

Why is the Clearadon Shallow Tray Aeration System No. 1?



AIR & WATER QUALITY INC.

160 US Route 1 • Freeport, ME 04032
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Figure 1 - Clearadon with its clean neat appearance

Air & Water Quality Inc. has been successfully installing the Clearadon Shallow Tray System for almost 20 years. The Clearadon is the only aeration system that we install! There are a couple of other aeration systems (Bubble-Up and Air-Raider) on the market but they have multiple flaws and because of these flaws, Air & Water Quality will not install these systems. When considering products from vendors, Air & Water Quality Inc. evaluates those products with respect to:

- Safety
- Maintainability
- Reliability
- Professional Engineering Design
- Performance

Safety-

The Clearadon design accommodates an exhaust fan. The exhaust fan insures that the aeration vessel and exhaust stack inside the living area of the house will be run under negative pressure. Air & Water Quality Inc. installs an exhaust fan as standard equipment with the installation. Our competitors do not install an exhaust fan and, therefore, their equipment is running under

positive pressure. Why is this an important safety feature? If the aeration vessel is under positive pressure, then any air leak that might develop between the vessel and its cover will allow the radon, which is being removed, to enter the house. The last thing that you would want to happen is to remove the radon and to reintroduce it into the air in the house.

Our competitors install their equipment with a 2" diameter exhaust stack. Air & Water Quality Inc. installs all Clearadons with a 4" exhaust stack. A 2" diameter stack is almost certain to freeze over in the cold New England winters. When freeze over occurs, the system is non-functional. We have observed this first hand.

Electrical safety is a major consideration when selecting any system – it is especially important when that system is in contact with water. The Clearadon electrical control box is not only professionally designed, but it is also UL listed. Our competitors' products leave a lot to be desired with respect to electrical safety. Take a look at the attached photo of a Bubble-Up system – do you think that wiring looks professional? Does it look safe? Connections in that photo show AC wiring connections lying on the top surface of the vessel where water could be sitting. That is an accident waiting to happen!

Maintainability-

As with all systems we install, we demand from the manufacturer that the system be easy and inexpensive to maintain. The Clearadon design is very simple – there are very few components and those components are mostly external to the aeration tank.

As with all aeration systems, it is important to provide annual maintenance. One of the maintenance functions is the cleaning and disinfection of the aeration vessel. With the Clearadon, the vessel cover is removed in seconds by flipping the 6 clips that hold the gasketed cover to the vessel. There is only a single tray in the vessel which must be removed – the vessel is then completely exposed inside for ease of cleaning.

The Bubble-Up is an example of a design with very little thought given to maintenance. In order to remove the cover from the vessel, a number of components on the top of the vessel must be removed. That is only the start of the process; one must now remove 14 bolts that hold the cover to the vessel. The capture mechanism for the bolts was designed to be the plastic of the vessel. Repeated removal of these bolts will result in the inability to secure them. Once the inside of the vessel is

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exposed, more components must be removed to adequately clean and disinfect the vessel.

Reliability-



Figure 2 - A typical installation

The extreme reliability of the Clearadon has been demonstrated over the almost 20 years that Air & Water Quality Inc. has been installing this aeration system. Because of the simple engineering design and the minimal number of components, the Clearadon is less prone to maintenance issues which are more common on the other aeration systems on the market.

Professional Engineering Design

Strickly from an appearance standpoint alone, there is no doubt that the Clearadon is far superior in design than the other aeration vessels on the market.

The Clearadon is a double-walled vessel. Why is this an important feature? All aeration systems have significant surface area which is exposed to humid conditions during a portion of the year. Because of the low water temperature in the vessel, the outside of a single-walled vessel will sweat profusely in the humid months. This will result in water running onto the floor from the surface of the vessel. The Clearadon is unique in that it is double-walled. The double wall provides an insulation barrier and prevents sweating on the outside of the vessel. This is particularly important when the aeration system is located in or near finished space.

Vessels containing liquid are normally designed to be cylindrical not rectangular. The cylindrical design is important from a structural standpoint. The Clearadon is a cylindrical design. The aeration vessel of the Bubble-Up is rectangular in design. I have attached a picture of the Bubble-Up which demonstrates the deformation of the vessel when it fills with water.

The Clearadon also comes standard with two floats and solenoid to control the flow of water into the unit. This ensures that no water can accidentally overflow on the floor. Some competitive units have only one float on their standard unit.

The professional engineering design of the Clearadon is also evidenced by the design of the electrical component with a UL listed control box. See the picture of the control box of the Clearadon(Fig 3).

Performance-

The performance of the Clearadon far exceeds that of its competitors. The Clearadon can treat water at 7 gpm with an average waterborne radon reduction rate of 99.7%. This is the highest reduction rate in the industry. The Clearadon design is such that higher than normal flow requirements can be met without use of commercial sized units. The Clearadon can feed treated water to storage and can repressurize with high flow pumps.

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Compare and Contrast-

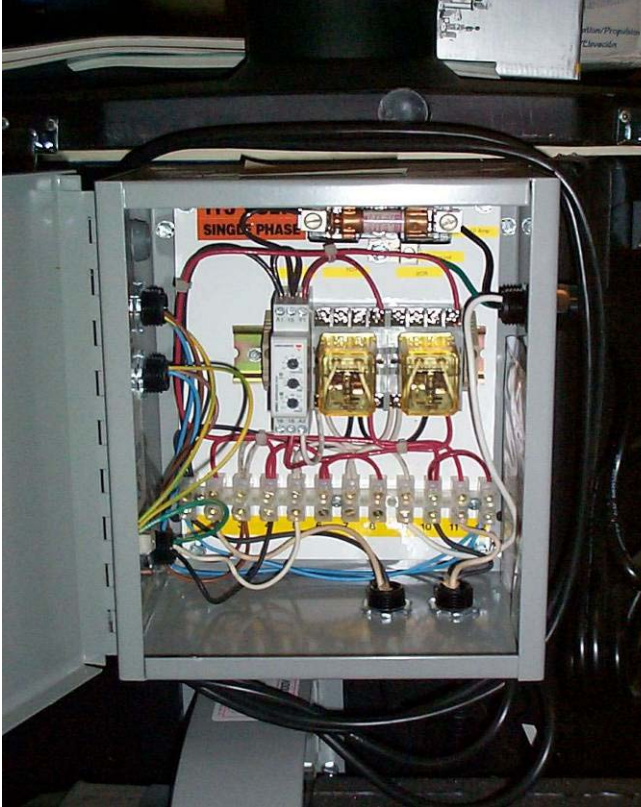


Figure 3 – Here is the safe professional UL control panel of the Clearadon.

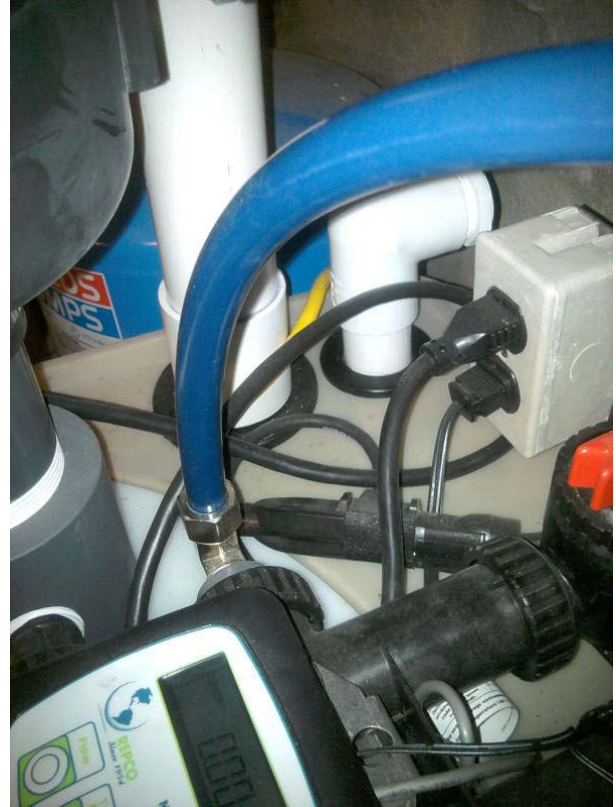


Figure 4 Bubble-Up wiring laying on top of unit waiting for water to be trapped by built up lip



Figure 5 - Bubble up controls – new definition of plug & play?

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Figure 6 – Picture of the easy access hand operated clips of the Clearadon.



Figure 7 – Let's count the screws and others things to remove for access for cleaning the Bubble-Up.



Figure 8 - Clean smooth accessible surfaces for easy cleaning of the Clearadon.



Figure 9 - This is one of two slotted confined areas in the aeration chamber of the AIRraider with no easy way to be clean.

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Figure 10 – The Clearadon has large 3/16" holes in the aeration tray that won't scale over with minerals.



Figure 11 – See the 1/16" holes in AIRRaider system which are prone to being plugged with minerals.



Figure 12 - Clearadon shown with external pump that has low water shut down protection with auto reset and lighted control panel that tells you what is happening. This also makes for easy service and diagnostics.



Figure 13 - Bubble-Up shown with a standard low pressure cut out switch for pump protection which is unreliable and is difficult for the homeowner to reset.

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Figure 14 –This picture is view looking down from the top of a Bubble-Up that has only been installed for a few months. This surface is supposed to be straight.



Figure 15 –A Typical wall deformation from air blower on an AirRaider.

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