



## WSB® clean: Owner's Manual

**Models:**      WSB 400      WSB 1250  
                     WSB 500      WSB 1500  
                     WSB 600      WSB 1600  
                     WSB 750      WSB 1800  
                     WSB 1000



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Dear Customer:

Congratulations on your purchase of a WSB® clean wastewater treatment system from RH2O® North America Inc. This document contains important guidelines to follow for the use of your WSB® system. Please take a moment to read it carefully in order to ensure the safe and proper operation of your wastewater treatment system.

If you have any questions after reading this document or if you need any further information, please do not hesitate to call a customer service representative at (519) 648-3475 or visit our website at: [www.rh2o.com](http://www.rh2o.com)

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### WARNING: WHAT TO DO IF YOU HAVE AN ALARM?

Your WSB® clean system comes equipped with an audible and visual alarm system that is installed at your residence. This alarm will indicate any problem with the system. If the alarm emits an audible noise, please contact RH2O immediately at (519) 648-3475.

In the case of the following, please contact your septic installer:

- If toilets or other water fixtures fail to drain or overflow into the house
- Abnormal odors inside or around the house
- Effluent or sewage appearing at the surface near your treatment system
- Your residence or yard is flooded



Electrical cables and plastic piping are buried close to your treatment system. Please contact your installation contractor or RH2O North America prior to any digging or excavation work in the area surrounding your treatment system. Failure to do so may result in electrical shock causing death or serious bodily injury in addition to expenses to repair any damaged pipes/electrical damage.

## 1 SAFETY INFORMATION

Please read and follow the precautions listed below, as well as those found throughout the Owner's Manual. If you have any questions regarding the safety or operation of your WSB clean wastewater treatment system, please contact RH2O.

→ **DANGER:** Always turn off the power to the system before servicing any components. Failure to do so may result in electrical shock causing serious bodily injury or death. All work must conform to local electrical, plumbing and building codes.

→ **DANGER:** Electrical equipment in flooded areas presents an electrical hazard. Do not enter a flooded area. Entering a flooded area may result in electrical shock causing death or serious bodily injury.



If contact with wastewater occurs, please remove any contaminated clothing and thoroughly wash all body areas and clothing exposed to wastewater with soap and water. To minimize any risk of illness, consult a physician.



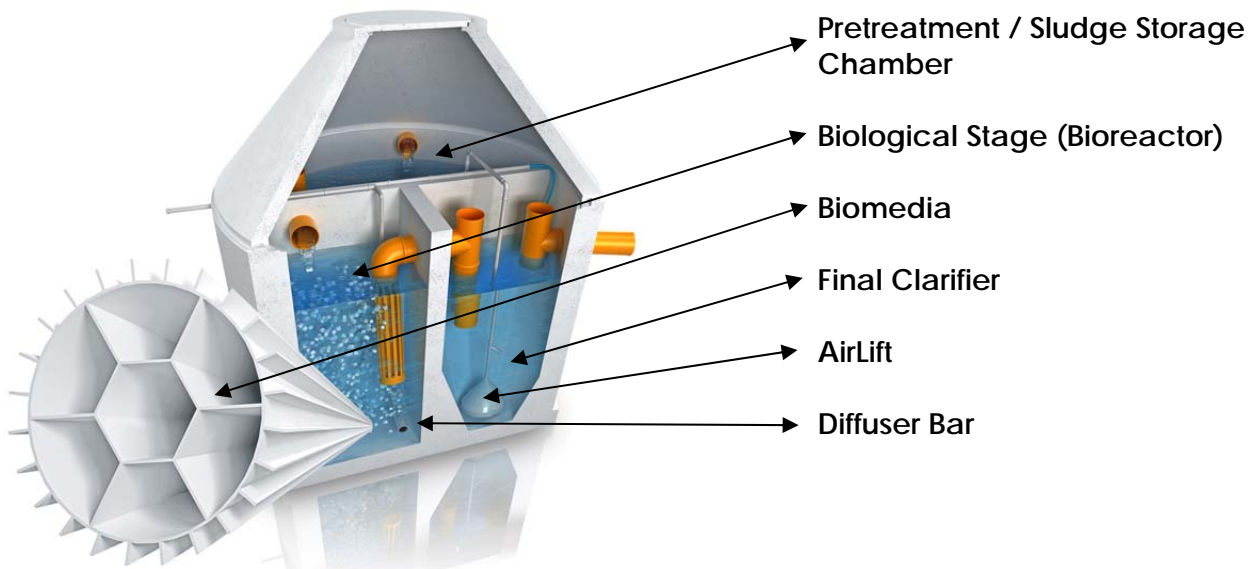
DO NOT attempt to service components of the wastewater treatment system yourself. Only authorized service personnel are to remove access covers on the WSB® system. Removal by unauthorized personnel may result in death or bodily injury from potentially hazardous gases and waste matter. Please ensure easy access to covers at all times for inspection and/or emergency purposes.



The use of your system when the air blower is not functioning can result in serious problems (i.e. clogging of your disposal bed/abnormal smells) and/or cancellation of your warranty.

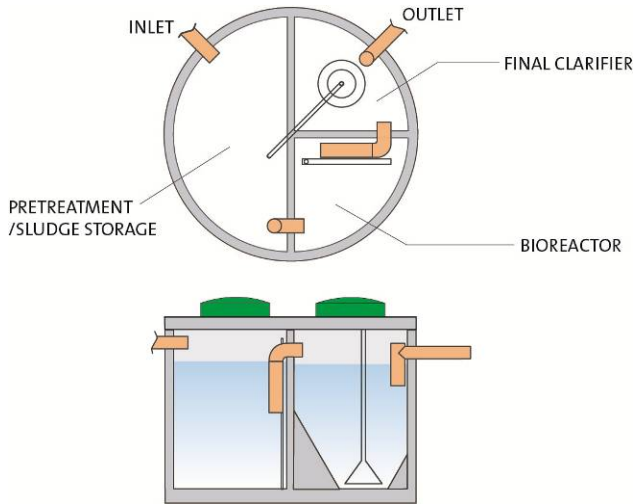
## 2 ABOUT THE WSB® CLEAN SYSTEM

WSB® Clean is a fully biological wastewater treatment plant designed to treat domestic wastewater. Incoming wastewater travels by gravity through the pretreatment tank where coarse particles settle and are stored here along with return sludge from the final clarifier. Preprocessed wastewater is now fed into the biological stage which contains the specially designed plastic carrier media. Microorganisms settle on the media and consume the organic material in the wastewater. Oxygen is needed for the biological cleaning process and is supplied by an air blower and distributed by fine bubble diffusers. The final clarifier consists of a cone or sloped area in order to collect and transfer any secondary sludge back to the sludge storage. From the clarifier, the biologically cleaned wastewater is ready to be discharged back into the environment. Depending on the type of disposal bed, you may have a pump tank to pressurize the treated effluent or it could flow by gravity. Check with your installing contractor or RH2O for more information regarding what type of disposal bed you have for your system.

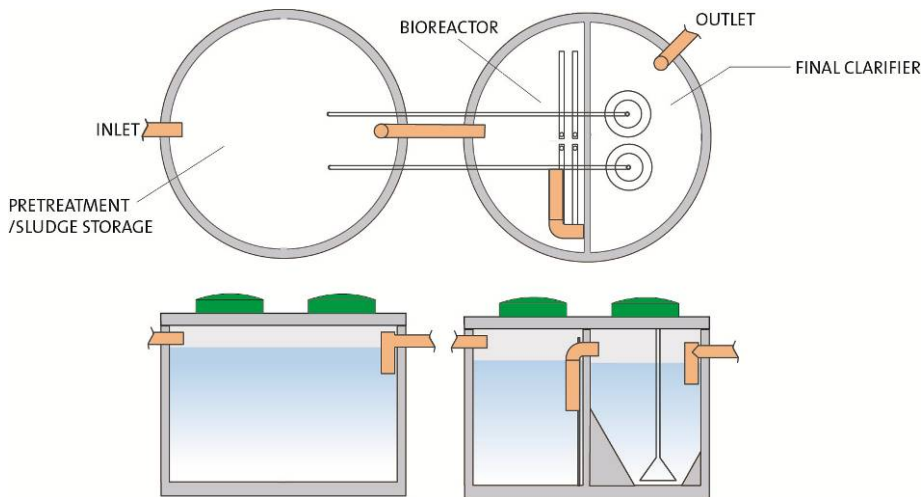


### 3 WSB® CLEAN SIZING INFORMATION

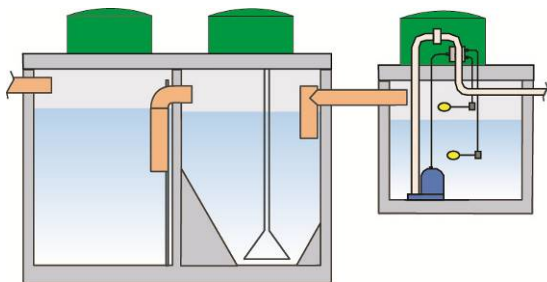
#### 3.1.1 WSB 400 - 1000 – Single Tank Installation



#### 3.1.2 WSB-1250-1800 – Two Tank Installation



#### 3.1.3 Pump Tank – Example Installation





### 3.2 WSB® System Model Designation

Model Designation	Daily Capacity (L)	Number of Tanks	Pretreatment Capacity	NSF/ANSI 40 Classification
WSB 400	1600	1	2450 L	Class I
WSB 500	2000	1	2450 L	Class I
WSB 600	2500	1	2970 L	Class I
WSB 750	3000	1	2970 L	Class I
WSB 1000	3800	1	3490 L	Class I
WSB 1250	5000	2	5950 L	Class I
WSB-1500	5678	2	6950 L	Class I
WSB 1600	6300	2	6950 L	N/A
WSB 1800	7000	2	6950 L	N/A

**NOTE:** Please refer to the system data plate located on the control panel to identify which model you have.

### 3.3 System Classification

All WSB Clean models meet the requirements of NSF/ANSI 40 and are certified as Class I treatment systems. Models with design flows larger than 5700 L/day (1500 Gallons/day) do not fall under the NSF / ANSI 40 scope of work but have been verified by NSF as meeting the same design criteria.

### 3.4 Identification Plate

The identification plate is found on the WSB control panel which is located within the residence, on the outside the building or inside the service building. The information on this plate identifies the size of your system and it may be required for responding to any alarms or issues with your system.

### 3.5 System Performance

The WSB® clean system has been designed to treat wastewater under normal operating conditions to meet the following effluent criteria:

Parameter	Standard
BOD5	< 15 mg/L
CBOD5	< 10 mg/L
TSS	<10 mg/L

## 4 CONTROL PANEL

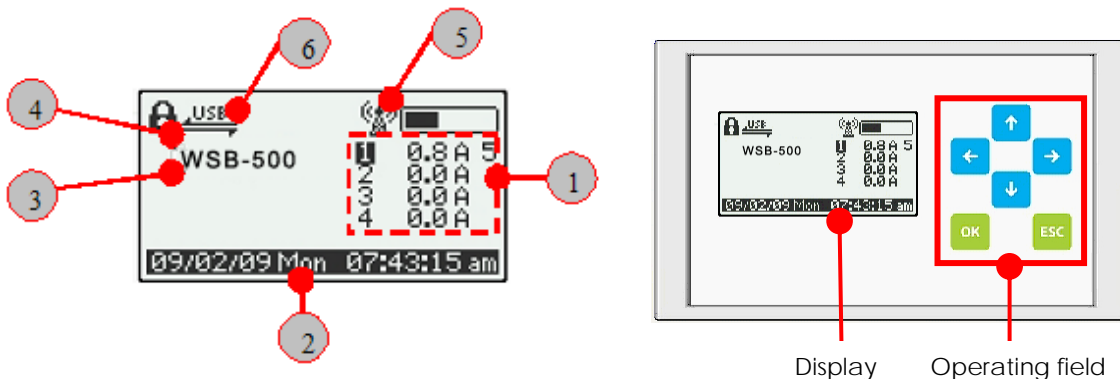
The WSB® clean control panel is preconfigured for standard operation of your wastewater treatment system. The panel comes equipped with a visual and audible alarm to notify you of any

mechanical or high water conditions should problems ever arise. The Control panel operates all of the mechanical components of the WSB® system.





Installation may only be carried out by a qualified electrician as per the RH2O Installation Manual!

#### 4.1 Controller Interface Overview



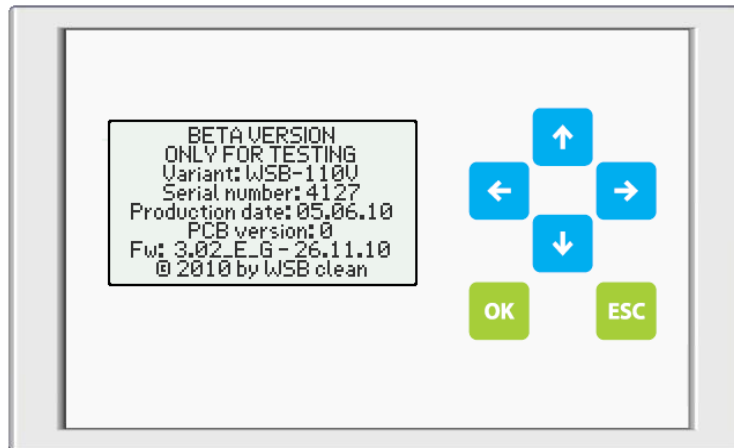
- 1 Status display of the outputs; display of the actual current consumption of the system
- 2 Display of the system time and date
- 3 Display of the operating mode
- 4 Display showing when the service menu is locked
- 5 Display of the GSM status with signal strength (remote monitoring)
- 6 Display showing when the control is connected to a read out device

#### 4.2 The Customer Menu

The Customer Menu is called up by pressing either of the arrow keys  . Navigation in the customer menu is also carried out using these keys. The customer menu provides access to the basic information a customer may require access to and is not protected by the system password.

#### 4.3 Device Information

The Device Information screen provides an overview of all the revision information associated with the system.

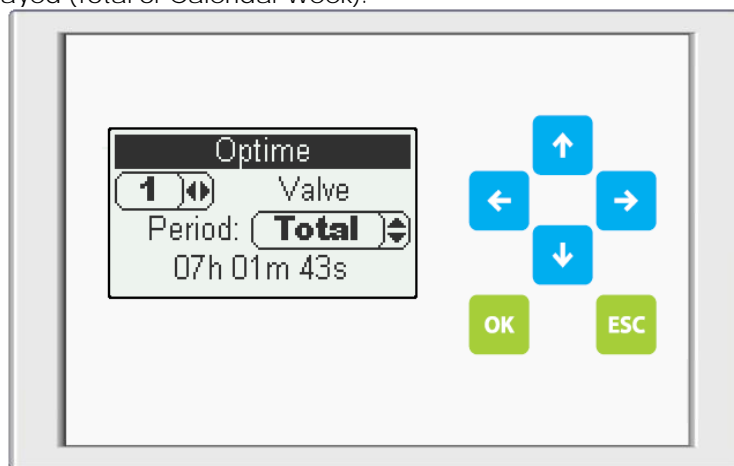


#### 4.4 Optime

The optime view allows you to see the operating times for each of the outputs. You can select whether to view the Total operating time for the specified output or the Calendar Week (CW) for each output. Along with each output the Pump Type is also displayed.

The left/right arrow keys allow you to select the output to view.

The up/down arrow keys allow you to set the period in which the operating hours should be displayed (Total or Calendar Week).



#### 4.5 Function Test

The function test verifies proper operation of all outputs and also does a battery backup test to determine if the batteries need to be replaced. The function test will turn on each output separately regardless of the operation time settings or day/night settings etc.

Parameters	Description
Test start	Press OK to initiate the function test
Start delay	Specifies the start delay between actual function testing and pressing the Test Start option.
Pulse duration	Specifies how long each output will be pulsed during testing



#### 4.6 Time/ Date

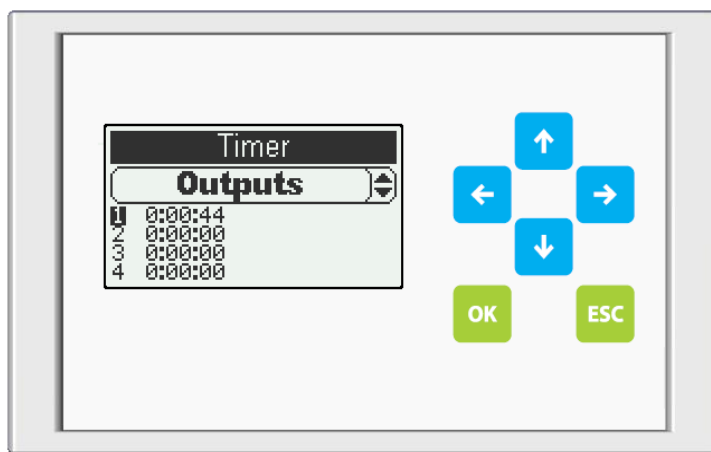
Date/time systems adjustments can be made in this menu point.

Parameters	Description
Date	Allows you to set the current date
Time Format	12 or 24hr format
Time	Allows you to set the current time
Summer Time	Daylight Savings Time enable/disable

#### 4.7 Timer (Display of Output Counters)

Displays the run time counters for all current output configurations. This view allows you to see the state of all outputs (on/off) as well as the pulse/pause counter values for each output.

**NOTE:** if the output is not configured to use a timer (i.e. Pulse/Pause) the timer value will always be zero (0).



#### 4.8 Sludge Removal

The sludge removal maintenance setting allows you to log a sludge removal event into the Error Report. You can select how many days the system will be shut-down for sludge removal and how long Output 3 will subsequently be turned OFF during this process.

#### 4.9 Error Signals and Power Outage Warnings (Alarms)

If an error signal appears on the display and the display blinks, the signal can be cancelled by depressing the **ESC** key for 5 seconds. If the power is out or disconnected, a warning signal will sound after one minute. This signal can also be cancelled by depressing the **ESC** key for 5 seconds. The warning signal will sound for 2 seconds every 2 seconds in the first 10 minutes. After 10 minutes it will sound for 5 seconds every minute. After 1 hour it will sound for 20 seconds every 30 minutes. This is a set timed program and cannot be changed unless accessed remotely by RH2O. The control panel documents and logs all error messages.

**NOTE:** If an error signal appears, immediately notify RH2O by calling (519) 648-3475.

#### 4.10 Controller Specifications & Dimensions

Supply to KL8:	115V AC 60Hz
Input protection:	500mA slow/230V class H
Protection for output 1,2,4:	5A slow/230V class H
Protection for output 3,5:	2,5A slow/230V class H
Output voltage at output 1-5:	115V AC 60Hz



Output voltage at KL1+KL2:	5V/DC
Max. current per 5V output:	100mA
Input voltage to KL1+KL2:	5V/DC
Protection class:	Only for indoor use
Height:	185 mm
Width:	215 mm
Depth:	95 mm
Weight:	ca. 1kg

## 5 SAMPLING OF THE SYSTEM



The WSB® clean system is designed so a sample, representative of the quality of the effluent, may be easily collected. RH2O® randomly samples systems on a yearly basis to confirm the WSB® clean systems are operating properly.

Some jurisdictions require effluent sampling to conform to local regulations. RH2O® or its duly authorized representative will provide sampling as part of our maintenance agreement.



Sampling must be taken by a person trained and certified by RH2O North America to ensure the sample gives accurate results in regards to how the system is performing.



## 6 IMPORTANT INSTRUCTIONS

To ensure the best performance of your WSB® clean wastewater treatment system please follow the guidelines provided in the sections below.

### 6.1 Harmful Chemicals



Do not use or discard any of the following products in the sinks or toilets of your residence:

- Caustic products used to unclog pipes (Mr. Plummer™ Dr. Plummer™, Drano Liquid™, etc.)
- Petroleum based products, paints, solvents etc.
- Pesticides
- Back Wash of a water softener system
- Large quantities of bleaching products
- Oil and grease (engine, cooking, etc.)
- Wax and resins
- Septic tank treatment products
- All non-biodegradable objects (cigarette butts, sanitary napkins, pads etc.)

→ **WARNING:** The discharge of any products that are harmful to your system may destroy the bacterial culture responsible for treating the wastewater and can potentially compromise the effectiveness of your system.

### 6.2 Do Not



Please respect manufacturer's recommendations for usage of domestic cleaning products. Failure to follow these guidelines can result in failure of your system.:

- Do not use automatic toilet cleaners
- Do not use a waste disposal unit in the sink (in-sink-erator)
- Do not connect downspouts or storm drains or allow surface water to drain into the system
- Do not enter an access riser – gases can be deadly and lack of oxygen could be fatal
- Do not use special additives designed to 'increase the performance of your system'
- Do not plant trees or shrubs too close to the system lids or disposal bed
- Do not leave interior faucets on to reduce chances of freezing – use insulation to ensure freezing cannot occur
- Do not bury your access openings (lids)
- Do not drive over or near your system or bed

→ **WARNING:** Only authorized service personnel are to remove access covers on the WSB® system. Removal by unauthorized personnel may result in death or bodily injury from potentially hazardous gases and waste matter. Please ensure easy access to covers at all times for inspection and/or emergency purposes

### 6.3 Best Practices

The following Best Practices are very important to ensuring proper operation of your system. Following these requirements will help to ensure years of hassle free operation of your WSB System



**DO:**

- Familiarize yourself with the location of your system and controls
- As a reference, keep a copy of the layout of your system
- Ensure water is diverted away from your disposal bed
- Budget to pump your tank on a regular basis (recommended between 2-5 years)
- Repair any leaking plumbing fixtures as soon as possible
- Replace old toilets with low flush or dual flush toilets
- Clean the lint filter on the washing machine on a regular basis
- Keep the access lids accessible and brought to grade at all times
- File the system maintenance cards (and service calls) to help keep accurate records
- Try to reduce the amount of wastewater that your system needs to treat (install high efficiency water saving products wherever possible)
- Use your garbage can to dispose of substances that can be harmful to your treatment system
- Collect grease in a container and dispose with your trash
- Conserve water and repair leaky toilets in order to not hydraulically overload your system

## 7 OPERATION AND MAINTENANCE

### 7.1 Service and Maintenance

Maintenance will be completed by RH2O or a duly authorized representative where they check, document and inspect the following among other things:

- Air Blower
- Sludge Return System (Air Lift or Pump)
- Control Panel and Alarm System
- Biological Process
- Sludge level inside the sludge storage tank (see pumping section below)
- Sample of effluent (where required)
- Flushing pressure lines (where required)



DO NOT attempt to service components of the wastewater treatment system yourself. Only authorized service personnel are to remove access covers on the WSB® system. Removal by unauthorized personnel may result in death or bodily injury from potentially hazardous gases and waste matter. Please ensure easy access to covers at all times for inspection and/or emergency purposes.



A perpetual maintenance agreement is required for all wastewater treatment systems. Only RH2O or its duly authorized representatives may perform maintenance services on the WSB® clean system. Failure to do so will result in the warranty of the system becoming null and void. The homeowner is responsible for maintaining a copy of all service performed on the system.



Considering that an annual inspection of your system will be carried out each year, it is the owner's responsibility to follow the instructions for the use and maintenance of the system, and follow all applicable regulations. In the event that a malfunctioning of the system occurs, immediately call RH2O North America.

### 7.2 Sludge Removal – (Pumping)

The removing of solids in your pre-treatment tank must be carried out by a specialized firm. The WSB system has been designed so that only the pre-treatment chamber requires periodic sludge removal. Sludge levels will be monitored as part of the maintenance agreement and homeowners will be notified when pumping is required. It is the homeowners responsibility to ensure sludge



removal is performed by a certified professional, and in compliance with local regulations, and that all records of service are kept for future reference.

### **7.3 Vacations and extended periods with limited usage**

The WSB® clean system has been designed to continue operating properly even with limited or extended periods of no usage. The power can be left on for a vacation and the performance of the system will not be impacted, even with little or no flow to the system. If the property is only used seasonally, (a winter lodge or only for summer months) and if the time that there would be no flows exceeds 4 consecutive weeks, the power can be shut down to the panel and blower. Once the property is lived in again, the power should be immediately turned back on.

### **7.4 Other Equipment (eg. Pump Station)**

For operation and maintenance requirements for other components/equipment being used in conjunction with your WSB® clean system, please refer to the appropriate "user's manual" that should be supplied with the equipment. Also, please refer to the drawings to see if any additional components or equipment are to be part of your entire wastewater treatment system.

### **7.5 Troubleshooting**

As outlined in section 7.1 Service and Maintenance, only an authorized RH2O representative should perform any maintenance on the system. In the event of an alarm the homeowner should always call service to evaluate the issue.

## **8 WSB Clean System Service Policy**

All WSB Clean NSF/ANSI Standard 40, Class 1 certified wastewater treatment systems have an initial 2 year service agreement (two calls per year) included with the system's initial purchase price. To find out who the service provider for your system is please refer to the labels on the main control panel.

### **8.1 Extended Service Policy**

An Extended Service Policy is available and may be purchased through RH2O North America. The extended service policy will provide you with the same piece of mind as the initial service policy included with the system and will ensure that your system is properly maintained and serviced in the event of a failure.



## 9 Limited Warranty

### 1. Preamble

RH2O North America Inc. (hereinafter called "RH2O") is proud to offer its customers with the following warranty. For the purposes of this Warranty Certificate, the term "Customer" shall mean the person(s) who are the owner(s) of the property where a WSB® clean system is installed and the term "Successors" means any other person entitled to exercise the customer's rights.

### 2. Nature of the Warranty

The purchase of a WSB® clean system includes a free inspection of all components during the first year following installation by an authorized representative of RH2O. All of the WSB® clean system components are warranted for a period of two years from the installation date. RH2O warrants the non-deterioration of its media for a period of twenty years, from the installation date. Components repaired or replaced under the two year warranty will be covered under warranty up to the end of the original two year warranty period.

### 3. Notification Obligations

The WSB® clean system includes an alarm system which works in conjunction with the control panel for the system. The control panel detects any problems related to the system and will sound the alarm. If the alarm goes off, the customer must immediately contact RH2O by written notification. The customer must also notify RH2O of any apparent anomaly, irregularity, and/or malfunction of the WSB® clean system. Failure to do so within a reasonable timeframe may result in this Warranty Certificate becoming null and void. The Customer must provide access to the system at all times to RH2O or its representative.

### 4. Exclusions

The following damages or problems are excluded from the Warranty:

- (a) Any damage or problem caused by an unexpected event or "Act-of-God", such as, and without limiting the generality of the foregoing: earthquakes, floods, hurricanes, landslides, explosions
- (b) Any damage or problem caused by the fault or act of a third party;
- (c) Any damage or problem arising from any modification, correction or addition carried out by a person not authorized by RH2O or without its approval;
- (d) Any damage or problem, if it is proven that the WSB® clean system was not used according to the terms and conditions stipulated in the Owners Manual;
- (e) Any damage or problem, if it is proven that the system was not used and maintained in compliance with the existing regulations;
- (f) Any damage or problem, caused by fault or action of the Customer or the Customer's Successors including, but without limiting the generality of the foregoing, refusal to allow access to the system for inspection purposes.

### 5. Particular Exclusions

It is further expressly understood that the Customer may not carry out or cause to be carried out any repair, maintenance and/or verification of the purchased WSB® clean system, or attempt to carry out any work whatsoever or to apply any corrective measures whatsoever to the aforementioned systems (except for periodic pumping of the sludge) without written consent from RH2O. Failure to do so



may result in this warranty becoming null and void.

#### 6. Indemnities and Damages

The liability and obligations of RH2O under this Warranty Certificate for corrective measures and/or means of correcting any problems, of which it is duly advised, shall be limited to the replacement of any component of the WSB® clean system, in compliance with sections 3 and 4 herein.

#### 7. Damage Limitations

RH2O may in no way be held liable for any other damage sustained by the Customer. RH2O compensation or indemnification obligation shall be limited to the provisions under section 6 of this Warranty Certificate. RH2O does not assume any liability for personal injury or property damage caused by the use or misuse of the WSB® clean system. RH2O shall not, in any event, be liable for special, incidental, indirect, or consequential damages. RH2O liability shall, in all instances, be limited to the provisions under section 6 of this Warranty Certificate and will end upon expiration of the applicable Warranty Certification period.

#### 8. Ownership Transfer

In the event of transfer of ownership, sale, reassignment or disposition in any other way of the Customer's property to a third party, this Warranty Certificate shall continue to apply on the express condition that the new owner confirms in writing to RH2O that he is the new owner of the property, is cognizant of the Warranty Certificate and accepts its terms and conditions. The Customer agrees to forward, to the buyer or the buyers successors, the Warranty Certificate, as well as the Owner's Manual. The Customer's Successors must complete the Ownership

Transfer Form and return it to RH2O in order for the ownership transfer to be complete and the Warranty Certificate to be valid.

#### 9. Inspection

The Customer or the Customer's Successors shall allow RH2O or its duly authorized representative to perform all necessary monitoring and/or inspection measures, when deemed necessary, for the assessment and validity of this Warranty Certificate. If the Customer or Customers Successors notify RH2O of an alleged defect or malfunction of the WSB® clean and that after inspection, it is found that no such defect or malfunction is revealed, or, that the warranty is excluded or doesn't apply, a minimum charge of \$100.00 plus direct expenses will be invoiced for the cost of such inspection.

#### 10. Interpretation

The terms of this Warranty Certificate shall be interpreted and governed by the law in force in the Province of Ontario and the provisions of this Warranty.

#### 11. Priority of the Warranty Certificate

This warranty supersedes any contract or understanding, written or verbal, entered into between the Customer and RH2O. In case of any contradiction between this warranty and other documents issued by RH2O, this warranty shall prevail.

#### 12. Jurisdiction

The parties acknowledge that any litigation regarding the present Warranty Certificate must be introduced in the judicial district of Toronto, Ontario.

