



## **Biosolids Position Statement**

Updated by PWEA on December 15, 2022

### **PWEA Mission Statement**

Advancing Pennsylvania's water quality professionals through education and training, promoting sound sustainable water policies, and fostering public stewardship of our water resources.

The Pennsylvania Water Environment Association (PWEA) supports a comprehensive approach to wastewater treatment and solids management that ensures the recycling and recovery of valuable resources including water, nutrients, organic matter, and energy. In addition, PWEA recognizes that biosolids<sup>1</sup>, natural byproducts of the wastewater treatment process, are a renewable resource that can be utilized to meet societal needs for renewable energy, carbon sequestration, and sustainability.

PWEA supports the use of biosolids in accordance with local community standards that are economically and technologically feasible. PWEA supports and promotes the use of biosolids as a renewable resource and supports initiatives to advance the public perception and appreciation of the importance of wastewater and solids management.

A cultural move toward sustainability has the potential to shift policy-maker and public perception of biosolids from a waste to a community resource that can help achieve sustainability goals. This shift is creating unprecedented opportunities for the water resource recovery community to promote biosolids as a valuable commodity and renewable natural resource.

PWEA actively supports the promotion and enhancement of the beneficial recycling and recovery of biosolids to meet the management needs of local communities. Beneficial reuse opportunities include use as a fertilizer and/or soil conditioner, energy recovery, and product development via processes such as composting, alkaline stabilization, and thermal processing. Major "end users" of beneficially recycled biosolids include agriculture, strip mine reclamation activities, and commercial soil blenders.

This position is consistent with decades of scientific research and years of field practice that have clearly established the value and environmental benefits of biosolids, when properly treated and managed. It is also consistent with those of the U.S. Environmental Protection Agency (EPA) as well as several Federal agencies, which encourage the beneficial use of biosolids in accordance with policies and regulations, including the Clean Water Act.

To take full advantage of the inherent resource value of biosolids, PWEA supports development of multiagency, coordinated regulations that are based on sound research and best practices; advancements, innovation, and development of new technologies; recognition of the expanded role of wastewater and solids management; enhanced sharing of knowledge both within the profession and with other organizations, the regulatory community, and the public; and continued research.

### **PWEA Position**

PWEA endorses the beneficial recycling and use of biosolids. Biosolids contain important recyclable resources, including water, nutrients, organic matter, and energy. PWEA maintains that significant opportunities have emerged for the innovative use and expansion of biosolids management. These

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<sup>1</sup> EPA defines biosolids as "nutrient-rich organic materials resulting from the treatment of domestic sewage in a treatment facility ... that can be recycled and applied as fertilizer to improve and maintain productive soils and stimulate plant growth." Water Environment Federation (WEF) has adopted the following terminology: biosolids is any domestic wastewater residual that has been stabilized to meet the criteria in (EPA's) 40 CFR Part 503 regulations, and, therefore, can be beneficially used. Stabilization processes include: aerobic digestion; anaerobic digestion; composting; alkaline stabilization; and thermal drying. Solids, residuals, or another appropriate term should be used for general description (e.g., solids handling, plant solids) when it is uncertain whether the material meets 40 CFR Part 503 criteria.

opportunities are largely tied to recognizing biosolids as a community resource too valuable to waste in a climate of growing renewable energy needs, sustainability interests, population growth, soil depletion, and technological improvements. Contemporary societal trends of renewable energy, carbon neutrality, sustainability, and soil health provide a unique opportunity to reposition biosolids management away from entrenched negative perceptions and towards the recognition of biosolids as a valuable resource that should be recovered.

PWEA supports the use of proven technologies that facilitate energy and nutrient recovery. PWEA encourages Federal and state legislation that promotes the use of biosolids as a source of renewable energy and nutrients. Such legislation should retain flexibility so that the resulting policies and regulations can easily encompass new sources and emerging technologies.

PWEA supports proactive communications and public outreach to continue to build a strong base of support for biosolids utilization and products. This approach includes enhanced communications and education both within the profession and with the public. The EPA Part 503 regulations provide regulatory guidelines for biosolids management practices of land application, incineration, landfilling, and surface disposal that are protective of human health and the environment. In the years since promulgation of the Part 503 regulations, the EPA, Water Environment Research Foundation, and others have investigated a variety of scientific topics, such as microconstituents, microbial risks, and perceived health effects, and have supported the development of innovative technologies for stabilization and pathogen reduction. The overarching conclusion of these efforts is that no documented negative human health impacts have been observed when biosolids meet all of the requirements of Part 503 and when good management practices are followed.

All biosolids management approaches must be based on established science. PWEA supports and promotes continued research to add to the understanding of effective practices for biosolids management, strengthening the science on which sound practices are based, and addressing emerging issues as they arise. PWEA supports ongoing biosolids research activities, such as developing scientific evaluation techniques that will help identify and characterize emerging issues of concern including microconstituents, per- and polyfluoroalkyl substances (PFAS), and other chemicals that have the potential to form or accumulate in biosolids. Research continues to expand both the treatment options and end uses for biosolids.

### **Biosolids Management for a Sustainable Future**

PWEA encourages the development and implementation of environmentally protective biosolids management programs by committing appropriate resources toward the establishment of regulations, best management practices, technology, research, and outreach activities that maximize recovery and use of the resources in biosolids. The benefits of this sustainable approach will lead to enhanced economic, social, and environmental outcomes. Leadership should emanate from decision-makers in the water resource recovery communities, agriculture, and energy sectors; business groups; and local, state, and Federal government. PWEA recommends taking action in five key areas to ensure the best and highest use of biosolids as a resource:

- (1) Support the development of state and Federal regulations which promote the renewable resource value of biosolids.** Those regulations should emphasize the resource value of biosolids while remaining protective of public and environmental health. Federal and state policies should support and encourage the beneficial use of this natural resource by providing the tools that are needed for development. PWEA recommends a multiagency regulatory strategy emphasizing maximum environmental benefit of biosolids, and advocating for transparency in development of any new regulations. Ongoing support should be provided to agencies that have well-managed programs and regulations to preserve a local community's choice of biosolids management options, so long as it is in compliance with Part 503 and any other new regulatory requirements.
  
- (2) Support development of technologies that maximize best and highest use of biosolids.** Technological innovations should be encouraged to ensure the full resource recovery of organic matter, nutrients, water, and energy. Continued and growing interest in "green energy" technologies can transform wastewater treatment plants into energy exporters. Development of tools for enhanced measurement of the carbon footprint and greenhouse gas emissions of biosolids management operations can provide a basis to gauge sustainability goals and achievements. PWEA also supports the creation of incentives for adoption of innovative processes that effectively utilize this renewable resource.

**(3) Recognize that the core business of wastewater treatment plants (WWTPs) or water resource recovery facilities (WRRFs) has moved toward resource recovery and sustainability.** Increasingly, older style WWTPs and solids operations are being upgraded to extract water, organic matter, energy, and nutrients throughout the treatment process. To ensure this expanded role is fully realized, WRRFs need to stay connected with evolving technologies, changing regulations, and continuous improvement in operations. Key to this effort is the development of partnerships between WRRF management and nontraditional collaborators such as private companies, energy service companies, other municipal agencies, and the public. These partnerships should be used to publicly promote new ideas and advance technologies that have been developed and successfully implemented at WRRFs.

**(4) Promote public awareness and acceptance of biosolids as a renewable resource by supporting the National Biosolids Partnership (NBP) Biosolids Management Program<sup>2</sup>.** PWEA and others have actively promoted the recognition of biosolids as a renewable resource, which must be expanded to Federal, state, and local public officials; professional and environmental groups; and the public to fully appreciate the importance of this renewable resource. Public awareness programs should include public participation, engagement, and education to help promote understanding and support for biosolids management programs. Increased educational efforts aimed at solids managers and regulators can help ensure a more consistent regulatory approach based on sound science. Proactive outreach with the public will ensure that organizations understand the useful benefits and techniques to extract the maximum value from this sustainable resource.

The NBP Environmental Management System program is an example of a program that has been developed as a model management system that both helps build public trust and promotes efficient biosolids management.

**(5) Partner with regulatory agencies, municipal agencies, and professional organizations as needed to promote research and development.** Ongoing research should be encouraged and supported to update science to ensure the continued, safe use of biosolids and to ensure public health and confidence. A collaborative approach can help to address a range of issues quickly and result in integrated solutions in an era of limited resources and funding.

#### **About the Pennsylvania Water Environment Association**

PWEA has approximately 2,000 members representing the private and public sectors. The Association provides a forum for continuing education, regulatory commentary, and communication within Pennsylvania's water quality sector. Those interested in joining PWEA or becoming more familiar with our Association are invited to visit us at [www.pwea.org](http://www.pwea.org).

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<sup>1</sup> The NBP, an alliance established in 1997 between WEF, the National Association of Clean Water Agencies, and the EPA, has developed a national model program to support efforts of wastewater agencies and organizations to continuously improve biosolids management practices via an environmental management system-based approach. The program is designed to assist wastewater agencies and organizations in the implementation of environmentally sound biosolids management practices. It is founded in a "practice-neutral" approach that can be tailored to local biosolids management needs, while helping to ensure that biosolids are properly managed by supplementing existing regulatory oversight requirements.