FARM SOURCE WATER PROTECTION

OFEC Framework

October 2013

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Investment in this project has been provided by Agriculture and Agri-Food Canada through the Canadian Agricultural Adaptation Program (CAAP). In Ontario, this program is delivered by the Agricultural Adaptation Council.

AAC agricultural adaptation council

Agriculture and Agri-Food Canada | Agriculture et Agroalimentaire Canada

Other funding partners include the Christian Farmers Federation of Ontario and the Ontario Federation of Agriculture.
Staff support has been provided through the OFEC partnership.

Message from OFEC

The Ontario Farm Environmental Coalition (OFEC) was established in 1991. The purpose was to enable Ontario farm organizations to collectively focus on how to best demonstrate the strong environmental ethic of Ontario's farm community.

In the 1990s much of the work of OFEC was focused on the development and delivery of the Environmental Farm Plan Program. This is a two-stage program comprised of a voluntary, self-administered, environmental risk assessment of the entire farm business (farmstead, fields, woodlots/wetlands), and an action plan detailing how any identified environmental concerns will be mitigated. A tribute to the success of the EFP program is that it is still one of the most popular programs available to Ontario farmers 21 years after it was first launched. Clearly it is well designed and well administered.

In May 2000 the province was saddened by the tragedy in Walkerton associated with a contaminated drinking water supply. OFEC had standing at the Walkerton Inquiry and was commissioned to produce two documents; one on environmental initiatives of Ontario farm organizations, the other a discussion on municipal wellhead protection. In addition, OFEC representatives participated on a number of tasks teams established by the Inquiry. It was very encouraging that a key finding of the Inquiry was that:

- The owner of the farm followed proper practices and should not be faulted.

This finding is significant because it recognizes that the owner of the farm identified as the source of the contaminant did what he could to prevent contaminants from leaving his farm, but the municipality failed to do what was necessary with respect to well siting, water quality monitoring and water treatment.

Subsequent to the Walkerton Inquiry, OFEC was involved in all of the several advisory committees that were established by the Ministry of the Environment to guide the development of the ***Clean Water Act*** (CWA). OFEC also prepared written submissions and testified at hearings through the legislative development process.

Once the CWA was in place and local source water protection (SWP) committees began to be established throughout the province, OFEC successfully lobbied to have the local farm community select their own agricultural representative(s) to the committee, rather than have agricultural representatives appointed by Conservation Authorities. In addition OFEC was able to secure funding to provide a modest level of support to the 38 SWP agricultural representatives. These representatives did a terrific job of representing the interests of the farm community.

The SWP committees have completed the plan development phase of their work and are waiting for approval by the Minister of the Environment. Subsequently, SWP plans will begin to be implemented.

OFEC worked to develop a voluntary farm assessment tool described below. It has been modeled after the EFP and we believe it will be of immeasurable value to those farmers who are expected to implement a Risk Management Plan because of the farm's proximity to a municipal well or a water intake, coupled with the nature of the farm operation.

The Framework is designed to address farm practices outside any defined exclusion zones. Hence the Framework does not apply to the wellhead 100 metre zone or the immediate intake point for municipal surface water sources.

OFEC remains committed to ensuring farmers receive adequate funding to implement their plan.

The OFA on behalf of the OFEC partners accessed partial funding for this project from Agriculture and Agri-Food Canada through the Agricultural Adaptation Council.

Introduction

This document is intended to be an aid to farmers who are impacted by the Clean Water Act and Source Water Protection (SWP) for municipal drinking water supplies. By means of a letter* from your municipality or an agency designated by the municipality, you have been notified as undertaking activities in the every day operation of your farm that are rated as a Significant Drinking Water Threat and are located in a vulnerable area near a municipal drinking water source. The drinking water source may be a water well or an intake from a surface water

*In the implementation phase, it is anticipated that a letter from the municipality through their RMO or a local authority will be the main method of initial communication. How, what, and when you are notified however may vary across the province especially in the early stages of implementation.

source such as a river or lake. Included with the letter is information explaining SWP objectives and where more information can be obtained on the provincial initiative and local resources. In response to agriculture having been identified as a potential source of contamination to water, this document including its worksheets provides additional information to help you better assess and understand how SWP might affect you. More importantly, the document will assist you in preparation for what is to come as a result of SWP implementation.

Clean Water Act (CWA) and Source Protection Planning – General Overview

Protecting water at its source is the first step of a multi barrier approach to ensure that every Ontarian has access to safe drinking water. Preventing contaminants from entering sources of drinking water – lakes, rivers, and aquifers – will provide the first line of defense in the protection of water sources and the health of Ontarians.

A new approach was required to regulate environmental management with respect to SWP. As no two pieces of land, farm infrastructure are the same, it is important for both the farmer and the RMO to discuss the protection sought within the specific farm context. During such discussions, a negotiated approach will emerge. The concept of negotiation was a key element agreed to during the promulgation of the Clean Water Act. Our flowcharts on page 7 and 8 recognize this important negotiation process.

The purpose of the Clean Water Act is to protect Ontario's existing and future drinking water sources. A key focus of the legislation is in the preparation of locally-developed Source Protection Plans (SPP) which addresses steps to be taken to protect municipal water supplies.

Source Protection Committees comprised of municipal representation, a range of stakeholders from the communities including at least one agricultural representative, and supported by various technical authorities including CA staff entered into a process to develop Source Protection Plans for all municipal drinking water supplies in Ontario under the Guidance of the Ontario Ministry of the Environment. Details of this process can be found at your local municipal office, on their website or on the MOE's website www.Ontario.cleanwater.

Under this process, Well Head Protections Areas (WHPA) for municipal water wells and Intake Protection Zones (IPZ) for municipal surface water intakes from rivers, streams, and lakes have been identified and assessed as to their vulnerability regarding their vulnerability to contamination. Furthermore, potential contaminants have also been categorized and rated according to risk levels. Based on preliminary mapping, businesses including farms have been identified within vulnerable areas if they appear to be potential contaminant sources. Farmers should review the accuracy of the information received for their farm.

Once approved by the Minister of the Environment, the next step for the municipality is to develop individual Risk Management Plans for each property or part of a property in close proximity to Well Head Protection Areas (WHPA's) and Intake Protection Zones (IPZ's) deemed to have potential sources of contaminants capable of causing a significant threat to municipal drinking water. It is noteworthy that all sectors - industry, private homes, agriculture, golf courses, small businesses, etc. are included, not just farms. Sewage treatment plants, septic systems and nuclear facilities are exempt.

How Does Source Protection Planning Affect Farmers?

If your farming operation has been identified as having one or more Significant Drinking Water Threats, then you have either already received or will receive a letter from the municipality, or their agent such as a Conservation Authority, indicating this and requiring the development of a Risk Management Plan by the RMO. The RMP is to show how receipt of this letter does not mean that you are doing anything wrong. It is simply stating that all or part of your farm is near a municipal water supply and that the Significant Drinking Water Threat designation applies to some areas of your farm operation. The letter* will specify the areas of concern on your farm based on the information available to them.

Designated Significant Drinking Water Threats pertinent to agriculture when in close proximity to water source within the WHPA and IPZ include:

- application of agricultural source material (e.g. Manure)
- storage of agricultural source material
- management (handling) of agricultural source material (spreading)

- application of non-agricultural source material
- handling/storage of non-agricultural source material
- application of Commercial Fertilizer
- storage of Commercial Fertilizer
- application of pesticides (specified)
- handling and storage of pesticides (specified)
- handling and storage of heating fuel
- handling and storage of liquid fuels (for motorized vehicles – gas and diesel)
- grazing and pasturing
- outdoor Confinement Areas and Farm Yards

All other farm areas continue to be managed according to existing applicable law.

The RMO will need to contact you at some point in the future to assess your farm and operation. A Risk Management Official (RMO) represents the municipality to review your activities related to the Significant Drinking Water threats. The RMO's job is to assess how you are addressing the threats at the present time and whether your actions are adequate in relation to the overall local Source Water Protection Plan that has been developed specifically for the protection of municipal water supply in your area.

Each situation is unique to the location and each municipality may emphasize different protection requirements depending on their particular circumstances. The RMO will be the primary official in the field aided by Risk Management Inspectors (RMI). In some cases, a municipally designated person may carry both designations. The RMO will identify if there is a need for upgrades to address Significant Drinking Water Threats and will negotiate with the landowner how and when improvements or changes to deal with that threat will be implemented. The Risk Management Plan is approved by the RMO. Then the process proceeds to the implementation of the accepted Risk Management Plan for the farm.

The Farm Assessment – Drinking Water Source Protection

The voluntary Farm Assessment tool provided herein will assist you in preparing you for your meeting with the RMO. It involves a two-step process:

1. Farm Sketch and Threats Inventory
   - The sketch can be a hand-drawn image, an aerial photograph, a Google earth image, etc. The boundaries of the property should be shown as well as the structures and activities that are related to the list of potentially Significant Drinking Water Threats mentioned earlier.
   - The letter you have received from the Municipality indicating the SDWTs they believe to be on your property may or may not be accurate. You should take time to verify their assessment, which is based only on readily available information. Onsite verification has likely not occurred and practices may have changed within your operation (e.g. dairy barns exist but no longer housing livestock since the last documentation).
   - You need only identify Significant Drinking Water Threats (SDWTs) within the designated vulnerable areas around the WHPAs or IPZs. Maps of these areas and of the proportion of your farm that is covered may or may not be readily available to you. Maps should be available from your local municipality either in person or on their websites. The RMO will also have this information. The farmer must be able to determine the exact area affected by the SWP WHPA and IPZ zone prior to meeting with the RMO. That portion of the farm should be the focus of attention and should not result in designation of the whole farm property.
2. Farm Assessment Worksheets
   - There are two sets of worksheets available to you, one for WHPA situations and one for IPZ situations. Each set contains thirteen worksheets. Most farms fall under either one of these zones.
     - In rare circumstances you may have a farm in both a WHPA and an IPZ zone. In such cases, both sets of worksheets should be completed. Furthermore, if your farm has been identified to be in a WHPA-E zone, do both the WHPA and IPZ worksheets.
   - There is one worksheet for each of the agriculture related SDWTs that may be present on your property. The target of the worksheets is to help establish the level at which you are currently addressing the SDWTs.
   - You need only do the worksheets that apply to your farm.

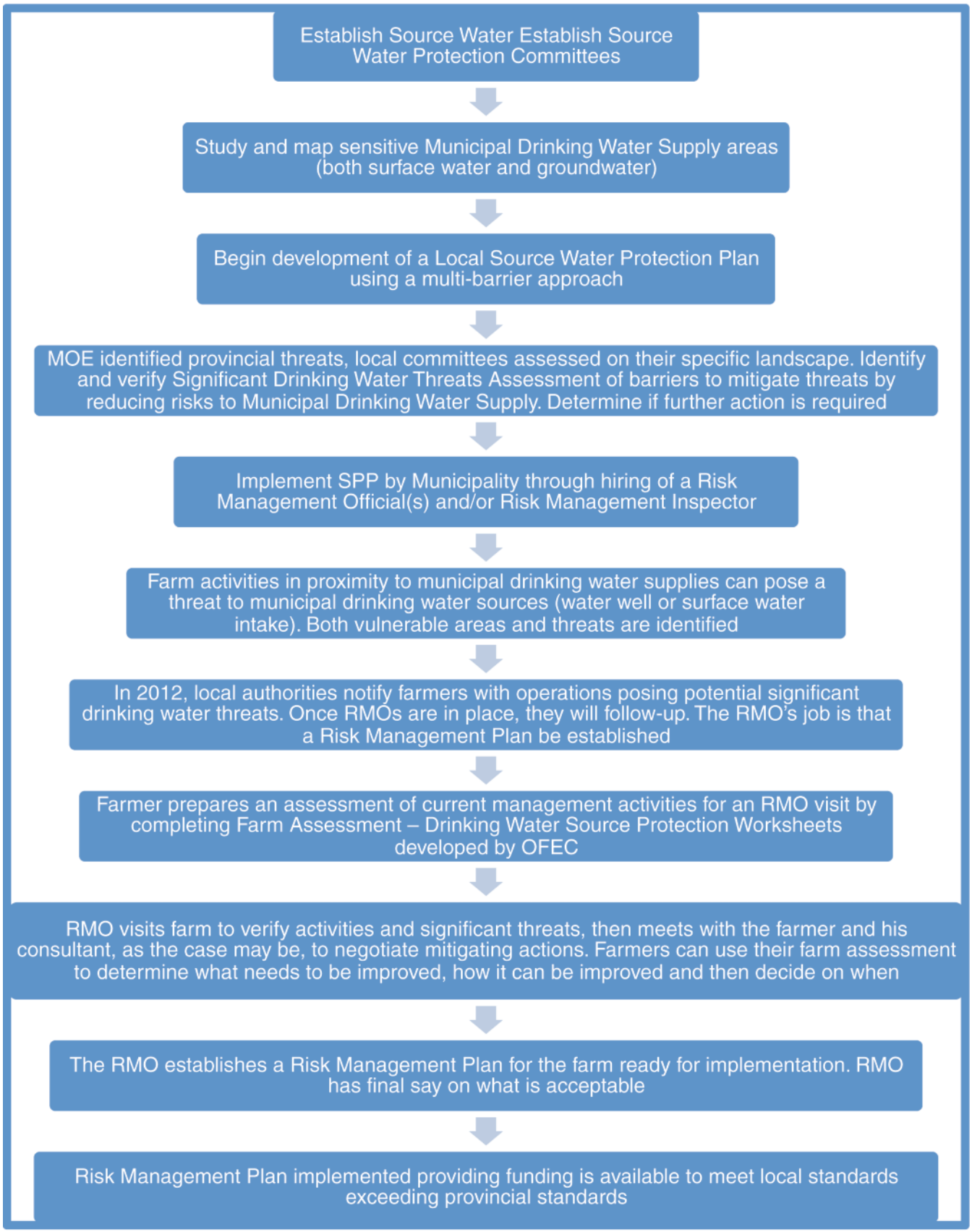
- Each worksheet is setup the same. There are three categories of assessment questions:
  - Containment Barriers – these are questions related to practices that control potential contaminations by containment.
  - Spatial Barriers – these are questions related to controlling the impact of potential contaminations by the distance of separation.
  - Contingency Barriers – these are questions related to controlling potential contaminations through training and preparation for potential situations.
- Within each category there will be questions specific to a standard or practice that will be shown in the first left column. The questions are targeted and do not take into account 'what-if' situations.
- BMPs were used as the main source of information to assist with the determination of industry benchmarks. OFEC also relied on a peer review process within the scientific research community and on published literature. While a BMP is not a regulatory tool, its content must be regulatory correct.
- The next three columns indicate levels to which standards are met.
  - Level 1 is the lowest level of attainment "Does not meet accepted industry benchmarks or design standards at the time of application". Many accepted industry benchmarks or design items in this category are below regulatory requirement or less than generally accepted practices.
  - Level 2 is the median level. Items described here "Meets accepted industry benchmarks or design standards at the time of application" Applicable regulations are met and standard practices are followed. This level corresponds to and reflects **provincial level standards**
  - Level 3 is the highest level. Items described here "exceeds accepted industry standards or design standards at time of application". In general, to fall in this category, things are being done much better than average and more than what regulations require. There may be more than one item described in the highest level. Some may be more protective than others but all "exceed industry benchmarks and design standards". This level should correspond to **local level standards established by the local Source Water Committee or local municipality in order to provide additional protection to the drinking water supply.**
- When going through each worksheet line item by line item, you may find that the description shown does not exactly describe what you have or are doing on your property. Your task is to choose the situation that best describes what you have or are doing with your farm. One procedure is to look at Level 1 and then Level 3. If you do not feel as if either of these categories describes you situation, then look at level 2. Often you will find yourself having to choose between two categories. It is up to you, as to which one best fits what your situation is.
- As you do this assessment, you will also see what it takes to move from one level to another (i.e. improve). This will aid in your long term planning of continuous environmental improvement which all farmers generally strive for, as well as make you aware of what could potentially be discussed with the RMO (Risk Management Official) when negotiating a Risk Management Plan for your farm.

Note 1: Even though the worksheets indicate possible strategies to elevate the protection level, an option that is not listed and does not fit into the assessment is to simply cease the activity or move the SDWT activity out of the vulnerable zone. This option is available to the RMO if the municipality has made that kind of decision. It may be an option to consider as an alternative to other options based on economic considerations. Also, there may be options to address the situation not identified in this document that may be quite acceptable to the RMO.

Note 2: "At time of application or at time of construction" is a recognition that regulations change over time. In the case of regulations, you may not meet present day regulations but you did meet the regulations existing at the time changes were made. An example would be a manure storage tank built 20 years ago that met the building codes and regulatory requirements then but not now. If you met what was required at the time of construction, then you would rate this situation at a level 2.

Note 3: If you do rate any items in Level 1 (lowest rating), you should begin creating a plan or strategy to address these situations so that all Level 1 items are moved to at least a Level 2.

Source Water Protection Process
General



General Source Water Protection Process For Individual Farmer

Notice to farmer by letter from the municipal Risk Management Officer (RMO) or a local authority indicating significant drinking water threats may be on the property. These can be structures, chemicals or practices, and are a function of proximity to a municipal drinking water supply (well or water intake)

Read letter carefully. Read information and learn about Source Water Protection. Municipality, MOE, Conservation Authority and OMAFRA have information in print or on websites

RMO will contact you and arrange a farm visit to inform you of local policies, provide maps showing affected lands on your property and discuss the development of a risk management plan to deal with Significant Drinking Water Threats in close proximity to drinking water source. If this information is not available, you should ask for it.

Next do a preliminary review of how well you are managing all threats to drinking water supplies as the RMO farm visit may result in additional areas of concern. To assist you, OFEC has developed a risk assessment tool -

(Farm Assessment – Drinking Water Source Protection Worksheets)

Complete a worksheet for each threat

You may wish to use a consultant trained in this area

They can also assist you with future dealings with the RMO if you so wish

Before RMO meeting, you should review the threats identified in the letter of notification to verify they exist in your operation in areas close in proximity to drinking water supplies.

Meet with the RMO to discuss a Risk Management Plan for your farm

You may wish to show RMO your worksheets to expedite the discussion

RMO will evaluate your present practices dealing with Significant Threats identified and discuss what if any improvements need to be made.

Negotiate with RMO (with assistance of consultant if you wish) on what needs to be done and by when. The negotiations process helps the RMO to finalize a Plan for your farm. Financial support to assist with change beyond provincial standards may or may not be available.

RMO has final say on what is acceptable.
Each municipality will have their own process but should be similar to these steps.

Report to OFEC when financing is not available to implement local standards

Risk Management Plan is implemented.

THREAT #3 - APPLICATION OF AGRICULTURAL SOURCE MATERIAL IN WHPA			
Standard or Practice	**Level 1**	**Level 2**	**Level 3**
	Does not meet accepted industry benchmarks or design standards at time of application	**Meets accepted industry benchmarks or design standards at time of application[1]**	**Exceeds accepted industry benchmarks or design standards at time of application**
Containment Barrier			
Nutrient Management Plan (NMP)	No NMP OR Existing NMP with no record keeping	A NMP, not necessarily prepared using OMAF's NMAN software, but which adheres to nutrient management principles (right place, right time, right amount, right type) is in place AND records are maintained OR For NMA "phased-in" farms > 300 NU, a record of approval has been obtained AND records are maintained to the Nutrient Management standard	A NMP, with no "red flags" as assessed through OMAFRA's NMAN software, is in place, AND records are maintained to the Nutrient Management standard. OR for NMA "phased-in" farms >300 NU OR 5 NU and any portion of the land of the farm unit used for the operation of within 100 metres of the municipal well a record of approval has been obtained, AND the associated NMP has no "red flags" as assessed through OMAFRA's NMAN software, AND records are maintained to the Nutrient Management standard
Calibrate and Maintain Equipment	Application equipment settings are not checked or calibrated	Application equipment is checked but not calibrated by farmer AND manufacturer's instructions are followed to apply intended rate	Application equipment is calibrated by farmer

[1] Must meet minimum regulatory criteria

THREAT #3 - APPLICATION OF AGRICULTURAL SOURCE MATERIAL IN WHPA			
Standard or Practice	**Level 1**	**Level 2**	**Level 3**
	Does not meet accepted industry benchmarks or design standards at time of application	**Meets accepted industry benchmarks or design standards at time of application[1]**	**Exceeds accepted industry benchmarks or design standards at time of application**
Cover Crop Use in Fall if ASM is Applied	No cover crops used OR Fields receiving late summer or early fall applied ASM do not have an over-winter crop (e.g. winter wheat or hay).	Cover crops or over-winter crops sometimes used when ASM is applied on cropped land in late summer or early fall	Cover crops or over winter-crops are always used when ASM is applied in late summer or early fall
Application Rates of Nitrogen (N)	Agronomic or Crop Removal recommended rates for N not considered	Application rates for N are based on Agronomic or Crop Removal recommended rates	Application rates for N are based on Agronomic or Crop Removal recommended rates AND no "red flags" from N-Index as calculated in NMAN
Spatial Barrier			
Application Setback Distance to Private Drilled Well (with a watertight casing extending at least 6 m below grade)	< 15 metres	15 to 24 metres	> 24 metres
Application Distance to Any Other Type of Private Well	< 30 metres	30 to 47 metres	> 47 metres
Contingency Barrier			
Supervision of Tank Filling	Inadequate supervision OR Unattended	Adequate supervision	Continuous supervision
Contingency Plan	No written plan OR Inadequate written plan	Adequate written plan available	Adequate written plan available AND meets standard contingency plan format

THREAT #3 - APPLICATION OF AGRICULTURAL SOURCE MATERIAL IN WHPA			
Standard or Practice	**Level 1**	**Level 2**	**Level 3**
	Does not meet accepted industry benchmarks or design standards at time of application	**Meets accepted industry benchmarks or design standards at time of application[1]**	**Exceeds accepted industry benchmarks or design standards at time of application**
Training of Farm Personnel	No contingency plan training of personnel	Personnel trained on contingency plan	Personnel trained on contingency plan AND refresher training held annually

THREAT #4 - STORAGE OF AGRICULTURAL SOURCE MATERIAL IN WHPA			
Standard or Practice	**Level 1**	**Level 2**	**Level 3**
	Does not meet accepted industry benchmarks or design standards at time of construction	**Meets accepted industry benchmarks or design standards at time of construction[1]**	**Exceeds accepted industry benchmarks or design standards at time of construction**
Containment Barrier			
Design Criteria for Manure Storage Facilities (Liquid and Solid)	Have not evaluated storage facility for evidence of leaks, cracks, or other structural problems OR Storage facility did not meet Ontario design criteria at time of construction OR Runoff not managed	No obvious sign of leaks, cracks, or other structural problems associated with ASM storage facility AND storage facility met Ontario design criteria at time of construction AND runoff is managed	No obvious sign of leaks, cracks, or other structural problems with ASM storage facility AND storage facility meets current Ontario design criteria for permanent ASM storage AND runoff is contained in accordance with Nutrient Management standards. OR No obvious sign of leaks, cracks, or other structural problems with ASM storage AND storage facility has been evaluated and meets current Ontario design criteria AND runoff is contained in accordance with Nutrient Management standards.
Spatial Barrier			
Distance to Private Drilled Well (with a watertight casing extending at least 6 m below grade)	< 15 metres	15 to 24 metres	> 24 metres
Distance to Any Other Type of Private Well	< 30 metres	30 to 47 metres	> 47 metres

[1] Must meet minimum regulatory criteria

THREAT #4 - STORAGE OF AGRICULTURAL SOURCE MATERIAL IN WHPA			
Standard or Practice	**Level 1**	**Level 2**	**Level 3**
	Does not meet accepted industry benchmarks or design standards at time of construction	**Meets accepted industry benchmarks or design standards at time of construction[2]**	**Exceeds accepted industry benchmarks or design standards at time of construction**
Distance Between Storage Floor and Bedrock or Uppermost Aquifer	<1m if concrete storage < 2m if earthen storage	= 1m if concrete storage = 2m if earthen storage	>1m if concrete storage > 2m if earthen storage
Contingency Barrier			
Contingency Plan	No written plan OR Inadequate written plan	Adequate written plan available	Adequate written plan available AND meets standard contingency plan format
Training of Farm Personnel	No contingency plan training of personnel	Personnel trained on contingency plan	Personnel trained on contingency plan AND refresher training held annually

[2] Must meet minimum regulatory criteria

THREAT #5 – MANAGEMENT (HANDLING) OF AGRICULTURAL SOURCE MATERIAL IN WHPA			
Standard or Practice	**Level 1**	**Level 2**	**Level 3**
	Does not meet accepted industry benchmarks or design standards at time of construction	**Meets accepted industry benchmarks or design standards at time of construction[1]**	**Exceeds accepted industry benchmarks or design standards at time of construction**
Containment Barrier			
Storage Capacity	< 240 days OR Not enough storage to avoid winter spreading	No formal evaluation of available storage capacity, but do not have to spread manure in winter	240 days or more (as determined by MSTOR or through formal record keeping/monitoring of storage fill status) OR Less than 240 days but NMS/P indicates enough storage to avoid winter spreading
Volume and Nutrient Reduction of ASM (e.g. manure, wastewaters)	No control over the amount of washwater used OR Livestock feed excessively wasted or improperly balanced	Washwater volume controlled or properly recycled OR Nutritionally-balanced feed ration	Washwater volume controlled or properly recycled AND nutritionally-balanced feed ration
Transfer System	Single check valve or no check valve used OR Leaks or cracks observed around connections and seals between storage tank(s) and transfer conduit(s). OR Does not meet current Ontario design criteria	Two check valves used AND visual inspections AND no obvious leaks or cracks in transfer system.	Meets current Ontario design criteria for ASM transfer systems AND routine visual inspection made for leaks and cracks with no weaknesses observed with connections and seals

[1] Must meet minimum regulatory criteria

THREAT #5 – MANAGEMENT (HANDLING) OF AGRICULTURAL SOURCE MATERIAL IN WHPA			
Standard or Practice	**Level 1**	**Level 2**	**Level 3**
	Does not meet accepted industry benchmarks or current design standards at time of construction	**Meets accepted industry benchmarks or design standards at time of construction[2]**	**Exceeds accepted industry benchmarks or design standards at time of construction**
Clean Water Control	No control OR Control insufficient for site situation	Some control of clean water (e.g. water drinkers/bowls maintained, eavestroughing in place on farm structures, berms to divert upslope water away from yard/storage area, etc. as appropriate for site)	Extensive control of critical clean water sources. (e.g. water drinkers/bowls maintained, eavestroughing in place on farm structures, berms to divert upslope water away from yard area, etc. as appropriate for site)
Spatial Barrier			
Distance to Drilled Well (with a watertight casing extending at least 6 m below grade)	< 15 metres	15 to 24 metres	> 24 metres
Distance to Any Other Type of Private Well	< 30 metres	30 to 47 metres	> 47 metres
Contingency Barrier			
Supervision of Transfer	Inadequate supervision	Adequate supervision	Continuous supervision
Contingency Plan	No written plan OR Inadequate written plan	Adequate written plan available	Adequate written plan available AND meets standard contingency plan format
Training of Farm Personnel	No contingency plan training of personnel	Personnel trained on contingency plan	Personnel trained on contingency plan AND refresher training held annually

[2] Must meet minimum regulatory criteria

THREAT #6 - APPLICATION OF CATEGORY 1 NON-AGRICULTURAL SOURCE MATERIAL IN WHPA[1]			
Standard or Practice	**Level 1**	**Level 2**	**Level 3**
	Does not meet accepted industry benchmarks or design standards at time of application	**Meets accepted industry benchmarks or standards at time of application [2]**	**Exceeds accepted industry benchmarks or standards at time of application**
Containment Barrier			
Material Application Rate (Liquid or Solid)	Application rate not known OR No record keeping	Application rate does not exceed 20 wet tonnes per hectare per year AND records are maintained OR Application rate exceeds 20 wet tonnes per hectare per year, material analyzed, soil analyzed and agronomic rate or crop removal for N and P considered AND records are maintained	Application rates are established by a completed NMP (with no red flags as assessed through OMAFRA's NMAN software) AND records are maintained to the Nutrient Management standard defined for Category 2 and 3 NASMs
Materials Application Practices at Time of Application	No incorporation AND living crop cover not present OR Field residue cover levels below 30%	Materials are injected OR Materials are incorporated within 24 hours OR Materials are applied to land covered by a living crop OR Materials are applied to land with crop residue covering at least 30% of the soil.	

[1] This worksheet applies to Category 1 NASM only - Criteria for identifying and for the land application of Category 1 NASM are stipulated in Ontario Regulation 267/03. Category 2 and 3 NASM are managed through NM legislation.
[2] Must meet minimum regulatory criteria
[3] For a definition of winter spreading, refer to the Nutrient Management Act Regulations

THREAT #6 - APPLICATION OF CATEGORY 1 NON-AGRICULTURAL SOURCE MATERIAL IN WHPA[1]			
Standard or Practice	**Level 1**	**Level 2**	**Level 3**
	Does not meet accepted industry benchmarks or design standards at time of application	**Meets accepted industry benchmarks or standards at time of application[2]**	**Exceeds accepted industry benchmarks or standards at time of application**
Winter Spreading[3]	Winter spreading may occur	No winter spreading	
Spatial Barrier			
Application Setback Distance to Private Drilled Well (with a watertight casing extending at least 6 m below grade)	< 15 metres	15 to 24 metres	> 24 metres
Distance to Any Other Type of Private Well	< 30 metres	30 to 47 metres	> 47 metres
Contingency Barrier			
Supervision of Transfers	Inadequate supervision OR Unattended	Adequate supervision	Continuous supervision
Contingency Plan	No written plan OR Inadequate written plan	Adequate written plan available	Adequate written plan available AND meets standard contingency plan format
Training of Farm Personnel	No contingency plan training of personnel	Personnel trained on contingency plan	Personnel trained on contingency plan AND refresher training held annually

THREAT #7 - STORAGE OF CATEGORY 1 NON-AGRICULTURAL SOURCE MATERIAL IN WHPA[1]			
Standard or Practice	**Level 1**	**Level 2**	**Level 3**
	Does not meet accepted industry benchmarks or design standards at time of construction	**Meets accepted industry benchmarks or design standards at time of construction[2]**	**Exceeds accepted industry benchmarks or design standards at time of construction**
Containment Barrier			
Design Criteria for Category 1 NASM Storage Facilities	Have not evaluated storage facility for evidence of leaks, cracks, or other structural problems, OR Storage facility did not meet Ontario design criteria at time of construction OR Storage facility did meet Ontario design criteria at time of construction BUT no concrete base	No obvious sign of leaks, cracks, or other structural problems in storage facility AND storage facility met Ontario design criteria at time of construction and includes a concrete base and sidewalls (liquid) AND runoff is managed in accordance with Nutrient Management standards	No obvious sign of leaks, cracks, or other structural problems in storage facility AND storage facility meets Ontario design criteria for permanent Category I NASM storage AND runoff is contained in accordance with the Nutrient Management standards
Spatial Barrier			
Distance to Drilled Private Well (with a watertight casing extending at least 6 m below grade)	< 15 metres	15 to 24 metres	> 24 metres
Distance to Any Other Type of Private Well	< 30 metres	30 to 47 metres	> 47 metres
Distance Between Storage's Concrete Floor and Bedrock or Uppermost Aquifer	Distance is <1metre	Distance is = 1metre	Distance is >1metre

[1] This worksheet applies to Category 1 NASM storages only. Category 2 and 3 NASM storage requires an approved NASM Plan. Criteria for identifying a Category 1 NASM are stipulated in Ontario Regulation 267/03
[2] Must meet minimum regulatory criteria

THREAT #7 - STORAGE OF CATEGORY 1 NON-AGRICULTURAL SOURCE MATERIAL IN WHPA[1]			
Standard or Practice	**Level 1**	**Level 2**	**Level 3**
	Does not meet accepted industry benchmarks or design standards at time of construction	**Meets accepted industry benchmarks or design standards at time of construction[3]**	**Exceeds accepted industry benchmarks or design standards at time of construction**
Contingency Barrier			
Contingency Plan	No written plan OR Inadequate written plan	Adequate written plan available	Adequate written plan available AND meets standard contingency plan format
Training of Farm Personnel	No contingency plan training of personnel	Personnel trained on contingency plan	Personnel trained on contingency plan AND Refresher training held annually

[1] This worksheet applies to Category 1 NASM storages only. Category 2 and 3 NASM storage requires an approved NASM Plan. Criteria for identifying a Category 1 NASM are stipulated in Ontario Regulation 267/03
[3] Must meet minimum regulatory criteria

THREAT #8 - APPLICATION OF COMMERCIAL FERTILIZER IN WHPA			
Standard or Practice	**Level 1**	**Level 2**	**Level 3**
	Does not meet accepted industry benchmarks or design standards at time of application	**Meets accepted industry benchmarks or design standards at time of application[1]**	**Exceeds accepted industry benchmarks or design standards at time of application**
Containment Barrier			
Nutrient Management Plan (NMP)	No NMP OR Existing NMP with no record keeping	A NMP, not necessarily prepared using OMAF's NMAN software, but which adheres to nutrient management principles (right place, right time, right amount, right type) is in place AND records are maintained OR For NMA "phased-in" farms > 300 NU, a record of approval has been obtained AND records are maintained to the Nutrient Management standard	A completed NMP with no "red flags" as assessed through OMAFRA's NMAN software is in place AND records are maintained to the Nutrient Management standard OR For NMA "phased-in" farms > 300 NU, OR > 5 NU and any portion of the land of a farm unit used for the operation within 100 metres of the municipal well a record of approval has been obtained, AND the associated NMP has no "red flags" as assessed through OMAFRA's NMAN software, AND records are maintained to the Nutrient Management standard
Calibrate and Maintain Equipment	Application equipment settings are not checked or calibrated	Application equipment is checked but not calibrated by farmer AND manufacturer's instructions are followed to apply intended rate	Application equipment is calibrated by farmer
Cover Crop Use in Fall if Commercial Nitrogen Fertilizer is Applied	No cover crops used OR fields receiving fall-applied commercial nitrogen fertlizer do no have N over-winter crop (e.g.: winter wheat or hay)	Cover crops or over-winter crops sometimes used.	Cover crops or over-winter crops are always used when commercial nitrogen fertilizer is applied in late summer or fall. OR Commercial nitrogen fertilizer is never applied in the fall post previous crop harvest

[1] Must meet minimum regulatory criteria

THREAT #8 - APPLICATION OF COMMERCIAL FERTILIZER IN WHPA			
Standard or Practice	**Level 1**	**Level 2**	**Level 3**
	Does not meet accepted industry benchmarks or design standards at time of application	**Meets accepted industry benchmarks or design standards at time of application[1]**	**Exceeds accepted industry benchmarks or design standards at time of application**
Application Rates of Nitrogen (N)	Agronomic or Crop Removal recommended rates for N not considered	Application rates for N are based on Agronomic or Crop Removal recommended N rates	Application rates for N are based on Agronomic or Crop Removal recommended rates AND no "red flags" from N-Index as calculated in NMAN
Spatial Barrier			
Application Setback Distance to Any Type of Private Well	Apply commercial fertilizer within 3 m of well	Commercial fertilizer is not applied within 3 metres of well	Commercial fertilizer is not applied within 6 metres of well
Vegetated Buffering of any Type of Private Well	< 3 metres permanently vegetated area around well	3 metres to 6 metres permanently vegetated area maintained around well	> 6 metres permanently vegetated area around well
Contingency Barrier			
Supervision of Tank Filling	Inadequate supervision OR Unattended	Adequate supervision	Continuous supervision
Contingency Plan	No written plan OR Inadequate written plan	Adequate written plan available	Adequate written plan available AND meets standard contingency plan format
Training of Farm Personnel	No contingency plan training of personnel	Personnel trained on contingency plan	Personnel trained on contingency plan AND refresher training held annually

THREAT #9 – HANDLING AND STORAGE OF COMMERCIAL FERTILIZER IN WHPA (For > 2500 kg of material stored for more than current growing season - storage and mixing at same site)			
Standard or Practice	**Level 1**	**Level 2**	**Level 3**
	Does not meet accepted industry benchmarks or design standards at time of construction	**Meets accepted industry benchmarks or design standards at time of construction[1]**	**Exceeds accepted industry benchmarks or design standards at time of construction**
Containment Barrier (for > 2500 kg of material stored for more than current growing season - storage and mixing at same site)			
Dry Storage	Outside storage	Covered storage	Inside storage
Dry Handling	Inadequate supervision OR Unattended	Adequate supervision	Continuous supervision
Liquid Secondary Containment	None	<110%	110% or more
Liquid Handling	Inadequate supervision OR Unattended	Adequate supervision	Continuous supervision
Rinsate Disposal	Rinsate dumped at farmstead or field	Rinsate applied to non-cropped vegetated area	Rinsate applied to cropped area with same adherence to private wellhead setbacks as with commercial fertilizer application
Spatial Barrier			
Distance to Private Drilled Well (with a watertight casing extending at least 6 m below grade)	< 15 metres	15 to 24 metres	> 24 metres
Distance to Any Other Type of Private Well	< 30 metres	30 to 47 metres	> 47 metres
Contingency Barrier			
Inspection of Liquid Fertilizer Storage While in Use	No visual inspection – before use or weekly	Visual inspection – before use and weekly	Visual inspection – before use and daily

[1] Must meet minimum regulary criteria

THREAT #9 – HANDLING AND STORAGE OF COMMERCIAL FERTILIZER IN WHPA (For > 2500 kg of material stored for more than current growing season - storage and mixing at same site)			
Standard or Practice	**Level 1**	**Level 2**	**Level 3**
	Does not meet accepted industry benchmarks or design standards at time of construction	**Meets accepted industry benchmarks or design standards at time of construction**	**Exceeds accepted industry benchmarks or design standards at time of construction**
Anti-backflow or Air Gap for Mixing and Loading (liquids only)	No anti-backflow OR No 6 inch air gap	6 inch air gap present when mixing and loading	Permanent anti-backflow OR Permanent 6 inch air gap OR Separate water tank
Contingency Plan	No written plan OR Inadequate written plan	Adequate written plan available	Adequate written plan available AND meets standard contingency plan format
Training of Farm Personnel	No contingency plan training of personnel	Personnel trained on contingency plan	Personnel trained on contingency plan AND refresher training held annually

THREAT #10 - APPLICATION OF PESTICIDE IN WHPA The applied pesticide products of concern for Source Water Protection are: MCPA, Mecoprop (if applied to an area of at least 1 ha), Atrazine, Dicamba, 2,4-D, Dichloropropene-1,3, MCPB, Metalaxyl, Metolachlor, s-Metolachlor (if applied to an area > 10 ha)			
Standard or Practice	**Level 1** **Does not meet accepted industry benchmarks or design standards at time of application**	**Level 2** **Meets accepted industry benchmarks or design standards at time of application[1]**	**Level 3** **Exceeds accepted industry benchmarks or design standards at time of application**
Containment Barrier			
Pest Control Practices	Pesticide applied in manner that does not meet label directions	Pesticide applied in manner that meets label directions	Pesticide applied in manner that meets label directions AND site's Pest Management Plan considers alternatives to these crop protection products
Calibrate and Maintain Equipment	Application equipment is serviced only when it breaks	Application equipment calibrated and serviced before start of crop season	Application equipment calibrated and serviced before start of crop season AND sprayers rinsed and re-calibrated between different pesticide use
Pesticide Training	Farm operator or personnel are not Certified Growers or Trained Assistants		At least one farm individual is a Certified Grower and handles or supervises all pesticide application activities AND other farm personnel handling pesticides are supervised by the Certified Grower and are Trained Assistants AND all Certified Pesticide Safety Course recommendations are followed OR A Licensed Custom Applicator is hired to apply pesticides in the area of concern AND all Certified Pesticide Safety Course recommendations are followed

[1] Must meet minimum regulatory criteria

THREAT #10 - APPLICATION OF PESTICIDE IN WHPA **The applied pesticide products of concern for Source Water Protection are: MCPA, Mecoprop (if applied to an area of at least 1 ha), Atrazine, Dicamba, 2,4-D, Dichloropropene-1,3, MCPB, Metalaxyl, Metolachlor, s-Metolachlor (if applied to an area > 10 ha)**			
Standard or Practice	**Level 1**	**Level 2**	**Level 3**
	Does not meet accepted industry benchmarks or design standards at time of application	**Meets accepted industry benchmarks or design standards at time of application[1]**	**Exceeds accepted industry benchmarks or design standards at time of application**
Spatial Barrier			
Application Setback Distance to Drilled Private Well (with a watertight casing extending at least 6 m below grade)	< 15 metres	15 to 24 metres	> 24 metres
Distance to Any Other Type of Private Well	< 30 metres	30 to 47 metres	> 47 metres
Contingency Barrier			
Supervision of Tank Filling	Inadequate supervision OR Unattended	Adequate supervision	Continuous supervision
Contingency Plan	No written plan OR Inadequate written plan	Adequate written plan available	Adequate written plan available AND meets standard contingency plan format
Training of Farm Personnel	No contingency plan training of personnel	Personnel trained on contingency plan	Personnel trained on contingency plan AND refresher training held annually

[1] Must meet minimum regulatory criteria

THREAT #11 – HANDLING AND STORAGE OF PESTICIDE IN WHPA **The stored pesticide products of concern for Source Water Protection are: MCPA or Mecoprop (if storing > 250 kg) OR Atrazine, Dicamba, 2,4-D, Dichloropropene-1,3, MCPB, Metalaxyl, Metolachlor, s-Metolachlor (if storing > 2500 kg) and stored for more than current growing season - storage and mixing at same site.**			
Standard or Practice	**Level 1**	**Level 2**	**Level 3**
	Does not meet accepted industry benchmarks or design standards at time of construction	**Meets accepted industry benchmarks or design standards at time of construction[1]**	**Exceeds accepted industry benchmarks or design standards at time of construction**
Containment Barrier			
Storage Type and Area	No designated storage area	Stored in designated area of building with no separation walls (e.g. area of a machine shed)	Stored in a designated room or cabinet within a building OR Stored in a dedicated pesticide storage building
Liquid Secondary Containment	Permeable floor material OR Floor drain connected to drain tile	Low permeability floor material. May use trays, drums to detect and control potential leaks. AND no floor drain.	Concrete floor with full containment[2] AND no floor drain OR Concrete floor AND floor drains to a spill collection tank
Rinsate Disposal	Rinsate dumped at farmstead or field OR Rinsate applied to crops not on label OR Label setbacks not followed	Rinsate applied to any labelled crops AND follow label setbacks	Rinsate applied to any labelled crops AND follow setbacks that are greater than label setbacks

[1] Must meet minimum regulatory criteria
[2] Refer to the Pesticides Handling BMP Workbook for a description of what full pesticide containment entails.

THREAT #11 – HANDLING AND STORAGE OF PESTICIDE IN WHPA **The stored pesticide products of concern for Source Water Protection are: MCPA or Mecoprop (if storing > 250 kg) OR Atrazine, Dicamba, 2,4-D, Dichloropropene-1,3, MCPB, Metalaxyl, Metolachlor, s-Metolachlor (if storing > 2500 kg) and stored for more than current growing season - storage and mixing at same site.**			
Standard or Practice	**Level 1**	**Level 2**	**Level 3**
	Does not meet accepted industry benchmarks or design standards at time of construction	**Meets accepted industry benchmarks or design standards at time of construction[1]**	**Exceeds accepted industry benchmarks or design standards at time of construction**
Spatial Barrier (storage and mixing at same site)			
Distance to Drilled Private Well (with a watertight casing extending at least 6 m below grade)	< 15 metres	15 to 24 metres	> 24 metres
Distance to Any Other Type of Private Well	< 30 metres	30 to 47 metres	> 47 metres
Contingency Barrier			
Supervision of all Tank Filling	Inadequate supervision OR Unattended	Adequate supervision	Continuous supervision
Contingency Plan	No written plan OR Inadequate written plan	Adequate written plan available	Adequate written plan available AND meets standard contingency plan format
Anti-Backflow or Air Gap for Mixing and Loading	No anti-backflow OR No 6 inch air gap	6 inch air gap present when mixing and loading	Permanent anti-backflow OR Permanent 6 inch air gap OR Separate water tank
Training of Farm Personnel	No contingency plan training of personnel	Personnel trained on contingency plan	Personnel trained on contingency plan AND refresher training held annually

[1] Must meet minimum regulatory criteria

THREAT #15A – HANDLING AND STORAGE OF HEATING FUEL (FUEL OILS) IN WHPA (for Above Grade Tanks with Capacity > 2500 Litres but not exceeding 5000 Litres)			
Standard or Practice	**Level 1**	**Level 2**	**Level 3**
	Does not meet accepted industry benchmarks or design standards at time of construction	**Meets accepted industry benchmarks or design standards at time of construction[1]**	**Exceeds accepted industry benchmarks or design standards at time of construction**
Containment Barrier			
Storage Tank Construction and Integrity	Not ULC approved OR Steel tank with severely damaged coating OR Improper tank support system	Steel tank with minor defects to protective coating AND ULC approved AND proper tank support system	Steel tank with protective coating AND ULC approved AND proper tank support system
Secondary Containment	Single wall tank installed on soil base OR Single wall tank. Bottom of tank not visible	Single wall tank installed on flat concrete base/pad OR Single wall tank installed with partial spill containment	Single wall tank installed in dike with 110% capacity AND rainwater removed periodically OR Double wall tank with interstitial monitoring OR Double wall vacuum tank
Spatial Barrier			
Distance to Drilled Well (with a watertight casing extending at least 6 m below grade)	< 15 metres	15 to 24 metres	> 24 metres
Distance to Any Other Type of Private Well	< 30 metres	30 to 47 metres	> 47 metres
Vehicular Protection (where applicable)	No vehicle protection (i.e. bollards or equivalent) where tanks are exposed to vehicle traffic		Vehicle protection (*i.e.* bollards or equivalent) in place for tanks exposed to vehicle traffic

[1] Must meet minimum regulatory criteria

THREAT #15A – HANDLING AND STORAGE OF HEATING FUEL (FUEL OILS) IN WHPA (for Above Grade Tanks with Capacity > 2500 Litres but not exceeding 5000 Litres)			
Standard or Practice	**Level 1**	**Level 2**	**Level 3**
	Does not meet accepted industry benchmarks or design standards at time of construction	**Meets accepted industry benchmarks or design standards at time of construction[1]**	**Exceeds accepted industry benchmarks or design standards at time of construction**
Contingency Barrier			
Inspection	No weekly visual inspection of tank for leaks or corrosion OR No inspection records kept	Weekly visual inspection of tank for leaks or corrosion AND inspection records kept	Weekly visual inspection of tank for leaks or corrosion AND weekly visual inspection of containment area AND inspection records kept
Inspection of Connection to Appliance	No annual inspection	Inspected annually by appropriate personnel[2]	Inspected annually by appropriate personnel[2] AND visual inspection monthly by owner
Contingency Plan	No written plan OR Inadequate written plan	Adequate written plan available	Adequate written plan available AND meets standard contingency plan format
Overfill Protection	Storage tank does not have an approved overfill protection device installed (tank cannot be filled > 95% capacity) OR Overfill device not operational	---	Storage tank has approved overfill protection device installed and operating (tank cannot be filled > 95% capacity)

Fully and Partially Below Grade Tanks with Capacity > 250 Litres OR Above Grade Tanks with Capacity > 5000 Litres
These tanks are to have been registered with TSSA

[1] Must meet minimum regulatory criteria

[2] Appropriate for TSSA and Fuel Oil Code Regulation. (Ideally this is the fuel supplier or a fuel mechanic)

THREAT #15B – HANDLING AND STORAGE OF MOTOR FUEL (LIQUID FUELS - GASOLINE AND DIESEL) IN WHPA (for Above Grade Tanks with Capacity > 2500 Litres but not exceeding 5000 Litres)			
Standard or Practice	**Level 1**	**Level 2**	**Level 3**
	Does not meet accepted industry benchmarks or design standards at time of construction	**Meets accepted industry benchmarks or design standards at time of construction[1]**	**Exceeds accepted industry benchmarks or design standards at time of construction**
Containment Barrier			
Storage Tank Construction and Integrity	Not ULC approved OR Steel tank with severely damaged coating OR Improper tank support system	Steel tank with minor defects to protective coating AND ULC approved AND proper tank support system	Steel tank with protective coating AND ULC approved AND proper tank support system
Secondary Containment	Single wall tank installed on soil base OR Single wall tank. Bottom of tank not visible	Single wall tank installed on flat concrete base/pad OR Single wall tank installed with partial spill containment	Single wall tank installed in dike with 110% capacity AND rainwater removed periodically OR Double wall tank with interstitial monitoring OR Double wall vacuum tank
Spatial Barrier			
Distance to Drilled Well (with a watertight casing extending at least 6 m below grade)	< 15 metres	15 to 24 metres	> 24 metres
Distance to Any Other Type of Private Well	< 30 metres	30 to 47 metres	> 47 metres
Vehicle Protection (where applicable)	No vehicle protection (i.e. bollards or equivalent) where tanks are exposed to vehicle traffic		Vehicle protection (*i.e.* bollards or equivalent) in place for tanks exposed to vehicle traffic

[1] Must meet minimum regulatory criteria

THREAT #15B – HANDLING AND STORAGE OF MOTOR FUEL (LIQUID FUELS - GASOLINE AND DIESEL) IN WHPA (for Above Grade Tanks with Capacity > 2500 Litres but not exceeding 5000 Litres)			
Standard or Practice	**Level 1**	**Level 2**	**Level 3**
	Does not meet accepted industry benchmarks or design standards at time of construction	**Meets accepted industry benchmarks or design standards at time of construction[1]**	**Exceeds accepted industry benchmarks or design standards at time of construction**
Contingency Barrier			
Inspection	No weekly visual inspection of tank for leaks or corrosion OR No inspection records kept	Weekly visual inspection of tank for leaks or corrosion AND inspection records kept	Weekly visual inspection of tank for leaks or corrosion AND weekly visual inspection of containment area if present AND inspection records kept
Supervision of All Vehicle Tank Filling	Inadequate supervision OR Unattended	Adequate supervision	Continuous supervision
Contingency Plan	No written plan OR Inadequate written plan	Adequate written plan available	Adequate written plan available AND meets standard contingency plan format

Fully and Partially Below Grade Tanks with Capacity > 250 Litres OR Above Grade Tanks with Capacity > 5000 Litres
These tanks are to have been registered with TSSA

[1] Must meet minimum regulatory criteria

THREAT #21A – OUTDOOR CONFINEMENT AREAS AND LIVESTOCK YARDS IN WHPA (> 1.0 NU/ACRE/YEAR)			
Standard or Practice	**Level 1**	**Level 2**	**Level 3**
	Does not meet accepted industry benchmarks or design standards at time of construction	**Meets accepted industry benchmarks or design standards at time of construction**[1]	**Exceeds accepted industry benchmarks or design standards at time of construction**
Containment Barrier			
Runoff Management from OCA or Livestock Yard Facilities	Have not visually inspected OCA or livestock yard base for evidence of leaks or cracks. OR Runoff not managed	OCA or livestock yard facility met Ontario design criteria at time of construction AND runoff is managed OR For NMA "phased-in" farms, Facility met Ontario design criteria at time of construction AND runoff is managed in accordance with NMA standards	OCA or livestock yard facility meets current Ontario design criteria AND runoff is contained in accordance with Nutrient Management standards. OR OCA or livestock yard facility has been evaluated and met current Ontario design criteria AND runoff is contained in accordance with Nutrient Management standards. OR Runoff is prevented through roofing of the OCA or livestock yard
Spatial Barrier			
Distance to Drilled Private Well (with a watertight casing extending at least 6 m below grade)	< 15 metres	15 to 24 metres	> 24 metres
Distance to Any Other Type of Private Well	< 30 metres	30 to 47 metres	> 47 metres

[1] Must meet minimum regulatory criteria

THREAT #21A – OUTDOOR CONFINEMENT AREAS AND LIVESTOCK YARDS IN WHPA			
Standard or Practice	**Level 1**	**Level 2**	**Level 3**
	Does not meet accepted industry benchmarks or design standards at time of construction	**Meets accepted industry benchmarks or design standards at time of construction[2]**	**Exceeds accepted industry benchmarks or design standards at time of construction**
Contingency Barrier			
Yard Cleaning/Sanitation	Scrape rarely	Scrape weekly	Scrape daily
Contingency Plan	No written plan OR Inadequate written plan	Adequate written plan available	Adequate written plan available AND meets standard contingency plan format
Training of Farm Personnel	No contingency plan training of personnel	Personnel trained on contingency plan	Personnel trained on contingency plan AND refresher training held annually

[2] Must meet minimum regulatory criteria

THREAT #21B – GRAZING AND PASTURING IN WHPA (1.0 NU/ACRE/YEAR OR LESS)[1]			
Standard or Practice	**Level 1**	**Level 2**	**Level 3**
	Does not meet accepted industry benchmarks or design standards at time of application	**Meets accepted industry benchmarks or design standards at time of application[2]**	**Exceeds accepted industry benchmarks or design standards at time of application**
Containment Barrier			
Nutrient Management	No restriction of livestock numbers on pasture AND Do not know the number of nutrient units per acre on pasture	Livestock density never exceeds 1.0 NU/acre	Livestock density on pasture never exceeds 1 NU/acre AND records kept of livestock numbers and production over the grazing period AND livestock only on pasture during the growing season
Spatial Barrier			
Private Wellhead Protection for all Types of Wells within 30 m of Grazing and Pasturing	Wellhead not maintained	Wellhead is maintained	Wellhead is above-ground, maintained and protected from potential livestock damage.
Depth to Bedrock or Watertable when site's vulnerability score = 10	All pasture area less than 0.3 metres	Some portions < 0.3 metres, some portions ≥ 0.3 metres	Exclusion from all areas with less than 0.3 metres
Contingency Barrier			
General Inspection of Pasture Areas	Rarely	Monthly and appropriate action taken	Weekly and appropriate action taken
Contingency Plan	No written plan OR Inadequate written plan	Adequate written plan available	Adequate written plan available AND meets standard contingency plan format
Training of Farm Personnel	No contingency plan training of personnel	Personnel trained on contingency plan	Personnel trained on contingency plan AND refresher training held annually

[1] Average annual livestock density is calculated as the sum of daily livestock densities divided by 365
[2] Must meet minimum regulatory criteria

THREAT #3 - APPLICATION OF AGRICULTURAL SOURCE MATERIAL IN IPZ			
Standard or Practice	**Level 1**	**Level 2**	**Level 3**
	Does not meet accepted industry benchmarks or design standards at time of application	**Meets accepted industry benchmarks or design standards at time of application[1]**	**Exceeds accepted industry benchmarks or design standards at time of application**
Containment Barrier			
Nutrient Management Plan (NMP)	No NMP OR Existing NMP with no record keeping	A NMP, not necessarily prepared using OMAF's NMAN software, but which adheres to nutrient management principles (right place, right time, right amount, right type) is in place AND records are maintained OR For NMA "phased-in" farms > 300 NU, a record of approval has been obtained AND records are maintained to the Nutrient Management standard	A NMP, with no "red flags" as assessed through OMAFRA's NMAN software, is in place AND records are maintained to the Nutrient Management standard OR For NMA "phased-in" farms > 300 NU, OR > 5 NU and any portion of the land of the farm unit used for the operation within 100 metres of a municipal well a record of approval has been obtained, AND the associated NMP has no "red flags" as assessed through OMAFRA's NMAN software, AND records are maintained to the Nutrient Management standard
Calibrate and Maintain Equipment	Application equipment settings are not checked or calibrated	Application equipment is checked but not calibrated by farmer AND manufacturer's instructions are followed to apply intended rate	Application equipment is calibrated by farmer
Buffer Alongside Surface Water	Buffer < 3 metres	Permanently vegetated buffer = 3 metres	Permanently vegetated buffer > 3 metres
Cover Crop Use in Fall if ASM is Applied	No cover crops used OR Fields receiving late summer or early fall applied ASM do not have an over-winter crop (e.g. winter wheat or hay).	Cover crops or over-winter crops sometimes used when ASM is applied on cropped land in late summer or early fall	Cover crops or over winter-crops are always used when ASM is applied in late summer or early fall

[1] Must meet minimum regulatory criteria

THREAT #3 - APPLICATION OF AGRICULTURAL SOURCE MATERIAL IN IPZ			
Standard or Practice	**Level 1**	**Level 2**	**Level 3**
	Does not meet accepted industry benchmarks or design standards at time of application	**Meets accepted industry benchmarks or design standards at time of application[1]**	**Exceeds accepted industry benchmarks or design standards at time of application**
Application Rates of Nitrogen (N) and Phosphorus (P)	Agronomic or Crop Removal recommended rates for N not considered OR Agronomic or Crop Removal recommended rates for P not considered	Application rates for both N and P are based on Agronomic or Crop Removal recommended rates.	Application rates for both N and P are based on Agronomic or Crop Removal recommended rates. AND no "red flags" from N-Index or P-Index as calculated in NMAN
Spatial Barrier			
Application Setback Distance to Surface Water[2]	Surface application, < 30% cover, and no incorporation < 13 metres OR Surface applied to a living crop or residue cover of at least 30% < 3 metres OR Surface applied and incorporated within 24 hours < 3 metres OR Injected , or placement in a band below the soil surface < 3 metres	Surface application, < 30% cover and no incorporation = 13 metres OR Surface applied to a living crop or residue cover of at least 30% = 3 metres OR Surface applied and incorporated within 24 hours = 3 metres OR Injected , or placement in a band below the soil surface = 3 metres	Surface application, < 30% cover, and no incorporation > 13 metres OR Surface applied to a living crop or residue cover of at least 30% > 3 metres OR Surface applied and incorporated within 24 hours > 3 metres OR Injected , or placement in a band below the soil surface > 3 metres

[2] Note these setback distances include the width of any vegetative buffer, if present, along surface water edge.

THREAT #3 - APPLICATION OF AGRICULTURAL SOURCE MATERIAL IN IPZ			
Standard or Practice	**Level 1**	**Level 2**	**Level 3**
	Does not meet accepted industry benchmarks or design standards at time of application	**Meets accepted industry benchmarks or design standards at time of application[1]**	**Exceeds accepted industry benchmarks or design standards at time of application**
Contingency Barrier			
Field Drainage Tile Monitoring – Liquid ASM	No visual monitoring	Visually monitor field drainage tile AND appropriate action is taken	Visually monitor field drainage tile AND land is pre-tilled AND appropriate action is taken OR Visually monitor field drainage tile AND tile observed not to be flowing AND appropriate action is taken OR Visually monitor field drainage tile AND surface application rate is reduced or split so any application is less than 40,000 litres/hectare (3600 imperial gallons/acre) AND appropriate action is taken
Supervision of Tank Filling	Inadequate supervision OR Unattended	Adequate supervision	Continuous supervision
Contingency Plan	No written plan OR Inadequate written plan	Adequate written plan available	Adequate written plan available AND meets standard contingency plan format
Training of Farm Personnel	No contingency plan training of personnel	Personnel trained on contingency plan	Personnel trained on contingency plan AND refresher training held annually

THREAT #4 - STORAGE OF AGRICULTURAL SOURCE MATERIAL IN IPZ			
Standard or Practice	**Level 1**	**Level 2**	**Level 3**
	Does not meet accepted industry benchmarks or design standards at time of construction	**Meets accepted industry benchmarks or design standards at time of construction[1]**	**Exceeds accepted industry benchmarks or design standards at time of construction**
Containment Barrier			
Design Criteria for Manure Storage Facilities (Liquid and Solid)	Have not evaluated storage facility for evidence of leaks, cracks, or other structural problems OR Storage facility did not meet Ontario design criteria at time of construction OR Runoff not managed	No obvious sign of leaks, cracks, or other structural problems associated with ASM storage facility AND storage facility met Ontario design criteria at time of construction AND runoff is managed	No obvious sign of leaks, cracks, or other structural problems with ASM storage facility AND storage facility meets current Ontario design criteria AND runoff is contained in accordance with nutrient management standards OR No obvious sign of leaks, cracks, or other structural problems in storage facility AND storage facility has been evaluated and meets current Ontario design criteria AND runoff is contained in accordance with nutrient management standards
Spatial Barrier			
Distance to Surface Water	< 50 metres OR < 50 metre flowpath	50 to 75 metres OR ≥ 50 m flowpath	> 75 metres
THREAT #4 - STORAGE OF AGRICULTURAL SOURCE MATERIAL IN IPZ			

[1] Must meet minimum regulatory criteria

Standard or Practice	Level 1	Level 2	Level 3
	Does not meet accepted industry benchmarks or design standards at time of construction	**Meets accepted industry benchmarks or design standards at time of construction**	**Exceeds accepted industry benchmarks or design standards at time of construction**
Contingency Barrier			
Contingency Plan	No written plan OR Inadequate written plan	Adequate written plan available	Adequate written plan available AND meets standard contingency plan format
Training of Farm Personnel	No contingency plan training of personnel	Personnel trained on contingency plan	Personnel trained on contingency plan AND refresher training held annually

THREAT #5 – MANAGEMENT (HANDLING) OF AGRICULTURAL SOURCE MATERIAL IN IPZ			
Standard or Practice	**Level 1**	**Level 2**	**Level 3**
	Does not meet accepted industry benchmarks or design standards at time of construction	**Meets accepted industry benchmarks or design standards at time of construction**[1]	**Exceeds accepted industry benchmarks or design standards at time of construction**
Containment Barrier			
Storage Capacity	< 240 days OR Not enough storage to avoid winter spreading	No formal evaluation of available storage capacity, but do not have to spread manure in winter	240 days or more (as determined by MSTOR or through formal record keeping/monitoring of storage fill status) OR Less than 240 days but NMP/S indicates enough storage to avoid winter spreading
Volume and Nutrient Reduction of ASM (e.g. manure, wastewaters)	No control over the amount of washwater used OR Livestock feed excessively wasted or improperly balanced	Washwater volume controlled or properly recycled OR Nutritionally-balanced feed ration	Washwater volume controlled or properly recycled AND nutritionally-balanced feed ration
Transfer System	Single check valve or no check valve used OR Leaks or cracks observed around connections and seals between storage tank(s) and transfer conduit(s) OR Does not meet current Ontario design criteria	Two check valves used AND visual inspections AND no obvious leaks or cracks in transfer system.	Meets current Ontario design criteria for ASM transfer systems AND routine visual inspection made for leaks and cracks with no weaknesses observed with connections and seals

[1] Must meet minimum regulatory criteria

THREAT #5 – MANAGEMENT (HANDLING) OF AGRICULTURAL SOURCE MATERIAL IN IPZ			
Standard or Practice	**Level 1**	**Level 2**	**Level 3**
	Does not meet accepted industry benchmarks or design standards at time of construction	**Meets accepted industry benchmarks or design standards at time of construction[1]**	**Exceeds accepted industry benchmarks or design standards at time of construction**
Clean Water Control	No control OR Control insufficient for site situation	Some control of clean water sources (e.g. water drinkers/bowls maintained, eavestroughing in place on farm structures, berms to divert upslope water away from yard/storage area, etc. as appropriate for site.)	Extensive control of critical clean water sources (e.g. water drinkers/bowls maintained, eavestroughing in place on farm structures, berms to divert upslope water away from yard area, etc. as appropriate for site.)
Spatial Barrier			
Distance to Surface Water	< 50 metres OR < 50 metre flowpath	50 to 75 metres OR > 50 metre flowpath	> 75 metres
Straight-Line Distance to Field Drainage Tile[2]	< 15 metres	15 to 24 metres	> 24 metres OR > 15 metres and equipped with an observation and shutoff station.
Contingency Barrier			
Supervision of Transfer	Inadequate supervision OR Unattended	Adequate supervision	Continuous supervision
Contingency Plan	No written plan OR Inadequate written plan	Adequate written plan available	Adequate written plan available AND meets standard contingency plan format
Training of Farm Personnel	No contingency plan training of personnel	Personnel trained on contingency plan	Personnel trained on contingency plan AND refresher training held annually

[1] Must meet minimum regulatory criteria
[2] Storage foundation drains that are fully sealed or equipped with an observation and shutoff station(s) or that lead to a treatment system are not considered field drainage pipe.

THREAT #6 - APPLICATION OF CATEGORY 1 NON-AGRICULTURAL SOURCE MATERIAL IN IPZ[1]			
Standard or Practice	**Level 1**	**Level 2**	**Level 3**
	Does not meet accepted industry benchmarks or design standards at time of application	**Meets accepted industry benchmarks or design standards at time of application [2]**	**Exceeds accepted industry benchmarks or design standards at time of application**
Containment Barrier			
Material Application Rate (Liquid or Solid)	Application rate not known OR No record keeping	Application rate does not exceed 20 wet tonnes per hectare per year AND records are maintained OR Application rate exceeds 20 wet tonnes per hectare per year, material analyzed, soil analyzed and Agronomic or Crop Removal rates for N and P considered AND records are maintained	Application rates are established by a completed NMP (with no red flags as assessed through OMAFRA's NMAN software) AND records are maintained to the Nutrient Management standard defined for Category 2 and 3 NASMs
Buffer Alongside Surface Water	Buffer < 3 metres	Permanently vegetated buffer = 3 metres	Permanently vegetated buffer > 3 metres
Winter Spreading[3]	Winter spreading may occur	No winter spreading	
Materials Application Practices at Time of Application	No incorporation AND living crop cover not present OR Field residue cover levels below 30%	Materials are injected OR Materials are incorporated within 24 hours OR Materials are applied to land covered by a living crop OR Materials are applied to land with crop residue covering at least 30% of the soil.	

[1] This worksheet applies to Category 1 NASM only - Criteria for identifying and for the land application of Category 1 NASM are stipulated in Ontario Regulation 267/03. Category 2 and 3 NASM are managed through NM legislation.
[2] Must meet minimum regulatory criteria
[3] For a definition of winter spreading, refer to the Nutrient Management Act Regulations

THREAT #6 - APPLICATION OF CATEGORY 1 NON-AGRICULTURAL SOURCE MATERIAL IN IPZ[1]			
Standard or Practice	**Level 1**	**Level 2**	**Level 3**
	Does not meet accepted industry benchmarks or design standards at time of application	**Meets accepted industry benchmarks or design standards at time of application [2]**	**Exceeds accepted industry benchmarks or design standards at time of application**
Spatial Barrier			
Application Setback Distance to Nearest Surface Water	<20 metre application setback from top of bank or surface water access point	20 to 30 metre setback from top of bank or surface water access point	> 30 metre setback from top of bank or surface water access point
Contingency Barrier			
Field Drainage Tile Monitoring – Liquid NASM	No visual monitoring	Visually monitor field drainage tile AND appropriate action is taken.	Visually monitor field drainage tile AND land is pre-tilled AND appropriate action is taken. OR Visually monitor field drainage tile AND tile observed not to be flowing AND appropriate action is taken OR Visually monitor field drainage tile AND surface application rate is reduced or split so any application is less than 40,000 litres/hectare (3600 imperial gallons/acre) AND appropriate action is taken.
Supervision of Transfers	Inadequate supervision OR Unattended	Adequate supervision	Continuous supervision
Contingency Plan	No written plan OR Inadequate written plan	Adequate written plan available	Adequate written plan available AND meets standard contingency plan format

THREAT #6 - APPLICATION OF CATEGORY 1 NON-AGRICULTURAL SOURCE MATERIAL IN IPZ[1]			
Standard or Practice	**Level 1**	**Level 2**	**Level 3**
	Does not meet accepted industry benchmarks or design standards at time of application	**Meets accepted industry benchmarks or design standards at time of application [2]**	**Exceeds accepted industry benchmarks or design standards at time of application**
Training of Farm Personnel	No contingency plan training of personnel	Personnel trained on contingency plan	Personnel trained on contingency plan AND refresher training held annually

THREAT #7 - STORAGE OF CATEGORY 1 NON-AGRICULTURAL SOURCE MATERIAL IN IPZ[1]			
Standard or Practice	**Level 1**	**Level 2**	**Level 3**
	Does not meet accepted industry benchmarks or design standards at time of construction	**Meets accepted industry benchmarks or design standards at time of construction[2]**	**Exceeds accepted industry benchmarks or design standards at time of construction**
Containment Barrier			
Design Criteria for Permanent Category 1 NASM Storage Facilities	Have not evaluated storage facility for evidence of leaks, cracks, or other structural problems, OR Storage facility did not meet Ontario design criteria at time of construction OR Storage facility did meet Ontario design criteria at time of construction BUT no concrete base	No obvious sign of leaks, cracks, or other structural problems in storage facility AND storage facility meets Ontario design criteria for permanent Category I NASM storage AND runoff is managed in accordance with Nutrient Management standards	No obvious sign of leaks, cracks, or other structural problems in storage facility AND storage facility meets Ontario design criteria for permanent Category I NASM storage AND runoff is contained in accordance with Nutrient Management standards.
Spatial Barrier			
Separation Distance from any Private Well	< 90 meters	90 metres or more	
Distance to Surface Water	< 50 metres OR < 50 metre flowpath	50 to 75 metres OR > 50 m or longer flowpath	> 75 metres
Straight-Line Distance to Field Drainage Tile[3]	< 15 metres	15 to 24 metres	> 24 metres OR > 15 metres and equipped with an observation and shutoff station

[1] This worksheet applies to Category 1 NASM storages only. Category 2 and 3 NASM storage requires an approved NASM Plan. Criteria for identifying a Category 1 NASM are stipulated in Ontario Regulation 267/03
[2] Must meet minimum regulatory criteria

THREAT #7 - STORAGE OF CATEGORY 1 NON-AGRICULTURAL SOURCE MATERIAL IN IPZ[1]			
Standard or Practice	**Level 1**	**Level 2**	**Level 3**
	Does not meet accepted industry benchmarks or design standards at time of construction	**Meets accepted industry benchmarks or design standards at time of construction[3]**	**Exceeds accepted industry benchmarks or design standards at time of construction**
Contingency Barrier			
Contingency Plan	No written plan OR Inadequate written plan	Adequate written plan available	Adequate written plan available AND meets standard contingency plan format
Training of Farm Personnel	No contingency plan training of personnel	Personnel trained on contingency plan	Personnel trained on contingency plan AND refresher training held annually

[1] This worksheet applies to Category 1 NASM storages only. Category 2 and 3 NASM storage requires an approved NASM Plan. Criteria for identifying a Category 1 NASM are stipulated in Ontario Regulation 267/03
[3] Must meet minimum regulatory criteria

THREAT #8 - APPLICATION OF COMMERCIAL FERTILIZER IN IPZ			
Standard or Practice	**Level 1**	**Level 2**	**Level 3**
	Does not meet accepted industry benchmarks or design standards at time of application	**Meets accepted industry benchmarks or design standards at time of application[1]**	**Exceeds accepted industry benchmarks or design standards at time of application**
Containment Barrier			
Nutrient Management Plan (NMP)	No NMP OR Existing NMP with no record keeping	A NMP, not necessarily prepared using OMAF's NMAN software, but which adheres to nutrient management principles (right place, right time, right amount, right type) is in place AND records are maintained OR For NMA "phased-in" farms > 300 NU, a record of approval has been obtained AND records are maintained to the Nutrient Management standard	A NMP with no "red flags" as assessed through OMAFRA's NMAN software is in place AND records are maintained to the Nutrient Management standard OR For NMA "phased-in" farms > 300 NU, OR > 5 NU and any portion of the land of the farm unit used for the operation within 100 metres of an intake. A record of approval has been obtained, AND the associated NMP has no "red flags" as assessed through OMAFRA's NMAN software, AND records are maintained to the Nutrient Management standard
Calibrate and Maintain Equipment	Application equipment settings are not checked or calibrated	Application equipment is checked but not calibrated by farmer AND manufacturer's instructions are followed to apply intended rate	Application equipment is calibrated by farmer
Buffer Alongside Surface Water	Buffer < 3 metres	Permanently vegetated buffer = 3 metres	Permanently vegetated buffer > 3 metres
Cover Crop Use in Fall if Commercial Fertilizer is Applied	No cover crops used OR Fields receiving fall applied commercial fertilizer do not have an over-winter crop (e.g. winter wheat or hay).	Cover crops or over-winter crops sometimes used when commercial fertilizer is applied on cropped land in late summer or fall.	Cover crops or over-winter crops are always used when commercial fertilizer is applied in late summer or fall OR commercial fertilizer is never applied in the fall post previous crop

[1] Must meet minimum regulatory criteria

THREAT #8 - APPLICATION OF COMMERCIAL FERTILIZER IN IPZ			
Standard or Practice	**Level 1**	**Level 2**	**Level 3**
	Does not meet accepted industry benchmarks or design standards at time of application	**Meets accepted industry benchmarks or design standards at time of application[1]**	**Exceeds accepted industry benchmarks or design standards at time of application**
Application Rates of Nitrogen (N) and Phosphorus (P)	Agronomic or Crop Removal recommended rates for N not considered OR Agronomic or Crop Removal recommended rates for P not considered	Application rates for both N and P are based on Agronomic or Crop Removal recommended rates	Application rates for both N and P are based on Agronomic or Crop Removal recommended rates AND no "red flags" from N-Index or P-Index as calculated in NMAN
Spatial Barrier			
Application Setback Distance to Surface Water[2]	Surface application, < 30% cover, and no incorporation < 13 metres OR Surface applied to a living crop or residue cover of at least 30% < 3 metres OR Surface applied and incorporated within 24 hours < 3 metres OR Injected , or placement in a band below the soil surface < 3 metres	Surface application, < 30% cover and no incorporation = 13 metres OR Surface applied to a living crop or residue cover of at least 30% = 3 metres OR Surface applied and incorporated within 24 hours = 3 metres OR Injected , or placement in a band below the soil surface = 3 metres	Surface application, < 30% cover, and no incorporation > 13 metres OR Surface applied to a living crop or residue cover of at least 30% > 3 metres OR Surface applied and incorporated within 24 hours > 3 metres OR Injected , or placement in a band below the soil surface > 3 metres
Contingency Barrier			
Supervision of Tank Filling	Inadequate supervision OR Unattended	Adequate supervision	Continuous supervision

[2] Note these setback distances include the width of any vegetative buffer, if present, along surface water edge.

THREAT #8 - APPLICATION OF COMMERCIAL FERTILIZER IN IPZ			
Standard or Practice	**Level 1**	**Level 2**	**Level 3**
	Does not meet accepted industry benchmarks or design standards at time of application	**Meets accepted industry benchmarks or design standards at time of application[1]**	**Exceeds accepted industry benchmarks or design standards at time of application**
Contingency Plan	No written plan OR Inadequate written plan	Adequate written plan available	Adequate written plan available AND meets standard contingency plan format
Training of Farm Personnel	No contingency plan training of personnel	Personnel trained on contingency plan	Personnel trained on contingency plan AND refresher training held annually

THREAT #9 – HANDLING AND STORAGE OF COMMERCIAL FERTILIZER IN IPZ (For > 2500 kg of material stored for more than current growing season - storage and mixing at same site)			
Standard or Practice	**Level 1**	**Level 2**	**Level 3**
	Does not meet accepted industry benchmarks or design standards at time of construction	**Meets accepted industry benchmarks or design standards at time of construction**[1]	**Exceeds accepted industry benchmarks or design standards at time of construction**
Containment Barrier			
Dry Storage	Outside storage	Covered storage	Inside storage
Dry Handling	Inadequate supervision OR Unattended	Adequate supervision	Continuous supervision
Liquid Secondary Containment	None	<110%	110% or more
Liquid Handling	Inadequate supervision OR Unattended	Adequate supervision	Continuous supervision
Rinsate Disposal	Rinsate dumped at farmstead or field	Rinsate applied to non-cropped vegetated area	Rinsate applied to cropped area with same adherence to surface water setbacks as with commercial fertilizer application.
Spatial Barrier			
Distance to Surface Water	< 30 metres	30 to 60 metres	> 60 metres
Contingency Barrier			
Inspection of Liquid Fertilizer Storage While in Use	No visual inspection – before use or weekly	Visual inspection – before use and weekly	Visual inspection – before use and daily
Anti-Backflow or Air Gap for Mixing and Loading (liquids only)	No anti-backflow OR No 6 inch air gap	6 inch air gap present when mixing and loading	Permanent anti-backflow OR Permanent 6 inch air gap OR Separate water tank

[1] Must meet minimum regulatory criteria

THREAT #9 – HANDLING AND STORAGE OF COMMERCIAL FERTILIZER IN IPZ (For > 2500 kg of material stored for more than current growing season - storage and mixing at same site)			
Standard or Practice	**Level 1**	**Level 2**	**Level 3**
	Does not meet accepted industry benchmarks or design standards at time of construction	**Meets accepted industry benchmarks or design standards at time of construction[2]**	**Exceeds accepted industry benchmarks or design standards at time of construction**
Contingency Plan	No written plan OR Inadequate written plan	Adequate written plan available	Adequate written plan available AND meets standard contingency plan format
Training of Farm Personnel	No contingency plan training of personnel	Personnel trained on contingency plan	Personnel trained on contingency plan AND refresher training held annually

[2] Must meet minimum regulatory criteria

THREAT #10 - APPLICATION OF PESTICIDE IN IPZ **The applied pesticide products of concern for Source Water Protection are: MCPA, Mecoprop (if applied to any sized area), Atrazine, Dicamba, 2,4-D, Dichloropropene-1,3, MCPB, Metalaxyl, Pendimethalin (if applied to an area of at least 1 ha), Glyphosate, Metolachlor, s-Metolachlor (if applied to an area > 10 ha)**			
Standard or Practice	**Level 1**	**Level 2**	**Level 3**
	Does not meet accepted industry benchmarks or design standards at time of application	**Meets accepted industry benchmarks or design standards at time of application[1]**	**Exceeds accepted industry benchmarks or design standards at time of application**
Containment Barrier			
Pest Control Practices	Pesticide applied in manner that does not meet label directions	Pesticide applied in manner that meets label directions	Pesticide applied in manner that meets label directions AND site's Pest Management Plan considers alternatives to these crop protection products
Calibrate and Maintain Equipment	Application equipment is serviced only when it breaks	Application equipment calibrated and serviced before start of crop season	Application equipment calibrated and serviced before start of crop season AND sprayers are rinsed and re-calibrated between different pesticide use
Pesticide Training	Farm operator or personnel are not Certified Growers or Trained Assistants	----	At least one farm individual is a Certified Grower and handles or supervises all pesticide application activities AND other farm personnel handling pesticides are supervised by the Certified Grower and are Trained Assistants AND all Certified Pesticide Safety Course recommendations are followed OR A Licensed Custom Applicator is hired to apply pesticides in the area of concern AND all Certified Pesticide Safety Course recommendations are followed

[1] Must meet minimum regulatory criteria

THREAT #10 - APPLICATION OF PESTICIDE IN IPZ **The applied pesticide products of concern for Source Water Protection are: MCPA, Mecoprop (if applied to any sized area), Atrazine, Dicamba, 2,4-D, Dichloropropene-1,3, MCPB, Metalaxyl, Pendimethalin (if applied to an area of at least 1 ha), Glyphosate, Metolachlor, s-Metolachlor (if applied to an area > 10 ha)**			
Standard or Practice	**Level 1**	**Level 2**	**Level 3**
	Does not meet accepted industry benchmarks or design standards at time of application	**Meets accepted industry benchmarks or design standards at time of application[1]**	**Exceeds accepted industry benchmarks or design standards at time of application**
Spatial Barrier			
Application Setback Distance to Surface Water	Pesticide application does not meet minimum setback specified on product label OR If label is silent, pesticide is applied within 3 metres of surface water	Pesticide application meets minimum setback specified on product label OR If label is silent, pesticide is not applied closer than 3 metres to 9 metres from surface water	Pesticide application uses a setback that is greater than the minimum setback specified on product label OR If label is silent, pesticide not applied within 9 metres from surface water.
Contingency Barrier			
Supervision of Tank Filling	Inadequate supervision OR Unattended	Adequate supervision	Continuous supervision
Contingency Plan	No written plan OR Inadequate written plan	Adequate written plan available	Adequate written plan available AND meets standard contingency plan format
Training of Farm Personnel	No contingency plan training of personnel	Personnel trained on contingency plan	Personnel trained on contingency plan AND refresher training held annually

THREAT #11 – HANDLING AND STORAGE OF PESTICIDE IN IPZ (The stored pesticide products of concern for Source Water Protection are: MCPA or Mecoprop (if storage is > 250 kg), Atrazine, Dicamba, 2,4-D, Dichloropropene-1,3, MCPB, Metalaxyl, Pendimethalin (if storage is > 2500 kg) and stored for more than current growing season - storage and mixing at same site)			
Standard or Practice	**Level 1**	**Level 2**	**Level 3**
	Does not meet accepted industry benchmarks or design standards at time of construction	**Meets accepted industry benchmarks or design standards at time of construction[1]**	**Exceeds accepted industry benchmarks or design standards at time of construction**
Containment Barrier			
Storage Type and Area	No designated storage area	Stored in designated area of building with no separation walls (e.g. area of a machine shed)	Stored in a designated room or cabinet within a building OR Stored in a dedicated pesticide storage building
Liquid Secondary Containment	Permeable floor material OR Floor drain connected to drain tile	Low permeability floor material (May use trays, drums to detect and control potential leaks) AND no floor drain.	Concrete floor with full containment[2] AND no floor drain OR Concrete floor AND floor drains to a spill collection tank
Rinsate Disposal	Rinsate dumped at farmstead or field OR Rinsate applied to crops not on label OR Label setbacks not followed	Rinsate applied to any labelled crops AND follow label setbacks	Rinsate applied to any labelled crops AND follow setbacks that are greater than label setbacks

[1] Must meet minimum regulatory criteria
[2] Refer to the Pesticides Handling BMP Workbook for a description of what full pesticide containment entails.

THREAT #11 – HANDLING AND STORAGE OF PESTICIDE IN IPZ **(The stored pesticide products of concern for Source Water Protection are: MCPA or Mecoprop (if storage is > 250 kg), Atrazine, Dicamba, 2,4-D, Dichloropropene-1,3, MCPB, Metalaxyl, Pendimethalin (if storage is > 2500 kg) and stored for more than current growing season - storage and mixing at same site)**			
Standard or Practice	**Level 1**	**Level 2**	**Level 3**
	Does not meet accepted industry benchmarks or design standards at time of construction	**Meets accepted industry benchmarks or design standards at time of construction[1]**	**Exceeds accepted industry benchmarks or design standards at time of construction**
Spatial Barrier			
Distance to Surface Water	< 30 metres	30 to 60 metres	> 60 metres
Contingency Barrier			
Supervision of all Tank Filling	Inadequate supervision OR Unattended	Adequate supervision	Continuous supervision
Contingency Plan	No written plan OR Inadequate written plan	Adequate written plan available	Adequate written plan available AND meets standard contingency plan format
Anti-Backflow or Air Gap for Mixing and Loading	No anti-backflow OR No 6 inch air gap	6 inch air gap present when mixing and loading	Permanent anti-backflow OR Permanent 6 inch air gap OR Separate water tank
Training of Farm Personnel	No contingency plan training of personnel	Personnel trained on contingency plan	Personnel trained on contingency plan AND refresher training held annually

[1] Must meet minimum regulatory criteria

THREAT #15A – HANDLING AND STORAGE OF HEATING FUEL (FUEL OILS) IN IPZ (for Above Grade Tanks with Capacity > 2500 Litres but not exceeding 5000 Litres)			
Standard or Practice	**Level 1**	**Level 2**	**Level 3**
	Does not meet accepted industry benchmarks or design standards at time of construction	**Meets accepted industry benchmarks or design standards at time of construction[1]**	**Exceeds accepted industry benchmarks or design standards at time of construction**
Containment Barrier			
Storage Tank Construction and Integrity	Not ULC approved OR Steel tank with severely damaged coating OR Improper tank support system	Steel tank with minor defects to protective coating AND ULC approved AND proper tank support system	Steel tank with protective coating AND ULC approved AND proper tank support system
Secondary Containment	Single wall tank installed on soil base OR Single wall tank. Bottom of tank not visible	Single wall tank installed on flat concrete base/pad OR Single wall tank installed with partial spill containment	Single wall tank installed in dike with 110% capacity AND rainwater removed periodically OR Double wall tank with interstitial monitoring OR Double wall vacuum tank
Spatial Barrier			
Distance to Surface Water	< 30 metres	30 to 60 metres	> 60 metres
Vehicular Protection (where applicable)	No vehicle protection (i.e. bollards or equivalent) where tanks are exposed to vehicle traffic		Vehicle protection (*i.e.* bollards or equivalent) in place for tanks exposed to vehicle traffic

[1] Must meet minimum regulatory criteria

THREAT #15A – HANDLING AND STORAGE OF HEATING FUEL (FUEL OILS) IN IPZ (for Above Grade Tanks with Capacity > 2500 Litres but not exceeding 5000 Litres)			
Standard or Practice	**Level 1**	**Level 2**	**Level 3**
	Does not meet accepted industry benchmarks or design standards at time of construction	**Meets accepted industry benchmarks or design standards at time of construction[1]**	**Exceeds accepted industry benchmarks or design standards at time of construction**
Contingency Barrier			
Inspection	No weekly visual inspection of tank for leaks or corrosion OR No inspection records kept	Weekly visual inspection of tank for leaks or corrosion AND inspection records kept	Weekly visual inspection of tank for leaks or corrosion AND weekly visual inspection of containment area AND inspection records kept
Inspection of Connection to Appliance	No annual inspection	Inspected annually by appropriate personnel[2]	Inspected annually by appropriate personnel[2] AND visual inspection monthly by owner
Contingency Plan	No written plan OR Inadequate written plan	Adequate written plan available	Adequate written plan available AND meets standard contingency plan format
Overfill Protection	Storage tank does not have an approved overfill protection device installed (tank cannot be filled > 95% capacity) OR Overfill device not operational	---	Storage tank has approved overfill protection device installed and operating (tank cannot be filled > 95% capacity)

Fully and Partially Below Grade Tanks with Capacity > 250 Litres OR Above Grade Tanks with Capacity > 5000 Litres
These tanks are to have been registered with TSSA

[1] Must meet minimum regulatory criteria
[2] Appropriate for TSSA and Fuel Oil Code Regulation. (Ideally this is the fuel supplier or a fuel mechanic)

THREAT #15B – HANDLING AND STORAGE OF MOTOR FUEL (LIQUID FUELS - GASOLINE AND DIESEL) IN IPZ (for Above Grade Tanks with Capacity > 2500 Litres but not exceeding 5000 Litres)			
Standard or Practice	**Level 1**	**Level 2**	**Level 3**
	Does not meet accepted industry benchmarks or design standards at time of construction	**Meets accepted industry benchmarks or design standards at time of construction[1]**	**Exceeds accepted industry benchmarks or design standards at time of construction**
Containment Barrier			
Storage Tank Construction and Integrity	Not ULC approved OR Steel tank with severely damaged coating OR Improper tank support system	Steel tank with minor defects to protective coating AND ULC approved AND proper tank support system	Steel tank with protective coating AND ULC approved AND proper support system
Secondary Containment	Single wall tank installed on soil base OR Single wall tank. Bottom of tank not visible	Single wall tank installed on flat concrete base/pad OR Single wall tank installed with partial spill containment	Single wall tank installed in dike with 110% capacity AND rainwater removed periodically OR Double wall tank with interstitial monitoring OR Double wall vacuum tank
Spatial Barrier			
Distance to Surface Water	< 30 metres	30 to 60 metres	> 60 metres
Contingency Barrier			
Inspection	No weekly visual inspection of tank for leaks or corrosion OR No inspection records kept	Weekly visual inspection of tank for leaks or corrosion AND inspection records kept	Weekly visual inspection of tank for leaks or corrosion AND weekly visual inspection of containment area if present AND inspection records kept

[1] Must meet minimum regulatory criteria

THREAT #15B – HANDLING AND STORAGE OF MOTOR FUEL (LIQUID FUELS - GASOLINE AND DIESEL) IN IPZ (for Above Grade Tanks with Capacity > 2500 Litres but not exceeding 5000 Litres)			
Standard or Practice	**Level 1**	**Level 2**	**Level 3**
	Does not meet accepted industry benchmarks or design standards at time of construction	**Meets accepted industry benchmarks or design standards at time of construction[1]**	**Exceeds accepted industry benchmarks or design standards at time of construction**
Supervision of all Vehicle Tank Filling	Inadequate supervision OR Unattended	Adequate supervision	Continuous supervision
Contingency Plan	No written plan OR Inadequate written plan	Adequate written plan available	Adequate written plan available AND meets standard contingency plan format
Vehicle protection (where applicable)	No vehicle protection (i.e. bollards or equivalent) where tanks are exposed to vehicle traffic		Vehicle protection (*i.e.* bollards or equivalent) in place for tanks exposed to vehicle traffic

Fully and Partially Below Grade Tanks with Capacity > 250 Litres OR Above Grade Tanks with Capacity > 5000 Litres
These tanks are to have been registered with TSSA

[1] Must meet minimum regulatory criteria

THREAT #21A – OUTDOOR CONFINEMENT AREAS AND LIVESTOCK YARDS IN IPZ (> 1.0 NU/ACRE/YEAR)			
Standard or Practice	**Level 1**	**Level 2**	**Level 3**
	Does not meet accepted industry benchmarks or design standards at time of construction	**Meets accepted industry benchmarks or design standards at time of construction[1]**	**Exceeds accepted industry benchmarks or design standards at time of construction**
Containment Barrier			
Runoff Management from OCA or Livestock Yard Facilities	Have not visually inspected OCA or livestock yard base for evidence of leaks, cracks OR Runoff not managed	OCA or livestock yard facility met Ontario design criteria at time of construction AND runoff is managed OR For NMA "phased-in" farms, Facility met Ontario design criteria at time of construction AND runoff is managed in accordance with NMA standards	OCA or livestock yard facility meets current Ontario design criteria AND runoff is contained in accordance with Nutrient Management standards OR OCA or livestock yard facility has been evaluated and met current Ontario design criteria AND runoff is contained in accordance with Nutrient Management standards OR Runoff is prevented through roofing of OCA or livestock yard
Spatial Barrier			
Permanently Vegetated Flow Path to Surface Water – when dry matter produced by livestock in yard/OCA ranges from 30% to 50% (see Nutrient Management Regulation Tables)	< 150 metres flow path	150 flow path to 300 metres total distance	> 300 metres total distance
Permanently Vegetated Flow Path to Surface Water – when dry matter produced by livestock in yard/OCA is > 50% (see Nutrient Management Regulation Tables)	< 50 metres flow path	50 flow path to 300 metres total distance	> 300 metres total distance

[1] Must meet minimum regulatory criteria

THREAT #21A – OUTDOOR CONFINEMENT AREAS AND LIVESTOCK YARDS IN IPZ			
Standard or Practice	**Level 1**	**Level 2**	**Level 3**
	Does not meet accepted industry benchmarks or design standards at time of construction	**Meets accepted industry benchmarks or design standards at time of construction[2]**	**Exceeds accepted industry benchmarks or design standards at time of construction**
Straight-Line Distance to Field Drainage Tile	< 15 metres	15 to 24 metres	> 24 metres OR > 15 metres and equipped with an observation and shutoff station
Contingency Barrier			
Yard Cleaning/Sanitation	Scrape rarely	Scrape weekly	Scrape daily
Contingency Plan	No written plan OR Inadequate written plan	Adequate written plan available	Adequate written plan available AND meets standard contingency plan format
Training of Farm Personnel	No contingency plan training of personnel	Personnel trained on contingency plan	Personnel trained on contingency plan AND refresher training held annually

[2] Must meet minimum regulatory criteria

THREAT #21B – GRAZING AND PASTURING IN IPZ (1.0 NU/ACRE/YEAR OR LESS)[1]			
Standard or Practice	**Level 1**	**Level 2**	**Level 3**
	Does not meet accepted industry benchmarks or design standards at time of application	**Meets accepted industry benchmarks or design standards at time of application [2]**	**Exceeds accepted industry benchmarks or design standards at time of application**
Containment Barrier			
Nutrient Management	No restriction of livestock numbers on pasture OR Do not know the number of nutrient units per acre on pasture	Livestock density on pasture never exceeds 1.0 NU/acre	Livestock density on pasture never exceeds 1 NU/acre AND records kept of livestock numbers and production over the grazing period AND livestock only on pasture during the growing season
Buffer Alongside Surface Water	Buffer < 3 metres	Permanently vegetated buffer = 3 metres	Permanently vegetated buffer > 3 metres
Spatial Barrier			
Livestock Access to Surface Water[3]	No restrictions	Livestock access is evaluated against criteria outlined in Streamside Grazing BMP Booklet. AND access recommendations of manual followed.	Exclusion
Contingency Barrier			
General Inspection of Pasture Areas	Rarely	Monthly and appropriate action taken	Weekly and appropriate action taken
Contingency plan	No written plan OR Inadequate written plan	Adequate written plan available	Adequate written plan available AND meets standard contingency plan format
Training of Farm Personnel	No contingency plan training of personnel	Personnel trained on contingency plan	Personnel trained on contingency plan AND refresher training held annually

[1] Average annual livestock density is calculated as the sum of daily livestock densities divided by 365
[2] Must meet minimum regulatory criteria
[3] Refer to Streamside Grazing BMP Booklet for more details

INFO SHEET FOR THREAT # 3 – APPLICATION OF AGRICULTURAL SOURCE MATERIAL IN WHPA
Additional Information
Questions are not of equal value as related to the prevention of contamination. Not all farm businesses will be able to incorporate all questions e.g. Some horticultural businesses will have difficulty incorporating cover crops in their practice. If this is the case on your property, simply indicate NA (not applicable) and be prepared to justify to the RMO if requested to explain. A NMP, not necessarily prepared using OMAF's NMAN software, but which adheres to nutrient management principles (right place, right time, right amount, right type) is in place
References for Additional Information
Containment Barrier – Control the products by containment
BMP Managing Crop Nutrients - Order from Publications Ontario BMP20 BMP Nutrient Management Planning - Order from Publications Ontario BMP14 BMP Manure Management - Order from Publications Ontario BMP16 BMP Cover Buffer Strips - Order from Publications Ontario BMP15 Nutrient Management (NMAN) Software - http://www.omafra.gov.on.ca/english/nm/nman/default.htm Soil Fertility Handbook - Hard Copy Book – Order from Publications Ontario Fertilizer Recommendation Tables - 2010 Revision - http://www.omafra.gov.on.ca/english/crops/facts/fert-rec-tables-toc.htm Agronomy Guide For Field Crops - Hard Copy Book – Order from Publications Ontario The Corn Nitrogen Calculator - http://www.gocorn.net/v2006/Ncalc/Nitrogen%20Calculator%20-%20GOCorn%203011810.pdf Record Keeping - http://www.omafra.gov.on.ca/english/engineer/facts/06-073.htm Can I Apply Nitrogen In The Fall? - http://www.omafra.gov.on.ca/english/crops/field/news/croptalk/2010/ct-1110a1.htm Using Nutrition to Reduce Nitrogen and Phosphorus Output on Dairy Farms - http://www.omafra.gov.on.ca/english/livestock/dairy/facts/info_reduce_np_output.htm Equipment Maintenance and Calibration Record Form #3: *Advantage Good Agricultural Practices* - http://www.omafra.gov.on.ca/english/food/foodsafety/producers/gapform3.htm Increasing Manure Value With Calibration - http://www.omafra.gov.on.ca/english/crops/field/news/croptalk/2008/ct-0308a4.htm Cover Crops - http://www.omafra.gov.on.ca/english/crops/facts/cover_crops01/covercrops.htm Cover Crops: Choosing a Cover Crop - http://www.omafra.gov.on.ca/english/crops/facts/cover_crops01/choosing.htm Cover Crops: Cover Crop Types -

http://www.omafra.gov.on.ca/english/crops/facts/cover_crops01/cover_types.htm Vegetable Production Recommendations - http://www.omafra.gov.on.ca/english/crops/vegpubs/vegpubs.htm Nursery, Landscape Plant Production & IPM Recommendations - http://www.omafra.gov.on.ca/english/crops/pub383/p383order.htm Turfgrass Management Recommendation - http://www.omafra.gov.on.ca/english/crops/pub384/p384order.htm Guide to Fruit Production - http://www.omafra.gov.on.ca/english/crops/pub360/p360toc.htm Greenhouse Floriculture Production Recommendations for Greenhouse Floriculture - http://www.omafra.gov.on.ca/english/crops/pub370/p370order.htm
Spatial Barrier – Provide protection by separation distance
BMP Managing Crop Nutrients - Order from Publications Ontario BMP20 BMP Water Wells - Order from Publications Ontario BMP12E BMP Nutrient Management Planning - Order from Publications Ontario BMP14 BMP Cropland Drainage - Order from Publications Ontario BMP25 BMP Manure Management - Order from Publications Ontario BMP16
Contingency Barrier – Be prepared for the unexpected
Farm Emergency Plan (2005) - Electronic copy of document to be posted to publicly-accessible website Automatic and Remotely Controlled Shutoff for Direct-Flow Liquid Manure Application Systems - http://www.omafra.gov.on.ca/english/engineer/facts/04-091.htm

INFO SHEET FOR THREAT # 4 – STORAGE OF AGRICULTURAL SOURCE MATERIAL (ASM) IN WHPA
Additional Information Design Criteria – manure storage structures have been built at different times and with different building permit requirements. As long as the structure met the building code requirements at time of construction you have met the level two rating along with the conditions of visual inspection and runoff management if it is solid manure.
References for Additional Information
Containment Barrier – Control the products by containment
BMP Nutrient Management Planning - Order from Publications Ontario BMP14 BMP Manure Management - Order from Publications Ontario BMP16 Nutrient Management (NMAN) Software - http://www.omafra.gov.on.ca/english/nm/nman/default.htm Storage of Liquid Manure - http://www.omafra.gov.on.ca/english/engineer/facts/10-051.htm The Value of Adequate Manure Storage Capacity - http://www.omafra.gov.on.ca/english/nm/newsletter/emn1108a1.htm Constructing a Permanent Concrete or Steel Liquid Nutrient or Runoff Storage Facility - http://www.omafra.gov.on.ca/english/engineer/facts/06-001.htm Constructing Hydraulically Secure Liquid Nutrient Storage Facilities - http://www.omafra.gov.on.ca/english/engineer/facts/06-035.htm Building a Permanent Storage for Solid Manure or Prescribed Materials Over 18% Dry Matter - http://www.omafra.gov.on.ca/english/engineer/facts/05-039.htm Handling Runoff From Solid Agricultural Source Material Storages and Outside Livestock Areas - http://www.omafra.gov.on.ca/english/engineer/facts/10-005.htm Siting Regulations for Manure Storage Facilities - http://www.omafra.gov.on.ca/english/engineer/facts/09-061.htm Site Characterization Study for the Construction of Permanent Nutrient Storage Facilities - http://www.omafra.gov.on.ca/english/engineer/facts/08-049.htm Agricultural Composting Basics - http://www.omafra.gov.on.ca/english/engineer/facts/05-023.htm Manure Composting as a Pathogen Reduction Strategy - http://www.omafra.gov.on.ca/english/engineer/facts/05-021.htm Aeration of Liquid Manure - http://www.omafra.gov.on.ca/english/engineer/facts/04-033.htm
Spatial Barrier – Provide protection by separation distance
BMP Water Wells - Order from Publications Ontario BMP12E

BMP Manure Management - Order from Publications Ontario BMP16 Siting Regulations for Manure Storage Facilities - http://www.omafra.gov.on.ca/english/engineer/facts/09-061.htm Infosheet #17 Manure Use and Management - http://www.ontariosoilcrop.org/docs/EFPInfosheet17.pdf
Contingency Barrier – Be prepared for the unexpected
Nutrient Management Protocol for Ontario Regulation 267/03 Made under the *Nutrient Management Act, 2002* - Part 12: Contingency Planning - http://www.omafra.gov.on.ca/english/nm/regs/nmpro/nmpro12_09.htm BMP Manure Management - Order from Publications Ontario BMP16 Farm Emergency Plan (2005) - Electronic copy of document to be posted to publicly-accessible website

INFO SHEET FOR THREAT # 5 – MANAGEMENT (HANDLING) OF AGRICULTURAL SOURCE MATERIAL IN WHPA

Additional Information

Storage capacity recommendations have changed over time to the present general recommendation of 240 days. If you do not know how many days of storage you have, but you have enough so that you do not have to spread in the winter then place yourself at a level 2 rating.

Volume and Nutrient Reduction as well as clean water control simply recognizes that the less nutrients and less volumes one has to deal with the less potential impact there will be. This is not science based but just related to experience of past situations outside of and within agriculture. Proper containment and management are the primary barriers to any potential contamination event.

References for Additional Information

Containment Barrier – Control the products by containment

BMP Manure Management - Order from Publications Ontario BMP16

Nutrient Management (NMAN) Software - http://www.omafra.gov.on.ca/english/nm/nman/default.htm

The Value of Adequate Manure Storage Capacity - http://www.omafra.gov.on.ca/english/nm/newsletter/emn1108a1.htm

Handling Runoff From Solid Agricultural Source Material Storages and Outside Livestock Areas - http://www.omafra.gov.on.ca/english/engineer/facts/10-005.htm

Feeding Dairy Cattle to Reduce Excess Nitrogen Output - http://www.omafra.gov.on.ca/english/livestock/dairy/facts/03-055.htm

Dietary Phosphorus In Dairy Cattle - How to Manage Nutrients and Protect the Environment - http://www.omafra.gov.on.ca/english/livestock/dairy/facts/04-001.htm

On-Farm Liquid Nutrient Transfer Systems http://www.omafra.gov.on.ca/english/engineer/facts/12-025.pdf

Automatic and Remotely Controlled Shutoff for Direct-Flow Liquid Manure Application Systems http://www.omafra.gov.on.ca/english/engineer/facts/04-091.htm

Siting Regulations for Manure Storage Facilities - http://www.omafra.gov.on.ca/english/engineer/facts/09-061.htm

Spatial Barrier – Provide protection by separation distance

BMP Manure Management - Order from Publications Ontario BMP16

BMP Cropland Drainage - Order from Publications Ontario BMP25

BMP Water Well - Order from Publications Ontario BMP12E

Protecting the Quality of Groundwater Supplies - http://www.omafra.gov.on.ca/english/environment/facts/06-115.htm

Siting Regulations for Manure Storage Facilities - http://www.omafra.gov.on.ca/english/engineer/facts/09-061.htm
Contingency Barrier – Be prepared for the unexpected
Nutrient Management Protocol for Ontario Regulation 267/03 Made under the *Nutrient Management Act, 2002* - Part 12: Contingency Planning - http://www.omafra.gov.on.ca/english/nm/regs/nmpro/nmpro12_09.htm Farm Emergency Plan (2005) - Electronic copy of document to be posted to publicly-accessible website Information about Nutrient Management Training Courses (e.g., NMAN - MSTOR) - http://www.omafra.gov.on.ca/english/nm/cert/training.htm Automatic and Remotely Controlled Shutoff for Direct-Flow Liquid Manure Application Systems http://www.omafra.gov.on.ca/english/engineer/facts/04-091.htm

INFO SHEET FOR THREAT # 6 – APPLICATION OF CATEGORY 1 NON-AGRICULTURAL SOURCE MATERIAL (NASM) IN WHPA

Additional Information

This worksheet applies to Category 1 NASM only - Criteria for identifying and for the land application of Category 1 NASM are stipulated in Ontario Regulation 267/03. Category 2 and 3 NASM are managed through NM legislation.

Some examples of the different categories are:

• Category 1: Unprocessed plant material (e.g. vegetable culls).

• Category 2: Processed plant material (e.g. organic waste materials from a bakery).

• Category 3: Animal-based NASM (e.g. organic residual material from meat processing plant, pulp and paper biosolids and municipal sewage biosolids.

References for Additional Information

Containment Barrier – Control the products by containment

What Farmers Need to Know about Non-Agricultural Source Material (NASM) - http://www.omafra.gov.on.ca/english/nm/nasm/farmers.htm

NMAN3-NASM Software - http://www.omafra.gov.on.ca/english/nm/nman/nman3.htm

Best Management Practices: Application of Municipal Sewage Biosolids to Cropland - Order from Publications Ontario BMP23E

Nutrient Management Tables for Ontario Regulation 267/03 Made under the *Nutrient Management Act, 2002* - September 14, 2009 - http://www.omafra.gov.on.ca/english/nm/regs/nm_tabtc_09.htm

Spatial Barrier – Provide protection by separation distance

Best Management Practices: Application of Municipal Sewage Biosolids to Cropland - Order from Publications Ontario BMP23E

What Farmers Need to Know about Non-Agricultural Source Material (NASM) - http://www.omafra.gov.on.ca/english/nm/nasm/farmers.htm

BMP Water Wells - Order from Publications OntarioBMP12E

Contingency Barrier – Be prepared for the unexpected

Nutrient Management Protocol for Ontario Regulation 267/03 Made under the *Nutrient Management Act, 2002* - Part 12: Contingency Planning - http://www.omafra.gov.on.ca/english/nm/regs/nmpro/nmpro12_09.htm

Best Management Practices: Application of Municipal Sewage Biosolids to Cropland - Order from Publications Ontario BMP23E

Farm Emergency Plan (2005) - Electronic copy of document to be posted to publicly-accessible website

INFO SHEET FOR THREAT # 7 – STORAGE OF CATEGORY 1 NON-AGRICULTURAL SOURCE MATERIAL (NASM) IN WHPA
Additional Information This worksheet applies to Category 1 NASM only - Criteria for identifying and for the land application of Category 1 NASM are stipulated in Ontario Regulation 267/03. Category 2 and 3 NASM are managed through NM legislation. Some examples of the different categories are: • Category 1: Unprocessed plant material (e.g. vegetable culls). • Category 2: Processed plant material (e.g. organic waste materials from a bakery). • Category 3: Animal-based NASM (e.g. organic residual material from meat processing plant, pulp and paper biosolids and municipal sewage biosolids.
References for Additional Information
Containment Barrier – Control the products by containment
What Farmers Need to Know about Non-Agricultural Source Material (NASM) - http://www.omafra.gov.on.ca/english/nm/nasm/farmers.htm NMAN3-NASM Software - http://www.omafra.gov.on.ca/english/nm/nman/nman3.htm Best Management Practices: Application of Municipal Sewage Biosolids to Cropland - Order from Publications Ontario BMP23E
Spatial Barrier – Provide protection by separation distance
BMP Water Wells - Order from Publications Ontario BMP12E Best Management Practices: Application of Municipal Sewage Biosolids to Cropland - Order from Publications Ontario BMP23E What Farmers Need to Know about Non-Agricultural Source Material (NASM) - http://www.omafra.gov.on.ca/english/nm/nasm/farmers.htm
Contingency Barrier – Be prepared for the unexpected
Best Management Practices: Application of Municipal Sewage Biosolids to Cropland - Order from Publications Ontario BMP23E Nutrient Management Protocol for Ontario Regulation 267/03 Made under the *Nutrient Management Act, 2002* - Part 12: Contingency Planning - http://www.omafra.gov.on.ca/english/nm/regs/nmpro/nmpro12_09.htm Information about Nutrient Management Training Courses - http://www.omafra.gov.on.ca/english/nm/cert/training.htm Farm Emergency Plan (2005) - Electronic copy of document to be posted to publicly-accessible website

INFO SHEET FOR THREAT #8 – APPLICATION OF COMMERCIAL FERTILIZER IN WHPA

Additional Information

Questions are not of equal value as related to the prevention of contamination. Not all farm businesses will be able to incorporate all questions e.g. Some horticultural businesses will have difficulty incorporating cover crops in their practice. If this is the case on your property, simply indicate NA (not applicable) and be prepared to justify to the RMO if requested to explain.

Nutrient management plans and record keeping for level 2 for non-phased in farms (less than 300 NU) refers to methods other than NMAN to determine the fertilizer application for each crop and some form of records are kept indicating what was used in prior years but not to the detail or format of the Nutrient Management Standard.

A NMP, not necessarily prepared using OMAF's NMAN software, but which adheres to nutrient management principles (right place, right time, right amount, right type) is in place

References for Additional Information

Containment Barrier – Control the products by containment

BMP Nutrient Management Planning - Order from Publications Ontario BMP14

BMP Managing Crop Nutrients - Order from Publications Ontario BMP20

Nutrient Management (NMAN) Software - http://www.omafra.gov.on.ca/english/nm/nman/default.htm

Soil Fertility and Nutrient Use: Fertilizer Recommendations - http://www.omafra.gov.on.ca/english/crops/pub811/9fertilizer.htm

Fertilizer Recommendation Tables - 2010 Revision - http://www.omafra.gov.on.ca/english/crops/facts/fert-rec-tables-toc.htm

Soil Fertility Handbook - Hard Copy Book – Order from Publications Ontario

Recordkeeping - http://www.omafra.gov.on.ca/english/engineer/facts/06-073.pdf

Equipment Maintenance and Calibration Record Form #3: *Advantage Good Agricultural Practices* - http://www.omafra.gov.on.ca/english/food/foodsafety/producers/gapform3.htm

Cover Crops - http://www.omafra.gov.on.ca/english/crops/facts/cover_crops01/covercrops.htm

Cover Crops: Choosing a Cover Crop - http://www.omafra.gov.on.ca/english/crops/facts/cover_crops01/choosing.htm

Cover Crops: Cover Crop Types - http://www.omafra.gov.on.ca/english/crops/facts/cover_crops01/cover_types.htm

Summer Cover Crop Options - http://www.omafra.gov.on.ca/english/crops/hort/news/hortmatt/2007/15hrt07a3.htm

Agronomy Guide For Field Crops - Hard Copy Book – Order from Publications Ontario

Need Help Selecting a Cover Crop? - Check Out this New On-line Tool - http://www.omafra.gov.on.ca/english/crops/field/news/croptalk/2012/ct-0612a2.ht

Choosing the Right Cover Crop -

http://www.omafra.gov.on.ca/english/crops/hort/news/hortmatt/2007/18hrt07a2.htm Adaptation and Use of Cover Crops - http://www.omafra.gov.on.ca/english/crops/facts/cover_crops01/cover.htm Equipment Maintenance and Calibration Record Form #3: *Advantage Good Agricultural Practices* - http://www.omafra.gov.on.ca/english/food/foodsafety/producers/gapform3.htm Vegetable Production Recommendations - http://www.omafra.gov.on.ca/english/crops/vegpubs/vegpubs.htm Nursery, Landscape Plant Production & IPM Recommendations - http://www.omafra.gov.on.ca/english/crops/pub383/p383order.htm Turfgrass Management Recommendation - http://www.omafra.gov.on.ca/english/crops/pub384/p384order.htm Guide to Fruit Production - http://www.omafra.gov.on.ca/english/crops/pub360/p360toc.htm Greenhouse Floriculture Production Recommendations for Greenhouse Floriculture - http://www.omafra.gov.on.ca/english/crops/pub370/p370order.htm
Spatial Barrier – Provide protection by separation distance
BMP Managing Crop Nutrients - Order from Publications Ontario BMP20 BMP Nutrient Management Planning - Order from Publications Ontario BMP14 BMP Water Management - Order from Publications Ontario BMP07E BMP Water Wells - Order from Publications Ontario BMP12E
Contingency Barrier – Be prepared for the unexpected
Farm Emergency Plan (2005) - Electronic copy of document to be posted to publicly-accessible website EFP Infosheet #4 Fertilizer Handling and Storage - http://www.ontariosoilcrop.org/docs/EFPInfosheet4.pdf

INFO SHEET FOR THREAT #9 – HANDLING AND STORAGE OF COMMERCIAL FERTILIZER IN WHPA
Additional Information This worksheet only needs to be done if you store more than 2500kg of fertilizer (liquid or solid) longer than the current growing season. If you buy fertilizer as you need it, and do not store fertilizer, then simply check off NA box and be prepared to explain to RMO. Even though you may not need to do the worksheet, there are good management tips and reminders for you within the worksheet and info sheet.
References for Additional Information
Containment Barrier – Control the products by containment
BMP Water Management - Order from Publications Ontario BMP07E EFP Infosheet #4 Fertilizer Handling and Storage - http://www.ontariosoilcrop.org/docs/EFPInfosheet4.pd
Spatial Barrier – Provide protection by separation distance
EFP Infosheet #4 Fertilizer Handling and Storage - http://www.ontariosoilcrop.org/docs/EFPInfosheet4.pd BMP Water Wells - Order from Publications Ontario BMP12E BMP Water Management - Order from Publications Ontario BMP07E
Contingency Barrier – Be prepared for the unexpected
Farm Emergency Plan (2005) - Electronic copy of document to be posted to publicly-accessible website EFP Infosheet #4 Fertilizer Handling and Storage - http://www.ontariosoilcrop.org/docs/EFPInfosheet4.pdf BMP Water Wells - Order from Publications Ontario BMP12E BMP Water Management - Order from Publications Ontario BMP07E

INFO SHEET FOR THREAT #10 – APPLICATION OF PESTICIDE IN WHPA

Additional Information

Not all pesticides are included. If you do not have any of the pesticides listed at the top of worksheet page, you do not have to do the worksheet. Simply Mark the NA (not applicable box) and list reason for not applicable status.

References for Additional Information

Containment Barrier – Control the products by containment

BMP – Pesticide Storage, Handling and Application – Order from Publications Ontario BMP13

BMP– Integrated Pest Management - Order from Publications Ontario BMP09E

Using Pesticides in Ontario **-** http://www.omafra.gov.on.ca/english/crops/resource/using-pesticides.htm

Product Label Information - http://pr-rp.hc-sc.gc.ca/ls-re/index-eng.php

Ways to Avoid Pesticide Spills - http://www.omafra.gov.on.ca/english/engineer/facts/96-025.htm

Crop Protection Guide for Greenhouse Vegetables - http://www.omafra.gov.on.ca/english/crops/pub835/p835order.htm

Pesticide Drift from Ground Applications - http://www.omafra.gov.on.ca/english/crops/facts/11-001.htm#equip

Publication 360, Guide to Fruit Production: Pesticide Application - http://www.omafra.gov.on.ca/english/crops/pub360/p360toc10.htm

Adjusting, Maintaining and Cleaning Airblast Sprayers - http://www.omafra.gov.on.ca/english/crops/facts/10-069.htm

OMAFRA Sprayer Calibration Calculator - http://www.omafra.gov.on.ca/english/crops/sprayer/ep75.htm

Grower Pesticide Safety Course Manual - http://www.opep.ca./index.cfm/learning-resources/farmers-learn-by-chapter/

Using Pesticides in Ontario - http://www.omafra.gov.on.ca/english/crops/resource/using-pesticides.htm

Certification and Training Requirements - http://www.omafra.gov.on.ca/english/crops/resource/using-pesticides.htm#certification

Spatial Barrier – Provide protection by separation distance

Using Pesticides in Ontario **-** http://www.omafra.gov.on.ca/english/crops/resource/using-pesticides.htm

Product Label Information - http://pr-rp.hc-sc.gc.ca/ls-re/index-eng.php

BMP – Pesticide Storage, Handling and Application - Order from Publications Ontario BMP13

BMP Water Wells - Order from Publications Ontario BMP12E

BMP - Water Management - Order from Publications Ontario BMP07
Contingency Barrier – Be prepared for the unexpected
Ways to Avoid Pesticide Spills - http://www.omafra.gov.on.ca/english/engineer/facts/96-025.htm BMP – Pesticide Storage, Handling and Application – Order from Publications Ontario BMP13 BMP – Water Management – Order from Publications Ontario BMP07 Pesticide Contamination of Farm Water Supplies Recommendations - http://www.omafra.gov.on.ca/english/engineer/facts/10-097.htmns Pesticide Application and Safety - http://www.omafra.gov.on.ca/english/crops/resource/pesticid.htm Grower Pesticide Safety Course Manual - http://www.opep.ca./index.cfm/learning-resources/farmers-learn-by-chapter/ EFP Infosheet #20 Pest Management - http://www.ontariosoilcrop.org/docs/EFPInfosheet20.pdf EFP Infosheet #18 Horticultural Production - http://www.ontariosoilcrop.org/docs/EFPInfosheet18.pdf Farm Emergency Plan (2005) - Electronic copy of document to be posted to publicly-accessible website

INFO SHEET FOR THREAT #11 – HANDLING AND STORAGE OF PESTICIDE IN WHPA

Additional Information

Not all pesticides are included. If you do not have any of the pesticides listed at the top of worksheet page or if you do not store more than 250 kg. of any of the listed pesticides or you do not store pesticides for longer than the growing season when they are used, you do not have to do the worksheet. Simply Mark the NA (not applicable box) and list reason for not applicable status.

References for Additional Information

Containment Barrier – Control the products by containment

BMP – Pesticide Storage, Handling and Application – Order from Publications Ontario BMP13

Using Pesticides in Ontario **-** http://www.omafra.gov.on.ca/english/crops/resource/using-pesticides.htm

Farm Pesticide Storage Facility - http://www.omafra.gov.on.ca/english/engineer/facts/11-005.pdf

Product Label Information - http://pr-rp.hc-sc.gc.ca/ls-re/index-eng.php

Info sheet #3 Pesticide Handling and Storage - Disposal of sprayer and container rinsate (rinse water) http://www.omafra.gov.on.ca/english/environment/efp/infosheet_3.htm#disposal

BMP Water Management – Order from Publications Ontario BMP07

Pesticide Handling and Storage – Pesticide Storage http://www.omafra.gov.on.ca/english/environment/efp/infosheet_3.htm#storage

Spatial Barrier – Provide protection by separation distance

Using Pesticides in Ontario **-** http://www.omafra.gov.on.ca/english/crops/resource/using-pesticides.htm

Product Label Information - http://pr-rp.hc-sc.gc.ca/ls-re/index-eng.php

BMP – Pesticide Storage, Handling and Application - Order from Publications Ontario BMP13

BMP Water Wells - Order from Publications Ontario BMP11E

BMP - Water Management - Order from Publications Ontario BMP07

Contingency Barrier – Be prepared for the unexpected

Ways to Avoid Pesticide Spills - http://www.omafra.gov.on.ca/english/engineer/facts/96-025.htmBMP – Pesticide Storage, Handling and Application – Order from Publications Ontario BMP13

BMP – Water Management – Order from Publications Ontario BMP07

Pesticide Contamination of Farm Water Supplies Recommendations - http://www.omafra.gov.on.ca/english/engineer/facts/10-097.htmns

Grower Pesticide Safety Course Manual - http://www.opep.ca./index.cfm/learning-resources/farmers-learn-by-chapter/

Info sheet #20 Pest Management - http://www.ontariosoilcrop.org/docs/EFPInfosheet20.pdf

INFO SHEET FOR THREAT #15A – HANDLING AND STORAGE OF HEATING FUEL (FUEL OILS) IN WHPA

Additional Information

This worksheet applies to heating fuel tanks such as used for oil furnaces in the house, machine shop etc. It also includes diesel fuel tanks directly connected to motors used for powering generators etc.

This worksheet only applies to Above Grade Tanks with Capacity > 2500 Litres but < 5000 Litres. For smaller tanks simply check off NA box. For larger than 5000 litre tanks and tanks partially or totally below ground, there is already mandatory legislation in place requiring registration with TSSA and again check off NA box and make note of tanks size.

In some cases fuel tank is owned by fuel supplier and some arrangement for rental or lease is made with you for its use. Both owner and user have responsibilities on installation and safe use of the facility. How it will be dealt with by the RMO is not yet known and may vary with municipality. Advise RMO of ownership for clarification of next steps.

References for Additional Information

Containment Barrier – Control the products by containment

BMP - Water Management - Order from Publications Ontario BMP07

EFP Infosheet #5 Storage of Petroleum Products - http://www.ontariosoilcrop.org/docs/EFPInfosheet5.pdf

Domestic Heating Oil Tank System Checkup - http://www.gov.ns.ca/nse/petroleum/docs/DomesticOilTankChecklist.pdf

Protection Against Vehicular Traffic R2 http://www.tssa.org/corplibrary/ArticleFile.asp?Instance=136&ID=96325CB837DC11E2B4B11D39C73CD67E

Spatial Barrier – Provide protection by separation distance

BMP - Water Management - Order from Publications Ontario BMP07

BMP Water Wells - Order from Publications Ontario BMP12E

EFP Infosheet #5 Storage of Petroleum Products - http://www.ontariosoilcrop.org/docs/EFPInfosheet5.pdf

Contingency Barrier – Be prepared for the unexpected

Farm Emergency Plan (2005) - Electronic copy of document to be posted to publicly-accessible website

Guideline For Incident Reporting Criteria For Hydrocarbon Fuels Industry

http://www.tssa.org/CorpLibrary/ArticleFile.asp?Instance=136&ID=49B703A8241A42E9A362740275B35B56

EFP Infosheet #5 Storage of Petroleum Products - http://www.ontariosoilcrop.org/docs/EFPInfosheet5.pdf

BMP - Water Management - Order from Publications Ontario BMP07

INFO SHEET FOR THREAT #15B – HANDLING AND STORAGE OF MOTOR FUEL (LIQUID FUELS – GASOLINE OR DIESEL) IN WHPA

Additional Information

This worksheet applies liquid fuels used in cars, trucks, and tractors. Includes both diesel and gasoline.

This worksheet only applies to Above Grade Tanks with Capacity > 2500 Litres but < 5000 Litres. For smaller tanks simply check off NA box. For larger than 5000 litre tanks and tanks partially or totally below ground, there is already mandatory legislation in place requiring registration with TSSA and again check off NA box and make note of tanks size.

In some cases, the fuel tank is owned by fuel supplier and some arrangement for rental or lease is made with farmer for its use. Both owner and user have responsibilities on installation and safe use of the facility. How it will be dealt with by the RMO is not yet known and may vary with municipality. Advise RMO of ownership for clarification of next steps.

References for Additional Information

Containment Barrier – Control the products by containment

BMP - Water Management - Order from Publications Ontario BMP07

EFP Infosheet #5 Storage of Petroleum Products - http://www.ontariosoilcrop.org/docs/EFPInfosheet5.pdf

Protection Against Vehicular Traffic R2
http://www.tssa.org/corplibrary/ArticleFile.asp?Instance=136&ID=96325CB837DC11E2B4B11D39C73CD67E

Spatial Barrier – Provide protection by separation distance

BMP - Water Management - Order from Publications Ontario BMP07

BMP - Water Wells - Order from Publications Ontario BMP12E

EFP Infosheet #5 Storage of Petroleum Products - http://www.ontariosoilcrop.org/docs/EFPInfosheet5.pdf

Contingency Barrier – Be prepared for the unexpected

Farm Emergency Plan (2005) - Electronic copy of document to be posted to publicly-accessible website

Guideline For Incident Reporting Criteria For Hydrocarbon Fuels Industry

http://www.tssa.org/CorpLibrary/ArticleFile.asp?Instance=136&ID=49B703A8241A42E9A362740275B35B56

EFP Infosheet #5 Storage of Petroleum Products - http://www.ontariosoilcrop.org/docs/EFPInfosheet5.pdf

INFO SHEET FOR THREAT # 21A – OUTDOOR CONFINEMENT AREAS (OCA) AND LIVESTOCK YARDS (>1.0 NU/ACRE/YEAR) IN WHPA

Additional Information

This worksheet is for outdoor confinement areas and livestock yard where the livestock density is greater than 1.0 nutrient units per acre of accessible area. If the density is less than that, then go to worksheet 21B Grazing and Pasturing (<1.0 NU/acre) in IPZ.

"Runoff is managed" at level 2 refers to attempt to manage how much runoff there is and what direction it goes (away from water wells). In some cases, walls are used to contain some of the runoff etc. Full control is level 3.

Design Criteria –structures have been built at different times and with different building permit requirements. As long as the structure met the building code requirements at time of construction you have met the level two rating along with the condition of managing the runoff.

References for Additional Information

Containment Barrier – Control the products by containment

Nutrient Management Protocol for Ontario Regulation 267/03 Made under the *Nutrient Management Act, 2002* - Part 3: Nutrient Units - http://www.omafra.gov.on.ca/english/nm/regs/nmpro/nmpro03_09.htm

BMP Manure Management - Order from Publications Ontario BMP16

Managing Outdoor Confinement Areas and Livestock Yards - http://www.omafra.gov.on.ca/english/engineer/facts/11-007.htm

Handling Runoff From Solid Agricultural Source Material Storages and Outside Livestock Areas - http://www.omafra.gov.on.ca/english/engineer/facts/10-005.htm

Nutrient Management Act, 2002: Handling Runoff From Solid Agricultural Source Material Storages and Outside Livestock Areas - http://www.omafra.gov.on.ca/english/engineer/facts/10-005.htm

EFP Infosheet #9 Livestock Yards and Outdoor Confinement Areas - http://www.ontariosoilcrop.org/docs/EFPInfosheet9.pdf

Building Permit Requirements for Livestock Operations - http://www.omafra.gov.on.ca/english/engineer/facts/07-063.htm

Constructing a Permanent Concrete or Steel Liquid Nutrient or Runoff Storage Facility - http://www.omafra.gov.on.ca/english/engineer/facts/06-001.htm

Constructing an Earthen Liquid Nutrient or Runoff Storage Facility - http://www.omafra.gov.on.ca/english/engineer/facts/06-005.htm

Siting Regulations for Manure Storage Facilities - http://www.omafra.gov.on.ca/english/engineer/facts/09-061.htm

Spatial Barrier – Provide protection by separation distance

BMP Manure Management - Order from Publications Ontario BMP16

BMP Water Wells - Order from Publications Ontario BMP12E

Managing Outdoor Confinement Areas and Livestock Yards - http://www.omafra.gov.on.ca/english/engineer/facts/11-007.htm Siting Regulations for Manure Storage Facilities - http://www.omafra.gov.on.ca/english/engineer/facts/09-061.htm EFP Infosheet #9 Livestock Yards and Outdoor Confinement Areas (OCAs) - http://www.ontariosoilcrop.org/docs/EFPInfosheet9.pdf
Contingency Barrier – Be prepared for the unexpected
Nutrient Management Protocol for Ontario Regulation 267/03 Made under the *Nutrient Management Act, 2002* - Part 12: Contingency Planning - http://www.omafra.gov.on.ca/english/nm/regs/nmpro/nmpro12_09.htm BMP Manure Management - Order from Publications Ontario BMP16 Farm Emergency Plan (2005) - Electronic copy of document to be posted to publicly-accessible website

INFO SHEET FOR THREAT # 21B – GRAZING AND PASTURING (< 1.0 NU/ACRE/YEAR) IN WHPA
Additional Information
This worksheet deals with issues related to general pasturing where there is a livestock density less than 1.0 NU per acre. All wellheads need to be properly maintained e.g. land slope away from wellhead, well cap in place and secure etc.
References for Additional Information
Containment Barrier – Control the products by containment
Nutrient Management Protocol for Ontario Regulation 267/03 Made under the *Nutrient Management Act, 2002* - Part 3: Nutrient Units - http://www.omafra.gov.on.ca/english/nm/regs/nmpro/nmpro03_09.htm Nutrient Management (NMAN) Software - http://www.omafra.gov.on.ca/english/nm/nman/default.htm Grazing Management - http://www.omafra.gov.on.ca/english/crops/pub19/4grazman.htm#fg Rotational Grazing in Extensive Pastures - http://www.ontariosoilcrop.org/docs/rotational_grazing_in_extensive_pastures.sm.pdf Pasture Production - http://www.omafra.gov.on.ca/english/crops/pub19/pub19toc.htm Farm Fencing Systems - http://www.omafra.gov.on.ca/english/engineer/facts/08-035.htm
Spatial Barrier – Provide protection by separation distance
BMP Water Wells - Order from Publications Ontario BMP12E Private Rural Water Supplies - http://www.omafra.gov.on.ca/english/environment/facts/06-117.htm Protecting the Quality of Groundwater Supplies - http://www.omafra.gov.on.ca/english/environment/facts/06-115.htm
Contingency Barrier – Be prepared for the unexpected
Nutrient Management Protocol for Ontario Regulation 267/03 Made under the *Nutrient Management Act, 2002* - Part 12: Contingency Planning - http://www.omafra.gov.on.ca/english/nm/regs/nmpro/nmpro12_09.htm Farm Emergency Plan (2005) - Electronic copy of document to be posted to publicly-accessible website Grazing Mentorship Program - http://www.omafra.gov.on.ca/english/crops/field/news/croptalk/2007/ct-0907a2.htm

INFO SHEET FOR THREAT # 3 – APPLICATION OF AGRICULTURAL SOURCE MATERIAL IN IPZ
Additional Information Questions are not of equal value as related to the prevention of contamination. Not all farm businesses will be able to incorporate all questions e.g. Some horticultural businesses will have difficulty incorporating cover crops in their practice. If this is the case on your property, simply indicate NA (not applicable) and be prepared to justify to the RMO if requested to explain. A NMP, not necessarily prepared using OMAF's NMAN software, but which adheres to nutrient management principles (right place, right time, right amount, right type) is in place
References for Additional Information
Containment Barrier – Control the products by containment
BMP for Phosphorous - Hard Copy – Order from Publications Ontario BMP24 BMP Managing Crop Nutrients - Order from Publications Ontario BMP20 BMP Nutrient Management Planning - Order from Publications Ontario BMP14 BMP Manure Management - Order from Publications Ontario BMP16 BMP Cover Buffer Strips - Order from Publications Ontario BMP15 Nutrient Management (NMAN) Software - http://www.omafra.gov.on.ca/english/nm/nman/default.htm Soil Fertility Handbook - Hard Copy Book – Order from Publications Ontario Fertilizer Recommendation Tables - 2010 Revision - http://www.omafra.gov.on.ca/english/crops/facts/fert-rec-tables-toc.htm Agronomy Guide For Field Crops - Hard Copy Book – Order from Publications Ontario The Corn Nitrogen Calculator - http://www.gocorn.net/v2006/Ncalc/Nitrogen%20Calculator%20-%20GOCorn%203011810.pdf Record Keeping - http://www.omafra.gov.on.ca/english/engineer/facts/06-073.htm Can I Apply Nitrogen In The Fall? - http://www.omafra.gov.on.ca/english/crops/field/news/croptalk/2010/ct-1110a1.htm Using Nutrition to Reduce Nitrogen and Phosphorus Output on Dairy Farms - http://www.omafra.gov.on.ca/english/livestock/dairy/facts/info_reduce_np_output.htm Equipment Maintenance and Calibration Record Form #3: *Advantage Good Agricultural Practices* - http://www.omafra.gov.on.ca/english/food/foodsafety/producers/gapform3.htm Increasing Manure Value With Calibration - http://www.omafra.gov.on.ca/english/crops/field/news/croptalk/2008/ct-0308a4.htm Cover Crops - http://www.omafra.gov.on.ca/english/crops/facts/cover_crops01/covercrops.htm Cover Crops: Choosing a Cover Crop - http://www.omafra.gov.on.ca/english/crops/facts/cover_crops01/choosing.htm Cover Crops: Cover Crop Types - http://www.omafra.gov.on.ca/english/crops/facts/cover_crops01/cover_types.htm

Vegetable Production Recommendations - http://www.omafra.gov.on.ca/english/crops/vegpubs/vegpubs.htm Nursery, Landscape Plant Production & IPM Recommendations - http://www.omafra.gov.on.ca/english/crops/pub383/p383order.htm Turfgrass Management Recommendation - http://www.omafra.gov.on.ca/english/crops/pub384/p384order.htm Guide to Fruit Production - http://www.omafra.gov.on.ca/english/crops/pub360/p360toc.htm Greenhouse Floriculture Production Recommendations for Greenhouse Floriculture - http://www.omafra.gov.on.ca/english/crops/pub370/p370order.htm
Spatial Barrier – Provide protection by separation distance
BMP Nutrient Management Planning - Order from Publications Ontario BMP14 BMP Cropland Drainage - Order from Publications Ontario BMP25 BMP Manure Management - Order from Publications Ontario BMP16 Automatic and Remotely Controlled Shutoff for Direct-Flow Liquid Manure Application Systems - http://www.omafra.gov.on.ca/english/engineer/facts/04-091.htm
Contingency Barrier – Be prepared for the unexpected
Farm Emergency Plan (2005) - Electronic copy of document to be posted to publicly-accessible website

INFO SHEET FOR THREAT # 4 – STORAGE OF AGRICULTURAL SOURCE MATERIAL (ASM) IN IPZ

Additional Information

Design Criteria – manure storage structures have been built at different times and with different building permit requirements. As long as the structure met the building code requirements at time of construction you have met the level two rating along with the conditions of visual inspection and runoff management if it is solid manure.

Distance to Surface Water - flowpath distance is the distance as the water travels to reach the destination surface water not the straight line distance.

References for Additional Information

Containment Barrier – Control the products by containment

BMP Nutrient Management Planning - Order from Publications Ontario BMP14

BMP Manure Management - Order from Publications Ontario BMP16

Nutrient Management (NMAN) Software - http://www.omafra.gov.on.ca/english/nm/nman/default.htm

Storage of Liquid Manure - http://www.omafra.gov.on.ca/english/engineer/facts/10-051.htm

The Value of Adequate Manure Storage Capacity - http://www.omafra.gov.on.ca/english/nm/newsletter/emn1108a1.htm

Constructing a Permanent Concrete or Steel Liquid Nutrient or Runoff Storage Facility - http://www.omafra.gov.on.ca/english/engineer/facts/06-001.htm

Constructing Hydraulically Secure Liquid Nutrient Storage Facilities - http://www.omafra.gov.on.ca/english/engineer/facts/06-035.htm

Building a Permanent Storage for Solid Manure or Prescribed Materials Over 18% Dry Matter - http://www.omafra.gov.on.ca/english/engineer/facts/05-039.htm

Handling Runoff From Solid Agricultural Source Material Storages and Outside Livestock Areas - http://www.omafra.gov.on.ca/english/engineer/facts/10-005.htm

Siting Regulations for Manure Storage Facilities - http://www.omafra.gov.on.ca/english/engineer/facts/09-061.htm

Site Characterization Study for the Construction of Permanent Nutrient Storage Facilities - http://www.omafra.gov.on.ca/english/engineer/facts/08-049.htm

Agricultural Composting Basics - http://www.omafra.gov.on.ca/english/engineer/facts/05-023.htm

Manure Composting as a Pathogen Reduction Strategy - http://www.omafra.gov.on.ca/english/engineer/facts/05-021.htm

Aeration of Liquid Manure - http://www.omafra.gov.on.ca/english/engineer/facts/04-033.htm

Spatial Barrier – Provide protection by separation distance

BMP Manure Management - Order from Publications Ontario BMP16

Siting Regulations for Manure Storage Facilities - http://www.omafra.gov.on.ca/english/engineer/facts/09-061.htm Infosheet #17 Manure Use and Management - http://www.ontariosoilcrop.org/docs/EFPInfosheet17.pdf
Contingency Barrier – Be prepared for the unexpected
Nutrient Management Protocol for Ontario Regulation 267/03 Made under the *Nutrient Management Act, 2002* - Part 12: Contingency Planning - http://www.omafra.gov.on.ca/english/nm/regs/nmpro/nmpro12_09.htm BMP Manure Management - Order from Publications Ontario BMP16 Farm Emergency Plan (2005) - Electronic copy of document to be posted to publicly-accessible websitea

INFO SHEET FOR THREAT # 5 – MANAGEMENT (HANDLING) OF AGRICULTURAL SOURCE MATERIAL IN IPZ

Additional Information

Distance to surface water can be straight line distance or liquid flowpath distance. Straight line distance is easier to measure. Flowpath is the distance required under the Nutrient Management Act which applies to larger operations as set out by the Act and new structures.

Volume and Nutrient Reduction as well as clean water control simply recognizes that the less nutrients and less volumes one has to deal with the less potential impact there will be. This is not science based but just related to experience of past situations outside of and within agriculture. Proper containment and management are the primary barriers to any potential contamination event.

References for Additional Information

Containment Barrier – Control the products by containment

BMP Manure Management - Order from Publications Ontario BMP16

Nutrient Management (NMAN) Software - http://www.omafra.gov.on.ca/english/nm/nman/default.htm

The Value of Adequate Manure Storage Capacity - http://www.omafra.gov.on.ca/english/nm/newsletter/emn1108a1.htm

Handling Runoff From Solid Agricultural Source Material Storages and Outside Livestock Areas - http://www.omafra.gov.on.ca/english/engineer/facts/10-005.htm

Feeding Dairy Cattle to Reduce Excess Nitrogen Output - http://www.omafra.gov.on.ca/english/livestock/dairy/facts/03-055.htm

Dietary Phosphorus In Dairy Cattle - How to Manage Nutrients and Protect the Environment - http://www.omafra.gov.on.ca/english/livestock/dairy/facts/04-001.htm

On-Farm Liquid Nutrient Transfer Systems http://www.omafra.gov.on.ca/english/engineer/facts/12-025.pdf

Automatic and Remotely Controlled Shutoff for Direct-Flow Liquid Manure Application Systems http://www.omafra.gov.on.ca/english/engineer/facts/04-091.htm

Siting Regulations for Manure Storage Facilities - http://www.omafra.gov.on.ca/english/engineer/facts/09-061.htm

Spatial Barrier – Provide protection by separation distance

BMP Manure Management - Order from Publications Ontario BMP16

BMP Cropland Drainage - Order from Publications Ontario BMP25

Siting Regulations for Manure Storage Facilities - http://www.omafra.gov.on.ca/english/engineer/facts/09-061.htm

Contingency Barrier – Be prepared for the unexpected
Nutrient Management Protocol for Ontario Regulation 267/03 Made under the *Nutrient Management Act, 2002* - Part 12: Contingency Planning - http://www.omafra.gov.on.ca/english/nm/regs/nmpro/nmpro12_09.htm Farm Emergency Plan (2005) - Electronic copy of document to be posted to publicly-accessible website Information about Nutrient Management Training Courses (e.g., NMAN - MSTOR) - http://www.omafra.gov.on.ca/english/nm/cert/training.htm

INFO SHEET FOR THREAT # 6 – APPLICATION OF CATEGORY 1 NON-AGRICULTURAL SOURCE MATERIAL (NASM) IN IPZ

Additional Information

This worksheet applies to Category 1 NASM only - Criteria for identifying and for the land application of Category 1 NASM are stipulated in Ontario Regulation 267/03. Category 2 and 3 NASM are managed through NM legislation.

Some examples of the different categories are:

- Category 1: Unprocessed plant material (e.g. vegetable culls).
- Category 2: Processed plant material (e.g. organic waste materials from a bakery).
- Category 3: Animal-based NASM (e.g. organic residual material from meat processing plant, pulp and paper biosolids and municipal sewage biosolids

References for Additional Information

Containment Barrier – Control the products by containment

What Farmers Need to Know about Non-Agricultural Source Material (NASM) - http://www.omafra.gov.on.ca/english/nm/nasm/farmers.htm

NMAN3-NASM Software - http://www.omafra.gov.on.ca/english/nm/nman/nman3.htm

Best Management Practices: Application of Municipal Sewage Biosolids to Cropland - Order from Publications Ontario BMP23E

Nutrient Management Tables for Ontario Regulation 267/03 Made under the *Nutrient Management Act, 2002* - September 14, 2009 - http://www.omafra.gov.on.ca/english/nm/regs/nm_tabtc_09.htm

Spatial Barrier – Provide protection by separation distance

Best Management Practices: Application of Municipal Sewage Biosolids to Cropland - Order from Publications Ontario BMP23E

What Farmers Need to Know about Non-Agricultural Source Material (NASM) - http://www.omafra.gov.on.ca/english/nm/nasm/farmers.htm

Contingency Barrier – Be prepared for the unexpected

Nutrient Management Protocol for Ontario Regulation 267/03 Made under the *Nutrient Management Act, 2002* - Part 12: Contingency Planning - http://www.omafra.gov.on.ca/english/nm/regs/nmpro/nmpro12_09.htm

Best Management Practices: Application of Municipal Sewage Biosolids to Cropland - Order from Publications Ontario BMP23E

Farm Emergency Plan (2005) - Electronic copy of document to be posted to publicly-accessible website

INFO SHEET FOR THREAT # 7 – STORAGE OF CATEGORY 1 NON-AGRICULTURAL SOURCE MATERIAL (NASM) IN IPZ

Additional Information

This worksheet applies to Category 1 NASM only - Criteria for identifying and for the land application of Category 1 NASM are stipulated in Ontario Regulation 267/03. Category 2 and 3 NASM are managed through NM legislation.

Some examples of the different categories are:

• Category 1: Unprocessed plant material (e.g. vegetable culls).

• Category 2: Processed plant material (e.g. organic waste materials from a bakery).

• Category 3: Animal-based NASM (e.g. organic residual material from meat processing plant, pulp and paper biosolids and municipal sewage biosolids.

References for Additional Information

Containment Barrier – Control the products by containment

What Farmers Need to Know about Non-Agricultural Source Material (NASM) - http://www.omafra.gov.on.ca/english/nm/nasm/farmers.htm

NMAN3-NASM Software - http://www.omafra.gov.on.ca/english/nm/nman/nman3.htm

Best Management Practices: Application of Municipal Sewage Biosolids to Cropland - Order from Publications Ontario BMP23E

Spatial Barrier – Provide protection by separation distance

Best Management Practices: Application of Municipal Sewage Biosolids to Cropland - Order from Publications Ontario BMP23E

What Farmers Need to Know about Non-Agricultural Source Material (NASM) - http://www.omafra.gov.on.ca/english/nm/nasm/farmers.htm

Contingency Barrier – Be prepared for the unexpected

Best Management Practices: Application of Municipal Sewage Biosolids to Cropland - Order from Publications Ontario BMP23E

Nutrient Management Protocol for Ontario Regulation 267/03 Made under the *Nutrient Management Act, 2002* - Part 12: Contingency Planning - http://www.omafra.gov.on.ca/english/nm/regs/nmpro/nmpro12_09.htm

Information about Nutrient Management Training Courses - http://www.omafra.gov.on.ca/english/nm/cert/training.htm

Farm Emergency Plan (2005) - Electronic copy of document to be posted to publicly-accessible website

INFO SHEET FOR THREAT #8 – APPLICATION OF COMMERCIAL FERTILIZER IN IPZ

Additional Information

Questions are not of equal value as related to the prevention of contamination. Not all farm businesses will be able to incorporate all questions e.g. Some horticultural businesses will have difficulty incorporating cover crops in their practice. If this is the case on your property, simply indicate NA (not applicable) and be prepared to justify to the RMO if requested to explain.

Nutrient management plans and record keeping for level 2 for non-phased in farms (less than 300 NU) refers to methods other than NMAN to determine the fertilizer application for each crop and some form of records are kept indicating what was used in prior years but not to the detail or format of the Nutrient Management Standard.

A NMP, not necessarily prepared using OMAF's NMAN software, but which adheres to nutrient management principles (right place, right time, right amount, right type) is in place

References for Additional Information

Containment Barrier – Control the products by containment

BMP for Phosphorous - Hard Copy – Order from Publications Ontario BMP24

BMP Managing Crop Nutrients - Order from Publications Ontario BMP20

BMP Nutrient Management Planning - Order from Publications Ontario BMP14

Nutrient Management (NMAN) Software - http://www.omafra.gov.on.ca/english/nm/nman/default.htm

Soil Fertility and Nutrient Use: Fertilizer Recommendations - http://www.omafra.gov.on.ca/english/crops/pub811/9fertilizer.htm

Fertilizer Recommendation Tables - 2010 Revision - http://www.omafra.gov.on.ca/english/crops/facts/fert-rec-tables-toc.htm

Soil Fertility Handbook - Hard Copy Book – Order from Publications Ontario

Recordkeeping - http://www.omafra.gov.on.ca/english/engineer/facts/06-073.pdf

Equipment Maintenance and Calibration Record Form #3: *Advantage Good Agricultural Practices* - http://www.omafra.gov.on.ca/english/food/foodsafety/producers/gapform3.htm

Cover Crops - http://www.omafra.gov.on.ca/english/crops/facts/cover_crops01/covercrops.htm

Cover Crops: Choosing a Cover Crop - http://www.omafra.gov.on.ca/english/crops/facts/cover_crops01/choosing.htm

Cover Crops: Cover Crop Types - http://www.omafra.gov.on.ca/english/crops/facts/cover_crops01/cover_types.htm

Agronomy Guide For Field Crops - Hard Copy Book – Order from Publications Ontario

Need Help Selecting a Cover Crop? - Check Out this New On-line Tool - http://www.omafra.gov.on.ca/english/crops/field/news/croptalk/2012/ct-0612a2.ht

Choosing the Right Cover Crop - http://www.omafra.gov.on.ca/english/crops/hort/news/hortmatt/2007/18hrt07a2.htm Adaptation and Use of Cover Crops - http://www.omafra.gov.on.ca/english/crops/facts/cover_crops01/cover.htm BMP Cover Buffer Strips - Order from Publications Ontario BMP15 Equipment Maintenance and Calibration Record Form #3: *Advantage Good Agricultural Practices* - http://www.omafra.gov.on.ca/english/food/foodsafety/producers/gapform3.htm Vegetable Production Recommendations - http://www.omafra.gov.on.ca/english/crops/vegpubs/vegpubs.htm Nursery, Landscape Plant Production & IPM Recommendations - http://www.omafra.gov.on.ca/english/crops/pub383/p383order.htm Turfgrass Management Recommendation - http://www.omafra.gov.on.ca/english/crops/pub384/p384order.htm Guide to Fruit Production - http://www.omafra.gov.on.ca/english/crops/pub360/p360toc.htm Greenhouse Floriculture Production Recommendations for Greenhouse Floriculture - http://www.omafra.gov.on.ca/english/crops/pub370/p370order.htm
Spatial Barrier – Provide protection by separation distance
BMP Managing Crop Nutrients - Order from Publications Ontario BMP20 BMP Nutrient Management Planning - Order from Publications Ontario BMP14 BMP Water Management - Order from Publications Ontario BMP07E
Contingency Barrier – Be prepared for the unexpected
Farm Emergency Plan (2005) - Electronic copy of document to be posted to publicly-accessible website EFP Infosheet #4 Fertilizer Handling and Storage - http://www.ontariosoilcrop.org/docs/EFPInfosheet4.pdf

INFO SHEET FOR THREAT #9 – HANDLING AND STORAGE OF COMMERCIAL FERTILIZER IN IPZ
Additional Information This worksheet only needs to be done if you store more than 2500kg of fertilizer (liquid or solid) longer than the current growing season. If you buy fertilizer as you need it, and do not store fertilizer, then simply check off NA box and be prepared to explain to RMO. Even though you may not need to do the worksheet, there are good management tips and reminders for you within the worksheet and info sheet.
References for Additional Information
Containment Barrier – Control the products by containment
BMP Water Management - Order from Publications Ontario BMP07E EFP Infosheet #4 Fertilizer Handling and Storage - http://www.ontariosoilcrop.org/docs/EFPInfosheet4.pd
Spatial Barrier – Provide protection by separation distance
EFP Infosheet #4 Fertilizer Handling and Storage - http://www.ontariosoilcrop.org/docs/EFPInfosheet4.pd
Contingency Barrier – Be prepared for the unexpected
Farm Emergency Plan (2005) - Electronic copy of document to be posted to publicly-accessible website EFP Infosheet #4 Fertilizer Handling and Storage - http://www.ontariosoilcrop.org/docs/EFPInfosheet4.pdf

INFO SHEET FOR THREAT #10 – APPLICATION OF PESTICIDE IN IPZ
Additional Information Not all pesticides are included. If you do not have any of the pesticides listed at the top of worksheet page, you do not have to do the worksheet. Simply Mark the NA (not applicable box) and list reason for not applicable status.
References for Additional Information
Containment Barrier – Control the products by containment
BMP – Pesticide Storage, Handling and Application – Order from Publications Ontario BMP13 BMP– Integrated Pest Management - Order from Publications Ontario BMP09E Using Pesticides in Ontario **-** http://www.omafra.gov.on.ca/english/crops/resource/using-pesticides.htm Product Label Information - http://pr-rp.hc-sc.gc.ca/ls-re/index-eng.php Ways to Avoid Pesticide Spills - http://www.omafra.gov.on.ca/english/engineer/facts/96-025.htm Crop Protection Guide for Greenhouse Vegetables - http://www.omafra.gov.on.ca/english/crops/pub835/p835order.htm Pesticide Drift from Ground Applications - http://www.omafra.gov.on.ca/english/crops/facts/11-001.htm#equip Publication 360, Guide to Fruit Production: Pesticide Application - http://www.omafra.gov.on.ca/english/crops/pub360/p360toc10.htm Adjusting, Maintaining and Cleaning Airblast Sprayers - http://www.omafra.gov.on.ca/english/crops/facts/10-069.htm OMAFRA Sprayer Calibration Calculator - http://www.omafra.gov.on.ca/english/crops/sprayer/ep75.htm Grower Pesticide Safety Course Manual - http://www.opep.ca./index.cfm/learning-resources/farmers-learn-by-chapter/ Using Pesticides in Ontario - http://www.omafra.gov.on.ca/english/crops/resource/using-pesticides.htm Certification and Training Requirements - http://www.omafra.gov.on.ca/english/crops/resource/using-pesticides.htm#certification
Spatial Barrier – Provide protection by separation distance
Using Pesticides in Ontario **-** http://www.omafra.gov.on.ca/english/crops/resource/using-pesticides.htm Product Label Information - http://pr-rp.hc-sc.gc.ca/ls-re/index-eng.php BMP – Pesticide Storage, Handling and Application - Order from Publications Ontario BMP13 BMP - Water Management - Order from Publications Ontario BMP07

Contingency Barrier – Be prepared for the unexpected
Ways to Avoid Pesticide Spills - http://www.omafra.gov.on.ca/english/engineer/facts/96-025.htm
BMP – Pesticide Storage, Handling and Application – Order from Publications Ontario BMP13
BMP – Water Management – Order from Publications Ontario BMP07
Pesticide Contamination of Farm Water Supplies Recommendations - http://www.omafra.gov.on.ca/english/engineer/facts/10-097.htmns
Pesticide Application and Safety - http://www.omafra.gov.on.ca/english/crops/resource/pesticid.htm
Grower Pesticide Safety Course Manual - http://www.opep.ca./index.cfm/learning-resources/farmers-learn-by-chapter/
EFP Infosheet #20 Pest Management - http://www.ontariosoilcrop.org/docs/EFPInfosheet20.pdf
EFP Infosheet #18 Horticultural Production - http://www.ontariosoilcrop.org/docs/EFPInfosheet18.pdf
Farm Emergency Plan (2005) - Electronic copy of document to be posted to publicly-accessible website

INFO SHEET FOR THREAT #11 – HANDLING AND STORAGE OF PESTICIDE IN IPZ
Additional Information
Not all pesticides are included. If you do not have any of the pesticides listed at the top of worksheet page or if you do not store more than 250 kg. of any of the listed pesticides or you do not store pesticides for longer than the growing season when they are used, you do not have to do the worksheet. Simply Mark the NA (not applicable box) and list reason for not applicable status.
References for Additional Information
Containment Barrier – Control the products by containment
BMP – Pesticide Storage, Handling and Application – Order from Publications Ontario BMP13 Using Pesticides in Ontario **-** http://www.omafra.gov.on.ca/english/crops/resource/using-pesticides.htm Farm Pesticide Storage Facility - http://www.omafra.gov.on.ca/english/engineer/facts/11-005.pdf Product Label Information - http://pr-rp.hc-sc.gc.ca/ls-re/index-eng.php Info sheet #3 Pesticide Handling and Storage - Disposal of sprayer and container rinsate (rinse water) http://www.omafra.gov.on.ca/english/environment/efp/infosheet_3.htm#disposal BMP Water Management – Order from Publications Ontario BMP07 Pesticide Handling and Storage – Pesticide Storage http://www.omafra.gov.on.ca/english/environment/efp/infosheet_3.htm#storage
Spatial Barrier – Provide protection by separation distance
Using Pesticides in Ontario **-** http://www.omafra.gov.on.ca/english/crops/resource/using-pesticides.htm Product Label Information - http://pr-rp.hc-sc.gc.ca/ls-re/index-eng.php BMP – Pesticide Storage, Handling and Application - Order from Publications Ontario BMP13 BMP - Water Management - Order from Publications Ontario BMP07
Contingency Barrier – Be prepared for the unexpected
Ways to Avoid Pesticide Spills - http://www.omafra.gov.on.ca/english/engineer/facts/96-025.htm BMP – Pesticide Storage, Handling and Application – Order from Publications Ontario BMP13 BMP – Water Management – Order from Publications Ontario BMP07 Pesticide Contamination of Farm Water Supplies Recommendations - http://www.omafra.gov.on.ca/english/engineer/facts/10-097.htmns Grower Pesticide Safety Course Manual - http://www.opep.ca./index.cfm/learning-resources/farmers-learn-by-chapter/ Info sheet #20 Pest Management - http://www.ontariosoilcrop.org/docs/EFPInfosheet20.pdf

INFO SHEET FOR THREAT #15A – HANDLING AND STORAGE OF HEATING FUEL (FUEL OILS) IN IPZ
Additional Information This worksheet applies to heating fuel tanks such as used for oil furnaces in the house, machine shop etc. It also includes diesel fuel tanks directly connected to motors used for powering generators etc. This worksheet only applies to Above Grade Tanks with Capacity > 2500 Litres but < 5000 Litres. For smaller tanks simply check off NA box. For larger than 5000 litre tanks and tanks partially or totally below ground, there is already mandatory legislation in place requiring registration with TSSA and again check off NA box and make note of tanks size. In some cases, the fuel tank is owned by fuel supplier and some arrangement for rental or lease is made with you for its use. Both owner and user have responsibilities on installation and safe use of the facility. How it will be dealt with by the RMO is not yet known and may vary with municipality. Advise RMO of ownership for clarification of next steps.
References for Additional Information
Containment Barrier – Control the products by containment
BMP - Water Management - Order from Publications Ontario BMP07 EFP Infosheet #5 Storage of Petroleum Products - http://www.ontariosoilcrop.org/docs/EFPInfosheet5.pdf Domestic Heating Oil Tank System Checkup - http://www.gov.ns.ca/nse/petroleum/docs/DomesticOilTankChecklist.pdf Protection Against Vehicular Traffic R2 http://www.tssa.org/corplibrary/ArticleFile.asp?Instance=136&ID=96325CB837DC11E2B4B11D39C73CD67E
Spatial Barrier – Provide protection by separation distance
BMP - Water Management - Order from Publications Ontario BMP07 EFP Infosheet #5 Storage of Petroleum Products - http://www.ontariosoilcrop.org/docs/EFPInfosheet5.pdf
Contingency Barrier – Be prepared for the unexpected
Farm Emergency Plan (2005) - Electronic copy of document to be posted to publicly-accessible website Guideline For Incident Reporting Criteria For Hydrocarbon Fuels Industry http://www.tssa.org/CorpLibrary/ArticleFile.asp?Instance=136&ID=49B703A8241A42E9A362740275B35B56 EFP Infosheet #5 Storage of Petroleum Products - http://www.ontariosoilcrop.org/docs/EFPInfosheet5.pdf

INFO SHEET FOR THREAT #15B – HANDLING AND STORAGE OF MOTOR FUEL (LIQUID FUELS – GASOLINE OR DIESEL) IN IPZ
Additional Information This worksheet applies liquid fuels used in cars, trucks, and tractors. Includes both diesel and gasoline. This worksheet only applies to Above Grade Tanks with Capacity > 2500 Litres but < 5000 Litres. For smaller tanks simply check off NA box. For larger than 5000 litre tanks and tanks partially or totally below ground, there is already mandatory legislation in place requiring registration with TSSA and again check off NA box and make note of tanks size. In some cases fuel tank is owned by fuel supplier and some arrangement for rental or lease is made with you for its use. Both owner and user have responsibilities on installation and safe use of the facility. How it will be dealt with by the RMO is not yet known and may vary with municipality. Advise RMO of ownership for clarification of next steps.
References for Additional Information
Containment Barrier – Control the products by containment
BMP - Water Management - Order from Publications Ontario BMP07 EFP Infosheet #5 Storage of Petroleum Products - http://www.ontariosoilcrop.org/docs/EFPInfosheet5.pdf Protection Against Vehicular Traffic R2 http://www.tssa.org/corplibrary/ArticleFile.asp?Instance=136&ID=96325CB837DC11E2B4B11D39C73CD67E
Spatial Barrier – Provide protection by separation distance
BMP - Water Management - Order from Publications Ontario BMP07 EFP Infosheet #5 Storage of Petroleum Products - http://www.ontariosoilcrop.org/docs/EFPInfosheet5.pdf
Contingency Barrier – Be prepared for the unexpected
Farm Emergency Plan (2005) - Electronic copy of document to be posted to publicly-accessible website Guideline For Incident Reporting Criteria For Hydrocarbon Fuels Industry http://www.tssa.org/CorpLibrary/ArticleFile.asp?Instance=136&ID=49B703A8241A42E9A362740275B35B56 EFP Infosheet #5 Storage of Petroleum Products - http://www.ontariosoilcrop.org/docs/EFPInfosheet5.pdf

INFO SHEET FOR THREAT # 21A – OUTDOOR CONFINEMENT AREAS (OCA) AND LIVESTOCK YARDS (>1.0 NU/ACRE/YEAR) IN IPZ

Additional Information

This worksheet is for outdoor confinement areas and livestock yard where the livestock density is greater than 1.0 nutrient units per acre of accessible area. If the density is less than that, then go to worksheet 21B Grazing and Pasturing (<1.0 NU/acre) in IPZ.

Design Criteria –structures have been built at different times and with different building permit requirements. As long as the structure met the building code requirements at time of construction you have met the level two rating along with the condition of managing the runoff.

Distance to Surface Water - flowpath distance is the distance as water travels to reach the destination surface water not the straight line distance.

References for Additional Information

Containment Barrier – Control the products by containment

Nutrient Management Protocol for Ontario Regulation 267/03 Made under the *Nutrient Management Act, 2002* - Part 3: Nutrient Units - http://www.omafra.gov.on.ca/english/nm/regs/nmpro/nmpro03_09.htm

BMP Manure Management - Order from Publications Ontario BMP16

Managing Outdoor Confinement Areas and Livestock Yards - http://www.omafra.gov.on.ca/english/engineer/facts/11-007.htm

Handling Runoff From Solid Agricultural Source Material Storages and Outside Livestock Areas - http://www.omafra.gov.on.ca/english/engineer/facts/10-005.htm

Nutrient Management Act, 2002: Handling Runoff From Solid Agricultural Source Material Storages and Outside Livestock Areas - http://www.omafra.gov.on.ca/english/engineer/facts/10-005.htm

EFP Infosheet #9 Livestock Yards and Outdoor Confinement Areas - http://www.ontariosoilcrop.org/docs/EFPInfosheet9.pdf

Building Permit Requirements for Livestock Operations - http://www.omafra.gov.on.ca/english/engineer/facts/07-063.htm

Constructing a Permanent Concrete or Steel Liquid Nutrient or Runoff Storage Facility - http://www.omafra.gov.on.ca/english/engineer/facts/06-001.htm

Constructing an Earthen Liquid Nutrient or Runoff Storage Facility - http://www.omafra.gov.on.ca/english/engineer/facts/06-005.htm

Siting Regulations for Manure Storage Facilities - http://www.omafra.gov.on.ca/english/engineer/facts/09-061.htm

Spatial Barrier – Provide protection by separation distance

BMP Manure Management - Order from Publications Ontario BMP16

Managing Outdoor Confinement Areas and Livestock Yards - http://www.omafra.gov.on.ca/english/engineer/facts/11-007.htm

Siting Regulations for Manure Storage Facilities -

http://www.omafra.gov.on.ca/english/engineer/facts/09-061.htm EFP Infosheet #9 Livestock Yards and Outdoor Confinement Areas (OCAs) - http://www.ontariosoilcrop.org/docs/EFPInfosheet9.pdf
Contingency Barrier – Be prepared for the unexpected
Nutrient Management Protocol for Ontario Regulation 267/03 Made under the *Nutrient Management Act, 2002* - Part 12: Contingency Planning - http://www.omafra.gov.on.ca/english/nm/regs/nmpro/nmpro12_09.htm BMP Manure Management - Order from Publications Ontario BMP16 Farm Emergency Plan (2005) - Electronic copy of document to be posted to publicly-accessible website

INFO SHEET FOR THREAT # 21B – GRAZING AND PASTURING (< 1.0 NU/ACRE/YEAR) IN IPZ
Additional Information
This worksheet deals with issues related to general pasturing where there is a livestock density less than 1.0 NU per acre.
References for Additional Information
Containment Barrier – Control the products by containment
Nutrient Management Protocol for Ontario Regulation 267/03 Made under the *Nutrient Management Act, 2002* - Part 3: Nutrient Units - http://www.omafra.gov.on.ca/english/nm/regs/nmpro/nmpro03_09.htm BMP Streamside Grazing - Order from Publications Ontario BMP19E Nutrient Management (NMAN) Software - http://www.omafra.gov.on.ca/english/nm/nman/default.htm Grazing Management - http://www.omafra.gov.on.ca/english/crops/pub19/4grazman.htm#fg Rotational Grazing in Extensive Pastures - http://www.ontariosoilcrop.org/docs/rotational_grazing_in_extensive_pastures.sm.pdf Pasture Production - http://www.omafra.gov.on.ca/english/crops/pub19/pub19toc.htm Farm Fencing Systems - http://www.omafra.gov.on.ca/english/engineer/facts/08-035.htm Fencing of Watercourses to Control Erosion - http://www.omafra.gov.on.ca/english/engineer/facts/00-049.htm
Spatial Barrier – Provide protection by separation distance
BMP Streamside Grazing - Order from Publications Ontario BMP19E Livestock Accesses to Watercourses - http://www.omafra.gov.on.ca/english/livestock/beef/facts/08-013.htm Fencing of Watercourses to Control Erosion - http://www.omafra.gov.on.ca/english/engineer/facts/00-049.htm
Contingency Barrier – Be prepared for the unexpected
Nutrient Management Protocol for Ontario Regulation 267/03 Made under the *Nutrient Management Act, 2002* - Part 12: Contingency Planning - http://www.omafra.gov.on.ca/english/nm/regs/nmpro/nmpro12_09.htm BMP Streamside Grazing - Order from Publications Ontario BMP19E Farm Emergency Plan (2005) - Electronic copy of document to be posted to publicly-accessible website Grazing Mentorship Program - http://www.omafra.gov.on.ca/english/crops/field/news/croptalk/2007/ct-0907a2.htm

OFEC Source Water Protection Framework
Farm Assessment Report, Sample Template

The OFEC Source Water Protection Framework - Farm Assessment Report should include the following information:

1. Farm Operation Information Table

2. Overview of the Operation

- add details of owner and operator names and type and size of operation
- location of subject land and name of town and municipal well(s) affecting the property
- identify the applicable source protection plan (online)
- estimate the number of tillable acres in the source water WHPA/IPZ zone where a farming activity has been classified as a significant drinking water threat
- identify agricultural threats that are relevant to the operation and any prohibitions of farming practices written in the source protection plan that may be applicable
- explain farming practices that may not be applicable based on the provincial table of circumstances and more specifically the local source protection plan (e.g. pesticide application area too small)
- indicate if there is an approved instrument (NMS, NASM plan) that may exempt certain practices from being addressed in a risk management plan
- identify sensitive features on the subject property (wells, surface water, etc.)
- include any landowner or operator concerns (generation of headlands, yield loss, restrictions on building, compensation, etc.)

3. Farm Source Water Protection Assessment Table

4. Description of Threats (optional information to support assessment)

- for each relevant agricultural threat, identify if they are in a WHPA area with a vulnerability score of 10 or an IPZ area with a vulnerability score of 8 or greater. It is in these areas that the agricultural threat is considered a significant risk to water quality under the Clean Water Act process
- identify which farm properties (if multiple) are to be considered for this threat
- for each threat barrier (containment, spatial, or contingency), describe the specific standard or practice that is currently being applied to the agricultural threat of concern so it can be evaluated against the management levels (1, 2 or 3) as described in the OFEC Framework booklet. Provide enough detail of the activity for third party review (e.g. nutrient and pesticide application timing and method, storage type, livestock yard size, OCA size and construction date, etc.)
- Repeat for ALL applicable threats

5. Map Information - Farm Unit Map

- include mapping information to help describe the farm site and its associated area of source water vulnerability
- identify all farm properties considered a source water threat on one map if possible
- the following list of information is valuable to include and present in a mapped format:

  Farm site map title
  Property name(s) and property boundaries
  Lot and concession
  Closest town and direction of that town
  Surrounding roads
  Municipal well location(s) or direction of municipal well(s) of concern
  North arrow
  Scale
  Legend

Information sources could include Agricultural Information Atlas, County or Conservation Area interactive web-based GIS portal, Source Protection Area website mapping

6. Map Information - Field or Farmstead Maps

- include mapping information to help describe the farm site and its associated area of source water vulnerability
- identify all farms and fields on a map with the WHPA/IPZ areas and vulnerability scores indicated if the vulnerability mapping is available
- include a farmstead map if applicable only when it is in a significant source water vulnerability area
- features to include on the map:

Farm site map title
Property name(s) and property boundaries
Lot and concession
Closest town and direction of that town
Surrounding roads
Municipal well location(s) or direction of closest municipal well(s) of concern
Identification of any significant vulnerability areas and WHPA/IPZs
Number of tillable acres in each significant vulnerability area
Sensitive features if in significant area (wells on property and neighbouring properties, surface water, etc.)
Setback distances from sensitive features if in significant area
Runoff management (storage, vegetated flow path, filter strip, etc.)
Presence of field tile or tile inlets
Buildings, permanent or temporary nutrient storages, fuel tanks, etc. if in significant area
North arrow
Scale
Legend

Information sources could include Agricultural Information Atlas, County or Conservation Area interactive web-based GIS portal, Source Protection Area website mapping

**Please note: The OFEC Farm Assessment Report should NOT include recommendations to the farmer, or list chemicals that are not listed as pesticides in the OFEC Framework booklet worksheets. These can be provided separately to the landowner if requested.

Farm Operation Information Table	
Consultant Meeting Date:	
Attendees:	
Certified Consultant:	
Risk Management Officer Name:	
Contact Information	
Owner/Operator Name:	
Street Address:	
City/Town/Village:	
Postal Code:	
Home Phone:	
Cell Phone:	
Fax:	
Email:	
Farm Information	
Farm Operation Name:	
Operation Type:	
Livestock Type (number):	
Tillable Acreage:	
Upper Tier Municipality:	
Lower Tier Municipality:	
Geotownship:	
Environmental Farm Plan Peer Reviewed:	
Environmental Farm Plan Completed:	
Nutrient Management Strategy Approved:	
Nutrient Management Plan Completed:	
Subject Land Information	
Owned/Rented:	
Lower Tier Municipality:	
Geotownship:	
Concession:	
Lot:	
Roll Number:	
Source Protection Area:	
Local Source Water Protection Plan:	
Approx. acres in WHPA vulnerability zone:	score 10_____ 8 to <10_____
Approx. acres in IPZ vulnerability zone:	score 10_____ 9 to <10_____ 8 to <9_____

Source Water Protection Farm Assessment Table

For each farm site being assessed in a WHPA area with a vulnerability score of 10 or IPZ area with a vulnerability score of 8 or greater, indicate the Level of Standard or Practice for each applicable Threat by entering 'X' in the most appropriate column. Refer to the OFEC Framework booklet, as well as the local source protection plan for more detailed information.

Well Head Protection Area (WHPA) Table of Threats

Threat No.	Threat Description	Barrier	Standard or Practice	Level 1	Level 2	Level 3	NA
3	Application of Agricultural Source Material in WHPA	Containment	Nutrient Management Plan				
			Calibrate & Maintain Equipment				
			Cover Crop Use in Fall if ASM is Applied				
			Application Rates of Nitrogen				
		Spatial	Application Setback Distance to Private Drilled Well (with a watertight casing extending at least 6m below grade)				
			Application Distance to Any Other Type of Private Well				
		Contingency	Supervision of Tank Filling				
			Contingency Plan				
			Training of Farm Personnel				
4	Storage of Agricultural Source Material in WHPA	Containment	Design Criteria for Manure Storage Facilities (Liquid and Solid)				
		Spatial	Distance to Drilled Well (with a watertight casing extending at least 6m below grade)				
			Distance to Any Other Type of Private Well				
			Distance Between Storage Floor and Bedrock or Uppermost Aquifer				
		Contingency	Contingency Plan				
			Training of Farm Personnel				
5	Management (Handling) of Agricultural Source Material in WHPA	Containment	Storage Capacity				
			Volume and Nutrient Reduction of ASM				
			Transfer System				
			Clean Water Control				
		Spatial	Distance to Drilled Well (with a watertight casing extending at least 6m below grade)				
			Distance to Any Other Type of Private Well				
		Contingency	Supervision of Transfer				
			Contingency Plan				
			Training of Farm Personnel				

6	Application of Category 1 Non-Agricultural Source Material in WHPA	Containment	Material Application Rate (Liquid or Solid)				
			Materials Application Practices at Time of Application				
			Winter Spreading				
		Spatial	Application Setback Distance to Private Drilled Well (with a watertight casing extending at least 6m below grade)				
			Distance to Any Other Type of Private Well				
		Contingency	Supervision of Transfers				
			Contingency Plan				
			Training of Farm Personnel				
7	Storage of Category 1 Non-Agricultural Source Material in WHPA	Containment	Design Criteria for Permanent Category 1 NASM Storage Facilities				
		Spatial	Distance to Drilled Private Well (with a watertight casing extending at least 6m below grade)				
			Distance to Any Other Type of Private Well				
			Distance Between Storage's Concrete Floor and Bedrock or Uppermost Aquifer				
		Contingency	Contingency Plan				
			Training of Farm Personnel				
8	Application of Commercial Fertilizer in WHPA	Containment	Nutrient Management Plan				
			Calibrate and Maintain Equipment				
			Cover Crop Use in Fall if Commercial Nitrogen Fertilizer is Applied				
			Application rates of Nitrogen				
		Spatial	Application Setback Distance to Any Type of Private Well				
			Vegetated Buffering of any Type of Private Well				
		Contingency	Supervision of Tank Filling				
			Contingency Plan				
			Training of Farm Personnel				

9	Handling and Storage of Commercial Fertilizer in WHPA	Containment	Dry Storage				
			Dry Handling				
			Liquid Secondary Containment				
			Liquid Handling				
			Rinsate Disposal				
		Spatial	Distance to Private Drilled Well (with a watertight casing extending at least 6m below grade)				
			Distance to Any Other Type of Private Well				
		Contingency	Inspection of Liquid Fertilizer Storage While in Use				
			Anti-Backflow or Air Gap for Mixing and Loading (liquids only)				
			Contingency Plan				
			Training of Farm Personnel				
10	Application of Pesticide in WHPA	Containment	Pest Control Practices				
			Calibrate and Maintain Equipment				
			Pesticide Training				
		Spatial	Application Setback Distance to Drilled Private Well (with a watertight casing extending at least 6m below grade)				
			Distance to Any Other Type of Private Well				
		Contingency	Supervision of Tank Filling				
			Contingency Plan				
			Training of Farm Personnel				
11	Handling and Storage of Pesticide in WHPA	Containment	Storage Type and Area				
			Liquid Secondary Containment				
			Rinsate Disposal				
		Spatial	Distance Drilled Private Well (with a watertight casing extending at least 6m below grade)				
			Distance to Any Other Type of Private Well				
		Contingency	Supervision of Tank Filling				
			Contingency Plan				
			Anti-Backflow or Air Gap for Mixing and Loading				
			Training of Farm Personnel				

15A	Handling and Storage of Heating Fuel (Fuel Oil) in WHPA	Containment	Storage Tank Construction and Integrity				
			Secondary Containment				
		Spatial	Distance to Drilled Well (with a watertight casing extending at least 6m below grade)				
			Distance to Any Other Type of Private Well				
			Vehicle Protection (where applicable)				
		Contingency	Inspection				
			Inspection of Connection to Appliance				
			Contingency Plan				
			Overfill Protection				
15B	Handling and Storage of Motor Fuel (Liquid Fuels – Gasoline and Diesel) in WHPA	Containment	Storage Tank Construction and Integrity				
			Secondary Containment				
		Spatial	Distance to Drilled Well (with a watertight casing extending at least 6m below grade)				
			Distance to Any Other Type of Private Well				
			Vehicle Protection (where applicable)				
		Contingency	Inspection				
			Supervision of All Vehicle Tank Filling				
			Contingency Plan				
21A	Outdoor Confinement Areas & Livestock Yards in WHPA (>1 NU/ac/year)		Runoff Management from OCA or Livestock Yard Facilities				
		Spatial	Distance to Drilled Private Well (with a watertight casing extending at least 6m below grade)				
			Distance to Any Other Type of Private well				
		Contingency	Yard Cleaning/Sanitation				
			Contingency Plan				
			Training of Farm Personnel				
21B	Grazing or Pasturing in WHPA (1 NU/acre/year or less)	Containment	Nutrient Management				
		Spatial	Private Wellhead Protection for all Types of Wells within 30m of Grazing and Pasturing				
			Depth to Bedrock or Watertable when site's vulnerability score = 10				
		Contingency	General Inspection of Pasture Areas				
			Contingency Plan				
			Training of Farm Personnel				

Intake Protection Zone (IPZ) Table of Threats

Threat No.	Threat Description	Barrier	Standard or Practice	Level 1	Level 2	Level 3	NA
3	Application of Agricultural Source Material in IPZ	Containment	Nutrient Management Plan				
			Calibrate and Maintain Equipment				
			Buffer Alongside Surface Water				
			Cover Crop Use in Fall if ASM is Applied				
			Application Rates of N and P				
		Spatial	Application Setback Distance to Surface Water				
		Contingency	Field Drainage Tile monitoring – Liquid ASM				
			Supervision of Tank Filling				
			Contingency Plan				
			Training of Farm Personnel				
4	Storage of Agricultural Source Material in IPZ	Containment	Design Criteria for Manure Storage Facilities (Liquid and Solid)				
		Spatial	Distance to Surface Water				
		Contingency	Contingency Plan				
			Training of Farm Personnel				
5	Management (Handling) of Agricultural Source Material in IPZ	Containment	Storage Capacity				
			Volume and Nutrient Reduction of ASM				
			Transfer System				
			Clean Water Control				
		Spatial	Distance to Surface Water				
			Straight Line Distance to Field Drainage Tile				
		Contingency	Supervision of Transfer				
			Contingency Plan				
			Training of Farm Personnel				
6	Application of Category 1 Non-Agricultural Source Material in IPZ	Containment	Material Application Rate				
			Buffer Alongside Surface Water				
			Winter Spreading				
			Materials Application Practices at Time of Application				
		Spatial	Application Setback Distance to Nearest Surface Water				
		Contingency	Field Drainage Tile Monitoring – Liquid NASM				
			Supervision of Transfers				
			Contingency Plan				
			Training of Farm Personnel				

7	Storage of Category 1 Non-Agricultural Source Material in IPZ	Containment	Design Criteria for Permanent Category 1 NASM Storage Facilities				
		Spatial	Separation Distance from any Private Well				
			Distance to Surface Water				
			Straight-Line Distance to Field Drainage Tile				
		Contingency	Contingency Plan				
			Training of Farm Personnel				
8	Application of Commercial Fertilizer in IPZ	Containment	Nutrient Management Plan				
			Calibrate and Maintain Equipment.				
			Buffer Alongside Surface Water				
			Cover Crop Use in Fall if Commercial Fertilizer is Applied				
			Application Rates of N and P				
		Spatial	Application Setback Distance to Surface Water				
		Contingency	Supervision of Tank Filling				
			Contingency Plan				
			Training of Farm Personnel				
9	Handling and Storage of Commercial Fertilizer in IPZ	Containment	Dry Storage				
			Dry Handling				
			Liquid Secondary Containment				
			Liquid Handling				
			Rinsate Disposal				
		Spatial	Distance to Surface Water				
		Contingency	Inspection of Liquid Fertilizer Storage While in Use				
			Anti-Backflow or Air Gap for Mixing and Loading (liquids only)				
			Contingency Plan				
			Training of Farm Personnel				
10	Application of Pesticide in IPZ	Containment	Pest Control Practices				
			Calibrate and Maintain Equipment				
			Pesticide Training				
		Spatial	Application Setback Distance to Surface Water				
		Contingency	Supervision of Tank Filling				
			Contingency Plan				
			Training of Farm Personnel				

11	Handling and Storage of Pesticide in IPZ	Containment	Storage Type and Area				
			Liquid Secondary Containment				
			Rinsate Disposal				
		Spatial	Distance to Surface Water				
		Contingency	Supervision of all Tank Filling				
			Contingency Plan				
			Anti-Backflow or Air Gap for Mixing and Loading				
			Training of Farm Personnel				
15A	Handling and Storage of Heating Fuel (Fuel Oils) in IPZ	Containment	Storage Tank Construction and Integrity				
			Secondary Containment				
		Spatial	Distance to Surface Water				
			Vehicular Protection (where applicable)				
		Contingency	Inspection				
			Inspection of Connection to Appliance				
			Contingency Plan				
			Overfill Protection				
15B	Handling and Storage of Motor Fuel (Liquid Fuels – Gasoline and Diesel) in IPZ	Containment	Storage Tank Construction and Integrity				
			Secondary Containment				
		Spatial	Distance to Surface Water				
		Contingency	Inspection				
			Supervision of all Vehicle Tank Filling				
			Contingency Plan				
			Vehicle Protection (where applicable)				

21A	Outdoor Confinement Areas & Livestock Yards in IPZ (>1 NU/ac/year)	Containment	Runoff Management from OCA or Livestock Yard Facilities				
		Spatial	Permanently Vegetated Flow Path to Surface Water – when dry matter produced by livestock in yard ranges from 30% to 50% (see Nutrient Management Regulation Tables) (All dry matter contents for OCA)				
			Permanently Vegetated Flowpath to Surface Water – when dry matter of manure produced by livestock in yard is > 50% (see Nutrient Management Regulation Tables)				
			Straight-Line Distance to Field Drainage Tile				
		Contingency	Yard Cleaning/Sanitation				
			Contingency plan				
			Training of Farm Personnel				
21B	Grazing or Pasturing in IPZ (1 NU/acre/year or less)	Containment	Nutrient Management				
			Buffer Alongside Surface Water				
		Spatial	Livestock Access to Surface Water				
		Contingency	General Inspection of Pasture Areas				
			Contingency Plan				
			Training of Farm Personnel				

The details of this OFEC Farm Assessment Report include the current farming practices on the identified land. Planned activities and practices are subject to change from year to year as farming is a dynamic industry and external factors can result in last minute management changes (weather, crop prices, product availability etc). If the farming practices change drastically from this overview at anytime, an update will need to be completed.

_____ _____

Signature
Farm Assessment Contact

Date

Notes

For more information, or for additional copies, please contact:

Ontario Federation of Agriculture

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Guelph, ON N1G 5L3
T: 519-821-8883