

BioCoir[®]

Coconut Fiber Biofilter

Owner's Manual

Virginia TL-3 with
Nitrogen Reduction

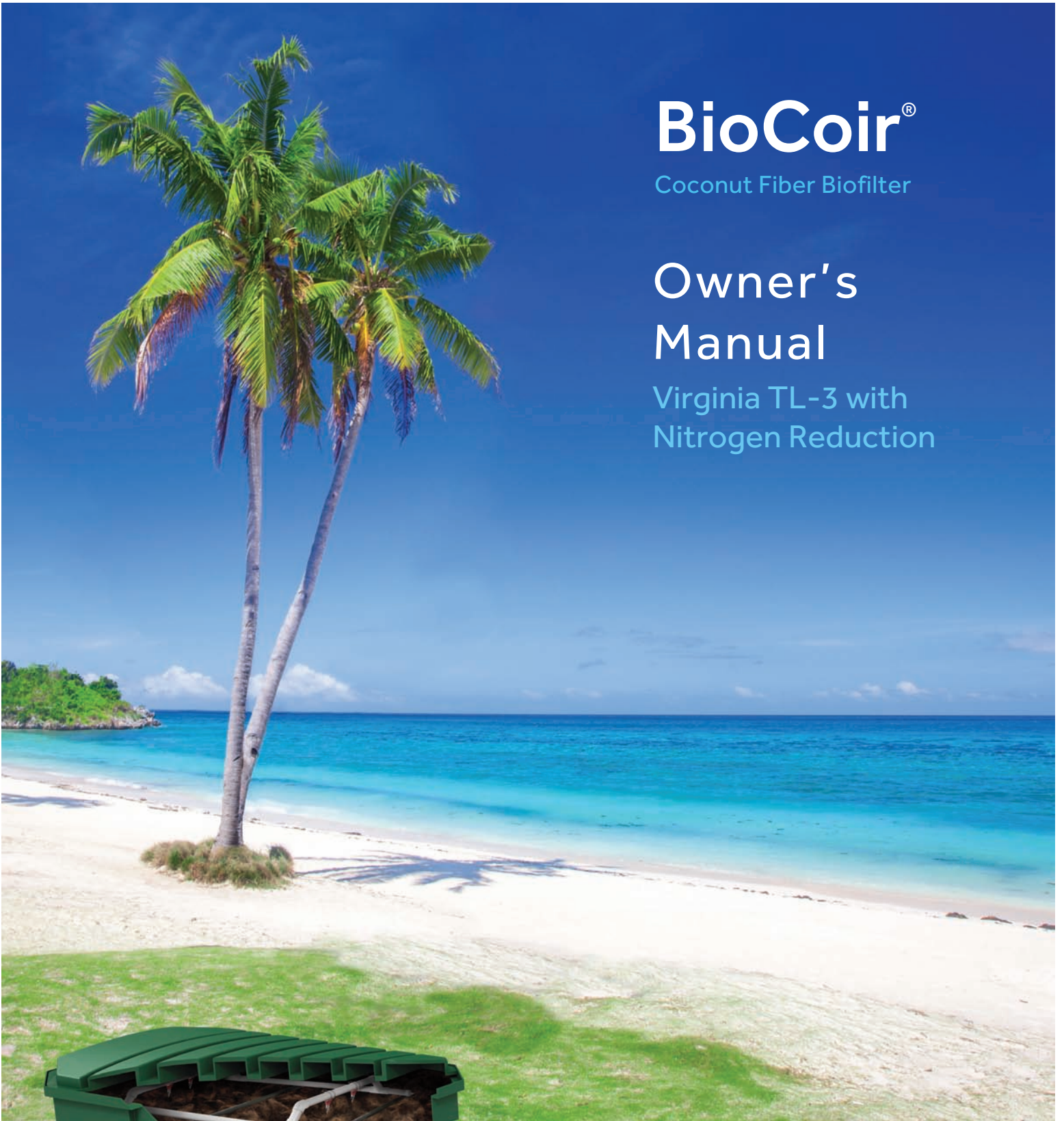


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1.0 Classification Statement

The BioCoir coconut fiber biofilter treatment system has been tested, per the Virginia Department of Health's GMP #147 (TL-3).

Table 1 BioCoir Models

Model Number	Bedrooms	Flow Rating (GPD)	Pod Type
Q-ATS-A400-80/20-BC	3	450	Anua HDPE
Q-ATS-A400-2-80/20-BC	6	900	Anua HDPE
ATS-SCAT-3-BC-200	1	150	Quanics FRP
ATS-SCAT-4-BC-400	2	300	Quanics FRP
ATS-SCAT-6-BC-650	3	450	Quanics FRP
ATS-SCAT-8-BC-1000	4	600	Quanics FRP
ATS-540-BC-N-TL3	4	600	Infiltrator IM-540 Tank
ATS-1060-BC-N-TL3	6	900	Infiltrator IM-1060 Tank
ATS-NS500-BC-N-TL3	4	600	Norwesco-Snyder Next Gen D2 500
ATS-NS750-BC-N-TL3	5	750	Norwesco-Snyder Next Gen D2 750
ATS-NS1000-BC-N-TL3	6	900	Norwesco-Snyder Next Gen D2 1000
ATS-NS500-80/20-BC-N-TL3	4	600	Norwesco-Snyder Next Gen D2 500
ATS-NS750-80/20-BC-N-TL3	5	750	Norwesco-Snyder Next Gen D2 750
ATS-NS1000-80/20-BC-N-TL3	6	900	Norwesco-Snyder Next Gen D2 1000

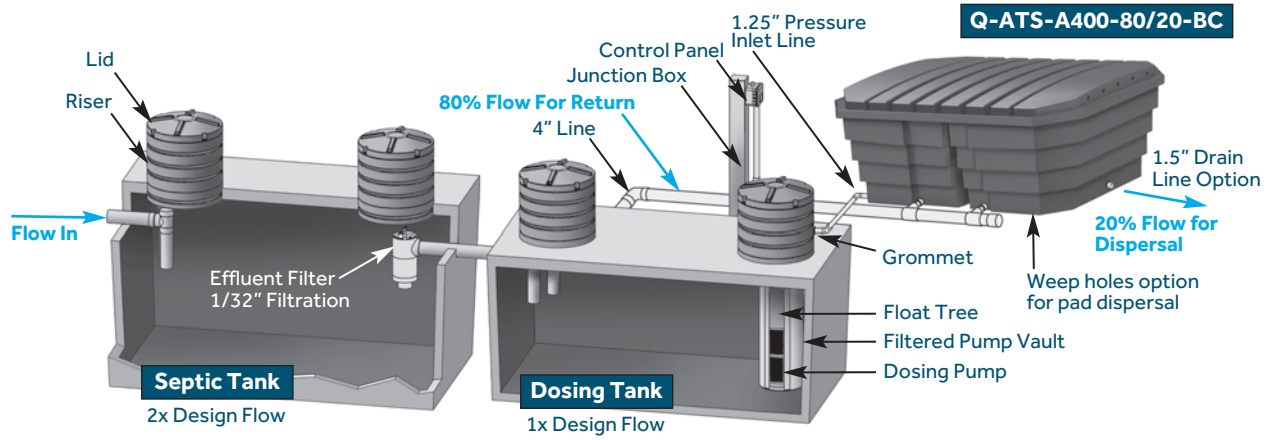
Note:

Model Q-ATS-A400-80/20-BC is not listed to NSF Standard 40.



2.0 Typical BioCoir System Configurations

Figure 1 System with 80/20 Split Pod



3.0 Process Description

Quanics BioCoir is an onsite treatment system utilizing fixed film or packed bed media in an unsaturated environment. The engineered media is housed in a plastic or fiberglass pod. Effluent is sprayed over the media utilizing helical spray nozzles. This engineered delivery system evenly distributes effluent over the media.

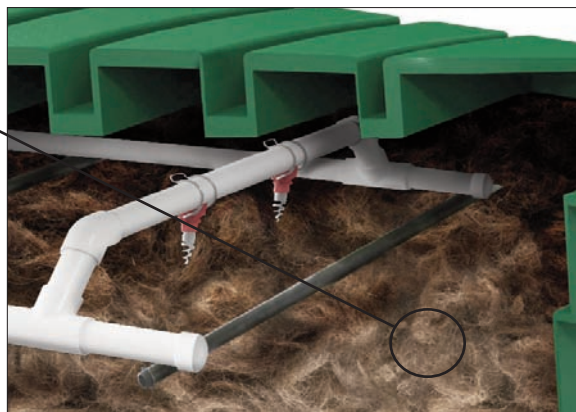
BioCoir uses coconut fiber (coir) media. Coir are the fibers that constitute the thick mesocarp, or husk, of the coconut fruit. Coconut fiber is low-cost and a renewable resource. The short-to-medium length fibers are a lingo cellulosic material and by-product of coconut harvesting in many developing nations. The high lignin content of these fibers results in a strong, durable material with high porosity and large surface area. The media properties provide an optimum environment for free air flow and water movement.

Pretreatment of the domestic sewage occurs using a septic tank equipped with an effluent filter, with 1/32" filtration, on the outlet. The primary treated effluent then moves into a dosing tank where a pump doses the screened effluent to the treatment pod. The effluent dosing occurs in short, frequent durations over a 24 hour period utilizing a control panel with a repeat cycle timer.

Once sprayed, the effluent moves via gravity down through the media where natural microbiological processes occur that provide high level treatment. After passing through the full depth of media, the effluent travels to the bottom of the pod and the flow is split with 80% back into the treatment stream and 20% to the final dispersal point. The final treated effluent meets the requirements for TL-3



Coconut Fiber Media



4.0 Operating Instructions

The BioCoir system has been designed and built to provide efficient, dependable and reliable operation. However, as with any on-site treatment system, routine periodic service is required. When proper routine maintenance is performed, these systems will operate at designed performance levels giving years of satisfactory treatment of domestic sewage.

The authorized distributor from whom you purchased your BioCoir system will coordinate routine inspections for the first 2 years from the original date of installation. At the time of inspection, the system will be checked for proper operation. If a problem exists, service will be performed with permission from the owner. At the end of the 2 year initial service period, your authorized distributor will assist you in continuing your service policy.

The treatment system electrical controls are located within the control panel. The control panel enclosure is equipped with an alarm beacon and an audible horn alarm. See "System Troubleshooting Guide" in this manual for instructions on what to do if the alarm beacon or horn comes on. After a power failure, if an alarm remains on for more than one hour you should call the service provider immediately.

Your BioCoir system will handle all domestic sewage, from your home. By the term sewage, we are referring to rapidly biodegradable material. To keep maintenance at a minimum level and to prevent the system from malfunctioning, the following guidelines need to be followed:

- Since naturally occurring aerobic bacteria (nothing added to the system) are responsible for treating the effluent, inorganic or non rapidly biodegradable materials should not be put into the system. Examples of improper items are: plastic products, rubber products, sanitary napkins or tampons, washcloths, cigarette butts, coffee grounds, eggshells, matches, or other non-biodegradable objects.

- Do not dispose of cooking grease or large amounts of oil into system; instead pour it into a container and dispose of it properly.
- To minimize pump-out frequency, limit use of garbage disposals.
- Lint from lint catchers, hair, etc., should be disposed in the trash and not washed down the drain.
- Water softener backwash should not be routed through the system. Another source of disposal should be used.
- Diapers can be rinsed out in the toilet; however, do not flush cloth or disposable diapers down the toilet.
- Large amounts of harsh chemicals, high-sudsing detergents, disinfectants or any substance that kills bacteria must not be discharged into the system.
- The system will not perform to its fullest capabilities if volumetric overload is allowed to occur. This occurs whenever excessive water, above the designed flow rate, is allowed into the system. Excessive water use or leaking plumbing fixtures may cause this condition.

The proper operation of this system depends upon proper organic and hydraulic loading of the system. We cannot control the loading and thereby cannot control the amount of harmful substances that may be discharged into the system. Only the users of a system can control what enters the system.

5.0 Maintenance Schedule

Normal maintenance every 6 months on your BioCoir system will include:

- a. Maintaining effluent filter
- b. Maintaining filtered pump vault
- c. Proper pump operation
- d. Inspecting and testing system alarms
- e. Check spray nozzles for debris
- f. Inspect septic/dosing tanks for pump out

Note 1: Replacement parts can be obtained from your authorized distributor or Anua.

Note 2: Pumping the septic/dosing tanks is usually necessary every 3 to 5 years; however, there is no set time because loadings vary from household to household. Access to the tank(s) is accomplished through the access opening(s), which is at finished grade. The tank(s) must be sprayed down during pump-out. The biosolids from the system must be disposed of in compliance with all federal, state, and local regulations.

Warning - Caution must be used when pumping water out any tank. Hydraulic displacement and tank flotation may occur whenever effluent and solids are removed from the tank when high groundwater conditions exist. Any source of water in the soil around the system installation could cause the tank to float. Water sources may include

rainfall, springs, creeks, bayous, rivers, lakes, and coastal areas. Proper precautions are therefore required to prevent tank flotation due to hydraulic displacement.

These precautions include, but are not limited to, the following:

- System locations - choose a site that will minimize possible groundwater saturation. Consider seasonal water table and soil conditions in the area of installation. Do not locate the system in a low spot in the ground where water tends to pool or at the edge of any natural body of water. If such a location cannot be avoided, call Anua at 336.547.9338 for technical assistance.
- It is recommended that you pump septic or dosing tank(s) during dry seasons only. However, if tank(s) must be pumped during the wet season, watch for upward movement of the tank(s) while pumping is being done. If upward movement is detected during pumping, immediately stop pumping out the tank(s). The tank(s) must be refilled to stop flotation. Each site must be evaluated on a case-by-case basis to determine the best time to remove tank contents and prevent flotation.

6.0 Compliance with Regulations

All permits and approvals from the local regulatory authority must be obtained before the treatment system is installed. All state and federal regulations must be complied with in areas that do not have local permitting authority.

It is important to remember that each state has independent regulations and guidelines for the installation of this treatment system and any auxiliary equipment that may accompany the system. You are responsible for

installing this system and associated ancillary items in accordance with all regulations and guidelines as they are issued in your respective state. Pretreatment tanks, storage or equalization tanks, pump tanks, etc., must comply with all applicable regulations for design and installation.

Anua, through its years of experience, recognizes the advantages of every component of the treatment system. Please contact us for assistance or inquiries at 336.547.9338.

7.0 Safety

Since sewage and effluent contains some level of pathogenic microorganisms, proper respect and care must be given to safety. Whenever you come into contact with sewage or effluent, take proper precautions to avoid direct contact.

Follow these simple safety precautions whenever exposed to the biosolids or effluent in the system:

- Wear disposable rubber gloves when handling contaminated items.
- Always wash with soap and water after handling contaminated items. The use of alcohol-based hand sanitizer is strongly recommended after handwashing.
- Always dispose of scum, rags, trash, debris, or soiled material in a proper waste container.
- If a spill or leak occurs in the yard, flush the area with plenty of clean water and disinfectant. If a spill or leak occurs in the house, clean with a dilute solution of bleach.
- Protect any injury, wound, open cut, etc., from exposure to biosolids or effluent.
- If an illness or disease is suspected to have come from exposure to sewage, get proper medical attention immediately. There are some serious diseases that could be transmitted by contact with sewage—take the proper precautions and be safe!

8.0 Emergency Contact Details

In the unlikely event that you experience a problem with your BioCoir system or if service is required, you should contact your authorized service provider. The contact details for your authorized service provider can be found on the service data label that is attached to the control panel. You should reference the BioCoir serial number found on the system data label attached to the pod(s) when you contact the authorized service provider or manufacturer.

8.1 Manufacturer Contact Information

Name: Anua
 Address: PO Box 77457, Greensboro, North Carolina 27417
 Phone: 336.547.9338
 Email : info@anuainternational.com
 Website: anuainternational.com

8.2 Authorized Service Provider Contact Information

To identify the initial service provider for your system, check the labels on the control panel and fill in the table below:

Name: _____
 Address: _____
 Office Phone: _____
 Mobile Phone: _____
 Email: _____
 Website: _____

9.0 Limited Warranty

Anua[®], herein identified as Anua, warrants each BioCoir[®] treatment system to be free from defects in material and workmanship for a period of two (2) years from the date of installation by an authorized installer for the end user when properly trained by Anua or an authorized representative. The sole obligation under this warranty is as follows: Anua shall fulfill this warranty by replacing or exchanging any component part, FOB factory that in Anua's judgment shows evidence of defects, provided said component part has been paid for and is returned through an authorized Distributor, transportation prepaid. The Limited Warranty does not make any provision for an informal dispute settlement arrangement.

The warranty does not apply to any defects whether patent or latent, and whether workmanship or materials or design of works carried out by any independent contract, or any failure due to accidental or malicious damage, or failure to comply with recommendations for operations and maintenance, or unit abuse, fair wear and tear, frost, storm damage, infiltration of storm or surface water or any other such climatic conditions or act of God generally.

The warranty does not cover the BioCoir treatment system and related components that have flooded, by external means, or that have been disassembled by unauthorized person, improperly installed, subjected to external damage or damage due to altered or improper wiring or overload protection.

Recommendations for special applications will be based upon the best available expertise of Anua and published industry information. Such recommendations do not constitute a warranty of satisfactory performance.

No warranty is made as to the field performance of any systems. The Limited Warranty

applies to the systems and does not include any portion of the plumbing, drainage, electrical wiring or installation of the treatment systems. Accessories supplied by Anua, but manufactured by others, are warranted for a period of two (2) years. In no event shall Anua be responsible for delay or damages of any kind or character resulting from, or caused directly or indirectly by, defective components or materials manufactured by others.

The Limited Warranty extends to the end user of this product. The end user is defined as the purchaser who first has the system installed, or in the case of the system designed for non-permanent installation, the purchaser who first uses the system. It is the end user's obligation to make known to any other consumer the terms and conditions of this Limited Warranty.

Anua reserves the right to revise, change, or modify the construction and design of the BioCoir treatment system, or any component part or parts thereof, without incurring any obligations to make such changes or modifications in previously sold equipment. Anua also reserves the right, in making replacements of component parts under this warranty, to furnish a component part, which, in its judgment, is equivalent to the part replaced. This warranty is a Limited Warranty. No claim of any nature shall be made against Anua unless and until the end user, or their legal representative, notifies Anua, in writing of the defect complained of and delivers the product and /or defective part(s), freight prepaid, to Anua or an authorized Anua dealer.

This warranty is strictly limited to the replacement of product supplied by Anua. It specifically excludes all other alleged headings of loss, including consequential loss.

10.0 Treatment System Tracking Sheet



TREATMENT SYSTEM TRACKING SHEET

GENERAL INFORMATION

Owner: Distributor:

Permit No.: Phone: Email:

System Address:

Town/City: County: State: Zip:

Legal Description: Tax ID No.:

PROJECT ENGINEER OR DESIGNER

Name and Company:

Phone: Email:

Address: City: State: Zip:

AUTHORIZED INSTALLER*

Name and Company:

Phone: Email:

Address: City: State: Zip:

SERVICE PROVIDER**

Name and Company:

Phone: Email:

Address: City: State: Zip:

*As a condition of operation, the design and installation instructions must be followed. The system shall be constructed in accordance with the approved plans and manufacturer specifications. The installer or system owner should provide installation photos, soil reports, permit documents and other pertinent information to demonstrate that the design and installation instructions were followed. Prior to placing the new system into operation, the permittee is responsible for ensuring that the administrative authority and the project engineer or designer verify the following:

- 1) All treatment system components, primary tanks, dosing tanks, access ports, access port covers and the collection system were properly installed, vented and tested to ensure they do not leak nor allow groundwater or surface water infiltration.
- 2) All system components were installed per the approved plans and manufacturer specifications.
- 3) All mechanical components (e.g. panels, pumps, alarms, level controls and air compressors) were properly installed, calibrated and tested.
- 4) All required health department, plumbing, electrical and/or building permits were obtained from the responsible administrative authority.
- 5) The dispersal system was installed in the approved location, at the proper depth, on natural contours and with minimal disturbance of native vegetation or soil.
- 6) The system is permanently protected from vehicular traffic, compaction, surface water run-off, irrigation and roof drains.
- 7) Upon final inspection and approval from administrative authority and project engineer or designer, the system is deemed fully operational.

**A service agreement between the service provider and the system owner is required as a condition of warranty. A service provider, who has been trained by the manufacturer or the manufacturer's authorized representative, must perform the service. The initial agreement should cover a two-year period, minimum, or as specified by the administrative authority.



SYSTEM INFORMATION

AEROCELL INSTALL DATE: DESIGN FLOW: NSF 40 MODEL: OTHER MODEL:

Facility type: Residential Commercial Effluent prior to AeroCell: Primary (septic) Secondary

NS Series No. of pods: Model: S/N:

IM Series No. of pods: Model: S/N:

A Series No. of pods: Model: S/N:

Septic tank mfg: Capacity: Material: Concrete Fiberglass Plastic

Dosing tank mfg: Capacity: Material: Concrete Fiberglass Plastic

Effluent filter(s): Zabel A300 Polylok PL-625 BEST GF-1032 Sim/Tech STF-100

Control panel mfg: Model: S/N:

Dosing pump mfg: Model: S/N:

BIOCOIR INSTALL DATE: DESIGN FLOW: NSF 40 MODEL: OTHER MODEL:

Facility type: Residential Commercial Effluent prior to BioCoir: Primary (septic) Secondary

NS Series No. of pods: Model: S/N:

IM Series No. of pods: Model: S/N:

A Series No. of pods: Model: S/N:

Septic tank mfg: Capacity: Material: Concrete Fiberglass Plastic

Dosing tank mfg: Capacity: Material: Concrete Fiberglass Plastic

Effluent filter(s): Zabel A300 Polylok PL-625 BEST GF-1032 Sim/Tech STF-100

Control panel mfg: Model: S/N:

Dosing pump mfg: Model: S/N:

EFFLUENT DISPERSAL METHOD INSTALL DATE: DESIGN FLOW:

Stone trench Chamber Polystyrene aggregate Mound LPP Drip Other

1. FILL AND SAVE USING FOXIT READER. DOWNLOAD AT: [HTTP://WWW.FOXITSOFTWARE.COM/SECURE_PDF_READER/](http://www.foxitsoftware.com/secure_pdf_reader/)
2. TO ACTIVATE WARRANTY EMAIL COMPLETED SHEET TO: INFO@ANUAINTERNATIONAL.COM



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