TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

August 7, 2023

Mr. Jerry McKinney
Clearstream Wastewater Systems, Inc.
P.O. Box 7568
Beaumont, TX 77726

Re: Clearstream Thirty-Six G-Series Products

Dear Mr. McKinney:

The Texas Commission on Environmental Quality (TCEQ) reviewed your letter and supporting documents received on November 30, 2021, and Gulf Coast Testing (GCT) reports from William Dildine thirty-six aerobic treatment system products. After reviewing your letter, NSF's 500G Standard 40 report and its associated supplemental scale-up report, TCEQ has determined that the products listed below meet the technical requirements for use in Texas.

The thirty-six products are approved for use in Texas at the capacities listed on the table. This approval for the 500G product is based on the GCT authorization for the Clearstream product to bear the NSF Mark, certifying that it and its performance conform with NSF Standard 40 for Class 1 residential wastewater effluent. The basis for the issuance of the NSF Mark for the remaining 35 Clearstream products is a scale-up analysis based on the Clearstream Product 500G, as demonstrated in the GCT Supplemental Report dated March 1, 2016.

As noted above, the GCT testing for product 500G was used by GCT to scale the other 500 gallons per day (gpd) capacity products as well as the 600, 750, 800, 1000, 1200, and 1500 gpd products. The BOD_5 loading for the 500G model met the requirements in NSF Standard 40 for a 500 gpd unit at 1.25 pounds of BOD_5 per day. The products, and their corresponding flow capacities, aeration compartment volumes, aerator requirements, and hydraulic retention time in the aeration compartment are listed on the following table.

Model Name	Maximum Capacity (gallons per day)	Aerator	Aeration Compartment Capacity (gallons)	Hydraulic Retention Time in Aeration Compartment (hours)
500G	500	CS-103E or CS-103EL; 2.4 scfm	673	32.3
500GC	500	CS-103E or CS-103EL; 2.4 scfm	673	32.3
500GC2	500	CS-103E or CS-103EL; 2.4 scfm	683	32.8
500GC2P	500	CS-103E or CS-103EL; 2.4 scfm	N/A	N/A

Model Name	Maximum Capacity (gallons per day)	Aerator	Aeration Compartment Capacity (gallons)	Hydraulic Retention Time in Aeration Compartment (hours)
500GC3-500	500	CS-103E or CS-103EL; 2.4 scfm	N/A	N/A
500GC3-750	500	CS-103E or CS-103EL; 2.4 scfm	N/A	N/A
500GCS[1]	500	CS-103E or CS-103EL; 2.4 scfm	695	33.4
500GS	500	CS-103E or CS-103EL; 2.4 scfm	695	33.4
500GST	500	CS-103E or CS-103EL; 2.4 scfm	678	32.5
500GT	500	CS-103E or CS-103EL; 2.4 scfm	647	31.1
600G	600	CS-103ET6 (2.8 cfm at 2.5 psi) or CS-103ER (2.6 cfm at 2.5 psi)	874	35
600GC	600	CS-103ET6 (2.8 cfm at 2.5 psi) or CS-103ER (2.6 cfm at 2.5 psi)	874	35
600GC2	600	CS-103ET6 (2.8 cfm at 2.5 psi) or CS-103ER (2.6 cfm at 2.5 psi)	874	35
600GC3	600	CS-103ET6 (2.8 cfm at 2.5 psi) or CS-103ER (2.6 cfm at 2.5 psi)	874	35
600GT	600	CS-103ET6 (2.8 cfm at 2.5 psi) or CS-103ER (2.6 cfm at 2.5 psi)	892	35.7
750G	750	CS-103FR (3.6 cfm at 3 psi) or CS-103FLL (3.6 cfm at 3 psi)	1,014	32.4
750GC	750	CS-103FR (3.6 cfm at 3 psi) or CS-103FLL (3.6 cfm at 3 psi)	1,014	32.4
750GC2	750	CS-103FR (3.6 cfm at 3 psi) or CS-103FLL (3.6 cfm at 3 psi)	1,014	32.4
750GT	750	CS-103FR (3.6 cfm at 3 psi) or CS-103FLL (3.6 cfm at 3 psi)	1,030	33
800G	800	CS-103FR (3.6 cfm at 3 psi) or CS-103FLL (3.6 cfm at 3 psi)	1,036	31.1

Model Name	Maximum Capacity (gallons per day)	Aerator	Aeration Compartment Capacity (gallons)	Hydraulic Retention Time in Aeration Compartment (hours)
800GC	800	CS-103FR (3.6 cfm at 3 psi) or CS-103FLL (3.6 cfm at 3 psi)	1,036	31.1
800GC2	800	CS-103FR (3.6 cfm at 3 psi) or CS-103FLL (3.6 cfm at 3 psi)	1,036	31.1
800GT	800	CS-103FR (3.6 cfm at 3 psi) or CS-103FLL (3.6 cfm at 3 psi)	1,052	31.6
1000G	1000	CS-103GR (5.3 cfm at 3 psi) or CS-103GL (5.2 cfm at 3.1 psi)	1,272	30.5
1000GC	1000	CS-103GR (5.3 cfm at 3 psi) or CS-103GL (5.2 cfm at 3.1 psi)	1,272	30.5
1000GCD	1000	CS-103GR (5.3 cfm at 3 psi) or CS-103GL (5.2 cfm at 3.1 psi)	1,476	35.4
1000GD	1000	CS-103GR (5.3 cfm at 3 psi) or CS-103GL (5.2 cfm at 3.1 psi)	1,346	32.3
1000GTD	1000	CS-103GR (5.3 cfm at 3 psi) or CS-103GL (5.2 cfm at 3.1 psi)	1,356	32.5
1200GCD	1200	CS-103GR (5.3 cfm at 3 psi) or CS-103GL (5.2 cfm at 3.1 psi)	1,951	39
1200GD	1200	CS-103GR (5.3 cfm at 3 psi) or CS-103GL (5.2 cfm at 3.1 psi)	1,748	35
1200GTD	1200	CS-103GR (5.3 cfm at 3 psi) or CS-103GL (5.2 cfm at 3.1 psi)	1,748	35
1500G	1500	CS-103HR (7.6 cfm at 2.5 psi) or CS-103HL (7.2 cfm at 3.3 psi)	1,983	31.7
1500GC	1500	CS-103HR (7.6 cfm at 2.5 psi) or CS-103HL (7.2 cfm at 3.3 psi)	1,983	31.7

Model Name	Maximum Capacity (gallons per day)	Aerator	Aeration Compartment Capacity (gallons)	Hydraulic Retention Time in Aeration Compartment (hours)
1500GCD	1500	CS-103HR (7.6 cfm at 2.5 psi) or CS-103HL (7.2 cfm at 3.3 psi)	2,249	36
1500GD	1500	CS-103HR (7.6 cfm at 2.5 psi) or CS-103HL (7.2 cfm at 3.3 psi)	2,028	32.4
1500GTD	1500	CS-103HR (7.6 cfm at 2.5 psi) or CS-103HL (7.2 cfm at 3.3 psi)	2,060	33

Footnote 1: this product was referenced in the original request and in the status request as '500GSC.' The correct reference is '500GCS.'

Several products were either listed or not listed in either the cover letter for the original request, the Gulf Coast Testing website or report, the status request or the documents listed below. The following products have not been approved by TCEQ for use since they are not included in the Gulf Coast Testing website or report: 1200G, 1200GC, and 1500GT.

This letter serves as proof of approval for the above-listed products until they are listed on the TCEQ website.

Several changes will be required on the following documents prior to the products being listed on the public TCEQ website.

- Owners Manual 500G
- Owners Manual 600-800G Series
- Owners Manual 1000-1500G
- Texas Review for Manufacturer Certification Training Course
- User Guide: Installation-Operation-Service

The requested changes will be indicated in a separate letter. If you have any questions or require clarification or additional information, please contact Donna Cosper, P.E. by email at donna.cosper@tceq.texas.gov.

Sincerely,

Joseph L. Hopkins

Joseph L. Hopkins, P.G.
Technical Programs Team Leader
Program Support and Environmental Assistance Division
Texas Commission on Environmental Quality

JLH/DC