

ILLINOIS POLLUTION CONTROL BOARD
November 22, 1974

IN THE MATTER OF:

PROPOSAL FOR AMENDMENT OF WATER POLLUTION
REGULATIONS

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R 74-11

ORDER OF THE BOARD (by Mr. Dumelle):

Motion filed November 12, 1974 by the Curtiss Candy Company asks for reconsideration or in the alternative for leave to intervene.

We deny reconsideration for the reasons that the substantially identical proposal is now before us in R 74-1, R 74-8 and R 74-9 as a result of an Environmental Protection Agency endorsement of those proposals. We do not lightly waive the 200 signature requirement set by statute to initiate regulatory proposals because such waivers might tend to indicate a judgment by the Board on the merits in advance of testimony.

Leave to intervene in R 74-1, R 74-8 and R 74-9 is granted.

IT IS SO ORDERED.

I, Christan L. Moffett, Clerk of the Illinois Pollution Control Board, do hereby certify that the above Order was adopted on this 22nd day of November, 1974 by a vote of 4-0.



ILLINOIS POLLUTION CONTROL BOARD

RULES AND REGULATIONS

Chapter 6: Public Water Supply

PART 1: INTRODUCTION

101 Authority

Pursuant to the authority contained in Section 17 of the Environmental Protection Act, adopted 1970, as amended (Ill. Rev. Stat. 1973, ch. 111 1/2, § 1017), which authorizes the Board to issue regulations "governing the location, design, construction, and continuous operation and maintenance of public water supply installations, changes, or additions which may affect the continuous sanitary quality, mineral quality, or adequacy of the public water supply," the Board adopts the following rules and regulations.

102 Policy

The General Assembly has found "that state supervision of public water supplies is necessary in order to protect the public from disease and to assure an adequate supply of pure water for all beneficial uses" (Ill. Rev. Stat., 1973, ch. 111 1/2, §1014). It is the purpose of these rules and regulations to serve as a guide in the design, preparation, and submission of plan documents for public water supply systems and their operation; to delineate limiting values for items upon which an evaluation of such plan documents will be made by the Agency; to establish, so far as practicable, uniformity of practice among the various engineers, and to delineate operation and maintenance procedures as necessary to insure safe, adequate, and clean water. Where the terms "shall" and "must" are used, practice is sufficiently standardized to permit specific delineation of requirements for safeguarding the health and well-being of the populace. These terms are intended to indicate a mandatory requirement by the Agency. Other terms, such as "should," "recommended," and "preferred" indicate desirable procedures or methods with deviations subject to individual consideration. The use of new water treatment methods, equipment, and materials for the processing and distribution of water are encouraged; nevertheless, before new processes, equipment, or materials are used at a public water supply facility, the supplier and/or engineer of such processes, equipment, and materials shall:

- A. Show that they have been thoroughly tested in full-scale, comparable installations, under competent supervision, or
- B. Establish that they have been thoroughly tested as a pilot-plant operated for a sufficient time

to indicate satisfactory performance.

103 Repeals

- A. These rules and regulations replace and supersede all Public Water Supply Systems Rules and Regulations adopted by the Illinois Department of Public Health (except those rules and regulations concerning fluoridation treatment), and continued in effect by Section 49 (C) of the Environmental Protection Act "until repealed, amended, or superseded by regulations under this Act." Accordingly, Public Water Supply Systems Rules and Regulations are hereby repealed, except that any proceeding arising from any act committed before the effective date of the applicable provision of this Chapter shall be governed by the regulations in force at the time the act was committed.
- B. Notwithstanding the provisions of Rule 212, those Technical Policy Statements presented to the Board with these Rules and Regulations shall have full force and effect on the effective date of these Rules and Regulations. Subsequent Technical Policy Statements shall be adopted by the Agency in conformance with Rule 212 of this Chapter.

104 Definitions

Definitions of terms and their use in Chapter 6 and in any Technical Policy Statements supplementary to Chapter 6 are in accordance with "Glossary-Water and Wastewater Control Engineering," 1969 edition, published jointly by American Public Health Association, American Society of Civil Engineers, American Water Works Association, and the Water Pollution Control Federation, except as separately defined below.

"Act" means the Illinois Environmental Protection Act.

"Adequate" means that a reasonable amount of water shall be available at all times.

"Agency" means the Illinois Environmental Protection Agency.

"Board" means the Illinois Pollution Control Board.

"Boil Order" means an order to boil all drinking and culinary water for at least five minutes before use, issued by the proper authorities to the consumers of a public water supply affected, whenever the water being supplied may have become bacteriologically contaminated.

"Certified Operator" means a public water supply operator certified according to the provisions of "An Act to Regulate the Operating of a Public Water Supply" (Ill. Rev. Stat. 1973, ch. 111 1/2 §501 et seq.).

"Engineer" means such person, persons, or firm which designed the waterworks, improvements or extensions thereto, and who conceived, developed, executed, or supervised the preparation of the plan documents, and who is registered in accordance with applicable statutes to practice in Illinois.

"Ground Water" means all natural or artificially introduced waters found below the ground surface, including water from dug, drilled, bored or driven wells, infiltration lines, and springs.

"Operational Testing" means only those chemical and physical tests (excluding bacteriological) which are to be used routinely in the operation of a public water supply in order to control the treatment processes used at that supply. These tests, which may be performed with commercially available test kits, include, but are not limited to:

Iron test for iron removal

Hardness test for ion exchange softening

Alkalinity for lime softening

Free and combined chlorine for chlorination.

"Organization Officer" means any officer of an organization which is the owner or operator of a public water supply, and who has direct administrative responsibility for the supply.

"Plan Documents" means reports, proposals, preliminary plans, survey and basis of design data, general and detailed construction plans, and specifications.

"Safe" means that the water contains no substances or organisms which are or may be injurious to a person in normal health who ingests the water.

"Standards" means the "Recommended Standards for Water Works" 1968 edition, and the nine 1972 "Addenda" as adopted by the Great Lakes-Upper Mississippi River Board of State Sanitary Engineers (commonly referred to as the Ten-States Standards).

"Surface Water" means all tributary streams and drainage basins, including natural lakes and artificial reservoirs, which may affect a specific water supply above the point of water supply intake.

"Surface Water Supply Source" means any surface water used as a water source for a public water supply.

"Supply" means a public water supply.

"Twelve-Month-Running-Average" means the arithmetic average of laboratory determinations for the immediately preceding twelve-month period for any single parameter. No fewer than six

separate samples, taken over a twelve-month period, with at least one each quarter of the year, but taken at not less than two-week intervals, shall be included in the average, except that multiple samples taken within the same 48-hour period and averaged together may be considered one sample for the purpose of this twelve-month-running-average.

"Water Main" means any pipe for the purpose of distributing potable water which serves or is accessible to more than one property, dwelling, or rental unit, and is exterior to buildings.

105 Analytical Testing

To determine compliance with these rules and regulations, all sampling and physical, chemical, bacteriological, and microscopic analyses shall be made according to the "Standard Methods for the Examination of Water and Wastewater," 13th edition, as published jointly by the American Public Health Association, the American Water Works Association, and the Water Pollution Control Federation, or such other procedures as are approved by the Agency.

106 Limit of Public Water Supplies

A public water supply shall be considered to end at each service connection.

107 Severability

If any provision of these rules or regulations is adjudged invalid, or if the application thereof to any person or in any circumstance is adjudged invalid, such invalidity shall not affect the validity of this chapter as a whole, or of any other part, sub-part, sentence or clause thereof not adjudged invalid.

PART II: PERMITS

This part establishes basic rules for the issuance of permits for construction, modification, and operation of proposed public water supply systems or improvements to public water supply systems.

201 Construction Permits

- A. No person shall cause or allow the construction of any new public water supply installation, or cause or allow the change of or addition to any existing public water supply, without a construction permit issued by the Agency. Public water supply installation, change, or addition shall not include routine maintenance, service pipe connections, hydrants and valves, or replacement of equipment, pipe, and appurtenances with equivalent equipment, pipe, and appurtenances.
- B. All work performed on a public water supply shall be in accordance with accepted engineering practices.

202 Operating Permits

No owner or operator of a public water supply shall cause or allow the use or operation of any new public water supply, or any new addition to an existing supply, for which a Construction Permit is required under Rule 201, without an Operating Permit issued by the Agency.

203 Algicide Permits

No algicide shall be applied to any stream, reservoir, lake, pond, or other body of water used as a public water supply source, without an Algicide Permit issued by the Agency. Permits issued under this Rule will be valid for public water supply sources only. Copper sulphate is the only algicide which may be used in public water supplies.

204 Applications - Contents

- A. All applications for any construction permit required under this part shall contain, where appropriate, the following information and documents:
 - 1. A summary of the basis of design.
 - 2. Operation requirements, where applicable.
 - 3. General layout.
 - 4. Detailed plans.
 - 5. Specifications.
- B. Plan documents for a public water supply or modifications of any existing public water supply, which are submitted under Rule 204 (A), shall be prepared by a person qualified under "An Act to Provide for the Licensing of Architects and to

Regulate the Practice of Architecture as a Profession and to Repeal Certain Acts Therein Named." (Ill. Rev. Sta. 1973, ch. 10 1/2 § 1 et seq., as amended), "An Act to Regulate the Practice of Professional Engineering, and to Repeal an Act to Regulate the Practice of Professional Engineering Filed June 24, 1941, and to Make an Appropriation Therefor." (Ill. Rev. Sta. 1973, ch. 48 1/2 §32 et seq., as amended), "An Act to Revise the Law in Relation to the Regulation of the Practice of Structural Engineering." (Ill. Rev. Stat. 1973, ch. 131 1/2, § 1 et seq., as amended), or any required combination thereof and shall have the necessary professional seal affixed.

- C. All applications for operating permits shall contain the name and certificate number of the certified operator on the operational staff of the public water supply, the name and location of the supply, and the construction permit number under which it was constructed, and such other information required by the Agency for proper consideration of the permit.
- D. All applications for algicide permits shall contain the name and certificate number of the certified operator supervising the application of the algicide, and sufficient additional information as required by the Agency to evaluate properly the dosages and effects of the treatment. Each permit application must include a statement describing the extent of the algae problem, the history of any past algae problems and algicide treatments, and a description of any fish kills which have resulted from treatments in the past. Adequate information must be supplied to support exceeding the limits as stated in Chapter 3, Part II: Water Quality Standards.
- E. The Agency may prescribe the form in which all information required under this Rule shall be submitted, and may adopt procedures requiring such additional information as is necessary to determine whether the public water supply system will meet the requirements of the Act and this Chapter.

205 Applications - Signatures and Authorization

All permit applications shall be signed by the owner or official custodian of the public water supply, or by the owner's duly authorized agent, and shall be accompanied by evidence of authority to sign the application.

206 Applications - Filing and Final Action by Agency

- A. An application for permit shall be deemed to be filed on the date of initial receipt by the Agency of the documents.

- B. If the Agency fails to take final action, by granting or denying the permit as requested or with conditions, within ninety days from the filing of the completed application, the applicant may deem the permit granted for the length of time applicable under Rule 208 (A), (B), and (C) as applicable, commencing on the ninety-first day after the application was filed.
- C. Any applicant for a permit may waive the requirement that the Agency must take final action within ninety days from the filing of the application.
- D. The Agency shall send all notices of final action by U.S. mail. The Agency shall be deemed to have taken final action on the date that the notice is mailed.

207 Standards for Issuance

The Agency shall not grant any construction permit required by Part II of this Chapter unless the applicant submits adequate proof that the public water supply either conforms to the design criteria promulgated by the Agency under Rule 212, or is based on such other criteria which the applicant proves will produce consistently satisfactory results.

208 Duration of Permits

- A. Construction Permits - Construction permits for public water supply facilities shall be valid for the start of construction within one year from the date of issuance, and may be renewed for additional one-year periods at the discretion of the Agency. Construction, once started, may continue for four years without permit renewal, and may be renewed for periods specified by the Agency at its discretion for each permit renewal.
- B. Operating Permits - Operating permits shall be valid until revoked unless otherwise stated in the permit.
- C. Algicide Permits - Algicide permits shall be valid only for the period stated in the permit, but in no case longer than one year.

209 "As Built" Plans

Whenever a supply has been constructed without a construction permit, the Agency may require submission of "as-built" plans prepared by a qualified person as described in Rule 204 (B). Any deficiencies requiring correction as determined by the Agency must be corrected within a time limit set by the Agency. This does not relieve the owner or official custodian from any liability for construction of the supply without a permit.

210 Conditions

In addition to specific conditions authorized under Part II of this Chapter, the Agency may impose such conditions in a permit as may be necessary to accomplish the purposes of the Act, and as are not inconsistent with regulations promulgated by the Board.

211 Appeals from Conditions in Permits

An applicant may consider any condition imposed by the Agency in a permit as a refusal by the Agency to grant a permit, which shall entitle the applicant to appeal the Agency's decision to the Board pursuant to Section 40 of the Act.

212 Design, Operation, and Maintenance Criteria

- A. The Agency may adopt criteria, published in the form of Technical Policy Statements, for the design, operation, and maintenance of public water supply facilities as necessary to insure safe, adequate, and clean water. These criteria shall be revised from time to time to reflect current engineering judgment and advances in the state of the art.
- B. Before adopting new criteria or making substantive changes to any Technical Policy Statements adopted by the Agency, the Agency shall:
 - 1. Publish a summary of the proposed changes, and rationale for such changes, in the Board Newsletter. The Agency may at its discretion also publish a summary of, and rationale for, the proposed changes in a comparable publication; and
 - 2. Provide a copy of the full text of the proposed changes to any person who, in writing, so requests; and
 - 3. Defer adoption of the changes for at least forty-five days from the date of publication to allow submission and consideration of written comments to the Agency on the proposed changes.
 - 4. Such procedures, and revisions thereto, shall not become effective until filed with the Index Division of the Office of the Secretary of State as required by "An Act Concerning Administrative Rules" (Ill. Rev. Stat. 1973, ch. 127 §§ 263-268.1).

213 Permits Under Emergency Conditions

- A. Whenever emergency conditions require immediate action, the Agency may issue construction and operating permits by telephone, with whatever special conditions the Agency deems to be necessary for the proper safeguarding of the health

of the water consumers. "As-built" plans and specifications covering the work performed under the telephone permit must be submitted to the Agency as soon as reasonably possible. Modifications required by the Agency after review of the submission shall be made promptly.

- B. The Agency shall confirm, in writing, within ten days of issuance, its granting of an emergency construction permit. Said confirmation may be conditioned upon the receipt and approval, by the Agency, of "as-built" plans and specifications.

Permit Revocations

Violation of any permit conditions or failure to comply with any rule or regulation of this Chapter shall be grounds for enforcement actions as provided in the Act, including revocation of permit. Such enforcement actions shall be sought by filing a complaint with the Board pursuant to Title VIII of the Act.

Permit Limitations

Any permit issued under Rules 201 to 215 shall not be considered to be valid unless and until all applicable permits from State agencies, including but not limited to those listed below, have been applied for:

<u>AGENCY</u>	<u>PERMIT DESCRIPTION</u>
Illinois Commerce Commission	Certificate of Convenience and Necessity
Department of Mines and Minerals Division of Oil and Gas	Well Drilling
Department of Transportation Division of Water Resource Management	Change to Existing Waterways

PART III: OPERATION AND MAINTENANCE

This part of the rules and regulations concerning public water supply facilities delineates requirements to be met in the operation and maintenance of such facilities.

301 Required Supervision

To assure the continued maintenance and operation of public water supplies, each supply shall be under the individual direct supervision of a municipal or private corporation, individual private ownership, or a regularly organized body governed by a constitution and by-laws requiring regular election of officers. The body exercising such direct supervision shall file with the Agency a statement of ownership before commencing construction of any public water supply facility. Public water supplies in existence on the effective date of these rules shall file a statement of ownership no later than 90 days after that date. The body filing such a statement shall be considered to be the owner until such time as a notification of change of ownership is received, in accordance with Rule 303.

302 Operator's Certification

All provisions of "An Act to Regulate the Operating of a Public Water Supply" (Ill. Rev. Stat. 1973, ch. 111 1/2 § 501 et seq.) shall be met. All official operating reports submitted to the Agency are to be signed by a Certified Operator. The Certified Operator in charge shall be responsible for the proper operation of the supply.

303 Notification of Change of Ownership or Responsible Personnel

The Agency shall be notified, within 15 days, by the owner of a public water supply of changes in ownership. The Agency shall also be notified of changes in responsible personnel who may be contacted in the event such contact is required. No notification shall be considered valid unless the new owner or responsible personnel indicates acceptance of these responsibilities and duties in the notification document.

304 Finished Water Quality

A. Bacteriological Quality

1. Standard Sample

The standard sample for the coliform test shall consist of:

- a. For the membrane filter technique, not less than 100 milliliters.

- b. For the fermentation tube method, five standard portions of either 10 milliliters or 100 milliliters.

2. Total Coliform Limits

The number of organisms of the coliform group present in potable water, as indicated by representative samples examined, shall not exceed the following limits:

- a. When the membrane filter technique is used, arithmetic mean coliform density of all standard samples examined per month shall not exceed one per 100 milliliters. Coliform colonies per standard sample shall not exceed four per 100 milliliters in:
 - (1) more than one standard sample when less than twenty are examined per month; or
 - (2) more than five percent of the standard samples when twenty or more are examined per month.
- b. When 10-milliliter standard portions are examined by the fermentation tube method, not more than ten percent in any month shall show the presence of the coliform group. The presence of the coliform group in three or more 10-milliliter portions of a standard sample shall not be allowable if this occurs in:
 - (1) more than one sample per month when less than twenty are examined per month; or
 - (2) more than five percent of the samples when twenty or more are examined per month.
- c. When 100-milliliter standard portions are examined by the fermentation tube method, not more than sixty percent in any month shall show the presence of the coliform group. The presence of the coliform group in five of the 100-milliliter portions of a standard sample shall not be allowable if this occurs in:

- (1) more than one sample per month when less than five are examined per month;
or
- (2) more than twenty percent of the samples when five or more are examined per month.

3. Total Coliform Check-Samples

- a. When coliform densities exceed the limit established in Rule 304 (A) (2), they may indicate a breakdown in the protective barriers and shall be cause for special follow-up action to locate and eliminate the cause of contamination.
- b. Check-samples should be taken at the discretion of the Agency under the following conditions:
 - (1) When coliform colonies in a single standard sample exceed four per 100 milliliters, as measured by the membrane filter technique, daily samples shall be promptly collected and examined from the same sampling point until the results obtained from at least two consecutive samples show less than one coliform per 100 milliliters.
 - (2) When organisms of the coliform group occur in three or more of the 10-milliliter portions of a single standard sample (fermentation tube method), daily samples shall be promptly collected and examined from the same sampling point until the results obtained from at least two consecutive samples show no positive tubes.
 - (3) When organisms of the coliform group occur in all five of the 100-milliliter portions of a single standard sample (fermentation tube method), daily samples shall be promptly collected and examined from the same sampling point until the results obtained from at least two consecutive samples show no positive tubes.
- c. The sampling point required to be check-sampled must not be eliminated from future collections based on a history of questionable water quality. These check samples shall not be included in the total number of samples examined per month, nor shall the check samples be used as a basis for determining compliance with the rules except as provided in Rule 304 A (3) (b) (1), (2) or (3).

4. Bacterial Plate Count Sample

When bacterial plate counts are considered by the Agency to be necessary, the sample for the bacterial plate count using Standard Plate-Count-Agar (35°C, 48 hours) shall consist of two portions of one milliliter and two portions of one-tenth milliliter.

5. Bacterial Plate Count Limits

The maximum number for the bacterial plate count in the water distributed to the consumer is 500 organisms per one milliliter, based on arithmetic average of all samples examined in a calendar month. In determining compliance, these data shall be reported to two significant figures. When the average bacterial plate count is found to exceed 500 organisms per one milliliter, either in portions of the distribution network or in finished water reservoir storage, the Agency shall determine if these bacterial counts require further action to be taken to protect the water consumers. Upon such findings, prompt attention shall be directed by the owner toward finding the cause and taking appropriate action for correction.

B. Chemical and Physical Quality

1. The finished water shall contain no impurity in concentrations that may be hazardous to the health of the consumer or excessively corrosive or otherwise deleterious to the water supply. Drinking water shall contain no impurity which could reasonably be expected to cause offense to the sense of sight, taste, or smell.
2. Substances used in treatment should not remain in the water in concentrations greater than required by good practice. Substances which may have a deleterious physiological effect, or for which physiological effects are not known, shall not be used in a manner that would permit them to reach the consumer.
3. To determine non-compliance with any of these standards, the analyses of substances listed in Table I are to be presented by the Agency or other complainant as twelve-month running averages, rounded to the same numbers of significant figures as the standard shown in the table. When rounding figures, digits five and above shall be rounded up. No single analysis shall show a concentration at any time of any substance listed in Table I of more than 1.5 times the average value shown in the table.

4. The twelve-month average of substances listed in Table I shall not exceed in the finished water the limits listed, after the compliance date shown. Any supply which is already in compliance, or reaches compliance before the date set for a substance, must continue in compliance thereafter.

TABLE I

MAXIMUM ALLOWABLE TWELVE-MONTH-AVERAGE CONCENTRATIONS
FINISHED WATER QUALITY

SUBSTANCE	REPORTED AS	MAXIMUM CONCENTRATION mg/l	COMPLIANCE DATE
Arsenic	As	0.1	E*
Barium	Ba	1.	Jan. 1, 1978
Cadmium	Cd	0.010	E
Chromium	Cr	0.05	E
Color	Color Units	15.	E
Copper	Cu	1.	E
Cyanide	CN	0.2	E
Fluoride	F	2.0	Jan. 1, 1978
Foaming Agents	MBAS	0.5	E
Iron	Fe	0.3 (a)	Jan. 1, 1978
Lead	Pb	0.05	E
Manganese	Mn	0.05 (a)	Jan. 1, 1978
Mercury	Hg	0.002	E
Nitrate-Nitrogen	N	10. (b)	E
Nitrite-Nitrogen	N	1.	E
Odor	Threshold Odor Number	3.	E
Organics			
Carbon Adsorbable			
Carbon-Chloroform Extract	CCE _m	0.7 (c)	E
Pesticides			
Chlorinated Hydrocarbon Insecticides			
Aldrin		0.001	E
Chlordane		0.003	E
DDT		0.05	E
Dieldrin		0.001	E
Endrin		0.0005	E
Heptachlor		0.0001	E
Heptachlor Epoxide		0.0001	E
Lindane		0.005	E
Methoxychlor		0.1	E
Toxaphene		0.005	E
Organophosphate Insecticides			
Parathion		0.1	E
Chlorophenoxy Herbicides			
2,4-Dichlorophenoxyacetic acid (2,4-D)		0.02	E
2,4,5 Trichlorophenoxypropionic acid (2,4,5-TP or Silvex)		0.01	E
Selenium	Se	0.01	E
Silver	Ag	0.05	E
Turbidity	TU	1.0 (d)	E
Zinc	Zn	5.	E

*E = Effective Date of Rules and Regulations

NOTES:

- a. Iron in excess of 0.3 mg/l and manganese in excess of 0.05 mg/l may be allowed at the discretion of the Agency if sequestration tried on an experimental basis proves to be effective. If sequestering is not effective, positive iron or manganese reduction treatment as applicable must be provided. No experimental use of a sequestering agent may be tried without previous Agency approval.
- b. Nitrate-Nitrogen may be allowed to exceed the value in Table 1 up to a maximum value of 20 mg/l. Such maximum concentrations may be allowed for up to a total of 35 calendar days in any calendar year, of which no single period shall be longer than 15 consecutive days, if notice is sent by officials of the water supply affected to consumers and physicians in the area, so that infants and pregnant women may temporarily use another supply.
- c. The subscript "m" is used to denote that this parameter is determined by using an improved miniaturized sampler and extraction technique.
- d. Turbidity in drinking water shall not exceed one turbidity unit at the point where water enters the distribution system unless it can be demonstrated that a higher turbidity not exceeding 5 TU does not:
 - (1) interfere with disinfection, or
 - (2) cause tastes and odors upon disinfection, or
 - (3) prevent the maintenance of an effective disinfection agent throughout the distribution system, or
 - (4) result in deposits in the distribution system, or
 - (5) cause consumers to question the safety of their drinking water.

305 Chlorination

All public water supplies, except those purchasing treated water containing adequate chlorine, shall chlorinate the water before it enters the distribution system. The residuals of free and combined chlorine shall in all public water supply systems be maintained at levels sufficient to provide adequate protection. The Agency may set levels, and promulgate procedures for chlorination. Public water supplies now in operation must comply with this rule within one year after its effective date. Any supply which is now in compliance or reaches compliance before that date, must continue in compliance thereafter. Those public water supplies having hand pumped wells and no distribution system are exempted from the requirements of this Rule.

306 Fluoridation

All public water supplies which are required to add fluoride to the water shall maintain a fluoride ion concentration reported as F of 0.9 to 1.2 mg/l in its distribution system, as required by Section 7a of "An Act to Provide for Safeguarding the Public Health by Vesting Certain Measures of Control and Supervision in the Department of Public Health over Public Water Supplies in the State" (Ill. Rev. Stat. 1973, ch. 111 1/2 § 121g1, as amended).

307 Raw Water Quality

- A. Each public water supply must take its raw water from the best available source which is economically reasonable and technically possible.
- B. Use of recycled sewage treatment plant effluent on a routine basis shall not be permitted until limits for effluent parameters have been determined and promulgated by the Board.
- C. The twelve-month running geometric means of fecal coliform and total coliform densities in raw water sources shall not exceed 2,000 per 100 ml. and 20,000 per 100 ml., respectively without specific approval of the Agency.
- D. Each owner or operator of a public water supply owning and/or controlling a public water supply surface water source shall take all reasonable actions for the protection of that source.

308 Raw Water Quantity

- A. Surface Supply - The quantity of surface water at the source shall be adequate to supply the total water demand of a community from that source, as well as a reasonable surplus for anticipated growth.

- B. Groundwater Supply - The quantity of ground water from the source of supply shall be adequate to supply the total water demand of that public water supply, as well as a reasonable surplus for anticipated growth, without excessive depletion of the aquifer.
- C. In determining adequacy of supply for compliance with Rule 308 (A) and (B), each individual source of supply shall be considered in relation to the percentage of the total requirements it is expected to provide.

309 Frequency of Sampling

- A. A minimum of two representative bacteriological samples of the finished water are to be submitted monthly by each public water supply owner, official custodian, or his authorized personnel to the Agency's laboratory for analyses. A greater number of samples may be required by the Agency, depending upon the type of treatment and the population served by the specific water supply. When a large number of samples are required, analyses performed by laboratories approved by the Agency will be accepted to meet the number of analyses necessary under this Section.

It shall be the responsibility of the public water supply to have the analyses performed either at its own certified laboratory or at any other certified laboratory if the number of analyses required by the Agency is in excess of the maximum number per public water supply normally analyzed by the Agency.

- B. A minimum of one representative mineral sample each of the raw and finished water are to be submitted every two years to the Agency's laboratory for analysis. Sampling for specific parameters may be required by the Agency more frequently whenever there is reason to believe that these parameters are or may be in excess of the limits listed in Table 1, or if the presence of other dangerous or potentially dangerous substances is suspected.

310 Operating Reports

Monthly operating reports shall be submitted to the Agency by all public water supplies within thirty days following the last day of each month, on forms provided or approved by the Agency.

311 Protection During Repair Work

All public water supplies reconstructed or altered shall be adequately protected to prevent contamination of the water at the source or in the system during such work.

312 Disinfection Following Repair or Reconstruction

Any part of a public water supply which has been repaired, reconstructed, or altered shall be satisfactorily disinfected before being put into operation. The disinfection procedure must be specifically approved by the Agency. Upon receipt of such approval, the public water supply may use the accepted disinfection procedure in the future, unless the Agency, for good cause, notifies the owner of a public water supply that such a procedure is no longer acceptable.

313 Emergency Operation

- A. Whenever contamination is determined to persist in a public water supply, as demonstrated by bacteriological analysis results, the owners or official custodians of the supply shall notify all consumers to boil all water used for drinking or culinary purposes until bacteriological samples demonstrate that the water is safe for domestic use, or until appropriate corrective action approved by the Agency is taken. If the owner or official custodian of the supply fails to take such action on his own or at the recommendation of the Agency, the Agency may issue a Boil Order directly to the consumers affected.
- B. Any emergency which results in water pressures falling below twenty pounds per square inch on any portion of the distribution system shall be reason for immediate issuance of a Boil Order by the owner, official custodian, or operator of the supply to those consumers affected unless:
 - 1. There is a historical record of adequate chlorine residual and approved turbidity levels in the general area affected covering at least twelve monthly readings.
 - 2. Samples for bacteriological examination are taken in the affected area immediately and approximately twelve hours later.
 - 3. Tests for residual chlorine and turbidity taken at not more than hourly intervals in the affected area for several hours do not vary significantly from the historical record. If significant decrease in chlorine residual or increase in turbidity occurs, a boil order shall be issued.
- C. Whenever the safety of a public water supply is endangered for any reason, including but not limited to spillage of hazardous substances, the Agency shall be notified immediately by the owner, official custodian or his authorized representative, and the water supply officials shall take appropriate action to protect the supply. The owner, official custodian or his authorized representative shall notify all consumers of appropriate action to protect them-

selves against any waterborne hazards. If the owner or official custodian of the supply fails to take such action on his own or at the recommendation of the Agency, the Agency shall notify directly the consumers affected.

314 Cross Connections

- A. No physical connection shall be permitted between the potable portion of a public water supply and any other water supply not of equal or better bacteriological and chemical quality as determined by inspection and analysis by the Agency, except as provided for in Rule 314 (D).
- B. There shall be no arrangement or connection by which an unsafe substance may enter a public water supply.
- C. Control of all cross-connections to a public water supply is the responsibility of the owner or official custodian of the supply. If a privately owned water supply source meets the applicable criteria, it may be connected to a public water supply upon approval by the owner or official custodian and by the Agency. Where such connections are permitted, it is the responsibility of the public water supply officials to assure submission from such privately owned water supply source or sources samples as required in Rule 309, and operating reports as required in Rule 310 of these Regulations, if applicable to the cross-connected source.
- D. The Agency may adopt specific conditions for control of unsafe cross-connections, which shall be complied with by the public water supplies of this State, as applicable. These conditions shall be adopted and/or changed as prescribed in Rule 212.

315 Laboratory Testing Equipment

Each public water supply must have adequate laboratory equipment and capability to perform the operational tests (except bacteriological) appropriate to the parameters to be tested and to the type of treatment employed. Such equipment must be in good operating condition, and the operator on duty must be familiar with the procedure for performing the tests. If a public water supply performs bacteriological examination of water to comply with the provisions of Rule 309, the laboratory and its equipment shall be in accordance with the rules for the certification of laboratories as established by the Illinois Department of Public Health, in accordance with Section 55.11 of "The Civil Administrative Code of Illinois" (Ill. Rev. Stat. 1973, ch. 127, § 55.11, as amended).

Nothing in this rule shall be construed to prevent a public water supply from running control bacteriological tests in an uncertified laboratory. These results are not to be included in the sample quota for that supply, as required by Rule 309.

Amendment to Chap. 3, Part II, of the
Illinois Pollution Control Board's Rules and
Regulations
Water Pollution

Rule 204 - Public and Food Processing Water Supply

In addition to the General Standards, waters designated in Part III of this Chapter for public and food processing water supply shall meet the following standards at any point at which water is withdrawn for treatment and distribution as a potable supply or for food processing except that such standards, including the General Standards, may be exceeded if such occurrence results from the application of an algicide in accordance with the terms of an Algicide Permit issued by the Agency under Chapter VI, Rule 203 and 204 (d) of these Rules and Regulations.

- (a) Water shall be of such quality that with treatment consisting of coagulation, sedimentation, filtration, storage and chlorination, or other equivalent treatment processes, the treated water shall meet in all respects the requirements of Table I, Rule 304, of Chapter 6 of these Rules and Regulations.
- (b) The following levels of chemical constituents shall not be exceeded:

CONSTITUENT	STORET NUMBER	CONCENTRATION (mg/l)
Arsenic (total)	01000	0.1
Barium (total)	01005	1.0
Cadmium (total)	01025	0.010
Chloride	00940	250.
Chromium	01034	0.05
Foaming Agents	38260	0.5
Iron (total)	01045	0.3
Lead (total)	01049	0.05
Manganese (total)	01055	0.05
Nitrate-Nitrogen	00620	10.
Nitrite-Nitrogen	00615	1.
Oil (hexane-solubles or equivalent)	00550	0.1
Organics		
Carbon Adsorbable		
Carbon Chloroform Extract (CCE _m)	32005	0.7 *
Pesticides		
Chlorinated Hydrocarbon		
Insecticides		
Aldrin	39330	0.001
Chlordane	39350	0.003
DDT	39370	0.05
Dieldrin	39380	0.001
Endrin	39390	0.0005
Heptachlor	39410	0.0001
Heptachlor Epoxide	39420	0.0001
Lindane	39782	0.005
Methoxychlor	39480	0.1
Toxaphene	39400	0.005
Organophosphate Insecticides		
Parathion	39540	0.1
Chlorophenoxy Herbicides		
2,4-Dichlorophenoxy-acetic acid (2,4-D)	39730	0.02
2,4,5-Trichlorophenoxy-propionic acid (2,4,5-TP or Silvex)	39760	0.01
Phenols	32730	0.001
Selenium (total)	01145	0.01
Sulphates	00945	250.
Total Dissolved Solids	00515	500.

* The subscript "m" is used to denote that this parameter is determined by using an improved miniaturized sampler and extraction technique.

- (c) Other contaminants that will not be adequately reduced by the treatment processes noted in paragraph (a) of this Rule shall not be present in concentrations hazardous to human health.