

Water Quality Report 2004

Protecting the health and
well-being of our communities



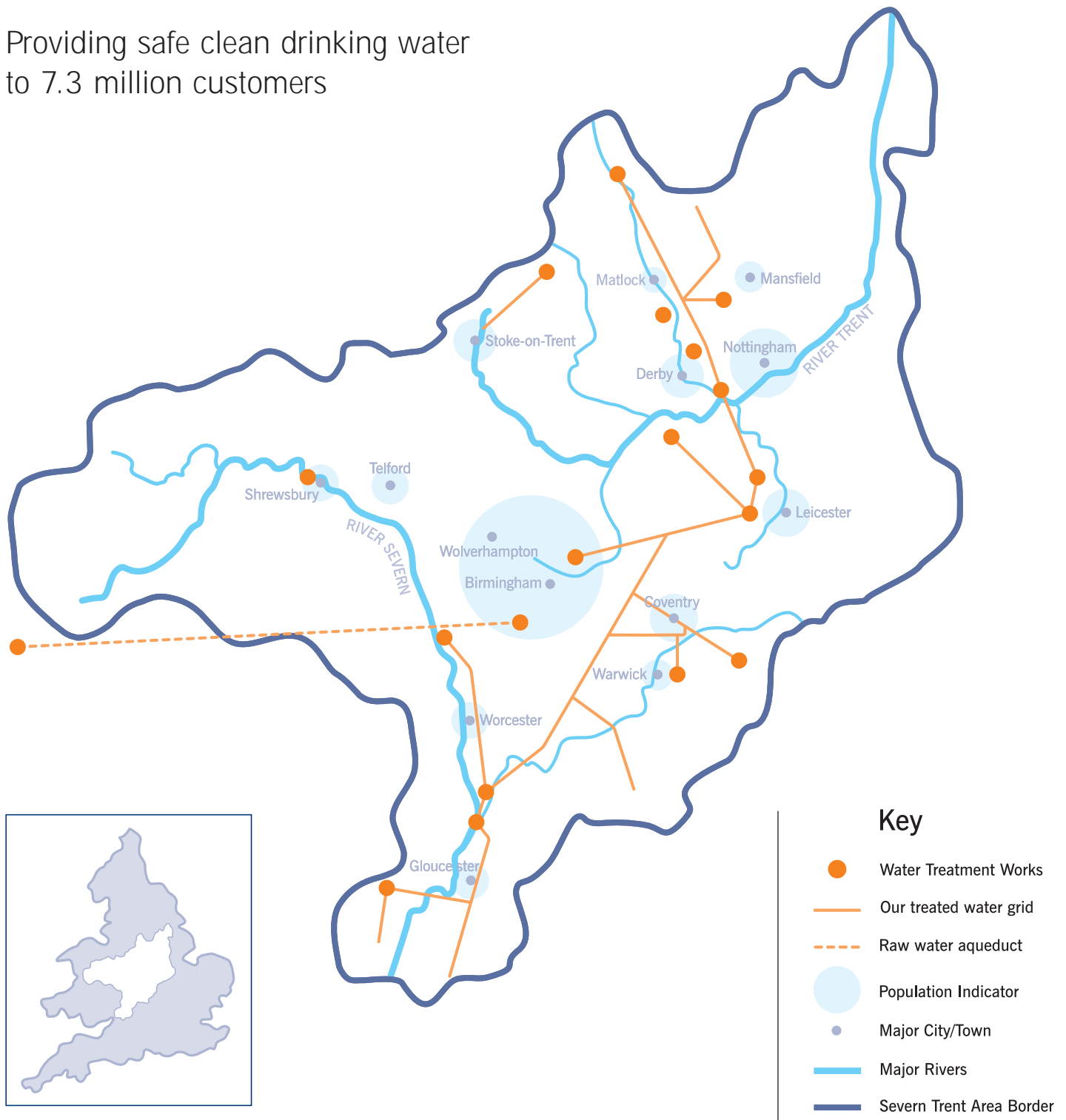
Your water. *Safe in our hands.*

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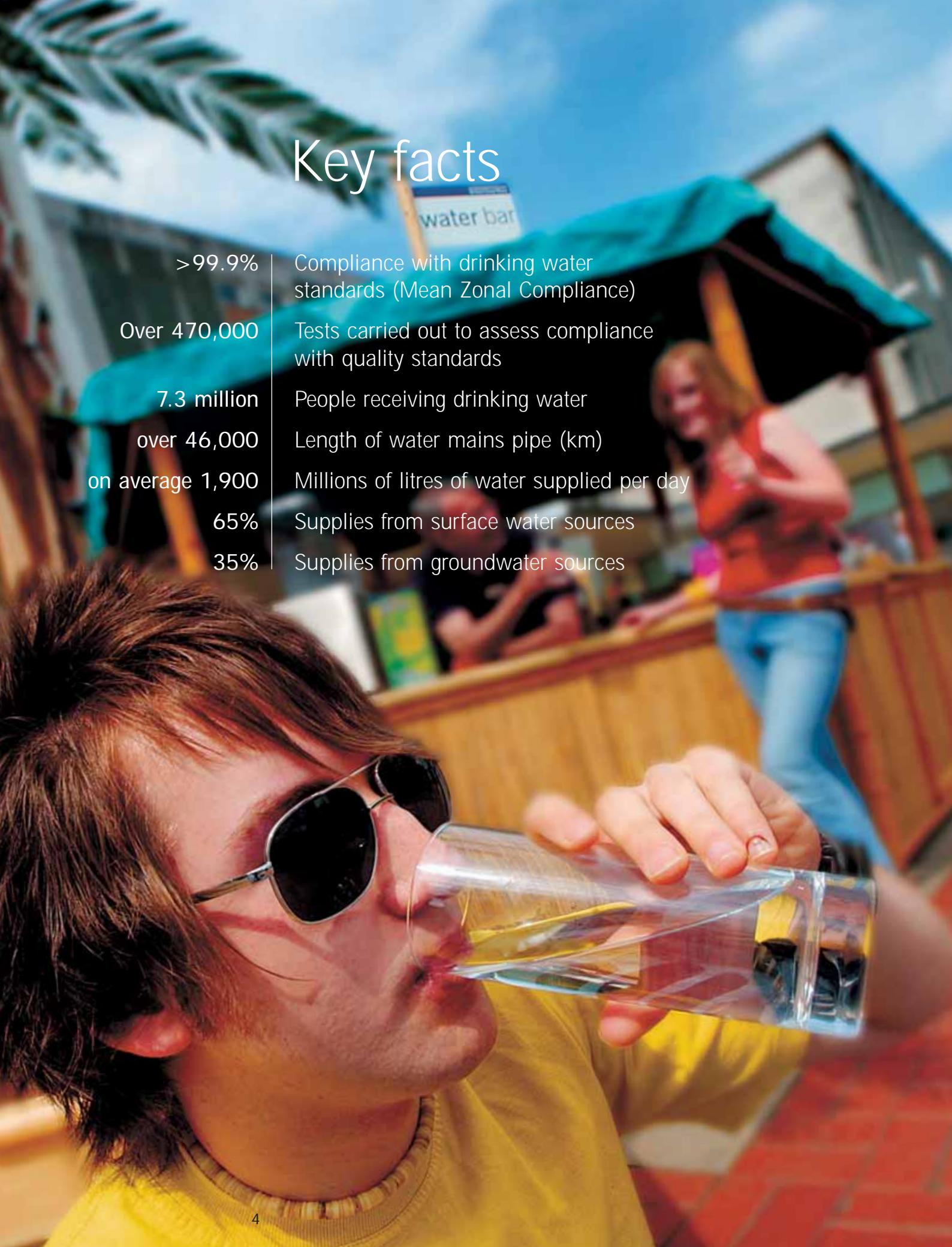
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Communities we serve

Providing safe clean drinking water to 7.3 million customers



Key facts



>99.9%	Compliance with drinking water standards (Mean Zonal Compliance)
Over 470,000	Tests carried out to assess compliance with quality standards
7.3 million	People receiving drinking water
over 46,000	Length of water mains pipe (km)
on average 1,900	Millions of litres of water supplied per day
65%	Supplies from surface water sources
35%	Supplies from groundwater sources

Foreword

This is the first year of reporting against the new Water Quality (Water Supply) Regulations 2000 that came into force on 25 December 2003.

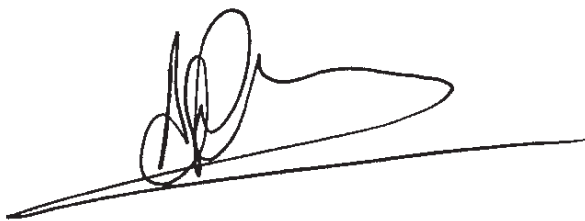
The new regulations introduced new and tighter UK and European standards for drinking water quality.

I am pleased to report that Severn Trent Water achieved 99.9% compliance with the water quality standards in 2004. This is one of the best water quality compliance records in the industry.

This high level of compliance has been achieved through rigorous management of our activities and processes at every stage of the drinking water supply system, 24 hours a day, 365 days a year. It is also a result of the huge investment in new plant, technology and pipework we have made in the last 5 years.

We work closely with our regulatory bodies and health professionals within our region to ensure we provide dependable, high quality drinking water to the 7.3 million customers we serve.

We are committed to the open publication of our water quality performance and this report provides a summary of the 470,000 tests we carried out in 2004 to measure compliance against the water quality standards.



Tony Wray
Managing Director



Severn Trent Water has consistently achieved **99.9%** compliance with water quality standards **since 1997**. This is one of the best water quality compliance records in the industry.



Water Quality Regulations

The Water Supply (Water Quality) Regulations 2000 that define the drinking water standards in the United Kingdom are some of the toughest standards in the world.



Drinking water standards

The standards, which are called 'Prescribed Concentrations or Values' incorporate standards from the European Drinking Water Directive and UK legislation (National standards). The standards are set in a variety of ways. Most define maximum levels and a few minimum levels, while some state the percentage of samples which must meet the required standard.

The standards cover chemicals, micro-organisms and aesthetic qualities such as colour, clarity and taste. The regulations also make a distinction between those parameters that are considered to be important to health (mandatory parameters – European/National standards) and others which largely affect the appearance and taste/smell of water (non mandatory - indicator standards).

The units of measurement used in the standards are extremely small, for example:

1 milligramme per litre (mg/l)
is 1 part in 1,000,000 (million)

1 microgramme per litre (µg/l)
is 1 part in 1,000,000,000 (billion)

1 nanogramme per litre (ng/l)
is 1 part in 1,000,000,000,000 (trillion)

Many of the measurements are very near the limits of detection, even with the most sophisticated instruments. Not surprising when you consider that one part in 10 billion, the individual pesticide standard is twice as difficult as finding one person in the whole world's population

Strict enforcement of standards

The independent Drinking Water Inspectorate (DWI) who have primary responsibility for enforcing the standards closely monitor our water quality programme.

The DWI audit our procedures and sampling results and produce a separate published report on drinking water quality each year. The DWI also investigate any problems that may have occurred. Data and information is also provided to local Public Health Doctors and Environmental Health Officers who have a statutory duty to monitor our water quality performance.

Any exceedance of the standard is always immediately investigated and remedial action taken. In the vast majority of cases such exceedances are minor and temporary in nature. However, all must be reported to the DWI, who can investigate further if they choose.

Water quality information

We are happy to provide any information that our customers may require about water quality.

Information on the water quality in your area or facts leaflets on water quality issues are available online at www.stwater.co.uk/waterquality or by telephoning us on 0800 783 4444.

The DWI also publishes an annual independent report on our water quality performance which is available online at www.dwi.gov.uk





Meeting our customers' needs

A reliable, high quality water supply

Drinking water supply system

We supply on average over 1,900 million litres of water per day. The water is treated at our 200 treatment works and distributed through more than 46,000 km of mains pipe infrastructure.

Investment

Over the past five years we have invested heavily in improving our mains distribution network and our treatment plants to ensure we meet our customers' expectations.

A particular focus has been investment to improve the taste and appearance of drinking water.

Protection of public health

The protection of public health through provision of high quality and reliable water supplies is an absolute priority for Severn Trent Water. Our customers' health and well being is at the heart of our business.

To support this, we work closely with Public Health Doctors and Environmental Health Officers in our region. Each year we also hold formal liaison meetings with Health Professionals to review the company's water quality and environmental performance.

Any event that may impact on water quality or affect acceptability to customers is notified immediately to Public Health Doctors, Environmental Health Officers and the Drinking Water Inspectorate.

Over the past few years the numbers of such events have reduced due to the sound investment in our infrastructure, robust operational practices and due diligence of our staff.

State of the art monitoring

Our quality management systems monitor our activities and processes at every stage of the drinking water supply system – from drinking water abstraction, through every treatment stage at our treatment works and finally through the water mains infrastructure that brings water to your tap.

Our Operations Management Centres use state of the art telemetry and monitoring systems to manage the quality of the water you receive. These systems also enable an early and rapid response to try to anticipate problems before they impact on our customers.

The provision of high quality and reliable water supplies is an absolute priority for Severn Trent Water.



Our quality record

Severn Trent water has consistently achieved 99.9% compliance with the United Kingdom standards for the drinking water it supplies to you.

We strive to make sure that the water we supply is not only safe to drink, but looks and tastes good as well.

We are committed to providing a dependable, **high quality drinking water** supply that fully meets all **European and UK standards**. This is a vital contribution to protecting the health of the communities we serve.

Water Quality 2004

Water leaving Treatment Works (170 Treatment Works)

European Standards

Parameter	Prescribed Concentration or Value (PCV)	Total Number of Samples	Samples Exceeding PCV		Works Exceeding PCV	
			No.	%	No.	%
Nitrite	0.1 mg NO ₂ /l	2541	0	0.0	0.0	0.0
Total	-	2541	0	0	0.0	0.0

National Standards

Parameter	Prescribed Concentration or Value (PCV)	Total Number of Samples	Samples Exceeding PCV		Works Exceeding PCV	
			No.	%	No.	%
Coliform Bacteria	0/100 ml	14692	15	0.102	12	7.059
Cryptosporidium oocysts	<1 oocysts per 10 litres	2941	0	0.0	0	0.0
Escherichia coli	0/100 ml	14692	1	0.007	1	0.588
Total	-	32325	16	0.049	12	7.059

Additional monitoring requirements (non mandatory – indicator parameters)

Parameter	Specification Concentration or Value	Total Number of Samples	Samples Exceeding Specification		Works Exceeding Specification	
			No.	%	No.	%
Colony Counts @ 22°C	No abnormal change	14693	0	0.0	0	0.0
Colony Counts @ 37°C	No abnormal change	14693	0	0.0	0	0.0
Residual Disinfectant (Free Chlorine) mg/l	No standard applies	14694	-	-	-	-
Residual Disinfectant (Total Chlorine) mg/l	No standard applies	14693	-	-	-	-
Turbidity	1 NTU	14173	18	0.127	13	7.647
Total	-	72946	18	0.025	13	7.647

Water at Service Reservoirs (577 Service Reservoirs)

European Standards

Parameter	Prescribed Concentration or Value (PCV)	Total Number of Samples	Samples Exceeding PCV		Reservoirs Exceeding PCV	
			No.	%	No.	%
Coliform Bacteria	0/100 ml	29819	26	0.087	*0	0.0
Escherichia coli	0/100 ml	29819	2	0.007	2	0.347
Total	-	59638	28	0.047	2	0.347

* Compliance required is for 95% of samples from any reservoir unit to have zero coliform organisms per 100ml of sample.

Additional monitoring requirements (non mandatory – indicator parameters)

Parameter	Specification Concentration or Value	Total Number of Samples	Samples Exceeding Specification		Reservoirs Exceeding Specification	
			No.	%	No.	%
Colony Counts @ 22°C	No abnormal change	29819	0	0.0	0	0.0
Colony Counts @ 37°C	No abnormal change	29819	0	0.0	0	0.0
Residual Disinfectant (Free Chlorine) mg/l	No standard applies	29819	-	-	-	-
Residual Disinfectant (Total Chlorine) mg/l	No standard applies	29819	-	-	-	-
Total	-	119276	0	0.0	0	0.0

Water at Customer Taps (191 Water Quality Zones)

European Standards

Parameter	Prescribed Concentration or Value (PCV)	Total Number of Samples	Samples Exceeding PCV		Zones Exceeding PCV	
			No.	%	No.	%
1,2 Dichloroethane	3 µg/l	1387	0	0.0	0	0.0
Antimony	5 µg Sb/l	1388	0	0.0	0	0.0
Arsenic	10 µg As/l	1390	0	0.0	0	0.0
Benzene	1 µg/l	1387	0	0.0	0	0.0
Benzo(a)pyrene	0.01 µg/l	1393	1	0.072	1	0.524
Boron	1 mg B/l	1389	0	0.0	0	0.0
Bromate	10 µg BrO ₃ /l	1400	0	0.0	0	0.0
Cadmium	5 µg Cd/l	1388	0	0.0	0	0.0
Chromium	50 µg Cr/l	1389	0	0.0	0	0.0
Copper	2 mg Cu/l	1388	0	0.0	0	0.0
Cyanide	50 µg CN/l	1387	0	0.0	0	0.0
Escherichia coli	0/100 ml	18855	2	0.011	2	1.047
Enterococci	0/100 ml	1390	0	0.0	0	0.0
Fluoride	1.5 mg F/l	1387	0	0.0	0	0.0
Lead	25 µg Pb/l	1424	4	0.281	4	2.094
Mercury	1 µg Hg/l	1389	0	0.0	0	0.0
Nickel	20 µg Ni/l	1389	0	0.0	0	0.0
Nitrate	50 mg NO ₃ /l	1689	0	0.0	0	0.0

Water at Customer Taps (191 Water Quality Zones) cont.

European Standards

Parameter	Prescribed Concentration or Value (PCV)	Total Number of Samples	Samples Exceeding PCV		Zones Exceeding PCV	
			No.	%	No.	%
Nitrite	0.5 mg NO ₂ /l	1686	0	0.0	0	0.0
Pesticides (Aldrin)	0.03 µg/l	1396	0	0.0	0	0.0
Pesticides (Ametryn)	0.1 µg/l	21	0	0.0	0	0.0
Pesticides (Atrazine)	0.1 µg/l	21	0	0.0	0	0.0
Pesticides (Dieldrin)	0.03 µg/l	1399	0	0.0	0	0.0
Pesticides (Diflufenican)	0.1 µg/l	21	0	0.0	0	0.0
Pesticides (EPTC)	0.1 µg/l	21	0	0.0	0	0.0
Pesticides (Fenpropimorph)	0.1 µg/l	20	0	0.0	0	0.0
Pesticides (Flutriafol)	0.1 µg/l	21	0	0.0	0	0.0
Pesticides (Heptachlor)	0.03 µg/l	1396	0	0.0	0	0.0
Pesticides (Heptachlor epoxide)	0.03 µg/l	1396	0	0.0	0	0.0
Pesticides (Metazachlor)	0.1 µg/l	21	0	0.0	0	0.0
Pesticides (Pirimicarb)	0.1 µg/l	21	0	0.0	0	0.0
Pesticides (Prometryn)	0.1 µg/l	21	0	0.0	0	0.0
Pesticides (Propazine)	0.1 µg/l	21	0	0.0	0	0.0
Pesticides (Propyzamide)	0.1 µg/l	21	0	0.0	0	0.0

Water at Customer Taps (191 Water Quality Zones) cont.

European Standards

Parameter	Prescribed Concentration or Value (PCV)	Total Number of Samples	Samples Exceeding PCV		Zones Exceeding PCV	
			No.	%	No.	%
Pesticides (Simazine)	0.1 µg/l	21	0	0.0	0	0.0
Pesticides (Tecnazene)	0.1 µg/l	21	0	0.0	0	0.0
Pesticides (Terbutryn)	0.1 µg/l	21	0	0.0	0	0.0
Pesticides (Triallate)	0.1 µg/l	21	0	0.0	0	0.0
Pesticides (Trietazine)	0.1 µg/l	21	0	0.0	0	0.0
Pesticides (Trifluralin)	0.1 µg/l	21	0	0.0	0	0.0
Pesticides: Total	0.5 µg/l	1395	0	0.0	0	0.0
Polycyclic Aromatic Hydrocarbons	0.1 µg/l	1416	1	0.071	1	0.524
Selenium	10 µg Se/l	1388	0	0.0	0	0.0
Tetra / Trichloroethane	10 µg/l	1390	0	0.0	0	0.0
Trihalomethanes: Total	100 µg/l	1405	4	0.285	4	2.094
Total	-	57432	12	0.021	12	6.283

Water at Customer Taps (191 Water Quality Zones) cont.

National Standards

Parameter	Prescribed Concentration or Value (PCV)	Total Number of Samples	Samples Exceeding PCV		Zones Exceeding PCV	
			No.	%	No.	%
Aluminium	200 µg Al/l	4439	1	0.023	1	0.524
Colour	20 mg/l Pt/Co Scale	3389	0	0.0	0	0.0
Hydrogen ion	6.5-10 pH value	5284	3	0.057	2	1.047
Iron	200 µg Fe/l	5265	26	0.494	21	10.995
Manganese	50 µg Mn/l	3476	6	0.173	5	2.618
Odour	3 at 25°C dilution number	3612	2	0.055	2	1.047
Sodium	200 mg Na/l	1389	0	0.0	0	0.0
Taste	3 at 25°C dilution number	3605	1	0.028	1	0.524
Tetrachloromethane	3 µg/l	1388	0	0.0	0	0.0
Turbidity	4 NTU	4494	0	0.0	0	0.0
Total	-	36341	39	0.107	25	13.089

Water at Customer Taps (191 Water Quality Zones) cont.

Additional monitoring requirements (non mandatory
– indicator parameters)

Parameter	Specification Concentration or Value	Total Number of Samples	Samples Exceeding Specification	
			No.	%
Ammonium	0.5 mg NH ₄ /l	3767	0	0.0
Chloride	250 mg Cl/l	1384	0	0.0
Clostridium perfringens (including spores)	0/100 ml	2940	2	0.068
Coliform Bacteria	0/100 ml	18856	86	0.456
Colony Counts @ 22°C	No abnormal change	6790	0	0.0
Colony Counts @ 37°C	No abnormal change	6789	0	0.0
Conductivity	2500 µS/cm	3696	0	0.0
*Gross Alpha	0.1 Bq/l	1394	-	-
*Gross Beta	1 Bq/l	1394	-	-
Hydrogen ion	< 9.5 pH value	5284	0	0.0
Residual Disinfectant (Free Chlorine) mg/l	No standard applies	18856	-	-
Residual Disinfectant (Total Chlorine) mg/l	No standard applies	18856	-	-
Sulphate	250 mg SO ₄ /l	1385	0	0.0
Total Organic Carbon (TOC)	No abnormal change	1395	0	0.0
Total	-	92786	88	0.095

*Monitored for the calculation of Total Indicative Dose

Authorised Departures and Undertakings

Authorised Departures

An authorised departure from part 3 of the regulations can be granted by the Secretary of State and can be applied when a temporary supply is considered not to be wholesome. Departure can only be given if there is no risk to health and for a maximum of three years.

We currently have no authorised departures.

Undertakings

Where there is a risk of breaching a standard but no risk to health an undertaking can be made under section 19 of the Water Industry Act 1991 to the Secretary of State. Undertakings set out detailed programmes of remedial actions to be completed within agreed timescales. Those currently in place are set out below

	Parameter	Zones Supplied	Approx. Population	Steps (to be) taken	Statutory Date	Status
ST.110	Iron, Turbidity & PAH	Further information on zones covered available on request		Renovate 1960 km of mains. Submit future undertakings if required	March 2005	Complete
ST.111	Iron	ZDB09 ZDB13	118,392	Strategic mains cleaning	March 2005	Complete
ST.112	Iron	ZDB07	36,518	Strategic mains cleaning	March 2005	Complete

Incidents Reported to Drinking Water Inspectorate

Despite our best efforts, with a 24 hours a day, 365 days a year service, there are occasional problems. When these occur we inform the Drinking Water Inspectorate who carry out an independent assessment of the circumstances. We also take all measures necessary to minimise the impact on customers, and to restore quality as quickly as possible. We ensure that any lessons learnt from the event are incorporated into our operating procedures. During 2004 three incidents were reported. Details are presented below.

Date	Location	Incident Type
January 2004	Knivedon Service Reservoir, Staffordshire	Loss of supply
September 2004	Wolverhampton, West Midlands	Discolouration
October 2004	Sugarbrook Service Reservoir	Microbiological failure

How to get more information

We produce complementary Sustainability, Care and Biodiversity Reports. We also produce a range of leaflets on water quality and environmental matters which can be obtained by visiting our web-site www.stwater.co.uk, or by telephoning our Customer Relations Department on 0800 783 4444.

We maintain a Public Register that shows the results of samples that Regulations require us to collect from customers' homes. You can view the Public Register by appointment at our Head Office at the address shown below. Annual water quality reports and information are also available from our web-site.

Head Office
 Severn Trent Water Limited
 2297 Coventry Road,
 Birmingham B26 3PU
 Tel: 0121 722 4000

We have a single business number – 0121 722 4000
www.stwater.co.uk – Severn Trent Water website
www.stwater.co.uk/waterquality - Water quality in your area
www.stwater.co.uk/waterqualityreports - Fact sheets and leaflets

We are subject to a very strict level of regulation in all our activities. Please talk to us first about any problems, but issues which cannot be resolved by us may be referred to the appropriate agency.

Addresses of Regulators

Office of Water Services (OFWAT)
 Centre City Tower
 7 Hill Street, Birmingham B5 4UA,
 Tel: 0121 625 1300
www.ofwat.gov.uk

OFWAT is a Government Department responsible for ensuring customers in England and Wales receive an efficient service of good quality and at a fair price.

WaterVoice Central
 1st Floor, Chanelle House
 86 New Street, Birmingham B2 4BA
 Tel: 0845 702 3953
www.ofwat.gov.uk

The Director General of Water Services has set up regional WaterVoice Committees to ensure customer representation in the regional regime.

Environment Agency Midlands Region
 Sapphire East, 550 Streetsbrook Road
 Solihull, West Midlands B91 1QT
 Tel: 08708 506 506
www.environment-agency.gov.uk

The EA is a national agency, organised on a regional basis for pollution control, water resource management, flood defence, fisheries, public recreation and conservation. It sets standards for effluents discharged to rivers and monitors the quality of effluents and the natural water environment.

Drinking Water Inspectorate (DWI)
 Ashdown House
 123 Victoria Street, London SW1E 6DE
 Tel: 020 7082 8024
www.dwi.gov.uk

The DWI acts as a technical assessor for the Government on the monitoring, recording and reporting of drinking water and the progress of legally committed improvement schemes by companies. It carries out technical audits of companies, investigates incidents, initiates actions to facilitate compliance with legal requirements and provides advice and expertise to Government departments on drinking water policy.

Local Authority (District Councils)
 See local address in the telephone directory

District councils have public health responsibilities to oversee the provision of sufficient and wholesome water supplies. Environmental Health Departments normally administer these functions.

European Commission
 DG11 Directorate B
 200 Rue de la Loire Brussels
www.europa.eu.int

Administers EC Directives and their implementation by national governments

Severn Trent Water

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This publication is available in alternative formats including large print and Braille.
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a member of the Severn Trent Group

