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IMPLEMENTING THE EC DRINKING WATER DIRECTIVE

FRANCE

The Legal and Institutional Arrangements

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DRINKING WATER DIRECTIVE

- FRANCE -

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Drinking water quality is regulated in France by a large number of legislative texts, in particular Articles 19 to 24 of the Public Health Code and the decree of 1 August 1961 and its enacting order of 10 August 1961. Some of the terms of these regulations are made more specific in subsequent orders and circulars.

European Directive 80/778 on drinking water quality is not - or is inadequately - implemented by this legislation. French law is about to be brought into line with European law after a delay of six years. The Commission has instituted infraction proceedings against France (reasoned opinion of February 1988) and has just decided to bring the case before the Court of Justice (13 July 1988). The implementing decree has been in preparation since 1983; it was approved by the Council of State on 21 June 1988, following the necessary political arbitration and its acceptance by the Prime Minister in April 1988, and should therefore be signed by the various competent Ministers and published in the Official Journal in Autumn 1988.

The new decree refers expressly to Directive 80/778 in its preamble (1); it also refers to Directive 75/440 on surface waters intended for the production of drinking water and Directive 79/869 on measurement methods. These two Directives are consequently also incorporated into French law. The new decree will repeal the decree of 1 August 1961; a number of the terms of the previous decree are incorporated in and supplemented by the new decree, in particular by the introduction of new quality standards.

(1) The preamble lists the legal bases of a law or decree.

The current legal position (system of the 1961 decree) is described in the following, mentioning the new future provisions in so far as they are linked to the Directive.

1. Legal position

French regulations apply to water intended for drinking supplied by mains or in packaging and water used in foodstuff industries and for ice-making.

Under the new decree, any use of water taken from the natural environment for consumption must be authorized, unless it is for the personal use of a family. The authorization will be granted by Prefectoral order, following consultation with the Health Council of the Département or the Higher Public Health Council in the case of large-scale projects, in accordance with criteria which will be laid down in a Ministerial order. This authorization replaces the catchment authorization needed up to now.

In addition, the establishment or modification of any public water supply plant will not be subject to the authorization needed under the 1961 decree, but to declaration to the competent authorities. The use of water for consumption by a family will also be subject to declaration.

Water must not be likely to place the health of those who consume it at risk. This principle, stated in the Public Health Code and the 1961 decree, is incorporated into the draft decree (2). It must also satisfy the quality requirements listed in an annex to the future decree. Under the 1961 system, these requirements were laid down in the order of 10 August 1961.

Supervisory obligations are prescribed in both regulatory systems,

(2) This clause was deleted by the Council of State on the grounds that it was too vague; it has been re-included at the request of the competent Ministries.

although the new decree does so far more precisely (see 3). The new decree will also contain provisions on supervision and inspections and catchment areas; it states that orders must lay down supply plant condition and operating criteria.

2. Maximum values

The decree and order of August 1961 prescribed values for drinking water "which should not be exceeded" as regards microbiological parameters, four organoleptic parameters and eleven chemical parameters (Pb, Se, As, Cu, Re, Mn, Zn, F, phenol, chromium, cyanides). The values for these parameters were on the whole higher than the values of the Directive.

The structure of Annex 1 of the new decree is identical to that of the Directive: the six groups of parameters are incorporated, with the same names, and the addition of a seventh group covering pesticides and allied products. In each of the groups, all the parameters allocated an MAC in the Directive have been incorporated without exception and with the addition of copper, zinc and chlorides, although no parameter is given guide values. The maximum concentrations are those of the Directive, except as regards colouring (15 mg of platinum in place of 20 in the Directive) and Kjeldahl nitrogen (2 mg/l in place of 1). As regards polycyclic aromatic hydrocarbons the MAC of 3,4-benzopyrene is 2.01 µg/l and that of the six other substances listed in the Directive and taken as a whole is 0.2 µg/l.

Different values are given for pesticides: there is an overall parameter: 0.5 µg and a parameter for PCBs and PCTs (0.5 µg). The content of individual pesticides is 0.1 µg, except for aldrin and dieldrin (0.03 µg) and hexachlorobenzene (0.01 µg).

The maximum chloride content is 250 mg, i.e. more than the guide value of the Directive and 1 mg for copper and 5 mg for zinc, i.e. a value between the guide values of the Directive. The microbiological parameters are those of the Directive, in more detail, and the guide value for total pathogens is incorporated as a maximum value.

Under Article 3 of the future decree, derogations from the values may be requested by suppliers for the three reasons (geological, climatic and serious accidental circumstances) set out in Articles 9 and 10 of the Directive. A fourth type of derogation corresponds to the exception contained in Article 4 [3] of Directive 75/440.

Derogations granted for climatic reasons or serious accidental circumstances or if the quality of the untreated water is inadequate must be given for a limited period. In addition, derogations for geological or climatic reasons must not cover toxic and microbiological parameters and are granted only if there is no threat to health. Other derogations must not entail unacceptable risks to public health.

These derogations are granted by Prefectoral order, which also prescribes the maximum values of the parameters to which the derogation relates (Article 3 of the new decree).

The 1961 system contains no clause on derogations. Given the parameters involved, this was not - according to Ministry officials - necessary.

3. Analyses and supervision

The Public Health Code (Articles 19, 20 and 21) obliges supplier concerns to supply water fit for consumption; under the decree of 1 August 1961, water must satisfy the quality conditions of the order of 10 August. These two provisions imply therefore that the quality of water is supervised. This supervision is the responsibility of the supplier - but there are no regulations on this matter.

a. The 1961 decree

Under the 1961 decree the supervision of water quality is carried out under the authority of the DASS (Departmental Directorates for Health and Social Affairs) by periodical analyses. These are carried out by laboratories which are generally authorized by the Minister

responsible for public health. Article 6 of the 1961 decree states that the number and frequency of analyses is prescribed by the Prefect; there must not be less than three per year. Supplementary analyses may be ordered by the Prefect. Laboratories must keep health records for all waters based on the analyses which they carry out (circular of 15 March 1962). Analysis costs are prescribed by tariff, and refunded by operators to the laboratories who pay for them initially.

b. The new decree

The new decree contains a similar, but far more precise, system:

- it makes the operator responsible for supervising water quality and "permanent monitoring";
- inspection of water quality is carried out in accordance with the sample analysis programme set out in Annex 2 of the decree. This programme is defined with reference to Annex 2 of Directive 80/778. The Prefect may modify this programme and may order supplementary analyses. It is considered to be a minimum programme;
- under this analysis programme, the DASS is responsible for taking samples and authorized laboratories are responsible for the analysis itself;
- analysis costs are borne by the operator; an order will lay down tariffs and the possibilities for refunds to operators by the State;
- the frequency of analysis under the programme is established with reference to the Directive using a system of grids and tables; these depend on the type of analysis, parameters, sampling locations (in the resource itself, in the water, whether treated or not, before it reaches the supply circuit, in the supply mains), annual throughput and the number of inhabitants.

The permanent monitoring for which the operator is responsible is not defined in the Decree; it is thus left completely to his discretion. The results of the analyses which he conducts must be made available to the DASS if the latter so requests. If a value is exceeded, the operator must notify the DASS thereof.

4. Competent authorities

Only water from the public mains is deemed to be drinking water (outline Departmental health regulations, circular of 9 August 1978). Communes therefore have a quasi-monopoly on the supply of drinking water in France. Communes may make their own departments responsible for water supplies or may authorize individuals by contract (lease or concession).

- The Prefects of Départements are the competent authorities for authorizations to use water and the issue of derogations under Article 3.
- The Departmental Directorates for Health and Social Affairs (DASS), answerable to the Ministry of Health and existing in each Département, are responsible for taking samples for analysis, whether these samples come under the normal programme or are for supplementary analyses. They also receive declarations of the establishment or modification of supply plants and the results of the analyses conducted by authorized laboratories and operators. Analysis laboratories must be authorized by order of the Minister of Health.
- The Departmental Health Council must be consulted by the Prefect on requests for authorizations to use water and requests to derogate from values.
- The Higher Public Health Council of France must be consulted on requests for authorization to use water when these concern more than 50 000 inhabitants or if the quality of the untreated water is lower than the value A3 of Directive 75/440. The Council is being consulted on the enacting terms of the future decree.

- The Mayors of Communes, lastly, are responsible for public hygiene (Commune Code). They may take any measures to ensure quality; this is generally interpreted to mean that they can be held liable for the quality of the water supplied in their Communes.

5. Penalties

Article 46 of the Public Health Code sets out penalties of imprisonment of 11 days to one year and/or fines of FF 500 to 30 000 for any person supplying water which is unfit for consumption or any licenced concern failing to monitor the quality of the water supplied.

The decree of 1 August 1961 (Article 15) states that the operating authorization can be suspended or withdrawn if "the quality of the water, the operating conditions or the layout of the plant are not in line with the terms of the decree".

The new decree which repeals the 1961 decree contains no specific provisions on administrative sanctions. However, even in the absence of specific provisions, withdrawal of an authorization is always possible since general administrative law is applicable.

The civil liability of water suppliers has been called into question - undoubtedly one of very few such cases - in proceedings between one of the largest supply companies and consumers. The values of some parameters were exceeded on several occasions over a number of years. The Court of Appeal awarded damages of FF 3000 to each inhabitant in 1986 on the grounds that there was a contract between these inhabitants and the company. No health disorders could be proved.

6. Information

Neither the 1961 system nor the new decree contain any provisions requiring information on drinking water quality to be made available to the public.

A Joint Ministerial circular of 13 July 1984 reminds Prefects, however, that the water analyses are official documents under the terms of the law of 17 July 1978 on public access to official documents; they must therefore be made available to any person who so requests.

In the draft of the new decree it was compulsory for water suppliers to provide the public with annual information. The Council of State, however, rejected this provision on the grounds that this obligation was adequately covered by the 1978 law.

Some Communes have taken the initiative of informing the public and already issue notifications of the results of measurements, in particular for nitrates. Moreover, the same 1984 circular "deemed it desirable to disseminate analysis results systematically by displaying them in Town Halls" and recommended periodical full information. It appears, however, according to a survey conducted by the Ministry of Health, that Communes are hesitant to provide full information; display at Town Halls is not, moreover, felt to be adequate.

7. Exceeding values

According to the principles of the Public Health Code, the 1961 decree (and the future decree), the legal consequence of exceeding a value is that the water is deemed unfit for consumption and can no longer be supplied to the community. The new decree specifies that the DASS is to be informed by the laboratory conducting the analyses (which are in any case passed on to the DASS) and by the operator himself under his permanent monitoring obligation. The DASS then decides what steps to take.

It is possible to provide a more precise answer to this question only for nitrates on the basis of the various circulars issued since Directive 80/778 came into force.

A circular of 10 July 1981 recommended that the population should be warned that water containing more than 100 mg/l of nitrate should not be consumed - if the supply could not be discontinued - and that water containing between 50 and 100 mg/l should not be consumed by babies and pregnant women. A circular of 29 April 1985 revoked this provision and instituted a system of exemptions for water containing between 50 and 100 mg/l. These derogations are granted exceptionally by the Prefect for a maximum of five years on submission of a plan to bring the water back into line with the standards. This circular fell, however, into a legal vacuum since there was no regulation prescribing a standard of 50 mg/l of nitrate in water supplies. A standard of 44 mg/l had been included in the order of 10 August 1961 but this related only to bottled water. Very little use has therefore been made of these derogations since Prefects are waiting for the decree being prepared to appear (3).

In general and according to an interview with a Ministry of Health official, exceeding the standard is considered to be a warning signal in France. It shows that steps must rapidly be taken to bring the water into line with the quality requirements. This is the responsibility of the operator and also of the DASS. A value which is exceeded may point merely to pollution of a very transient nature. Permanent bad quality is demonstrated only when values are repeatedly exceeded.

8. Status of private sources

Supply from a private network providing water for a large number of people (private local supplies: camping sites, hotels, tourist amenities in mountainous areas, etc.) are subject to authorization in the same way as public supplies (Article 24 of the Public health Code

(3) There has, moreover, been no Community derogation under Article 20.

and future decree). They are also subject to the same monitoring and supervision obligations - and must respect the same standards.

Supply sources for family use are not specifically regulated by the 1961 decree. The owner or user of land is entitled to make full use of this land including the catchment of water.

The new decree exempts water used for family purposes from the authorization obligation; such use must simply be declared to the DASS. The owner of a supply source is made aware of the advisability of monitoring and analysing the quality of his water. He is not, however, subject to any obligation. The DASS may decide in some cases to analyse water from family supplies.

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IMPLEMENTING THE EC DRINKING WATER DIRECTIVE

FEDERAL REPUBLIC OF GERMANY

The Legal and Institutional Arrangements

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Directive 80/778 is implemented in West Germany by the Decree of 22 May 1986 on drinking water and water for foodstuff production (Trinkwasser-Verordnung) (1). The first version of this Decree dates from 31 January 1975; it has been specifically amended to bring German law into line with the Directive.

1. Applicable law

A. The legal basis (2) of the Decree on drinking water and water for foodstuff production is §11 of the Federal Law on epidemics (3) and §10 [1], sentence 1, of the Law on foodstuffs and consumer goods (4).

According to §11 of the Federal Law on epidemics, drinking water and water for foodstuff uses must be such that it can be consumed or used without placing human health at risk, in particular through pathogens. §11 empowers the Federal Minister for Family Affairs, Youth and Health to prescribe by decree the properties which water must possess to satisfy the above requirements.

The legislation on foodstuffs provides a basis for the terms of the Decree, particularly as regards values, which have no significance from the point of view of health but relate to other properties of water.

Before the Decree on drinking water existed the technical guidelines (DIN 2,000) (modified for the second time in 1959 and modified several times since) laid down the properties required of drinking water in public supplies. It set out the following principles: drinking water must be free from pathogens, must not be dangerous to health, must not contain too many dissolved substances, must be appetising, clear, fresh, without colour, smell and taste. The guideline still exists. Its principles are now transposed into the Decree of 1975 and so have become legally binding. DIN 2,000 also formulated some technical principles for the construction and functioning of the water supply plants. These descriptions also were brought into the Decree. Another guideline (DIN 2,001) set similar principles for private water supplies.

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- (1) Verordnung über Trinkwasser und über Wasser für Lebensmittelbetriebe, BGBl, 1986, 1, p. 760.
 - (2) In West Germany decrees are passed to enact laws. Enabling legislation is always therefore a prerequisite for a decree.
 - (3) Bundesseuchengesetz in the version of 18 December 1979, amended on 27 June 1985.
 - (4) Lebensmittel- und Bedarfsgegenstände-Gesetz of 15 August 1974.

The first version of the Decree laid down obligations only in respect of public health requirements and the 14 parameters and values were prescribed only as regards public health. The very long period taken to bring German law into line with the Directive is largely due to the unwillingness to extend the scope of application of the Decree to aspects other than health. The Directive was incorporated into German law four years late; it should be noted that the Commission of the European Communities did not set in motion any infraction proceedings against West Germany.

B. The 1986 Decree has two initial sections covering the properties required of drinking water and of water for foodstuff uses. It then sets out the obligations of persons in charge of drinking water supply plants and the supervisory obligations of the health authorities and, lastly, penalties. This layout is more or less identical to that of the 1975 text. Five annexes deal with microbiological analysis methods, values for 13 chemical substances, margins of error in the calculation of certain parameters, values relating to the properties of drinking water (3 organoleptic parameters (5), 4 physico-chemical parameters and 10 chemical parameters) and, lastly, the number and frequency of analyses.

The Decree sets out the principle that drinking water must be free from pathogens: it requires (mandatory values) the absence of all coliform bacteria and faecal coliform bacteria (*Escherichia coli*) and recommends (guide value) that the total number of pathogens in non-disinfected water should not exceed 100/ml. Disinfection product residues must be able to be identified: the Decree prescribes a value of 0.1 mg of chlorine in the case of disinfection by chlorine or sodium, magnesium or calcium hypochlorite or 0.05 mg of chlorine

(5) As in the Directive, this relates to colour, cloudiness and odour; taste is not a parameter of the Decree.

dioxide when this product is used for disinfection. These are minimum concentrations which make it possible to prove that disinfection has actually taken place (6).

The Decree also prescribes (in §2 and Annex 2) values for 13 chemical substances listed in Annex 2 which must not be exceeded; other chemical substances which are not listed and radioactive substances must not be present in drinking water at concentrations likely to place human health at risk. The Decree also contains a clause seen as a "minimization clause" (7) which requires concentrations of chemical substances "which may pollute drinking water or adversely affect its quality to be as low as the state of the art allows, with reasonable costs, taking account of the specific circumstances of each case" (§2 [3]).

Pursuant to this clause §3 of the Decree specifies that the values for the 7 physical parameters and the 10 chemical substances listed in Annex 4 must not be exceeded.

C. Drinking water is also subject to a health criterion: it must not place human health at risk. A maximum concentration is laid down for some chemical substances, while only the principle is stated for other substances which may harm health as a result of their concentration. Water which may pose a threat to human health is not therefore drinkable. Drinking water must also satisfy a number of properties and purity requirements. These are not listed in the Decree but a number of parameters are listed in Annex 4 where they are assigned values. Exceeding these values is deemed to be prejudicial to these properties and requirements; these values also have to be as low as is technically feasible and reasonable.

D. This distribution of the parameters in terms of their health

(6) There is no "chlorine" parameter, only a "chlorine compounds" parameter.

(7) See explanatory memorandum for the German Decree, Bundesrat-Drucksache 589/85.

significance is not fully in keeping with the system of the Directive. Some parameters are not therefore incorporated into German law or are placed in categories which differ from those of the Directive.

All the "toxic substance" parameters of the Directive (Annex D) accompanied by MACs are mentioned in Annex 2 of the Decree, with the same values - except arsenic (0.04 mg in place of 0.05) and lead (0.04 mg in place of 0.05). Only selenium and antimony are not included or the parameters without MACs. Fluorine, nitrates and nitrites and chlorine compounds are also included in this list. Pesticides and PCBs, PCTs, PBBs and PBTs are given the same values as in the Directive but these values will be applicable only in 1989 (§27 of the Decree). The chemical parameters of Annex 4 of the Decree are: 5 physico-chemical parameters from the Directive (SO_4 , Mg, Na, K, Al) and 5 "undesirable" parameters from the Directive (NH_4 , Fe, Mn, Ag and surfactants). The values are the MACs of the Directive, except for sulphate with 240 mg instead of 250.

2. Definition of the maximum admissible concentration

The German Decree on drinking water does not expressly contain the term "maximum admissible concentration". It sets out limit values (Grenzwert) "which are not to be exceeded" and a guide value solely for the "total pathogen" parameters with and without disinfection of the water. With the exception of one case, therefore, all the values in the Decree are limit values. However, some of these values "which must not be exceeded" are more absolute than others:

- the microbiological parameter values must in no case be exceeded; no exceptions are allowed. If, however, faecal coliform bacteria are completely absent, all coliform bacteria are deemed to be absent if the value is respected in at least 95% of cases out of at least 40 analyses;
- the values laid down for the 13 chemical substances of Annex 2 (8)

(8) It should be borne in mind that parameter 13 "pesticides" is not applicable until 1 October 1989.

may be exceeded in individual cases provided that an authorization is obtained and provided that human health is not placed at risk and there are no other means of supplying water under reasonable conditions (§4 [1]). These dispensations are granted on an individual basis by the competent authorities;

- the values prescribed for the substances and parameters listed in Annex 4 may be subject to general exemption depending on regional conditions and if there is no health risk (§4 [2]). These dispensations are granted by Decrees of the Länder governments;
- the values of Annex 4 do not apply to the sulphate, ammonium, potassium, iron and magnesium parameters if the subsoil is rich in one of these elements. The concentration laid down for silver is not applicable if the water is treated with silver.

3. Powers

Legislative powers on drinking water lie with the Federal authorities since this is an area in which there are equally ranking powers: the law on foodstuffs and the fight against epidemics and transmissible diseases (Article 74 of the Constitution)(9) If the Federation exercises its regulatory powers, the Länder have to implement these regulations. This is the case here.

The implementation of the Decree on drinking water therefore rests solely with the Länder. Some Länder have passed measures to enact the Decree: Bavaria (10) Hessen (11), Lower Saxony (12) and the Rhineland Palatinate (13). Enacting measures are currently being

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- (9) Federal powers in this area lie with the Ministry for Family Affairs, Youth and Health
- (10) Ministerial Instruction of 9 October 1986 (probably not published).
- (11) Decree on the authorities competent to implement the Federal Law on epidemics of 18 December 1986 (GVBL Hessen 14.1.87), circular of 8 January 1987 on §4 of the Decree on drinking water (Staatsanzeiger 5/1987, p. 230), circular on §17 of the Decree on drinking water 5.8.1987 (Staatsanzeiger 35/1987, p. 17).
- (12) Joint ministerial circular of 14.12.1987 (MB1.2/88).
- (13) Order of 31 July 1986 on exceeding the values pursuant to §4 of the Decree on drinking water (MinBl 1986, p. 482).

prepared in North Rhine-Westphalia, Baden-Württemberg and in Schleswig-Holstein since the recent change of government (14). Saarland, Berlin, Bremen and Hamburg have no specific enacting legislation

In addition, most of the Länder have Decrees or circulars specifying administrative powers in this area. In principle the Kreise and towns independent of the Kreise are responsible for implementing the Decree as "lower" authorities responsible for this sector of state administration (and not as self-administering authorities). Technical authorities assist the Kreis and have a major supervisory, regulatory and advisory role: the Gesundheitsamt (Health Office) in every Kreis and large Commune. In the three city-states (Berlin, Bremen and Hamburg) the health departments of the Commune are responsible.

Individual authorizations exempting from the values (§4 [1] of the Decree) are the responsibility of different authorities in different Länder; in the Saarland and Schleswig-Holstein where there is no regional administration, powers are held by the Ministries with responsibility for health and sanitation. In Hessen and Rhineland Palatinate the regional authorities (Regierungspräsident) are responsible. In the other Länder the competent authorities are the Kreis and in Berlin, Bremen and Hamburg the Commune authorities responsible for health and sanitation.

The following table summarizes these various powers (15):

(14) Information gathered from the Health Ministries of the Länder.

(15) This Table from 1987 is still valid, leaving aside recent changes or specific local procedures which are unknown.

<u>Länder</u>	<u>Competent authorities</u>
Baden-Württemberg	Kreis authorities; local police for ordering measures to be taken in the event of pollution
Bavaria	Kreis authorities
Berlin	Health and sanitation department of district councils
Bremen	Local police; Senator (Minister) responsible for health for authorizations to use seawater for the preparation, treatment and cleaning of catches and equipment on fishing boats at sea (§5 [2])
Hamburg	District councils (health departments); Senator responsible for health for public water supply plants
Hessen	Kreise and towns independent of Kreise; regional authorities for dispensations, authorizations to use water not meeting the criteria of the Decree on the production of foodstuffs (§5 [3]) and the prescription of supplementary analyses (§10 [1])
Lower Saxony	Kreise and towns independent of Kreise and independent towns and communes
North Rhine-Westphalia	Kreis authorities
Rhineland Palatinate	Kreis police authorities; regional police authorities for authorizations to use water which does not meet the criteria of the Decree for the preparation of foodstuffs and orders to conduct analyses at locations or times or for certain substances lying outside of normal obligations (§11 [1, 2 and 5])
Saarland	Kreise and towns independent of Kreise; the Minister for Health for dispensations and authorizations to use water which does not meet the criteria of the Decree for the preparation of foodstuffs
Schleswig-Holstein	Kreise and towns independent of Kreise; the Minister for Health for dispensations; the Minister responsible for foodstuffs for authorizations to use seawater for the preparation of fish on fishing boats at sea

These authorities are supervised either by Ministries or by the regional authorities of each Land.

Source: Aurand, die Trinkwasserverordnung, 1987.

4. Public notification of data on drinking water quality

The Decree on the quality of drinking water does not make it compulsory to publicize data on water quality. The enacting terms in 4 Länder do not contain a general obligation of this type; in two Länder (Hessen and Rhineland Palatinate), however, consumers must be notified every month of new measurements in the event of a value being exceeded or an exemption authorization. In addition, circulars of the 4 Länder state that consumers must be informed if nitrate contents exceed 50 to 90 mg/l: this is the responsibility of the operator himself in Lower Saxony and probably in Bavaria although this is not explicitly stated, and of the administrative authorities in Rhineland Palatinate and Hessen.

In general, moreover, the various drinking water supply companies may themselves, if they wish, take the initiative to publicize data on the quality of their water.

In some places, Communes or Kreise draw up "drinking water registers" which can generally be consulted by anyone interested. A large number of Communes also publicize measurements or a certain number of measurements of drinking water quality. It is impossible to specify numbers.

The Institute for Air, Soil and Water (Institut für Wasser, Boden, Lufthygiene) of the Federal Health Office in Berlin processes the data which it receives from water suppliers and regularly publishes an "atlas of drinking water quality". The last edition was in 1984. A new edition should come out soon.

Consumers are not entitled to ask for information on the quality of drinking water.

5. Analyses and supervision

A. The operator or owner of a drinking water supply plant must conduct analyses (§8 of the Decree). The number and frequency of the

analyses required under §8 and §9 of the Decree on drinking water are comparable to the requirements set out in the European Directive but are not, however, completely identical.

The number depends on the quantity of water supplied annually.

- Analyses designed to monitor disinfection must be daily. In the case of a supply of less than 1000 m³ per annum, or if individual circumstances make this appropriate, the competent authorities can decide on a less frequent rate.
- Analyses of microbiological and organoleptic properties must be conducted for every 30 000 m³ of water supplied (or every 15 000 m³ in the case of disinfection).
- The chemical substances listed in Annex 2 of the Decree must be subject to periodical analysis: once yearly for plants supplying a maximum of 1 million m³ of water annually and twice yearly for plant of higher capacity. The number of analyses can be increased by special order of the competent authorities. They may also reduce the frequency or the number of parameters to be analysed if they are convinced that the concentrations will remain below the limit values prescribed.

It should be noted that the number and the frequency of the analyses for the parameters "pesticides, PCBs and PCTs" and the 10 chemical parameters of Annex 4 are not prescribed: the competent authorities prescribe these themselves "if analyses prove to be necessary to protect human health or to ensure that the properties of drinking water are beyond reproach, taking account of the circumstances of each case".

Analysis results must be submitted in writing; in some regions there are also forms. Operators must retain the results for 10 years. They must send copies to the Health Office if the latter so requests.

B. The Health Offices themselves carry out inspections: every three years in principle they inspect the plant and its surrounding area, ensure that the operator is complying with his obligations and inspect water quality (or simply the written results of the measurements conducted by the operator). They check twice yearly that the operator is complying with his obligations, if necessary by visiting the plant and analysing the water. The findings of the three-yearly inspection must be submitted in writing, kept for 10 years and forwarded to the operator. Health Office staff are entitled to enter premises, take samples, etc.

6. Measures if maximum values are exceeded

The operator or, in general, the owner of a water production plant must himself inform the Health Offices if any values are exceeded or if there is any change in the water or any unusual occurrence in the catchment area or the plant itself which might have repercussions on public health. He must at the same time conduct immediate investigations to clarify the situation and take steps to correct it (§13 of the Decree on drinking water).

The Health Offices must also conduct supplementary analyses and inspections if they are aware of circumstances likely to prejudice water quality and if they deem these analyses necessary. They must then notify the relevant authorities thereof and put forward appropriate measures (§19).

If maximum values are exceeded, the competent authorities may themselves, under the authorization granted by §10 of the Federal Law on epidemics, take steps to prevent any threat to individuals or the community. They may thus prohibit the supply of water, prescribe rapid purification and designate the water as water unfit for drinking, etc. Under §11 of the Decree on drinking water they may also prescribe more frequent analyses.

Finally, under §§1, 2 and 3 of the Decree on drinking water, water which contains quantities of microbiological or chemical substances

which are greater than those listed in Annexes 1, 2 and 4 of the Decree is not deemed to be drinking water. Logically, therefore, stopping the supply is one of the measures which the operator must take. This is not, however, the case if authorizations to exceed values have been given in individual cases for the chemical substances of Annex 2 and if general dispensations have been granted for the other chemical substances on the basis of regional circumstances.

7. Exceptions to §4 [1] of the Decree on drinking water

The possibility of granting dispensations from the values in individual cases, for which §4 [1] of the Decree on drinking water provides, is specified in the four provisions enacting the Decree which currently exist. It should be borne in mind, in the first instance, that authorizations to exceed values may be granted only if there is no risk to public health and if there is no other way of providing a drinking water supply under reasonable conditions. The principles are nevertheless similar:

- The authorization must have a time limit. The duration is fixed case by case.
- The authorization can be granted only if the request is accompanied or immediately followed by the submission of a purification plan.
- The consumer must be informed that values have been exceeded either by the operator or by the authorities (see 4).
- The dispensation system is particularly highly developed for nitrate contents (16).

A. Dispensations may be granted if the nitrate content does not exceed 90 mg/l. In view of the risks to babies, the authorization is

(16) An unpublished circular of 9 January 1986 deals with this matter in North Rhine-Westphalia.

accompanied by conditions: in Hessen and Lower Saxony the operator must inform consumers that water with a nitrate content of more than 50 mg/l should not be used in the preparation of babies' feeds, unless specific hygiene precautions are taken (boiling the water, etc.). In North Rhine-Westphalia, this information is published by the health and sanitation authorities; in Bavaria, the Ministerial order simply states that this information must be given. In the Rhineland Palatinate and Hessen, moreover, the operator must make water available to consumers which satisfies the criteria required for the feeding of babies "under reasonable conditions for the consumer". In Hessen, the authorization to exceed the 50 mg/l nitrate content cannot be longer than two years. The other Länder do not have specific legislation on this subject.

B. Only the Hessen order expressly states that dispensations cannot be granted for water whose nitrate content is more than 90 mg/l. The Bavarian order states merely that authorizations cannot in principle be justified; there is no express prohibition. There is no express prohibition in North Rhine-Westphalia either. The same is true of Rhineland Palatinate where the order states that, above 90 mg/l, the health risks must be brought expressly to the attention of the supplier firm. In Lower Saxony authorizations cannot be granted if the water contains more than 90 mg/l. The operator must be warned of the risks which this water poses to health but must also be informed that this water can be used for other purposes. All take-off points must in this case be labelled "water unfit for drinking - consumption of this water may harm health". The three other Länder also require this information on take-off points. In Bavaria, however, it is only expressly required for private or individual supplies.

No accurate information on the number of authorizations to exceed values is currently available either as regards public supply mains or private supplies. This information is at best partial and covers a small area.

8. Penalties

Operators or owners of water supply plants who intentionally or negligently supply water exceeding the parameters of §1 [1, 4] (total and faecal coliform bacteria and disinfectant residues) and the chemical parameter values of Annex 2 may be imprisoned for up to two years or fined (§21 of the Decree).

The authorities may levy a fine of up to DM 50 000 if the values of the parameters laid down either in Annex 4 of the Decree or by a Decree of a Federal State derogating from the values of Annex 4 are intentionally or negligently exceeded.

The authorities may also levy a fine of up to DM 50 000 if the operator or owner of a supply plant intentionally or negligently fails to meet his obligations to notify the authorities that values have been exceeded or fails to conduct analyses, submit analysis reports or cooperate with the supervisory authorities.

No judgments relating to the failure to observe values appear to have been delivered.

9. Status of private supplies

Individual or private supplies are in principle subject to the same conditions as public supply. This follows on from the definition of water supply plants in §6 of the Decree on drinking water. The only difference lies in the fact that these private supplies do not exceed 1000 m³ of water per annum which has effects on measurements.

Consequently, although the number and frequency of analyses are in principle specified in Annex 5 of the Decree on drinking water, a special system for supplies of less than 1000 m³ of water per annum is set out in §11 [3]. As regards microbiological parameters and disinfection residues, either the frequency set out in Annex 5 - once yearly for the former, once daily for the latter - is applied or the competent authorities can decide to make them less frequent. For

the chemical, physico-chemical and organoleptic parameters of Annexes 2 and 4, the competent authorities decide whether analyses have to be conducted and, if so, for which parameters and how often (17).

This system which is less burdensome than the system for plants supplying more than 1000 m³ of water per annum has come up against problems of practical application as regards private and individual plants.

The Health Offices of the Kreise are not really able, given the large numbers of private supplies (18) and the lack of staff and resources, to supervise the quality of this water, even if only once yearly. The information obtained from the competent authorities seems to show that there are no inspections at all in some regions. The obligation of the owner of the supply plant to notify the authorities if values are exceeded is only rarely respected because of the lack of analyses. No dispensation authorization can be granted in these circumstances. It may well be that the values for microbiological parameters or nitrates in particular are exceeded in some cases without anyone knowing.

Owners of private sources are unwilling to monitor the quality of their water partly because they fear they will be reported to the authorities and because a request for an authorization to exceed values may entail stricter supervision in the future; the cost of analyses is also a cause of unwillingness. The conviction, lastly, that the water from one's own well which has been in use for generations cannot be bad plays an important role.

Bonn, 19 July 1988

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- (17) In the case of Health Office inspections, the latter decide if and when the inspection has to be carried out.
- (18) It is estimated that supplies from private wells account for less than 3% of the total supply of drinking water; there are, however, a large number of wells and it is estimated that North Rhine-Westphalia alone has 90 000. There are some 7000 German supply companies.

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IMPLEMENTING THE EC DRINKING WATER DIRECTIVE

NETHERLANDS

The Legal and Institutional Arrangements

Dr Graham Bennett

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WRC contract 9412 SLD

September 1988

IMPLEMENTATION OF THE DRINKING WATER DIRECTIVE
IN THE NETHERLANDS

Graham Bennett

1. The general law implementing the Directive

The management of drinking water supplies in the Netherlands is regulated by the Waterworks Act 1957 (Stb. 1957, 150). The quality of drinking water is prescribed by a statutory instrument issued under that Act: the Waterworks Decree of 7 June 1960 (Stb. 1960, 345). But this Decree, although laying down a number of standards for drinking water quality, was of insufficient scope to give effect to the Directive's provisions. A set of amendments was consequently enacted on 2 April 1984 (Stb. 1984, 220) and took effect from 1 July 1984 - two years after the formal compliance date. These amendments to the Waterworks Decree lay down quality standards for a considerably larger number of parameters. Moreover, the parameters, set out in Appendix A to the Decree (reproduced below), are divided into four distinct categories:

1. MAC values that must not be exceeded under any circumstances (Table I, comprising the toxic substances parameters from the Directive and four of the microbiological parameters).
2. Minimum concentrations of certain substances for drinking water that has been softened or desalinated (Table II, comprising the Directive's total hardness and alkalinity parameters).
3. MAC values that may be deviated from as a consequence of exceptional meteorological conditions or the nature and structure of the ground, though only with the permission of the Minister of Environment and where this does not constitute a public health hazard (Table III, comprising the Directive's organoleptic parameters, most of the physico-chemical parameters and most of the undesirable substances parameters).
4. MAC values that may be deviated from where it would be unreasonable to require compliance by the drinking water company (Table IV, comprising four physico-chemical parameters, six undesirable substances parameters and two microbiological parameters, all subject only to guide values in the Directive).

The parameters included in these four categories correspond for the most part with those listed in the annexes to the Directive. In most cases the Dutch values coincide with those laid down in the Directive. The remainder fall between the MAC value and the guide level or, in six cases in the fourth category, correspond to the guide level.

The monitoring obligations imposed on the water companies are set out in great detail, where for each parameter is specified the appropriate method of analysis, the respective reference number of the Netherlands Normalisation Institute standard method, the unit of measurement, the precision required, the degree of accuracy, the detection threshold and the relevant standard value. In virtually all cases the specified method conforms with that laid down in Annex II of the Directive.

The required monitoring frequencies are presented in a way rather more difficult to compare with the Directive. For a select number of parameters Annex II stipulates the minimum number of samples to be analysed per year for various volumes of drinking water distributed and the equivalent populations supplied; the frequency of analysis increases with the volume of water supplied. In the Decree, by contrast, an obligatory minimum frequency of analysis is given for each parameter for samples taken from the distribution area. This frequency (two-weekly, three-monthly or six-monthly depending on the parameter) applies to all sampling points in the distribution network. The Decree then stipulates that there should be one sampling point for each 10,000 inhabitants served, with a minimum of two points in each distribution area. The total number of samples per year must therefore be found by multiplying the required frequency of analysis by the number of sampling points in the distribution area. Using this procedure, the minimum frequencies laid down in the Decree comply with the number of samples set out in Annex II of the Directive with the exception of the parameters ammonium, nitrites, nitrates and the total bacterial counts in populations below 50,000 where the frequencies are less.

2. Definition of a MAC

Article 4(2) of the Waterworks Decree requires drinking water to meet the values laid down in Appendix A to the Decree. The same article specifies the circumstances in which the Minister may grant exemptions from the values in Table III of the Appendix (see above). At the same time, Article 4(1) requires that the drinking water supplied may not be 'disadvantageous' to health.

It seems clear that those standards subject to a MAC value in the Directive are to be understood as legally

binding, absolute standards under the Dutch legislation. It must, however, be emphasised that nowhere is the term 'maximum admissible concentration' legally defined, neither has any court case led to a judicial ruling on the matter. It may nevertheless be concluded, both from the phrasing of the legislation and certain ministerial statements, that a MAC value is indeed to be taken as an absolute limit. First, referring to Appendix A of the Waterworks Decree, Table I is simply headed 'values which may not be exceeded', Table III is headed 'values which may only be exceeded in the cases meant by Article 4, second sub-section, under a', and Table IV is headed 'values which may only be exceeded in the cases meant by Article 4, second sub-section, under b' (literal translations used). In the absence of any qualifying statements elsewhere in the Decree or in the accompanying explanatory memorandum, there is a clear presumption that the values are to be taken as absolute unless otherwise stated.

Second, a number of ministerial statements made over the past few years, particularly with reference to contamination of drinking water with pesticides, indicate that the government also regards the MAC values as absolute:

- In answering questions from the lower chamber on the presence of dichloropropane in drinking water supplies in the province of Drenthe - where the standard for each separate pesticide of 0.1 ug/l was exceeded at approximately 50 per cent of all supply points - the Minister of Environment pointed out on 23 August 1985 that the regional Public Health and Environment Inspector (who falls under the competence of the Minister) had already advised the waterworks company to treat the water such that all drinking water supplied contained no more than 0.1 ug/l dichloropropane (Kamerstukken II, 1984/1985, Aanhangsel nr. 1148, blz. 2271 and Kamerstukken II, 1984/1985, Aanhangsel nr. 1155 (herdruk), blz. 2287).
- In responding to questions from the lower chamber on the concentrations of pesticides in ground water, the Minister of Agriculture, speaking also on behalf of the Minister of Environment, explained that the primary consideration of the Pesticides Approval Committee (the body charged with giving technical advice on new pesticides to the Minister of Agriculture) in assessing the possible application of preparations by farmers in drinking water abstraction areas was that their long-term use should not lead to the MAC value for pesticides in drinking water being exceeded (Kamerstukken II, 1987/1988, Aanhangsel nr. 265, blz. 529).

- As a result of discharges into the Rhine, drinking water supplied to consumers in some areas in the west of the Netherlands has become contaminated with the pesticide bentazon, in concentrations of up to 1.6 ug/l. Only the installation of costly additional purification equipment by the respective drinking water companies can reduce this contamination to levels below the 0.1 ug/l MAC for each separate pesticide. In responding to this problem, the Minister of Environment stated that 'the breaching of the respective standard by a single substance need not lead directly to acute health damage effects, but indicates that measures should be taken to eliminate the pollution' (Kamerstukken II, 1987/1988, 20 560, nr. 1).

3. Legal competences

The supply of drinking water in the Netherlands has traditionally been characterised by a large number of local companies. These currently exist in several different forms:

- private limited company
- foundation
- municipal water company
- intermunicipal water company
- provincial water company.

This fragmented structure has, however, been subject to some criticism in recent years, with the result that the administrative structure of drinking water supply is now in the process of being reorganised. The emphasis of this reorganisation is to create a smaller number of larger companies, with the ultimate aim of reducing the present number of 80 companies to 15-20. Such a reorganisation will inevitably extend over many years, and in the medium term it might be expected that the number will be reduced to about 25 by 1995. By this time it is almost certain that all drinking water suppliers will be private limited companies (though with public authorities - provinces and municipalities - as the only shareholders). Within such a fragmented structure, coordination of the many companies is essential, and this is the responsibility of the Association of Water Company Proprietors (VEWIN), a highly influential organisation which also represents the water companies at national and international level.

With regard to the control of drinking water quality, the direct responsibility for ensuring that supplies meet the various quality requirements lies with the Public Health and Environment Inspectorate. This is a national inspectorate, falling within the competence of the Minister of Environment but which operates at the regional level and

which enjoys a considerable degree of autonomy in the way it exercises control (though its duty to ensure that drinking water is of the prescribed quality is unequivocal).

4. Access to data

Nowhere in the legislation relating to drinking water is the status of the monitoring data and analyses prescribed. There is, therefore, no obligation on the drinking water companies to publish these data or make them available to interested parties. But this is not to say that data are not released to the public; practices simply vary from company to company.

However, as a result of the recent incident involving the contamination of drinking water supplies in the west of the Netherlands with the pesticide bentazon (see 2 above) - where consumers were not immediately informed of the contamination - the Minister has declared that consumers have a right to 'maximum openness'. Discussions are therefore to take place between the Minister and the VEWIN in autumn 1988 to decide how this can best be arranged.

5. Enforcement

The enforcement of the requirements laid down in the Waterworks Act and Waterworks Decree is the responsibility of the regional Inspector for Public Health and Environment. Where the inspector finds that a drinking water company contravenes these provisions, he may direct the company to take certain remedial measures and may specify a period within which the works are to be completed. Should the company fail to ensure compliance, the state may itself undertake the necessary measures and recover the costs from the company. It is important to note that, where the contamination does not constitute a public health hazard, the company may continue to supply drinking water until the end of the specified period. In practice, however, it is extremely unusual for the inspector to direct a drinking water company to take the necessary remedial measures. In virtually all cases the inspector and the company will agree on a mutually acceptable programme of action, with the inspector's opinion weighing heavily in the discussions.

In order to facilitate the task of the inspector, Article 6 of the Waterworks Act obliges each drinking water company to inform him immediately of any circumstances which might reasonably be expected to form a risk to proper compliance with the Act. Article 6 of the Waterworks Decree also requires drinking water companies to provide him with a summary of the monitoring data accumulated in each calendar year. All data should be

made available to the inspector should he so request. Finally, Article 63 of the Waterworks Act empowers the Minister of Environment to take any appropriate remedial action necessary to ensure compliance with the Act. Any costs incurred by the Minister in performing this task shall be borne by the offender.

6. Private supplies

Only about 0.1 per cent of consumers in the Netherlands rely on private sources of drinking water, and neither the Waterworks Act nor other legislation explicitly applies to the quality of these supplies. It should be noted, however, that a manufacturer of products intended for human consumption who abstracts water for this purpose from a private source is bound by the provisions of the General Goods Act Decree of 11 July 1949 (Stb. 1949, J306), which specifies that the water should meet the requirements of the Waterworks Decree. In the case of a recreational facility (such as a camping site) which draws water from a private source, the necessary municipal building permit could be extended to cover the way in which this was done, though no such cases are known.

Were a private supply found to be unsatisfactory, it is conceivable that the broad competences vested in the Public Health and Environment Inspector under the Health Act (Stb. 1956, 51) would prove sufficient for him to intervene, though again no instances are known of this occurring.

7. Penalties

Infringements by water suppliers of the Waterworks Act or the Waterworks Decree which fall within the scope of this report are punishable by a maximum of six months' imprisonment or a fine of up to Nfl.5000.

8. Miscellaneous provisions

The sampling frequency required by the Waterworks Decree is set out in Appendix B to the Decree (reproduced below). Here an obligatory minimum frequency is given for each parameter for samples taken from the distribution area (and also, though this is not required by the Directive, from pumping station outlets where only ground water has been abstracted, from pumping station outlets where only surface water has been abstracted, and from the ground water or surface water reservoirs used for abstraction). In addition, Article 6 of the Waterworks Decree empowers the inspector to require that certain parameters be more frequently analysed than specified in the appendix or to require that additional parameters be analysed if he regards this as necessary to give a proper insight into the quality of the water. The analysis of

the samples is to follow the requirements of Appendix C to the Waterworks Decree (reproduced below).

Apart from the provisions relating to the number of sampling points (see 1 above), no specific requirements are laid down regarding the pattern of sampling other than that the exact pattern is subject to the approval of the inspector.

Finally, no derogations from the Directive have been granted for drinking water supplies in the Netherlands.

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IMPLEMENTING THE EC DRINKING WATER DIRECTIVE

ITALY

The Legal and Institutional Arrangements

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CHAPTER I

1. The Directive 80/778/EEC of 15 July 1980 concerning the quality of water destined for human consumption has been transposed into Italian law by two successive provisions:
 - 1.1 - A Prime Minister's Decree of 8 February 1985 (hereinafter called PMD 1985);
 - 1.2 - A Presidential Decree of 24 May 1988 N° 236 (hereinafter called PD 236).

2. There are the following differences between these two decrees:

- 2.1 - PMD 1985 has purely hygienic objectives, and in fact was prepared by the Ministry of Health (hereinafter called MH);
- 2.2 - PD 236 contains regulations concerning health and others for the protection of the environment as well as penal and administrative sanctions.

PD 236 stems from a collaboration between the MH and the Ministry for the Environment (hereinafter ME), assisted also by the Ministries of Public Works (hereinafter MPW), of Agriculture and Forestry, of Industry, Commerce, and Trade, of the Treasury, and the Minister for European Affairs (Minister without Portfolio).

The importance given to environmental aspects in the regulations for water for human consumption is one of the consequences of the creation of the ME set out in Law N° 349 of 8 July 1986.

2.3 - PD 236 has the force of Law while the PMD is an administrative provision (an Administrative Act) comparable with government regulations. PD 236 is a delegated decree in execution of Law N° 183 of 16 April 1987 on the co-ordination of policies regarding Italian membership of the European Community and the adjustment of Italian internal legislation to the regulations issued by the Community.

2.4 - PMD 1985 governed a partial insertion of the Directive, while PD 236 brings about a total insertion of the Directive and contains principles and criteria in addition to those in the directive.

These principles and criteria are established by Art. 15 and Art. 18 of Law N° 183 of 16 April 1987 and involve the following aspects:

- regulation of putting on the market and of using dangerous substances and preparations to be employed in agriculture;
- recovery and conservation of environmental conditions, to defend the fundamental interests of the population and the quality of life;
- defence, conservation, and improvement of natural resources and heritage through:
 - rules aimed at prevention or repair of damage to the environment;

- restrictive measures designed to protect and preserve the environment;
- inspection and controlling measures.

3. Description of PD 236 and the principal innovations contained in it, with some introductory reminders of a general character.

3.1.1 - The public water supply is provided by municipalities or townships, by public consortia, and by a small number of private undertakings which provide about 3% of the drinking water in Italy.

3.1.2 - Property in land, either agricultural or urban, can be expropriated; however the Constitution does permit limitations to the use of private property.

3.1.3 - Productive activity, according to the Italian Constitution, can be conditioned and limited by planning and control for attainment of social ends.

3.1.4 - Functions regarding the case of public health and public hygiene are delegated to the National Health Service (hereinafter NHS).

3.2 - The NHS is organized in three main levels:

3.2.1 - The central level, with functions of co-ordination and direction. This level is covered by the MH which avails itself of technical bodies such as the Steering Committee on Health.

3.2.2 - The Regional level, with functions of co-ordination, direction, and organization, with the right of substitution in cases of local inertia. This level covers

the functions attributed in Italy to the Regions, understood in this context not as geographical subdivisions but as public bodies who possess recognized legislative, regulatory and executive powers.

- 3.2.3 - The Local level, with the functions of operational administration of the health services (hospitals, industrial health, accident prevention, public hygiene services, etc.). These functions are performed by the Local Health Units (hereinafter LHU) and by multi-locality centres.

4. The limitations and controls on private property and on productive and agricultural activities have been actuated by bringing in measures illustrated below.

- 4.1 - Areas for the safeguarding of water resources.

Zones of two types are foreseen for the protection of springs and wells (underground waters) and intakes (surface waters).

- 4.1.1 - Total Protection Zones, with a radius of not less than 10 metres, and possibility of being enlarged to take account of the local situation regarding the vulnerability of, and risk to, the resource (Art. 4 and Art. 5).
- 4.1.2 - Limited Protection Zones, with a radius of not less than 200 metres. This extension may be reduced taking account of the local situation as regards the vulnerability of and risk to the resource.
- In a limited protection zone the following activities

or uses, which are incompatible with the protection of the resource, are prohibited:

- a - spreading or injection of effluents, sludges or sewage.
- b - accumulation of organic manures;
- c - soak-aways for the dispersion of storm water from yards or streets;
- d - cemeteries;
- e - spreading of pesticides or fertilizers;
- f - digging of quarries or pits;
- g - dumping refuse;
- h - dumps for solid or liquid refuse, dangerous chemical substances, or radioactive materials;
- i - centres for collecting, demolition and scrapping of motor vehicles;
- j - waste treatment plants;
- k - pasturing or housing of animals (Art. 6/2).

4.2 It is also prohibited to lay new drains or to install new cess pools in limited protection zones. The competent Authority (and in particular the Commune) must arrange for existing drains or soak-aways to be removed (Art. 6/3).

4.3 - As regards water intakes from surface waters civil engineering works are to be carried out for the protection of the slopes and the banks of lakes and rivers

and for the deviation in favour of the intake, of channels discharging storm water or sewage (Art. 6/4).

- 4.4 - Further restrictions and limitations on private property may be derived from the definition of protection zones for the conservation of areas which feed subterranean water supplies or the catchment areas which feed the surface water resource which is to be destined to human consumption; restrictions which may limit the use of the ground for buildings, industry, tourism, forestry, crops or animal farming (Art. 7).
- 4.5 - The risk of contamination of subterranean waters from water wells is covered by granting the national government the power to emanate regulations including technical rules to be observed in digging, perforating, drilling, maintenance, closure, or reopening of wells for water (Art. 8/1/g).
- 4.6.1 - The widespread pollution caused by synthetic antiparasitic chemicals is put under control, and the use of these substances must be recorded in a register. Producers, distributors, stockists, transporters and users (agricultural undertakings) of antiparasitic products are obliged to keep such a register, which PD 236 refers to as a "Card". The regulation makes reference to "presidi sanitari",

meaning all synthetic chemical substances employed in agriculture as antiparasitics, fungicides, weed killers (specific and general) and similar substances whose use is subject to MH approval.

4.6.2 The purpose of the "Card" is to allow the organization of a system of information, under MH control, with the following objectives:

- a - prophylaxis and conservation of human health;
- b - conservation of the fauna;
- c - conservation of the natural environment (Art. 15/1);

d - repression of adulteration of agricultural products (Art. 15/3).

4.7 - Drinking water supply undertakings are obliged to set up, or in any case to make use of, their own laboratories for quality control of the water distributed. (Art. 13).

5. Derogation

5.1 - Directive N° 80/778 foresees, in Art. 9 and Art. 10, some possible derogations for natural or contingent causes, or in cases of emergency.

Such powers of derogation have been included in the Italian regulations (Art. 17).

In addition to rigorously respecting the EEC criteria, exercise of the power of derogation is subordinated to the emanation of a Plan of Action which must be adopted by the territorially competent Regional authority.

5.2 - The Plan of Action must govern at least the following main aspects:

- identification of the cause of the phenomenon;
- definition of the area involved;
- definition of the resident population;
- determination of the controls and prohibitions regarding the use of certain substances;
- definition of the actions to be taken for eliminating the pollution, and determination of the financial resources required;
- administrative sanctions against parties breaking the rules.

5.3 - The Act of Derogation must be communicated to the MH and to the ME.

5.4 - A derogation can be used to deal with situations due to overstepping the MAC (Maximum Admissible Concentration) for certain parameters of limited and transitory harmfulness, although evidently such situations must be producing substantial difficulties.

The purpose of a so-called prorogation^{or delay} are on a different level.

6. Prorogations

6.1 - Art. 20 of Dir. 80/778 foresees the possibility in exceptional cases and for certain groups in the population, of applications for the suspension of the terms for observance of the ME Code and other prescriptions as in Appendix 1.

Exercise of these powers is controlled by Art. 19 of PD 236.

Provision for a suspension is arranged by decree of the MH and ME, acting on an application from the Region involved. The regulations have been stipulated in such a way that power of initiating the adoption of a Suspension Decree is attributed to the Regional Authority which has a specific competence for the management of its own territory.

The Regional power of initiative has a specific content and requires concrete activation by the Region which must:

- a - Indicate the object, the method and the timing of the suspension
- b - Identify the causes of the phenomenon;
- c - Present a plan for the improvement of the waters concerned, aimed at ensuring the observance of Appendix I inside the time needed for the realization of the plan;
- d - Integrate the improvement plan with any additional measures taken by the MH and the ME.

6.2 - Activation of the procedure for a suspension is not in itself sufficient, since a double role is reserved to the National Government, namely:

- a - Evaluation of the Water Improvement Plan and eventual formulation of integrative measures; and
- b - carrying out the EEC procedure included in Art. 20 of Dir. 80/778 on the basis of which the plans of action

will be examined by the Commission on the specific request of a member nation.

6.3 - A request for suspension is intended to overcome, in complete agreement with the EEC organization, the difficult situation created by Atrazine and by Molinate or by other weed killers which have polluted subterranean waters.

6.4 - The action taken by the Italian Government to contain and to overcome this phenomenon can be appreciated by the succession of dispositions over a period:

- a - ME Ordinance of 25 June 1986 containing a precautionary prohibition of the use over the whole national territory, of formulations containing the active principle Atrazine until 31 December 1986;
- b - Ordinance of 22 December 1986 containing a precautionary prohibition of the use , over the whole national territory of formulations containing the active principle Atrazine, extending the life of the preceding ordinance until 31 December 1987;
- c - Ordinance of 3 April 1987, N° 135, containing precautionary prohibition of the use, over the whole national territory, of formulations containing the active principles Atrazine or Molinate until 31 March 1988;

This ordinance made it obligatory to keep a "Log Book" or register or cards to record the purchases and transferals of all substances with approved formulations, among which Atrazine and Molinate were specified.

- d - The Log Book was instituted by MH Circular N° 12 of 17 March 1987.
- e - The MH laid down, in Ordinance N° 64 of 24 February 1988, the maximum dosage and the permitted uses of some active weed killing substances such as: Alaclor, Bentazone, MCPA, Metolaclor, Pendimetalin, Piridate, Propanil, Simazina, Trifluralin.
- f - By Ordinance N° 65 of 27 February 1988 the MH has postponed the date for the obligatory introduction of the Log Book from being 1 March 1988 to being the thirtieth day after the PD actuating the EEC directives in the matter of dangerous antiparasite preparations, will become law.

6.5 - Since PD 236 dealt with antiparasite preparations in Art. 15, the Log Book is therefore obligatory in any case after 14 August 1988. But the obligatory institution of the Log Book has the force of law already in PD 236, and therefore it is not necessary to wait the thirty days as the Log Book becomes obligatory from 15 July 1988.

6.6 - The inclusion of the faculty of suspension of the application of Appendix I to the PD 236 emphasizes on the one hand the depth of the degradation of the aqueous environment in industrialized countries, and on the other the foreseeable difficulty of getting back within acceptable limits without taking into account that the self-purifying

capacity of the soil, and hence of subterranean waters, has its own natural time span which cannot be influenced by laws to remedy the delays in the development of a "culture of the environment" or a still remote "water culture".

The faculty of suspension has been introduced by Italian legislators conditioned by a complex of precautions, and with prohibitions and checks which demonstrate a willingness to discuss with the EEC organizations, which are well known for their correct and unyielding attitude as regards certain phenomena of environmental deterioration.

CHAPTER II

The MAC (Maximum Admissible ^{Concentration} does not have a definition, so that the criteria laid down in the appendices to Directive 80/778 are valid - Appendix I to Directive 80/778 has been accepted in substance, while the parameters in PD 236 Appendix I are those of the Directive. The appendix to PMD 1985, which differed from the EEC model, has thus been superseded. However some of the differences included in the PMD 1985 and defined in the "Observations" have been maintained, in particular the MAC is not carried forward for Parameter 12, while it is stated in the notes that the MAC for Parameter 32 must be applied before 8 May 1991.

Directive 80/778 does not give a MAC for some parameters and these gaps have been filled in the appendix to PD 236.
 Parameter 35 has been assigned a MAC of 1000;
 Parameter 36 has been assigned a MAC of 3000;
 Parameter 38 has been assigned a MAC of from 1500 to 700, varying according to the average temperature of the area (from 8° to 30°) in the geographical zone considered.

CHAPTER III

1. The PD of 1988 attributes to the Ministers the following responsibilities and authorities:
 - a - Power of direction and co-ordination of third parties, both public and private, as regards all activities connected with the application of the PD of 1988.
 - b - Modifications, variations and additions to the Appendices;

c - Technical Rules, methodology and criteria for:

- c.1 - census of the subterranean, brackish and marine waters to be destined for human consumption;
- c.2 - Anticipatory precautions regarding waters to be destined for human consumption;
- c.3 - Repurification, of waters destined for human consumption;
- c.4 - Definition of the areas to be protected as water resources;
- c.5 - Installation of water supply pipes;
- c.6 - Purification of drinking water and relative works;
- c.7 - Excavation, perforation, drilling, maintenance, closure and reopening of wells for water;
- c.8 - Information systems regarding the properties of waters to be used for human consumption (Art. 8).

These responsibilities are attributed to MH, ME, and MPW.

d - Determination of the Maximum Allowable Value (hereinafter called MAV) of the MAC for particular parameters or sets of parameters (Art.16/1).

e - Identification of the methods of repurification to be adopted when a MAV is established (Art. 16/2).

The MAV is decided by the MH in collaboration with the ME, after reference to the Steering Committee on Health.

2. Responsibilities of the Regions:

- a - Identification of the areas to be safeguarded. The Regional activity of identification of these areas is

subordinated to the following limitations:

- respect of the criteria established by the Government;
- consideration of the restrictions and limitations imposed on private property and on industrial or agricultural productive enterprises.

The Regions have the power of controlling any further activities which may be carried on in the protected areas.

- b - coordination of information regarding waters to be used for human consumption within the Regional territory;
- c - power of substituting the communes or mountain communities which do not take adequate action to protect their waters;
- d - anticipatory organization to handle situations of emergency involving water. This phrase is intended to mean those situations where water for human consumption cannot be distributed because of natural factors or because of pollution of springs, wells and surface waters discovered in the course of routine checks;
- e - adoption of plans of action for the repurification and improvement of the quality of the waters (Art. 9/d).
- f - Exercise of the power of suspension (Art. 17).
- g - Designation of a sole health control body for the water mains between communes, between provinces or between Regions.

3. Responsibilities of the Communes.

3.1 - Operation of the water circulation services in Italy.

The first disposition in Italian law which concerns itself with the natural cycle of water is contained in the decree which makes Directive 86/280 operative and concerns the limiting values and quality objectives of those dangerous substances which appear in List I of the basic Directive 76/464.

This rule makes it clear that "the specific limiting values must tend towards the elimination of pollution from the different phases of the water cycle which may be affected by effluents" (Art. 1/2).

PD 236 on the other hand refers to services which are essential to the water cycle (Art. 13), meaning by essential services the services of water supply, sewers, and purification of effluent waters.

Water supply services in Italy are the responsibility of the Communes who are obliged to supply the citizens with water of good quality: "every Commune must be supplied, for drinking purposes, with pure water of good quality" (Art. 248 Royal Decree N° 1265 of 27 July 1934, consolidated text of health legislation).

The Communes arrange for a water supply service in one of the following forms defined by State Law:

- a - municipal operation
- b - operation by a specialized firm
- c. concession to private industry.

3.2 - Special water supply organizations have been created by special laws, often regarding the South and the large islands, and have responsibilities for several Communes or sometimes even in more than one Region.

These bodies are:

- a - The Apulian Water Board responsible for Region of Apulia, part of the Region of Calabria and part of the Region of Basilicata.
- b - The Sicilian Water Board responsible for 300 Communes in Sicily, excluding some of the most important.
- c - Sardinian Water and Sewage Board, responsible for the Region of Sardinia.

In the South there exist industrial development areas, and the Consortia which manage these areas are responsible for industrial water supply.

Water supply for irrigation is operated by the Land Improvement and Irrigation Boards.

Concessions to private industry are relatively modest and account for only 3% of the total water supply services.

3.3 - The Communes, the special organizations, and private water supply companies are the principal recipients of PD 236, and therefore have executive duties.

The PD provides the Communes with the power of initiative in informing the Regions of the advisability of a derogation of the MAC (Art. 18/1).

3.4 - Communes, special bodies, and private water supply companies are obliged to carry out inspections of the water supplied to the mains. This control is an internal one in the sense that all these subjects are considered as producers and, like all producers, are required to assure themselves of the good quality of the goods supplied to consumers.

Small Communes and small bodies are permitted to perform these controls in association or partnership (Art. 12).

This provision tends to make Communes think beyond purely local management to a larger area of water supply.

The internal controls are conceptually different from, and are not carried with, the external inspections organized by the NHS which will be discussed in Chapter VIII.

CHAPTER IV

PD 236 does not recommend any specific system of information to consumers, but requires the operating bodies and the NHS, also through existing health legislation, to adopt "immediate provisions" as soon as the results of analysis or inspection indicate any possibility of risk to human health (Art. 12/3).

The right to information about the environment is affirmed in the law creating the Ministry of the Environment and a law is being drafted to make this right more effectively recognized.

However it must be remembered that many Regions have already adopted laws which do ensure an effective system of environmental information.

The enquiry in the Questionnaire emphasizes that the PD 236 did not perhaps give equal weight to the aspect of informing the citizens.

It can however be stated in anticipation that the legislative provisions for the integration of the Directive on Subterranean Waters will contain rules for co-ordination with the other laws; and thus it can be reasonably expected that the question of information will be covered in this connection after Parliament has given the Government delegated powers to operate in this specific sector.

CHAPTER V

1. Exceeding the MAC may be discovered during health inspections, internal checks, or checks carried out by private parties or occasionally by various public bodies such as, for example, a hospital making a precautionary check up on the water delivered by the supply company, a factory which makes routine inspections of the quality of the water to be used in production, or an environmentalists' association.
2. The numerical value of the parameter is sent for information to the Region, to the Commune, and to the body supplying the water, who are each obliged to adopt those measures for which they are responsible (Art. 12/3).
3. On receipt of the information the body receiving it must evaluate it and form an opinion as to the potability of the sample.
4. This evaluation of the potability is carried out taking into

account any eventual notes regarding the parameter and also the "general criteria and methodology for determining the characteristics of the water" (Art. 8/1/c). These criteria must be issued by the MH in collaboration with ME.

5. If the water is not accepted as being fit for human consumption suitable dispositions may be made either in parallel or in alternative.

The operating body, having provisionally suspended the supply of water, may urge the Region to apply the derogation criteria of Art. 17.

6. As an alternative an arrangement may be made to supply the population from mobile water tanks (Art. 11/3).

7. An extraordinary intervention on the part of the Civil Protection Service may also be requested on account of its powers to dig new wells, to bring mobile water purifiers into the area, and to lay emergency water mains.

The Civil Protection Service's powers override the regulations regarding public contracts and public supplies, and the importance of its role in facing and solving emergency water supply situations has been increasing in the last few years.

8. For the very reason of returning water supply emergencies to normal the PD 236 grants the Regions the power predisposing planned measures for emergency water supplies (Art. 9/1/a).
9. More detailed regulations in this field will be issued by the Government as part of the water potabilization regulations (Art. 8/1/f).

CHAPTER VI

PD 236 applies restrictions to private water supply enterprises, carriers of water by land or sea, the food industry, those who extract water for domestic uses from their own wells, as also to the owners of land surrounding springs, wells or surface water intakes.

Somewhat different disciplinary rules apply to each category.

- Private water supply enterprises are treated in all respects as if they were public water supply bodies, and there is therefore no difference between water supplied by a public organization and that supplied by public enterprise.
- Carriers of water by land, on motor vehicles, are subject to the same controls as those applied to water distribution networks.
- Carriers of water in tanker ships or floating reservoirs towed by sea are subject to the same discipline.

However it must be pointed out that, as a consequence of the dispositions of PD 236 and the general regulations about food stuffs and those regarding the supply of water to the smaller inhabited islands there is in course of emanation a decree more completely regulating the transportation of water in tanker ships or in barges provided with tanks.

- The proprietors of land adjoining wells, springs and water intakes are restricted as to the use of the land including limitations of the type of agriculture established by

PD 236 or adopted as a consequence of the powers it grants.

- Firms in the food industry who use water for their products, and substances put on the market, are restricted by PD 236 with regulations having the same content as the EEC rules in Directive 80/778.
- The following clarifications are needed in the case of families using their own wells for domestic purposes. PD 236 concerns itself with water supplied for consumption, and in the Italian system the supply of water for consumption is reserved to public bodies.

When PD 236 was being prepared there were discussions as to whether its dispositions should be extended to family wells, in view of the fact that the original wording of the definition of protected areas gave them all a fixed radius of 200 metres. Such a rigid limit would, in practice, have eliminated agriculture on the tens of thousands of farms whose average area is about 30 acres.

The modification of that rule with introduction of a flexible limit for protection areas has removed the doubts which had arisen about the impact of PD 236.

It seems reasonable to believe that criteria for the overseeing of private wells will be introduced along with the establishment of general criteria for the sound management of water wells and for the definition of protected areas for safeguarding water resources.

Since the dispositions of PD 236 are aimed at the protection of human health, those rules which cover the quality of water intended for human consumption cannot be derogated and thus constitute a reference standard for the quality of water from private wells.

No specific regulations regarding inspection have been adopted but it should be noted that Regional legislation makes it possible for private persons to have the water from their own wells analysed by the NHUs, usually against payment.

Furthermore Appendix II on the frequency of sampling grants the faculty to the competent health authorities to arrange for samples to be taken in widely spread population centres in the category "up to 500 inhabitants".

CHAPTER VII

Sanctions

PD 236 specified penal sanctions and administrative sanctions (Art. 21).

Voluntary or unpremeditated acts which harm water intended for or distributed for the purpose of human consumption are punished, under the Italian Penal Code, by prison sentences, or, in less serious cases, by fines (see Arts. 438-452 of the Penal Code).

Art. 21 of the PD 236 introduced other types of crime to be punished with imprisonment or fines. The new provisions are the following:

- a - Any person, who, in violation of the dispositions in PD 236, shall supply for human consumption water which does not conform to the quality requirements specified in Appendix I (which is the appendix to Directive 80/778) will be punished with a fine not exceeding two million lire or by detention for not more than three years.
- b - A fine up to two million lire or detention up to three years is also applicable to persons who use water not conforming to the quality specification in Appendix I in the food industry.

Administrative sanctions, consisting of the payment of sums up to three million lire, are foreseen for the following cases:

- a - violations of the dispositions regarding the keeping of record cards for the use of antiparasitic substances and approved chemicals intended for agricultural use;
- b - failure to observe the dispositions regarding restricted areas round springs, etc.
- c - failure to follow the disposition laid down for the implementation of operative plans in cases in which recourse has been made to a derogation.

CHAPTER VIII

Inspections

The system of inspection to check the good quality

of waters intended for human consumption has been revised by PD 236.

- Inspection Points.

Checks must be made at all points along the water supply system, meaning the entire complex of pipes and plant which carry the water from the point where it is collected to the point where it is put at the disposition of the consumer.

The inspection points which are specifically mentioned are:

- springs
- wells
- surface water intakes
- intake to the main plant
- storage reservoirs
- potabilization plant
- distribution network
- motor vehicle tanks
- waterborne vessels.

- Type of Control

PD 236 foresees two types of control:

- internal controls executed by all bodies operating water supply plant, at their own charge (see page 3/3)
- external controls, not carried out by the operating body but by Health Inspectors, with the object of protecting the health of the public and of consumers of water and foods.

Responsibility for Health Inspection.

The Health inspection is carried out by the outside staff of the NHU's.

These controls take place in phases:

- sample taking
- laboratory analysis
- evaluation of the quality of the water.

The models and frequencies of the analyses of water intended for human consumption are indicated in Appendix II of DP 236 which refers to appropriate EEC dispositions.

The analytical methods to be used in these controls are given in Appendix III of PD 236 which also refers back to the appropriate EEC disposition.

Other types of control are left to be inserted in the rules for implementing PD 236 in those cases which cover the regulation of:

- a - water potabilization plants
- b - the organization of the information system referring to the quality of the waters intended for human consumption;
- c - unitary control of intercommunal, interprovincial and inter-regional water supply enterprises on the part of an Office under the NHS, so that the water will be checked using the same criteria along its whole path from original source to the point where it is put at the disposition of the consumer.

It must be made clear that the whole of the Italian system of health inspection was radically modified by the recent reform of the NHS.

Until 1978 the controls of water quality were carried out by

the Provincial Laboratories of Hygiene and Prophylactics which had been set up in each Province.

The reform transferred these laboratories to the NHS and their integration is still not satisfactory after 10 years. One of the motives which has led the national Government to redesign the control procedure was in fact that of introducing a profound reorganization of the present system, to overcome the differences found in practice between large plants and small plants, and between operations run by specialized firms and those run autonomously by small Communes.

The organization of the centralized information system (Art.8/1h) will make it reasonably practical to discover qualitative and quantitative differences as also the insufficiencies.

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