

Versatility of the Hg Containment Series by Anterior Quest

Introduction: Consistent with “Best Management Practices for Amalgam Waste” (BMPs) developed by the ADA, dentists are responsible for managing the amount of amalgam waste released from their practices into the environment. In an effort to help clinicians in this endeavor, BMPs outline amalgam waste handling and disposal procedures. One BMP is the installation of amalgam separators compliant with ISO 11143. Amalgam separators are effective in reducing 95% of the amalgam from dental office wastewater and the mercury is then recycled, allowing dentists to be compliant with current EPA regulations.

Among clinicians, there is much confusion regarding the best method of complying with recommendations and regulations regarding amalgam waste. Subsequently, *Anterior Quest* has developed the *Hg Containment Series*. The *Hg Containment Series* is a completely customizable unit designed to offer clinicians a means of not only complying with current standards but effectively meeting future regulations as well by providing 100% containment of amalgam waste production from dental offices.

Description:

The *Hg Containment Series* is not an amalgam separator or filtration device; rather, it provides 100% containment of mercury and amalgam. The manufacturer asserts guaranteed compliance with government standards requiring installation of an amalgam separator with 95% or greater efficiency. The *Hg Containment Series* is effortless, cost effective, safe and virtually maintenance free. The patented filterless technology is designed to work with any wet or dry vacuum system through a simple, in-line plumbing connection. The dual-tank system is installed between the main suction line from the operatories and the vacuum unit. Amalgam is collected in the holding tank until it is removed for disposal every 60 days. This service can be performed via piping to the outside of the building, or a service technician can enter the mechanical area to do it directly from the *Hg Containment Series*. The stainless steel unit is available in 30, 60, 90 and 120 gallon capacities and is customizable to fit any office requirements for size and space including small closet and crawl spaces. The *Hg Containment Series* comes with a two-year limited warranty (Figure 1).



Figure 1. *Hg Containment Series*.

Clinical Presentation:



Figure 2. Office A in Ann Arbor, MI.

The *Hg Containment Series* was installed in two dental offices, which differed greatly with respect to age, physical layout, capacity, and type of existing vacuum system.

Office A is equipped with 14 operatories, nine dentist and five hygiene chairs. The dental practice is located on the 2nd floor of a brick building built in 1996 (Figure 2). The office has two separate wings, each with its own equipment room and evacuation system. The wing selected for installation of the *Hg Containment Series* is heavily utilized by two dentists and two hygienists and maintains a patient volume of approximately 40 patients per day. The equipment room is on the same floor as the operatory space and in the same working zone.

A representative from *Anterior Quest* took measurements of the available space and custom designed a 60-gallon (3 ft by 2 ft) **Hg Containment Series** to fit snugly in an unused corner space of the equipment room while working with the existing suction system, **STS Dry Vacuum System** (*Air Techniques*) (Figure 3 and 4).

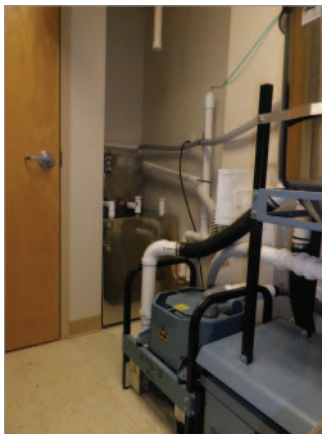


Figure 3. **Hg Containment Series** at Office A.



Figure 4. Example of customized **Hg Containment unit**.

Office B is a 57-year-old practice with four operatories, two dentist and two hygiene chairs. This practice averages 25 patients per day. The building was built in 1911 (Figure 5), and converted into a dental practice in 1955. Most of the large equipment, including a **Custom Air** (*Dental EZ*) wet vac system, is located in the basement. An *Anterior Quest* representative took measurements and determined the space was sufficient to install a standard (2 ft by 2 ft), 60-gallon **Hg Containment Series** in line with the existing evacuation system (Figure 6).



Figure 5. Office B in Ann Arbor, MI.



Figure 6. Example of a standard **Hg Containment unit**.

Clinical Performance:



Figure 7. Tube on large holding tank for visual inspection.

Anterior Quest visited each practice to determine the individual requirements for space and capacity. Both practices found installation of the **Hg Containment Series** to be simple, quick, and clean. The equipment was described as being “basically maintenance free.” There are no filters to change and both dental teams appreciated not having to handle any waste. The only maintenance required is weekly visual monitoring of the site tube on the large holding tank (Figure 7), and notifying the company if the tube appears to be more than $\frac{3}{4}$ full.

The **Hg Containment Series** was installed in-line before the vacuum unit. In offices with a wet vac system, the filter is replaced one last time following installation. The **Hg Containment Series** completely eliminated the need to change the filter. Office B noted they “don’t even think about this unit. Prior to installation, we had to remember to order a new filter and then nobody wanted to change it.

We would be working and think darn we need to change that thing! With the *Hg Containment Series*, we only remember that we have it when they come in after removing the waste to see how we're doing. It is great!"

With respect to waste removal, *Anterior Quest* monitored each unit for the first week following installation to determine the amount of waste produced and the waste removal schedule necessary. Typically, waste removal is completed on a set schedule, every 60 days. If necessary, *Anterior Quest* will work closely with dental team members to determine an appropriate water line cleaning protocol, using a non-foaming enzymatic cleaner, to minimize excessive wastewater.

For offices requiring internal waste removal, *Anterior Quest* schedules and performs pick up during normal business hours (Figure 8). One team member from Office A noted the company "came in quietly and we barely noticed they were here. No equipment had to be shut down, no loud noises were made and the waste removal did not disrupt our workday at all."

After waste was removed, it was taken to a licensed and regulated environmental recycler, and a detailed log was sent to the dental office indicating the date and amount of waste removed. For each *Hg Containment Series*, *Anterior Quest* maintains a manifest of waste removal records.



Figure 8. Example of waste removal from inside a dental practice.

Discussion:

Although the two installations of the *Hg Containment Series* presented have the waste removal completed internally, it is important to note this is not the standard procedure. For 80% of the units *Anterior Quest* installs, the waste is piped to the outside of the building and removed externally (Figure 9 and 10), eliminating any concerns regarding waste removal and patient perceptions.



Figure 9. External attachments for waste removal.



Figure 10. External waste removal.

Conclusion:

The *Hg Containment Series* is an excellent choice for clinicians, providing a versatile and simple solution for amalgam waste management in compliance with current and potential future EPA regulations. While the initial cost of the *Hg Containment Series* is higher than amalgam separators, the process and documentation quickly provides a return on investment for a dental practice. No filters or cartridges are required, and the ability to simply call for worry-free, non-invasive management of amalgam waste provides peace of mind for offices that may struggle with time-consuming recordkeeping, and routine maintenance procedures that may be overlooked.

Editor's Note: A law just passed in the state of Michigan stating, after January 1, 2014, dentists will be required to submit documentation with license renewal of each amalgam waste system in place.

