NORTH CAROLINA DEPARTMENT OF HEALTH AND HUMAN SERVICES
DIVISION OF PUBLIC HEALTH
ENVIRONMENTAL HEALTH SECTION
ON-SITE WATER PROTECTION BRANCH

PROVISIONAL WASTEWATER SYSTEM APPROVAL

Provisional Wastewater System Approval Number: PWWS 2002-01-R4

Issued To:	BioMicrobics, Inc. 16002 W. 110th St. Lenexa, KS 66219 www.biomicrobics.com
Contact:	Daniel Westrich 913-422-0707
For:	BioMicrobics, Inc. MicroFAST® Models 0.5, 0.625, 0.75, 0.9, 1.5, 3.0, and 4.5 and HighStrengthFAST® Models 1.0, 1.5, and 3.0 Wastewater Treatment Systems to Meet Treatment Standard II

Approval Date:	April 22, 2002	
	February 24, 2009	Re-issuance of approval with updated design criteria
	November 2, 2020	Removal of NSF-40 and TS-I systems
	December 31, 2024	Updated for 18E and renewed for 2025

In accordance with G. S. 130A-343 and 15A NCAC 18E, Section .1700, an application by BioMicrobics, Inc., for renewal of their on-site wastewater system utilizing the MicroFAST® and HighStrengthFAST® Treatment Systems for Treatment Standard II has been reviewed and found to meet the requirements of a Provisional System when the following conditions are met.

I. General

A. Scope of this Provisional Approval
   1. Design, installation, use, and operation and maintenance requirements for MicroFAST® and HighStrengthFAST® Treatment Systems to meet TS-II effluent standards pursuant to 15A NCAC 18E .1201(a), Table XXV.
   2. Operation, maintenance, and monitoring requirements for MicroFAST® and HighStrengthFAST® Treatment Systems and associated dispersal systems to ensure the treatment performance standards are met.
   3. Proposal for evaluation of this Provisional System.

B. This Provisional Approval is applicable to MicroFAST® systems receiving domestic strength effluent as defined in 15A NCAC 18E .0402(a), Table III, that have a design daily flow less than or equal to 3,000 gallons per day (gpd) and designed to meet Treatment Standard II. This Approval is also applicable to HighStrengthFAST® systems for treating wastewater from food service

facilities or other commercial establishments generating high strength wastewater as defined in 15A NCAC 18E .0402(a), Table III, designed to meet Treatment Standard II.

Use of HighStrengthFAST® Treatment Systems systems for facilities with high strength effluent, as defined in 15A NCAC 18E .0402(a), Table III or industrial process wastewater, shall be proposed by BioMicrobics, Inc and a North Carolina Professional Engineer (PE) to the Department for review and approval on a case-by-case basis, prior to permitting by the local health department (LHD). The system design shall include the proposed untreated wastewater strength in BOD_5, COD, TN, TSS, and fats, oils, and grease, the expected organic loading rate in pounds of BOD or N, the hydraulic loading rate on the pretreatment system, and the calculations, references, and any other needed information to support the proposed design.

C. The following requirements shall be met for all sites using MicroFAST® and HighStrengthFAST® Treatment Systems.
   1. The system influent shall have wastewater with sufficient alkalinity to facilitate biological treatment processes.
   2. The blower must remain on at all times unless otherwise recommended by BioMicrobics, Inc.
   3. The influent shall not have a pH or toxins that significantly inhibit microbial growth. Please see the company's Owner's Manual for a list of prohibited products.

D. Use of MicroFAST® and HighStrengthFAST® Treatment systems that have a design daily flow greater than 3,000 gpd may be permitted after approval by the Department on a case-by-case basis in accordance with 15A NCAC 18E .0302(e) or in accordance with G.S. 130A-336.1.

II. System Description

The MicroFAST® and HighStrengthFAST® Treatment Systems are an aerobic wastewater treatment system that utilizes a completely submerged fixed film process to treat organics and nitrify, and a passive recycle system for denitrification. Each model contains submerged media specific to the application. Microorganisms grow on the media and remove soluble contaminants from the wastewater, utilizing them as a source of energy for growth and production of new microorganisms. The inserts for the MicroFAST® and HighStrengthFAST® Treatment Systems consist of a liner around the media and an airlift to provide aeration and mixing within the confines of the liner. The area outside the liner in the septic tank remains anoxic for denitrification. A passive recirculation system moves the aerated wastewater to the outside of the liner to obtain denitrification. The aeration and circulation inside the liner are provided by a blower that pumps air into a draft tube that extends down the center of the media. Treated effluent passes out of the aerobic zone of the treatment plant through a pipe connected directly to a baffled quiescent area in the liner. For systems with a design daily flow greater than 1,000 gpd, final effluent is discharged to a holding tank with an effluent filter or directly to a dosing tank meeting the capacity requirements of Section VI.A.6. An ultraviolet (UV) system for disinfection is provided prior to the effluent ultimately discharging to a dispersal field.

III. Siting Criteria

The MicroFAST® and HighStrengthFAST® Treatment systems and associated dispersal fields shall be sited and sized in accordance with 15A NCAC 18E, Section .1200 for TS-II systems. Drip irrigation systems used with MicroFAST® and HighStrengthFAST® Treatment systems shall be sited and sized

in accordance with 15A NCAC 18E .1204 and the manufacturer specific drip approval. The MicroFAST® and HighStrengthFAST® Treatment systems and associated dispersal fields shall meet all applicable horizontal setback requirements in accordance with 15A NCAC 18E Section .0600 or .1202 and be located to prevent surface and subsurface water inflow and infiltration.

IV. Dispersal Field Sizing

The dispersal field system sizing criteria shall be based upon the long-term acceptance rate specified in the appropriate portion of the rules or the Provisional, Innovative, or Accepted system approval for the type of dispersal system to be used.

V. Special Site Evaluation

A special site evaluation may be required based on the proposed dispersal system. Refer to 15A NCAC 18E .0510(c) for when a special site evaluation is required.

VI. Design Criteria

A. The MicroFAST® and HighStrengthFAST® Treatment Systems shall be designed in accordance with the following criteria.
   1. Tables 1 and 2 provide the minimum unit sizing required for the MicroFAST® and HighStrengthFAST® unit based on design flow and full time or seasonal use.

Table 1 – Sizing for Full Time Residential Installations

System Model	Design Flow Limit	Settling Zone Size (gallons)	Treatment Zone Size (gallons)	Total Tank Size (gallons)
MicroFAST 0.5	500 gpd	500	750	1,250
MicroFAST 0.625	625 gpd	500	900	1,400
MicroFAST 0.75	750 gpd	500	1,000	1,500
MicroFAST 0.9	900 gpd	725	1,250	1,975
MicroFAST 1.5*	1,500 gpd	1,075	1,875	2,950
MicroFAST 3.0*	3,000 gpd	2,145	3,750	5,895
HighStrengthFAST 1.0*	Design flow and influent BOD and TSS limits must be established on a case-by-case basis, depending upon the facility served and the desired effluent limitations. A PE shall design and BioMicrobics, Inc. shall certify the design of each project for High Strength wastewater or with a design daily flow greater than 1,000 gpd. A set of support design calculations shall be provided for each system. * See Number F in Design Criteria			
HighStrengthFAST 1.5*				
HighStrengthFAST 3.0*				

Table 2 – Sizing for Seasonal Use Residential Installations

System Model	**Design Flow Limit**	**Settling Zone Size (gallons)**	**Treatment Zone Size (gallons)**	**Total Tank Size (gallons)**
MicroFAST 0.75	500 gpd	500	1,000	1,500
MicroFAST 0.9	750 gpd	725	1,250	1,975

<table>
<tr><td>MicroFAST 1.5</td><td>900 gpd</td><td>1,075</td><td>1,875</td><td>2,950</td></tr>
<tr><td>MicroFAST 3.0*</td><td>1,500 gpd</td><td>2,145</td><td>3,750</td><td>5,895</td></tr>
<tr><td>MicroFAST 4.5*</td><td>3,000 gpd</td><td>See Note 1</td><td>4,220</td><td>See Note 1</td></tr>
<tr><td>HighStrengthFAST 1.0*</td><td colspan="4" rowspan="4">Design flow and influent BOD and TSS limits must be established on a case-by-case basis, depending upon the facility served and the desired effluent limitations. A North Carolina Professional Engineer shall design and BioMicrobics, Inc. shall certify the design of each project for High Strength wastewater or with a design daily flow greater than 1,000 gpd. A set of support design calculations shall be provided for each system.

Note 1: The MicroFAST 4.5 is installed in a separate tank from the Settling Zone tank. The size of the Settling Zone tank should be in accordance with State and Local rules.

* See Number 5 in Design Criteria</td></tr>
<tr><td>HighStrengthFAST 1.5*</td></tr>
<tr><td>HighStrengthFAST 3.0*</td></tr>
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2. A MicroFAST® system designed for flows less than or equal to 1,500 gpd shall utilize models of Residential Wastewater Treatment Systems (RWTS's) that have been preapproved by the State in addition to meeting the requirements listed below. For MicroFAST® systems designed for flows greater than 1,500 gpd, and for HighStrengthFAST® units, a modified state-approved septic tank shall be used sized in accordance with 15A NCAC 18A .1952(b). Tank modifications to accommodate the HighStrengthFAST® unit shall be pre-approved by the State prior to Construction Authorization (CA) issuance.
3. Grease traps or grease interceptors designed and sized in accordance with 15A NCAC 18E .0803 shall be required prior to HighStrengthFAST® units.
4. A vent for the MicroFAST® or HighStrengthFAST® unit must be provided. The house vents may not be the only vent.
5. MicroFAST® systems designed for flows greater than 1,000 gpd and all HighStrengthFAST® units shall be designed on a case-by-case basis by a PE. Design certification shall be provided by BioMicrobics, Inc. verifying acceptance of the PE's design criteria, plans, and component specifications. The company shall provide this written certification to the applicant for submittal with the application.
6. For MicroFAST® and HighStrengthFAST® Treatment Systems requiring a holding tank, a State approved septic tank sized at a minimum of 25 percent of the capacity required in 15A NCAC 18E .0801 shall be provided after the MicroFAST® and HighStrengthFAST® treatment unit. This tank can also be used as a dosing tank as long as the 25 percent minimum liquid storage capacity is provided at all times in the tank.
7. A UV system, such as "The Disinfector", Salcor Model 3G UV Unit, or other UV system proposed by the company and approved by the State, shall be used for systems. The UV system shall be rated for the discharge rate from the MicroFAST® and HighStrengthFAST® treatment unit. Audible and visible alarms for bulb failure will be provided.
8. MicroFAST® and HighStrengthFAST® Treatment Systems will utilize the BioMicrobics, Inc. control panel. The control panel is in a NEMA 4X enclosure and located within 50 feet and in line of sight of the MicroFAST® or HighStrengthFAST® treatment unit. Separate control and alarm circuits shall be provided. The operator authorized in writing by BioMicrobics, Inc, (authorized operator) for the system shall be able to access the panel directly on site and shall be available to the LHD with 24-hour notice in the event that the LHD needs to access the control panel.

9. All access riser hatches shall be secured by approved tamper-resistant stainless-steel bolts supplied by the manufacturer. Riser construction, attachment to tanks, and security systems shall be pre-approved by the State for septic tank and pump tank risers, as applicable.
10. Buoyancy calculations shall be completed by a PE on sites where a soil wetness condition is present within five feet of the top of the ground surface. The PE shall make appropriate design modifications as needed.
11. BioMicrobics, Inc. will utilize a device for the recording of daily water flows. The device shall provide a means for determining at least the daily, 7-day, and 30-day flow monitoring requirements of 15A NCAC 18E .1702(a)(2)(l). This information will be stored in the data logger which will be downloaded by the authorized operator. Where effluent flows are by gravity, the method of flow measurement will be done on a case-by-case basis with approval by the State.
12. Dispersal field dosing tanks shall be state-approved tanks sized in accordance with 15A NCAC 18E .0803.
13. Effluent from MicroFAST® and HighStrengthFAST® Treatment Systems may be discharged to a gravity dispersal field or to a dosing tank for an LPP field, drip dispersal field, or any other dispersal field type.
14. The MicroFAST® or HighStrengthFAST® Treatment System shall not be placed in driveways, parking areas, or areas subject to vehicular traffic, unless designed by a PE and approved by the State on a case-by-case basis.

B. MicroFAST® systems designed for domestic wastewater flows less than or equal to 1,000 gpd shall be designed by a designer authorized by BioMicrobics, Inc, in writing (authorized designer), Authorized On-Site Wastewater Evaluator (AOWE), or a PE. MicroFAST® systems designed for flows greater than 1,000 gpd and all HighStrengthFAST® units shall be designed on a case-by-case basis by a PE. Design certification shall be provided by BioMicrobics, Inc. verifying acceptance of the PE's design criteria, plans, and component specifications. The company shall provide this written certification to the applicant for submittal with the application.

VII. Installation and Testing

A. A preconstruction conference shall be required to be attended by the following, as applicable: authorized designer, AOWE, PE, installer authorized in writing by BioMicrobics, Inc, (authorized installer), BioMicrobics, Inc, licensed distributor, and LHD prior to beginning installation of the MicroFAST® or HighStrengthFAST® Treatment system.

B. MicroFAST® and HighStrengthFAST® Treatment systems shall be installed according to directions provided by BioMicrobics, Inc.

C. All individuals or companies installing MicroFAST® and HighStrengthFAST® Treatment systems shall be in possession of all necessary permits and licenses before attempting any portion of an installation. The company or individual must be a Level IV installer and authorized in writing by BioMicrobics, Inc.

D. Watertightness of the tanks shall be tested by either of the following protocols: 24-hour hydrostatic test or a vacuum test.

1. Hydrostatic Test[1, 2]
   a. Temporarily seal the inlet and outlet pipes.
   b. Fill tank with clean water to a point at least two inches above the pipe connections or the seam between the tank and the riser, whichever is highest.
   c. Measure the water level.
   d. Allow the tank to sit for 24 hours.
   e. Re-measure the water level.
   f. If the water level change is ½-inch or less or one percent of the liquid tank capacity, the tank passes the leak test.
   g. If the water level change is greater than ½-inch, any visible leaks can be repaired and the tank may be topped off with water and allowed to sit for a minimum of one hour.
   h. The tank passes the leak test if there are no visible leaks (flowing water or dripping in a steady stream) and no measurable drop in water level after one hour. Otherwise, the tank fails the leak test.
2. Vacuum Test[3]
   a. Temporarily seal the inlet and outlet pipes.
   b. A vacuum of four inches of mercury should be pulled on the tank and held for five minutes.
   c. During the testing, the tank manufacturer or their representative can seal the tank if it is found to be leaking.
   d. If the tank is repaired, the vacuum must be brought back up to four inches and held for five minutes.

E. The authorized installer, PE, AOWE, or authorized designer, and the authorized operator shall conduct a final inspection and start-up of the MicroFAST® and HighStrengthFAST® Treatment system and all associated system components. The LHD will attend and observe the final inspection and start-up.

F. Specified site preparation steps and construction specifications for the dispersal field shall be strictly adhered to, including specified depth of trenches in relation to site limiting conditions, cover material specifications, if needed, trench installation method, etc.

G. Prior to OP issuance, the LHD inspection shall include the following checks at a minimum:
   1. Observing positive airflow out of the vent by placing a bag on the vent and observing it filling.
   2. Confirming the blower is no more than 100 feet from the MicroFAST® and HighStrengthFAST® system.
   3. Observing the leak testing.
   4. Testing of the blower and UV system alarms.
   5. Inspecting the blower outlet pipe to ensure that the first 12 inches are galvanized steel pipe.
   6. Confirming all vents are installed.
   7. Confirming that the control panel is set for continuous blower operation.
   8. Recording all pump model numbers and time clock settings.

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1 Victor D'Amato and Ishwar Devkota, *Development of Prefabricated Septic and Pump Tank Construction and Installation Standards for North Carolina.*

2 National Precast Concrete Association, *Best Practices Manual Precast Concrete On-Site Wastewater Tanks*, Second Edition, October 2005, 24.

3 National Precast Concrete Association, *Best Practices Manual Precast Concrete On-Site Wastewater Tanks*, Second Edition, October 2005, 24.

VIII. Operation, Maintenance, Monitoring, and Reporting

A. MicroFAST® and HighStrengthFAST® Treatment Systems shall be classified, at a minimum, as a Type Va system in accordance with Table V(a) of 15A NCAC 18E .1301(b), Table XXXII. Management and inspection shall be in accordance with 15A NCAC 18E, Section .1300. HighStrengthFAST® units shall be inspected monthly.

B. All MicroFAST® and HighStrengthFAST® Treatment Systems require an operation and maintenance agreement between the system owner and BioMicrobics, Inc, its authorized representative, or with an authorized operator in accordance with 15A NCAC 18E .1302(c). The authorized operator must have proper equipment and training to access and program the control panels on site. The authorized operator shall be:
   1. a North Carolina certified subsurface operator (Operator in Responsible Charge); and
   2. either an employee of BioMicrobics, Inc, or authorized in writing by BioMicrobics, Inc.

C. All MicroFAST® and HighStrengthFAST® Treatment Systems shall be operated and maintained according to the latest version of BioMicrobics, Inc, O&M manual.

D. At each MicroFAST® and HighStrengthFAST® Treatment System inspection, the authorized operator shall follow service procedure steps identified in the BioMicrobics, Inc, O&M Manual and, at a minimum, observe, monitor, and record the following:
   1. Blower operation making sure to take note of unusual aspects involving sound, function, and physical appearance of parts such as the steel inlet air filters and activity such as the air flow rate.
   2. Inspection of the MicroFAST® and HighStrengthFAST® chamber to confirm wastewater is being aerated when the blower is on and the wastewater level is approximately two inches above the media when the blower is off.
   3. Clarity of effluent (e.g. color and evidence of suspended solids).
   4. Wastewater levels in all the tanks.
   5. Sludge and scum levels in all the tanks.
   6. Watertightness of tanks, risers, and pipe connections at the tanks.
   7. Operation of pumps, floats, valves, electrical controls, and alarms, including record of alarms since last visit and troubleshooting actions.
   8. Average and maximum readings for 7-day and 30-day flows.
   9. Dispersal field pump delivery rate (drawdown test), determination of the average pump run time, and dispersal field dosing volume.
   10. Any structural damage, accessibility issues, adequate ventilation, excess odors, ponding of effluent, insect infestations, vegetative growth over the dispersal field, or surfacing of effluent on the dispersal field area.
   11. Sample of MicroFAST® or HighStrengthFAST® system influent and effluent, as required.

E. The authorized operator shall conduct any other measurements, monitoring, maintenance activities, and observations as specified in the Operation Permit (OP) and recommended by the manufacturer.

F. Sampling
   1. All sampling shall be done in accordance with 15A NCAC 18E .1302 and .1709. MicroFAST®

and HighStrengthFAST® Treatment Systems shall be sampled annually. Systems with design daily flows greater than 1,500 gpd and less than or equal to 3,000 gpd shall be sampled twice a year.

2. Effluent for all systems shall be tested for BOD_5, TSS, and $NH_3$and shall be tested in the field for turbidity. Systems designed to meet TS-II standards, effluent shall also be tested for TN (TKN and NO_3-N). Sampling is not required for fecal coliforms when the site is found to be compliant with all other constituents in Table XXV of 15A NCAC 18E .1201(a).
3. Influent samples, if needed, shall be taken at a point prior to entry into the MicroFAST® or HighStrengthFAST® Treatment System. This can be done using a sludge judge to take the sample from the inlet of the first settling tank and collecting the sample below the scum layer and above the settled solids. Care shall be taken to collect the sample with as little solids as possible.
4. Effluent samples shall be collected from a free-flowing effluent stream after the final settling chamber and UV system or from an approved sampling port immediately following the final settling chamber and UV system, as applicable. Effluent samples for drip dispersal systems or other pressurized dispersal systems shall be collected from a tap on the dispersal field force main, prior to the spin filters for drip systems. The preferred location of the tap is in the pump tank discharge assembly after the UV system. The sampling shall not commence until at least 30 seconds of continuous discharge through the sample tap has been completed.

G. Notification and Performance of Maintenance and Repairs
   1. The authorized operator shall alert the LHD, BioMicrobics, Inc., and the system owner within 48 hours of needed maintenance or repair activities including, but not limited to, landscaping, tank sealing, tank pumping, pipe or control system repairs, media replacement, and/or adjustments to any other system component.
   2. The authorized operator shall notify the system owner, BioMicrobics, Inc., and the LHD whenever the pump delivery rate efficiency or average pump ran times are not within 25 percent of the initial measurements.
   3. System troubleshooting and needed maintenance shall be provided to maintain the pump delivery rate and average pump run time within 25 percent of initial measurements obtained during system start-up.
   4. Tanks will be pumped as needed upon recommendation o the authorized operator and in accordance with the BioMicrobics, Inc O&M Manual. At a minimum, the septic tank will be pumped whenever the depth of the sludge and scum is found to be more than one third of the liquid depth in any compartment in accordance with 15A NCAC 18E .1303(a)(3).
   5. The tanks shall be pumped by a permitted septage management firm, and the septage handled in accordance with 15A NCAC 13B .0800.
   6. All maintenance activities shall be logged and recorded in the authorized operator reports provided to the system owner, BioMicrobics, Inc. and the LHD.

H. Reporting
   1. The authorized operator shall provide a written report to the system owner, BioMicrobics, Inc., and the LHD within 30 days of each inspection. At a minimum this report shall specify:
      a. The date and time of inspection.
      b. System operating conditions according to VIII.D, VIII.E, and VIII.F.
      c. Results from laboratory analysis of influent and effluent samples.
      d. Maintenance activities performed since the last inspection report.

e. An assessment of overall system performance.
f. A list of any improvements or maintenance needed.
g. A determination of whether the system is malfunctioning, and the specific nature of the malfunction.
h. Any changes made in system settings based on recommendations of the manufacturer.

2. Proposal for Evaluation and Reporting
   a. The manufacturer shall maintain a contract for evaluation of the performance of the Provisional System with an independent third-party laboratory, consultant, or other entity that has expertise in the evaluation of wastewater system and that is approved by the State.
   b. The third party shall review the site-specific sampling and flow-monitoring protocol, collect and analyze the authorized operator inspection reports, sampling and monitoring data, and prepare an Annual Report summarizing all data for all the sites. This report is due with the approval renewal form by November 30th of each year. The report shall include all data gathered so far for the systems installted. These reports shall provide information to the State based upon the monitoring data and observations made from the Provisional Systems installed pursuant to this Approval. This should include an assessment of system performance in relation to the established treatment performance standards; an assessment of physical and chemical properties of the materials used to construct the system, in terms of strength, durability, and chemical resistance to loads and conditions experienced; recommended areas of applicability for the system; and any conditions and limitations related to the use of the system.
   c. Upon completion of the research and testing protocol, and prior to completing any application by BioMicrobics, Inc., to the State for reclassification of the MicroFAST® and HighStrengthFAST® Treatment System as an Innovative System, the approved third party shall prepare a Final Report to the State that includes the results from all of the systems installed during the Provisional Approval, including sampling results, flow-monitoring information, authorized operator reports, etc., and provide recommendations on future use of the system. The Final Report shall be in electronic format and may be published on the On-Site Water Protection Section's website without confidentiality. The contents of the interim and final reports shall not be altered from the original document without approval from BioMicrobics, Inc.
   d. A minimum of 50 data points is required, including data from a minimum of 15 sites, with a minimum of two data sets per site collected over at least a 12-month period.
   e. For coastal resort communities, the two samples shall take place between June 1 and September 8 of each year. The samples must be taken at least six weeks apart.
   f. Other seasonal homes shall be sampled during the times of greatest use.
   g. A copy of the sample results will be provided from the laboratory directly to the On-Site Water Protection Section.
   h. The State of North Carolina and BioMicrobics, Inc., agree that any systems that are out of compliance due to owner intervention, i.e. excessive flows, chemical disposal, or high strength waste, etc., shall not be considered in the Provisional Approval and any test results from those systems shall not be held against BioMicrobics, Inc.

IX. Responsibilities and Permitting Procedures

A. Prior to the installation of a MicroFAST® and HighStrengthFAST® Treatment System at a site, the owner shall submit an application or Notice of Intent (NOI) to the LHD for the proposed use of

this system. Improvement Permits (IP) or Construction Authorizations (CA) issued by the LHD shall have a soil and site evaluation conducted either by the LHD, LSS, or Authorized On-Site Wastewater Evaluator (AOWE). The NOI shall include a soil and site evaluation conducted by an LSS.

B. The IP, CA, and NOI shall contain all the conditions the site approval is based upon, including the proposed used of the Innovative system. The OP will include all conditions specified in the IP and CA. The Authorization to Operate (ATO) should include all the conditions specified in the NOI.

C. When a special site evaluation is required pursuant to 15A NCA 18E .0510, an evaluation and written, sealed report from a Licensed Soil Scientist (LSS) regarding the site shall be provided to the LHD. The report shall contain the information specified in 15A NCAC 18E .0510(d). The LHD may request the assistance of their Regional Soil Scientist in evaluating this report prior to permit issuance.

D. MicroFAST® and HighStrengthFAST® Treatment systems shall be designed by either an authorized designer, AOWE, or a PE. Systems over 1,000 gpd, using the HighStrengthFAST® Treatment system, or as required in accordance with 15A NCAC 18E .0303(a) shall be designed by a PE. All design submittals shall be accompanied by a certification letter from BioMicrobics, Inc. or its North Carolina authorized representative.

E. Prior to the LHD issuing a CA for a MicroFAST® and HighStrengthFAST® Treatment system, a design submittal prepared by an authorized designer, AOWE, or PE shall be submitted. The design submittal shall include the information required in 15A NCAC 18E .0305.

F. It is recommended that local authorized environmental health practitioners attend a design training session offered by the manufacturer or the authorized representative prior to permitting the system. Also, at the request of the LHD, a Regional Engineer will review the design.

G. For sites required to be evaluated by an LSS or Licensed Geologist (LG), see Section V and IX.C, the LHD, AOWE, or PE may specify as a condition of the IP and CA that an LSS or LG oversee critical phases of the dispersal field installation and certify in writing that the installation was in accordance with their specified site and installation requirements prior to the OP or ATO issuance.

H. The authorized operator shall be present during the final inspection of the system prior to the issuance of the OP or ATO.

I. The LHD shall issue the OP after the following:
   1. Field verification of installation completion;
   2. Receipt of written documentation from the authorized designer, AOWE, or PE that the system has been designed, installed, and is operating in accordance with the approved plans; and
   3. All necessary legal documents have been completed, including the contract between the system owner and the authorized operator.

   The LHD shall issue the OP for an (a2) and (a5) application after all necessary legal documents have been completed, including the contract between the system owner and the authorized operator.

The ATO shall be submitted to the LHD in accordance with G.S. 130A-336.1 and G.S. 130A-336.2.

X. Repair of Systems

The provisions of 15A NCAC 18E .1302 shall govern the use of the MicroFAST® and HighStrengthFAST® Treatment system for repairs to existing malfunctioning wastewater systems.

Approved By: _____ Date: _____