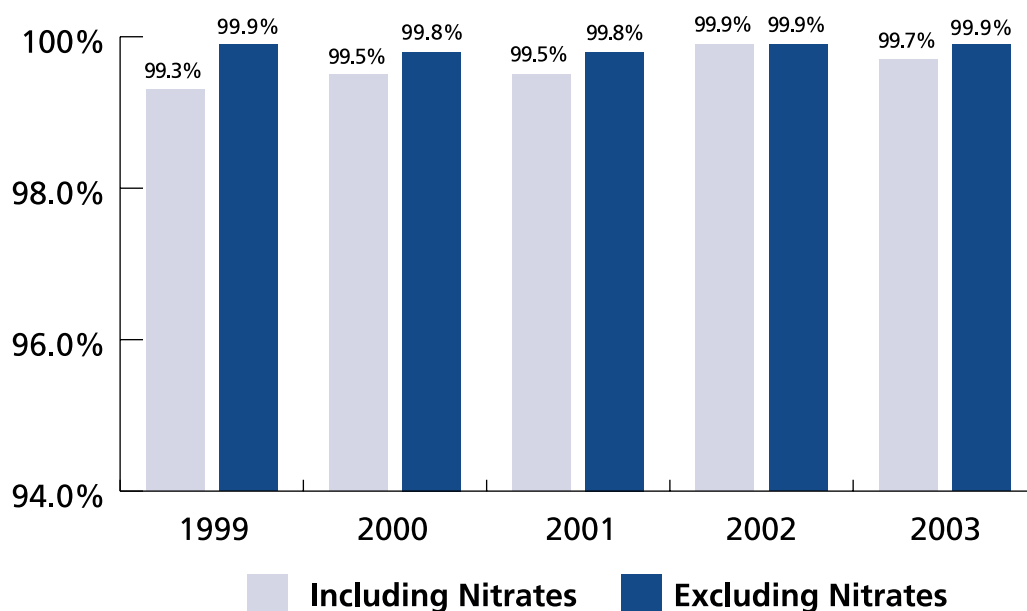


5. WATER QUALITY IN THE DISTRIBUTION SYSTEM

In 2003 some 1,643 water samples were taken from all parts of the distribution system and analysed for physical, bacteriological and chemical standards. The following tables show the bacteriological results and the maximum, average, minimum, MAC concentrations and percentage compliance of samples taken from the distribution system.

Zone	No. of samples	% compliance with the Maximum Allowable Concentration (MAC)	
		Total coliforms	Faecal coliforms
Zone 1: East			
Random consumer taps	96	96.9%	99%
Fixed points	416	100%	100%
Total	512	99.4%	99.8%
Zone 2: West			
Random consumer taps	49	100%	100%
Fixed points	248	99.6%	100%
Total	297	99.7%	100%
Grand Total	809	99.5%	99.9%

**Overall compliance with the water quality
Maximum Allowable Concentrations**



PHYSICAL AND CHEMICAL QUALITY

Water in Distribution

Parameter	Maximum Allowable Concentration (MAC)	Concentration or value			No. of samples taken	% compliance with MAC
		Minimum	Mean	Maximum		
pH Value	6.5 – 9.5	7.0	7.4	8.3	210 ^f	100%
Conductivity	1500 µSm/cm at 200C	464	596	690	131	100%
Turbidity	4 N.T.U.	0.11	0.32	1.12	131	100%
Nitrate *	50 mg NO ₃ /l	21.0	39.8	55.0	50	84%
Nitrite **	0.1 mg NO ₂ /l	0.001	0.025	0.238	132	93%
Ammonia	0.5 mg NH ₃ /l	<0.01	0.09	0.16	131	100%
Iron	200 µg Fe/l	<10	31	140	74	100%
Aluminium	200 µg Al/l	<20	<20	138	259	100%
Manganese	50 µg Mn/l	<20	<20	34.2	132	100%
Colour	20 Hazen Units	<0.69	4.3	5.0	131 ^f	100%
Copper	3000 µg Cu/l	<4	61	632	74	100%
Lead	50 µg Pb/l	<1	5	36	74	100%
Zinc	5000 µg Zn/l	<6	30	152	74	100%
Chloride	400 mg Cl/l	50	72	110	131	100%
Dissolved Solids	1500 mg/l	270	409	483	131	100%
Oxidizability	5 mg O ₂ /l	0.10	0.37	0.71	127	100%
Total Hardness	mg CaCO ₃ /l no value	108	142	179	131	NA
Alkalinity	mg CaCO ₃ /l no value	44	60	86	131	NA
Residual Chlorine	mg Cl ₂ /l no value	<0.02	0.23	0.54	180 ^f	NA

mg/l = milligrams per litre

µg/l = micrograms per litre

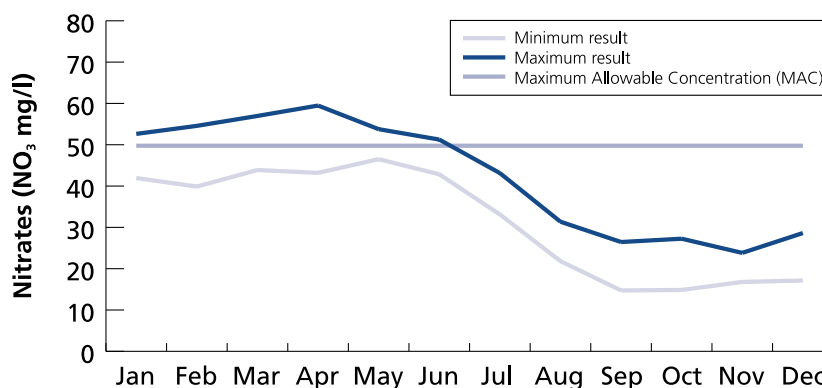
< = indicates the concentration is below the detection level of the test

^f = in addition to the "compliance" chemical samples several hundred examinations were made for bacteriological and operational sampling purposes, all results were below the MAC.

*Nitrate: The MOU gives the Company a dispensation for nitrate of 33% of samples that can be over 50 mg/l, up to a limit of 70 mg/l.

**Nitrite: Provisional guideline of 3 mg NO₂/l set by World Health Organisation Quality Guidelines 1995.

Nitrate Levels in Distribution 2003



PESTICIDE ANALYSIS

Water in Distribution

Parameter	Maximum Allowable Concentration (MAC)	Concentration or value			No. of samples taken	% compliance with MAC
		Minimum	Mean	Maximum		
Atrazine µg/l	0.1	<0.01	<0.01	0.012	8	100%
Simazine µg/l	0.1	<0.01	<0.01	0.011	8	100%
Propazine µg/l	0.1	<0.01	<0.01	0.028	8	100%
Terbutylazine µg/l	0.1	<0.01	<0.01	0.021	8	100%
Cyanazine µg/l	0.1	<0.01	0.025	0.092	52	100%
Mecoprop µg/l	0.1	<0.01	<0.01	0.013	52	100%
Triclopyr µg/l	0.1	<0.01	<0.01	0.017	52	100%
Linuron µg/l	0.1	<0.01	<0.01	0.035	52	100%
Diuron µg/l	0.1	<0.01	0.010	0.074	52	100%
Carbetamide µg/l	0.1	<0.01	<0.01	0.018	52	100%
Dalapon µg/l	0.1	<0.01	0.013	0.047	9	100%

µg/l = micrograms per litre

< = indicates the concentration is below the detection level of the test.

UK = United Kingdom advisory limits quoted in "Water Quality Regulations 1989".

*UK = "likely advisory value", has been calculated by the Company consultants using a formula given in the "Water Regulations 1989". The calculations confirm the low toxicity of these particular pesticides.

WHO = advisory limits quoted in "World Health Organisation Quality Guidelines 1993".

NB In addition to the above parameters, examinations were carried out for a further seventy one types of pesticides, the results of which were below the detection level of the tests.