

## SCHEDULE 1

Regulations 2, 11, 12, 13, 18 and 19

## Concentrations or Values

## PART 1

## Wholesomeness

TABLE A:

## MICROBIOLOGICAL PARAMETERS

Prescribed concentrations or values Parameters	Maximum concentration or value	Units of Measurement
<i>Escherichia coli</i> ( <i>E. coli</i> )	0	Number/100ml
Enterococci	0	Number/100ml
<b>In the case of water in bottles or containers:</b>		
<i>Escherichia coli</i> ( <i>E.coli</i> )	0	Number/250ml
Enterococci		Number/250ml
<i>Pseudomonas aeruginosa</i>	0	Number/250ml
Colony count 22°C	100	Number/ml

TABLE B:

## CHEMICAL PARAMETERS

Prescribed concentrations or values Parameters	Maximum concentration or value	Units of Measurement
Acrylamide <sup>(1)</sup>	0.10	µg/l
Antimony	5.0	µg/l
Arsenic	10	µg/l
Benzene	1.0	µg/l
Benzo(a)pyrene	0.010	µg/l
Boron	1.0	mg/l
Bromate	10	µg/l
Cadmium	5.0	µg/l
Chromium	50	µg/l
Copper	2.0	mg/l
Cyanide	50	µg/l

**Status:** This is the original version (as it was originally made).

Prescribed concentrations or values		Maximum concentration or value	Units of Measurement
<b>Parameters</b>			
1,2 dichloroethane		3.0	µg/l
Epichlorohydrin <sup>(1)</sup>		0.10	µg/l
Fluoride		1.5	mg/l
Lead		10	µg/l
			µg/l
Mercury		1.0	µg/l
Nickel		20	µg/l
Nitrate <sup>(2)</sup>		50	mg/l
Nitrite <sup>(2)</sup>		0.5 (or 0.1 in the case of treatment works)	mg/l
Pesticides <sup>(3)</sup> —	Aldrin	0.030	µg/l
	Dieldrin	0.030	µg/l
	Heptachlor	0.030	µg/l
	Heptachlor epoxide	0.030	µg/l
	Other pesticides	0.10	µg/l
	Pesticides total <sup>(4)</sup>	0.50	µg/l
Polycyclic aromatic hydrocarbons <sup>(5)</sup>		0.10	µg/l
Selenium		10	µg/l
Tetrachloroethene and Trichloroethene <sup>(6)</sup>		10	µg/l
Trihalomethanes: Total <sup>(7)</sup>		100	µg/l
Vinyl chloride <sup>(1)</sup>		0.50	µg/l

(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. This is controlled by product specification.

(2) See also the nitrate-nitrite formula in regulation 4(1)(c).

(3) For these purposes “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 likely to be present in a given supply need be monitored.

(4) “Pesticides total” means the sum of the concentrations of the individual pesticides detected and quantified in the monitoring process.

(5) The specified compounds are:

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

The parametric value applies to the sum of the concentrations of the individual compounds detected and quantified in the monitoring process.

The parametric value applies to the sum of the concentrations of the individual compounds detected and quantified in the monitoring process.

(6) The parametric value applies to the sum of the concentrations of the individual compounds detected and quantified in the monitoring process.

(7) The specified compounds are:

- chloroform
- bromoform
- dibromochloromethane
- bromodichloromethane.

The parametric value applies to the sum of the concentrations of the individual compounds detected and quantified in the monitoring process.

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### National requirements – Prescribed concentrations or values

Parameters	Maximum concentration or value	Units of Measurement
Aluminium	200	µg/l
Colour	20	mg/l Pt/Co
Iron	200	µg/l
Manganese	50	µg/l
Odour	Acceptable to consumers and no abnormal change	
Sodium	200	mg/l
Taste	Acceptable to consumers and no abnormal change	
Tetrachloromethane	3	µg/l
Turbidity	4	NTU

**Status:** This is the original version (as it was originally made).

## PART 2

### Indicator Parameters

**TABLE C:**

**Prescribed concentrations, values or states**

<b>Parameters</b>	<b>Maximum concentration or value</b>	<b>Units of Measurement</b>
Ammonium	0.50	mg/l
Chloride <sup>(1)</sup>	250	mg/l
<i>Clostridium perfringens</i> (including spores)	0	Number/100ml
Coliform bacteria	0	Number/100ml (Number/250ml in the case of water put into bottles or containers)
Colony counts	No abnormal change	Number/ml at 22°C
Conductivity <sup>(1)</sup>	2500	µS/cm at 20°C
Hydrogen ion	9.5 (maximum) 6.5 (minimum) (in the case of still water put into bottles or containers the minimum is 4.5)	pH value pH value
Sulphate <sup>(1)</sup>	250	mg/l
Total organic carbon (TOC)	No abnormal change	mgC/l
Turbidity <sup>(2)</sup>	1	NTU

(1) The water should not be aggressive.

(2) Only in the case of surface water or groundwater that has been influenced by surface water.

## PART 3

### Radioactive substances parameters

**TABLE D:**

**Prescribed values for radon, tritium and indicative dose of water intended for human consumption**

Parameters	Maximum concentration or value	Units of Measurement
Indicative dose (for radioactivity)	0.10	mSv
Radon <sup>(1)</sup>	100	Bq/l
Tritium (for radioactivity) <sup>(2)</sup>	100	Bq/l

- (1) Enforcement action by the local authority is deemed justified on radiological protection grounds without further consideration where radon concentrations exceed 1,000 Bq/l.
- (2) If tritium concentration exceeds its parametric value, an investigation (which may include analysis) of the presence of artificial radionuclides must be carried out.

### SCHEDULE 2

Regulations 2, 9, 18 and 26

#### Monitoring

## PART 1

### Monitoring for Group A parameters

#### Sampling

1.—(1) A local authority must undertake monitoring for Group A parameters in accordance with this Part.

(2) “Monitoring for Group A parameters” means sampling for each parameter listed in column 1 of Table 1 in the circumstances listed in the corresponding entry for that parameter in column 2 of that Table, in order to—

- (a) determine whether or not water complies with the concentrations or values in Schedule 1;
- (b) provide information on the organoleptic and microbiological quality of the water; and
- (c) establish the effectiveness of the treatment of the water, including disinfection.

**Table 1**

#### Group A parameters

Parameter	Circumstances
Aluminium	If used as a water treatment chemical
Ammonium	If chloramination is used

**Status:** This is the original version (as it was originally made).

<b>Parameter</b>	<b>Circumstances</b>
<i>Clostridium perfringens</i> (including spores)	Where the water originates from, or is influenced by, surface waters
Coliform bacteria	In all supplies
Colony counts	In all supplies
Colour	In all supplies
Conductivity	In all supplies
<i>Escherichia coli</i> ( <i>E. coli</i> )	In all supplies
Hydrogen ion concentration	In all supplies
Iron	If used as a water treatment chemical
Manganese	Where the water originates from, or is influenced by, surface waters
Nitrate	If chloramination is used
Nitrite	If chloramination is used
Odour	In all supplies
<i>Pseudomonas aeruginosa</i>	Only in the case of water in bottles or containers
Taste	In all supplies
Turbidity	In all supplies

### Frequency of sampling

2. Sampling for Group A parameters must be carried out at frequencies specified in Table 2.

**Table 2**

**Sampling frequency for Group A parameters**

<i>Volume m<sup>3</sup>/day</i>	<i>Sampling frequency per year</i>
≤10	1
> 10 ≤ 100	2
> 100 ≤ 1,000	4
> 1,000 ≤ 2,000	10
> 2,000 ≤ 3,000	13
> 3,000 ≤ 4,000	16
> 4,000 ≤ 5,000	19
> 5,000 ≤ 6,000	22
> 6,000 ≤ 7,000	25
> 7,000 ≤ 8,000	28

<i>Volume m<sup>3</sup>/day</i>	<i>Sampling frequency per year</i>
> 8,000 ≤ 9,000	31
> 9,000 ≤ 10,000	34
> 10,000	4 + 3 for each 1,000 m <sup>3</sup> /day of the total volume (rounding up to the nearest multiple of 1,000 m <sup>3</sup> /day)

## PART 2

### Monitoring for Group B parameters

#### Sampling

3.—(1) A local authority must undertake monitoring for Group B parameters in accordance with this Part.

(2) “Monitoring for Group B parameters” means sampling for each parameter listed in Part 1 or 2 of Schedule 1 (other than Group A parameters already being sampled under Part 1 of this Schedule)

- (a) in order to provide information necessary to determine whether or not the private water supply satisfies each concentration, value or state specified in either of those Parts of that Schedule; and
- (b) if disinfection is used, to check that disinfection by-products are kept as low as possible without compromising the effectiveness of disinfection.

#### Frequency of sampling

4. Sampling for Group B parameters must be carried out at the frequencies specified in Table 3.

**Table 3**

**Sampling frequency for Group B parameters**

<i>Volume m<sup>3</sup>/day</i>	<i>Sampling frequency per year</i>
≤10	1
> 10 ≤ 3,300	2
> 3,300 ≤ 6,600	3
> 6,600 ≤ 100,00	4
> 10,000 ≤ 100,000	3 + 1 for each 10,000 m <sup>3</sup> /day of the total volume (rounding up to the nearest multiple of 10,000 m <sup>3</sup> /day)
> 100,000	10 + 1 for each 25,000 m <sup>3</sup> /day of the total volume (rounding up to the nearest multiple of 25,000 m <sup>3</sup> /day)

*Status: This is the original version (as it was originally made).*

## PART 3

Minimum frequency for both monitoring for Group A parameters and monitoring for Group B parameters for water put into bottles or containers

<i>Volume<sup>a</sup> of water produced in bottles or containers each day (m<sup>3</sup>)</i>	<i>Monitoring for Group A parameters: number of samples per year</i>	<i>Monitoring for Group B parameters: number of samples per year</i>
≤10	1	1
> 10 ≤ 60	12	1
> 60	1 for each 5 m <sup>3</sup> /day of the total volume (rounding up to the nearest multiple of 5 m <sup>3</sup> /day)	1 for each 100 m <sup>3</sup> /day of the total volume (rounding up to the nearest multiple of 100 m <sup>3</sup> /day)

<sup>a</sup> The volumes are calculated as averages taken over a calendar year.

## PART 4

Variation of monitoring requirements for Group A and Group B parameters

### Variation of sampling frequency

5.—(1) A local authority may reduce the sampling frequencies required for a parameter (other than for *Escherichia coli* (*E. coli*)) under Part 1 or 2 of this Schedule provided that—

- the results from samples taken in respect of that parameter collected at regular intervals over the preceding 3 years are all at less than 60% of the parametric value;
- the results of a risk assessment are considered, and that risk assessment indicates that no factor can be reasonably anticipated to be likely to cause deterioration of the quality of the water for human consumption;
- data collected in the course of discharging its monitoring obligations under this Part are taken into account; and
- at least one sample is taken per year.

(2) A local authority may set a higher frequency for any parameter if it considers it appropriate taking into account the findings of any risk assessment.

### Variation of parameters

6.—(1) A local authority may cease to monitor a parameter (other than *Escherichia coli* (*E. coli*)) otherwise required to be monitored under Part 1 or 2 of this Schedule provided that—

- the results from samples taken in respect of that parameter collected at regular intervals over the preceding 3 years are all at less than 30% of the parametric value;
- the results of a risk assessment are considered, and that risk assessment indicates that no factor can be reasonably anticipated to be likely to cause deterioration of the quality of the water for human consumption; and
- data collected in the course of discharging its monitoring obligations under this Part are taken into account.



(2) A local authority may monitor for other properties, elements, organisms or substances not included as a parameter if it considers it appropriate taking into account the findings of any risk assessment.

### SCHEDULE 3

Regulations 12 and 13

#### Monitoring of radioactive substances

##### **Radon**

**1.—(1)** In relation to the radon parameter in the radioactive substances parameters table, a local authority—

- (a) must ensure that a representative survey is carried out in accordance with sub-paragraph (2) to determine the likelihood of a private water supply failing to comply with the relevant parametric concentration or value specified in the radioactive substances parameters table; and
  - (b) must carry out monitoring where there is reason to believe, on the basis of the results of the representative surveys or other reliable information, including any risk assessment carried out in accordance with regulation 6, that the parametric value for the radon parameter laid down in the radioactive substances parameters table might be exceeded.
- (2) A representative survey must be designed in such a way—
- (a) as to be capable of determining the scale and nature of likely exposure to radon in water intended for human consumption originating from different types of groundwater sources and wells in different geological areas; and
  - (b) that underlying parameters, especially the geology and hydrology of the area, radioactivity of rock or soil, and well type, can be identified and used to direct further action to areas of likely high exposure to radon.

##### **Tritium**

**2.—(1)** In relation to the tritium parameter in the radioactive substances parameters table, a local authority—

- (a) must carry out monitoring where an anthropogenic source of tritium or other artificial radionuclides is present within the catchment area and it cannot be shown on the basis of other surveillance programmes or investigations, including any risk assessment carried out in accordance with regulation 6, that the level of tritium is below the parametric value listed in the radioactive substances parameters table; and
  - (b) must carry out an investigation of the presence of other artificial radionuclides if the concentration of tritium exceeds the parametric value listed in the radioactive substances parameters table.
- (2) Where monitoring is required by sub-paragraph (1)—
- (a) it must be carried out at the frequencies as set out for monitoring for Group B parameters in Table 3 in Part 2 of Schedule 2; or
  - (b) it must (in the case of a private water supply falling within the scope of regulation 11(1)) be carried out at least every 5 years or more frequently if the risk assessment referred to under sub-paragraph (1)(a) shows this to be necessary.

**Indicative Dose**

3.—(1) In relation to the indicative dose parameter in the radioactive substances parameters table, a local authority must carry out monitoring where a source of artificial radioactivity or elevated natural radioactivity is present and it cannot be shown on the basis of other surveillance programmes or investigations, including any risk assessment carried out in accordance with regulation 6, that the level of indicative dose is below the parametric value listed in the radioactive substances parameters table.

- (2) Where monitoring is required by sub-paragraph (1) in relation to artificial radionuclides—
  - (a) it must be carried out at the frequencies as set out for monitoring for Group B parameters in Table 3 in Part 2 of Schedule 2; or
  - (b) it must (in the case of a private water supply falling within the scope of regulation 11(1)) be carried out at least every 5 years or more frequently if the risk assessment shows this to be necessary.
- (3) Where monitoring is required by sub-paragraph (1) in relation to a source of elevated natural radioactivity—
  - (a) the local authority—
    - (i) may decide the frequency of monitoring in its area depending on the screening strategy adopted by the authority; and
    - (ii) must notify the Welsh Ministers in writing of its decision under sub-paragraph (i); and
  - (b) the frequency of monitoring decided under paragraph (a)(i) may vary from a single check measurement to the frequencies as set out for monitoring for Group B parameters in Table 3 in Part 2 of Schedule 2.
- (4) Where a local authority decides under sub-paragraph (3) that a single check measurement for natural radioactivity is appropriate, the local authority must carry out a further check if any change occurs in relation to the private water supply which is likely to influence the concentrations of radionuclides in the supply.

**Water treatment**

4. Where treatment to reduce the level of radionuclides in a private water supply has been undertaken, the local authority must monitor the supply for total indicative dose, radon and tritium in accordance with the provisions of this Part and the frequencies as set out for monitoring for Group B parameters in Table 3 in Part 2 of Schedule 2 to verify the continued efficacy of that treatment.

**Averaging**

5. Where a parametric value in the radioactive substances parameters table is exceeded in relation to a particular sample taken by a local authority, the Welsh Ministers must specify, by notice in writing to the local authority, the extent of resampling necessary to ensure that the measured values are representative of an average activity concentration for a full year.

## SCHEDULE 4

Regulations 13 and 14

### Sampling and analysis

## PART 1

### General

#### **Samples: general**

1.—(1) The local authority must ensure, so far as reasonably practicable, that the appropriate requirements are satisfied when—

- (a) taking, handling, transporting and storing a sample required to be taken in accordance with this Schedule;
- (b) analysing such a sample; or
- (c) causing any such sample to be taken, handled, transported, stored or analysed.

(2) In this paragraph, “the appropriate requirements” means such of the following as are applicable—

- (a) the sample is representative of the quality of the water at the time of sampling;
- (b) the person taking a sample is subject to a system of quality control to an appropriate standard checked from time to time by a suitably accredited body;
- (c) the sample is not contaminated when being taken;
- (d) the sample is kept at such a temperature and in such conditions as secure that there is no material alteration of the concentration or value for the measurement or observation of which the sample is intended;
- (e) the sample is analysed as soon as reasonably practicable after it has been taken—
  - (i) by, or under the supervision of, a person who is competent to perform that task; and
  - (ii) with the use of such equipment as is suitable for the purpose;
- (f) the collection and transportation of samples, or measurements recorded by continuous monitoring must be subject to a system of quality control to an appropriate standard checked from time to time by a suitably accredited body.

(3) When undertaking the activity described in—

- (a) sub-paragraph (1)(a), the local authority must demonstrate compliance with any of EN ISO/IEC 17024, EN ISO/EIC 17025, or another equivalent standard accepted at international level;
- (b) sub-paragraph (1)(b), the local authority must demonstrate compliance with EN ISO/EIC 17025 or another equivalent standard accepted at international level.

(4) Implementation of the requirement in sub-paragraph (3)(a) may be delayed for a period of no more than 24 months beginning on the day on which these Regulations come into force.

(5) In this paragraph, “suitably accredited body” means any person accredited by the United Kingdom Accreditation Service<sup>(1)</sup>.

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(1) See S.I. 2009/3155 for the appointment of the United Kingdom Accreditation Service as the national accreditation body.

**Analysing samples: microbiological parameters**

2. For each parameter specified in the first column of Table 1 in Part 2 of this Schedule the method of analysis is specified in the second column of that table.

**Analysing samples: chemical and indicator parameters**

3.—(1) On or before 31 December 2019, the local authority may apply the method of analysis for chemical and indicator parameters in either sub-paragraph (3) or sub-paragraph (4).

(2) After 31 December 2019, the local authority must apply the method of analysis for chemical and indicator parameters in sub-paragraph (4).

(3) For each parameter specified in the first column of Table 2 in Part 2 of this Schedule the method is one that is capable of—

- (a) measuring concentrations and values with the trueness and precision specified in the second and third columns of that table, and
- (b) detecting the parameter at the limit of detection specified in the fourth column of that table.

(4) For each parameter specified in the first column of Table 3 in Part 2 of this Schedule the method is one that is capable of measuring concentrations equal to—

- (a) the parametric value with a limit of quantification of 30% or less of the relevant parametric value (as contained in Schedule 1), and
- (b) the uncertainty of measurement in the second column of that table.

(5) The method of analysis used for odour and taste parameters must be capable of measuring values equal to the parametric value with a precision of 1 dilution number at 25°C.

(6) For these purposes—

- (a) “limit of detection” is—
  - (i) three times the relative within-batch standard deviation of a natural sample containing a low concentration of the parameter; or
  - (ii) five times the relative within-batch standard deviation of a blank sample;
- (b) “precision” (the random error) is twice the standard deviation (within a batch and between batches) of the spread of results about the mean. Acceptable precision is twice the relative standard deviation. Further specifications are set out in ISO 17025;
- (c) “trueness” (the systematic error) is the difference between the mean value of the large number of repeated measurements and the true value. Further specifications are set out in ISO 17025;
- (d) “uncertainty of measurement” is a non-negative parameter characterising the dispersion of the quantity values being measured, based on the information used.

**Authorisation of alternative methods of analysis**

4.—(1) The Welsh Ministers may authorise a method different from those set out in paragraph 3(2) or 3(3) if satisfied that it is at least as reliable.

(2) An authorisation may be time-limited and may be revoked at any time.

**Sampling and analysis by persons other than local authorities**

5.—(1) A local authority may enter into an arrangement for any person to take and analyse samples on its behalf.

(2) A local authority must not enter into an arrangement under sub-paragraph (1) unless—

- (a) it is satisfied that the task will be carried out promptly by a person competent to perform it, and
- (b) it has made arrangements that ensure that any breach of these Regulations is communicated to it immediately, and any other result is communicated to it within 28 days.

## PART 2

### Analytical methods

**Table 1**

**Prescribed methods of analysis for microbiological parameters**

<i>Parameter</i>	<i>Method</i>
Escherichia coli (E. coli)	EN ISO 9308-1 or EN ISO 9308-2
Enterococci	EN ISO 7899-2
Pseudomonas aeruginosa	EN-ISO 16266
Colony count 22°C — enumeration of culturable microorganisms	EN ISO 6222
Colony count 36°C — enumeration of culturable microorganisms	EN ISO 6222
Clostridium perfringens (including spores)	EN ISO 14189

*Status: This is the original version (as it was originally made).*

**Table 2**

**Prescribed performance characteristics for methods of analysis for chemical and indicator parameters: trueness, precision and limit of detection (on or before 31 December 2019)**

<i>Parameter</i>	<i>Trueness % of prescribed concentration or value or specification (except for pH)</i>	<i>Precision % of prescribed concentration or value or specification (except for pH)</i>	<i>Limit of detection % of prescribed concentration or value or specification (except for pH)</i>
Aluminium	10	10	10
Ammonium	10	10	10
Antimony	25	25	25
Arsenic	10	10	10
Benzene	25	25	25
Benzo(a)pyrene	25	25	25
Boron	10	10	10
Bromate	25	25	25
Cadmium	10	10	10
Chloride	10	10	10
Chromium	10	10	10
Colour	10	10	10
Conductivity	10	10	10
Copper	10	10	10
Cyanide <sup>(1)</sup>	10	10	10

(1) The method of analysis should determine total cyanide in all forms.

(2) EN ISO 8476.

(3) The performance characteristics apply to each individual pesticide and will depend on the pesticide concerned. 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.

(4) The performance characteristics apply to the individual substances specified at 25% of the parametric value in Table B of Part 1 of Schedule 1.

(5) The performance characteristics apply to the individual substances specified at 50% of the parametric value in Table B of Part 1 of Schedule 1.

(6) The performance characteristics apply to the prescribed value of 4 NTU.

(7) The performance characteristics apply to the specification of 1 NTU for surface waters or ground waters influenced by surface water.

<b>Parameter</b>	<b>Trueness % of prescribed concentration or value or specification (except for pH)</b>	<b>Precision % of prescribed concentration or value or specification (except for pH)</b>	<b>Limit of detection % of prescribed concentration or value or specification (except for pH)</b>
1,2-dichloroethane	25	25	10
Fluoride	10	10	10
Hydrogen ion concentration (expressed in pH units)	0.2	0.2	
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 <sup>(2)</sup>			
Pesticides and related products <sup>(3)</sup>	25	25	25
Polycyclic aromatic hydrocarbons <sup>(4)</sup>	25	25	25
Selenium	10	10	10
Sodium	10	10	10
Sulphate	10	10	10

(1) The method of analysis should determine total cyanide in all forms.

(2) EN ISO 8476.

(3) The performance characteristics apply to each individual pesticide and will depend on the pesticide concerned. 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.

(4) The performance characteristics apply to the individual substances specified at 25% of the parametric value in Table B of Part 1 of Schedule 1.

(5) The performance characteristics apply to the individual substances specified at 50% of the parametric value in Table B of Part 1 of Schedule 1.

(6) The performance characteristics apply to the prescribed value of 4 NTU.

(7) The performance characteristics apply to the specification of 1 NTU for surface waters or ground waters influenced by surface water.

*Status: This is the original version (as it was originally made).*

<i>Parameter</i>	<i>Trueness % of prescribed concentration or value or specification (except for pH)</i>	<i>Precision % of prescribed concentration or value or specification (except for pH)</i>	<i>Limit of detection % of prescribed concentration or value or specification (except for pH)</i>
Tetrachloroethene <sup>(5)</sup>	25	25	10
Tetrachloromethane	20	20	20
Trichloroethene <sup>(5)</sup>	25	25	10
Trihalomethanes:			
Total <sup>(4)</sup>	25	25	10
Turbidity <sup>(6)</sup>	10	10	10
Turbidity <sup>(7)</sup>	25	25	25

- (1) The method of analysis should determine total cyanide in all forms.
- (2) EN ISO 8476.
- (3) The performance characteristics apply to each individual pesticide and will depend on the pesticide concerned. 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.
- (4) The performance characteristics apply to the individual substances specified at 25% of the parametric value in Table B of Part 1 of Schedule 1.
- (5) The performance characteristics apply to the individual substances specified at 50% of the parametric value in Table B of Part 1 of Schedule 1.
- (6) The performance characteristics apply to the prescribed value of 4 NTU.
- (7) The performance characteristics apply to the specification of 1 NTU for surface waters or ground waters influenced by surface water.

**Table 3**

**Method of analysis for chemical and indicator parameters: uncertainty of measurement()**

<i>Parameter</i>	<i>Uncertainty of measurement % of parametric value (except for pH)</i>
Aluminium	25
Ammonium	40
Antimony	40

()



<i>Parameter</i>	<i>Uncertainty of measurement</i>
	<i>% of parametric value</i>
	<i>(except for pH)</i>
Arsenic	30
Benzene	40
Benzo(a)pyrene <sup>(2)</sup>	50
Boron	25
Bromate	40
Cadmium	25
Chloride	15
Chromium	30
Conductivity	20
Copper	25
Cyanide <sup>(3)</sup>	30
1,2-dichloroethane	40
Fluoride	20
Hydrogen ion concentration pH (expressed in pH 0.2 units)	
Iron	30
Lead	25
Manganese	30
Mercury	30
Nickel	25
Nitrate	15
Nitrite	20
Oxiedisability <sup>(4)</sup>	50
Pesticides <sup>(5)</sup>	30
Polycyclic aromatic hydrocarbons <sup>(6)</sup>	50
Selenium	40
Sodium	15
Sulphate	15
Tetrachloroethene <sup>(7)</sup>	30
Trichloroethene <sup>(7)</sup>	40

**Status:** This is the original version (as it was originally made).

<i>Parameter</i>	<i>Uncertainty of measurement</i>
	<i>% of parametric value</i>
	<i>(except for pH)</i>
Trihalomethanes: total <sup>(6)</sup>	40
Total organic carbon (TOC) <sup>(8)</sup>	30
Turbidity <sup>(9)</sup>	30

- (1) The uncertainty of measurement must not be used as an additional tolerance to the parametric values set out in Schedule 1.
- (2) If the value of uncertainty of measurement cannot be met, the best available technique should be selected (up to 60%).
- (3) The method of analysis should determine total cyanide in all forms.
- (4) EN ISO 8476.
- (5) The performance characteristics apply to each individual pesticide and will depend on the pesticide concerned. 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.
- (6) The performance characteristics apply to the individual substances specified at 25% of the parametric value in Table B of Part 1 of Schedule 1.
- (7) The performance characteristics apply to the individual substances specified at 50% of the parametric value in Table B of Part 1 of Schedule 1.
- (8) The uncertainty of measurement must be estimated at the level of 3mg/l of TOC. CEN 1484 Guidelines for the determination of TOC and dissolved organic carbon must be used.
- (9) The uncertainty of measurement must be estimated at the level of 1,0 NTU in accordance with EN ISO 7027.

## PART 3

### Monitoring for indicative dose and analytical performance characteristics

6. A local authority may use reliable screening strategies to indicate the presence of radioactivity in water intended for human consumption.
7. The strategies referred to in paragraph 6 may include screening for—
  - (a) certain radionuclides or individual radionuclide; or
  - (b) gross alpha activity or gross beta activity (where appropriate gross beta activity may be replaced by residual beta activity after subtraction of the K-40 activity concentration).

### Screening for certain radionuclides, or screening for an individual radionuclide

8. If one of the activity concentrations exceeds 20% of the corresponding derived value or the tritium concentration exceeds its parametric value listed in Part 3 of Schedule 1 an analysis of additional radionuclides is required.

9. A local authority must, in deciding which radionuclides require to be measured for each supply, take into account all relevant information about likely sources of radioactivity.

### Screening strategies for gross alpha activity and gross beta activity

10. Subject to paragraph 11 the recommended screening levels are—
  - (a) 0,1Bq/l for gross alpha activity; and
  - (b) 1,0Bq/l for gross beta activity.

11. If the gross alpha activity exceeds 0,1Bq/l or the gross beta activity exceeds 1,0Bq/l, analysis for specific radionuclides is required.

12. The Welsh Ministers may set alternative screening levels for gross alpha activity and gross beta activity where it can be demonstrated by the local authority that the alternative levels are in compliance with an indicative dose of 0,1 mSv.

### Calculation of the indicative dose

13. The indicative dose must be calculated from—

- (a) the measured radionuclide concentrations and the dose coefficients laid down in Annex III, Table A of Directive 96/29/Euratom(2) ; or
- (b) more recent information recognised by the Welsh Ministers, on the basis of the annual intake of water (730 l for adults).

14. Where the following formula is satisfied, it can be assumed that the indicative dose is less than the parametric value of 0,1 mSv and no further investigation is required—

### Derived concentrations for radioactivity in water intended for human consumption (1)

Origin	Nuclide	Derived concentration
Natural	U-238 <sup>3</sup>	3,0 Bq/l
	U-234 <sup>3</sup>	2,8 Bq/l
	Ra-226	0,5 Bq/l
	Ra-228	0,2 Bq/l
	Pb-210	0,2 Bq/l
	Po-210	0,1 Bq/l
Artificial	C-14	240 Bq/l
	Sr-90	4,9 Bq/l
	Pu-239/Pu-240	0,6 Bq/l
	Am-241	0,7 Bq/l
	Co-60	40 Bq/l
	Cs-134	7,2 Bq/l
	Cs-137	11 Bq/l
	I-131	6,2 Bq/l

(1) This table allows only for the radiological properties of uranium, not for its chemical toxicity.

### Performance characteristics and methods of analysis

15. For the following parameters and radionuclides, the method of analysis used must, as a minimum, be capable of measuring activity concentrations with a limit of detection specified below:

(2) OJ No. L 159, 29.6.1996, p. 1, prospectively repealed and replaced by Directive 2013/59 Euratom (OJ L 13, 17.1.2014, p. 1) with effect from 6 February 2018.

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**Status:** This is the original version (as it was originally made).

<b>Parameters and radionuclides</b>	<b>Limit of detection (Notes 1,2)</b>	<b>Notes</b>
Tritium	10 Bq/l	Note 3
Radon	10 Bq/l	Note 3
gross alpha	0,04 Bq/l	Note 4
gross beta	0,4 Bq/l	Note 4
U-238	0,02 Bq/l	
U-234	0,02 Bq/l	
Ra-226	0,04 Bq/l	
Ra-228	0,02 Bq/l	Note 5
Pb-210	0,02 Bq/l	
Po-210	0,01 Bq/l	
C-14	20 Bq/l	
Sr-90	0,4 Bq/l	
Pu-239/Pu-240	0,04 Bq/l	
Am-241	0,06 Bq/l	
Co-60	0,5 Bq/l	
Cs-134	0,5 Bq/l	
C2-137	0,5 Bq/l	
I-131	0,5 Bq/l	

Note 1: The limit of detection must be calculated according to the ISO standard 11929: Determination of the characteristic limits (decision threshold, detection limit, and limits of confidence interval) for measurements of ionising radiation — Fundamentals and application, with probabilities of errors of 1st and 2nd kind of 0,05 each.

Note 2: Measurement uncertainties must be calculated and reported as complete standard uncertainties, or as expanded uncertainties with an expansion factor of 1,96 according the ISO Guide for the Expression of Uncertainty in Measurement.

Note 3: The limit of detection for tritium and for radon is 10% of its parametric value of 100 Bq/l.

Note 4: The limit of detection for gross alpha activity and gross beta activities are 40% of the screening values of 0,1 and 1,0 Bq/l respectively.

Note 5: This limit of detection applies only to initial screening for indicative dose for a new water source; if initial checking indicates that it is not plausible that Ra-228 exceeds 20% of the derived concentration, the limit of detection may be increased to 0,08 Bq/l for routine Ra-228 nuclide specific measurements, until a subsequent re-check is required.

## SCHEDULE 5

Regulation 16

### Records

#### **Initial records**

**1.—(1)** A local authority must record the number of private water supplies in its area, and for each supply must record—

- (a) the name of the supply, together with a unique identifier;
  - (b) the type of source;
  - (c) the geographical location using a grid reference;
  - (d) an estimate of the number of people supplied;
  - (e) an estimate of the average daily volume of water supplied in cubic metres;
  - (f) the type of premises supplied;
  - (g) detail of any treatment process, together with its location
- (2) It must review and update the record at least once a year.
- (3) It must keep the record for at least 30 years.

#### **Additional records**

**2.—(1)** For each supply referred to in paragraph 1(1), the local authority must record, within 28 days of each of the following taking place—

- (a) a plan and description of the supply;
  - (b) the monitoring programme for the supply;
  - (c) the risk assessment;
  - (d) a summary of the results of the risk assessment;
  - (e) a summary of the reasons for a decision to reduce or exempt altogether the monitoring of a particular parameter under Part 4 of Schedule 2;
  - (f) the date, results and location of any sampling and analysis relating to that supply, and the reason for taking the sample;
  - (g) the results of any investigation undertaken in accordance with these Regulations;
  - (h) any authorisation;
  - (i) any notices served under section 80 of the Act, or regulation 20;
  - (j) any action agreed to be taken by any person under these Regulations;
  - (k) any request for the local authority to carry out sampling and analysis, undertake a risk assessment or give advice;
  - (l) a summary of any advice given in relation to the supply.
- (2) It must keep the risk assessment and records of sampling and analysis for at least 30 years, and all other records under this paragraph for at least 5 years.

## SCHEDULE 6

Regulation 23

## Fees

**Fee**

1. The local authority may charge a fee, payable on invoice, for the activities in the following table, and the fee is the reasonable cost of providing the service subject to the following maximum amounts.

<b>Service</b>	<b>Maximum fee (£)</b>
Risk assessment (each assessment):	
regulation 9 supply	700
regulation 10 and 11 supplies	300
Sampling (each visit) <sup>(1)</sup>	100
Investigation (each investigation):	250
Granting an authorisation (each authorisation):	100
Analysing a sample—	
taken under regulation 10 or 11:	25
taken during monitoring for Group A parameters:	110
taken during monitoring for Group B parameters:	600

(1) No fee is payable where a sample is taken and analysed solely to confirm or clarify the results of the analysis of a previous sample.

**Persons liable to pay**

2.—(1) Any person requesting anything under these Regulations is liable for the cost.

(2) Except where sub-paragraph (1) applies, fees are payable, as specified in the invoice, by the relevant person.

(3) Where more than one person is liable, in determining who is required to make payment the local authority—

- (a) may apportion the charge between them; and
- (b) must have regard to any agreement or other document produced to the local authority relating to the terms on which water is supplied.