

A D V A N C E D

ENVIROSEPTIC<sup>MD</sup>



## Ontario User Guide

# Enviro-Septic<sup>®</sup> System

ESP-Ontario Model

Residential Application  
Province of Ontario

BMEC Authorization #: 13-03-365

July 11<sup>th</sup> 2013

Make-Way Environmental Technologies Inc.

### Important Security instructions

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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 (CO<sub>2</sub>), methane gas (CH<sub>4</sub>) and sulphuric hydrogen (H<sub>2</sub>S). The H<sub>2</sub>S 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.

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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.

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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. (ex. 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.

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Advanced Enviro-Septic<sup>®</sup> comes with a manufacturer's limited warranty. The warranty details are presented in Appendix B.

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**Advanced Enviro-Septic<sup>®</sup> 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<sup>®</sup> is a trademark of Presby Environmental, Inc.  
Advanced Enviro-Septic<sup>®</sup> is a trademark of Presby Environmental, Inc.  
Bio-Accelerator<sup>®</sup> is a trademark of Presby Environmental, Inc.**

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## Introduction

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Congratulations! You have chosen the Enviro-Septic<sup>®</sup> System for your septic installation. This system was developed to effectively treat wastewater from the septic tank of your home. However, certain 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.

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### 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<sup>®</sup> 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 their responsibility to respect the rules and regulations in effect especially the standards for discharge into the environment.

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## Your Enviro-Septic<sup>®</sup> System

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### Designation of the Enviro-Septic<sup>®</sup> System

**Name:** Enviro-Septic<sup>®</sup> System

**Model:** ESP-TS

**Class and treatment type:** The Enviro-Septic<sup>®</sup> system meets all the requirements of the NQ 3680-910<sup>1</sup> standard for class II – secondary treatment water treatment systems in Quebec and meets the requirements for Tertiary Quality Criteria in Ontario.

**Application Domain:** Residential Wastewater (sewage).

The system cannot be used to treat wastewater to make it drinkable. It is made to treat residential wastewater to an acceptable level for it to be reintroduced into the environment according to applicable standards.

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<sup>1</sup> 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<sup>®</sup> 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<sup>®</sup> system must be preceded by a septic tank with an effluent filter and a wastewater distribution device. The treated water is drained directly into the soil beneath the treatment system.

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### 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 odor in the house, around the septic system or emanating from sources of drinking water,
- abnormally wet soil, presence of persistent puddles or odors in the area of the septic tank or the Enviro-Septic<sup>®</sup> 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<sup>®</sup> system installation,
- flooding in the area where the Enviro-Septic<sup>®</sup> system is installed,
- erosion of the land fill on or around the Enviro-Septic<sup>®</sup> 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 inspection technician or the customer service of Make-Way Environmental Technologies Inc. 1-866-625-3929. Please have available the information from Appendix B – *Information Specific to Your Treatment System* – of the present guide.

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### Customer service and Technical support information

Please contact us if you need further information.

Telephone: 1-866-MAKE-WAY (625-3929) or (519) 709-0681

Fax: (519)235-0570

Email: [itech@makeway.ca](mailto:itech@makeway.ca)

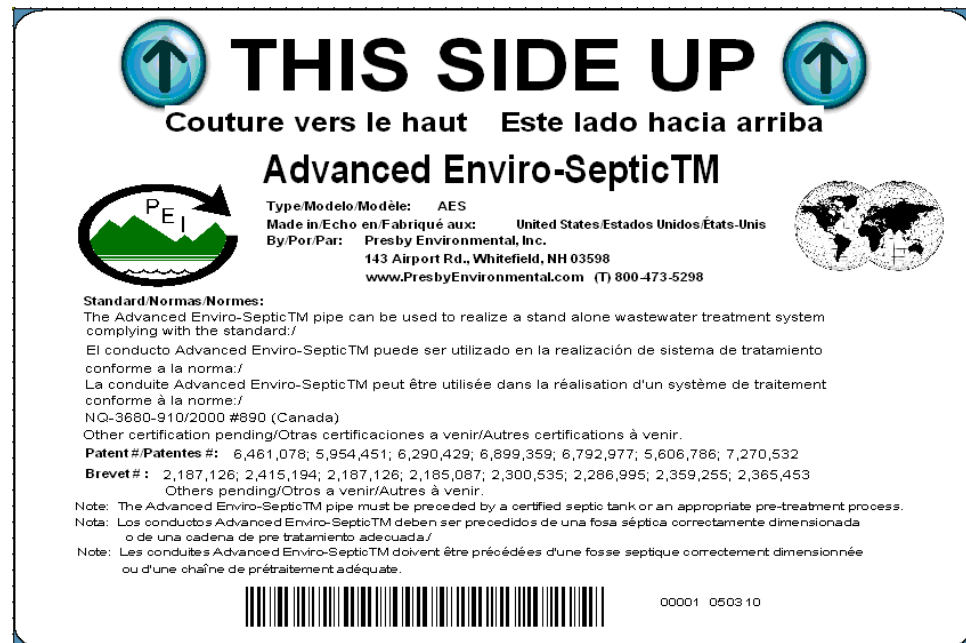
Internet site: [www.makeway.ca](http://www.makeway.ca)

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**Enviro-Septic<sup>®</sup>  
Pipe  
Descriptive Tag**

Each of the Advanced Enviro-Septic<sup>®</sup> pipes used in the installation of your Enviro-Septic<sup>®</sup> system is attached with a descriptive tag similar to the one in Figure 1.

This tag is sewn onto the geotextile over the pipe. It must be present on every Enviro-Septic<sup>®</sup> Pipe when installed. Do not remove it as it is meant to be buried.



**Fig. 1 – Enviro-Septic<sup>®</sup> Pipe Descriptive Tag**

**System Tag**

Each Enviro-Septic<sup>®</sup> system must be identified with a specific system tag. This tag, similar to the one shown in figure 2, will be installed in the sampling device access port. The number shown at the bottom of the tag will help to identify your system.



<b>ENVIRO-SEPTIC</b> SYSTEM	Distributeur autorisé au Canada / Canadian Authorized Distributor:	DBO Expert inc. 1-866-440-4975		
	Distributeur en Ontario Ontario Distributor:	Makeway Environment inc. 1-866-Makeway (1-866-625-3929)		
	Modèle / Type :	ESP-Ontario Conduites / Pipes: ESP-TS Canada		
	Fabriqué aux / Made in :	États-Unis / USA		
	Par / by :	Presby Environmental, Inc., 143 Airport Road, Whitefield, NH, 03598		
	Commission d'évaluation des matériaux de construction / Building Materials Evaluation Commission BMEC Authorization Number :	A2005-18		
	Date d'installation / Installation date	<input type="text"/>		
	Capacité hydraulique du système/ Hydraulic Capacity of the system	<input type="text"/>		
	Note : Le système de traitement Enviro-Septic doit être précédé d'une fosse septique certifiée ou d'un traitement primaire adéquat / The Enviro-Septic system must be preceded by a certified septic tank or an appropriate primary treatment.			
	No. de System / System number:	<input type="text"/>		

**Fig. 2 –Enviro-Septic® System Tag**

### Certified Designers and Authorized Installers

The Province of Ontario requires that all designers and installers of septic systems must be certified by the Province. Designers and Installers of the Enviro-Septic® System must also be trained on Enviro-Septic products by the manufacturer or manufacturer's representative.

All Enviro-Septic® installations must be done by an installer authorized by Make-Way Environmental Technologies Inc. (Make-Way is authorized by DBO Expert Inc to train and accredit installers). Authorization is obtained by attending a training session or by doing the first installation under supervision of Make-Way Environmental Technologies Inc.

### Enviro-Septic® System Capacity

The capacity of your Enviro-Septic® system depends on the configuration designed and installed on site.

Initially, Each section of Enviro-Septic® pipe (ESP) has the capacity to treat 90 L of wastewater per day or 30 litres per linear meter of pipe. Therefore, the formula to determine the basic capacity of your Enviro-Septic® system is:

$$90 \times \text{Number of Enviro-Septic® pipes installed.}$$

This being said, for some configurations, the capacity of the underlying soil to evacuate the treated wastewater may be lower than the capacity of the pipes installed. Therefore, it is important to verify with the designer the actual capacity to treat and evacuate of the system installed.

That capacity will also appear on the system tag.

**Residential Wastewater**

Your system was design to treat domestic wastewater. Table 2 indicates the normal characteristics of raw domestic sewage. The water entering the Enviro-Septic system needs to be within the range of the parameters shown for the septic tank effluent.

**Table 2**

Parameters	Units	Raw Sewage	Septic Tank Effluent
TSS	Mg/L	237-600	50-90
CBOD <sub>5</sub>	Mg/L	210-530	140-200
Fecal Coliform	UFC/100ml	10 <sup>6</sup> -10 <sup>10</sup>	10 <sup>3</sup> - 5 ×10 <sup>6</sup>

Reference : Tchobanoglous and Burton (1991)

**Warranty certificate**

Enviro-Septic<sup>®</sup> comes with a manufacturer’s limited warranty. The warranty details are presented in Appendix A.

## How does the Enviro-Septic<sup>®</sup> system works?

The Enviro-Septic<sup>®</sup> system is a passive technology which facilitates the proliferation of the bacteria responsible for wastewater treatment. It is comprised mainly of two inseparable components: the rows of Enviro-Septic<sup>®</sup> pipes and a layer of system sand.

The Enviro-Septic<sup>®</sup> system must be preceded by a septic tank with an effluent filter and a distribution box (or another method of distribution).

The system must be installed according to the Ontario Design and Installation Manual and in accordance with the Building Materials Evaluation Commission (BMEC) Authorization A2005-18 and Part 8 of the Ontario Building Code (OBC).

**Treatment Process of the Enviro-Septic<sup>®</sup> System**

The rows of Advanced Enviro-Septic<sup>®</sup> pipe and system sand permit the treatment and distribution of wastewater on the surface of the receiving soil.

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 two layers of synthetic media covering the pipes. These membranes facilitate the fixation of the microbic cultures which support wastewater treatment as well as longitudinal distribution.

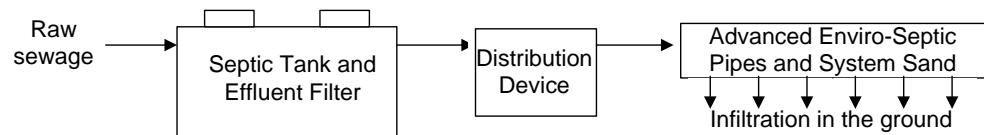
The layer of sand continues the treatment process and helps in dispersing the water before it infiltrates into the natural soil. In this way, the Enviro-Septic<sup>®</sup> system integrates both functions of treatment and evacuation.



## Enviro-Septic<sup>®</sup> Chain of Treatment

There are five (5) main components in the Enviro-Septic<sup>®</sup> chain of treatment. They are:

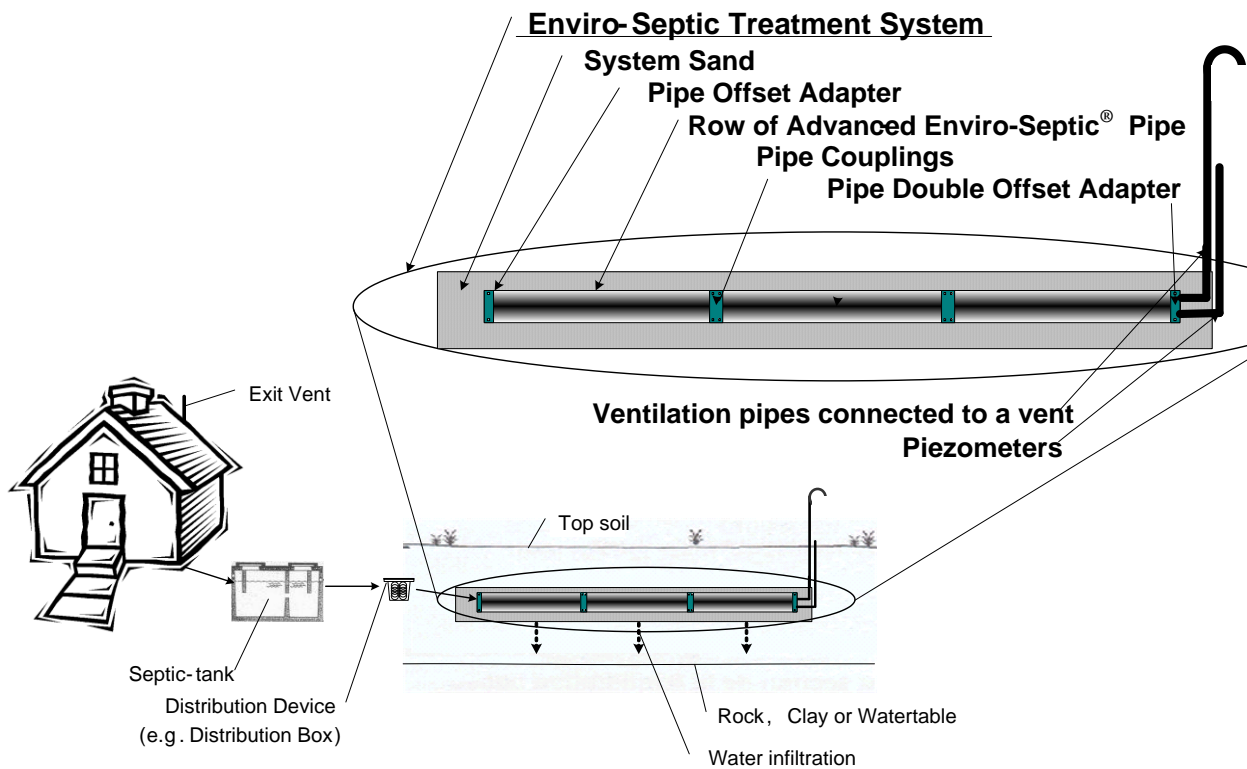
- Septic Tank
- Effluent filter.
- Distribution device
- Advanced Enviro-Septic<sup>®</sup> pipe and
- Enviro-Septic<sup>®</sup> system sand.



**Fig. 3**–Enviro-Septic<sup>®</sup> chain of treatment

## Diagram of the Enviro-Septic<sup>®</sup> System

The following diagram presents the Enviro-Septic<sup>®</sup> system



**Fig. 4**–Enviro-Septic<sup>®</sup> system

### Enviro-Septic<sup>®</sup> System Components

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Your septic system includes several components. All of these components are parts of the treatment process of your installation. The following table 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.

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<b>Enviro-Septic<sup>®</sup> System Components</b>				
<b>Component of the septic system</b>	<b>Function</b>	<b>Follow-up needed</b>	<b>Frequency</b>	<b>Responsible for follow-up</b>
Septic tank	Primary wastewater treatment	Periodic emptying	According to standards and regulations in effect	Owner is responsible to have work done by qualified personnel
Septic Tank Effluent Filter	Retention of solids that are 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	Distributes the septic tank effluent to the rows of Advanced Enviro-Septic <sup>®</sup>	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 <sup>®</sup> Pipe.	Distribute and treat wastewater	See piezometers		
Piezometers	To check the water level of each row of Enviro-Septic <sup>®</sup> pipe	Measure water levels	Once or twice a year as preventative measure, before emptying septic tank	Owner or qualified person
Sampling device	To verify the treatment performance of the Enviro-Septic <sup>®</sup> System	Ensure that there is access to this device	1 <sup>st</sup> sample taken within 12 months after system is put into use. Thereafter, once every year. (BMEC)	Qualified person
Vent	To allow the circulation of air in the Enviro-Septic <sup>®</sup> 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)	Lift septic tank effluent to the Enviro-Septic <sup>®</sup> System	According to supplier's specifications		

## Operating the Enviro-Septic<sup>®</sup> System

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<b>Initial Use</b>	<p>At the time of installation the septic tank must be filled with clear water.</p> <p>If a pumping station is used, the installer 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<sup>®</sup> system is now ready for use.</p>
<b>Intermittent Use or Prolonged Absences</b>	<p>The Enviro-Septic<sup>®</sup> 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>

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## Enviro-Septic<sup>®</sup> System Operating Instructions

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The use and the maintenance of an Enviro-Septic<sup>®</sup> System are relatively simple. In the sections below you will find the basic rules to follow to ensure the proper operation of your Enviro-Septic<sup>®</sup> System. The compliance to these rules is essential to the correct operation of any septic system.

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.

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<b>Wastewater Volume</b>	<p>Large quantities of water that leave the house and enter the Enviro-Septic<sup>®</sup> 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 susceptible to be put into suspension and be brought towards the System and the infiltration bed. The frequency of such an event must be minimized.</p> <p>You must ensure that the volume of wastewater entering the Enviro-Septic<sup>®</sup> System is reasonable when compared to the total daily flow the system was designed for.</p> <p>After the installation, if changes are made to the residence (ex. addition of a bedroom)<sup>2</sup>, please contact the designer of the Enviro-Septic<sup>®</sup> 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.</p>
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<sup>2</sup> 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, citrus products 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 in the Pipeline issue of Fall 2004, West Virginia University<sup>3</sup>.
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<sup>3</sup> This document can be found at the following Web Site:  
[http://www.nesc.wvu.edu/pdf/WW/publications/pipline/PL\\_FA04.pdf](http://www.nesc.wvu.edu/pdf/WW/publications/pipline/PL_FA04.pdf)

### Elsewhere in and Around the House

#### Do:

- divert drainage and rain water away from the surface of the Enviro-Septic<sup>®</sup> system.

#### Do not :

- discharge water softener backwash into your septic system,
  - discharge any water from swimming pool filters, spas or other appliance 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 septic system),
  - 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<sup>®</sup> 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<sup>®</sup> System could possibly kill these bacteria.

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### Aeration

It is very important to ensure good aeration occurs so that the septic system functions correctly. The vent (or vents) installed at the ends of the septic system encourages this aeration. 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.

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**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 unsaturated with water. Heavy machinery or motorized vehicle traffic<sup>4</sup> on the soil closes the natural pores of the soil which reduces its permeability and allows for pounding and the accumulation of water.

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**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 2 meters).

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<sup>4</sup> The Advanced Enviro-Septic<sup>®</sup> 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<sup>®</sup> System Maintenance

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#### Septic Tank Maintenance

The septic tank preceding the Enviro-Septic System must be pumped out regularly according to municipal regulations. Generally it should be pumped out every two years for residential use or every three to five 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.

The liquids and solids will be removed when pumping out the septic tank. The septic tank is then filled with water.

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<sup>®</sup> System. Moreover, entering a septic tank can be very dangerous. Only a qualified person may perform this work.

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#### Pre-filter (Septic Tank Effluent Filter)

The effluent filter is a device normally used at the exit of the septic tank. It is now mandatory for all septic tanks.

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

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#### 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<sup>®</sup> 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).

### Advanced Enviro-Septic<sup>®</sup> Pipe Rows

Under normal use, the rows of Advanced Enviro-Septic<sup>®</sup> pipe 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(s) reaches 260 mm, a rejuvenation of the Enviro-Septic<sup>®</sup> System must be considered. A qualified person<sup>5</sup> must carry out this procedure.

### Piezometers

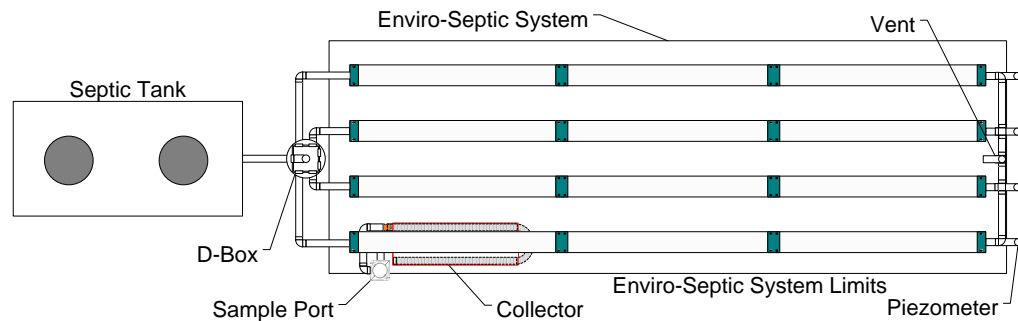
No maintenance is required on the piezometers. However, the owner must ensure that the caps are in place. They must be accessible at all times to facilitate system inspection (they must not be buried).

### Sampling Device

The Enviro-Septic System must have a sampling device. The sampling port, a pipe of 200 mm in diameter<sup>6</sup> 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.

### Enviro-Septic<sup>®</sup> System Components Installed in Ground

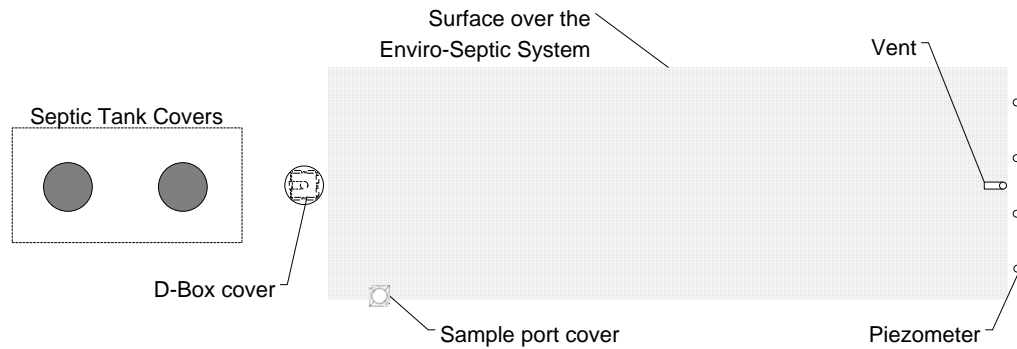


**Fig. 5**

<sup>5</sup> 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.

<sup>6</sup> The diameter of the sampling port constructed prior to 2009 is 100 mm.

**Enviro-Septic<sup>®</sup>  
System  
Components  
Visible**



**Fig. 6**

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 low vent situated at the extremity of the Enviro-Septic<sup>®</sup> system and the high vent usually located on the roof.

**System Sand**

There is no maintenance to be done on the system sand during normal use of the Enviro-Septic<sup>®</sup> System.

**Pumping  
Station or Low  
Pressure  
Distribution  
System**

In certain cases, the site constraints require the use of a pumping station or a low-pressure distribution system to evenly distribute the water. The owner is then responsible to comply with the manufacturer's schedule maintenance requirements of this equipment.

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**Surface Above  
the Enviro-  
Septic<sup>®</sup> System**

The surface located above the Enviro-Septic<sup>®</sup> system must be covered with herbaceous vegetation. A light 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.

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### Owner's Responsibilities

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#### Owner's Responsibilities

The owner is responsible for:

- using the Enviro-Septic<sup>®</sup> 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 Make-Way Environmental Technologies Inc. when requested.
- maintaining the effluent filter, 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 obstacle.
- providing access at all times to the Enviro-Septic<sup>®</sup> system, the piezometer covers, the sampling device, the Distribution Box 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.
- having at all times a service/maintenance agreement in place with Make-Way Environmental Technologies Inc. or one of its representatives whenever regulations so oblige.
- periodically verifying the water levels in the piezometers (see Measuring the Water Levels in the Piezometers) or having it done by a qualified person.

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#### Qualified Person

The qualified person that performs the maintenance or the inspection of an Enviro-Septic<sup>®</sup> System is a person who was trained and certified by Make-Way Environmental Technologies Inc. to perform the tasks associated with the Enviro-Septic<sup>®</sup> system. Make-Way Environmental Technologies 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-MAKE-WAY (625-3929).

For maintenance on the pumping station and the 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

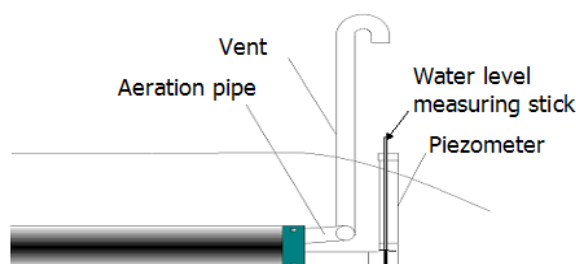
The procedure for measuring the water level takes place where the piezometers are located, at the extremity of the Enviro-Septic<sup>®</sup> System.

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 wood 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 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 with your inspection contract.

### Diagram of Water Level Measurement



**Fig. 7**

### What to Do if Water Level is High

It is normal to find some level of water in the rows of Advanced Enviro-Septic<sup>®</sup>. But it is normal that the pipes are filled with water to the point of blocking the passage of air. Such a situation could occur if adverse conditions arise (examples: broken plumbing, obstruction of the air passage, unwanted water reaching the system, etc.). A high level of water represents an unusual case. Fortunately, the Enviro-Septic<sup>®</sup> System has the capacity to rejuvenate itself. This makes it possible to practically recreate the original conditions of the water treatment of the Enviro-Septic<sup>®</sup> system.

If the level of water in the piezometers exceeds 260 mm (10.5 inches) please contact Make-Way Environmental Technologies Inc. or your inspection technician who will inform you of what needs to be done. But first, the cause of malfunction affecting the system will need to be corrected. Then, as a general rule, we will suggest one of the following rejuvenating procedures.<sup>7</sup>

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 Enviro-Septic<sup>®</sup> pipes at the same time.
3. The forced rejuvenation with cleaning that consists of draining the septic tank and removing water and the inorganic matter that could have accumulated in the pipes over the years.

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. If the water level is too high, the pumping out of the septic tank could be done at the same time a forced regeneration procedure occurs.**

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<sup>7</sup> Under similar conditions, but for a different technology than Enviro-Septic, system components or even the entire system must be replaced. In the case of Enviro-Septic, the rejuvenation procedure makes it possible to bring the system back to its initial state. This is why it is said that the Enviro-Septic system forgives.



### Appendix B - Presby Twenty Year Limited Warranty

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The limited warranty on Enviro-Septic<sup>®</sup> pipes is provided by the manufacturer of the product, Presby Environmental Inc. through its duly authorized distributor, DBO Expert Inc.

It is presented in the next two pages.

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**PRESBY ENVIRONMENTAL, INC.**  
INNOVATIVE SEPTIC TECHNOLOGIES



## **Presby Twenty Year Limited Warranty**

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<sup>®</sup> leaching systems and Presby Maze<sup>®</sup> 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.



DBO Expert inc. 501, Chemin Giroux, Sherbrooke (Québec) J1C 0J8  
Tél. : 1-866-440-4975 (819) 562-4975 Téléc. : (819) 846-2135 [www.dboexpert.com](http://www.dboexpert.com)



## **Certificat de Garantie limitée de 20 ans**

La présente garantie limitée de 20 ans est offerte par le manufacturier Presby Environmental Inc., une corporation du New Hampshire établie à l'adresse suivante : 143 Airport Rd., Whitefield, New Hampshire, 03598 (ci-après appelée « Presby »). Cette garantie s'applique uniquement aux Produits de Presby vendus directement par son distributeur autorisé DBO Expert inc. ou par l'entremise de celui-ci, dont l'adresse postale est le 501, chemin Giroux, Sherbrooke (Québec) J1C 0J8 (ci-après appelée « le distributeur »). Les « Produits de Presby » comprennent le système d'épandage souterrain Enviro-Septic<sup>MD</sup> et le Maze de Presby, ainsi que leurs accessoires (manchons, adaptateurs décentrés).

**Garantie :** Presby garantit les Produits Presby contre tout défaut de fabrication pour une période de 20 ans à compter de leur date d'installation, mais en aucun temps pour une période de plus de 21 ans à compter de leur date de fabrication. Un défaut de fabrication signifie une imperfection ou un bris affectant les Produits, causé par, ou survenu durant le processus de fabrication des Produits. Cette Garantie ne couvre pas les dommages aux Produits causés par, ou résultant du transport, d'un accident, d'un mauvais usage, d'un usage abusif, de la négligence, de l'entreposage, de l'installation, de la réparation, de l'entretien ou d'un usage autre que l'usage ordinaire et normal des Produits. Cette Garantie ne s'applique pas aux dommages aux Produits causés par, ou résultant d'un défaut d'installer ou d'utiliser les Produits en conformité avec les instructions du distributeur qui sont approuvées par Presby, ou le défaut d'inspecter et d'entretenir avec soin les Produits.

**Enregistrement de la Garantie, procédure de réclamation et correctif :** Afin de donner effet à cette Garantie, le Contrat de suivi doit être complété et retourné chez le distributeur dans les trente (30) jours suivant l'achat des Produits. Toute réclamation aux termes de la Garantie doit être faite par écrit et transmise au distributeur dans les trente (30) jours suivant la connaissance des faits donnant lieu à une telle réclamation. Le distributeur devra avoir l'opportunité d'inspecter les Produits, tels qu'ils auront été installés et devra avoir accès à tous les registres et à toutes informations concernant la manipulation, l'entreposage et l'installation des Produits. Le défaut de respecter l'une ou l'autre des exigences prévues ci-avant aura pour effet de rendre la Garantie nulle et sans effet. Si durant la période de Garantie, le distributeur et Presby en viennent à la conclusion qu'il existe effectivement un défaut affectant les Produits, la seule et unique obligation du distributeur et de Presby sera, et ce, à leur discrétion soit de réparer les Produits ou de fournir des Produits de remplacement. Le distributeur et Presby n'ont pas l'obligation d'enlever les Produits défectueux ou d'installer les Produits de remplacement. Le distributeur et Presby ne seront pas responsables pour tout autre dommage ou réclamation relié aux Produits défectueux, incluant, notamment, mais non limitativement, toute réclamation pour des dommages directs ou incidents, pour perte de profits ou à titre de frais légaux.

**Exclusion :** La Garantie conférée par le distributeur et Presby aux termes des présentes exclut toute autre garantie, expresse ou implicite, incluant, notamment, mais non limitativement, toute garantie de qualité ou d'aptitude pour des fins particulières. L'application, l'interprétation et tout litige découlant de la présente Garantie ou de tout contrat relié à la présente Garantie seront régis par les lois applicables à l'État du New Hampshire.