



ORGANIC MATTER RECYCLING REGULATION

CONSULTATION PAPER

SUMMARY OF PUBLIC COMMENTS

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Organic Matter Recycling Regulation (OMRR) Consultation – Summary of Public Comments

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Organic Matter Recycling Regulation Consultation

1. Introduction

The Ministry of Environment (the ministry) intends to revise the Organic Matter Recycling Regulation (OMRR), of the *Environmental Management Act* (EMA) and the *Public Health Act*. The regulation, enacted in 2002, governs the construction and operation of composting facilities, and the production, distribution, storage, sale and use or land application of biosolids and compost.

This report provides a compilation of comments received as part of the consultation process for revision of the Organic Matter Recycling Regulation.

1.1 Background to the consultation process

An intentions paper was posted for public review and comment on the ministry's website (www.env.gov.bc.ca/epd/codes/) July through September of 2011. The intentions paper provided an update of the ministry's proposed revisions to the regulation for consultation prior to drafting and implementation of the revised regulation (in keeping with the ministry's review process). It also provided a summary of the ministry's mandate and objectives, background information, proposed revisions to the regulation, and sections addressing development of guidance documents and assuring compliance. The final section of the intentions paper described the avenues for providing comment to the ministry. A separate response form for providing comments or suggestions to the ministry was also posted on the website.

1.2 Purpose and format of the Summary document

This document has been prepared for the ministry by C. Rankin & Associates, contracted by the ministry to independently receive, compile and review comment on the ministry's intentions for development of the regulations.

The complete set of responses received through the consultation process has been compiled and passed to the ministry for detailed review and consideration. All comments and references submitted through this process, through independent submissions and through direct consultations with stakeholders, will be reviewed and carefully considered by the ministry in developing the regulations.

The compilation of responses is arranged by topic as presented in the intentions paper.

1.3 Description of responses received

Close to fifty responses to the intentions paper were received (by e-mail and fax) and have been reviewed for consideration in this summary. Respondents included companies and individuals who work in the organic matter recycling industry, consultants to the industry, local and provincial government agency submissions, academic researchers and representatives of community groups and environmental quality associations, as well as individuals.

RESPONSES TO MINISTRY INTENTIONS

1. Ministry's objectives in reviewing and revising the regulation

The composting and recycling of organic matter under the Organic Matter Recycling Regulation helps to divert material from disposal and supports the ministry's goal of reducing municipal solid waste disposal. The ministry's objectives in reviewing and revising the regulation are to: protect the environment (and in particular, soil quality and drinking water sources); provide clear and effective guidance for local governments and other compost and biosolids producers; and provide an opportunity to beneficially use specified organic material as an alternative to chemical fertilizers (see section 3 of the intentions paper).

Response Form Question 1.1: Do you have any comments regarding the ministry's objectives in reviewing and revising the regulation?

Many respondents provided detailed comments in response to this question, with several, for example, summarizing the key points of their submission. Several respondents expressed "support for" the objectives or noted that they are "sound in theory." Other respondents suggested specific changes or pointed to "deficiencies" in the ministry's objectives and proposed intentions. For example, respondents suggested that the ministry (or the province) should provide additional "leadership" and/or "support" for local governments to ensure that "social and environmental standards" are met while diverting waste from landfills. Several respondents noted that there is a need to "smooth out... jurisdictional issues in enforcing odour control measures [in particular] involving the ministry, local government and [the] Agricultural Land Commission." Several respondents directed the ministry to review and consider "California Rule: 1133 Composting and Related Operations... [as it] provides comprehensive regulations that act as a framework to minimize the pollution potential of land, air and water from composting operations."

Additional specific comments or suggestions included:

- "The ministry's objectives of beneficial use of organic material are not being heard by the local, municipal and regional authorities."
- "In reference to the ministry's objective to protect the environment it seems that air quality issues do not receive the emphasis that leachate issues do."
- "Focus on making the regulation more consistent and reasonable."
- "A commitment of the Province to further the recycling of organic matter in the most environmentally and economically sensible way possible... should be stated explicitly."
- "A more comprehensive risk assessment must be conducted on Class A compost as it has been repeatedly noted by qualified professionals that the material has a greater environmental risk than the regulation implies."
- "MOE should have as one of its [objectives]... the aim to clearly recognize the differences in scale, volumes and raw materials of the different operations required to comply with OMRR and to develop scale and risk-appropriate requirements for a full range of operations."

2. Organic matter suitable for composting

The OMRR sets out a list of organic matter suitable for composting and management under the regulation. Section 5.1 (A – D) of the intentions paper outlines how differing types of material are defined and regulated under the OMRR.

Response Form Question 2.1: Do you have any comments regarding the definitions and regulation of organic matter suitable or not suitable for composting under the OMRR or other regulations?

Most respondents who commented on this topic expressed agreement with the categories and general intent regarding types of materials suitable and not suitable for composting set out in the intentions paper. Many respondents also provided detailed suggestions to clarify or modify the proposed descriptions.

With respect to pulp or paper mill wastewater treatment plant residuals (i.e., “sludge”), a number of respondents noted that the potential for contaminants (such as “chlorine, boron or endocrine disrupting compounds...[and/or] dioxin”) needs to be taken into consideration. Several respondents noted that the OMRR needs to be congruent with the Soil Amendment Code of Practice and that the ministry should “clearly define how the [two pieces of legislation] work together, including which takes precedent or whether the requirements of both apply.”

The most common comment on this topic related to “clean wood from any source.” Respondents almost universally recommended that “residuals from demolition or construction sources in composting processes [be considered acceptable] provided that they do not result in negative impact to the quality of the end product, compost.” One respondent, for example, commented that “if the compost processor can meet the end requirement for ‘foreign matter’ in the final compost, then is there any reason why clean wood from the construction industry cannot be used in a composting process.” Several respondents commented that it is appropriate to restrict painted and composite wood materials under the regulation, although several respondents also noted, for example, that “it is not necessary to restrict material on the basis of its source – it should be recognized that compost operations do accept and successfully process organic material from different sources and sectors.” Many respondents also felt that wood that contains food waste or manure should be considered acceptable material as these substances are acceptable individually. One respondent noted the “emergence of... *Cryptococcus gattii*, associated with native tree species found along the east-central coast of Vancouver Island... [and the importance of]... thermal digestion [in processing – to minimize risk of contamination related to this pathogen].”

A number of respondents expressed support for inclusion of domestic composting toilet sludge to schedule 12 of the regulation. Several respondents noted concerns regarding the regulation of biosolids and untreated domestic septic sludge, including “potential contaminants of concern (PCOC) in the material... there are currently no safeguards in the regulation regarding PCOC” and... “[exclusion of unstabilized sludge and the] implications to some small communities as it means that the communities have to stabilize their sludge (e.g., by aerobic or anaerobic digestion) before stabilization by composting.... [with] significant capital and operational cost implications.” One respondent noted the need for “consistencies [between biosolids and

domestic septic tank sludge] in the OMRR with respect to requirements for fecal coliform criteria testing prior to composting” and recommended “reduc[ing] the ambiguity in terminology.” One respondent recommended “that serious consideration be given to changing from fecal coliform to e-coli as the indicator for pathogens... it is my belief that there are too many possible interferences that can cause false positives in the fecal test.”

Regarding paper and cardboard, respondents commonly supported the ministry’s intention commenting, for example, that “accepting paper and cardboard that cannot be reasonably recycled into a paper product is an important improvement in the list of acceptable feedstocks for composting.” Some respondents added a caveat that “only food soiled paper and cardboard should be allowed in the compost stream – there are better recycling paths for both [materials].”

Some respondents commented on distinctions between “agricultural wastes” regulated under the Agricultural Waste Control Regulation (AWCR) and regulatory provisions in OMRR. One respondent, for example, noted that “schedule 12 excludes materials that by definition are ‘industrial waste’, but originate from agricultural type operations – to type such materials as ‘industrial waste’ while there are no or very limited risks, and then exclude them from use on farm land as a fertilizer, is a ‘waste of resources’.” The respondent commented that “by combining the AWCR... with the OMRR schedule 12, farmers may have a better economic perspective as other organic materials can be used in on-farm composting.” The respondent concluded the comment noting that “an argument can be made to keep the two regulations separated – if [this] is the goal, then on-farm composting should be strictly enforced to conform with the AWCR – thus, ‘softening’ of the AWCR by a municipal bylaw should not be tolerated by the ministry.”

Another respondent commenting on materials that should be covered under OMRR recommended that the regulation “should cover ALL organic materials offered to the public...[for example] compost from on-farm facilities and prepared under the Agricultural Waste [Control] Regulation is not required to be tested for quality, even though the input materials in such compost would warrant testing... many soil blenders also collect organic waste (yard and garden waste and other materials) to blend into their soil products... this will not meet schedule 1 and 2 with no guarantee that the soil blend meets the schedule 4 specifications – as well, raw or not completely processed organic waste will spread weed seeds.”

Several respondents recommended regular review and updating of schedule 12 in the regulation – to provide a mechanism for incorporating new information regarding materials and composting methods and technologies. Alternatively, some respondents recommended that “the director [should have] discretionary authority to approve additional materials on a case specific basis as suitable for composting under OMRR.”

Additional specific comments or suggestions included:

- “It would be fantastic to work with the lumber and pallet manufacturers to put together a labeling system for lumber and pallets to help facilitate the sorting out of treated wood waste.”
- “Please consider the inclusion of ‘compostable paper products’ [and] ‘compostable plastics’.”

- “Halifax Regional Municipality accepts all boxboard (i.e., cereal boxes) in compost rather than the paper stream which is a wise move since boxboard reduces the quality of recycled paper.”
- “In the discussion on compost quality, input materials originating from herbicide-applied areas may require a restriction in use.”
- “The need for improvements to legislation to support and facilitate application of small scale onsite anaerobic digesters and the use of digestate for compost or land application – this need has been recognized in other jurisdictions (for example the EU) and is a pressing issue in terms of greenhouse gas emissions and nutrient recycling.”
- “Refer in the regulation to vermicomposting as an acceptable method.”

3. Leachate management and leachate impact assessment report requirements

Effective leachate management is essential for composting facilities to ensure protection of human health and the environment. The ministry’s proposed amendments related to leachate management requirements are described in section 5.2 of the intentions paper.

Response Form Question 3.1: Do you have any comments regarding the ministry’s intention to replace the requirement for preparation of an environmental impact study (if production tonnage exceeds a specified amount) with a provision that a leachate impact assessment report prepared by a qualified professional is required of all composting facilities if discharging leachate (irrespective of production tonnage)?

Respondents commonly supported requirements and standards for a leachate impact assessment report prepared by a qualified professional. A number of respondents suggested that the ministry explicitly identify items to be addressed in a leachate impact assessment. Several suggested that leachate assessment could be part of a broader environmental impact study and noted, for example that “again, this change downplays the importance of air quality impacts.” One respondent commented that “a requirement for an environmental impact study based on production tonnage is more logical than a requirement for a leachate only impact assessment, regardless of production volumes.”

Some respondents expressed concern that for small scale operations (e.g., “such as those with Class D and E licenses under the Meat Inspection Regulations”) the costs of hiring a qualified professional to prepare required assessments and plans “can be prohibitive” and requested that “some consideration be given to the scale of the operation and the scope of the management plans required.” In contrast, several respondents commented that “it seems reasonable to encompass all composting operations because a small operation close to a sensitive ecosystem can cause much more harm than a large operation well isolated from the surrounding environment.”

Additional specific comments or suggestions included:

- “We do not believe that any leachate should be allowed to be discharged to the environment unless authorized under the *Environmental Management Act* and/or unless guidance is provided in the regulation, similar to the biosolids criteria for land application.”

- “Cost and time commitment required for small operators to comply with the regulation should be carefully weighed with the level of risk to the environment and the resources required for enforcement.”
- “An exemption exists for residential composting and consideration is being given to extending this to institutions such as schools and universities – extending the exemption to small commercial non-agricultural operations (such as restaurants) and small business start-ups is also advised.”
- “Untreated leachate should never be discharged off site – furthermore, to ensure that minimal leachate is generated, initial moisture and addition of water should be designed to be used in a closed loop system only – consequently, only in vessel and covered composting technology should allowed under OMRR.”
- “All systems under OMRR should require adequate air filtration to [explicit] standards... systems such as windrow, uncovered aerated static pile, Ag Bag, etc. should not be allowed under OMRR as they are strictly waste management systems and do not have consistency that satisfies all of OMRR’s mandate to recycle and produce ‘high quality, safe’ compost.”
- “Only professional engineers and architects, lawyers and doctors have codes that include disciplinary action.”
- “Ground water (aquifer) vulnerability assessment must be a criteria in assessing a site for a commercial compost facility and or/used in the design of same to require that no contaminants are introduced to an aquifer.”

Response Form Question 3.2: Do you have any additional comments regarding the ministry’s proposed leachate management requirements?

Several respondents noted that leachate management is one of the most important issues associated with composting and suggested that “with good management practices [the production of leachate] can be eliminated.” One respondent, for example, commented that “technology exists to allow for capture and use of all leachate from any compost process facility – this should be implemented and mandatory safeguards built in to [best management practices] for all facilities no matter their classification or process volume capacity.”

Most respondents commenting on this topic supported explicit requirements for an impermeable surface, roof, cover, prepared surface and leachate collection system – often suggesting that the proviso “unless deemed unnecessary by a qualified professional” not be included with these requirements. One respondent however, suggested “this intention would better serve the public by requiring an engineered separation and treatment system to maintain separation of leachate from uncontaminated stormwater – the intent is to protect surface and ground water systems, so requiring an engineered system is more effective than requiring five elements that don’t address the fate of the leachate.”

Several respondents commented on the need to ensure that finished compost material does not result in leachate generation and runoff. One respondent, for example, recommended that “the regulation should require that Class A compost also be stored on an impermeable surface with appropriate leachate containment measures.”

A number of respondents suggested that “the director [should be required to explicitly] acknowledge receipt of the report.” Respondents commenting on this topic also sought “clarity... [regarding] the procedure for moving forward after notification.”

Additional specific comments or suggestions included:

- “The proponent must install at least three groundwater monitoring wells to determine the groundwater flow path and collect water quality samples.”
- “Apparently the impact assessment reports will be for information purposes only and will not be used for corrective or enforcement actions – how does this support the MOE's stated goal of protection of the environment?”
- “For most smaller operators, hiring a qualified professional as defined in OMRR will be prohibitively expensive... this requirement would directly counter the stated intent of increasing the diversion of organic matter from landfills and other less desirable disposal options towards composting and beneficial use, unless the services of suitable qualified professionals could be provided to smaller operators at little or no cost, perhaps in a similar way as the services of environmental farm planners.”
- “Requirements under OMRR must be scale and risk appropriate.”

4. Plans and notification requirements

A. Plans and associated requirements (see intentions paper section 5.3A)

Response Form Question 4.1: Do you have any comments regarding content and/or preparation of an odour management plan by a composting facility?

Respondents commenting on this topic pointed to importance of addressing odours generated by a composting facility. For example, one respondent suggested that “effective odour management is a top priority for the successful management of an organics residuals recycling facility.” Respondents commented that odour management includes “public nuisance air impacts” as well as “contaminants”, with odours being the source of many public complaints and concerns at the site-specific or municipal level.

Specific suggestions from respondents included: “clearly state[d] limits in terms of concentration (odour units) and frequency”; “[the plan] has to [follow] some guidelines and... be able to be reviewed by other qualified professionals”; and “the ministry should provide a list of approved machines/measuring equipment that defines the units of measurement or calibration so all process facilities can monitor and report in the same calibration units at all times.”

Several respondents requested clarification from the ministry as whether a separate odour management plan will be required and/or “a single report should be completed which would address odour management, leachate management and operational specifications.”

Additional specific comments or suggestions included:

- “Municipal regulations commonly specify zero odour at the property boundary with fines of 1 million dollars per day per occurrence – these limits are impossible to achieve and

virtually prohibit composting in these jurisdictions – the ministry needs to educate local government in how to define reasonable levels of odor.”

- “All composting facilities should require an odour management plan with proper air filtration technology to effectively contain VOC’s, TSS, and NH₃ to background levels.”
- “In addition to requiring odour management plans the MOE should consider amending the OMRR to adopt the California Greenwaste Compost standards (Rule 1133.3 Emission Reductions from Greenwaste Composting Operations)... these standards require that all outdoor windrow compost operations use forced aeration with ventilation, require an extended active compost phase, and use a Solvita maturity index to determine compost quality.”
- “Once in place [odour management plans] must be enforced through appropriate onsite monitoring and effective penalties for non-compliance – there must also be timely response to odour complaints.”

Response Form Question 4.2: Do you have any comments regarding content and/or preparation of an operating plan by a composting facility?

Respondents commenting on this topic commonly noted that an operating plan is “vital”, “essential” and/or “just common sense and good due diligence.” Several respondents reiterated a suggestion that “harmonization of the management plans into one document, rather than separate documents, would be more economical and facilitate compliance and revision as required.” Specific comments or suggestions included:

- “We would recommend inclusion of noise and traffic.”
- “[A] groundwater monitoring plan must include a regular groundwater sampling program (at least quarterly), which will initially determine background water quality information followed by regular sampling to monitor the present groundwater chemistry – the results must be retained by the operator and provided to the approving authority at regular intervals... [and] should be regularly reviewed by a QP.”
- “[The ministry’s proposed wording] is not sufficiently focused – we suggest the following wording: ‘specify that the operating plan required of composting facilities addresses the ‘management and control of unprocessed waste materials, temperature, moisture, pile porosity, pile fires, vectors, contaminants, wildlife, litter, un-compostable waste materials, and dust’.”
- “Operations [are] site specific and require best management practices [to follow] – standard operating practices are the norm as well as emergency plans – municipal and regional risk management plans or environmental management plans already encompass those components – however, it would be reasonable to expect an annual operating document review and update.”
- “The Compost Council of Canada has developed an audit process for facilities involved in the voluntary Compost Quality Alliance program... along with our training and certified operator process.”

Response Form Question 4.3: Do you have any comments regarding content and/or preparation of a land application plan by a composting facility?

Clarification note: The wording of this question was erroneous. The ministry's intent was to seek comments regarding preparation of a land application plan by a qualified professional (and not by a composting facility). Several respondents pointed out this error, noting, for example, that "land application... is the responsibility of the client or land manager."

Some respondents commented that "a land application plan is and should continue to be required for any of the organic materials currently listed" or that "land application plans should be tailored to specific site conditions and compost material conditions." One respondent, for example, noted that "provision for compost facilities to prepare a land application plan for on-site compost applications will help ensure all managed organic matter is consistently managed and prevent potential issues associated with repeated or over application."

Additional specific comments or suggestions included:

- "We also request your ministry's help in addressing development plans surrounding existing compost facilities – it is important that the facility's existence and investment be protected against otherwise uncontrollable development that could negatively impact the facility's ongoing viability."
- "The specification should address what is meant by 'discharges' – this specification should also address the protection of air quality, surface water quality, and groundwater quality."
- "The trigger point [for requiring a land application plan] should be based on the quantity of material applied per unit area – 5m³ applied to 25 acres is a different situation than the same quantity applied to ¼ acre."
- "There needs to be more consideration to nutrient budgets from the processing site right through to all the proposed (secured) applications sites associated with the processing site."

Response Form Question 4.4: Do you have any additional comments regarding the ministry's proposed requirements associated with plans, reports and specifications?

Many respondents commenting on this topic – while expressing general recognition of the need to "keep all plans, reports and specifications up to date" – raised concerns that the ministry's proposed requirements may be unnecessary, overly costly and/or bureaucratic.

Specific comments and suggestions on this topic included:

- "This requirement does not take in to consideration the fact that an experienced operator with a lengthy successful track record should be given the benefit of being capable of preparing such plans... I strongly disagree with this suggested requirement and am suggesting that... that the plans done by the operator simply be reviewed by a qualified professional... the ministry could consider hiring a composting specialist to review operator plans and if inadequate, then require the operator to hire someone who knows what they are doing."

- “We have found a problem with local government and other agencies asking for confirmation of a ‘license’ from OMRR – when we notify the Director, there is no official response – the ministry should issue some kind of acknowledgement of conformance.”
- “The requirement that composting facilities provide the ministry with updates within 30 days of each change puts an exceptional burden on both the facilities and the ministry – the ministry should maintain a registry of facilities and require them to submit an annual report with changes contained therein.”
- “With respect to land application, the regulation should clarify who is responsible for preparing the land application plan – the provider of the compost (facility operator) or the land owner.”
- “Requirements for all plans and notifications should be drafted in easily understood language and incorporated with existing paperwork wherever possible, consideration should be given to streamlining the paper work burden and removing any overlaps or duplications.”
- “Requirements for plans, reports and specification must be scale and risk appropriate – reliance on QPs for plan requirements is cost prohibitive for many small composting facilities and likely not proportionate to risk, particularly for farm-based operations composting only farm generated wastes, including on-farm slaughter wastes, and often with a long history of successful composting.”
- “We strongly support the need for maintenance and monitoring and suggest that the Regulation could include requirement for a filed maintenance plan and for monitoring/ testing by (defined) Authorized Persons of the composting process – the OMRR could include reference to the same Authorized Persons as the Sewerage System Regulation (SSR) does – a filing process similar to that under the SSR (or an extension of that process) might be used to provide a simplified path for management of these small systems.”

B. Notification of operation (see intentions paper section 5.3 B)

Response Form Question 4.5: Do you have any comments regarding the proposed requirements for notification of operation?

Respondents commenting on this topic generally expressed support for or understanding of the intention to require notification to the Agricultural Land Commission. Many respondents also requested clarification from the ministry regarding the role of the commission in the context of the notification process and the form which notification should take. Several respondents commented that it is not clear “what role [the commission] plays, if any, in relation to their authority to request additional information and/or veto the operation of a composting facility.” One respondent suggested that “the regulation of composting facilities located on [agricultural reserve land] should be a partnership between the [commission] and the Ministries of Agriculture and Environment... This [would be] an effective and economical method for Ministry of Environment oversight.” Another respondent recommended that “regulations be made on the percentage of agricultural land reserve used in any given parcel for commercial composting versus approved farming practices.”

Additional specific comments or suggestions included:

- “It would be enabling for [small scale reclamation projects that arise on short notice] if the director was allowed discretionary authority over the 90 day notice, on a case-by-case basis.”
- “Depending on the amount of non-farm waste that is being brought in, and depending on how much of the finished compost (if any) they will be using on the farm property... applicants will typically have to submit an application for a non-farm use (which is very different than a notice in writing) to the [commission] and the local government – also, the [commission] has not typically been able to guarantee that they will be able to review an application within 90 days – these sections do not seem to match the current legislative requirements.”
- “Area residents (home and business) within [the] impact area [of the facility] (established by a QP) must be informed of the proposed operation if groundwater wells are potentially an issue – background well water quality must be determined from area wells prior to the operation of the facility.”

5. Updates to technical standards and record keeping requirements

The ministry is proposing to update technical standards and record keeping requirements to be consistent with current national standards (see intentions paper section 5.4)

Response Form Question 5.1: Do you have any comments regarding the ministry’s intended updates to technical standards and/or sampling and record keeping requirements (intentions paper sections 5.4A. and 5.4 B.)?

Respondents provided many detailed and technical comments in response to this topic.

Many respondents expressed concern that the proposed change in sampling requirements (from every 1,000 tonnes to every 1,000 m³) would necessitate considerable additional sampling and costs without clear scientific justification or benefit to public health and safety. One respondent, for example, commented that “by changing the requirement from dry tonnes to cubic meters, the effect is to require approximately four times the number of samples per year vs. the current regulation – in the case of [our operation], the proposed change would require 242 samples per year... this will result in the creation of large volumes of data, at considerable cost to private firms to produce and to the ministry to receive and analyze, with rapidly diminishing information value beyond a certain point – we suggest limiting the total number of finished product samples required per year to a maximum of 30 samples for any single facility location and process.” Other suggestions for an appropriate testing frequency included: “[following] the Compost Quality Alliance program which focuses on both regulatory as well as agronomic parameters [based on volume of production – four samples/season for 1-5 tonnes of compost up to 12 samples/season for operations producing over 15 tonnes of compost]”; “a sampling frequency of every 2000 m³ of screened finished compost”; and “instead of increasing the sampling requirements for compost... consider a clause in OMRR that composters must evaluate the suitability of received materials... [this would] shift the burden of proof onto the waste generators rather than have it absorbed by the composting facilities.”

The proposed intention of requiring fecal coliform levels to be met in all (seven) discrete (not representative) samples required generated divergent comments from respondents. Some respondents commented, for example, that they felt “no issue with meeting fecal coliforms for all seven samples – if composting is done right this will be met easily” or that “this aligns the fecal coliform criteria with Class B requirements.” Many other respondents recommended that the requirement should remain as the geometric mean, commenting, for example, that “this allows for analytical variability inherent in higher coliform concentrations... and the potential for outliers in the data set.” One respondent suggested reviewing the “entire testing protocol” with producer input prior to adopting new technical standards.

One respondent with expertise in engineering and public health research provided a number of details comments and suggestions for the ministry to consider. The respondent “documented and reported that the temperature profiles within municipal yard waste windrow compost piles are highly divergent, even within distances as close as 0.5 m... we believe that the current practice of taking limited temperature readings with probes that do not reach the middle of the pile are insufficient to characterize the temperature profile of the pile... [and] in all cases we found the presence of enteric microorganisms in yard waste.” The respondent also commented that “the standard... ‘fecal coliform’ test is a misnomer” and recommended that “a more stringent criteria but no more difficult to perform... would be a specific test for *E. coli* to determine if mammalian-source enteric bacteria are reduced in the final compost.” The respondent also recommended that “the presence or absence of *Salmonella* be determined where food waste is a feedstock in order to protect public health” and that yard waste compost can also pose risks to vulnerable segments of the population. Respondents provided varied recommendations regarding record keeping requirements. Comments in this topic included: “keeping records for more than three years is not an issue”; “we suggest record keeping for five years at which time the operator may request permission to destroy the records”; and “the *Freedom of Information and Protection of Privacy Act*... at a maximum only requires seven years of storage of records.”

Additional specific comments or suggestions included:

- “We recommend the ADDITION of consideration of worker and public health due to the intrinsic nature of compost to amplify thermophilic organisms.”
- “The US composting council has an industry standard for compost maturity where approved labs test chemical, physical and biological properties – we would be supportive of such testing by similarly approved labs.”
- “A standard for ammonium in tests to determine finished compost must become one of the required parameters in order to determine finished product and to ensure that levels are such that no ground water contamination occurs – ammonium has the ability to convert to nitrate/nitrite.”
- “The maturity standard in Schedule 2 Section 2 must be updated to include the Solvita test as a measure of maturity, or the biological maturity testing as outlined in TMECC 05-08-C... or TMECC 05-08-E... these methods are now generally accepted in other jurisdictions as a measure of maturity.”
- “The CCME Guidelines for Compost Quality is in terms of standards identical to the CAN/BNQ 0413-200/2005 – the ministry could use the CAN/BNQ as it is a ‘standard’

rather than a 'guideline' – however, [it] includes an extra compost class, which may be confusing to OMRR users.”

- “The ministry may consider that re-testing is allowed as well as segregating and reprocessing parts of piles that do not meet the fecal coliform standards.”
- “We recognize the value of consistency/harmonization of the OMRR with national standards, however, this needs to be done cautiously.”
- “We recommend the adoption of California Green Waste Compost standards (see AQMD 1133.3).”
- “We have a general concern here that the technical standards, as ‘best in class’ for industry generally, will be unworkable/un-reachable for small operations.”

Response Form Question 5.2: Do you have any comments or suggestions regarding the inclusion of a “background release” section (analogous to provisions contained in the Contaminated Sites Regulation) in the OMRR?

Almost all respondents who commented on this topic supported inclusion of a background release section in the OMRR. One respondent taking exception to the intention felt that “as long as compost adheres to the Class A standards, the amount of materials added... will not in the (higher) levels in the soil... [and in the case of] Class B compost... application should be based on a land application plan [with] background soil levels included in the considerations... thus, a background release section is not required.” Other respondents commenting in support of inclusion felt that inclusion of a background release section would “facilitate the use of biosolids in land reclamation, particularly in reclaiming mine sites.”

6. Requirements for production of “biosolids growing medium”

The ministry is intending to update requirements for production of biosolids growing medium, including process and quality criteria and distribution requirements, to reflect current standards (see intentions paper section 5.5)

Response Form Question 6.1: Do you have any comments regarding the ministry’s proposed requirements for production of biosolids growing medium?

Respondents commenting on this topic, while most frequently expressing support for the ministry’s proposed requirements, provided a number of suggestions or cautions. One respondent, for example, suggested that “the specifications for the allowable TKN and [per cent organic material] should be reviewed by a team of experienced Professional Agrologists prior to be included in the regulations to ensure adequate environmental protection.” Other respondents commented on the diverse materials that might be included in growing medium (including mineral sources such as sand, wood or soil), “topsoil blenders” who may use organic materials without being under requirements of the OMRR, and the “need to provide meaningful information for persons who may be growing food in biosolids growing media.”

Several respondents recommended that Class B biosolids compost should be excluded from commercial soil products that are sold into wholesale or retail markets. Other respondents “support[ed] the inclusion of Class A and B compost as acceptable biosolids growing medium... [as long as] Class B compost used as feedstock... also meet[s] the pathogen and vector attraction reduction requirements for Class A biosolids specified in schedules 1, 2 and 3 [of the OMRR]. ”

Several respondents expressed “support [for] the ministry’s proposed harmonization with the BC Landscape standards.” One respondent also encouraged the ministry to work with compost industry associations to promulgate programs that include feedstock information/declarations and a testing regime that “goes beyond a focus on health and safety to also include important agronomic parameters.”

Response Form Question 6.2: Do you have any comments or suggestions regarding appropriate maturity tests for production of biosolids growing medium other than C:N?

Many respondents who commented on this topic felt that C:N ratio was not useful as a measure of maturity in the context of OMRR. Common recommendations included: “the same tests required for compost maturity by the Canadian Council of Ministers of the Environment (CCME) or a respiration maturity test like Solvita”; “biological maturity testing as outlined in TMECC 05-08-C (CO₂ evolution, mature at <4mg/gram of compost) or TMECC 05-08-E (Solvita, mature when Solvita Rating is >6.5)”; and “temperature, pH, concentration of ammonia and bicarbonate are good surrogate measures to ensure it is not phyto-toxic.”

Additional specific comments or suggestions included:

- “Adequate curing time should be allowed to stabilize the pH and concentrations of NH₄⁺ and HCO₃⁻ before it is land applied.”
- “A soil producer’s ability to effectively market BGM requires flexibility in the blends created to meet the soil industry’s quality standards based on the intended use (e.g., tree plantings versus playing fields) – further, there appears to be limited industry consensus on an appropriate method to accurately gauge maturity... it is difficult to identify or isolate a parameter to determine maturity; it is the combination of parameters that must be evaluated as a whole to determine overall product quality/maturity.”
- “Stored finished compost maturity must be tested monthly to ensure it remains inactive.”
- “The intentions paper suggests a TKN limit of 1.0, but does not specify the units or metric (e.g., ‘1.0 percent by weight’).”
- “In our experience, the landscape and soil industry does not use this metric [carbon to nitrogen ratio] – some customers desire C:N ratios up to 45:1.”

7. Additional housekeeping changes

The ministry intends to undertake several “housekeeping” amendments (see intentions paper section 5.6)

Response Form Question 7.1: Do you have any comments or suggestions regarding the ministry’s proposed “housekeeping” changes to the regulation?

Many respondents commenting on this topic expressed support for regular review of the regulation. For example, one respondent suggested that “the review process allows biosolids generators and other users of the regulation to request clarification and modification of the regulation to reflect current management practices, opportunities for use and changes in technologies.” Another respondent commented that “sunset clauses that identify dates for systematic review of requirements, ensure that regulations are current and take into account changing business environments, new standards, scientific and technological advances.” Some respondents suggested a review after five years if a period of three years is not feasible.

Several respondents noted their support for “backyard composting” at schools and universities. Some expressed concern that even small composting units/facilities can become a public nuisance. One respondent, for example, noted that “such composting sites will be processing food waste from cafeterias and kitchens and need to be regulated... [we] suggest including some design parameters [for such facilities in the regulation].” One respondent requested clarification regarding the ministry’s intent, commenting that “it is unclear from the intentions paper whether the addition of allowing backyard composting of up to 20 m³/year on non-residential sites extends to small businesses.”

Additional specific comments or suggestions included:

- “OMRR might benefit from a shift towards a complete ‘outcomes-based’ approach, which removes strict numerical standards for biosolids constituent quality and focuses solely on standardized end-points in the environment post-application – this type of management process, which remains aligned to the current high degree of environmental stewardship, would remove significant pressure from municipalities that may struggle with high elemental concentrations due to naturally occurring issues, for example copper, chromium and zinc in the Interior.”
- “Recommend including a general statement that it is always good to cover finished compost as it protects the compost from precipitation, from weed seeds that may blow onto the compost, and it keeps the compost drier and easier to manage.”
- “[We] understand the need for clarification, however adding the GRVD (Metro Vancouver) to the list [is] redundant as Metro is within the Fraser Valley and... those areas with precipitation greater than 600 mm [between] October 1st and March 31st.”
- “Operationally the requirement to cover finished compost may be impractical for especially large volumes that are generated at some... permitted facilities – compost that meets OMRR end quality criteria that is stored at a facility compliant with the OMRR compost facility requirements provides appropriate protection of the environment. Further... compost is shown to be an effective medium in the management of water infiltration/run-off issues –

the provision to cover finished compost should be determined by the Qualified Professional preparing the compost facility plan on a case-by-case basis.”

8. Best management practices

The regulation is supported by guidance and direction related to practices and procedures (see intentions paper section 6).

Response Form Question 8.1: Do you have any comments or suggestions regarding development and use of guidelines and/or best management practices for the recycling of organic matter?

Respondents provided a number of specific comments and suggestions on this topic, including:

- “A clear definition [of ‘best management practices’ and or ‘guidelines’] should be identified.”
- “The CCME limit for zinc is 700...OMRR is 500, the CCME limit for chromium is 210... OMRR is 100, why would OMRR not be amended to match these?”
- “BMPs, as employed on commercial sites [in keeping with] the site’s Operating Certificate, should be required to be routinely reviewed by qualified professionals.”
- “A protocol for sampling would be helpful.”
- “OMRR guidance doesn’t address the organics recycling and organics digestion.”
- “Guidelines, handbooks and resources... should include on-farm anaerobic digestion resources [available] from the Ministry of Agriculture.”
- “Newer composting technologies such as Gore and AgBag should be included... the publication of the Guideline may be not that beneficial as a tool for Qualified Professionals (who are preparing the Design and Operating Plans for all composting facilities) – a list of resources – regularly updated would be a better ‘guidance’... the guideline could be beneficial to operators, although the [Composting Council of Canada] composting operators course, together with the course manual, would be a better resource.”
- “BMPs and guidance documents are only valuable when they are maintained and kept up to date – it would be better to have the guideline reviewed every three years rather than the regulation.”
- “We strongly encourage the ministry to support the intent and efforts of the Compost Quality Alliance program to promote effective organics recycling process and the credible development of sustainable end markets.”
- “We would encourage the Ministry to require mandatory facility operator training to ensure a baseline expertise that is common across all facilities and operating sites.”

9. Assuring compliance

Section 7 of the intentions paper outlines awareness and compliance promotion, compliance verification and enforcement of the regulation.

Response Form Question 9.1: Do you have any comments on or suggestions for the ministry to support awareness, compliance and enforcement of the regulation?

Respondents provided substantive comment on this topic. Several, for example, expressed “strong support for compliance promotion” efforts such as information and education workshops. Respondents also recommended a “robust” compliance program and/or protocols that include “regular scheduled inspections”, “spot checks” and follow up actions to support and/or enforce compliance, as well as “public disclosure of all reports and test results.” One respondent, for example, commented that “ensuring compliance is a key aspect of long-term sustainability of the industry and helps to maintain the support of host communities for local composting operations.”

Concerns raised by respondents included “odour and public nuisance complaints” and issues involving composting operations located on agricultural reserve land. Suggestions from respondents in support of compliance and enforcement included: “mandatory filing of a compliance certificate... between the processor and the ministry”; “utilization of independent qualified professionals to periodically review and monitor... plans and... operations... [with] the cost borne by the compost facility”; “requiring an annual report similar to that of the Mushroom Compost Regulation”; and “a ministry-provided list of approved machines [and] measuring equipment... so all process facilities can provide consistent reliable operating history.” One respondent suggested including in the regulation “a clause indicating that a local government (municipality or regional district) can impose additional and more stringent requirements” and requested “a provision to circulate OMRR applications to Regional Districts for comments for harmonization of regulations.”

10. Protection of human health and the environment – meeting ministry objectives

Response Form Question 10.1: In your view, how effectively do the ministry’s intentions and the Organic Matter Recycling Regulation address the ministry’s objectives of protecting the environment and encouraging the beneficial use of specified organic material?

About half of the total respondents commented on this question – with an even split between respondents who considered the ministry’s intentions “quite effective” and those who saw “significant gaps” in the intentions.

One respondent commented, for example, that the OMRR is “an effective mechanism for regulation of organic residuals... and appreciate the flexibility in use opportunities... and the consistency it provides in the regulation of biosolids throughout the province.” Another respondent suggested that the regulation has “the potential of leading the country in terms of compost/biosolids maturity and by default setting the standard to host facilities that surpass those that presently exist elsewhere in the country.”

In contrast, other respondents commented about limitations in the ministry’s intentions. For example, one respondent noted that while the “intent is good, the current regulation has very poor and unclear units defining thresholds for testing and defining requirements.” Another

respondent commented that “the OMRR is sufficiently vague to allow interpretation by qualified professionals who are hired by the facility” and encouraged “independent review of composting operations.”

Specific comments or suggestions included:

- “Operators of registered and compliant facilities should be validated by the ministry to insure a sustainable industry and to create an incentive to be compliant.”
- “Regulation revisions require more specific attention to groundwater resource protection.”
- “Requirements under OMRR must be scale and risk appropriate and based on sound, demonstrable science.”
- “OMRR... technically allows biosolids which meet all other Class A criteria to be land applied regardless of the Cr or Cu concentrations – we recommended that the ministry modify the OMRR to state that Cr and Cu concentrations in Class A biosolids must meet the criteria for Class B biosolids as an interim measure until such as time as Cr and Cu standards are regulated for fertilizers.”
- “We recommend that the ministry investigate adding anaerobic digestate to schedule 12 as organic matter which is suitable for composting... OMRR or all other regulations which cover the management of organic residuals/by-products in the Province need to be reviewed to improve clarity and provide a one stop shop for the regulation of such facilities.”
- “It would be more useful if the Province understood what is working by meeting with local government at the facilities and operations level instead of taking a top down approach that does not seem to be evidenced based. The implications of the proposed changes will have a significant cost both to the local taxpayer and the province, is a step backwards and could lead to completely enclosed facilities and control systems that are not affordable.”
- “We recommend that the ministry clarify the OMRR requirement that ‘Class B biosolids must not be land applied in a watershed used as a permitted water supply under the Drinking Water Protection Regulation’ – currently there is ambiguity regarding where these watersheds are located.”
- “[Our] concerns... include... [the] limited scope of the regulation regarding the environmental risk of Class A compost, the reliance on industry for self regulation, the lack of inspections and enforcement by the ministry, and the lack of support and leadership by the province for local governments.”
- “We strongly recommend exploring the possibility of making plan and infrastructure requirements under OMRR/SPPICOP an eligible item for EFP BMP funding for small, farm based operators, at appropriate cap and contribution levels, as well as revisiting the thresholds between ‘agricultural wastes’ and ‘slaughter wastes’ for farm based livestock and poultry slaughter and processing facilities.”
- “Encouraging the beneficial use of organic material may further be supported through inclusion in the regulation a director’s discretionary authority around the 90 day notification periods that are specified in the intentions paper.”

Response Form Question 10.2: Do you have any other comments or suggestions for the ministry regarding the regulation of organic matter composting facilities?

Specific comments or suggestions provided by respondents included:

- “Schedule 2 section 2(b) specifies that compost must be retained in curing pile for at least 21 days. This is not long enough to ensure biologically stable compost and should be extended – I would like to see it be at least 45 days – ... this results in compost being delivered to customers that smells and may have deleterious effects on soil oxygen levels which can result in poor plant performance.”
- “The Province should adopt the CCME guidelines for compost/biosolids maturity, [as well as] specify the testing protocol that has to be followed.”
- “Streamline and consolidate all regulations relating to composting and organic matter handling and applications – we now have: Agricultural Waste Control Regulation, OMRR, Mushroom Composting Regulation and the Soil Amendment Code of Practice.”
- “Make consideration for new technologies such as anaerobic digestion within the regulations.”
- “Anaerobic digestion as an energy source and waste treatment process is currently being reviewed by [government agencies] and others... as OMRR already covers anaerobic digestion as a treatment process, it seems to make more sense to maintain [this process] under this regulation rather than create a separate regulation – if the regulation needs to be adjusted to accommodate classification of waste streams by risk and end use of process products then that should be part of this OMRR rewrite – some considerations in addition to waste streams entering the anaerobic digestion, are components of the land management plan which should include a more robust and thoughtful consideration to nutrient management as well as land use at the processing site and the land application sites.”
- “[We] encourage the ministry to continue to facilitate a range of beneficial use options for biosolids which are economically feasible, protective of the environment and supportive of sustainability initiatives.”
- “Yard waste/grass clippings may contain animal waste (dog poo)... and invasive weed species [yet is not subject to the same pathogen kill requirements or reporting requirements as other materials]... can we still call yard waste compost Class A compost?”
- “Implement language to cover the grey areas such as on-farm composting of MSW type materials (yard and garden waste, street cleanings, land clearing waste etc) for on-farm use and the sale to the public from on-farm composting facilities that produce compost from off-farm materials – better regulate the quality of compost from on-farm facilities that distribute compost off-farm.”
- “With many of the Regional Districts in BC directing organics away from disposal through policy statements with target dates that must be met by their municipalities or districts, it is important that the changes in the Regulations support this direction rather than inhibit – a phase in approach like Landfill Gas [Regulation] may be appropriate along with communication program.”
- “Suggest the OMRR be demarcated into biosolids related requirements in one section and compost requirements in another to aid in using and interpreting the regulations correctly.”

In its present format, compost and biosolids requirements can be easily confused especially when referring to facility, storage, and production requirements.”

- “Ministry should have a repository of specific technical details and training to assist long term growth, governing, BMP and industry standards – establish an independent review body comprised of industry experts, facility operators and processors to ensure all facilities are measured with the same yard stick and availing themselves of BMP.”
- “We are a leading jurisdiction in waste reduction with aggressive plans for further diversion. As these efforts unfold, so does the establishment of private sector commercial composting facilities. This will be replicated with other jurisdictions across the province embarking on the same course of organics diversion. Our experience and example of constantly running up against ineffective provisions of the OMRR, and the vast consumption of money and resources spend, added to the community concerns and environmental risks involved, will only discourage further organics diversion, integrated resource management, and industry investment... although provincial regulations are usually a baseline standard, which can be complemented by local bylaws requiring higher standards, our situation is one where existing and proposed provincial OMRR standards often fall far short of adequate, and even undermine our local bylaw... When local governments has to be create a series of bylaws to protect communities and the environment from something allowed for under provincial legislation, the provincial baseline standard needs to be raised”
- “The importance of woody materials as feedstock for many of our processes cannot be understated... creating products (compost and landscape materials) that meet quality criteria requirements using clean landfill derived woody debris is a critical and cost saving measure to operations and taxpayers – the consequences of not using these materials would require higher intensity energy use (more materials movement), more GHG produced, burial of organics streams already removed from burial and loss of landfill space.”

Appendix A: Acronyms and Abbreviations

Acronym or Abbreviation	Definition
AWCR	Agricultural Waste Control Regulation
BC	British Columbia
BGM	Biosolid Growing Medium
BMP	Best Management Practices
CAN/BNQ	National Standard of Canada/ Bureau de Normalisation du Québec
CCME	Canadian Council of Ministers of the Environment
CO ₂	Carbon Dioxide
CQA	Compost Quality Alliance
C:N	Carbon to Nitrogen Ratio
Cr	Chromium
Cu	Copper
EFP	Environmental Farm Plan
EU	European Union
GHG	Greenhouse Gases
HCO ₃	Hydrogen carbonate (bicarbonate)
m ³	cubic meters
mg	milligram
mm	millimetre
MOE	Ministry of Environment
MSW	Municipal Solid Waste
NH ₃	ammonia
OMRR	Organic Matter Recycling Regulation
PCOC	Potential Contaminants of Concern
QP	Qualified Professional
SSPICOP	Slaughter & Poultry Processing Industry Code of Practice
SSR	Sewerage System Regulation
TKN	Total Kjeldahl nitrogen – the combination of organically bound nitrogen and ammonia in wastewater
TMECC	Test Methods for the Examination of Composting and Compost
TSS	Total Suspended Solids
US	United States
VOC's	Volatile Organic Compounds