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**GOVERNMENT NOTICES • GOEWERMENTSKENNISGEWINGS**

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**DEPARTMENT OF ENVIRONMENTAL AFFAIRS**

NO. 1135

04 SEPTEMBER 2019

**NATIONAL ENVIRONMENTAL MANAGEMENT: WASTE ACT, 2008 (ACT NO: 59 OF 2008)****DRAFT NATIONAL NORMS AND STANDARDS FOR ORGANIC WASTE COMPOSTING**

I, Barbara Dallas Creecy, Minister of Environment, Forestry and Fisheries, hereby under section 7(1) (c) and 7(2) (a), read with section 67(1) (f) and 7(6) of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008), give notice of my intention to set the national norms and standards for organic waste composting, in the Schedule hereto.

Members of the public are invited to submit to the Minister, within 60 days from the date of the publication of the notice in the Gazette, written comments or inputs to the following addresses:

By Post:                   The Director-General  
                                Attention: Dr M Tshitangoni  
                                Department of Environmental Affairs  
                                Private Bag X447  
                                Pretoria, 0001

By hand:                   Ground floor (Reception), Environment House, 473 Steve Biko Road, Arcadia,  
                                0083

By email:                   [MTshitangoni@environment.gov.za](mailto:MTshitangoni@environment.gov.za) .

Any queries in connection with the notice can be directed to: Dr Mpho Tshitangoni. Telephone: (012) 399 9793 or email: [MTshitangoni@environment.gov.za](mailto:MTshitangoni@environment.gov.za)

Comments received after the closing date may not be considered.

A copy of a draft national norms and standards for organic waste composting published in the *Gazette* can also be accessed at <http://sawic.environment.gov.za> under "Draft Documents for comment"



**BARBARA DALLAS CREECY  
MINISTER OF ENVIRONMENT, FORESTRY AND FISHERIES**

## SCHEDULE

### BACKGROUND

1. The National Waste Management Strategy (NWMS) advocates for the waste management hierarchy as a necessary approach towards achieving effective waste management and contributing to sustainable development. Organic waste composting has been identified by the NWMS as one of the approaches towards achieving the objectives of the waste management hierarchy, amongst other measures.
2. The diversion of organic waste from landfills promotes the achievement of comprehensive and sustainable management of environmental resources and contributes to upholding of the constitutional rights of all South Africans to an environment that is not harmful to human health and wellbeing.
3. During the 2012/2013 fiscal year, the Department of Environmental Affairs developed a National Organic Waste Composting Strategy, with the purpose of exploring opportunities for diverting compostable organic waste from landfill disposal. The strategy made a number of recommendations, which included amongst others, the development of norms and standards for organic waste compost, in order to provide for a national approach to composting and to exempt composting facilities from requiring a Waste Management Licence.
4. Organic waste composting is currently listed in Category A subparagraph (6) of the List of Waste Management Activities that have, or are likely to have, a detrimental effect on the environment, published under Government Notice 921 in the Government Gazette 37083 of 29 November 2013, in terms of section 19(2) of the Waste Act and requires a waste management licence. The objective of the national norms and standards for organic waste composting is that when these norms and standards comes into operation, the organic waste composting activity will be excluded from the requirement of a waste management licence. Through the setting of the norms and standards for organic waste composting it is anticipated that composting of organic waste will increase and thus contribute to the NWMS's target for diverting recyclables from landfill sites for re-use, recycling or recovery.
5. The draft national norms and standards are only applicable to compostable organic waste, which excludes infectious, poisonous, health-care and hazardous organic wastes.

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## 1. DEFINITIONS

In these norms and standards, any word or expression to which a meaning has been assigned in the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) has the meaning so assigned, and unless the context otherwise indicates—

**“Best Practicable Environmental Option”** means the option that provides the most benefit or causes the least damage to the environment as a whole, at a cost acceptable to society, in the long term as well as in the short term;

**“compost”** is a product of controlled aerobic, biological decomposition of biodegradable materials. The organic waste undergoes mesophilic and thermophilic temperatures, which significantly reduces the viability of pathogens and weed seeds, and stabilizes the carbon such that it is beneficial to plant growth;

**“compostable organic waste”** means a nitrogen, phosphorous, potassium and carbon-based materials of animal or plant origin that naturally enhances fertility of soil through a natural degradation process but, excludes human made organic chemicals and naturally occurring organic chemicals which have been refined or concentrated by human activity, and health-care risk waste;

**“composting”** means a controlled biological process in which organic materials are broken down by micro-organisms by means of an aerobic process to produce compost or fertiliser;

**“containment barrier”** refers to a suitable surface on which organic waste is processed through composting which protects the environment from potential contamination with excessive nutrients;

**Environmental Authority** means any person or representatives from a national, provincial and local government authorised to conduct an inspections or audits at the facility;

**“fermentative anaerobic composting”** means the slow bio conversion of organic matter in the absence of oxygen using fermentation. During anaerobic fermentative composting organic material is chemically and microbiologically altered;

**“fertiliser”** means any substance which is intended or offered to be used for improving or maintaining the growth of plants or the productivity of the soil;

**“garden waste”** means organic biodegradable waste material generated from the likes of a typical garden or similar vegetation waste generated from municipal parks and gardens;

**“handling”** means functions associated with the movement of waste, including storage, treatment and ultimate disposal, by the use of manual systems or mechanical systems;

**“hazardous organic waste”** means any waste that contains organic elements or compounds that may, owing to the inherent physical, chemical or toxicological characteristics of that waste, have a detrimental impact on human health and the environment;

**“infectious organic waste”** means organic waste which contains or may be reasonably presumed to contain pathogens which normally cause or significantly contribute to the cause of morbidity or mortality in human beings;

“**leachate**” means water that has percolated through and/or been generated by decomposition of organic waste material;

“**Local Authority**” means Municipality governing waste by-laws and environmental health matters.

“**monitoring**” means continuous or non-continuous measurement of a concentration or other parameters for purpose of assessment or control of environmental quality or exposure and the interpretation of such measurements;

“**National Authority**” means the national department responsible for environmental affairs;

“**non-conforming waste**” means organic or inorganic waste that is not permitted to be processed at the composting facility in terms of the facility’s approved environmental management plan (EMP) or waste that has been determined by the composting facility operator not to be accepted.

“**offensive odour**” means any smell which is considered to be malodorous or a nuisance to a reasonable person.

“**organic fertiliser**” means a fertiliser manufactured from substances of animal or plant origin, or a mixture of such substances, and that is free of any substances that can be harmful to man, animal, plant or the environment containing at least 40 g/kg prescribed nutrients;

“**organic sludge**” means a thick, soft, wet mud or a similar viscous mixture of liquid and solid components consisting mainly of organic matter, but excludes sludge from wastewater treatment processes;

“**organic waste**” means waste of biological origin which can be broken down, in a reasonable amount of time, into its base compounds by micro-organisms and other living things and/or by other forms of treatment;

“**organics**” means both processed and unprocessed compostable organic waste;

“**premises**” means a building or structure, land or an area (whether enclosed or not), or a mobile plant;

“**Provincial Authority**” means provincial department responsible for environmental affairs and the governing implementation of composting facility plans and design, audit assessments and compliance matters.

## 2. ACRONYMS

**BPEO-** Best Practicable Environmental Option

**DAFF-** Department of Agriculture, Forestry and Fisheries

**DEA-** Department of Environmental Affairs

**EMP-** Environmental Management Plan

**NEMA-** National Environmental Management Act, 1998 (Act No. 107 of 1998)



**NEMWA-** National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008)

**SANS-** South African National Standards

**SDS-** Safety Data Sheet

## **2. PURPOSE**

- (1) The purpose of these norms and standards is to:
  - (a) Provide a national uniform approach relating to controlling the composting of organic waste at a facility that falls within the threshold in order to prevent or minimise potential negative impacts on the bio-physical and socio-economic environment; and
  - (b) Ensure Best Practicable Environmental Option (BPEO) in the composting of organic waste.

## **3. APPLICATION OF THE NATIONAL NORMS AND STANDARDS**

- (1) These national norms and standards apply to organic waste composting facilities that have the capacity to process compostable organic waste, in excess of 10 tonnes per day.
- (2) An organic waste composting facility is required to comply with these national norms and standards, without the requirement of obtaining a waste management licence in terms of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008).
- (3)

## **4. APPLICATION FOR ESTABLISHMENT OF AN ORGANIC WASTE COMPOSTING FACILITY**

- (1) Application to establish organic waste composting facility must be submitted to the relevant Provincial Authority.
- (2) Approval of the design plan, waste types to be composted and operational processes to be used, and a decommissioning plan must be granted before commencing with any composting activity.
- (3) An Environmental Management Plan, compiled by the facility owner or environmental consultant, must clearly describe the composting processes and measures to be put in place to protect the environment.
- (4) Before operating a composting facility, a person must obtain a permission to construct and operate a composting facility from the relevant Local Authority, if required in terms of the relevant municipal by-law.

## **5. REQUIREMENTS FOR THE DESIGN AND CONSTRUCTION OF AN ORGANIC WASTE COMPOSTING FACILITY**

- (1) Organic waste composting facility may not be constructed in an environmentally sensitive area such as a floodplain, water resource, wetland and any other conservation or protected area, and it must conform to zoning requirements as determined by the relevant Local Authority.
- (2) Organic waste composting facility must be constructed in an area that is accessible to emergency response personnel and equipment.
- (3) Building plans for the establishment of organic waste composting facility must be submitted with the application form to the Provincial Authority.

- (4) Containment barriers must be risk based and the type of waste to be processed and the immediate receiving environment must be considered to quantify the type of containment barriers to put in place in consultation with the Provincial Authority. The containment barriers must be practical and be able to withstand the heavy machinery associated with the composting activities where applicable.
- (5) The leachate collection system must be designed to prevent water pollution and odour problems.
- (6) The organic waste composting facility must be maintained on a continuous basis in such a manner that waste being processed on the site is handled correctly to ensure odours, dust, pests and leachate does not negatively impact neighbours and the environment.
- (7) Excess water generated at the composting facility, either through receiving wet waste or generated from rainfall, must be used on site to control dust or to increase the moisture content of compost heaps to facilitate decomposition. Leachate generated on site needs to be treated to the satisfaction of Local Authority before it can be disposed to a sewer or at a waste water treatment works.
- (8) The construction and operational times, as well as noise levels must comply with relevant applicable legislation or municipal by-laws in order to minimise the impact of noise on the neighbouring properties.
- (9) On-site fuelling and servicing of construction equipment and motor vehicles must only occur on designated impermeable surface within a bunded area.
- (10) An area under construction must be demarcated to prevent unauthorised access during the construction phase.
- (11) The organic waste composting facility must be designed and constructed in such a manner that runoff from the site is prevented from coming into contact with the materials received and processed at the premises, including the final product and the process residuals stored at the facility.

## **6. REQUIREMENTS FOR SECURITY AND ACCESS CONTROL**

- (1) The site must be fenced off and secured to prevent unauthorised entry to the areas of the organic waste composting facility used for receiving, storing and processing of organics, process residuals and contaminated materials.
- (2) A material screening protocol must be put in place to prevent non-conforming waste from entering the facility.
- (3) Non-conforming waste must not be accepted at the compost facility, it must be intercepted and diverted to a relevant licensed waste management facility.

## **7. REQUIREMENTS DURING OPERATIONAL PHASE**

- (1) Minimisation of airborne emissions
  - (a) Operational measures must be put in place to immediately blend a carbon source or cover with mature compost, any highly biodegradable organics such as food waste and organic sludge, putrescible waste to minimise offensive odour emissions that may be generated by potentially odorous waste.
  - (b) Un-surfaced roads and un-grassed or un-paved areas, which give rise to dust, must be regularly watered or other effective dust control measures implemented, to restrict dust to levels which do not pose a threat to human health or the environment. Speed reducing measures such as speed humps and speed limit signage must be introduced.
  - (c) Organics that are being processed must always be kept reasonably moist (at least 25% (m/m) moisture content) to minimise the emissions of airborne pathogens.

- (d) Emissions of methane in aerobic processes must be controlled by keeping the organics being processed adequately aerated.
  - (e) The schedule of turning of the compost should depend on the composting method being employed at the facility and must conform to the EMP.
  - (f) Facility management must put measures in place to control high concentrations of particulate matter during pre-treatment (shredding and mixing) of dry organics.
  - (g) Workers at composting and related organic-processing facilities must be protected against high levels of exposure to particulate matter by ensuring that design features and operational measures are strictly followed and monitored.
- (2) Management of waste generated at the organic waste composting facility
- (a) Any liquid and solid waste generated at the organic waste composting facility, including contaminated products and process residuals not suitable for beneficial processing at the organic waste composting facility, must be stored in such a manner as to prevent water pollution and amenity impacts, in accordance with the requirements specified in the National Norms and Standards for Storage of Waste published in terms of Government Notice No.926 in *Government Gazette No. 37088*, on 29 November 2013. Organic waste composting facility must comply with the following requirements for the management of waste:
    - (i) Waste generated at the composting facility must be sorted at source into various categories (recyclables and non-recyclables) and a documented procedure must be implemented to prevent any mixing of hazardous and general waste;
    - (ii) Liquid waste must be stored in leak resistant containers which must be inspected weekly for early detection of leaks;
    - (iii) The liquid waste containers must be of sufficient strength and structural integrity to ensure that they are unlikely to burst or leak in their ordinary use;
    - (iv) Waste that is spilled or carried by wind during operation, handling or storage must be contained;
    - (v) Hazardous waste must be stored in covered containers that are only opened when waste is added or emptied; and
    - (vi) Organic waste composting facilities must register with the Waste Information System in terms of the National Waste Information System Regulations, 2012 published under Government Notice No. R. 625 in *Government Gazette No.35583* of 13 August 2012.
- (3) Stockpiling of incoming and processed organics
- (a) The quantities (tonnage or kilograms) of incoming and processed organics must at all times not exceed the design requirements of the storage and processing areas.
  - (b) Operational measures must be put in place to ensure that the storage times for organics are controlled to minimise emissions of offensive odours.
  - (c) Design and operational measures must minimise contamination of final products.
- (4) Fire and methane gas management
- (a) A fire management plan or strategy must be in place and at least contain the following:
    - (i) Sufficient fire-fighting equipment that is kept in good working conditions and available at the facility;
    - (ii) Identified sources of fires that may result at the facility and appropriate operational procedures to be undertaken to bring the fire under control; and
    - (iii) A firebreak or barrier constructed around the perimeter of the site to avoid the spread of fires.

- (iv) Clear signs must be in place and should inform the public that flammable liquids are not permitted on the site.
  - (b) The design and operation of aerobic composting in order to ensure that the generation of methane is minimised.
  - (c) The design and operational procedure for the composting facility to ensure that heap heights are limited and heaps are monitored for excessive high temperatures to prevent spontaneous combustion.
- (5) Minimising amenity impacts
  - (a) The composting facility must put in place measures to control pests.
  - (b) The composting facility operator must prevent weeds from proliferating at the premises and composting facilities that receive alien vegetation must ensure that seeds do not survive in the compost through seed germination testing.
- (6) Water pollution prevention
  - (a) The facility must be designed and operated in such a manner that surface water is prevented from mixing with organics received, processed and stored at the premises, including the final product.
  - (b) All water that has entered the processing and storage areas, including the contaminated water, must be handled and treated as leachate.
- (7) Safe storage and disposal
  - (a) The design of the facility must include infrastructure to securely store all organics, contaminated products, waste and process residues that cannot be beneficially processed at the facility, until they can be lawfully disposed of at the facility or transferred to another facility.

## 8. GENERAL REQUIREMENTS

- (1) These norms and standards do not replace any other relevant requirements stipulated in terms of other legislations, unless the requirements in terms of the other legislations are less stringent than these requirements.
- (2) All infrastructure required for the composting operations must be maintained to ensure that it functions to the operational requirements and design parameters.
- (3) The mass (tons) of all incoming compostable organic waste must be weighed or estimated by determining the density of the waste and multiplying it by the volume of waste received and the records thereof must be safely kept at the facility or company office for a period of 10 years.
- (4) The stockpiling of compost at the organic waste composting facility must be for a temporary period.
- (5) Pollution of the biological and physical environments (including habitats for animal and plant species, water resources, land, soil and air) as a result of operations within the facility must at all times be prevented.
- (6) General waste generated during the construction, operation and decommissioning phases of the facility must be managed at a licenced waste management facility.
- (7) A Safety Data Sheet (SDS) for each of the chemical products utilised must be kept on site and in easily accessible location to employees.
- (8) All compost intended for use as fertilisers must be registered with the national department responsible for agriculture and meet all the necessary requirements in terms of the Regulations Regarding Fertilisers, published in Government Notice No. R. 732 in Gazette No. 35666 of 10 September 2012 issued in terms of the Fertilizers, Farms Feeds, Agricultural Remedies and Stock Remedies Act, 1947 (Act No. 36 of 1947), including any amendment.

- (9) Facility management must keep a complaint register on site during the construction and operational phases as well as details on how the complaints are being addressed.
- (10) Employees must wear protective clothing when required as prescribed by the composting facilities Environmental Management Plan (EMP).
- (11) An incident register must be kept at the facility at all times.

## **9. TRAINING AND CAPACITY BUILDING**

- (1) A composting facility management must, during the safety, health and environment induction, train a new employee or employees on waste management in order to identify, prevent, minimise or manage actions or behaviours that are likely to cause adverse impacts on air, water, land, fauna and flora as a result of construction, operation and decommissioning of the facility.
- (2) Members of staff at a composting facility must be trained to manage all types of waste in accordance with the provisions of these norms and standards and any other relevant legislative requirements applicable to composting facilities.
- (3) Facility staff members must be trained in fire-fighting techniques.

## **10. MANAGEMENT OF EMERGENCY SITUATIONS**

- (1) Emergency response measures must be put in place to deal with any eventuality of fires resulting from the working surfaces or at any other area within the facility.
- (2) Emergency incidents must be dealt with in accordance with section 30 of the National Environmental Management Act, 1998 (Act No. 107 of 1998).

## **11. MONITORING, AUDITING AND REPORTING**

- (1) The site must be inspected on a weekly basis to ensure early detection and addressing of environmental pollution.
- (2) Should the preliminary water assessment findings indicate that the groundwater underneath and adjacent to the facility is vulnerable and that systems to prevent groundwater pollution are required, then a groundwater and soil monitoring network must be established.
- (3) Compost heap temperature that is high enough to destroy pathogens for the applicable composting method must be maintained and monitored for a time period required for such composting method.
- (4) The National, Provincial and Local Authorities must be given access to audit or inspect the facility at any time and at such frequency as the authority may decide.
- (5) The audit or inspection reports by the Environmental Authority must be made available to the facility operator within sixty (60) days of the audit or inspection.
- (6) The composting facility manager must, during the audit or inspection, make any records or documentation available to the audit or inspection team as may be required.
- (7) Safe disposal certificates for hazardous waste removed from facility must be kept on record.
- (8) A record of any finding of non-compliance by the Environmental Authority and how the manner of such non-compliances were addressed must be kept in a file and produced upon request by any relevant competent authority.
- (9) Internal audits detailing environmental performance of the facility must be conducted every six (6) months and official reports thereof must be prepared. Each of the internal audits findings must be made available to the external auditor referred to in sub-paragraph (9) below and to the Environmental Authority upon request. Audit reports must be in the format specified by the Provincial Authority.
- (10) External audits of the facility must be conducted every twelve (12) months by an independent auditor and the auditor must prepare an official audit report documenting the audit findings. The

external audit report must be submitted to the Provincial Authority upon request and must include, but not limited to the following:

- (a) Confirmation of compliance of the facility to these Norms and Standards and the composting facility's EMP as approved by the Provincial Authority.
  - (b) Confirmation of compliance with any specific requirements issued by the relevant authority either at national, provincial or local sphere of government.
  - (c) Confirmation of any major environmental incidents that occurred and details of the manner the incidents were addressed.
  - (d) Confirmation of the presence of records of safe disposal certificates for all hazardous waste removed from the facility.
  - (e) Confirmation that hazardous waste is separated from general waste and that such waste is removed by a registered waste handling company for either recycling or disposal at licenced disposal facility.
- (11) For the purposes of compliance monitoring, all prospective composting facilities must prior to commencement with the construction inform the Provincial Authority and the Local Authority for a once off registration of the activity.
- (12) The registration application referred to in paragraph (10) above must as a minimum include the following:
- (a) The name of the owner/operator of the facility where the activity is intended to take place.
  - (b) The location of the facility in terms of the name of the local municipality, Erf number and geographical coordinates.
  - (c) The size of the facility.
  - (d) The proximity of the facility to the nearest residential area.
  - (e) The land use or zoning.

## 12. REQUIREMENTS DURING DECOMMISSIONING PHASE

- (1) A facility to be discontinued, for whatever reasons, must be rehabilitated to the satisfaction of the Provincial Authority.
- (2) A closure and a rehabilitation plan for the facility, including the indication of end-use of the area must be developed and submitted to Provincial Authority for approval.
- (3) All equipment must be removed from the site, unless demonstrations are made that the equipment that remains will not have the potential to cause environmental impacts and is needed for subsequent uses of the site.
- (4) The site must be rehabilitated according to the closure and the rehabilitation plan approved by the Provincial Authority.
- (5) The composting facility manager will remain responsible for any adverse impacts on the environment, even after operations have ceased.

## 13. TRANSITIONAL ARRANGEMENTS

A person who lawfully conducted an organic waste composting activity prior to and on the date of commencement of these Norms and Standards must continue with the activity for the duration as stipulated in the approval, authorisation or licence and after the expiry of the approval, authorisation or licence comply with the provisions of these Norms and Standards.