

## **PART V**

### **SERVICE BACKFLOW PREVENTION/CROSS CONNECTIONS**

#### **5.1 *CROSS CONNECTIONS STRICTLY PROHIBITED:***

- 5.1.1 No person shall cause a physical connection to be made between the Kent County Water Authority water supply and any other water supply for any purpose, but not limited to commercial, domestic, sanitary, fire protection or boiler feed.
- 5.1.2 No plumbing fixtures, devices, or construction shall be installed which may provide a cross connection between the Kent County Water Authority supply and a drainage system, soil or waste pipe, so as to permit or make possible the backflow of sewage or waste into the supply system. Draw-off pipes for draining sprinkler systems shall not be connected into a drainage system or a submerged pit.
- 5.1.3 If the Authority water supply is delivered to a tank that is, also, supplied with water from any other source, the tank shall be open to atmospheric pressure and the Kent County Water Authority water supplied above the maximum level in the tank. The tank shall be equipped with an overflow pipe of ample size to ensure a fixed maximum water level. There shall be at least a 6-inch air gap between the invert of the pipe supplying Kent County Water Authority water and the maximum level of water in the tank.
- 5.1.4 In the event that the Kent County Water Authority water supply is delivered to a tank in which there are chemicals, dyestuffs or other materials used in processing, the pipe supplying Kent County Water Authority water shall not be submerged. There shall be ample clearance between the invert of the Kent County Water Authority supply pipe and the top of the tank to prevent back siphonage into the Kent County Water Authority supply.

#### **5.2 *REQUIREMENTS FOR BACKFLOW PREVENTION:***

- 5.2.1 All commercial and industrial users shall be equipped with reduced pressure zone backflow preventer of a testable type immediately downstream of the water meter. Prior to installation and service activation, the Kent County Water Authority shall determine style and type. Detailed guidance is contained in the Kent County Water Authority Cross Connection Control Prevention Program appended to these regulations.

- 5.2.2 High and moderate hazards to the system are to be protected through the installation of a reduced pressure zone type of backflow device assembly. High and moderate hazard uses include, but not limited to the following: metal plating process, hospital, nursing home, clinic, hotel, mortuary, laboratory, film processing, car washing, chemical process or storage, food processing, restaurant, irrigation systems, hair salon, sewage treatment, chemical fire protection, or any commercial building with the ability for occupancy changes.
- 5.2.3 Low hazards are to be protected by the installation of a double or dual check valve backflow device assembly. Low hazard operations include, but not limited to single-family residential structures.
- 5.2.4 In all cases, backflow prevention shall be installed and be operational prior to connection to the Kent County Water Authority's system. Commercial connections shall be equipped with a reduced pressure zone style backflow preventer in order to isolate the public water system prior to service connection. Valves shall be located on both sides of the backflow preventer with drain or test plug on the valve located between the meter and backflow device.
- 5.2.5 It is required that applicant's professional engineer review all piping within any proposed development building or industrial facility and identify locations where isolation backflow preventers will be needed to protect the water supply from potential contamination.
- 5.2.6 All single family residential units must be equipped with residential double or dual check valve on the effluent side of the meter and non-removable vacuum breakers on all outside hose bibs prior to service connection and meter installation. Style shall be non-removable self-draining types.
- 5.2.7 All commercial or residential lawn sprinkler systems must be provided with an appropriate pressure backflow device assembly where the system connects to water supply. It shall be in a location that is always free draining and can not be submerged.
- 5.2.8 All permanently connected fire sources and private hydrants shall be equipped with isolation type reduced pressure backflow preventers of a testable type i.e. RPZ. Backflow prevention may be incorporated into the meter system piping. The device shall be placed in a location that is protected from damage by frost.
- 5.2.9 Installations that require additional backflow prevention are outlined in the Kent County Water Authority Cross Connection Control Prevention Program and should be referred to for further information and requirements.
- 5.2.10 Installation of a backflow device assembly will prevent release of on site pressure to the utility water mains. It is mandatory a thermal expansion device be properly installed pursuant to all government plumbing codes to relieve any excessive

increase in on site pressure due to hot water heating systems or other activities systems.

- 5.2.11 Backflow prevention devices shall be installed above ground, heated and lighted. Where the building point-of entry is located more than two hundred (200) feet from the curb stop, the backflow prevention device shall be installed in an accessible location in the building at the point of entry before the first tap, and any appliance or pumping unit.

Installation of backflow prevention devices in below ground pits shall be avoided whenever possible. If it is necessary that the backflow prevention device be mounted in a pit, it shall be lighted; power ventilated, heated and free draining under all conditions. Redundant pumping capable of contending with the full relief flows of the backflow and a monitoring alarm is also required for below grade applications.

- 5.2.12 The installer and/or owner of the facility must employ the OSHA Confined Space Entry Requirements and shall have the OSHA Safety Rules and required safety equipment available whenever anyone must enter the pit. In all cases, the backflow prevention device assembly site shall be easily accessible for testing and/or repair. Federal Occupational Safety & Health Administration (OSHA) rules, regulations and statutes are incorporated by reference and made a part herein.