

# Product Notes

## Product Note 3.121A - OR

**Re:** BioDiffuser™ Bio 2 Chamber  
Installation Guidelines — Oregon

**Date:** July 24, 2003



The BioDiffuser Bio 2 represents the latest in the line of BioDiffuser plastic leaching chamber products. As its name implies, the Bio 2 is engineered to function equivalently to 12 inches of drain media in a 2-foot wide trench. The Oregon Department of Environmental Quality has authorized the use of the Bio 2 as a replacement for the traditional 24-inch wide gravel trench in your state.

The following information is provided to you as resource for installation of the Bio 2 chamber. The Bio 2 is authorized for use in both gravity-fed and pressure-dosed applications, and these guidelines should be followed whenever the Bio 2 is the replacement product of choice.

Use of a Bio 2 system is subject to all applicable Oregon on-site rules, including those standards established in OAR Chapter 340, Division 71 and 73. The Bio 2 may not be installed at a site for which a conventional gravel trench with 12" deep media would not be authorized.

If you have any questions about the use of the Bio 2 chamber, please contact your local BioDiffuser distributor or call ADS directly at 1-800-733-8523.

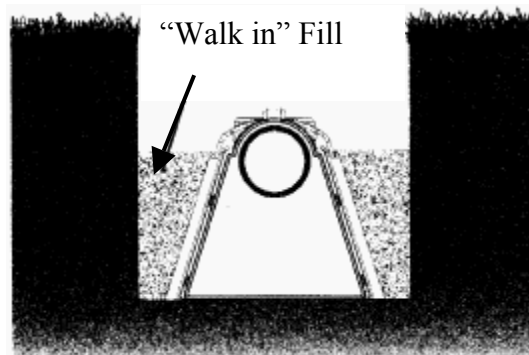
## I. General Guidelines

The installation instructions in this section apply to use of the Bio 2 chamber in all gravity-fed applications: trench configuration with gravity distribution; and trench configuration with same-end (e.g. drop-box) or alternate-end inlet serial distribution.

1. Trench excavations shall be a minimum of 18" wide.
2. Trench excavations shall maintain a minimum 10' center-to-center spacing with a minimum of 8 feet of undisturbed earth between trenches, unless otherwise allowed by the DEQ or its agents.
3. The header pipe running from a distribution or drop box into each chamber line shall be level.
4. The header pipe running from a distribution or drop box into each chamber line shall be a minimum of 4' in length.
5. The header pipe running from a distribution or drop box into each chamber line shall be bedded on native soil.
6. Native soil backfill shall be placed along the sidewall aspect of the chamber units, and "walked in" to secure placement before final backfill takes place.

## II. Gravity-Fed Trench Installation Guidelines

1. Excavate trenches to proper width and depth as described in the design and as required by applicable state and local codes.
2. Scarify the bottom and sidewall surfaces to remove any smearing which may have occurred during excavation. Smooth irregularities in the excavation. A level, flat surface is necessary.
3. Assemble the Bio 2 parts in the trench excavation by engaging the "dome" end of the installing unit over the "post" end of the chamber already in place. No screws are required.
4. Knock out the scribed hole in each end plate unit as called-for in the plan. Knockouts will accommodate either SDR 35 or Schedule 40 pipe. (Score the appropriate groove in the knockout with a knife before removing plug with shovel handle in order to create a 4.2" or 4.5" hole as required).
5. Place end plates on each end of the Bio 2 chamber line. Secure in place with backfill. Install distribution pipe from the distribution box or septic tank as described in the plan. See Page 3 for distribution pipe alignment guidance.

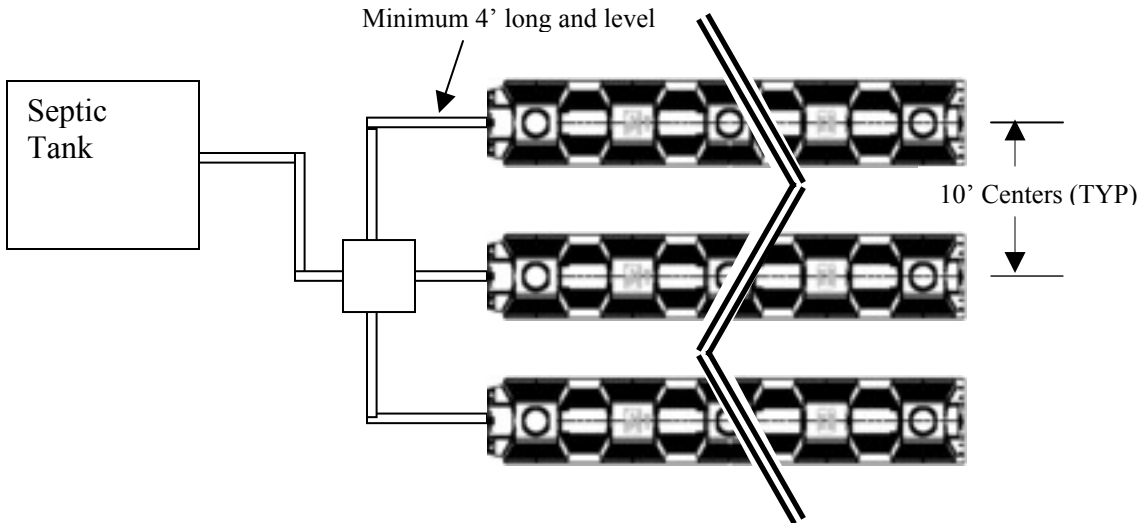


Equal Distribution End Cap detail with invert at 6.87" and "walked-in" fill.

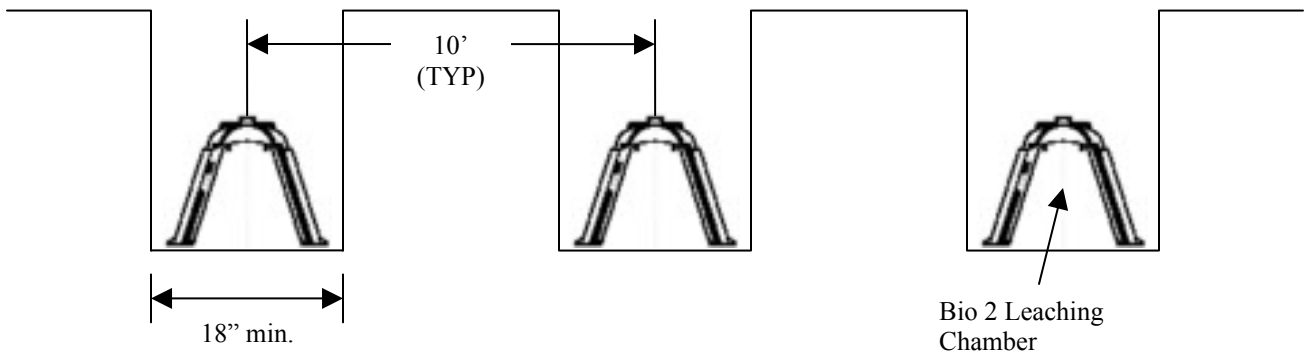
6. Fill sidewall area to top of the chamber units with native soil (or select fill, where required.) Coarse sand or gravel is recommended.
7. "Walk in" fill to compact soil along the sides of the chamber. This is important to achieve full weight/load rating.
8. Complete the backfill of the system with native soil or select fill to the depth specified in the system design and as required by applicable state and local codes. Avoid large rocks and debris in backfill material. Do not drive equipment over the Bio 2 units without first bridging the excavation. A tracked vehicle is recommended.

## Equal Gravity Distribution- Example 1

### Plan View--Fig. 1A



### Cross Section View—Fig. 1B



### **III. Serial Distribution Trench Installation Guidelines**

1. Excavate trenches to proper width and depth as described in the design and as required by applicable state and local codes.
2. Scarify the bottom and sidewall surfaces to remove any smearing that may have occurred during excavation. Smooth irregularities in the excavation. A level, flat surface is necessary.
3. Assemble the Bio 2 parts in the trench excavation by engaging the "dome" end of the installing unit over the "post" end of the chamber already in place. No screws are required.
4. Drill a 4 ¼ inch diameter hole in each inlet end plate at a 3 ¼ inch invert height. Knock out the scribed hole in each end plate.
5. Place end plates on each end of the Bio 2 chamber line. Secure in place with backfill. Install distribution pipe from the distribution box into the first chamber line as described in

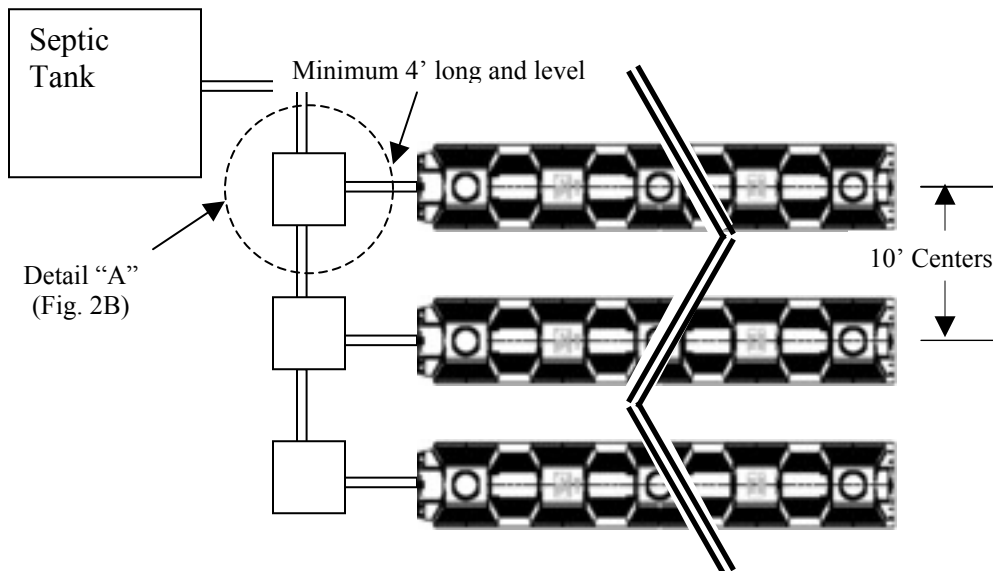
the plan. See Examples 2 & 3 (below and next page) for distribution pipe alignment guidance.

6. Install subsequent trenches in same manner. Connect distribution pipes from one line to another via either drop-box distribution with same-end inlet, or alternate-end inlet as described in the plan. Again, refer to Examples 2 & 3 for distribution pipe alignment guidance.
7. Fill sidewall area to top of the chamber units with native soil (or select fill, where required.) Coarse sand or gravel is recommended.
8. "Walk in" fill to compact soil along the sides of the chamber. This is important to achieve full weight/load rating.
9. Complete the backfill of the system with native soil or select fill to the depth specified in the system design and as required by applicable state and local codes. Avoid large rocks and debris in backfill material. Do not drive equipment over the Bio 2 units without first bridging the excavation. A tracked vehicle is recommended.

## **Same-End (Drop-Box) Serial Distribution—Example 2**

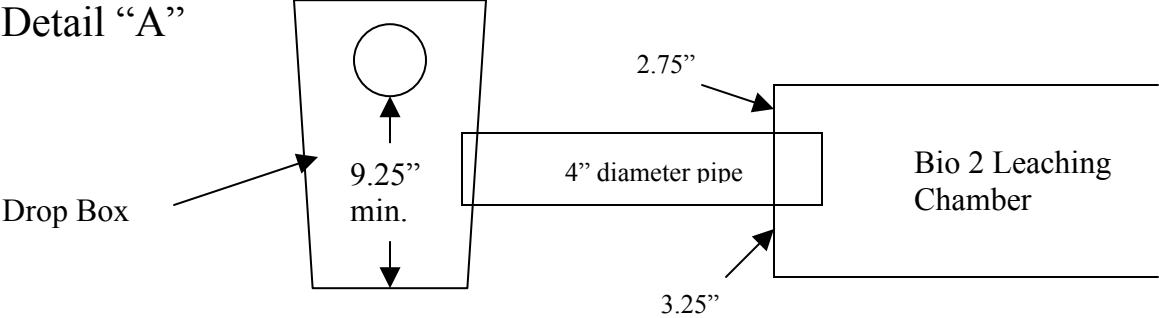
Drill a 4 ¼ inch diameter hole in the end plate, creating a 3 ¼ inch invert. Place drop box so header pipe is level.

### **Plan View—Fig 2A**



Cross-Section View—Fig. 2B

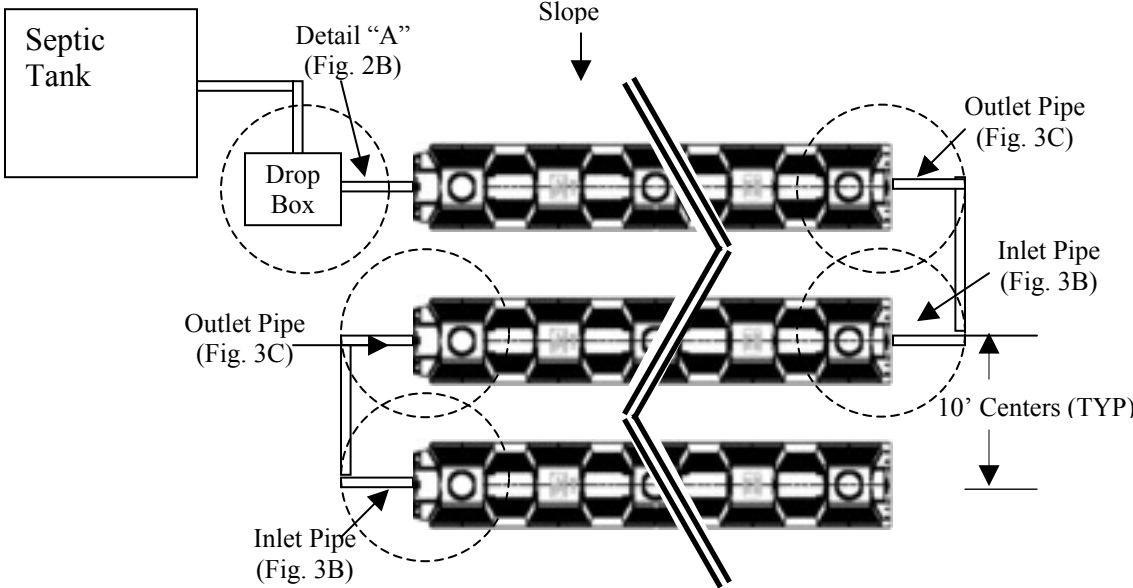
Detail “A”



Effluent will fill to above sidewall louvers before advancing.

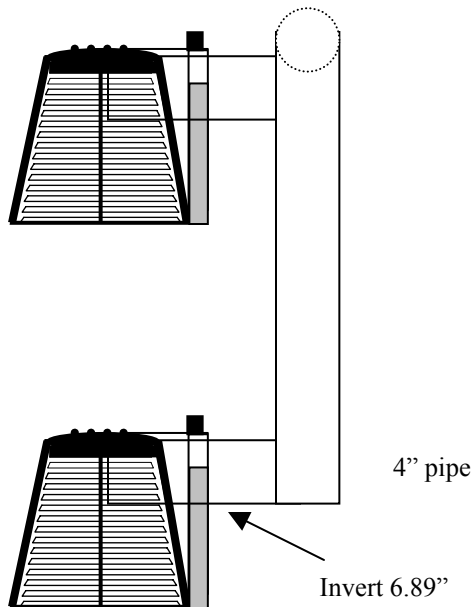
Alternating-End Inlet Serial Distribution—Example 3

Plan View—Fig. 3A

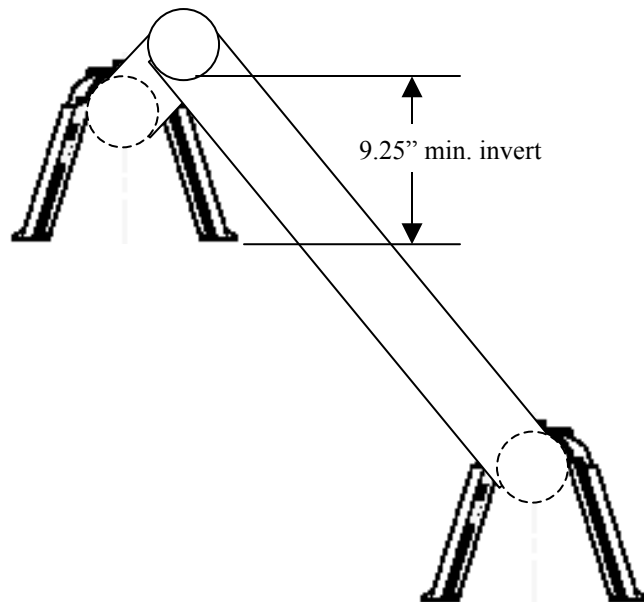


## Alternating-End Inlet Serial Distribution (continued)

Inlet Pipe—Fig. 3B



Outlet Pipe—Fig. 3C



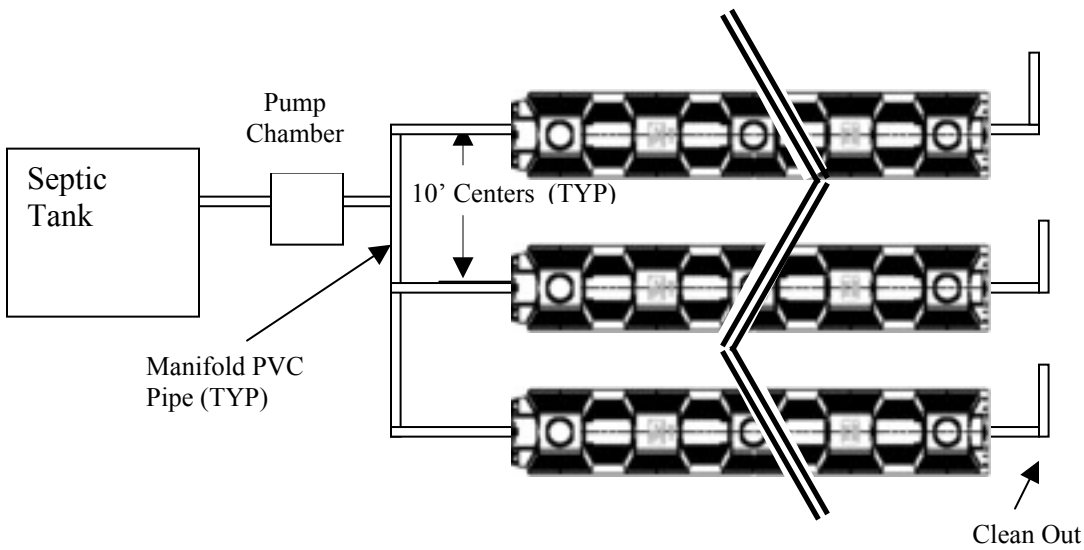
### **IV. Pressure Distribution Trench Installation Guidelines**

1. Excavate trenches to proper width and depth as described in the design and as required by applicable state and local codes.
2. Scarify the bottom and sidewall surfaces to remove any smearing that may have occurred during excavation. Smooth irregularities in the excavation. A level, flat surface is necessary.
4. Drill holes in end plates to match O.D. of pressure distribution pipe as specified in the plan. Insert first length of distribution pipe into first end plate.
5. Place the first Bio 2 part in the trench excavation. Place first end plate on the "dome" end of the Bio 2 chamber. Secure in place with backfill. Secure distribution pipe at "post" end of the Bio 2 by use of plastic pipe hangers slid through slots provided on either side of the "post". Cinch the pipe tightly in place.
6. Continue as described in step 5 above, engaging the "dome" end of the installing unit over the "post" end of the chamber already in place, and hanging pipe at the end of each chamber, until line is complete. Attach final end plate. Install required sweep elbows (cleanout) with threaded cap on each line.

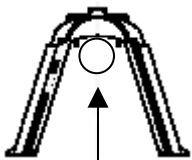
7. Fill sidewall area to top of the chamber units with native soil (or select fill, where required.) Coarse sand or gravel is recommended.
8. "Walk in" fill to compact soil along the sides of the chamber. This is important to achieve full weight/load rating.
9. Complete the backfill of the system with native soil or select fill to the depth specified in the system design and as required by applicable state and local codes. Avoid large rocks and debris in backfill material. Do not drive equipment over the Bio 2 units without first bridging the excavation. A tracked vehicle is recommended.

## Pressure Distribution—Fig. 4

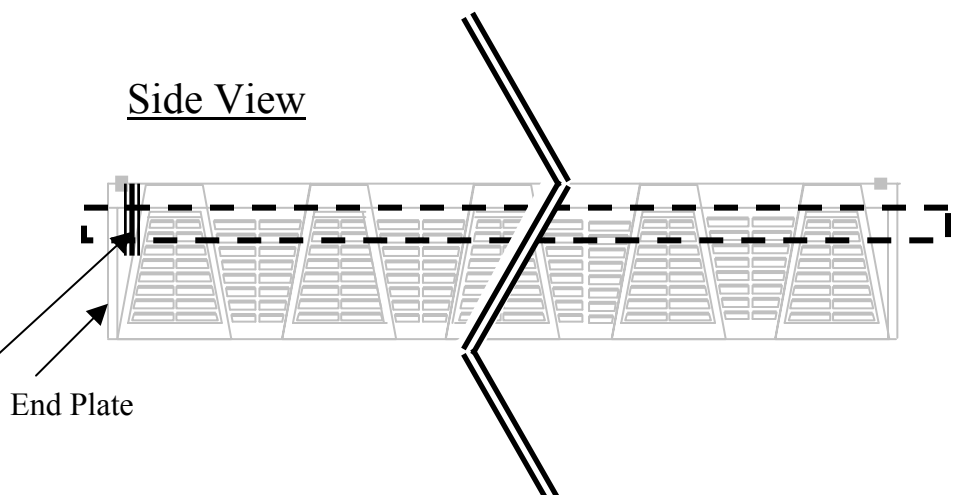
### Plan View



### End View

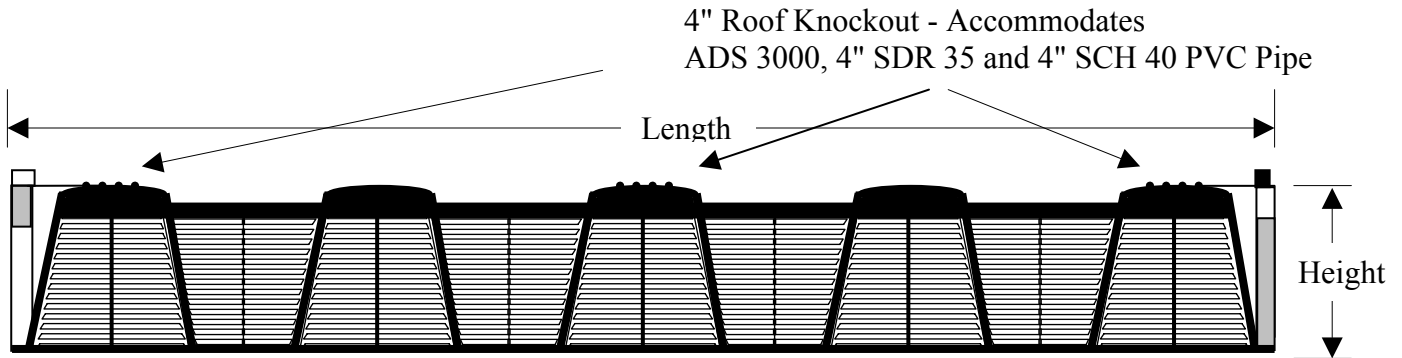


### Side View

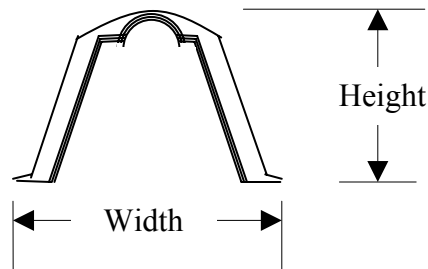


Hang PVC Pipe from top of chamber using plastic pipe straps

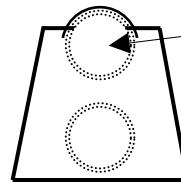
# BioDiffuser™ Bio 2 Chamber Specifications



Bio 2 can withstand H-10 loads when installed with properly graded and compacted soils. A minimum of 12" of cover is required for H-10 loads.



Universal End Cap



4" Knockout  
Accommodates  
ADS 3000, 4" SDR 35  
and 4" SCH 40

## Size and Packing Information

Chambers	Bio 2 15" x 12" x 87" H -10
ADS Prod. #	1500BD
Width	15"
Height	11.9"
Length	86.9"
Invert Height*	11.6"
Invert / End Cap	6.87"
Units / Pallet	90
Units / TL	1260

ADS / PSA BioDiffuser Chambers can be ordered in pallet quantities. Contact your ADS Customer Service for ordering details 1-800-733-8523

\*Based on inlet through top of chamber

08/05/03