ORDINANCE NO. 125

AN ORDINANCE OF THE CITY OF SAN LUIS, ARIZONA FOR PREVENTION OF BACKFLOW; PROVIDING DEFINITIONS; SETTING FORTH PREVENTION REQUIRED; ESTABLISHING HAZARDS, APPROVED METHODS; ASSEMBLY REQUIREMENTS, INSTALLATION, INSPECTION, RETROACTIVE APPLICATION, PLAN REVIEWS, FEES, AND PROVIDING PENALTIES FOR VIOLATION.

BE IT ORDAINED BY THE MAYOR AND COUNCIL OF THE CITY OF SAN LUIS, ARIZONA AS FOLLOWS:

SECTION 1. DEFINITIONS:

A. Approved

Accepted by the Department as either meeting an applicable specification stated or cited in this Chapter, or suitable for the proposed use.

B. Auxiliary Water Supply

Any water supply on, or available to, premises other than potable water supplied by the City of San Luis. These auxiliary waters may include, but shall not be limited to, water from another purveyor's public potable water supply or any natural sources such as a well, spring, river, stream, harbor, or treated effluent, waste waters or industrial fluids. These waters may be polluted or contaminated or may be objectionable and constitute an unacceptable water source over which the Department does not have sanitary control.

C. Backflow

The undesirable reversal of flow in the potable water system caused by either backpressure or backsipphonage.

D. Backpressure

Any elevation of pressure in a customer's water supply system, above the pressure of the public potable water supply system, which could cause water or other liquids, mixtures or substances to flow from a customer's water supply system into the distribution system of the public potable water supply system.

E. Backsiphonage

A reversal of the normal flow of water caused by a reduction of pressure in the potable water supply system which causes the flow of water or other liquids, mixtures or substances to flow from a customer's water supply system into the distribution system of the public potable water supply system.

F. Backflow Preventer

An approved assembly or means designed to prevent the reversal of the normal flow of water caused by either backpressure or backsiphonage.

G. Certified Tester

An individual certified and approved by an agency recognized by the Department to conduct testing on backflow prevention assemblies.

H. Contamination

An impairment in the quality of potable water, by sewage, industrial fluids, waste liquids, compounds or other material or fluids, to a degree which creates an actual hazard to the public health by poisoning or the spread of disease.

I. Cross-Connection

Any actual or potential connection or other arrangement of piping or fixtures, between a piping system containing potable water and piping system containing nonpotable water, waste fluids, industrial fluids or other fluids of questionable safety for human consumption, through which, or because of which, backflow may occur into the public potable water system. Cross-connections include any temporary connections such as swing connections, removable sections, fourway plug valves, spools, dummy sections of the pipe, swivel or changeover devices or sliding multi-port tubes, hose connections, or any other temporary or permanent devices, through which, or because of which, backflow can or may occur.

J. Customer Water Supply System

The water distribution facilities within a customer's premises commencing at the discharge point of the service connection.

K. Department

The City of San Luis, Department of Public Works.

L. Distribution System

The network of conduits used to deliver potable water from the source facilities to the customer's water supply system.

M. Hazard, Degree of

Evaluation of the potential risk to the public health and the adverse effect of the hazard upon the public potable water system.

N. Industrial Fluid System

Any system containing a fluid or solution which is chemically, biologically or other wise contaminated or polluted in a form or concentration such as would constitute a health, system, pollution, or plumbing hazard if introduced into the public potable water system. This may include, but shall not be limited to: polluted or contaminated waters' all types of process waters, waste 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 alkaline, circulating cooling waters connected to an open cooling tower and/or cooling towers that are chemically or biologically treated or stabilized with toxic substances; contaminated natural waters such as from wells, springs, streams, rivers, bays, harbors, seas, irrigation canals or systems, or 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.

O. Nonpotable Water

Water which is not safe for human consumption or which is of questionable quality for human consumption.

P. Pollution

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

Q. Potable Water

Any water is safe for human consumption pursuant to the standards set by the Arizona Department of Environmental Quality.

R. Public Potable Water Supply System

The source facilities and the distribution system under control of the City of San Luis to the point where a customer's water supply system commences. A customer's water supply system commences at the discharge point of the service connection.

S. Service Connection

The terminal end of a service line from the public potable water system at its point of delivery to the customer's water system where the Department loses jurisdiction and sanitary control over the water. If a meter is installed between the customer's water supply system and the public potable water system, the service connection shall be the discharge-end of the meter. Service connections shall also include a water connection from a fire hydrant and any other temporary or emergency water connections with the public potable water supply system.

T. Source Facilities

All components and facilities utilized in the production, treatment, storage and delivery of potable water to the distribution system.

U. Used Water

Any water supplied by the Department, from the public potable water system to a customer's water system, after it has passed through the service connection and is no longer under the sanitary control of the Department.

SECTION 2. PURPOSE

A. To protect the public potable water supply of the City of San Luis from the possibility of contamination or pollution by preventing the backflow of contaminants and pollutants into the public potable water supply system; and

B. To promote the elimination or control of existing cross-connections, actual or potential, within a customer's internal potable water system, plumbing fixtures and industrial piping systems; and

C. To provide for a continuing program of cross-connection control which will prevent the contamination or pollution of the public potable water supply system.

SECTION 3. BLACKFLOW PREVENTION REQUIRED

A. The minimum level of backflow protection which shall be provided to protect the public water supply system shall be that which is recommended by the Manual or Cross Connection

Control, 8th Edition, June 1988 (and no future editions), which is incorporated herein by reference and on file in the office of the City Manager.

B. An approved backflow prevention method shall be utilized or installed at every service connection to a customer's water system when the Department determines the potable water supplied by the public potable water system may be subject to contamination, pollution or other deterioration in sanitary quality by conditions within the customer's water system.

C. The backflow prevention method to be utilized or installed shall be determined by the Department. The method required by the Department shall be sufficient to protect against the potential degree of hazard, as determined by the Department, to the public potable water supply from the customer's water system.

SECTION 4. HAZARD POTENTIAL

The degree of hazard potential to the public potable water supply and system from a customer's water supply system shall be determined using the following hazard factors:

A. Health

Any condition, device or practice which, in the judgment of the Department, may create a danger to the health and well-being of the potable water consumers.

B. Plumbing

A plumbing type cross-connection that is not properly protected by an approved backflow prevention method.

C. Pollution

An actual or potential threat to the physical facilities of the public potable water supply system or to the potable water supply which, although not dangerous to health, would constitute a nuisance or be esthetically objectionable, or could cause damage to the system or its appurtenances.

D. System

An actual or potential threat which may cause severe damage to the physical facilities of the public potable water supply system or which may have a protracted effect on the quality of the potable water in the system.

SECTION 5. BLACKFLOW PREVENTION METHODS: APPROVED LIST

A. A backflow prevention method shall be any assembly or other means designed to prevent backflow. The following are the recognized backflow prevention methods which the Department may require under Section 3 or Section 4 of this regulation.

1. Air gap: The unobstructed vertical distance through the free atmosphere between the lowest opening of any pipe or faucet supplying potable water to a tank, plumbing fixture or other device and the flood level rim of said tank, plumbing fixture or other device. An approved air gap shall be at least double the diameter of the supply pipe or faucet and in no case less than one (1) inch.

2. Reduced pressure principle assembly (hereinafter "RP"): An assembly containing two independently acting approved check valves together with a hydraulically operating, mechanically independent pressure differential relief valve located between the check valves, and at the same time below the first check valve. The assembly shall include properly located test cocks and tightly closing shut-off valves at each end of assembly.

3. Double check valve assembly (hereinafter "DC"): An assembly composed of two independently acting, approved check valves, including tightly closing shut-off valves located at each end of the assembly and fitted with a properly located test cocks.

4. Pressure vacuum breaker assembly (hereinafter "PVB"): An assembly containing an independently operating, internally loaded check valve and an independently operating, loaded air inlet valve located on the discharge side of the check valve. The assembly shall be equipped with properly located test cocks and tightly closing shut-off valves located at each end of the assembly.

B. A backflow prevention method may be approved by the Department if it has received the approval of the Foundation for Cross-Connection Control and Hydraulic Research of the University of Southern California.

C. The Department shall maintain a list of approved backflow prevention assemblies, by type and manufacturer. The list shall be furnished to any customer required to install a backflow prevention assembly.

SECTION 6. BACKFLOW PREVENTION METHOD REQUIRE SPECIFIED ACTIVITIES

A. When any of the following activities are conducted on premises served by the public potable water system, a potential hazard to the public potable water supply shall be presumed and a backflow prevention method, of the type specified for that activity herein, must be utilized or installed at the service connection for that premise.

1. Aircraft and missile plant: RP
2. Animal clinics and animal grooming shops: RP
3. Any premises where a cross-connection is maintained: RP
4. Automotive repair with steam cleaner, acid cleaning equipment, or solvent facilities: RP
5. Auxiliary water systems: RP
6. Bottling plants, beverage or chemical: RP
7. Breweries: RP
8. Multi-storied buildings: DC
9. Buildings with house pumps and/or potable water storage tank: DC
10. Buildings with landscape fountains, ponds, or baptismal tanks: RP or Air Gap
11. Buildings with sewage ejectors: RP or Air Gap
12. Canneries, packing houses, and reduction plants: RP
13. Car wash facilities: RP
14. Cooling towers, boilers, chillers, and other heating and cooling systems utilizing potable water: RP
15. Chemical plants: RP
16. Chemically treated potable or nonpotable water systems: RP
17. Civil works (government owned or operated facilities not open for inspection by the Department): RP
18. Commercial laundries: RP
19. Dairies and cold storage plants: DC
20. Dye works: RP
21. Film processing laboratories, facilities or equipment: RP
22. Fire systems - as classified by the American Water Works Association (AWWA)
    Manual 14:
    A) Class 1, Class 2: DC
       This requirement may be waived for fire protection systems constructed of approved potable water materials per the Uniform Plumbing Code as adopted by the City.
    B) Class 3, all systems: DC
    C) Classes 4, 5 and 6, all systems: RP
23. Fire systems - where backflow protection is required on the industrial/domestic service connection that is located on the same premises, both service connections will have adequate backflow protection for the highest degree of hazard effecting either system.

24. Food processing plants: RP
25. High schools and colleges: RP
26. Holding tank disposal stations: RP
27. Hospitals and mortuaries (major complexes): RP
28. Medical and dental buildings, sanitariums, rest and convalescent homes engaged in the diagnosis, care or treatment of human illness: DC
29. Irrigation systems (not to include single family residences used solely for residential purposes unless otherwise identified as having a cross connection or back flow problem):
    A) Premises where nonpotable water is used for irrigation: RP
    B) Premises using potable water with nonpotable water piping: RP
    C) Premises having a system served by more than one (1) service connection (looped system): RP
    D) Premises where chemigation is practiced: RP
30. Laboratories using toxic materials: RP
31. Manufacturing, processing, and fabricating plants: RP
32. Mobile home parks served by master meter: DC
33. Motion picture studios: RP
34. Multiple services - interconnected: DC
35. Oil and gas production facilities: RP
36. Paper and paper production facilities: RP
37. Plating plants: RP
38. Portable insecticide and herbicide spray tanks: RP or Air Gap
39. Power plants: RP
40. Radioactive materials processing facilities: RP
41. Restricted, classified, or other closed facilities: RP
42. Rubber plants: RP
43. Sand and gravel plants: RP
44. Sewage and storm drainage facilities: RP
45. Shopping centers served by master meters: RP
46. Public swimming pools with self-levelers or automatic fillers: PVB
47. Street sweepers, steel wheeled rollers: RP or Air Gap
48. Water trucks, water tanks, or hydraulic sewer cleaning equipment: RP or Air Gap
49. Hydrant meters connected to system to be used for irrigation or any use not included in No. 48: RP or Air Gap
50. Buildings used for commercial mini-warehouses or industrial uses where one (1) service connection supplies more than one (1) tenant or occupant of the building: RP

B. When two or more of the activities listed above are conducted on the same premises and served by the same service connection, the most restrictive blackflow prevention method required for

any of the activities conducted on the premises shall be required to be utilized or installed at the service connection. The order of most restrictive to least restrictive backflow prevention methods shall be as follows:

1. Air Gap (most restrictive);
2. Reduced Pressure Principle Assembly (RP);
3. Double Check Valve Assembly (DC);
4. Pressure Vacuum Breaker Assembly (PVB) (least restrictive)

C. If the Department determines, after inspection of the customer's system, that a backflow prevention method less restrictive than that required in Section 3 of this regulation will provide adequate protection of the public potable water system, the Department may, in its sole discretion, modify the requirements of Section 6 of this regulation.

SECTION 7. BACKFLOW ASSEMBLY INSTALLATION REQUIREMENTS: LOCATION

A. Backflow prevention assemblies shall be installed by the customer, at the customer's expense and in compliance with the standards and specifications adopted by the City of San Luis, at the service connection.

B. The assembly shall be in an accessible location approved by the Department. A reduced pressure principle assembly and pressure vacuum breaker assembly shall be installed above ground. A double check valve assembly may be installed, at the customer's option, below ground in a vault which meets standard specifications established by City of San Luis.

C. When customer desires a continuous water supply, two (2) or more backflow prevention assemblies shall be installed parallel to one another at the service connection to allow a continuous water supply during testing of the backflow prevention assemblies. When backflow prevention assemblies are installed parallel to one another, the sum of the diameters of the assemblies shall be at least equal to the diameter of the service connection. Fire system assemblies are addressed in Section 8.

D. Section 7 of this regulation shall not apply to fire sprinkler systems.

SECTION 8. INSTALLATION OF BACKFLOW PREVENTION ASSEMBLIES FOR FIRE SPRINKLER SYSTEMS

A. All control valves on the backflow device shall be locked in the open position or be tamper switch protected in accordance with NFPA.

B. When a backflow prevention assembly is required for a water service connection supplying only to a fire sprinkler system, assembly shall be installed at the user connection for the fire sprinkler system in compliance with standard specifications adopted by the City of San Luis.

C. If the authority enforcing the Uniform Fire Code determines that a fire sprinkler system shall have a continuous water supply which may not be interrupted during testing of the backflow prevention assembly, the customer shall install, at his expense, two backflow prevention assemblies parallel to one another at the service connection. The diameter of each assembly shall be at least equal to the diameter of the service connection.

D. When a backflow prevention assembly is required for a building which already contains a fire sprinkler system, the sprinkler system shall be tested and certified by a licensed registrant in the State of Arizona that it will perform within the specification of the National Fire Protection association and the City of San Luis fire codes, after installation of the required assembly.

SECTION 9. INSPECTIONS, TESTING, MAINTENANCE, RECORDS

A. A customer's water system shall be available at all times during business hours for inspection by authorized personnel of the Department. The inspection shall be conducted to determine compliance with this regulation.

B. The customer shall test and service backflow prevention assemblies at least once a year. If the testing reveals the assembly to be defective or in unsatisfactory operating condition, the customer shall perform any necessary repairs, including replacement or overhaul of the assembly, if necessary, which will return the assembly to satisfactory operating condition.

C. If the Department or customer learns or discovers, during the interim period between tests, that an assembly is defective or in unsatisfactory operating condition, the customer shall

perform any necessary repairs, including replacement or overhaul of the assembly if necessary, which will return the assembly to satisfactory operating condition.

D. The annual testing shall be performed by an individual certified and approved to conduct such testing by an agency recognized by the Department. A list of certified, approved and recognized individuals will be maintained by the Department and will be available upon request to all persons required to install or maintain a backflow prevention assembly. A tester may be suspended or removed from the list for improper testing, maintenance, reporting or other improper practices as determined by the department.

E. The customer shall maintain records, on forms approved by the Department, of the results of all tests and all servicing, repairs, overhauls or replacements of the backflow prevention assembly. A copy of the records shall be submitted to the Department within fourteen (14) days after completion of the activity for which the record is made.

SECTION 10. RETROACTIVE APPLICATION SYSTEM RETROFIT

A. The provisions of this regulation shall apply to all new water customers and all water customers existing prior to the enactment date of this regulation.

B. Backflow prevention assemblies installed prior to enactment of this regulation, and which do not comply with the requirements set forth herein, shall be replaced with assemblies which comply with the standards set forth herein.

C. All water customers existing prior to the enactment of this regulation shall comply with the standards set forth herein within a period of time as determined by the Department. The maximum time allowed for compliance shall be July 1, 1994.

D. A change of ownership or name change or type of use change shall require a new survey of use. If the survey determines an assembly is required, installation needs to be completed before granting the change.

E. Fire sprinkler systems which will require retrofit prior to July , 1994:

1. A fire sprinkler system designed by pipe schedule which is modified, expanded or augmented under issuance of a building permit.

2. A fire sprinkler system designed by hydraulic calculation which is modified in an area equal to the size of the design area or effecting 10 sprinkler heads.

F. The Quarterly Flow & Valve Confidence Test. Class 1 and Class 2 fire sprinkler systems constructed with nonpotable BPA immediately, replacing the single check valve or to have the fire sprinkler system single check (or alarm check) inspected at least quarterly to verity the existing single check (an/or alarm check) valves are properly installed and functioning. Quarterly Flow & Valve Confidence Test reports shall be provided to the department and the fire chief within 14 days following the inspection, submitted on forms approved by the Department. Any fire sprinkler system which falls two consecutive quarterly inspections shall be re-engineered with; the single check valve replaced by the appropriate backflow prevention assembly. The water customer or properly owner shall pay for this quarterly flow & valve confidence test.

SECTION 11. PLAN REVIEW

A. All backflow prevention assemblies which will be installed shall be shown and specified on all required building and engineering plans. City approval of the intended assembly installation is required prior to issuance of any building or engineering permit.

B. Plumbing permits for the installation of all backflow prevention assemblies required by the City shall be obtained from the City prior to installation.

C. Replacement of existing backflow prevention assemblies shall require a plumbing permit.

D. Backflow prevention assemblies must be installed as to meet the standard specifications of the City and be tested by a certified tester and shown to be operating correctly. A copy of all testing records shall be submitted to the Department within fourteen (14) days.

SECTION 12. FEES

A. A monthly service fee may be established by City Council resolution to cover the costs if implementing and enforcing this regulation and if established shall ba charged to every customer who is required to install a backflow prevention assembly. The fee shall be included in the customer's monthly water bill.

B. A fee may be established by the City for any permits issued pursuant to the terms of this regulation.

SECTION 13. ENFORCEMENT

A. It shall be unlawful for any person, firm or corporation to bypass or remove a backflow prevention method without the approval of the Department. Any person, firm or corporation violating the provisions of this paragraph shall be guilty of a Class 1 misdemeanor, and upon conviction thereof shall be punished in accordance with the Arizona Revised Statutes. Each separate day or part thereof during which any violation of this paragraph occurs or continues shall be deemed to constitute a separate offense, and upon conviction thereof shall be punishable as herein provided.

B. If the Department discovers that a customer has not installed a required backflow prevention method or that a backflow prevention method has been improperly tested or maintained, by passed or removed, or that an unprotected cross-connection exists in the customer's water system, the water service to that service connection shall be disconnected if the situation is not remedied within the time specified in the notice sent to the customer as required by this section. The service shall not be restored until the condition is remedied.

C. Water service to a fire sprinkler system shall not be subject to disconnection under this section. If a situation, which could otherwise result in discontinuance of water service in subsection B, above, is not remedied within the time provided in the notice sent to the customer, the customer shall be guilty of a Class 1 misdemeanor. Each separate day or part thereof during which any violation of this paragraph occurs or continues shall be deemed to constitute a separate offense, and upon conviction thereof shall be punishable as herein provided.

D. Prior to disconnecting any water service because a condition set forth in subsection A. above exists, the Department shall send a notice to the customer describing the condition and notifying the customer the condition must be remedied within forty-five (45) days after mailing of the notice by the Department. If such condition is not remedied within said forty-five (45) day period, the Department shall send a second notice, by certified mail, to the customer modifying the customer notifying the customer that water service will be disconnected in fifteen (15) days in the condition is not remedied within such time period.

E. The Department may disconnect, without notice, water service to any customer when the Department discovers that the customer's water system is contaminating the public potable water supply.

PASSED AND ADOPTED by the Mayor and Council of the City of San Luis, Arizona, this 11th day of Sept., 1995.

Miguel A. Lopez, Mayor

Attest:

Victor M. Stevens, City Manager

Approved as to form:

Robert C. Clarke, City Attorney