

Office of Drinking Water Policy

Title:	Premises Isolation Requirements for Service Connections with Wastewater Pumps	Number:	H.02
References:	WAC 246-290-490(4)(b) & (c)		
Contact:	Terri Notestine, Simon Tung		
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Approved:	<i>Denise A. Clifford, Director, Office of Drinking Water</i>		

Drinking water policies are written descriptions of the approach taken by the Program to implement a statute, regulation, court order, or other agency order, and may include the Program's current practice, procedure, or method of action based on that approach. Any generally applicable directives or criteria that provide the basis for imposing penalties or sanctions, or for granting or denying Program approvals, must either be in statute or established in a rule.

POLICY STATEMENT

This policy provides direction to purveyors on the backflow protection requirements for service connections to premises with wastewater pumps. Group A water system purveyors must develop and implement cross-connection control programs to protect public water systems from contamination. Premises isolation requirements apply to all Group A connections (non-residential and residential) with high-health hazards.

POLICY SCOPE

Identifies the conditions under which premises isolation is required for service connections to residential and non-residential premises with wastewater pumps per WAC 246-290-490 (Table 9).

Premises Isolation Requirements for Non-Residential Connections with Wastewater Pumps Where Potable Water is Readily Available for Maintenance

Per Table 9 of the current cross-connection control regulations, purveyors must ensure premises isolation with a Department of Health (DOH) approved air gap or reduced pressure backflow assembly (RPBA) for connections to premises with wastewater lift stations and pumping stations [WAC 246-290-490(4)(b)]. This requirement applies to wastewater pumps located on private property and dedicated pump stations.

Premises isolation with a DOH-approved air gap or RPBA is required for *non-residential* connections (see Key Definitions) when the potable water supply is installed in **any** of the following ways:

- Hard-plumbed to the pump station itself.
- Not hard-plumbed to the pump station, but instead is located on the same property as the pump station.
- Not hard-plumbed to the pump station, but instead is readily available in the vicinity of the pump station (i.e., through a yard hydrant or some other piping fixture), such that it would be **reasonable to assume** that the potable water could be used for maintenance of the pump station. The purveyor's Cross-Connection Control Specialist is responsible for making this determination of use.

Due the severe health hazard associated with unprotected cross-connections between potable water supplies and wastewater, and the fact that water purveyors usually have no control over maintenance of wastewater pump stations in their service areas, some purveyors may choose to do both of the following:

- Eliminate water service to all wastewater pump stations (either hard-plumbed to the pump station facility or to yard hydrants that could be used for pump station maintenance).
- Require that all water used for public wastewater pump station maintenance be supplied by tanker trucks as recommended in the *Cross-Connection Control Manual, Accepted Procedure and Practice*, 6th edition, published by the Pacific Northwest Section of the American Water Works Association.

The Office of Drinking Water (ODW) will fully support purveyors who implement this approach.

Portable RPBA's Not Acceptable for Non-Residential Connections with Wastewater Pumps

ODW does **not** accept the use of **portable** RPBA's as a **permanent** method of complying with the mandatory premises isolation requirements of WAC 246-290-490. This is due to the difficulty purveyors have ensuring that both of the following conditions will be met:

- Non-water system personnel will install the portable RPBA's to protect the drinking water supply when maintaining the pump station.
- The portable RPBA's are tested *each time they are relocated* (i.e., between pump stations) as required under WAC 246-290-490(7)(b).

Purveyors may use a portable RPBA on an **interim** basis to protect the public water system from contamination from a non-residential wastewater pump station, until an RPBA is permanently installed for premises isolation or water service is terminated to the pump station.

Premises Isolation Requirements for Residential Connections with Wastewater Pumps

Per Table 9 of the current cross-connection control regulations, purveyors must ensure premises isolation with a DOH-approved air gap or approved RPBA for connections to premises with wastewater lift stations and pumping stations [WAC 246-290-490(4)(b)]. Per WAC 246-290-490(4)(c), the premises isolation requirements apply to single-family residential connections. This policy applies to all connections to residential premises where wastewater is pumped:

- Within or to an onsite wastewater treatment system.
- To an off-site wastewater treatment system.
- To a public wastewater collection system such as a septic tank effluent pump system.

The purveyor shall require premises isolation for residential connections where the wastewater pump is the only Table 9 hazard on the premises and any of the following apply:

1. Plumbing, Pump, or System Design Creates *Permanent* Connections between Potable Water and Wastewater

The design of the plumbing, wastewater pump, and/or wastewater treatment system on the consumer's premises creates ***permanent connections*** (i.e., hard-plumbed) between the potable water system and wastewater through permanent connections to any wastewater-related equipment or treatment system on the consumer's premises, including wastewater pumps, piping that conveys wastewater, and/or onsite wastewater treatment systems.

2. Pump or System Design Creates *Temporary* Connections between Potable Water and Wastewater

The design of the wastewater pump and/or wastewater treatment system located on the consumer's premises contains provisions for creating ***temporary connections*** (e.g., hose bibb connections at the end of the on-site system, other piping/hardware, etc.) between the potable water system and any wastewater-related equipment or treatment system installed on the consumer's premises.

3. Maintenance Practices Create *Temporary* Connections between Potable Water and Wastewater

Maintenance practices on the consumer's premises create ***temporary*** connections between the potable water system and wastewater through temporary connections to wastewater-related equipment or the onsite treatment system, including wastewater pumps, piping that conveys wastewater, and/or onsite wastewater treatment systems.

4. Consumer's Plumbing System Does *Not* Comply with Uniform Plumbing Code

The plumbing system on the consumer's premises **does not** comply with the provisions of the Uniform Plumbing Code currently in effect in Washington (i.e., 2003 Uniform Plumbing Code) regarding potable water outlets with hose attachments.

The current Uniform Plumbing Code, WAC 51-56-0603.4.7, requires that potable water outlets with hose attachments, other than water heater drains, boiler drains, and clothes washer connections, be protected by non-removable backflow prevention devices (e.g., hose bibb backflow preventers, hose bibb vacuum breakers). The current Uniform Plumbing Code also requires listed self-draining frost-proof hose bibbs with integral backflow preventers or vacuum breakers to be used in climates where freezing temperatures occur.

To avoid premises isolation, consumers (homeowners or occupants) have the option to retrofit to current Uniform Plumbing Code standards all potable water outlets with hose attachments that are available for maintenance of any of the following:

- Wastewater pump.
- Any piping that conveys wastewater.
- Onsite wastewater treatment system.

Premises isolation **is** required for connections to premises where the homeowners (or occupants) choose **not** to retrofit the potable water outlets with hose attachments to meet current Uniform Plumbing Code standards. The premises owner, **not the purveyor**, is responsible for retrofitting potable water outlets with hose attachments on private property to ensure Uniform Plumbing Code compliance.

5. Access to Premises Restricted or Denied

The homeowner (or occupant) denies or restricts the purveyor's access to the premises to perform, during reasonable hours, a cross-connection control hazard survey of the premises. Note: Per Table 9 of WAC 246-290-490, purveyors must require premises isolation for connections to premises where access for hazard surveys is denied or restricted. This appears on Table 9 as, "Survey Access Denied or Restricted."

If none of the above conditions apply, premises isolation is at the purveyor's discretion.

Alternate Approach

To adhere to current backflow industry practice and to reduce the risk of contamination to their water systems, some purveyors in Washington may choose to:

- Implement cross-connection control programs that are more stringent than this policy.
- Require premises isolation for **any** residential connection with a wastewater pump.

WAC 246-290-490(2)(a) contains a provision for purveyors to implement more stringent cross-connection control programs than the minimum program required by WAC 246-290-490. ***ODW will fully support purveyors who choose to implement the more stringent approach, since it is more protective of public health and is consistent with industry practice.***

HISTORY

WAC 246-290-490 requires Group A water system purveyors to develop and implement cross-connection control programs to protect the public water system from contamination via cross-connections. WAC 246-290-490(4)(b):

- Establishes mandatory premises isolation requirements for high-hazard premises, such as those listed on Table 9.
- Requires purveyors to ensure that a DOH-approved RPBA or DOH-approved air gap is installed for premises isolation on all connections to facilities of the type listed on Table 9.

Table 9 includes the category ***wastewater lift stations and pumping stations***. Although Table 9 type hazards are most often associated with non-residential service connections, WAC 246-290-490(4)(c) clarifies that the premises isolation requirements also apply to single-family residential connections with Table 9 type high-health hazards. WAC 246-290-490 (2)(b):

- Requires purveyors to ensure that good engineering and public health protection practices are used in the development and implementation of cross-connection control programs.
- States that purveyors may use, as guidance for cross-connection control program development and implementation, department publications and the most recently published editions of references such as, but not limited to, the *Cross-Connection Control Manual, Accepted Procedure and Practice* published by the Pacific Northwest Section of the American Water Works Association and the *Manual of Cross-Connection Control* published by the Foundation for Cross-Connection Control and Hydraulic Research, University of Southern California (USC).

Both of these manuals reflect backflow prevention industry standards. Both recommend premises isolation with an approved air gap or RPBA to any premises where there is a wastewater pump. The *Cross-Connection Control Manual* (6th edition) published by the Pacific Northwest Section of the American Water Works Association clarifies that the recommendation for premises isolation with an approved RPBA applies to single-family residences with wastewater pumps to onsite wastewater systems or with wastewater pumps connected to public wastewater systems. The USC *Manual of Cross-Connection Control* (9th edition) states that their recommendation includes services to privately owned facilities in public or private buildings.

In the past, ODW has been asked to clarify how WAC 246-290-490(b) applied to connections to residential premises with wastewater pumps. Based on existing WAC language and industry standards, past ODW correspondence directed purveyors to require premises isolation with an air gap or RPBA to all connections (residential and non-residential) with wastewater pumping facilities. This interpretation has created workload and enforcement issues for public water systems that serve many residential connections with wastewater pumps.

Since 2002, ODW has annually been collecting cross-connection control program development and implementation data from the largest (with ≥ 1000 connections) community public water systems in Washington. ODW's data collection efforts have focused on the status of backflow protection for high hazard premises such as those listed on Table 9 of WAC 246-290-490. Based on the data collected to date, improvements in backflow protection for high hazard premises are needed statewide to protect public health. This policy:

- Recognizes that non-residential wastewater pump stations (and other Table 9 type premises) pose a greater risk to public water systems than connections to residential premises with wastewater pumps.
- Helps utilities prioritize their resources to address cross-connection control hazards.

For connections to residential premises with wastewater pumps, where failure to comply with the Uniform Plumbing Code backflow protection requirements for potable water outlets with hose attachments is the only basis for requiring premises isolation, premises owners (or occupants) always have the option to retrofit their potable water outlets with hose attachments to meet current Uniform Plumbing Code standards. Note: The installation of the hose bib backflow preventers or vacuum breakers:

- May not have been required under the Uniform Plumbing Code in effect at the time the residence was constructed.
- Would not be required under the Uniform Plumbing Code currently in effect, because retrofitting of existing plumbing is not required when a new Uniform Plumbing Code becomes effective.

KEY DEFINITIONS

Multifamily residential building means common wall residential buildings that consist of four or fewer units, that do not exceed two stories in height, that are less than five thousand square feet in area, and that have a one-hour fire resistive occupancy separation between units (from RCW 19.27.015).

Non-residential connection means all service connections that do not meet the definition of residential connection as defined below. This includes, but is not limited to, connections to municipal, commercial and industrial premises.

Onsite wastewater (sewage) system means an integrated system of components, located on or nearby the property it serves, that conveys, stores, treats, and/or provides subsurface soil treatment and dispersal of wastewater. It consists of a collection system, a treatment component or treatment sequence, and a soil dispersal component. An onsite wastewater system also refers to a holding tank wastewater system or other system that does not have a soil dispersal component.

Residential connection means a service connection to either a:

- Single family dwelling unit.
- Multifamily residential building as defined in RCW 19.27.015.

Wastewater means a combination of liquid and waste carried from residences, commercial buildings, industries, and institutions, together with any groundwater, surface water or storm water that may be present. For purposes of this policy, wastewater includes sewage as defined in Chapter 246-272 WAC, Onsite Sewage Systems.

Wastewater lift/pump station means a permanently installed facility for pumping wastewater.

Water service to wastewater lift/pump station means any potable water supply piped from the purveyor’s distribution system that meets either of the following conditions:

- Hard-plumbed to the wastewater pump station itself.
- Plumbed to a connection, such as a yard hydrant, located on the same property as the pump station or in the vicinity of the pump station, such that it would be *reasonable to assume* that the potable water is available for use (whether intended or not) in maintenance of the wastewater pump or lift station facilities, including the priming, cleaning, flushing, and unclogging of any wastewater pumps.

PROCEDURE

#	Action By	Action
1	Water Purveyor	<ul style="list-style-type: none"> • Evaluate existing cross-connection control program plan. • Revise approach to residential and non-residential premises with wastewater pumps if needed or desired. • Adopt and implement revised cross-connection control Program plan. • Note: the approach to wastewater pumps/lift stations in the purveyor’s cross-connection control program plan must be at least as stringent as the approach described in this policy.
2	Water Quality Cross-Connection Control Program Staff	Identify, through the Annual Summary Report cross-connection control data collection process, public water systems that have failed to comply with the mandatory premises isolation requirements for non-residential connections with wastewater pumps.

#	Action By	Action
3	ODW Regional Office Staff	Provide to Water Quality Section cross-connection control program staff for compliance action, the names of water systems identified through sanitary surveys, special purpose investigations, or other means that have failed to comply with the mandatory premises isolation requirements for non-residential connections with wastewater pumps.
4	Water Quality Cross-Connection Control Program Staff	Implement the ODW cross-connection control Compliance Strategy approved in 2004 (see the complete document for details) focusing on the <i>selected</i> high hazard premises identified by management.
5	Water Quality Cross-Connection Control Program Staff	Provide proposed WAC 246-290-490 changes to Program Development staff for the next regulation revision process.