# Organic Matter Recycling Regulation Project Update

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# Introduction and Purpose

The Organic Matter Recycling Regulation (OMRR) regulates the production and land application of compost and biosolids. The OMRR was brought into force in 2002 under the joint authorities of the *Environmental Management Act* and the *Public Health Act*.

As previously shared in the 2018 Intentions Paper and 2019 Summary of Public Input, the Ministry of Environment and Climate Change Strategy (the ministry), in collaboration with the Ministry of Health, is pursuing regulatory modernization to improve the protection of human health and the environment.

# Modernizing the OMRR will:

- Better align requirements with present day practices, advances in science, and evolving standards in other jurisdictions;
- Promote best achievable technology and practices;
- Improve clarity regarding requirements and expected end results; and
- Increase transparency and enhance Indigenous engagement through increased information sharing and better engagement around organic matter management in B.C.

This document is an update for partners and stakeholders on project status and identifies refinements of existing policy and technical standards. This has been informed by:

- New and evolving mandate commitments (described below);
- Ongoing feedback from partners and stakeholders; and
- Reviewing up-to-date scientific information and Best Achievable Technologies including from the European Union, the US Environmental Protection Agency, and across Canada.

Regulatory amendments are now targeted for 2023 based on the feedback from the 2018 Intentions Paper and further refinements in this project update. The ministry intends to monitor regulatory effectiveness, including evolving scientific information, beyond 2023 to ensure the OMRR policy framework is protective of human health and the environment.

# Alignment with B.C.'s Priorities

Since 2018, the drivers for OMRR modernization have increased. The Organic Matter Recycling Regulation (OMRR) also supports CleanBC and the ministry's service plan by facilitating the diversion of organics, reducing greenhouse gas emissions, and promoting the circular economy. Modernizing the OMRR is intended to continue to support organics diversion and the adoption of the circular economy, while updating safeguards for human health and the environment (e.g., updating quality standards for biosolids and compost).

Modernizing the OMRR will also support the CleanBC Plastics Action Plan by outlining new requirements aimed to keep plastic out of compost and address the growing problem of plastic pollution in the environment (see intended requirements for compostable plastic and foreign matter objectives under Allowable Feedstock for Compost on p.6).

# **Policy Refinements**

While the ministry's overall policy direction remains unchanged from the 2018 IP, refinements to policy and technical standards have been made based on feedback and emerging information as outlined below.

#### **Biosolids**

This phase of OMRR modernization will continue to allow the land application and beneficial use of biosolids with added conditions and in alignment with the *Canadian Council of Ministers of the Environment's Canada-Wide Approach for the Management of Wastewater Biosolids*. Land applying biosolids as a soil amendment recycles plant nutrients, restores carbon to soils, and results in lower greenhouse gas emissions compared to combustion-based alternatives.

The ministry will continue to review new and evolving scientific information with respect to biosolids, including contaminants of emerging concern, and will continue to use this information to inform policy.

Based on feedback from the 2018 Intentions Paper and review of standards and information from other provinces and jurisdictions the ministry is intending to update the standards for land applying biosolids as a soil amendment. More specifically, the ministry will update the OMRR requirements for biosolids that relate to metals, foreign matter and sampling, as outlined below.

#### **Metal Standards**

In section 7.1 of the 2018 Intentions Paper, the ministry proposed using metal concentration limits based on the federal *Canada Fertilizer Act* (CFA) and associated trade memorandum<sup>1</sup>. For consistency, it was proposed to base all metal concentrations for Class A and Class B biosolids on the same CFA standard. Concerns were raised by respondents that the copper limits, as calculated, were not achievable by most wastewater treatment plants.

After re-evaluating the CFA-based standards and reviewing the standards in other jurisdictions, the ministry will instead adopt the National Standard of Canada<sup>2</sup>, which was developed by the Bureau de normalisation du Québec, using a 'no net degradation' and best achievable technologies approach. The recommended standards, summarized in Table 1 in Appendix A, are generally more protective than the current OMRR standards, the CFA-based standards, and the standards outlined in US EPA's Part 503 Biosolids Rules<sup>3</sup>, used in Washington State.

Canadian Food Inspection Agency, Government of Canada. 1997. T-4-93 Safety Guidelines for Fertilizers and Supplements, Guidance document repository for the Canadian Fertilizer Act. Last accessed March 19, 2020

National Standard of Canada CAN/BNQ 0413-400/2009 (R 2015), Soil Amendments – Alkaline or Dried Municipal Biosolids, Standards Council of Canada and Bureau de Normalisation du Quebec, 4th edition 2016-02-29.

<sup>&</sup>lt;sup>3</sup> United States Environmental Protection Agency. 2018. Standards for the Use or Disposal of Sewage Sludge (40 CFR Part 503).

# Pathogen Standards

In sections 7.4 and 8.2 of the 2018 Intentions Paper, the ministry proposed re-sampling biosolids for fecal coliforms within the month prior to land application based on concerns that fecal coliforms may regrow during storage. Feedback and further review by the ministry indicated however, that increased concentrations of fecal coliforms during storage does not necessarily indicate risk to human health, since an increase in concentrations can result from environmental fecal coliforms that are not pathogenic. As a result, the ministry is no longer intending to require re-sampling for pathogens prior to land application in favour of taking an approach that is more accurate.

In keeping with the original policy rationale, the ministry intends to adopt additional sampling protocols for microbes based on Ontario's protocols<sup>4</sup>, which allow for more representative sampling and a more accurate picture of the concentration of pathogens in biosolids and compost. The sampling protocol is outlined in Table 2 in Appendix A.

# Sampling Frequency

The OMRR's current sampling frequency for biosolids, biosolids growing medium (BGM) and compost, is based on dry tonnes of organic matter. In 2018, the ministry proposed to retain the current sampling frequency but base requirements on wet tonnes of biosolids product. As noted in the 2019 Summary of Public Input, stakeholders generally agreed with the ministry's assessment that wet tonnes of product will be easier to measure.

However, respondents noted that there may have been errors when the ministry converted to wet tonnes. Since then, the ministry has re-evaluated conversion factors available in literature and recalculated the sampling frequencies. The intended sampling frequencies for biosolids, BGM and compost are summarized in Table 3, Appendix A.

# **Contaminants of Emerging Concern**

Contaminants of emerging concern (CECs) are chemical substances, including endocrine disrupting compounds, that may be present in biosolids due to the use of pharmaceuticals, personal care products, fire retardants and other products.

Due to advances in analytical chemistry, the ability to measure CECs has generally outpaced the ability to understand the impacts of CECs on human health and the environment. For this reason, the impacts of CECs in biosolids and wastewater treatment discharges is the subject of on-going scientific research.

- Contaminants of emerging concern (CECs) can be present in wastewater treatment plants and biosolids
- The ministry supports prevention first, including source pollution control and extended producer responsibility programs for CECs, such as the BC Medications Return Program
- The ministry also intends to add the authority in OMRR for a director to require monitoring of biosolids for CECs

Liquid waste management plans (LWMPs) are a tool that can be used to implement a prevention first approach to the issue of CECs. Although not mandatory

<sup>4</sup> Ontario Ministry of Agriculture, Food and Rural Affairs. 2012 Sampling and Analysis Protocol for Ontario Regulation 267/03 Made under the Nutrient Management Act, 2002.

under the *Environmental Management Act* and regulations, local governments are strongly encouraged to develop and implement these plans, which involve community engagement and are approved by the minister. LWMPs typically include plans for managing biosolids and implementing source control measures to discourage or regulate discharges of certain wastes into the system, including CECs.

B.C. also supports the extended producer responsibility program for pharmaceuticals, to ensure these substances are managed responsibly and discharge to sewers is minimized.

In addition to the prevention first approach, the ministry also intends to add authority in the OMRR for a director to require assessment of biosolids for CECs. This data, along with evolving scientific information about CECs from other jurisdictions, will help inform future policy development for OMRR.

# **Biosolids Growing Medium Operations**

#### **Environmental Management Plans**

In the 2018 Intentions Paper, environmental management plans were proposed for compost facilities and biosolids growing medium operations to develop site-specific mitigation measures to address environmental risks. Respondents were generally supportive but requested more detail regarding the content of the plans and which facilities would be required to complete them.

To clarify, large biosolids growing medium operations (those which accept more than 5 m<sup>3</sup> of biosolids per year AND operate for more than nine months on the same site) will be required to prepare an environmental management plan with the following elements:

- Closure Plan
- Leachate Management Plan
- Odour Management Plan
- Operating Plan

As described in section 1.4 of the 2018 Intentions Paper, all plans and reports would need to be submitted at the time of notification, kept up-to-date and available on-site for review by a compliance officer. The notification, and all plans and reports submitted with the notification, will be available to the public.

In addition to the information required for a notification, and in response to feedback to the 2018 Intentions Paper, it is intended that notifications must provide proof that potentially impacted Indigenous Nations and local governments have been notified.

## **Pathogens Testing**

It was previously proposed that BGM would need to be analyzed for indicator microbes to align with the CFA, specifically salmonella and fecal coliforms (section 8.1, 2018 Intentions Paper). However, it has been noted from feedback that this is not necessary, since biosolids used to produce BGM are already required to meet pathogen reduction criteria. As a result, the amended OMRR will not include a requirement for testing BGM for salmonella and fecal coliforms.

Except as outlined above, there are no other significant changes to the intentions in the 2018 Intentions Paper with regards to BGM.

# **Compost Quality Requirements**

#### **Metal Standards**

In section 7.1 of the 2018 Intentions Paper, the ministry proposed that metal concentration limits for Class A compost correspond to the most stringent soil quality standards outlined in Schedule 10.1 of the OMRR. The rationale is that Class A compost can be distributed without volume restrictions and must not result in soil metal concentrations that exceed Schedule 10.1 and restrict land use. There are no changes to that policy intention.

However, like the metal standards for biosolids, the ministry is now recommending the adoption of the National Standard of Canada<sup>5</sup>, which was developed by the Bureau de normalisation du Québec for Class B compost. These standards are generally more stringent than the current OMRR standards and the standards described in 2018 Intentions Paper. Refer to Table 4 in Appendix A for intended numerical standards for individual metals.

## **Compost Maturity Standards**

Animals and insects (vectors) are less likely to be attracted to mature compost that has been cured properly due to the reduced food value and minimized odour. Section 9.1 of the 2018 Intentions Paper proposed curing may be achieved within 14 days. Based on additional research, the ministry recommends that minimum curing times should be 21 days<sup>6,7</sup>. Also, to make requirements easier to enforce, the ministry intends to adopt measured numerical standards<sup>8,9</sup> for determining when a compost is mature in the OMRR, as summarized in Appendix A, Table 5.

#### Foreign Matter

As described in sections 6.3 and 7.1 of the 2018 Intentions Paper, the ministry is intending to adopt more stringent requirements for foreign matter to better protect compost quality, and better address foreign matter (FM) contamination, including plastics.

In addition to requiring the measurement of FM in compost as a percentage of finished product, the ministry is also recommending that grab samples of final product be assessed on site for FM consistent with the National Standard of Canada<sup>10</sup>. More specifically, Class A compost would be required to have less than one piece FM >25 mm in any 500 mL aliquot, and Class B would need fewer than two pieces of FM >25 mm in any 500 mL aliquot.

<sup>&</sup>lt;sup>5</sup> National Standard of Canada CAN/BNQ 0413-200/2016. 2016. Organic Soil Conditioners - Composts. Fourth edition 2016-02-29. ISBN 978-2-551-25768-3 (printed version).

Support document for Compost Quality Criteria. 1996. National Standard of Canada (Can/BNQ 0413-200), CCME Guidelines, Agriculture and Agri-food Canada (AAFC) Criteria.

CCME. 2005. Guidelines for Compost Quality, PN1340, Canadian Council of Ministers of the Environment, Winnipeg Manitoba, ISBN 1-896997-60-0, 2005.

National Standard of Canada CAN/BNQ 0413-200/2016. 2016. Organic Soil Conditioners - Composts. Fourth edition 2016-02-29. ISBN 978-2-551-25768-3 (printed version).

<sup>&</sup>lt;sup>9</sup> Test Methods for the Examination of Composting and Compost. 2001. Excerpt chapter 05.08 Respirometry

<sup>&</sup>lt;sup>10</sup> National Standard of Canada CAN/BNQ 0413-200/2016. 2016. Organic Soil Conditioners - Composts. Fourth edition 2016-02-29. ISBN 978-2-551-25768-3 (printed version).

## Allowable Feedstock for Compost

In section 5.4 of the 2018 Intentions Paper, the ministry proposed adding certified compostable plastic to Schedule 12 as an allowable feedstock for compost. However, stakeholder feedback and information from other jurisdictions indicate that even if plastic is certified as compostable, it may not fully compost successfully at compost facilities resulting in plastic contamination. Compostable plastics are also difficult to distinguish from non-compostable plastic which can also result in contamination.

For these reasons, the ministry intends for a director to have the authority to approve acceptance of compostable plastic. The ministry is looking at the additional operational requirements that facilities would need to accept compostable plastic products.<sup>11</sup>

In section 5.2 of the 2018 Intentions Paper, the ministry proposed including raw sewage sludge for inclusion in Schedule 12. However, volumes of raw sewage sludge can result in high concentrations of pathogens, and nuisance odours. The ministry is instead proposing that raw sewage sludge not be included as a feedstock in Schedule 12, unless approved by a director under specific conditions (i.e., if a facility can demonstrate that sufficient infrastructure and management is available to process sludge).

The ministry also intends to give a director the ability to allow other feedstocks to be composted that are not listed in Schedule 12 if the facility is able to demonstrate that the feedstock will add value to the composting and fully compost to the satisfaction of the director. This would include invasive plant species, where a proponent can adequately demonstrate that composting is an effective management method for a particular species.

The policy intentions for allowable feedstock, as outlined in the 2018 Intentions Paper, remain unchanged unless otherwise specified above. The ministry intends to provide guidance to support implementing the new regulation, including educational materials regarding what types of feedstocks are suitable for composting.

# Compost Facilities

# **Engagement and Registration**

In section 1.2 of the 2018 Intentions Paper, the ministry proposed a new registration process for compost facilities that were not permitted, to improve information sharing and transparency. In addition to the information required for registration, the ministry is also recommending that the total mass of organic material on site (i.e., bulking agent and finished product) be provided as part of registration. This will prevent the accumulation of large volumes of organic material on site, which can result in leachate and nuisance odours.

<sup>&</sup>lt;sup>11</sup> Director approval would likely require some trial and on-going monitoring of foreign matter and other performance measures to make sure plastic is fully composted.

<sup>&</sup>lt;sup>12</sup> Organic material is defined as: feedstock (including bulking agent), finished compost, material that is actively composting and curing, overs (over-sized material which may be put back into compost for reprocessing) and foreign matter that has come into contact with organic matter.

## Facility Environmental Management Plan

Although the ministry does not intend to make any changes to the facility environmental management plans (FEMPs) as described in the 2018 Intentions Paper, respondents asked for more clarity regarding when FEMPs would be required, as reflected in the 2019 Summary of Public Input. The following table provides clarity and outline requirements.

Table 1: Environmental management plan requirements by compost facility size

Compost Facility	Facility Thresholds	Environmental Management Plan Description	Authorization
Tiny	<ul> <li>Accepts &lt; 100 m³ /year of wood waste or yard waste OR</li> <li>Produces &lt; 20 m³ /year AND is residential</li> </ul>	None	None
Small	<ul> <li>Accepts &lt; 15,000 wet tonnes/year of feedstock*         <p>OR     </p></li> <li>Accepts only yard and wood waste AND Accepts more than 100 m³ of only yard and wood waste/year</li> </ul>	FEMP Light:  Operating plan  Leachate plan  Odour plan	Registration
Medium	<ul> <li>Accepts no food waste nor biosolids</li> <li>Accepts ≥ 15,000 wet tonnes/year of feedstock*</li> </ul>	Full FEMP:  Operating plan  Leachate plan  Odour plan  Closure plan	Registration
Large	<ul> <li>Accepts food waste or biosolids</li> <li>Accepts ≥ 15,000 wet tonnes/year of feedstock*</li> </ul>	See Permit Application	Permit

<sup>\*</sup> Feedstock includes all organic material, including bulking agents such as wood waste.

# Leachate Management Plans

The current OMRR (Section 26(4)) allows a qualified professional to substitute requirements for leachate collection systems with alternative requirements, if demonstrated to be suitable by an environmental impact assessment. To protect human health and the environment, the ministry intends to require a leachate management plan, as part of the FEMP, and require that a director approve any alternative leachate management or collection systems. The ministry also intends to require any discharge of leachate to the environment be approved by a director, with the authority for a director to impose requirements to protect human health or the environment.

#### Odour

Compost facilities have the potential to cause odour that negatively affects the surrounding community. Odorous substances are often a mixture of different gases and aerosols, making them very difficult to determine and measure. Odour detection and how it's perceived (i.e., how offensive it is) varies by individual. The issue is complicated by other factors such as the frequency, intensity, duration and offensiveness.

In sections 6.1 and 6.2 of the 2018 Intentions Paper, the ministry proposed to address odour from compost facilities, as follows:

- More stringent requirements for odour management plans, as part of the required FEMP
- An environmental impact study, including an odour model, will be required for all new or modified
  facilities with a design capacity of 15,000 wet tonnes of feedstock per year. The study is in addition
  to the odour plan in the FEMP.
- All new compost facilities or modified compost facilities that receive more than 15, 000 tonnes of feedstock and receive biosolids or food waste, must be enclosed<sup>13</sup> or in-vessel within five years of the revised regulation coming into effect. All existing authorized facilities as described above must be enclosed or in-vessel within ten years.
- Facilities are required to commit to operate in accordance with FEMP, including following the best
  management practices to minimize odours and maintain aerobic conditions on-site such as: limiting
  the duration and volume of odorous waste stored outdoors, immediately mixing smelly feedstock
  with bulking agent or compost, aerating leachate, and covering active windrows with finished
  compost.

As a clarification to the existing intended requirements to mitigate odour, a modernized OMRR will also:

- Require active compost piles and leachate be maintained in aerobic conditions, and operators
  monitor and record parameters related to conditions as part of their monitoring plan within their
  FEMP.
- Provide the authority for a director to require that a compost facility hire a third-party qualified
  professional engineer to audit the facility for compliance with the FEMP and OMRR requirements,
  and to develop and implement an action plan to deal with odours.

# **Land Application**

#### Registration and Engagement and Land Application Plan

As outlined in sections 1.3 and 9.2 of the 2018 Intentions Paper, the ministry is intending to require registration of land application sites and intends to adopt an engagement process with Indigenous peoples to support transparency and B.C.'s commitment to the United Nations Declaration on the Rights of Indigenous Peoples.

<sup>&</sup>lt;sup>13</sup> Enclosed means activities are enclosed, which can include receiving, processing and storing, and process containment using appropriate emission control technologies such as: negative pressure, biofilters, leachate collection, aeration, etc.

Currently, section 5 of the OMRR requires a land application plan (LAP) for each site and each occurrence of land application of managed organic matter. In response to local government feedback, the ministry intends to enable a LAP for each site for the duration of one year or five years (based on the preference of the applicant) as opposed to a LAP for each land application event.

#### Mine Reclamation

Biosolids can facilitate mining reclamation and other remediation activities by providing a cost effective organic and nutrient-rich soil amendment that can be used to build soil, improve soil quality, establish vegetation and reduce erosion.

However, mine reclamation sites can exceed the allowable soil standards outlined in Schedule 10.1 of OMRR due to the background conditions and mining related activities. Although the OMRR allows a director to approve a protocol for establishing soil standards that exceed Schedule 10.1, this has not been widely practiced or adopted due to lack of clarity for process and difficulties in establishing a site-specific protocol.

As stated in section 7.5 of the 2018 Intentions Paper, to better facilitate the beneficial reuse of biosolids at mine reclamation sites, the ministry intends to allow a director to issue a registration for a site that exceeds Schedule 10.1 standards, as long as the applicant is able to demonstrate that the biosolids will benefit the site and will not exacerbate site contamination. The ministry intends to provide guidance outlining this in more detail for proponents at the time of implementation.

# Next Steps

The ministry is now targeting 2023 for regulatory amendments. Additional information will be provided to support regulated parties on the details of new requirements, including guidance for the registration process for compost facilities and land application of biosolids.

The ministry will continue to monitor new scientific information, and compost and biosolid management strategies as part of ongoing policy analysis to support the regulatory framework.

Table 1: Intended Metal Concentrations Standards in Biosolids

	Intended OMRR Standards		Current OMRR Standards	
Material Substance (µg/g)	Biosolids Class A	Biosolids Class B	Biosolids Class A	Biosolids Class B
Arsenic	41	41	75	75
Cadmium	15	15	20	20
Chromium	1000	1000	ı	1060
Cobalt	150	150	151	150
Copper	1500	1500	ı	2200
Lead	300	300	505	500
Mercury	4	4	5	15
Molybdenum	20	20	20	20
Nickel	180	180	181	180
Selenium	25	25	14	14
Zinc	1850	1850	1868	1850

Table 2: Additional Samples for Pathogens in Biosolids and Compost

For Salmonella sample results:	For Fecal Coliform indicator test results:
All samples and results must be recorded, then:	All samples and results must be recorded, then:
<ul> <li>If any single sample from a batch exceeds a limit, then the batch fails and cannot be classified.</li> </ul>	<ul> <li>If any single sample from a batch exceeds a limit, then the batch fails and cannot be classified.</li> </ul>
OR	OR
<ul> <li>Twelve additional samples may be taken from the batch in question until a minimum of four consecutive samples meet the standard.</li> </ul>	<ul> <li>Twelve additional samples may be taken from the batch in question until the geometric mean of all samples meets the standard.</li> </ul>
AND	AND
<ul> <li>If the standards are not met within twelve additional samples, then the batch fails that standard and cannot be classified.</li> </ul>	<ul> <li>If the standards are not met within twelve additional samples, then the batch fails that standard and cannot be classified.</li> </ul>

Table 3: Sampling Frequency for Compost, BGM and Biosolids

Product	Parameters	Grab or Composite of Multiple Grabs Per Sampling Event	Recommended Number of Sampling Events	
	Metals	Composite of 10 grabs	1 sampling event per 2000 wet tonnes of product <sup>1</sup>	
	Fecal Coliform	10 Grabs		
	Foreign Matter (%FM)	Composite of 10 Grabs		
Compost (except Class A made with yard and wood waste only)	Foreign Matter (# pieces per 500 mL aliquot)	10 Grabs	1 sampling event per 500 wet tonnes of product <sup>1</sup>	
	Salmonella (for Class A Compost only)	10 Grabs	1 sampling event per 6000 wet tonnes of product <sup>1</sup>	
	As requested by director (e.g., contaminants of emerging concern)	As requested	As requested by director	
Biosolids Growing Medium	Metals Total Kjeldahl Nitrogen Organic matter content	Composite of 10 grabs	1 sampling event per 4000 wet tonnes of product <sup>2</sup>	
	As requested by director (e.g., contaminants of emerging concern)	As requested	As requested by director	
	Metals	Composite of 10 grabs		
Biosolids	Fecal Coliform	10 Grabs	1 sampling event per 4000 wet tonnes of product <sup>1</sup>	
	Foreign Matter (%FM)	Composite of 10 Grabs		
	Salmonella (for Class A Biosolids only)	10 Grabs	1 sampling event per: 12,000 wet tonnes of Class A Biosolids <sup>1</sup>	
	As requested by director (e.g., contaminants of emerging concern)	As requested	As requested by director	

 $<sup>^{\</sup>rm 1}$  Minimum of two events per calendar year with 30 days between sampling events.

<sup>&</sup>lt;sup>2</sup> Minimum of two events per calendar year, with 30 days between sampling events if BGM is operating for nine months or more.

Table 4: Intended Metal Concentrations Standards in Class B Compost

	Intended OMRR Standards	Current OMRR Standards
Material Substance (µg/g)	Compost Class B	Compost Class B
Arsenic	41	75
Cadmium	20	20
Chromium	1000	1060
Cobalt	150	150
Copper	1500	2200
Lead	300	500
Mercury	4	15
Molybdenum	20	20
Nickel	180	180
Selenium	14	14
Zinc	1850	1850

Note: There are no changes to the Class A Compost metal concentration limits that were proposed in the 2018 Intentions Paper.

Table 5: Standards and test methods for determining when a compost is mature

The ministry recommends that compost must meet at least one of the following standards to quantify when the curing stage is complete and the compost is mature:

- a) the respiration rate is  $\leq$  400 mg of oxygen per kg of volatile solids per hour when analyzed in accordance with the "Respirometric Method"  $^{14}$ .
- b) the respiration rate is  $\leq$  450 mg of oxygen per kg of volatile solids per hour when analyzed in accordance with the procedure described in Part II "Modified Biochemical Oxygen Demand (BOD) Respiration Method" <sup>15</sup>.
- c) the carbon dioxide evolution rate is  $\leq 4$  mg of carbon in the form of carbon dioxide per gram of organic matter per day using the Carbon Dioxide Evolution Rate test method (TMECC 05.08-B)<sup>16</sup>.
- d) the rise in temperature of compost above room temperature is  $\leq 10^{\circ}$ C, using the Dewar Self-Heating Test (TMECC 05.08-D)<sup>17</sup>.
- e) the Solvita® maturity index is 7 (TMECC 05.08-E)18.
- f) compost must not reheat upon standing under the following conditions (Current OMRR Schedule 2 §2(b) and as described in 2018 IP section 9.1):
  - i. compost is aerated and formed into a pile no smaller than 3 metres in diameter and 2 metres high with compost having a moisture content between 35 percent and 60 percent;
  - ii. the pile must be formed in a location where the ambient temperature remains in the range of 5° to 30°C;
  - iii. 3 days after the pile has been formed. the temperature of the compost is measured at a depth of 60 cm into the pile from the outside surface of the pile;
  - iv. the compost must not re-heat upon standing to greater than 8°C above ambient temperature.

<sup>&</sup>lt;sup>14</sup> National Standard of Canada CAN/BNQ 0413-200/2016. 2016. Organic Soil Conditioners - Composts. Fourth edition 2016-02-29. ISBN 978-2-551-25768-3 (printed version).

<sup>15</sup> Ibid.

<sup>&</sup>lt;sup>16</sup> Test Methods for the Examination of Composting and Compost. 2001. Excerpt chapter 05.08 Respirometry.

<sup>&</sup>lt;sup>17</sup> Ibid.

<sup>18</sup> Ibid.