COMMISSION OF THE EUROPEAN COMMUNITIES

COM(94) 612 final

Brussels, 04.01.1995

95/0010 (SYN)

Proposal for a
COUNCIL DIRECTIVE
concerning the quality of water
intended for human consumption

(presented by the Commission)

EXPLANATORY MEMORANDUM

1. INTRODUCTION AND SUMMARY

1.1 The need for a revision of Directive 80/778/EEC

Directive 80/778/EEC[1] relating to the quality of water intended for human consumption (the "Drinking Water Directive") laid down for the first time a set of mandatory quality standards for drinking water throughout the Community which Member States were obliged to meet. Its impact was significant and it is generally recognized that the Directive has been the driving force behind the overall improvement in drinking water quality which has taken place in Europe over the past decade.

The Directive has provided governments and water suppliers with a stable and predictable base for their investment programmes, and consumers can now expect to receive water complying with explicit Community-wide quality standards.

However, in spite of the many benefits of Directive 80/778/EEC, there have been some shortcomings, which the Commission has recognized. For example, difficulties have arisen because the Directive did not provide Member States with an adequate legal framework within which to respond to variations in the quality of raw water and to the technical difficulties encountered in the production and distribution of drinking water. In such cases the Directive gives little opportunity to Member States to redress failures to meet the various quality standards in an appropriate and transparent legal framework.

Furthermore, since the Directive is based on a proposal made in 1975 its ideas and standards correspond to what was thought to be appropriate 20 years ago. Therefore the Directive does not take into account improvements in scientific understanding and in technology which have taken place since then.

Moreover, in the light of the subsidiarity principle embodied in the Treaty of European Union signed at Maastricht, there was a requirement to reconsider the Directive. This was confirmed at the Edinburgh European Council in December 1992. The conclusions of the Edinburgh Council state:"On the environment, the Commission intends to simplify, consolidate and update existing texts, particularly those on water, to take new knowledge and technical progress into account".

Therefore, it was agreed at the Brussels European Council in December 1993 that the Commission would undertake a fundamental review of the Drinking Water Directive.

In particular, it was agreed to reorient the drinking water rules and regulations towards compliance with essential quality and health parameters, leaving Member States free to add secondary parameters if they see fit.

---

[1] OJ No L 229, 30.8.1980, p. 11.

This meant in practice that the revised drinking water quality directive (covering water for use in the home and water used in the food industry that can affect the health properties of the final product) would define general parameters, some of which would be fixed in technical terms at Community level and others at national level.

In September 1993 the Commission hosted a conference where interested parties presented their views on the Directive and the need for a revision. The views expressed at the conference and the information given subsequently to the Commission have been taken into account in the preparation of this proposal.

The proposal is based on the understanding that maintaining a supply of good quality drinking water is a prerequisite both for providing a high standard of human health protection and for sustainable social and economic development. It is thus an important factor in raising the standard of living and the quality of life in the Union.

This proposal for a revision of the Directive will therefore, if adopted, bring the Directive into line with the Treaty on European Union, and in particular with the principle of subsidiarity and the precautionary principle.

In the Commission's view the single most important change in the Directive is the reduction from 50 µg/l to 10 µg/l in the maximum permitted concentration of lead in drinking water. This change, which is in accordance with the latest recommendations of the World Health Organization (WHO), is introduced, primarily, in order to protect infants, young children, and pregnant women from the neuro-toxic effects that are known to contribute to IQ deficits, learning and behavioural problems. In the Commission's view, this benefit will considerably outweigh the costs involved.

Compliance at the tap with the new value for lead will necessitate the replacement of lead pipes and fittings. Preliminary estimates suggest that the total cost of doing this will be of the order of ECU 70 000 million. However, it is proposed that 15 years should be allowed for compliance with this parameter, and so Member States will have some freedom to phase in the necessary investment. In addition, it will be possible for Member States to decide the rate at which lead pipes and fittings are to be replaced in domestic premises.

They will therefore be able to defer investment in this area, should they consider such action necessary.

1.2 Relationship between this proposal and resource protection

This proposal to revise Directive 80/778/EEC is only one part of the process of simplifying, consolidating and updating existing Community legislation related to water. The proposal does not aim at resource protection, but at the quality of water which consumers receive both in drinking water and in foodstuffs which have utilized water in their preparation.

While the Commission recognizes the importance of resource protection it is felt inappropriate to include such measures in this proposal. Its aim is to set, in a legislative form which is applicable and implementable throughout the European Union, the basic standards for drinking water which will be appropriate for protecting human health into the next century.

A review of the drinking water Directive is, however, an important step in the overall strategy for a coherent and sustainable protection of water resources in the European Union.

Resource protection in the Community will be based on the intended revision of Directive 80/68/EEC[2] on the protection of groundwater against pollution caused by certain dangerous substances and on relevant existing legislation; and also by proposed legislation on the protection of surface water.

There is a case for considering that the quality of surface water intended for the production of drinking water will be adequately protected by a combination of the existing Directives concerning plant protection products, pollution by urban waste water, nitrates from agricultural sources and dangerous substances, and by the adoption of the proposed Directives on integrated pollution prevention and control and the ecological quality of water. These obligations are in addition to the general obligations which follow from Article 130 R of the Treaty.

When all the abovementioned proposals concerning the protection of surface water, which are presently before Council, have been adopted the Commission intends to review the continued usefulness of Directives 75/440/EEC[3] and 79/869/EEC[4], and will make an appropriate proposal.

1.3 Main changes proposed in the Directive

1. Reduced Number of Parameters

The total number of water quality parameters listed in Annex I has been reduced from 67 in Directive 80/778/EEC to 48 in the proposal. This includes 13 new parameters which have been added in the light of progress in scientific understanding.

Only those parameters considered essential at the level of the Union to ensure a continued high level of health protection are included.

It may be necessary for Member States to set values for further parameters where local conditions so require, and as they see fit, in order to protect human health.

---

(2) OJ No L 20, 26.1.1980, p. 43.
(3) OJ No L 194, 25.7.1975, p. 26.
(4) OJ No L 271, 29.10.1979, p. 44.

2. Reviewed Parametric Values

In the light of the precautionary principle and the improvements in scientific understanding, the parametric values for the quality parameters listed in Annex I have been reviewed. In this exercise, the recent guidelines issued by the World Health Organization (WHO) have been taken fully into consideration as well as variations in the environmental conditions pertaining throughout the Union.

In addition, the Commission's Scientific Advisory Committee to Examine the Toxicity and Ecotoxicity of Chemical Compounds has been asked for its advice on a number of important parameters, including pesticides and lead.

Where appropriate, the parametric values are based on the available scientific evidence or, where this value is lower than that which can be achieved by current treatment methods, on the lowest value that can be reached in practice. A precautionary approach has been adopted in cases where the available scientific evidence is insufficient.

The parameters for which parametric values have been reconsidered include, inter alia, lead,nitrares and pesticides.

For lead and nitrate, the Commission is proposing parametric values which are basically in accordance with the WHO guidelines. By comparison with the existing Directive this means an unchanged parametric value for nitrate and a reduction by 80% of the parametric value for lead.

The reduction in the parametric value for lead is based on the evidence which supports the current WHO guideline value. Although based primarily on the need to avoid the accumulation of lead in infants it is adequate to protect all age groups.

For pesticides, the Commission proposes that the existing precautionary parametric value of 0.1 µg/l should be retained as a matter of principle for each individual pesticide. Experience shows that in most cases this value can be respected without the need for extra treatment provided that pesticides are used in a responsible manner.

3. Increased Transparency

The Commission is proposing to increase transparency in the application of the Directive by increasing the frequency of reporting from triennial (Amendment to 80/778/EEC by the Standardized Reporting Directive 91/692/EEC) to annual reports. In addition, there will be an obligation to inform consumers immediately of any deviations from the standards of the Directive and of any danger to human health which might ensue from this, together with advice on measures which should be taken by consumers.

4. Flexibility to Redress Failures

The proposal of the Commission provides a flexible framework within which Member States can redress unforeseen failures to meet the standards of the Directive provided there is no potential danger to human health and that the supply of drinking water cannot be maintained by any other reasonable means. The proposal also ensures that the public concerned are fully informed in such situations.

The proposal requires Member States to inform the Commission of any important derogations granted.

Member States are obliged to give priority, wherever possible, to preventive action and, where appropriate, take action to improve the quality of water resources intended for the abstraction of water intended for human consumption.

5. Mutual Recognition of Drinking Water Quality

The Commission is proposing to make it illegal for Member States to restrict or prohibit the free circulation of drinking water complying with the minimum standards of the Directive, or of food products in which drinking water has been used, between the Member States. This is necessary in order to ensure that the new approach does not result in any obstacles to trade.

6. Simplified monitoring obligations

A revised set of minimum requirements for monitoring schemes for drinking water is proposed which will allow Member States to adapt the amount and nature of monitoring to local conditions. Furthermore, a revision in the approach to reference methods of analysis for monitoring has been proposed, permitting the use of any method meeting certain performance standards rather than requiring certain methods to be used. This will allow Member States to adapt their methods to technical and scientific progress without necessitating recourse to changes in the annexes to the Directive.

2. JUSTIFICATION FOR THE PROPOSAL

2.1 General considerations

In its report to the European Council on the adaptation of Community legislation to the subsidiarity principle[5] the Commission committed itself to reviewing Directive 80/778/EEC relating to the quality of water intended for human consumption. This review should lead to the presentation of a proposal for a revised Directive to adapt the current Directive to scientific and technical progress, make it more readily implementable, and not lower the level of health protection now afforded to the consumer.

---

[5] COM(93) 545 final.

Directive 80/778/EEC has already been amended several times:

by Directive 81/858/EEC of 19.10.1981[6] adapting, consequent upon the accession of Greece, Directive 80/778/EEC; Article 15 was amended by the Act of Accession of Spain and Portugal of 12 June 1985, Annex I, Chapter X.1.j and by Annex XXXVI, Chapter III.6[7]; by Council Directive 90/656/EEC of 4 December 1990 on the transitional measures applicable in Germany with regard to certain Community provisions relating to the protection of the environment[8] and by the Council Directive 91/692/EEC of 23 December 1991 standardizing and rationalizing reports on the implementation of certain Directives relating to the environment[9].

The Commission has decided to present its proposal to amend Directive 80/778/EEC in the form of a proposal for a consolidated Directive. Elements which are already in Community legislation are included in order to enhance the accessibility and transparency of the proposal.

The text indicates the proposed amendments by underlining each change and by the word "adapted" in the margin.

2.2 Reference to the 5th Environmental Action Programme

The 5th Environmental Action Programme[10] emphasizes that for the purpose of improving the quality of life and as a condition for achieving sustainable development, it is essential to secure sufficient water of adequate quality for all purposes throughout the Community. In this context the safeguarding of a high quality of water intended for human consumption is of prime importance in order to protect the health and wellbeing of citizens. The present proposal aims at contributing towards the implementation of these objectives.

2.3 The scientific basis

The scientific information evaluated in the course of the review relates mainly to published studies and data.

On a number of issues the Commission has requested the opinion of its Scientific Advisory Committee to Examine the Toxicity and Ecotoxicity of chemical compounds (CSTE). The assessments made by the World Health Organization and its recommendations on guidelines for drinking water quality published in 1993 have been taken into account, together with the experience gained during the implementation of Directive 80/778/EEC. The Commission has also considered information provided to it in connection with the Drinking Water Conference it organized in September 1993, and other expert advice.

---

(6) OJ No L 319, 7.11.1981, p. 19.
(7) OJ No L 302, 15.11.1985, p. 9.
(8) OJ No L 353, 17.12.1990, p. 59.
(9) OJ No L 377, 31.12.1991, p. 48.
(10) OJ No C 138, 17.5.1993, p. 1.

3. SUBSIDIARITY AND COSTS

3.1 What are the objectives of the proposed action compared with the obligations of the Community?

The proposal aims to simplify, consolidate and update the existing Directive. The proposed Directive would align the current Directive with the Treaty establishing the European Community, and in particular with Articles 3,3b and 130r of that Treaty.

3.2 Is the proposed action based on an exclusive competence of the Community or a competence shared with the Member States?

The main aim of this proposal is to protect human health, one of the objectives mentioned in Article 130r of the Treaty establishing the European Community.

Thus the legal basis for the proposal is Article 130s(1) of the Treaty and the competence is shared between Member States and the Community.

3.3 What is the Community dimension of the problem?

All Member States are concerned by this action.

Water which is safe to drink is a basic requirement for sustaining human life and for protecting human health. Without water of adequate quality the standard of living and the quality of life within the European Community would fall dramatically. Were this to happen the Community would have failed to achieve one of the objectives as enshrined in Article 2 of the Treaty.

As water is often an ingredient or component used in the food processing and manufacturing industry, it is essential that the wholesomeness of the final product is not affected by the quality of water used.

The proposed Directive aims at the protection of human health for all Community citizens. Furthermore, water is a product, and the basic health-related standards applicable to it will ensure that obstacles to trade will not arise. This applies also to those foodstuffs whose wholesomeness may depend on the quality of the water used in their production.

3.4 Which solution is most efficient comparing the means of the Community and of the Member States?

On the basis of the experience gained since the adoption of Directive 80/778/EEC, the Commission believes this Directive has been effective in improving the quality of drinking water throughout the Community. It has provided Member States and the water supply industry with a stable base for their planning and investment. Consumers have become familiar with the Directive and expect to receive water which they know will be safe to drink.

Therefore, the Commission has concluded that its preference in the revision of Directive 80/778/EEC should be for a framework directive which allows Member States as much freedom as possible. However, this framework is underpinned by a central pillar of requirements and standards which are necessary in order to ensure that human health is adequately protected throughout the Community. Nevertheless, the quality of water can vary from one region to another within the Community, and Member States need sufficient flexibility to be able to set their own standards for additional and localized parameters if they see fit and conditions so require.

This framework approach provides the essential health protection for all Community citizens while at the same time allowing local circumstances to be addressed in the most efficient manner.

3.5 What added value will the action bring to the Community and what are the costs of the actions?

In the interest of a smooth and cost-effective implementation of a revised Directive the following proposed modifications are of particular interest:

- the possibility of granting temporary derogations in order to rectify a situation without necessarily having recourse to treatment;

- the restriction of parameters to those which are of importance throughout the Union supplemented by the obligation and competence to set additional standards according to national and local needs;

- the setting of minimum monitoring obligations which are to be implemented according to local needs.

These modifications open up increased possibilities for a cost-effective and adaptable implementation of the Directive in line with the local, regional or national requirements. It is expected that they will bring substantial savings in administrative and monitoring costs.

On the other hand, the proposed provisions on reporting and information to the public may lead to additional costs in some Member States. However, in view of the importance of confidence of the consumers in the quality of their drinking water it is reasonable to assume that this expenditure on information will be economically beneficial as it may avoid in many cases unnecessary defensive measures such as installation of tap filters or consumption of bottled water.

The standards in Annex I reflect a high level of health protection based on available scientific knowledge and the precautionary principle. For most of the parameters, the costs of complying with those standards are determined by the quality of the water resources used for abstraction of drinking water.

For some parameters there is scope to decide what constitutes an appropriate level of protection. This indicates a need for risk management.

With the genotoxic carcinogens, it is not usually possible to identify a no-effect level, and the stringency of individual standards depends upon what is considered to be a tolerable risk. In such cases the Treaty obligation to aim for a high level of protection is of particular importance. The Commission considers that the appropriate statistical level of risk is that there should be no more than one excess cancer in a population of one million resulting from a life-time exposure to the individual carcinogen. There are parameters for which other factors would suggest that a different level of risk would be appropriate. The levels chosen for the various parameters are outlined in further detail in the explanations to Annex I.

Health risks and confidence of consumers are difficult to valuate in monetary terms.

Nor are the financial costs the only or even dominant criterion for the management of health risks. Therefore the economic considerations focus on the aspects of cost effectiveness and affordability which means the impact of compliance costs on water prices.

When talking about affordability it needs to be kept in mind that in the Union an average household spends only about 0.3% to 1.0% of their disposable income on the supply of drinking water. Hence increases in water prices only become critical for the lowest income groups.

Furthermore, the development of water prices is only to a minor extent influenced by expenditure to maintain water quality. Costs directly attributable to combat man-made pollution such as treatment or a switch to new sources of a better quality normally only amount to about 10-30% of the total cost of water supply. The perceived marked increase in water prices observable in some regions of the Community are rather a repercussion of long spells of underinvestment and a lack of maintainance of the supply and distribution systems in the past, exacerbated by increasing quantitative problems mainly in growing urban areas and a reduced availability of subsidies to finance investments.

The estimate of compliance costs resulting from the proposal is based on the limited information available to the Commission at present. However, economic studies are being undertaken and will be available in early 1995 to refine those estimates.

According to the information available the major increase in compliance cost will be attributable to the change of the parametric value for lead which is indispensable for the health reasons outlined below.

Lead is a general toxicant that accumulates in the skeleton. Infants, children up to six years of age, and pregnant women are most susceptible to its adverse health effects. In recent years it has become increasingly evident that long term exposure to low levels of lead may cause IQ deficits, learning and behavioural problems. Exposure to lead at the foetal stage appears to have a more pronounced effect on cognitive development than exposure at the infant stage. In view of this toxicological evidence, the WHO revised its guideline value for lead in drinking water down from 50 µg/l to 10 µg/l. The new guideline value was based on the assumption that a bottle-fed infant receives 50% of its lead from water.

This means that the quantity of lead that an infant would receive under normal nutritional habits using water with a lead content of 10 µg/l is just in the range of the provisional tolerable weekly intake. The value of 10 µg/l therefore includes little or no uncertainty factor.

Given the direct nature of the evidence, an uncertainty factor of 1 is appropriate, but the same evidence makes it clear that no higher parametric value could be supported, without compromising the health of infants, young children and pregnant women. Hence the parametric value for lead proposed now is at the upper acceptable limit for infants who are the group most at risk. The level allows for a higher protection of other age groups.

A value of 10 microgrammes per litre of lead (10 µg/l Pb) can only be achieved by removing lead from the distribution systems and from domestic plumbing. In general, 75-95% of the costs relate to the replacement of pipes and fittings in domestic premises and hence fall on their proprietors. The remaining costs will fall on water suppliers or public authorities, and will be recovered in most cases through higher charges.

According to the provisional findings of the economic study on costs relating to the change of the lead parameter, the regional distribution of pipe replacement cost is as shown in the table on the next page:

ESTIMATED FINANCIAL COST OF LEAD PIPE REPLACEMENT IN THE MEMBER STATES (PRICES AT 1993, IMPLEMENTATION WITHIN 20 YEARS)

Member State	Household installations plus distribution pipes		Distribution pipes	
Belgium	3 204	MECU	532	MECU
Denmark	0	MECU	0	MECU
Germany	3 210	MECU	85	MECU
Greece	Negligible cost		Negligible	
France	19 500	MECU	390	MECU
Ireland	2 462	MECU (?)	196	MECU
Italy	*14 750*	*MECU (?)*	*1 950*	*MECU*
Luxembourg	15	MECU	15	MECU
The Netherlands	1 734	MECU	179	MECU
Portugal	*2 350*	*MECU (?)*	*20*	*MECU*
Spain	*9 116*	*MECU (?)*	*316*	*MECU*
UK	13 440	MECU	3 040	MECU
Grand Total	*69 769*	*MECU*	*10 253*	*MECU*

As indicated by the printing in italics the figures for Italy, Portugal and Spain are questionable as some of the assumptions need to be discussed. For most of the countries the normal destruction rate of houses is not yet considered, nor are savings due to reduced leakage. The economic costs (baseline before discounting) can therefore be expected to be 10-20% lower. The unit cost of lead pipe replacement per property depends much on the local situation. Costs are in the range of ECU 600 - 3 200 per household, with an average of about ECU 1 500/household.

To take account of the high cost of lead removal, the Directive will allow for an implementation period of 15 years to carry out the necessary works in the distribution systems. In exceptional circumstances the provisions of Article 18 would enable further prolongations.

It should be noted that the proposed Directive will not oblige individual householders to replace lead pipes within their property. Therefore, much of the cost of complying with the parametric value for lead can be considered optional. However, in order to reap the full health benefits it is highly desirable that measures in the distribution and the domestic systems are taken in parallel.

In order to comply with the temporary parametric value of 25 µg/l, additional treatment of the water supplied will be necessary in many places (it is already often practised in some Member States). Unit costs depend on local circumstances; they are usually in the range of ECU 0.03/m^3 - ECU 0.15/m^3.

The information available is not sufficient to estimate the total cost for all Member States. The highest costs are expected for France (ECU 1 400 million over a period of 10 years); Germany (ECU 230 million); Belgium (ECU 172 million); United Kingdom (ECU 65 million). The Commission believes that when allowing for a long implementation time for the ultimate value of 10 µg/l these intermediate measures are indispensable.

The costs of complying with the current parametric values for nitrate and pesticides are largely determined by agricultural practices. The proposal does not seek any fundamental change to these parametric values and hence there should not be a direct substantial change in compliance costs; therefore any substantial change in compliance costs will depend on political decisions in other policy areas, notably agriculture. However the provisions concerning trivial exceedences (Article 10(3) of the proposal) will reduce the compliance cost for the pesticide parameter as by this rule the installation of unnecessary treatment facilities can be avoided.

The financial impact of other changes to the parameters and parametric values in Annex I will be limited to some groups of water supplies:

The most important operational consequences can be expected from the addition of the three disinfection by-products bromate, chloroform and bromodichloro-methane. These will cause some changes in the treatment system and operations, mainly for supplies from surface water sources. If new capacities for treatment with activated carbon have to be installed the increase of production cost per cubic meter of water will be in the range of ECU 0.02-0.05. Assuming further that 20% of the surface water supplies would need such an upgrading the annualized cost would be in the range of ECU 100-150 million/a.

The tightening of the two geogenic pollutants arsenic and antimony will require new investment for treatment in the few areas where they occur. However, data on the concentrations to be expected are very sketchy. The consequential treatment cost per m^3 of water is estimated to be in the range of ECU 0.03 for very big waterworks up to ECU 0.45 for waterworks of a capacity of 100 m^3/day. It is expected that less than 1% of European waters are affected. Nevertheless economic reasons may require that for sparsely populated regions a longer implementation time will be needed in line with the procedure set up in Article 18.

The parameter benzo(a)pyrene is new in this Directive but the problem of this parameter has been familiar to the water industry for many years.

The remedial action necessary is the removal of coal tar lined piping and joints. Such pipes were used in the past mainly in the UK and Germany. Replacement programmes primarily for other technical reasons are already underway so the incremental costs due to this parameter can hardly be isolated. The setting of a parametric value will most likely only advance investments that are planned anyway.

The new parametric value for boron will pose some technical and economic problems as no mature treatment technology exists yet. As discussed in the explanations to this parameter below, the toxicological relevance of the substance needs to be re-evaluated. Depending on the outcome action may have to be taken at source, that is by the modification of detergents. In the few regions where waters naturally contain a high concentration of boron, blending of waters might be the only practicable solution.

In conclusion apart from the lead parameter the economic consequences of the parametric changes are limited. On a Member State level the cost increases will be approximately offset by the increased scope for cost-effective implementation.

3.6 Which instruments does the Community have at its disposal?

As the intention of the proposal is to ensure the protection of human health, it is considered that a legally binding instrument is required to lay down the parametric values and other requirements. Thus a recommendation would be insufficient.

Conversely, a regulation would allow the Member States insufficient flexibility to take account of regional variations. Thus, the instrument proposed is a Directive.

3.7 Will a Directive defining the general objectives to be achieved leaving the implementation to the Member States be sufficient?

The protection of human health can best be assured by setting general objectives to be implemented by Member States, supported by specific standards and rules in those cases where uniformity is required.

In order to achieve an adequate level of health protection throughout the Community, precise standards are required for those substances which it is essential to control on a Community basis.

3.8 Proportionality

In the drafting of this proposal emphasis has been placed on the application of the subsidiarity principle, in accordance with Article 3b of the EC Treaty.

However, in order to protect human health, it is necessary to establish basic rules and standards at a Community level for a number of core parameters.

There are nevertheless other substances which may be present in drinking water but which only occur on a local or regional basis. Establishing harmonized standards for such substances would be inappropriate and Member States should have the necessary freedom to deal with these as required.

4. RESULTS OF CONSULTATIONS WITH INTERESTED PARTIES

In preparing its proposal the Commission has taken into account the advice it has received from Member States, and representatives of organizations with a particular interest in the quality of water intended for human consumption.

With regard to the broad spectrum of those who are concerned by this subject matter, the Commission organized in September 1993 a Conference on the revision of Directive 80/778/EEC. The information received at this conference and further comments received through this conference and from individual citizens has been taken into account in the preparation of the proposal.

In addition, representatives of the Member States were consulted on the modifications they considered necessary to the current Directive at, inter alia, a high level meeting held on 28 February 1994.

The Commission has followed closely the work of the World Health Organization which led to the publication of its guidelines for drinking water.

Detailed discussions have also taken place on several occasions, with representatives of the European water industry, in particular EUREAU, and their comments and advice have been considered in the preparation of the proposal.

In general the European water industry has indicated it is in full agreement with the line taken in this proposal. However, the consultations with GISEM on the specific problems of bottled waters are not yet finalized, and hence the monitoring rules proposed for bottled water should be regarded as provisional.

5. DESCRIPTION OF THE LEGISLATIVE SITUATION IN THE MEMBER STATES

Directive 80/778/EEC was adopted by Council on 15 July 1980, giving Member States two years to bring into force the laws, regulations and administrative provisions necessary to comply with it. Member States had 5 years to take the necessary measures to ensure that the quality of water intended for human consumption complied with the Directive's requirements.

All Member States have transposed and implemented Directive 80/778/EEC. For the new Länder of Germany transitional measures are applicable which require compliance at the latest by 31 December 1995.

6. CHOICE AND JUSTIFICATION OF THE LEGAL BASIS

Directive 80/778/EEC was based on Article 100 and 235 of the Treaty establishing the European Economic Community.

Since the adoption of this Directive the Treaty has been amended by the Treaty on European Union. It now contains a specific legal basis (Article 130s) for Community policy in the field of environment which, according to Article 130r(1), has as one of its objectives the protection of human health.

Because the central objective of the proposed Directive is the protection of human health Article 130s provides an appropriate legal basis.

Many of the provisions to protect human health will also ensure harmonized conditions for the product "water" in the Internal Market. However, it is not proposed to make Article 100a and Article 130s the joint basis. The objective and the main content of the proposal are covered by Article 130s, which is a sufficient legal basis for the proposal.

The proposal does not relate to water management and so the second paragraph of Article 130s is not applicable. Paragraph 1 of Article 130s is the only legal basis needed.

7. DETAILED EXPLANATION OF THE AMENDMENTS

RECITALS

The recitals have been revised so as to reflect the reasoning behind the proposal.

ARTICLE 1

Article 1 of Directive 80/778/EEC has been revised so as to provide a clear indication of the scope and purpose of the amended Directive.

The purpose of the current Directive 80/778/EEC, as stated in its Article 1, is to set standards for water intended for human consumption. Like that Directive the proposal deals only with the quality of water received by the consumer. While the Commission is convinced that the protection of water resources is and will continue to be of prime importance in ensuring good quality drinking water, it considers that the protection of raw water resources should not be addressed in a Directive relating to the quality of water intended for human consumption.

The primary aim of the proposal is to ensure that water in the European Community which is used for the purpose of human consumption is safe and presents no potential danger to public health. However, water should not only be safe but also wholesome; water which is unpalatable may be perceived by consumers as being unsafe. Such a perception may lead consumers to using other, less well controlled and less safe sources of water. This could be detrimental to human health.

The proposal for an amended Directive 80/778/EEC creates a framework, and only sets at Community level those objectives and standards which are necessary to protect the health of consumers. Member States will need to set national rules and standards related to water production and distribution and to consumer acceptability needed to accomplish these objectives.

ARTICLE 2(1)

Article 2(1) of Directive 80/778/EEC provides a definition of the meaning of 'water intended for human consumption'.

Article 2(1)(a) is refined so as to make it clear that the scope of the revised Directive is not limited to water supplied from distribution systems, but in addition includes all water intended for human consumption made available in bottles and containers.

The basic standards which ensure that water intended for human consumption is safe should apply to all water, although for practical reasons this protection may be provided in different ways for different sorts and sizes of supplies.

The definition refers specifically to bottled water. Bottled water is often used as a substitute for tap water, and there is no justification for applying different standards for the health-related parameters. It is not expected that this change will result in any additional significant burden on Member States.

Article 2(1)(b) maintains the requirement of Directive 80/778/EEC, that water used in the manufacture or processing of foodstuff comes under the scope of the Directive where the quality of the water used could affect the wholesomeness of the foodstuff in its finished form.

The parameters contained in Annex I, Parts A and B, of the proposal relate to human health. It is therefore appropriate that water used in a food production undertaking should, in general, be of the same standard as water intended for human consumption.

The revised definition provides the possibility of exemptions in cases where the competent authorities have established that the quality of water used is not likely to affect the wholesomeness of the final product. This should ensure that water of drinking quality is used where this is necessary, and at the same time leaves food manufacturers in no doubt which rules are applicable to them.

It should be noted that water used for agricultural purposes is not included within the scope of this directive.

Because of the introduction of Article 2(1)b the provisions of Article 6 of the current Directive 80/778/EEC are no longer relevant, and have not been retained in the proposal. Indeed, the Commission has never been able to draw up the report referred to in Article 6(2). Article 3 of the current Directive is also now redundant, and has not been retained.

ARTICLE 2(2)

Article 2(2) of the proposal introduces a new definition, that of the "domestic distribution system". This definition is required to enable the application of the proposed new Article 7(3). This definition will allow identification of that part of the distribution system which is the responsibility of another party other than the water supplier.

ARTICLE 3(a) and 3(b)

A new Article 3 contains the existing provisions of Article 4(1) in Directive 80/778/EEC. It explicitly states that the Directive does not apply to natural mineral waters covered by Directive 80/777/EEC[11] or to waters which are considered as medicinal products within the meaning of Directive 65/65/EEC[12].

The Commission has examined the possibility of extending the scope of Directive 80/777/EEC to cover all bottled water and not just natural mineral waters. However, it has decided not to propose such a change because it felt that other bottled waters are adequately covered by Directive 80/778/EEC in respect of their wholesomeness.

Medicinal waters are characterized by their special properties or requirements and are therefore excluded from the field of application.

ARTICLE 3(c)

Article 1(2) of the proposal makes it clear that the objective of the Directive is to protect human health from adverse effects resulting from contamination of water intended for human consumption. In practice, this means that drinking water should be safe whether used for drinking or for any domestic purpose. However, there are some uses where water quality would have no effect on the user's health. Examples would be watering garden plants, or washing cars. There is no value in requiring the use of high quality water complying with the Directive's standards in such cases.

This is particularly relevant in those regions where water is scarce. In such areas the priority must be to ensure that water intended for human consumption is available in adequate quantity. There is no benefit in using scarce drinking water for those domestic uses where water of a lower quality can be used without compromising the protection of human health.

Nevertheless, Member States should ensure that the use of lower quality water does not affect the quality of water intended for human consumption. Unless considerable care is taken, cross contamination can arise as a result of incorrect connections. This could lead, in turn, to contamination of the water supply network, so putting the health of consumers at risk.

ARTICLE 3(d)

It is recognized that there may be isolated areas where the effort needed to ensure respect of the proposed standards might be disproportionate. Neither the current directive nor the proposal contains any obligation for Member States to supply drinking water, and there is no need to deprive persons living in such areas of their traditional water resources. It is therefore proposed that the revised directive need not be applied to individual sources serving 15 households or less. In such cases special advice to the persons concerned and the possible introduction of restrictions on use can reduce the potential risk to human health to an acceptable level. This is supplemented by the overriding obligation contained in Article 5(1) of the proposal.

---

(11) OJ No L 229, 30.8.1980, p. 1.

(12) OJ No 22, 9.2.1965, p. 369/65.

ARTICLE 4

The new Article 4 requires Member States to take the measures necessary to ensure that water intended for human consumption complies at least with the standards of the proposed Directive. While this principle already exists in Article 7 (6) of Directive 80/778/EEC, the new Article 4 adapts it to the framework approach of the proposal.

ARTICLE 4(1)

Article 4(1) maintains the obligation established by Article 7(6) of Directive 80/778/EEC, for those parameters proposed for inclusion in Annex I because of their relevance or potential relevance for human health.

In order to respect the principle of subsidiarity, only those parameters which are known to be of general importance in the Member States or which are representative of the most important groups of substances that occur in drinking water are retained in the proposal.

The microbiological quality of water is the most important factor in relation to acute health effects. Accordingly, Part A of Annex I contains a number of indicator organisms. These can be measured reliably using existing methods, and their presence gives warning of the possible presence of pathogenic microorganisms.

Nevertheless it is recognized there can be many causes of microbiological contamination although there are difficulties related to the detection of some of the organisms such as cryptosporidia. Consequently, the proposal contains an additional and general requirement that water intended for human consumption does not contain pathogenic microorganisms and parasites in numbers which constitute a potential danger to human health.

It should be noted that Member States that set a more stringent standard, for example, for the pesticide parameter, will not be able to apply these more stringent standards to the authorization of plant protection products under the procedures of Directive 91/414/EEC. This is because Annex VI of that Directive specifies that authorizations are granted providing the concentrations of pesticides in groundwater meet the minimum requirements for drinking water.

ARTICLE 4(2)

The list of parameters in Annex I has been limited to those which are of most importance for the quality of drinking water in the European Community.

They are not the only substances which could present a risk or even a potential threat to human health if present in drinking water. However, to include all potential contaminants without regard to how likely or unlikely their presence may be would create an unworkable Directive.

There would be disproportionate monitoring obligations and very little gain in safety.

Therefore, in addition to meeting the specific requirements Member States must also take all the other measures necessary to ensure that drinking water is both safe to drink and meets consumers' expectations. By creating this framework the proposal leaves Member States free to achieve this objective in their own way, and to decide individually the quality of water acceptable to their consumers.

ARTICLE 5(1)

The new Article 5(1) introduces an obligation to prohibit the supply or restrict the use of water which constitutes a potential danger to human health. While most other obligations aim at minimizing potential health risks, Article 5(1) is designed to ensure consumers will in no case be exposed to unacceptable health risks from water intended for human consumption.

This constitutes the absolute barrier beyond which derogations or exemptions are neither acceptable nor permitted.

As already indicated, the proposal contains standards for only those parameters which are considered to be the most important and relevant at a Community level. Thus, the general provision of Article 5(1) is indispensable in such a framework approach if the objective of protecting the health of all consumers is not to be compromised.

The Article emphasizes the responsibility of Member States in those important cases where human health could be at risk. It establishes two possible ways in which Member States can react in such cases. They can prohibit the supply or, if appropriate, place restrictions on its use. However, it should be noted that prohibiting or restricting the supply of drinking water is a drastic step and should be regarded as a last resort when other measures which might be taken are unable to resolve the problem.

One of the criticisms often made about Directive 80/778/EEC is its lack of any clear obligation to inform consumers about the quality of the water they receive. The last sentence of Article 5(1) aims to redress this by placing a specific obligation on Member States to ensure that consumers are immediately made aware and kept informed when the water quality is such that it presents a potential danger to public health. Furthermore, Article 5(1) specifically states that those consumers affected by a prohibition or use restriction are to be given advice on the necessary action they should take in order to protect their own health in such circumstances.

It will be for Member States to decide the amount and kind of information to be provided under this Article. However, it is clear that consumers will need to be informed of the reasons for the prohibition or restriction, what is being done to solve the problem and how long it is expected to last, and of any special action they should take.

ARTICLE 5(2)

Given that potential problems can vary widely and the measures to resolve them are dependent upon local conditions and situations, it is inappropriate to set at a Community level what would constitute a potential danger to human health. Thus, it will be for the Member States to decide the point at which a prohibition or use restriction of the supply is the only course of action open.

The decision whether to prohibit or restrict a supply needs to be considered in relation to the risks involved to human health by continuing the supply. Because of sanitary considerations, turning off a water supply may in many cases be to the detriment of those the action is aiming to protect. Furthermore, local or regional conditions such as the behaviour pattern of consumers and the availability of alternative sources of water will determine what is the best course of action in a given case.

ARTICLE 5(3)

The decision to prohibit or restrict a supply will often need to be taken quickly by the competent authorities. In most cases this will be at a regional or local level. Consequently, Article 5(3) provides for guidelines to be established by Member States to assist their competent authorities in making such decisions.

ARTICLE 6(1)

Article 6(1) corresponds to the existing Article 7(1) and places it in a more logical position within the Directive.

ARTICLE 6(2)

The new Article 6(2) adapts the obligations contained in Article 7(3) and (4) of Directive 80/778/EEC to the new structure of Annex I and sets out how the values are to be fixed for the different groups of parameters.

The parameters in Annex I have been divided into three groups, as follows:

Part A - Microbiological parameters
Part B - Chemical parameters
Part C - Indicator parameters

Parameters contained in the first two parts are included because of their direct significance for the protection of human health.

No substantive change is proposed to the obligation to fix values at least as strict as those specified in the Annex for these parameters.

However, the parameters contained in Part C do not relate to substances which by themselves and at the values proposed, present a risk to human health.

They are included to provide a prompt indication of changes in water quality and of the possible need for remedial action in order to protect human health. Such changes may indicate contamination of raw water, shortcomings in treatment and the possibility that materials are being dissolved from pipes. Nevertheless, the proposal includes an obligation to set values not less stringent than those given in the Annex to provide the reference point against which monitoring results can be compared.

The parametric values proposed for the indicator parameters are a trigger point beyond which it is necessary to confirm that water quality is adequate to protect human health. Only if it is inadequate, is further action needed.

Because the parametric values for the indicator parameters are not set on the basis of protecting human health Member States may set values less strict than those in Annex I, Part C.

Nevertheless, Member States will still be required to assess the quality of water intended for human consumption against the parametric values proposed. This is necessary because a value set by a Member State for a Part C parameter for other purposes may not be adequate to detect a change in water quality arising from a new pollution source. Therefore, Member States will be required to investigate and if necessary take action in cases where the parametric values proposed in Annex I, Part C are not respected.

Aluminium is a good example to illustrate this point. A health-related parametric value would be much higher than that given in Annex I, Part C. However, aluminium is widely used in water treatment. In essence, aluminium is added to the water to be treated and subsequently precipitated as a floc. This floc carries with it suspended organic matter, as well as parasites and viruses which might be present in the raw water. The aluminium concentration of a correctly treated water will be low; and a high value would suggest that the treatment process was not operating correctly and that the microbiological quality of the treated water was suspect. If the aluminium concentration was only being assessed against a higher, health-related, value small changes in concentration indicating deficiencies in treatment might not be detected.

ARTICLE 6(3)

In its Report to the European Council on the Adaptation of Community Legislation to the Subsidiarity Principle, the Commission indicated that when reviewing existing water legislation it would "reorient rules and regulations towards compliance with essential quality and health parameters, leaving Member States free to add secondary parameters if they see fit".

Therefore, and in accordance with the above, the proposal contains only those parameters which are considered essential for the protection of the health of consumers on a Community-wide basis.

Nevertheless, it is recognized there are also other parameters which need to be controlled in order to protect human health but which occur or are relevant only on a regional or local basis. Therefore and in line with the principle of subsidiarity, it is more appropriate that these are dealt with at a national rather than a Community level. Consequently, and in accordance with the general obligation of Article 1, Article 6(3) places an obligation on Member States to set values for such additional parameters where the protection of human health in their territory so requires.

Special provisions are made in Article 13 to ensure that the functioning of the Internal Market is not affected by this flexibility.

ARTICLES 6(4), 6(5) and 6(6)

Under Article 6(2) and 6(3), Member States are free to set higher standards, and standards for additional parameters respectively.

If Member States choose this route, it is proposed that they should notify the Commission accordingly. To achieve this, three new sub-articles 6(4) to 6(6) are required.

ARTICLE 7(1) and 7(2)

Article 7(1) is new insofar as it clarifies the point at which the parametric values will have to be respected. In the past, differing interpretations about the point at which the requirements of Directive 80/778/EEC applied resulted in some legal uncertainty.

It is only logical that water should be safe at the point where it is available for consumption or for use in food production and manufacturing if the principal aim of the Directive, the protection of consumers against the effects of contaminated water, is to be achieved. This point can either be the consumer's tap or at the outlet of a container. In the case of bottled water, it is preferable to sample at the point of bottling, but there is nothing in the proposed directive which would prevent Member States undertaking additional sampling of bottled water at the point at which it is offered for sale to the consumers.

Article 7(2) specifies that where water is supplied from a distribution network the parametric values are to be respected as the water emerges from at least one tap in the consumer's premises. It should be noted that the proposal establishes the minimum requirement and leaves Member States free to adopt more ambitious rules.

Also, by limiting the obligation to one tap, in-house storage tanks and hot water systems are not covered by the Directive.

Water used within a food production undertaking and falling within the scope of Article 2(1)a) must comply with the proposed parametric values at the point where it becomes available for use within the undertaking. The compliance point could thus be at a well within the undertaking or at the point when water leaves a distribution network.

ARTICLE 7(3)

The effect of the previous paragraph is to oblige Member States to take the measures necessary to ensure that the parametric values are respected at the consumer's tap. This is the only way in which the objective of the Directive can be achieved. However, water quality can be influenced by the condition of household installations and the materials used in their construction. It follows that the Directive's standards can only be respected if the person responsible for a household installation ensures that it does not have an adverse effect on water quality.

It is acknowledged that the arrangements, traditions, and the legal situations pertaining to ownership of housing and in particular the household plumbing installations differ between Member States. Therefore, the Commission considers that the objectives of the Directive in this respect can best be achieved by the individual Member States.

The Commission considers it appropriate to oblige Member States to take the measures necessary to ensure that the consumer receives water which respects the Directive's standards provided that the household installation is of appropriate materials and correctly maintained. Article 7(3) of the proposed Directive therefore lays down that Member States will be considered to have fulfilled their obligations in cases where failure to respect the Directive's standards is attributable to the domestic distribution system which are the responsibility of another party other than the water supplier.

To ensure that efforts made to supply good quality water and in improvements made to the general distribution system are not in vain, the Construction Products Directive (89/106/EEC) obliges Member States to ensure that in future only appropriate materials are authorized or available for use in the domestic distribution system.

ARTICLE 8(1)

Article 8(1) carries forward the obligation in Article 12(1) of the current Directive 80/778/EEC to monitor the quality of drinking water.

The purpose of monitoring drinking water is to check its quality and assess whether the measures taken to ensure the respect of the Directive's quality standards are operating correctly. It is obviously not possible to monitor the quality of drinking water at each consumer's tap.

The proposal therefore specifies that monitoring should provide a representative picture of the quality of drinking water available to consumers.

In addition, a new monitoring obligation is added. Member States will be obliged to verify the efficiency of disinfection treatment applied during the preparation of water intended for human consumption. The means by which this is to be done will depend upon the circumstances, and are not specified in the proposed Directive.

This change allows the central issue, which is that any necessary disinfection should carried out correctly, to be addressed directly. It also means that the parameter 'residual chlorine' becomes redundant, and so can be deleted.

ARTICLE 8(2)

This new Article requires competent authorities to establish appropriate monitoring programmes.

The Commission considers that monitoring requirements should take account of a number of factors, notably the population served, the quality and vulnerability to pollution of the raw water resources used for the production of drinking water, the treatment applied and the condition of the distribution network.

These factors can vary widely from one place to another. Annex II therefore contains only the minimum monitoring requirements which should apply throughout the Community. Member States are then free to apply monitoring programmes which go beyond this minimum in order to respond to local or regional conditions. This will lead to an efficient use of monitoring resources by allowing effort to be concentrated where it is most needed.

The alternative, of setting monitoring rules at Community level, would probably mean that in some cases they would be needlessly strict.

This would not be satisfactory. In some case there would be inadequate surveillance of water quality while in others monitoring requirements could pre-empt resources that might be better used in other directions to the benefit of consumers' health.

ARTICLE 8(3)

The points of sampling are to be determined by the competent authorities in the Member States. This flexibility, which is already provided for in the present Directive, is retained in order to ensure that samples are taken at the most representative point and also to allow for practical and cost-effective monitoring.

The concentrations of many of the parameters in Annex I will not change while water is in a distribution system or container. The choice of sampling point is not critical for such parameters. Samples taken at the outlet of a treatment works, at the consumer's tap, from the distribution system, at a bottling plant or from a bottle will give results representative of the quality of water received by the consumer or user.

In such cases it is neither necessary nor useful for the Directive to specify the sampling point.

However, there are parameters for which the choice of the sampling point will influence the analytical result obtained. This is the case with microbiological parameters and with substances derived from materials in contact with water. There are also some parameters whose concentration may change within the distribution system as a result of slow chemical or microbiological reactions.

In such cases the sampling point must be chosen so as to provide results representative of the quality of water where it is made available to the consumer or for use in food production undertakings. When water is supplied to consumers through a distribution system the appropriate sampling point will usually be a tap within domestic premises.

The distribution of sampling points within a given area can only be decided in relation to local circumstances. Member States will be familiar with the quality of the raw water used and its variability, the treatment processes employed, and structure and condition of distribution systems. The proposal therefore leaves the choice of appropriate sampling points to the Member States.

ARTICLE 8(4)

Article 8(4) provides the possibility of establishing Community guidelines for monitoring. Such guidelines could assist Member States to discharge their obligations under the other paragraphs of Article 8. The guidelines will also help to ensure that monitoring results are comparable throughout the Community.

ARTICLE 8(5) and 8(6)

The proposal only specifies reference methods of analysis in those cases where the parameter is defined by the method of analysis used. However, it is important to avoid laying down rules that would hinder the development and use of improved methods of analysis. It is therefore proposed that the use of other methods of analysis should be permitted provided that it can be demonstrated that they give results equivalent to those obtained using the reference method.

With most parameters the choice of method of analysis is not crucial to the result obtained. In such cases the proposed Directive would permit the use of any method of analysis that respects the requirements for accuracy, precision and limit of detection specified in Annex III. This will allow laboratory facilities to be used efficiently and would not hinder the development of new methods of analysis.

The Commission intends to review at regular intervals the reference methods of analysis specified in Annex III.

ARTICLE 9(1)

This Article contains the obligation to investigate immediately any failure to meet the requirements of Annex I in order to identify the cause. Only when the cause has been identified will it be possible to decide what further action, if any, is needed.

It is important that all failures should be investigated. A transient peak value may have little significance for human health, while a seemingly trivial failure may be a sign of an unforeseen problem which, if not rectified, could adversely affect consumers.

ARTICLE 9(2)

Article 7(6) of the current Directive provides that Member States shall take the steps necessary to ensure that water intended for human consumption at least meets the requirements specified in Annex I (of that Directive).

Similar, but not identical, provisions are included in Article 4(1) of the proposed Directive.

Article 9(2) in the proposed Directive covers those cases, which are not uncommon, where action taken by a Member State has not been sufficient to ensure that water intended for human consumption was of the requisite quality. Provided that the failure to comply was not a result of negligence or deliberate disregard of the obligations in the proposed Article 4(1) there would be little value in referring the matter to the Court of Justice. It would be better to assess compliance with the Directive on the basis of the action taken under Article 9(2).

The new Article 10 provides a legal framework within which the necessary remedial action can be taken.

ARTICLE 9(3)

For the indicator parameters listed in Annex I, Part C, the proposed paragraph 3 limits the obligation to take remedial action to only those cases where the investigation of a failure to meet the standards reveals a need for action. In those cases where the indicator has enabled a potential source of contamination or a treatment failure to be identified, the remedial action required by Article 9(3) can vary widely and will often not be related to the indicator parameter itself. Therefore the proposal leaves it to Member States to take the appropriate remedial action which is necessary to protect human health.

ARTICLE 10(1)

The new Article 10 amends the provisions of Articles 9 and 10 of Directive 80/778/EEC and introduces a general derogation scheme. It ensures that there is a clear and transparent legal framework to cover the remedial works required.

Directive 80/778/EEC provides only very limited derogation possibilities, essentially for geological and meteorological reasons and only then for those parameters which do not relate to toxic or microbiological factors. Derogations are also possible in the event of emergencies but this was interpreted by the European Court of Justice in a narrow sense.

Unless one of the conditions for granting a derogation was satisfied, the supply of water not respecting the Directive's quality standards amounted to a failure to apply the Directive correctly. Furthermore, any national legislation permitting the supply of such non-complying water would be of no effect, because it too would not be in accordance with Member States' obligations under the Directive.

This legal inflexibility has led to an unsatisfactory state of affairs, because measures necessary for the protection of human health cannot be taken legally. One of the aims of this proposal is to provide a legal framework within which remedial action can be taken.

Controlled derogations can be considered acceptable. Most of the substances may cause chronic effects, and long term exposure is the significant consideration in relation to the protection of consumers' health.

The parametric values for this category of parameter are set on the basis of a safe life-long consumption. It is therefore possible to exceed these values for a limited period of time without compromising the either the long term or short term protection of consumers' health.

Nevertheless, even in these circumstances some conditions must be met in order to ensure that the objective of the Directive is fully respected.

First, recourse to such derogations is limited to those cases where the supply of water intended for human consumption cannot be maintained by any other reasonable means. It is clearly unacceptable to erode the safety margins contained in the parametric values in Annex I, Part B while means exist to supply water in conformity with those values. The means to ensure continued compliance will depend on individual circumstances, but will include further treatment, the use of other sources of raw water, and blending waters of different qualities. Derogations are, in any case, subject to the rule in Article 10(1) that they must not constitute a potential danger to human health.

Finally, when making a derogation, Member States will have to set the length of time it is to apply and the maximum permissible value for the substance in question. When doing so, they will also need to take account of the two conditions noted above and to ensure that the derogation covers only what is required to remedy the situation.

Article 10(1) refers only to Part B of Annex I and does not apply to Part A. This is because of the immediate and serious health risks which can result from microbiological pollution. The proposed Directive requires the absence of the microbiological parameters specified in Annex I Part A. Detection of any microbiological parameter calls for immediate action, such as disinfection or restrictions on use. However, the requirements for these parameters are very strict, and even with the best precautionary measures there may be occasional failures to comply. This is most notably the case for drinking water derived from surface water and that delivered by long distribution networks. Nevertheless, the Commission considers that microbiological failures must be dealt with immediately and do not require a legal framework for remedial action. Indeed, it would not be consistent with the objective of the proposed Directive to authorize any failure to comply with parametric values for the microbiological parameters.

Consequently, the microbiological parameters have been excluded from the derogation scheme of the proposal.

As regards the indicator parameters contained in Part C of Annex I, their purpose does not require any derogations under the proposal.

Member States are free to set different values for these parameters for purposes other than monitoring. The only legal obligation under the proposal is to identify the reason why an analytical result not in conformity with the parametric value set in Part C of Annex I has been recorded, and to take appropriate action necessary to ensure the protection of human health.

ARTICLE 10(2)

This paragraph sets out in detail the conditions which must be satisfied by each derogation. These conditions have been set in such a way as to provide the maximum transparency for consumers.

ARTICLE 10(3) and(4)

These new paragraphs address situations where the competent authorities consider that a failure is of minor importance for human health and can be rectified within ten days. In such cases a simplified procedure is appropriate as the problem can be resolved quickly and without the need for a long term improvement plan as foreseen by Article 10(2).

Consequently, this facility is limited not only in time but also to trivial failures.

In order to ensure this flexibility is not used as a means to disregard the obligations under Article 10(2), repeated failures to comply with a parametric value, even if trivial, are excluded from this simplified procedure. If a small failure occurs regularly, this indicates the possibility of a more fundamental problem and the need for substantive action. Respect of the general conditions for a derogation is thus required.

ARTICLE 10(5)

Respect of the parametric values given in Parts A and B of Annex I is required without exception in the case of water offered for sale in bottles or containers. This is because derogations are not needed to ensure continuity of supply in such cases.

However, where water is supplied in containers during emergencies but is not offered for sale the above considerations do not apply, and derogations can be granted under Article 10.

ARTICLE 10(6)

Paragraph 6 makes it clear that consumers must be informed immediately about the facts of a derogation and the conditions attached to it.

In addition, Member States must provide advice to groups of the population for which derogation could lead to a special risk.

Member States are left free to decide what information to provide to consumers in respect of the trivial failures to comply covered by Article 10(3).

This flexibility has been introduced in order to ensure that consumers are not needlessly alarmed by problems which will be rectified quickly.

ARTICLE 10(7)

The obligation in Directive 80/778/EEC to inform the Commission of derogations has been amended and placed in Article 10(7). A time limit in which to send this information to the Commission has been introduced to enable the Commission to fulfil its task of overseeing the correct application of the new Directive.

For practical reasons, the obligation to inform the Commission applies only in respect of those derogations which cover an output of water intended for human consumption of more than 1 000 cubic metres per day. Short term trivial failures to respect parametric values covered by Article 10(3) are also excluded from this obligation.

ARTICLE 11(1)

The scope of Article 8 of Directive 80/778/EEC has been extended to include impurities in substances used in the preparation of water intended for human consumption. Such impurities can lead to health effects which could be avoided by using better quality treatment chemicals.

The text has also been brought into line with the new framework approach. The acceptable concentrations of treatment chemicals or impurities associated with them are no longer defined exclusively by the Maximum Admissible Concentrations given in Directive 80/778/EEC. Account must now also be taken of the specifications for treatment chemicals which Member States might adopt in the implementation of the proposed Directive.

The proposal makes it clear that the concentrations of treatment chemicals or of their impurities in water intended for human consumption should be no higher than is necessary for the purpose for which the treatment chemicals were used. This will have the effect of limiting contamination from treatment chemicals and their impurities, and will require the use of good practice in the preparation of drinking water.

It should be noted that the general problem of water contamination resulting from materials used for piping and fittings and which come into contact with water intended for human consumption are dealt with in the framework of Directive 89/106/EEC - the Construction Products Directive. This Directive and its Interpretative Documents set out, amongst other things, requirements concerning the protection of consumers' health.

This will oblige Member States to ensure that only those materials which are compatible with the relevant water quality will be available in the future for use in contact with water intended for human consumption. This means that Member States will have to legislate accordingly.

ARTICLE 12

Article 12 corresponds to the current Article 11 of Directive 80/778/EEC.

The new text relates the standstill clause to those aspects which are relevant for the protection of human health in order that the freedom provided for in the proposal to determine other quality criteria is not unduly reduced.

This means that Member States should take any necessary measures to ensure that the by-products of water treatment should not be disposed of in any way that would prejudice the quality of waters used for the production of drinking water.

ARTICLE 13(1)

Water is a product, and the purpose of this new provision is to ensure that the framework approach in the proposed Directive does not lead to obstacles to trade in water within the Community. It is based on the principle of mutual recognition, and Member States will not be able to refuse water which conforms to the Directive's quality standards.

This means that water which merely complies with the parametric values in the Directive cannot be refused in another Member State where stricter standards for drinking water may be in force. Furthermore, Member States which choose to impose stricter standards than required by the Directive, will not be able to insist that these stricter standards should apply to any water produced in another Member State.

It should be noted that this will not affect the mutual recognition of authorizations under Directive 91/414/EEC concerning the placing of plant protection products on the market.

ARTICLE 13(2)

This paragraph places the existing obligation contained in Article 4(2) of Directive 80/778/EEC into a more logical place and contains the necessary adaptation to the new framework approach.

Furthermore, the principle of mutual recognition explained in detail under Article 13(1) above shall apply equally to foodstuffs manufactured or prepared with drinking water. This means that foodstuffs produced with water which merely complies with the parametric values in the Directive cannot be refused in another Member State where stricter standards for drinking water may be in force.

Furthermore, Member States which choose to impose stricter standards than required by the Directive, will not be able to insist that these stricter standards should apply to any foodstuffs manufactured with water produced in another Member State.

ARTICLE 14 and ARTICLE 15

Articles 13, 14 and 15 of Directive 80/778/EEC established a Committee procedure for adapting the reference methods of analysis contained in Annex III to scientific and technical progress. However, the Commission feels it is desirable to extend the adaptation possibilities so that the technical content of Annexes II and III may be adapted rapidly to scientific and technical progress and the implementation of the Directive facilitated.

In 1988 the Commission made a proposal[13] to simplify the adaptation of Directive 80/778/EEC to scientific and technical progress, but this proposal has not yet been adopted.

As the Directive is health related, the Commission, under Article 14(1), shall review Annex I in the light of scientific and technical progress and shall make proposals for amendments, where necessary, under the procedure in Article 189c.

In addition, consumers should benefit as quickly as possible from scientific and technical progress and also from the practical experience which has been gained in implementing the Directive. Therefore, Article 14(2) allows for the adaptation of Annexes II and III

---

(13) OJ No C 13, 17.1.1989, p. 7, as amended by OJ No C 300, 29.11.1989, p. 13.

following the procedure set out in Article 15 in accordance with Council Decision 87/373/EEC of 13 July 1987[14]. All appropriate available scientific advice, including where necessary the advice of the relevant Scientific advisory committees, shall be taken into account for the preparation of the proposals to be submitted for decision making under the Committee procedure.

In this respect, a Committee established under Procedure II Variant (b) of Council Decision 87/373/EEC provides an efficient and effective means of dealing with any adaptation to the relevant Annexes as a result of scientific and technical progress. This procedure would allow a change to be introduced in a short period of time if it is in accordance with the Committee's opinion. However, it also gives Council the possibility of taking a different decision within three months if the changes proposed were not in accordance with the opinion of the Committee.

ARTICLE 16

The obligations of Article 16(1) are new as compared to Directive 80/778/EEC. The Commission considers it to be particularly important that up to date information about the quality of drinking water is readily available to consumers.

Directive 90/313/EEC of 7 June 1990 on the freedom of access to information on the environment[15] provides some possibilities for obtaining this information. However, Directive 90/313/EEC has a more general scope, and the Commission considered that a specific requirement will increase transparency and allow consumers to obtain the relevant information more easily.

In addition, it is proposed that Member States should publish an annual report on their drinking water quality. These reports are considered necessary to enable Community citizens to obtain adequate and timely information concerning the quality of their drinking water. In this respect Member States should consider what steps they should take to ensure that all consumers are properly informed about the quality of their drinking water.

These reports are also to be sent to the Commission which, every three years, will publish a synthesis report on the quality of drinking water throughout the Community. These reports will facilitate the comparison of water quality throughout the Community and demonstrate the progress made in the improvement of drinking water quality.

The existing obligations under Directive 91/692/EEC standardizing and rationalizing reports on the implementation of certain Directives relating to the environment[16] would thus be modified. National reports are more targeted, detailed and available sooner that those provided for in Directive 91/692/EEC. This advantage for consumers has led the Commission to propose this change so that a wider range of interests are covered.

---

(14) OJ No L 197, 18.7.1987, p. 33.
(15) OJ No L 158, 23.6.1990, p. 56.
(16) OJ No L 377, 31.12.1991, p. 48.

ARTICLE 17

Article 17 amends the existing Article 19 of Directive 80/778/EEC. The amendment is necessary to allow Member States a reasonable transition period to implement new obligations introduced by the revised Directive.

ARTICLE 18

Article 18 amends Article 20 of the current Directive 80/778/EEC so as to allow Member States the possibility of a longer period within which to comply with parametric values in Part B of Annex I.

However, such additional time will only be available in exceptional circumstances and where it can be fully justified by the Member State. In the Commission's opinion, the main application of this Article will be in relation to meeting the new standard proposed for lead.

Given that the most effective way of meeting this standard will be the complete removal of lead from pipes and fittings, it has to be recognized that such major infrastructural changes cannot be implemented in certain locations over a short period of time.

ARTICLE 19

In accordance with the general rules on legislative consolidation, Article 19 repeals Directive 80/778/EEC, without prejudice to the obligations of the Member States to its transposition.

It follows that Member States remain under an obligation to transpose Directive 80/778/EEC properly. With a view to ensuring optimum transparency, Annex IV referred to in Article 19, sets out the dates of application of the transposition measures.

To facilitate the correlation of the new Directive with the provisions of the repealed Directive, the Article further refers to a correlation table, set out as Annex V.

ARTICLE 20

Article 20 contains the standard provisions on the obligations of Member States to transpose a Directive and to communicate these measures taken to the Commission.

ANNEX I

PARAMETERS & PARAMETRIC VALUES

I. GENERAL CONSIDERATIONS

The parameters and the parametric values included in Annex I have been selected with a view to ensuring a high level of health protection. They reflect a quality of water which consumers can drink and use for domestic purposes for a lifetime without the risk of adverse health effects.

In its review the Commission has taken as the starting point that the revision of Directive 80/778/EEC should not reduce the level of health protection afforded by that Directive.

The WHO guideline values for drinking water quality adopted in 1992 have been taken as the basis for many of the parametric values proposed. The guideline values are an up to date authoritative assessment of the available toxicological evidence.

However, they have not been transferred automatically into parametric values. As recommended by WHO, they have been taken as a basis for setting the parametric values. Where there has been reason to do, the Commission has proposed other values or no value at all.

For some more difficult parameters the Commission has acted on the advice received from its scientific Advisory Committee of chemical compounds (CSTE).

No change has been proposed where the values contained in Directive 80/778/EEC have, in practice, provided adequate health protection and no new scientific evidence has been produced which could justify a modification. In doubtful cases the Commission considers that further investigation and studies will have to be made before changes are incorporated in Community legislation intended to provide a high level of health protection.

Most of the parametric values contain a considerable precautionary safety factor. It follows that a failure to comply with a parametric value will not necessarily present an immediate threat to health. The principal exceptions are the microbiological parameters. The parametric values proposed are zero, and any positive result indicates the possible presence of pathogenic microorganisms, and calls for an immediate response.

Carcinogenic parameters present a special case. For genotoxic carcinogens there is not usually a threshold concentration below which there is no risk to health. The starting point for the derivation of the parametric values proposed for individual carcinogens is that there should be no more than one excess cancer in a population of one million resulting from a lifetime exposure. This is stricter than the criterion of one excess cancer in 100 000 used by WHO in setting its guidelines for drinking water quality. The extra safety margin is justified by the

obligations contained in Article 130r(2) of the Treaty and, in particular, the needs to aim at a high level of protection and to take account of the precautionary principle. The CSTE has also recommended the criterion of one excess cancer in a population of one million resulting from a lifetime exposure as being more appropriate in Europe.

However, the Commission considers it important that the standards proposed for individual parameters can be respected in practice. This means that it is necessary to take account of the availability of methods of treatment and of methods of analysis. It is also necessary to consider the balance of risk to the health of consumers resulting from consumption of water not meeting the highest quality standards and from not supplying water. It is far better in most cases, from the point of view of protecting the health of consumers, to continue to supply water of good quality even although this quality might not be as high as might ideally have been wished. There are therefore cases where the parametric value proposed is not as strict as that corresponding to the one in a million criterion.

Disinfection by-products call for special comment. It would be possible to produce drinking water which respected parametric values set on the one in a million criterion, but disinfection would become very difficult in practice. The immediate and direct threat to health, and even to life, presented by pathogenic microorganisms in water makes it unthinkable that disinfection should be given up. The parametric values proposed for disinfection by-products are therefore not so strict that disinfection is compromised.

II. PARAMETERS CONTAINED IN PART A OF ANNEX I

This part contains a list of parameters which are not pathogenic in themselves but which indicate the possible presence of pathogenic microorganisms. The parameters included and their values correspond to those of Directive 80/778/EEC. The parameter faecal coliforms is replaced by Escherischia coli. This change amounts to defining the parameter more precisely in line with scientific progress.

For water offered for sale in bottles or containers, a new parameter "Pseudomonas aeruginosa" has been added. This is to ensure that drinking water, which can remain for some time in its bottle or container, remains of irreproachable quality. For similar reasons the microbiological parametric values are based on a 250 ml sample and not a 100 ml sample, which is the usual value. They are thus somewhat stricter than those for most water intended for human consumption. This reflects consumers' high expectations for bottled water.

There is no tolerable limit which could be considered as safe for microbiological pollution. Therefore the parametric value for the indicator organisms is zero in a specified volume of water.

In order to enhance the protection against disease attributable to biological causes Article 4(1)b of the proposed Directive requires Member States to ensure that water intended for human consumption does not contain pathogenic microorganisms or parasites in numbers sufficient to constitute a potential danger to human health. This carries forward the obligation contained in Part E of Annex I of Directive 80/778/EEC. This is in line with the objective of the proposed Directive.

III. PARAMETERS CONTAINED IN PART B OF ANNEX I

This part contains parametric values for substances which could adversely affect human health if present in sufficient concentration in water intended for human consumption. The parameters chosen are those which are considered to be those most likely to be encountered in the Community or those which might present a particularly serious threat to health. With most parameters the health effect are chronic rather than acute.

1. Parameters retained without change

The following parameters are retained without change to their parametric values. These values have proved their practical value in protecting human health, and there is no new evidence which would require a change.

Cadmium
Chromium
Cyanide
Mercury
Nitrate
Nitrite
Selenium

Nitrite is directly toxic, causing methaemoglobinaemia. Nitrate is indirectly toxic because it can be reduced to nitrite in the body. The parameters are linked, and so too are the parametric values.

Under most circumstances the presence of nitrite in water is an indication of poor quality, and the current surrogate zero of 0.1 mg/l remains appropriate. However, when chloramination is practised nitrite can be formed as a by-product. It is therefore proposed that under these circumstances the parametric value for nitrite should be 0.5 mg/l and that the condition [nitrate]/50 + [nitrite]/3 $\leq$ 1 should be satisfied; the square brackets signify concentration in mg/l. This will allow the practice of chloramination to be continued while maintaining an adequate level of protection for consumers.

Concerning pesticides, the Commission has asked its Scientific Advisory Committee to Examine the Toxicity and Ecotoxicity of Chemical Compounds (CSTE) for its opinion whether the scientific knowledge available today provides the necessary security and reliability to determine, on the basis of a precautionary approach, individual limit values which guarantee safe drinking water on a life-long basis for the population, including sensitive population groups where relevant and what the correct values for individual substances could be.

The opinion of the Committee is as follows:

"The Committee is of the opinion that the present limit values of 0.1 µg/l of compound or 0.5 µg/l in total adequately protect human health, generally providing a sufficient margin of safety.

A revised setting of limit values which would be toxicologically acceptable for a life-time consumption will only be possible after complete studies and on the basis of a case by case evaluation, by referring to the full dossier of any substance being submitted to the Committee and bearing in mind the inadequacies in data bases and uncertainties in the assessment of variables.

Referring to the parameters and data used in the WHO-guideline values for the control of drinking water, the Committee finds that they may not provide a sufficient margin of safety for the European Union. The values define upper concentration limits when each substance was studied in isolation and the Committee wishes to stress that information on the toxicity of mixtures of individual pesticides is almost entirely lacking. For these reasons too, the Committee drew attention to the precautionary principle which should be considered when dealing with the WHO-guideline and their possible transfer to a European Union directive.

Priorities for pesticides possibly to be studied could be set-up on the basis of results from monitoring programmes.

Alternative ecotoxicologically based values should also be considered, such as those of the list of pesticides whose water quality objectives are equal to or below 0.1 µg/l taking into account also the possibilities of waste water treatment."

In the light of this opinion the Commission considers that it is premature to propose any change to the present value of 0.1 µg/l for each pesticide in water intended for human consumption.

In line with the abovementioned advice, further investigation will be undertaken in the near future for the pesticides found most frequently in water intended for human consumption in the Community in order to enable the Commission to consider this parameter further. In doing this the Commission will take into account whatever scientific information that becomes available as a result of the implementation of Directive 91/414/EEC, the placing of plant protection products on the market. It will be necessary to take account of all health relevant factors in assessing which concentrations of individual pesticides could be tolerated in water intended for human consumption as safe on a life-long basis. The scientific knowledge available at present concerning metabolites, degradation products and synergistic effects is rather limited and in some cases there is no evidence.

The Commission therefore feels obliged to take a careful and precautionary approach by not proposing at this stage any amendment to the parametric value for individual pesticides.

However, as proposed in Note 5 to Part B of Annex I, individual values can be considered for a given substance, after examination of the available technical and scientific information, where this is fully justified from the human health perspective and at the same time necessary.

The Commission has not proposed a value for the total concentration of all pesticides. It considers that interactions and cumulative effects must be taken into account in fixing parametric values for individual substances. This cannot be done in an arbitrary way for a whole family of substances.

Efficient and cost-effective protection of health requires that effort be concentrated on those matters which are relevant for a given water supply. Monitoring the pesticide content of water intended for human consumption should therefore concentrate on those substances which are likely to be present because of their use in the relevant catchment area.

2.1 Parameters, for which the parametric values have been amended or binding values fixed for the first time

Antimony is a toxic heavy metal. High doses can be fatal, and lower doses lead to changes in blood chemistry. The balance of the available toxicological evidence is that the current MAC value of 10 µg/l is too high. Although the evidence needed to derive a new parametric value is not conclusive, the proposed value of 3 µg/l reflects both the precautionary principle and the need to set a standard that can demonstrably be complied with.

The limited data available to the Commission indicate that concentrations of antimony in water intended for human consumption are usually within the range less than 1 µg/l to 12 µg/l, and this suggests that any problems in complying with the proposed parametric value will be confined to a few areas. However, it should be noted that the use of antimony-tin solders to replace lead-tin solders could be a significant source of antimony in water in the future.

Arsenic is known to be a carcinogen, causing cancers of the skin. The available toxicological evidence is not conclusive but it has been calculated that the lifetime risk of contracting skin cancer associated with a concentration of arsenic in drinking water of 10 µg/l is 6 in 10 000. Such cancers are not usually fatal, and the lifetime risk of death is much lower, but probably not as low as one in a million. The parametric value proposed is based on the available evidence and reflects both the precautionary principle and the need to set a standard that can demonstrably be complied with. However, it is clear that the value should be kept under review and, if necessary, modified in the light of further toxicological evidence.

The available scientific evidence relating to the toxicity of copper to the liver indicates that a parametric value of 2 mg/l is appropriate for the protection of human health. This is near to or below the threshold for taste, and so it is necessary to include copper in the list of chemical parameters. However, it is understood that the evidence relating to the toxicity of copper will be subject to further review, and this may lead to a need to modify the classification and parametric value. Accordingly the Commission may invite its Scientific Committee on the Toxicity and Ecotoxicity of chemical compounds to examine this evidence. Copper is widely used in domestic plumbing systems, and the proposed Directive is not intended to restrict this use. However, it is clear, as with all plumbing materials, that there must be a coherence between water quality and the choice of materials used to transport that water.

Hence with good quality copper and the proper control of the water treatment process, meeting the parametric value of 2 mg/l should not pose any difficulties.Therefore, the use of copper materials in water distribution systems is not, in itself, harmful to human health.

For fluoride the parametric value proposed is 1.5 mg/l independent of temperature. With fluoride the positive and negative effects on health are only separated by a small margin and the value proposed is considered to represent the optimum balance.

Lead is a cumulative poison, and the parametric value proposed is 10 µg/l. This is consistent with the advice given by the CSTE, that the present MAC value of 50 µg/l should ultimately be reduced to the 10 µg/l level recommended by the WHO. However, respect of a parametric value of 10 µg/l can only be guaranteed by the removal of all lead from supply and distribution systems.

It is therefore proposed for this parameter only that 15 years should be allowed for compliance.

In addition and as an interim measure, the parametric value for lead will be 25 µg/l from five years after notification of the Directive. This value can be respected in those areas where it is necessary by treating water so as to reduce its plumbosolvency.

This intermediate step will contribute to a reduction in the total intake of lead. It is clear that the intake of lead from water should be reduced as quickly as possible and, to this end, the proposed Directive calls upon Member States to give priority to areas where lead concentration is high.

The proposed reduction in the value for nickel from 50 µg/l to 20 µg/l is based on limited evidence on changes of the ratios of organ to body weights. It will also provide extra protection to those sensitized persons in whom nickel can provoke eczema.

The Commission expects few problems in meeting the new parametric value, but there will be need for vigilance with use of nickel in taps and fittings.

The presence of polycyclic aromatic hydrocarbons (PAH) in water intended for human consumption is objectionable. Some individual compounds are carcinogenic, and there is a lack of information concerning many of the compounds. It is therefore proposed to retain the current composite parameter and the associated precautionary parametric value. This approach will serve to minimize the concentrations of PAH compounds in water.

However, one of the six PAH compounds (benzo(a)pyrene) is known to be highly carcinogenic. It is therefore proposed that it should contribute no more than 0.01 µg/l to the parametric value of 0.2 µg/l. This is in line with advice from the CSTE.

It may be noted that the principal source of PAH compounds in treated water is coal-tar used to line supply pipes. This use is decreasing.

3. Parameters which are proposed to be added to the Directive

Acrylamide is included as a chemical parameter because it is carcinogenic. The concentration corresponding to an excess cancer risk of 10^{-6}, that is to say, to a risk of one excess cancer in a population of one million, is 0.05 µg/l. The parametric value proposed, 0.25 µg/l, is the lowest that can be achieved in practice. This concentration is below the limit of detection of convenient methods of analysis. It will therefore be necessary to regulate the concentration of acrylamide in water by specifying the maximum concentration of monomer permissible in polyacrylamide and the amount of the polymer that may be used as a flocculant.

Benzene is known to be carcinogenic, and because it may find its way into water intended for human consumption it is necessary to propose a parametric value.

The value proposed (1 µg/l) corresponds to an excess cancer risk of 10^{-6}.

Bromate is included as a chemical parameter because it is carcinogenic. Bromate is not expected to be present in raw water but may be formed during treatment by oxidation of bromide present in raw water. Bromate also occurs in some treatment chemicals.

However, bromate is formed during disinfection with chlorine, and it is important to avoid setting a parametric value that would compromise the use of chlorine as a disinfectant.

The lowest parametric value consistent with reliable disinfection with chlorine is about 10 µg/l, and this is the value proposed. This can be measured with conventional techniques of analysis.

Bromodichloromethane and chloroform are included as chemical parameters because they are carcinogenic and are found in water intended for human consumption. They arise principally as disinfection by-products.

The concentrations corresponding to an excess lifetime risk of cancer of 10^{-6} are 6 µg/l and 20 µg/l respectively.

However, in practice it can be difficult to achieve these levels, and concentrations of 15 and 40 µg/l respectively are proposed as the parametric values. It is also proposed, in the interests of operating convenience, that alternative parametric values of 25 and 30 µg/l could be used. This would leave the standard of protection of human health almost unchanged while not compromising the efficiency of disinfection with chlorine.

The compounds are formed during the disinfection of water and also by reaction with residual disinfectant in the distribution system.

It is possible to propose parametric values which apply when water leaves a treatment works but it is not possible to judge the extent to which their concentrations will increase during distribution. Therefore, as an interim measure it is proposed that the parametric values will apply at the exit to treatment works.

The Commission will study the extent to which the compounds are formed during distribution and the possible methods to reduce their production; It is expected that within three years a draft of the measures to be taken in respect of these compounds will be presented to the Commission in accordance with Article 14(1) of the proposal.

These measures will take account of the need to protect human health, and of the feasibility and cost of their implementation.

Present indications are that the parametric values applicable at the exit of treatment works will need to be reviewed.

*Tetrachlorethene and *trichlorethene have been included on the advice of the CSTE. They are examples of solvents which can be found in raw water and treated water. The parametric values proposed are the corresponding WHO guideline values.

*1,2-dichlorethane is carcinogenic, and can be found in raw water. The parametric value proposed (3 µg/l) corresponds to an excess cancer risk of 10^{-6}.

*Epichlorhydrin is included as a toxic parameter because of its carcinogenicity. The parametric value proposed (0.5 µg/l) is in line with advice from the CSTE. That value is below the limit of detection of convenient methods of analysis. In practice, control of epichlorhydrin concentration could be achieved by specifying a maximum concentration in the polymer used as a flocculant or to line pipes.

*Vinyl chloride is included as a toxic parameter because it is carcinogenic. The parametric value proposed (0.5 µg/l) is in line with advice from the CSTE.

The available toxicological evidence indicates that long-term exposure to boron can lead to testicular atrophy. There is therefore need for a parametric value to replace the Guide Level value in the current Directive. Boron in raw water is usually attributable to the use of perborates in domestic laundry products, but there are some areas where its presence is due to natural sources.

Conventional treatment does not remove boron from water, and where boron is present naturally in raw water there may be need to invoke the provisions of Article 10(1) in order to maintain the supply of water intended for human consumption.

The Commission is aware that recent evidence has become available relating to the toxicology of boron and it expects to invite its Scientific Advisory Committee on the Toxicity and Ecotoxicity of Chemical Compounds to examine this evidence. It may subsequently be necessary to present a draft of the measures to be taken in respect of boron to the Commission in accordance with Article 14(1) of the proposal.

IV. INDICATOR PARAMETERS

Colour, turbidity, odour and taste have been included as indicator parameters.

The factors which give rise to water which is aesthetically unsatisfactory may be harmful and can indicate a range of pollution sources and other health relevant problems.

The parameters are also retained because of their value in providing a simple and readily measured indication of changes in water quality.

The parametric values are not given in quantitative terms. There is no value in seeking to harmonize aesthetic properties at Community level.

Aluminium is retained as an indicator parameter, and the parametric value is unchanged. Most of the aluminium in drinking water arises from treatment.

An elevated concentration of aluminium in drinking water indicates the possibility that the treatment works is not operating correctly and that removal of pathogenic organisms might not be complete.

Ammonium is retained for its indicator function, and the parametric value is unchanged.

The presence of more than a small concentration of ammonium in treated water can be an indication both of contaminated raw water and of inadequate disinfection.

Conductivity is retained for its indicator function for the total concentration of dissolved salts and the parametric value unchanged.

It can be measured readily and quantitatively, and any unusual change calls for explanation.

The absence of dissolved oxygen is usually a sign of poor water quality and suggests that pollution has occurred.

It is therefore proposed to include dissolved oxygen as an indicator parameter and to set a minimum parametric value of 50% saturation.

Hydrogen ion concentration (pH) is retained as an indicator parameter, and maximum and minimum parametric values are proposed.

If pH is too low the water can be aggressive, and may dissolve toxic heavy metals from pipes and fittings. Too high a pH can compromise disinfection.

The parameter is useful because it can be measured quickly and easily, and measurements can be made at the point of sampling.

Iron is retained as an indicator parameter, and the parametric value is unchanged. Its presence in water intended for human consumption can be an indication of shortcomings in treatment and so of a potential danger to human health. This is particularly important where iron is used as a flocculant.

However, there are cases in which iron is naturally present in raw water and where there is no health-related reason to remove it.

Manganese is retained as an indicator parameter, and the parametric value is unchanged. Its presence in water intended for human consumption can be an indication of shortcomings in treatment and so of a potential danger to human health. However, there are cases in which manganese is naturally present in raw water and where there is no health-related reason to remove it.

The parameter oxidizability is retained and the parametric value is not changed.

The parameter is an indicator of possible contamination arising from sewage or farm wastes, and it is a measure of the potential for the formation of organohalogen compounds during disinfection.

Sulphate is included because of its value in indicating changes in water and because respect of the parametric value proposed will automatically ensure that magnesium sulphate, a laxative is not present in excessive concentrations.

Total bacteria counts do not provide specific information on the microbiological quality of water, but changes in count are useful indications of possible contamination which require further investigation.

The parameter total coliforms is retained. It is a less specific indicator than E. coli for faecal pollution of mammalian origin. However, it gives an indication of other microbiological contamination of water intended for human consumption, and so complements information provided by other parameters.

The parameter total organic carbon refers to the totality of organic compounds present in water, expressed in terms of the equivalent concentration of carbon.

The presence of organic compounds in drinking water is undesirable, particularly as many of them are poorly characterized and their significance for human health is not known. They can also serve as a substrate upon which microorganisms can grow in distribution systems, they can be the precursors of organohalogen compounds formed during disinfection.

The parametric value proposed is 4 mg/l, but this is supplemented by a requirement that there should be no abnormal change.

The deletion of the residual chlorine parameter calls for special comment. The parameter has been replaced by a more general obligation, contained in Article 8(1), to verify the efficiency of the disinfection treatment applied. Thus, all forms of disinfection are included within the scope of the proposed Directive, not just disinfection based on the use of chlorine or its compounds.

V. PARAMETERS CONTAINED IN ANNEX I OF DIRECTIVE 80/778/EEC BUT NOT INCLUDED IN THE PROPOSAL

The following 31 parameters in Annex I of the current Directive have not been carried forward into the proposed new Annex I:

Temperature (B5), chlorides (B8), silica (B10), calcium (B11), magnesium (B12), sodium (B13), potassium (B14), total hardness (B16), dry residues (B17), free carbon dioxide (B19), Kjeldahl nitrogen (excluding N in NO_2 and NO_3) (C23), hydrogen sulphide (C26), substances extractable in chloroform (C27), dissolved or emulsified hydrocarbons (after extraction by petroleum ether); mineral oils (C28), phenols (phenol index) (C29), surfactants (reacting with methylene blue) (C31), other organochlorine compounds not covered by parameter 55 (C32), zinc (C36), phosphorus (C37), cobalt (C39), suspended solids (C40), residual chlorine (C41), barium (C42), silver (C43), beryllium (D45), vanadium (D54), faecal coliforms (E58), total hardness for softened water (F1), hydrogen ion concentration for softened water (F2), alkalinity for softened water (F3), and dissolved oxygen for softened water (F4).

Some of the parameters omitted are not directly relevant to the protection of human health or are not of Community-wide importance. Others have been replaced by more appropriate parameters and the remainder are covered by the indicator parameters included in the Annex.

ANNEX II

MONITORING

Purpose of monitoring

The central purpose of the Directive is to ensure that water intended for human consumption is safe and pleasant to drink.

The function of the Directive is to lay down the quality standards to be achieved in water intended for human consumption. These standards, in the form of parametric values, will define the criteria for the design and operation of treatment plant and distribution systems, and provide guidance on the possible need to protect raw water resources.

It follows that a fundamental reason for monitoring carried out in connection with the Directive is to assess whether the measures taken to ensure respect of the Directive's parametric values are operating correctly, as judged by the quality of drinking water supplied. The systematic monitoring of drinking water quality must be an integral part of the implementation of the Directive; it is not an end in itself.

It is obviously not feasible to monitor drinking water quality continuously for every parameter at every point of supply, and a practical monitoring scheme should be designed so as to make the best use of limited resources.

The starting point is to note that a well-designed treatment works putting water into supply through an established distribution network will deliver water of predictable quality to individual users. In such cases the purpose of monitoring is not to discover the quality of water supplied. This should be known, and monitoring will serve to indicate whether or not water quality is as expected. Any departure from the expected quality, whether improvement or deterioration, will be the signal to investigate and to take any necessary remedial action.

This leads to the conclusion that the unit for monitoring should be the individual supply zone. Annex II therefore contains a definition of "supply zone" which reflects the fact that a supply zone is a geographically defined area within which water is supplied from one or a small number of sources and within which water may be expected to be of uniform quality. The measurement of water quality at a point within a supply zones will give some indication about water quality elsewhere within the zone, and so will contribute to efficiency in monitoring.

Two levels of monitoring, check monitoring and audit monitoring, are specified in the proposed revised Directive.

The purpose of check monitoring is to provide the information necessary to decide, on the basis of some simple tests, whether or not a water supply appears to be in conformity with the Directive's parametric values.

This is the first line of defence.

The parameters to be measured in check monitoring are simple indicators of water quality. With the exception of the test for E. coli, the analyses can either be carried out semi-quantitatively on site or by simple laboratory procedures.

If the results are as expected and there is no other reason to expect that water quality might be unsatisfactory then it could be concluded that no further action was needed. However, any unusual or unsatisfactory result calls for explanation and, further action.

The precise nature of this further action cannot be specified in the Articles of the revised Directive: the action needed will depend upon individual circumstances. However, the proposal for a revised Annex II is based on the expectation that the first action would be an investigation to establish the cause of the unsatisfactory result.

The purpose of audit monitoring is to provide the information necessary to decide whether all the Directive's parametric values are being respected. This is done as a second line of defence in the protection of human health. Where the results of audit monitoring show a failure to comply with one or more of the Directive's parametric values the rules contained in Article 9 of the proposed Directive would apply.

The results of check or audit monitoring might reveal the need for further monitoring. Such investigative monitoring will depend upon the particular circumstances, and should not be specified in detail in a Directive, although the need for such monitoring follows Article 9 of the proposed Directive.

Monitoring is potentially expensive, both financially and in terms of resources. It is therefore particularly important to ensure that full value is obtained from the analyses which are made, and that effort is not wasted in carrying out tests which contribute little or nothing to a knowledge of water quality.

This suggests that a practical monitoring programme must take account of three factors:

* the frequency of monitoring of the supply zone in question, and therefore of the risk to human health due to any deficiency in the quality of the water supplied;

* the likelihood that any particular parameter is present at a significant concentration; and

* the choice of sampling point in relation to changes in water quality which might be brought about by the distribution system.

These points are considered below.

Frequency of monitoring

Table B of Annex II of the current Directive is ambiguous because it is not clear whether sampling frequency is linked to volume of water produced, volume of water distributed or to population served. It would be preferable to link sampling frequency only to the volume of water distributed rather than to the population served. This is more readily measured, and so is preferable in a legal instrument.

It is proposed that the sampling frequency should be based upon an annual average of volume of water supplied. This would provide consistency throughout the table, and would avoid the difficulty that day to day fluctuations in the volume of water supplied could lead to different monitoring obligations.

There is no objective way to identify the correct frequency. A higher sampling frequency is always to be preferred because it will provide more information. The minimum frequencies given in Table B of the proposed Annex II are based upon those in the current Directive, and therefore upon Member States' current practice. There is nothing in the proposed revised Directive which would prevent Member States adopting a higher frequency where necessary.

Small supplies present a particular problem. There is no reason why citizens receiving water from small supplies should not enjoy the same protection as those receiving water from large supplies. However, there are two practical problems:

* The cost of monitoring per consumer will be relatively high.

* In many cases water treatment will be simple, and the quality of water supplied will depend very much upon the protection given to the raw water. This could lead to more variability in water quality than might be expected with large supplies, and so to a need for more frequent monitoring.

The monitoring of supplies of water to small communities is left as a matter for Member States' own responsibility.

Likelihood that a parameter is present

Member States will have information about the likely quality of water intended for human consumption from:

* a knowledge of the geology of the area from which the water is taken;

* results of previous analyses;

* a knowledge of agricultural practices in the catchment area and, in particular, a knowledge of which agrochemicals are in current use;

* a knowledge of the treatment processes and chemicals used; and

* a knowledge of the materials used in the distribution system and in domestic installations.

This information will provide a good indication of the parameters likely to be present in water intended for human consumption and of those not likely to be present in significant concentrations in relation to the Directive's parametric values.

There is little value in analysing frequently to confirm that a parameter not expected to be present cannot be detected. It is therefore proposed that, with the exception of the parameters in the list for check monitoring, there will be no obligation to monitor parameters not

expected to be present in significant concentrations. The test of significance will be the likelihood that the parametric value will be exceeded.

This relaxation would not apply to check monitoring. One of the essential functions of check monitoring is to give an early indication of unexpected conditions. However, it is to be noted that those parameters have been chosen with a view to simplifying the analysis needed.

Choice of sampling point

The objective is that water intended for human consumption should comply with the Directive's parametric values at the point where it is made available to the consumer, that is to say, at the consumer's tap.

For some parameters, such as lead, this is the only suitable sampling point. However, with most parameters little change will occur in the distribution system. Sampling at a convenient point will then provide information applicable to other places in a supply zone.

This presumed stability of water quality within a supply zone can be exploited to enable more efficient monitoring schemes to be devised. The presumption will be supported by satisfactory results from the check monitoring, while unsatisfactory results will necessitate an investigation of the cause.

With smaller supply zones it will be appropriate for most of the sampling to take place at individual taps. As the size of a supply zone increases it will be possible to shift much of the sampling to representative points in the production and distribution chain.

The above discussion has related primarily to water supplied through public distribution systems, but there are three special cases which call for comment. These are water used in food production undertakings, water supplied in containers, and bottled water.

Food production undertakings

The monitoring of water used in food production undertakings calls for special rules for the choice of sampling points and sampling frequency.

The current Directive's rules apply to the quality of water intended for human consumption only insofar as the quality of that water is likely to affect the wholesomeness of the foodstuff in its finished form. This principle is carried forward into the proposed revised Directive, and it is necessary to consider the point or points at which water is to be checked.

In practice individual food production undertakings will have only a small number of supplies to be regulated, and in many cases only one supply. It is considered that the point at which the proposed Directive's parametric values are to be met is the point at which water falling within the scope of Article 2(1)(b) enters the undertaking or at which it is drawn from a source within the perimeter of the undertaking. Thereafter the water should be considered as being process water and so outside the scope of the revised Directive.

This system ensures that:

* consumers have a degree of protection because all water used in the manufacture of foodstuffs is of good quality; and

* there is no obstacle to the free circulation of foodstuffs within the Community on the basis of water quality.

It may also be noted that consumers also benefit from the quality standards applicable to manufactured foodstuffs.

The rules for sampling frequency given in Table B(1) of Annex II of the proposed revised Directive include food production undertakings.

Water for sale in bottles or containers

Such water presents a special case. It is proposed that sampling should take place at the point of bottling or putting into containers. This will permit the quality of water to be checked when it is prepared for sale; it is expected that the quality of water in closed bottles or containers will not change during storage, but the proposed Directive contains nothing that would prevent Member States carrying such further checks that they judge necessary.

However, it is expected that the volume of water supplied per person per day will be about 200 litres, while the expected daily consumption of bottled water will be about 2 litres. In order to maintain the same level of health protection it is proposed that the frequency of sampling and analysis shall be increased to reflect this difference.

ANNEX III

REFERENCE METHODS OF ANALYSIS

For most parameters it is proposed only to specify the reliability requirements for the analytical results obtained. That done, any method of analysis capable of meeting those requirements would be suitable, and there is only need to include reference methods of analysis in the Directive in those cases where the method of analysis defines the parameter. Even in this case there is no need to insist that the reference method of analysis must be used; any other method capable of giving equivalent results would be acceptable. This is particularly important for the microbiological parameters. Existing methods of analysis require several days before a result is obtained. This is inconvenient, and nothing should be done to impede the development of more rapid techniques.

In most cases a number of methods of analysis are available, and to choose one method to the exclusion of others would be arbitrary. Making such a choice would overlook the differences in size and level of equipment in laboratories throughout the Community and would have the effect of making it difficult for individual laboratories to use the methods of analysis best suited to their needs. It would also discourage any research into new and improved methods of analysis.

For most parameters it is suggested that suitable reliability requirements would be:

1. A relative accuracy of 10% for results near to the maximum or minimum parametric value, as the case may be.

2. A relative precision of 10% for results near to the maximum or minimum parametric value, as the case may be.

3. A limit of detection of one tenth of the relevant parametric value.

The concepts of accuracy, precision and limit of detection can be expressed in statistical terms, and it is proposed to use the relevant International Standard Organization (ISO) definitions.

However, it may be noted that accuracy is the difference between a measured value and the true value, precision is a measure of the inherent variability of a method of analysis, and limit of detection is the smallest concentration that can be measured reliably.

Where the usual method of analysis depends upon chromatography the accuracy and precision requirements are 25% of the parametric value. This is because while such methods have very low limits of detection they are inherently incapable of producing results of high accuracy and precision.

In a few cases, where the parametric value is close to the limit of detection with convenient methods of analysis the requirements for accuracy, precision and limit of detection have been set at 25% of the parametric value.

With some parameters derived from treatment chemicals the parametric value is below the limit of detection available from conventional methods of analysis. In these cases the concentration in water intended for human consumption can be calculated from a knowledge of the concentration of the parameter in the treatment chemical and of the amount of treatment chemical used.

These requirements recognize that there is a degree of uncertainty associated with analytical results. This degree of uncertainty, the experimental error, can be reduced by refining techniques but can never be totally eliminated. The values suggested above are not particularly demanding but are adequate for the purpose of demonstrating compliance or otherwise with the Directive's parametric values.

With the microbiological parameters there is need to specify the method of analysis, because the method of analysis defines the parameter.

Proposal for a
COUNCIL DIRECTIVE
concerning the quality of water
intended for human consumption

THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty establishing the European Community and, in particular, Article 130s(1) thereof,

Having regard to the proposal from the Commission[1],

In cooperation with the European Parliament[2],

Having regard to the opinion of the Economic and Social Committee[3],

Whereas it is necessary to adapt Council Directive 80/778/EEC of 15 July 1980 relating to the quality of water intended for human consumption[4], as last amended by Directive 91/692/EEC[5], to scientific and technological progress; whereas experience from the implementation of the said directive shows that it is necessary to create an appropriately flexible and transparent legal framework for Member States to address failures to meet the standards; whereas furthermore the directive should be re-examined in the light of the Treaty of the European Union and in particular the principle of subsidiarity;

Whereas in keeping with the provisions of Article 3(b) of the Treaty, whereby any action by the Community should not go beyond what is necessary to achieve the objectives of the Treaty, it is necessary to revise the provisions of Directive 80/778/EEC so as to focus on compliance with essential quality and health parameters, leaving Member States free to add secondary parameters if they see fit;

Whereas, in accordance with the principle of subsidiarity, the differences in natural and socio-economic features of the regions in the Union require that most decisions on monitoring, analysis, and on the measures to be taken to redress failures be taken at a local, regional or national level;

Whereas Community standards for essential health-related quality parameters in water intended for human consumption are necessary in order to define the minimum environmental quality goals to be achieved in connection with other Community measures, in order to safeguard the sustainable use of water intended for human consumption;

---

(1) OJ No C
(2) OJ No C
(3) OJ No C
(4) OJ No L 229, 30.8.1980, p. 11.
(5) OJ No L 377, 31.12.1991, p. 48.

Whereas, in view of the importance for human health of water intended for human consumption, it is necessary to lay down at Community level the essential quality standards with which all water intended for this purpose must comply;

Whereas it is necessary to include water used in the food industry unless it can be established that the use of such water does not affect the wholesomeness of the finished product;

Whereas it is necessary to exclude from the scope of this Directive natural mineral waters and waters which are medicinal products, since special rules for these types of water have been established;

Whereas measures are required to meet specified values for all directly health-relevant parameters and for other parameters if a deterioration in quality has occurred; whereas furthermore such measures should not prejudice the implementation of Directive 91/414/EEC of 15 July 1991 concerning the placing of plant protection products on the market[6], as last amended by Commission Directive 94/79/EC[7];

Whereas it is important to prevent a potential danger to human health arising from contaminated water; and whereas the supply of such water should be prohibited or its use restricted;

Whereas it is necessary to *set* individual parametric values for substances which are important throughout the Community at a level strict enough to ensure that the Directive's purpose can be achieved;

Whereas the parametric values are based on the scientific knowledge available and the precautionary principle; whereas those values have been selected to ensure that water intended for human consumption can be consumed safely on a life long basis, and thus represent a high level of health protection;

Whereas it is necessary for Member States to set values for other parameters where this is necessary to protect human health in their territory;

Whereas the parametric values are to be complied with at the point where water intended for human consumption is available to the consumer;

Whereas the quality of water intended for human consumption can be influenced by the condition and materials used in household installations; whereas, furthermore, it is recognized that responsibility for the condition and the materials used in household installations may not be borne by the Member States;

Whereas monitoring programmes should be established by the Member States to check that water intended for human consumption meets the requirements of the Directive; whereas such monitoring programmes should be appropriate to local needs and should meet the minimum monitoring requirements set out in the Directive;

---

(6) OJ No L 230, 19.8.1991, p. 1.

(7) OJ No L 354, 31.12.1994, p. 16.

Whereas the methods used to analyse the quality of water intended for human consumption should be such to ensure that the results obtained are reliable and comparable;

Whereas Member States should, in the event of non-compliance with the Directive's standards, investigate the cause and take appropriate remedial action to ensure that the quality of the water is restored;

Whereas in the case of non-compliance with a parameter having an indicator function, remedial action will only be required in order to ensure that human health is protected;

Whereas, should such remedial action be necessary to restore the quality of water intended for human consumption, in accordance with Article 130r(2) of the Treaty priority should be given to action which rectifies the problem at source;

Whereas, without prejudice to the protection of human health and in order that the supply of drinking water may be maintained, Member States should be authorized to make provision, under certain conditions, for derogations from this Directive; whereas, furthermore, it is necessary to establish a proper framework for such derogations in order to ensure that the water meets the standards of the Directive;

Whereas, since the preparation of water intended for human consumption may involve the use of certain substances, rules are required to govern the use thereof in order to avoid possible harmful effects on human health due to excessive quantities of such substances or impurities contained in such substances;

Whereas it is necessary in order to ensure the functioning of the internal market that water intended for human consumption can freely circulate in the Union unless its marketing could constitute a potential danger to human health;

Whereas technical progress may necessitate rapid adaptation of the technical requirements laid down in Annexes II and III; whereas, furthermore, in order to facilitate application of the measures required for this purpose, provision should be made for a procedure under which the Commission can adopt such adaptations with the assistance of a Committee composed of representatives of the Member States;

Whereas consumers should be adequately and appropriately informed of the quality of water intended for human consumption, and of any derogations made by the Member States and any remedial action taken by the competent authorities; whereas, furthermore, consideration should be given both to the technical and statistical needs of the Commission, and to the rights of the individual to obtain adequate information about the quality of water intended for human consumption;

Whereas, in exceptional and specific circumstances, it may be necessary to allow Member States a longer period of time in order to meet certain provisions of the Directive;

Whereas this Directive should not affect the obligations of the Member States as to the time limit for transposition into national law, nor as to application, as shown in Annex IV,

HAS ADOPTED THIS DIRECTIVE:

Article 1

1. This Directive concerns the quality of water intended for human consumption. — Article 1 (adapted)

2. The objective of the Directive is to protect human health from the adverse effects resulting from the contamination of water intended for human consumption by ensuring that it is wholesome.

Article 2

1. For the purposes of this Directive, "water intended for human consumption" shall mean: — Article 2 (adapted)

   (a) all water either in its original state or after treatment, used for the purpose of drinking and other domestic purposes, regardless of its origin and regardless whether available from the tap, in bottles or containers.

   (b) all water used in a food production undertaking for the manufacture, processing, preservation or marketing of products or substances intended for human consumption unless the competent national authorities have established that the use of water cannot affect the wholesomeness of the foodstuff in its finished form. — Article 2 (adapted)

2. For the purpose of this Directive, "domestic distribution system" shall mean all pipework and fittings which connect a consumer's tap to the supply and which, according to the relevant national law, are not the responsibility of the water supplier. — Article 4(1) (adapted)

Article 3

This Directive shall not apply to:

(a) Natural mineral waters recognized as such by the competent national authorities, in accordance with Directive 80/777/EEC[8];

[8] OJ No L 229, 30.8.1980, p. 1.

(b) Waters which are medicinal products within the meaning of Directive 65/65/EEC[9];

(c) Water intended exclusively for those domestic purposes which have no influence, either directly or indirectly, on the health of the consumers concerned.

(d) Without prejudice to Article 5(1), water intended for human consumption from an individual source serving 15 or less households, unless the water is offered for sale.

Article 4

1. Without prejudice to their obligations under other Community provisions, Member States shall take the measures necessary to ensure that water intended for human consumption:

(a) meets the minimum requirements specified in Annex I Parts A and B; and — Article 7(6) (adapted)

(b) is free of pathogenic micro-organisms and parasites in numbers which constitute a potential danger to human health.

2. Member States shall take all other measures necessary to ensure that water intended for human consumption meets the objective set out in Article 1.

Article 5

1. Member States shall ensure that any supply of water intended for human consumption which constitutes a potential danger to human health is prohibited or its use restricted. In such cases consumers shall be informed immediately thereof and given the necessary advice.

2. The competent authorities shall decide on a case-by-case basis what action under paragraph 1 should be taken, taking into account also the risks to human health which would follow from an interruption to the supply or a restriction in the use, of water intended for human consumption.

3. Member States may establish guidelines to assist the competent authorities to fulfil their obligations under paragraph 2.

---

[9] OJ No 22, 9.2.1965, p. 369/65.

Article 6

1. Member States shall set values applicable for water intended for human consumption for the parameters set out in Annex I. — Article 7(1)

2. The values set pursuant to paragraph 1 shall not be less stringent than those set out in Annex I. As regards the parameters set out in Annex I Part C, the values need to be fixed for monitoring purposes and for the fulfilment of the obligations contained in Article 9 only. — Article 7(3) (adapted)

3. Member States shall set values for additional parameters not included in Annex I where the protection of human health in their national territory or part of it so requires. — Article 16 (adapted)

4. When a Member State deems it necessary to adopt standards more stringent than those set out in Annex I, Part B, or standards for additional parameters not included in Annex I but necessary to protect human health, it shall communicate this to the Commission in accordance with the procedures under Council Directive 83/189/EEC[10].

5. Without prejudice to the procedures under Directive 83/189/EEC, and in particular Article 9 thereof, Member States may take such envisaged measures only after three months following such communication and provided that the Commission's opinion is not negative.

6. In the latter event, before the expiry of the period referred to in paragraph 5, the Commission shall initiate the procedure provided for in Article 15 in order to determine whether the envisaged measures may be implemented subject, if necessary, to appropriate amendments.

Article 7

1. The parametric values set in accordance with paragraphs 1, 2 and 3 of Article 6 shall be complied with at the point where water intended for human consumption is available to the consumer, or for use in a food production undertaking or, in the case of water put into bottles or containers intended for sale, at the point at which the water is put into bottles or containers. — Article 12(2) (adapted)

2. For water intended for human consumption supplied from a distribution network, the parametric values shall be complied with as it emerges from at least one tap in the consumer's premises. — Article 12(1) (adapted)

---

(10) OJ No L 109, 26.4.1983, p. 8.

3. Member States are deemed to have fulfilled their obligations under this Article and under Articles 4 and 9(2) where it can be established that non-compliance with the parametric values set in accordance with Article 6(1), (2) and (3) is due to the domestic distribution system. Article 12(3)

Article 8

1. Member States shall take all measures necessary to ensure regular, representative monitoring of the quality of water intended for human consumption, in order to check whether the water available to consumers meets the requirements of this Directive. In addition, Member States shall take all measures necessary to ensure that, where disinfection forms part of the preparation of water intended for human consumption, the efficiency of the disinfection treatment applied is verified. Article 12(5) (adapted)

2. To meet the obligations contained in paragraph 1 appropriate monitoring programmes shall be established by the competent authorities for all water intended for human consumption. Those monitoring programmes shall meet the minimum requirements set out in Annex II.

3. The sampling points shall be determined by the competent authorities.

4. Community guidelines for the monitoring referred to in this Article may be drawn up in accordance with the procedure laid down in Article 15.

5. (a) The Member States shall use the reference methods of analysis set out in Annex III.

(b) Alternative methods may be used provided it can be demonstrated that equivalent results can be obtained. Member States which have recourse to an alternative method shall provide the Commission with all relevant information concerning this method and its equivalence.

(c) Where no reference method of analysis is specified, any method of analysis may be used provided that it meets the requirements set out in Annex III.

6. The Commission shall review at regular intervals the reference methods of analysis specified in Annex III.

Article 9

1. Member States shall ensure that any failure to meet the requirements of Annex I is immediately investigated in order to identify the cause.

2. If, despite the measures taken to meet the obligations under Article 4(1), water intended for human consumption does not meet the requirements of Annex I, Member States shall ensure that the necessary remedial action is taken as soon as possible to restore its quality.

3. In the case of non-compliance with the parametric values or with the specifications contained in Part C of Annex I, remedial action to restore the quality of the water needs only to be taken where this is necessary in order to protect human health.

Article 10

1. Member States may make provision for derogations from the parametric values set out in Annex I part B for a limited period of time and up to a maximum value to be determined by them, provided that the derogation during such period does not constitute a potential danger to human health and provided that the supply of water intended for human consumption in the area concerned cannot otherwise be maintained by any other reasonable means. Articles 9(1) and 10(1) (adapted)

2. A derogation made in accordance with paragraph 1 shall specify the following:

   (a) the reason for derogation;

   (b) the parameter concerned and the maximum permissible value under the derogation;

   (c) the geographical area and the population affected and the quantity of water supplied per day;

   (d) an appropriate monitoring scheme, with an increased monitoring frequency where necessary;

   (e) the required duration of the derogation;

   (f) a plan for the necessary remedial action, including a timetable for the work and an estimate of the cost.

   (g) whether any relevant food industry would be affected.

3. If the competent authorities consider the non-compliance with the parametric value to be trivial, and if remedial action taken in accordance with Article 9(2) is able to redress the problem within a maximum of 10 days, the special requirements set out in paragraph 2 need not be applied.

   In this case, only the maximum permissible value for the parameter concerned and the time allowed to redress the problem shall be set by the competent authorities.

4. Recourse to paragraph 3 is no longer possible if failure to comply with any one parametric value for a given water supply has occurred on more than 30 days on aggregate during the previous 12 months.

5. Member States which have recourse to the derogations referred to in this Article shall ensure that the population concerned by such derogation is immediately informed of the derogation and its conditions in an appropriate manner. In addition Member States shall ensure that, where necessary, advice is issued to particular population groups for which it could present a special risk.

   These obligations shall not apply to the situation referred to in paragraph 3, unless the competent authorities decide otherwise.

6. With the exception of derogations made in accordance with paragraph 3, Member States shall inform the Commission within 15 days of those derogations which cover a supply of more than 1 000 m^3 per day, including the information specified in paragraph (2). — Articles 9(2) and 10(3) (adapted)

7. The provisions of this Article shall not apply to water intended for human consumption offered for sale in bottles or containers.

Article 11

Member States shall take all necessary measures to ensure that any substances used in the preparation of water intended for human consumption and impurities associated with such substances do not remain in the water in concentrations higher than is necessary for the purpose of their use and do not, either directly or indirectly, reduce the protection of human health provided for in the framework of this Directive. — Article 8 (adapted)

Article 12

Member States shall ensure that the measures taken to implement the provisions of this Directive shall in no circumstances have the effect of allowing, directly or indirectly, either any deterioration of the present quality of water intended for human consumption so far as this is relevant to the protection of human health or any increase in the pollution of waters used for the production of drinking water. — Article 11 (adapted)

Article 13

1. Member States shall not prohibit or restrict the free circulation of water intended for human consumption on grounds relating to its quality, where the quality of such water is in conformity with the minimum requirements specified in Parts A and B of Annex I.

2. Member States shall not prohibit or restrict the marketing of foodstuffs on grounds relating to the quality of the water covered by Article 2(1)b where the quality of such water is in conformity with the minimum requirements specified in Parts A and B of Annex I. — Article 4(2) (adapted)

Article 14

1. At least every 10 years, the Commission shall review Annex I in the light of scientific and technical progress and shall make proposals for amendments, where necessary, under the procedure in Article 189c of the Treaty. — Article 13 (adapted)

2. Such changes as are necessary for adapting Annexes II and III to scientific and technical progress shall be adopted in accordance with the procedure laid down in Article 15. — Article 14 (adapted)

Article 15

The Commission shall be assisted by a Committee composed of the representatives of the Member States and chaired by the representative of the Commission. — Article 15 (adapted)

The representative of the Commission shall submit to the Committee a draft of the measures to be taken. The Committee shall deliver its opinion on the draft within a time limit which the chairman may lay down according to the urgency of the matter. The opinion shall be delivered by the majority laid down in Article 148(2) of the Treaty in the case of decisions which the Council is required to adopt on a proposal from the Commission. The votes of the representatives of the Member States within the Committee shall be weighted in the manner set out in that Article. The chairman shall not vote.

The Commission shall adopt measures which shall apply immediately. However, if these measures are not in accordance with the opinion of the Committee, they shall be communicated by the Commission to the Council forthwith. In that event: — Article 15(3)(a) (adapted)

the Commission may defer application of the measures which it has decided for a period of not more than onemonth from the date of such communication. — Article 15(3)(b) (adapted)

the Council, acting by a qualified majority, may take a different decision within the time limit referred to in the previous subparagraph. — Article 15(3)(c) (adapted)

Article 16

1. Member States shall take the measures necessary to ensure that adequate and up to date information on the quality of water intended for human consumption is available to consumers.

2. Without prejudice to the implementation of the provisions of Council Directive 90/313/EEC of 7 June 1990 on the freedom of access to information on the environment[11], Member States shall publish an annual report on the quality of water intended for human consumption. This report shall cover a calendar year and shall be published before the end of the following calendar year.

Article amended by Directive 91/692/EEC (adapted)

3. Member States shall send their reports to the Commission within three months of publication.

4. The formats and the minimum information for the reports referred to in paragraph 3 shall be determined having especial regard to the measures referred to in Articles 3(d), 5, 6(3) and 9, and shall if necessary, be amended in accordance with the procedure laid down in Article 15.

5. The Commission shall examine the reports of the Member States and, every three years, shall publish a synthesis on the quality of water intended for human consumption in the Community. These reports shall be published within two years of the end of each three-year reporting period.

Article 17

Member States shall take the necessary measures to ensure that the quality of water intended for human consumption complies with this Directive within five years of its entry into force, without prejudice to Part B of Note 3 of Annex I.

Article 19 (adapted)

Article 18

1. Member States may in exceptional circumstances and for geographically defined population groups submit a special request to the Commission for a longer period than provided for in this Directive for complying with individual parametric values set in Part B of Annex I. This provision does not apply to water intended for human consumption offered for sale in bottles or containers.

Article 20 first sentence (adapted)

2. The request, for which grounds must be duly put forward, shall set out the difficulties experienced. It must also propose an action plan with an appropriate timetable for the necessary improvement of the quality of water intended for human consumption, including a monitoring programme and information on the cost of implementing the plan. The request shall also specify whether any relevant food industry would be affected.

Article 20 second sentence (adapted)

---

(11) OJ No L 158, 23.6.1990, p. 56.

3. The Commission shall examine this request and, if necessary, take appropriate measures in accordance with the procedure laid down in Article 15.

Article 20 third sentence (adapted)

Article 19

Directive 80/778/EEC is hereby repealed with effect from five years from the entry into force of this Directive, without prejudice to the obligations of Member States as to deadlines for transposition into national law and for application as shown in Annex IV.

Reference to the repealed Directive shall be construed as a reference to this Directive and shall be read in accordance with the correlation table set out in Annex V.

Article 20

1. Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with this Directive within two years following its entry into force. They shall forthwith inform the Commission thereof.

Article 18(1) (adapted)

When Member States adopt these provisions, these shall contain a reference to this Directive or shall be accompanied by such reference at the time of their official publication. The procedure for such reference shall be adopted by Member States.

Article 18(2) (adapted)

2. Member States shall communicate to the Commission the texts of the provisions of national law which they adopt in thefield covered by this Directive.

Article 21

This Directive shall enter into force on the twentieth day following that of its publication in the Official Journal of the European Communities.

Article 22

This Directive is addressed to the Member States.

Article 21

Done at Brussels,

For the Council
The President

ANNEX I

PARAMETERS AND PARAMETRIC VALUES
PART A

MICROBIOLOGICAL PARAMETERS

PARAMETER	PARAMETRIC VALUE	UNIT
E. Coli	0	number/100 ml
Faecal streptococci	0	number/100 ml
Sulphite-reducing clostridia	0	number/20 ml

For water offered for sale in bottles or containers the following applies:

E. Coli	0	number/250 ml
Faecal streptococci	0	number/250 ml
Sulphite-reducing clostridia	0	number/50 ml
Pseudomonas aeruginosa	0	number/250 ml

PART B

CHEMICAL PARAMETERS

PARAMETER	PARAMETRIC VALUE	UNIT
Acrylamide	0.25	µg/l
Antimony	3	µg/l
Arsenic	10	µg/l
Benzene	1	µg/l
Boron	300	µg/l(Note 1)
Bromate	10	µg/l
Bromodichloromethane	15	µg/l (Note 2)
Cadmium	5	µg/l
Chloroform	40	µg/l (Note 2)
Chromium	50	µg/l
Copper	2	mg/l (Note 1)
Cyanide	50	µg/l
1,2-dichloroethane	3	µg/l
Epichlorhydrin	0.5	µg/l
Fluoride	1.5	mg/l
Lead	10	µg/l (Note 3)
Mercury	1	µg/l
Nickel	20	µg/l
Nitrate	50	mg/l (Note 4)
Nitrite	0.1	mg/l (Note 4)
Pesticides	0.1	µg/l (Note 5)
Polycyclic aromatic hydrocarbons	0.2	µg/l; sum of concentrations of specified compounds, (Note 6); the concentration of benzo(a)pyrene must not exceed 0.01 µg/l
Selenium	10	µg/l
Tetrachlorethene	40	µg/l
Trichlorethene	70	µg/l
Vinyl chloride	0.5	µg/l

Note 1: The values and classification of these parameters may be amended in the light of new scientific evidence which is expected to become available shortly.

Note 2: The samples for these parameters are to be taken after any chlorine contact time and at the outlet of the water treatment plant. Where necessary, the parametric value for bromodichloromethane can be increased to 25 µg/l provided that the parametric value for chloroform is reduced to 30 µg/l.

Note 3: The value applies to a representative sample of water drawn from the tap and has to be met at the latest 15 calendar years from the date of entry into force of this Directive. When implementing the measures to achieve this value Member States shall give priority to those areas where lead concentrations in water intended for human consumption are high.

Member States shall ensure that all appropriate measures are taken to reduce the concentration of lead in water intended for human consumption as much as possible during the period needed to achieve compliance with the parametric value.

The parametric value for lead from 5 years after the entry into force of this Directive until 15 years after it has entered into force is 25 µg/l.

Note 4: Where chloramination is practised these parametric values may be replaced by 0.5 for nitrite and the condition that [nitrate]/50 + [nitrite]/3 $\leq$ 1, the square brackets signifying concentrations in mg/l.

Note 5: (a) Pesticides means:
- organic insecticides;
- organic herbicides;
- organic fungicides;
- organic nematocides;
- organic acaricides.
- organic algicides

and related products [growth regulators]

(b) The parametric value applies to each individual pesticide.

(c) Only those pesticides which are likely to be present in a given supply need to be monitored.

(d) The Commission shall examine whether an individual value can be set for a given substance, after an evaluation of the available scientific information

Note 6: The specified compounds are :
benzo(a)pyrene
fluoranthene
benzo(b)fluoranthene
benzo(k)fluoranthene
benzo(ghi)perylene
indeno(1,2,3-cd)pyrene

PART C

INDICATOR PARAMETERS

PARAMETER	PARAMETRIC VALUE	UNIT
Aluminium	200	µg/l
Ammonium	0.5	mg/l
Colour	Acceptable to consumers and no abnormal change	
Conductivity	2500	µS cm^{-1} at 20°C
Dissolved oxygen	≥ 50	% saturation
Hydrogen ion concentration	≥ 6.5 and ≤ 9.5	pH units
Iron	200	µg/l
Manganese	50	µg/l
Odour	Acceptable to consumers and no abnormal change	
Oxidizability (Note 1)	5	mg/l O_2
Sulphate	250	mg/l
Taste	Acceptable to consumers and no abnormal change	
Total bacteria count	No abnormal change	
Total coliforms	0	number/100 ml (Note 2)
Total organic carbon (TOC) (Note 3)	4 and no abnormal change	mg/l C
Turbidity	Acceptable to consumers and no abnormal change	

Note 1: This parameter need not be measured if the parameter TOC is analysed.

Note 2: For water offered for sale in bottles or containers the unit is number/250 ml.

Note 3: This parameter need not be measured for supplies of less than 10 000 m^3 per day.

ANNEX II

MONITORING

TABLE A

PARAMETERS TO BE ANALYSED

1. CHECK MONITORING

Aluminium (1)
Ammonium
Colour (2)
Conductivity
E. Coli
Hydrogen ion concentration
Iron (1)
Nitrate (3)
Nitrite (3)
Odour (2)
Pseudomonas aeruginosa (4)
Taste (2)
Turbidity

NOTES

1. When used as flocculant.
2. Qualitative examination.
3. When chloramination is used as a disinfectant. In other cases the parameters are in the list for Audit monitoring.
4. Only for water offered for sale in bottles or containers.

2. AUDIT MONITORING

All the other parameters in Annex I should be measured, unless it can be established by the competent authorities, for a time to be determined by them, that a parameter is not likely to be present in a given supply in concentrations which could lead to a risk of breaching the relevant parametric value.

TABLE B

1. MINIMUM FREQUENCY OF SAMPLING AND ANALYSES (Note 1)

(Except for water offered for sale in bottles or containers)

VOLUME OF WATER DISTRIBUTED OR PRODUCED EACH DAY WITHIN A SUPPLY ZONE (Note 2) m^3	**CHECK MONITORING NUMBER OF SAMPLES PER YEAR**	**AUDIT MONITORING NUMBER OF SAMPLES PER YEAR**
≤100	(Note 3)	(Note 3)
>100 ≤1000	1	(Note 3)
>1000 ≤2000	3	1
>2000 ≤10 000	12	1
>10 000 ≤20 000	60	1
>20 000 ≤30 000	120	2
>30 000 ≤60 000	180	3
>60 000 ≤100 000	365	6
>100 000 ≤200 000	730	10
>200 000 ≤300 000 (Note 4)	1460	20

2. MINIMUM FREQUENCY OF SAMPLING AND ANALYSIS FOR WATER OFFERED FOR SALE IN BOTTLES OR CONTAINERS (PROVISIONAL).

VOLUME OF WATER PRODUCED FOR OFFERING FOR SALE IN BOTTLES OR CONTAINERS EACH DAY* (Note 1) M^3	CHECK MONITORING NUMBER OF SAMPLES PER YEAR	AUDIT MONITORING NUMBER OF SAMPLES PER YEAR
≤ 1	(Note 6)	(Note 6)
>1 ≤ 10	1	1
>10 ≤ 20	3	1
>20 ≤ 100	12	1
>100 ≤ 200	60	1
>200 ≤ 300	120	2
>300 ≤ 600	180	3
>600 ≤ 1000	365	6
>1000 ≤ 2000	730	10
>2000 ≤ 3000 (Note 5)	1460	20

* : The volumes are calculated as averages taken over a calendar year.

Note 1: The relative proportions of samples taken at consumers' taps and within the supply zone will depend upon the size of the zone. For water supplies of 20 000 m^3 per day about 50% of the samples could be taken within treatment and distribution system.

Note 2: A supply zone is a geographically defined area within which water intended for human consumption comes from one or several sources and within which water quality may be considered as being approximately uniform.

Note 3: The frequency should be decided by the Member State concerned, but water intended to be used by food manufacturing industries must be monitored at least once a year.

Note 4: In those cases where the volume of water distributed exceeds 300 000 m^3 per day the minimum sampling frequencies are calculated by proportion from those applicable where the volume distributed exceeds 100 000 m^3 per day.

Note 5: In those cases where the volume produced for offering for sale in bottles or containers exceeds 3000 m^3 per day the minimum sampling frequencies are calculated by proportion from those applicable where the volume produced exceeds 1000 m^3 per day.

Note 6: The frequency should be decided by the Member State concerned.

ANNEX III

REFERENCE METHODS OF ANALYSIS

1. PARAMETERS FOR WHICH NO REFERENCE METHOD OF ANALYSIS IS SPECIFIED

Colour
Odour
Taste
Turbidity

2. PARAMETERS FOR WHICH PERFORMANCE CHARACTERISTICS ARE SPECIFIED

2.1 For the following parameters, the specified performance characteristics are that the method of analysis used shall be capable of measuring concentrations equal to the parametric value with an accuracy, precision and limit of detection specified.

PARAMETERS	**ACCURACY % OF PARA-METRIC VALUE** (Note 1)	**PRECISION % OF PARA-METRIC VALUE** (Note 2)	**LIMIT OF DETECTION % OF PARAMETRIC VALUE** (Note 3)	**CONDITIONS**
Acrylamide				To be controlled by product specification
Aluminium	10	10	10	
Ammonium	10	10	10	
Antimony	10	10	10	
Arsenic	10	10	10	
Benzene	25	25	10	
Boron	10	10	10	
Bromate	25	25	25	
Bromodichloro-methane	25	25	10	
Cadmium	10	10	10	
Chloroform	25	25	10	
Chromium	10	10	10	

Conductivity	10	10	10	
Copper	10	10	10	
Cyanide (Note 4)	10	10	10	
1,2-dichloro-ethane	25	25	10	
Dissolved oxygen	10	10	10	
Epichlorhydrin				to be controlled by product specification
Fluoride	10	10	10	
Iron	10	10	10	
Lead	10	10	10	
Manganese	10	10	10	
Mercury	10	10	10	
Nickel	10	10	10	
Nitrate	10	10	10	
Nitrite	10	10	10	
Oxidizability (Note 5)	25	25	10	
Pesticides (Note 6)	25	25	25	
Polycyclic aromatic hydrocarbons (Note 7)	25	25	25	
Selenium	10	10	10	
Sulphate	10	10	10	
Tetrachlor-ethene	25	25	10	
Total organic carbon	10	10	10	
Trichlorethene	25	25	10	
Vinyl chloride				by product specification

2.2 For Hydrogen ion concentration the specified performance characteristics are that the method of analysis used shall be capable of measuring concentrations equal to the parametric value with an accuracy of 0.2 pH unit and a precision of 0.2 pH unit.

Note 1: This term has the meaning given in ISO standard * * *

Note 2: This term has the meaning given in ISO standard * * *

Note 3: This term has the meaning given in ISO standard * * *

Note 4: The method should determine total cyanide in all forms.

Note 5: Oxidation should be carried out for 10 minutes at 100°C under acid conditions using permanganate.

Note 6: The performance characteristics apply to individual pesticides.

Note 7: The individual substances are specified in Annex I.

3. METHODS OF ANALYSIS ARE SPECIFIED FOR THE FOLLOWING PARAMETERS:

Total coliforms

Membrane filtration followed by incubation on Membrane lauryl sulphate broth (Note 1) for 4 hours at 30°C followed by 14 hours at 37°C. Count all yellow colonies, regardless of size.

E. coli

Membrane filtration followed by incubation on Membrane lauryl sulphate broth (Note 1) for 4 hours at 30°C followed by 14 hours at 44°C. Count all yellow colonies, regardless of size.

Faecal streptococci

Membrane filtration followed by incubation on Membrane enterococcus agar (Note 2) for 48 hours at 37°C. Count all pink, red or maroon colonies which are smooth and convex.

Sulphite-reducing Clostridia

Maintain the sample at 75°C for 10 minutes prior to membrane filtration. Incubate on Tryptose-Sulphite-Cycloserine Agar at 37°C (Note 3) under anaerobic conditions. Count all black colonies after 24 and 48 hours incubation.

Pseudomonas aeruginosa

Membrane filtration followed by incubation in a closed container at 37°C on modified Kings A broth (Note 4) for 48 hours. Count all colonies which contain green, blue or reddish-brown pigment and those which fluoresce.

Total bacteria counts

Incubation in a yeast extract agar (Note 5) for 72 hours at 22°C and for 24 hours at 37°C. Count all colonies.

Note 1

The composition of Membrane lauryl sulphate broth is:

Peptone	40 g
Yeast extract	6 g
Lactose	30 g
Phenol red solution*	50 ml
Sodium lauryl sulphate	1 g
Distilled water	to 1 litre

* : aqueous solution containing 4 g/l.

Note 2

The composition of Membrane enterococcus agar is:

Tryptose	20 g
Yeast extract	5 g
Glucose	2 g
Dipotassium hydrogen phosphate	4 g
Sodium azide	400 mg
Agar	12 g
2,3,5-triphenyltetrazolium chloride solution*	10 ml
Distilled water	to 1 litre

* The solution contains 10 g/l 2,3,5-triphenyl-tetrazolium chloride.

Note 3

The composition of Tryptose-Sulphite-Cycloserine Agar is:

Tryptose	15 g
Soya peptone	5 g
Yeast extract	5 g
Sodium metabisulphite	1 g
Iron (III) ammonium citrate	1 g
Agar	12 g
Distilled water	to 1 litre

Immediately before use, the agar must be mixed with a solution containing 10 g/l D-cycloserine at the rate of 4 ml solution to 100 ml agar.

Note 4

The composition of modified Kings A broth is:

Peptone	20 g
Ethanol	25 ml
Potassium sulphate, anhydrous	10 g
Magnesium chloride, anhydrous	1.4 g
Cetyltrimethyl ammonium bromide	0.5 g
Distilled water	to 1 litre

Note 5

The composition of yeast extract agar is:

Yeast extract	3 g
Peptone	5 g
Agar	12 g
Distilled water	to 1 litre

ANNEX IV

NOTIFICATION

Deadlines for transposition into national law and for application

Directive 80/778/EEC Transposition 17.7.1982 Application 17.7.1985 All Member States except Spain, Portugal and new Länder of Germany	**Directive 81/858/EEC (Adaptation due to accession of Greece)**	**Act of Accession of Spain and Portugal Spain transposition 1.1.1986 application 1.1.1986 Portugal transposition 1.1.1986 application 1.1.1989**	**Directive 90/656/EEC for new Länder of Germany**	**Directive 91/629/EEC**
Articles 1 to 14			application 31.12.1995	
Article 15	amended with effect from 1.1.1981	amended with effect from 1.1.1986		
Article 16				
Article 17				Article 17(a) inserted
Article 18				
Article 19		amended	amended	
Article 20				
Article 21				

ANNEX V

CORRELATION TABLE

THIS DIRECTIVE	DIRECTIVE 80/778/EEC
Article 1(1)	Article 1(1)
Article 1(2)	-
Article 2(1)(a)and (b)	Article 2
Article 2(2)	-
Article 3(a) and (b)	Article 4(1)
Article 3(c) and (d)	-
Article 4(1)	Article 7(6)
Article 4(2)	-
Article 5	-
Article 6(1)	Article 7(1)
Article 6(2) first sentence	Article 7(3)
Article 6(2) second sentence	-
Article 6(3)	Article 16
Article 6(4)	-
Article 6(5)	-
Article 6(6)	-
Article 7(1)	Article 12(2)
Article 7(2)	-
Article 7(3)	-
Article 8(1)	Article 12(1)
Article 8(2)	-
Article 8(3)	Article 12(3)
Article 8(4)	-
Article 8(5)	Article 12(5)
Article 8(6)	-
Article 9	-

THIS DIRECTIVE	DIRECTIVE 80/778/EEC
Article 10(1)	Articles 9(1) and 10(1)
Article 10(2) - (5)	-
Article 10(6)	Articles 9(2) and 10(3)
Article 10(7)	-
Article 11(1)	Article 8
Article 12	Article 11
Article 13(1)	-
Article 13(2)	Article 4(2)
Article 14	Article 13
Article 15, first paragraph	Article 14
Article 15, second paragraph	Article 15
Article 15, third paragraph	Article 15(3)(a) (b) and (c)
Article 16(1)	-
Article 16(2) - (5)	Article 17(a) (inserted by Directive 91/692/EEC)
Article 17	Article 19
Article 18	Article 20
Article 19	-
Article 20	Article 18
Article 21	-
Article 22	Article 21

FINANCIAL STATEMENT

SECTION 1 - Financial Consequences (part B of the budget)

1. TYPE OF OPERATION

Revision of Council Directive 80/778/EEC concerning the quality of water intended for human consumption

2. BUDGET HEADING INVOLVED

B_4_304 Environmental Legislation, Studies and Services

3. LEGAL BASIS

The proposal will be made under Article 130 s(1) of the Treaty Establishing the European Community. The new legal base replaces Articles 235 and 100 of the existing Directive which was adopted at a time when there were no environmental provisions in the Treaty.

4. DESCRIPTION OF OPERATION

4.1 General objective

Protection of human health by ensuring the wholesomeness of water intended for human consumption.

4.2 Period covered and arrangements for renewal or extenstion

It is proposed that the quality standards for water intended for human consumption should be complied with within 5 years of notification of the Directive.

A revision of the Directive will be proposed when the Commission finds it appropriate.

5. CLASSIFICATION OF EXPENDITURE OR REVENUE

The proposal will entail compulsory and non-compulsory expenditure

Differentiated appropriations

6. TYPE OF EXPENDITURE

- studies and services directly linked with the achievement of the objective of the measure of which they form an integrated part in order to give the necessary scientific and technical advice in the implementation of the proposal
- publication of periodic reports
- expenditure is 100% subvention

- expenditure will be in the form of studies and services commissioned by the Commission

7. FINANCIAL IMPACT

7.1 Method of calculating total costs of operation (definition of unit costs)

- technical assistance (services) ECU 100 000/year
- scientific and technical studies ECU 200 000/year
- elaboration and production of Community report on the quality of water intended for human consumption every three years, the first report covering 1998-2000. Total costs per report ECU 300 000; first report will be produced in 2001.

all costs are in 1994 ECUs.

7.2 Itemised breakdown of costs (in 1000 1994 ECUs - committment appropriations)

	1995	1996	1997	1998	TOTAL
Technical Assistance	100	100	100	100	400
Studies	200	200	200	200	800
Reporting	0	0	0	0	0

7.3 Schedule for the preliminary draft budget for multiannual operations whose basic instruments contains an "amount deemed necessary"

There is no "amount deemed necessary" for this operation

8. FRAUD PREVENTION MEASURES; RESULTS OF MEASURES TAKEN

- It will be explicitly specified in contracts that all work performed is the property of the Commission
- Final payment of contractors will only take place after reception and examination of the studies or services requested
- Inspection on the premises of the contractant will be foreseen in the contracts

SECTION 2 : Administrative Expenses (part A of the budget)

A 2510: Meeting expenses of Committees whose consultation is a compulsory in the making of Community acts.

1. increase in personnel

   Adoption of the proposal will mean no net increase of personnel

2. operating expenses generated by the action (in 1994 prices)

   From 1996 at the earliest:

   Travel for the Committee foreseen in Article 15 of the proposal.
   Cost: ECU 12 x 658/meeting x 2 meetings/year = ECU 15 972/year

SECTION 3 - ELEMENTS OF COST-EFFECTIVENESS ANALYSIS

1. <u>Specific and quantifiable objectives; target population</u>

   The general objective of the proposal is to ensure that the supply of water intended for human consumption is wholesome. This means that the quality of the water made available for human consumption must be in compliance with the minimum quality standards set in Annex I to the proposed Directive and which must be met five years after notification of the Directive.

   The target population is the population for which drinking water is made available by a distribution network or in bottles or containers.

2. <u>Grounds for the action</u>

   The action is proposed in order to

   - implement the principle of subidiarity in the Directive as agreed at the European Council in Brussels in 1993 by restricting the quality parameters to those essential to human health and by leaving Member States free to set other parameters which they find appropriate

   - to amend the existing Directive in a manner which will aid Member States in overcoming the difficulties in the implementation of the existing Directive

   - update, in accordance with technical and scientific progress, the existing directive which was proposed in 1975 and adopted in 1980

   Experience has shown that the existing Directive has been efficient in ensuring a good quality of drinking water in the Community. A Directive is the instrument which allows the objectives in terms of minimum quality of water intended for human consumption to be set at Community level while leaving the means to reach the objectives to be decided by Member States.

In accordance with the Treaty, Member States will bear the costs of implementing the Directive. These costs, which are almost entirely due to meeting the new health-based standard for lead in drinking water are expected to require investments of the order of ECU 50 000 million.

3. Monitoring and evaluation of the operation

The baseline for the quality of water intended for human consumption will be provided by the tri-annual reports submitted by the Member States under the reporting obligation for Member States in the existing Directive. Under the revised Directive, Member States will be under an obligation to publish annual reports on the quality of water intended for human consumption in their territory and to submit these reports to the Commission.

The requirements to reporting format which will be determined at Community level and the requirements to monitoring by the Member States and to the methods of analysis used will ensure comparability with the minimum standards of the Directive and also between Member States.

The reports of Member States will form the basis of tri-annual Community reports to follow and analyse the implementation of the Directive.

4. Coherence with financial programming

The operation is foreseen in the financial programming of DG XI under the objective of water protection.

ISSN 0254-1475

COM(94) 612 final

DOCUMENTS

EN 14 10

Catalogue number : CB-CO-95-006-EN-C

ISBN 92-77-84806-5

Office for Official Publications of the European Communities

L-2985 Luxembourg