This translated version of the collection of regulations concerning the sanitary quality of drinking water and drinking water facilities is merely designed to provide an answer to an increasing demand for updated information in English. We trust it would prove to be a useful resource in understanding the Israeli legal requirements for drinking water.
The binding version is the official Hebrew Text.

Department of Environmental Health
Public Health Services
Ministry of Health
State of Israel

RECORDS

COLLECTION OF REGULATIONS

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Public Health regulations (Sanitary Quality of Drinking Water and Drinking water Facilities), 2013 page 1394

PUBLIC HEALTH REGULATIONS (SANITARY QUALITY OF DRINKING WATER AND DRINKING WATER FACILITIES), 2013

By the power invested in me under Sections 52B and 62B(b) of the Public Health Ordinance, 1940 (hereinafter - the Ordinance), in consultation with the Minister of Agriculture and Rural Development pursuant to Section 52B(a)(5) of the Ordinance, and in accordance with Section 10(a) of the Businesses Licensing Law, 1968, in consultation with the Minister of Environmental Protection, with the approval of the Knesset Committee for Internal affairs and Environment pursuant to Section 21A(a) of the Basic Law: The Knesset and Section 2(b) of the Penal Law, 1977, I hereby promulgate the following regulations:

Chapter A: Purpose, Definitions and Obligations of Supplier

Purpose

1 The purpose of these regulations is to protect public health by setting a high standard for the sanitary quality of drinking water, conditions and provisions for all matters pertaining to the sources of drinking water, facilities for water production and water distribution systems, provisions regarding the water treatment and the control of water quality, as well as the requirements for reporting and advertising, and all, among others, by imposing obligations and stipulating instructions in accordance with the provisions of these regulations.

Definitions
(Order of definitions according to Hebrew alphabet, as in the original document)

2 In these regulations-

"Testing" - analysis of drinking water performed by a recognized laboratory using a test-method approved by The Director – determined in The Book, an EPA Method or another method;

"Chemical Testing" - analysis for the detection and quantification of one or more of the elements detailed in Annex 1,2,5 or 6 to these regulations;

"Microbiological Testing"- analysis for the detection and enumeration of coliform bacteria;

"Full microbiological testing"- analysis for the detection and enumeration of coliform bacteria, fecal coliform bacteria, fecal streptococci bacteria and a Heterotrophic plate count.;

"Repeat microbiological testing"- analysis for the detection and enumeration of coliform bacteria, as well as fecal coliform bacteria or, if required by the Health Authority - Escherichia coli (E.coli) bacteria;

"Factor"- an element, attribute, compound or microorganism;

"Sampling"- obtaining a sample of water and transferring it for testing at a recognized laboratory or another laboratory as instructed by The Director.

"Repeat sampling"- sampling from the same spot in which, in a microbiological testing, a result deviating from the requirements in Regulation 4 was found, within 24 hours of the time the deviating result was found by the laboratory;

"The Book"- the most recent edition of the book "Standard Methods for the Examination of Water and Wastewater", edited and published by the American Public Health Association, American Water Works Association, Water Environment Federation, a copy

of which has been consigned to the Dr. S. Ziman Public Medicine Library of the Ministry of Health in Jerusalem, and available to the public during working hours;

"Desalination"- A process designed to remove salts or minerals dissolved in the water;

"Water contamination"- or "contamination of drinking water" - a deviation from the quality required under Regulation 4(1) or 4(2), or a change in the physical, chemical, organoleptic, biological, bacteriological, radioactive or other attributes of water, or the presence of any other factor that might compromise public health;

"The Water Law"- the Water Law, 1959;

"Water Treatment"- any process intended to improve the sanitary quality of water or to render its compatibility with drinking water, or to prevent or reduce factors that might interfere with its sanitary quality;

"BAT - Best Available Technology"- the best and most advanced technology and means for water treatment and for improvement of its sanitary quality and for the prevention or maximum reduction in factors that might interfere with the sanitary quality, and which are reasonably available even if not yet implemented in Israel;

"Raw water"- water that is intended, after treatment, to become drinking water;

"Drinking water"- as defined in the Ordinance;

"Production facility"- a system for pumping raw water from a water source;

"Surface water facility"- a production facility pumping water from a lake, a river, a stream, a spring or a water reservoir, whether natural, or regulated and installed, where the water is caught, close to the surface or after surging through to the surface;

"Underground water facility"- a production facility pumping water from an underground water reservoir;

"Treatment facility"- a system or process intended for water treatment;

"The Director"- the General Director of the Ministry of Health or an employee of the Ministry; authorized by the General Director, for the matters of some or all of these regulations;

"Recognized laboratory" or "laboratory"- a laboratory that has been recognized by The Director for the matters of some or all of these regulations;

"Water supply system"- a system, that includes, among others, the following components or some of them: a pumping facility, facilities for water treatment, distribution, gaging, storing or monitoring and with the exception of a production facility;

"Main water system"- a water supply system that carries drinking water from one supplier to another supplier;

"Water source" or "source of drinking water" - springs, streams, rivers, lakes and other flowing or pooled water, whether above ground or underground, whether natural or regulated and installed, whether the water is seeping out, flowing or standing

therein at all times or intermittently, including sea-water intended for desalination, and except for drainage water, wastewater and reclaimed water;

"Monitoring" - including sampling, testing, interpreting results and reporting, as the case may be;

"Entry point" - a point at which the water is transmitted from a water supply system kept by a particular supplier to a water supply system kept by another supplier;

"Supplier" or "water supplier" – anyone supplying drinking water through a water supply system or a production facility to another supplier or to a water consumer, including the holder of a production license pursuant to Section 23 of the Water Law, or whoever is required to obtain such a license, and a municipal authority;

"Sanitary survey"- actions taken to reveal the causes for drinking water contamination or that are liable to cause drinking water contamination;

"Preventive sanitary survey" - a periodic sanitary survey in production facilities, treatment facilities and water supply systems and in their environment;

"Investigative sanitary survey" - a sanitary survey designed to identify cause for water contamination in a water source, production facility or water supply system and their environment;

"Sum of ratios value" - the sum of measured values, each divided by the relevant maximum concentration, as detailed in the formula:

$$\frac{\text{Conc. of Measured Parameter } N_1}{\text{Standard conc. } N_1} + \frac{\text{Conc. of Measured Parameter } N_2}{\text{Standard conc. } N_2} + \frac{\text{Conc. of Measured Parameter } N_i}{\text{Standard conc. } N_i} = \text{Sum of ratios value}$$

"Health Authority"- as defined in Section 52A of the Ordinance;

"National Water Authority"- whoever has been authorized by the council of the governmental authority for water and sewage, under Section 46 of the Water Law;

"Municipal Authority"- a municipality, a local council, a regional council, or a local committee situated within the local council's territory, an urban union or a company as defined in the Water and Sewage Corporations Law, 2001, as the case may be;

"EPA method - a test method approved by the United States Environmental Protection Agency and published on the internet website of the Ministry of Health;

Obligations of water supplier

3 A water supplier shall at all times be responsible for: -

(1) Quality of the drinking water being supplied and assuring that the drinking water complies with the sanitation quality required under these regulations;

(2) The proper installation, operation and maintenance of the water supply system or the production facility directly or indirectly owned or possessed by the supplier;

(3) Execution of the provisions of these regulations.

Chapter B: Quality of Drinking water and Response to Deviations

Quality of drinking water

4 The following shall be applied for drinking water at all time:
(1) It contains no coliform bacteria in 100 milliliters;
(2) It contains no factor deviating in measure, concentration, value or Sum of ratios value of those detailed in Annex 1,2,5 or 6 to these regulations;
(3) It has been treated in accordance with the provisions of these regulations.

Deviation in quality of drinking water

5 (a) When drinking water did not comply with one or more of the conditions specified in Regulation 4 -
(1) The supplier must notify the Health Authority and the consumers with no delay; the Health Authority may exempt the supplier from the duty of notifying consumers as aforesaid, if the authority has found that not complying with the condition specified in Regulation 4 is unlikely to adversely affect public health;
(2) The Supplier must take immediate corrective actions and report them to the Health Authority;
(b) Once the Health Authority has received notice as per sub-regulation (a)(1), it may give the supplier instructions with regard to additional actions, that must be taken, or take any other action to protect public health, including disqualification of the water as per Regulation 7;
(c) The Supplier must take corrective actions as per sub-regulation (a)(2) and additional actions as per sub-regulation (b) pending achieving the required quality as stated in Regulation 4; upon completion of the corrective actions, the supplier shall sample the water at the sampling spot at which the deviation was found and at further representative points in the water supply system, to verify that the water meets the required quality as stated in Regulation 4; results of the tests shall be reported to the Health Authority.
(d) Upon completion of the corrective actions and sampling as stated in sub-regulation (c), the supplier shall publish, on his internet website, a report which shall include the deviation that was found and the date thereof, the corrective actions taken and the tests results demonstrating that the water meets the required quality as stated in Regulation 4.

Deviation in test result

6 In addition to what is stated in Regulation 5 -
(1) Once in a microbiological test, one or more coliform bacteria has been found in 100 milliliters of water, the supplier or the laboratory, as the case may be, shall carry out the following actions:
(a) The laboratory that performed the test shall immediately test the coliform bacteria found to identify E.coli and shall immediately forward the test results to the Health Authority;
(b) The water supplier shall carry out repeat sampling for a repeat microbiological test; the Health Authority may require the supplier to carry out sampling at additional sampling points;

provided that the water has been disqualified for drinking at that time, the Health Authority may exempt the supplier from carrying out repeat sampling;

(c) Once in a repeat microbiological test, one or more coliform bacteria has been found in 100 milliliters of water, the supplier will carry out repeat sampling as stated in sub-paragraph (b) and shall also proceed in accordance with the instruction of the Health Authority pending achieving the water quality required as stated in Regulation 4;

(2) Once in a chemical test, a result deviating from the water quality specified in Annex 1,2 and 6 to these regulations, has been found, the water supplier shall immediately carry out additional sampling from the same spot from which the previous sample was taken, or shall immediately discontinue water supply from the production facility; the supplier and the laboratory shall immediately forward tests results to the Health Authority; the Health Authority may give the supplier additional instructions with regard to performing tests.

Disqualifying drinking water

7 (a) The Health Authority may disqualify water for being used as drinking water, set conditions for such use, restrict such use or order the restriction of supply, upon the occurrence of one of the following:

(1) When it (the water) does not comply with the provisions of Regulation 4;

(2) When a reasonable concern exists that the water might risk public health because of its quality or appearance or based on findings of a sanitary survey or due to concern of water contamination, even if the provisions of Regulation 4 are met;

(3) When it has been found that the water contains a factor not specified in these regulations or a factor for which no value, in measure, concentration or number has been set or a value that in the opinion of the Health Authority might risk public health.

(b) Once water has been disqualified for drinking, as stated in sub-regulation (a), the supply thereof shall not be renewed until after receipt of approval from the Health Authority, and subject to performance of such conditions and instructions as have been determined by the Health Authority.

Special permit for using water with deviating quality

8 (a) The Director may, in a reasoned written decision, for a limited period, permit the use of water, that do not comply with the quality requirements of Regulation 4, as drinking water and to make it subject to conditions, if he perceives that there is no alternative drinking water available for supply and after it has been established to his satisfaction that -

(1) Consumption of the drinking water for the said limited period will not cause health damage to the public;

(2) All measures ordered by The Director for the prevention of health damage due to drinking the water have been implemented.

(b) A permit as stated in sub-regulation (a), may be issued for a limited period that shall not exceed six months, and it may be renewed for additional periods.

(c) Once a permit, as stated in sub-regulation (a), has been issued,

the supplier shall without delay notify the consumers of the permit and its conditions, in a manner required by The Director.

Chapter C: Provisions for Water Sources and Production facilities

Approval of a drinking water source

9 (a) A Water supplier shall not supply water from a water source unless the Health Authority has approved the water source and in accordance with the conditions of such an approval, which shall contain, among others, provisions regarding the water treatment as stated in Regulation 17.

(b) The Health Authority shall not approve a water source as stated in sub-regulation (a) if the water is unsuitable for use as raw water because of water contamination or concern for contamination.

Testing a drinking water source

10 (a) A supplier who produces water from a water source shall perform tests of the raw water in the production facility as detailed hereunder:

(1) A full microbiological test and a turbidity test - once every three months; once water supply has been renewed from a production facility from which water has not been supplied for a period exceeding one month, the supplier shall perform a full microbiological test and a turbidity test prior to renewing the water supply as aforesaid;

(2) A chemical test of all the factors specified in Annex 1 and 2, at a frequency as specified in Annex 3, according to the monitoring frequency group detailed in Annex 1 and 2 to these regulations;

(3) Additional tests of such types and frequency required by the Health Authority, in case of concern for public health or for water contamination.

(b) The National Water Authority shall prepare, once annually, a monitoring plan for blue algae, (cyanobacteria) or their toxins in the raw water of the National Water Carrier, as well as an action plan for a situation of a deviation in blue algae toxins from the value specified in Table E of Annex 1 to this regulation; the said plans shall be submitted for approval of the Health Authority prior to November 1st of every year; the Health Authority may approve the plans, reject them, or approve them subject to conditions; the National Water Authority shall act in accordance with plans that have been approved by the Health Authority.

Deviation in a micro-biological test in an underground water facility

11 (a) Once the results of a full microbiological test of 100 milliliters of water sampled in an underground water facility, prior to disinfection, exceed 50 coliform bacteria, or 10 fecal coliform bacteria or 10 streptococci bacteria -

(1) The water supplier shall carry out repeat sampling for an additional full microbiological test, shall immediately perform corrective actions necessary to prevent water contamination, and shall report these actions to the Health Authority without delay, and shall also conduct an investigative sanitary survey

pursuant to Regulation 28 (b);

(2) If, after completing the corrective actions required under Paragraph (1), the water quality remains deviant of what was stated in the opening passage, the source shall not be used as raw water unless the water is treated as required in Regulation 17(c)(1) and provided that approval is obtained from the Health Authority, and in accordance with the conditions of such approval.

(b) An underground water facility, in which bacterial concentration has been found to be higher than what is specified in sub-regulation (a), in more than 50% of the annual samples taken under the approved sampling plan as stated in Regulation 26, shall be considered a surface water facility and the water shall be treated and monitored as specified in Regulation 17(c)(2), (d) and (e) pertaining to surface water facility or by equivalent methods approved by The Director.

(c) In an underground water facility in which the turbidity of the raw water deviated from the quality required in Table B of Annex 2 to these regulations, in more than 25% of the tests carried out through the last 5 years, the supplier shall continuously monitor water turbidity.

Production facility in which water is being injected back into the aquifer

12 (a) In a production facility where water is being injected, the injected water shall comply with the values in Regulation 4.

(b) Where water has been injected as stated in sub-regulation (a), drinking water shall not be supplied from the production facility until after approval of the Health Authority is received and in accordance with the conditions of such approval.

(c) For the purposes of this regulation, "water injection" - as defined in Section 44A of the Water Law.

Chapter D: Water supply system

Testing in the water supply system

13 (a) A water supplier shall perform the tests detailed hereunder, in a water supply system in his ownership or possession:

(1) A test that includes a microbiological test, a turbidity test and a test for an active disinfectant as detailed in Table A of Annex 4 ;

(2) A test for metals that includes – a test for iron, copper and lead as detailed in Table B the Annex 4;

(3) A test for fluoride as detailed in Table C of Annex 4;

(4) A test for asbestos, in pipe systems made of asbestos, as detailed in Table B of Annex 4.

(b) Tests as stated in sub-regulation (a) shall be carried out in accordance with the size of the population being served as specified in Column A in Annex 4, at a frequency specified in Column B and the number of samples for each test as detailed in Column C alongside it.

(c) Without diminishing from what is stated in sub-regulations (a) and (b), at the point of entry the supplier who is transferring the water to

another supplier, shall perform a microbiological test, a turbidity test and a test for an active disinfectant, at a frequency detailed in Annex 4, in Table A, Column B, according to the size of the population being served from that very point of entry as stated alongside it in Column A; notwithstanding the provisions of this sub-regulation, in situations detailed hereunder, the Health Authority may approve performance of the said tests at a representative sampling point or points it approved in advance:

(1) When the water supply is carried out directly to several communities, where the total population does not exceed 5,000 residents;

(2) In a community where there are several points of entry, at the entry points that reliably represent water quality and size of population being served, according to a plan approved by the Health Authority.

(d) The Health Authority shall decide as to the size of the population being served according to data from the Central Bureau of Statistics, taking into account among others, the extent and type of activity of the population being served from that water point; the decision made by the Health Authority, as stated in this sub-regulation, shall be published on the internet website of the Ministry of Health.

(e) In a case of concern for public health or water contamination, the water supplier shall perform additional tests of such types, at such frequencies and at such locations as the Health Authority shall direct.

(f) A test for an active disinfectant not carried out under continuous monitoring shall be made at the time of the sampling by a person qualified as stated in Regulation 33 (b), at the responsibility of the water supplier or a recognized laboratory on his behalf.

Tests requested by consumers

14 (a) At the request of a consumer, a water supplier shall perform tests for the factors in Regulation 13(a)(1) and (2) in the water supply system owned or possessed by the consumer, in accordance with sampling directives as shall be published by The Director; once such tests have been performed, the supplier shall provide the results to the consumer who shall bear the costs thereof.

(b) A water supplier supplying water to consumers, shall notify such consumers in the periodic account invoice, of the possibility to perform such tests under sub-regulation (a); the consumer may request that such tests be performed at a frequency of once every 12 months at the most.

Water held in a water storage tank

15 A supplier shall not supply drinking water that were held in a water storage tank, for a period that exceeds one week, unless an approval from the Health Authority is received and in accordance with the conditions of such approval; in this regulation, "water storage tank" - as defined in the Public Health Regulations (water storage tank Systems for Drinking Water), 1983 (hereinafter water storage tank Systems for Drinking Water Regulations).

Water supply from a new

16 A supplier shall not supply drinking water from a water supply system from which drinking water has not yet been supplied or from a water

system or after cleaning and disinfection of a water supply system

supply system that has undergone repair or a modification which might adversely affect water quality, unless he has performed cleaning and disinfection of the system by a method and with materials approved by The director and after performing tests, all in accordance with the Water storage tank Systems for Drinking Water Regulations and the instructions of The Director.

Chapter E: Water Treatment

Water treatment and monitoring in treatment facility

17 (a) A supplier shall operate a water treatment facility and shall monitor the water in a facility approved by the Health Authority and in accordance with the instructions of The Director, with regard to the types of production and treatment facilities, their capacity and their complexity.

(b) A treatment facility shall be planned, established and operated in accordance with the Best Available Technology (BAT) as approved by The Director, with consideration of, among others, the effect of the facility on the environment.

(c) In addition to sub-regulations (a) and (b) -

(1) Raw water produced in an underground water facility in which a deviation has occurred as stated in Regulation 11(a)(2) or has been exposed to contamination, in the opinion of the Health Authority, shall be treated in a manner that ensures the removal of at least 3 orders of magnitude of viruses.

(2) Raw water produced in a surface water facility shall be treated with a technology that will include at least filtration, and in a manner that ensures the removal of factors as detailed herein:

(a) cryptosporidium - 2 orders of magnitude (99% removal);

(b) giardia – 3 orders of magnitude (99.9% removal);

(c) viruses - 4 orders of magnitude (99.99% removal);

(d) Notwithstanding what is stated in sub-regulation (c), the Health Authority may demand the removal of higher orders of magnitude than stated in sub-regulation (c), when high concentrations of cryptosporidium or giardia have been found in the water source or when such concern exists.

(e) A filtration treatment facility shall be designed for a turbidity level of between 0.1 - 0.3 Nephelometric Turbidity Units (NTU) upon leaving the facility (exit point), at the discretion of The Director.

(f) Water turbidity shall be continuously analyzed at the exit point of each filtration unit and shall not exceed 0.3 NTU for 95% of the time on a daily average, and in any event, a deviation from 0.3 NTU shall not persist for more than 30 consecutive minutes.

Desalination

18 (a) In addition to what has been stated in Regulations 10 and 17, where raw water is treated by desalination, it shall be monitored at sampling points and for factors as detailed in Annex 6 and shall meet the levels required as specified in Column E of that Annex.

(b) In a desalination facility producing more than 5,000 cubic meters of water per day, continuous conductivity monitoring meters shall be installed in a number that is appropriate for the structure of the facility and its complexity and in accordance with the instructions of the Health Authority.
(c) A supplier who is desalinating water or is otherwise treating the water in a manner causing changes in acidity or alkalinity of the water, shall provide for the stabilization of the water by a method that shall assure that stabilization values of the water as specified in Column C in Annex 6 match the level required in Column E.
(d) Notwithstanding what is stated in sub-regulation (c), The Director may approve stabilization of the water, in order to minimize corrosion of the pipe system, by another method .

Water disinfection

19 (a) A supplier shall not supply drinking water unless it contains at least one of the disinfectants specified in Column A of Table A in Annex 5, at a concentration which shall not be less than the concentration specified in Column B, and shall not exceed the concentration specified in Column C, both in the production facility and in the supply system, as the case may be.
(b) Where drinking water contains more than one disinfectant of those specified in Table A of Annex 5, the minimal required residue shall be calculated according to the Sum of Ratios Value and shall not be less than 1 and the maximum required concentration shall be calculated according to the Sum of Ratios Value and shall not exceed 1.
(c) The supplier shall monitor the concentration of disinfectant in the drinking water as detailed hereunder:
(1) In a treatment facility where water disinfection is carried out - by continuous monitoring at the exit point from the facility;
(2) In a water supply system - at the time of any microbiological test or by continuous monitoring; if the frequency of the microbiological sampling is only once monthly, the residual disinfectant shall be monitored on one further occasion in the middle of the month;
(3) At the entrance to a water supply system serving a population larger than 50,000 residents - by continuous monitoring; such monitoring shall be carried out by the supplier transferring the water to another supplier.
(d) The Director may approve the disinfection of water with a disinfectant, or by a technology, not specified in Table A of Annex 5, on such conditions as he finds appropriate, if he has found that the efficiency thereof is equivalent to those disinfectants specified in Table A of Annex 5.
(e) A supplier shall plan the water supply system in a manner that shall reduce as much as possible the disinfection by-products in the drinking water; in any event, the maximum concentrations of by-products specified in Column B of Table B in Annex 5 shall not exceed the values specified in Columns C, D and E.
(f) The supplier shall monitor disinfection by-products at frequencies specified in Annex 5, in Tables C.1 to C.3, as the case may be.

(g) A supplier shall notify the Health Authority, another supplier, if exists and the consumers, in advance, of any change in the method or in the level of disinfection of supplied water.

Fluoridation

20 (a) Drinking water in which the fluoride concentration is less than 0.7 milligrams per liter (hereinafter - mg/l) - the supplier, shall add fluoride to the water prior to supplying to consumers in any community in which there are more than 5,000 residents, to the extent that the concentration in the water would be a weekly average of 1.0 mg/l .

(b) A supplier shall not establish nor operate a system that adds fluoride to water other than in accordance with a plan approved by the Health Authority, and which shall include means of monitoring and control.

(c) A supplier adding fluoride to the drinking water shall monitor the fluoride concentration in the water at least once daily or continuously.

Dilution

21 (a) A supplier who wishes to carry out dilution of drinking water in order to prevent a deviation from the quality required under Regulation 4(2), shall submit a written application to the Health Authority for the approval of the dilution; the supplier shall attach to such an application, among others, documented evidence to satisfy the Health Authority, of compliance with all the following conditions:

(1) The deviating factor is naturally abundant in the environment, including chloride, nitrate, sulfate, fluoride of a natural source, selenium of a natural source, and natural radioactive materials;

(2) The deviation is not caused by man-made pollution;

(3) The concentration of the deviant factor is stable or is merely changing slowly over time;

(4) A continuous monitoring and control system exists and ensures there shall be no excess of the deviant factor in the water following dilution;

(5) The water that is intended as diluent of the deviant water, shall meet the conditions set in Regulation 4.

(b) The water dilution and monitoring shall be carried out in accordance with an approved plan and the instructions of the Health Authority.

Monitoring instruments

22 The Director may stipulate the type of monitoring instruments to be used, the manner of their operation, their calibration and any other instruction pertaining to them.

Materials for the treatment of drinking water

23 A supplier shall not use a material for the treatment of water unless the material complies with the requirements of Israeli Standard 5438: "chemicals for treatment of water intended for drinking", or other material approved by The Director in writing.

Chapter F: General Provisions

Approval of plans

24 A person shall not set up a water supply system or a production facility unless the Health Authority has approved the plan of the system, or of the above-mentioned facility, and shall not set it up or operate it other than in accordance with the approved plan; the Health Authority may approve a plan, reject it or set conditions for its approval.

Products in contact with drinking water

25 A person shall not install nor use a product that comes into contact with drinking water, including in the water supply system or in the water production facility, unless it complies with the requirements of Israeli Standard 5452: "testing of products for use in contact with drinking water".

Annual sampling plan

26 (a) A supplier shall prepare an annual plan for performance of sampling and tests, in accordance with these regulations, in a water supply system and in a production facility that he owns or that is in his possession; the plan shall include at least, among others: sampling points, factors tested and the sampling schedules, as required under these regulations.

(b) A plan as stated in sub-regulation (a) shall be submitted for approval of the Health Authority before November 1st of every year, and in such manner as shall be stipulated by The Director; the Health Authority may approve the plan, reject it or set conditions for its approval, and this within one month from the date of having received it; where the Health Authority has not rejected a plan or made the plan subject to conditions, within the said month, the plan that has been submitted shall be considered an approved plan.

(c) A supplier shall operate in accordance with an approved annual plan as stated in sub-regulation (b).

Sampling and transferring samples to a laboratory

27 Sampling, including marking, storage and transportation of the samples for testing, shall be performed in accordance with The Director's instructions.

Sanitary survey

28 (a) A supplier shall perform a preventive sanitary survey, at a frequency which shall not be less than -

(1) Once annually, in a facility for water treatment, with the exception of a facility that is solely used for disinfecting water.

(2) Once every 5 years, in every water production facility and its vicinity, in an area that encompasses the facility within its protected zones, as defined in the Public Health Regulations (Sanitary Conditions for Drinking Water Well), 1995, with the addition of 100 meters from protection radius C, as defined in the said Regulation;

(3) Once in every 10 years, in the water supply system.

(b) In addition to what is stated in sub-regulation (a), a supplier shall immediately carry out an investigative sanitary survey in any case of -

(1) Contamination or concern for contamination of water;
(2) Where the Health Authority was of the opinion that a test result, including a deviation in water taste or odor, or other circumstances, points to a problem causing a contamination or concern for contamination of the water;
(3) If deviations have been found in more than 5% of the results of microbiological tests performed in the water supply system within one year.

(c) A sanitary survey shall be performed according to the instructions of the Health Authority.

(d) A preventive sanitary survey shall be performed according to a plan prepared by the water supplier and approved by the Health Authority.

(e) The water supplier shall submit the findings of the preventive sanitary survey or investigative survey to the Health Authority after its completion, including the results of the laboratory tests performed as part of the said survey.

(f) The water supplier shall prepare a plan for corrective actions, due to findings of the preventive sanitary survey and shall submit it for approval to the Health Authority within 60 days from the date of completing the survey; the plan for corrective actions shall set, among others, a time table for the performance of the actions detailed therein; The Health Authority may approve the plan for corrective actions upon conditions or instruct the supplier as to additional actions that he must take; once a plan for corrective actions has been approved, the supplier shall perform those actions according to the approved plan.

Chapter G: Reporting, Publication and Documentation

Reporting and forwarding test results

29 (a) A laboratory shall forward test results to the Health Authority, as detailed hereunder:

(1) Test results deviating from requirements specified in Regulation 4(1) and 4(2) shall be forwarded immediately to the Health Authority within which jurisdiction were the drinking water samples taken, and to the water supplier;
(2) Results of all the drinking water tests performed by the laboratory in accordance with these regulations shall be forwarded to the Health Authority once monthly, in a computerized manner.

(b) A supplier shall forward to the Health Authority, either personally or through a recognized laboratory, tests results as detailed hereunder:

(1) Once monthly, results of all microbiological tests, residual chlorine tests and turbidity tests performed during the preceding month; the results shall be forwarded in a computerized manner to the Health Authority within which jurisdiction were the water samples taken;
(2) Results of all chemical tests performed during a period of six months; the results shall be forwarded by the end of March

regarding the months of July through December of the year preceding the report, and by the end of September regarding the months of January through June of the same year; the results shall be forwarded in a computerized manner to the Health Authority within which jurisdiction were the water samples taken;

(3) Once annually, the results of tests performed at the request of consumers pursuant to Regulation 14, presented in a manner as stipulated by The Director.

(c) A supplier shall report without delay to the Health Authority regarding a fault that is liable to affect the quality of the water in the water supply system and in a water production facility.

(d) The water supplier shall submit a computerized annual report to the Health Authority by June 1 every year, summarizing the findings up to December 31st of the preceding year; such a report shall be submitted in the manner stipulated by The Director, including graphs and tables, data processing and analysis of the monthly findings of the year, substantial faults that have occurred, and recommendations for repair, improvement and upgrading.

Publication

30 (a) By June 1st of every year, a supplier shall publish on his internet website, an annual report specifying the quality of the water that he has supplied in the preceding year and all the details set out hereunder, according to water sources, production facilities and water supply systems from which he supplied water as aforesaid:

(1) Names and types of the water sources from which he supplied water;

(2) A summary of the findings of the microbiological and chemical tests performed throughout the past year, including the minimum and maximum concentrations of disinfectants and by-products of disinfectants in the water, distinctively and specifically mentioning deviations, if any have been found;

(3) Substantial faults that have affected the water quality and occurred in the water supply system or in the production facility;

(4) Corrective actions that he took due to faults as stated in Paragraph (3) or a deviation as stated in Paragraph (2) and actions that he took for the prevention of such faults or deviations;

(5) The treatment facilities that he has operated, with the exception of those being used solely for disinfection, and including the type of facility and the methods used for treating the water;

(6) The main findings of the sanitary surveys that he performed, and corrective actions taken following the findings of the said surveys;

(7) A summary of implementation of the annual sampling plan as stated in Regulation 26;

(8) Details of means of communication for the submission of requests and complaints.

(b) Without diminishing from the provisions of any law, The Director shall make all the following available for the public in his Offices and

on the Ministry's internet website:

(1) The Director's instructions in reference to these Regulations;

(2) Results of tests performed in water sources, in the production facilities and in the supply systems, distinctively and specifically mentioning deviations, if any have been found, including a summary of major findings of sanitary surveys within 90 days of the date the information was received;

(3) Information pertaining to the maximum permitted concentration for any factor in accordance with these regulations, and information concerning the health related effects of any such factor.

Report and publication of special permits

31 (a) The Director shall make information available for the public and on the Ministry of Health's internet website, regarding special permits for the use of water, issued pursuant to the provisions of Regulation 8 at or about the time such permit is granted; the publication shall mention the water source, the identity of the supplier and the region of supply for which the permit was issued, as well as the period for which the permit was issued.

(b) The Minister of Health shall report once annually, and no later than June 30th of every year, to the Internal affairs and Environment Committee of the Knesset, the special permits that the Health Authority had issued under the provisions of Regulation 8, including the rationales for issuing any such permit.

Documentation

32 (a) A supplier shall keep a computerized record of continuous monitoring data, for at least one year.

(b) The water supplier shall keep all water test results performed under these regulations and the information shall be available for inspection by the Health Authority at all times.

Employee training

33 (a) Any treatment, work, maintenance, cleaning, change or control of drinking water, in a water supply system or in a production facility shall be performed in the presence of or by a person who has undergone training approved by The Director in the field of sanitary quality of drinking water, and who has participated in periodic training courses, approved by The Director, at least once in every five years.

(b) Sampling shall be performed by a person, who has undergone training in water sampling approved by The Director, and who has participated in periodic training courses, approved by The Director, at least once in every five years.

Cancellation of approval

34 The Director and the Health Authority may at any time cancel an approval given under these regulations, provided that the supplier had been given an opportunity of having his arguments heard, if they are of the view that -

(1) Any one of the individual provisions of these regulations has not been complied with;

(2) There is a concern for public health if the approval is not cancelled.

Advisory Committee

35 (a) The Director shall appoint an Advisory Committee for drinking water quality, which shall be comprised as follows:

(1) The Chief Environmental Health Engineer in the Ministry of Health and he shall be the Chairman;

(2) The Chief Environmental Health Toxicologist in the Ministry of Health;

(3) The National Drinking Water Engineer in the Ministry of Health;

(4) Five representatives who are members of the Academic Staff of Institutions of Higher Education, who have educational qualifications in the field of water systems engineering, water chemistry or water biology, hydrology, water treatment or similar fields;

(5) Two physicians who are experts in public health;

(6) A representative of the Minister for Environmental Protection, being one of the employees of his Ministry;

(7) The Director of the Governmental Water and Sewage Authority or his Representative;

(8) A representative of the water suppliers appointed from a list of candidates submitted by The Director of the Governmental Water and Sewage Authority;

(9) A representative of a public organization that is concerned with public health and the environment from a list of candidates submitted by the umbrella organization of those public bodies concerned with preservation of environmental quality.

(b) The period of tenure in office of a member of the Advisory Committee appointed by sub-regulation (a) paragraphs (4) through (9) shall be five years and he may be re-appointed for additional periods of office.

(c) The Advisory Committee shall determine its own working arrangements.

(d) The duties of the Advisory Committee are:

(1) To follow the recommendations and standards of international organizations and other countries in regard to the recommended quality of drinking water;

(2) To follow studies and publications relating to quality of drinking water and research relevant to determination of requirements for the quality of drinking water;

(3) To analyze results of drinking water tests performed under these regulations;

(4) To recommend the performance of drinking water quality surveys as necessary, including the quality of drinking water in institutions populated by vulnerable population and in old buildings and at locations populated by deprived population, and professional oversight in performing such surveys.

(5) To recommend collection of data for factors that might be present in the water, in the water sources and in the water supply system, and to analyze this data;

(6) To recommend the conduct of research and information collection regarding desalinated water, including the effect of

consumption of water with low mineral content on public health and on the water supply system;
(7) To recommend the amendment and updating of these regulations, based among others, on information that has been accumulated and actions taken based on Paragraphs (1) to (5);
(8) Any other function assigned by The Director.

(e) Without diminishing from the provisions of sub-regulation (d), the Advisory Committee shall from time to time and at least once every 4 years, examine the need for updating these regulations and shall submit its recommendations to the Minister of Health.

(f) Findings and recommendations of the Advisory Committee shall be published on the Ministry of Health internet website.

Repeal

36 The Public Health Regulations (Sanitary Quality of Drinking Water), 1974 - are hereby repealed.

Commencement

37 (a) These regulations, with the exception of the provisions specified in sub-regulation (b) and (c), shall come into effect 60 days from the date of their publication (hereinafter - the commencement date).

(b) Commencement of Regulation 14 - One year from the date of publication of these regulations.

(c) Commencement of Regulation 33 (a) -

(1) In respect to a supplier who employs up to 10 employees in functions as stated in the said regulation, on March 1st 2014;
(2) In respect to a supplier who employs more than 10 employees in functions as stated in the said regulation, on September 1st 2017, provided that in every year up to the commencement date at least a fifth of the employees of such a supplier shall be duly trained.

Transitional Provisions

38 (a) The first annual series of samplings for monitoring Pesticides and Industrial Organic Materials for the purpose of the provisions of Item 1, "Monitoring frequency group A" in Annex 3 , shall be performed on dates set according to a plan that the water supplier shall submit for approval of the Health Authority by the commencement date; the series of samplings shall be performed by the end of five years from the commencement date and be annually distributed , in a uniform manner.

(b) The first annual series of samplings of the elements Uranium, Boron, Beryllium, Molybdenum, and Methyl-*tert*-Butyl Ether (MTBE) shall be performed on the dates set according to a plan that the water supplier shall submit for approval of the Health Authority by the commencement date; the series of samplings shall be performed by the end of two years from the commencement date.

(c) Not withstanding what is stated in Annex 2, water in which the concentration of factors as mentioned hereunder, shall be considered fit for drinking throughout the period indicated alongside it:

(1) Sulfate up to 350 mg/l - 3 years from the commencement date;
(2) Chloride up to 450 mg/l - 5 years from the commencement date;
(3) Aluminum in filtered water, up to 0.2 mg/l in excess of the concentration in the raw water - two years from the commencement

date

(d) (1) An initial sanitary survey as to Regulation 28(a)(2) shall be performed by the end of three years from the commencement date.

(2) An initial sanitary survey as to Regulation 28(a)(3) shall be performed by the end of of five years from the commencement date and be evenly distributed over the years.

Temporary provision - Magnesium

39 In the period between September 1st 2012 to September 1st 2015 the ramifications and costs of adding magnesium to desalinated water shall be examined in order to study costs and applicability of the optional technologies, and the following provisions shall apply:

(1) In one or more of the desalination facilities, infrastructures shall be constructed for the purpose of operating a pilot plant or plants for the examination of technologies for the addition of magnesium to drinking water, including an infrastructure that will enable the pilot plant to re-introduce magnesium to desalinated water at a concentration of 20 to 30 mg/l, thereby enabling reliable results as to the feasibility, cost, health effects and other consequences and the benefit of each of the technologies examined;

(2) A professional team shall be established consisting of seven members who shall be responsible for determining the outline of the pilot plant, its capacity and scope, including a specification of the work, the stages, the methodology and the exact criteria to be examined; the team shall include two representatives of The Director General of the Ministry of Health, a representative of The Director General of the Ministry of Energy and Water, a representative of The Director of the Governmental Water and Sewage Authority, a representative of The Director General of the Ministry of Agriculture and Rural Development and two representatives of the Ministry of Finance (in these regulations - the team);

(3) The Director shall make an annual report to the Internal affairs and Environment Committee of the Knesset, no later than September 1st, of the results of the examination performed by the said team and their conclusions as of the date of the report, and further, by June 1st, 2015 a recommendation shall be given with regard to the work of the team in the matter of adding magnesium to desalinated water;

(4) During the period up to September 1st, 2015, The Director may permit a water supplier, who supplies water from a desalination facility, to run the water treated in the pilot plant into the drinking water, under such conditions as he shall deem appropriate.

Temporary Provision - Fluoridation

40 Regulation 20 shall remain in force for a period of one year from the commencement date.

Annex 1

(Regulations 2, 4(2), 6(2), 10(a)(2), 10(b) and Annex 3)

Factors Affecting Health

Table A: Inorganic Substances

Column A The Factor	Column B Symbol (for reporting purposes)	Column C Maximum Concentration microgram per liter (hereinafter - mcgl)	Column D Monitoring Frequency Group in a production facility relevant to Annex 3
Antimony	Sb	6	C
Uranium*	U	15	E
Arsenic	As	10	E
Boron	B	1,000	E
Barium	Ba	1,000	E
Beryllium	Be	4	E
Nitrate	NO_3	70,000 (asNO_3)	F
Silver	Ag	100	E
Mercury	Hg	1	E
Chrome	Cr	50	E
Molybdenum	Mo	70	E
Nickel	Ni	20	E
Selenium	Se	10	E
Lead	Pb	10	E
Fluoride	F	1,700	E
Cyanide	CN	50	E
Cadmium	Cd	5	E
Thallium	Tl	2	C

* Uranium will also be tested for radioactivity level according to table D: radioactive substances.

Table B: Pesticides

Column A The Factor	Column B Symbol (for reporting purposes)	Column C CAS No.	Column D Maximum Concentration microgram per liter (mcgl)	Column E Monitoring Frequency Group in a production facility relevant to Annex 3
Oxamyl	OXML	23135-22-0	200	C
Alachlor	ALAC	15972-60-8	4	A
Aldicarb	ALCB	116-06-3	10*	A
Aldicarb sulfone	ALSN	1646-88-4		
Aldicarb sulfoxide	ALSD	1646-87-3		
Atrazine	ATRA	1912-24-9	2	A
Aldrin	ADRN	309-00-2	0.05*	C
Dieldrin	DADN	60-57-1		
Ethylene Dibromide	ETDB	106-93-4	0.05	A
2,4-D Including esters and salts	DCPA	94-75-7	30	A
1,2-Dibromo-3-Chloropropane	DBCP	96-12-8	0.3	A
DDT	DDT	107917-42-0	1*	B
Including degradation products	DDD	72-54-8		
DDE-& DDD	DDE	72-55-9		
1,2-Dichloropopane	DCPN	78-87-5	5	A
Dimethoate	DMTT	60-51-5	6	A
Dinoseb	DNSB	88-85-7	7	C
Diquat	DQAT	85-00-7	20	C
Heptachlor	HEPT	76-44-8	0.4	A
Heptachlor epoxide	HEPE	1024-57-3	0.2	A
2,4,5-T	TCAA	93-76-5	9	B
Trifluralin	TRFL	1582-09-8	20	A
Chlordane including all isomers of Octachlor	CLDN	57-74-9	1	A
Chlorpyrifos	CLPF	2921-88-2	30	A
Lindane	LIND	58-89-9	1	A
Metolachlor	MTAL	51218-45-2	10	C
MCPA	MCPA	94-74-6	2	A
Simazine	SIMZ	122-34-9	2	A
2,4,5-TP (Silvex)	TCPA	93-72-1	10	B
Pentachlorophenol (PCP)	PCP	87-86-5	3	B
Carbofuran	CBFN	1563-66-2	20	C
Sum of ratios value			1.5 (No Units)	

* Sum of all the factors listed in this group

Table C: Organic Substances from an Industrial Source

Column A The Factor	Column B Symbol (for reporting purposes)	Column C CAS No.	Column D Maximum Concentration microgram per liter (mcgl)	Column E Monitoring Frequency Group in a production facility relevant to Annex 3
Ethylbenzene	ETBN	100-41-4	300	A
Polychlorinated Biphenyls (PCB's)	PCB	1336-36-3	0.5*	B
Benzene	BENZ	71-43-2	5	A
Benzo[a]pyrene	BNZP	50-32-8	0.5	A
Di(2-ethylhexyl) phthalate	BEPT	117-81-7	8	A
Ethylene Dibromide	ETDB	106-93-4	0.05	A
1,1-Dichloroethylene	DCEY	75-35-4	10	A
Cis-1,2-Dichloreothylene	CDCE	156-59-2	50	A
Trans-1,2-Dichloroethylene	TDCE	156-60-5	50	A
1,2-Dichloroethane	DCET	107-06-2	4	A
1,2-Dichlorobenzene	MDCB	95-50-1	600	A
1,4-Dichlorobenzene	PDCB	106-46-7	75	A
Dichloromethane	DCLM	75-09-2	5	A
1,2-Dichloropropane	DCPN	78-87-5	5	A
Vinyl chloride	VYCL	75-01-4	0.5	A
Toluene	TOLU	105-88-3	700	A
Tetrachloroethylene	TECE	127-18-4	10	A
1,1,1-Trichloroethane	TCET	71-55-6	200	A
1,1,2-Trichloroethane	TCEN	79-00-5	5	A
Trichloroethylene	TCEY	79-01-6	20	A
1,2,4-Trichlorobenzene	TCB	120-82-1	70	A
Chloroform	CHLF	67-66-3	80	A
Monochlorobenzene	MCBZ	108-90-7	100	A
Styrene	STYR	100-42-5	50	A
Formaldehyde	FORM	50-00-00	900	D
Carbon Tetrachloride	CCL4	56-23-5	4	A
Xylene – sum of all Isomers	XYLE	1330-20-7	500	A
Sum of ratios value			1.5 (No Units)	

* Sum of all the species expressed as Decachlorobiphenyl

Table D: Radioactive Substances
Radionuclide from natural origin and manmade sources that might be found in drinking water sources*

Column A Radionuclide	Column B Type of Radiation	Column C Maximum Activity Concentration** (Bq/l)	Column D Source of Radionuclide		Column E Monitoring Frequency Group relevant to Annex 3
U^{238}***	α	3.0	Natural uranium series	Radionuclides from a natural source	I
U^{234}***	α	2.8			
Th^{230}	α	0.7			
Ra^{226}	α	0.5			
Pb^{210}	β	0.2			
Po^{210}	α	0.1			
Th^{232}	α	0.6	Natural thorium series		
Ra^{228}	β	0.2			
Th^{228}	α	1.9			
Ra^{224}	α	2.1			
Cs^{134}	β	7.2	Fission Products	Radio-nuclides from a manmade source	
Cs^{137}	β	10.5			
Sr^{90}	β	4.9			
I^{131}	β	6.2			
H^{3}	β	7,610	Other Radio-nuclides		
C^{14}	β	236			
Pu^{239}	α	0.5			
Am^{241}	α	0.7			
Sum of ratios value		1 (No Units)			

* Maximum activity concentrations for other radionuclides are detailed in annex 6 of the Guidelines for drinking water quality of the World Health organization (WHO) in the most updated edition published on the Ministry of Health Internet Website

** Maximum activity concentration as detailed in Column C is the equivalent of one annual radiation dose of 0.1 Millisievert (0.1 mSv)

*** The maximum concentration of Uranium will also be tested according to Table A: Inorganic Substances.

Table E: Blue Algae (Cyanobacteria) Toxins

Column A The Factor	Column B Maximum Permitted Concentration (mcgl)	Column C Monitoring Frequency Group relevant to Annex 3
Microcystin LR (free and bound)	1	D

Table F: Other Factors

Column A The Factor	Column B Symbol (for reporting purposes)	Column C Maximum Permitted Concentration (mg/l)	Column D Monitoring Frequency Group relevant to Annex 3
Perchlorate (CLO_4)	CLO_4	-	D
Benzo[a]pyrene*	BNZP	-	A
Benzo[b]fluoranthene	BBFL	-	D
Benzo[k]fluoranthene	BKFL	-	D
Benzo[ghi]perylene	BGPE	-	D
Indeno (1,2,3-cd) pyrene	INPY	-	D
Cryptosporidium		-	D
Giardia		-	D

* Benzo[a]pyrene will also be examined according to Table C: Organic Substances from an Industrial Source

Annex 2

(Regulations 2, 4(2), 6(2), 10(a)(2), 11(c) and 37(c))

Factors with an Organoleptic Effect*

Table A

Column A The Factor	Column B Symbol (for reporting purposes)	Column C Maximum Permitted Concentration (mg/l)	Column D Monitoring Frequency Group Relevant to Annex 3
Zinc	Zn	5.0	G
Aluminum	Al	0.2	G
Potassium	K	-	G
UV Radiation absorbance	UV	-	H
Iron	Fe	1.0	G
Sulfate	SO_4	250	G
Chloride	Cl	400	H
Total Organic Carbon	TOC	-	H
Total Dissolved Solids	TDS	-	G
Magnesium	Mg	-	G
Manganese	Mn	0.2	G
Surface Active agents (anionic detergents)	MBAS	0.5	G
Methyl-t-Butyl Ether.(MTBE) CAS No.04-4-1634	MTBE	0.04	G
Copper	Cu	1.4	G
Sodium	Na	-	G
Calcium	Ca	-	G
Oils	OG	0.3	D

***** Organoleptic effect - taste, odor, color, temperature, and so forth

Table B

Column A The Factor	Symbol (for reporting purposes)	Column B Permitted Value	Column D Monitoring Frequency Group Relevant to Annex 3
Acidity/Alkalinity	PH	6.5-9.5	H
Taste		not repulsive	By special request
Smell	ODOR	not repulsive	By special request
Temperature	T	not repulsive	H (on site testing)
Color	COLR	15 Color Units	H
Turbidity	TURB	1 Nephelometric Turbidity Unit (hereinafter - NTU)	In a water source - quarterly in a water supply system - at every microbiological sampling

** The Director may permit up to 3 NTU in an underground water facility if it has been proven to his satisfaction that the turbidity emanates from a mineral factor and is not accompanied by a microbiological deviation as stated in Regulation 4(1)

Annex 3

(Regulations 10(a)(2), 37(a), Annex 1 and 2)

The Sampling Frequency in a Production Facility

1. **Monitoring Frequency Group A**
(Pesticides and organic substances from an industrial source)

(a) **A deep underground water facility**

In an underground water facility in which the depth of the bore from ground level to the bottom of the bore is greater than 150 meters - monitoring of each factor will be performed once annually.

If the concentration of a particular factor upon testing is lower than 60% of the maximum concentration, and a sanitary survey has not revealed findings justifying an increased frequency of testing, the sampling frequency shall be reduced to once every 5 years; the frequency shall be increased to an annual frequency if in one of the tests the concentration of the factor shall rise above 60% of its maximum permitted value.

(b) **A shallow underground water facility**;

(1) In a shallow underground water facility in which the depth of the bore from ground level to the bottom of the bore is less than 150 meters - monitoring for each factor will be performed once every 3 months for a period of one year*;

(2) At each stage, depending upon the results of the last tests, action must be taken according to one of the following alternatives:

(a) **First alternative:** where it has been found that the result of all the tests for a particular factor is less than 10%** of the maximum concentration, the next sampling will take place after 5 years;

(b) **Second alternative:** where it has been found that the result of a test for a certain factor is between 10% and 30% of the maximum concentration of that factor, action must be taken as follows:

* No Need to perform sampling during seasons in which the production facility is inactive
** A result that is less than the quantification threshold of the method shall be deemed to be 0.

(1) The monitoring shall be performed in the season in which the factor has been found at a concentration of between 10% and 30%, at a frequency of once annually;
(2) Where it has been found that the maximum concentration is lower than 30% and that there is no upward trend in its concentration for a period of 3 years, the next sampling for that factor shall be performed after 5 years;

(c) **Third alternative:** where it has been found that the result of a test for a particular factor is higher than 30% of the maximum concentration, action must be taken as follows:
(1) The supplier will perform monitoring at a frequency of once every 3 months;
(2) Where it has been found that concentration of the factor dropped below 30% of the maximum concentration in all tests performed during 3 years, the next sampling for that factor will be performed a year later.
(3) Where it has been found that concentration of the factor is lower than 30% in all tests performed for that factor and that there is no upward trend in its concentration over a period of 5 years, the next sampling shall be performed 5 years later

(c) **Surface water facility**

(1) In an above-ground water facility monitoring shall be carried out for each factor once every three months for a period of one year*.
(2) At every stage, depending upon the results of the last tests, action must be taken according to one of the the following alternatives:
(a) **First alternative:** where it has been found that the result of all the tests for a particular factor is less than 10%** of the maximum concentration, the next sampling will take place after 3 years;
(b) **Second alternative:** where it has been found that the result of a test for a certain factor is between 10% and 30% of the maximum concentration of that factor, action must be taken as follows:
(1) The monitoring shall be performed at a frequency of once every three months;
(2) Where it has been found that the maximum concentration is lower than 30% and that there is no upward trend in its concentration for a period of 3 years, the next sampling for that factor shall be performed after 3 years;
(c) **Third Alternative:** where it has been found that the result of a test for a particular factor is higher than 30% of the maximum concentration, action must be taken as follows:
(1) The supplier will perform monitoring at a frequency of once every 3 months;
(2) Where it has been found that concentration of the factor dropped below 30% of the maximum concentration in all tests performed during 3 years, the next sampling for that factor will be performed a year later.
(3) Where it has been found that concentration of the factor is lower than 30% in all tests performed for that factor and that there is no upward trend in its concentration over a period of 5 years, the next sampling shall be performed 3 years later.

* No Need to perform sampling during seasons in which the production facility is inactive
** A result that is less than the quantification threshold of the method shall be deemed to be 0.

2. **Monitoring Frequency Group B**
   (Factors of which use has been terminated or which were never in use in Israel)
   One test shall be performed for every factor, in every water production facility that hasn't been tested for this factor since January 1st 2006.
   In a production facility in which one of the factors has been discovered, at any concentration, the monitoring for this factor shall continue as directed by the Health Authority; In production facilities in which the factor has not been found, monitoring for this factor shall cease.

3. **Monitoring Frequency Group C**
   (Factors for which the probability to constitute a sanitary hazard is too small to justify regular monitoring at this stage, but information gathering is necessary to evaluate the necessity of monitoring under conditions prevailing in Israel).
   Tests will be performed in 25% of the production facilities of every water supplier who supplies water from more than 3 production facilities, for a period of 2 years since the commencement of these Regulations; the Health Authority shall approve the list of the production facilities in which such tests are to be performed;
   According to the findings of these tests throughout the country, The Director shall decide under which of the monitoring groups such contaminants shall be classified. (Group "A" "B , "D", "E " or termination of monitoring).

4. **Monitoring Frequency Group D**
   (Factors which are liable to constitute a health hazard, and may be found only in specific areas).
   The monitoring will be performed as instructed by The Director according to the degree of the environmental-health risk present in each region.

5. **Monitoring Frequency Group E**
   (Non-organic factors that affect health)
   In relation to each factor, monitoring shall be performed once annually in every production facility.
   If the concentration of a particular factor in the last test performed, including a test performed prior to the commencement date, is lower than 60% of the maximum concentration, and a sanitary survey has not revealed findings that justify an increased testing frequency, the sampling frequency shall be reduced to once every 5 years.
   The frequency shall be increased to once a year if in one of the tests, the concentration of the factor should rise above 60% of its maximum permitted value.

6. **Monitoring Frequency Group F**
   (Nitrate)
   Annual monitoring shall be performed in all production facilities.
   If the concentration found in a test is higher than 50 mg/l, the sampling frequency shall be increased to once every 3 months. Reducing the sampling frequency to once annually, shall require the approval of the Health Authority.

7. Monitoring Frequency Group G
(Factors with an organoleptic affect)

A factor for which a maximum concentration has been determined, monitoring shall be performed once annually in every production facility.

If the concentration in the last test performed, including a test performed prior to the commencement date, is lower than 60% of the maximum concentration, the sampling frequency shall be reduced to once every 5 years.

Where no maximum concentration has been determined for a factor, monitoring shall take place once every 5 years in every production facility.

8. Monitoring Frequency Group H
(Factors with an organoleptic affect)

For these factors monitoring will be performed once annually in all water sources.

9. Monitoring Frequency Group I
(Radioactive Substances)

Annual monitoring will be performed for α and β emitting radioactive elements in all production facilities.

Depending on the results of the last tests for the gross α and β emitting radioactive elements, action must be taken according to one of the following alternatives:

(1) **First Alternative:** Where it has been found that test results are lower than 0.2 becquerel (Bq) per liter for gross α emitting radioactive elements and 1 Bq per liter for gross β emitting radioactive elements (after deduction of the activity concentration of Potassium-40), the sampling frequency shall be once in five years.

(2) **Second Alternative:** Where it has been found that test results are higher than 0.2 becquerel (Bq) per liter for gross α emitting radioactive elements and 1 Bq per liter for gross β emitting radioactive elements (after deduction of the activity concentration of Potassium-40), a detailed test for radionuclides from Table D in Annex 1, shall be performed according to rules set by The Director, and under the following conditions:

(a) Where it is found that the sum of ratios value of the radionuclides is smaller than 0.6, a further test shall be performed after 3 years for gross α emitting radioactive elements and for gross β emitting radioactive elements;

(b) Where it is found that the sum of ratios value of the radionuclides is between 0.6 and 1, a further test shall be performed after one year for gross α emitting radioactive elements and for gross β emitting radioactive elements.

Annex 4

(Regulation 13(a), (b), and (c))

Testing and Sampling Frequency in a Water Supply System

Table A: Microbiological tests, Active Disinfectant and Turbidity

Column A Size of Population being Served	**Column B** Sampling Frequency	**Column C** Number of sites from which a sample is taken on each occasion
Up to 1,000	Once every 4 weeks	2
1,001 to 5,000	Once every 4 weeks	4
5,001 to 10,000	Once every 4 weeks	6
10,001 to 20,000	Once every 2 weeks	5
20,001 to 30,000	Once every 2 weeks	6
30,001 to 40,000	Once every 2 weeks	7
40,001 to 50,000	Once weekly	5
50,001 to 70,000	Once weekly	6
70,001 to 90,000	Twice weekly	4
90,001 to 110,000	Twice weekly	5
110,001 to 140,000	Twice weekly	6
140,000 to 170,000	3 times weekly	4
170,000 to 200,000	3 times weekly	5
200,001 to 250,000	5 times weekly	4
250,001 to 300,000	5 times weekly	5
300,001 to 400,000	5 times weekly	6
400,001 to 500,000	5 times weekly	7
Above 500,000	5 times weekly	8
Main water system	Frequency and number of samples as per the sampling plan under Regulation 26	

Table B: Tests for Metals - Iron, Copper and Lead

Column A Size of Population being Served	**Column B** Sampling Frequency	**Column C** Number of sites from which sample is taken on each occasion
Up to 10,000	Once every 3 years	3
10,001 to 50,000	Once every 2 years	6
50,001 to 100,000	Once annually	10
100,001 to 200,000	Once annually	20
200,001 to 300,000	Once annually	40
Above 300,000	Once annually	60
Main water system	Frequency and number of samples as per the sampling plan under Regulation 26	

Table C: Tests for Fluoride

(1) A representative sampling point will be tested at least quarterly;
(2) In regions where water is received from a permanent source a sample will be taken from one representative sampling point;
(3) In communities receiving water from various water sources, samples will be taken as set forth in the Table;

Column A Size of Population being Served	**Column B** Sampling Frequency	**Column C** Number of sites from which sample taken on each occasion
Communities in Regional Councils	Quarterly	1
In Local Councils and towns	Once monthly at variable	
Up to 20,000	sampling points	2
20,001 to 50,000		3
50,001 to 100,000		4
100,001 to 200,000		5
200,001 to 300,000		6
Above 300,000		7
Main water system	Frequency and number of samples as per the sampling plan under Regulation 26	

Table D: Tests for Asbestos

Column A Size of Population being Served	**Column B** Sampling Frequency	**Column C** Number of sites from which sample is taken on each occasion
Up to 10,000	Once-Only tests to be performed within 3 years of the commencement date	3
10,001 to 50,000		6
50,001 to 100,000		10
100,001 to 200,000		15
200,001 to 300,000		20
Above 300,000		30
Main water system	Frequency and number of samples as per the sampling plan under Regulation 26	

Annex 5

(Regulations 2, 4(2), 19(a), (b), (d) through (f))

Disinfection

Table A: Disinfectants

Column A **The Factor**	**Column B** **Minimal Required Residue, mg/l**	**Column C** **Maximum Permitted Concentration, mg/l**
In the Production facility at the exit of the disinfection facility		
Chlorine	0.2	1
Chloramines	0.5	3
Chlorine Dioxide	0.1	0.8
Sum of ratios value	1 (no units)	1 (no units)
In the Water Supply System		
Chlorine	0.1	0.5*
Chloramines	0.3	3
Chlorine Dioxide	Not required	0.8
Sum of ratios value	1 (no units)	1 (no units)

* In a main water system, as long as the water is not being supplied to consumers, up to 0.8 mg/l.

Table B: Disinfection By-Products

Column A The Factor	Column B By-Products of Disinfection	Column C Maximum Concentration	Column D Maximum Concentration for no more than two consecutive weeks	Column D Maximum annual weighted average
		Mg/l	Mg/l	Mg/l
Chlorine	Trihalomethanes	0.1 per 90% of the time at least	0.15	0.1
Chloramines	Ammonia	-	-	-
	Nitrite	3(as NO_2)	-	-
Chlorine Dioxide	Chlorite+Chlorate	1*	-	-
Ozone	Bromate	0.01	-	-

* Sum of 2 compounds

Table C: Sampling Frequency for Disinfection By-Products

- The Tables refer to a water supply regime where no alteration of disinfectant type occurs;
- When disinfectant type is alternated for certain periods, monitoring at the required frequency shall begin after a week;
- An annual adjusted calculation of the measured levels in accordance with the duration of use of each of the disinfectants, will be computed.

Table C.1: Monitoring Ammonia, Nitrite, Chlorite + Chlorate, and Bromate

By-Product of Disinfection	Ammonia	Nitrite	Chlorite + Chlorate	Bromate
Monitoring Frequency in The Water Supply System	Once every three months			
Location of Sampling Points in Water Supply System	Point with maximum retention time or by-products level			

Table C.2: Monitoring Trihalomethanes

			Column D Location of Sampling Points in the water Supply System		
Column A Production facility	**Column B Size of served population**	**Column C sampling Frequency**	Total No of test points in the sample	Point of entry to the System	Point with maximum retention time or level of by-products
Surface water	up to 1,000	Twice annually between May and October	1		1
	1,000- 10,000	Once every 6 weeks and once only between December and February	2	1	1
	10,000-50,000		3	1	2
	50,00-250,000		5	2	3
	Above 250,000		8	3	5
Underground water or desalinated water	Up to 10,000	Once annually between June and August	1		1
	10,000-100,000	Once every 6 weeks and once only between December and February	3	1	2
	Above 100,000		4	1	3

Notes on Table C.2

- In a period in which concentrations are found to be higher than the maximum permitted concentration, the sampling frequency shall be increased to once every two weeks;
- A supply system in which underground water and surface water are being supplied intermittently shall be considered to be a system supplying surface water.

Table C.3: Reduced Monitoring for Trihalomethanes

			Column D Location of Sampling Points in the water Supply System		
Column A Production facility	**Column B Size of served population**	**Column C sampling Frequency**	Total No of test points in the sample	Point of entry to the System	Point with maximum retention time or level of by-products
Surface water	up to 1,000	Twice annually between May and October	1		1
	1,000- 50,000	Once every 3 months between December and February and once every 6 weeks the rest of the year	2	1	1
	50,00-250,000		3	1	2
	Above 250,000		4	2	2
Underground water or desalinated water	Up to 10,000	Once every 3 years between June and August	1		1
	10,000-100,000	Once a year between June and August	1		1
	Above 100,000	Once a year between June and August	2	1	1

Notes on Table C.3

Reduced monitoring according to the table will be performed only if the measured concentration of trihalomethanes at all sampling points in the water supply system has been found to be lower than 0.05 mg/l during a continuous period of one year.

Annex 6

(Regulations 2, (4) 2, 18 (a) and (c), and 36 (c))

Monitoring and Quality Instructions for Desalination

Column A Type of Monitoring	Column B Sampling point	Column C The factor	Column D Unit of measurement	Column E Required level
Continuous	Exit from desalination plant	Conductivity	Micro-Siemens per centimeter	Operational value[1] in 95% of daily measurements and not more than 30% above the operational value
	Exit from "Hardening"	Turbidity	NTU	0.5 and below in 95% of daily measurements and not more than 1.0
		Acidity/Alkalinity	pH	7.5-8.3 in 95% of the daily measurements and not more than 8.5
Grab Sample	Exit from "Hardening"	Soluble Calcium	Mg/l as - $CaCO_3$	80-120 [2]
		Alkalinity	Mg/l as - $CaCO_3$	80 and above
		Stabilization value - CCPP[3]	Mg/l as - $CaCO_3$	3.0-10 [4]
		Stabilization value – LI Langelier Index	unit	0 and above [4]

Notes on the Table:

(1) Operational value approved by the Health Authority for operation of the desalination plant.

(2) In water that has been desalinated from brackish water wells, the concentration of soluble calcium shall not be less than 50 mg/l as $CaCO_3$ and provided that the CCPP values shall be within the confines of the permitted concentration and as has been approved by the Health Authority.

(3) Calcium Carbonate Precipitation Potential - a quantitative parameter that represents the precipitation potential of $CaCO_3$(s) in solution until achieving an equilibrium state between the aqueous and solid phases: Calculating the parameter is made iteratively by using the values of these parameters in the aqueous phase: general alkalinity, soluble calcium concentration, EC of the water, pH and temperature; a software designed for water chemistry such as the $STASOF_4$ and the AWWA (RTW model) will carry out the calculation.

(4) Not mandatory for small brackish water desalination plants supplying up to 5,000 cubic meters of water per day to a regional water supply system only.

April 9th, 2013

Original Hebrew version was signed by
YAEL GERMAN
The Minister of Health