

SASKATCHEWAN REGULATION 3/80

THE WATER RESOURCES MANAGEMENT ACT — SECTION 41
Order in Council 11/80, dated January 2, 1980

Published in *The Saskatchewan Gazette*, dated Friday, January 11, 1980;
Volume 76, No. 2; Part II; Pages 2-13.

(Filed January 3, 1980.)

ORDER:

His Honour the Lieutenant Governor in Council on the recommendation of the Minister of the Environment, pursuant to section 41 of The Water Resources Management Act, hereby repeals the Water Pollution Control Regulations and the Waterworks Regulations made by Order in Council 490/68, being Saskatchewan Regulation 88/68, and makes the Water Pollution Control Regulations in accordance with Schedule A hereto and Waterworks Regulations in accordance with Schedule B hereto, all effective on the date of the Order.

SCHEDULE A

WATER POLLUTION CONTROL REGULATIONS
SHORT TITLE

Short Title 1. These regulations may be cited as the Water Pollution Control Regulations.

INTERPRETATION

Interpretation 2. In these regulations:

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| “Act” | (a) “Act” means The Water Resources Management Act; |
| “aerobic lagoon” | (b) “aerobic lagoon” means a sewage lagoon, comprised of one or more cells, designed to operate with dissolved oxygen present in the liquid as a result of photosynthesis and atmospheric reaeration during periods when the surface is free of ice; |
| “approval” | (c) “approval” means an approval in writing from the minister; |
| “approved cooling water” | (d) “approved cooling water” means water the use of which has been approved by the minister solely for the purpose of cooling; |
| “BOD” | (e) “BOD” means biochemical oxygen demand; |
| “cell” | (f) “cell” means a compartment of a sewage lagoon; |
| “collection system” | (g) “collection system” means facilities used for collecting and conducting sewage to the point of treatment or disposal; |
| “effluent” | (h) “effluent” means any liquid discharging from a sewage works and includes industrial waste; |
| “industrial waste” | (i) “industrial waste” means any liquid or other waste resulting from any process of industry, manufacture, trade or business, or the development of a natural resource; |
| “minister” | (j) unless otherwise specified, “minister” means the Minister of the Environment or a person or persons authorized by name or position, pursuant to section 12.1 of The Department of the Environment Act, to perform the duties conferred upon the minister by these regulations; |
| “primary cell” | (k) “primary cell” means the cell of a sewage lagoon into which the untreated sewage enters for treatment; |
| “primary treatment” | (l) “primary treatment” means the removal of a substantial portion of settleable matter by sedimentation, precipitation, flotation, or any combination of these processes with or without the use of chemicals, air or mechanical devices; |

<p>“quantity” or “rate of flow”</p> <p>“sanitary sewer”</p> <p>“secondary treatment”</p> <p>“sewage lagoon”</p> <p>“sewer”</p> <p>“storm sewer”</p> <p>“storm water”</p> <p>“treatment facility”</p>	<p>(m) “quantity” or “rate of flow” means the amount of sewage or effluent per unit of time;</p> <p>(n) “sanitary sewer” means a sewer intended to convey sewage other than storm water;</p> <p>(o) “secondary treatment” means further treatment following and combined with primary treatment;</p> <p>(p) “sewage lagoon” means one or more open basins or reservoirs specially designed to treat sewage or industrial waste;</p> <p>(q) “sewer” means any drain, sewer pipe or conduit intended to convey sewage;</p> <p>(r) “storm sewer” means a sewer intended to convey only storm water;</p> <p>(s) “storm water” means rain water or water resulting from the melting of snow or ice, which enters a sewage works;</p> <p>(t) “treatment facility” means the various devices used for the purpose of treating or holding sewage and includes pumps, piping, other equipment and their appurtenances.</p>
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REQUIREMENTS FOR APPROVAL OF SEWAGE WORKS

3. The following works are hereby designated under clause (d) of section 41 of the Act as works in respect of which approval of the minister is not required prior to the construction, extension or alteration of the works;

- (a) works that discharge industrial waste into municipal sewage works; and
- (b) works for the operation of a private system of sewage works unless:
 - (i) the system discharges industrial waste; or
 - (ii) the average flow from a system over a 24 hour period exceeds 4,000 gallons; and
- (c) works concerning:
 - (i) the disposal of salt water; or
 - (ii) the disposal of sediment and other oil and gas field wastes; or
 - (iii) the drilling, casing cementing, operating and plugging of wells in such manner as to prevent the pollution of fresh water supplies by oil, gas or salt water;

Disposal of Brine, Oil Field Wastes etc. Approved by Dept. of Mineral Resources

that comply with legislation administered by the Department of Mineral Resources.

4. Subject to section 5 no person shall operate a sewage works unless he has obtained the approval of the minister to do so.

Approval Required for Operation of a Sewage Works Previously Constructed Works

5. Where:
- (a) the construction of a sewage works commenced prior to the coming into force of these regulations;
 - (b) a Minister of the Crown granted approval in writing for the construction of the sewage works prior to the coming into force of these regulations in accordance with the law then in force and the approval has not been revoked; and
 - (c) the operation of the sewage works commenced not later than two years after the coming into force of these regulations;

the operation may continue, subject to section 28 of the Act, without the approval of the minister until the works are extended or altered.

Minimum of Primary Treatment for all Sewage and Industrial Wastes

- 6.—(1) The minister shall not issue an approval for:
- (a) the construction, extension or alteration of a sewage works; or
 - (b) the operation of a sewage works;

unless in the opinion of the minister the treatment facilities are capable of providing at least primary treatment for all sewage and industrial waste other than storm water and approved cooling water.

(2) An application for approval of primary treatment only shall include preliminary design considerations for future secondary treatment.

Future Treatment Considerations

Interim Operation Where Treatment Inadequate

(3) Where the minister is of the opinion that treatment facilities are initially required to provide treatment over and above primary treatment, the minister:

- (a) subject to clause (b) shall refuse to issue an approval unless such treatment facilities are to be provided; or
- (b) where:
 - (i) the applicant submits a proposal for the construction of such treatment facilities within a specified time; and
 - (ii) the minister is satisfied with the proposal and that the applicant is in a position to conform to the proposal within the specified time;

the minister may issue an approval for the operation of the sewage works for the specified period subject to the condition that such treatment facilities are constructed in accordance with the proposal.

Temporary Exemption of Primary Treatment Requirement

(4) Notwithstanding subsection (1) where:

- (a) a sewage works was constructed prior to the coming into force of these regulations with the approval of a Minister of the Crown; and
- (b) the treatment facilities in the sewage works are not sufficient to give at least primary treatment to the sewage; and
- (c) an application is received to extend or alter the sewage works; and
- (d) the applicant provides the minister with an undertaking satisfactory to the minister with respect to the provision of treatment facilities,

the minister may issue an approval for the extension or alteration and operation of such sewage works subject to terms and conditions specified by the minister.

Engineering Report

7.—(1) Where construction of a new sewage works, other than works for the collection of sewage, is intended, the minister shall be provided with a copy of the engineering report.

Information Required for an Approval

(2) Where an application is made for the approval of the minister to commence the construction of a sewage works, the application shall be accompanied by, unless previously submitted to the minister, the following:

- (a) a site plan showing the area served by the collection system and the relative location of pumping stations, pressure mains, treatment facilities and the location of the final discharge of the effluent;
- (b) a plan and profile of proposed sewers, indicating the area to be served, and showing the location of the sewer in the street in relation to the other underground utilities, material size, length and gradient of pipe, ground and invert elevations and details of manholes, catch basins and other appurtenances;
- (c) a description of the sewer location for each pipe size;
- (d) a plan and profile of pressure mains indicating pipe material, location, gradient, depth and appurtenances;
- (e) specifications for material and parameters used to design the size and capacity of pipes, pumps and appurtenances;
- (f) for treatment facilities a plan showing location, topography, existing and proposed development, access roads, effluent discharge point and relevant drainage courses;
- (g) information on the proposed treatment facilities including:
 - (i) a description of the method or process;
 - (ii) the nature and quality of sewage, including industrial waste, to be treated;
 - (iii) the expected effluent quality and quantity;
 - (iv) the capacities of individual units;
 - (v) the factors used in design;
 - (vi) the anticipated method of operation and the arrangement for effluent drainage;
 - (h) drawings giving the structural, piping and equipment details for pumping stations and treatment facilities;
 - (i) cost estimates, including a breakdown, for capital and local improvement portions of the project;
 - (j) such other data and material as the minister may require.

Additional Information Required for Industrial Waste	<p>(3) The requirements of subsections (1) and (2) shall, unless otherwise approved by the minister, be prepared or approved by a person who at the time of preparation or approval was a member of the Association of Professional Engineers of Saskatchewan established pursuant to The Engineering Profession Act or was a holder of a licence under that Act.</p> <p>8. In addition to the requirements of clauses (f), (g) and (h) of subsection (2) of section 7 an application for the separate discharge of industrial waste shall include:</p> <p>(a) information on the quantity of water used in a specific process or industrial operation or process area, together with the estimated or measured quantity and quality of the waste arising from the water use;</p> <p>(b) information on the variation in rates of flow and the maximum and average concentrations of significant waste components where the quantity or quality of the waste varies according to industrial operating procedures;</p> <p>(c) sketch plans in the form of flow diagrams of process units from which liquid wastes emanate;</p> <p>(d) cost estimates and such other data and material as the minister may require.</p>
Additional Information and Alterations	<p>9. Upon receipt of an application for approval of a proposed sewage works the minister may review the application with the applicant for the purpose of:</p> <p>(a) obtaining such additional information from the applicant as deemed necessary; or</p> <p>(b) requiring alterations to the design of the proposed sewage works.</p>
Granting an Approval	<p>10. Following a review of the application, the minister may:</p> <p>(a) grant a provisional approval in principle of the proposed works subject to the submission of plans and specifications being approved by the minister prior to construction;</p> <p>(b) grant an approval for construction;</p> <p>(c) require alterations to the design of the proposed works prior to granting an approval;</p> <p>(d) grant an approval for a specified period of time upon such terms and conditions as the minister may require; or</p> <p>(e) refuse to grant an approval.</p>
Approval Valid Unless Violated	<p>11. The approval of a treatment facility which has been issued for a specified period of time subject to terms and conditions shall be valid for the specified period of time so long as the terms and conditions are upheld by the person operating the facility.</p>
Changes Required Before Renewal if Treatment Inadequate	<p>12. If, before the period specified in any approval has elapsed, the minister determines that the treatment facilities are not adequate, the minister shall serve notice to the person to whom the approval was granted to make necessary alterations or additions to the treatment facilities by:</p> <p>(a) the end of the specified period, if the minister deems there is reasonable time remaining to do so; or</p> <p>(b) a specified date, if the minister deems that there is not reasonable time remaining in specified period to do so before renewing the approval for a further specified period of time.</p>
Review of Approvals	<p>13. The minister may review approvals at any time and may:</p> <p>(a) cancels an approval that was issued for an unspecified period of time and immediately reissue the approval subject to terms and conditions for a specified period of time;</p> <p>(b) renew an approval for a further specified period if it was previously issued for a specified period of time;</p> <p>(c) require that the holder of an approval submit a schedule acceptable to the minister for alterations or additions to the treatment facilities, before renewing an approval.</p>
Refusal to Renew Approvals	<p>14. The minister may refuse to renew an approval if the holder of the approval does not comply with requirements, concerning alterations or additions, deemed necessary by the minister pursuant to section 12 and clause (c) of section 13.</p>

Alteration or Revision	<p>15. An alteration or revision to a plan or specification that has been approved by the minister is invalid until the plan or specification as altered or revised has been approved in writing by the minister.</p>
Cancellation of Approval	<p>16. The minister may cancel an approval if in his opinion the conditions of the approval have been violated.</p>
Two Year Limit to Construct	<p>17. Where construction has not been undertaken within two years of the issuance of an approval the approval shall be null and void.</p>
DESIGN AND CONSTRUCTION REQUIREMENTS	
Pipe and Fittings	<p>18.—(1) Sewer pipe and fittings shall conform to the specifications of the Canadian Standards Association or the American Society for Testing and Materials.</p>
Pipe Protection	<p>(2) Sanitary sewer pipe shall be placed at such depth or afforded such protection as will prevent freezing and damage.</p>
No Combined Systems	<p>(3) Unless otherwise approved by the minister, sanitary sewers and storm sewers shall not be inter-connected.</p>
Minimum Pipe Size	<p>(4) Unless otherwise approved by the minister, a public sanitary sewer in which sewage flows by gravity shall be a minimum of 8 inches in diameter.</p>
<i>Sewage Pumping Stations</i>	
Minimum Number of Pumps	<p>19.—(1) A pumping station designed for more than 50 gallons per minute or being the only pumping station in a sewage works, shall have at least two sewage pumps.</p>
Forced Ventilation	<p>(2) A pumping station shall have mechanically forced air ventilation.</p>
Backflow Preventer	<p>(3) Backflow preventers shall be installed on pump discharge pipes.</p>
Bypass Prohibition	<p>(4) Unless otherwise approved by the minister, no sewage bypass may be permitted at a sewage pumping station.</p>
Prohibition of Cross-Connections	<p>(5) Potable water lines and hoses connected thereto shall not come in contact with sewage, and potable water outlets shall be placed at least 6 inches above high water level in the wet well.</p>
Exemptions for Storm Water Pumping	<p>(6) Subsection (1) to (4) do not apply to pumping stations used to pump only storm water.</p>
<i>Pressure Mains</i>	
Pressure Mains and Fittings	<p>20.—(1) Unless otherwise approved by the minister, pressure mains and fittings shall conform to the specifications of the Canadian Standards Association, the American Water Works Association or the American Society for Testing and Materials.</p>
Valved at Lagoon	<p>(2) Pressure mains terminating in a sewage lagoon shall be fitted with a valve prior to entering the lagoon.</p>
<i>Treatment Facilities</i>	
Effluent to Meet Minister Requirements	<p>21. Treatment facilities shall be designed and operated to produce an effluent to meet the requirements established by the minister.</p>
Aerobic Lagoons	<p>22.—(1) Unless otherwise approved by the minister aerobic lagoons for municipalities shall be designed to meet the following requirements:</p> <p>(a) a minimum of two cells to operate in series;</p> <p>(b) the surface area of the primary cell shall be such that a five day BOD at 20 degrees Centigrade loading of no greater than 30 pounds per acre per day will be applied; and</p> <p>(c) the cells other than the primary cell shall have a capacity to store at least 180 days of sewage flow.</p>
Records	<p>23.—(1) Records of daily sewage flow shall be kept for all treatment facilities with a sewage flow in excess of 100,000 gallons per day and for all separate discharges of industrial waste and such records shall be made available to the minister upon request.</p>
Tests	<p>(2) The person operating a treatment facility shall cause tests to be conducted as required by the minister and the results of such tests shall be made available to the minister upon request.</p>

Safety Protection 24.—(1) In treatment facilities utilizing electrical or mechanical equipment, provisions shall be made for safety protection.

Prohibition of Cross-Connections (2) Potable water lines and hoses connected thereto shall not come in contact with sewage, and potable water outlets shall be placed at least 6 inches above high water level in any pump well, basin or treatment unit.

Effluent Chlorination 25. In those cases where the minister requires effluent chlorination, it shall be accomplished by maintaining a chlorine residual, after a minimum of 15 minutes contact time, of not less than 0.5 milligrams per litre, unless otherwise approved by the minister.

Effluent Disposal

Period of Lagoon Discharge 26. Unless otherwise approved by the minister, a sewage lagoon shall not be discharged after November 1 nor before the spring runoff in the following year.

Effluent Dispersion 27. Effluent discharged from a treatment facility to a flowing stream or water body shall be released below the water surface and in such a manner to achieve effective dispersion of the effluent.

CHEMICAL CONTROL OF AQUATIC NUISANCES

Minister Approval for Biocides 28.—(1) No person shall, unless authorized by the minister to do so, place or permit or cause to be placed any substance or material in surface water or along the banks of surface water for the purpose of poisoning, killing or eliminating weeds, algae or other organisms.

Exemptions (2) Subsection (1) does not apply to any substance added to surface water for any purpose set out in subsection (1) where:

(a) the surface water is located wholly within the boundaries of land that is owned by or in the lawful possession of the person by whom or on whose behalf the substance is added; and

(b) the surface water does not discharge water by any means directly or indirectly, other than by percolation, into surface water that is located wholly or partly outside the boundaries of such land.

SCHEDULE B
WATERWORKS REGULATIONS
SHORT TITLE

Short Title 1. These regulations may be cited as the Waterworks Regulations.

INTERPRETATION

Interpretation 2. In these regulations:

“Act” (a) “Act” means The Water Resources Management Act;

“approval” (b) “approval” means an approval in writing from the minister;

“backflow preventer” (c) “backflow preventer” means any device designed to prevent reverse flow;

“clearwater reservoir” (d) “clearwater reservoir” means a chamber designed to store treated water before the water enters the distribution system;

“contamination” (e) “contamination” means an impairment of the quality of water that renders it unfit for human consumption;

“distribution system” (f) “distribution system” means a system of water pipes, storage reservoirs, valves and hydrants designed to convey water from the point where it is produced to the consumer;

“intake” (g) “intake” means any device designed to permit water from a surface water supply to enter a conduit which conveys water to the treatment facility;

“mg/l” (h) “mg/l” means milligrams per litre;

“minister” (i) unless other specified, “minister” means the Minister of the Environment or a person or persons authorized by name or position, pursuant to section 12.1 of The Department of the Environment Act, to perform the duties conferred upon the minister by these regulations;

“observation well” (j) “observation well” means any well used to determine characteristics of the aquifer but not intended to supply water;

“pumping water level” (k) “pumping water level” means the level of the water in the well when the well is being pumped;

“sanitary well seal”

“service connection”

“static water level”

“submersible pump”

“surface supply”

“transmission line”

“treatment facility”

(l) “sanitary well seal” means a device used to form a watertight joint;

(m) “service connection” means a pipe that enables the consumer to draw water from a distribution system;

(n) “static water level” means the level of the water in a well when the well is not being pumped;

(o) “submersible pump” means a pump and motor that are submerged in water;

(p) “surface supply” means any surface water, as defined in the Act, used as a source of water supply;

(q) “transmission line” means a pipe designed to convey water from a source of supply to a treatment facility or a distribution system;

(r) “treatment facility” means any system or method used to treat water chemically, electrically, mechanically, or otherwise.

REQUIREMENTS FOR APPROVAL OF WATERWORKS

Waterworks Exempt from Approvals

3. The following works are hereby designated under clause (d) of section 41 of the Act as works in respect of which the approval of the minister is not required prior to the construction, extension or alteration of the works:

- (a) wells not connected to a distribution system;
- (b) works constructed in connection with farming operations;
- (c) works for the operation of a private system of waterworks having a distribution system unless the daily water usage exceeds 4,000 gallons; or
- (d) works within the corporate limits of a municipality that obtain their entire supply of water from waterworks of that municipality that have been approved in a manner authorized by, or recognized as satisfactory by the Act or these regulations.

Approval Required for Operation of a Waterworks Previously Constructed Works

4. Subject to section 5 no person shall operate a waterworks unless he has obtained the approval of the minister to do so.

5. Where:

- (a) the construction of a waterworks commenced prior to the coming into force of these regulations;
 - (b) a Minister of the Crown granted approval in writing for the construction of the waterworks prior to the coming into force of these regulations in accordance with the law then in force and the approval has not been revoked; and
 - (c) the operation of the waterworks commenced not later than two years after the coming into force of these regulations;
- the operation may continue, subject to section 28 of the Act, without the approval of the minister until the works are extended or altered.

Engineering Report

6.—(1) Where construction of new waterworks, other than works for the distribution of water, is intended, the minister shall be provided with a copy of the engineering report.

Information Required for an Approval

(2) Where an application is made for the approval of the minister to commence the construction of a waterworks or to extend or alter any existing waterworks the application shall be accompanied by, unless previously submitted to the minister, the following:

- (a) a site plan showing the location of the source of supply of water, the transmission line, the treatment facility, the pumping station and the treated water storage;
- (b) a plan of the distribution system showing the location of the pipe in the street in relation to other underground utilities, the size of the pipe and the location of hydrants, valves and appurtenances;
- (c) drawings giving the structural, piping and equipment details for pump houses, treatment facilities and storage reservoirs;
- (d) specifications for and calculations used to determine the size and capacity of treatment units and the equipment;

- (e) where a well used as a source of supply of water or a part thereof the depth, diameter and screen details for each well together with the type and capacity of the pumps;
- (f) cost estimates, including the breakdown, for capital and local improvement portions of the project;
- (g) chemical analyses of the proposed water supply performed by a laboratory acceptable to the minister;
- (h) such other data and material as the Minister may require.
- (3) The requirements of subsections (1) and (2) shall, unless otherwise approved by the minister, be prepared or approved by a person who at the time of preparation or approval was a member of the Association of Professional Engineers of Saskatchewan established pursuant to the Engineering Profession Act or was a holder of a license under that Act.
- Additional Information and Alterations 7. Upon receipt of an application for approval of a proposed waterworks the minister may review the application with the applicant for the purpose of:
- (a) obtaining such additional information from the applicant as deemed necessary; or
- (b) requiring alterations to the design of the proposed waterworks.
- Granting an Approval 8. Following review of the application, the minister may:
- (a) grant a provisional approval in principle of the proposed works but subject to the submission of plans and specifications being approved by the minister prior to construction;
- (b) grant an approval for construction;
- (c) require alterations to the design of the proposed works prior to granting an approval;
- (d) grant an approval upon such terms and conditions as the minister may require; or
- (e) refuse to grant an approval.
- Alteration or Revision 9. An alteration or revision to a plan or specification that has been approved by the minister is invalid until the plan or specification as altered or revised has been approved in writing by the minister.
- Cancellation of an Approval 10. The minister may cancel an approval if in his opinion the conditions of the approval have been violated.
- Two Year Limit to Construct 11. Where construction has not been undertaken within two years of the issuance of an approval the approval shall be null and void.

DESIGN AND CONSTRUCTION REQUIREMENTS

Supply

- Protection of a Surface Supply Well Casing Material Construction 12. A surface supply of water shall be reasonably protected against pollution.
13. A well used as a source of supply shall have a durable well casing of new material.
14. A well casing shall be:
- (a) installed in such a manner that there is no opening on the outside of the well casing between the surface of the ground and the water-bearing formation;
- (b) installed in such a manner that it will seal off water-bearing formations other than that from which the source of supply is drawn; and
- (c) fitted at the upper end with a pump head or sanitary well seal where a submersible pump is used, to prevent the entry of surface water, dirt or other substance into the well casing.
- Connections to Casing 15. A pipe or fitting connected to a well casing shall be so constructed to prevent the entry of surface water, dirt or other material into the well casing.
- Pump House Requirements 16.—(1) Unless approved in writing by the minister, where a well is not located within a treatment plant, the equipment shall be located in a heated pump house and all entrances to the pump house shall be kept locked at all times except when being used by persons authorized to enter the pump house.

- (2) A pump house floor shall be constructed of concrete and sloped to a floor drain leading to a sewer or drainage pump.
- Water Level 17. A well shall be equipped with an air line and gauge to determine static and pumping water levels and records of the levels shall be maintained.
- Observation Well 18. An observation well constructed to test an aquifer shall, when not being used by persons authorized to use it, be sealed at all times to prevent the entry of surface water, dirt or other material.
- Disinfection 19. A well shall be cleaned and disinfected:
- (a) during the drilling operations:
- (i) by the application of chlorine to the water in the well each day in sufficient quantity to obtain a chlorine concentration of 50 mg/l in all the water in the well; and
- (ii) by cleaning and disinfecting the gravel pack materials and pumping equipment before placement;
- (b) after the well has been completely constructed and before use:
- (i) by thoroughly removing all foreign substances;
- (ii) by swabbing the casing pipe thoroughly using alkalis, if necessary, to remove oil, grease or other materials; and
- (iii) by the application of a chlorine solution of such volume and strength that a concentration of at least 50 mg/l shall be obtained in all the water in the well for a period of not less than two hours;
- (c) after a repaired pump has been reinstalled or a new pump has been installed by the application of a chlorine solution in accordance with clause (b) (iii).
- Transmission and Distribution*
- Pipe and Fittings 20.—(1) Unless otherwise approved by the minister, the pipe and fittings in a distribution system shall conform to the specifications of the Canadian Standards Association or the American Water Works Association.
- (2) Unless otherwise approved by the minister, lining materials for pipe shall be cement mortar, coal-tar enamel, or epoxy resin and such lining material shall conform to the specifications of the American Water Works Association where such specifications exist.
- Pipe Protection 21. A pipe shall be placed at such depth or afforded such protection as will prevent freezing and damage.
- Pipe Laying 22. No person shall:
- (a) install a water pipe in a trench with a sewer pipe; or
- (b) install a sewer pipe in a trench with a water pipe.
- 23.—(1) Notwithstanding section 22 the minister may, where satisfied that it is in the public interest to do so, authorize a person to install a water pipe in a trench with a sewer pipe where:
- (a) the lowest portion of the water pipe is placed at least 2 feet above the highest portion of sewer pipe in a vertical plane;
- (b) the water pipe is horizontally separated from the sewer pipe by at least 1 foot; and
- (c) the sewer pipe is not under pressure.
- (2) Section 22 does not apply to a service connection where:
- (a) a sewer pipe is not under pressure;
- (b) the sewer pipe is not located above the water pipe; and
- (c) the water pipe is constructed of copper or plastic and the inside pipe diameter is less than 4 inches.
- Foreign Material in Pipe 24.—(1) When a pipe is laid it shall be as free as possible of all foreign matter.
- (2) Where a pipe contains dirt that may not be removed during the flushing operation, the interior of the pipe shall be cleaned and swabbed as necessary with a bactericidal solution.
- (3) When a pipe laying is not in progress the open ends of the pipe shall be effectively plugged, sealed or covered to prevent the entry of rodents, foreign matter or water.

Distribution System Disinfection 25.—(1) A pipeline shall be flushed after the pressure test has been made and prior to chlorination.
 (2) The pipe in a new distribution system or in an extension to an existing system shall be chlorinated so that a chlorine residual of 10 mg/l exists after 24 hours of contact time in all sections of the pipe.
 (3) Where a system is repaired the repaired portion shall be chlorinated:
 (a) in accordance with subsection (2); or
 (b) by maintaining a chlorine residual of 100 mg/l of contact time of 1 hour.
 (4) All valves and other appurtenances shall be operated while a pipeline is being chlorinated.
 (5) After completion of the chlorination process, shall treated water shall be thoroughly removed from the pipeline by flushing and the replacement water shall be sampled and tested for bacterial quality before use.

Hydrants 26.—(1) Except as provided in subsection (2), a hydrant shall be connected to self-draining sump.
 (2) Where soil permeability or water content makes the installation of a sump impractical, a hydrant drain may be connected to a sewer manhole if:
 (a) there is an air gap of 3 feet between the end of the drain pipe and the bottom of the manhole; and
 (b) backflow preventer is installed on the drain line.

Treatment Facility

Structural Design 27.—(1) A manhole opening into a clearwater reservoir constructed below the plant shall be raised not less than 4 inches above the finished floor and shall be covered with a metal lid so designed as to prevent entry of water.
 (2) A vertical opening into a clearwater reservoir shall be provided with a sleeve projecting not less than 4 inches above the finished floor and designed to prevent the entry of water.
 (3) A floor shall be sloped to one or more floor drains or sumps.
 Plumbing (4) Backwash and drain piping that passes through a clearwater reservoir shall be encased in not less than 2 inches of concrete or other material satisfactory to the minister.
 (5) A drain line connected to a sanitary sewer shall be provided with a trap.
 (6) A drain line from a treatment unit shall not be directly connected to a sewer and shall be equipped with a gate valve or approved backflow preventer.

Equipment 28.—(1) Gas chlorinators and chlorine cylinders shall be isolated in a room or enclosure having the following features:
 (a) a door which opens in an outward direction only;
 (b) provision for visual inspection of the room from outside the room; and
 (c) continuous mechanical ventilation to the atmosphere or screened vents located in or near the ceiling and within 6 inches of the floor.
 (2) Where liquid chlorine cylinders are used, a container of ammonia shall be kept in the plant to detect leaks.
 (3) Safety equipment shall be located close to but outside the room containing chlorine equipment.

29.—(1) A water treatment plant or pump house shall be equipped with a totalizing meter.
 (2) A chemical feeder shall be equipped with a device to allow adjustment in the dosage rate of chemicals applied.
 (3) A filter shall be equipped with a loss of head gauge and a rate of flow indicator.
 (4) A dry feeder for activated carbon shall be equipped with a dust collector.
 (5) Safety equipment consisting of gloves, goggles and a respirator shall be used when handling water treatment chemicals to protect against skin, eye and respiratory irritation.

Treated Water Storage

Storage Reservoirs 30.—(1) A reservoir used for the storage of potable water shall have a water-tight cover and be maintained in good repair.
 (2) An entrance manhole for a ground storage reservoir shall be raised at least 6 inches above the finished grade of the surrounding area and the grade shall be sloped away from the reservoir to prevent flooding by surface runoff.
 (3) A manhole opening into a storage reservoir shall be equipped with a tight-fitting cover designed to prevent entry of water and if the reservoir is located outdoors, the manhole opening shall be kept locked at all times except when being used by the persons authorized to enter the reservoir.
 (4) An opening or pipe used to ventilate a storage reservoir shall be of a design capable of preventing the entry of birds, rodents or foreign matter and shall be screened.

Chemical Treatment

Chemicals 31.—(1) No person shall use a chemical to treat water to be used for human consumption unless it is a chemical within a class of chemicals that has been approved by the minister for such purpose.
 Coagulant Aids (2) No person shall use a coagulant aid in processing water to be used for human consumption unless it is a coagulant aid that has been approved by the United States Public Health Service Technical Advisory Committee as a coagulant aid for such purpose.
 Corrosion Control 32.—(1) No person shall add a polyphosphate to a water supply to be used for human consumption unless it is added at the treatment facility.
 (2) The amount of phosphate in the water after the addition of a polyphosphate shall not exceed 10 mg/l as total inorganic phosphate.
 Chlorination 33. Unless otherwise approved in writing by the minister, the owner of a waterworks distribution system shall cause to be maintained:
 (a) a free chlorine residual of not less than 0.1 mg/l in the water entering a distribution system; or
 (b) a total chlorine residual of not less than 0.5 mg/l, based on a 5 minute orthotolidine test, at the most distant point in a distribution system.

OPERATION, TESTING AND RECORDS

Treated Water Quality 34.—(1) A facility treating water for human consumption shall be operated in such a manner that:
 (a) the treated water is free of bacterial contamination;
 (b) the quality with respect to iron, manganese, colour, turbidity and threshold odour number shall conform as closely as possible to the Criteria established by the minister for water to be used for human consumption.
 (2) Equipment for the application of fluoride shall be operated to ensure:
 (a) proper control of chemical dosage; and
 (b) adherence to operator safety measures as may be prescribed by the minister.
 (3) The interior of a treatment facility shall be maintained in a clean and sanitary condition.

Bacteriological Sampling 35.—(1) When a new waterworks system is installed, samples shall be taken from not less than 4 locations at widely separated points in the distribution system and the samples shall be submitted to the Provincial Laboratories, Department of Health, Regina, for bacteriological analysis.

(2) A new system of waterworks shall not be put into operation until bacteriological analyses conducted by the Provincial Laboratories indicate the absence of bacterial contamination.

(3) When a system is in operation, samples of water taken from the system shall be submitted to the Provincial Laboratories for bacteriological examination at such times and in such manner as the minister may direct.

(4) A sample of water submitted pursuant to subsection (3) shall not be taken regularly from the same location unless otherwise directed by the minister or a medical health officer.

(5) When a sample shows the presence of bacterial contamination, the person operating the waterworks or his representative shall take such action as is deemed necessary or as may be required by the minister or a medical health officer to eliminate the contamination without delay.

(6) The minister shall provide a medical health officer with copies of all bacteriological analyses conducted on water samples taken from waterworks systems within the health region for which he is a medical health officer.

(7) The requirements of this section are not applicable to water which is not used for human consumption.

Fluoride Sampling

36. Unless otherwise approved in writing by the minister, a municipality that applies fluoride to the water in a waterworks system operated by it, shall each month, submit four samples of water taken from widely separated points in the system of the Provincial Laboratories, Department of Health, Regina, for fluoride analyses.

Records and Tests

37.—(1) The owner of a waterworks shall cause operational records to be maintained and such records shall be made available to the minister upon request.

(2) Records shall include the following information:

(a) static and pumping water level of the supply well taken at least monthly;

(b) daily pumpage;

(c) dosages and amounts of chemicals applied;

(d) test results.

(3) The owner of a waterworks shall cause tests to be conducted on treated water used for human consumption and such tests shall include:

(a) the daily chlorine residual where chlorine is applied;

(b) fluoride concentration where fluoride is applied;

(c) such other tests as required to gauge the quality of the drinking water or the efficiency of the treatment units.