INITIAL DATA COLLECTION PROTOCOL
for Provisional Approval of
Advanced Onsite Pretreatment Units for Nitrogen Reduction

The following table provides the minimum data collection requirements for initial data submitted to Chesapeake Bay States for their advanced onsite system approval program, for systems having rated treatment capacities of 400 gallons/day to 1500 gallons/day. This protocol is for nitrogen reducing treatment units that do not include soil treatment with the leaching field as part of the process. The information is adapted from NSF Standard 245, with minor changes: the effluent reporting will require submissions of all data and averaged data, and cold weather data is required. Any data collection information not summarized below shall follow NSF 245.

Data collected in compliance with this Initial Data Collection Protocol submitted to states will be accepted for review under their own approval programs. Pennsylvania requires initial data collection to be either NSF Standard 245 certified or qualified by NSF as being equivalent to NSF 245, in addition to the other additional requirements specified by the Chesapeake Bay Watershed states Initial Data Collection Protocol. Some states may accept to review data that does not comply with all of the data collection requirements stated below. Acceptance of data that does not comply with this protocol is at the discretion of each individual state.

Preparations for testing and evaluation	System shall be operated in accordance with the manufacturer's instructions. Routine service and maintenance is not allowed during the testing and evaluation period.		
Influent Wastewater Characteristics	TKN	35 - 70 mg/L as N	
	TSS	100 - 350 mg/L	
	BOD_5	100 - 300 mg/L	
	Alkalinity	> 175 mg/L as CaCO3	
	Temperature	10 to 30 degrees C	
	pH	6.5 – 9.0 SU	
Hydraulic Loading	Systems shall be evaluated for a minimum of 26 weeks (maximum of 34 weeks).		
Design Loading	System shall be dosed 7 days per week with a wastewater volume equivalent to the daily hydraulic capacity of the system.		
	6:00 am – 9:00 am	35%	
	11:00 am – 2:00 pm	25%	
	5:00 pm – 8:00 pm	40%	
Stress Loading	Stress loading sequences shall begin in week 17 of the testing and will be completed in this order: wash-day stress, working-parent stress, power/equipment failure stress, and vacation stress.		
Dosing Volumes	30-day average volume is in 100% ± 10% of the system's rated hydraulic capacity.		
Sampling Frequency	Minimum of 55 influent and effluent data sets collected during non-stress dosing period		
	16 weeks	Design Loading	3 samples/week
	7.5 weeks	Stress Loading	2 samples/stress recovery week
	2.5 weeks	Design Loading	3 samples/week
Cold Weather Sample	A minimum of 12 of the total 55 data sets must be collected during cold weather (December 15-March 15), where the unit is in a location where the average ambient air temperature is at or below 50 degrees Fahrenheit during the three month period. An applicant may supplement existing data with		

<table>
<tr><td></td><td>additional cold weather testing data provided the test locations, temperature data, sampling protocols and other relevant information is documented to fully review the information.</td></tr>
<tr><td>Collection Methods</td><td>All sample collection shall be in accordance with Standard Methods[1], unless otherwise specified. Influent samples shall be flow-proportional, 24-hour composites obtained during periods of system dosing. Effluent samples shall be flow-proportional, 24-hour composites obtained during periods of discharge. Grab samples shall be collected for pH, temperature, and dissolved oxygen.</td></tr>
<tr><td>Third Party Testing</td><td>Applicant must demonstrate that data is collected by a third party Testing Organization and oversight of data collection is conducted by a third party Verification Organization.

In addition to the manufacturer (“applicant”), who is the entity that develops, designs, and produces residential wastewater treatment systems, there are two other important entities in this process to ensure that the product undergoes third-party testing. Third-party testing is testing conducted by an independent party under contract to the Verification Organization to test a particular product pursuant to a standard or accepted protocol with an obligation to report all results.

The Testing Organization is defined as an independent third-party that implements the testing of the system in compliance with a standard or accepted protocol, including documentation and sample reporting to the Verification Organization.

The Verification Organization is an independent third-party that is responsible for the oversight of the Testing Organization in preparation and completion of testing, and in preparation, review and completion of the final report. The Verification Organization must be independent; a person or body that is recognized as being independent of the person or organization that sells the treatment unit, as well as independent from the manufacturer and user of the treatment unit. They are independent because they are not affiliated with the producer, the seller, or the end user of the item being tested (i.e., no commercial bias is present). An individual, such as a licensed professional engineer or university professor, can also act as a Verification Organization. The qualifications of the Verification Organization must be provided and will be subject to review and approval as part of the data review.

The Chesapeake Bay Watershed States have chosen NSF International as an acceptable Verification Organization. An applicant may propose another organization for review and approval by the states. Only one Verification Organization should be used for all systems tested. A state may also conduct their own independent review and verification of the data collected.</td></tr>
<tr><td rowspan="2">Final Report</td><td>Final report shall be prepared in accordance with NSF 245 except for the following changes:</td></tr>
<tr><td><table><tr><td>Total Nitrogen</td><td>All sample data and average shall be reported</td></tr></table></td></tr>
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[1] American Public Health Association (APHA), American Water Works Association (AWWA) and Water Environment Federation (WEF): *Standard Methods for the Examination of Water and Wastewater*, 21st Edition, 2005

	TSS	All sample data and average shall be reported
	$CBOD_5$	All sample data and average shall be reported
	pH	All sample data and average shall be reported