

STATUTORY INSTRUMENTS.

**S.I. No. 439 of 2000.**

**EUROPEAN COMMUNITIES (DRINKING WATER) REGULATIONS, 2000.**

S.I. No. 439 of 2000.

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S.I. No. 439 of 2000.

EUROPEAN COMMUNITIES (DRINKING WATER)  
REGULATIONS, 2000.

The Minister for the Environment and Local Government in exercise of the powers conferred on him by section 3 of the European Communities Act, 1972 (No. 27 of 1972) and for the purpose of giving effect to the Council Directive of 3 November, 1998 (No. 98/83/EC)<sup>1</sup> hereby makes the following Regulations:

<sup>1</sup> O.J. No. L330, 5.12.1998, p.32.

Citation

1. These Regulations may be cited as the European Communities (Drinking Water) Regulations, 2000.

Commencement

2. These Regulations shall come into operation on 1 January, 2004.

Interpretation

3. (1) In these Regulations, save where the context otherwise requires—

"the Agency" means the Environmental Protection Agency established under the Environmental Protection Agency Act, 1992 (No. 7 of 1992);

"authorised person" means a person appointed by a sanitary authority to be an authorised person for the purposes of these Regulations;

"the Directive" means Council Directive 98/83/EC of 3 November 1998 on the quality of water intended for human consumption;

"domestic distribution system" means the pipework, fittings and appliances within the curtilage of a premises which are installed between the distribution network and the taps that are normally used for the provision of water for human consumption;

"exempted supply" means a supply of water which—

(a) (i) is provided from either an individual supply providing less than 10m<sup>3</sup> a day on average or serving fewer than 50 persons, and

(ii) is not supplied as part of a commercial or public activity, or

(b) is used exclusively for purposes in respect of which the sanitary authority is satisfied that the quality of the water has no influence, either directly or indirectly, on the health of the consumers concerned;

"the Minister" means the Minister for the Environment and Local Government;

"monitoring" includes inspection, measurement, sampling or analysis whether periodically or continuously;

"premises" includes any land, any waterworks as defined in section 2 of the Public Health (Ireland) Act, 1878 and any building, structure or private dwelling;

"private water supply" means a water supply which is not in the charge or ownership of a sanitary authority;

"sanitary authority" means a sanitary authority for the purposes of the Local Government (Sanitary Services) Acts, 1878 to 1964;

"water intended for human consumption" means—

(a) all water, either in its original state or after treatment, intended for drinking, cooking, food preparation or other domestic purposes, regardless of its origin and whether it is supplied from a distribution network or from a tanker,

(b) all water used in any food production undertaking for the manufacture, processing, preservation or marketing of products or substances intended for human consumption unless the sanitary authority are satisfied that the quality of the water cannot affect the wholesomeness of the foodstuff in its finished form,

other than—

— natural mineral waters recognised by the responsible authority as defined in the European Communities (Natural Mineral Waters) (Amendment) Regulations, 1998 (S.I. No. 461 of 1998),

— water supplied in bottles or containers,

— waters which are medicinal products within the meaning of Council Directive 65/65/EEC of 26 January, 1965<sup>2</sup>, or

<sup>2</sup> O.J. No. L22. 9.2.1965, p.369 as last amended by Directive 93/39/EEC (O.J. No. L214, 24.8.1993. p.22)

— an exempted supply.

(2) In these Regulations—

(a) a reference to an article or schedule which is not otherwise identified is a reference to an article or schedule of these Regulations, and

(b) a reference to a sub-article which is not otherwise identified is a reference to a sub-article of the article in which the reference occurs.

#### Duty of sanitary authority

4. (1) It shall be the duty of a sanitary authority to take the necessary measures to ensure that water intended for human consumption is wholesome and clean and meets the requirements of these Regulations, except where a departure is granted under article 5.

(2) Water shall be regarded as wholesome and clean if—

(a) it is free from any micro-organisms and parasites and from any substances which in numbers or concentrations, constitute a potential danger to public health, and

(b) it meets the quality standards specified in Tables A and B in Part 1 of the Schedule.

(3) A sanitary authority shall not be in breach of its obligations under this article, article 6 (a) or article 9(2)(a) in case of water supplied to a premises (other than a premises where water is supplied to the public, including schools, hospitals and food outlets) where non-compliance with a parametric value is due to the domestic distribution system in that premises or the maintenance thereof and the distribution system is not in the charge or control of the water supplier in its capacity as a water supplier.

(4) In a case where sub-article (3) applies and there is a risk that water covered by article (6)(a) would not comply with the parametric values specified in Part 1 of the Schedule a sanitary authority shall nevertheless ensure that—

(a) (i) appropriate measures are taken to reduce or eliminate the risk of non-compliance with the parametric values, such as advising property owners of any possible remedial action which could be taken by them, or

(ii) other measures, such as appropriate treatment techniques, are taken to change the nature or properties of the water before it is supplied so as to reduce or eliminate the risk of the water not complying with the parametric values after supply,

and

(b) the consumers concerned are duly informed and advised of any possible additional remedial action that should be taken by them.

#### Departures from standards

5. (1) A departure from the parametric values specified in Table B in Part 1 of the Schedule may, on application by a sanitary authority, be granted by the Agency in relation to a water supply provided no such departure constitutes a potential danger to public health and provided that the supply of water intended for human consumption in the area concerned cannot otherwise be maintained by any other reasonable means.

(2) An application to the Agency for the grant of a departure under this article in respect of a water supply shall be made by a sanitary authority in whose area a water supply is located.

(3) An application for a departure under this article shall contain such information as may be specified by the Agency.

(4) A departure granted under this article shall—

(a) be subject to such conditions as may be specified by the Agency,

(b) have effect for as short a period of time as possible, which shall not exceed three years.

(c) subject to sub-article (5), specify the matters set out in Part 4 of the Schedule, and

(d) be reviewed by the Agency prior to the end of the period of the departure so as to determine whether sufficient progress has been made in the opinion of the Agency.

(5) (a) Subject to paragraph (b), sub-article (4) shall not apply in case where the Agency considers that

(i) the non-compliance with the parametric value is trivial, and

(ii) the action taken in accordance with sub-article 9(2) (a) is sufficient to remedy the problem within 30 days,

and in such a case a departure granted under this article need specify only the maximum permissible value for the parameter and the time allowed to remedy the problem.

(b) Paragraph (a) shall not apply in the case of a water supply where failure to comply with any one parametric value in relation to that supply has occurred on more than 30 days in aggregate during the previous twelve months.

(6) In exceptional circumstances a second departure which shall not exceed three years may be granted by the Agency and the Agency shall notify the Minister of the granting of such a departure.

(7) A sanitary authority which has recourse to a departure granted under this article shall ensure that—



(a) the population affected by such departure is promptly informed of the departure and of the conditions governing it, and

(b) advice is given, where necessary, to particular population groups for which the departure could present a particular risk.

#### Point of compliance

6. A sanitary authority shall ensure that the parametric values specified in Part 1 of the Schedule are complied with in the case of—

(a) water supplied from a distribution network, at the point, within a premises or an establishment, at which it emerges from the tap or taps that are normally used for the provision of water for human consumption;

(b) water supplied from a tanker, at the point at which it emerges from the tanker;

(c) water used in a food-production undertaking, at the point where the water is used in the undertaking.

#### Monitoring of water quality

7. (1) A sanitary authority shall take all measures necessary to ensure that regular monitoring is carried out at the points of compliance specified in article 6 in relation to the quality of water intended for human consumption.

(2) For the purposes of sub-article (1), a sanitary authority shall specify the points at which samples shall be taken for analysis and establish a monitoring programme in accordance with Part 2 of the Schedule.

(3) Samples taken in accordance with sub-article (1) shall be representative of the quality of the water consumed throughout the year.

(4) A monitoring programme established under sub-article (2) shall comply with the specifications for the analyses of parameters specified in Part 3 of the Schedule and may provide for the use of—

(a) methods of analysis other than those specified in section 1 of Part 3 of the Schedule provided that the Agency is satisfied that the results obtained are at least as reliable as those produced by the specified methods, and

(b) any method of analysis for those parameters listed in sections 2 and 3 of Part 3 of the Schedule provided that it meets the requirements set out therein.

(5) A sanitary authority shall ensure that additional monitoring is carried out on a case-by-case basis of substances and micro-organisms for which no parametric value has been specified in Part 1 of the Schedule, if there is reason to suspect that such

substances and, or micro-organisms may be present in amounts or numbers which constitute a potential danger to human health.

#### Protection of human health

8. (1) Where a sanitary authority considers that a supply of water intended for human consumption constitutes a potential danger to human health the authority shall ensure that—

(a) the supply of such water is prohibited or the use of such water is restricted, or such other action is taken as is necessary to protect human health, and

(b) consumers shall be informed promptly thereof and given the necessary advice.

(2) A sanitary authority shall decide what action should be taken under sub-article (1) having due regard to the risks to human health which would be caused by an interruption of the supply or a restriction in the use of water intended for human consumption.

(3) The duty imposed on a sanitary authority by sub-article (1) shall apply whether or not any failure to meet a parametric value has occurred.

#### Remedial action

9. (1) A sanitary authority shall ensure that any failure to meet the parametric values specified in Part 1 of the Schedule is immediately investigated so as to identify the cause of such failure.

(2) Where it is found, as a result of monitoring carried out under article 7, that the quality of water intended for human consumption does not meet the parametric values specified in Part 1 of the Schedule, the sanitary authority shall, subject to any departures in force under article 5—

(a) ensure, subject to article 4, that the necessary remedial action is taken as soon as possible to restore the quality of the water and shall give priority to its enforcement action, having particular regard to the extent to which the relevant parametric value has been exceeded and to the potential danger to human health,

(b) in the case of a public water supply, prepare an action programme within 60 days of receipt by the sanitary authority of the monitoring results and implement such action programme for the improvement of the quality of the water so as to secure compliance with these Regulations as soon as possible and not later than—

(i) one year from the date of finalisation of an action programme in relation to the water quality standards specified in Tables A and B in Part 1 of the Schedule in relation to matters which present a risk to public health, and

(ii) two years from the date of finalisation of an action programme in relation to all the water quality standards specified in Table B in Part 1 of the Schedule, other than those referred to in paragraph (i),

(c) in the case of a private water supply serve, within 14 days of receipt by the sanitary authority of the monitoring results, a notice in writing on the person or, where there is more than one such person, each person responsible for that supply requiring that person, or persons as the case may be, to prepare within 60 days of the date of said notice an action programme and to implement such action programme, including such interim measures as may be appropriate, for the improvement of the quality of the water so as to secure compliance with these Regulations as soon as possible and not later than—

(i) one year from the date of finalisation of an action programme in relation to the water quality standards specified in Tables A and B in Part 1 of the Schedule in relation to matters which present a risk to public health, and

(ii) two years from the date of finalisation of an action programme in relation to all the water quality standards specified in Part B in Part 1 of the Schedule, other than those referred to in paragraph (i).

(3) An action programme under sub-article (2) (b) shall include such interim measures as may be appropriate.

(4) An action programme under sub-article (2)(c) shall have regard to the provisions of any strategic rural water plan for the area in which the water supply is situate.

(5) A sanitary authority shall ensure that, where remedial action is taken in relation to a water supply, consumers are informed of such action save where the authority considers the non-compliance with the parametric value to be trivial in nature or extent.

(6) (a) In the event of non-compliance with the parametric values or with the specifications provided for in Table C in Part 1 of the Schedule in the case of a public water supply, a sanitary authority shall consider whether such non-compliance poses a risk to human health.

(b) Where such risk exists, a sanitary authority shall take remedial action in accordance with sub-article (2) (a) and (b) and (3) to restore the quality of the water where it is necessary to protect public health.

(7) (a) In the event of non-compliance with the parametric values or with the specifications provided for in Table C in Part 1 of the Schedule in the case of a private water supply, a sanitary authority shall consider whether such non-compliance poses a risk to human health.

(b) Where such risk exists, a sanitary authority shall initiate the provisions of sub-article (2)(c) and the person or persons responsible for such supply shall take remedial action to restore the quality of the water within the timeframe specified.

10. (1) A water supplier shall take all measures necessary to ensure that no substances or materials for new installations used in the preparation or distribution of water intended for human consumption or impurities associated with such substances or materials for new installations remain in water intended for human consumption in concentrations higher than is necessary for the purpose of their use and do not, either directly or indirectly reduce the protection of human health provided for in these Regulations.

(2) Where disinfection forms part of the preparation and, or distribution of water intended for human consumption, a water supplier shall ensure that the efficiency of the disinfection treatment is verified and that any contamination from disinfection by-products is kept as low as possible without compromising the disinfection.

#### Power of entry

11. (1) An authorised person may at all reasonable times enter any premises for the purposes of these Regulations.

(2) When exercising the power conferred by this article, an authorised person shall, if so required, produce evidence of his or her authority.

#### Charges by sanitary authority

12. (1) A sanitary authority may charge for monitoring the quality of private water supplies intended for human consumption.

(2) A charge made by a sanitary authority by virtue of sub-article (1) shall be of such amount as the authority considers appropriate but shall not exceed the cost of such monitoring.

(3) A charge made by a sanitary authority by virtue of sub-article (1) shall be payable by and recoverable from—

(a) in the case of a private water supply, the trustees or other persons responsible for providing that supply, and

(b) in any other case, the occupier or occupiers of the premises supplied.

(4) A sanitary authority may recover the amount of any charge made by them under this article from the person or persons by whom it is payable as a simple contract debt in any court of competent jurisdiction.

#### Recommendations of Minister

13. The Minister may, from time to time, issue recommendations to sanitary authorities in relation to the carrying out of any of their duties under these Regulations and sanitary authorities shall have regard to any such recommendations.

#### Offences and penalties

14. (1) Where a notice is served on a person under Article 9(2)(c) in relation to the preparation or implementation of an action programme in respect of water quality standards specified in Part 1 of the Schedule, regarding matters which present a risk to public health, and that person fails to comply with the terms of the notice, that person shall be guilty of an offence in respect of such failure and shall be liable on summary conviction to a fine not exceeding £1,500 or to a term of imprisonment not exceeding six months or, at the discretion of the court, to both such fine and such imprisonment.

(2) Where a person, after conviction of an offence under sub-article (i), continues to contravene the provision, that person shall be guilty of an offence on every day on which such contravention is continued and for each such offence that person shall be liable to a fine, on summary conviction, not exceeding £200.

#### Information in case of exempted supplies

15. A sanitary authority shall take measures to notify the population served by an exempted supply of—

(a) the fact that these Regulations do not apply to such supply,

(b) action that can be taken to protect human health from the adverse effects resulting from any contamination of water intended for human consumption, and

(c) appropriate advice where a potential danger to human health arising from the quality of such supply is apparent.

#### Quality to be maintained

16. Measures taken by a sanitary authority or a water supplier to apply the provisions of these Regulations shall in no case have the effect of allowing, directly or indirectly, either any deterioration in the existing quality of water intended for human consumption so far as that is relevant for the protection of human health or an increase in the pollution of waters used for the production of drinking water.

#### Revocation

17. The European Communities (Quality of Water Intended for Human Consumption) Regulations, 1988 (S.I. No. 81 of 1988) are hereby revoked with effect from 1 January, 2004.

### *SCHEDULE*

#### Part 1 PARAMETERS AND PARAMETRIC VALUES

##### TABLE A

## MICROBIOLOGICAL PARAMETERS

Parameter	Parametric value (number/100 ml)
Escherichia coli (E.coli)	1
	0
Enterococci	2
	0

## TABLE B

### CHEMICAL PARAMETERS

Parameter	Parametric value	Unit	Comments
3			
Acrylamide	0.10	ug/l	
Note 1			

4

Antimony

5.0

ug/l

5

Arsenic

10

ug/l

6

Benzene

1.0

ug/l

7

Benzo(a)pyrene

0.010

ug/l

8

Boron

1.0

mg/l

9

Bromate

10

ug/l

Note 2

10

Cadmium

5.0

ug/l

11

Chromium

50

ug/l

12

Copper

0.0

mg/l

Note 3

13

Cyanide

50



ug/l

14

1,2-dichloroethane

3.0

ug/l

15

Epichlorohydrin

0.10

ug/l

Note 1

16

Fluoride

1.0

mg/l

Note 11

17

Lead

10

ug/l

Notes 3 and 4

18

Mercury

1.0

ug/l

19

Nickel

00

ug/l

Note 3

20

Nitrate

50

mg/l

Note 5

21

Nitrite

0.50

mg/l

Note5

22

Pesticides

0.10

ug/1

Notes 6 and 7

23

Pesticides - Total

0.50

ug/1

Notes 6 and 8

24

Polycyclic aromatic hydrocarbons

0.10

ug/1

Sum of concentrations of specified compounds; Note 9

25

Selenium

10

ug/1

26

Tetrachloroethene and Trichloroethene

10

ug/1

Sum of concentrations of specified parameters.

27

Trihalomethanes - Total

100

ug/l

Sum of concentrations of specified compounds; Note 10

28

Vinyl chloride

0.50

ug/l

Note 1

#### Notes

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: For the water referred to in sub-articles 6(a), (b) and (c) the parametric value to be met by 1 January, 2004 is 25 ug/l. A value of 10 ug/l must be met by 25 December, 2008.

Note 3: The value applies to a sample of water intended for human consumption obtained by an adequate sampling method\* at the tap and taken so as to be representative of a weekly average value ingested by consumers and that takes account of the occurrence of peak levels that may cause adverse effects on human health.

\*The Copper, Lead and Nickel parameters shall be monitored in such a manner as the Minister shall determine from time to time.

Note 4: For water referred to in sub-articles 6 (a), (b) and (c), the parametric value to be met by 1 January 2004 is 25 ug/l. A value of 10 ug/l must be met by 25 December, 2013.

All appropriate measures shall be 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 priority shall be progressively given to achieve compliance with that value where lead concentrations in water intended for human consumption are highest.

Note 5: Compliance must be ensured with the conditions that  $\frac{[NO_3] + [NO_2]}{50} + \frac{[NO_2]}{3} \leq 1$ , the square brackets signifying the concentrations in mg/l for nitrate (NO<sub>3</sub>) and nitrite (NO<sub>2</sub>) and the value of 0.10mg/l for nitrites ex water treatment works.

Note 6: Only those pesticides which are likely to be present in a given supply require to be monitored.

"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.

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 ug/l.

Note 8: "Pesticides - Total" means the sum of all individual pesticides detected and quantified in the course of 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: The specified compounds are: chloroform, bromoform, dibrom-ochloromethane and bromodichloromethane.

For the water referred to in sub-articles 6 (a), (b) and (c), the parametric value to be met by 1 January, 2004 is 150 ug/l. A value of 100 ug/l must be met by 25 December, 2008.

All appropriate measures must be 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, priority must progressively be given to those areas where THM concentrations in water intended for human consumption are highest.

Note 11: The parametric value is 1.0mg/l for fluoridated supplies. In the case of supplies with naturally occurring fluoride the parametric value is 1.5mg/l.

#### TABLE C

#### INDICATOR PARAMETERS

	Parameter
	Parametric value
	Unit
	Comments
	29
Aluminium	200
	ug/l

30

Ammonium

0.30

mg/l

31

Chloride

250

mg/l

Note 1

32

*Clostridium perfringens* (including spores)

0

number/100 ml

Note 2

33

Colour

Acceptable to consumers and no abnormal change

34

Conductivity

2500

$\mu\text{S cm}^{-1}$  at 20°C

Note 1

35

Hydrogen ion concentration

$\geq 6.5$  and  $\leq 9.5$

pH units

Note 1

36

Iron

200

ug/l

37

Manganese

50

ug/l

38

Odour

Acceptable to consumers and no abnormal change

39

Oxidisability

5.0



	mg/l O <sub>2</sub>
Note 3	
	40
Sulphate	
	250
	mg/l
Note 1	
	41
Sodium	
	200
	mg/l
	42
Taste	
Acceptable to consumers and no abnormal change	
	43
Colony count 22°	
No abnormal change	
	44
Coliform bacteria	
	0

number/100 ml

45

Total organic carbon (TOC)

No abnormal change

Note 4

46

Turbidity

Acceptable to consumers and no abnormal change

Note 5

## RADIOACTIVITY

Parameter

Parametric value

Unit

Comments

47

Tritium

100

Bq/l

Notes 6 and 8

48

Total indicative dose

0.10

mSv/year

Notes 7 and 8

Notes

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 supply shall be investigated to ensure that there is no potential danger to human health arising from the presence of pathogenic micro-organisms, e.g. cryptosporidium.

Note 3: This parameter need not be measured if the parameter TOC is analysed.

Note 4: This parameter need not be measured for supplies of less than 10,000m<sup>3</sup> a day.

Note 5: In the case of surface water treatment, a parametric value not exceeding 1.0 NTU (nephelometric turbidity units) in the water ex treatment works must be strived for.

Note 6: Monitoring frequencies to be set at a later date in Part 2 of the Schedule.

Note 7: Excluding tritium, potassium -40, radon and radon decay products; monitoring frequencies, monitoring methods and the most relevant locations for monitoring points to be set at a later date in Part 2 of the Schedule.

Note 8: A. The proposals required by Note 6 on monitoring frequencies, and Note 7 on monitoring frequencies, monitoring methods and the most relevant locations for monitoring points in Part 2 of the Schedule shall be adopted in accordance with the Committee procedure laid down in Article 12 of Council Directive 98/83/EEC.

B. Drinking water need not be monitored for tritium or radioactivity to establish total indicative dose where, on the basis of other monitoring carried out, the levels of tritium of the calculated total indicative dose are well below the parametric value.

PART 2 MONITORING

TABLE A

## PARAMETERS TO BE ANALYSED

### 1. Check monitoring

The purpose of check monitoring is regularly to provide information on the organoleptic and microbiological quality of the water supplied for human consumption as well as information on the effectiveness of drinking-water treatment (particularly of disinfection) where it is used, in order to determine whether or not water intended for human consumption complies with the relevant parametric values laid down in Part 1 of this Schedule.

The following parameters must be subject to check monitoring:

- Aluminium (Note 1)
- Ammonium
- Colour
- Conductivity
- Clostridium perfringens (including spores)(Note 2)
- Escherichia coli (E. coli)
- Hydrogen ion concentration
- Iron (Note 1)
- Nitrite (Note 3)
- Odour
- Taste
- Coliform bacteria
- Turbidity

#### Notes

Note 1: Necessary only when used as flocculant.<sup>(\*)</sup>

<sup>(\*)</sup> in all other cases, the parameters are in the list for audit monitoring.

Note 2: Necessary only if the water originates from or is influenced by surface water.<sup>(\*)</sup>

(\*) in all other cases, the parameters are in the list for audit monitoring

Note 3: Necessary only when chloramination is used as a disinfectant

## 2. Audit monitoring

The purpose of audit monitoring is to provide the information necessary to determine whether or not all the parametric values specified in Part 1 of this Schedule are being complied with. All such parameters must be subject to audit monitoring unless it can be established by a sanitary authority, for a period of time to be determined by it, that a parameter is not likely to be present in a given supply in concentrations which could lead to the risk of a breach of the relevant parametric value. This paragraph does not apply to the parameters for radioactivity, which, subject to Notes 6, 7 and 8 in Table C in Part 1 of the Schedule will be monitored in accordance with monitoring requirements adopted under the Committee procedure set out in Article 12 of Council Directive 98/83/EC.

### TABLE B

Minimum frequency of sampling and analyses for water intended for human consumption supplied from a distribution network or from a tanker or used in a food-production undertaking.

Samples must be taken at the points of compliance as defined in Article 6 to ensure that water intended for human consumption meets the requirements of these Regulations. However, in the case of a distribution network, samples may be taken 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.

Volume of water distributed or produced each day within a supply zone (Notes 1 and 2) m<sup>3</sup>

Check monitoring - number of samples per year (Notes 3, 4 and 5)

Audit monitoring- number of samples per year (Notes 3 and 5)

>=10

<=100

2

Note 6

>100

<=1,000

4

1

>1,000

<=10,000

1

+ 1 for each 3,300 m<sup>3</sup>/d and part thereof of the total volume

>10,000

<=100,000

4

+ 3 for each 1,000 m<sup>3</sup>/d and part thereof of the total volume

3

+ 1 for each 10,000 m<sup>3</sup>/d and part thereof of the total volume

>100,000

10

+1 for each 25,000 m<sup>3</sup>/d and part thereof of the total volume

#### Notes

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 a water consumption of 200 l/day/capita.

Note 3: In the event of intermittent short-term supply the monitoring frequency of water distributed by tankers is to be decided by the sanitary authority concerned.

Note 4: Where the values of the results obtained from samples taken during the preceding two years are constant and are significantly better than the values specified in Part 1 of the Schedule, and no factor is likely to cause deterioration in the quality of the water, the number of samples specified in Table B of Part 2 of the Schedule and the reduction shall not (except in the case of a supply where the volume of water distributed or produced each day within a supply zone does not exceed 100m<sup>3</sup>) be more than 50%.

Note 5: As far as possible, the number of samples should be distributed equally in time and location.

Note 6: To be determined by sanitary authority.

### PART 3 SPECIFICATIONS FOR THE ANALYSIS OF PARAMETERS

Each laboratory at which samples are analysed must have a system of analytical quality control that is subject from time to time to checking by a person who is not under the control of the laboratory and who is approved by the Agency for that purpose.

#### Section 1 PARAMETERS FOR WHICH METHODS OF ANALYSIS ARE SPECIFIED

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, in accordance with the Committee procedure laid down in Article 12 of Council Directive 98/83/EC of further CEN/ISO international methods for these parameters. Sanitary authorities may use alternative methods, providing the provisions of sub-articles 7 (4)(a) and (b) are adhered to.

— Coliform bacteria and *Escherichia coli* (*E. coli*) (ISO 9308-1)

— Enterococci (ISO 7899-2)

— *Clostridium perfringens* (including spores)

— Membrane filtration followed by anaerobic incubation of the membrane on m-CP agar (Note 1) at 44 + 1 °C for 21 + 3 hours. Count opaque yellow colonies that turn pink or red after exposure to ammonium hydroxide vapours for 20 to 30 seconds.

#### Notes

Note 1: The composition of m-Cp agar is:

Basal medium

Tryptose

30 g

Yeast extract

20 g

Sucrose

5 g

L-cysteine hydrochloride

1 g

MgSO<sub>4</sub>·7H<sub>2</sub>O

0.1 g

Bromocresol purple

40 mg

Agar

15 mg

Water

1,000 mg



Dissolve the ingredients of the basal medium, adjust pH to 7.6 and autoclave at 121 °C for 15 minutes. Allow the medium to cool and add:

D-cycloserine

400mg

Polymyxine-B sulphate

25mg

Indoxyl-B-D-glucoside to be dissolved in 8 ml sterile water before addition

60mg

Filter - sterilised 0.5% phenolphthalein diphosphate solution

20ml

Filter - sterilised 4.5% FeCl<sub>3</sub> •6H<sub>2</sub>O

2ml

## Section 2 PARAMETERS FOR WHICH PERFORMANCE CHARACTERISTICS ARE SPECIFIED

For the following parameters, the specified performance characteristics are that the method of analysis used must, as a minimum, be capable of measuring concentrations equal to the parametric value with a trueness, precision and limit of detection specified. Whatever the sensitivity of the method of analysis used, the result must be expressed using at least the same number of decimals as for the parametric value considered in Tables B and C in Part 1 of the Schedule.

Parameters

Trueness % of parametric value (Note 1)

Precision % of parametric value (Note 2)

Limit of % of parametric value (Note 3)

Conditions

Comments

Acrylamide

To be controlled by product specification

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

Note 4

1,2- dichloroethane

25

25

10

Epichlorohydrin

To be controlled by product specification

Fluoride

10

10

10

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

Note 5

Pesticides

25

25

25

Note 6

Polycyclic aromatic hydrocarbons

25

25

25

Note 7

Selenium

10

10

10

Sodium

10  
10  
10

sulphate

10  
10  
10

Tetrachloro-ethene

25  
25  
10

Note 8

Trichloroethene

25  
25  
10

Note 8

Trihalome thanes - Total

25  
25  
10



## Note 7

Vinyl chloride

To be controlled by product specification

For hydrogen ion concentration the specified performance characteristics are that the method of analysis used must be capable of measuring concentrations equal to the parametric value with a trueness of 0.2 pH unit and a precision of 0.2 pH unit.

### Notes

Note 1 (\*): Trueness is the systematic error and is the difference between the mean value of the large number of repeated measurements and the true value.

(\*): These terms are further defined in ISO 5725.

Note 2 (\*): Precision is the random error and is usually expressed as the standard deviation (within and between batch) of the spread of results about the mean. Acceptable precision is twice the relative standard deviation.

(\*): These terms are further defined in ISO 5725.

Note 3: Limit of detection is either:

— Three times the relative within batch standard deviation of natural sample containing a low concentration of the parameter, or  
— five times the relative within batch standard deviation of a blank sample.

Note 4: The method should determine total cyanide in all forms.

Note 5: Oxidation should be carried out for 10 minutes at 100 °C under acid conditions using permanganate.

Note 6: The performance characteristics apply to each individual pesticide and will depend on the pesticide concerned. The limit of detection may not be achievable for all pesticides at present, but sanitary authorities should strive to achieve this standard.

Note 7: The performance characteristics apply to the individual substances specified at 25% of the parametric value in Part 1 of the Schedule.

Note 8: The performance characteristics apply to the individual substances specified at 50% of the parametric value in Part 1 of the Schedule.

Section 3 PARAMETERS FOR WHICH NO METHOD OF ANALYSIS IS SPECIFIED

- Colour
- Odour
- Taste
- Total organic carbon
- Turbidity (see note)

Note: For turbidity monitoring in treated surface water the specified performance characteristics are that the method of analysis used must, as a minimum, be capable of measuring concentrations equal to the parametric value with a trueness of 25%, precision of 25% and a 25% limit of detection.

PART 4 Matters to be specified in grant of departure under article 5

1. The grounds for the departure.
2. The parameter concerned, previous relevant monitoring results, and the maximum permissible value under the departure.
3. The geographical area, the quantity of water supplied each day, the population concerned and whether or not any relevant food-production undertaking would be affected.
4. An appropriate monitoring scheme, with an increased monitoring frequency where necessary.
5. A summary of the plan for the necessary remedial action, including a timetable for the work and an estimate of the cost and provisions for reviewing.
6. The required duration of the departure.

L.S.

GIVEN under the Official Seal of the Minister for the Environment and Local Government, this 18th day of December, 2000.

NOEL DEMPSEY,

Minister for the Environment and Local Government.

EXPLANATORY NOTE.

*(This note is not part of the Instrument and does not purport to be a legal interpretation.)*

These Regulations prescribe quality standards to be applied in relation to certain supplies of drinking water, including requirements as to sampling frequency, methods of analysis, the provision of information to consumers and related matters. The Regulations come into operation on 1 January 2004 and revoke SI No. 81 of 1988. The Regulations give effect to provisions of EU Council Directive 98/83/EC on the quality of water intended for human consumption.