

Brooke Paup, *Chairwoman*  
Bobby Janecka, *Commissioner*  
Catarina R. Gonzales, *Commissioner*  
Kelly Keel, *Executive Director*



## TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

*Protecting Texas by Reducing and Preventing Pollution*

March 28, 2025

Mr. Daniel Westrich, Manager of Regulatory Affairs  
BioMicrobics, Inc.  
16002 W. 110th Street  
Lenexa, Kansas, 66219

Re: Approval of proprietary OSSF treatment system for:  
BioMicrobics, Inc.  
MicroFAST® 0.4 Model

Dear Mr. Westrich:

We have received your request for a Texas Commission on Environmental Quality (TCEQ) review of the above-referenced proprietary system, with supporting documentation, on February 3, March 11, 12, and 17, 2025. Cindy Rojas Annicchiarico of the TCEQ Technical Programs Team conducted the review, as required by 30 Texas Administrative Code (TAC) §285.5(b)(3). After reviewing your request and supporting documentation, TCEQ has determined that the treatment product meets the applicable technical requirements. **This letter serves as notification of approval for use in the State of Texas as an approved proprietary system.** Please be advised, the review of individual OSSF applications is a separate action and this letter is not an authorization to install an individual OSSF.

This approval notes that the MicroFAST® 0.4 model is approved for use in Texas as a Class I treatment system under NSF Standard 40. The scale-down review of the MicroFAST® 0.4 model against the tested MicroFAST® 0.5 model (test report dated April 2007) was provided by NSF, and it was determined that the Micro-FAST 0.4 meets the requirements of NSF/ANSI 40-2022 for Residential Wastewater Treatment Systems, is proportionally equivalent to the tested unit, is constructed of the same material, and has an equivalent flow system. Similarly, NSF provided a scale-down letter stating that the MicroFAST® 0.4 model was completed against the tested MicroFAST® 0.5 model (test report dated October 2008). It was determined that the MicroFAST® 0.4 meets the requirements of NSF/ANSI 245: Water Treatment Systems - Nitrogen Reduction. Table 1 shows the technical specifications for the MicroFAST® 0.4 model.

As required by Title 30 TAC 285.32(c)(5)(A), proprietary units are approved to treat flows equal to or less than their rated capacity with an influent wastewater strength ranging from a 30-day average CBOD concentration between 100-300 mg/L. Proprietary units may be used as components in an overall treatment system treating influent stronger than 300 mg/L CBOD as shown in table 2. However, the overall treatment system shall meet the requirements set forth in 30 TAC 285.32(d). This approval also notes that the subject unit does not include pump chambers. All pump tanks are subject to the requirements specified in 30 TAC §285.34(b).

Influent Characteristic	NSF 40 Standard Required	Actual Average
BOD5, mg/L	100 to 300 mg/l	250 mg/l
Total Suspended Solids (TSS), mg/L	100 to 350 mg/l	310 mg/l

*Table 2: Influent Wastewater Characteristics Required Vs. Tested Results as Cited on the provided Standard 40 Certification Report- Under the provisions of NSF/ANSI Standard 40 - 2022 for Residential Wastewater Treatment Systems*

Effluent Characteristic	Concentration Range (During testing)	Average Concentration	Median
CBOD5, mg/L	2 to 8 mg/L	3 mg/L	2 mg/L
TSS, mg/L	2 to 29 mg/L	5 mg/L	2 mg/L
pH	6.1 to 7.90 Standard Units (SU)	6.8 - 6.9 SU	6.8 SU

*Table 3: Effluent Wastewater Characteristics as Cited on the provided Standard 40 Certification Report- Under the provisions of NSF/ANSI Standard 40 - 2022 for Residential Wastewater Treatment Systems*

The MicroFAST® wastewater treatment bioreactor utilizes a proprietary attached and suspended growth process to achieve treatment. Since the media used in the plant is submerged, both attached and suspended biological growth occur simultaneously. In both attached and suspended growth systems, microorganisms remove soluble contaminants from the wastewater, utilizing them as a source of energy for growth and production of new microorganisms (as cited in the NSF/ANSI Standard 40 MicroFAST® 0.5 Wastewater Treatment System Report, page 9).

The MicroFAST® Model 0.5 tested in the NSF report was constructed of concrete. The plant utilizes part of the tank for primary treatment, with the secondary treatment achieved in an aerobic zone inside an insert in the tank (as cited in the NSF/ANSI Standard 40 MicroFAST® 0.5 Wastewater Treatment System Report, page 9).

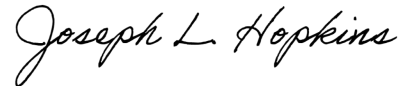
Model Number	Rated Capacity (gallons per day)	Pretreatment Chamber (gallons)	Aeration Chamber (gallons)	Filtration Media (cubic feet)	Approved Aerator Model
MicroFAST®	400	380	570	12.3	Fuji® Electric VFC200 or Mapro® CL20HS

*Table 1. MicroFAST® 0.4 Technical Specifications, as cited in the NSF Scale-Down Certification which certifies that MicroFAST® 0.4 conforms with the requirements of NSF/ANSI 40 for Residential Wastewater Treatment Systems.*

Daniel Westrich  
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If you have any questions, or if we may be of assistance to you, please contact Cindy Rojas Annicchiarico in the TCEQ Technical Programs Team at (512) 239-5146 or via e-mail at [Cindy.Annicchiarico@tceq.texas.gov](mailto:Cindy.Annicchiarico@tceq.texas.gov).

Sincerely,

A handwritten signature in black ink that reads "Joseph L. Hopkins". The signature is written in a cursive style with a large, prominent initial "J".

Joseph L. Hopkins, P.G.  
Technical Programs Team Leader  
Texas Commission on Environmental Quality

JLH/CRA

Brooke Paup, *Chairwoman*  
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Kelly Keel, *Executive Director*



## TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

*Protecting Texas by Reducing and Preventing Pollution*

October 2, 2025

Mr. Daniel Westrich, Manager of Regulatory Affairs  
BioMicrobics, Inc.  
16002 W. 110th Street  
Lenexa, Kansas, 66219

Re: Approval of proprietary OSSF treatment product for:  
BioMicrobics, Inc.  
MicroFAST Flex 0.5 Model

Dear Mr. Westrich:

We have received your request for a Texas Commission on Environmental Quality (TCEQ) review of the above-referenced proprietary system, with supporting documentation, on September 2, 17-18, 23, and 30, 2025. Cindy Rojas Annicchiarico of the TCEQ Technical Programs Team conducted the review, as required by 30 Texas Administrative Code (TAC) §285.5(b)(3). After reviewing your request and supporting documentation, TCEQ has determined that the treatment product meets the applicable technical requirements. **This letter serves as notification of approval for use in the State of Texas as an approved proprietary system.** Please be advised, the review of individual OSSF applications is a separate action and this letter is not an authorization to install an individual OSSF.

This approval notes that the MicroFAST Flex 0.5 model is approved for use in Texas as a Class I treatment system under NSF Standard 40. The bracketing review of MicroFAST Flex 0.5 to the testing of MicroFAST 0.5 has been completed by NSF, and it has been determined that the requested model meets the requirements of NSF/ANSI 40-2023 and NSF/ANSI 245 for Residential Wastewater Treatment Systems - Nitrogen Reduction. Table 3-5 provides the technical information and dimensions for the MicroFAST Flex 0.5 and MicroFAST 0.5, which have been found acceptable according to NSF Standard 40. The approved aerators for MicroFAST Flex 0.5 are cited as Fuji Electric VFC200 or Mapro CL20HS.

As required by Title 30 TAC 285.32(c)(5)(A), proprietary units are approved to treat flows equal to or less than their rated capacity with an influent wastewater strength ranging from a 30-day average CBOD concentration between 100-300 mg/L. Proprietary units may be used as components in an overall treatment system treating influent stronger than 300 mg/L CBOD as shown in table 1. However, the overall treatment system shall meet the requirements set forth in 30 TAC 285.32(d). This approval also notes that the subject unit does not include pump chambers. All pump tanks are subject to the requirements specified in 30 TAC §285.34(b).

Influent Characteristic	NSF 40 Standard Required	Actual Average
BOD5, mg/L	100 to 300	250
Total Suspended Solids (TSS), mg/L	100 to 350	310

*Table 1: Influent Wastewater Characteristics Required Vs. Tested Results as Cited on the provided Standard 40 Certification Report for the tested unit MicroFAST 0.5- Under the provisions of NSF/ANSI Standard 40 - 2022 for Residential Wastewater Treatment Systems*

Effluent Characteristic	Concentration Range (During testing)	Average Concentration	Median
CBOD5	2 to 8 mg/L	3 mg/L	2 mg/L
TSS	2 to 29 mg/L	5 mg/L	2 mg/L
pH	6.1 to 7.90 Standard Units (SU)	6.8 - 6.9 SU	6.8 SU

*Table 2: Effluent Wastewater Characteristics as Cited on the provided Standard 40 Certification Report for the tested unit MicroFAST 0.5- Under the provisions of NSF/ANSI Standard 40 - 2022 for Residential Wastewater Treatment Systems*

The MicroFAST 0.5 wastewater treatment bioreactor utilizes a proprietary attached and suspended growth process to achieve treatment. Since the media used in the plant is submerged, both attached and suspended biological growth occur simultaneously. In both attached and suspended growth systems, microorganisms remove soluble contaminants from wastewater, utilizing them as a source of energy for growth and production of new microorganisms (as cited in the NSF/ANSI Standard 40 MicroFAST® 0.5 Wastewater Treatment System Report, page 9).

The MicroFAST Model 0.5 tested in the NSF report has a rated capacity of 500 gallons per day (gpd). The tank was constructed of concrete. The plant utilizes part of the tank for primary treatment, with the secondary treatment achieved in an aerobic zone inside an insert in the tank (as cited in the NSF/ANSI Standard 40 MicroFAST® 0.5 Wastewater Treatment System Report, page 9).

MicroFAST® Model	Volume of FAST® Media	Media Dimensions	Design Flow Rate (gallons per day)
MicroFAST Flex™ 0.5	16 cu. ft.	32"x36"x24"	500
MicroFAST 0.5	16 cu. ft.	24"x48"x24"	500

*Table 3. Technical Specifications for MicroFAST 0.5 and MicroFAST Flex 0.5, as cited on the NSF Bracketing review (July 29, 2025)*

Model Number	Standard	Minimum Settling Zone		Minimum Treatment Zone		Minimum Total Tank	
		Volume (gal)	Hydraulic Retention Time (hrs)	Volume (gal)	Hydraulic Retention Time (hrs)	Volume (gal)	Hydraulic Retention Time (hrs)
MicroFAST® Flex™ 0.5	40 & 245	500	24	750	36	1,250	60
MicroFAST® 0.5	40 & 245	500	24	750	36	1,250	60

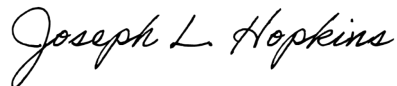
*Table 4: Tanks Dimensions for MicroFAST 0.5 and MicroFAST Flex 0.5 as cited on the NSF Bracketing review (July 29, 2025)*

Model Number	Standard	Minimum Settling Zone		Minimum Treatment Zone		Minimum Total Tank	
		Volume (gal)	Hydraulic Retention Time (hrs)	Volume (gal)	Hydraulic Retention Time (hrs)	Volume (gal)	Hydraulic Retention Time (hrs)
MicroFAST® Flex™ 0.5	40	350	16.8	450	21.6	800	38.4
MicroFAST® 0.5	40	350	16.8	450	21.6	800	38.4

*Table 5: Tanks Dimensions for MicroFAST 0.5 and MicroFAST Flex 0.5 as cited on the NSF Bracketing review (July 29, 2025)*

If you have any questions, or if we may be of assistance to you, please contact Cindy Rojas Annicchiarico in the TCEQ Technical Programs Team at (512) 239-5146 or via e-mail at [Cindy.Annicchiarico@tceq.texas.gov](mailto:Cindy.Annicchiarico@tceq.texas.gov).

Sincerely,



Joseph L. Hopkins, P.G.  
Technical Programs Team Leader  
Texas Commission on Environmental Quality

JLH/CRA