Jeb Bush
Governor

FLORIDA DEPARTMENT OF HEALTH

John O. Agwunobi , M.D.
Secretary

INTEROFFICE MEMORANDUM

**INFORMATION**
HSES 02-001

**DATE:** January 28, 2002

**TO:** County Health Department Directors/Administrators
ATTN: Environmental Health and Engineering Directors

**THROUGH:** Sharon L. Heber, Dr. P.H., Director
Division of Environmental Health

**FROM:** Gerald Briggs, Chief
Bureau of Onsite Sewage Programs

**SUBJECT:** ANSI/NSF Standard 40, Class I, Aerobic Treatment Units (new listings)

**INFORMATION ONLY**

Baylor University has certified the following aerobic treatment units (ATUs) as meeting all of the requirements of ANSI/NSF Standard 40 - Residential Wastewater Treatment Systems for Class classification. Please add them to the listing of ATUs acceptable for use in the State of Florida.

**LISTED SYSTEM: Hoot Aerobic Systems**
**MANUFACTURER: Murphy Cormier, General Contractor, Inc.**
**2885 Highway 14 East**
**Lake Charles, LA 70607**
**(337) 474-2804**
**www.hootsystems.com**

**MOST RECENT LISTING DATE 10/11/2001 (Re-certification complete as of this date)**

**APPROVED MODELS AND MATERIALS DESIGNATIONS:**
Model Number Rated Capacity-Gallons/Day Classification
H-500 A/AD/AN/AH/AW/AS/AT/AND/ASD/ATD, CP 500 Class I
H-750 AN/AH/AND, CP 750 Class I
H-1000 AD/AN/AW/AND, CP 1000 Class I
LA-Hoot 500 & 500TP 500 Class I
LA-Hoot 1000 & 1000TP 1000 Class I

Attached, you will find completion reports and/or engineering drawings for these units.

Please direct any questions to Brad Croft at (850) 245-4070 or SC 205-4070.

GB/bc
Attachments

**STATE OF FLORIDA**
**DEPARTMENT OF HEALTH**
**APPLICATION FOR ONSITE SEWAGE TREATMENT AND DISPOSAL SYSTEM OPERATING PERMIT**

Authority: Chapter 381, F.S. & Chapter 64E-6, F.A.C. Application/Permit Number _____
New:_____ Amended:_____ Renewal:_____
Aerobic:_____ Commercial:_____ Industrial/Manufacturing:_____

## GENERAL INFORMATION

Property Owner_____
Work Telephone_____ Home phone: _____
Address of Owner:_____ City: _____State_____ Zip_____
Owner's Agent:_____
Agent's Address:_____ City:_____State_____ Zip_____
Agent's Phone:_____ Property Street Address:_____
City:_____State_____ Zip_____
Section:____ Township:_____ Range:____ Parcel:_____ Lot:____ Block:____ Subdivision:_____ Unit:_____

## EXISTING SYSTEM INFORMATION

Please complete those items shown below which are applicable to the existing permitted onsite sewage disposal system serving the above referenced property: Onsite Sewage Treatment and Disposal System Construction Permit Number (if known):_____
Septic Tank(s)/Aerobic Unit_____gallons Grease Trap(s)_____gallons Dosing Tank_____gallons
Drainfield size is_____square feet installed in a: standard subsurface_____ filled_____ mound system_____
The drainfield layout is in trenches_____absorption bed_____other_____ (describe) Drip Irrigation Disposal System
Onsite Well? Yes_____ No_____ System Setback to Wells_____ft. Lot Size _____Square Feet
Estimated sewage flow into system_____Gallons/Day Based on_____
Number of businesses or dwellings (circle one) which are being served by this onsite sewage disposal system _____
Additional Comments: _____

## COMMERCIAL/INDUSTRIAL/MANUFACTURING FACILITY

Please attach a business survey form for each business which is or will be served by the onsite sewage disposal system. Briefly describe the type of activities that will be supported by the onsite sewage system serving this property._____

What is the zoning designation for the property?_____ Give a description of the zoning and examples of approved businesses in this type of zoning: _____

## AEROBIC TREATMENT UNIT

Date of aerobic system installation approval:_____/_____/_____ Is the aerobic treatment unit still under the manufacturer's initial two year warranty? Yes __X__ No_____ Aerobic Unit Manufacturer:_____Hoot Aerobic Systems___.
Type of Aerobic Unit: _____Hoot_____GPD_____ Class I:___X___ Class II:_____ Above 1500 Gallon Capacity: ___No_____.
Construction/Installation Permit Number:_____ Are multiple aerobic units used on the site: Yes_____ No_____
Is there an active service agreement on the aerobic treatment unit? Yes__X___ No_____ Please Attach a Copy of the Agreement
If yes, when does the service agreement expire? _____/_____/_____
Who is the authorized service company providing maintenance to your unit?
Company Name_____ Phone Number_____
Address_____City_____State_____ Zip_____

I hereby certify that the above information is accurate and a reflection of the actual conditions existing on the above referenced property. I understand that any change of occupancy or tenancy at the above location will require me to file an amendment to this operating permit.

Applicant's signature:_____ Date_____/_____/_____
Application Status:
Disapproved: _____ Date _____/_____/_____ Reason: _____
_____
By: _____ Title: _____ _____ CHD
Approved: _____ Date_____/____/_____
By: _____ Title: _____ _____ CHD

# PERFORMANCE STANDARDS DESIGN REVIEW CHECKLIST

**Application**

1. Cover letter from engineer requesting the approval of a performance based system. _____
2. Initial site evaluation with estimated seasonal high water table, soil LTAR _____
3. County Department of Health/Engineer concurrence on estimated seasonal high water table, soil LTAR._____

**Design**

1. Plans signed, dated, and sealed by an engineer registered in the State of Florida._____
2. "Certification of Design" statement signed by the Engineer _____
3. Design adherence to setback requirements. _____

If not, specify non-conformance setbacks. _____

4. Design adherence to separation from the seasonal high water table _____
5. Information required:
   - ! System design criteria:
   - ! Performance level: STS( ), ASTS( ), AWTS( )
     ASTS with enhanced nutrient removal (Keys)( )
   - ! CBOD =_____2.4_____mg/l
   - ! TSS =_____1.8_____mg/l
   - ! TN =_____9.7_____mg/l
   - ! TP =_____N/A_____mg/l
   - ! f coliform =_____N/A_____fc colonies/100 ml
   - ! System design calculations. _____
   - ! System design plans and drawings. _____
   - ! Monitoring requirements:
   - ! pollutant(s) to be monitored. _____
   - ! pollutant sampling frequency._____
   - ! monitoring ports provided. _____
   - ! monitoring locations identified._____
6. Drainfield:
   - ! Drainfield infiltrative surfaces identification._____
   - ! Drainfield infiltrative surface calculations. _____
   - ! Drainfield Infiltrative surface reductions adherence to performance expectations. _____
   - ! Design adherence to "effective storage volume" requirements. _____
   - ! Design adherence to "total storage volume" requirements. _____
   - ! Design adherence to unobstructed area requirements. _____
7. Modeling programs:
   - ! Model program inputs documented in tabular form. _____
   - ! Model program outputs included In the engineering submission _____
8. System failure effluent collection contingency plan, if applicable. _____
9. Installation Instructions._____

**Inspection**

1. Operational manual._____
2. Operational maintenance manual/instructions _____

Operational maintenance frequency._____

3. Signed maintenance agreement between owner and maintenance entity _____
4. Property owner has executed and recorded (in the public records at the county courthouse), a written notice that informs all subsequent property owners of the use of the performance based treatment system and the requirement for the system to be maintained. _____
5. "Certification of Installation" statement signed by the engineer, or an agent of the engineer. _____
6. Verification of system installation per design plans and specifications._____

# DRIP EFFLUENT DISPOSAL SYSTEMS

## DESIGN CRITERIA

April 11, 2001

Drip effluent disposal systems shall be permitted as an alternative drainfield option for use in Performance-Based Treatment Systems in the State of Florida. The following criteria apply.

Florida registered professional engineers shall design all drip effluent disposal systems and the design shall include and consider the following:

1. Drip effluent disposal systems shall be considered performance-based treatment systems.
2. Effluent for drip effluent disposal systems shall be pretreated to reduce both the 5-day Carbonaceous Biochemical Oxygen Demand ($CBOD_5$) and the Total Suspended Solids (TSS) to each be less than 30 mg/l.
3. The infiltrative area required shall be the same as the area required for a mineral aggregate drainfield with reductions allowed for the reduction of $CBOD_5$ and TSS as noted in Florida Administrative Code, Chapter 64E-6, Part IV, Performance-Based Treatment Systems.
4. In a bed configuration, the drainfield area shall be calculated as extending one foot beyond the sides of the outermost emitter lines.
5. In a trench containing a single distribution line, the drainfield area shall be calculated as 2 feet X the emitter spacing in feet X the number of emitters.
6. Drip effluent disposal systems shall be considered pressure distribution systems.
7. Head loss calculations shall be provided to insure proper hydraulic pressure at the emitter.
8. Pump selection shall be indicated in the design specifications. Pump performance curves shall be provided.
9. Recirculation rates shall be indicated on the drawings.
10. Check valves, petcocks, inline filters, and vacuum breaking device locations shall be indicated on the drawings.
11. Drip effluent disposal systems shall be time-dosed over the 24-hour period. Demand control dosing shall override timed-dosing in periods of flow where timed dosing cannot handle the excessive flow.
12. All drip emitter systems shall be designed as continuous loop circuits with no dead-end emitter lines. All systems need to incorporate a mechanism for backwashing or flushing.
13. Drip effluent disposal systems shall meet the following operating parameters:
    - Minimum operating pressure at the emitter head shall be 10 psi.
    - Maximum operating pressure at the emitter head shall be 45 psi.
    - Maximum system operating pressure shall be 60 psi.
    - Maximum discharge rate per emitter shall be 1.5 gallons per hour.
14. Drip emitter lines shall be drawn to scale and drip emitter spacing shall be indicated on the drawings.
15. The maximum emitter longitudinal spacing on a distribution line shall be 2 feet. The maximum distribution line spacing in a bed configuration shall be 2 feet.

16. The 24-inch separation from the seasonal high water table shall be measured from the emitter orifice.
17. Setbacks shall be measured from the drip emitter lines.
18. There is no drainfield sidewall in a drip effluent disposal system. The definition of a filled system in s. 64E-6.002(24), Florida Administrative Code, is not applicable to drip effluent disposal systems. A drip effluent disposal system is considered to be a mound system when any part of the bottom surface of any drip emitter line is located at or above the elevation of undisturbed native soil in the drainfield area. A drip effluent disposal system is considered a standard subsurface drainfield system when the entire bottom surface of every drip emitter line is installed below the elevation of undisturbed native soil in the drainfield area.
19. For mound systems there shall be a minimum separation of 18 inches between the shoulder of the fill and the nearest drip emitter line. Mound system slopes shall be in accordance with s. 64E-6.009(3)(f), Florida Administrative Code. Mound systems shall be stabilized in accordance with s. 64E-6.009(3)(f), Florida Administrative Code.
20. For standard subsurface systems, the elevation of any fill covering the drainfield shall extend no less than 18 inches away from all emitter lines before tapering down to natural grade.
21. Minimum cover on the distribution lines shall be 6 inches for standard subsurface systems and 9 inches for mound systems. The maximum cover for all systems shall be no greater than 12 inches.
22. The system shall include a petcock on the dosing pump discharge line for effluent sampling in lieu of the installation of monitoring ports required in s. 64E-6.029(2), Florida Administrative Code.
23. All onsite sewage treatment and disposal systems that include a drip effluent disposal system shall have an annual operating permit, maintenance contract with an approved performance-based system maintenance entity and shall be inspected in accordance with s. 64E-6.027(5), Florida Administrative Code.
24. Manufacturers of drip effluent disposal system distribution lines, emitters, and components shall apply for and obtain approval for specific model numbers or part numbers prior to inclusion of the components on any site specific permit application.
25. Manufacturer's of drip effluent disposal system components shall provide design and installation manuals for engineering and construction guidance. Design manuals shall include tables that detail flow rates vs. pressure and pressure loss per length(s) of distribution pipe.

Answers for Drip Effluent Disposal Systems Design Criteria for the State of Florida

Dated April 11,2001

1. OK
2. 2.4 CBOD 1.8 TSS
3. OK
4. OK
5. OK
6. OK
7. Pressure Loss in 100' of 1 ¼" Tubing is 0.39 Lbs.

   Pressure loss across filter is 7 PSI including filter flush return line

   Flow Rate while the system is running is _____GPM.

   To Achieve 2.0 ft/s scouring velocity, _____ GPM is needed

   Pump is capable of producing _____ GPM at _____' of Head

   Pressure to field will be adjusted to achieve a maximum of 30 PSI on the

   supply manifold by opening the by-pass petcock located in the pump tank.
8. Hoot Blaster H-2OEB 105, pump curve in enclosed.
9. _____ GPM, filter flush return line, _____ GPM during field flush, ____GPM in pump tank.
10. Check Valves, Petcocks, filter and air relief valves are located inside pump chamber, or in filter box.
11. OK
12. OK
13. Minimum will be 25 PSI

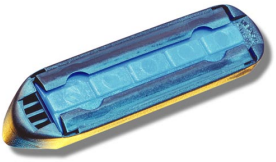
    Maximum will be 30 PSI

    Maximum will be 45 PSI

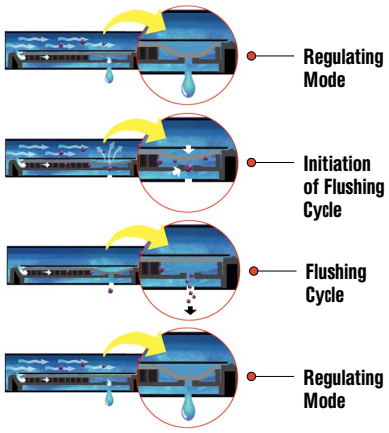
    Maximum will be 0.92 GPH per emitter.
14. OK
15. OK
16. OK
17. OK
18. OK
19. OK
20. OK
21. 6" Cover over emitters.
22. OK
23. OK
24. Completed with Paul Booher.
25. Drip manual given to Installer and Engineer.

NETAFIM

# BioLine Dripperline



## Pressure Compensating Dripperline for Wastewater




BioLine's Self-Cleaning, Pressure Compensating Dripper is a fully self-contained unit molded to the interior wall of the dripper tubing.

As shown at left, BioLine is continuously self-cleaning during operation, not just at the beginning and end of a cycle. The result is dependable, clog free operation, year after year.

### Product Advantages

**The Proven Performer**

- Tens of millions of feet used in wastewater today.
- Bioline is permitted in every state allowing drip disposal.
- Backed by the largest, most quality-driven manufacturer of drip products in the U.S.
- Preferred choice of major wastewater designers and regulators.
- Proven track record of success for many years of hard use in wastewater applications.

**Quality Manufacturing with Specifications Designed to Meet Your Needs**

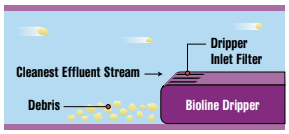
- Pressure compensating drippers assure the tightest application uniformity - even on sloped or rolling terrain.
- Excellent uniformity with runs of 400 ft. or more reduce installation costs.
- Highest quality-control standards in the industry: Cv of 0.25 (coefficient of manufacturer's variation).
- A selection of flows and spacings to satisfy the designer's demand for almost any application rate.

**Long-Term Reliability**

- Protection against plugging:

- Dripper inlet raised 0.27" above wall of tubing to prevent sediment from entering dripper.
- Drippers impregnated with Vinyzene to prevent buildup of microbial slime.
- Unique self-flushing mechanism passes small particles before they can build up.

Cross Section of Bioline Dripperline




**Root Safe**

- A physical barrier on each BioLine dripper helps prevent root intrusion.
- Protection never wears out - never depletes - releases nothing to the environment.
- Working reliably for up to 15 years in subsurface wastewater installations.
- Additional security of chemical root inhibition with Techfilter - supplies Trifluralin to the entire system, effectively inhibiting root growth to the dripper outlets.


## Applications

- For domestic strength wastewater disposal.
- Installed following a treatment process.
- Can be successfully used on straight septic effluent with proper design, filtration and operation.
- Suitable for reuse applications using municipally treated effluent designated for irrigation water.

## Specifications

Wall thickness (mil): 45*

Nominal flow rates (GPH): .4, .6, .9*

Common spacings: 12", 18", 24"*

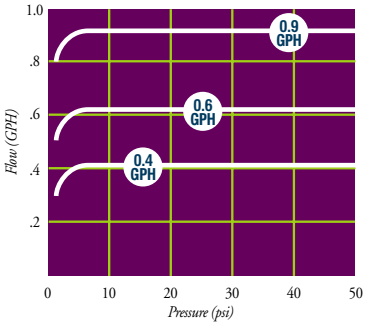
Recommended filtration: 120 mesh

Inside diameter: .570*

Color: Purple tubing indicates non-potable source.

*Additional flows, spacings, and pipe sizes available by request. Please contact Netafim USA Customer Service. for details.

**BIOLINE** Flow Rate vs. Pressure




NETAFIM USA
PRECISION IRRIGATION™
5470 E. Home Ave. • Fresno, CA 93727
(888) 638-2346 • FAX (800) 695-4753
www.netafimusa.com

## BioLine Technical Information

### DRIPPER FLOW PATH DIMENSIONS

| Dripper | Length | Depth | Width |
|---|---|---|---|
| 0.4 GPH | .75" | .037" | 0.040" |
| 0.6 GPH | .75" | .045" | 0.044" |
| 0.9 GPH | .75" | .047" | 0.060" |

### DRIPPER HYDRAULIC PERFORMANCE

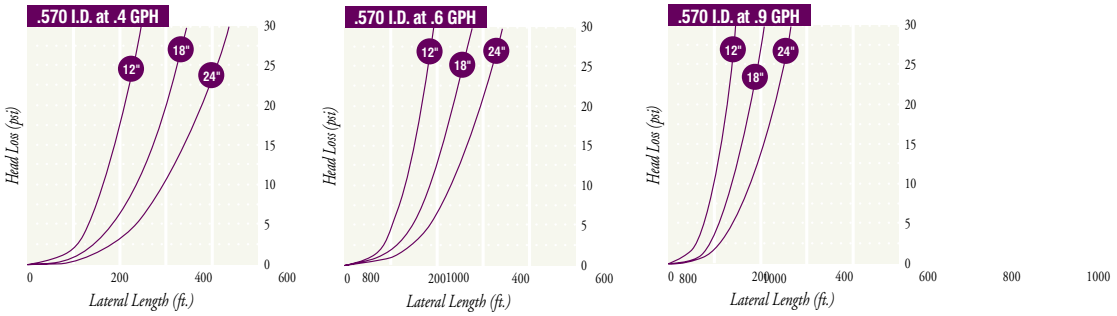
| Dripper | Kd | Exponent (x) | Constant (K) |
|---|---|---|---|
| 0.4 GPH | .9 | 0 | .42 |
| 0.6 GPH | .9 | 0 | .61 |
| 0.9 GPH | .9 | 0 | .92 |

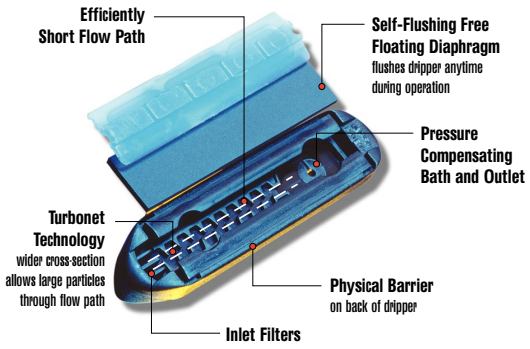
### UNIFORMITY

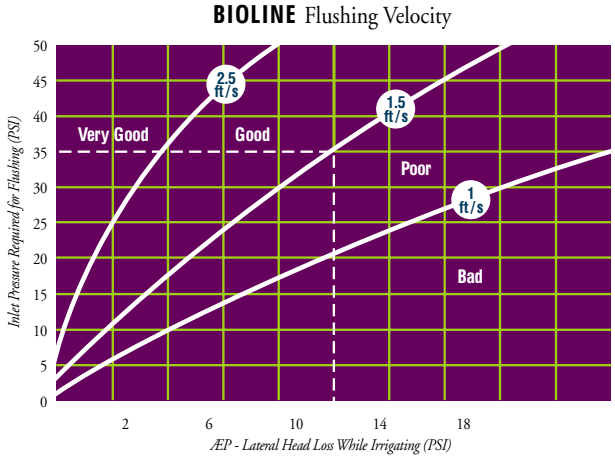
| Dripper | Cv |
|---|---|
| 0.4 GPH | 0.25 |
| 0.6 GPH | 0.25 |
| 0.9 GPH | 0.25 |

### OPERATING RECOMMENDATIONS

| Dripper | Minimum Pressure | Maximum Pressure | Minimum Filtration |
|---|---|---|---|
| 0.4 GPH | 10 psi | 60 psi | 120 |
| 0.6 GPH | 10 psi | 60 psi | 120 |
| 0.9 GPH | 10 psi | 60 psi | 120 |





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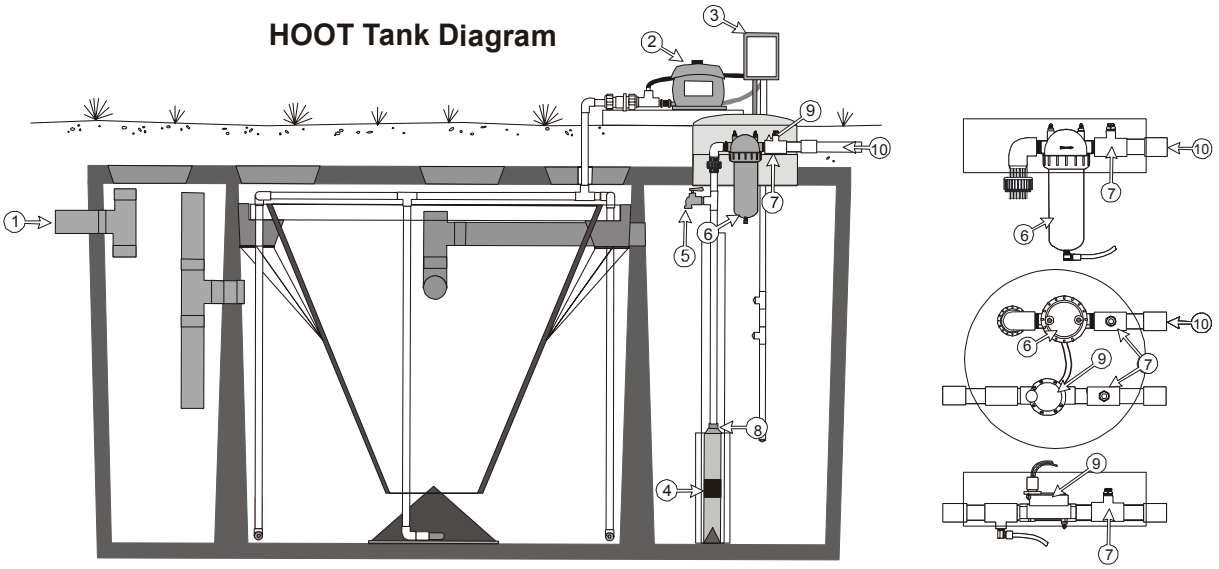
## HOOT Tank Diagram




Key

1. 4" Inlet
2. Troy Air Blower
3. Hoot Dosing Control Panel
4. Hoot Blaster 20EB105
5. Sampling Port
6. 100 Micron Filter
7. Air Release Valves
8. Check Valve
9. Field Flush Solenoid Valve
10. 1 1/4" Pump Outlet

## HOOT BLASTER Model H-20EB105