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STATUTORY INSTRUMENTS

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**1996 No. 3001**

**WATER RESOURCES, ENGLAND AND WALES**

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

<i>Made</i>	- - - -	<i>28th November 1996</i>
<i>Laid before Parliament</i>		<i>6th December 1996</i>
<i>Coming into force</i>	- -	<i>6th January 1997</i>

The Secretary of State for the Environment and the Secretary of State for Wales, acting jointly in exercise of the powers conferred on them by sections 82, 102 and 219(2) of the Water Resources Act 1991<sup>(1)</sup> and of all other powers enabling them in that behalf, hereby make the following Regulations:

**Citation, commencement and interpretation**

1.—(1) These Regulations may be cited as the Surface Waters (Abstraction for Drinking Water) (Classification) Regulations 1996 and shall come into force on 6th January 1997.

(2) Expressions used in these Regulations which are also used in Directive 75/440/EEC<sup>(2)</sup> (quality required of surface waters used for abstraction of drinking water) or Directive 79/869/EEC<sup>(3)</sup> (methods of measurement and frequency of sampling and analysis of such waters) shall have the same meaning as in those Directives.

(3) Any reference in these Regulations 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.

**Classification of waters**

2. The classifications DW1, DW2 and DW3 and the criteria for those classifications set out in Schedule 1 shall apply for classifying inland freshwaters by reference to their suitability for abstraction for supply as drinking water.

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(1) 1991 c. 57; see section 221(7) as to the joint exercise of functions exercisable concurrently.  
(2) O.J. No. L 194, 25.7.75, p. 26; relevant amendments were made by Directive 79/869/EEC.  
(3) O.J. No. L 271, 29.10.79, p. 44.

### **Compliance with relevant limits**

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

- (a) 95 per cent of the samples taken in relation to those waters in accordance with regulation 5 comply with the limit;
- (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) above if they are the result of a flood, natural disaster or abnormal weather conditions.

(3) Paragraph (1)(b) above shall not apply in the case of the limits specified in Schedule 1 in relation to temperature.

### **Waivers**

4.—(1) Subject to the following provisions of this regulation, the Environment Agency may waive any requirement to comply with the relevant limit value for any parameter in relation to waters classified under these Regulations if the Agency considers it appropriate to do so—

- (a) as a result of any flood or other natural disaster;
- (b) in the case of a limit value marked (O) in Schedule 1, as a result of exception 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; or
- (d) in the case of a shallow lake or virtually stagnant surface water, for parameters marked with an asterisk in Schedule 1.

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

(3) Paragraph (1)(d) above 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) Where the Environment Agency exercises its power under paragraph (1) above, it shall immediately notify the Secretary of State in writing giving details thereof, stating its reasons and specifying the period of the waiver.

(5) 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**

5.—(1) Subject to regulation 6, the Environment Agency shall ensure that waters classified under these Regulations are sampled, and samples are analysed, in accordance with paragraphs (2) to (5) below.

(2) Samples shall always be taken at the same sampling point at times when water is being abstracted for supply as drinking water, and the sampling point chosen by the Environment Agency 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 Schedule 1 for the relevant class of waters using methods of measurement which are at least as reliable as those specified in Part I of Schedule 2 and respect the values shown in that Part for limits of detection, precision and accuracy.

(4) Sampling and analysis shall be carried out for each parameter listed in Schedule 1 for the relevant class of waters at the frequency fixed by the Environment Agency in relation to the sampling point and, in fixing the frequency, the Environment Agency 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 I 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 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.**

6.—(1) Where a survey by the Environment Agency of any waters classified under these Regulations shows that the values obtained for any parameter are considerably superior to the quality required by Schedule 1, the Agency may reduce the frequency of sampling of the waters in relation to that parameter.

(2) The Environment Agency may decide that regular sampling and analysis of any waters classified under these Regulations is not needed in relation to any parameter if—

- (a) the requirements of paragraph (1) above 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 in relation to that parameter to the minimum required for waters classified as DW1.

#### **Modification of the Water Resources Act 1991**

7.—(1) Section 83 of the Water Resources Act 1991 (water quality objectives) shall have effect—

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

(2) Section 104(1)(c) of the Water Resources Act 1991 (meaning of “controlled waters”) shall have effect as if “inland freshwaters” included all waters which need to be classified under these Regulations to give effect to Directive [75/440/EEC](#) in England and Wales.

(3) Section 202(2) of the Water Resources Act 1991<sup>(4)</sup> (information in connection with the control of pollution) shall have effect as if it conferred power on the Environment Agency to require the furnishing of information reasonably required by the Agency for the purposes of giving effect to Directives [75/440/EEC](#) and [79/869/EEC](#).

### **Consequential amendments and revocations**

**8.**—(1) Regulation 23 of the Water Supply (Water Quality) Regulations 1989<sup>(5)</sup> shall be amended as follows—

(a) in paragraph (2) for the words from “in accordance with” to the end of that paragraph there shall be substituted the words “in accordance with section 83(1) of the Water Resources Act 1991 is, as appropriate, DW1 or DW2 or DW3, as set out in the Surface Waters (Abstraction for Drinking Water) (Classification) Regulations 1996”; and

(b) paragraph (3) shall be omitted.

(2) The Surface Waters (Classification) Regulations 1989<sup>(6)</sup> are hereby revoked.

26th November 1996

*John Gummer*  
Secretary of State for the Environment  
Department of the Environment

28th November 1996

*William Hague*  
Secretary of State for Wales

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<sup>(4)</sup> Relevant amendments were made by paragraph 128 of Schedule 22 to the Environment Act 1995 (c. 25).

<sup>(5)</sup> S.I. 1989/1147; relevant amendments were made by S.I. 1989/1384 and S.I. 1991/1837.

<sup>(6)</sup> S.I. 1989/1148.

## SCHEDULE 1

Regulations 2, 3(1) and (3), 4(1), 5(3) and  
(4) and 6(1)

## CRITERIA FOR CLASSIFICATION OF WATERS

The limits set out below are maxima

No. in Annex II to 75/440/EEC	Parameters	Units	Limits		
			DW1	DW2	DW3
2	Coloration (after simple filtration)	mg/l Pt Scale	20 <sup>(O)</sup>	100 <sup>(O)</sup>	200 <sup>(O)</sup>
4	Temperature	°C	25 <sup>(O)</sup>	25 <sup>(O)</sup>	25 <sup>(O)</sup>
7*	Nitrates	mg/l NO <sub>3</sub>	50 <sup>(O)</sup>	50 <sup>(O)</sup>	50 <sup>(O)</sup>
8	Fluorides	mg/l F	1.5		
10*	Dissolved iron	mg/l Fe	0.3	2	
12	Copper	mg/l Cu	0.05 <sup>(O)</sup>		
13	Zinc	mg/l Zn	3	5	5
19	Arsenic	mg/l As	0.05	0.05	0.1
20	Cadmium	mg/l Cd	0.005	0.005	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
23	Selenium	mg/l Se	0.01	0.01	0.01
24	Mercury	mg/l Hg	0.001	0.001	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 <sub>4</sub>	250	250 <sup>(O)</sup>	250 <sup>(O)</sup>
31	Phenols (phenol index) paranitraniline 4- aminoantipyrine	mg/l C <sub>6</sub> H <sub>5</sub> OH	0.001	0.005	0.1
32	Dissolved or emulsified hydrocarbons	mg/l	0.05	0.2	1

<sup>(O)</sup> See regulation 4(1)(b).

\* See regulation 4(1)(d).

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No. in Annex II to 75/440/EEC	Parameters	Units	Limits		
			DW1	DW2	DW3
33	Polycyclic aromatic hydrocarbons	mg/l	0.0002	0.0002	0.001
34	Total pesticides (parathion, hexachlorocyclohexane, dieldrin)	mg/l	0.001	0.0025	0.005
39	Ammonium	mg/l NH <sub>4</sub>		1.5	4 <sup>(O)</sup>

(O) See regulation 4(1)(b).

\* See regulation 4(1)(d).

## SCHEDULE 2

Regulation 5(3) and (4)

### PART I

#### METHOD OF MEASURING THE VALUES OF PARAMETERS

No. in Annex II to 75/440/EEC	Parameters	Units	Limit of detection <sup>1</sup>	Precision <sup>2</sup>	Accuracy <sup>3</sup>	Method of measurement	Materials recommended for the container
2	Coloration (after simple filtration)	mg/l Pt Scale	5	10%	20%	— Filtering through a glass fibre membrane.  Photometric method using platinum-cobalt scale.	
4	Temperature	°C	—	0.5	1	— Thermometry.  Measured in situ at the time of sampling	

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No. in Annex II to 75/440/EEC	Parameters	Units	Limit of detection <sup>1</sup>	Precision <sup>2</sup>	Accuracy <sup>3</sup>	Method of measurement	Materials recommended for the container
						without prior treatment of the sample.	
7	Nitrates	mg/l NO <sub>3</sub>	2	10%	20%	— Molecular absorption spectrophotometry.	
8	Fluorides	mg/l F	0.05 <sup>7</sup>	10% <sup>7</sup>	20% <sup>7</sup>	— Molecular absorption spectrophotometry after distillation if necessary. — Ion selective electrodes.	
10	Dissolved iron	mg/l Fe	0.02 <sup>5</sup>	10% <sup>5</sup>	20% <sup>5</sup>	— Atomic absorption spectrophotometry after filtering through 0.45 µm filter membrane. — Molecular absorption spectrophotometry after filtering through 0.45 µm filter membrane.	
12	Copper <sup>4</sup>	mg/l Cu	0.005 <sup>7</sup>	10% <sup>7</sup>	20% <sup>7</sup>	— Atomic absorption spectrophotometry. — Polarography.	
13	Zinc <sup>4</sup>	mg/l Zn	0.02	10%	20%	— Atomic absorption spectrophotometry.	

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No. in Annex II to 75/440/EEC	Parameters	Units	Limit of detection <sup>1</sup>	Precision <sup>2</sup>	Accuracy <sup>3</sup>	Method of measurement	Materials recommended for the container
19	Arsenic <sup>4</sup>	mg/l As	0.01	10%	20%	— Molecular absorption spectrophotometry. — Atomic absorption spectrophotometry. — Molecular absorption spectrophotometry.	
20	Cadmium <sup>4</sup>	mg/l Cd	0.001	30%	30%	— Atomic absorption spectrophotometry. — Polarography.	
21	Total chromium <sup>4</sup>	mg/l Cr	0.01	20%	30%	— Atomic absorption spectrophotometry. — Molecular absorption spectrophotometry.	
22	Lead <sup>4</sup>	mg/l Pb	0.01	20%	30%	— Atomic absorption spectrophotometry. — Polarography.	
23	Selenium <sup>4</sup>	mg/l Se	0.005	10%	10%	— Atomic absorption spectrophotometry.	
24	Mercury <sup>4</sup>	mg/l Hg	0.0002	30%	30%	— Flameless atomic absorption spectrophotometry (cold vaporisation).	
25	Barium <sup>4</sup>	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 <sub>4</sub>	10	10%	10%	— Gravimetric analysis. — EDTA compleximetry.	



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No. in Annex II to 75/440/EEC	Parameters	Units	Limit of detection <sup>1</sup>	Precision <sup>2</sup>	Accuracy <sup>3</sup>	Method of measurement	Materials recommended for the container
31	Phenols (phenol index) paranitraniline 4-aminoantipyrene	mg/l C <sub>6</sub> H <sub>5</sub> OH	0.0005 <sup>7</sup> 0.001 <sup>8</sup>	0.0005 <sup>7</sup> 30% <sup>8</sup>	0.0005 <sup>7</sup> 50% <sup>8</sup>	<ul style="list-style-type: none"> <li>— Molecular absorption spectrophotometry.</li> <li>— Glass. Molecular absorption spectrophotometry 4-aminoantipyrene method.</li> <li>— Paranitraniline method.</li> </ul>	Glass.
32	Dissolved or emulsified hydrocarbons	mg/l	0.01 <sup>7</sup> 0.04 <sup>8</sup>	20% <sup>7</sup> 20% <sup>8</sup>	30% <sup>7</sup> 30% <sup>8</sup>	<ul style="list-style-type: none"> <li>— Infra-red spectrometry after extraction by carbon tetrachloride.</li> <li>— Gravimetry after extraction by petroleum ether.</li> </ul>	Glass
33	Polycyclic aromatic hydrocarbons <sup>4</sup>	mg/l	0.00004	50%	50%	<ul style="list-style-type: none"> <li>— Measurement of fluorescence in the UV after thin layer chromatography.</li> </ul>	Glass or aluminium.
Comparative measurements in relation to a mixture of six control substances with the same concentration.							

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No. in Annex II to 75/440/EEC	Parameters	Units	Limit of detection <sup>1</sup>	Precision <sup>2</sup>	Accuracy <sup>3</sup>	Method of measurement	Materials recommended for the container
34	Total pesticides (parathion, hexachlorocyclohexane, dieldrin) <sup>4</sup>	mg/l	0.0001	50%	50%	— Gas or liquid chromatography after extraction by suitable solvents and purification.	Glass.
						Identification of the constituents of the mixture.	
						Quantitative analysis. <sup>10</sup>	
39	Ammonium	mg/l NH <sub>4</sub>	0.1 <sup>8</sup>	10% <sup>8</sup>	20% <sup>8</sup>	— Molecular absorption spectrophotometry.	

- 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** 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. These samples must be treated so as to ensure that the analysis covers the largest quantity of substances to be measured.
- 5** For waters classified as DW1 or DW2.
- 6** For waters classified as DW3.
- 7** For waters classified as DW1.
- 8** For waters classified as DW2 or DW3.
- 9** 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; indeno (1,2,3-cd) pyrene.
- 10** Mixture of three substances all of the same concentration to be taken into consideration: parathion, hexachlorocyclohexane, dieldrin.

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## PART II

### MINIMUM ANNUAL FREQUENCY OF SAMPLING FOR EACH PARAMETER

Population served	Classification DW1			Classification DW2			Classification DW3			
	A <sup>1</sup>	B <sup>2</sup>	C <sup>3</sup>	D <sup>4</sup>	E <sup>5</sup>	F <sup>6</sup>	G <sup>4</sup>	H <sup>7</sup>	J <sup>6</sup>	
≤10,000	1	1	1	1	1	1	1	2	1	1
>10,000 to ≤30,000	1	1	1	1	2	1	1	3	1	1
>30,000 to ≤100,000	2	1	1	1	4	2	1	6	2	1
>100,000	3	2	1	1	8	4	1	12	4	1

1 This column applies to the parameters—coloration, temperature and nitrates.

2 This column applies to the parameters—dissolved iron, copper, zinc, sulphates and phenols.

3 This column applies to the parameters—fluorides, arsenic, cadmium, total chromium, lead, selenium, mercury, barium, cyanide, dissolved or emulsified hydrocarbons, polycyclic aromatic hydrocarbons and total pesticides.

4 This column applies to the parameters—coloration, temperature, nitrates and ammonium.

5 This column applies to dissolved iron, zinc, sulphates and phenols.

6 This column applies to the parameters—arsenic, cadmium, total chromium, lead, selenium, mercury, barium, cyanide, dissolved or emulsified hydrocarbons, polycyclic aromatic hydrocarbons and total pesticides.

7 This column applies to the parameters—zinc, sulphates and phenols.

### EXPLANATORY NOTE

*(This note is not part of the Regulations)*

These Regulations prescribe a system for classifying the quality of inland freshwaters according to their suitability for abstraction for supply as drinking water.

The classifications DW1, DW2 and DW3 reflect the mandatory values assigned by Directive [75/440/EEC](#) (quality required of surface waters intended for abstraction of drinking water) to the parameters listed in Schedule 1 to the Regulations.

The Regulations also incorporate the methods of measurement, and frequency of sampling and analysis, for those parameters laid down in Directive [79/869/EEC](#).

The Regulations, together with regulation 23 of the Water Supply (Water Quality) Regulations 1989 and the Surface Water (Abstraction for Drinking Water) Directions 1996, complete the transposition of Directives [75/440/EEC](#) and [79/869/EEC](#) for England and Wales.

Copies of the Surface Waters (Abstraction for Drinking Water) Directions 1996 may be obtained from—

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- Water Quality Division,  
Department of the Environment,  
Romney House,  
43 Marsham Street,  
London SW1P 3PY.
- Environment Division,  
Welsh Office,  
Cathays Park,  
Cardiff CF1 3NQ.

A compliance cost assessment of the effect that these Regulations would have on the cost of business is also available from the offices listed above.