 2 of Commission Directive 2009/90/EC⁽¹⁾, of

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30 % or less of the relevant parametric value and an uncertainty of measurement as specified in Table 1 of this Annex. The result shall be expressed using at least the same number of significant figures as for the parametric value referred to in Parts B and C of Annex I to this Directive.

The uncertainty of measurement laid down in Table 1 shall not be used as an additional tolerance to the parametric values set out in Annex I.

TABLE 1. MINIMUM PERFORMANCE CHARACTERISTIC
'UNCERTAINTY OF MEASUREMENT'

Parameters	Uncertainty of measurement(See Note 1)% of the parametric value (except for pH)	Notes
Aluminium	25	
Ammonium	40	
Acrylamide	30	
Antimony	40	
Arsenic	30	
Benzo(a)pyrene	50	See Note 2
Benzene	40	
Bisphenol A	50	
Boron	25	
Bromate	40	
Cadmium	25	
Chloride	15	
Chlorate	40	
Chlorite	40	
Chromium	30	
Copper	25	
Cyanide	30	See Note 3
1,2-dichloroethane	40	
Epichlorohydrin	30	
Fluoride	20	
HAAs	50	
Hydrogen ion concentration pH	0,2	See Note 4
Iron	30	
Lead	30	

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Manganese	30	
Mercury	30	
Microcystin-LR	30	
Nickel	25	
Nitrate	15	
Nitrite	20	
Oxidisability	50	See Note 5
Pesticides	30	See Note 6
PFAS	50	
Polycyclic aromatic hydrocarbons	40	See Note 7
Selenium	40	
Sodium	15	
Sulphate	15	
Tetrachloroethene	40	See Note 8
Trichloroethene	40	See Note 8
Trihalomethanes – total	40	See Note 7
Total organic carbon (TOC)	30	See Note 9
Turbidity	30	See Note 10
Uranium	30	
Vinyl chloride	50	

2. Notes to Table 1

- Note 1 : Uncertainty of measurement is a non-negative parameter characterising the dispersion of the quantity values being attributed to a measurand, based on the information used. The performance criterion for measurement uncertainty ($k = 2$) is the percentage of the parametric value stated in the table or any stricter value. The uncertainty of measurement shall be estimated at the level of the parametric value, unless otherwise specified.
- Note 2 : If the value of uncertainty of measurement cannot be met, the best available technique should be selected (up to 60 %).
- Note 3 : The method determines total cyanide in all forms.
- Note 4 : The value for the uncertainty of measurement is expressed in pH units.
- Note 5 : Reference method: EN ISO 8467.
- Note 6 : The performance characteristics for individual pesticides are given as an indication. Values for the uncertainty of measurement as low as 30 % can be achieved for several pesticides, while higher values up to 80 % may be allowed for a number of pesticides.
- Note 7 : The performance characteristics apply to individual substances, specified at 25 % of the parametric value in Part B of Annex I.

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- Note 8 : The performance characteristics apply to individual substances, specified at 50 % of the parametric value in Part B of Annex I.
- Note 9 : The uncertainty of measurement should be estimated at the level of 3 mg/l of the total organic carbon (TOC). EN 1484 Guidelines for the determination of TOC and dissolved organic carbon (DOC) shall be used for the specification of the uncertainty of the test method.
- Note 10 : The uncertainty of measurement should be estimated at the level of 1,0 NTU (nephelometric turbidity units), in accordance with EN ISO 7027 or another equivalent standard method.

3. Sum of PFAS

The following substances shall be analysed based on the technical guidelines developed in accordance with Article 13(7):

- Perfluorobutanoic acid (PFBA)
- Perfluoropentanoic acid (PFPA)
- Perfluorohexanoic acid (PFHxA)
- Perfluoroheptanoic acid (PFHpA)
- Perfluorooctanoic acid (PFOA)
- Perfluorononanoic acid (PFNA)
- Perfluorodecanoic acid (PFDA)
- Perfluoroundecanoic acid (PFUnDA)
- Perfluorododecanoic acid (PFDoDA)
- Perfluorotridecanoic acid (PFTrDA)
- Perfluorobutane sulfonic acid (PFBS)
- Perfluoropentane sulfonic acid (PFPS)
- Perfluorohexane sulfonic acid (PFHxS)
- Perfluoroheptane sulfonic acid (PFHpS)
- Perfluorooctane sulfonic acid (PFOS)
- Perfluorononane sulfonic acid (PFNS)
- Perfluorodecane sulfonic acid (PFDS)
- Perfluoroundecane sulfonic acid
- Perfluorododecane sulfonic acid
- Perfluorotridecane sulfonic acid

Those substances shall be monitored when the risk assessment and risk management of the catchment areas for abstraction points carried out in accordance with Article 8 conclude that those substances are likely to be present in a given water supply.

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- (1) Commission Directive 2009/90/EC of 31 July 2009 laying down, pursuant to Directive 2000/60/EC of the European Parliament and of the Council, technical specifications for chemical analysis and monitoring of water status ([OJ L 201, 1.8.2009, p. 36](#)).