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ANNEXES 1 to 6

ANNEXES

to the Proposal for a

Directive of the European Parliament and of the Council

on the quality of water intended for human consumption (recast)

{SWD(2017) 448 final} - {SWD(2017) 449 final} - {SWD(2017) 451 final}

ANNEX I

PARAMETERS AND ☒ MINIMUM REQUIREMENTS FOR ☒ PARAMETRIC VALUES ☒ USED TO ASSESS THE QUALITY OF WATER INTENDED FOR HUMAN CONSUMPTION ☒

PART A

Microbiological parameters

Parameter	Parametric value (number/100 ml)
<i>Escherichia coli</i> (E. coli)	0
Enterococci	0

The following applies to water offered for sale in bottles or containers:

Parameter	Parametric value
<i>Escherichia coli</i> (E. coli)	0/250 ml
Enterococci	0/250 ml
<i>Pseudomonas aeruginosa</i>	0/250 ml
Colony count 22 °C	100/ml
Colony count 37 °C	20/ml

Parameter	Parametric value	Unit
<i>Clostridium perfringens</i> spores	0	Number/100 ml
Coliform bacteria	0	Number/100 ml
Enterococci	0	Number/100 ml
<i>Escherichia coli</i> (E. coli)	0	Number/100 ml
Heterotrophic plate counts (HPC) 22°	No abnormal change	
Somatic coliphages	0	Number/100 ml

Turbidity	<1	NTU
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↓ 1998/83 (adapted)

⇒ new

PART B

Chemical parameters

Parameter	Parametric value	Unit	Notes
Acrylamide	0,10	µg/l	Note 1 ⊗ The parametric value refers to the residual monomer concentration in the water as calculated according to specifications of the maximum release from the corresponding polymer in contact with the water. ⊗
Antimony	5,0	µg/l	
Arsenic	10	µg/l	
Benzene	1,0	µg/l	
Benzo(a)pyrene	0,010	µg/l	
⇒ Beta-estradiol (50-28-2) ⇐	⇒ 0,001 ⇐	⇒ µg/l ⇐	
⇒ Bisphenol A ⇐	⇒ 0,01 ⇐	⇒ µg/l ⇐	
Boron	1,0	mg/l	
Bromate	10	µg/l	Note 2
Cadmium	5,0	µg/l	
⇒ Chlorate ⇐	⇒ 0,25 ⇐	⇒ mg/l ⇐	
⇒ Chlorite ⇐	⇒ 0,25 ⇐	⇒ mg/l ⇐	
Chromium	50 ⇒ 25 ⇐	µg/l	⇒ The value shall be met, at the latest, by [10 years after the entry into force of this Directive]. The parametric value for chromium until that date is 50 µg/l. ⇐

Copper	2,0	mg/l	Note 3
Cyanide	50	µg/l	
1,2-dichloroethane	3,0	µg/l	
Epichlorohydrin	0,10	µg/l	Note 4 <p>☒ The parametric value refers to the residual monomer concentration in the water as calculated according to specifications of the maximum release from the corresponding polymer in contact with the water. ☒</p>
Fluoride	1,5	mg/l	
⇒ Haloacetic acids (HAAs) ⇐	⇒ 80 ⇐	⇒ µg/l ⇐	⇒ Sum of the following nine representative substances: monochloro-, dichloro-, and trichloro-acetic acid, mono- and dibromo-acetic acid, bromochloroacetic acid, bromodichloroacetic acid, dibromochloroacetic acid and tribromoacetic acid. ⇐
Lead	10 ⇒ 5 ⇐	µg/l	Notes 3 and 4 <p>⇒ The value shall be met, at the latest, by [10 years after the entry into force of this Directive]. The parametric value for lead until that date is 10 µg/l. ⇐</p>
Mercury	1,0	µg/l	
⇒ Microcystin-LR ⇐	⇒ 1,0 ⇐	⇒ µg/l ⇐	
Nickel	20	µg/l	Note 3
Nitrate	50	mg/l	Note 5 <p>☒ Member States shall ensure that the condition $\frac{[\text{nitrate}]}{50} + \frac{[\text{nitrite}]}{3} \leq 1$, where the square brackets signify the concentrations in mg/l for nitrate (NO₃) and nitrite (NO₂), is complied with and that the value of 0,10 mg/l for nitrites is</p>

			complied with ex water treatment works. <input checked="" type="checkbox"/>
Nitrite	0,50	mg/l	Note 5 <input checked="" type="checkbox"/> Member States shall ensure that the condition $\frac{[\text{nitrate}]}{50} + \frac{[\text{nitrite}]}{3} \leq 1$, where the square brackets signify the concentrations in mg/l for nitrate (NO ₃) and nitrite (NO ₂), is complied with and that the value of 0,10 mg/l for nitrites is complied with ex water treatment works. <input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Nonylphenol <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> 0,3 <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> µg/l <input checked="" type="checkbox"/>	
Pesticides	0,10	µg/l	Notes 6 and 7 <input checked="" type="checkbox"/> 'Pesticides' means: <ul style="list-style-type: none"> – organic insecticides, – organic herbicides, – organic fungicides, – organic nematocides, – organic acaricides, – organic algicides, – organic rodenticides – organic slimicides, – related products (<i>inter alia</i>, growth regulators) and their relevant metabolites <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> as defined in Article 3(32) of Regulation (EC) No 1107/2009 ¹ <input checked="" type="checkbox"/> . <input checked="" type="checkbox"/> The parametric value applies to each individual pesticide. In the case of aldrin, dieldrin, heptachlor and heptachlor epoxide, the parametric value is 0,030 µg/l. <input checked="" type="checkbox"/>
Pesticides — Total	0,50	µg/l	Notes 6 and 8

¹ Regulation (EC) No 1107/2009 of the European Parliament and of the Council of 21 October 2009 concerning the placing of plant protection products on the market and repealing Council Directives 79/117/EEC and 91/414/EEC (OJ L 309 24.11.2009, p. 1).

			<p>☒ 'Pesticides — Total' means the sum of all individual pesticides, as defined in the previous row, detected and quantified in the monitoring procedure. ☒</p>
⇒ PFAS ⇐	⇒ 0,10 ⇐	⇒ µg/l ⇐	<p>⇒ 'PFAS' means each individual per- and polyfluoroalkyl substance (chemical formula: $C_nF_{2n+1}-R$). ⇐</p>
⇒ PFASs - Total ⇐	⇒ 0,50 ⇐	⇒ µg/l ⇐	<p>⇒ 'PFASs Total' means the sum of per- and polyfluoroalkyl substances (chemical formula: $C_nF_{2n+1}-R$). ⇐</p>
Polycyclic aromatic hydrocarbons	0,10	µg/l	<p>Note 9</p> <p>☒ Sum of concentrations of the following specified compounds: benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(ghi)perylene, and indeno(1,2,3-cd)pyrene ☒ .</p>
Selenium	10	µg/l	
Tetrachloroethene and Trichloroethene	10	µg/l	Sum of concentrations of specified parameters
Trihalomethanes — Total	100	µg/l	<p>Note 10</p> <p>☒ Where possible, without compromising disinfection, Member States shall strive for a lower value.</p> <p>Sum of concentrations of the following specified compounds: chloroform, bromoform, dibromochloromethane, bromodichloromethane. ☒</p>
⇒ Uranium ⇐	⇒ 30 ⇐	⇒ µg/l ⇐	
Vinyl chloride	0,50	µg/l	<p>Note 1</p> <p>☒ The parametric value refers to the residual monomer concentration in the water as calculated according to specifications of the maximum release from the corresponding</p>

			polymer in contact with the water. ☒
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↓ 1998/83 (adapted)
→₁ 596/2009 Art. 1 and Annex .2(2)
→₂ Corrigendum, OJ L 111, 20.4.2001, p. 31

Note 1:

~~The parametric value refers to the residual monomer concentration in the water as calculated according to specifications of the maximum release from the corresponding polymer in contact with the water.~~

Note 2:

~~Where possible, without compromising disinfection, Member States should strive for a lower value.~~

~~For the water referred to in Article 6(1)(a), (b) and (d), the value must be met, at the latest, 10 calendar years after the entry into force of the Directive. The parametric value for bromate from five years after the entry into force of this Directive until 10 years after its entry into force is 25 µg/l.~~

Note 3:

~~The value applies to a sample of water intended for human consumption obtained by an adequate sampling method² at the tap and taken so as to be representative of a weekly average value ingested by consumers. Where appropriate the sampling and monitoring methods must be applied in a harmonised fashion to be drawn up in accordance with Article 7(4). Member States must take account of the occurrence of peak levels that may cause adverse effects on human health.~~

Note 4:

~~For water referred to in Article 6(1)(a), (b) and (d), the value must be met, at the latest, 15 calendar years after the entry into force of this Directive. The parametric value for lead from five years after the entry into force of this Directive until 15 years after its entry into force is 25 µg/l.~~

~~Member States must ensure that all appropriate measures are taken to reduce the concentration of lead in water intended for human consumption as much as possible during the period needed to achieve compliance with the parametric value.~~

~~When implementing the measures to achieve compliance with that value Member States must progressively give priority where lead concentrations in water intended for human consumption are highest.~~

Note 5:

~~Member States must ensure that the condition that $[\text{nitrate}]/50 + [\text{nitrite}]/3 \leq 1$, the square brackets signifying the concentrations in mg/l for nitrate (NO₃) and nitrite (NO₂), is complied with and that the value of 0,10 mg/l for nitrites is complied with ex water treatment works.~~

² To be added following the outcome of the study currently being carried out.

Note 6:

~~'Pesticides' means:~~

- ~~— organic insecticides,~~
- ~~— organic herbicides,~~
- ~~— organic fungicides,~~
- ~~— organic nematocides,~~
- ~~— organic acaricides,~~
- ~~— organic algicides,~~
- ~~— organic rodenticides~~
- ~~— organic slimicides,~~
- ~~— related products (*inter alia*, growth regulators)~~

~~and their relevant metabolites, degradation and reaction products.~~

~~Only those pesticides which are likely to be present in a given supply need be monitored.~~

Note 7:

~~The parametric value applies to each individual pesticide. In the case of aldrin, dieldrin, heptachlor and heptachlor epoxide the parametric value is 0,030 µg/l.~~

Note 8:

~~'Pesticides — Total' means the sum of all individual pesticides detected and quantified in the monitoring procedure.~~

Note 9:

~~The specified compounds are:~~

- ~~— benzo(b)fluoranthene,~~
- ~~— benzo(k)fluoranthene,~~
- ~~— benzo(ghi)perylene,~~
- ~~— indeno(1,2,3-cd)pyrene.~~

Note 10:

~~Where possible, without compromising disinfection, Member States should strive for a lower value.~~

~~The specified compounds are: chloroform, bromoform, dibromochloromethane, bromodichloromethane.~~

~~For the water referred to in Article 6(1)(a), (b) and (d), the value must be met, at the latest, 10 calendar years after the entry into force of this Directive. The parametric value for total THMs from five years after the entry into force of this Directive until 10 years after its entry into force is 150 µg/l.~~

~~Member States must ensure that all appropriate measures are taken to reduce the concentration of THMs in water intended for human consumption as much as possible during the period needed to achieve compliance with the parametric value.~~

When implementing the measures to achieve this value, Member States must progressively give priority to those areas where THM concentrations in water intended for human consumption are highest.

PART C

Indicator parameters

Parameter	Parametric value	Unit	Notes
Aluminium	200	µg/l	
Ammonium	0,50	mg/l	
Chloride	250	mg/l	Note 1
<i>Clostridium perfringens</i> (including spores)	0	number/100 ml	Note 2
Colour	Acceptable to consumers and no abnormal change		
Conductivity	2500	µS cm ⁻¹ at 20 °C	Note 1
Hydrogen ion concentration	≥ 6,5 and ≤ 9,5	pH units	Notes 1 and 3
Iron	200	µg/l	
Manganese	50	µg/l	
Odour	Acceptable to consumers and no abnormal change		
Oxidisability	5,0	mg/l O ₂	Note 4
Sulphate	250	mg/l	Note 1
Sodium	200	mg/l	
Taste	Acceptable to consumers and no abnormal change		
Colony count 22*	No abnormal change		
Coliform bacteria	0	number/100 ml	Note 5
Total organic carbon (TOC)	No abnormal change		Note 6
Turbidity	Acceptable to consumers and no abnormal change		Note 7

RADIOACTIVITY			
Parameter	Parametric value	Unit	Notes
Tritium	100	Bq/l	Notes 8 and 10
Total indicative dose	0,10	mSv/year	Notes 9 and 10

Note 1:

The water should not be aggressive.

Note 2:

This parameter need not be measured unless the water originates from or is influenced by surface water. In the event of non-compliance with this parametric value, the Member State concerned must investigate the supply to ensure that there is no potential danger to human health arising from the presence of pathogenic micro-organisms, e.g. cryptosporidium. Member States must include the results of all such investigations in the reports they must submit under Article 13(2).

Note 3:

For still water put into bottles or containers, the minimum value may be reduced to 4,5 pH units.

For water put into bottles or containers which is naturally rich in or artificially enriched with carbon dioxide, the minimum value may be lower.

Note 4:

This parameter need not be measured if the parameter TOC is analysed.

Note 5:

For water put into bottles or containers the unit is number/250 ml.

Note 6:

This parameter need not be measured for supplies of less than 10000 m³ a day.

Note 7:

In the case of surface water treatment, Member States should strive for a parametric value not exceeding 1,0 NTU (nephelometric turbidity units) in the water ex treatment works.

Note 8:

Monitoring frequencies to be set later in Annex II.

Note 9:

Excluding tritium, potassium 40, radon and radon decay products; monitoring frequencies, monitoring methods and the most relevant locations for monitoring points to be set later in Annex II.

Note 10:

→₁

~~1. The Commission shall adopt the measures required under Note 8 on monitoring frequencies, and Note 9 on monitoring frequencies, monitoring methods and the most relevant locations for monitoring points in Annex II. Those measures, designed to amend non-essential elements of this Directive, shall be adopted in accordance with the regulatory procedure with scrutiny referred to in Article 12(3).~~

~~When elaborating those measures the Commission shall take into account, inter alia, the relevant provisions under existing legislation or appropriate monitoring programmes including monitoring results as derived from them.~~

←

~~2. A Member State is not required to monitor drinking water for tritium or radioactivity to establish total indicative dose where it is satisfied that, on the basis of other monitoring carried out, →₂ the levels of tritium or the calculated total indicative dose ← are well below the parametric value. In that case, it shall communicate the grounds for its decision to the Commission, including the results of this other monitoring carried out.~~

↓ new

Parameters relevant for the domestic distribution risk assessment

Parameter	Parametric value	Unit	Notes
<i>Legionella</i>	<1000	Number/l	In case the parametric value <1000/l is not met for <i>Legionella</i> , resampling for <i>Legionella pneumophila</i> shall be done. If <i>Legionella pneumophila</i> is not present, the parametric value for <i>Legionella</i> is <10 000/l
Lead	5	µg/l	The value shall be met, at the latest, by [10 years after the entry into force of this Directive]. The parametric value for lead until that date is 10 µg/l.

ANNEX II

MONITORING

PART A

General objectives and monitoring programmes for water intended for human consumption

1. Monitoring programmes ☒ established pursuant to Article 11(2) ☒ for water intended for human consumption ~~must~~ ☒ shall ☒ :

- (a) verify that the measures in place to control risks to human health throughout the water supply chain from the ☒ abstraction ☒ catchment area through ~~abstraction~~, treatment and storage to distribution are working effectively and that water at the point of compliance is wholesome and clean;
- (b) provide information on the quality of the water supplied for human consumption to demonstrate that the obligations set out in Articles 4 and ☒ the parametric values set in accordance with Article ☒ 5, ~~and the parametric values laid down in Annex I~~, are being met;
- (c) identify the most appropriate means of mitigating the risk to human health.

2. ☒ Monitoring programmes established ☒ pursuant to Article 11(2), ~~competent authorities shall establish monitoring programmes complying with the parameters and frequencies set out in Part B of this Annex which consist of~~ ☒ shall include one of the following ☒ :

- (a) collection and analysis of discrete water samples; ~~or~~
- (b) measurements recorded by a continuous monitoring process.

↓ new

Monitoring programmes shall also include an operational monitoring programme complementary to verification monitoring, providing rapid insight in operational performance and water quality problems, and allowing rapid pre-planned remedial action. Such operational monitoring programmes shall be supply-specific, taking into account the outcomes of the hazard and supply risk assessments, and intended to confirm the effectiveness of all control measures in abstraction, treatment, distribution and storage. The operational monitoring programme shall include the monitoring of the parameter turbidity to regularly control the efficacy of physical removal by filtration processes, in accordance with the parametric values and frequencies indicated in the following table:

Parameter	Parametric value
Turbidity	0.3 NTU (95%) and not >0.5 NTU for 15 consecutive minutes

Volume (m ³) of water distributed or produced each day within a supply zone	Minimum frequency
≤ 10 000	Daily
>10 000	Online

↓ 2015/1787 Art. 1.1 and Annex I
(adapted)
⇒ new

In addition, monitoring programmes may consist of:

- (a) inspections of records of the functionality and maintenance status of equipment; ~~and/or~~
- (b) inspections of the ⇒ abstraction ⇐ ~~catchment~~ area, ☒ and of the ☒ ~~water abstraction~~, treatment, storage and distribution infrastructure ⇒ without prejudice to monitoring requirements provided under Article 8(1)(c) and Article 10(1)(b)⇐ .

~~3. Monitoring programmes may be based on a risk assessment as set out in Part C.~~

34. Member States shall ensure that monitoring programmes are reviewed on a continuous basis and updated or reconfirmed at least every ~~5~~ ⇒ 6 ⇐ years.

PART B

☒ Core ☒ pParameters and ☒ sampling ☒ frequencies

~~1. General framework~~

~~A monitoring programme must take into account the parameters referred to in Article 5, including those that are important for assessing the impact of domestic distribution systems on the quality of water at the point of compliance, as set out in Article 6(1). When choosing appropriate parameters for monitoring, local conditions for each water supply system must be taken into consideration.~~

~~Member States shall ensure that the parameters listed in point 2 are monitored at the relevant sampling frequencies as set out in point 3.~~

~~2. List of parameters~~

~~Group A~~ ⇒ 1. Core ⇐ parameters

~~The following parameters (Group A) shall be monitored in accordance with the monitoring frequencies set out in Table 1 of point 3:~~

- (a) ~~Escherichia coli (E. coli), coliform bacteria, colony count 22 °C, colour, turbidity, taste, odour, pH, conductivity;~~
- (b) ~~other parameters identified as relevant in the monitoring programme, in accordance with Article 5(3) and, where relevant, through a risk assessment as set out in Part C.~~

~~Under specific circumstances, the following parameters shall be added to the Group A Parameters:~~

~~(a) ammonium and nitrite, if chloramination is used;~~

~~(b) aluminium and iron, if used as water treatment chemicals.~~

↓ new

Escherichia coli (*E. coli*), *Clostridium perfringens* spores, and somatic coliphages are considered 'core parameters' and may not be subject to a supply risk assessment in accordance with part C of this Annex. They shall always be monitored at the frequencies set out in Table 1 of point 2.

↓ 2015/1787 Art. 1.1 and Annex I

Group B parameters

~~In order to determine compliance with all parametric values set out in this Directive, all other parameters not analysed under Group A and set in accordance with Article 5 shall be monitored at least at the frequencies set out in Table 1 of point 3.~~

↓ 2015/1787 Art. 1.1 and Annex I

23. Sampling frequencies

Table 1			
Minimum frequency of sampling and analysis for compliance monitoring			
Volume of water distributed or produced each day within a supply zone (See Notes 1 and 2) m³		Group A parameter number of samples per year (See Note 3)	Group B parameter number of samples per year
	≤ 100	≥ 0 (See Note 4)	≥ 0 (See Note 4)
≥ 100	≤ 1000	4	1
≥ 1000	≤ 10000	4 + 3 for each 1000 m³/d and part thereof of the total volume	1 + 1 for each 4500 m³/d and part thereof of the total volume
≥ 10000	≤ 100000		3 + 1 for each 10000 m³/d and part thereof of the total

			volume
> 100000			12 + 1 for each 25000 m ³ /d and part thereof of the total volume

↓ new

All parameters set in accordance with Article 5 shall be monitored at least at the frequencies set out in the following Table, unless a different sampling frequency is determined on the basis of a supply risk assessment carried out in accordance with Article 9 and part C of this Annex:

Table 1	
Minimum frequency of sampling and analysis for compliance monitoring	
Volume (m ³) of water distributed or produced each day within a supply zone	Minimum number of samples per year
≤ 100	10 ^a
> 100 ≤ 1 000	10 ^a
> 1 000 ≤ 10 000	50 ^b
> 10 000 ≤ 100 000	365
> 100 000	365

a: all samples are to be taken during times when the risk of treatment breakthrough of enteric pathogens is high.

b: at least 10 samples are to be taken during times when the risk of treatment breakthrough of enteric pathogens is high.

↓ 2015/1787 Art. 1.1 and Annex I

Note 1: A supply zone is a geographically defined area within which water intended for human consumption comes from one or more sources and water quality may be considered as being approximately uniform.

Note 2: The volumes are calculated as averages taken over a calendar year. The number of inhabitants in a supply zone may be used instead of the volume of water to determine the minimum frequency, assuming water consumption of 200 l/(day*capita).

~~*Note 3:* The frequency indicated is calculated as follows: e.g. 4300 m³/d = 16 samples (four for the first 1000 m³/d + 12 for additional 3300 m³/d).~~

Note 3~~4~~: Member States that have decided to exempt individual supplies under Article 3(2)(b) of this Directive shall apply these frequencies only for supply zones that distribute between 10 and 100 m³ per day.

PART C

☒ Supply ☒ ~~r~~Risk assessment

~~1. Member States may provide for the possibility to derogate from the parameters and sampling frequencies in Part B, provided that a risk assessment is performed, in accordance with this Part.~~

~~1.2.~~ The ☒ supply ☒ risk assessment referred to in ☒ Article 9 ☒ ~~point 1~~ shall be based on the general principles of risk assessment set out in ~~relation to~~ international standards such as standard EN 15975-2 concerning ‘security of drinking water supply, guidelines for risk and crisis management’.

~~3. The risk assessment shall take into account the results from the monitoring programmes established by the second subparagraph of Article 7(1), and Article 8 of Directive 2000/60/EC of the European Parliament and of the Council³ for bodies of water identified under Article 7(1) that provide more than 100 m³ a day on average, in accordance with Annex V to that Directive.~~

~~2.4.~~ ~~Based on the results of the~~ ☒ Following a supply ☒ risk assessment, the list of parameters ☒ considered in the monitoring ☒ ~~in point 2 of Part B~~ shall be extended and/or the sampling frequencies ~~in point 3 of~~ ☒ set out in ☒ Part B increased, where any of the following conditions is fulfilled:

- (a) the list of parameters or frequencies set out in this Annex is not sufficient to fulfil the obligations imposed under Article ~~117~~(1);
- (b) additional monitoring is required for the purposes of Article ~~117~~(6);
- (c) it is necessary to provide the ~~necessary~~ assurances set out in point (1)(a) of Part A;~~3~~

↓ new

- (d) increasing the sampling frequencies is necessary pursuant to Article 8(3)(a).

~~3.5.~~ ~~Based on the results of the~~ ☒ Following a supply ☒ risk assessment, the list of parameters ~~set out in point 2 of Part B~~ ☒ considered in the monitoring ☒ and the sampling frequencies set out in ~~point 3 of~~ Part B may be reduced provided ☒ all of ☒ the following conditions are met:

³ Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy (OJ L 327, 22.12.2000, p. 1).

~~(a) the frequency of sampling for *E. coli* must not be reduced below the one laid down in point 3 of Part B under any circumstances;~~

~~(b) for all other parameters;~~

~~(a)(i)~~ the location and frequency of sampling ☒ is ☒ ~~shall be~~ determined in relation to the parameter's origin, as well as the variability and long-term trend of its concentration, taking into account Article 6;

~~(b)(ii)~~ ☒ for reducing ☒ ~~to reduce~~ the minimum sampling frequency of a parameter, ~~as set out in point 3 of Part B~~, the results obtained from samples collected at regular intervals over a period of at least 3 years from sampling points representative of the whole supply zone ☒ are ☒ ~~must all be~~ less than 60 % of the parametric value;

~~(c)(iii)~~ ☒ for removing ☒ ~~to remove~~ a parameter from the list of parameters to be monitored, ~~as set out in point 2 of Part B~~, the results obtained from samples collected at regular intervals over a period of at least 3 years from points representative of the whole supply zone ☒ are ☒ ~~must all be~~ less than 30 % of the parametric value;

~~(d)(iv)~~ ☒ for removing ☒ ~~the removal of a particular~~ parameter ~~set out in point 2 of Part B~~ from the list of parameters to be monitored ☒, the decision is ☒ ~~shall be~~ based on the result of the risk assessment, informed by the results of monitoring of sources of water intended for human consumption and confirming that human health is protected from the adverse effects of any contamination of water intended for human consumption, as laid down in Article 1;

~~(e)(v)~~ ☒ for reducing ☒ the sampling frequency ☒ of a parameter or for removing a parameter ☒ ~~may be reduced or a parameter removed~~ from the list of parameters to be monitored, ~~as set out in points (ii) and (iii) only if~~ the risk assessment confirms that no factor that can be reasonably anticipated is likely to cause deterioration of the quality of the water intended for human consumption.

↓ new

4. Where monitoring results, demonstrating that the conditions set out in paragraph 3, points (b) to (e) are met, are already available by [the date of entry into force of this Directive], those monitoring results may be used to adapt the monitoring following the supply risk assessment from that date.

↓ 2015/1787 Art. 1.1 and Annex I
⇒ new

~~6. Member States shall ensure that:~~

~~(a) risk assessments are approved by their relevant competent authority; and~~

~~(b) information is available showing that a risk assessment has been carried out, together with a summary of its results.~~

PART D

Sampling methods and sampling points

1. Sampling points shall be determined so as to ensure compliance with the points of compliance as defined in Article 6(4). In the case of a distribution network, a Member State may take samples within the supply zone or at the treatment works for particular parameters if it can be demonstrated that there would be no adverse change to the measured value of the parameters concerned. As far as possible, the number of samples shall be distributed equally in time and location.
2. Sampling at the point of compliance shall meet the following requirements:
 - (a) compliance samples for certain chemical parameters (in particular copper, lead ⇒ , *Legionella* ⇐ and nickel) shall be taken at the consumer's tap without prior flushing. A random daytime sample of one litre volume is to be taken. As an alternative, Member States may use fixed stagnation time methods that better reflect their national situation, provided that, at the supply zone level, this does not result in fewer cases of non-compliance than using the random daytime method;
 - (b) compliance samples for microbiological parameters at the point of compliance shall be taken and handled according to EN ISO 19458, sampling purpose B.
3. Sampling in the distribution network, with the exception of sampling at the consumers' tap, shall be in accordance with ISO 5667-5. For microbiological parameters, sampling in the distribution network shall be taken and handled according to EN ISO 19458, sampling purpose A.

↓ 1998/83

ANNEX III

SPECIFICATIONS FOR THE ANALYSIS OF PARAMETERS

↓ 2015/1787 Art. 1.2 and Annex II.1

Member States shall ensure that the methods of analysis used for the purposes of monitoring and demonstrating compliance with this Directive 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.

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 best available techniques not entailing excessive costs.

↓ 2015/1787 Art. 1.2 and Annex II.2(a)

PART A

Microbiological parameters for which methods of analysis are specified

↓ 596/2009 Art. 1 and Annex .2(2)

~~The following principles for methods of microbiological parameters are given either for reference, whenever a CEN/ISO method is given, or for guidance, pending the possible future adoption by the Commission of further CEN/ISO international methods for those parameters. Member States may use alternative methods, providing the provisions of Article 7(5) are met. Those measures on further CEN/ISO international methods, designed to amend non-essential elements of this Directive, *inter alia*, by supplementing it, shall be adopted in accordance with the regulatory procedure with scrutiny referred to in Article 12(3).~~

↓ 2015/1787 Art. 1.2 and Annex II.2(b)
⇒ new

The methods for microbiological parameters are:

- (a) *Escherichia coli* (*E. coli*) and coliform bacteria (EN ISO 9308-1 or EN ISO 9308-2)
 - (b) *Enterococci* (EN ISO 7899-2)
 - (c) *Pseudomonas aeruginosa* (EN ISO 16266)
 - (d) ~~enumeration of culturable microorganisms~~ colony count ⇒ or heterotrophic plate counts at ⇐ 22 °C (EN ISO 6222)
 - ~~(e) enumeration of culturable microorganisms colony count 36 °C (EN ISO 6222)~~
 - (~~f~~e) *Clostridium perfringens* including spores (EN ISO 14189)
-

↓ new

- (f) Turbidity (EN ISO 7027)
- (g) *Legionella* (EN ISO 11731)
- (h) Somatic coliphages (EN ISO 10705-2)

↓ 2015/1787 Art. 1.2 and Annex II.3(a) (adapted)

PART B

Chemical ~~and indicator~~ parameters for which performance characteristics are specified

↓ 2015/1787 Art. 1.2 and Annex II.3(b) (adapted)
⇒ new

1. ~~Chemical and indicator~~ parameters

For the parameters set out in Table 1, ~~the specified performance characteristics are that~~ the method of analysis used ~~⊗~~ shall ~~⊗~~ ~~must~~, as a minimum, be capable of measuring concentrations equal to the parametric value with a limit of quantification, as defined in Article 2(2) of Commission Directive 2009/90/EC⁴, of 30 % or less of the relevant parametric value and an uncertainty of measurement as specified in Table 1. The result shall be expressed using at least the same number of significant figures as for the parametric value considered in Parts B ~~and C~~ of Annex I.

~~Until 31 December 2019 Member States may allow for the use of ‘trueness’, ‘precision’ and ‘limit of detection’ as specified in Table 2, as an alternative set of performance characteristics to ‘limit of quantification’ and ‘uncertainty of measurement’ as specified respectively in the first paragraph and Table 1.~~

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 25

⁴ 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).

Benzene	40	
⇒ Beta-estradiol (50-28-2) ⇐	⇒ 50 ⇐	
⇒ Bisphenol A ⇐	⇒ 50 ⇐	
Boron	25	
Bromate	40	
Cadmium	25	
Chloride	15	
⇒ Chlorate ⇐	⇒ 30 ⇐	
⇒ Chlorite ⇐	⇒ 30 ⇐	
Chromium	30	
Conductivity	20	
Copper	25	
Cyanide	30	See Note 36
1,2-dichloroethane	40	
⇒ Epichlorohydrin ⇐	⇒ 30 ⇐	
Fluoride	20	
⇒ HAAs ⇐	⇒ 50 ⇐	
Hydrogen ion concentration pH (expressed in pH units)	0,2	See Note 7
Iron	30	
Lead	25	
Manganese	30	
Mercury	30	
⇒ Microcystin-LR ⇐	⇒ 30 ⇐	
Nickel	25	
Nitrate	15	
Nitrite	20	

⇒ Nonylphenol ⇐	⇒ 50 ⇐	
Oxidisability	50	See Note 8
Pesticides	30	See Note 49
⇒ PFASs ⇐	⇒ 50 ⇐	
Polycyclic aromatic hydrocarbons	⇒ 30 ⇐ 50	See Note 510
Selenium	40	
Sodium	15	
Sulphate	15	
Tetrachloroethene	30	See Note 611
Trichloroethene	40	See Note 611
Trihalomethanes — total	40	See Note 510
Total organic carbon (TOC)	30	See Note 12
Turbidity	30	See Note 13
⇒ Uranium ⇐	⇒ 30 ⇐	
⇒ Vinyl chloride ⇐	⇒ 50 ⇐	

~~Acrylamide, epichlorohydrin and vinyl chloride to be controlled by product specification.~~

Table 2				
Minimum performance characteristics 'Trueness', 'precision' and 'limit of detection' — may be used until 31 December 2019				
Parameters	Trueness (See Note 2) % of the parametric value (except for pH)	Precision (See Note 3) % of the parametric value (except for pH)	Limit of detection (See Note 4) % of the parametric value (except for pH)	Notes

Aluminium	10	10	10	
Ammonium	10	10	10	
Antimony	25	25	25	
Arsenic	10	10	10	
Benzo(a)pyrene	25	25	25	
Benzene	25	25	25	
Boron	10	10	10	
Bromate	25	25	25	
Cadmium	10	10	10	
Chloride	10	10	10	
Chromium	10	10	10	
Conductivity	10	10	10	
Copper	10	10	10	
Cyanide	10	10	10	See Note 6
1,2-dichloroethane	25	25	10	
Fluoride	10	10	10	
Hydrogen ion concentration pH (expressed in pH units)	0,2	0,2		See Note 7
Iron	10	10	10	
Lead	10	10	10	
Manganese	10	10	10	
Mercury	20	10	20	
Nickel	10	10	10	
Nitrate	10	10	10	
Nitrite	10	10	10	
Oxidisability	25	25	10	See Note

				8
Pesticides	25	25	25	See Note 9
Polycyclic aromatic hydrocarbons	25	25	25	See Note 10
Selenium	10	10	10	
Sodium	10	10	10	
Sulphate	10	10	10	
Tetrachloroethene	25	25	10	See Note 11
Trichloroethene	25	25	10	See Note 11
Trihalomethanes total	25	25	10	See Note 10
Turbidity	25	25	25	

~~Acrylamide, epichlorohydrin and vinyl chloride to be controlled by product specification.~~

↓ 2015/1787 Art. 1.2 and Annex II.3(c) (adapted)
⇒ new

2. Notes to Tables 1 and 2

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 ⇐ better. Measurement uncertainty shall be estimated at the level of the parametric value, unless otherwise specified.
Note 2	Trueness is a measure of systematic error, i.e. the difference between the mean value of the large number of repeated measurements and the true value. Further specifications are those set out in ISO 5725.
Note 3	Precision is a measure of random error and is usually expressed as the standard deviation (within and between batches) of the spread of results from the mean. Acceptable precision is twice the relative standard deviation. This term is further specified in ISO 5725.

Note 4	Limit of detection is either: — three times the standard deviation within a batch of a natural sample containing a low concentration of the parameter, or — five times the standard deviation of a blank sample (within a batch).
Note 25	If the value of uncertainty of measurement cannot be met, the best available technique should be selected (up to 60 %).
Note 36	The method determines total cyanide in all forms.
Note 7	Values for trueness, precision and uncertainty of measurement are expressed in pH units.
Note 8	Reference method: EN ISO 8467
Note 49	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, higher values up to 80 % may be allowed for a number of pesticides.
Note 540	The performance characteristics apply to individual substances, specified at 25 % of the parametric value in Part B of Annex I.
Note 644	The performance characteristics apply to individual substances, specified at 50 % of the parametric value in Part B of Annex I.
Note 12	The uncertainty of measurement should be estimated at the level of 3 mg/l of the total organic carbon (TOC). CEN 1484 Guidelines for the determination of TOC and dissolved organic carbon (DOC) shall be used.
Note 13	The uncertainty of measurement should be estimated at the level of 1,0 NTU (nephelometric turbidity units) in accordance with EN ISO 7027.

~~ANNEX IV~~

DEADLINES FOR TRANSPOSITION INTO NATIONAL LAW AND FOR APPLICATION					
Directive 80/778/EEC Transposition 17.7.1982 Application 17.7.1985 All Member States except Spain, Portugal and new Länder of Germany	Directive 81/858/EEC (Adaptation due to accession of Greece)	Act of Accession of Spain and Portugal Spain : transposition 1.1.1986 application 1.1.1986 Portugal transposition 1.1.1986 application 1.1.1989	Directive 90/656/EEC for new Länder of Germany	Act of Accession of Austria, Finland and Sweden Austria transposition 1.1.1995 application 1.1.1995 Finland transposition 1.1.1995 application 1.1.1995 Sweden transposition 1.1.1995 application 1.1.1995	Directive 91/692/EEC
Articles 1 to 14			Application 31.12.1995		
Article 15	Amended with effect	Amended with effect		Amended with effect	

	from 1.1.1981	from 1.1.1986		from 1.1.1995	
Article 16					
Article 17					Article 17(a) inserted
Article 18					
Article 19		Amended	Amended		
Article 20					
Article 21					

ANNEX V

CORRELATION TABLE	
This Directive	Directive 80/778/EEC
Article 1(1)	Article 1(1)
Article 1(2)	—
Article 2(1) (a) and (b)	Article 2
Article 2(2)	—
Article 3(1) (a) and (b)	Article 4(1)
Article 3(2) (a) and (b)	—
Article 3(3)	—
Article 4(1)	Article 7(6)
Article 4(2)	Article 11
Article 5(1)	Article 7(1)
Article 5(2) first sentence	Article 7(3)
Article 5(2) second sentence	—
Article 5(3)	—
Article 6(1)	Article 12(2)
Article 6(2) to (3)	—
Article 7(1)	Article 12(1)
Article 7(2)	—
Article 7(3)	Article 12(3)
Article 7(4)	—

Article 7(5)	Article 12(5)
Article 7(6)	—
Article 8	—
Article 9(1)	Article 9(1) and Article 10(1)
Article 9(2) to (6)	—
Article 9(7)	Article 9(2) and Article 10(3)
Article 9(8)	—
Article 10	Article 8
Article 11(1)	—
Article 11(2)	Article 13
Article 12(1)	Article 14
Article 12(2) and (3)	Article 15
Article 13(1)	—
Article 13(2) to (5)	Article 17(a) (inserted by Directive 91/692/EEC)
Article 14	Article 19
Article 15	Article 20
Article 16	—
Article 17	Article 18
Article 18	—
Article 19	Article 21

ANNEX IV

INFORMATION TO THE PUBLIC TO BE PROVIDED ONLINE

The following information shall be accessible to consumers on-line in a user-friendly and customized way:

- (1) identification of the relevant water supplier;
- (2) the most recent monitoring results for parameters listed in Annex I, parts A and B, including frequency and location of sampling points, relevant to the area of interest to the person supplied, together with the parametric value set in accordance with Article 5. The monitoring results must not be older than:
 - (a) one month, for very large water suppliers;
 - (b) six months for large water suppliers;
 - (c) one year for small water suppliers;
- (3) in case of exceedance of the parametric values set in accordance with Article 5, information on the potential danger to human health and the associated health and consumption advice or a hyperlink providing access to such information;
- (4) a summary of the relevant supply risk assessment;
- (5) information on the following indicator parameters and associated parametric values:
 - (a) Colour;
 - (b) pH (Hydrogen ion concentration);
 - (c) Conductivity;
 - (d) Iron;
 - (e) Manganese;
 - (f) Odour;
 - (g) Taste;
 - (h) Hardness;
 - (i) Minerals, anions/cations dissolved in water:
 - Borate BO_3^-
 - Carbonate CO_3^{2-}
 - Chloride Cl^-
 - Fluoride F^-
 - Hydrogen Carbonate HCO_3^-
 - Nitrate NO_3^-
 - Nitrite NO_2^-
 - Phosphate PO_4^{3-}
 - Silicate SiO_2

- Sulphate SO_4^{2-}
- Sulphide S_2^-
- Aluminium Al
- Ammonium NH_4^+
- Calcium Ca
- Magnesium Mg
- Potassium K
- Sodium Na

Those parametric values and other non-ionised compounds and trace elements may be displayed with a reference value and/or an explanation;

- (6) advice to consumers including on how to reduce water consumption;
- (7) for very large water suppliers, annual information on:
 - (a) the overall performance of the water system in terms of efficiency, including leakage rates and energy consumption per cubic meter of delivered water;
 - (b) information on management and governance of the water supplier, including the composition of the board;
 - (c) water quantity supplied yearly and trends;
 - (d) information on the cost structure of the tariff charged to consumers per cubic meter of water, including fixed and variable costs, presenting at least costs related to energy use per cubic meter of delivered water, measures taken by water suppliers for the purposes of the hazard assessment pursuant to Article 8(4), treatment and distribution of water intended for human consumption, waste water collection and treatment, and costs related to measures for the purposes of Article 13, where such measures have been taken by water suppliers;
 - (e) the amount of investment considered necessary by the supplier to ensure the financial sustainability of the provision of water services (including maintenance of infrastructure) and the amount of investment actually received or recouped;
 - (f) types of water treatment and disinfection applied;
 - (g) summary and statistics of consumer complaints, and of timeliness and adequacy of responses to problems;
- (8) access to historical data for information under points (2) and (3), dating back up to 10 years, upon request.



ANNEX V

Part A

Repealed Directive
with list of the successive amendments thereto
(referred to in Article 23)

Council Directive 98/83/EC (OJ L 330, 5.12.1998, p. 32)	
Regulation (EC) No 1882/2003 of the European Parliament and of the Council (OJ L 284, 31.10.2003, p. 1)	Only point 29 of Annex II
Regulation (EC) No 596/2009 of the European Parliament and of the Council (OJ L 188, 18.7.2009, p. 14)	Only point 2.2 of the Annex
Commission Directive (EU) 2015/1787 (OJ L 260, 7.10.2015, p. 6)	

Part B

Time-limits for transposition into national law
(referred to in Article 23)

Directive	Time-limit for transposition	
98/83/EC	25 December 2000	
(EU) 2015/1787	27 October 2017	

ANNEX VI

CORRELATION TABLE

Directive 98/83/EC	This Directive
Article 1	Article 1
Article 2, introductory wording	Article 2, introductory wording
Article 2 pts. 1 and 2	Article 2 pts. 1 and 2
-	Article 2 pts. 3 to 8
Article 3(1), introductory wording	Article 3(1), introductory wording
Article 3(1)(a) and (b)	Article 3(1)(a) and (b)
Article 3(2) and (3)	Article 3(2) and (3)
Article 4(1), introductory wording	Article 4(1), introductory wording
Article 4(1)(a) and (b)	Article 4(1)(a) and (b)
Article 4(1), 2 nd subparagraph	Article 4(1)(c)
Article 4(2)	Article 4(2)
Article 5(1) and (2)	Article 5(1)
Article 5(3)	Article 5(2)
Article 6(1) pts (a) to (c)	Article 6, pts (a) to (c)
Article 6(1), pt (d)	-
Article 6(2)	-
Article 6(3)	-
-	Article 7
-	Article 8
	Article 9
-	Article 10

Article 7(1)	Article 11(1)
Article 7(2)	Article 11(2) introductory wording
-	Article 11(2), pts (a) to (c)
Article 7(3)	Article 11(3)
Article 7(4)	-
Article 7(5)(a)	Article 11(4) introductory wording
Article 7(5)(b)	Article 11(4)(a)
Article 7(5)(c)	Article 11(4)(b)
Article 7(6)	Article 11(5)
Article 8(1)	Article 12(1)
Article 8(2)	Article 12(2), 1st subparagraph
-	Article 12(2), 2nd subparagraph
Article 8(3)	Article 12(3), 1st subparagraph
-	Article 12(3), 2nd subparagraph
-	Article 12(4), pts (a) to (c)
Article 8(4)	Article 12(5)
Article 8(5) to (7)	-
Article 9	-
Article 10	-
-	Article 13
-	Article 14
-	Article 15
-	Article 16

-	Article 17
Article 11(1)	Article 18(1), 1 st subparagraph
-	Article 18(1), 2 nd subparagraph
Article 11(2)	-
-	Article 18(2)
-	Article 19
Article 12(1)	Article 20(1)
Article 12(2), 1 st subparagraph	Article 20(1)
Article 12(2), 2 nd subparagraph	-
Article 12(3)	-
Article 13	-
Article 14	-
Article 15	-
-	Article 21
Article 17(1) and (2)	Article 22(1) and (2)
Article 16(1)	Article 23(1)
Article 16(2)	-
	Article 23(2)
Article 18	Article 24
Article 19	Article 25
Annex I, part A	Annex I, part A
Annex I, part B	Annex I, part B
Annex I, part C	-
-	Annex I, part C
Annex II, Part A (1)(a) to	Annex II, Part A (1)(a) to

(c)	(c)
Annex II, Part A (2) 1 st subparagraph	Annex II, Part A (2) 1 st subparagraph
-	Annex II, Part A (2) 2nd subparagraph and table
Annex II, Part A (2) 2nd subparagraph	Annex II Part A (2) 3rd subparagraph
Annex II, Part A (3)	-
Annex II, Part A (4)	Annex II, Part A (3)
Annex II, Part B (1)	-
Annex II, Part B (2)	Annex II, Part B (1)
Annex II, Part B (3)	Annex II, Part B (2)
Annex II, Part C (1)	-
Annex II, Part C (2)	Annex II, Part C (1)
Annex II, Part C (3)	-
Annex II, Part C (4)	Annex II, Part C (2)
Annex II, Part C (5)	Annex II, Part C (3)
-	Annex II, Part C (4)
Annex II, Part C (6)	-
Annex II, Part D, pts (1) to (3)	Annex II, Part D, pts (1) to (3)
Annex III, 1 st and 2 nd subparagraphs	Annex III, 1 st and 2 nd subparagraphs
Annex III, part A, 1 st and 2 nd subparagraphs	-
Annex III, part A, 3 rd subparagraph, points (a) to (f)	Annex III, part A, 3 rd subparagraph points (a) to (h)
Annex III, part B, (1), 1 st subparagraph	Annex III, part B, (1), 1 st subparagraph
Annex III, part B, (1), 2 nd	-

subparagraph	
Annex III, part B, (1), 3 rd subparagraph and Table 1	Annex III, part B, (1), 2 nd subparagraph and Table 1
Annex III, part B, (1), Table 2	-
Annex III, part B, (2)	Annex III, part B, (2)
Annex IV	-
Annex V	-
-	Annex IV
-	Annex V
-	Annex VI