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TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

September 12, 2024

Mr. Grady Tucker, CEO
AquaKlear, Inc.
876 North Bierdeman Road,
Pearl, Mississippi, 39208

Re: Approval of proprietary OSSF treatment system for:
AquaKlear, Inc.
AquaKlear AKA600CA

Dear Grady Tucker:

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 4, 2024. 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 **AquaKlear AKA600CA** model treatment product meet 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.

The Gulf Coast Testing (GCT) Supplemental Report for Model AKA600CA, April 9, 2018, presents information on the modification and scale-up report for the Model AKA 500 Series Model and contains general information on the tested plant, specifications, installation details, and descriptions of key components of similar capacity and larger capacity plants of these models, including the AKA600CA.

Gulf Coast Testing, LLC has determined by performance evaluation under the provisions of ANSI/NSF Standard 40 (2013) that the Model AK500C manufactured by AquaKlear has met the requirements of Standard 40. AquaKlear proposes to scale up the AK500C to treat 600 gallons per day and add a 500-gallon pretreatment or "trash" compartment under Standard 40 (2013). AquaKlear also proposes to change the design of the skimmer operation. The tested Model AK500C is identical to the Model AKA500C except for the skimmer operation. The tested Model AK500C skimmer operates once per day. The Model AKA500C skimmer operates continuously over a 24-hour, skimming very low volumes. The model AKAC500C outperformed the Model AK500C for the effluent and influents CBOD5 and the TSS, concluding that changing the skimmer operation has no negative effect on the performance and would meet the requirement of Standard 40.

The AquaKlear Model AK500C achieves treatment through a flow process. Wastewater enters a 510-gallon aeration chamber, which is continuously aerated using a diffused air system consisting of a Hiblow HP-50W aerator and a Hiblow MD# T-300 Type TP-250 diffuser. Settling is accomplished in a 180-gallon clarification chamber following the aeration chamber. Treated wastewater exits the plant through an effluent outlet pipe.

The AKA600CA has added a 500-gallon pretreatment compartment to the residential wastewater system. The pretreatment compartment is part of the biological process. It acts as a primary settlement compartment and catches solids, including greases, oils, and other materials, which are put down the drain or flushed into the system. The aeration compartment of Model AKA600CA, where most of the biological activity occurs, has a total volume of approximately 633 gallons. The clarifier chamber of Model AKA600CA is separated from the aeration chamber by a divider wall. The clarifier has a volume of approximately 220 gallons. Table 1 illustrates the compartment volume comparison between the AK 500C and AKA 600CA models. Table 2 shows the aerators and diffuser specifications for model AKA 600CA.

	AK 500C		AKA 600CA		
	500 gallons/day		600 gallons/day		
Compartment	Volume (Gallons)	HRT (Hours)	Volume (Gallons)	HRT (Hours)	Change %
Pretreatment			500	20.0	NA
Aeration	510	24.5	633	25.3	3.4%
Clarification	180	8.6	220	8.8	1.9%

Table 1. Compartment Volume comparison, as cited in the Gulf Coast Testing (GCT) Supplemental Report for Model AKA600CA, April 9, 2018

Model Number	Aerator	Diffuser
AKA600CA	AP-60/AP-60A	C50808
	OR	OR
	HP-60-0110/HP60-010A	50SN000010 T-300

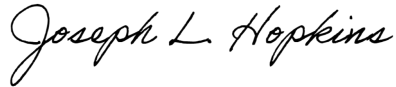
Table 2. Aerator and diffuser for AKA600CA model, as cited in the Gulf Coast Testing (GCT) Supplemental Report for Model AKA600CA, April 9, 2018

To sum up, the proposed Model AKA600CA is proportionally equivalent to the tested unit, constructed of the same material, and has an equivalent flow system. This approval for the Model AKA600C product is based on the GCT authorization that it and its performance conform with NSF Standard 40 for Class 1 residential wastewater effluent.

Grady Tucker
Page 3,
September 12, 2024

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) 239-4156 or via e-mail at Cindy.Annicchiarico@tceq.texas.gov.

Sincerely,

A handwritten signature in cursive script that reads "Joseph L. Hopkins".

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

JLH/CRA