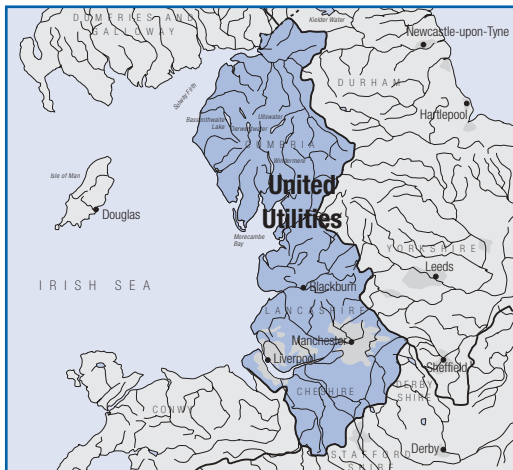


23 United Utilities Water PLC

Overall Water Quality supplied by United Utilities Water PLC in 2002

- A total of 336,666 tests were carried out on samples taken by United Utilities Water in 2002.
- Of these tests, 99.81% complied with the Regulations.



Company Information

Amount of Water Supplied:	1,940 MI/d
Consumers Supplied:	6.8 million
Areas of Supply:	Cumbria, Lancashire, Merseyside, Greater Manchester and Cheshire
Water Composition:	92% from rivers and reservoirs 8% from boreholes and aquifers
Treatment Works:	149
Service Reservoirs:	385
Km of Mains:	42,200
Water Supply Zones:	292

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 336,666 tests on samples taken at water treatment works, from service reservoirs and in water supply zones and of these, 99.81% 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	149	159	156
COLIFORMS			
Total number of tests	23,664	23,970	23,781
– number containing coliforms	60	56	90
– % containing coliforms	0.25%	0.23%	0.38%
Treatment works with coliforms detected	44	39	60
– % of all works with coliforms detected	29.53%	24.53%	38.46%
FAECAL COLIFORMS			
Total number of tests	23,664	23,973	23,781
– number containing faecal coliforms	12	12	18
– % containing faecal coliforms	0.05%	0.05%	0.08%
Treatment works with faecal coliforms detected	11	12	17
– % of all works with faecal coliforms detected	7.38%	7.55%	10.90%

Failures of the coliform standard at 35 works and the faecal coliform standard at 11 works in 2002 were considered trivial, or unlikely to recur as the result of remedial action taken by the Company. Failures of the total coliform standard at three further works were covered by legally binding undertakings given by the Company. These undertakings require remedial work to be carried out to ensure compliance with the standard. There has been a significant decrease since 2000 in the number of treatment works, and in the number of tests carried out on samples from treatment works, in which total coliforms were detected. All other differences were not considered significant.

In 2002, 1,460 regulatory samples for *Cryptosporidium* were taken at four sites. Very low numbers of oocysts were detected in 23 samples from three 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	385	387	387
COLIFORMS			
Total number of tests	19,756	20,173	20,352
– number containing coliforms	58	51	53
– % containing coliforms	0.29%	0.25%	0.26%
Service reservoirs with coliforms detected	50	42	48
Service reservoirs with coliforms detected in more than 5% of tests	0	3	1
– % of all service reservoirs with coliforms detected	0.00%	0.78%	0.26%
FAECAL COLIFORMS			
Total number of tests	19,756	20,173	20,352
– number containing faecal coliforms	8	12	8
– % containing faecal coliforms	0.04%	0.06%	0.04%
Service reservoirs with faecal coliforms detected	8	9	5
– % of all service reservoirs with faecal coliforms detected	2.08%	2.33%	1.29%

There were no failures of the coliform standard at any of the service reservoirs. The detection of faecal coliforms at eight service reservoirs was considered trivial. Differences over the last three years in the number of service reservoirs, and in the number of tests carried out on samples from service reservoirs, in which coliforms or faecal coliforms were detected 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	19,040	136	0.71	16	7	3	3
Faecal coliforms	19,040	11	0.06	0	11	10	9
Colour	4,716	1	0.02	0	1	0	0
Turbidity	8,343	7	0.08	1	6	13	8
Odour	3,043	0	0.00	0	0	0	0
Taste	3,021	0	0.00	0	0	0	0
Hydrogen ion	7,362	2	0.03	1	2	4	12
Nitrate	4,895	16	0.33	16	3	3	2
Nitrite	4,895	1	0.02	0	1	3	3
Aluminium	9,800	6	0.06	0	5	12	11
Iron	9,815	118	1.20	112	81	88	108
Manganese	9,816	43	0.44	37	38	43	37
Lead	4,661	49	1.05	18	43	60	99
PAH	2,222	6	0.27	0	6	10	11
Trihalomethanes	3,881	68	1.75	64	7	10	34
Total pesticides	2,933	2	0.07	0	2	0	1
Atrazine	1,866	0	0.00	0	0	1	0
MCPA	1,951	3	0.15	0	2	2	1
MCPP (Mecoprop)	1,952	1	0.05	0	1	5	6
Simazine	1,866	1	0.05	0	1	0	0
2,4,5-T	1,923	1	0.05	0	1	1	0
Other pesticides	23,988	0	0.00	0	0	0	0
Ammonium	4,889	1	0.02	0	1	5	14
Benzo 3,4 Pyrene	2,218	2	0.09	0	0	1	0
Copper	4,592	0	0.00	0	0	1	1
Oxidizability	601	5	0.83	0	4	1	0
Phosphorus	9,756	5	0.05	0	4	20	4
Surfactants	367	0	0.00	0	0	3	0
Tetrachloroethene	3,879	1	0.03	0	0	0	0
Zinc	4,587	0	0.00	0	0	1	0
All others	66,448	0	0.00	0	0	0	0
TOTAL	248,366	486	0.20%	265			

292 zones in 2002, 304 zones in 2001 and 305 zones in 2000

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	559	1.0 µg/l	0
Bromate	1,216	10.0 µg/l	4
1,2 dichloroethane	557	3.0 µg/l	0
Nitrite (ex-water treatment works)	565	0.1 mg/l	0
<i>Clostridium perfringens</i>	457	0/100 ml	12
Enterococci	1,369	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	331	10.0 µg/l	0	5.0 µg/l	0
Arsenic	829	50.0 µg/l	0	10.0 µg/l	38
Boron	321	2.0 mg/l	0	1.0 mg/l	0
Copper	4,592	3.0 mg/l	0	2.0 mg/l	0
Lead	4,661	50.0 µg/l	49	25.0 µg/l ¹ 10.0 µg/l ²	120 419
Nickel	305	50.0 µg/l	1	20.0 µg/l	0
Nitrite (at consumers taps)	4,895	0.1 mg/l	1	0.5 mg/l	0
PAH	2,222	0.2 µg/l	6	0.1 µg/l	0
Tetrachloroethene	3,879	30.0 µg/l	1	} 10.0 µg/l	1
Trichloroethene	3,879	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
Audit of progress with regulatory programmes of work	March 2002
Audit of regulatory <i>Cryptosporidium</i> samplers	June 2002
Review of distribution system undertaking	July 2002
Inspection of laboratory analysing for <i>Cryptosporidium</i>	August 2002
Audit of response to selected consumer complaints	October 2002
Audit trails of 15 test results	October 2002
Inspection of two water treatment works and one service reservoir	November 2002
Audit of sampling arrangements	November 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 mainly in relation to the audit trails, the inspection of the laboratory analysing for *Cryptosporidium*, and the audit of sampling arrangements.

Incidents

The Inspectorate regarded nine 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.

Four 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 procedures.

During the 2002 reporting period, assessments were also completed for eight incidents, which occurred in 2001.

Five incident assessments from 2002 remain under consideration.

Nature of incident	No. of incidents	Assessment completed	Area affected	Population potentially affected
Supply of discoloured water	4	Yes	Bromborough (March)	4,390
			Fleetwood & Thornton Cleveleys (May)	40,000
	3	No	Maghull (August)	6,000
			Maghull (October)	9,925
			Longridge (August)	10,273
			Little Sutton (September)	9,243
		Croxteth & West	12,173	
		Derby, Liverpool (December)		
Issue of precautionary advice to boil water	1	No	Ulpha (November)	38
Supply of water with taste & odour	1	No	High Harrington (September)	160

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
Total coliforms	3(7)	Huntington WTW	Undertaking
Total coliforms	3(7)	Watchgate WTW	Monitor
Total coliforms	3(7)	Ashworth Moor WTW	Pending
Total coliforms	3(7)	Cowm WTW	Pending
Total coliforms	3(7)	Worsthorne WTW	Pending
Iron	3(3)(c)	Castle Hill supply zone	Undertaking
Aluminium	3(3)(c)	Dilworth supply zone	Distribution undertaking
Turbidity	3(3)(c)	Sutton Hall North supply zone	Distribution undertaking

Undertakings and other Improvement Programmes

Water treatment works and service reservoirs

Seven undertakings were due for completion during 2002. Six of these were to install treatment at Ambleside, Borwick, Burton, Grasmere, Staveley and Troutbeck to remove *Cryptosporidium*. Of these six, two were completed on or ahead of schedule and four were delayed due to circumstances beyond the Company's control. Of these four, three were completed by the end of 2002 and a revised undertaking has been accepted for the fourth. The seventh undertaking, for plumbosolvency control, required treatment to be installed at a number of sites. All the installations were completed on schedule.

Three Regulation 41 programmes of work to meet the new and revised standards set down in the new Water Supply (Water Quality) Regulations 2000 were due for completion in 2002. These were to install treatment at Edenhall, Grange and Mow Cop to remove arsenic. The programmes were completed on schedule.

One statement of intent to reduce the risk of *Cryptosporidium* breaching the treatment standards was due for completion during 2002. This programme was completed on schedule.

One statement of intent for meeting the iron standard was due for completion during 2002. This programme was completed on schedule.

Distribution

The ongoing distribution system undertaking has been progressing satisfactorily. During 2002, 824 km of mains have been renovated. The Company is required to renovate a further 5,476 km of mains by December 2010.

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.

A Regulation 41 programme of work for lead pipe replacement in one supply zone was due for completion by 31 December 2002. However, the replacement of a small proportion of lead pipe was not achieved by this date due to reasons beyond the control of the Company. A revised programme of work with a new completion date has been agreed.