

Golf Course Regulation Compliance Program

2 of 6: *Prevent Backflow to Protect Water Sources*

by Corinne duPreez, MDA

Backflow prevention

A backflow prevention device is used to protect the water supply from potential contamination due to the unexpected flow of water in the reverse direction. Minnesota Department of Agriculture (MDA) and Minnesota Department of Health (MDH) regulations require the use of a backflow prevention device or a fixed air gap when filling pesticide or fertilizer application equipment from a municipal water supply, a private well, or from surface water.

Statutory authority

Minnesota Statute 18B.07, Subd. 5. Use of water supplies for filling application equipment. (a) A person may not fill pesticide application equipment directly from a public water supply, as defined in section 144.382, or from public waters, as defined in section 103G.005, subdivision 15, unless the equipment or water supply is equipped with a backflow prevention device that complies with the Minnesota Plumbing Code under Minnesota Rules, parts 4715.2000 to 4715.2280.

Minnesota Statute 18C.201, Subd. 2. Use of public water supplies for filling equipment. A person may not fill fertilizer application equipment directly from a public water supply, as defined in section 144.382, unless the outlet from the public water supply is equipped with a backflow prevention device that complies with Minnesota Rules, parts 4715.2000 to 4715.2280.

Feel free to cross reference them with the MDA's fact sheet, Backflow Prevention Guidelines for Filling and Rinsing Fertilizer or Pesticide Application Tanks at: <http://www.mda.state.mn.us/~media/Files/chemicals/pesticides/bf-prevent.pdf>

Acceptable Backflow Prevention Devices

Air Gap: Maintain a fixed and permanent physical separation from the discharge outlet to the rim of the tank, container, etc. The physical distance from the opening of the application equipment to the end of the water line must be two (2) times the diameter of the water line. An additional device for rinsing containers is required.



Fixed ridged air gap



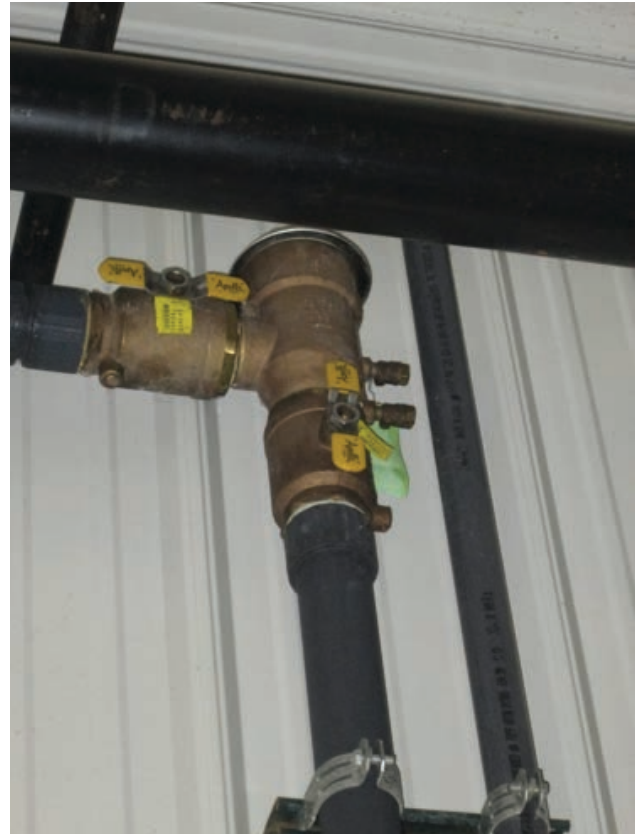
Removable fixed air gap

Reduced Pressure Principle or Reduced Pressure Zone Device (RPP or RPZ): Installed, tagged, and inspected by a certified plumber.



***Number One Compliance Violation
Are You Up To Code?***

Pressurized Vacuum Breaker (PVB): Install a PVB twelve (12) inches above the overflow level of equipment that is being filled under continuous pressure with a shutoff valve downstream.

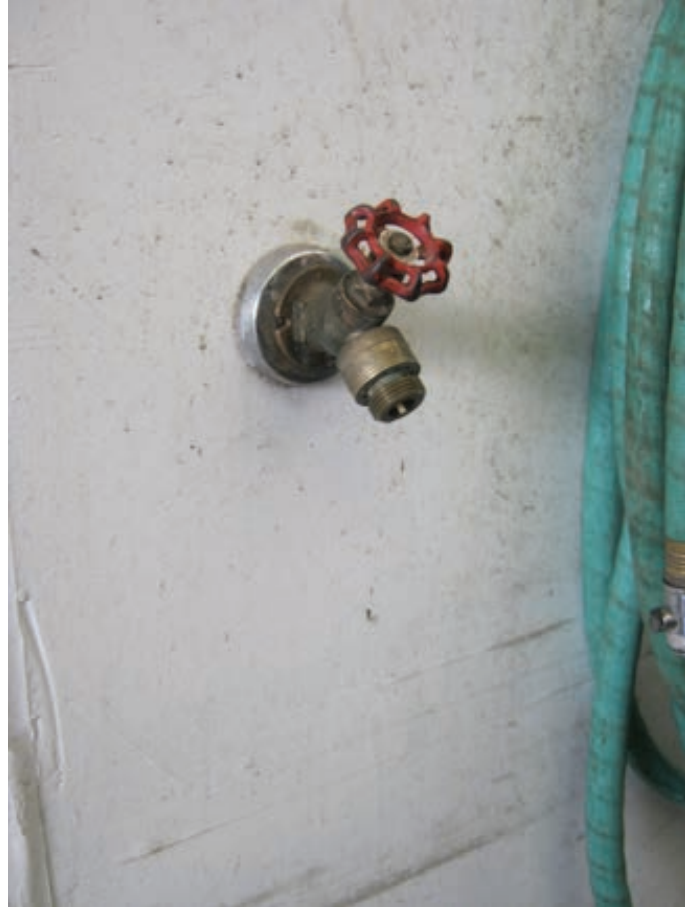


Atmospheric Vacuum Breaker (AVB): Install an AVB on a water line not subject to continuous pressure, six (6) inches above overflow level of equipment being filled, and downstream of a shutoff valve. An additional device is needed to rinse containers.



Rinsing Empty Pesticide Containers/Application Equipment Only

Hose Connection Vacuum Breaker: Attach this breaker on the discharge side of the last control valve. Do not install a hose with a spray control valve following the hose connection vacuum breaker.



Double Check Valve with Intermediate Atmospheric Vent: This valve and vent must be used together on $\frac{1}{2}$ and $\frac{3}{4}$ inch water supplies for inline applications with continuous pressure. This valve is for rinsing containers/equipment only; it is not a substitute for a RPZ or RPP.

Filling hand/backpack sprayers:
Fill a water-only service container
and transfer the water into your
sprayer.



Unacceptable Backflow Prevention Practice or Devices

No backflow used

Use of check valve only

RPZ without inspection/tag

Air gap not permanent/not fixed

Inadequate separation of air gap (2x times the width of water line is required)

No physical gap for filling backpack sprayers

No check valve for rinsing containers

Airgap maintained by person/hand instead of fixed

No physical separation in air gap

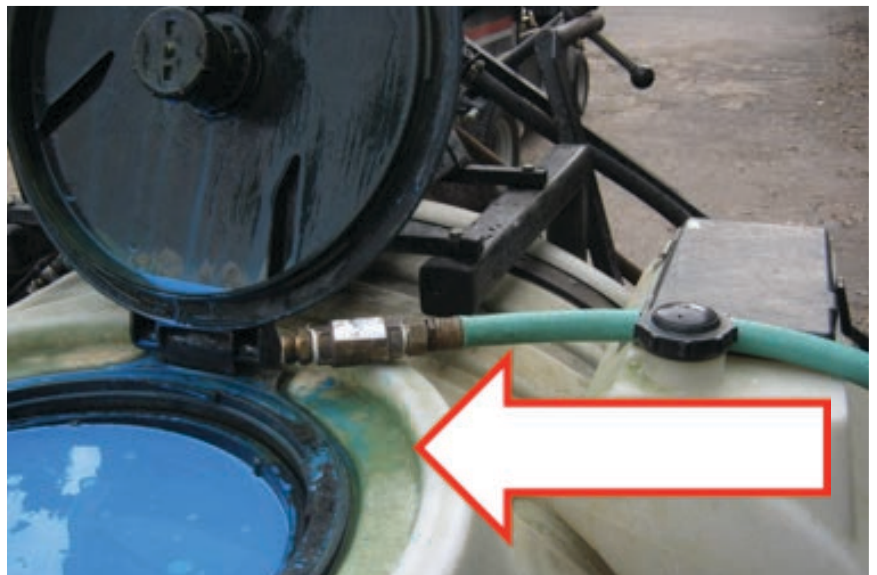
***Number One Compliance Violation
Are You Up To Code?***

**No physical
separation in
air gap**



**Air gap is not
permanently
fixed.**

**Air gap is
maintained
by a person
and not
permanently
fixed**





Air gap is maintained by a person and not permanently fixed.

Backflow Prevention Violations and ORDERS

During an inspection, an Agricultural Chemical Investigator (ACI) will observe the backflow prevention device(s) at your golf course. If non-compliance is documented, one or more of the following Orders will be issued and re-inspection may occur.

1a. Cease and desist the filling of pesticide application equipment until an MDH approved backflow prevention device is properly installed.

1b. Statement of Completion - Properly install a MDH-approved backflow prevention device before filling pesticide application equipment. (Timeline to complete included.)

RPZ specific orders:

2a. Cease and desist the filling of application equipment until the RPZ has been

inspected by a certified person.

2b. Statement of Completion - RPZ backflow device must be inspected annually by a certified person. Submission of a copy of the certification tag is considered adequate proof of completion. (Timeline to complete included.)

Financial Penalties

The MDA views the lack of backflow prevention device to be a serious and direct threat to groundwater. Pesticides have been and can be easily directly back siphoned into groundwater. Due to the potential health and environmental risks associated with the lack of adequate backflow prevention, be advised that documented noncompliance may result in additional enforcement, including financial penalties. In fact, this is one of the more common financial penalties levied on golf courses.

As mentioned above, for additional information and/or examples of acceptable backflow prevention devices, refer to MDA's fact sheet, Backflow Prevention Guidelines for Filling and Rinsing Fertilizer or Pesticide Application Tanks at: <http://www.mda.state.mn.us/~media/Files/chemicals/pesticides/bfprevent.pdf>

Thank You,

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