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Regulating Nutrients from Non-agricultural Sources

Background – Nutrient Management Act

Ontario passed the Nutrient Management Act (NMA) in June 2002 and its companion regulation in 2003. The intent of the act is to provide comprehensive, enforceable, province-wide standards to regulate biosolids and other materials that are applied to land by the agricultural industry, municipalities, food processors, wineries and paper mills. This material includes agricultural source materials like manure, and non-agricultural source materials (NASM) such as leaf and yard waste, fruit and vegetable peels, residual organics from food processing, treated septage, pulp and paper biosolids and sewage biosolids.

The regulation considered the Walkerton Inquiry recommendations and as a result, nutrient management became part of Ontario's comprehensive, science-based approach to protecting drinking water.

Who's responsible

The Ministry of the Environment (MOE) and the Ministry of Agriculture, Food and Rural Affairs (OMAFRA) share responsibility for ensuring the application of biosolids and other nutrients on farmland is protective of the environment, Ontario's water supply and human health, while also benefiting crop production.

OMAFRA brings experience and science-based understanding of agricultural needs, soil fertility and nutrient management. The ministry is responsible for the approvals of nutrient management plans and the training and certification of land applicators and plan preparers.

MOE brings the scientific knowledge and commitment to the protection of groundwater, surface water, soils and air, ensuring that nutrient management practices and standards are environmentally protective through science-based research. A key responsibility is to make certain regulatory requirements are followed through inspection and enforcement activities carried out under the Environmental Protection Act (EPA), Ontario Water Resource Act and the NMA.

Together the two ministries ensure that environmental protection is maintained and enhanced and that application of these materials meets the needs of farmers.

Why spread organics on farmland?

Spreading materials like NASM on farmland returns essential nutrients to the soil to help foster new plant growth. Materials that are high in organic matter, for example, allow the soil to breathe and hold more water, which decreases water runoff and soil erosion and increases overall water conservation.

Farmers also receive an economic benefit as NASM provides nitrogen, phosphorus and other micro-nutrients typically found in commercial fertilizers that would otherwise have to be purchased.

Another important reason for using these materials on farmland is that it keeps them out of landfills, an important consideration in Ontario's waste diversion efforts.

A number of studies have been conducted on the land application of biosolids. No objective evidence has been found to indicate that properly applied and regulated land application of biosolids has adverse health impacts. For more information on studies, see MOE's fact sheet titled [Land Application of Sewage Biosolids: Keeping Up-to-date on Latest Science](#).

Other jurisdictions

Ontario's current Nutrient Management Regulation is similar to the requirements of other countries and provinces.

The United States' Environmental Protection Agency and Quebec's Ministère du Développement durable, de l'Environnement et des Parcs have instituted quality-based standards and approval systems for sewage biosolids similar to Ontario's approach, although Ontario's includes a broader range of materials.

Regulatory changes for NASM

The new requirements focus on the quality of the material being applied to the land, building on standards that already exist and were part of conditions set out in a Certificate of Approval. They include greater consideration of the material quality and potential odour generation and will cover any Ontario farm where non-agricultural source material will be applied, as opposed to just those farms that have livestock.

Changes to strengthen the standards and requirements include:

- Requirements that were previously in guidelines are now in regulation. This change gives greater certainty about permissible practices and greater transparency about the process.
- The creation of three categories of non-agricultural source material that determine the approvals required, land application rules and storage requirements. Certain standards must be met depending on the concentration of metals, pathogen content and odour potential. If the levels are exceeded, the material cannot be applied to farmland.
- Based on the quality of the material, some applications will be required to prepare a land application plan while others, such as sewage biosolids, will need to have the plan approved by OMAFRA. In addition generators will still need to meet Certificate of Approval requirements for the generation of the material.
- Minimum setbacks from surface water, depth to bedrock and maximum application rates are now contained in the regulation.

- Additional testing of material may be required if it is felt that there is potential for an adverse effect.
- An odour classification system has been developed with an accompanying NASM Odour Guide. This will be used by the regulated community and staff of MOE and OMAFRA to determine odour category and setback distances from residences, residential areas and institutions.

The changes that have been made to the management of non-agricultural source materials are designed to strengthen the rules and remove overlapping approvals for farmers and generators of NASM.

Until now, the application of non-agricultural source materials on farm lands was subject to approval under the EPA, meaning that some generators and receivers had to obtain a Certificate of Approval. But NASM used as a nutrient also needed approval under the Nutrient Management Act, which required generators to prepare a nutrient management strategy and receivers to prepare a nutrient management plan. The result was an overlapping approval process.

Generators of NASM will continue to be regulated under the EPA until the material arrives at the farmer's gate where it becomes subject to the nutrient management regulation.

This change brings consistency across the province, levels the playing field for farmers, generators and haulers, and clearly defines requirements and who's impacted.

A chart on old and new standards and requirements is available on MOE's website at www.ontario.ca/nasm-moe.

For more information

Please call or visit the following websites for additional information:

Ministry of the Environment
Public Information Centre
1-800-565-4923 or 416-325-4000
www.ontario.ca/nasm-moe

Ministry of Agriculture, Food and Rural Affairs
Agriculture Information Contact Centre
1-877-424-1300
www.ontario.ca/nasm

ADDENDUM – COMPARISON CHART: OLD AND NEW STANDARDS/REQUIREMENTS

Material Standards & Requirements

Standard/ Requirement	Old	New	Rationale
Testing for metals	Required for higher risk None for lower risk materials (e.g., vegetable peels)	Same unless lower risk materials are applied at higher rate then testing required	Maintain protection
Testing for pathogens	Required for those generating higher risk material that is currently regulated by Nutrient Management Act No testing for lower risk materials like vegetable peels	Required for all materials containing human waste, and other materials wishing to prove low pathogen levels None for lower risk	More protective of health and environment Encourages treatment of more materials to prove lower pathogen levels
Approval process	Certificate of Approval (C of A) for higher risk No testing for lower risk	Must have a registered NASM plan in place for medium risk materials (such as bakery waste that meet low metal levels) Must have an OMAFRA-approved NASM plan for higher risk (e.g., sewage biosolids and paper biosolids) None for lower risk	NASM plan looks at nutrient content and quality of materials Regulation provides the standards and land application requirements typically found in Certificates of Approval Ensures standards are met. Testing must be completed and results provided to farmer before material land applied

Agricultural Standards & Requirements

Standard/ Requirement	Old	New	Rationale
Testing soil	Required for higher risk; none for lower risk	Same	Maintain protection
Testing nutrients	Required for higher risk; none for lower risk	Required for higher risk; none for lower risk unless application rate increases	Increases protection when more lower risk materials are applied
Testing parameters	Testing required on a case- by- case basis at the time of CofA application	Testing requirements identified for specific materials in regulation (sodium, boron, fats, oils & greases). Director has authority to request additional testing of other parameters (e.g., emerging contaminants like thallium)	Clarify up front what parameters must be tested for and what the limits are for each categorized material More protective, levels playing field
Beneficial use requirements	Assumed to be of benefit if fit NASM definition	Must demonstrate benefit (e.g., material must contain phosphorous or raise pH of soil)	Clarifies when a material is a nutrient and when it was a waste and would need a C of A
Application rates	Based on risk of materials and limiting factors specified in protocols and guidelines	Application rates and limits are now in regulation.	More easily enforceable Considers all parameters before determining land application rates
Harvest and grazing periods	One set of restrictions based on crop and livestock type	Same restrictions for higher risk materials, but lower risk materials have reduced periods	Reflects quality of material and promotes use of higher quality material

Water Protection Standards & Requirements

Standard/ Requirement	Old	New	Rationale
Setbacks to wells	100 metres to a municipal well 90 m to other well 15 m to drilled wells	Same for higher risk materials Lower risk materials have reduced setbacks to other wells (30 m)	Setbacks reflect quality and risk of NASM being applied No change for sewage biosolids
Setbacks to surface water	Cannot apply NASM within 20 m of surface water	Same; lower risk materials can be applied closer if certain conditions met	Setbacks reflect quality and risk of NASM being applied No change for sewage biosolids
Depth to bedrock	1.5 m in current guide but standard may be reduced on case-by- case basis; often lower in C of A)	<u>Low risk materials</u> No application on less than 0.3 m from bedrock; additional restrictions between 0.3 m and 0.5 m; no additional restriction if more than 0.6 m <u>Higher risk</u> No application if less than 0.5 m; additional restrictions between 0.5 m and 1 m; no additional restriction more than 1 m	Reflects quality and risk of NASM being applied. Ensures consistent standards across the province. Increased restriction for higher risk material
Depth of unsaturated soil	At least 0.3 m of unsaturated soil required	Higher risk has additional restrictions after 0.3 m; lower risk no additional restrictions after 0.3 m	Standards based on quality of material with increased restrictions for higher risk materials

Other Standards & Requirements

Standard/ Requirement	Old	New	Rationale
Winter application	<p>Application restrictions on ground that is snow covered or frozen for all materials</p> <p>No winter application of sewage biosolids</p> <p>No rules for pulp and paper biosolids</p>	<p>Reduced requirements for low risk materials (e.g., shorter timeframe for incorporation)</p> <p>No application of sewage biosolids in winter</p> <p>New rules for pulp and paper biosolids</p>	<p>Protective</p> <p>Reflects quality of NASM being applied</p>
Odour	<p>General setbacks based on experience</p>	<p>New setbacks from residences and other occupied buildings and areas based on odour units</p>	<p>Specified in regulation.</p> <p>Protects neighbours</p> <p>Approach based on actual field experience and Quebec system</p>
Enforcement	MOE	Same	
Consistency of standards	Standards varied in Cs of A across districts	Standards defined in regulation	Ensures that standards are consistent across the province
Training and certification	Training and certification for brokers, land applicators/ farmers	More comprehensive and clear requirements for training/certification for land applicators/farmers	Ensure certified people are better prepared for duties to manage NASM
Approvals	MOE	OMAFRA	Standards and land application requirements that were part of MOE approvals process are now in regulation
Notification	MOE notifies municipality when C of A approved	<p>OMAFRA to notify municipality when NASM plan approved</p> <p>Land applicator to notify MOE before spreading</p>	<p>Helps plan enforcement activities</p> <p>Ensures municipality is aware of application sites for higher risk materials</p>