

**Comments
on the
Draft: Guide for the Beneficial Use of
Non-Agricultural Source Materials (NASM)
on Agricultural Land**

**Submitted
to the
Ontario Ministry of the Environment**

**by the
Water Environment Association of Ontario**

January 28, 2005

EBR Registry Number: PA04E0008

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I. INTRODUCTION

The Water Environment Association of Ontario (WEAO) appreciates this opportunity to comment on the Draft Guide for the Beneficial Use of Non-Agricultural Source Materials on Agricultural Land (the NASM Guide). WEAO is dedicated to the transfer of information and concepts regarding all areas of the water environment. We provide a valuable network for those involved in pollution abatement. WEAO is a member association of the Water Environment Federation (WEF), an international organization with a vision of "Clean Water Everywhere". Membership in WEF is approximately 41,000.

WEAO has adopted the Vision of "A Clean Water Environment, Today and Tomorrow".

The Association has a membership comprised of professionals dedicated to improving the water environment, including managers, engineers, technologists, scientists, equipment suppliers and contractors, as well as students. The approximately 1,200 members represent consulting firms, industries, equipment manufacturers, municipalities, colleges and universities, and provincial and federal government agencies.

The Association serves its membership by organizing a number of professional development and technical seminars each year, as well as an annual conference. The membership is updated on current issues through the publication of its newsletter, and maintenance of an active website.

"WEF encourages countries, provinces, and states to exercise leadership in designing environmentally protective, easily implemented biosolids management programs." In addition, WEF "... believes that preserving and enhancing water quality is possible only through the application of sound scientific knowledge and effective technology." Beneficial use of biosolids on agricultural land has been practised widely in Ontario since the development of guidelines in the mid-1970's. In fact, land application is the preferred biosolids management option for more than 80% of Ontario municipalities.

During a 30-year history, no adverse effects on human or animal health, crop productivity, or the environment have been documented around well-managed biosolids land application sites in Ontario. Similarly, the U.S. National Academy of Sciences, U.S. Environmental Protection Agency, European Union, Canadian and Provincial Governments and various academic

institutions worldwide have conducted extensive research and have concluded that land application of biosolids according to guidelines, poses minimal health or environmental risk.

Part II of our submission provides some general comment on the proposed NASM Guide, followed by specific comments referenced to sections of the NASM Guide. The following comments reference the numbering and pagination of the draft document as published on the EBR website.

We have adopted the principle of sound scientific knowledge and effective technology in making our comments, as well as reasonable implementation timelines, and we trust they will be useful in finalizing the NASM Guide.

II. COMMENTS ON PROPOSED DRAFT

A. Duplication of Regulation

The revision of the 1996 Guidelines for the Utilization of Biosolids and Other Wastes on Agricultural Land into the Draft NASM Guide appears to have been done so as to generally make the NASM guide consistent with the requirements of the Nutrient Management Act, Regulations and Protocols (NMA). While we appreciate the MOE efforts to harmonize the duplicate regulation of biosolids under the NMA and the EPA, we would prefer that this duplicate regulation did not exist.

We recommend that biosolids management be removed from the *Environmental Protection Act* (EPA) and be managed only through the *Nutrient Management Act*. This will simplify the ability of generators and managers to manage biosolids, to ensure reliability and consistency of management practices and minimize costly and time-consuming duplication of efforts. In addition, we recommend that with respect to biosolids, all government agencies be required to operate only under the NMA and its regulations. For example, at present, the Ontario Realty Corporation, the Niagara Escarpment Commission, local Conservation Authorities and some municipalities have imposed their own bylaws and requirements on land application of biosolids.

B. Timing of Implementation

By incorporating the technical requirements of the NMA, such as sampling and analysis requirements, application standards, pathogen testing, use of the NMAN program, etc the

proposed NASM Guide effectively phases in all NASM generators as soon as they receive a new site CofA which references the NASM Guide. Requiring the use of NMAN for the determination of application rates also effectively phases in all farms associated with these new CofAs. (The main elements of the NMA not required by the NASM guide, i.e. the development of an actual strategy and/or plan, is a minor consideration compared to the requirements of the NMA being implemented through the NASM Guide.) Since most generators are likely to apply to a site with a new CofA in any given year, this essentially accelerated the implementation of the NMA for all NASM generators and farmers receiving NASM.

Generators have been anticipating the requirements of the NMA to come in effect according to the phasing in schedules in the NMA regulations. This NASM Guide implements these requirements but does not follow the NMA phasing in schedule. Generators require time to assess the implications of the changes required and put in place plans for compliance. For municipal generators especially, time is required to have plans approved and budgeted for. In the likely event that capital changes are required to wastewater facilities to comply with the requirements, several years are typically required to budget, design and construct the required facilities. The phasing schedule of the NMA regulations generally recognises this need.

The introduction of the use of the NMAN program to set application rates will also have an impact on biosolids application programs by reducing many application rates and requiring more land. Given that municipalities already find it difficult, or impossible, to secure enough land, requiring more land will be a significant challenge. Once again generators need time to respond to these changes. It should be noted that under the NMA, the requirement to use NMAN would only apply to NASM generators when they applied material to a phased in farm. In most cases this would not occur until cash croppers are phased in under the NMA, a condition for which a phase in schedule has not yet even been released. NMAN's inclusion in the NASM Guide accelerates its impact on biosolids programs significantly.

It is recommended that the proposed NASM Guide not come into effect for at least a one year period following its release in final form, prior to the beginning of the land application season (i.e. Before April 1), and that it be phased in after that in a manner consistent with the NMA regulations.

C. Timeliness of Approvals and Implementation of Regulatory Requirements

Our members and other stakeholders have experienced long delays in obtaining Certificates of Approval (CofA) from the Ontario Ministry of Environment district offices, on applications for land spreading of biosolids. Applications have been submitted in a timely fashion but approvals have not been issued in a timely manner by MOE District Offices. Expected within 2 weeks or one month – often approvals have been issued only after 6 or more months. These kinds of delays make it impossible to meet land application commitments to farmers or sewage biosolids management commitments to municipalities. These delays will further complicate the use of agronomic application rates, as required by the draft NASM Guide.

D. Proposed Enhancements to MOE's Land Application Program

The MOE had previously released a consultation draft regarding enhancements to the MOE's biosolids land application program, in the form of mandatory requirements for municipal and public consultation and notification around land application sites. Since this type of requirement is not present in the Draft NASM Guide, are we to assume that the MOE has chosen not to implement these enhancements, or will there be an additional instrument regarding consultation?

E. Lack of Accredited Methods for Biosolids Cake analysis

By making reference to the NMA Protocol documents for sampling and analysis, the NASM Guide has inherited the problems associated with the Protocols. In particular, the lack of CAEAL certified methods for a biosolids cake matrix make it impossible for plants applying dewatered biosolids to comply with the protocol, which requires sampling of the cake rather than the liquid biosolids and analysis by an accredited laboratory. The MOE should ensure that methods are in place for required analysis, before imposing the requirement.

F. Removal of Nitrogen: Metal Criteria

The WEAO support the MOE decision to remove the Nitrogen to Metals ratio criteria, contained in the previous biosolids Guidelines. The Nitrogen: Metal ratio criteria did not provide any additional information or environmental protection. It's removal makes the NASM Guide easier to understand and easier to explain to the public, while remaining protective of the environment.

G. Metals limits and blending of materials

Section 9, table 5 and 6 and various other sections should reflect a general recognition in the NASM Guide that the protection of the soil from metals accumulation is based on a potential long term build up of metals after many, many applications of material. While it may not be desirable over the long term, it is possible in the short term to significantly exceed the standard in table 5 columns 2-4 without exceeding column 5 or causing any damage to agricultural land or crops. This should be reflected in the provision of some flexibility for materials that exceed the metals standards. For example, municipalities should be given some time to determine the cause of, and correct, an abnormal elevated metals level in their biosolids. They should be allowed to continue to blend and/or apply the material at a reduced rate for a reasonable time period. Also the ability to blend materials allowed under the previous guideline should be retained, as it reflects the reality that it is the long term quality of the final material applied to land that is relevant to protecting the environment. This ability currently provided by the biosolids guidelines provides much needed operational flexibility and contingency to biosolids programs.

H. Restrictions on all NASM's

Given that the definition of NASM is far broader than “biosolids”, or even “wastes applied to agricultural lands” and may include materials the MOE has not considered, the MOE should review the proposed NASM Guide very carefully to ensure they are not inadvertently placing restrictions on other materials that are not scientifically warranted. Examples of this include the concerns raised below related to the application of liming materials, and the restriction on crop harvest and application for all NASM's under section 6.5.

I. Specific comments

Section 1 contains no definition of the term commercial fertilizer, even though the term is used in the Draft NASM Guide. The definition of commercial fertilizer from the NMA should not be used as it does not encompass all “commercial fertilizers”. A suitable definition that includes all fertilizers sold under the provisions of the Federal Fertilizers Act should be developed and included in both the NMA and the NASM Guide.

Section 1 should contain a definition of “nutrient” as it is crucial to the definition of NASM

Section 2.4.2 In addition to recognizing that biosolids have demonstrated that they meet condition 2, it should be noted that they also typically meet the requirements of condition 1.

Section 4.1 includes a requirement that odours from all materials, including biosolids, should after spreading generally be no more than those produced by normal farm practices. This is a significant change from the previous biosolids Guidelines, as this provision did not apply to biosolids. There is not an equivalent requirement under the NMA. The MOE is still in the process of developing odour measurement techniques and a standard for land applied materials, and does not currently have a scientifically defensible method available to properly enforce this section. It would be prudent for the MOE to wait until it has procedures, methods and standards in place before trying to impose odour standards on biosolids.

Sections 4.1.1 and 4.3.7 should show the E. Coli standard as 2×10^6 not 2×106 i.e. two million not two hundred and twelve.

Section 4.2. would appear to require biosolids to be sampled for a number of parameters that are currently not required under the NMA. This includes Potassium in section 4.2.3, Sodium in section 3.3.2, Boron in section 4.3.3, and Fats Oils and Greases in section 4.3.4. These sections should be clarified to indicate that sampling for these parameters might be required, for some NASM.

Section 4.3.1 The text here is describing the very action of the NASM Guide itself, yet it reads as if it is describing some other regulation or standard that sets standards and restricts metals, and that only a summary is required here. For example, how is it that only column 4 of table 5 and 6 provide the details of metals limits, when column 4 is not even mentioned anywhere else in the NASM Guide?

Table 5 and 5. The columns in the tables should be numbered for clearer reference throughout the NASM Guide. The maximum permissible metals addition to soil values in column 4 are frequently less than the product of the 22 or 8 tonne application rates and the metals concentration limits in columns 2 and 3 respectively. This causes column 4 to become the rate limiting parameter and application at the limits provided in columns 2 and 3 is not possible. That application rates may be limited by columns 4 or 5 of table 5 or 6 is not explicitly stated in the text of the NASM Guide.

Section 4.3.5 should be clarified to indicate that high and low pH materials may be applied before the crop is planted, or after the crop is harvested.

Section 5.4 it is recommended that this section be revised to allow application of liming material concurrent with application of NASM. Since all liming materials may be considered NASM, the restriction on application of more than 1 NASM in section 10 should be relaxed with respect to liming materials.

Section 6.1.2 may be overly restrictive in limiting liquid application to prevent runoff. The experience of applicators seems to indicate that higher application rates using proper injection techniques are possible without danger of runoff. The MOE should revisit the science supporting these limits, consider revising the limits here and in the NMA, and publish the scientific rationale for the limits.

Sections 6.5.1, 6.5.2 and 6.6. These clauses do not recognize the different characteristics of different NASM. Similar clauses were included in the biosolids guidelines due to concerns over contact with pathogens in municipal biosolids. Many of the NASM's, including municipal biosolids treated to class A standards, do not contain significant quantities of pathogens and should not be subject to these restrictions. The NASM Guide and the NMA in these sections, and throughout, should recognize the different characteristics of different NASM's and control them accordingly.

Section 9.1 1) the use of once a month testing here is inconsistent with the alternate minimum sampling frequency allowed under section 8.2

III. CONCLUSIONS

WEAO's comments reflect a number of concerns regarding the impact of the Draft NASM Guide. These concerns are raised in consideration of; environmental protection; science based regulations having considered a cost benefit analysis; equal requirements and standards for products of a similar nature; streamlining of documentation; understandable and demonstrable requirements. While the WEAO is not opposed to the on-going improvement of the biosolids program, we urge the MOE to carefully consider the specific technical issues raised in this document, as well as the timing of implementation of these new rules.