

City of Cornelius 41-00218

ORDINANCE NO. 662

AN ORDINANCE AMENDING THE CORNELIUS CODE BY ADDING SECTIONS 4.200 AND 4.230 RELATING TO CROSS-CONNECTIONS TO THE CITY WATER SYSTEM

THE CITY OF CORNELIUS DOES ORDAIN AS FOLLOWS:

Section 1: The Code of Cornelius is hereby amended by adding the following sections:

"WATER SUPPLY CROSS-CONNECTION CONTROL"

"4.200 Purposes and Objectives. The purpose and objectives of water supply cross-connection control provisions set forth below are:

"(1) To protect the public potable water supply of Cornelius from the possibility of contamination or pollution by isolating within the customer's private water system(s) such contaminants or pollutants which could backflow into the public water systems.

"(2) To promote the elimination or control of existing cross-connections, actual or potential, between the customer's in-plant potable water system(s) and non-potable water system(s), plumbing fixtures and industrial piping systems.

"(3) To provide for the maintenance of a continuing Program of Cross-Connection Control which will systematically and effectively prevent the contamination or pollution of all potable water systems.

"4.205 Responsibility. The City Manager or his designee shall be responsible for the protection of the public potable water distribution system from contamination or pollution due to the backflow of contaminants or pollutants through the water service connection. If, in the judgment of the City Manager or his designee, an approved backflow prevention assembly is required at the customer's water service connection; or, within the customer's private water system for the safety of the water system, the City Manager or his designee shall give notice in writing to the customer to install approved backflow prevention assembly(s) at specific location(s) on the customer's premises. The customer shall immediately install such approved assembly(s) at the customer's own expense; and failure, refusal or inability on the part of the customer to install, have tested and maintain such assembly(s) shall constitute a ground for discontinuing water service to the premises until such requirements have been satisfactorily met.

"4.210 Definitions. For the purposes of Section 4.200 to 4.230 the following mean:

"AIR-GAP. The unobstructed vertical distance through the free atmosphere between the lowest opening from any pipe or faucet supplying water to a tank, plumbing, fixture or other device and the flood level of said vessel. An approved air-gap shall be at least double the diameter of the supply pipe, measured vertically, above the overflow rim of the vessel; and in no case less than one inch.

"APPROVED. Accepted by the Oregon State Health Division applicable specifications stated or cited in this ordinance, or as suitable for the proposed use.

"AUXILIARY WATER SUPPLY. Any water supply on or available to the premises other than the Purveyor's approved public water supply will be considered as an auxiliary water supply. These auxiliary waters may include water from another purveyor's public potable water supply or any natural source(s) such as a well, spring, river, stream, etc., or "used waters" or "industrial fluids". These waters may be contaminated or polluted or they may be objectionable and constitute an unacceptable water source over which the Water Purveyor does not have sanitary control.

"BACKFLOW. The reversal of the normal flow of water caused by either backpressure or backsiphonage.

"BACKPRESSURE. The flow of water or other liquids, mixtures or substances under pressure into the distribution pipes of a potable water supply system from any source or sources other than the intended source.

"BACKSIPHONAGE. The flow of water or other liquids, mixtures or substances into the distribution pipes of a potable water supply system from any source or sources other than the intended source.

"BACKFLOW PREVENTER. An assembly or means designed to prevent backflow.

"CONTAMINATION. Means an impairment of the quality of the potable water by sewage, industrial fluids or waste fluids, compounds or other materials to a degree which creates an actual or potential hazard to public health through poisoning or through the spread of disease.

"CROSS-CONNECTION. Any actual or potential physical connection or arrangement of piping or fixtures between two otherwise separate piping systems, one of which contains potable water and the other non-potable water or industrial fluids of questionable safety, through which, or because of which, backflow may occur into the potable water system. This would include any temporary connections, such as swing connections, removable sections, four-way plug valves, spools, dummy sections or pipe, swivels or change-over devices or sliding multipoint tubes.

"CROSS-CONNECTION CONTROLLED. A connection between a potable water system and a non-potable water system with an approved backflow prevention assembly properly installed and maintained so that it will continuously afford the protection commensurate with the degree of hazard.

"CROSS-CONNECTION CONTROL BY CONTAINMENT. The installation of an approved backflow prevention assembly at the water service connection to any customer's premises where it is physically and economically infeasible to find and permanently eliminate or control all actual or potential cross-connections within the customer's water system; or, it shall mean the installation of an approved backflow prevention assembly on the service line leading to and supplying a portion of the customer's water system where there are actual or potential cross-connections which cannot be effectively eliminated or controlled at the point of the cross-connection.

"DOUBLE CHECK VALVE ASSEMBLY. An assembly of two independently operating, approved check valves with tightly closing shut-off valves on each end of the check valves, plus properly located test cocks for the

testing of each check valve. The entire assembly shall meet the design and performance specifications as determined by a laboratory and a field evaluation program resulting in an approval by recognized and State Health Division-approved testing agency for backflow prevention assemblies. To be approved, these assemblies must be readily accessible for in-line testing and maintenance.

"HAZARD, DEGREE OF. The term is derived from an evaluation of the potential risk to public health and the adverse effect of the hazard upon the potable water system.

"(i) HAZARD - HEALTH Any condition, device, or practice in the water system and its operation which could create, or in the judgment of the Director, may create, a danger to the health and well-being of the water consumer.

"(ii) HAZARD - PLUMBING A plumbing type cross-connection in a consumer's water system that has not been properly protected by an approved air-gap or approved backflow prevention assembly.

"(iii) HAZARD - POLLUTIONAL An actual or potential threat to the physical properties of the water system or to the potability of the public or the consumer's water system but which would constitute a nuisance or be aesthetically objectionable or could cause damage to the system or its appurtenances, but would not be dangerous to health.

"(iv) HAZARD - SYSTEM An actual or potential threat of severe damage to the physical properties of the public potable water system or the consumer's potable water system or of a pollution or contamination which would have a protracted effect on the quality of the potable water in the system.

"INDUSTRIAL FLUIDS SYSTEM. Any system containing a fluid or solution which may be chemically, biologically or otherwise contaminated or polluted in a form or concentration such as would constitute a health, system, pollutional or plumbing hazard if introduced into an approved water supply. This may include, but not be limited to: polluted or contaminated waters; all types of process waters and 'used waters' originating from the public potable water system which may have deteriorated in sanitary quality; chemicals in fluid form; plating acids and alkalines; circulating cooling waters connected to an open cooling tower and/or towers that are chemically or biologically treated or stabilized with toxic substances; contaminated natural waters such as from wells, springs, streams, rivers, irrigation canals or systems, etc.; oils, gases glycerine, paraffins, caustic and acid solutions and other liquid and gaseous fluids used in industrial or other purposes or for fire-fighting purposes.

"POLLUTION. Means the presence of any foreign substance (organic, inorganic or biological) in water which tends to degrade its quality so as to constitute a hazard or impair the usefulness or quality of the water to a degree which does not create an actual hazard to the public health but which does adversely and unreasonably affect such waters for domestic use.

"REDUCED PRESSURE PRINCIPLE ASSEMBLY. An assembly of two independently

acting, approved check valves together with a hydraulically operating, mechanically independent differential pressure relief valve, located between the check valves and at the same time below the first check valve. The unit shall include properly located test cocks and tightly closing shut-off valves at each end of the assembly. The entire assembly shall meet the design and performance specifications as determined by a laboratory and a field evaluation program resulting in an approval by a recognized and Oregon State Health Division approved testing agency for backflow prevention assemblies. The assembly shall operate to maintain the pressure in the zone between the two check valves at an acceptable level less than the pressure between the pressure on the public water supply side of the assembly. At cessation of a normal flow the pressure between the two check valves shall be less than the pressure on the public water supply side of the device. In case of leakage of either of the check valves, the differential relief valve shall operate to maintain the reduced pressure in the zone between the check valves by discharging to the atmosphere. When the inlet pressure is two pounds per square inch or less, the relief valve shall open to the atmosphere. To be approved, these assemblies must be readily accessible for in-line testing and maintenance and be installed in a location where no part of the assembly will be submerged.

"WATER - POTABLE. Any water which, according to recognized standards, is safe for human consumption.

"WATER - NONPOTABLE. Water which is not safe for human consumption or which is of questionable potability.

"WATER - SERVICE CONNECTION. The terminal end of a service connection from the public potable water system; i.e., where the Water Purveyor loses jurisdiction and sanitary control over the water at its point of delivery to the customer's water system. If a meter is installed at the end of the service connection, then the service connection shall mean the downstream end of the meter. There should be no unprotected takeoffs from the service line ahead of any meter or any backflow prevention assembly located at the point of delivery to the customer's water system. Service connection shall also include water service connection from a fire hydrant and all other temporary or emergency water service connections from the public potable water system.

"WATER - USED. Any water supplied by a Water Purveyor from a public potable water system to a consumer's water system after it has passed through the point of delivery and is no longer under the sanitary control of the Water Purveyor.

"4.215 Requirements.

"(1) Water System:

"(a) The water system shall be considered as made up of two parts: The utility system and the customer system.

"(b) The Utility System shall consist of the source facilities and the distribution system; and shall include all those facilities of the water system under the complete control of the utility, up to the point where the customer's system begins.

"(c) The source shall include all components of the facilities utilized in the production, treatment, storage, and delivery of water to the distribution system.

"(d) The distribution system shall include the network of conduits used for the delivery of water from the source to the customer's system.

"(e) The customer's system shall include those parts of the facilities beyond the termination of the utility distribution system which are utilized in conveying utility-delivered water to points of use.

"(2) No water service connection to any premises shall be installed or maintained by the City unless the water supply is protected as required by State laws and regulations and this Code. Service of water to any premises shall be discontinued by the City if a backflow prevention assembly required by this Code is not installed, tested and maintained, or if it is found that a backflow prevention assembly has been removed, by-passed, or if an unprotected cross-connection exists on the premises. Service will not be restored until such conditions are corrected.

"(3) An approved backflow prevention assembly shall also be installed on each domestic, fire or irrigation service line to a customer's water system at or near the property line or immediately inside the building being served; but, in all cases, before the first branch line leading off the service line wherever the following conditions exist:

"(a) In the case of premises having auxiliary water supply which is not or may not be of safe bacteriological or chemical quality and which is not acceptable to the City Manager or his designee as an additional source, the public water system shall be protected against backflow from the premises by installing an approved backflow prevention assembly in the service line(s) appropriate to the degree of hazard.

"(b) In the case of premises on which any industrial fluids or any other objectionable substance is handled in such a fashion as to create an actual or potential hazard to the public water system, the public system shall be protected against backflow from the premises by installing an approved backflow prevention assembly in the service line appropriate to the degree of hazard. This shall include the handling of process waters and waters originating from the utility system which have been subject to deterioration in quality.

"(c) In the case of premises having (1) internal cross-connection(s) that cannot be permanently corrected or controlled, or (2) intricate plumbing and piping arrangements or where entry to all

portions of the premises is not readily accessible for inspection purposes, making it impracticable or impossible to ascertain whether or not dangerous cross-connections exist, the public water system shall be protected against backflow from the premises by installing an approved backflow prevention assembly in the service line.

"(4) The type of protective assembly required under Section 4.215(3) shall meet all standards of the Oregon State Health Division in addition to any and all requirements stated herein. The type of protective devices required will depend on the degree of hazard which exists, as follows:

"(a) In the case of any premises where there is an auxiliary water supply as stated in Section 4.213(3)(a) of this Code and it is not subject to any of the following rules, the public water system shall be protected by an approved air-gap separation or an approved reduced pressure principle backflow prevention assembly.

"(b) In the case of any premises where there is water or substance that would be objectionable but not hazardous to health, if introduced into the public water system, the public water system shall be protected by an approved double check valve assembly.

"(c) In the case of any premises where there is any material dangerous to health which is handled in such a fashion as to create an actual or potential hazard to the public water system, the public water system shall be protected by an approved air-gap separation or an approved reduced pressure principle backflow prevention assembly. Examples of premises where these conditions will exist include sewage treatment plants, sewage pumping stations, chemical manufacturing plants, hospitals, mortuaries and plating plants.

"(d) In the case of any premises where there are "uncontrolled" cross-connections, either actual or potential, the public water system shall be protected by an approved air-gap separation or an approved reduced pressure principle backflow prevention assembly at the service connection.

"(e) In the case where, because of security requirements or other prohibitions or restrictions, it is impossible or impractical to make a complete in-plant cross-connection survey, the public water system shall be protected against backflow from the premises by either an approved air-gap separation or an approved reduced pressure principle backflow prevention assembly on each service to the premises.

"(5) Any backflow prevention assembly required herein shall be a model and size approved by the City Manager and the State Health Division. The term "Approved Backflow Prevention Assembly" shall mean an assembly that has been manufactured in full conformance with the standards established by the American Water Works Association (A.W.W.A.) entitled:

AWWA C506-84 Standards for Reduced Pressure Principle and Double Check Valve Backflow Prevention Devices, or latest revisions;

and, have met completely the laboratory and field performance specifications of the Foundation for Cross-Connection and Hydraulic Research (F.C.C.C. & H.R.) of the University of Southern California established by specifications of backflow prevention assemblies - Section 10 of the most current issue of "Manual of Cross-Connection Control".

"The A.W.W.A. and F.C.C.C. & H.R. standards and specifications have been adopted by the State of Oregon Health Division and are hereby adopted by the City of Cornelius.

"(6) It shall be the duty of the customer-user at any premises where backflow prevention assemblies are installed to have certified inspections and operational tests made at least once per year. In those instances where the City Manager deems the hazard to be great enough he may require certified inspections at more frequent intervals. These inspections and tests shall be at the expense of the water user and shall be performed by the assembly manufacturer's representative, Water Department personnel, or by a certified tester approved by the State Health Division. It shall be the duty of the City Manager or his designee to see that these tests are made in a timely manner. The customer-user shall notify the City Manager or his designee in advance when the tests are to be undertaken so that an official representative may witness the tests if so desired. These assemblies shall be repaired, overhauled or replaced at the expense of the customer-user whenever such assemblies are found to be defective. Records of such tests, repairs and overhauls shall be kept and copies given to the City Manager or his designee.

"(7) All presently installed backflow prevention assemblies which do not meet the requirements of this Code but were approved for the purposes described herein at the time of installation and which have been properly maintained shall, except for the inspection and maintenance requirements under Section 4.215(6) be excluded from the requirements of these rules so long as the City Manager or his designee is assured that they will satisfactorily protect the utility system. Whenever the existing device is moved from the present location or requires more than minimum maintenance or when the City Manager or his designee finds that the maintenance constitutes a hazard to health, the unit shall be replaced by an approved backflow prevention assembly meeting the requirements of this Code.

"(8) The City Manager or his designee may specify the location and methods of installation of all backflow prevention devices.

"(9) Any installation, corrective measure, disconnection; or other change to a backflow prevention device shall be at the sole expense of the owner or water customer. The cost of any change required in the City's system outside the property (i.e., between the meter and the supply line) and any charges for cut-off or disconnection shall be added to the charges against the premises which necessitated the expenditures.

"(10) Any person operating any mobile apparatus which uses the City water system or water from any premises within the City must provide for backflow prevention.

"4.220. Cross-Connection Inspections.

"(1) No water shall be delivered to any structure hereafter built within areas served by City water until the same shall have been inspected by the City for possible cross-connections and been approved as being free of same.

"(2) The customer's system shall be open for inspection at all reasonable times to authorized representatives of the City to determine whether cross-connections or other structural or sanitary hazards, including violations of these regulations, exist. When such condition(s) becomes known, the City Manager or his designee shall deny or immediately discontinue service to the premises by providing for a physical break in the service line until the customer has corrected the condition(s) in conformance with the State and City laws relating to plumbing and water supplies and the regulations adopted pursuant thereto. All inspections as stipulated in this Section shall be made by and at the expense of the City.

"(3) Authorized employees of the City shall have free access, at proper hours of the day, to all parts of buildings or premises for the purpose of inspecting the condition of the pipes, fixtures and other appurtenances, and the manner in which the water is being used.

"(4) If access to the premises is refused, the City shall discontinue water service to the premises.

"4.225 Backflow Preventer Testing Program

"(1) Any backflow prevention device which may be required by the City or the State to be installed on property for the protection of the water supply shall be tested at the time of installation and, anytime the device is moved or relocated, immediately after relocation or moving. The property owner must forward the results of such testing to the City Manager within ten days of the date of installation or relocation.

"(2) The property owner must order and cause to be performed, a test of each backflow prevention device annually, or within 30 days after, the anniversary date of the initial testing. The City may require more frequent testing in order to assure that the device is properly functioning in those installations which represent a serious health hazard as determined by the City.

"(3) If the City Manager has not received the results of the test within 30 days of the anniversary date for annual testing or within 10 days of the date of the device, or the date of the City's discovery that the device was installed without testing as applicable, the City may order the test and add the cost of the test onto the property owner's water bill.

"(4) If the results of the test ordered by the City or the property owner indicate that repairs are necessary, the repairs must be made and a new test made and results of the test forwarded to the City Manager within ten days of the first test.

"If the City Manager has not received evidence of the repairs and the results of the second test within ten days of the first test, the City may have the repairs made and second test made and add the cost to the property owner's water bill.

"This section shall apply to all test and repairs until the test shows the backflow preventer device is functioning properly.

"(5) The City may discontinue the water service of any person who refuses or fails to pay such testing or repair, and have the charges added to the customer's water bill.

"(6) All tests required to be performed under this section must be performed by a tester certified by the State.

"4.230 Liability. Sections 4.200 to 4.225 shall not be construed to hold the City responsible for any damage to persons or property by reason of this inspection or testing herein, or the failure to inspect or test."

INTRODUCED AND ADOPTED this 21st day of July, 1987.

CITY OF CORNELIUS, OREGON