5 Water Quality in the Distribution System

It is very important that the quality of water is maintained as it passes through the distribution network. Accordingly, sampling of water is carried out throughout the distribution network in accordance with an approved programme. Analysis is carried out to ensure the water maintains its high physical, bacteriological and chemical standards from leaving the treatment works to customers' stop taps.

During 2007, 1280 samples of water were taken and the following tables show the results of the check and audit monitoring programme together with the compliance levels.

Check Monitoring: Supply Zone

Substances and parameters	Specific concentration or value (maximum) or state	Min	Mean	Max	No. of samples	% compliance
E.coli	0 per 100ml	0	0	0	640	100
Coliform bacteria	0 per 100ml	0	0	0	640	100
Residual disinfectant	No value mg Cl_2/l	<0.02	0.13	0.52	540	-
Aluminium	200 µg Al/l	<20	20	63	100	100
Ammonium	0.50 mg NH_4/l	<0.04	<0.04	0.13	100	100
Clostridium perfringens	0 per 100ml	0	0	0	100	100
Colony counts	No abnormal change	No abnormal change			540	100
Colour	20 mg/l Pt/Co	<0.69	2.02	5.25	100	100
Conductivity	2500 µS/cm at 20°C	417	495	614	100	100
Hydrogen ion	10.0 pH value 6.5(min)	7.39	7.71	8.29	100	100
Iron	200 µg Fe/l	<10	24	167	100	100
Manganese	50 µg Mn/l	0.7	4.9	22.7	100	100
Nitrate	50 mg NO_3/l	30.9	43.6	57.6	100	77
Nitrite	0.5 mg NO_2/l	<0.01	0.019	0.195	100	100
Odour	3 at 25°C Dilution number	1	1	1	100	100
Taste	3 at 25°C Dilution number	1	1	1	99	100
Turbidity	4 NTU	0.10	0.21	0.88	100	100

5 Water Quality in the Distribution System (continued)

Audit Monitoring: Supply Zone

Substances and parameters	Specific concentration or value (maximum) or state	Min	Mean	Max	No. of samples	% compliance
Antimony	5.0 µg Sb/l	0.25	0.33	0.45	12	100
Arsenic	10 µg As/l	0.40	0.56	0.75	12	100
Benzene	1.0 µg/l	<0.06	<0.06	<0.06	12	100
Benzo(a)pyrene	0.010 µg/l	<0.001	<0.001	<0.001	12	100
Boron	1.0 mg B/l	<0.040	0.100	0.179	12	100
Cadmium	5.0 µg Cd/l	<0.5	<0.5	<0.5	12	100
Chromium	50 µg Cr/l	0.11	0.29	0.73	12	100
Copper	2.0 mg Cu/l	0.003	0.016	0.053	12	100
Cyanide	50 µg CN/l	<0.005	<0.005	<0.005	12	100
1,2 dichloroethane	3.0 µg/l	<0.1	<0.1	<0.1	12	100
Enterococci	0 per 100ml	0	0	0	12	100
Fluoride	1.5 mg F/l	<0.050	0.17	0.84	12	100
Lead	25 µg Pb/l [1]	<0.5	<0.5	5.0	12	100
Mercury	1.0 µg Hg/l	<0.002	0.016	0.178	12	100
Nickel	20 µg Ni/l	1.20	1.43	1.80	12	100
Linuron [2]	0.1 µg/l	<0.004	<0.004	0.012	12	100
Diuron [2]	0.1 µg/l	<0.005	<0.005	0.005	12	100
2,4-D [2]	0.1 µg/l	<0.011	0.012	0.038	12	100
Mecoprop [2]	0.1 µg/l	<0.010	<0.010	0.021	12	100
Atrazine [2]	0.1 µg/l	<0.002	<0.002	0.008	12	100
Prometryne [2]	0.1 µg/l	<0.002	<0.002	0.009	12	100
Terbutryn [2]	0.1 µg/l	<0.003	<0.003	0.014	12	100
Terbuthylazine [2]	0.1 µg/l	<0.002	<0.002	0.003	12	100
Dalapon [2]	0.1 µg/l	<0.010	0.015	0.031	12	100
Pesticides total	0.5 µg/l	<0.010	<0.010	0.082	12	100

[1] The value of 25 µg Pb/l is valid until immediately before 25th December 2013, reducing to 10 µg Pb/l on and after 25th December 2013.
[2] Detected pesticide - 76 other pesticides analysed for and not detected.

5 Water Quality in the Distribution System (continued)

Audit Monitoring: Supply Zone

Substances and parameters	Specific concentration or value (maximum) or state	Min	Mean	Max	No. of samples	% compliance
Polycyclic aromatic hydrocarbons	0.10 µg/l	<0.01	<0.01	<0.01	12	100
Selenium	10 µg Se/l	0.70	1.02	1.70	12	100
Sodium	200 mg Na/l	46.2	50.2	53.7	12	100
Trichloroethene and Tetrachloroethene	10 µg/l	<0.1	<0.1	0.1	12	100
Tetrachloromethane	3 µg/l	<0.1	0.1	0.4	12	100
Trihalomethanes	100 µg/l	5.8	13.1	19.2	12	100
Chloride	250 mg Cl/l	60.6	65.0	68.3	12	100
Sulphate	250 mg SO_4/l	84.0	92.5	99.5	12	100
Total Organic Carbon	No abnormal change	1.67	1.90	2.12	12	100
Tritium	100 Bq/l	<10.0	<10.0	<10.0	12	100
Gross alpha	0.1 Bq/l	<0.03	<0.03	<0.03	12	100
Gross beta	1.0 Bq/l	0.12	0.18	0.22	12	100