



pennsylvania
DEPARTMENT OF ENVIRONMENTAL
PROTECTION

BUREAU OF WASTE MANAGEMENT
DIVISION OF MUNICIPAL and RESIDUAL WASTE
GENERAL PERMIT WMGM042

ANEROBIC DIGESTION

Issued: August 18, 2012

Amended: April 2, 2021

Expires: August 18, 2022

ANAEROBIC DIGESTION

A. Description:

1. This general permit authorizes:
 - a. The anaerobic digestion of animal manure on a farm mixed with one or more of the following:
 - grease trap waste (collected from restaurants or grocery stores),
 - pre-consumer and post-consumer food waste from commercial establishments, institutional establishments, or industrial food manufacturing operations.
 - b. The utilization of a depackaging unit(s) to mechanically separate pre-consumer and post-consumer food waste from commercial establishments, institutional establishments, or industrial food manufacturing operations, from its packaging, prior to anaerobic digestion.
 - c. The mixture of animal manure with authorized waste streams are hereinafter referred to as a “waste.”
2. This general permit authorizes the beneficial use of:
 - a. Methane gas produced by the anaerobic digestion as fuel, including in the production of electricity.
 - b. Waste solids removed from the digester as animal bedding material at the farm; and
 - c. Liquid waste and solids removed from the digester as a soil additive for agricultural purposes. If fats, oils, and grease are added to the digester, the liquid waste and solids may not be beneficially used as a soil additive if the concentration of fats, oils and grease exceeds 15,000 mg/l (milligram per liter).

B. Registration Requirements:

1. Persons or municipalities that propose to operate under the terms and conditions of this general permit after the date of permit issuance must obtain a registration from the appropriate Department Regional Office (see attached list). A completed registration along with a registration application fee in the amount identified on the application forms must be submitted to the appropriate Department Regional Office. Checks shall be made payable to the “Commonwealth of Pennsylvania”. No activities shall commence unless authorized by the Department in writing.
2. Applications submitted to the Department for registration under this general permit to utilize a depackaging unit(s), or to modify coverage under an existing authorization to utilize a depackaging unit(s), must specify the types of packaging materials that will be processed by the depackaging unit(s).

ANAEROBIC DIGESTION

C. Operating Conditions for All Permittees and Activities Authorized by this General Permit:

1. The permittee shall not cause or allow a point or non-point source discharge of any of the following to the surface waters of the Commonwealth, unless permitted by the Department: residual waste; municipal waste; liquid waste; combined stormwater runoff and leachate, if generated; or runoff from the staging, processing, and storage areas where solid waste management activities are conducted. All such runoff shall be managed in accordance with The Clean Streams Law, 35 P.S. §§ 691.1-691.1001.
2. Nothing in this general permit shall be construed to supersede, amend, or authorize a violation of any of the provisions of any valid and applicable local law, ordinance, or regulation, providing that said local law, ordinance, or regulation is not preempted by the Solid Waste Management Act, 35 P.S. §6018.101-6018.1003 (SWMA); Clean Streams Law, 35 P.S. §§ 691.1-691.1001; Air Pollution Control Act, 35 P.S. §§ 4001-4106 and the Municipal Waste Planning, Recycling and Waste Reduction Act, 53 P.S. §4000.101-4000.1904.
3. The processing and beneficial use activities authorized by this general permit shall not harm or present a threat of harm to the health, safety, or welfare of the people or environment of this Commonwealth. The Department may:
 - a. Modify, suspend, revoke, or reissue the authorization granted in this general permit if the permittee cannot comply with the conditions of this general permit or if the authorized processing and beneficial use activities cannot be adequately regulated under the conditions of this general permit.
 - b. Require a person or municipality authorized by a general permit to apply for and obtain an individual permit when the person or municipality is not in compliance with the conditions of the general permit or is conducting an activity that harms or presents a threat of harm to the health, safety or welfare of the people or the environment of this Commonwealth.
4. The incoming waste shall be stored in accordance with 25 Pa. Code, Chapter 285 (relating to storage, collection, and transportation). The Department may waive the requirement in 25 Pa. Code, § 285.121(b)(3) that the storage container have a tight-fitting lid or cover or be otherwise sealed provided the applicant demonstrates as part of the permit application that the container provides equivalent storage performance and prevents leaks, odors, and vector attraction.
5. Failure of measures herein approved to perform as intended or as designed, or in compliance with the applicable laws, rules, and regulations, and terms and conditions of this general permit for any reason shall be grounds for the revocation or suspension of the permittee's approval to operate under this general permit.
6. Waste not authorized under this general permit shall be removed weekly from the processing area and properly disposed of at a permitted municipal waste disposal facility, unless authorized by the Department in writing to do otherwise. Incidental or temporary on-site storage of waste not authorized in this general permit shall comply

ANAEROBIC DIGESTION

with the requirements as specified in 25 Pa. Code, Chapter 285 (relating to storage, collection, and transportation).

7. The waste processed for beneficial use under the authorization of this general permit shall not be mixed with other types of waste materials, including hazardous waste, special handling waste, or other municipal or residual waste, unless otherwise approved by the Department in writing.
8. The processing, storage and transportation of waste authorized under this general permit or otherwise generated by the permittee shall be conducted in a manner that will minimize and control nuisances and not be harmful to the public health, safety, or the environment of this Commonwealth.
9. Municipal and residual waste may be stored up to seven days provided it meets all other conditions of this permit. If the municipal or residual waste is not added to the digester within seven days, it must be removed from the site and managed in accordance with Condition C.6.
10. As a condition of this permit, the permittee authorizes the Department to access and inspect all areas of the facility where activities related to this permit are taking place or have taken place in the past. This permit condition is referenced in accordance with §§ 608 and 610(7) of the SWMA, 35 P.S. §§ 6018.608 and 6018.610(7). This condition in no way limits any other powers granted under the SWMA.
11. Any waste generated from the processing and beneficial use activity authorized by this general permit shall be managed in accordance with the Solid Waste Management Act, 35 P.S. §§6018.101 - 6018.1003 and the regulations promulgated thereunder.
12. All activities conducted under the authorization granted in this permit shall be conducted in accordance with the permittee's application, except to the extent that there is a conflict with the regulations or governing statutes.
13. Any independent contractors or agents retained by the permittee in the completion of the processing and beneficial use activities authorized under this permit shall be subject to a compliance history review by the Department prior to performance of activities under this general permit, as specified by Section 6018.503 of the SWMA, 35 P.S. §6018.503.
14. A Preparedness, Prevention and Contingency (PPC) plan that is consistent with the most recent edition of the Department's "Guidelines for the Development and Implementation of Environmental Emergency Response Plans" shall be developed and maintained at the facility. The PPC plan shall be updated as needed or at least every five years. The permittee shall immediately implement the applicable provisions of the Department-approved PPC plan for any emergency that affects or threatens public health, safety, welfare, or the environment.
15. Upon cessation of operations at the facilities operating under the authorization granted in this permit, the operator shall clean and/or remove any municipal or residual waste, storage tanks and structures or other materials that contain or have been contaminated with municipal or residual waste and shall provide for the processing and disposal of the waste or material in accordance with the SWMA, other environmental protection acts and the regulations promulgated thereunder.

ANAEROBIC DIGESTION

16. The permittee shall comply with the Air Pollution Control Act, 35 P.S. §§ 4001 – 4106, and the regulations promulgated under the Act, including Chapter 123, Standards for Contaminants, Fugitive Emissions at 25 Pa. Code §§ 123.1 and 123.2 and Odor Emissions at 25 Pa. Code § 123.31.
17. The permittee shall maintain in force and effect a general liability insurance policy, in accordance with 25 Pa. Code, Chapter 271, Subchapter D (relating to bonding and insurance) to provide continuous coverage during operation of the facility and until the Department issues a final closure certification.
18. The liquid and solid waste that is beneficially used shall be managed as manure once it is removed from the digester.
19. The areas of the facility where incoming waste is stored prior to placement in the digester or areas where waste generated from the digester is stored before being beneficially used shall not be located:
 - a. In the 100-year floodplain of waters of this Commonwealth, unless the Department approves in the permit a method for protecting the facility from a 100-year flood consistent with the Flood Plain Management Act, 32 P.S. §§ 679.101 - 679.601 and the Dam Safety and Encroachments Act, 32 P.S. §§ 693.1 - 693.27.
 - b. In or within 100 feet of a wetland.
 - c. Within 300 feet measured horizontally from an occupied dwelling unless the owner of the dwelling has provided a written waiver consenting to the facility being closer than 300 feet. The waiver shall be knowingly made and separate from a lease or deed unless the lease or deed contains an explicit waiver from the owner.
 - d. Within 50 feet of a property line unless the owner demonstrates one of the following:
 - i. That actual processing of waste is not occurring within 50 feet of a property line.
 - ii. That storage and processing take place in an enclosed facility.
 - iii. That the owner of the adjacent property has provided a written waiver consenting to the facility being closer than 50 feet. The waiver shall be knowingly made and separate from a lease or deed unless the lease or deed contains an explicit waiver from the owner.
 - e. Within 100 feet of a perennial stream unless the storage and processing will not occur within that distance and no adverse hydrologic or water quality impacts will result.
 - f. Within 300 feet of a water source unless the owner has provided a written waiver consenting to the facility being closer than 300 feet.
 - g. Within 900 feet measured horizontally from the property line, unless a written waiver is obtained from the current property owner of:

ANAEROBIC DIGESTION

- i. A building owned by a school district or parochial school and used for instructional purposes;
 - ii. A park;
 - iii. A playground.
- h. In an area where the facility would adversely affect a habitat of a known endangered or threatened species.

D. Additional Operating Conditions for Farms Authorized to Use a Depackaging Unit Prior to Anaerobic Digestion:

1. The depackaging unit(s) must be operated in a manner that prevents the shredding or fragmenting of packaging into small pieces that can progress through the operation in digester influent, digester effluent, and ultimately into the final beneficial use material.
 2. The depackaging unit(s) must be operated within a fully enclosed facility.
 3. No visible plastic fragments shall be in the digester effluent destined for land application, dewatered solids destined for land application, or for use as an animal bedding, and there shall be no visible plastics in the areas where the effluent or dewatered solids are ultimately land applied.
 4. The permittee shall collect representative samples of the liquid and solid waste destined for beneficial use on a quarterly basis and analyze it for the constituents in Tables 1 and 2. Sampling events must be separated by at least 80 calendar days but not more than 100 calendar days. If processed waste is not available for sampling and analysis in the normal 80 to 100-day testing window, a sample shall be collected and analyzed as soon as it is available after the 100-day window. Subsequent sampling and testing events shall maintain the intended quarterly schedule as closely as possible.
- d. The liquid and solid waste may be beneficially used by land application to agricultural lands as a soil additive if limits in Table 1 are satisfied, and the waste is shown that the electrical conductivity (EC) value for the sodium absorption ratio (SAR) of the processed material is below the high hazard category set forth in Table 2. The analysis for Table 1 shall be based upon "total" dry weight values, and conducted utilizing the "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods" (EPA SW-846), or other methods approved by DEP.

ANAEROBIC DIGESTION

**Table 1
Constituents to be Tested on a Quarterly Basis¹**

Constituent	Limit (mg/kg)
pH (range)	5.5 – 12.5
Aluminum	41
Cadmium	39
Chromium (total)	1,000
Copper	1,500
Lead	300
Nickel	420
Mercury	17
Manganese	2,000
Tin	130,000
% Plastics ²	Reporting Only
% Physical Contaminants (man-made inerts) ³	Reporting Only
Organic Nitrogen	Based on NMP ⁴ or MMP ⁵
Ammonium Nitrogen	Based on NMP or MMP
Fats, Oil and Grease	15,000 mg/L
Electrical Conductivity	See Table 2

¹ These determinations may be based upon the 90 percent upper confidence level using “Test Methods for Evaluating Solid Waste, Physical/Chemical Methods” (EPA SW-846) as guidance for statistical treatment of data. If the waste exceeds any of these limits the permittee shall re-analyze the waste for the chemical parameter(s) in question. If reanalysis shows that the waste still exceeds the limit(s), the permittee shall notify the appropriate DEP regional office.

² The % plastics shall be determined using Method 3.06 (Glass Shards, Metal Fragments and Hard Plastics Wet Sieving Technique) of the United States Department of Agriculture and the United States Composting Council *Test Methods for the Examination of Composting and Compost*, or another method approved by DEP.

³ The % physical contaminants shall be determined using Method 3.06 (Glass Shards, Metal Fragments and Hard Plastics Wet Sieving Technique) of the United States Department of Agriculture and the United States Composting Council *Test Methods for the Examination of Composting and Compost*, or another method approved by DEP.

⁴ Nutrient Management Plan

⁵ Manure Management Plan

ANAEROBIC DIGESTION

Table 2
SAR and Salinity/Soluble Salts of Processed Waste Material

Sodium Absorption Ratio (SAR) of Blended Waste Material	Hazard (to crops/fields)		
	None ¹	Slight/Moderate ²	High ³
	Salinity/Soluble Salts of Blended Waste Material (EC as mmhos/cm)		
0 – 3	> 0.7	0.7 – 0.2	> 0.2
3 – 6	> 1.2	1.2 – 0.3	> 0.3
6 – 12	> 1.9	1.9 – 0.5	> 0.5
12 – 20	> 2.9	2.9 – 1.3	> 1.3
20 – 40	> 5.0	5.0 – 2.9	> 2.9

¹ Land application is permissible, and no Na monitoring is necessary for the land application of waste material.

² Land application activity is permissible. However, soil monitoring for Exchangeable Sodium Percentage⁴ (ESP) and Salinity/Soluble Salts⁵ (EC), at the end of the growing season, is required. If soil ESP exceeds 10% and/or soil EC exceeds 0.8 mmhos/cm, the land application of blended waste material shall be suspended on affected fields until soil ESP ≤ 10% and soil EC ≤ 0.8 mmhos/cm is achieved.

³ Land application of waste material containing combination of SAR and EC values in high hazard category is not permitted.

⁴ Exchangeable Sodium Percentage (ESP) constituents determined by Mehlich 3 extraction procedure.

⁵ Salinity/Soluble Salts (EC) of soil determined by 2:1 – Water/Soil method.

- e. The permittee may request, in writing, a reduced frequency of monitoring in writing after the liquid and solid waste has been monitored for 2 consecutive years.
5. The permittee shall maintain in force and effect a bond in sufficient guarantees in accordance with 25 Pa. Code, Chapter 271, Subchapter D (relating to financial assurances requirements) to provide continuous coverage during operation of the depackaging unit and until the Department issues a final closure certification.

E. Recordkeeping.

1. The permittee shall maintain records of all waste accepted by the facility and maintain records, including analytical results in accordance with Condition D.5, if applicable, to demonstrate that the liquid waste or solids to be beneficially used after their removal from the digester meet the requirements of the general permit.
2. The permittee shall develop a log system documenting inspections of the facility that have been conducted by facility personnel.
3. Records of all analytical evaluations conducted on the wastes produced or effluent liquid waste removed shall include the following on each sample: the dates of sampling and testing, sampling procedures, person collecting the sample, each parameter tested, address of the sample location, date and time, the analytical results, the laboratory used, and analytical methodologies.

ANAEROBIC DIGESTION

4. The records shall be retained at the facility for a minimum of 5 years and made available to the Department upon request.

F. Reporting.

1. The permittee shall immediately notify the appropriate Department's Regional Office (see attached list), in writing, of any changes in: the name, address, owners, operators and/or responsible officials of the company; changes in processing area location; changes in land ownership or the right to operate on the land occupied; liquid and solid waste that is or will be beneficially used exceeds the fats, oils and grease maximum concentration and the change in status of any permit issued by the Department or federal government under the environmental protection acts.
2. Persons operating under the provision of this general permit shall submit to the appropriate Department Regional Office (see attached list), an annual report on the beneficial use activities conducted under this permit by March 1 for the preceding calendar year. This report shall include: the quantity of each source of incoming waste, the type of incoming waste from each source: the name, address, and phone number of each source of incoming waste; the date of receipt; and the name, address, and phone number of the destination of each outgoing shipment of waste (such as materials destined for disposal). The report shall also include any analytical results performed in accordance with Condition D.5.
3. The permittee shall immediately notify the Department's Emergency Hotline by telephone at 800-541-2050 and the waste management program in the appropriate DEP regional office (see attached list) of any accidental spills and shall take appropriate immediate action to protect the health and safety of the public and the environment.

G. Wastes Other than Grease Trap Waste (collected from restaurants or grocery stores) and Pre-consumer and Post-consumer Food Waste from Commercial, Institutional Establishments, or Industrial Food Manufacturing Operations.

1. For each new food waste type that is proposed to be anaerobically digested under the authorization of this general permit, the permittee shall:
 - a. Submit a written request to the appropriate Department Regional Office to conduct a short-term trial project for a new waste type in a limited volume for a period of 1 year or less to determine the feasibility for the beneficial use of new waste type material under this general permit. The proposed trial project shall not be commenced unless a written approval from the Department has been obtained.

At a minimum, the following information shall be provided for our review and consideration:

- i. Name of the generator and location where the new waste type is generated.
- ii. Name and address of the facility or location that the proposed new beneficial use activity, if appropriate, will be tried.

ANAEROBIC DIGESTION

- iii. A description of the proposed new beneficial use activity, if appropriate.
 - iv. Weight, amount, or volume and frequency of use of the new waste type that will be used, and the new beneficial use material produced in the test trial project.
 - v. A determination that the new waste type is not hazardous.
 - vi. The duration proposed for this test trial project.
 - vii. Descriptions of the processing method(s) in the production of new beneficial use material in this test trial project.
 - viii. Descriptions of the storage of (1) new waste type material received, and (2) new beneficial use material produced in this test trial project.
- b. Notify the appropriate Department Regional Office of any changes, to the information provided in the request to the Department, during the duration of this test trial project.
 - c. Upon the completion of the test trial project:
 - i. Submit a project report to the appropriate Department Regional Office. The project report shall include all records and analytical results performed for the test trial project.
 - ii. Submit a written request to the appropriate Department Regional Office, for a minor modification to the existing general permit for the inclusion of new waste type in the beneficial use activities authorized in the general permit.
2. The beneficial use of new material produced in the test trial project, as authorized in the general permit, shall not be commenced unless the existing general permit has been modified by the Department.

H. Renewal:

A person or municipality that plans to continue the operations authorized under this general permit, after the expiration date indicated on the approval for coverage page, shall file a complete application for permit renewal at least 180 days before the expiration date of this general permit unless permission has been granted by the Department for submission at a later date. The renewal application shall be made using the "Form 20 (Application for a Municipal or Residual Waste General Permit)".

In the event that a timely and complete application for renewal has been submitted and the Department is unable, through no fault of the permittee, to reissue the general permit or approval for coverage before its current coverage expiration date, the terms and conditions of the approved coverage will automatically continue and will remain fully effective and enforceable pending the issuance or denial of the renewal for permit coverage provided the permittee is, and has been, operating in compliance with the terms and conditions of the general permit.

ANAEROBIC DIGESTION

**Department of Environmental Protection
Regional Offices
(and Counties Served)**

- I. Bucks, Chester, Delaware, Montgomery, Philadelphia.

Southeast Regional Office
2 East Main Street
Norristown, PA 19401
Phone: (484) 250 – 5960

- II. Carbon, Lackawanna, Lehigh, Luzerne, Monroe, Northampton, Pike, Schuylkill, Susquehanna, Wayne, Wyoming.

Northeast Regional Office
2 Public Square
Wilkes-Barre, PA 18711-0790
Phone: (570) 826 – 2511

- III. Adams, Bedford, Berks, Blair, Cumberland, Dauphin, Franklin, Fulton, Huntingdon, Juniata, Lancaster, Lebanon, Mifflin, Perry, York.

Southcentral Regional Office
909 Elmerton Avenue
Harrisburg, PA 17110-8200
Phone: (717) 705 – 4706

- IV. Bradford, Cameron, Centre, Clearfield, Clinton, Columbia, Lycoming, Montour, Northumberland, Potter, Snyder, Sullivan, Tioga, Union.

Northcentral Regional Office
208 West 3rd Street - Suite 101
Williamsport, PA 17701
Phone: (570) 327 – 3653

- V. Allegheny, Armstrong, Beaver, Cambria, Fayette, Greene, Indiana, Somerset, Washington, Westmoreland.

Southwest Regional Office
400 Waterfront Drive
Pittsburgh, PA 15222-4745
Phone: (412) 442 – 4000

- VI. Butler, Clarion, Crawford, Elk, Erie, Forest, Jefferson, Lawrence, McKean, Mercer, Venango, Warren.

Northwest Regional Office
230 Chestnut Street
Meadville, PA 16335-3481
Phone: (814) 332 – 6848