Department of Pesticide Regulation

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Backflow Prevention Regulatory Requirements and Policy

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Referrals	If you have any questions pertaining to this document, please contact your Senior Pesticide Use Specialist liaison.
Approval	*original signed by* Scott Paulsen, Chief Pesticide Enforcement Branch (916) 445-3914

Background

This letter states the Department of Pesticide Regulation's (DPR) policy pertaining to backflow prevention requirements in Title 3 of the California Code of Regulations (3CCR) section 6610.

A properly placed and functioning backflow prevention device prevents ground and surface water contamination by stopping the backward flow of pesticides from the mix tank to the water source in the event of a water pump failure or a decrease in water pressure.

Continued on next page

Backflow Prevention Regulatory Requirements and Policy,
Continued

Prior Documentation

This letter supercedes:

- Manual of Procedural Guidance for Enforcement Personnel, pages 63-64.
- Any other previous policies, positions, or interpretations that may be in conflict.

Outside Water Source

For the purposes of 3CCR section 6610, an outside water source includes all sources of water except water stored in a reservoir tank that is owned or under the control of the pesticide applicator and/or the property operator.

Examples of reservoir tanks include mobile "nurse rigs", stationary water tanks (above or below ground), or reservoirs maintained exclusively for irrigation water. The reservoir tank must be separated from the original water source by an acceptable backflow prevention device.

Pesticide Label Requirements

U.S. Environmental Protection Agency (EPA) Pesticide Registration Notice 87-1 requires pesticide registrants to include specific equipment requirements on their pesticide product labels for the application of pesticides though irrigation systems (chemigation). Handlers must comply with all chemigation equipment requirements specified on the pesticide label, including the backflow prevention requirements. When connecting to a public water supply, pesticide labels require handlers to use a reduced-pressure zone, backflow preventer. Alternatively, they may discharge the water into a reservoir tank as long as they maintain an air gap between the public water source and the top of the reservoir. For all other water supplies, pesticide labels require handlers to use a single check valve, vacuum relief valve and low pressure drain. Handlers who comply with the backflow prevention requirements on the pesticide product labeling also meet the requirements of 3CCR section 6610.

Continued on next page

Backflow Prevention Regulatory Requirements and Policy,
Continued

Acceptable Devices and Device Descriptions

The device descriptions were taken from the American Society of Agricultural Engineer Standard titled "Safety Devices for Chemigation" (ASAE EP409.1 DEC97. Copyright © ASAE. All Rights Reserved.). 3CCR section 6610 does not include backflow prevention device standards nor does DPR approve backflow prevention devices or systems. The device descriptions are provided for your information and are advisory only.

Device	Description
Air-gap separation	ASAE description**:** An air gap is a physical separation between the free-flowing discharge end of a water pipeline and an open or non-pressurized receiving vessel. To have an acceptable air gap, the end of the discharge pipe must be located a distance of at least twice the diameter of the pipe above the topmost rim of the receiving vessel. In no case can this distance be less than 25 mm (1 inch).
Reduced pressure principle backflow prevention device	ASAE description: This device consists of two independently acting check valves, plus a pressure differential relief valve that is located between the two check valves. It can be used for both backsiphonage and backpressure control and can handle most toxic chemical chemicals. A minimum clearance of 300 mm (12 inches) above the ground level or grade is suggested to ensure an air gap between the relief valve and any water that might puddle beneath the device. If the relief valve is within 6.1 m (20 feet) of the water source, provide a trough or conduit to carry valve discharge away from the water source. This device is also identified as a "reduced-pressure zone, backflow preventer" on pesticide labels that allow handlers to connect chemigation systems to public water supplies.

Continued on next page

Backflow Prevention Regulatory Requirements and Policy,
Continued

Double check valve assembly	ASAE description: The double check valve assembly is composed of two single, independently acting check valves and can handle both backsiphonage and backpressure. A low pressure drain and inspection port should be installed immediately upstream of this system (see #4 for equipment descriptions).
Single check valve, vacuum relief valve and low pressure drain assembly	ASAE description: This system is primarily an antisiphon device and should be constructed of corrosion-resistant materials. The check valve should be spring loaded with a chemically resistant sealing surface capable of preventing leakage. Generally, metal to metal surfaces would not be acceptable. The direction of flow should be clearly indicated on the outside of the device. The vacuum relief valve is installed on top of the pipe on the inlet side of the check valve to provide for vacuum relief when flow discontinues. The vacuum relief should be 19 mm (¾ inch) in diameter or sized according to ASAE Standard S376, Design, Installation and Performance of Underground, Thermoplastic Irrigation Pipelines, if underground thermoplastic pipeline is used. The low-pressure drain is for monitoring check valve performance and bleeding off any leakage. It must be located on the inlet side of the check valve at the lowest point, usually directly under the vacuum relief valve. The drain must be mounted in the pipe such that any check valve leakage enters the drain rather than flowing towards the water supply. The drain should be at least 19 mm (¾ inch) in diameter with a closing pressure of at least 7 kPA (1 psi) and not exceeding 35 kPA (5 psi). If the drain is within 6 m (20 feet) of the water source, provide a trough or conduit to carry the drainage away, and grade the surface to assure drainage away from the water source.

Continued on next page

Backflow Prevention Regulatory Requirements and Policy, Continued

	An inspection port of at least 102 mm (4 inches) diameter should be provided to check for malfunction of the check valve and drain where the irrigation pipeline is 102 mm (4 inches) or larger. This inspection port can be combined with the mounting of the vacuum relief valve.

Device Placement

3CCR section 6610 requires pesticide handlers to equip service rigs and application equipment with acceptable backflow prevention devices before they draw water from an outside source. To prevent the accidental contamination of ground or surface water, a pesticide handler must properly install an acceptable, functioning backflow prevention device between the water source and the pesticide handling equipment. DPR policy allows pesticide handlers to install the backflow prevention device on the pesticide handling equipment or the water source provided they position and install it properly.

Functioning Devices

3CCR section 6600, General Standards of Care, requires handlers to perform pest control in a careful and effective manner; and exercise reasonable precautions to avoid contamination of the environment. To prevent ground and surface water contamination, pesticide handlers must ensure that backflow prevention devices function properly whenever regulations require the use of this equipment. Pesticide handlers who use faulty or improperly installed backflow prevention devices violate the requirements of 3CCR section 6600 whether the pesticide application caused environmental contamination or not.

Continued on next page

Backflow Prevention Regulatory Requirements and Policy, Continued

Requirements beyond the scope of FAC or 3CCR

3CCR section 6610 states "Backflow protection must be acceptable to both the water purveyor and the local health department." This is an informational statement that notifies pesticide handlers and property operators that local health departments and/or water purveyors may require the use of certain types of backflow prevention devices. Pesticide handlers and property operators should check with these agencies before installing backflow prevention systems to assure compliance with applicable water protection requirements that are beyond the scope of the FAC.

DPR and the CACs are not authorized to enforce Health and Safety Code statutes or Title 17, Public Health, regulations pertaining to the protection of drinking water. 3CCR section 6610 does not oblige county agricultural commissioners to enforce regulatory requirements that are beyond the scope of their current authority.

The General Application of Standards, 3CCR section 6601 (b), states "it is not the intent of [3CCR] to require separate or duplicate equipment or facilities." A pesticide handler or property operator may use a backflow prevention device that meets the requirements of another regulatory agency provided the device also meets requirements established by DPR. In situations where the local health department or a water purveyor has clear authority over the acceptability of backflow prevention devices, DPR recommends that the CAC defer to those agencies. Where no other backflow prevention standards apply, handlers must comply with the requirements of 3CCR section 6610.

cc: Mr. Daniel J. Merkely, Agricultural Commissioner Liaison