THE QUALITY OF DRINKING WATER IN THE EUROPEAN UNION 2002-2004

SYNTHESIS REPORT ON THE QUALITY OF DRINKING WATER IN THE MEMBER STATES OF THE EUROPEAN UNION IN THE PERIOD 2002-2004
Directives 80/778/EEC and 98/83/EC

Source picture: Amsterdam Waternet

Colofon

The Quality of Drinking Water in the European Union
Synthesis Report on the Quality of Drinking Water in the European Union period 2002-2004
(Directives 80/778/EEC and 98/83/EC)

17 December 2007

Accuracy of information

The reader should note that the information contained in this report is that submitted by Member States. The European Commission is thus not responsible for its quality, accuracy or representativeness. It should also be noted that the information is not complete in terms of the number of Member States reporting and the number of questions being answered. All information presented in this synthesis report has been submitted to responsible authorities in the Member States for approval prior to the publication of this report.

List of abbreviations

WSZ	Water supply zone as defined in the Drinking Water Directive
"Larger WSZ"	Serving more than 5000 persons or supplying more than 1000m^3/day
MAC	Maximum Acceptable Concentration
DWD	Drinking Water Directive
n.a.	Not applicable (e.g. in the case of no reporting obligation or in the case a parameter has not been retained in the 98/83/EC DWD)
n.i.	no information

In this report the data reported relate to two subsequent Council Directives for drinking water 80/778/EEC and 98/83/EC. During the revision process some of the parameter names have been changed to include the developments in research and science.

To make it easier to understand the text and compare the data from various years and various Member States we have opted for using both names in all tables and text sections, regardless of the names Member States used in the reporting. We are aware of the fact that this is not fully correct as with the names the analytical methods might have changed. It is a compromise we have accepted. The names we refer to in the report are:

DWD 80/778/EEC	DWD 98/83/EC
Faecal coliforms FC	*E.coli*
Faecal Streptococci FS	Enterococci
Total coliforms TC	Coliform bacteria
SSRC	*Cl.perfringens*
Organochlorine compounds not covered by parameter 55	THM

The authors would like to stress that the information in this synthesis report on derogations is limited as the data are submitted one year after the reporting period has ended. It is a retrospecive reporting. Substantial information on derogations is always submitted to the EC the moment a derogation is issued.

Executive Summary

The quality of drinking water in the European Union is covered by Council Directive 98/83/EC concerning the quality of water intended for human consumption. The 98/83/EC Drinking Water Directive (DWD) came into force in 1998 and replaces the previous DWD 80/778/EEC. The Member States of the EU had two years to transpose the new DWD in their national legislation (transposition) and another three years to comply with the requirements of the DWD (implementation).

Every three years the Member States have to report to the European Commission on the quality of the drinking water within their territory in relation to the DWD. Member States report for each of the three years separately. Reporting requirements and formats are regulated in the Reporting Directive (91/692/EEC).

For each reporting period the European Commission produces and publishes a synthesis report that is based on the information provided by the Member States. This synthesis report covers the returns from Member States on the Drinking Water Directive for the fourth reporting period, covering the years 2002-2004. This period can be seen as a transitional period between the old and the new DWD. For the year 2004 all Member States reported on the basis of the new DWD 98/83/EC. For the years 2002 and 2003 the returns are a mix of old and new DWD.

Eighteen Member States submitted a return for the Drinking Water Directive (DWD). This is the first period that Member States from the European Union that joined in 2004 were able to report. Even though these Member States do not yet have a legal reporting obligation, the Czech Republic, Hungary and Estonia submitted a report on a voluntary basis. The Czech Republic did send in a return for all three reporting years.

Even though Member States have to report at a national level and not at a regional level as Belgium does, it was decided that data from the three Belgian regions are to be included. However, it was not possible to aggregate the data from the three regions, so Flanders, Walloon and Bruxelles are presented as separate entities. This has an effect on the comparisons that are made between Member States in this report, as regional data should not be compared to national data from other Member States.

Data were received from Sweden, but the data were presented in such a format that they could not be included in the synthesis report.

In this synthesis report the water quality parameters that cause non-compliance with the drinking water standards in the DWD are identified at an individual Member State level. Where possible a comparison is made between the water quality in the fourth and the previous reporting period. A summary of water quality at European Union level is made.

The summary that was made from the data produced by the Member States focused on the compliance with the parameters of the current DWD, the list A, list B and list C parameters. Parameters that most often cause non-compliance at a European level are:

- Iron and manganese (**list C**)
- Coliform bacteria (**list C**)
- Aluminium (**list C**)
- Enterococci (**list A**)
- Colony Counts 22 (**list C**)
- Arsenic, nitrate, THM (trihalomethanes) (**list B**) , sulphate (**list C**)
- Lead, nickel, PAH (polycyclic aromatic hydrocarbons) (**list B**), chloride, pH and turbidity (**list C**).

It is not easy to draw conclusions on trends in water quality at individual Member State and EU level. For the new Member States no trend analysis is possible and also not for Member States that submitted very incomplete returns. A number of Member States show both an increase in non-compliance for some parameters a decrease for other parameters: Belgium, Denmark, France, Italy, Austria, and Finland. No significant change is obvious in the Netherlands and the United Kingdom. Improvements seem to have been realised in Germany, Spain and Ireland and also in Portugal.

There are often derogations in place for specific parameters. Italy has issued the highest number of derogations. The parameters mostly covered by a derogation are **arsenic, fluoride, nitrate and iron, and pesticides.**

A large number of pesticides is reported by the Member States. The most often mentioned pesticides are **atrazine and desethylatrazine**.

The synthesis shows that especially the indicator parameters cause many water quality problems in the various Member States of the EU. Of the list B parameters **arsenic and nitrate** cause most cases of non-compliance in the Member States and there are many derogations in place for these parameters. Special attention is required for individual **pesticides** as they cause non-compliance but are also subject to derogations, while the philosophy behind the parametric value in the

DWD is that such substances should be absent in drinking water (sources).

Contents

1 Introduction

The quality of drinking water in the European Union is covered by Council Directive 98/83/EC concerning the quality of water intended for human consumption. The 98/83/EC Drinking Water Directive (DWD) came into force in 1998 and replaces the previous DWD 80/778/EEC. The Member States of the EU had two years to transpose the new DWD in their national legislation (transposition) and another three years to comply with the requirements of the DWD (implementation).

Every three years the Member States report to the European Commission on the quality of the drinking water within their territory in relation to the DWD. Member States report for each of the three years separately. Reporting requirements and formats are regulated in the Reporting Directive (91/692/EEC). Even though no new reporting format for the new DWD has yet been agreed, most Member States reported on the basis of the old format and also often in accordance with the Guidance Document on Reporting. This format has been produced by the European Commission together with an expert working group with representatives of the Member States. This reporting format will be used as a basis for the future electronic reporting via the Water Information System Europe (WISE): http://ec.europa.eu/environment/water .

For each reporting period the European Commission produces and publishes a synthesis report that is based on the information provided by the Member States. This synthesis report covers the returns from Member States on the Drinking Water Directives (80/778/EEC and 98/83/EC) for the fourth reporting period, covering the years 2002-2004.

The first reporting period for the 80/778/EEC DWD covered the years 1993-1995. The data submitted by the Member States were processed by the European Commission and a synthesis report was produced in 2001[1].
For the second reporting period (1996-1998)[2] a second synthesis report was produced in 2003 on the quality of drinking water in the European Union.
For the third reporting period (1999-2001)[3] a third synthesis report was produced in 2008 on the quality of drinking water in the European Union. All three reports (1993-1995), (1996-1998) and (1999-2001) are available on the website of the European Commission, http://ec.europa.eu/environment/water/water-drink/index_en.html.
This is the fourth synthesis report covering the reporting period 2002-2004.

1. Synthesis report on the quality of drinking water in the Member States of the European Union in the period 1993-1995 (2001)
2. Synthesis report on the quality of drinking water in the Member States of the European Union in the period 1996-1998 (2003)
3. Synthesis report on the quality of drinking water in the Member States of the European Union in the period 1999-2001 (2008)

2 Council Directive on the quality of water intended for human consumption 80/778/EEC

General aspects Drinking Water Directives
In 1998 the revised Drinking Water Directive 98/83/EC was adopted and the Directive has been transposed into national legislation by all Member States of the European Union. For the reporting period covered in this synthesis report the information relates to the previous Drinking Water Directive (DWD) 80/778/EEC and to the current DWD in force 98/83/EC. Eighteen Member States submitted a more or less complete return for the fourth reporting period.

The report submitted by Sweden could not be processed as the very different format used by the Member State did not allow a proper synthesis. There were serious shortcomings in the reports from Greece and Luxembourg (even though we did use some of the information in the report) and in the report from Belgium as it did not concern the national level.

Three Member States that joined in 2004 submitted a return for this period, which were Estonia, Czech Republic and Hungary. The return submitted by Hungary was not representative of the overall drinking water quality in the Member State. After consultation with the responsible authorities it was decided not to include these data in the synthesis report. The data from the Czech Republic and from Estonia are included.

In this synthesis report a comparison is made with the water quality results from the previous reporting periods if such information is available.

On average most EU Member States have approximately 200 to 300 large water supply zones for which they have a reporting obligation. There are exceptions with very few large wsz such as Luxembourg and Estonia and a few large Member States with a few thousand (1700 to 2700) large wsz (France, Italy, Germany and the UK). Spain is not easy to assess as they do not distinguish between large and small wsz. See table 2.1.

Table 2.1 General information on the reporting by the EU Member States: 1. the DWD the data relate to 2. the years covered by the reporting and 3. the number of water supply zones covered by the reporting.

Member State	1. Data relate to DWD 80/778/EEC or 98/83/EC			2. Returns submitted for the years			3. WSZ > 5000 people or > 1000 m³/day
	2002	2003	2004	2002	2003	2004	Average 2002-2004
Belgium*	80/778	80/778	98/83	Y/N/Y	Y/Y/Y	Y/Y/N	± 300 (estimate)
Czech Rep.	98/83	98/83	98/83	Y	Y	Y	268
Denmark	98/83	98/83	98/83	Combined for 3 years			260
Germany	80/778	98/83	98/83	Y	Y	Y	2706
Estonia	n.a.	n.a.	98/83	n.a.	n.a.	Y	21
Greece	80/778	80/778	98/83	Y	Y	Y	n.i.
Spain	80/778	98/83	98/83	Y	Y	Y	1134 (all wsz)
France	80/778	80/778	98/83	Y	Y	Y	2288
Hungary**	n.a.	n.a.	98/83	n.a.	n.a.	Y	281
Ireland	80/778	80/778	98/83	Y	Y	Y	160
Italy	80/778	80/778	98/83	Y	Y	Y	1677
Luxembourg	n.i.	n.i.	n.i.	Y	Y	Y	10 (provinces)
Netherlands	98/83	98/83	98/83	Y	Y	Y	221
Austria	98/83	98/83	98/83	Y	Y	Y	229
Portugal	80/778	98/83	98/83	Y	Y	Y	314
Finland	98/83	98/83	98/83	Y	Y	Y	165
Sweden***	n.i.	n.i.	n.i.	O	O	O	n.i.
Un.Kingdom	80/778	80/778	98/83	Y	Y	N	2266
Total							12.300

n.i. = no information
n.a. = not applicable, no reporting obligation
O = omitted from the report due to unsuitable format used for reporting
** Flanders Region reported on the basis of the new DWD 98/83/EC in 2003 and 2004 (no data 2002)*
The Walloon Region reported on the basis of the old DWD in 2002 and 2003 (no data for 2004)
The Brussels Region reported on the basis op the old DWD in 2002 and 2003 and on the basis of the new DWD 98/83/EC in 2004
*** After consultation with he responsible authorities the data from Hungary were not included.*
**** The information submitted by Sweden was in such a different format that it could not be processed.*

Rationale of the synthesis report

In this report each Member State is discussed with respect to its drinking water supply, where both quantitative and qualitative information are addressed. In the first part of each paragraph some key data on the supply of drinking water is presented for each Member State. This information concerns:

- the total population in the Member State;
- the number of water supply zones serving more than 5000 people or producing more than 1000 m³ of water per day;
- the number of people served by these supplies;
- the total quantity of water supplied by these water supply zones;
- the percentage of the population served by these supplies;
- and the water sources used for the production of this water: (groundwater, surface water and other water sources).

In the second part of each paragraph the quality of the drinking water supplied is addressed and compared to the information on the quality in the previous three reporting periods if available.

The qualitative analysis for each Member State concerns:

- a summary of water quality at a national level, mentioning for each parameter the percentage samples that do not comply with the parametric values in the DWD;
- the number of water supply zones where one or more parameters are not always in compliance with the parametric values in the DWD.

Where available the parameters for which a derogation has been issued are reported.

In the last chapter data submitted by the Member States are used to try and draw some conclusions at a European Union level.

3 Drinking Water Quality in the Member States

In this chapter the returns submitted by the Member States will be discussed. Each paragraph summarises the information for one of the Member States. Firstly some key data on the water supply are addressed and secondly the quality of the drinking water supplied in comparison to the requirements of the Drinking Water Directive. Parameters discussed are limited to those that have a parametric value in the Directive. The information is restricted to the "larger" water supply zones that fall under the reporting requirements. Larger water supply zones are serving more than 5000 persons or supply more than 1000 m^3 water per day. Where possible data are compared to the results of the previous three reporting periods to try and identify any improvements in water quality.

3.1 Drinking Water Quality in Belgium 2002-2004

The quality and completeness of the 2002-2004 returns
Belgium consists of three regions, the Brussels Region (the district of the capital city of Brussels), the Flanders Region (Vlaams Gewest) and the Walloon Region (Région Wallonne). Belgium reports to the European Commission on the quality of drinking water for each of the three regions separately. Even though this is not in line with the requirements for reporting an attempt was made to process the data for Brussels, Flanders and Walloon and integrate them if possible to make the synthesis report as complete as possible. It is difficult if not impossible to aggregate the data at a national level, as it not merely a matter of adding up cases of non-compliance and percentages at a national level.

Brussels reported on the years 2002 and 2003 on the basis of DWD 80/778/EEC and for the year 2004 on the basis of the new DWD 98/83/EC.
Flanders reported on the years 2003 and 2004 all on the basis of the new DWD 98/83/EC. For the year 2002 Flanders did not have the data available in a suitable digital format.
Walloon reported on the years 2002 and 2003 on the basis of the DWD 80/778/EEC. No data were received on the year 2004.
In conclusion the return for the 2002-2004 from Belgium was incomplete as the Member State did not report on aggregated data at a national level and both the Flanders and the Walloon Region did not report on all three reporting years.

General information on the water supply in Belgium

Belgium has a total population of 10.3 million persons. Dependent on the region between 83 and 100% of the population is connected to

larger water supplies that serve more than 5000 persons or that produce more than 1000 m^3 of water per day (see table 3.1.1). There are 2 of such water supply zones in Brussels and 168 in the Walloon region. The number of large water supply zones in the Flanders region is not known. The quality data for Belgium that are presented in this synthesis report concern the abovementioned 170 water supply zones. Drinking water in Belgium is produced from both groundwater sources (higher percentage) and surface water sources.

Table 3.1.1 General information Belgium 2002-2004

Total population	10.3 million total for Belgium		
	Brussels	Flanders	Walloon
Number of water supply zones serving more than 5000 persons/more than 1000 m^3 water per day	2		168
Number of people served by these water supply zones	0.98/0.99/0.99 million		2.8 million
Total amount of water supplied (only supplies serving 5000 or more consumers)	68.8/69.5/68.5 Mm^3/yr		182 Mm^3/yr
Population served by these supplies	100%		83.5%
Raw water sources			
Groundwater	85%	50%	79%
Surface water	15%	50%	21%
Other sources	none	none	none

The parameters that caused non-compliance in more than 1% of the samples taken in these water supply zones are listed in table 3.1.2 (left column), starting with the parameter that has the highest percentage of non-complying samples (iron and residual chlorine). Detailed information is presented in tables 3.1.3 and sub-tables 3.1.3 (a, b and c).

Belgium also provided information at water supply zone level on the parameters that did not always comply with the parametric values in the DWD. The information is available for the Brussels Region, incomplete for the Flanders Region (at province level and not for all three years, 2002 missing) and incomplete for the Walloon Region (2004 missing). The parameters that caused non-compliance in more than 1 sample are listed in table 3.1.2 (right column), starting with the parameter that caused non-compliance in the highest number of wsz (FS/Enterococci and TC/coliform bacteria). Detailed information is presented in table 3.1.4.

Table 3.1.2 Summary of water quality parameters that cause non-compliance in Belgium, 2002-2004	
Parameters that cause non-compliance in more than 1% of all samples taken in Belgium (in any of the three reporting years)*	**Parameters that show non-compliance in a number of water supply zones in Belgium***
Brussels Region:	**Brussels Region:**
Iron	FS/Enterococci
Nickel	Lead
Lead	Nickel
PAH	SSRC/*Cl.perfringens*
	Iron
	Manganese
	TC/Coliform bacteria
	Temperature
Flanders Region:	**Flanders Region:**
Iron	TC/Coliform bacteria
Sodium	FS/Enterococci
Lead	Lead
	Nickel
	SSRC/*Cl.perfringens*
	Iron
	Manganese
	BaP
	Fluoride
	Ammonium
	FC/*E.coli*
	Nitrite
	Aluminium
	Sodium
	Copper
	pH
Walloon Region:	**Walloon Region:**
Residual chlorine	FS/Enterococci
Iron	TC/Coliform bacteria
Sulphate	FC/*E.coli*
Aluminium	Iron
Manganese	Aluminium
TC/Coliform bacteria	Nitrate
	Manganese
	Nitrite
	THM
	Sulphate
	Lead
	SSRC/*Cl.perfringens*
	BaP
	pH
All other parameters comply in 99% or more of the samples.	**Parameters that most often caused failure in supply zones (in more than 1 sample in any year)**

* Only supplies serving 5000 or more consumers

National summary of the drinking water quality in Belgium

Table 3.1.3 presents information on the overall quality of drinking water in all larger supplies in the three Belgian Regions in the fourth reporting period. For each non-compliant parameter the percentage of samples that exceeded the parametric value in the DWD is presented.

Table 3.1.3 National summary of monitoring results for each parameter in large wsz >5000 people. For the years 2002, 2003 and 2004 . Parameters that showed non-compliance in more than 1% of the samples taken. Percentages non-compliance.

Region	**Brussels**			**Flanders**			**Walloon**		
Reporting year	**2002**	**2003**	**2004**	**2002**	**2003**	**2004**	**2002**	**2003**	**2004**
Parameters				**No data**					**No data**
Iron			5.34		2.48	1.36	2.2	2.1	
Nickel			4.80						
Residual chlorine							4.3	2.4	
Aluminium							3.7		
Sulphate							1.7	2.6	
Manganese								2.6	
Sodium					1.76	1.62			
Lead			1.33		1.15	1.15			
PAH			1.14						
TC/Coliform bacteria							1.1		
							Note 1		Note 2
All other parameters complied in 99% or more of the samples taken in the regions									

Comment responsible authorities Walloon Region:
Note 1 : 2002 results incorporate previous stable results of reference year 2001
Note 2 : 2004 transition year with a mix of results 80/778 and 98/83 impossible to merge

Table 3.1.3.a Percentage exceedances for samples taken in all water supply zones serving 5000 or more consumers in 2002-2004 and for comparison 1993-1995, 1996-1998 and 1999-2001, Brussels region Belgium						
Year	**1993-1995**	**1996-1998**	**1999-2001**	**2002**	**2003**	**2004**
Parameter	**No data**	No parameter	No parameter	No parameter	No parameter	
Iron						5.34
Nickel						4.80
Lead						1.33
PAH						1.14
All other parameters complied in 99% or more of the samples taken						

Table 3.1.3.b Percentage exceedances for samples taken in all water supply zones serving 5000 or more consumers in 2002-2004 and for comparison 1993-1995, 1996-1998 and 1999-2001, Flanders region Belgium						
Year	**1993-1995**	**1996-1998**	**1999-2001**	**2002**	**2003**	**2004**
Parameter	**No data**	**No data**		**No data**		
Iron			4.5/4.2/4.4		2.48	1.36
Sodium			<1/6.4/<1		1.76	1.62
Lead					1.15	1.15
Phenols			27.0/24.6/4.3			
Fluoride			3.8/3.2/4.0			
Cyanides			<1/3.3/<1			
Pesticides			1.9/<1/<1			
Manganese			1.4/1.4/<1			
Nickel			<1/1.7/<1			
TC/Coliform bacteria			<1/<1/1.7			
Silver			<1/1.2/<1			
Potassium			1.4/1.1/<1			
Colour			<1/1.2/<1			
FS/Enterococci			<1/<1/1.1			
Hydrocarbons			1.2<1/<1			
Turbidity			<1/<1/1.2			
All other parameters complied in 99% or more of the samples taken or no data were submitted						

Table 3.1.3.c Percentage exceedances for samples taken in all water supply zones serving 5000 or more consumers 2002-2004 and for comparison 1993-1995 , 1996-1998 and 1999-2001, Walloon region Belgium						
Reporting year	1993-1995	1996-1998	1999-2001	2002	2003	2004
Parameter						No data
Residual chlorine			4.3	4.3	2.4	
Iron	2.0/2.0/2.8		2.1	2.2	2.1	
Sulphate			1.7	1.7	2.6	
Aluminium	25.0/6.4/3.8	1.4	3.3	3.7		
Manganese		2.1			2.6	
TC/Coliform bacteria	2.5/2.2/3.0		1.7	1.1		
THM	3.5/9.8/3.8	5.8	3.2			
Turbidity		1.8				
Nickel		1.5				
Pesticides	13.4/7.4/4.3	1.5				
All other parameters complied in 99% or more of the samples taken						

Number of water supply zones exceeding water quality parameters
For each parameter that showed non-compliance in more than 1 sample in individual water supply zones, the number of such water supply zones was calculated. The total of number of water supply zones with more than 1 non-compliant sample is listed in table 3.1.4 The total number of water supply zones serving more than 5000 persons in Belgium is unknown due to missing data from the Flanders Region. In general no or incomplete information was available from both the Flanders and the Walloon Region to assess the number of water supply zones that failed to comply with the requirements of the DWD.

Table 3.1.4 Total *number of water supply zones* serving more than 5000 people that exceed the parametric value in the DWD in *more than 1 sample* . Belgium 2002-2004

Region/province	Brussels 2 wsz			Flanders (5 provinces)			Walloon 168 wsz		
Reporting year	2002	2003	2004	2002	2003	2004	2002	2003	2004
Parameter	Number of wsz with more than 1 case of non-compliance								
FS/Enterococci			1	No data	3	2	14	19	No data
Lead			1		4	3	1	1	
Nickel			1		2	3			
SSRC/*Cl.perfringens*			1		1	1	1		
Iron			1		4	4	13	15	
Manganese			1		1	1	4	7	
TC/Coliform bacteria			1		4	5	40	31	
Temperature			1						
BaP					1			1	
Fluoride					2	1			
Ammonium					2				
FC/*E.coli*					3		10	19	
Nitrite					2		2	3	
Aluminium					2	2	11	3	
Sodium					4	3			
Copper						1			
THM							3	1	
Nitrate							5	2	
Sulphate							2	1	
pH						3	1		

Derogations in Belgium

Both Brussels and Walloon reported that no derogations were issued during the reporting period. No information is available for Flanders.

Conclusions Belgium

In general the returns from Belgium are not only in the wrong format, providing regional rather than national returns, the quality of most of the data is also poor. The Brussels Region has the most complete return of all three regions. Few conclusions can be drawn at national level, because of the abovementioned reasons. There are 10 parameters (highest score for iron, lead and nickel) that cause non-compliance in more than one percent of the samples taken in all three regions. There are 22 parameters (highest score for FS/Enterococci, lead and TC/Coliform bacteria) that cause non-compliance in water supply zones.

A remarkable change is noticeable in the Brussels area, where four parameters (iron, nickel, lead and PAH) show non-compliance in more than 1% of the samples taken, where in the past none parameter exceeded the standards in more than 1% of samples. The increased non-compliance for nickel might be explained by the stricter parametric value and PAH is a new parameter. The increase for iron and lead can not be explained. For the Flanders region only three parameters (iron,

sodium and lead) show more than 1% non-compliance. The list of parameters has been reduced by more parameters than can be explained by a reduction in the list in the DWD. For the Walloon region the number of parameters with more than 1% non-compliance has decreased to four (residual chlorine (not retained), iron, sulphate and manganese). In summary for Belgium there are indications that the number of non-compliant parameters has increased in Brussels (under new DWD) and decreased in Flanders and Walloon. Information on the coming years is needed to see if this is a trend in Belgian water quality.

3.2 Drinking Water Quality in the Czech Republic 2002-2004

Quality and completeness of the 2002-2004 returns
The Czech authorities submitted a voluntary returns for the three reporting years covered in this report. All data relate to the current DWD 98/83/EC.
The returns of Czech Republic was comprehensive and nearly complete. The only missing information relates to the water supply zones with cases of non-compliance. No information is given on the number of people in het wsz and the amount of water supplied. Also information is missing on the reasons for non-compliance and planned remedial actions.

General information on the water supply in the Czech Republic
The Czech Republic has a total population of 10.2 million persons. There are 268 large water suply zones that supply 7.3 million people, which equals 72% of the population. The large wsz supply approximately 532 million m^3 of drinking water per year. The quality data for the Czech Rpublic that are presented in this synthesis report concern the abovementioned water supply zones. Drinking water in the Czech Republic is made from groundwater, surface water and a mixture of both.

Table 3.2.1 General information Czech Republic 2002-2004	
Total population	10.2 million
Number of water supply zones (water supply zone) serving more than 5000 persons/more than 1000 m^3 water per day	268
Number of people served by these water supply zones	7.3 million
Total amount of water supplied (only supplies serving 5000 or more consumers)	about 532 million m^3/year
Population served by these supplies	72%
Raw water sources	
Groundwater	32.81 %
Surface water	35.96 %
Other sources	31.23 % (mixture of surface and ground water)

The Czech Republic provided a national summary on the water quality in large water supply zones serving more than 5000 persons, mentioning for each parameter the percentage of samples that did not comply with the parametric values in the DWD.
The parameters that caused non-compliance in more than 1% of the samples taken in these water supply zones are listed in table 3.2.2 (left column), starting with the parameter that has the highest percentage of

non-complying samples (iron). Detailed information is presented in table 3.2.3.
The Czech Republic also provided information at water supply zone level on the parameters that did not always comply with the parametric values in the DWD. The parameters that caused non-compliance in more than one sample are listed in table 3.2.2 (right column), starting with the parameters that caused non-compliance in the highest number of water supply zones (iron). Detailed information is presented in table 3.2.4.

Table 3.2.2 Summary of water quality parameters that cause non-compliance in the Czech Republic, 2002-2004 (voluntary reporting)

Parameters that cause non-compliance in more than 1% of all samples taken in the Czech Republic (in any of the three reporting years)*	**Parameters that show non-compliance in a number of water supply zones in the Czech republic***
Iron	Iron
Nitrate	Manganese
Sulphate	TC/Coliform bacteria
TC/Coliform bacteria	pH
Manganese	Nitrate
Colony Counts 22	FS/Enterococci
BaP	Turbidity
TOC	Colour
Vinylchloride	Colony Counts 22
THM	BaP
FS/Enterococci	Sulphate
1,2-dichloroethane	SSRC/*Cl. perfringens*
pH	Odour
Total pesticides	FC/*E.coli*
Mercury	Aluminium
Trichlorothene	Antimony
Individual pesticides	Ammonium
	Mercury
	1.2-dichloroethane
	Arsenic
	Nickel
	Cadmium
	Lead
	Trichloroethene
	THM
	TOC
	Tetrachloroethene
	Selenium
	Oxidisability
	Taste
	Benzene
	Vinyl Chloride
	Total pesticides
	Individual pesticides
All other parameters comply in 99% or more of the samples	**Parameters that most often caused failure in supply zones (in more than 1 sample in any year)**

* Only supplies serving 5000 or more consumers

National summary of the drinking water quality in the Czech Republic

Table 3.2.3 presents information on the overall quality of drinking water in all larger supplies in the Czech Republic in this reporting period. For each non-compliant parameter the percentage samples that exceeded the parametric value in the DWD is presented.

Table 3.2.3 National summary of monitoring results for each parameter in large wsz >5000 people. For the years 2002, 2003 and 2004. Parameters that showed non-compliance in more than 1% of the samples taken. Percentages non-compliance. Czech Republic

Parameter	2002 % non compliance	2003 % non compliance	2004 % non compliance
Iron	8.91	7.30	7.05
Nitrate	3.73	1.99	1.48
Sulphate	1.89	2.05	1.15
TC/coliform bacteria	2.65	1.68	1.38
Manganese			3.36
Colony Counts 22			1.93
BaP	1.30	2.86	
TOC	3.35		
VC	1.23	1.26	
THM	1.69		
FS/Enterococci	1.09		
1.2-dichloroethane		1.09	
pH	1.45		
Total pesticides		1.38	
Mercury		1.25	
Trichloroethene	1.28		
Individual pesticides also see note under the table			
2,4-D	11.34	12.31	
Aldicarb		[100] **only one sample**	
Atrazine	3.33	23.00	5.94
Bentazon	6.25		
Cyanazine	5.56		
Endosulfan	1.92		
Dichlorprop	4.35	6.25	
Heptachlor		1.25	
Hexachlorbenzene		1.24	
Lindane		2.22	
MCPA		6.25	1.12
Mecoprop	4.76	2.63	
Methoxychlor		1.98	2.92
Pentachlorphenol	71.43	29.41	
Simazine	7.22	13.24	
All other parameters complied in 99% or more of the samples taken in the Czech Republic			

Comment [K1]: This 100% non-compliance means one sample above the limit. Originally there were important relating information in the tables (number of samples). When you delete such information, public and media will read this report as terrible situation (all drinking waters in Czechia in 2003 contained pesticide aldicarb above the limit value...!), which is not true and misleading. We suggest to add information that it is just one sample!

Comment from the responsible authorities. For some individual pesticides high percentages of non-compliance are reported for the Czech Republic. In one case even 100% non-compliance. This does not imply that high percentages of drinking water in

this Member States show non-compliance for pesticides. The number of samples is often rather small, calculating the percentage non-compliance then gives a wrong impression.

Number of water supply zones exceeding water quality parameters

The total number of large water supply zones in the Czech Republic is 268. Table 3.2.4 shows the water supply zones that had more then 1 case of non-compliance for the various parameters.

Table 3.2.4 Total *number of water supply zones* serving more than 5000 people that exceed the parametric value in the DWD in *more than 1 sample*. Czech Republic 2002-2004.

	2002	2003	2004
Number of WSZ	268	268	268
Parameter	**Number of wsz with more than 1 case of non-compliance**		
Iron	107	119	128
Manganese	41	33	41
TC/Coliform bacteria	41	32	32
pH	24	20	23
Nitrate	20	15	14
FS/Enterococci	24	19	5
Turbidity	17	17	14
Colour	10	12	18
Colony Counts 22	3	7	24
BaP	5	13	1
Sulphate	7	6	5
SSRC/*Clostridium perfringens*	9	2	5
Odour	2	2	8
FC/*E.coli*	7	4	2
Aluminium	6	3	4
Antimony	4	3	
Ammonium	3	2	1
Mercury	2	7	1
1.2-dichloroethane	2	4	1
Arsenic	3	3	1
Nickel	3	2	1
Cadmium	3	3	
Lead	3	3	
Trichloroethene	3	2	
THM	3	1	
TOC	2	2	
Tetrachloroethene	2	2	
Selenium	2	1	
Oxidisability	2	1	
Taste			2
Benzene		1	
Vinyl Chloride		1	
Total pesticides		1	
Individual pesticides			
Lindane	1	5	
Methoxychlor	3	4	1
Simazine	2	1	

Comment [K2]: Yes, "zakal"

2.4 D	**2**	**1**	
Pentachlorphenol	**4**	**1**	
Heptachlor		**3**	
Atrazine		**3**	**2**
Hexachlorobenzene		**3**	

Derogations Czech Republic

Table 3.2.5 shows the derogations in place in the Czech Republic in the reporting period 2002-2004. Derogations are in place for iron, nitrate, aluminium, arsenic, sulphate and atrazine.

Table 3.2.5 Number of WSZ with derogation in place, Czech Republic 2002-2004

Parameter	**2002/2003/2004**
Iron	4
Nitrate	4
Aluminium	1
Arsenic	1
Sulphate	1
Atrazine	1

Conclusions Czech Republic

The Czech Republic submitted a return for the three reporting years on a voluntary basis. The return was very complete and of good quality also considering it is a first reporting effort. The return also contains comprehensive information on analyses of individual pesticides. There are 17 parameters (highest score for iron, nitrate and sulphate) that cause non-compliance in more than one percent of the samples taken in the whole Member State. There are 34 parameters (highest score for iron, manganese and TC/Coliform bacteria) that cause non-compliance in water supply zones. As it is a first return there is no possibility to analyse a trend in water quality.

3.3 Drinking Water Quality in Denmark 2002-2004

The quality and completeness of the 2002-2004 returns
The returns from Denmark are incomplete and information provided on non-compliance is not in line with the requirements of the DWD asking for reporting for each year separately. Also Denmark did not supply any information at water supply zone level. The data submitted all relate to the 98/83/EC Drinking Water Directive.

General information on the water supply in Denmark
Denmark has a total population of 5.4 million persons. Denmark has approximately 260 large water supply zones that supply 3.5 million people, which equals 65% of the population (see table 3.3.1). The large wsz supply 270 million m^3 of drinking water per year.
The quality data for Denmark that are presented in this synthesis report concern the abovementioned water supply zones. Most drinking water in Denmark is produced from groundwater sources.

Table 3.3.1 General Information Denmark 2002-2004

Total population in Denmark	5.4 million
Number of water supply zones serving more than 5000 persons/more than 1000 m^3 water per day	249/270/255
Number of people served by these water supply zones	3.5 million
Total amount of water supplied (only supplies serving 5000 or more consumers)	270 million m^3/year
Population served by these supplies	65%
Raw water sources	
Groundwater:	99.0%
Surface water:	1.0%%
Other sources, bank filtrate	none

Denmark provided a national summary of the water quality in the 260 water supply zones serving more than 5000 persons, mentioning for each parameter the percentage samples that did not comply with the parametric values in the DWD. The parameters that caused non-compliance in more than 1% of the samples taken in these water supply zones are listed in table 3.3.2 (left column), starting with the parameter that has the highest percentage of non-complying samples (total volatile hydrocarbons). Detailed information is presented in table 3.3.3.

Table 3.3.2 Summary of water quality parameters that cause non-compliance in Denmark. 2002-2004	
Parameters that cause non-compliance in more than 1% of all samples taken in Denmark (in any of the three reporting years)*	**Parameters that show non-compliance in a number of water supply zones in Denmark***
(Total volatile hydrocarbons) Colony Counts 37 °C Iron Ammonium Turbidity Colour Chlorophenols Free carbondioxide Nitrite SSRC/*Cl. perfringens* Colony Counts 21 °C Zinc BaP Aluminium TC/Coliform bacteria Methane Nitrate Copper Manganese Electroconductivity Arsenic Volatile Chlorinated Carbons pH Lead	**No data supplied**
All other parameters comply in 99% or more of the samples	**Parameters that most often caused failure in supply zones (in more than 1 sample in any year)**

* Only supplies serving 5000 or more consumers

National summary of the drinking water quality in Denmark

Table 3.3.3 presents information on the overall quality of drinking water in all larger water supply zones in Denmark in the fourth reporting period. For each non-compliant parameter the percentage of samples that exceeded the parametric value in the DWD is presented. Were they are available data for the previous reporting periods are also included. Denmark reports results from samples taken ex-works and samples taken at the consumer's premises. In table 3.3.3 the results at the consumer's premises are given in brackets. Table 3.3.3 shows that the total volatile hydrocarbons parameter was most often exceeding the parametric value in the total number of samples. However, the rather high percentage of 81.8% non-compliance only relates to a total of 11 samples taken inside premises. The second parameter with a high score of non-compliance is Colony Counts at 37 ˚C. All data supplied were aggregated for the three reporting years together, which is not in line with the reporting requirements.

Table 3.3.3 National summary of monitoring results for each parameter in large wsz > 5000 people. For the years 2002, 2003 and 2004 and for comparison data from 1993-1995, 1996-1998 and 1999-2001. Percentages non-compliance. Denmark.				
Parameter	**1993-1995**	**1996-1998**	**1999-2001 (reported together)**	**2002-2004 (reported together) % ex-works and % at premises (in brackets)**
Total volatile Hydrocarbons			1.7	<1 (**81.8 only 11 samples**)
Colony Counts 37 °C	1.7/0.4/1.2	2.3/3.7/2.0	4.3	3.1 (**28.0**)
Iron	1.7/2.0/1.7	1.8/1.8/2.3	2.8	7.8 (**26.1**)
Ammonium				14.8 (**25.6**)
Turbidity				**24.5** (0)
Colour				**23.7** (9.0)
Chlorophenols				**23.5**
Free carbondioxide			10.8	15.4 (**20.8**)
Nitrite				11.7 (**17.5**)
SSRC/*Cl.perfringens*				**14.0** (0)
Colony Counts 21 °C	0.3/0.2/0.5	1.1/2.5/1.7	2.5	**13.9** (1.8)
Zinc				0 (**12.4**)
BaP				**11.2**
Aluminium			78.6	0 (**10.3**)
TC/Coliform bacteria	1.3/1.0/0.8	0.9/1.7/2.0	3.0	1.2 (**10.1**)
Methane			25.3	**7.9** (0)
Nitrate				0 (**4.8**)
Copper				0 (**3.8**)
Manganese	2.1/2.2/1.4	0.9/1.3/1.2	1.5	**5.8** (1.6)
Electroconductivity				**3.1** (2.8)
Arsenic				0 (**1.9**)
Volatile Chlorinated Carbons				**1.7** (0)
pH				**1.6** (0)

Lead				0 (**1.3**)
Tetrachloroethene			1.6	
Temperature			4.2	
TOC			3.0	
THM			50.0	
Phosphates			42.8	
Trichloromethane			10.2	
Hydrogen sulphide			5.1	
All other parameters complied in 99% or more of the samples taken in Denmark				

Comment responsible authority: *Parameters with more than 1% non-compliance ex-works (note 1) and at entry buildings or premises (note 2).*
Note 1: *The stricter national values exit water works are set for those parameters where the distribution system could have an effect at the level of these parameters in the drinking water.*
Note 2: *For parameters which don't change in the distribution system the control will only be done exit water works. For parameters which change in the distribution system the control is carried out at the entry of premises. Therefore it is not the same parameters which are measured exit water works and entry of premises. The water quality is generally checked by water samples taken at the water works and the consumers tap after flushing.*

Number of water supply zones exceeding water quality parameters
Denmark did not supply any information at water supply zone level with the following explanation: "it is the municipal council that is the inspection authority with regard to drinking water, and thus it is the municipalities that hold this information". This is not in accordance with the requirements of the DWD, that holds the Member States responsible for submitting the data to the European Commission.

Derogations Denmark

Table 3.3.5 shows the derogations in place in Denmark in the reporting period 2002-2004. Derogations are in place for iron, nitrate, aluminium, arsenic, sulphate and atrazine.

Table 3.3.5 Number of WSZ with derogation in place, Denmark 2002-2004

Parameter	2002/2003/2004
Arsenic	5
Aluminium	2
Permanganate value	2
Free Carbondioxide	1
Iron	1
Turbidity	1
Colour	1

Conclusions Denmark

The return submitted is not complete and not in compliance with the reporting requirements, especially as the three reporting years have been combined. There are 24 parameters (highest score for total volatile Hydrocarbons, Colony Counts 37 °C and iron) that cause non-compliance in more than one percent of the samples taken in the whole Member State.

Trend analysis in Danish drinking water is difficult due to the combined reporting for the three consecutive years. It looks like there are higher percentages of non-compliance at a national level, such as for the parameters: colony counts 37, iron, ammonium, turbidity, colour, chlorophenols, nitrite, *Cl.perfringens*, colony counts 21, zinc, BaP (new), TC/coliform bacteria, nitrate, copper, manganese, EC, arsenic (stricter value), volatile chlorinated hydrocarbons and pH. Other parameters on the other hand showed a much lower percentage of non-compliance at national level such as: methane, aluminium (dramatic decrease), tetrachloroethene, TOC and THM (dramatic decrease).

3.4 Drinking Water Quality in Germany 2002-2004

The quality and completeness of the 2002-2004 returns
The return submitted by Germany was complete and of good quality that made it easy to process the data. The data for 2002 relate to the 80/778/EEC Drinking Water Directive and the data for 2003 and 2004 to the 98/83/EC DWD.

General information on the water supply in Germany
Germany has a total population of 82.5 million persons, of which 72.45% are connected to larger water supplies that serve more than 5000 persons or that produce more than 1000 m^3 of water per day (see table 3.4.1). There are 2706 of such water supply zones in Germany and they supply 4112.5 million m^3 of drinking water per year to more than 60 million people. The quality data for Germany that are presented in this synthesis report concern the abovementioned water supply zones. Most drinking water in Germany is produced from groundwater sources, and the remainder is produced directly or indirectly (bank filtrate) from surface water sources.

Table 3.4.1 General information Germany 2002-2004

Total population	82.5 million
Number of water supply zones (water supply zone) serving more than 5000 persons/more than 1000 m^3 water per day	2706
Number of people served by these water supply zone	60.05 million
Total amount of water Supplied (only supplies serving 5000 or more consumers)	4112.5 million m^3/year
Population served by these supplies	72.45%
Raw water sources	
Groundwater	76.2 %
Surface water	13.3 %
Other bank infiltrate and artificial groundwater	10.5 %

Germany provided a national summary of the water quality in the 2706 water supply zones serving more than 5000 persons, mentioning for each parameter the percentage samples that did not comply with the parametric values in the DWD. The parameters that caused non-compliance in more than 1% of the samples taken in these water supply zones are listed in table 3.4.2 (left column), starting with the parameter that has the highest percentage of non-complying samples (FS/Enterococci). Detailed information is presented in table 3.4.3.

Germany also provided information at water supply zone level on the parameters that did not always comply with the parametric values in the DWD. The parameters that caused non-compliance in more than one sample are listed in table 3.4.2 (right column), starting with the parameters that caused non-compliance in the highest number of water supply zones (TC/Coliform bacteria). Detailed information is presented in table 3.4.4.

Table 3.4.2 Summary of water quality parameters that cause non-compliance in Germany 2002-2004

Parameters that cause non-compliance in more than 1% of all samples taken in Germany (in any of the three reporting years)*	Parameters that show non-compliance in a number of water supply zones in Germany*
FS/Enterococci	TC/Coliform bacteria
Organochlorine compounds/THM	Colony Counts 22˚ C
Total pesticides	Colony Counts 36˚ C
Iron	Iron
Manganese	Turbidity
TC/Coliform bacteria	FC/*E.coli*
Individual pesticides	Manganese
	Organochlorine compounds/THM
	FS/Enterococci
	Colour
	Nitrate
	SSRC/*Cl.perfringens*
	Nickel
	Ammonium
	pH
	Antimony
	Aluminium
	Desethylatrazine
	Arsenic
	Sulphate
	Odour
	2.6.Dichlorbenzamid
	BaP
	Selenium
	Residual chlorine
	Tri and tetrachloroethene
	EC
	Diethylether/phenol
	Prochloraz
	Copper
	Benzene
	Lead
	Bromate
	Chloride
	Taste
All other parameters comply in 99% or more of the samples	Parameters that most often caused failure in supply zones (in more than 1 sample in any year)

* Only supplies serving 5000 or more consumers

National summary of the drinking water quality in Germany

Table 3.4.3 presents information on the overall quality of drinking water in all larger water supply zones in Germany in the fourth reporting period. For each non-compliant parameter the percentage of samples that exceeded the parametric value in the DWD is presented. Were they are available data for the previous reporting periods are also included. Table 3.4.3 shows that the FS/Enterococci parameter was most often exceeding the parametric value in the total number of samples.

Table 3.4.3 National summary of monitoring results for each parameter in large wsz > 5000 people. For the years 2002, 2003 and 2004 and for comparison data from 1993-1995, 1996-1998 and 1999-2001. Percentages non-compliance. Germany.

Parameter	1993-1995	1996-1998	1999	2000	2001	2002	2003	2004
FS/Enterococci						7.3		
Organochlorine compounds/THM			8.0*	4.8*	2.0*	6.9		
Total pesticides		2.6	3.5	2.5	1.2	1.6		
Iron		2.4	1.2	1.4	1.5	1.4		1.9
Manganese		4.1	2.4	1.6	1.3	1.7		1.3
TC/Coliform bacteria							1.6	1.3
Ind. pesticides								1.5
Arsenic		1.9		1.3				
Sulphate		1.6		1.2				
Nitrate	2.3/3.4/3.2	1.4	1.1	1.1				
Hydrocarbons		1.4	1.1		1.7			
Phenols			1.4		1.7			
Lead				1.1				
Cadmium				1.1				
Chromium				1.1				
Fluoride				1.1				
Nickel				1.1				
Mercury				1.1				
PAH**				1.4				
Oxidisability					1.2			
Kjeldahl-N					2.0			
Surfactants			1.9					
All other parameters complied in 99% or more of the samples								

* 1999, 2000, 2001 THM reported separately

**PAH Polycyclic Aromatic Hydrocarbons

Number of water supply zones exceeding water quality parameters

For each parameter that showed non-compliance in more than 1 sample in individual water supply zones, the number of such water supply zones was calculated. The total of number of water supply zones with more than 1 non-compliant sample is listed in table 3.4.4. The total number of water supply zones serving more than 5000 persons is 2706 in Germany. The parameter TC/Coliform bacteria caused non-compliance in most water supply zones.

Table 3.4.4 Total *number of water supply zones* serving more than 5000 people that exceed the parametric value in the DWD in *more than 1 sample*. Germany 2002-2004 and for comparison data from 1993-1995, 1996-1998 and 1999-2001.

	Reporting year								
	1996	*1997*	*1998*	*1999*	*2000*	*2001*	2002	2003	2004
Nr of WSZ	2664	2664	2664	2669	2669	2669	2706	2706	2706
Parameter	Number of wsz with more than 1 case of non-compliance								
TC/Coliform bacteria	16	12	21	69	54	55	59	62	117
Colony Counts 22							30	20	51
Colony Counts 36							35	23	42
Iron	25	29	20	18	25	16	16	17	29
Turbidity	10	9	6	9	8	11	7	18	29
FC/*E.coli*	7	3	11	14	18	21	17	9	13
Manganese	40	37	33	33	23	14	15	12	12
Organochlorine compounds/THM	13	8	8	10/15	3/12	/9	15	2	2
FS/Enterococci				1	6	3	4	3	12
Colour				1	1	3	2	8	5
Nitrate				3	14	3	1	7	1
SSRC/*Cl.perfringens*								1	5
Nickel								6	9
Ammonium				3	3	2	4	3	1
pH							5		
Antimony								4	
Aluminium	8	4	2	2	1			3	
Desethylatrazine							2	4	1
Arsenic				1	1	1	1	1	3
Sulphate	7	9	5	2	2	1		1	2
Odour						1		2	
2.6.Dichlorbenzamid							2		
BaP								2	
Selenium								2	
Residual chlorine							2		
Tri and tetrachloroethene								1	1
EC							1		
Diethylether/phenol								1	
Prochloraz							1		
Copper									1
Benzene								1	
Lead								1	
Bromate								1	
Chloride								1	

Taste								1	
Phosphorus							1		
Potassium							1		
Pesticides	3	3	7	3	1				
Nitrite				1	1	2			
Hydrocarbons				1	1				
Potassium				2					
Magnesium					1				
Oxidisability					1				
Phosphorus					1				

Derogations in Germany

Germany reported extensively on the derogations in place during the reporting period 2002-2004. Table 3.4.5 shows a total of 20 derogations have been issued for desethylatrazine, dichlorobenzamide, atrazine, arsenic, nitrate, nickel, selenium and ethidimuron.

Table 3.4.5 Number of WSZ with derogation in place, Germany 2002-2004

Parameter	2002/2003/2004
Desethylatrazine	4
Dichlorobenzamide	5
Atrazine	3
Arsenic	1
Nitrate	4
Nickel	1
Selenium	1
Ethidimuron	1

Comment [A3]: It is also the English name for this pesticide (herbicide).

Conclusions Germany

The return submitted by Germany was comprehensive and complete. There are 7 parameters (highest score for FS/Enterococci, organochlorine compounds/THM and total pesticides) that cause non-compliance in more than one percent of the samples taken in the whole Member State. There are 35 parameters (highest score for TC/Coliform bacteria, Colony Counts 22 and Colony Counts 36) that cause non-compliance in water supply zones.

The number of parameters that show more than 1% non-compliance in Germany at a national level seems to have decreased more than can be explained by the coming into force of the new DWD. In 2004 the last reporting year there are only four parameters that show more than 1% non-compliance at the national level: iron, manganese, TC/Coliform bacteria and individual pesticides. This indicates an improvement in the quality of drinking water in Germany. The number of water supply zones that show non-compliance for a number of microbiological parameters seems to have increased.

3.5 Drinking Water Quality in Greece 2002-2004

The quality and completeness of the 2002-2004 returns
The return for 2002-2004 was incomplete and not in compliance with the reporting requirements of the DWD. The information provided related to the 80/778/EEC DWD for the years 2002 and 2003 and to the 98/83/EC DWD for the year 2004.

General information on the water supply in Greece
The general information on the water supply in Greece was not provided by the responsible authorities.

Table 3.5.1 General information Greece 2002-2004	
Total population	Million
Number of water supply zones (water supply zone) serving more than 5000 persons/more than 1000 m^3 water per day	
Number of people served by these water supply zone	Million
Total amount of water supplied (only supplies serving 5000 or more consumers)	million m^3/year
Population served by these supplies	%
Raw water sources	
Groundwater	%
Surface water	%

Greece did not provide information on the national level so it is not possible to identify parameter that cause non-compliance at a national level.

Greece did provide information at water supply zone level on the parameters that did not always comply with the parametric values in the DWD. The parameters that caused non-compliance in more than one sample are listed in table 3.5.2 (right column), starting with the parameters that caused non-compliance in the highest number of water supply zones (TC/Coliform bacteria). Detailed information is presented in table 3.5.4.

Table 3.5.2 Summary of water quality parameters that cause non-compliance in Greece 2002-2004	
Parameters that cause non-compliance in more than 1% of all samples taken in Greece (in any of the three reporting years)*	**Parameters that show non-compliance in a number of water supply zones in Greece***
No information given	TC/Coliform bacteria FC/*E.coli* FS/Enterococci Colony Counts 22 or 37 Residual chlorine Magnesium Chloride Aluminium Nitrate Sulphate Iron Turbidity Arsenic Manganese Hardness Conductivity Fluoride Taste
All other parameters comply in 99% or more of the samples	**Parameters that most often caused failure in supply zones (in more than 1 sample in any year)**

* Only supplies serving 5000 or more consumers

National summary of drinking water quality in Greece.

The information is missing from the Greek returns. The following comment was received from the responsible authority.

Comment responsible authorities: The monitoring data of the drinking water quality are presented per settlement, according to the DWD tables specifying frequency of sampling. We have decided for the per settlement presentation and not for the national one since the summing up of the per settlement frequencies or non-compliances DOES NOT provide a value representative at the national level.

Number of water supply zones exceeding water quality parameters

We counted information on **151 water supply zones**. However it is not clear how many wsz exist in Greece and whether or not they are all reported on.

On the sampling effort: there are doubts about the sampling effort being in line with the requirements of the DWD. Many wsz have entries for about 10 or less parameters, which are often restricted to microbiological parameters.

For each parameter that showed non-compliance in more than 1 sample in individual water supply zones, the number of such water supply zones was calculated. The total of number of water supply zones with more than 1 non-compliant sample is listed in table 3.5.4. The total number of water supply zones serving more than 5000 persons in Greece is unknown, but 151 are reported on. The parameter TC/Coliform bacteria caused non-compliance in most water supply zones.

Table 3.5.4 Total *number of water supply zones* serving more than 5000 people that exceed the parametric value in the DWD in *more than 1 sample*. Greece 2002-2004. Greece reported on 151 WSZ

	Reporting year		
	2002	**2003**	**2004**
Parameter	**Number of wsz with more than 1 case of non-compliance**		
TC/Coliform bacteria	41	45	39
FC/*E.coli*	22	34	8
FS/Enterococci	7	10	20
Colony Counts 22 or 37	18	12	14
Residual chlorine	5	4	5
Magnesium	3	4	1
Chloride	2	2	4
Aluminium	3	2	2
Nitrate	2	2	3
Sulphate	2	2	2
Iron	2	2	2
Turbidity	2	1	2
Arsenic			2
Manganese	2		1
Hardness		2	
Conductivity	1	1	1
Fluoride	1	1	1
Taste			1

Derogations in Greece
Greece provided detailed information on derogations issued during and beyond the current reporting period.Table 3.5.5 summarises the derogations in place for arsenic, boron, fluoride and mercury.

Table 3.5.5 Number of WSZ with derogation in place, Greece 2002-2004

Parameter	**2002/2003/2004**
Arsenic	5
Boron	1
Fluoride	1
Mercury	2

Conclusions Greece:
The return submitted by Greece is incomplete and not in line with the reporting requirements asking for reporting at water supply zone and national level and not per settlement. There are 18 parameters (highest score for TC/Coliform bacteria, FC/*E.coli* and FS/Enterococci) that cause non-compliance in water supply zones. There is no comparison possible with previous reporting periods.

3.6 Drinking Water Quality in Spain 2002-2004

The quality and completeness of the 2002-2004 returns
The return submitted by Spain is not complete and not in line with the reporting requirements that asks for reporting on large wsz serving more than 5000 people. The data submitted relate to the 80/778/EC DWD for the year 2002 and to the 98/83/EC DWD for the years 2003 and 2004.

General information on the water supply in Spain
Spain has a total population of 43.2 million persons. The percentage of the population connected to larger water supplies that serve more than 5000 persons or that produce more than 1000 m^3 of water per day is unknown. There are 1134 water supply zones in Spain but these are not all large wsz. The 1134 water supply zones supply drinking water to 59 million people permanent residents and non-peermanent residents. Most drinking water in Spain is produced from groundwater. The remainder is produced from surface water and 1% from seawater desalination. The quality data for Spain that are presented in this synthesis report concern an unknown number of wsz in 2002, 285 wsz in 2003 and 1209 wsz in 2004.

Table 3.6.1 General Information Spain 2002-2004

Total population	43.2 million
Number of water supply zones serving more than 5000 persons/more than 1000 m^3 water per day	1134 all wsz (large and small)
Number of people served by these water supply zones	59 million (total served population including non-permanent residents)
Total amount of water supplied	3222 million m3/year
Population served by these supplies	%
Raw water sources	Surface water 21% Groundwater 78% Seawater 1%

Spain provided a national summary of the water quality in …/285/1209 large and small water supply zones, mentioning for each parameter the percentage samples that did not comply with the parametric values in the DWD. The parameters that caused non-compliance in more than 1% of the samples taken in these water supply zones are listed in table 3.6.2 (left column), starting with the parameter that has the highest percentage of non-complying samples (sulphate). Detailed information is presented in table 3.6.3.

Spain also provided information at water supply zone level on the parameters that did not always comply with the parametric values in the DWD. The parameters that caused non-compliance in more than one sample are listed in table 3.6.2 (right column), starting with the parameters that caused non-compliance in the highest number of water supply zones (free residual chlorine). Detailed information is presented in table 3.6.4.

Table 3.6.2 Summary of water quality parameters that cause non-compliance in Spain 2002-2004

Parameters that cause non-compliance in more than 1% of all samples taken in Spain (in any of the three reporting years)	**Parameters that show non-compliance in a number of water supply zones in Spain**
Sulphate	Free residual chlorine
Free residual chlorine	Sulphate
THM	Colony Counts 22
Iron	Aluminium
Sodium	Chloride
Nitrate	TC/Coliform bacteria
TC/Coliform bacteria	Turbidity
Manganese	Ammonium
FS/Enterococci	EC
Chloride	pH
Bound residual chlorine	Bound residual chlorine
Aluminium	SSRC/*Cl.perfringens*
Arsenic	Colour
EC	THM
Oxidisability	Sodium
	Iron
	Nitrate
	Odour
	Nitrite
	Manganese
	Taste
	FC/*E.coli*
	Boron
	Antimony
	Atrazine
	Terbutylatrazine
All other parameters comply in 99% or more of the samples	**Parameters that most often caused failure in water supply zones (in more than 1 sample in any year).**

* Only supplies serving 5000 or more consumers

National summary of the drinking water quality in Spain

Table 3.6.3 presents information on the overall quality of drinking water in Spain in the fourth reporting period. For each non-compliant parameter the percentage of samples that exceeded the parametric value in the DWD is presented. Were available data for the previous reporting periods are also included. Table 3.6.3 shows

that the sulphate parameter was most often exceeding the parametric value in the total number of samples taken in Spain.

Table 3.6.3 National summary of monitoring results in small and large wsz, for the years 2002, 2003 and 2004 and for comparison data for 1993-1995, 1996-1998 and 1999-2001. Percentages non-compliance. Spain												
Reporting year	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**
Parameter												
										All wsz also <5000		
Sulphate	17.0	2.7	25.2	6.1	4.0	7.0	2.7	2.4	3.7	10.3	3.8	7.6
Free residual chlorine										n.a.	5.0	5.5
THM										n.a.	3.7	
Iron					2.0	1.4	1.4			1.3	2.2	1.7
Sodium	40.7	29.2	50.6	33.0	47.5	20.3	3.8	2.2	3.8	8.2		
Nitrate				2.0	2.8	3.5	3.7	3.5	2.2	3.1		
TC/Coliform bacteria						2.5				1.4		
Manganese				1.6		1.2	1.2				2.1	1.6
FS/Enterococci				1.0	1.4					2.0		1.3
Chloride											1.5	1.9
Bound residual chlorine				1.4	1.4	1.4		1.8			1.7	1.6
Aluminium						2.5	1.3		1.7		1.3	1.3
Arsenic								2.2	2.2	1.1		
EC										1.2		
Oxidiability										1.2		
Magnesium	1.9	2.6	5.2	4.2	3.3	3.3	4.0	12.5	7.1			
Temperature				5.0	2.8	1.4	6.5	8.4	4.0			
Potassium	5.4	0.2	17.5	2.4	14.6	14.2	3.1	2.9	3.3			
Phenols				1.1	9.0	4.9			10.5			
Dry residues	2.6	2.0	3.9									
All other parameters complied in 99% or more of the samples taken in Spain n.a. parameter not retained in the DWD												

Number of water supply zones exceeding water quality parameters

For each parameter that showed non-compliance in more than 1 sample in individual water supply zones, the number of such water supply zones was calculated. The total of number of water supply zones with more than 1 non-compliant sample is listed in table 3.6.4. The total number of water supply zones was 285 in 2003 and 1209 in 2004. The number of wsz reported on in Spain is growing with the introduction of the Information System in Spain. The parameter free residual chlorine caused non-compliance in most water supply zones.

Table 3.6.4 Total *number of water supply zones* that exceed the parametric value in the DWD in *more than 1 sample*. Spain 2002-2004 and for comparison data from 1996-1998 and 1999-2001.

	Reporting year						
	1996-1998	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**
Nr of wsz	759	842	847			285	1209
Parameter							
Free residual chlorine	50		166			42	236
Sulphate	59		26			4	48
Colony Counts 22						4	30
Aluminium	53		12			7	16
Chloride						4	14
TC/Coliform bacteria	60		106			6	13
Turbidity	15		40			8	13
Ammonium			13			7	10
EC						4	10
pH						10	52
Bound residual chlorine						9	7
SSRC/*Cl.perfringens*			10			4	8
Colour	5		5			3	6
THM						3	4
Sodium	41		15			2	3
Iron	14		7			1	3
Nitrate	35		45				5
Odour			1				3
Nitrite			6				3
Manganese	9		8			2	2
Taste			1				3
FC/*E.coli*	19		35			2	4
Boron							2
Antimony						1	1
Atrazine							1
Terbutylatrazine							1
Temperature	48		71				
Magnesium	33		29				
FS/Enterococci	19		24				

Potassium	31		19				
Fluoride			12				
Oxidisability			4				
Dry residues			4				
Pesticides			3				
Arsenic			2				

Derogations in Spain
For the year 2002 derogations were in place for the parameters: magnesium, sulphate and temperature, when these parameters could still be covered by derogation. No new derogations were issued for the years 2003 and 2004.

Conclusions Spain
The return submitted by Spain was not complete and not in line with the reporting requirements, the information was 2002 is missing and small water supplies are included in the returns. There are 15 parameters (highest score for sulphate, free residual chlorine and THM) that cause non-compliance in more than one percent of the samples taken in the whole Member State. There are 26 parameters (highest score for free residual chlorine, sulphate and Colony Counts 22) that cause non-compliance in water supply zones.

In the final reporting year 2003 there are a significant lower number of 98/83/EC parameters that show non-compliance in more than 1% of the samples at a national level. There are six parameters with more than 1%non-compliance: sulphate, iron, manganese, Enterococci, chloride and aluminium. In the first reporting year 2002, the number of parameters is higher. This indicates an improvement in the quality of drinking water in Spain, also because Spain included water supply zones with less than 5000 people. The number of non-compliance water supply zones can not be judged for improvement as Spain has included more wsz then in previous periods.

3.7 Drinking Water Quality in Estonia 2002-2004

The quality and completeness of the 2002-2004 returns
Estonia reported for part of the year 2004 as they only joined the EU in 2004.
Data reported cover the period from 01052004 to 31122004. The reporting has been done on a voluntary basis. The information provided relates to the 98/83/EC DWD. The report was complete for this reporting year.

General information on the water supply in Estonia
Estonia has a population of 1.35 million persons. The percentage of the population connected to larger water supplies that serve more than 5000 persons or that produce more than 1000 m^3 of water per day is 64% (0.84 million). There are 23 of these water supply zones in Estonia but 2 wsz only provides water to the food industry. The 21 wsz supply 45 million m^3 of water per year. Most drinking water in Estonia is produced from surface water. The quality data for Estonia that are presented in this synthesis report concern the water supplied in the abovementioned 21 wsz.

Table 3.7.1 General information Estonia 2004	
Total population	1.35 million
Number of water supply zones (water supply zone) serving more than 5000 persons/more than 1000 m^3 water per day	21 and 2 for food production only
Number of people served by these water supply zone	0.84 million
Total amount of water supplied (only supplies serving 5000 or more consumers)	45 million m^3/year
Population served by these supplies	64 %
Raw water sources	
Groundwater	37.8 %
Surface water	62.2 %
Other sources	none

Estonia provided a national summary of the water quality in 21 large water supply zones, mentioning for each parameter the percentage samples that did not comply with the parametric values in the DWD. The parameters that caused non-compliance in more than 1% of the samples taken in these water supply zones are listed in table 3.7.2 (left column), starting with the parameter that has the highest percentage of non-complying samples (manganese). Detailed information is presented in table 3.7.3.

Estonia did also provide information at water supply zone level on the parameters that did not always comply with the parametric

values in the DWD. The parameters that caused non-compliance in more than one sample are listed in table 3.7.2 (right column), starting with the parameters that caused non-compliance in the highest number of water supply zones (iron). Detailed information is presented in table 3.7.4.

Table 3.7.2 Summary of water quality parameters that cause non-compliance in Estonia 2002-2004

Parameters that cause non-compliance in more than 1% of all samples taken in Estonia (in any of the three reporting years)	**Parameters that show non-compliance in a number of water supply zones in Estonia**
Manganese Chloride Iron Turbidity THM Note all parameters except THM are covered by a derogation. These are not real cases of non-compliance.	Iron Turbidity Manganese Chloride Ammonium FS/Enterococci TC/Coliform bacteria FC/*E.coli* Colour Oxidisability Total THM Aluminium Residual chlorine Colony Counts 22 Odour Sulphate Taste Boron
All other parameters comply in 99% or more of the samples	**Parameters that most often caused failure in water supply zones (in more than 1 sample in any year).**

National summary of the drinking water quality in Estonia

Table 3.7.3 presents information on the overall quality of drinking water in Estonia in the fourth reporting period. For each non-compliant parameter the percentage of samples that exceeded the parametric value in the DWD is presented. Table 3.7.3 shows that the manganese parameter was most often exceeding the parametric value in the total number of samples.

Table 3.7.3 National summary of monitoring results for each parameter in large wsz > 5000 people. For the year 2004. Percentages non-compliance. Estonia. Reporting covers the period 01052004-31122004		
Parameter	2004	**comment**
Manganese	8.5	Derogation No real non-compliance
Chloride	7.1	Derogation No real non-compliance
Iron	5.7	Derogation No real non-compliance
Turbidity	1.4	Derogation No real non-compliance
THM	1.6	No derogation
All other parameters complied in 99% of more of the samples taken in Estonia		

Number of water supply zones exceeding water quality parameters

For each parameter that showed non-compliance in more than 1 sample in individual water supply zones, the number of such water supply zones was calculated. The total of number of water supply zones with more than 1 non-compliant sample is listed in table 3.7.4. The total number of water supply zones serving more than 5000 persons is 21 in Estonia. The parameter iron caused non-compliance in most water supply zones.

Table 3.7.4 Total number of water supply zones *serving more than 5000 people that exceed the parametric value in the DWD in* more than 1 sample. *Estonia 2004. Estonia has 21 large wsz.*	
Reporting year 2004	
Parameter	**Number of wsz with more than 1 case of non-compliance**
Iron	11
Turbidity	6
Manganese	5
Chloride	5
Ammonium	2
FS/Enterococci	2
TC/Coliform bacteria	2
FC/*E.coli*	1
Colour	1
Oxidisability	1
Total THM	1
Aluminium	1
Residual chlorine	1
Colony Counts 22	1
Odour	1
Sulphate	1
Taste	1
Boron	1

Derogations in Estonia

Estonia reported on derogations in place. During the accession Estonia negotiated a number of derogations for colour, pH, iron, manganese, odour, turbidity, chloride, conductivity and sulphate. Derogations are also in place for iron, nitrate, aluminium, arsenic, sulphate and atrazine. In addition Estonia has requested a regular derogation for fluoride till 28-12-2005.

Conclusions Estonia

The voluntary return submitted by Estonia was complete. There are 5 parameters that cause non-compliance in more than one percent of the samples taken in the whole Member State. However four of the parameters are covered by a derogation and only THM is non-compliant in the sense of the DWDW. There are 18 parameters (highest score for iron, turbidity and manganese) that cause non-compliance in water supply zones.

3.8 Drinking Water Quality in France 2002-2004

The quality and completeness of the 2002-2004 returns
The return submitted by France was comprehensive and complete. The data for 2002 and 2003 relate to the 80/778/EEC Drinking Water Directive and the data for 2004 to the 98/83/EC DWD.

General information on the water supply in France
France has a total population of 60.1 million persons, of which 73.54% are connected to larger water supplies that serve more than 5000 persons or that produce more than 1000 m^3 of water per day (see table 3.8.1). There are 2288 of such water supply zones in France and they supply 3800 million m^3 of drinking water per year to nearly 45 million people. The quality data for France that are presented in this synthesis report concern the abovementioned water supply zones. Most drinking water in France is produced from groundwater sources, and the remainder is mostly produced from surface water sources. Some water comes from rainwater sources and desalination of seawater.

Table 3.8.1 General information France 2002-2004

Total population	60.1 million
Number of water supply zones (water supply zone) serving more than 5000 persons/more than 1000 m^3 water per day	2288
Number of people served by these water supply zones	44.86 million (permanent population)
Total amount of water supplied (only supplies serving 5000 or more consumers)	3800 million m^3/year
Population served by these supplies	73.54%
Raw water sources	
Groundwater	66.32%
Surface water	33.60%
Other sources	<1% desalinated seawater and rain water

France provided a national summary of the water quality in the 2288 water supply zones serving more than 5000 persons, mentioning for each parameter the percentage samples that did not comply with the parametric values in the DWD. The parameters that caused non-compliance in more than 1% of the samples taken in these water supply zones are listed in table 3.8.2 (left column), starting with the parameter that has the highest percentage of non-complying samples (desethylatrazine). Detailed information is presented in table 3.8.3.

France also provided information at water supply zone level on the parameters that did not always comply with the parametric values in the DWD. The parameters that caused non-compliance in more than one sample are listed in table 3.8.2 (right column), starting with the parameters that caused non-compliance in the highest number of water supply zones (TC/Coliform bacteria). Detailed information is presented in table 3.8.4.

Table 3.8.2 Summary of water quality parameters that cause non-compliance in France 2002-2004

Parameters that cause non-compliance in more than 1% of all samples taken in France (in any of the three reporting years)	**Parameters that show non-compliance in a number of water supply zones in France**
Desethylatrazine	TC/Coliform bacteria
Selenium	Temperature
Temperature	SSRC/*Cl.perfringens*
Aluminium	Turbidity
Arsenic	Iron
Atrazine	FC/*E.coli*
Manganese	Aluminium
Fluoride	Desethylatrazine
Iron	FS/Enterococci
Nickel	Nitrate
Potassium	Atrazine
Sodium	Potassium
Nitrate	Manganese
PAH	Sulphate
Lead	Taste
Kjeldahl-N	Nickel
TC/Coliform bacteria	Arsenic
SSRC/*Cl.perfringens*	Fluoride
Sulphate	Selenium
Hydrocarbons	Sodium
	Chloride
	Bromate
	Kjeldahl-N
	Colour
	Tri and tetra
	Odour
	Ammonium
	Lead
	Hydrocarbons
	Magnesium
	Oxidisability
	pH
	PAH
	EC
	THM
	Diuron
	Chlorodecane

	Terbutylazine Desisopropylatrazine Oxadixyl Terbutylazindesethyl Glyphosphate Terbumetondes-ethyl Dinoterb Trichlorpyr 2hydroxy atrazine Metachlor
All other parameters comply in 99% or more of the samples	**Parameters that most often caused failure in water supply zones (in more than 1 sample in any year)**

* Only supplies serving 5000 or more consumers

National summary of the drinking water quality in France

Table 3.8.3 presents information on the overall quality of drinking water in all larger water supply zones in France in the fourth reporting period. For each non-compliant parameter the percentage of samples that exceeded the parametric value in the DWD is presented. Were available data for the previous reporting periods are also included. Table 3.8.3 shows that the pesticide desethylatrazine was most often exceeding the parametric value in the total number of samples in the large wsz.

Table 3.8.**3 National summary of monitoring results for each parameter in large wsz > 5000 people. For the years 2002, 2003 and 2004 and for comparison data from 1993-1995, 1996-1998 and 1999-2001. Percentages non-compliance.** France.

Parameter	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Desethylatrazine							11.5	11.7	7.0	5.3	6.5	3.1
Selenium							7.5	7.3	7.2	4.0	4.4	1.3
Temperature					2.7	3.2	3.0	3.4	4.4	3.1	4.6	
Aluminium	5-6	5-6	5-6	6.3	5.7	4.3	5.0	3.8	3.2	2.8	3.0	1.8
Arsenic												3.1
Atrazine							6.2	5.1	4.8	2.6	1.9	
Manganese	1-2	1-2	1-2	2.8	3.1	2.6	2.4	2.7	2.6	2.4	2.2	1.2
Fluoride	1-2	1-2	1-2	5.1	4.4	2.1	2.4	3.0	2.0			
Iron	1-2	1-2	1-2	2.3	2.5	2.4	2.0	2.1	2.0	1.7	1.4	1.5
Nickel												1.5
Potassium	1-2	1-2	1-2	2.2	2.2	1.3			1.2	1.4	1.1	
Sodium	1-2	1-2	1-2	2.8	2.2	1.2		1.1		1.4	1.1	
Nitrate	4	4	4	2.3	2.3	2.4	2.2	2.0	2.6	1.7	1.2	
PAH											1.4	
Lead												1.4
Kjeldahl-N										1.3	1.1	
TC/Coliform bacteria	1-2	1-2	1-2	1.8	1.8	2.4	1.4	1.3	1.2			1.3
SSRC/*Cl.perfringens*												1.1
Sulphate	1-2	1-2	1-2	1.7	1.7	1.8				1.1		
Hydrocarbons	2-3	2-3	2-3	1.3		1.6			1.4		1.1	
Desisopropylatrazine							1.0	1.5				
Phenols							1.7					
Odour				4.0	3.3	3.4						
Taste				3.2	1.3	1.1						
Pesticides (total)	2.4	1.8	1.5	1.3	1.6	1.2						
FC/*E.coli*	1-2	1-2	1-2									
All other parameters complied in 99% of more of all samples taken in France												

Number of water supply zones exceeding water quality parameters

For each parameter that showed non-compliance in more than 1 sample in an individual water supply zone, the number of such water supply zones was calculated. The total of number of water supply zones with more than 1 non-compliant sample is listed in table 3.8.4. The total number of water supply zones serving more than 5000 persons is 2288 in France. The parameter Total coliforms/Coliform bacteria caused non-compliance in most water supply zones in France in the 2002-2004 period.

Table 3.8.4 Total *number of water supply zones* serving more than 5000 people that exceed the parametric value in the DWD in *more than 1 sample*. France, 2002-2004. For comparison the data are also provided for 1996-1998 and 1999-2001. For 1996-1998 no processed data at water supply zone level were available only at département level.

	Reporting year								
	1996	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**
Nr of wsz	**Nr of départements in which one or more water supply zone show non-compliance (total 100 départments). Only parameters failing in > 1 sample are included**			**2236**			**2288**	**2288**	**2288**
Parameter				**Number of wsz with more than 1 case of non-compliance**					
Total coliforms	74	80	77	139	159	137	113	101	254
Temperature	12	19	13	43	56	55	86	280	n.a.
SSRC/*Cl.perfringens*	24	24	24	15	20	11	23	24	160
Turbidity	68	65	64	68	81	68	50	46	136
Iron	29	36	30	58	57	57	62	61	93
Faecal coliforms/*E.coli*	75	83	77	177	163	138	99	70	38
Aluminium	23	22	20	43	32	40	34	40	91
Desethylatrazine				102	108	70	67	69	55
FS/Enterococci	73	74	71	101	102	81	61	60	59
Nitrate	30	25	25	75	72	78	57	49	43
Atrazine				77	60	49	38	23	22
Potassium				2	4	9	25	29	
Manganese	19	21	22	16	24	14	17	17	26
Sulphate	10	12	9	16	14	20	21	22	14
Taste							9	10	
Nickel							1		10
Arsenic									10
Fluoride	3	4	5	12	18	15	9	7	6
Selenium				8	8	7	6	17	9
Sodium	6	4	4	4	6	4	4	8	
Chloride									8
Bromate									8
Kjeldahl-N							6	6	n.a.
Colour	2	5	7	7	5	2	6	2	
Tri and tetra									6
Odour							4	5	
Ammonium	3	4	6				4	1	4
Lead									4
Hydrocarbons	7	4	8	0	37	2	1	4	
Magnesium							2	2	
Oxidisability							0	1	n.a.
pH							1	1	1
PAH							1	2	1
EC									1
THM									1
Nitrite	11	8	9						
Individual pesticides other than atrazine and desethylatrazine									
Pesticides	43	45	43						

Diuron							5		
Chlorodecane				2	9	3	2	3	3
Terbutylazine				4	7	4	2	3	1
Desisopropylatrazine				2	14	4	2	1	2
Oxadixyl							3	2	2
Terbutylazindesethyl							2		1
Glyphosphate								1	
Terbumetondes-ethyl							1		
Dinoterb							1		
Trichlorpyr									1
2hydroxy atrazine									1
Metachlor									1
AMPA				0	7	0			
Simazine				9	3	3			

n.a. parameter not retained in the DWD

Derogations in France

Information is given on the derogations in place for the 2002-2004 period. A total of 76 derogations was issued for (part of) the 2002-2004 period, see table 3.8.5. The reasons for the derogations were always given and mostly concerned geological nature of the underground or are the result of agricultural activity.

Table 3.8.5 Number of WSZ with derogation in place, France 2002-2004

Parameter	**2002/2003/2004**
Desethylatrazine	3
Atrazine and metabolites	2
Arsenic	2
Temperature	32 (climate)
Fluor	8
Potassium	4
Sulphate	3
Nitrate	1
Sodium	5
Nickel	16

Conclusions France

The return submitted by France was comprehensive and complete. There are 20 parameters (highest score for desethylatrazine, selenium and temperature) that cause non-compliance in more than one percent of the samples taken in the whole Member State. There are 47 parameters (highest score for TC/Coliform bacteria, temperature and SSRC/*Cl.perfringens*) that cause non-compliance in water supply zones. There is comprehensive information on individual pesticides analyses.

The percentage of non-compliance for pesticides (desethylatrazine, atrazine and desisopropylatrazine). seems to be decreasing in

France. Other parameters also show a lower level of non-compliance such as selenium, aluminium, manganese, iron, nitrate and fluoride. A higher level of non-compliance is noticeable for arsenic and nickel (both stricter value), PAH (new) and lead. The number of no-compliant water supply zones does not show a consistent trend.

3.9 Drinking Water Quality in Ireland 2002-2004

The quality and completeness of the 2002-2004 returns

The returns from Ireland for the 2002-2004 period were comprehensive and complete. The data for the years 2002 and 2003 relate to the 80/778/EEC DWD and for the year 2004 to the 98/83/EC DWD. Ireland knows three types of water supplies, which are public water supplies, group water supplies and small/private water supplies. The group and the small/private water supplies are mostly too small to be subject to the mandatory reporting to the Commission (serving less than 5000 people).

General information on the water supply in Ireland

Ireland has a total population of 3.9 million persons, of which 68-73% are connected to larger water supplies that serve more than 5000 persons or that produce more than 1000 m^3 of water per day (see table 3.9.1). There are 116 to 250 of such water supply zones in Ireland and they supply between 423 and 546 million m^3 of drinking water per year to approximately 3 million people. The quality data for Ireland that are presented in this synthesis report concern the abovementioned water supply zones. Most drinking water in Ireland is produced from surface water sources, and the remainder is produced from groundwater sources.

Table 3.9.1 General information Ireland 2002-2004

Total population	3.9 million
Number of water supply zones (water supply zone) serving more than 5000 persons/more than 1000 m^3 water per day	116/115/250
Number of people served by these water supply zone	2.65/2.66/2.96million
Total amount of water supplied (only supplies serving 5000 or more consumers)	423/457/546 million m^3/year
Population served by these supplies	67.7/68.0/73.3%
Raw water sources	
Groundwater	8.3/6.4/10.6%
Surface water	91.7/93.6/89.4%
Other sources	none

Ireland provided a national summary of the water quality in all water supply zones serving more than 5000 persons, mentioning for each parameter the percentage samples that did not comply with the parametric values in the DWD. The parameters that caused

non-compliance in more than 1% of the samples taken in these water supply zones are listed in table 3.9.2 (left column), starting with the parameter that has the highest percentage of non-complying samples (TC/Coliform bacteria). Detailed information is presented in table 3.9.3.

Ireland also provided information at water supply zone level on the parameters that did not always comply with the parametric values in the DWD. The parameters that caused non-compliance in more than one sample are listed in table 3.9.2 (right column), starting with the parameters that caused non-compliance in the highest number of water supply zones (TC/Coliform bacteria). Detailed information is presented in table 3.9.4.

Table 3.9.2 Summary of water quality parameters that cause non-compliance in Ireland, 2002-2004

Parameters that cause non-compliance in more than 1% of all samples taken in Ireland (in any of the reporting years)	**Parameters that show non-compliance in a number of water supply zones in Ireland**
TC/Coliform bacteria	TC/Coliform bacteria
Aluminium	Aluminium
Iron	Odour
Odour	Colour
Taste	Iron
Colour	SSRC/*Cl. perfringens*
Manganese	Turbidity
Turbidity	FC/*E.coli*
	Manganese
	Fluoride
	pH
	Taste
	Colony Counts 22
	Lead
	THM
	Copper
	Bromate
	FS/Enterococci
	Ammonium
All other parameters comply in 99% or more of the samples	**Parameters that most often caused failure in supply zones (in more than 1 sample in any year)**

* Only supplies serving 5000 or more consumers

National summary of the drinking water quality in Ireland

Table 3.9.3 presents information on the overall quality of drinking water in all larger water supply zones in Ireland in the fourth reporting period. For each non-compliant parameter the percentage of samples that exceeded the parametric value in the DWD is presented. Were available data for the previous reporting periods are also included. Table 3.9.3 shows that the Total Coliform/

Coliform bacteria parameter was most often exceeding the parametric value in the total number of samples in the larger water supply zones.

Table 3.9.3 National summary of monitoring results for each parameter in large wsz > 5000 people. For the years 2002, 2003 and 2004 and for comparison data from 1993-1995, 1996-1998 and 1999-2001. Percentages non-compliance. Ireland.

Parameter	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
TC/Coliform bacteria							5.6	6.4	5.3	5.00	6.05	6.59
Aluminium	12	5	6	4.5	6.1	5.7	5.5	6.4	5.6	6.64	4.97	4.64
Iron	9	4	5	4.4	5.6	6.2	8.0	8.1	3.9	2.74	2.60	4.85
Odour	7	8	6	7.2	3.5	3.1	3.2	3.3	4.1	2.78	3.60	2.02
Taste	3	10	10	7.2	3.0	2.7	2.4	1.9	1.6	1.72	3.05	1.15
Colour	5	2	2	3.3	2.6	3.1	3.0	2.7	1.8	2.24		2.20
Manganese	8	8	4	1.2	7.4	6.5	6.0	6.0	2.1	1.90	1.50	1.33
Turbidity										1.05		
TC/FC*	4	5	5	4.5	5.6	4.5						
FC/*E.coli*								2.1	1.7			
Fluoride	16	10	9	7.5	6.2	4.0	2.9	4.1	2.8			
Heavy Metals**				1.2								
pH												
Ammonium					1.1							
All other parameters complied in 99% of more of all samples taken in Ireland												

* TC and FC total and faecal coliforms were reported together in the first two periods 1993-1995 and 1996-1998, in

** All individual heavy metals failed in < 1% of all samples

Number of water supply zones exceeding water quality parameters

A total of 116/115/250 water supply zones are subject to reporting to the Commission for the 2002-2004 period. For each parameter that showed non-compliance in more than 1 sample in individual water supply zones, the number of such water supply zones was calculated. The total of number of water supply zones with more than 1 non-compliant sample is listed in table 3.9.4. The parameter TC/Coliform bacteria caused non-compliance in most water supply zones in 2002-2004.

Table 3.9.4 Total *number of water supply zones* serving more than 5000 people that exceed the parametric value in the DWD in *more than 1 sample*. Ireland, 2002-2004. For comparison the data are also provided for 1993-1995, 1996-1998 and 1999-2001.

	Reporting year								
	1996	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**
Nr of wsz	120	120	120	120	125	116	116	115	250*
Parameter									
TC/Coliform bacteria					64	44	45	49	81
Aluminium	24	25	24	30	27	33	31	26	39
Odour	36	30	20	26	28	30	21	26	31
Colour	22	20	22	10	28	18	13	10	31
Iron	20	20	19	27	17	19	16	19	18
SSRC/*Cl. perfringens*									17
Turbidity	6	7	6	17	10	8	8	1	17
FC/*E.coli*					22	16	7	5	15
Manganese	7	7	11	13	11	13	12	10	8
Fluoride	40	40	26	4	40	32	19	15	2
pH							1	1	0
Taste	20	17	10	1	8	11	10	12	0
Colony Counts 22									8
Lead				1	0	2	1	0	3
THM									3
Copper							1	2	
Bromate									1
SSRC/Enterococci									1
Ammonium				60	1	0			1
TC+FC	44	49	44	15					
Nitrite				0	1	0			

**** Comment responisble authority: The sharp increase is due to the fact that more than twice the number of wsz were included in 2004 compared to 2002 and 2003***

Derogations in Ireland

Ireland reported derogations for the 2002-2004 period for the parameters iron, manganese and colour (see table 3.9.5). Derogations that were in place for 2002 and 2003 were no longer in place in 2004 as only list B parameters can be derogated under the 98/83/EC DWD.

Table 3.9.5 Number of WSZ with derogation in place, Ireland 2002-2004

Parameter	**2002**	**2003**	**2004**
Iron	4	4	none
Manganese	3	1	
Colour	1	1	

Conclusions Ireland

The return submitted by Ireland was comprehensive and complete. There are 8 parameters (highest score for TC/Coliform bacteria, aluminium and iron) that cause non-compliance in more than one percent of the samples taken in the whole Member State. There are 19 parameters (highest score for TC/Coliform bacteria, aluminium and odour) that cause non-compliance in water supply zones.

For the parameters iron and manganese there is a significant improvement compared to the previous reporting periods. Also there is more than 99% compliance at a national level for the parameters E.coli and fluoride which is a significant improvement compared to the previous reporting period. The trend in non-compliant water supply zones can not be judged as the total number has changed significantly.

3.10 Drinking Water Quality in Italy 2002-2004

The quality and completeness of the 2002-2004 returns
The returns from Italy was comprehensive and complete. The data reported relate to the 80/778/EEC DWD for the years 2002 and 2003 and to the 98/83/EC DWD for the year 2004. There is still uncertainty about the exact number of large wsz in Italy as they vary with the reporting period. In 1993-1995 1490 wsz, in 1996-1998 1656 wsz, in 1999-2001 325 wsz and in the 2002-2004 period 1648-1719 wsz.

General information on the water supply in Italy
Italy has a total population of 57.4 million persons, of which more than 81-83% are connected to larger water supplies that serve more than 5000 persons or that produce more than 1000 m^3 of water per day (see table 3.10.1). There are 1648/1663/1719 of such water supply zones in Italy. The quality data for Italy that are presented in this synthesis report concern the abovementioned water supply zones. Most drinking water in Italy is produced from groundwater sources.

Table 3.10.1 General information Italy 2002-2004

Total population	57.4million
Number of water supply zones (water supply zone) serving more than 5000 persons/more than 1000 m^3 water per day	1648/1663/1719
Number of people supplied by these water supply zones	46.68/47.13/47.70 million
Total amount of water supplied (only supplies serving 5000 or more consumers)	5802/6055/6189 million m^3/year
Population served by these supplies	81.3/82.1/83.1%
Raw water sources	
Groundwater	81.2/81.2/80.7%
Surface water	18.4/18.4/19.0%
Other sources	0.4/0.4/0.3 %

Italy provided a national summary of the water quality in the 1648/1663/1719 water supply zones serving more than 5000 persons, mentioning for each parameter the percentage samples that did not comply with the parametric values in the DWD. The parameters that caused non-compliance in more than 1% of the samples taken in these water supply zones are listed in table 3.10.2 (left column), starting with the parameter that has the highest percentage of non-complying samples (vanadium). Detailed information is presented in table 3.10.3.

Italy also provided information at water supply zone level on the parameters that did not always comply with the parametric values in the DWD. The parameters that caused non-compliance in more than one sample are listed in table 3.10.2 (right column), starting with the parameters that caused non-compliance in the highest number of water supply zones (TC/Coliform bacteria). Detailed information is presented in table 3.10.4.

Table 3.10.2 Summary of water quality parameters that cause non-compliance in Italy

Parameters that cause non-compliance in more than 1% of all samples taken in Italy (in any of the reporting years)	**Parameters that show non-compliance in a number of water supply zones in Italy**
Vanadium	TC/Coliform bacteria
PAH	FS/Enterococci
Sulphate	FC/*E.coli*
Aluminium	Chlorite
Chloride	Iron
Colony Counts 22/37	Tri- and tetrachloroethene
Turbidity	Nitrate
Dry residues	Organohalogen compounds/THM
Organochlorine	Aluminium
compounds/THM	Turbidity
Ammonium	Magnesium
Nitrite	Temperature
pH	Colony Counts 22
Hydrogen sulphide	Pentametylentetrazola
Colour	2 metil-1,3,4-tiadiazolo
Iron	Manganese
Magnesium	Sulphate
Fluoride	SSRC/*Cl.perfringens*
Nitrate	Sodium
FC/*E.coli*	Colony Counts 37
Sodium	Trimetilditiofostato
FS/Enterococci	Copper
Kjeldahl-N	1,2 dichloroethane
Odour	Desethylatrazine
Manganese	2.6 dichlorobeanzamide
Hydrocarbons	Bromacil
Mercury	Chloride
Temperature	
SSRC/*Cl.perfringens*	
Cyanide	
EC	
Antimony	
Arsenic	
Oxidisability	
1.2 dichloroethene	
Boron	
Nickel	
Tri and	

tetrachloroethane	
All other parameters comply in 99% or more of the samples	**Parameters that most often caused failure in supply zones (in more than 1 sample in any year)**

* Only supplies serving 5000 or more consumers

National summary of the drinking water quality in Italy

Table 3.10.3 presents information on the overall quality of drinking water in all larger water supply zones in Italy in the fourth reporting period. For each non-compliant parameter the percentage of samples that exceeded the parametric value in the DWD is presented. Were available data for the previous reporting periods are also included. Table 3.10.3 shows that the vanadium parameter was most often exceeding the parametric value in the total number of samples in the larger water supply zones

Table 3.10.3 National summary of monitoring results for each parameter in large wsz > 5000 people. For the years 2002, 2003 and 2004 and for comparison data from 1993-1995, 1996-1998 and 1999-2001. Percentages non-compliance. Italy 2002-2004.

	Reporting year							
Parameter	***1993-1995***	***1996-1998***	***1999***	***2000***	***2001***	***2002***	***2003***	***2004***
Vanadium						22.8	32.1	
PAH			1.3		14.1		14.7	
Sulphate		2	2.3			12.1	6.4	1.28
Aluminium	2-4	2	1.7			12.4	4.5	
Chloride								18.0
Colony Counts 22/37						7.8	10.2	2.7/1.6
Turbidity			1.4			9.2	1.2	
Dry residues						8.4	8.3	
Organochlorine compounds/THM						8.0	4.7	
Ammonium			2.1			6.7	4.1	
Nitrite			3.0			6.0	3.7	
pH						5.4	3.1	2.3
Hydrogen sulphide							5.0	
Colour						4.9	4.1	
Iron	2-3	2	4.0	1.2	1.3	3.6	4.3	2.3
Magnesium			4.4			4.3	3.3	
Fluoride						2.7	4.2	
Nitrate			2.1			3.8		
FC/*E.coli*	3-5	4	7.5	5.3	6.1	2.8	2.5	3.6
Sodium			6.0			2.1	3.6	1.5
FS/Enterococci	3-5	3	8.7	5.8	6.5	1.9	1.7	3.6
Kjeldahl-N						3.5		
Odour			1.7			3.2		
Manganese	4-7	2		1.4		2.0	2.9	2.4
Hydrocarbons			1.2	1.1	1.3		2.9	
Mercury						2.8		
Temperature			2.0				2.4	

SSRC/*Cl.perfringens*							2.4	
Cyanide						1.5	1.3	1.9
EC								1.8
Antimony						1.5	1.8	
Arsenic						1.4	1.2	1.6
Oxidisability			1.1					1.4
1.2 dichloroethene								1.4
Boron								1.2
Nickel							1.1	
Tri and tetrachloroethane								1.1
Lead			3.1					
Potassium			14.9	8.4	8.3			
Pesticides		2	7.9					
Phenols					15.1			
All other parameters comply in 99% or more of the samples taken in Italy								

Number of water supply zones exceeding water quality parameters

For each parameter that showed non-compliance in more than 1 sample in individual water supply zones, the number of such water supply zones was calculated. The total of number of water supply zones with more than 1 non-compliant sample is listed in table 3.10.4. The total number of water supply zones serving more than 5000 persons is between 1648 and 1719 in Italy.

The parameter TC/Coliform bacteria caused non-compliance in most water supply zones in 2002-2004.

Table 3.10.4 Total *number of water supply zones* serving more than 5000 people that exceed the parametric value in the DWD in *more than 1 sample*. Italy, 2002-2004. For comparison the data are also provided for 1996-1998 and 1999-2001.

Reporting year	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**
Nr of WSZ	**1656**	**1656**	**1656**	**325**	**325**	**325**	**1648**	**1663**	**1719**
Parameter									
TC/Coliform bacteria	48	49	51	30	33	32	27	23	13
FS/Enterococci	18	17	21	7	13	7	18	11	7
FC/E.coli	28	24	29	16	16	12	16	17	12
Chlorite								1	9
Iron	20	16	20	5	6	5	6	6	3
Tri- and tetrachloethene									5
Nitrate	9	15	8	9	9	5	3	4	
Organohalogen compounds/THM	7	10	7		3		4	1	2
Aluminium	13	8	7		2		3	1	3
Turbidity	12	12	8	3	1	2	2	3	1
Magnesium								3	
Temperature				2	3	2	2	2	
Colony Count 22							1	2	
Pentametylentetrazola							2		
2 metil-1,3,4-tiadiazolo									2
Manganese					2		1	1	

Sulphate								1	
SSRC/*Cl. perfringens*						2		1	1
Sodium							1	1	
CC37							1	1	
Trimetilditiofostato								1	
Copper									1
1,2 dichloroethane									1
Desethylatrazine									1
2.6 dichlorobenzamide									1
Bromacil									1
Chloride								1	
Nitrite				1	3	1			
Residual chlorine						2			

Derogations in Italy

Italy provided extensive information on the derogations in place. Derogations have been issue in the 2002-2004 period for the parameters iron, manganese, ammonium, nitrate, sulphate, magnesium, sodium, chloride, pH , fluoride, dry residues, vanadium, boron, arsenic, THM and chlorite. The derogations are presented in table 3.10.5.

Table 3.10.5 Number of WSZ with derogation in place, Italy 2002-2004

Parameter	2002	2003	2004
Iron	9	8	3
Manganese	13	11	4
Ammonium	5	5	
Nitrate	1	1	
Sulphate	8	7	
Magnesium	8	7	
Sodium	4	4	2
Chloride	3	3	2
pH	1	1	
Fluoride	4	3	2
Dry residues	2	2	
Vanadium			4
Boron			4
Arsenic			20
THM			3
Chlorite			12

Conclusions Italy

The return submitted by Italy was comprehensive and complete, with much information on individual pesticides. There are 38 parameters (highest score for vanadium, PAH and sulphate) that cause non-compliance in more than one percent of the samples taken in the whole Member State. There are 27 parameters (highest score for TC/Coliform bacteria, FS/Enterococci and FC/*E.coli*) that cause non-compliance in water supply zones.

It is difficult to describe the changes in Italian drinking water, as there are both indications of upward and downward trends. Remarkable is the fact that the number of parameters that showed more than 1% non-compliance at the national level in 2004 is much lower than in 2002 and 2003. There is no real explanation for this decrease.
A higher level of non-compliance is seen for PAH (new parameter), aluminium, colony counts (22 and 37), THM, turbidity, ammonium, nitrite, pH, colour, iron, fluoride, nitrate, odour, mercury, *Cl.perfringens*, antimony in 2002 and or 2003, while all these parameters show a much lower level of non-compliance in 2004.

Increased non-compliance is noticed for cyanide, antimony, arsenic (stricter value), 1,2 dichloroethene, EC, boron, nickel (stricter value) and tri- and tetrachloroethane (new). A very dramatic increase occurs in 2004 for the chloride parameter. A much lower level of non-compliance at national level is seen for Enterococci and sodium. No clear trend is visible in the number of water supply zones showing no-compliance.

3.11 Drinking Water Quality in Luxembourg 2002-2004

The quality and completeness of the 2002-2004 returns

The quality and completeness of the 2002-2004 returns

The responsible authorities send in a return for the 2002-2004 reporting period. The returns is not complete and not in the required format for reporting on the quality of drinking water and therefore difficult to process. Wherever possible data provided by Luxembourg is included in this synthesis report. It is not clear to which DWD the data provided by the Member State relate.

General information on the water supply in Luxembourg

Luxembourg has a total population of 0.45 million persons. It is not clear how many percent of these people are connected to larger water supplies that serve more than 5000 persons or that produce more than 1000 m^3 of water per day (see table 3.11.1). There are 10 of such water supply zones in Luxembourg. The quality data for Luxembourg that are presented in this synthesis report concern the abovementioned water supply zones.

Table 3.11.1 General information Luxembourg 2002-2004

Total population	0.45 million
Number of water supply zones (water supply zone) serving more than 5000 persons/more than 1000 m^3 water per day	10
Number of people supplied by these water supply zones	million
Total amount of water supplied (only supplies serving 5000 or more consumers)	31.8 million m^3/year 72% of all water supplied in Luxembourg
Population served by these supplies	%
Raw water sources	
Groundwater	
Surface water	
Other sources	

Table 3.11.2 Summary of water quality parameters that cause non-compliance in Luxembourg	
Parameters that cause non-compliance in more than 1% of all samples taken in Luxembourg (in any of the reporting years)	**Parameters that show non-compliance in a number of water supply zones in Luxembourg**
No data available	Colony Counts 36 Colony Counts 22 TC/Coliform bacteria Manganese
All other parameters comply in 99% or more of the samples	**Parameters that most often caused failure in supply zones**

National summary of drinking water in Luxembourg

Luxembourg provided information on the number of analyses in the ten wsz but the data were sometimes combined for the three reporting years and sometimes the percentage of non-compliance was given and not the number of non-compliant results. It was therefore not possible to calculate the percentage of non-compliance for each of the reported parameters at a national level.

Number of water supply zones exceeding water quality parameters

Luxembourg presented information on non-compliance in the 10 large water supply zones in the abovementioned fashion. It was not possible to calculate the number of water supply zones that had more than one non-compliant result for each parameter. The only calculation that could be made is the number of water supply zones that have one or more non-compliant result. In the case the data were combined for three years each separate year was assumed to have non-compliance for that parameter. See table 3.11.4.

Table 3.11.4 Number of water supply zones that show non-compliance listing the parameters that most often cause zones to fail 2002-2004 Luxembourg

	Reporting year		
Parameter	**2002**	**2003**	**2004**
Colony Counts 36	8	7	6
Colony Counts 22	6	6	6
TC/Coliform bacteria	5	5	5
Manganese	1		

Derogations in Luxembourg

No information was provided on derogations.

Conclusions Luxembourg

The returns submitted was very incomplete and was difficult to process because of the very different format of data reporting used. There are 4 parameters that cause non-compliance in water supply zones (highest score for Colony Counts 22 and 37 and TC/Coliform bacteria).

3.12 Water Quality in the Netherlands 2002-2004

The quality and completeness of the 2002-2004 returns
The returns submitted by the Netherlands were comprehensive and complete. The data relate to the 98/83/EC DWD for all three reporting years. The returns concerned results of the drinking water quality ex-works and at the consumers tap. Both data are presented as parameters that do no change during distribution are not measured at the tap but at the drinking water production plant. Parameters that can change during distribution are sometimes analysed in the water ex-works and at the consumers tap.

General information on the water supply in the Netherlands
The Netherlands has a total population of 16 million persons, of which almost 100 % are connected to larger water supplies that serve more than 5000 persons or that produce more than 1000 m^3 of water per day (see Table 3.12.1). There are approximately 220 of such water supply zones in the Netherlands and they supply 1221/1247/1204 million m^3 of drinking water per year to 16 million people. The quality data for the Netherlands that are presented in this synthesis report concern the abovementioned water supply zones. Most drinking water in Netherlands is produced from groundwater sources, and the remainder is produced from surface water sources.

Table 3.12.1 General information The Netherlands 2002-2004

Total population	16 million
Number of water supply zones (water supply zone) serving more than 5000 persons/more than 1000 m^3 water per day	225/221/218
Number of people served by these water supply zone	16/16/16 million
Total amount of water supplied (only supplies serving 5000 or more consumers)	1221/1247/1204 million m^3/year
Population served by these supplies	99.9%
Raw water sources	
Groundwater	62.0%
Surface water	38.0%
Other sources	none

The Netherlands provided a national summary of the water quality in the 220 water supply zones serving more than 5000 persons, mentioning for each parameter the percentage samples that did not comply with the parametric values in the DWD. Table 3.12.2 (left column) shows that there are no parameters that exceed in more 1%

of the samples in the Netherlands. Detailed information is presented in table 3.12.3.

The Netherlands also provided information at water supply zone level on the parameters that did not always comply with the parametric values in the DWD. The parameters that caused non-compliance in more than one sample are listed in table 3.12.2 (right column), starting with the parameters that caused non-compliance in the highest number of water supply zones (turbidity). Detailed information is presented in table 3.12.4.

Table 3.12.2 Summary of water quality parameters that cause non-compliance in the Netherlands 2002-2004

Parameters that cause non-compliance in more than 1% of all samples taken in the Netherlands (in any of the reporting years)	**Parameters that show non-compliance in a number of water supply zones in the Netherlands**
No parameters that failed in more than 1% of the samples	Turbidity Manganese Iron Nickel TC/Coliform bacteria Trichloroacetic acid Mecoprop Nitrate Colour Ammonium Lead Bromacil Metoxuron
	Parameters that most often caused failure in supply zones (in more than 1 sample in any year)

* Only supplies serving 5000 or more consumers

National summary of the drinking water quality in the Netherlands

Table 3.12.3 presents information on the overall quality of drinking water in all larger water supply zones in the Netherlands in the fourth reporting period. For each non-compliant parameter the percentage of samples that exceeded the parametric value in the DWD is presented. Were available data for the previous reporting periods are also included. Table 3.12.3 shows that none of the drinking water parameters exceeded the parametric values of the DWD in more than 1% of the samples.

Table 3.12.3 National summary of monitoring results for each parameter in large wsz > 5000 people. For the years 2002, 2003 and 2004 and for comparison data from 1993-1995, 1996-1998 and 1999-2001. Percentages non-compliance. The Netherlands				
Parameter	1993-1995	1996-1998	1999-2001	2002-2004
	None	None	None	None

Number of water supply zones exceeding water quality parameters

For each parameter that showed non-compliance in more than 1 sample in an individual water supply zone, the number of such water supply zones was calculated. The total of number of water supply zones with more than 1 non-compliant sample is listed in table 3.12.4. The total number of water supply zones serving more than 5000 persons is 225/221/218 in the Netherlands.

The parameter turbidity caused non-compliance in most water supply zones in the 2002-2004 period (water quality ex-works). The parameter iron caused non-compliance in most water supply zones in the 2002-2004 period (water at the consumers tap).

Table 3.12.4 Total *number of water supply zones* serving more than 5000 people that exceed the parametric value in the DWD in *more than 1 sample*. The Netherlands, 2002-2004. For comparison the data are also provided for 1996-1998 and 1999-2001.

***Number of water supply zones with non-compliance, water quality leaving the treatment plant* (only parameters failing in more than 1 sample are included)**

Parameter	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**
Nr of WSZ	250	250	250	230	230	230	225	221	218
Turbidity					1		15	14	12
Manganese	3	5	4	5	3	3	2	3	2
Iron	5	5	5	6	7	4	1	1	1
Nickel						2	1	1	1
TC/Coliform bacteria	9	3	4	4	2	2			2
Trichloroacetic acid							1		1
Mecoprop				1	1	1	1		
Nitrate					1		1		
Colour					1				1
Ammonium									1
Bromacil									1
Pesticides	4	5	5						
AMPA				1					
Bentazon				2	1	1			
BAM					2	2			
Sulphate				1					
Nitrite				1	1				
Oxidisability					1				
Nitrate					1				

Continued next page

Number of water supply zones with non-compliance, water quality in the distribution net (consumers' tap) (only parameters failing in more than 1 sample are included									
Parameter	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**
Nr of WSZ	**250**	**250**	**250**	**230**	**230**	**230**	**225**	**221**	**218**
Iron	10	15	10	11	7	8	1	3	6
Turbidity				2		2	1	1	3
Manganese	2	2	2	1	2	2			3
Lead						2	3		
TC/Coliform bacteria	5	8	5	5	7	4	1	2	
Metoxuron							1		
Colour								1	1
FC/*E.coli*					1				
Nitrite					1				
Temperature				1		2			
Ammonium				1		1			

Derogations in the Netherlands

The Netherlands reported 14 derogations for the parameters colour, oxidisability and nickel all due to the structure and nature of the underground. See table 3.12.5, 2002-2004 period.

Table 3.12.5 Number of WSZ with derogation in place, The Netherlands 2002-2004	
Parameter	**2002/2003/2004**
Colour	10
Oxidisability	3
Nickel	1

Conclusions the Netherlands

The returns from the Netherlands are comprehensive and complete. The Netherlands is the only Member State where none of the parameters failed in more than 1% of the samples at national level. There are 13 parameters that cause non-compliance in water supply zones, with the highest score for turbidity, manganese and iron. As there are no parameters that show more than 1% non-compliance the results for the Netherlands are the same as in the previous reporting periods. The only trend indication is a decrease in the number of water supply zones that have non-compliance for the iron parameter and the TC/Coliform bacteria parameter.

3.13 Drinking Water Quality in Austria 2002-2004

The quality and completeness of the 2002-2004 returns

The returns submitted by Austria were complete. The data provided relate to 98/83/EC DWD for all three reporting years.

General information on the water supply in Austria

Austria has a total population of 8.17 million persons, of which 66% are connected to larger water supplies that serve more than 5000 persons or that produce more than 1000 m^3 of water per day (see table 3.13.1). There are 226/234/227 of such water supply zones in Austria and they supply 404/432/429 million m^3 of drinking water per year 5.4 million people. The quality data for Austria that are presented in this synthesis report concern the abovementioned water supply zones. Most drinking water in Austria is produced from groundwater sources, and the remainder is produced surface water sources.

Table 3.13.1 General information Austria 2002-2004	
Total population	8.08/8.12/8.17million
Number of water supply zones (water supply zone) serving more than 5000 persons/more than 1000 m^3 water per day	226/234/227
Number of people served by these water supply zone	5.3/5.4/5.4 million
Total amount of water supplied (only supplies serving 5000 or more consumers)	404/432/429 million m^3/year
Population served by these supplies	65/67/66%
Raw water sources	
Groundwater	98.9/99.1/99.4%
Surface water	1.1/0.9/0.6%
Other sources	none

Austria provided a national summary of the water quality in the 226/234/227 water supply zones serving more than 5000 persons, mentioning for each parameter the percentage samples that did not comply with the parametric values in the DWD. The parameters that caused non-compliance in more than 1% of the samples taken in these water supply zones are listed in table 3.13.2(left column), starting with the parameter that has the highest percentage of non-complying samples (desethylatrazine). Detailed information is presented in table 3.13.3.

Austria also provided information at water supply zone level on the parameters that did not always comply with the parametric values in the DWD. The parameters that caused non-compliance in more

than one sample are listed in table 3.13.2 (right column), starting with the parameters that caused non-compliance in the highest number of water supply zones (TC/Coliform bacteria). Detailed information is presented in table 3.13.4.

Table 3.13.3 Summary of water quality parameters that cause non-compliance in Austria, 2002-2004

Parameters that cause non-compliance in more than 1% of all samples taken in Austria	**Parameters that show non-compliance in a number of water supply zones in Austria**
Desethylatrazine	TC/Coliform bacteria
Desethylpropylatrazine	FC/*E.coli*
Arsenic	Desethylatrazine
Atrazine	FS/Enterococci
TC/Coliform bacteria	Atrazine
FS/Enterococci	Nitrate
Manganese	Desethylpropylatrazine
Colony Counts 37	Nitrite
Iron	*Cl. perfringens*
Nickel	Prometryn
FC/*E.coli*	PAH
Chloride	Metolchlor
CC 22	Iron
	Chloride
	Ps. aeruginosa
	Total pesticides
All other parameters comply in 99% or more of the samples	**Parameters that most often cause failure in water supply zones (in more than 1 sample in any year)**

* Only supplies serving 5000 or more consumers

National summary of the drinking water quality in in Austria

Table 3.13.3 presents information on the overall quality of drinking water in all larger water supply zones in Austria in the fourth reporting period. For each non-compliant parameter the percentage of samples that exceeded the parametric value in the DWD is presented. Were available data for the previous reporting periods are also included. Table 3.13.3 shows that the desethylatrazine was most often exceeding the parametric value in the total number of samples in the larger water supply zones in the 2002-2004 period.

Note from the responsible authorities on the data for 2002-2004
According to Annex I Part B note 6 only those pesticides which are likely to be present in a given supply need be monitored. In those supplies where pesticides (e.g. atrazine, desethylatrazine, bentazone) have been monitored, more than one sample has been taken per year. Moreover, in cases of non-complying samples mostly came from those water supplies which have derogations. For this reason the calculations for pesticides do not reflect the real proportion of non-complying waterworks (WSZ). With exception of some waterworks all other have no problems with pesticides.

Table 3.13.3 National summary of monitoring results for each parameter in large wsz > 5000 people. For the years 2002, 2003 and 2004 and for comparison data from 1996-1998 and 1999-2001. Percentages non-compliance. Austria							
Reporting year	1996-1998	1999	2000	2001	2002	2003	2004
Nr of WSZ	**185**	**208**	**208**	**208**	**226**	**234**	**227**
Parameter							
Desethylatrazine		31.2	41.0	69.8	15.8	10.6	8.5
Desethylpropylatrazine						11.1	
Arsenic							7.1
Atrazine		22.1	33.5	42.7	6.5	2.0	2.6
TC/Coliform bacteria	2	1.2			4.3	2.5	1.7
FS/Enterococci					2.4	1.2	
Manganese	2				1.9		
Colony Counts 37					1.5		
Iron					1.5		
Nickel							1.5
FC/*E.coli*					1.4	1.1	
Chloride					1.3		
CC 22					1.2		
Pesticides	2						
Nitrate	2	1.1	1.5	1.7			
Magnesium		1.3	1.3	1.2			
Organichlorine compounds/THM	2						
All other parameters complied in 99% or more of the samples taken in Austria							

Number of water supply zones exceeding water quality parameters

For each parameter that showed non-compliance in more than 1 sample in an individual water supply zone, the number of such water supply zones was calculated. The total of number of water supply zones with more than 1 non-compliant sample is listed in table 3.13.4. The total number of water supply zones serving more than 5000 persons is 226/234/227 in Austria. The parameter TC/Coliform bacteria caused non-compliance in most water supply zones in 2002-2004.

Table 3.13.4 Total *number of water supply zones* serving more than 5000 people that exceed the parametric value in the DWD in *more than 1 sample*. Austria, 2002-2004. For comparison the data are also provided for 1996-1998 and 1999-2001

Reporting year	1996-1998	1999	2000	2001	2002	2003	2004
Nr of WSZ	No data				226	234	227
Parameter							
TC/Coliform bacteria					12	10	14
FC/*E.coli*					2	3	7
Desethylatrazine		16	16	16	5	6	3
FS/Enterococci					1	4	5
Atrazine		16	16	16	1	2	2
Nitrate						1	2
Desethylpropylatrazine					1		
Nitrite					1		
SSRC/*Clostridium perfringens*					1		
Prometryn						1	
PAH						1	
Metolchlor						1	
Iron							1
Chloride							1
Pseudomonas aeruginosa							1
Total pesticides							1

Derogations in Austria

Austria reported on derogations for four parameters for the 2002-2004 period, see table 3.13.5

Table 3.13.5 Number of WSZ with derogation in place, Austria 2002-2004

Parameter	**2002[1]**	**2003[1,2]**	**2004[2]**
Atrazine	8	8/5	6
Desethylatrazine	15	6/5	6
Bentazone	1	0/1	1
All parameters	15[3]	10[3]	6[3]

1) Derogation according to Trinkwasser-Pestizidverordnung and Trinkwasser-Ausnahmeverordnung
2) Derogation according to Trinkwasserverordnung
3) One waterworks (WSZ) is for emergency supply only

Conclusions Austria

The return submitted by Austria was complete. There are 14 parameters (highest score for desethylatrazine, desethylpropyl-atrazine and arsenic) that cause non-compliance in more than one percent of the samples taken in the whole Member State. There are 16 parameters (highest score for TC/Coliform bacteria, FS/Enterococci and FC/*E.coli*) that cause non-compliance in water supply zones.

There is some improvement in water quality compared to the previous reporting periods especially with respect to the individual pesticides. There is a significant decrease in percentage non-compliance for atrazine and desethylatrazine. In the final reporting year 2004 the number of parameters that show non-compliance in more than 1% of samples taken at national level has dropped to five: desethylatrazine, arsenic (stricter value), atrazine, Coliform bacteria and nickel (stricter value). In 2002 the number of non-compliant parameters was ten. There is an increase in the number of microbiological parameters that have more than 1% non-compliance (Coliform bacteria, Enterococci, E.coli and Colony Counts 37).

The increase in microbiological non-compliance also shows in a higher number of water supply zones showing non-compliance. The number of wsz showing non-compliance for desethylatrazine and atrazine has droppped significantly.

3.14 Drinking Water Quality in Portugal 2002-2004

The quality and completeness of the 2002-2004 returns
The returns submitted by Portugal were comprehensive and complete. The data for the year 2002 are based on the 80/778/EEC DWD and the data for the years 2003 and 2004 are based on the 98/83/EC DWD.

General information on the water supply in Portugal
Portugal has a total population of 10.5 million persons, of which 83.9% are connected to larger water supplies that serve more than 5000 persons or that produce more than 1000 m^3 of water per day (see table 3.14.1). There are 314 of such water supply zones in Portugal and they supply 709 million m^3 of drinking water per year to 8.3 million people. The quality data for Portugal that are presented in this synthesis report concern the abovementioned water supply zones. Most drinking water in Portugal is produced from surface water sources, and the remainder is produced from groundwater sources.

Table 3.14.1 General Information Portugal 2002-2004

Total population	10.5 million
Number of water supply zones serving more than 5000 persons/more than 1000 m^3 water per day	314
Number of people served by these water supply zones	8.3 million
Total amount of water supplied (only supplies serving 5000 or more consumers)	709 /million m^3/year
Population served by these supplies	83.9%
Raw water sources	
Groundwater	35.1%
Surface water	64.9%

Portugal provided a national summary of the water quality in the 314 water supply zone serving more than 5000 persons, mentioning for each parameter the percentage samples that did not comply with the parametric values in the DWD. The parameters that caused non-compliance in more than 1% of the samples taken in these water supply zones are listed in table 3.14.2 (left column), starting with the parameter that has the highest percentage of non-complying samples (pH). Detailed information is presented in table 3.14.3.

Portugal also provided information at water supply zone level on the parameters that did not always comply with the parametric

values in the DWD. The parameters that caused non-compliance in more than one sample are listed in table 3.14.2 (right column), starting with the parameters that caused non-compliance in the highest number of water supply zones (TC/Coliform bacteria). Detailed information is presented in table 3.14.4.

Table 3.14.2 Summary of water quality parameters that cause non-compliance in Portugal, 2002-2004

Parameters that cause non-compliance in more than 1% of all samples taken in Portugal (in any of the three reporting years)	**Parameters that show non-compliance in a number of water supply zones in Portugal**
pH	TC/ Coliform bacteria
Kjeldahl-N	FC/*E.coli*
Aluminium	pH
Phenols	Temperature
Iron	FS/Enterococci
Temperature	Iron
TC/Coliform bacteria	Oxidisability
Temperature	Manganese
FS /Enterococci	SSRC/*Cl.perfringens*
Hydrocarbons	Aluminium
Manganese	Odour
	Turbidity
	Taste
	Phenols
	Hydrocarbons
	Kjeldahl-N
	Nitrate
	Ammonium
	Pesticides
	Arsenic
	Boron
	Magnesium
	Potassium
	Sodium
	Alkalinity
	Nitrite
	Colour
	Phosphorus
	Total pesticides
	Selenium
	Trihalomethanes
	Chloride
	Fluoride
	Copper
All other parameters comply in 99% or more of the samples	**Parameters that most often cause failure in water supply zones (in more than 1 sample in any year)**

*** Only supplies serving 5000 or more consumers**

National summary of the drinking water quality in Portugal

Table 3.14.3 presents information on the overall quality of drinking water in all larger water supply zones in Portugal in the fourth reporting period. For each non-compliant parameter the percentage of samples that exceeded the parametric value in the DWD is presented. For comparison data from the previous reporting period (1999-2001) are included. Table 3.14.3 shows that the pH parameter was most often exceeding the parametric value in the total number of samples in the larger water supply zones in 2002-2004.

Table 3.14.3 National summary of monitoring results for each parameter in large wsz > 5000 people. For the years 2002, 2003 and 2004 and for comparison data from 1999-2001. Percentages non-compliance. Portugal

Reporting year	1993-1995	1996-1998	1999	2000	2001	2002	2003	2004
Parameter	No data	No data						
pH								3.8
Kjeldahl-N			1.5		3.3	2.3	3.5	
Aluminium			2.6	2.4	1.9	3.3	1.9	1.5
Phenols			3.8	5.6		3.3		
Iron			3.9	4.3	5.3	3.2	2.3	3.2
Temperature			3.3	3.8	2.5	1.9	3.0	
TC/Coliform bacteria			2.0	2.1	2.2	2.3	2.0	1.9
FS /Enterococci					1.1			
Hydrocarbons			4.4	3.6	5.2	1.4	1.1	
Manganese			4.4	3.5	4.6	2.1	1.5	
All other parameters complied in 99% of more of the samples taken in Portugal								

Number of water supply zones exceeding water quality parameters

For each parameter that showed non-compliance in more than 1 sample in an individual water supply zone, the number of such water supply zones was calculated. The total of number of water supply zones with more than 1 non-compliant sample is listed in table 3.14.4. The total number of water supply zones serving more than 5000 persons in Portugal is 314 in the three reporting years. The parameter Total coliforms/Coliform bacteria caused non-compliance in most water supply zones in 2002-2004.

Table 3.14.4 Total *number of water supply zones* serving more than 5000 people that exceed the parametric value in the DWD in *more than 1 sample*. Portugal 2002-2004. For comparison the data are also provided for 1999-2001						
Reporting year	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**
Nr of WSZ	**272**	**274**	**278**	**314**	**314**	**314**
Parameter						
TC/ Coliform bacteria	62	64	67	129	134	94
FC/*E.coli*	25	28	28	65	51	35
pH				3	2	64
Temperature	14	19	24	23	36	
FS/Enterococci	13	11	12	33	27	2
Iron	9	16	17	18	20	14
Oxidisability	22	12	18	15	19	3
Manganese	10	9	8	7	8	18
SSRC/*Cl.perfringens*	13	14	13	16	14	6
Aluminium	11	17	16	15	16	9
Odour	9	13	18	15	10	9
Turbidity	7	10	9	10	12	9
Taste	8	13	14	11	6	9
Phenols	5	11		7		
Hydrocarbons	5	8	12	5	6	
Kjeldahl-N	3	3	5	3	6	
Nitrate	3	2	6	2	2	4
Ammonium	5	4	1	3	1	3
Pesticides				3		
Arsenic						2
Boron						2
Magnesium	2	1	1	1	1	
Potassium		1	2	1		
Sodium	1	1	1	1		
Alkalinity				1		
Nitrite	1	3	3	1		
Colour						1
Phosphorus				1		
Total pesticides				1		
Selenium					1	
THM						1
Chloride						1
Fluoride		1				1
Copper						1
PAH			2			
Cadmium		1				
Nickel		1				
Lead		1				

Derogations in Portugal

Portugal did not report on derogations during the 2002-2004 period.

Conclusions Portugal

The return submitted by Portugal was comprehensive and complete. There are 11 parameters (highest score for pH, Kjeldahl-N and aluminium) that cause non-compliance in more than one percent of the samples taken in the whole Member State. There are 34 parameters (highest score for TC/Coliform bacteria, FC/*E.coli* and pH) that cause non-compliance in water supply zones. There is little improvement in water quality compared to the previous reporting periods, the improvement relates to the percentage of non-compliance for iron and manganese.

3.15 Drinking Water Quality in Finland 2002-2004

The quality and completeness of the 2002-2004 returns
The returns submitted by Finland were complete. The data reported relate to the 98/83/EC DWD for all three reporting years.

General information on the water supply in Finland
Finland has a total population of 5.28 million persons, of which 72.8% are connected to larger water supplies that serve more than 5000 persons or that produce more than 1000 m^3 of water per day (see table 3.15.1). There are 165 of such water supply zones in Finland and they supply 329 million m^3 of drinking water per year to 3.81 million people. The quality data for Finland that are presented in this synthesis report concern the abovementioned water supply zones. Most drinking water in Finland is produced from surface water sources, and the remainder is produced from groundwater and artificial groundwater sources.

Table 3.15.1 General information Finland 2002-2004

Total population	5,28 million
Number of water supply zones (water supply zone) serving more than 5000 persons/more than 1000 m^3 water per day	165
Number of people served by these water supply zone	3.81 million
Total amount of water supplied (only supplies serving 5000 or more consumers)	329 million m^3/year
Population served by these supplies	72.8%
Raw water sources	
Groundwater	40.9%
Artificial groundwater	12.5%
Surface water	46.6%

Finland provided a national summary of the water quality in the 165 water supply zones serving more than 5000 persons, mentioning for each parameter the percentage samples that did not comply with the parametric values in the DWD. The parameters that caused non-compliance in more than 1% of the samples taken in these water supply zones are listed in table 3.15.2 (left column), starting with the parameter that has the highest percentage of non-complying samples (fluoride). Detailed information is presented in table 3.15.3.

Finland also provided information at water supply zone level on the parameters that did not always comply with the parametric values in the DWD. The parameters that caused non-compliance in more than one sample are listed in table 3.15.2 (right column),

starting with the parameters that caused non-compliance in the highest number of water supply zones (iron). Detailed information is presented in table 3.15.4.
Table 3.15.3 presents information on the overall quality of drinking water in all larger water supply zones in Finland in the fourth reporting period. For each non-compliant parameter the percentage of samples that exceeded the parametric value in the DWD is presented. For comparison data from the previous reporting periods are included. Table 3.15.3 shows that the parameter fluoride was most often exceeding the parametric value in the total number of samples in the larger water supply zones in 2002-2004.

Table 3.15.2 Summary of water quality parameters that cause non-compliance in Finland, 2002-2004

Parameters that cause non-compliance in more than 1% of all samples taken in Finland (in any of the three reporting years)	**Parameters that show non-compliance in a number of water supply zones in Finland**
Fluoride	Iron
Benzo(a)pyrene BaP	Manganese
Tri and tetrachloroethene	Colony Counts 22˚C
Atrazine	TC/Coliform bacteria
Desethylatrazine	Turbidity
Iron	Fluoride
Colony Counts 22˚C	Odour
Manganese	Taste
	Colour
	pH
	Aluminium
	Ammonium
	FC/*E.coli*
	FS/Enterococci
	Tri and tetrachloroethene
	BaP
	Atrazine**
	Desethylatrazine**
	SSRC/*Cl. perfringens*
	Copper
All other parameters comply in 99% or more of the samples	**Parameters that most often cause failure in water supply zones (in more than 1 sample in any year)**

*** Only supplies serving 5000 or more consumers**
**** only 3 or 4 results**

National summary of the drinking water quality in Finland
Table 3.15.3 presents information on the overall quality of drinking water in all larger water supply zones in Finland in the fourth reporting period. For each non-compliant parameter the percentage of samples that exceeded the parametric value in the DWD is presented. For comparison data from the previous reporting

periods, 1993-1995, 1996-1998 are included. Table 3.15.3 shows that the fluoride parameter was most often exceeding the parametric value in the total number of samples in the larger water supply zones in 2002-2004.

Table 3.15.3 National summary of monitoring results for each parameter in large wsz > 5000 people. For the years 2002, 2003 and 2004 and for comparison data from 1993-1995, 1996-1998. Percentages non-compliance. Finland

Reporting year	**1993-1995**	**1996**	**1997**	**1998**	**1999-2001**	**2002**	**2003**	**2004**
Parameter	No data				No data			
Fluoride		26.8	24.3	26.1		11.4	11.2	4.2
Benzo(a)pyrene BaP						7.5		
Tri and tetrachloroethene						6.5		
Atrazine			27.3					2.8
Desethylatrazine								2.4
Iron		4.7	5.0	5.4		2.2	2.3	2.0
Colony Count 22°C						1.9	2.3	2.3
Manganese		3.7	3.2	3.1		1.3	1.7	1.0
SSRC/Enterococci						1.1		
Nitrite		3.8	1.9	7.3				
Aluminium			2.0	2.2				
Nickel			1.9	1.6				
All other parameters complied in 99% or more of the samples taken in Finland								

Number of water supply zones exceeding water quality parameters

For each parameter that showed non-compliance in more than 1 sample in an individual water supply zone, the number of such water supply zones was calculated. The total of number of water supply zones with more than 1 non-compliant sample is listed in table 3.15.4. The total number of water supply zones serving more than 5000 persons in Finland is 165 in the three reporting years. The parameter iron caused non-compliance in most water supply zones in 2002-2004.

Table 3.15.4 Total *number of water supply zones* serving more than 5000 people that exceed the parametric value in the DWD in *more than 1 sample*. Finland 2002-2004. For comparison the data are also provided for 1993-1995 and 1996-1998

Reporting year	1993-1995	1996	1997	1998	1999-2001	2002	2003	2004
Nr of WSZ	No data	171	171	171	No data	165	165	165
Parameter								
Iron		16	17	16		23	23	21
Manganese		7	8	8		12	15	11
Colony Counts 22°C						6	9	9
TC/Coliform bacteria		4	8	4		9	5	9
Turbidity		3		2		6	8	6
Fluoride		8	9	8		7	4	1
Odour		3	3			3	6	5
Taste						3	6	4
Colour		7	3	3		5	4	4
pH						5	3	
Aluminium		2	5	1		2	2	2
Ammonium							2	1
FC/*E.coli*		3	3	2		1		2
FC/Enterococci						2		1
Tri and tetrachloroethene						2		
BaP						2		
Atrazine*								1
Desethylatrazine**								1
SSRC/*Cl. perfringens*								1
Copper								1
Nitrite		6	5	6				

* Only 4 results ** only 3 results

Derogations in Finland

Finland reported to have derogations in place for the fluoride parameter. The data are presented in table 3.15.5. The information given on the derogations in the returns is extensive.

Table 3.15.5 Number of WSZ with derogation in place, Finland 2002-2004

Parameter	2002	2003	2004
Fluoride		3	4

Comments responsible authorities: In the DW returns, Finland has also given information on reasons to the exceedances and remedial actions taken to improve the quality of DW (both microbiological/chemical parameters and indicator parameters). BaP exceedings were associated with incorrect sampling procedure (flaming of taps before sampling). BaP or polycyclic aromatic hydrocarbons could not be found from additional DW samples.
The amount of consumers supplied by water supply zones having fluoride problems is quite limited, approx. 50 000 (1 % of the population). During derogations, remedial actions have

been carried out and the concentration of fluoride has in many zones decreased below 1,5 mg/l. The number of water supply zones with fluoride problems has decreased remarkably. Total amount of individual pesticide results was 6643 in 2004. There were only 7 results (4 atrazine and 3 DEA results) which did not comply with the quality standard which means 0,1 % of the individual pesticide results.

Conclusions Finland

The return submitted by Finland was complete, with much information on individual pesticides. There are 8 parameters (highest score for fluoride, BaP and tri- and tetrachloroethene) that cause non-compliance in more than one percent of the samples taken in the whole Member State. There are 20 parameters (highest score for iron, manganese and Colony Counts 22) that cause non-compliance in water supply zones.

There are some new parameters causing non-compliance in more than 1% of samples taken at a national level which are: BaP, tri and tetrachloroethene (new parameters), atrazine and desethylatrazine (few data) and Colony Counts 22. There is a marked decrease in the percentage non-compliance for fluoride and also for iron and manganese, nitrite, aluminium and nickel. The data are compared to the second reporting period as no data are available for the third period. The number of wsz showing no-compliance for iron and manganese has increased.

3.16 Drinking Water Quality in Sweden 2002-2004

The quality and completeness of the 2002-2004 returns

The Swedish authorities made a significant effort to produce three booklets on the quality of drinking water in the Member State for the years 2002, 2003 and 2004. Unfortunately we were not able to process the information and include it in the synthesis report as the format was not in compliance with the reporting guidelines. The information submitted was textual rather than in table format. No data were given at individual parameter level in a national summary nor at water supply zone level.

3.17 Drinking Water Quality in the United Kingdom 2002-2004

The quality and completeness of the 2002-2004 returns
The United Kingdom submitted a return for two reporting years and combined the data from the various parts of the Member State at a national level. This includes data from England and Wales, Northern Ireland and Scotland. The data for the 2004 are missing and will be included at a later date. The data for the years 2002 and 2003 that were submitted relate to the 83/778/EEC DWD.

General information on the water supply in the United Kingdom
The United Kingdom has a total population of 60 million persons, of which approximately 90 % are connected to larger water supplies that serve more than 5000 persons or that produce more than 1000 m3 of water per day (see table 3.17.1). There are 2282/2249 of such water supply zones in the United Kingdom and they supply drinking water to more than 53 million people. The quality data for United Kingdom that are presented in this synthesis report concern the abovementioned water supply zones. Most drinking water in the United Kingdom is produced from surface water sources, and the remainder is produced groundwater sources.

Table 3.17.1 General information The United Kingdom 2002-2004	
Total population	60 million
Number of water supply zones (water supply zone) serving more than 5000 persons/more than 1000 m^3 water per day	2284/2249
Number of people served by these water supply zone	52.7/53.5 million
Total amount of water supplied (only supplies serving 5000 or more consumers)	15.8/15.9 million m^3/year
Population served by these supplies	89/89.4%
Raw water sources	
Groundwater	32.0/33.0%
Surface water	68.0/67.0%
Other sources	none

The United Kingdom provided a national summary of the water quality in the 2284/2249 water supply zones serving more than 5000 persons, mentioning for each parameter the percentage samples that did not comply with the parametric values in the DWD. The parameters that caused non-compliance in more than 1% of the samples taken in these water supply zones are listed in table 3.17.2 (left column), starting with the parameter that has the highest percentage of non-complying samples (organochlorine

compounds/THM). Detailed information is presented in table 3.17.3.

The United Kingdom also provided information at water supply zone level on the parameters that did not always comply with the parametric values in the DWD. The parameters that caused non-compliance in more than one sample are listed in table 3.17.2 (right column), starting with the parameters that caused non-compliance in the highest number of water supply zones (organochlorine compounds/THM). Detailed information is presented in table 3.17.4.

Table 3.17.2 Summary of water quality parameters that cause non-compliance in the United Kingdom

Parameters that cause non-compliance in more than 1% of all samples taken in the United Kingdom (in any of the reporting years)	**Parameters that show non-compliance in a number of water supply zones in the United Kingdom**
Organochlorine compounds/THM	Organochlorine compounds/THM
Aluminium	Iron
Oxidisability	Lead
Lead	Aluminium
Iron	TC/Coliform bacteria
PAH	Oxidisability
Manganese	PAH
Pesticides	FC/*E.coli*
Ammonium	pH
	Ammonium
	Pesticides
All other parameters comply in 99% or more of the samples	**Parameters that most often caused failure in water supply zones (in more than 1 sample in any year)**

* Only supplies serving 5000 or more consumers

National summary of the drinking water quality in the United Kingdom

Table 3.17.3 presents information on the overall quality of drinking water in all larger water supply zones in the UK in the third reporting period. For each non-compliant parameter the percentage of samples that exceeded the parametric value in the DWD is presented. Were available data for the previous reporting periods are also included. Table 3.17.3 shows that the organochlorine compounds/THM parameter was most often exceeding the parametric value in the total number of samples in the larger water supply zones in 2002-2004.

Table 3.17.3 National summary of monitoring results for each parameter in large wsz > 5000 people. For the years 2002 and 2004 and for comparison data from 1993-1995, 1996-1998 and 1999-2001. Percentages non-compliance. United Kingdom												
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Parameter												n.i.
Organochlorine compound/THM				3.7	5.1	8.1	24.2	26.8	31.4	43.7	34.6	
Aluminium							18.6	15.4	19.9	15.9	14.3	
Oxidisability						1.1	10.4	7.7		9.8	6.8	
Lead	3.1	3.2	3.4	2.4	2.1	1.8	8.0	3.1	2.7	5.5	6.2	
Iron	2	2.1	3.4	2	1.8	1.8	5.6	4.0	2.9	2.7	3.1	
PAH	3.6	4.5	4.9	3.9	3.3	3.2	1.5	2.5	1.6		1.9	
Manganese							2.8				1.6	
MCPA											1.6	
Ammonium								1.2		1.5		
Colour							1.4	1.4				
Nitrite	4.3	4.9	4.8	4	3.7	3.4						
Hydrocarbons	7.1		1.5									

Number of water supply zones exceeding water quality parameters

For each parameter that showed non-compliance in more than 1 sample in an individual water supply zone, the number of such water supply zones was calculated. The total of number of water supply zones with more than 1 non-compliant sample is listed in table 3.17.4. The total number of water supply zones serving more than 5000 persons varies between 2284 and 2249 in the UK. The parameter organochlorine compounds/THMcaused non-compliance in most water supply zones in 2002-2004.

Table 3.17.4 Total *number of water supply zones* serving more than 5000 people that exceed the parametric value in the DWD in *more than 1 sample*. United Kingdom 2002-2004. For comparison the data are also provided for 1993-1995, 1996-1998 and 1999-2001.									
Reporting year	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**
Nr of WSZ	**1900**	**1900**	**1900**	**2324**	**2316**	**2305**	**2284**	**2249**	**n.i.**
Parameter									
Other organochlorine compounds/THM	66	83	134	73	69	67	74	52	
Iron	235	201	204	28	21	14	11	12	
Lead	37	109	91	12	6	7	11	10	
Aluminium	39	28	23	15	9	5	5	5	
TC/Coliform bacteria	105	108	78	6	5	7	5	5	
Oxidisability				5	3	1	3	3	
PAH	106	103	89	2	3	1	1	1	
FC/*E.coli*							1		
pH							1		

Ammonium					1	1	1		
MCPA								1	
Pesticides				3	3	1			
Nitrite	152	134	145						
Manganese	47	42	37						
Turbidity				1					

Derogations in the United Kingdom

Extensive information is given on the derogations in place. They are all due to the nature and structure of the ground. The derogations concerned are reported in table 3.17.5.

Table 3.17.5 Number of WSZ with derogation in place, United Kingdom 2002-2004

Parameter	2002	2003	2004
Colour	74	62	No data
Odour	60	57	
Taste	60	60	
Aluminium	34	34	
Manganese	82	61	

Conclusions United Kingdom

The return submitted by the United Kingdom is incomplete as the data for 2004 are mising. There are 9 parameters that cause non-compliance in more than 1% of the samples taken in the Member State (highest score for organochlorine compounds/THM, aluminium and oxidisability). There are 11 parameters that cause non-compliance in water supply zones (highest score for organochlorine compounds/THM, iron and lead).

There is no trend visible in the water quality in the UK, the percentage of no-compliance for the THM parameter is still high.

4 Conclusions at European Union Level

Some background information on the supply of drinking water in the European Union

Some key information is presented on the supply of drinking water in the European Union, the total population in the Member States and the percentage of this population served in the large water supply zones, reported on in this reporting period (see table 4.1). Graph 4.1 shows the relative contribution of various raw water sources (surface water, groundwater and other sources) to the production of drinking water in the EU Member States. Other sources mostly concern bank infiltrate, sea water and rain water.

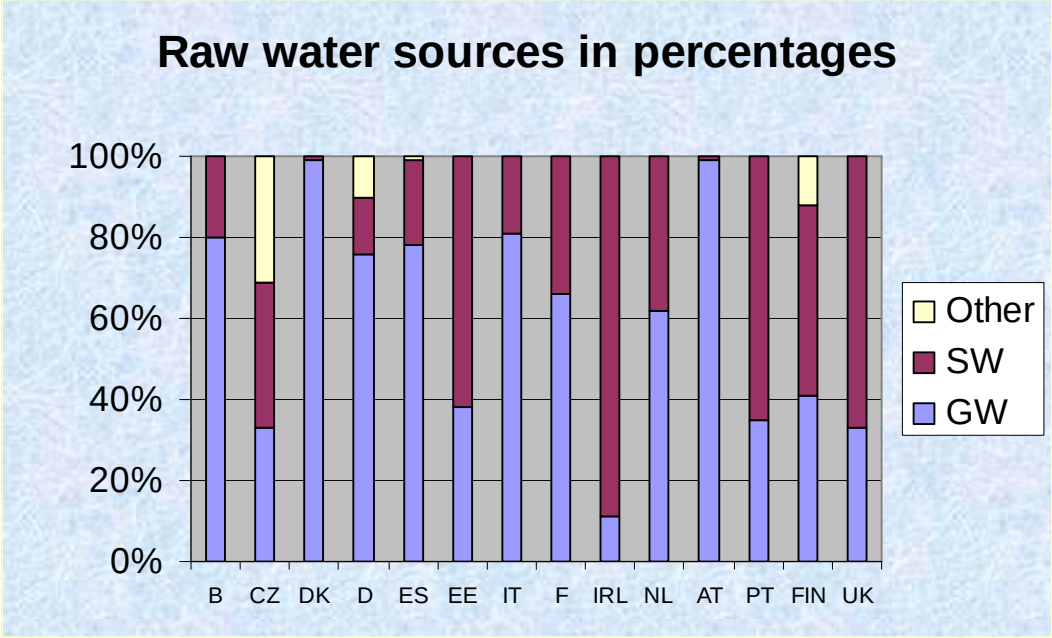
Table 4.1 Information on the supply of drinking water in the European Union 2002-2004

MS	Population in millions	% of the total population served by these supply zones
B	10.3	83-100
CZ	10.2	72
DK	5.4	65
D	82.5	72
EE	1.35	64
EL	10.6	??
ES	43.2	70
F	60.1	73
IRL	3.9	68-73
IT	57.4	81-83
LUX	0.45	??
NL	16	100
AT	8.17	65-67
PT	10.5	84
FIN	5.2	73
S	8.8	??
UK	60	89

All fifteen Member States that have a reporting obligation for this fourth period submitted a return to the European Commission. This is the first time all Member States actually complied with the reporting obligations. The only return that could not be processed was the Swedish one. In addition three Member States Czech Republic, Estonia and Hungary reported on a voluntary basis. After consultation with the responsible authorities it was decided not to include the Hungarian entry as it presents a wrong impression of the water quality in the whole Member State. The return from Estonia and from the Czech Republic were both complete and of

good quality. The returns from Luxembourg, Denmark, Greece and Belgium were not in compliance with the reporting format of the DWD. However, the data that could be processed for these Member States were included.
Considering the difficulty with the production of any synthesis at all it is very important to introduce the new reporting formats as soon as possible and to start using the WISE system (Water Information System Europe).

Raw water sources
Many Member States predominantly use groundwater as a source for the production of drinking water. Exceptions are, the Czech Republic, Estonia, Ireland, Portugal, Finland and the United Kingdom.



Graph 4.1 relative contribution of groundwater, surface water and other water sources to the production of drinking water in the EU Member States 2002-2004.

Non-complying parameters in the EU 2002-2004
This is the fourth and last reporting period that will include data from the previous 80/778/EEC Directive. The next reporting period will exclusively be in accordance with the current DWD in force. For that reason an overview is produced of compliance and non-compliance of the Member States (more than 1% non-compliance in all samples taken in the various Member States), with the parameters in the 98/83/EC DWD. Table 4.2 shows the non-compliance with the 98/83/EC A (microbiological) parameters, B (chemical) parameters and C (indicator) parameters. Table 4.2 makes it clear that non-compliance is often caused by the so-called indicator parameters.

The highest on the list are:

- Iron and manganese
- Coliform bacteria
- Aluminium

Followed by:

- Enterococci
- Colony Counts 22
- Arsenic, nitrate, THM, sulphate.
- Lead, nickel, PAH, Chloride, pH and turbidity.

Table 4.2 98/83/EC parameters and the number of MS where they cause non-compliance in more than 1% of all samples taken in that MS

	Parameter	Nr. of Member Stats with > 1% non-compliance
A parameters	*E.coli*	2
	Enterococci	7
B parameters	Arsenic, nitrate, THM	5
	Lead, nickel, PAH	4
	BaP, fluoride, tri- and tetrachlorothane, individual pesticides	3
	1,2-dichloroethylene, mercury, nitrite, total pesticides	2
	Antimony, boron, copper, cyanide, selenium, vinylchloride	1
	Benzene, bromate, cadmium, chromium	None of the MS
C parameters	Iron, manganese	13
	Coliform bacteria	9
	Aluminium	8
	Colony Counts 22	6
	Sulphate	5
	Chloride, pH, turbidity	4
	Ammonium, colour, EC, oxidisability, sodium	3
	Cl.perfringens, odour	2
	Taste, TOC	1

In chapter 2 we calculated that there are more than 12.000 large water supply zones in the 17 Member States that submitted a suitable return for the 2002-2004 reporting period. For each Member State a synthesis was made of all water supply zones that had more than one non-compliant sample in the water supply zones. The number of these water supply zones were calculated for each Member State. At EU level a synthesis was made of all water supply zones that failed in more than one sample for the individual parameters in the 98/83/EC DWD. The information is presented in table 4.3 for the years 2002, 2003 and 2004 together with the total

number of water supply zones the data relate to. Again it is the indicator parameters that cause most cases of non-compliance: Total coliforms/Coliform bacteria, iron, manganese, turbidity and aluminium. Both microbiological parameters FC/*E.coli* and FS/Enterococci also cause a significant number of non-compliances in the water supply zones. In the chemical parameter list it is nitrate that has the highest score for non-compliance followed by fluoride.

Table 4.3 Total number of water supply zones in the EU Member States that had more than one non-compliant sample in the three reporting years

Total number of WSZ reported on	2002 10.559	2003 10.832	2004 9.543
A parameters			
FC/*E.coli*	247	217	137
FS/Enterococci	164	156	117
B parameters			
Antimony	4	8	1
Arsenic	4	4	18
Benzene		2	
BaP	7	17	1
Boron			5
Bromate		1	9
Cadmium	3	3	
Chromium			
Copper	1	2	5
1,2-dichloroethylene	2	4	2
Fluoride	36	29	12
Lead	19	19	11
Mercury	2	7	1
Nickel	5	11	25
Nitrate	86	90	77
Nitrite	4	5	3
Total pesticides	5	1	1
PAH	2	4	1
Selenium	8	21	9
Tri- and tetrachloroethane	5	3	12
THM	25	8	14
VC		1	
C parameters			
Aluminium	114	122	173
Ammonium	11	15	19
Chloride	2	8	33
Colour	36	40	67
SSRC/*Cl.perfringens*	50	47	205
EC	2	5	12
pH	41	37	143
Iron	265	292	334
Manganese	113	109	127
Odour	45	51	57
Oxidisability	20	24	4
Sulphate	32	37	72
Sodium	5	15	7
Taste	33	35	20

Colony Counts 22 C	57	53	93
TC/Coliform bacteria	526	509	694
TOC	2	2	
Turbidity	117	128	245

Drinking water quality in EU Member States in 2002-2004
Table 4.4 (pages 111 and 112 at the end of this report) gives a detailed overview of the Member States that show non-compliance for the 98/83/EC parameters in more than 1% of the samples taken in the various Member States. The summary table shows that Italy has the highest number of parameters that have non-compliance, while the Netherlands has none.

Improvement in drinking water quality
It is difficult to judge changes in overall water quality in the various Member States on the basis of aggregated data. Another barrier to trend analysis is the transition from the old DWD to the new DWD. A large number of parameters from the old DWD were not retained, new parameters have been introduced, parameters have been redefined (which might lead to differences in results), analytical methods defined in the DWD might affect the results (e.g. microbiological parameters) and some parameters have stricter values. Also the mandatory sampling at the tap and possible changes in monitoring and sampling methods have an impact as is the case with the redefining of water supply zones by Member States (Spain and Ireland). All the abovementioned aspects stress again the need for harmonised guidelines for sampling and monitoring, analytical methods and reporting.

Nevertheless some conclusions as asked for by the EC have been drawn. Where conclusions in trends at Member State level are tricky business, this is even more the case for trend analysis at EU level. We would like to stress again that these conclusions are not very hard at all and should be taken with a large pinch of salt.

The Member States Estonia and the Czech Republic submitted a first return and are excluded from a trend analysis. This also applies to Member States as Greece, Sweden and Luxembourg that provided incomplete information. This leaves 12 Member States for the trend analysis.

Trends in drinking water quality in twelve Member States

Member State	Changes in drinking water quality
Belgium	Brussels Region has an increase in non-compliant parameters: for iron and lead, PAH (new parameter) and nickel (stricter value). Flanders Region there is a reduction in the number of non-compliant parameters. Walloon Region there is a reduction in the number of no-compliant parameters. In summary for Belgium there are indications that the number of non-compliant parameters has increased in Brussels (under new DWD) and decreased in Flanders and Walloon.
Denmark	There is a higher percentage non-compliance for colony counts 37, iron, ammonium, turbidity, colour, chlorophenols, nitrite, Cl.perfringens, colony counts 21, zinc, BaP (new), TC/coliform bacteria, nitrate, copper, manganese, EC, arsenic (stricter value), volatile chlorinated hydrocarbons and pH. Lower percentage non-compliance for methane, aluminium (dramatic decrease), tetrachloroethene, TOC and THM (dramatic decrease).
Germany	Decrease in the number of non-compliant parameters and in the number of wsz that show non-compliance for microbiological parameters.
Spain	In the final reporting year 2003 there are a significant lower number of parameters that show non-compliance compared to the previous year 2002. The number of non-compliance water supply zones can not be judged for improvement as Spain has included more wsz then in previous periods.
France	The percentage of non-compliance for pesticides seems to be decreasing. Other parameters also show a lower level of non-compliance such as selenium, aluminium, manganese, iron, nitrate and fluoride. A higher level of non-compliance is noticeable for arsenic and nickel (both stricter value), PAH (new) and lead. The number of no-compliant water supply zones does not show a **consistent** trend.
Ireland	For the parameters iron and manganese there is a significant improvement compared to the previous reporting periods. Also there is more than 99% compliance at a national level for the parameters E.coli and fluoride which is a significant improvement compared to the previous reporting period. The trend in non-compliant water supply zones can not be judged as the total number has changed significantly.
Italy	It is difficult to describe the changes in Italian drinking water, as there are both indications of upward and downward trends. Remarkable is the fact that the number of parameters that showed more than 1% non-compliance at the national level in 2004 is much lower than in 2002 and 2003. There is no real explanation for this decrease. A higher level of non-compliance is seen for PAH (new parameter), aluminium, colony counts (22 and 37), THM, turbidity, ammonium, nitrite, pH, colour, iron, fluoride, nitrate, odour, mercury, Cl.perfringens, antimony in 2002 and or 2003, while all these parameters show a much lower level of non-compliance in 2004. Increased non-compliance is noticed for cyanide, antimony, arsenic (stricter value), 1,2 dichloroethene, EC, boron, nickel (stricter value) and tri- and tetrachloroethane (new). A very dramatic increase occurs in 2004 for the chloride parameter. A much lower level of non-

	compliance at national level is seen for Enterococci and sodium. No clear trend is visible in the number of water supply zones showing no-compliance.
The Netherlands	As there are no parameters that show more than 1% non-compliance the results for the Netherlands are the same as in the previous reporting periods. The only trend indication is a decrease in the number of water supply zones that have non-compliance for the iron parameter and the TC/Coliform bacteria parameter.
Austria	There is some improvement in water quality compared to the previous reporting periods especially with respect to the individual pesticides. There is a significant decrease in percentage non-compliance for atrazine and desethylatrazine. In the final reporting year 2004 the number of parameters that show non-compliance in more than 1% of samples taken at national level has dropped to five: desethylatrazine, arsenic (stricter value), atrazine, Coliform bacteria and nickel (stricter value). In 2002 the number of non-compliant parameters was ten. There is an increase in the number of microbiological parameters that have more than 1% non-compliance (Coliform bacteria, Enterococci, E.coli and Colony Counts 37). The increase in microbiological non-compliance also shows in a higher number of water supply zones showing non-compliance. The number of wsz showing non-compliance for desethylatrazine and atrazine has dropped significantly.
Portugal	There is little improvement in water quality compared to the previous reporting periods, the improvement relates to the percentage of non-compliance for iron and manganese.
Finland	There are some new parameters causing non-compliance in more than 1% of samples taken at a national level which are: BaP, tri and tetrachloroethene (new parameters), atrazine and desethylatrazine (few data) and Colony Counts 22. There is a marked decrease in the percentage non-compliance for fluoride and also for iron and manganese, nitrite, aluminium and nickel. The data are compared to the second reporting period as no data are available for the third period. The number of wsz showing no-compliance for iron and manganese has increased.
United Kingdom	There is no trend visible in the water quality in the UK, the percentage of non-compliance for the THM parameter is still high.

Most of the 12 Member States show both an increase in non-compliance for some parameters a decrease for other parameters: Belgium, Denmark, France, Italy, Austria, and Finland. No significant change is obvious in the Netherlands and the United Kingdom. Improvements seem to have been realised in Germany, Spain and Ireland and also in Portugal.

Note on pesticides and derogations

Pesticides

In table 4.5 an overview is presented on the pesticides and metabolites that were reported by the Member States as causing non-compliance and or for which a derogation has been issued. It is clear that the pesticides atrazine and desethylatrazine cause the highest number of non-compliances and derogations. It is also

obvious that there is a large number of pesticides (between 40 and 50 individual pesticides) involved.

Derogations (other than pesticides)

Table 4.6 shows the derogations that have been issued by the Member States and that are in force during the 2002-2004 reporting period. Most derogations are in place in Italy. Most derogations concern the parameters arsenic (9), fluoride (6) and iron and nitrate (5).

Table 4.5 Report on non-compliance and derogations issued for pesticides and metabolites

Member State that reports non-compliance	CZ	D	ES	F	IT	NL	AT	FIN	UK
2,4-D									
2 metil-1,3,4-tiadiazolo									
2hydroxy atrazine									
Aldicarb									
AMPA									
Atrazine									
BAM									
Bentazon									
Bromacil									
Chlorodecane									
Cyanazine									
Desethylatrazine									
Desethylpropylatrazine									
Desisopropylatrazine									
Dichlorobenzamide									
Dichlorprop									
Dinoterb									
Diuron									
Endosulfan									
Ethidimuron									
Glyphosphate									
Heptachlor									
Hexachlorobenzene									
Lindane									
MCPA									
Mecoprop									
Metachlor									
Methoxychlor									
Metolchlor									
Metoxuron									
Oxadixyl									
Pentachlorphenol									
Pentametylentetrazola									
Prochloraz									
Prometryn									
Simazine									
Terbumetondes-ethyl									
Terbutylazindesethyl									
Terbutylazine									
Terbutylatrazine									
Trichloroacetic acid									
Trichlorpyr									
Trimetilditiofostato									
Non-compliance									
Covered by derogation									

Key to the table is given at the bottom of the table:
light green: non-compliance
dark green: covered by derogation.

Table 4.6 Derogations in place in the Member States in the 2002-2004 period (other than pesticides)

		Derogations issued other than for pesticides													
					* excl negociated parameters										
	B	CZ	DK	D	EE*	ES	EL	HU	F	IRL	IT	NL	FIN	UK	Total
	none														
iron															5
nitrate															5
aluminium															4
arsenic															9
sulphate															4
colour															4
turbidity															1
KMnO4															1
Free CO2															1
nickel															3
selenium															1
fluoride															6
magnesium						2002									2
temperature						2002									2
boron															3
mercury															1
antimony															1
bromate															1
1,2-dichlorothane															1
lead															1
potassium															1
sodium															2
manganese															3
ammonium															1
chloride															1
pH															1
dry residues															1
vanadium															1
chlorite															1
THM															1
oxidisability															1
odour															1
taste															1

Table 4.4 Non-compliant 98/83/EC parameters in the EU Member States reporting period 2002-2004
The table is printed on the pages 102 and 103.

Non-compliant parameters DWD 98/83/EC in the EU Member States																		
Reporting period 2002-2004																		
MS	**B**	**CZ**	**D**	**DK**	**EE**	**EL**	**ES**	**F**	**IRL**	**IT**	**LUX**	**NL**	**AT**	**PT**	**FIN**	**S**	**UK**	**TOTAL**
LIST A PARAMETERS																		
E.coli										X			X					2
Enterococci		X	X				X	X		X			X	X				7
LIST B PARAMETERS																		
Antimony										X								1
Arsenic				X			X	X		X			X					5
Benzene																		0
BaP		X		X											X			3
Boron										X								1
Bromate																		0
Cadmium																		0
Chromium																		0
Copper				X														1
Cyanide										X								1
1,2-dichloroethene		X								X								2
Fluoride								X		X					X			3
Lead	X			X				X									X	4
Mercury		X								X								2
Nickel	X							X		X			X					4
Nitrate		X		X			X	X		X								5
Nitrite				X						X								2
Total pesticides		X	X															2
Individual pesticides								X					X		X		X	4
PAH	X							X		X							X	4
Selenium								X										1
Tri and tetrachloroethylene		X								X					X			3
THM		X	X		X			X		X							X	6
VinylChloride		X																1
	3	9	3	6	1	N.I.	3	10	0	15	0	0	5	1	4	N.I.	4	

Non-compliant parameters DWD 98/83/EC in the EU Member States																		
Reporting period 2002-2004																		
MS	**B**	**CZ**	**D**	**DK**	**EE**	**EL**	**ES**	**F**	**IRL**	**IT**	**LUX**	**NL**	**AT**	**PT**	**FIN**	**S**	**UK**	**TOTAL**
LIST C PARAMETERS																		
Cl.perfringens				X						X								2
Colony Counts 22		X		X						X	X		X		X			6
Coliform bacteria	X		X	X			X	X	X		X		X	X				9
Aluminium	X			X			X	X	X	xx				X			X	8
Ammonium				X						X							X	3
Chloride					xx		X			X			X					4
Colour				X					X	X								3
EC				X			X			X								3
pH		X		X						X				X				4
Manganese	X	X	X	X	xx			X	X	X	X		X	X	X		X	13
Odour									X	X								2
Oxidisability							X			X							X	3
Sulphate	X	X					X	X		X								5
Sodium							X	X		X								3
Taste									X									1
TOC		X																1
Turbidity				X	xx				X	X								4
Iron	X	X	X	X	xx		X	X	X	X			X	X	X		X	13
	xx covered by derogation																	
Total	5	6	3	11	xx	ni	8	6	8	15	3	0	5	5	3	n.i.	5	