

# NUTRIENT MANAGEMENT NEWSLETTER

Environmental Management Branch, OMAFRA

December 2011

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## A Second Thought About Secondary Containment

*By: Peter Doris, Environmental Specialist, OMAFRA*

A recent conversation with a farmer highlighted the need for some discussion on secondary containment. The farmer had reasonable knowledge of the requirements for engineered design and oversight for the construction of the storage facility, site characterization and the engineered transfer system. However, he was not aware of the requirements for secondary containment for the facility portion that is to be constructed above grade to address the risk of a possible above-grade breach.



Photo courtesy of Ontario Harvestore Systems

Section 76 in O. Reg 267/03 addresses secondary containment in liquid storage facilities. These requirements are summarized in the OMAFRA Factsheet entitled [Constructing Hydraulically Secure Liquid Nutrient Storage Facilities](#) as follows:

Liquid nutrient storage structures that extend above the surface of the ground must be constructed so that at least one of three conditions is met:

- A factor of safety is applied to the design as determined by an engineer to increase structural integrity.
- An engineer specifies a secondary containment system is not required.
- The above grade portion of the storage has a secondary containment system with a capacity that will store 110% of the above ground portion of the facility.

In summary, secondary containment is one of the engineering requirements that helps ensure the safety and integrity of liquid manure storage facilities constructed under an approved nutrient management strategy.

# New Form Helps Streamline the Nutrient Management Strategies Process

By: *Matt Wilson, Environmental Specialist, OMAFRA*



In an effort to streamline the approvals of Nutrient Management Strategies (NMS) a process change is being implemented. As an option to consultants and certified farmers the new **Engineering Requirement Form (ERF)** can be submitted in place of the **Engineers Commitment Certificate (ECC)** at the time a NMS is submitted for approval. The new form will identify the features of building projects that require engineering design and review under the Nutrient Management Regulations but will not be signed by the Engineers. The Engineers Commitment Certificate will still require signature(s) by the Professional Engineers involved in the project but will be submitted along with the Record of Approval when applying for the building permit.

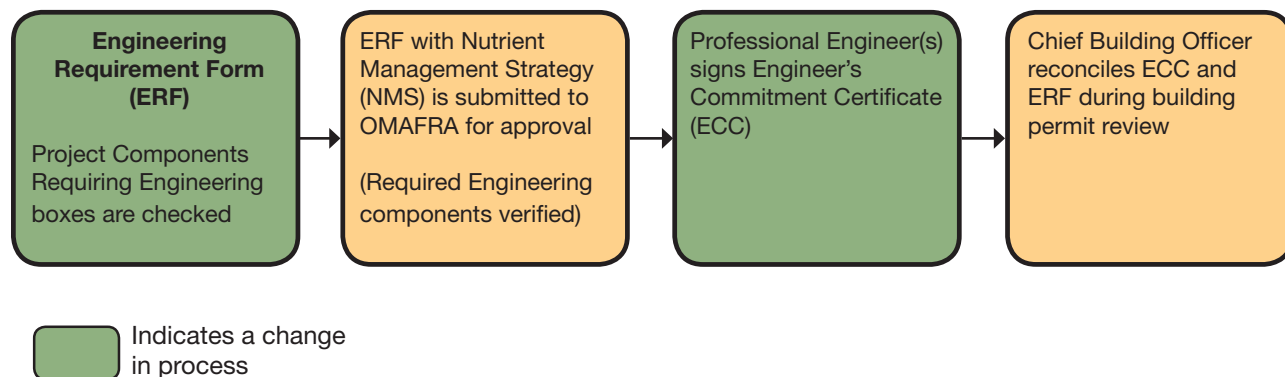
We received feedback from Engineers, Building Officials and Consultants and have made a number of improvements to the NMS approvals process. This new process change allows:

- The Professional Engineer to commit to a project after the NMS is approved
- The engineer to be brought into the process after most siting details are finalized
- The lag time between when the engineer signs on to a project and when the project starts will be much shorter
- The producer can start preparing the NMS earlier
- Producers have assurance that their proposed building project will meet the Nutrient Management Regulations before having to retain professionals to do design work

Both the ERF and the ECC forms can be found on our website at:  
[www.omafra.gov.on.ca/english/environment/forms.htm](http://www.omafra.gov.on.ca/english/environment/forms.htm)

If you have any questions on the new form or the change in the process please contact your local Environmental Specialist.

## Using the Engineering Requirement Form



# AG MAPS Launches at Fall Farm Shows

By Phyllis MacMaster, Environmental Specialist, OMAFRA

OMAFRA recently launched its Geographic Information website AG MAPS, at the Outdoor Farm Show and the International Plowing Match in September. OMAFRA Geospatial Information Specialist, Jennifer Birchmore was on hand to provide demonstrations to interested visitors. “The site was well received with positive feedback from nutrient management consultants and landowners. Users are excited to find all the information required to submit agriculture strategies or plans and applications in one spot” said Jennifer.



AG MAPS offers professionals like nutrient management consultants and NASM Plan Developers access to all geospatial agricultural and rural information including the Agricultural Information Atlas mapping website. This interactive site provides visitors options to create and view agricultural data like soils, drainage and aerial imagery with relevant data layers from other Provincial ministries.

Nutrient Management professionals in particular can now create farmstead site and field sketches, measure field areas and distances to and from sensitive features, check roll numbers and lot concession property locations, use aerial photos to identify existing livestock barns and manure storages, as well as view sites for new or expanding barns or storage. Maps developed using the

mapping tools can be submitted to OMAFRA in support of tile drainage record submissions, nutrient management and environmental farm plans.

As well, AG MAPS offers viewers access to pre-fabricated maps like the Canada Land Inventory map series plus maps from the data download pages like Ontario Farmers markets and OMAFRA office locations.

Farmers, Nutrient Management Consultants, NASM Plan Developers, Drainage Superintendents, Green Energy Developers, Real Estate Developers, Conservation Authorities and many other professionals and planners can benefit from having this site publicly available.

Tile Drainage Record - Example Drainage Map

|                                                                                                                                                                                                                                               |                     |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| Contractor<br>ABC                                                                                                                                                                                                                             |                     |
| Licence Number<br>1234                                                                                                                                                                                                                        |                     |
| Landowner<br>Example Farms                                                                                                                                                                                                                    |                     |
| County<br>COUNTY OF HURON                                                                                                                                                                                                                     |                     |
| Township<br>WAWANOSH                                                                                                                                                                                                                          |                     |
| Concession<br>5                                                                                                                                                                                                                               | Lot<br>13           |
| Year of Installation<br>2009                                                                                                                                                                                                                  | Acres Drained<br>30 |
| Length of Tile Installed <input checked="" type="checkbox"/> Feet<br>200 <input type="checkbox"/> Metres                                                                                                                                      |                     |
| Drain Information <input checked="" type="checkbox"/> Random<br><input type="checkbox"/> Systematic                                                                                                                                           |                     |
| <input checked="" type="checkbox"/> New System<br><input type="checkbox"/> Improved System                                                                                                                                                    |                     |
| Outlet Information<br><input type="checkbox"/> Road Ditch <input checked="" type="checkbox"/> Municipal Drain<br><input type="checkbox"/> Private Ditch <input type="checkbox"/> Natural Watercourse<br><input type="checkbox"/> Other: _____ |                     |

An aerial photograph of a farmstead with a yellow line indicating a drainage system. Labels on the map include "LOT 11, CON. 5 EASTERN DIVISION", "LOT 12, CON. 5 EASTERN DIVISION", "LOT 13, CON. 5", "LOT 14, CON. 5", and "LOT 15, CON. 5". A scale bar at the bottom indicates distances from 0 to 800 meters. Map coordinates are given as 43° 51' 39.2" N, 81° 35' 26.5" W. The map was created on October 28, 2010.

This map was created using the Agriculture Information Atlas. The user located a specific property, turned on layers of interest (i.e., photography) and used available tools to sketch and label fields.

Visit AG MAPS at: [www.ontario.ca/agmaps](http://www.ontario.ca/agmaps)

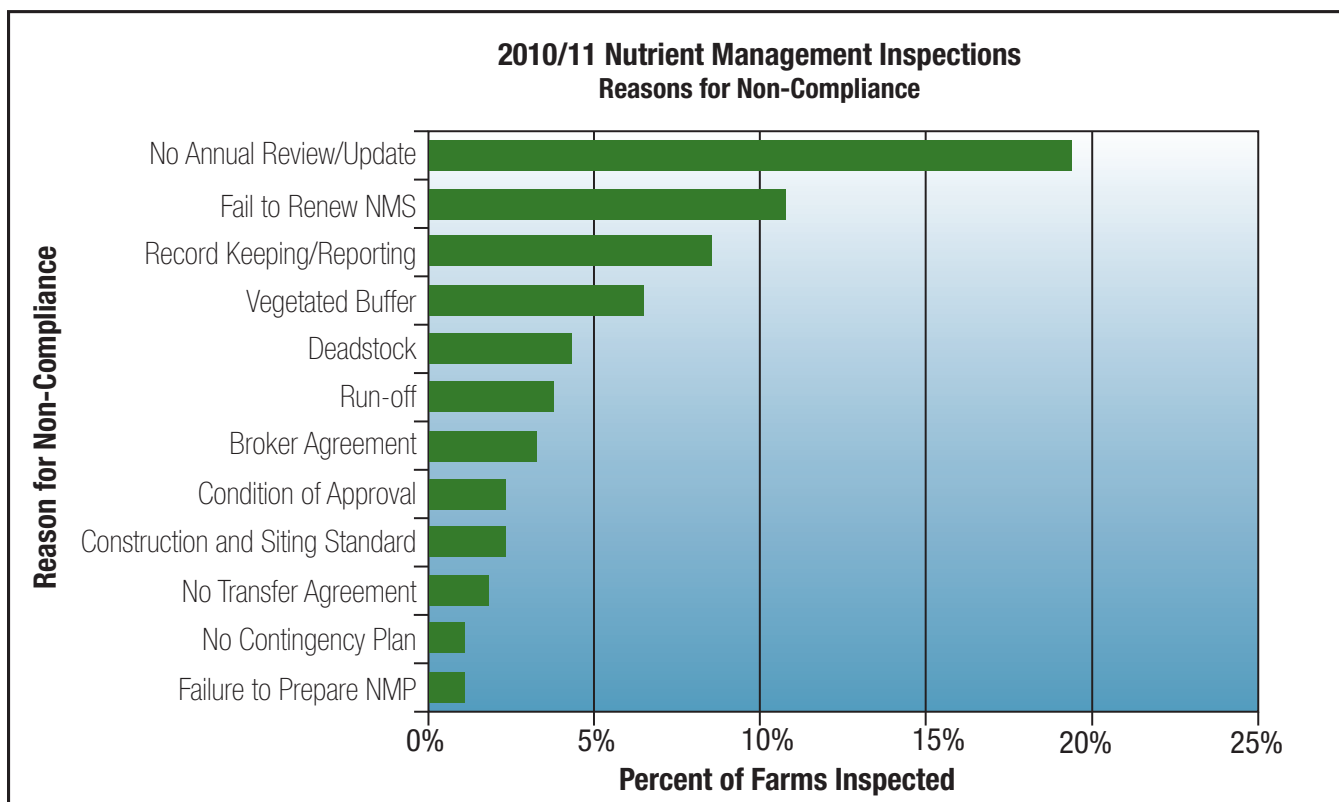
# Nutrient Management Inspection Findings 2010/11 – Summary by the Ministry of the Environment

*By: Paul Sims, Divisional Program Specialist, Program Services Unit, Southwestern Region, Ontario Ministry of the Environment*

During its 2010/2011 fiscal year the Ministry of Environment conducted 191 planned Nutrient Management Inspections. Based on the results from these inspections the most common challenges that farmers face with compliance to the nutrient management regulations are administrative in nature and include:

- no annual review or update,
- failure to renew the nutrient management strategy, typically after five years, and
- failure to comply with record keeping and reporting requirements

Compliance with vegetated buffer zone and run-off management requirements were the most commonly cited problems related to land application and storage.



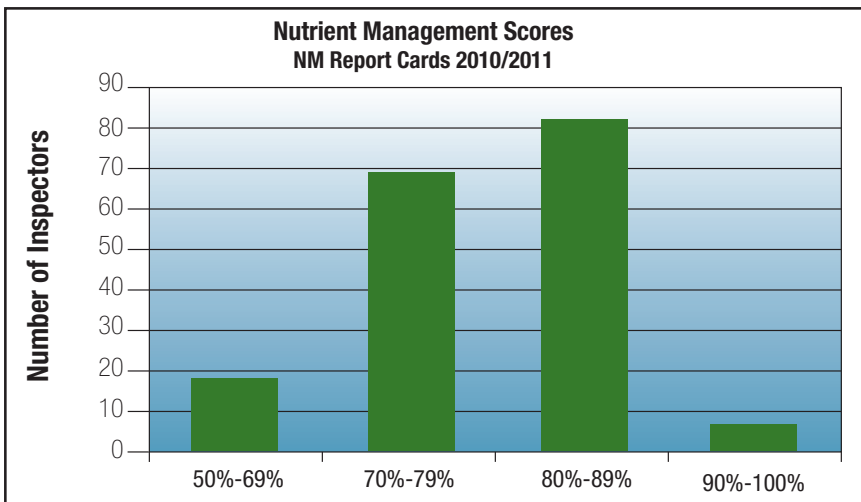
Administrative non-compliance continues to be the primary cause of violations noted during inspections.

Failure to renew has been identified as a common compliance problem. Southwest Region Program Services Unit is working with the Districts and OMAFRA to improve performance in this area.

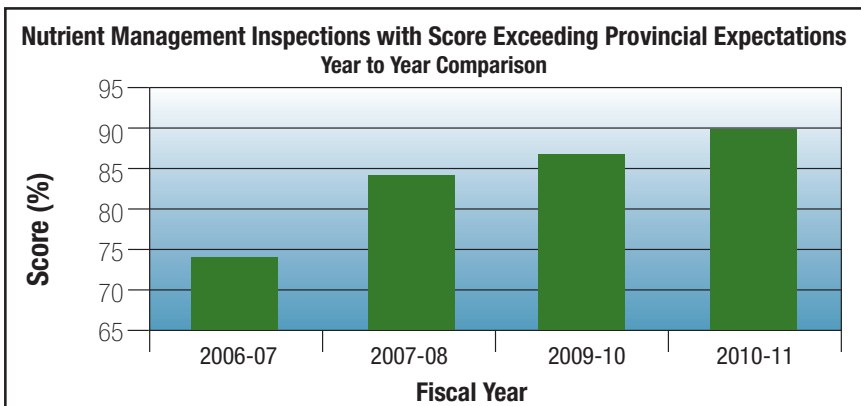
Failure to maintain adequate buffer zones is the most often cited violation of land application standards.

## Environmental Performance

During Nutrient Management inspections the MOE also assesses a farm's environmental performance. Environmental performance is measured using a scoring system (range from 1-100) which is calculated from observations made during the inspection. A minimally compliant operation receives a score of 70 using this system. This is the benchmark that should be met for provincial expectations. Operations with better risk management practices that go beyond compliance receive scores higher than 70, provided the operation has few significant compliance issues.



2010/11 found 90% of inspections exceeded the provincial expectation of scoring 70% on the report card.

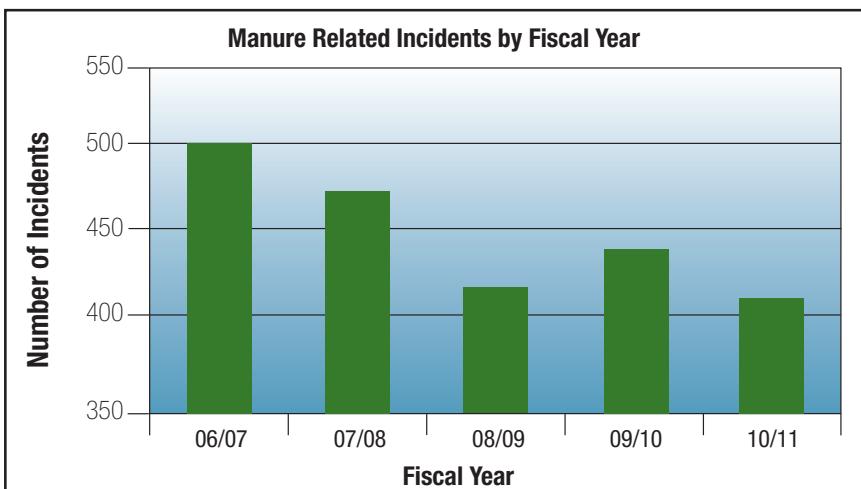


Annual trends indicate environmental performance by farms continue to improve year over year.

### Note:

2010/11 improvements may in part be due to changes to the risk scoring for control points that were implemented that year.

The MOE also tracks manure related incident reports involving spills, reports of non-compliance or complaints. The following summarizes the year-to-year numbers of manure related incident reports.



Comparison of manure related incidents indicates a downward trend.

# Linkages Between On-farm Quality Assurance Programs and Nutrient Management

*By: Peter Doris, Environmental Specialist, OMAFRA*

Recently a random audit by the Ministry of Environment on a poultry farm brought to light the issue of multiple standards with respect to locating manure storage facilities. The Chicken Farmers of Canada, through their On Farm Food Safety Assurance Program (OFFSAP), strongly recommends that manure storage facilities be located at least 15 m away from chicken barns. In the OFFSAP program, the 15 m area around the barn is referred to as a “controlled access zone” (CAZ) and is part of the biosecurity program for chicken farms. Facilities built prior to the OFFSAP program may have the manure storages within 15 m of the barn and in some cases storage might be adjacent to the barn.



Permanent Storage for Solid Manure

O Reg 267/03 does not require a setback for manure storage facilities from the barn but does require setbacks from water resources such as wells, surface water and tile inlets. There can be other setbacks for barns and manure storage facilities such as minimum distance separation requirements in municipal zoning by-laws.

This issue brings to light the importance of proper planning prior to construction. From a certification perspective, the consultant is expected to ensure that the nutrient management requirements are met, but the consultant should make certain that their client is aware that there are multiple requirements to siting\* of the manure storage. The consultant also should clarify in the initial engagement meeting who is expected to look into what and confirm the rules.

In addition to the Building Code, the Nutrient Management regulation, commodity quality assurance programs and municipal by-laws are some of the requirements to consider prior to the construction of a building project.

**\*Other factors including:** site drainage, services (lanes, power, water supply, waste disposal), security, space allowance for future expansion, separation distances for snow and wind control, ventilation and disease control, distance separation from residences for control of noise and odours, distance to wells, surface water, catch basins but are not discussed in this document).

## Image from Factsheet:

*Building a Permanent Storage for Solid Manure or Prescribed Materials Over 18% Dry Matter*

# 2011 Manure Expo, Norfolk, Nebraska

*By: Peter Doris, Environmental Specialist, OMAFRA*

For the last 10 years, on one day in the middle of summer, people from all over North America congregate to discuss the state of manure management at an event called Manure Expo. The 2011 Expo was held on July 20 in Norfolk, Nebraska and attracted approximately 1000 farmers, researchers, industry, government and media representatives. The Expo is a “hands-on” event with a large trade show, educational sessions and technology demonstrations.

## Applicable Lessons for Ontario

The trade show area features an extensive line up of products and services related to manure management, including Ontario and Canadian companies. I was wonderstruck by the seemingly ever increasing size and scale of some of the equipment. However upon closer examination, it is the advancement related to precision and accuracy that is truly impressive. GPS, real time data management and record keeping, and computer linked interfaces with other equipment (i.e. tractors, pumps, etc) are all an integral part of today's equipment.



Liquid manure equipment demonstration at 2011 Manure Expo in Norfolk, Nebraska

From a regulatory and public policy standpoint, the Americans have federal and state oversight of Concentrated Animal Feeding Operations (CAFOs). There are different provisions depending on the number of animals in the operation and whether or not the operation directly discharges to surface water. A nutrient management plan is required by some CAFO operators in relation to land application of manure. The U.S. Environmental Protection Agency (USEPA) is also examining methodology for air emissions reporting from CAFOs and their manure storages related to four pollutants: particulate matter (PM), hydrogen sulfide (H<sub>2</sub>S), volatile organic compounds (VOCs), and ammonia (NH<sub>3</sub>) in order to comply with US air quality statutes and for protection against civil litigation.

The concurrent programs highlighted research on several topics including winter spreading of manure. Not surprisingly, the research from the Discovery Farms that are part of the University of Wisconsin showed winter application of manure is not a best management practice. Field and farm level observations from Wisconsin showed the greatest risk of runoff in mid-to-late winter (January – March) when manure application occurred prior to rainfall and snow melt events. The speaker highlighted the fact that winter spreading should only be done as a contingency and that fields for application should be selected for a low risk of runoff (little or no slope, not near surface water and have crop residue or a dormant crop).

Next year, the 2012 [Manure Expo](#) will be August 22 2012 in Prairie Du Sac, Wisconsin.

# Training Tidbits

## NEW Factsheets

Temporary Field Storage of Non-Agricultural Source Material 11-009 **NEW**

Handling Milking Centre Washwater 11-039 **Revised**

Septic Smart: Advanced Treatment Systems – Alternatives to Conventional Septic Systems AF146 **NEW**

## Courses and Training Update

Nutrient Management Courses and Exams for Certificates and/or Licences

Register on line at [www.nutrientmanagement.ca](http://www.nutrientmanagement.ca)

### Coming Soon:

- January 2012 - New [Biogas Safety Awareness eLearning course](#) will be available on line in French and English. Let your clients know this is available to them.
- Winter 2012 - Revised and updated [Primary and Advanced Drainage courses](#) will be available on-line in January and February 2012. Watch our [website](#) for details.
- February 22nd, 2012 - Next Consultant Meeting Update is tentatively set for this date. Mark your calendars.

## Reminders:

- The first Nutrient Application Technician Licences are up for renewal in 2012.
- Broker Certificate and Prescribed Material Application Business Licence started renewing in 2011.
- To avoid being out of compliance ensure the nutrient management strategies/plans you have prepared list individuals with up-to-date certificates and licences.

Hardcopies of publications can be ordered through Service Ontario

- Online at [ServiceOntario Publications](#)
- By phone at:
  - 416-326-5300
  - 1-800-668-9938 Toll-free across Canada
- Order in person through a public access terminal available at [ServiceOntario Centres](#) located across the province

## Look for a Postcard! Renewal Notices Twice a Year

Renewal notices will be coming out to certificate and licence holders twice a year. As a reminder, a postcard will be sent to you approximately 6 months in advance of your certificate or licence expiring. Remember it can take a few months to meet your renewal requirements. It is your responsibility to know when your certificate and licence expires and plan for your renewal process.



## Amended Certificates – terms and conditions under review due to the changes in O. Reg 267/03, effective date: January 1, 2011

Terms and Conditions on all Nutrient Management Certificates and Licences are in the process of being reviewed to clarify responsibilities and duties; and also ensure consistency with other certificates/licences. Amended documents will be issued to current certificate and licence holders as appropriate.

### Contact Your Local OMAFRA Specialist!

**Phyllis MacMaster, Environmental Specialist**  
Ontario Ministry of Agriculture, Food and Rural Affairs,  
Box 2004, Kemptville ON K0G 1J0  
T: 613-258-8297  
F: 613-258-8392  
[phyllis.macmaster@ontario.ca](mailto:phyllis.macmaster@ontario.ca)

[ontario.ca/omafra](http://ontario.ca/omafra)

Agriculture Information Contact Centre:  
T: 1-877-424-1300