

1 Anglian Water Service Limited

Overall Water Quality supplied by Anglian Water Services Limited in 2002

- A total of 226,403 tests were carried out on samples taken by Anglian Water Services Limited in 2002.
- Of these tests, 99.63% complied with the Regulations.



Company Information

Amount of Water Supplied:	1.200 MI/d
Consumers Supplied:	4.1 million
Areas of Supply:	East Anglia, Lincolnshire, Bedfordshire, Northamptonshire, and parts of Essex, Buckinghamshire and Nottinghamshire
Water Composition:	48% from rivers and reservoirs 52% from boreholes and aquifers
Treatment Works:	140
Service Reservoirs:	383
Km of Mains:	35,995
Water Supply Zones:	189

The Company has two inset appointments to supply water to Buxted Chickens in the Essex and Suffolk Water supply area and to Kodak in the Three Valleys Water supply area.

Water Quality at Treatment Works, in Service Reservoirs and in Water Supply Zones

To be wholesome, water must comply with the standards for the parameters set out in the Water Supply (Water Quality) Regulations 1989. In 2002, the Company carried out a total of 226,403 tests on samples taken at water treatment works, from service reservoirs and in water supply zones and of these, 99.63% complied with the relevant water quality standards set down in the Regulations. A list of the parameters, the relevant standards and their significance can be found at the beginning of this section.

Water Quality leaving Treatment works

	2002	2001	2000
Number of water treatment works	140	146	139
COLIFORMS			
Total number of tests	14,492	14,177	14,768
– number containing coliforms	3	3	7
– % containing coliforms	0.02%	0.02%	0.05%
Treatment works with coliforms detected	3	3	7
– % of all works with coliforms detected	2.14%	2.05%	5.04%
FAECAL COLIFORMS			
Total number of tests	14,492	14,177	14,768
– number containing faecal coliforms	0	0	0
– % containing faecal coliforms	0.00%	0.00%	0.00%
Treatment works with faecal coliforms detected	0	0	0
– % of all works with faecal coliforms detected	0.00%	0.00%	0.00%

Failures of the coliform standard at three works in 2002 were considered trivial. Differences over the last three years in the number of treatment works, and in the number of tests carried out on samples from treatment works, in which coliforms were detected were not considered significant.

In 2002, 1,543 regulatory samples for *Cryptosporidium* were taken at five sites. Very low numbers of oocysts were detected in two samples from two sites. All results were well below the treatment standard and there were no reported outbreaks of cryptosporidiosis.

Water Quality in Service Reservoirs

	2002	2001	2000
Number of service reservoirs	383	385	380
COLIFORMS			
Total number of tests	20,744	20,536	20,464
– number containing coliforms	8	27	31
– % containing coliforms	0.039%	0.13%	0.15%
Service reservoirs with coliforms detected	8	25	26
Service reservoirs with coliforms detected in more than 5% of tests	0	0	0
– % of all service reservoirs with coliforms detected	0.00%	0.00%	0.00%
FAECAL COLIFORMS			
Total number of tests	20,744	20,536	20,464
– number containing faecal coliforms	1	2	1
– % containing faecal coliforms	0.005%	0.01%	0.00%
Service reservoirs with faecal coliforms detected	1	2	1
– % of all service reservoirs with faecal coliforms detected	0.26%	0.52%	0.26%

There were no failures of the coliform standard at any of the service reservoirs. Failure of the faecal coliform standard at one service reservoir was considered trivial. There has been a significant decrease since 2001 in the number of service reservoirs and samples from service reservoirs in which total coliforms were detected. All other differences were not considered significant.

Water Quality in Water Supply Zones

The table below shows the data for the key parameters and any other parameters where there was a failure of the standard. All other parameters were fully compliant.

Parameter	Total number of tests	Tests not meeting the prescribed concentration or value		Number of failures covered by Undertakings	Number of zones not complying with the standards		
		No	%		2002	2001	2000
Coliforms	12,565	34	0.27	0	0	0	0
Faecal coliforms	12,565	3	0.02	0	3	3	5
Colour	3,655	0	0.00	0	0	0	0
Turbidity	8,485	5	0.06	0	5	4	3
Odour	1,023	0	0.00	0	0	0	1
Taste	1,018	0	0.00	0	0	0	1
Hydrogen ion	8,472	0	0.00	0	0	0	0
Nitrate	5,054	0	0.00	0	0	1	1
Nitrite	5,859	728	12.43	0	55	56	59
Aluminium	3,779	0	0.00	0	0	0	0
Iron	5,975	17	0.28	6	14	20	18
Manganese	3,976	0	0.00	0	0	1	0
Lead	2,781	3	0.11	0	3	3	0
PAH	514	38	7.39	0	19	8	15
Trihalomethanes	318	0	0.00	0	0	0	0
Total pesticides	2,244	0	0.00	0	0	0	0
Other pesticides	33,369	0	0.00	0	0	0	0
Ammonium	3,767	0	0.00	0	0	0	1
Benzo 3.4 Pyrene	514	3	0.58	0	0	0	0
Copper	886	0	0.00	0	0	0	1
Faecal streptococci	839	0	0.00	0	0	1	0
Phosphorus	3,949	0	0.00	0	0	0	1
Temperature	12,120	1	0.01	0	1	1	0
All others	20,661	0	0.00	0	0	0	0
TOTAL	154,388	832	0.54%	6			

189 zones in 2000, 2001 and 2002

The fifth column indicates the number of failures in zones already covered by legally binding undertakings given by the Company. These undertakings require remedial work to be carried out to ensure compliance with the individual standard.

The New Regulations

In 2002, the Company carried out monitoring for the six new parametric values set down in the new Water Supply (Water Quality) Regulations 2000. These Regulations come into force on 25 December 2003. The results are shown in the table below.

Parameter	Total number of tests	New standard	Tests not meeting the new standard
Benzene	743	1.0 µg/l	0
Bromate	1,138	10.0 µg/l	9
1,2 dichloroethane	947	3.0 µg/l	0
Nitrite (ex-water treatment works)	3,945	0.1 mg/l	0
<i>Clostridium perfringens</i>	431	0/100 ml	0
Enterococci	839	0/100 ml	0

Compliance data for 2002 has also been analysed against the revised standards and the results are shown in the following table.

Parameter	Total number of tests	Current Standard	Number of tests not meeting current standard	Revised Standard	Number of tests not meeting revised standard
Antimony	224	10.0 µg/l	0	5.0 µg/l	0
Arsenic	224	50.0 µg/l	0	10.0 µg/l	1
Boron	224	2.0 mg/l	0	1.0 mg/l	0
Copper	886	3.0 mg/l	0	2.0 mg/l	0
Lead	2,781	50.0 µg/l	3	25.0 µg/l ¹ 10.0 µg/l ²	15 77
Nickel	224	50.0 µg/l	0	20.0 µg/l	2
Nitrite (at consumers' taps)	5,859	0.1 mg/l	728	0.5 mg/l	0
PAH	514	0.2 µg/l	38	0.1 µg/l	0
Tetrachloroethene	503	30.0 µg/l	0	} 10.0 µg/l	0
Trichloroethene	503	10.0 µg/l	0		

Details of the new and revised standards, and the reasons for the revisions where applicable, can be found in chapter J "New Regulations and Associated Programmes of Work".

- 1 from 25.12.03
- 2 from 25.12.13

Company Audit and Inspection

The Company was inspected or audited by the Inspectorate or its appointed consultants on a number of occasions during 2002. Where relevant, report summaries are available in the ‘Business and Technical’ section of the Inspectorate’s web site under ‘Audit and Inspection’.

Audit or Inspection	Date
Audit of regulatory <i>Cryptosporidium</i> monitoring sites	Various dates throughout the year
Audit of progress with regulatory programmes of work	March 2002
Inspection of laboratory analysing for <i>Cryptosporidium</i>	August 2002
Audit of response to selected consumer complaints	October 2002
Audit of analytical requirements for nitrate and nitrite	November 2002
Audit of sampling arrangements	November 2002
Review of distribution system undertaking	November 2002
Inspection of two water treatment works and four service reservoirs	November 2002
Audit trails of 15 test results	December 2002
Review of plumbosolvency treatment and control programmes for lead	December 2002

A number of recommendations were made in respect of action required to avoid the risk of a breach of a regulatory duty. These recommendations were in relation to the treatment works, the analytical requirements for nitrate and nitrite, plumbosolvency treatment for lead and the laboratory analysing for *Cryptosporidium*.

Incidents

The Inspectorate regarded 21 of the events notified during 2002 by the Company as incidents. For further details on the classification of incidents, see chapter C “Events affecting Water Quality” in Part 3.

Eighteen of the incidents have been assessed by the Inspectorate. Each was of short duration and the Company has taken appropriate remedial action. A number of recommendations were made regarding sampling and procedures.

During the 2002 reporting period, assessment was also completed for four incidents which occurred in 2001.

Three incident assessments from 2002 remain under consideration.

Nature of incident	No. of incidents	Assessment completed	Area affected	Population potentially affected
Supply of discoloured water	5	Yes	Barnham Cross (June)	9,000
			Stondon (June)	1,820
			Weston Underwood (July)	7,500
	3	No	Grantham (August)	5,000
			Gunby Corner (November)	4,000
			Thetford (November)	22,976
Contamination of supplies due to permeation of consumers' service pipes	4	Yes	Thetford (December)	22,976
			Northrepps (April)	75
			Pettaugh (July)	5
			Southery (August)	5
Microbiological contamination of supplies	8	Yes	Lingwood (August)	5
			Burgh le Marsh (September)	5
			Ipswich (June)	30
			Lavendon (July)	138
			Barrow (July)	30
			Fairstead (August)	50
			Inworth (August)	38
			Swanton Abbot (August)	50
Maidford (September)	625			
Supply of water with taste & odour	1	Yes	Strubby with Woodthorpe (September)	150
			Etton (July)	33

Enforcement Action

The table below indicates areas where, in 2002, the Inspectorate considered taking enforcement action for regulatory breaches, and where an undertaking was submitted or where the Company took appropriate action.

Parameter/Area	Regulation breached	Location	Outcome
Manganese	3(3)(c)	Thetford	Undertaking given

Undertakings and other Improvement Programmes

Water treatment works and service reservoirs

One undertaking was due for completion during 2002. This was to install treatment at North Pickenham water treatment works to remove nitrate. The programme was completed on schedule.

The scheme covered by the undertaking described above for North Pickenham was also subject to a statement of intent.

No other improvement programmes were due for completion in 2002.

Distribution

The ongoing distribution system undertaking, which required completion of renovation by 30 September 2002, has been progressing satisfactorily. During 2002, 338 km of mains were renovated.

Lead

The Company has a Regulation 41 programme of work to meet the revised standard for lead set down in the new Water Supply (Water Quality) Regulations 2000, which will come into force on 25 December 2003. Progress with the delivery of the programme is monitored by the Inspectorate and has been satisfactory.