

**STATE OF MINNESOTA  
DEPARTMENT OF AGRICULTURE**

In the Matter of the Proposed Rule )  
of the Department of Agriculture )  
Pertaining to the Regulation of )  
Pesticides Applied Through Irrigation )  
Systems (Chemigation) )

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**STATEMENT OF NEED AND  
REASONABLENESS**

INTRODUCTION

The subject of this rulemaking is the proposed adoption by the Minnesota Department of Agriculture (MDA) of a rule governing the permitting and use of chemigation systems. Minnesota Statute 18B.08 requires the department to adopt a rule to develop specific requirements for the implementation of a program to regulate the application of pesticides by irrigation. These rules include the development of a permit program, the inclusion of effective anti-siphon devices in the irrigation system, and the institution of a non-refundable application fee for each well that is to be used in applying pesticides by irrigation.

BACKGROUND

The protection of ground water from contamination by agricultural pesticides has been and will continue to be of major importance to the citizens of the State of Minnesota.

Chemigation systems allow for the introduction of pesticides into irrigation water. The sources of irrigation water are wells located close to areas of human habitation. Because of the potential for pesticides to be introduced into ground water via backsiphonage and back pressure, it is prudent to regulate chemigation systems in the State of Minnesota.

IMPACT ON SMALL BUSINESS

The farms using chemigation systems and therefore complying with the proposed rules could be considered small businesses.

The installation of anti-pollution equipment in irrigation systems affords maximum ground water protection and at the same time allows for use of the irrigation system for the application of pesticides. Less stringent compliance with the proposed rule (i.e., different anti-pollution equipment) jeopardizes ground water protection.

Reporting requirements and permit application information has been simplified to aid in compliance. Only information necessary for MDA follow-up is included.

The rule would not take effect until January 1, 1989, which allows small businesses adequate time to install anti-pollution devices and file an application for a use permit.

#### NEED FOR REASONABLENESS OF THE PROPOSED RULE

**Section 1505.2000:** The definitions are necessary to assure that the rule is clearly understood. The inclusion of definitions is reasonable so that MDA may consistently apply the rule to those who must comply with it.

#### **Section 1505.2010:**

Subparts 1 and 2. The permit application is necessary to gather information pertinent to the location, ownership, and operation of the chemigation system. The information requested is reasonable because it is the minimum information necessary for MDA to effectively conduct inspections of the system. The 45-day review time-frame is reasonable because it allows for an in-depth review of the anti-pollution requirements of the rule.

Subpart 3. The annual renewal process is necessary so that MDA is apprised of any changes in operation of the system. It is reasonable for MDA to be apprised of annual changes in operation so that the rule may be effectively enforced. The inclusion of an "annual use report" is necessary to monitor pesticide use. It is reasonable to monitor pesticide use because MDA is responsible for enforcing Minnesota Statutes, Chapter 18B, regarding pesticide use, storage, and handling.

Subpart 4. A conditional permit is necessary to give greater flexibility for the operation of a system that may need to be added because of changes in acreage requirements, pest pressures, or environmental conditions. The time-frame for the review of a conditional permit is reasonable, given the potential for loss of crop yields through a time delay. An explanation of the need is reasonable to apprise the department of regional pesticide use changes.

#### **Section 1505.2020:**

Subpart 1. It is necessary to indicate to chemigators that they must use only labeled pesticides at labeled rates because the use of labeled pesticides in chemigation systems

results in the control of target pests while minimizing the contamination of ground water. It is necessary to indicate to firms that backflow prevention devices are needed during irrigation system shutdown or equipment failure because these are the times when backflow of pesticides would most often occur. It is reasonable to indicate this to operators so that they will be aware of the general requirements for using pesticides in irrigation systems. It is reasonable to indicate this information to operators so that they will be in compliance with Minnesota Statutes, Chapter 18B.

Subpart 2. It is necessary to limit the distance from well heads to pesticide supply tanks and pesticide filling/storage areas in order to provide maximum well protection against pesticide spills. The distances given are reasonable and consistent with the Minnesota Department of Health Water Well Construction Code.

Subpart 3. It is necessary to require the containment of stored pesticides near wells in order to reduce the possibility that a spill of pesticides near a well would contaminate ground water. A 125% containment capacity is reasonable, given the reduction of containment capacity by rainwater and storage equipment. It is necessary to specify that containment vessels must be compatible with stored pesticides so that containment integrity is maintained. It is reasonable to indicate this because of potential chemical incompatibility with the containment vessel resulting in a pesticide spill and possibly ground water contamination. It is necessary to indicate a time frame for pesticide storage at the chemigation site to reduce the potential for contamination from spills. A three month time frame is reasonable because containment is provided during the time of pesticide use while still allowing the flexibility of not requiring containment during times of lesser need or use.

Subpart 4. It is necessary to clearly describe the specific anti-pollution devices/valves and also to indicate when they should be functional and the materials they may be constructed of so that the chemigation system is constructed and operated properly. It is reasonable to indicate this information so that operators will better be able to comply with specifications, thereby assuring the protection of ground water. It is reasonable to allow portable anti-pollution units to be used because use of particular chemigation systems may vary widely due to field differences in target pest pressure. It is necessary to make a distinction between systems connected to public water supply systems and those that are not because public water supply systems have more stringent requirements for backflow prevention control.

(A) It is necessary to indicate the exact location of the reduced pressure principle

device (RPP) or double check valve because the location dictates if there will be protection against the backsiphonage of pesticides. It is reasonable to locate the RPP or double check valve between the supply pump and the point of pesticide injection because the greatest potential source of ground water contamination could be backsiphonage from the point of pesticide injection.

(B) It is necessary to indicate that only a reduced pressure zone backflow preventer may be used for systems connected to public water supplies to conform with Minnesota Department of Health rules.

(1) It is necessary to indicate compliance with independent test standards to clearly define what type of RPP's are acceptable. Using devices certified by recognized testing laboratories is reasonable because the testing laboratories assure effective operation of an RPP over a wide range of pressures and conditions. A list of devices certified by recognized testing laboratories will be maintained for distribution to interested parties by the commissioner.

(2) It is necessary to describe the exact specifications required for check valves to clearly indicate what type of check valves are acceptable. The specifications are reasonable because they ensure that integral part of the chemigation system against failure (i.e., backsiphonage). It is also reasonable for the operator to choose from a list of devices certified by recognized testing laboratories, provided by the commissioner, so that the operator will be assured of using equipment that is designed for the intended purpose.

(C) It is necessary to indicate the exact location and acceptable valve orifice sizes of the vacuum relief valve because the location and valve orifice sizes will dictate if there will be protection against the backsiphonage of pesticides. The location and valve orifices are acceptable engineering practices.

(D) It is necessary to require an automatic low-pressure drain with a 3/4-inch orifice so that backsiphon protection is assured if there is a pressure drop in the system. The use of the low-pressure drain and its location in the system are accepted engineering practices. It is reasonable to direct any drainage away from the well so that contamination at the well does not occur.

(E) It is necessary to require a flow interrupter device to be present and interlocked with the pesticide injection unit so that even if the unit is non-operational, venturi siphoning action from the flowing irrigation water will not cause pesticides to move into the irrigation

line past the injection unit from the supply tank. Stopping the flow of pesticides to the irrigation line is reasonable because pesticide over-application or spills may otherwise occur.

(F) A check valve at the point of pesticide injection into the irrigation system is necessary to prevent irrigation flow into the pesticide supply tank. It is reasonable to require this set-up because irrigation backflow could result in a pesticide spill.

(G) An interlock system is necessary to prevent continuing pesticide injection into a non-operational irrigation system. It is reasonable to prevent the pesticide flow so that a pesticide spill does not occur.

(H) A low pressure switch is necessary to prevent pesticide misapplication. It is reasonable to limit pesticide misapplication because misapplication results in label violations, lack of target pest control, possible plant damage, and possible ground water contamination.

Subpart 5. It is necessary to purge irrigation lines after pesticide injection to remove pesticides from the system. It is reasonable to remove pesticides from the system to eliminate plant damage or environmental damage.

Subpart 6. It is necessary to post lands that are chemigated to prevent entry into treated areas. It is reasonable to protect human health.

**Section 1505.2030:** A record of pesticides is required so that MDA may monitor pesticide use through irrigation systems. Records of inspections are required so that MDA is assured that all anti-pollution equipment is operational.

**Section 1505.2040:** It is necessary to clearly define an operator's responsibilities in order to assure greater accountability. It is reasonable to define the responsibilities so that MDA may more efficiently enforce these rules.

**Section 1505.2050:** It is necessary for the commissioner to periodically update the system user on safety practices so that human health is protected. Improper operation of the system may jeopardize human health through personal injury or ground water contamination.

**Section 1505.2060:**

Subpart 1. It is necessary to outline MDA's inspection responsibilities to eliminate

any potential conflicts with the operator. The inspection practices are within existing federal guidelines.

Subpart 2. It is necessary to specify that equipment must be installed and maintained according to manufacturers' guidelines so that proper functions are maintained. It is reasonable to maintain proper functions so that unreasonable, adverse effects on the environment do not occur.

Subpart 3. Periodic, routine inspection is necessary to effectively monitor the correct operation of the system. Correct operation is imperative if label application rates are not to be exceeded.

Subpart 4. It is necessary to allow for modifications in the system so that changes in technology and equipment availability may be addressed. Changes in the system that do not jeopardize ground water protection are reasonable. An additional review of revised applications is reasonable because time is needed for in-depth reviews.

**Section 1505.2070:** It is necessary to restate statutory requirements so that compliance is assured. It is reasonable to state required compliance so that MDA may enforce the rule more effectively.