SCHEDULE 3 Regulation 6

MONITORING PROGRAMMES

1.—(1) A monitoring programme established under Part 4 of these Regulations must—

(a) verify that—

(i) the measures in place to control risks to human health throughout the water supply chain (from the catchment area through abstraction, treatment and storage to distribution) are working effectively; and

(ii) water at the point of compliance is wholesome;

(b) provide information on the quality of water supplied to—

(i) demonstrate whether or not the water complies with prescribed concentrations and values for parameters in Schedule 1;

(ii) determine the organoleptic and microbiological quality of the water; and

(iii) establish the effectiveness of the treatment of the water, particularly of disinfection where it is used.

(c) identify the most appropriate means of mitigating any risk to human health; and

(d) have regard to Part 5.

(2) A monitoring programme must consist of either—

(a) the collection and analysis of discrete water samples; or

(b) measurement recorded by a continuous monitoring process; or

(c) a combination of both of the methods described in sub-paragraphs (a) and (b).

(3) In addition, monitoring programmes may consist of—

(a) inspections of records of the functionality and maintenance status of equipment; and/or

(b) inspections of the catchment area, water abstraction, treatment, storage and distribution infrastructure.

(4) The monitoring programme may be based on a risk assessment as set out in regulation 30.

(5) When choosing appropriate parameters and other micro-organisms, parasites or substances for monitoring programmes, local conditions for each water supply system must be taken into consideration.

TABLE 1

PARAMETERS AND CIRCUMSTANCES FOR GROUP A MONITORING

(1) Item	*(2) Parameter*	*(3) Circumstances*
1	Aluminium	If used as water treatment chemicals or where the water originates from, or is influenced by, surface waters
2	Ammonium	Where chloramination is practised
3	Coliform bacteria	In all supplies
4	Colony Counts	In all supplies
5	Colour	In all supplies

(1) A supply which consists of both groundwater and surface water is deemed to be a supply which consists only of surface water.

(1) Item	*(2) Parameter*	*(3) Circumstances*
6	Conductivity	In all supplies
7	Disinfectant residual	When disinfection treatment is practised
8	*Escherichia coli (E. coli)*	In all supplies
9	Indicative Dose	Where there is treatment in place to reduce the level of radionuclides in water intended for human consumption.
10	Iron[(1)]	If used as water treatment chemicals or where the water originates from, or is influenced by, surface waters
11	Manganese[(1)]	Where the water originates from, or is influenced by, surface waters
12	Nitrate	Where chloramination is practised
13	Nitrite	Where chloramination is practised
14	Odour	In all supplies
15	pH (Hydrogen ion)	In all supplies
16	Radon	Where there is treatment in place to reduce the level of radionuclides in water intended for human consumption.
17	Taste	In all supplies
18	Tritium	Where there is treatment in place to reduce the level of radionuclides in water intended for human consumption.
19	Turbidity	In all supplies

(1) A supply which consists of both groundwater and surface water is deemed to be a supply which consists only of surface water.

TABLE 2

Annual Sampling Frequencies: Water Supply Zones

This table sets out the annual sampling frequencies for all the substances and parameters in column 1. These are determined for each water supply zone according to its estimated population (column 2).

(1) Substances and parameters subject to monitoring	*(2) Estimated population of water supply zone[1]*	*(3) Number of samples per year*
Group A monitoring		
Escherichia coli (E. coli)	< 100	4
Coliform bacteria	≥ 100	12 per 5,000 population[1]
Residual disinfectant		
Aluminium	<100	2
Ammonium	100–4,999	4
Colony counts	5,000–9,999	12
Colour	10,000–29,999	24
Conductivity[2]	30,000–49,999	36
Hydrogen ion	50,000–79,999	52
Iron	80,000–100,000	76
Manganese		
Nitrate[3]		
Nitrite[3]		
Odour		
Taste		
Turbidity		
Group B monitoring		
Aluminium	<100	1
Antimony	100–4,999	4
Arsenic	5,000–100,000	8
Benzene[2]		
Benzo(a)pyrene		
Boron[2]		
Bromate[4]		

(1) Where the population is not an exact multiple of 5,000, the population figure should be rounded up to the nearest multiple of 5,000.

(2) Sampling for these parameters may be within water supply zones or at supply points as specified in Table 3, subject to notes (5) and (6) below.

(3) Group A monitoring in water supply zones is required only where chloramination is practised. In other circumstances Group B monitoring is required.

(4) Group B monitoring in water supply zones is required only where sodium hypochlorite is added after water has left the treatment works. In other circumstances, Group B monitoring is required at supply points.

(5) To monitor for indicative dose (for radioactivity).

(6) In the event that a single sample is taken in a year, a further sample should be taken if there is any change in relation to that supply that could affect the concentration of radionuclides in the water supply.

(1) Substances and parameters subject to monitoring	*(2) Estimated population of water supply zone[1]*	*(3) Number of samples per year*
Cadmium		
Chromium		
Clostridium perfringens (including spores)		
Copper		
Cyanide[2]		
1,2 dichloroethane[2]		
Enterococci		
Fluoride[2]		
Gross alpha[2][5]		
Gross beta[2][5]		
Iron		
Lead		
Manganese		
Mercury[2]		
Nickel		
Nitrate[3]		
Nitrite[3]		
Pesticides and related products[2]		
Polycyclic aromatic hydrocarbons		
Radon[2][6]		
Selenium		
Sodium		
Trichloroethene/		

(1) Where the population is not an exact multiple of 5,000, the population figure should be rounded up to the nearest multiple of 5,000.

(2) Sampling for these parameters may be within water supply zones or at supply points as specified in Table 3, subject to notes (5) and (6) below.

(3) Group A monitoring in water supply zones is required only where chloramination is practised. In other circumstances Group B monitoring is required.

(4) Group B monitoring in water supply zones is required only where sodium hypochlorite is added after water has left the treatment works. In other circumstances, Group B monitoring is required at supply points.

(5) To monitor for indicative dose (for radioactivity).

(6) In the event that a single sample is taken in a year, a further sample should be taken if there is any change in relation to that supply that could affect the concentration of radionuclides in the water supply.

(1) Substances and parameters subject to monitoring	*(2) Estimated population of water supply zone[(1)]*	*(3) Number of samples per year*
Tetrachloroethene[(2)]		
Tetrachloromethane[(2)]		
Trihalomethanes		
Chloride[(2)]		
Sulphate[(2)]		
Total organic carbon[(2)]		
Tritium[(2)]		

(1) Where the population is not an exact multiple of 5,000, the population figure should be rounded up to the nearest multiple of 5,000.

(2) Sampling for these parameters may be within water supply zones or at supply points as specified in Table 3, subject to notes (5) and (6) below.

(3) Group A monitoring in water supply zones is required only where chloramination is practised. In other circumstances Group B monitoring is required.

(4) Group B monitoring in water supply zones is required only where sodium hypochlorite is added after water has left the treatment works. In other circumstances, Group B monitoring is required at supply points.

(5) To monitor for indicative dose (for radioactivity).

(6) In the event that a single sample is taken in a year, a further sample should be taken if there is any change in relation to that supply that could affect the concentration of radionuclides in the water supply.

TABLE 3

Annual Sampling Frequencies: Treatment Works or Supply Points

Sampling is at treatment works for the substances and parameters shown in column (1) of the Table as items (1) to (6) and at supply points for the other substances and parameters, except nitrite subject to notes 2 and 3 to the Table below.

This table sets out the annual sampling frequencies for all the substances and parameters in column 2 at treatment works or supply points. The frequencies are determined according to the volume of water supplied at each treatment works or supply point (column 3).

(1) Item	*(2) Substances and parameters*	*(3) Volume of water supplied m^3/d[(1)]*	*(4) Number of samples per year[(2)]*
1	*Escherichia coli (E. coli)*	<20	4
2	Coliform bacteria	20-1,999	52
3	Colony counts	2,000-5,999	104

(1) The water undertaker may use the number of inhabitants in a supply zone instead of the volume of water to determine the minimum frequency, assuming a water consumption of 200 l/day/capita.

(2) The volumes are calculated as averages taken over a calendar year.

(3) Sampling at treatment works when chloramination is practised.

(4) Sampling at treatment works when chloramination is not practised.

(5) Group B monitoring at supply points is required only where sodium hypochlorite is not added after water has left the treatment works. In other circumstances, Group B monitoring is required in water supply zones

(6) To monitor for indicative dose (for radioactivity).

(1) Item	*(2) Substances and parameters*	*(3) Volume of water supplied m^3/d[(1)]*	*(4) Number of samples per year[(2)]*
4	Nitrite[(3)]	6,000-11,999	208
5	Residual disinfectant	≥ 12,000	365
6	Turbidity		
Group A monitoring			
7	Conductivity	<20	2
		20-999	4
		1,000-1,999	12
		2,000-5,999	24
		6,000-9,999	36
		10,000-15,999	52
		16,000-32,999	104
		33,000-49,999	156
		50,000-67,999	208
		68,000-84,999	260
		85,000-101,999	312
		102,000-119,999	365
		120,000-241,999	730
		242,000-484,999	1,460
		485,000-728,999	2,190
Group A monitoring			
8	Gross alpha[(6)]	<20	1
9	Gross beta[(6)]	20-999	4
10	Radon	1,000-49,999	8

(1) The water undertaker may use the number of inhabitants in a supply zone instead of the volume of water to determine the minimum frequency, assuming a water consumption of 200 l/day/capita.

(2) The volumes are calculated as averages taken over a calendar year.

(3) Sampling at treatment works when chloramination is practised.

(4) Sampling at treatment works when chloramination is not practised.

(5) Group B monitoring at supply points is required only where sodium hypochlorite is not added after water has left the treatment works. In other circumstances, Group B monitoring is required in water supply zones

(6) To monitor for indicative dose (for radioactivity).

(1) Item	*(2) Substances and parameters*	*(3) Volume of water supplied m^3/d[(1)]*	*(4) Number of samples per year[(2)]*
11	Tritium	50,000-89,999 90,000-299,999 300,000-649,999 ≥ 650,000	12 24 36 48
Group B monitoring			
12	Benzene	<20 20-999 1,000-49,999 50,000-89,999 90,000-299,999 300,000-649,999 ≥650,000	1 4 8 12 24 36 48
13	Boron		
14	Bromate[(5)]		
15	Clostridium perfringens (including spores)		
16	Cyanide		
17	1,2,dichloroethane		
18	Fluoride		
19	Mercury		
20	Nitrite[(4)]		
21	Pesticides and related products		
22	Trichloroethene/ Tetrachloroethene		
23	Tetrachloromethane		
24	Chloride		
25	Sulphate		
26	Total Organic Carbon		
27	Radon		
28	Tritium		
29	Gross alpha[(6)]		

(1) The water undertaker may use the number of inhabitants in a supply zone instead of the volume of water to determine the minimum frequency, assuming a water consumption of 200 l/day/capita.

(2) The volumes are calculated as averages taken over a calendar year.

(3) Sampling at treatment works when chloramination is practised.

(4) Sampling at treatment works when chloramination is not practised.

(5) Group B monitoring at supply points is required only where sodium hypochlorite is not added after water has left the treatment works. In other circumstances, Group B monitoring is required in water supply zones

(6) To monitor for indicative dose (for radioactivity).

(1) Item	*(2) Substances and parameters*	*(3) Volume of water supplied m^3/d[(1)]*	*(4) Number of samples per year[(2)]*
30	Gross beta[(6)]		

(1) The water undertaker may use the number of inhabitants in a supply zone instead of the volume of water to determine the minimum frequency, assuming a water consumption of 200 l/day/capita.

(2) The volumes are calculated as averages taken over a calendar year.

(3) Sampling at treatment works when chloramination is practised.

(4) Sampling at treatment works when chloramination is not practised.

(5) Group B monitoring at supply points is required only where sodium hypochlorite is not added after water has left the treatment works. In other circumstances, Group B monitoring is required in water supply zones

(6) To monitor for indicative dose (for radioactivity).