
STATUTORY RULES OF NORTHERN IRELAND

1996 No. 603

WATER AND SEWERAGE

**The Surface Waters (Abstraction for Drinking Water)
(Classification) Regulations (Northern Ireland) 1996**

Made - - - - - *20th December 1996*

Coming into operation *20th February 1997*

The Department of the Environment, in exercise of the powers conferred on it by section 4B of the Water Act (Northern Ireland) 1972(1) and now vested in it(2), section 56B of the Water and Sewerage Services Order (Northern Ireland) Order 1973(3) and, being a department designated(4) for the purposes of section 2(2) of the European Communities Act 1972(5) in relation to measures relating to the prevention, reduction and elimination of pollution of water, in exercise of the powers conferred on it by that section and of every other power enabling it in that behalf, hereby makes the following Regulations:

Citation and commencement

1. These Regulations may be cited as the Surface Waters (Abstraction for Drinking Water) (Classification) Regulations (Northern Ireland) 1996 and shall come into operation on 20th February 1997.

Interpretation

2.—(1) In these Regulations—

“the Department” means the Department of the Environment; and

“pollution control functions” means the Department’s functions under or by virtue of the following statutory provisions, that is to say—

- (a) the Water Act (Northern Ireland) 1972;
- (b) the Water and Sewerage Services (Northern Ireland) Order 1973;

(1) 1972 c. 5 (N.I.) as amended by the Water and Sewerage Services (Amendment) (Northern Ireland) Order 1993 (S.I. 1993/3165 (N.I. 16) Art. 16)

(2) S.R. & O. (N.I.) 1973 No. 504 Art. 4

(3) S.I. 1973/70 (N.I. 2) as amended by the Water and Sewerage Services (Amendment) (Northern Ireland) Order 1993 (S.I. 1993/3165 (N.I. 16) Art. 12)

(4) S.I. 1989/2393

(5) 1972 c. 68

(c) regulations made by virtue of section 2(2) of the European Communities Act 1972, to the extent that the regulations relate to pollution of water.

(2) Expressions used in these Regulations which are also used in Directive [75/440/EEC](#)(6) (quality required of surface waters used for abstraction of drinking water) or Directive [79/869/EEC](#)(7) (methods of measurement and frequency of sampling and analysis of such waters) shall have the same meaning as in those Directives.

(3) In these Regulations any reference to the supply of water as drinking water shall be taken to be a reference to the supply of that water as drinking water after it has undergone purification treatment.

(4) The Interpretation Act (Northern Ireland) 1954(8) shall apply to these Regulations as it applies to a Measure of the Northern Ireland Assembly.

Classification of waters

3. The classifications DW1, DW2 and DW3 and the criteria for those classifications set out in Schedule 1 shall apply for classifying waters by reference to their suitability for abstraction by the Department for supply (after treatment) as drinking water.

Compliance with relevant limits

4.—(1) Subject to paragraphs (2) and (3), any waters classified under these Regulations shall be treated in any year as complying with the limits specified in column I of Schedule 1 for waters of the relevant class in relation to a parameter if—

- (a) 95 per cent of the samples taken in relation to those waters in accordance with regulation 7 comply with the limits specified in column I of Schedule 1;
- (b) none of the samples exceeds the limit by more than 50 per cent;
- (c) there is no associated danger to public health where any of the samples exceeds the limit; and
- (d) there have been no occasions on which consecutive samples so taken at statistically suitable intervals exceed the limit.

(2) Non-compliant samples shall be ignored for the purposes of paragraph (1) if they are the result of a flood, natural disaster or abnormal weather conditions.

(3) Paragraph 1(b) shall not apply in the case of any standard adopted by the Department in relation to temperature.

Guideline values and no deterioration principle

5. In discharging its pollution control functions in relation to any waters classified under these Regulations, the Department shall—

- (a) endeavour to respect the guideline values specified in column G of Schedule 1 for waters of the relevant class;
- (b) act in accordance with the principle that implementation of measures taken pursuant to Directive [75/440/EEC](#)(9) may under no circumstances lead directly or indirectly to deterioration of the current quality of surface water.

(6) O.J. No. L194, 25.7.75, p. 26

(7) O.J. No. L271, 29.10.79, p. 44

(8) [1954 c. 33 \(N.I.\)](#)

(9) O.J. No. L194, 25.7.75, p. 26

Compliance with standards

6.—(1) Subject to paragraphs (2) and (3), any waters classified under these Regulations shall be treated as complying with any standard in relation to any parameter adopted by the Department as a result of regulation 5 in relation to those waters if—

- (a) 90 per cent of the samples taken in relation to the waters in accordance with regulation 5 comply with the standard;
- (b) none of the samples fails the standard by more than 50 per cent;
- (c) there is no associated danger to public health where any of the samples fails to comply with the standard; and
- (d) there have been no occasions on which consecutive samples so taken at statistically suitable intervals fail to comply with the standard.

(2) Non-compliant samples shall be ignored for the purposes of paragraph (1) if they are the result of a flood, natural disaster or abnormal weather conditions.

(3) Paragraph 1(b) shall not apply in the case of any standard adopted by the Department in relation to temperature, pH, dissolved oxygen and microbiological parameters

Waivers

7.—(1) Subject to the provisions of this regulation, the Department may waive any requirement to comply with the relevant limit value for any parameter in relation to waters classified under these Regulations or any standard adopted as a result of regulation 5 for any parameter in relation to any water classified under these Regulations if it considers it appropriate to do so—

- (a) as a result of any flood or other natural disaster;
- (b) in the case of any parameter marked (O) in Schedule 1, as a result of exceptional meteorological or geographical conditions;
- (c) where the waters undergo natural enrichment in certain substances as a result of which the waters would exceed the relevant limit value for that parameter;
- (d) in the case of a shallow lake or virtually stagnant surface water, for parameters marked with an asterisk in Schedule 1.

(2) The Department shall not waive any requirement if that would result in a danger to public health.

(3) Paragraph 1(d) shall only apply in the case of a shallow lake where—

- (a) the depth of the lake does not exceed 20 metres;
- (b) the exchange of water is slower than a year; and
- (c) waste water is not discharged into the lake.

(4) In this regulation “natural enrichment” means a process whereby without human intervention a given body of water receives from the soil certain substances contained therein.

Sampling and analysis

8.—(1) Subject to Regulation 9, the Department shall ensure that waters classified under these Regulations are sampled and samples are analysed in accordance with paragraphs (2) to (5).

(2) Samples shall always be taken at the same sampling point at times when water is being abstracted by the Department for supply as drinking water and the sampling point chosen by the Department must be—

- (a) at the place where water is abstracted before being sent for purification treatment; and

(b) so situated that samples taken at that point are representative of the quality of the water at that place.

(3) Samples shall be analysed for compliance with the parameters listed in Part I of Schedule 2 for the relevant class of waters using methods of measurement which are at least as reliable as those specified in that Part and respect the values shown in that Part for limits of detection, precision and accuracy.

(4) Sampling and analysis shall be carried out at the frequency fixed by the Department in relation to the sampling point for those waters for each parameter listed in Schedule 1 and, in fixing the frequency, the Department shall ensure that—

- (a) sampling is carried out at regular intervals;
- (b) the annual frequency of sampling and analysis for each parameter is not less than that specified in Part II of Schedule 2 for the relevant class of waters; and
- (c) sampling is as far as possible spread over the year so as to give a representative picture of the quality of the water.

(5) The containers used for samples, the agents or methods used to preserve part of the sample for the analysis of one or more parameters, the conveyance and storage of the samples and the preparation of samples for analysis must not be such as to bring about any significant change in the results of the analysis.

Reduction of frequency of sampling, etc.

9.—(1) Where a survey of any waters classified for the purposes of these Regulations shows that the values obtained for any parameters are considerably superior to—

- (a) the quality required by Schedule 1, or
- (b) the standard adopted by the Department as a result of regulation 5 in relation to the waters,

the Department may reduce the frequency of sampling of the waters in relation to that parameter or standard.

(2) The Department may decide that regular sampling and analysis of waters classified under these Regulations is not needed if—

- (a) the requirements of paragraph (1) are satisfied in relation to the waters;
- (b) there is no pollution of the waters;
- (c) there is no risk of the quality of the waters deteriorating; and
- (d) the quality of the waters is superior to the minimum required for waters classified as DW1.

Modification of section 4C of the Water Act (Northern Ireland) 1972

10. Section 4C of the Water Act (Northern Ireland) shall have effect—

- (a) as if it imposed a duty on the Department to exercise the powers conferred on it by that section to classify under these Regulations such waters as are necessary to give effect to Directive [75/440/EEC](#); and
- (b) in relation to the performance of that duty, as if subsections (4), (5) and (7) of that section were omitted.

Systematic plan of action

11. The Department shall draw up a systematic plan of action including a timetable for the improvement of surface water and especially that falling within category DW3.

Revocation of the Surface Waters (Classification) Regulations (Northern Ireland) 1995

12. The Surface Waters (Classification) Regulations (Northern Ireland) 1995(10) are hereby revoked.

Sealed with the Official Seal of the Department of the Environment on 20th December 1996.

L.S.

R. W. Rogers
Assistant Secretary

Status: This is the original version (as it was originally made). This item of legislation is currently only available in its original format.

SCHEDULE 1

regulations 3, 4, 5, 7, 8 and 9

Characteristics of Surface Water intended for the Abstraction of Drinking Water

| No in Annex II to 75/440/EEC | Parameters | DW1 | | DW2 | | DW3 | |
|------------------------------|--|------------|---------------------|------------|--------------------|------------|--------------------|
| | | G | I | G | I | G | I |
| 1 | pH | 6.5 to 8.5 | | 5.5 to 9 | | 5.5 to 9 | |
| 2 | Coloration mg/l Pt (after simple filtration) | 10 | 20 ^(O) | 50 | 100 ^(O) | 50 | 200 ^(O) |
| 3 | Total suspended solids mg/l SS | 25 | | | | | |
| 4 | Temperature °C | 22 | 25 ^(O) | 22 | 25 ^(O) | 22 | 25 ^(O) |
| 5 | Conductivity µS/cm ⁻¹ at 20°C | 1,000 | | 1,000 | | 1,000 | |
| 6 | Odour (dilution factor at 25°C) | 3 | | 10 | | 20 | |
| 7* | Nitrates mg/l NO ₃ | 25 | 50 ^(O) | | 50 ^(O) | | 50 ^(O) |
| 8 ⁽¹⁾ | Fluorides mg/l F | 0.7 to 1 | 1.5 | 0.7 to 1.7 | | 0.7 to 1.7 | |
| 10* | Dissolved iron mg/l Fe | 0.1 | 0.3 | 1 | 2 | 1 | |
| 11* | Manganese mg/l Mn | 0.05 | | 0.1 | | 1 | |
| 12 | Copper mg/l Cu | 0.02 | 0.05 ^(O) | 0.05 | | 1 | |
| 13 | Zinc mg/l Zn | 0.5 | 3 | 1 | 5 | 1 | 5 |
| 14 | Boron mg/l B | 1 | | 1 | | 1 | |
| 19 | Arsenic mg/l As | 0.01 | 0.05 | | 0.05 | 0.05 | 0.1 |
| 20 | Cadmium mg/l Cd | 0.001 | 0.005 | 0.001 | 0.005 | 0.001 | 0.005 |
| 21 | Total Chromium mg/l Cr | | 0.05 | | 0.05 | | 0.05 |
| 22 | Lead mg/l Pb | | 0.05 | | 0.05 | | 0.05 |

(1) The values given are upper limits set in relation to the mean annual temperature (high and low).

(2) This parameter has been included to satisfy the ecological requirements of certain types of environment.

* See regulation 6(1)(d)

(O) See regulation 6(1)(b)

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| No in Annex II to 75/440/EEC | Parameters | DW1 | | DW2 | | DW3 | |
|------------------------------|---|--------|--------|--------|--------------------|--------|--------------------|
| | | G | I | G | I | G | I |
| 23 | Selenium mg/l Se | | 0.01 | | 0.01 | | 0.01 |
| 24 | Mercury mg/l Hg | 0.0005 | 0.001 | 0.0005 | 0.001 | 0.0005 | 0.001 |
| 25 | Barium mg/l Ba | | 0.1 | | 1 | | 1 |
| 26 | Cyanide mg/l CN | | 0.05 | | 0.05 | | 0.05 |
| 27 | Sulphates mg/l SO ₄ | 150 | 250 | 150 | 250 ^(O) | 150 | 250 ^(O) |
| 28 | Chlorides mg/l Cl | 200 | | 200 | | 200 | |
| 29 | Surfactantsmg/l (reacting with methyl blue) (lauryl sulphate) | 0.2 | | 0.2 | | 0.5 | |
| 30 ^{*(2)} | Phosphatesmg/l P ₂ O ₅ | 0.4 | | 0.7 | | 0.7 | |
| 31 | Phenols (phenol index) mg/l C ₆ H ₅ OH paranitraniline 4 amino-antipyrine | | 0.001 | 0.001 | 0.005 | 0.01 | 0.1 |
| 32 | Dissolved or emulsified hydrocarbons (after extraction by petroleum ether) mg/l | | 0.05 | | 0.2 | 0.5 | 1 |
| 33 | Polycyclic aromatic hydrocarbons mg/l | | 0.0002 | | 0.0002 | | 0.001 |
| 34 | Total pesticides (parathion, mg/l | | 0.001 | | 0.0025 | | 0.005 |

(1) The values given are upper limits set in relation to the mean annual temperature (high and low).

(2) This parameter has been included to satisfy the ecological requirements of certain types of environment.

* See regulation 6(1)(d)

(O) See regulation 6(1)(b)

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| No in Annex II to 75/440/EEC | Parameters | DW1 | | DW2 | | DW3 | |
|------------------------------|---|------|---|-------|-----|--------|------------------|
| | | G | I | G | I | G | I |
| | hexachlorocyclohexane, dieldrin) | | | | | | |
| 35* | Chemical oxygen demand (COD) mg/l O ₂ | | | | | 30 | |
| 36* | Dissolved oxygen saturation rate % O ₂ | >70 | | >50 | | >30 | |
| 37* | Biochemical oxygen demand (BOD ₅) (at 20°C without nitrification) mg/l O ₂ | <3 | | <5 | | <7 | |
| 38 | Nitrogen by Kjeldahl method (except NO ₃) mg/l N | 1 | | 2 | | 3 | |
| 39 | Ammonia NH ₄ mg/l | 0.05 | | 1 | 1.5 | 2 | 4 ^(O) |
| 40 | Substances extractable with chloroform mg/l SEC | 0.1 | | 0.2 | | 0.5 | |
| 43 | Total coliforms /100 ml 37°C | 50 | | 5,000 | | 50,000 | |
| 44 | Faecal coliforms /100 ml | 20 | | 2,000 | | 20,000 | |
| 45 | Faecal streptococci /100 ml | 20 | | 1,000 | | 10,000 | |

(1) The values given are upper limits set in relation to the mean annual temperature (high and low).

(2) This parameter has been included to satisfy the ecological requirements of certain types of environment.

* See regulation 6(1)(d)

(O) See regulation 6(1)(b)

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| No in Annex II to 75/440/EEC | Parameters | DW1 | | DW2 | | DW3 | |
|------------------------------|------------|-------------------------|---|-------------------------|---|-----|---|
| | | G | I | G | I | G | I |
| 46 | Salmonella | Not Present in 5,000 ml | | Not Present in 1,000 ml | | | |

(1) The values given are upper limits set in relation to the mean annual temperature (high and low).

(2) This parameter has been included to satisfy the ecological requirements of certain types of environment.

* See regulation 6(1)(d)

(O) See regulation 6(1)(b)

SCHEDULE 2

regulation 8

Part I

Method of Measuring the Values of Parameters

| No. in Annex I to 79/869 / EEC | Parameters | Unit | Limit of detection ¹ | Precision ² | Accuracy ³ | Method of measurement | Materials recommended for the container |
|--------------------------------|--------------------------------------|---------------|---------------------------------|------------------------|-----------------------|---|---|
| 1 | pH | pH unit | — | 0.1 | 0.2 | Electrometry, measured in situ at the time of sampling without prior treatment of the sample. | |
| 2 | Coloration (after simple filtration) | mg/l Pt Scale | 5 | 10% | 20% | Filtering through a glass fibre membrane. Photometric method using platinum-cobalt scale. | |

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| No. in Annex I to 79/869 / EEC | Parameters | mg/l SS | Limit of detection ¹ | Precision ² | Accuracy ³ | Method of measurement | Materials recommended for the container |
|--------------------------------|---------------------------|---------------------------|---------------------------------|------------------------|-----------------------|---|---|
| 3 | Total suspended solids | mg/l SS | — | 5% | 10% | Filtering through a 0.45 µm filter membrane, drying at 105°C and weighing. Centrifuging (for at least 5 mins with mean acceleration of 2,800 to 3,200 g), drying at 105°C and weighing. | |
| 4 | Temperature°C | | — | 0.5 | 1 | Thermometry. Measured in situ at the time of sampling without prior treatment of the sample. | |
| 5 | Conductivityµs/cm at 20°C | | — | 5% | 10% | Electrometry. | |
| 6 | Odour | (dilution factor at 25°C) | — | — | — | By successive dilutions. | Glass. |
| 7 | Nitrates | mg/l NO ₃ | 2 | 10% | 20% | Molecular absorption spectrophotometry. | |
| 8 | Fluorides | mg/l F | 0.05 | 10% | 20% | Molecular absorption spectrophotometry after distillation if necessary. Ion | |

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| <i>No. in Annex I to 79/869 / EEC</i> | <i>Parameters</i> | <i>Limit of detection¹</i> | <i>Precision²</i> | <i>Accuracy³</i> | <i>Method of measurement</i> | <i>Materials recommended for the container</i> |
|---------------------------------------|------------------------------|--|--------------------------------------|--------------------------------------|---|--|
| | | | | | | selective electrodes. |
| 10 | Dissolved iron mg/l Fe | 0.02 | 10% | 20% | Atomic absorption spectrophotometry after filtering through a filter membrane (0.45 µm). Molecular absorption spectrophotometry after filtering through a 0.45 µm filter membrane. | |
| 11 | Manganese mg/l Mn | 0.01 ⁴ 0.02 ⁵ | 10% ⁴ 10% ⁵ | 20% ⁴ 20% ⁵ | Atomic absorption spectrophotometry. Atomic absorption spectrophotometry. Molecular absorption spectrophotometry. | |
| 12 | Copper ¹² mg/l Cu | 0.005 0.02 ⁶ | 10% 10% ⁶ | 20% 20% ⁶ | Atomic absorption spectrophotometry. Polarography. Atomic absorption spectrophotometry. Molecular absorption spectrophotometry. Polarography. | |
| 13 | Zinc ¹² mg/l Zn | 0.01 ⁴ 0.02 | 10% ⁴ 10% | 20% ⁴ 20% | Atomic absorption spectrophotometry. | |

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| <i>No. in Annex I to 79/869 / EEC</i> | <i>Parameters</i> | <i>Limit of detection¹</i> | <i>Precision²</i> | <i>Accuracy³</i> | <i>Method of measurement</i> | <i>Materials recommended for the container</i> |
|---------------------------------------|--------------------------------------|---|--------------------------------------|--------------------------------------|---|---|
| | | | | | Atomic absorption spectrophotometry. Molecular absorption spectrophotometry. | |
| 14 | Boron ¹² mg/l B | 0.1 | 10% | 20% | Molecular absorption spectrophotometry. Atomic absorption spectrophotometry. | Materials not containing boron in any significant quantities. |
| 19 | Arsenic ¹² mg/l As | 0.002 ⁴ 0.01 ⁷ | 20% ⁴ 10% ⁷ | 20% ⁴ 20% ⁷ | Atomic absorption spectrophotometry. | |
| 20 | Cadmium ¹² mg/l Cd | 0.0002 0.001 ⁷ | 30% | 30% | Atomic absorption spectrophotometry. Polarography. | |
| 21 | Total chromium ¹² mg/l Cr | 0.01 | 20% | 30% | Atomic absorption spectrophotometry. Molecular absorption spectrophotometry. | |
| 22 | Lead ¹² mg/l Pb | 0.01 | 20% | 30% | Atomic absorption spectrophotometry. Polarography. | |
| 23 | Selenium ¹² mg/l Se | 0.005 | 10% | 10% | Atomic absorption spectrophotometry. | |
| 24 | Mercury ¹² mg/l Hg | 0.0001 0.0002 ⁷ | 30% | 30% | Flameless atomic absorption spectrophotometry | |

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| No. in Annex I to 79/869 / EEC | Parameters | Limit of detection ¹ | Precision ² | Accuracy ³ | Method of measurement | Materials recommended for the container |
|--------------------------------|--|---------------------------------|-------------------------|-------------------------|---|---|
| | | | | | | (cold vaporisation). |
| 25 | Barium ¹² mg/l Ba | 0.02 | 15% | 30% | Atomic absorption spectrophotometry. | |
| 26 | Cyanide mg/l CN | 0.01 | 20% | 30% | Molecular absorption spectrophotometry. | |
| 27 | Sulphates mg/l SO ₄ | 10 | 10% | 10% | Gravimetric analysis. EDTA compleximetry. Molecular absorption spectrophotometry. | |
| 28 | Chlorides mg/l Cl | 10 | 10% | 10% | Titration (Mohr's method). Molecular absorption spectrophotometry. | |
| 29 | Surfactants (reacting with methylene blue) mg/l (lauryl sulphate) | 0.05 | 20% | | Molecular absorption spectrophotometry. | |
| 30 | Phosphates mg/l P ₂ O ₅ | 0.02 | 10% | 20% | Molecular absorption spectrophotometry. | |
| 31 | Phenols (phenol index) parani-traniline 4 amino-antipyrene mg/l C ₆ H ₅ OH | 0.0005 0.001 ⁸ | 0.0005 30% | 0.0005 50% | Molecular absorption spectrophotometry. 4 aminoantipyrene method. Paranitraniline method. | Glass. |
| 32 | Dissolved or emulsified hydro-carbons (after extraction) mg/l | 0.01 0.04 ⁵ | 20% 20% ⁵ | 30% 30% ⁵ | Infra-red spectrometry after extraction by carbon tetrachloride. Gravimetry | Glass. |

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| No. in Annex I to 79/869 / EEC | Parameters | | Limit of detection ¹ | Precision ² | Accuracy ³ | Method of measurement | Materials recommended for the container |
|--------------------------------|---|---------------------|---------------------------------|------------------------|-----------------------|---|---|
| | by petroleum ether) | | | | | after extraction by petroleum ether. | |
| 33 | Polycyclic aromatic hydrocarbons ¹² | mg/l | 0.00004 | 50% | 50% | Measurement of fluorescence in the UV after thin layer chromatography. Comparative measurements in relation to a mixture of six control substances with the same concentration. ¹⁰ | Glass or aluminium. |
| 34 | Total pesticides (parathion, hexachlorocyclohexane, dieldrin) ¹² | mg/l | 0.0001 | 50% | 50% | Gas or liquid chromatography after extraction by suitable solvents and purification. Identification of the constituents of the mixture. Quantitative analysis. ¹¹ | Glass. |
| 35 | Chemical oxygen demand (COD) | mg/l O ₂ | 15 | 20% | 20% | Potassium dichromate method. | |
| 36 | Dissolved oxygen | % O ₂ | 5 | 10% | 10% | Winkler's method. Electro- | Glass. |

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|--------------------------------|--|---------------------------------------|------------------------|-----------------------|---|---|
| 37 | saturation rate Biochemical oxygen demand (BOD ₅) (at 20°C without nitrification) | 2 | 1.5 | 2 | chemical method. Determination of dissolved oxygen before and after five day incubation at 20°C ± 1°C in complete darkness. Addition of a nitrification inhibitor. | |
| 38 | Nitrogen, mg/l N Kjeldahl method (except NO ₂ or NO ₃) | 0.3 | 0.5 | 0.5 | Mineralisation, distillation by the Kjeldahl method and ammonium determination by means of molecular absorption spectrophotometry or titration. | |
| 39 | Ammonium mg/l NH ₄ | 0.01 ⁴ | 0.03 ⁴ | 0.03 ⁴ | Molecular absorption spectrophotometry. | |
| 40 | Substances extractable with chloroform | 0.1 ⁵ (¹³) | 10% ⁵ | 20% ⁵ | Extraction at neutral pH value by purified chloroform, evaporation in vacuo at room | |

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| No. in Annex I to 79/869 / EEC | Parameters | Limit of detection ¹ | Precision ² | Accuracy ³ | Method of measurement | Materials recommended for the container |
|--------------------------------|-----------------|---------------------------------|------------------------|-----------------------|--|---|
| 43 | Total coliforms | /100 ml | 5 ⁴ | 500 ⁹ | temperature, weighing of residue. Culture at 37°C on an appropriate specific solid medium (such as Tergitol lactose agar, Endo agar, 0.4% Teepol broth) with filtration ⁴ or without filtration ⁹ and colony count. Samples must be diluted or, where appropriate, concentrated in such a way as to contain between 10 and 100 colonies. If necessary, identification by gasification. Alternative method: — Method of dilution | Sterilised glass. |

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| No. in Annex I to 79/869 / EEC | Parameters | Limit of detection ¹ | Precision ² | Accuracy ³ | Method of measurement | Materials recommended for the container |
|--------------------------------|------------------|---------------------------------|------------------------|-----------------------|---|---|
| 44 | Faecal coliforms | /100 ml | 2 ⁴ | 200 ⁹ | with fermentation in liquid substrates in at least three tubes in three dilutions. Sub-culturing of the positive tubes on a confirmation medium. Count according to MPN (most probable number). Incubation temperature 37°C ± 1°C. Culture at 44°C on an appropriate specific solid medium (such as Tergitol lactose agar, Endo agar, 0.4% Teepol broth) with filtration ⁴ or without filtration ⁹ and colony count. Samples | Sterilised glass. |

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| <i>No. in Annex I to 79/869 / EEC</i> | <i>Parameters</i> | <i>Limit of detection¹</i> | <i>Precision²</i> | <i>Accuracy³</i> | <i>Method of measurement</i> | <i>Materials recommended for the container</i> |
|---------------------------------------|-------------------|---------------------------------------|------------------------------|-----------------------------|--|--|
| | | | | | <p>must be diluted or, where appropriate, concentrated in such a way as to contain between 10 and 100 colonies. If necessary, identification by gasification.</p> <p>Alternative method: — Method of dilution with fermentation in liquid substrates in at least three tubes in three dilutions. Sub-culturing of the positive tubes on a confirmation medium. Count according to MPN (most probable number). Incubation temperature 44°C ± 0.5°C.</p> | |

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| <i>No. in Annex I to 79/869 / EEC</i> | <i>Parameters</i> | <i>Limit of detection¹</i> | <i>Precision²</i> | <i>Accuracy³</i> | <i>Method of measurement</i> | <i>Materials recommended for the container</i> |
|---------------------------------------|-----------------------------|---------------------------------------|------------------------------|-----------------------------|---|--|
| 45 | Faecal streptococci /100 ml | 2 ⁴ 200 ⁹ | | | Culture at 37°C on an appropriate specific solid medium (such as sodium azide) with filtration ⁴ or without filtration ⁹ and colony count. Samples must be diluted or, where appropriate, concentrated in such a way as to contain between 10 and 100 colonies. | |
| | | | | | Alternative method: — Method of dilution in sodium azide broth in at least three tubes in three dilutions. Count according to MPN (most | |

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|--------------------------------|--|---------------------------------|------------------------|-----------------------|--|---|
| 46 | Salmonella 1/5,000 ml ¹⁴ 1/1,000 ml ¹⁵ | | | | probable number. Concentration by filtration (on membrane or appropriate filter). Inoculation into pre-enrichment medium. Enrichment and transfer into isolating gelese. Identification. | Sterilised glass. |

- 1 "Limit of detection" means the minimum value of the parameter examined which it is possible to detect.
- 2 "Precision" means the range within which 95% of the results of measurements made on a single sample, using the same method, are located.
- 3 "Accuracy" means the difference between the true value of the parameter examined and the average experimental value obtained.
- 4 For values in the column of Category DW1 in Schedule 1.
- 5 For waters classified as DW2 or DW3.
- 6 For waters classified as DW3.
- 7 For values in the I columns of Schedule 1.
- 8 For values in the I column of Category DW1, and values in Category DW3 in Schedule 1.
- 9 For values in the G columns of Categories DW2 and DW3 in Schedule 1
- 10 Mixture of six standard substances all of the same concentration to be taken into consideration: fluoranthene; 3, 4-benzofluoranthene; 11, 12-benzofluoranthene; 3, 4-benzopyrene; 1, 12 benzoperylene; indano/1, 2, 3-cd/pyrene.
- 11 Mixture of three substances all of the same concentration to be taken into consideration; parathion, hexachlorocyclohexane, dieldrin.
- 12 If the samples contain so much suspended matter as to require special preliminary treatment, the accuracy values shown in the above Table may as an exception be exceeded and are to be regarded as a target. The samples must be treated so as to ensure that the analysis covers the largest quantity of substances to be measured.
- 13 As this method is not in current use in all Member States it is not certain that the limit of detection required for checking values can be attained.
- 14 Absence in this volume for values in the G column of Category DW1 in Schedule 1.
- 15 Absence in this volume for values in the G column of Category DW2 in Schedule 1.

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Part II

Minimum Annual Frequency of Sampling for each Parameter

| Population Served | Classification DW1 | | | Classification DW2 | | | Classification DW3 | | |
|---------------------|--------------------|-----------------|------------------|--------------------|-----------------|------------------|--------------------|-----------------|------------------|
| | I ¹ | II ² | III ³ | I ¹ | II ² | III ³ | I ¹ | II ² | III ³ |
| <10,000 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 |
| > 10,000 to ≤30,000 | 1 | 1 | 1 | 2 | 1 | 1 | 3 | 1 | 1 |
| >30,000 to ≤100,000 | 2 | 1 | 1 | 4 | 2 | 1 | 6 | 2 | 1 |
| >100,000 | 3 | 2 | 1 | 8 | 4 | 1 | 12 | 4 | 1 |

1 This column applies to the parameters –pH, coloration, total suspended solids, temperature, conductivity, odour, nitrates, chlorides, phosphates, chemical oxygen demand (COD), dissolved oxygen saturation rate, biochemical oxygen demand (BOD₅) and ammonium.

2 This column applies to the parameters — dissolved iron, manganese, copper, zinc, sulphates, surfactants, phenols, nitrogen by the Kjeldahl method, total coliforms and faecal coliforms.

3 This column applies to the parameters — fluorides, boron, arsenic, cadmium, total chromium, lead, selenium, mercury, barium, cyanide, dissolved or emulsified hydrocarbons, polycyclic aromatic hydrocarbons, total pesticides, substances extractable by chloroform, faecal streptococci and salmonella.

EXPLANATORY NOTE

(This note is not part of the Regulations.)

These Regulations prescribe a system for classifying the quality of waters intended for abstraction for drinking water according to their suitability for abstraction by the Department of the Environment for supply after treatment as drinking water.

The classifications DW1, DW2 and DW3 prescribed by regulation 3 reflect the values assigned by Directive 75/440/EEC (the quality required of surface water intended for abstraction of drinking water) to the parameters listed in Schedule 1 to the Regulations. The values in the “I” column of the Schedule (regulation 4) represent those values which the Department is required to meet by the Directive.

The values in the “G” column of the Schedule (regulation 5) are values which the Department is required to endeavour to respect when discharging its water pollution control functions.

Regulation 6 sets out the standards which waters will be required to meet to comply with the Regulations.

The Department is also required to draw up a systematic plan of action for the improvement of the waters (regulation 11).

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The Regulations also incorporate the methods of measurement and frequency of sampling and analysis in 79/869/EEC laid down in that Directive for those parameters.

The Surface Waters (Classification) Regulations (Northern Ireland) 1995 are revoked as a consequence of these Regulations.

Copies of the Directives may be obtained from The Stationery Office Ltd, 16 Arthur Street, Belfast BT1 4GD.