

Managing Drinking Water Threat Activities on Agricultural Properties

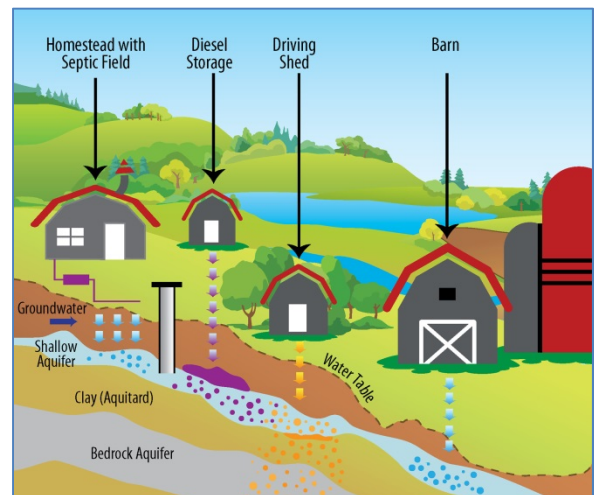
A local committee has prepared drinking water source protection plans for the Maitland Valley and Ausable Bayfield areas. These plans provide policies to protect municipal drinking water sources. The plans were approved by the Province of Ontario in January 2015. Policies took effect on April 1, 2015. Source protection plan policies require actions – such as risk management plans – for some activities in wellhead protection areas (WHPAs). These zones around municipal wells are vulnerable to contamination so risk management plans are required for people conducting certain activities there, such as application and storage of pesticide or commercial fertilizer.

Maps with these areas of high vulnerability can be found at sourcewaterinfo.on.ca by clicking on the 'Assessment Reports' tab at the top of the page.

You may also call **1-888-286-2610** and ask staff to help you with any questions you have.

Ontario's *Clean Water Act, 2006* lists 21 activities or conditions that can pose a threat to drinking water sources. Some of these activities are common on agricultural operations, from septic systems to fuel storage. They also include:

- ✓ Application and storage of pesticide
- ✓ Application and storage of commercial fertilizer
- ✓ Application and storage of Agricultural Source Material (ASM) – (for example, manure)
- ✓ Application and Storage of Non-Agricultural Source Material (NASM) – (for example, processing waste)
- ✓ Grazing/pasturing and outdoor confinement areas



If not properly managed, these activities could, under certain circumstances, result in leaching of contaminants – pathogens (including bacteria), nitrogen, phosphorus, and pesticides – to municipal drinking water sources.

If your property falls in a wellhead protection area – zone A (within 100 metres of the municipal well) or zone B (two-year time-of-travel area) where the vulnerability is high (vulnerability score is 10 as indicated in red on the mapping), *and* you, or your renter, are engaged in one or more of these activities you may require a risk management plan (RMP).

Potential threat activities include septic systems, fuel storage, storage of hazardous wastes, and others. For the list of 21 activities or conditions that can pose a threat to drinking water visit Ontario.ca or sourcewaterinfo.on.ca or ask for one of our other fact sheets.

Pesticide Application

If the area of land, located within a wellhead protection area (WHPA) with a vulnerability score of 10, is under one hectare, no risk management plan is required.

If the area of land, located within a wellhead protection area with a vulnerability score of 10, is one to 10 hectares, a risk management plan will be required for pesticides that have Mecoprop or MCPA as active ingredients (used mostly for cereals).

If the area of land, located within a wellhead protection area with a vulnerability score of 10, is more than 10 hectares, a risk management plan will be required for pesticides with several different active ingredients.

The risk management plan is negotiated between the person doing the activity – the owner or the renter – and your local risk management official. If a contract spray service or neighbour is used, the person who has signed the risk management plan has to ensure it is followed.

With an understanding that crop rotation, weather, and infestation rates will be factors when determining if and when pesticide application is required, the following best management practices could be followed to ensure that pesticide application does not result in the presence of pesticide in the municipal water source:

- Review the mapping (with custom operator as well) to ensure awareness of where the wellhead protection area is located
- Scout fields for weeds to confirm infestation rate and whether spraying is required
- Proper plant management to improve plant health and reduce need for pesticides
- Enter the GPS coordinates provided by the risk management official into the sprayer data system, if applicable, to ensure accuracy of spraying
- Application of pesticide only as per manufacturer's direction and registration, e.g., tank mixes and Pest Management Regulatory Agency registration
- Take proper actions to reduce drift, e.g., nozzle selection; water pressure; droplet size
- Avoid times of high winds or prior to heavy rain
- Regularly calibrate sprayers
- Use alternate pesticide if possible
- Use management practices to reduce soil erosion and runoff
- Apply pesticides with precision to reduce application volume
- Ensure that only properly trained and certified persons apply pesticide
- No vehicles containing quantities of pesticide should be parked on the vulnerable area
- In order to avoid spills, no mixing of pesticide should take place on the vulnerable area

Most farms in the Maitland Valley and Ausable Bayfield areas are outside of wellhead protection areas A and B. For those few agricultural operations with property in a WHPA in the region, it is usually a small part of their property and risk to drinking water is generally reduced through management solutions.

Commercial Fertilizer Application

While crop rotation will determine the type of fertilizer, and the rate applied, the following best management practices could be utilized to ensure that commercial fertilizer application does not result in the presence of nitrogen that could reach the municipal water source:

- Review the mapping (with custom operator as well) to ensure awareness of where the wellhead protection area is located
- Have the area in the wellhead protection area soil sampled every three years
- Apply fertilizer based on soil tests, crop usage and expected yields for your area using *Crop Removal* charts or apps using recommended rates
- Consider other inputs including: manure, crop residue, and cover crops as these can greatly increase soil nutrient reserves
- Enter the GPS co-ordinates provided by the RMO into the tractor data system, if applicable, to ensure accuracy of application
- For corn crops use one of the following options in the wellhead area: have a Pre Side-dressed Nitrogen Test (PSNT) done for nitrogen requirements or use delayed release fertilizer or apply 10 – 15 per cent less fertilizer in the area
- Use management practices to reduce soil erosion and runoff
- *Nman* program print-out

Commercial fertilizer application in this region is only assessed as a significant threat to drinking water and requiring a risk management plan in these wellhead protection areas: Dungannon, Huron Sands, and Lucknow. This is based on mapping of managed land and livestock density for the Maitland Valley and Ausable Bayfield source protection areas.

Agricultural Source Material (ASM) and Non- Agricultural Source Material (NASM)

Source protection plan policies apply where the vulnerability score is 10, and the application of ASM or NASM is, or would be, a significant threat to drinking water. This includes ASM in any quantity, and NASM where either the material is removed from a meat plant or sewage works, the livestock density is greater than one nutrient unit (NU), or the percentage of managed land is greater than 80 per cent. In these circumstances the policy states:

- Existing and future application of ASM or NASM – Prohibited in a WHPA-A.
- Risk management plan required in WHPA-B where the vulnerability score is 10.

Pesticide Storage

Source protection plan policies in this region only apply where the storage of pesticides is for retail sale or extermination, and the mass of materials is greater than 250 kilograms; or, where pesticides are manufactured, processed or wholesaled, and the mass of materials is greater than 2,500 kilograms. Under these circumstances, the policy requirements are as follows:

- **Existing storage** – Risk management plan required in WHPA-A or WHPA-B where the vulnerability score is 10.

- **Future storage** – Prohibited in WHPA-A or WHPA-B where the vulnerability score is 10.

Commercial Fertilizer Storage

Source protection plan policies apply for the storage of commercial fertilizers where the mass of materials, in any form, is more than 2,500 kilograms. Under these circumstances, the policy requirements are as follows:

- **Existing storage** – Risk Management Plan required in WHPA-A or WHPA-B where the vulnerability score is 10
- **Future storage** – Prohibited in WHPA-A or WHPA-B where the vulnerability is 10.

Grazing and pasturing policies are the same for existing and future activities.

Storage of Agricultural Source Material (ASM) – Manure or NASM

Source protection plan policies apply for the storage of ASM. ASM can include manure, yard runoff, wash water, and other organic products as defined in the *Nutrient Management Act*.

- **Existing storage**
 - Prohibition of existing ASM storage in WHPA-A (100 metre zone)
 - Risk Management Plan required in WHPA-B where the vulnerability score is 10.
- **Future storage** – Prohibited in WHPA-A or WHPA-B where the vulnerability score is 10.

Best management practices could include:

- Ensure manure storage is adequate for the operation and meets current engineering requirements (See OMAFRA Fact Sheet # 714: Engineering Requirements for Farm Structures)
- All runoff should be collected and properly handled in a storage system
- Divert clean water from manure storage areas and barnyards

Grazing and Pasturing

Source protection plan policies apply for grazing and pasturing of livestock based on livestock density.

Existing and Future Grazing and Pasturing

- **WHPA-A** – Prohibition where *more* than 1 nutrient unit per acre is generated
 - Risk management plan for existing and future grazing and pasturing in **WHPA-A** where less than 1 nutrient unit per acre is generated
- **WHPA-B where vulnerability score is 10**
 - Risk management plan for existing and future grazing and pasturing

Best management practices could include:

- Reduce stocking rate in the wellhead protection area
- Install fencing to restrict livestock from wellhead protection area
- Improve grazing management

Outdoor Confinement Area (Farm-animal yard)

Source protection plan policies apply for livestock outdoor confinement areas where the operation is or would be a significant threat to municipal drinking water sources.

- **Existing**
 - Prohibition of existing outdoor confinement areas in WHPA-A
 - Risk Management Plan required in WHPA-B where the vulnerability score is 10
- **Future**
 - Prohibition of existing outdoor confinement areas in WHPA-A and in WHPA-B where the vulnerability score is 10.

Best management practices could include:

- All runoff to be collected and properly stored or treated
- Prevent seepage of ASM through proper monitoring and maintenance of collection and storage facilities
- Paved yard plus clean water diversion to minimize runoff

For more information contact us at:

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May 2015 • Content of this fact sheet is provision, for local information purposes, and subject to change. For legislation and regulations visit Ontario.ca. For text of the source protection plans visit sourcewaterinfo.on.ca. Thank you for all you do to protect municipal drinking water sources.