

ADVANCED
ENVIROSEPTIC[®]



ENVIRO-SEPTIC SYSTEM GUIDE

Owner's Guide

Enviro-Septic[®] System

AES-TS Model

Class II – Secondary treatment level

and

AES-TSA Model

Class III –Advanced secondary treatment level

Residential Application

Province of Quebec

System certified by: Bureau de normalisation du Quebec

Standard: NQ 3680-910

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Important Security instructions



It is extremely dangerous even potentially deadly to open a septic tank, pumping station or any enclosed space that is part of a wastewater treatment system. This work must be done by a person trained in enclosed space working and rescue procedures who has the necessary equipment.

The action of the bacteria on the organic matter present in the wastewater produces gases such as carbon gas (CO₂), methane gas (CH₄) and sulphuric hydrogen (H₂S). The H₂S present in the septic tank or a pumping station can cause the death of an individual in a matter of minutes. This is why this work must be left to competent personnel.



Pipes are buried near your septic installation. Please speak to your contractor or the technical service of DBO Expert inc. in order to take the necessary precautions before digging or undertaking excavation jobs near your septic system.



Please be sure that the covers of the septic tank, pumping station, piezometers and sampling device are always in place and that they remain accessible at all times for periodic inspections and interventions when necessary. (e.g. emptying of the septic tank). The same applies for distribution boxes of systems built after 2009 as well as those which had an accessible distribution box before that time.



Advanced Enviro-Septic[®] comes with a manufacturer's limited warranty. The warranty details are presented in Appendix A.

Advanced Enviro-Septic[®] U.S. Patent numbers. 6,461,078; 5,954,451; 6,290,429; 6,899,359; 6,792,977; 7,270,532 and 5,606,786. Other patent pending.

**Enviro-Septic[®] is a trademark of Presby Environmental, Inc.
 Advanced Enviro-Septic[®] is a trademark of Presby Environmental, Inc.
 Bio-Accelerator[®] is a trademark of Presby Environmental, Inc.**

Table of Contents

Introduction	3
The purpose of this document	3
Designation of the Enviro-Septic System	3
Definition of the Enviro-Septic System	4
What to do if a problem occurs?	4
Customer service and Technical support information	4
System tag	5
Certified Contractor	5
Enviro-Septic System Capacity	6
Residential Wastewater	7
Warranty certificate	7
Functioning of the Enviro-Septic System	8
Treatment process of the Enviro-Septic system	8
Diagram of the Enviro-Septic chain of treatment	8
Enviro-Septic System Components	10
Operating the Enviro-Septic System	12
Initial Use	12
Intermittent Use or Prolonged Absences	12
Enviro-Septic System Operating Instructions	13
Wastewater Volume	13
In the bathroom	14
In the kitchen	14
For the laundry	14
Elsewhere in and around the house	15
Chemicals for septic installation	15
Ventilation	15
Heavy machinery and motorized vehicle traffic	16
Vegetation	16
Enviro-Septic System Maintenance	17
Distribution box and flow equalizer	17
Embankment surface above the Enviro-Septic System	20
Owner's Responsibilities	21
Measuring the Water Levels in the Piezometers	22
What to do if water level is high	23
Appendix A- Presby Twenty Year Limited Warranty	24
Appendix B - Information Specific to Your Treatment System	25
Appendix C – Register of the height of water in the piezometers	26
Appendix D – Register of the Septic Tank Maintenance	27

Introduction

Congratulations! You have chosen the Enviro-Septic System for your septic installation. This system was developed to efficiently treat domestic wastewater. However, instructions must be followed in order to maintain its treatment performance so that you can make use of it for many years.

We ask that you carefully read through this document and keep it in your files for future reference.

The purpose of this document

This user guide explains the proper use, procedures and inspections required in order to ensure the proper operation and longevity of an Enviro-Septic System for residential wastewater treatment.

Please note that it is the owner's responsibility to ensure that the system is used properly and according to its treatment capacity. It is also his responsibility to respect the rules and regulations in effect, especially the Law of the quality of Environment and the Q-2, r.22 regulation¹ on wastewater treatment and evacuation.

Designation of the Enviro-Septic System

Name: Enviro-Septic® System

Model: ESP-TSA and ESP-TS

Application Domain: Residential Wastewater (sewage).

Class and treatment type: The Enviro-Septic system meets all the requirements of the NQ 3680-910² standard for class III – advanced secondary treatment systems or class II – secondary treatment systems in Quebec.

The system cannot be used to treat wastewater to make it consumable. It is made to treat residential wastewater to an acceptable level for it to be reintroduced into the environment according to the criteria prescribed in the Q-2, r.22.

¹ The Q-2, r.22 regulation was previously known as the Q-2, r.8. It is available on the Quebec Government site of the "Ministère du Développement durable de l'Environnement et des Parcs", at the address: www.mddep.gouv.qc.ca/eau/eaux-usees or through the "Publication du Québec"

² NQ 3680-910 standard, Wastewater treatment – Stand-Alone Wastewater Treatment Systems for isolated Dwellings, Bureau de Normalisation du Québec, 2000-06-16

Definition of the Enviro-Septic System

The Enviro-Septic system is a passive technology that facilitates the growth of bacteria responsible for wastewater treatment. It is composed primarily of two inseparable components: the rows of Advanced Enviro-Septic pipe and a layer of system sand.

The Enviro-Septic system must be preceded by a septic tank and a wastewater distribution device. The treated water is drained directly into the soil beneath the treatment system through a soil absorption system as described in the Q-2, r.22 regulation: a leaching field for class II systems or a polishing leaching field for class III systems. They can also be discharged directly to a river if this type of discharge is allowed.

What to do if a problem occurs?

If in the course of normal use of your septic system you notice any of the following problems:

- Presence of abnormal odours in the house, around the septic system or emanating from sources of drinking water.
- Abnormally wet soil, presence of persistent puddles or odours in the area of the septic tank or the Enviro-Septic system.
- Slow flushing toilets or other plumbing in the home.
- Presence of abnormally abundant vegetation on the surface or around the septic tank or the Enviro-Septic system installation.
- Flooding in the area where the Enviro-Septic system is installed.
- Erosion of the land fill on or around the Enviro-Septic system.
- Alarm from the pumping station if such a device is part of your installation.

If you notice one of these problems, immediately contact your contractor or the customer service of DBO Expert Inc. 1-866-440-4975. Please have available the information from Appendix B – *Information Specific to Your Treatment System* – of the present guide.

Warning: Please note that the situations described above can affect any septic system, whether it is an Enviro-Septic system, any other certified wastewater treatment technology or any soil absorption systems prescribed in the Q-2, r.22 regulation. When these problems occur, they are usually caused by poor installation, malfunction of the residence plumbing, extreme weather or geological factors or surface water flowing into the septic system.

Customer service and Technical support information

Please contact us if you need further information.

Telephone: 1-866-440-4975 or (819) 846-3642

Fax: (819) 846-2135

Email: info@dboexpert.com

Internet site: www.enviro-septic.com

System tag

Each Enviro-Septic system must be identified with a specific system tag. This tag, similar to the one shown in figure 1, will be installed in the sampling device access port. It will be added during the installation of the system. The number shown at the bottom of the tag will help to identify your system.

The class of the system in place is indicated on the system tag.

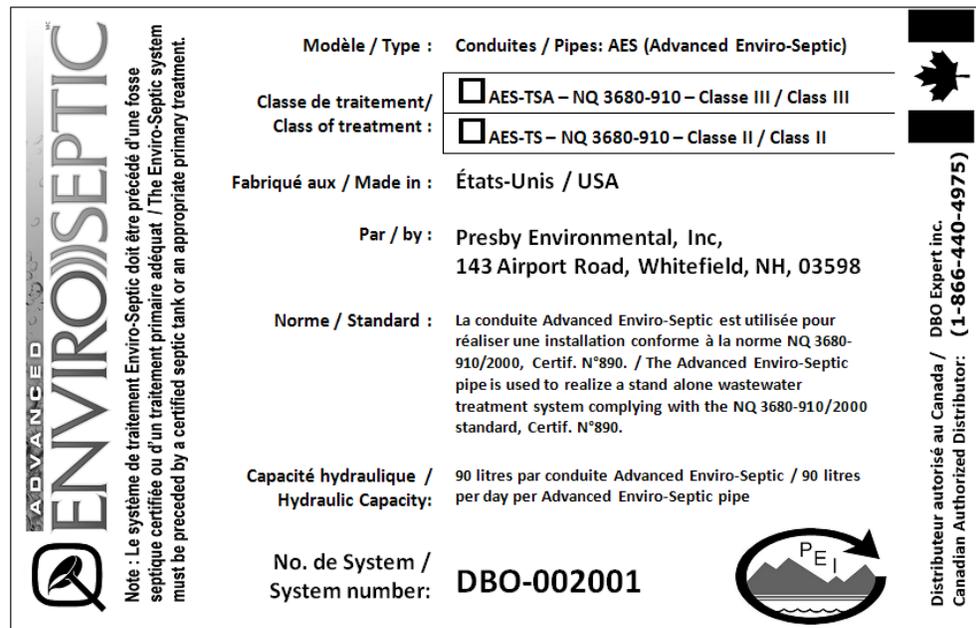


Fig. 1

Certified Contractor

The Enviro-Septic System must be installed by a contractor previously trained by DBO Expert or one of its representatives to obtain a certificate of authorised installer. The customer service of DBO Expert can provide the name of contractors having the proper authorisation to install Enviro-Septic Systems.

Enviro-Septic System Capacity

The capacity of the Enviro-Septic System depends on two elements :

- The number of Advanced Enviro-Septic Pipes
- The capacity of the underlying soil to evacuate the treated water.

Tables 1 and 2 present the capacity of each system in relation with the number of pipes installed for a 1 to 6 bedroom residence or other building with a daily flow of 3240 L/d or less. The total volume of wastewater fed to the system must not be more than what is shown in the table.

The system may also be limited by the capacity of the underlying soil to permit the infiltration and evacuation of wastewater. This value should be evaluated by the designer mandated to create the plans and estimates for your septic installation. It is, therefore, important to verify with the designer if the capacity of the soil permits complete infiltration and evacuation of the maximum amount of water able to be treated by the pipes installed.

Table 1 – Enviro-Septic hydraulic capacity based on the number of bedrooms of an isolated dwelling

Number of bedrooms	Minimum Number of Advanced Enviro-Septic [®] Pipes (3.05 m each)	Minimum Total Length of Advanced Enviro-Septic [®] Pipes (m)	Maximum Hydraulic Capacity (L/d) ³
1	8	24,4	540
2	12	36,6	1080
3	15	45,8	1260
4	18	54,9	1440
5	22	67,1	1800
6	26	79,3	2160

³ The hydraulic capacities shown in table 1 are the same shown in the Q-2, r.22 regulation for 1 to 6 bedroom isolated dwellings (clause 1.3). The difference between the minimum number of Advanced Enviro-Septic pipe for a similar daily flow between table 1 and 2 come after different security factors that are associated with 1 to 6 bedroom house vs other types of buildings.

**Table 2 –
Enviro-Septic
hydraulic
capacity based
on the number
of pipes
installed for
another type of
building**

Maximum Daily Flow (L/d)	Number of Advanced Enviro-Septic® Pipes (3.05 m each)	Total Length of Advanced Enviro-Septic® Pipes (m)
540	8	24,4
810	10	30,5
1080	12	36,6
1260	15	45,8
1440	18	54,9
1620	20	61,0
1800	22	67,1
1960	24	73,2
2160	26	79,3
2280	28	85,4
2440	30	91,5
2600	32	97,6
2760	34	103,7
2920	36	109,8
3080	38	115,9
3240	40	122,0

**Residential
Wastewater**
Table 3

Table 3 indicates the normal characteristics of raw domestic sewage.

Parameter	Units	Raw Sewage	Septic Tank Effluent
TSS	mg/L	237-600	50-90
CBOD ₅	mg/L	210-530	140-200
Fecal Coliform	CFU/100 ml	10 ⁶ -10 ¹⁰	10 ³ -10 ⁶

Source: Tchobanoglous and Burton (1991)

**Warranty
certificate**

Advanced Enviro-Septic® comes with a manufacturer's limited warranty. The warranty details are presented in Appendix A.

Functioning of the Enviro-Septic System

Treatment process of the Enviro-Septic system

The rows of Advanced Enviro-Septic® pipes and system sand permit the treatment and distribution of wastewater on the surface of the receiving soil (surface of the polishing leaching field or the leaching bed).

The pipes support, first of all, the separation of particles through flotation and decantation. The water is then evacuated through perforations situated all around the pipes and through the pores of the three layers of synthetic media covering the pipes. These membranes facilitate the fixation of the microbial cultures which support wastewater treatment as well as longitudinal distribution.

The layer of sand continues the treatment process and helps in dispersing the water before it infiltrates into the natural soil. In this way, the Enviro-Septic system integrates both functions of treatment and evacuation.

Diagram of the Enviro-Septic chain of treatment

The chain of treatment varies according to the method of discharge used. Figures 2.1 to 3.2 show the different options possible.

Underground evacuation

Figures 2.1 and 2.2 show the progress of the water along the complete chain of treatment for a system using underground evacuation

Fig. 2.1 - Secondary Treatment System

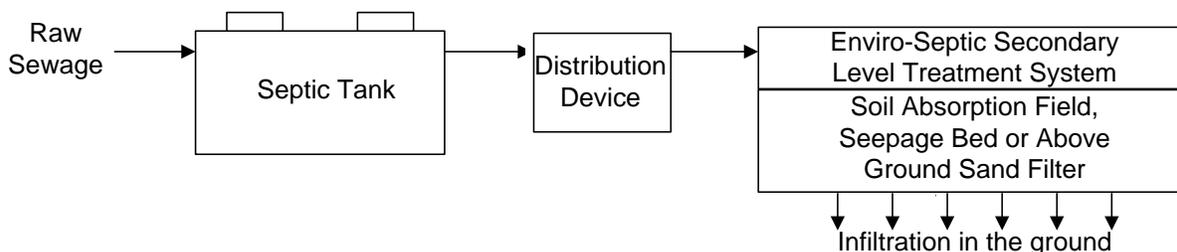
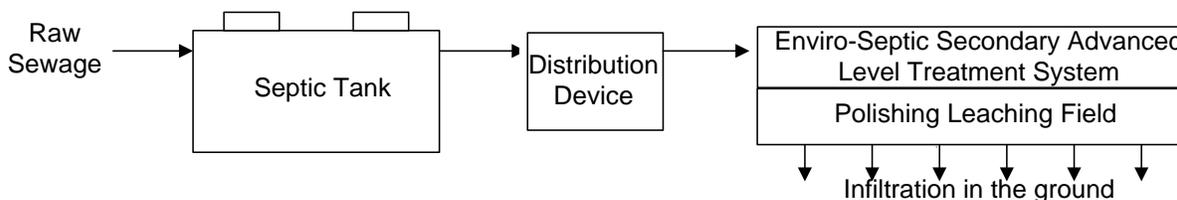


Fig. 2.2 - Advanced Secondary Treatment System



Discharge to a Stream or River

Figures 3.1 and 3.2 show the progress of the water in the complete treatment chain of a system using a direct discharge to a waterway.

Fig. 3.1 - Secondary Treatment System

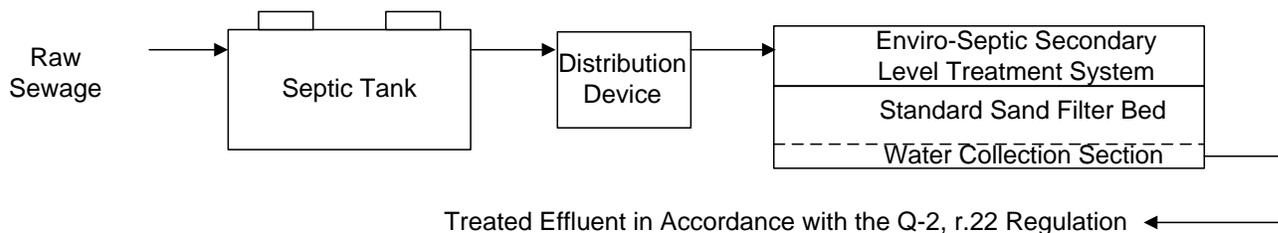
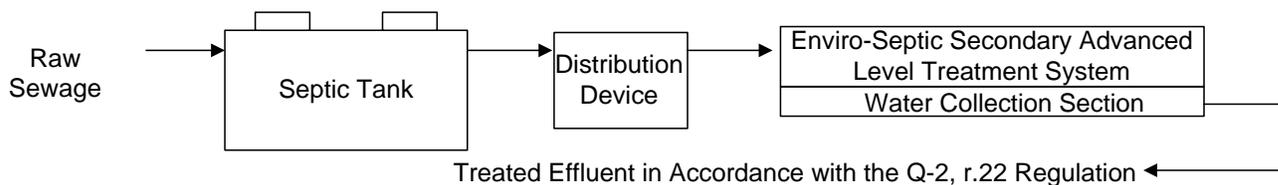


Fig. 3.2 - Advanced Secondary Treatment System



Enviro-Septic System Components

Your septic installation includes several components. All of these components are part of the chain of treatment of your installation. Table 4 presents the list of these elements. However it should be noted that some of these are only used when site conditions require them.

The table also presents a summary of inspections required for each component. More detailed information on this subject is presented in the sections that follow.

Fig. 4 - Diagram of the Enviro-Septic system

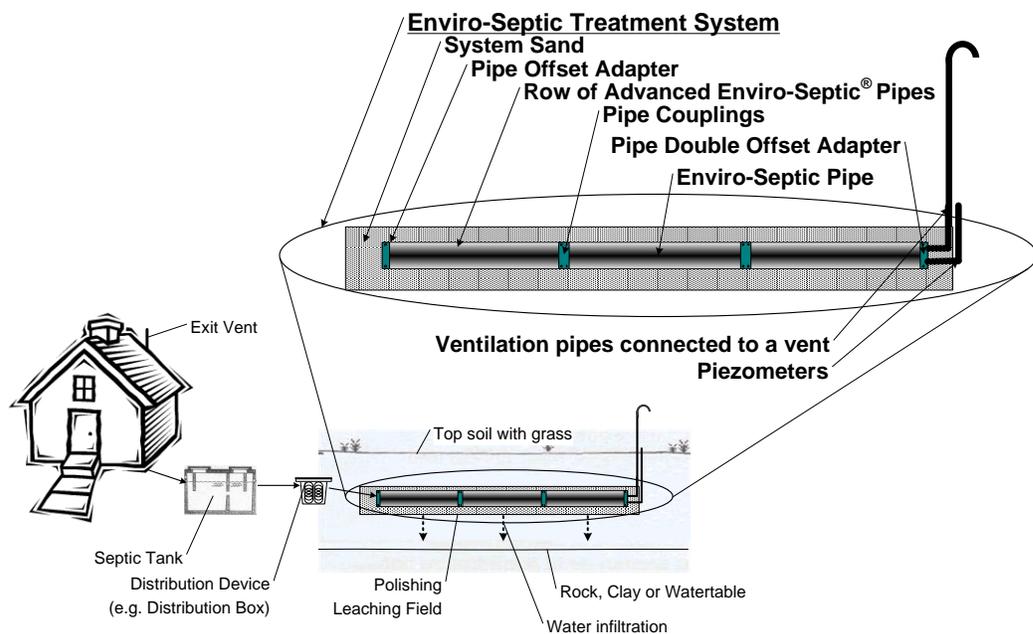


Table 4 - Enviro-Septic System Components

Components of the septic system	Function	Follow-up needed	Frequency	Responsible for follow-up
Septic tank	Primary wastewater treatment	Periodic emptying	According to standards and regulations in effect	Owner is responsible to have work done by qualified person
Septic Tank Effluent Filter ⁴	To retain solids larger than the maximum openings of the filter.	According to manufacturer's instructions.		
Distribution systems 3 options A) Distribution box and flow equalizers B) Pressure distribution (feed) system C) Automatic distributing valve	To distribute the septic tank effluent to the rows of Advanced Enviro-Septic [®] .	A) According to water level in the piezometers B) According to the manufacturer's directions. C) According to the manufacturer's directions.	A) As needed	A) Owner
Rows of Advanced Enviro-Septic [®] Pipes.	To distribute and treat wastewater	See piezometers		
Piezometers	To indicate the level of water in the rows of pipes.	Measure water levels	Once or twice a year as a preventive measure, before emptying the septic tank	Owner or qualified person
Sampling device	To verify the treatment performance of the Enviro-Septic System	Ensure that there is access to this device	Optional	Qualified person
Vent	To allow the circulation of air in the Enviro-Septic System	Ensure that the opening is not blocked	As needed	Owner
System sand	To complete the water treatment process and to improve the drainage	No		
Pumping station (optional)	To lift septic tank effluent to the Enviro-Septic System	According to supplier's specifications		

⁴ The effluent filter is necessary whenever the septic tank is followed by a low pressure distribution system. It is also mandatory in all BNQ certified septic tanks made since January 1st, 2009.

Operating the Enviro-Septic System

Initial Use	<p>At the time of installation, the septic tank must be filled with clear water.</p> <p>If a pumping station is used, the contractor will verify that it is functioning properly at the time of installation. The home owner must make sure that there is adequate electricity to safely operate the equipment as well as the alarm component.</p> <p>The Enviro-Septic system is now ready for use.</p>
Intermittent Use or Prolonged Absences	<p>The Enviro-Septic system is a passive wastewater treatment system. When properly installed, it requires no particular attention for intermittent use or in the case of prolonged absence.</p>

Enviro-Septic System Operating Instructions

The use and the maintenance of an Enviro-Septic System are relatively simple. In general, use of a reasonable amount of water in the residence and respecting the following rules will allow you use of your installation without problems for years to come.

In the following paragraphs, you will find the basic rules to follow to ensure proper functioning of your Enviro-Septic System. For more details on this topic, please consult the website of the MDDEFP and more specifically the Good Practice Guide for owners of wastewater treatment systems⁵. You will see that the following rules are essential to the proper functioning of any septic system, regardless of the technology used.

To simplify understanding, these rules are presented to you as things to do or not to do in each part of the house and outside around the house.

Wastewater Volume

Large quantities of water that leave the house and enter the Enviro-Septic System in a short period of time could have a negative impact on the effectiveness of the treatment and the infiltration of wastewater. Large quantities of water can cause agitation in the septic tank. A certain quantity of sludge or scum is likely to be put into suspension and be brought towards the Enviro-Septic system and the infiltration bed. The frequency of such events must be minimized.

You must ensure that the volume of wastewater entering the septic tank and flowing into the Enviro-Septic System is reasonable when compared to the total daily flow the system was designed for.

After the installation, if changes are made to the residence (ex. addition of a bedroom)⁶, please contact the designer of the Enviro-Septic System. Make sure that the septic system is inspected by a qualified person to determine that it has the necessary capacity to treat and infiltrate the new daily design flow of wastewater being generated.

⁵ Ministry of Sustainable Development, Environment, Wildlife and Parks, Good Practice Guide for owners of wastewater treatment systems - June 2011 <http://www.mddep.gouv.qc.ca/eau/eaux-usees/Guide-bonnes-pratiques-proprio-dispositifs.pdf>

⁶ Adding a bedroom, a business at home, a reception room, conversion of the house to a bed and breakfast, etc.

In the bathroom

Do:

- Immediately repair any leaking faucet or toilet.
- Use a reasonable quantity of toilet paper.

Do not :

- Use disinfectant in tablet (puck) form, whether it is placed in the basin or the tank.
 - Throw cigarettes, cigarette butts or medication in the toilet.
 - Throw paper towels, paper napkins or other personal hygiene products in the toilet.
-

In the kitchen

Do:

- Repair any leaking faucet.
- Use dish soap or dishwasher soap that is low in phosphate (0 to 5%).
- Use the necessary quantity of soap to do the work. Take note that the necessary quantity is often less than suggested by the manufacturer.

Do not :

- Use a food waste disposal unit in your sink that is connected to your septic installation.
 - Dispose of vegetables, meats, fat, oil, coffee beans, or other unassimilated products into the septic system.
-

For the laundry

Do:

- Use phosphate free detergent, preferably in liquid form. If it is not possible, use biodegradable powder detergent.
 - Use the necessary quantity of soap to do the work. Take note that the necessary quantity is often less than that suggested by the manufacturer.
 - Minimize, when possible, the volume of water used for the laundry according to the quantity of clothing to wash.
 - If possible, spread your loads of laundry throughout the week as recommended by MDDEFP for any septic installation⁷.
-

⁷ Ministry of Sustainable Development, Environment, Wildlife and Parks, Good Practice Guide for owners of wastewater treatment systems - June 2011 <http://www.mddep.gouv.qc.ca/eau/eaux-usees/Guide-bonnes-pratiques-proprio-dispositifs.pdf>

Elsewhere in and around the house

Do:

- Divert drainage and rain water away from the surface of the Advanced Enviro-Septic® System.

Do not :

- Discharge water softener backwash into your septic system.
- Discharge any water from swimming pool filters, spas or other appliances that discharge chlorinated water into your septic system.
- Let water from sump pumps, roof drains (gutters) and drainage pipes discharge into the septic system.
- Dispose of solvents, paints, antifreeze, engine oil, floor waxes, carpet cleaners, drain cleaner or other toxic or flammable products in the septic installation. This includes water used to wash brushes or rollers that were used with latex paint (latex paint contains elements that are harmful to the septic systems).
- Dispose of animal litter, tea bags, coffee grounds, egg shells, cigarette butts, paper towels, condoms, diapers or sanitary napkins in the septic installation.

Chemicals for septic installation

Your Enviro-Septic System does not require any starting chemical, cleaning or other additives. The bacteria that carry out the treatment are naturally present in raw domestic sewage. Any chemicals or additives added to the Enviro-Septic System could possibly kill these bacteria.

Ventilation

It is very important to ensure that good ventilation occurs so that the septic system functions correctly. The vent(s) installed at the ends of the septic system encourage this air circulation. It is important to make sure that the opening is not blocked and that air can circulate freely at all times. Air enters through the vent, circulates through the rows of pipes and the septic tank and travels through the plumbing of the house to exit through the roof vent.

The owner must be sure to have a roof vent and to keep it clear at all times. When a pumping station is used, a bypass pipe or an extra vent must be used to ensure proper ventilation of the system.

Heavy machinery and motorized vehicle traffic

No heavy machinery must be driven on a septic system, whether it is before, during or after its construction. This includes any motorized vehicle. The effectiveness of the drainage in the ground depends on the presence of a non-compacted natural soil that is not saturated with water. Heavy machinery or motorized vehicle traffic⁸ on the soil closes the natural pores of the soil which reduces its permeability and allows for pounding and the accumulation of water.

Vegetation

The surface of the septic system must be planted with grass. The grass must be cut regularly in order to encourage growth without the use of fertilizers. Vegetation cover contributes to the elimination of nitrogen and phosphorus.

It is important not to plant trees or other plants with invasive roots within the proximity of the septic installation (minimum distance 3 meters).

⁸ The Advanced Enviro-Septic[®] pipes installed according to manufacturer's recommendations can withstand the weight of a vehicle not exceeding the standard H10, if such a vehicle were to move above the treatment system. The occasional passage of a light vehicle such as a lawn tractor, is acceptable.

Enviro-Septic System Maintenance

Septic Tank Maintenance

The septic tank preceding the Enviro-Septic System must be pumped out regularly. Article 13 of the Q-2, r.22 regulation requires that it is pumped out every two years for normal residential use or every four years for seasonal applications. For more information on septic tank maintenance, verify the current regulation, or get in touch with the municipal authorities.

If the septic tank is not emptied regularly, an increasingly large amount of solids and grease in suspension will leave the septic tank and end up in the treatment system. The septic tank will no longer function properly and in time the performance of the Enviro-Septic System may be affected. This is why periodic emptying of the septic tank is necessary.

At all times, a professional using the proper equipment must carry out the pumping out of a septic tank

The owner is responsible to ensure his septic tank is pumped out according to local regulations. This work should always be done by a qualified person since it can be very dangerous to open a septic system without first taking the necessary precautions.

Note: It is the home owner's responsibility to make sure that at all times the septic tank lids are in their proper position and securely fastened. A lid that is not installed correctly can be harmful to the operation of the Enviro-Septic System.

Pre-filter (Septic tank effluent filter)

The effluent filter is a device normally used at the exit of the septic tank⁹. It is mandatory when a low pressure distribution system is used between the septic tank and the Advanced Enviro-Septic[®] pipes.

The effluent filter must be cleaned according to the maintenance and inspection procedures provided by the manufacturer.

Distribution box and flow equalizer

During normal use of your septic system the distribution box and the flow equalizers do not need adjustment. The initial levelling during installation and the self-levelling capability of the flow equalizers are generally enough to maintain an equal distribution of water among the rows of Advanced Enviro-Septic[®] pipe. However, a difference of more than 100 mm between the lowest and highest water level in the piezometers for two consecutive measurements indicates that the equalizers may need adjustment. A qualified person must then carry out the adjustment(s).

⁹ The effluent filter is necessary whenever the septic tank is followed by a low pressure distribution system. It is also mandatory in all BNQ certified septic tanks made since January 1st, 2009.

**Advanced
Enviro-Septic®
Pipe Rows**

Under normal use, the rows of Advanced Enviro-Septic® pipes do not require maintenance. It is normal to find fluctuation of the water level in the pipes. On the other hand, if the water level reaches 260 mm, a rejuvenation of the Enviro-Septic System must be considered. A qualified person¹⁰ must carry out this procedure.

Piezometers

No maintenance is required on the piezometers. However, the owner must ensure that the caps are in place. They must be accessible at all times to facilitate system inspection (they must not be buried).

**Sampling
device**

The Enviro-Septic System must have a sampling device. The sampling port, a pipe of 200 mm in diameter¹¹ closed off by a cap, must be accessible above ground. It is normally located beside the rows of pipes, near the extremity fed by water from the septic tank (see figures 5 and 6).

The owner must make sure that the sample port is always capped. It will be used on occasion by an inspection technician to analyze the performance of the Enviro-Septic System according to requirements in effect.

¹⁰ There may be costs related to this operation, if the problem is due to improper use of the system or due to a design or installation problem.

¹¹ The diameter of the sampling port constructed prior to 2009 is 100 mm.

Fig. 5 - Elements of the Enviro-Septic system installed in the ground

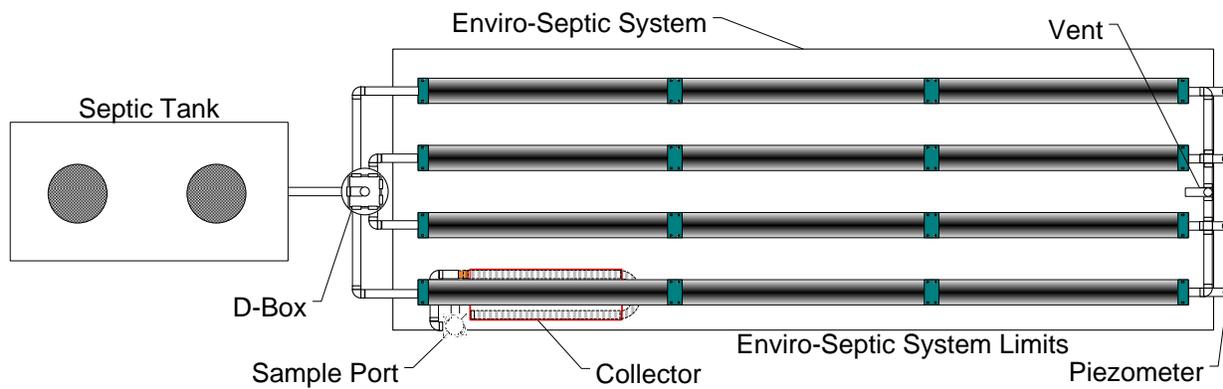
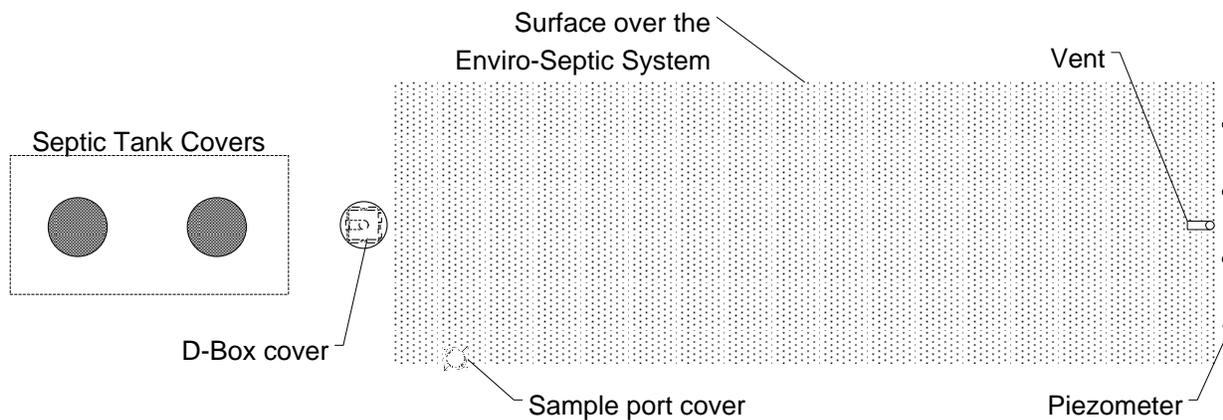


Fig. 6 - Elements of the Enviro-Septic system appearing above ground



Note: The position of the components may vary according to the layout configuration. The dotted lines represent the position of the septic tank. The position of the Enviro-Septic system is represented by the large rectangle. These two elements are not visible from the surface.

Only the vents, the septic tank, the sampling device and the piezometer covers are visible at the soil surface. The distribution box cover may be visible, depending on the year of system installation, mostly since 2009.

If a pumping station is used, its cover will also be visible above the soil surface.

Vent The vent does not require any maintenance. The owner must however ensure that nothing prevents the circulation of air. In the winter, the opening of the pipe must be sufficiently high so that snow does not block the passage of the air. There must also be a difference of at least 3 meters, at all times, between the entry vent situated at the extremity of the Enviro-Septic system and the exit vent usually located on the roof.

If a short vent pipe is used in the summer, it must be replaced by a long one in the winter so that the opening always remains above the snow level.

System Sand There is no maintenance to be done on the system sand during normal use of the Enviro-Septic System.

Pumping station or low pressure distribution system In certain cases, the use of a pumping station or a low-pressure distribution system may be required, due to the site constraints or because of certain water distribution needs. The owner is then responsible to comply with the manufacturer's scheduled maintenance requirements of this equipment.

Embankment surface above the Enviro-Septic System The surface located above the Enviro-Septic system must be covered with herbaceous vegetation. A slight slope must be given to the surface in order to help the drainage of rainwater towards the outside of the system. The grass must also be cut regularly. Finally, any depression that could be created with time must be filled in order to avoid any accumulation of water above the system and to prevent erosion.

Owner's Responsibilities

Owner's Responsibilities

The owner is responsible for:

- Using the Enviro-Septic System according to the instructions presented in the user guide.
- Pumping out the septic tank according to the regulations in effect.
- Recording the information for the pumping out of the septic tank and forwarding the information to DBO Expert Inc. when requested.
- Maintaining the effluent filter (if present), the pumping station, the pressure distribution system or the automatic wastewater distributing valve according to manufacturer's specifications and recording the information if this equipment is part of the system.
- Ensuring that the vent openings are clear of any obstacles. If a short pipe is used in the summer, replace it with a long one for winter.
- Providing access at all times to the Enviro-Septic system, the piezometer covers, the sampling device and the vents.
- Adhering to the requirements of the applicable rules and regulations, in particular with regards to the discharge standards of the system to the environment (Q-2, r.22).
- Periodically verifying the water levels in the piezometers (see Measuring the Water Levels in the Piezometers) or having it done by a qualified person.
- Having at all times a Follow-up Agreement in place with DBO Expert Inc. or one of its representatives **as required by the article 3.3 of the Q-2, r.22 regulation.**

Qualified person

The qualified person that performs the maintenance or the inspection of an Enviro-Septic System is a person who was trained and certified by DBO Expert Inc. to perform the tasks associated with the Enviro-Septic system.

DBO Expert Inc. trains these people to carry out the inspections of the system, perform adjustments to the equalizers and/or carry out the rejuvenating procedure.

To obtain the name of a qualified person in your area, contact our customer service department at 1-866-440-4975.

For maintenance on the pumping station and the low pressure distribution system, the owner must refer to the user guide specified by the manufacturer of these systems.

The pumping out of the septic tank must be performed by a company specializing in that field. Check with your municipality for the companies in your area that are qualified to do this work.

Measuring the Water Levels in the Piezometers

The procedure for measuring the water level takes place where the piezometers are located, at the extremity of the Enviro-Septic System.

Warning: Water present in the piezometers is wastewater. It is important to take the necessary precautions while taking the water level measurements. The person taking the measurement must wear protective gloves. The use of disposable protective gloves is recommended. In order to avoid possible contamination, avoid direct contact with wastewater.

Water level measuring sequence:

1. Remove the cap from the piezometer to be measured.
2. Insert a wooden stick or a meter stick (measuring instrument) into the piezometer so that it comes in contact with the water that can be present in the bottom of the piezometer. Normally, a wooden stick of one meter in length will be sufficient. If on the other hand your piezometers are longer, use a longer wooden stick. A string attached to the wooden stick can also be used in this case to lower and lift your measuring instrument in the piezometer.
3. By using a meter stick, determine the water level in the pipe by observing the height of the wet area. If the reading proves to be difficult, add some fine sand on the wet area before lowering it in the piezometer. Most of the sand will be removed from the area that will have soaked in the water and the reading will be easier.
4. Note the water level of the piezometer.
5. Replace the cap on the piezometer
6. Dry the wet area on the wooden stick or meter stick using disposable rags.
7. Repeat all the steps for each piezometer.
8. Clean the meter stick, the wooden stick or the gloves if they are reusable. Place the disposable gloves and rags in a plastic bag and properly secure the bag.
9. Record the results obtained in the table provided (see annex C).

Diagram of water level measurement

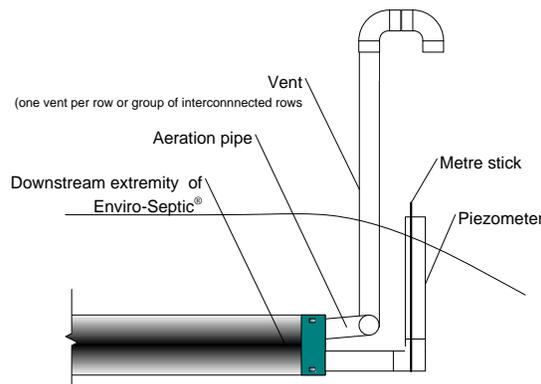


Fig. 7

« The Enviro-Septic System, the system that forgives! »

What to do if water level is high

It is normal to find a certain water level in the rows of Advanced Enviro-Septic® pipes. But, it is not normal to find the pipes filled with water to the point of blocking the passage of air. Such a situation could occur, if adverse conditions are present (i.e. malfunction of the residence plumbing, obstruction of the air passage, excess of surface water flowing to the system, etc.). A high level of water is an abnormal situation. Fortunately, the Enviro-Septic System has the ability to be regenerated. Thus, if this situation arises, it is possible to **recreate** virtually the same conditions of wastewater treatment your Enviro-Septic System had when initially installed.

If the level of water in the piezometers exceeds 260 mm (10.5 inches) please contact DBO Expert Inc. or your inspection technician who will inform you of what needs to be done. First, the cause of the problem affecting the system will need to be corrected. Subsequently, the technician will suggest one of the following rejuvenation procedures¹².

There are three rejuvenating procedures possible.

1. The natural rejuvenation that occurs following a reduction of use of the septic system for a period of a few days or weeks (e.g. during a vacation).
2. The forced rejuvenation that consists of pumping out the septic tank and removing water from the Advanced Enviro-Septic® pipes at the same time.
3. The forced rejuvenation with cleaning that consists of draining the septic tank and removing the water and the inorganic matter that could have accumulated in the pipes.

A qualified person must carry out the forced rejuvenation procedures.

Occasionally, at the time of a forced rejuvenation, the septic tank is not filled with clear water as in the case of a normal draining. This procedure must then be made at the time when the groundwater is low and that there is no danger that hydrostatic pressure is exerted on the septic tank.

As a preventive measure, it is recommended to check the water level in the piezometers a few days before performing a regular pumping out of the septic tank (see Measuring the Water Levels in the Piezometers). If the water level is too high, communicate with DBO Expert customer service. The pumping out of the septic tank could be done at the same time a forced regeneration procedure occurs.

¹² Under similar conditions, but for another technology than Enviro-Septic, system components or even the entire system must be replaced. In the case of Enviro-Septic, the rejuvenation procedures make it possible to almost return the system to its initial state. This is why we say the Enviro-Septic is a system that forgives!

Appendix A- Presby Twenty Year Limited Warranty



PRESBY ENVIRONMENTAL, INC. *INNOVATIVE SEPTIC TECHNOLOGIES*

This Twenty Year Limited Manufacturer's Warranty is provided by the Manufacturer, Presby Environmental, Inc., a New Hampshire corporation having a mailing address of 143 Airport Rd., Whitefield, New Hampshire, 03598 (hereinafter called "Presby"). This Warranty applies only to Presby Products sold by or through its duly authorized distributor, DBO Expert, inc., a Quebec corporation having a mailing address of 501, chemin Giroux, Sherbrooke (Québec) J1C 0J8 (hereinafter called the "Distributor"). "Presby Products" means Presby's Enviro-Septic[®] leaching systems and Presby Maze[®] with the required accessories (couplings, offset adaptor).

Warranty: Presby warrants that Presby Products are free from defect for twenty years from the date of installation but in no event more than twenty-one years from the date of manufacture. Product Defects means defects or damage to the Products caused by or occurring during the manufacturing process. This Warranty does not cover or apply to damages to the Products caused by or resulting from transit or from accident, misuse, abuse, neglect, storage, installation, repair, maintenance or from use other than normal and ordinary use of the Products. This Warranty does not apply to damages to the Products caused by or resulting from failure to install or use the Products in accordance with distributor's instructions which have been approved by Presby or failure to properly inspect and maintain the Products.

Warranty Registration, Claim Process and Remedy: In order to enforce this Warranty, the Follow-up Agreement must be completed and returned to the distributor within thirty days of purchase of the Products. Any claim under the Warranty must be in writing and received by the distributor within thirty days of the date when the facts giving rise to such claim under this Warranty become known or are otherwise discovered. The distributor must be provided with an opportunity to inspect the Products as installed. Failure to comply with these requirements renders the Warranty null and void. If, during the Warranty period, the distributor and Presby find and determine that defects in Products exist, then the distributor and Presby's sole and exclusive obligation is to either repair the Products or provide replacement Products. The distributor and Presby, in their discretion, shall determine whether to repair the Products or provide replacement Products. The distributor and Presby shall have no obligation to remove any defective Products or to install any replacement Products. The distributor and Presby shall not be liable or responsible for any other damages or claims arising from or relating to defective Products, including but not limited to claims for general, consequential, or incidental damages, lost profits, or attorney fees.

Disclaimer: The distributor and Presby otherwise make no express warranty concerning the Products and the distributor and Presby disclaims any and all warranties, express or implied. Except as stated herein, there are no warranties express or implied, and the distributor and Presby do not warrant that the goods are merchantable or fit for any particular purpose. Any claim or controversy relating to this Warranty, or to matters of place of contracting, interpretation, performance or breach thereof, shall be brought in and adjudged in accordance with the applicable laws of state of New Hampshire.

Appendix B - Information Specific to Your Treatment System

Information on your Enviro-Septic System

System number¹³ _____ Installation date: _____

Designer /Engineer: _____

Installer / Contractor: _____

Municipal inspector: _____

Treatment class : II–Secondary III–Secondary avanced

Number of rows of pipes: _____

Hydraulic capacity (L/d): _____

Number of 3,05 m pipes per row: _____

Water Distribution

- Distribution box
- Pumping station
- Wastewater distributing valve
- Low pressure distribution system

Septic tank capacity: _____

Notes

¹³ Number on the system tag in the lid of the sampling port and starting with DBO- (see Figure 1 on page 5).

