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Uniform Terminology for Rural Waste Management

American Society of Agricultural and Biological Engineers

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Uniform Terminology for Rural Waste Management

Proposed by the ASAE Rural Waste Disposal Committee; reviewed by the ASAE Structures and Environment Division Technical Committee, ASAE Water Treatment and Use Committee, and the USDA North Central Region Committee on Farm Waste Disposal; approved by the Structures and Environment Division Technical Committee; adopted by ASAE as a Recommendation December 1965; reconfirmed December 1970, December 1971; revised March 1973; revised and reclassified as a Standard December 1977; reconfirmed December 1982; revised June 1983, March 1987; reconfirmed December 1992; revised October 1994; reaffirmed for two years December 1999; reaffirmed December 2001, February 2004, February 2009; November 2013.

Keywords: Definitions, Management, Terminology, Waste

1 Purpose and Scope

1.1 The terminology reported herein is intended to establish uniformity in terms used in the field of rural waste management and to serve as a focal point for the development of useful new terms and definitions. Terms and definitions were adopted from related fields where applicable.

1.2 Standard procedures for the determination of values for many of the terms defined herein may be found in Standard Methods for the Examination of Water and Wastewater, American Public Health Association, Washington, D.C. A source of additional wastewater terms can be found in the Glossary — Water and Waste Water Control Engineering, Water Environment Federation, Alexandria, VA.

2 Normative References

The following standard contains provisions which, through reference in this text, constitute provisions of this Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this Standard are encouraged to investigate the possibility of applying the most recent edition of the standard indicated below. Standards organizations maintain registers of currently valid standards.

APHA, Standard Methods for the Examination of Water and Wastewater

3 Definitions

3.1 activated sludge process: A biological wastewater treatment process in which a mixture of wastewater and biological solids is agitated and aerated. The developed organic solids are subsequently separated from the wastewater by sedimentation and wasted or returned to the process as needed. The mixture is called mixed liquor, and the mass of settled solids is the active sludge.

3.2 absorption: The taking up of one substance into the body of another.

3.3 adsorption: The adherence of gas, liquid, or dissolved materials to the surface of solids through physical or electrochemical attachment.

3.4 aerobic bacteria: Bacteria that require free elemental oxygen for their growth. Oxygen in chemical combination will not support aerobic organisms.

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3.5 aerobic decomposition: Reduction of the net energy level of organic matter by aerobic microorganisms.

3.6 aerobic lagoon: (See lagoon and oxidation pond.)

3.7 aeration: A process forcing intimate contact between air and a liquid by one or more of the following methods:

— spraying the liquid in the air;

— bubbling air through the liquid;

— agitating the liquid to promote absorption of oxygen through the air liquid interface.

3.8 aerator: A device used to supply oxygen to wastewater, sludge, or manure in a tank or lagoon.

3.9 aerosol: A system of colloidal particles dispersed into air or gas, e.g., smoke or fog.

3.10 agitation: The turbulent mixing of liquids and slurries.

3.11 agricultural wastes: Wastes normally associated with the production and processing of food and fiber on farms, feedlots, ranches, ranges, and forests which may include animal manure, crop residues, and dead animals; also agricultural chemicals and their residues and containers, which may contribute contaminants to surface and subsurface water.

3.12 agricultural residue: A remaining part from the production and processing of food and fiber on farms, feedlots, ranches, ranges, and forests which may include animal manure and crop residue materials (see agricultural wastes).

3.13 algae: Primitive plants, one or many celled, usually aquatic, capable of synthesizing their foodstuffs by photosynthesis.

3.14 alkalinity: The capacity of water to neutralize acids; a property imparted by the water's content of carbonates, bicarbonates, hydroxides, and occasionally borates, silicates, and phosphates. It is expressed in milligrams per liter of equivalent calcium carbonate.

3.15 ammonification: The biochemical process whereby organic nitrogen is converted to ammoniacal nitrogen.

3.16 anaerobic bacteria: Bacteria not requiring the presence of free or dissolved oxygen. Facultative anaerobes can be active in the presence of dissolved oxygen, but do not require it.

3.17 anaerobic decomposition: Reduction of the net energy level of organic matter by anaerobic microorganisms in the absence of free oxygen.

3.18 anaerobic digestion: Conversion of organic matter in the absence of oxygen under controlled conditions to gases such as methane and carbon dioxide.

3.19 bacteria: A group of universally distributed, rigid, essentially unicellular procaryotic microorganisms. Bacteria usually appear as spheroid, rod-like or curved entities, but occasionally appear as sheets, chains, or branched filaments.

3.20 biochemical oxygen demand, BOD: The quantity of oxygen used by bacteria while stabilizing decomposable organic matter under aerobic conditions. Normally measured at 20 °C over a 5 d period.

3.21 biogas: Gaseous product of anaerobic digestion that consists primarily of methane and carbon dioxide.

3.22 biological oxidation: The process whereby living organisms convert organic matter into a less complex or mineral form.

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