ENVIRONMENTAL MANAGEMENT NEWSLETTER

A Quick Update on Nutrient Management

VOLUME NO 1, ISSUE NO 4. MARCH-APRIL 2008

IN THIS ISSUE

NOW AVAILABLE: NUTRIENT MANAGEMENT ACT, REGULATION AND PROTOCOLS ONLINE COURSE

Kelli Rice, Education Co-ordinator

The Nutrient Management Act, Regulation and Protocols Course is now available online! The online course is equivalent to the in-class Nutrient Management Act, Regulation and Protocols Course and is designed for farmers and nutrient management consultants. It gives you an overview of the Nutrient Management Act, including key definitions and requirements of the Act, Regulation and Protocols. You are also given tools to create your own nutrient management strategy (NMS) and/or nutrient management plan (NMP). The course is divided into seven sections and will take about eight hours to complete. The online course will help participants fulfill their certification requirements under the Regulation.

After you complete the course, you will have unlimited access to the course to use as a resource. To view this course, we recommend you have a 56K internet connection (at minimum). Once you are connected, the course is viewable through a web browser such as Microsoft Internet Explorer, Netscape Navigator or Firefox. You should also have access to a printer. Contact the Nutrient Management Information Line at 1-866-242-4460 for information on registration and accessing the course.

Cost: $95 per producer ($70 for additional people from the same operation)
$180 per non-producer ($130 for additional people from the same organization)

AS WE GO TO PRESS...

Peter Doris, Environmental Specialist

INFORMATION TO HELP IN THE PREPARATION OF A NM STRATEGY FOR AN ANAEROBIC DIGESTER PROJECT

OMAFRA has developed a guidance document called *Nutrient Management Requirements for On-Farm Anaerobic Digestion Materials* to assist in the preparation of nutrient management strategies for mixed AD projects. The guidance document can be accessed on the OMAFRA website at http://www.omafra.gov.on.ca/english/engineer/facts/nm_ad.htm or call the Nutrient Management Information Line at 1-866-242-4460.

NEW FACTSHEET AVAILABLE ON BUILDING PERMIT REQUIREMENTS

OMAFRA has a new Factsheet for people thinking about construction projects called *Building Permit Requirements for Livestock Operations*. This Factsheet outlines requirements for: zoning, minimum distance separation (MDS), nutrient management, site characterization, conservation authority approval and professional engineering. This a great resource both farmers and for engineers and consultants to pass on to their farm clients. The Factsheet can be accessed on the OMAFRA website at: http://www.omafra.gov.on.ca/english/engineer/facts/07-063.htm

NEW INFOSHEET AVAILABLE ON AgEO SITE VISITS

OMAFRA has a new Infosheet called What to Expect When an Agricultural Environmental Officer Inspects Your Farm. This attached Infosheet provides an overview of the process and some tips on how to prepare for an inspection.

VEGETATED FILTER STRIP SYSTEMS

Peter Doris, Environmental Specialist

Figure 2: Three screens to minimize solids from being pumped to the strip

Figure 3: Properly sized orifice plate behind screen to control flow rate

Figure 4: Distribution pipe with 1/2" holes at 17' intervals distribute runoff evenly across the strip

As you may recall, amendments in 2007 to Ontario Regulation 267/03 (as amended) allowed vegetated filter strip systems (VFSSs) to be engineered, constructed, and operated as a method for managing runoff from agricultural operations. Previously, a VFSS for runoff required a Certificate of Approval under the Ontario Water Resources Act issued by the Ministry of the Environment (MOE).

WHAT IS A VEGETATED FILTER STRIP SYSTEM:

A VFS system collects, temporarily stores, and transports agricultural runoff generated from an outdoor livestock yard/outdoor confinement area or a permanent solid manure storage facility to an infiltration area. The VFS system is composed of a series of components that serve the following primary functions:

1. Collect and temporarily store agricultural runoff (Figure 1)
2. Screen out solids from agricultural runoff (Figure 2)
3. Control rate of release of nutrients, organic matter, and pathogens in agricultural runoff (Figure 3)
4. Transport agricultural runoff to an infiltration area (via gravity or pump)
5. Distribute flow evenly across infiltration area (Figure 4)
6. Allow runoff to infiltrate into soil within infiltration area (Figure 5).

Figure 1: Barnyard with retaining wall that serves as temporary storage for runoff

The infiltration area is a densely vegetated (planted) strip of land, engineered and constructed to accept and manage runoff through settling, filtration, absorption and infiltration processes. The VFS system is designed to be "zero discharge." This means the VFS system accommodates all of the agricultural runoff that it receives, without discharging any beyond the designed infiltration area.

From: Publication 826 Vegetated Filter Strip System Design Manual.

DIFFERENCES BETWEEN VFSSs AND PERMANENTLY VEGETATED AREAS (PVA)

To use a VFSS for runoff:	To use a permanently vegetated area with flow path for runoff:
Engineering required: yes	Engineering required: no
Solid manure storage facility limited by dry matter or area of the facility: No	Solid manure storage facility, limited by dry matter or area of the facility: Yes
Permanent outdoor confinement areas (OCA), limited by animal numbers or dimensions of the OCA: No	Permanent outdoor confinement areas (OCA), limited by animal numbers or dimensions of the OCA: Yes
Soil texture is an important consideration: yes	Soil texture is an important consideration: no

VEGETATED FILTER STRIP SYSTEMS

Peter Doris, Environmental Specialist

PRACTICAL CONSIDERATIONS

Limitations on the use of the VFSS are largely related to the soil texture found on the farm, which becomes a key factor in determining the dimensions required for the strip. Using established engineering tables for infiltration rates of various soil textures (clay, sand, loam or silt) along with the flow rate of liquid delivered to the strip, the dimensions required for the VFSS can be calculated. Some of the VFSSs in operation currently have dimensions of 100' to 140' wide and 100' to 200' long. In practice, the VFSSs work well on "sandy-loam to loam to clay-loam" textured soils, typically referred to as a "medium" textured soil. The VFSSs do not tend to work well on either a coarse soil such as a "blow-sand" or a fine textured soil such as a "heavy" clay soil.

Assuming the site has a soil texture that allows for a reasonably compact and efficient VFSS, you will need the services of an engineer. A "drainage" engineer may be a good place to start since they are familiar with the soil properties in your area and a number of these engineers have had some technical training on VFSSs. OMAFRA is currently compiling a list of engineers for publishing that are willing to do VFSS design.

Publication 826: *Vegetated Filter Strip System Design Manual* is available for $25 from OMAFRA Resource Centres or download it for free from the OMAFRA website.

The two biggest variables that the engineer will address in the design are the volume/rate of liquid that the VFSS will be required to manage and the soil texture as discussed above. Volume of liquid produced will be based on the footprint or area of the uncovered manure storage and/or livestock yard and the rainfall expected from a one in 25 year storm event for the area.

While VFSSs are engineered and constructed only for runoff under the nutrient management regulations, these VFSSs projects do not require a NM strategy. Only if the operator is undertaking another initiative on the farm such as a project which requires a building permit for a livestock housing facility or manure storage with greater than 5 NU, would a NM strategy be required.

USE OF VFSSs DURING WINTER CONDITIONS

VFSSs are designed and constructed for year-round operation. Pipes that transport runoff to the strip are designed to either discharge liquid to the strip or drain back to the subsurface sump to prevent freezing. In addition, because runoff events are relatively infrequent during the winter and typically occur when the temperature is above the freezing point, runoff can infiltrate the strip during winter conditions or be trapped in the snow or vegetation cover.

OTHER APPLICATIONS FOR VFSSs

OMAFRA is undertaking a field research project to examine the effectiveness of VFSSs for milking centre washwater starting in 2008. Because this is not "runoff", a VFSS for this application will require a Certificate of Approval from MOE.

FOR MORE INFORMATION ON VFSSs, CONTACT:

Bob Stone, P. Eng. OMAFRA 613 475 5428 bob.stone@ontario.ca

Figure 5: Distribution pipe and vegetated strip area. The strip area is a slightly lighter shade of green because it consists of grasses whereas the rest of the field is predominantly alfalfa.

UPCOMING NUTRIENT MANAGEMENT COURSES

CALL NUTRIENT MANAGEMENT INFORMATION LINE 1 866 242 4460 TO REGISTER

Course	Date	Location
Nutrient Management Regulations and Protocols	May 28 and 29	Brighton
Introduction to Nutrient Management	April 30 and May 1	Casselman (French)
How to Prepare a NM Strategy and Plan (using NMAN)	April 16 & 17	Stratford
How to Prepare a NM Strategy and Plan (using NMAN)	April 22 & 23	Kitchener
How to Prepare a NM Strategy and Plan (using NMAN)	May 28 & 29	Ottawa (French)

Questions from Consultants and Farmers

Matt Wilson and Gabrielle Ferguson, Environmental Specialists

DOES A LIVESTOCK BARN REBUILDING AFTER A CATASTROPHE NEED A NUTRIENT MANAGEMENT STRATEGY?

This question has been raised a number of times by producers that have had barns collapse or destroyed by fire. The question often comes when the barn being rebuilt is the same size and at the same location as the original structure.

Let's set the record straight. Any application for a building permit for livestock housing or manure storage by an operation generating greater than five nutrient units will trigger the requirements for an approved NMS, which must be obtained prior to the building permit. If a farm was not previously phased in under the Nutrient Management Act (NMA), the building permit would trigger the need for an approved NMS. This operation would then be phased in.

If the farm was previously phased in, and had an approved NMS in place, then the need for a new NMS will be determined by the significance of the construction. If there are significant differences between the new structures and the previously existing buildings, then an amendment to the NMS may be required. A new NMS is required if there are changes to the housing capacity, animal density or barn dimensions. If the rebuilt structure is similar to the original then the existing NMS may be sufficient.

The local building department may be willing to make this determination, but they may want confirmation from the Ministry regarding the status of an existing NMS. The Approvals Unit will respond to requests in writing.

There is an expedited review process that speeds up the process of approval of NMSs submitted as a result of catastrophes, in order to ensure that producers are able to rebuild as soon as possible. Please contact your local environmental specialist or call the Nutrient Management Information Line for more information.

The misconception about the need for an approved NMS stems from the fact that in catastrophe situations a municipality has the option to not apply MDS II to the rebuilding of a livestock facility. This is providing the resulting facility is built no closer to a surrounding development or that animal numbers or density are not increased above that of the facility that existed before the event.

I AM MAKING SOME CHANGES TO MY MILKING PARLOUR; DO I NEED A NEW NUTRIENT MANAGEMENT STRATEGY?

When you are making any change to livestock housing or manure storage facilities that requires a building permit, an approved Nutrient Management Strategy (NMS) is required. The NMS is required even if the livestock housing capacity of the barn does not change.

This means that if structural changes made to a milking parlour or to a horse tack room trigger the need for a building permit a Nutrient Management Strategy will be required. The assumption here is that the rooms to be added or changed are attached to the livestock housing part of the barn.

COMMENTS OR QUESTIONS? CONTACT:

Peter Doris
Environmental Specialist
Ontario Ministry of Agriculture, Food and Rural Affairs
95 Dundas Street East
Brighton, ON K0K 1H0
Tel: 613 475 5604
Fax: 613 475 3835
E-mail: peter.doris@ontario.ca

ONE LAST WORD

Correct Roll Numbers will save serious time in the processing of NM Strategies. **It can take hours and days to sort out incorrect roll numbers, which often delay the process. Roll number databases OMAFRA reviewers have access to do not always reflect revisions made by municipalities — and municipality roll numbers rule. If you got the roll number from the municipality, please tell us in your NM Strategy document. It can save both of us a lot of time.**

Nutrient Management Information Line: 1-866-242-4460
E-mail: nman.omafra@ontario.ca

www.ontario.ca/omafra