Amalgam Management

FOR DENTAL OFFICES

UW Extension

MMSD
Preserving The Environment • Improving Water Quality

Acknowledgements

The Milwaukee Metropolitan Sewerage District and the University of Wisconsin Extension thank:

(1) all of the dentists who installed separators for the case studies,

(2 the Wisconsin Dental Association, and

(3) the U.S. Environmental Protection Agency, Great Lakes National Program Office, for providing financial assistance for the production of this booklet.

WDA
Wisconsin Dental Association, Inc.

September 2004

Dear Milwaukee Area Dentists:

The Wisconsin Dental Association (WDA) has worked cooperatively with the state Department of Natural Resources, the UW-Extension and the Milwaukee Metropolitan Sewerage District (MMSD) in an effort to utilize federal grant monies to develop information that will be helpful for practicing dentists who must make important purchasing decisions in light of the MMSD amalgam separator mandate.

To this end, we worked together to develop a summary of the different types of separators that have already been installed in the dental offices of your Milwaukee-area colleagues. We hope that this summary will give you a sense of what their experiences have been prior to purchasing and installing separators of your own. Furthermore, we applaud the leadership of those dentists who volunteered to be the first in the MMSD area to install separators. WDA would like to recognize their willingness to enter uncharted territories and absorb the costs and hassles of being the first to install separators without receiving any financial incentives to do so. Those efforts will continue to benefit their fellow dentists – not just in Milwaukee but across the entire state.

WDA stands firm in our belief that dental waste accounts for less than 1% of the mercury contamination problem that plagues our lakes and streams. However, it is dentistry's desire to be responsible environmental stewards and to do our part in capturing potential wastes before they enter the stream. Hopefully, the coal-burning power plants and the contributors of the other 99% of the problem will rise to the occasion and take ownership of their responsibilities in a similar fashion.

Sincerely,

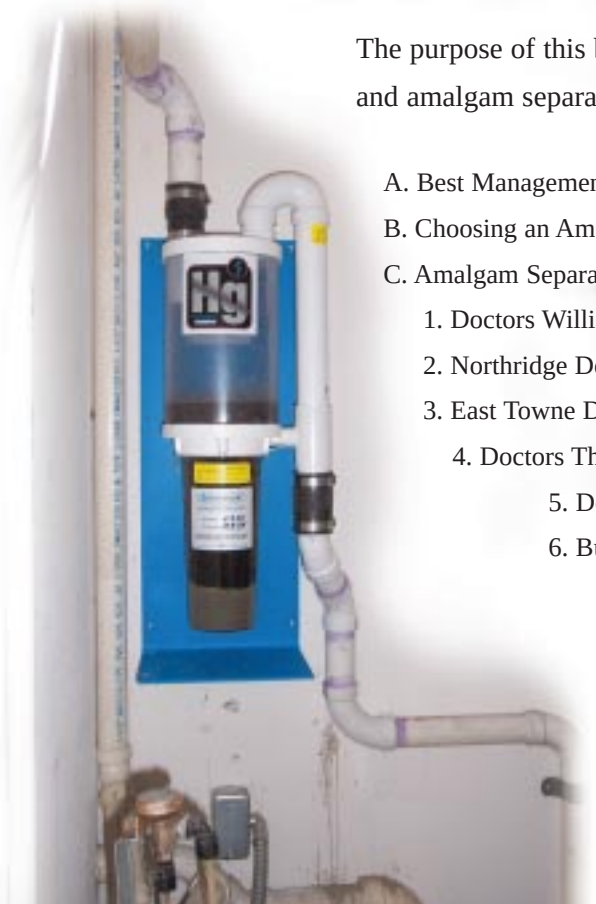
Dennis Engel, DDS
President

Introduction

The dental profession has always emphasized preventive care. Now, this spirit of prevention needs to extend to preventing the release of amalgam to the environment.

At dental offices, vacuum systems discharge amalgam to the sewerage system when dentists place or remove amalgam fillings. Amalgam is typically 50% mercury, by weight. Mercury pollution has caused the Wisconsin Department of Natural Resources to issue a statewide fish consumption advisory. To address mercury in wastewater, the DNR requires sewage treatment facilities, such as the Milwaukee Metropolitan Sewerage District, to implement a mercury minimization program. A primary element of this program is reducing the amount of amalgam discharged by dental offices.

Amalgam is an efficient and effective restorative material. Dentists will continue to use it in the foreseeable future, although its use continues to gradually decline. Even if dentists completely stopped using amalgam for new fillings, the removal of old amalgam will continue to generate amalgam waste. In response to the environmental issues related to mercury, the Wisconsin Dental Association has identified best management practices for amalgam. While important, best management practices alone are not sufficient to minimize discharges. Amalgam separators are available from several suppliers and are able to decrease amalgam in wastewater by 95% or more. In January 2004, the District adopted rules requiring the implementation of best management practices and, by February 1, 2008, the installation of amalgam separators.



The purpose of this booklet is to inform dental offices regarding best management practices and amalgam separators. This booklet contains:

A. Best Management Practices for Amalgam
B. Choosing an Amalgam Separator for Your Dental Office
C. Amalgam Separator Case Studies
    1. Doctors William and Nicholas Stathas
    2. Northridge Dental Center
    3. East Towne Dental Associates
    4. Doctors Thomas E. Raimann and Richard A. Mueller
    5. Doctor Chan D. Tran
    6. Burleigh Dental
    7. Doctor James Del Balso
    8. Doctor James C. Morgenroth
    9. Doctor Robert G. Saur
    10. Downtown Dental Group
D. Section 11.214, MMSD Rules,
    Amalgam Management at Dental Offices.

Best Management Practices for Amalgam

DO	DO NOT
Use precapsulated alloys and stock a variety of capsule sizes	Use bulk mercury
Recycle used amalgam capsules	Put amalgam capsules in biohazard containers, infectious waste containers (red bags) or regular garbage
Salvage, store, and recycle non-contact amalgam (scrap amalgam)	Put non-contact amalgam in biohazard containers, infectious waste containers (red bags) or regular garbage
Salvage amalgam pieces from restorations after removal (contact amalgam) and recycle the amalgam waste	Put contact amalgam in biohazard containers, infectious waste containers (red bags) or regular garbage
Use chair-side traps to retain amalgam and recycle their contents	Rinse chair-side traps containing amalgam over sinks or other drains
Recycle the contents retained by the vacuum pump filter or other amalgam collection device	Rinse vacuum pump filters or other amalgam collection device over sinks or other drains
Recycle extracted teeth that contain amalgam restorations*	Put extracted teeth with amalgam restorations in biohazard containers, infectious waste containers (red bags) or regular garbage
Use line cleaners that do NOT contain bleach or other chlorine compounds	Use line cleaners that contain bleach or other chlorinecompounds
RECYCLE AS MUCH AMALGAM WASTE AS POSSIBLE	FLUSH AMALGAM WASTE DOWN A SINK, TOILET, OR OTHER DRAIN

*Confirm with your recycler whether it accepts extracted teeth. Disinfect extracted teeth by storing them in an airtight container with a solution of glutaraldehyde or 10% formalin until they are removed for recycling with your other amalgam waste.

References:
(1) Wisconsin Dental Association, *Recycling Amalgam Waste and Other Best Management Practices for your Dental Office,* www.wda.org/member_benefits/amalgam.htm.
(2) American Dental Association, *Best Management Practices for Amalgam Waste,* March 2004; www.ada.org/prof/resources/topics/topics_amalgamwaste.pdf

Best Management Practices for Amalgam Waste

Always wear safety glasses, a mask, and gloves when handling amalgam

Amalgam Capsules

1. Stock amalgam capsules in a variety of sizes
2. After mixing amalgam, place the empty capsules in a wide-mouthed, airtight, plastic container that is labeled *Amalgam Capsule Waste for Recycling**
3. Place any non-empty capsules into this container
4. Ensure that the container is tightly sealed at all times
5. When the container is full, send it to a recycler

Non-contact (scrap) Amalgam

1. Place non-contact (scrap) amalgam into a wide-mouthed, airtight, plastic container that is labeled *Non-contact Amalgam Waste for Recycling**
2. Ensure that the container is tightly sealed at all times
3. When the container is full, send it to a recycler

Disposable Chair-Side Traps

1. Remove the trap and place it into a wide-mouthed, airtight, plastic container labeled *Contact Amalgam Waste for Recycling**
2. Ensure that the container is tightly sealed at all times
3. When the container is full, send it to a recycler
4. If a chair is strictly dedicated to hygiene, then place the trap into the regular garbage

Reusable Chair-Side Traps

1. Remove the trap and empty the contents into a wide-mouthed, airtight, plastic container labeled *Contact Amalgam Waste for Recycling**
2. Ensure that the container is tightly sealed at all times
3. When the container is full, send it to a recycler
4. Do NOT rinse the trap under running water

Vacuum Pump Filters

1. Obtain instructions and schedule for filter replacement from the manufacturer
2. Change the filter according to the recommended schedule
3. Obtain instructions for handling the used filter from your recycler
4. If you are required to decant water from the filter before recycling, pour the water into a tray or other container that can catch any spills and pour very carefully to avoid losing any amalgam.

Line Cleaners

Use line cleaners that do NOT include bleach or other chlorine compounds

Disinfection

Disinfecting amalgam waste for recycling is unnecessary, except for extracted teeth that contain amalgam restorations. For disinfection, use glutaraldehyde or 10% formalin, rather than bleach. Bleach dissolves amalgam and releases mercury. Use bleach only if your recycler accepts the disinfectant solution along with the amalgam waste.

* Some recyclers allow you to place all amalgam waste, including capsules, non-contact amalgam, contact amalgam, traps, filters, and teeth into the same container. If so, you may use one container labeled *Amalgam Waste for Recycling.* Follow your recycler's instructions for packaging and shipping amalgam waste.

Reference:
(1) Wisconsin Dental Association, *Recycling Amalgam Waste and Other Best Management Practices for your Dental Office,* www.wda.org/member_benefits/amalgam.htm.
(2) American Dental Association, *Best Management Practices for Amalgam Waste,* March 2004; www.ada.org/prof/resources/topics/topics_amalgamwaste.pdf

Amalgam Separator Case Studies

1 Office of Doctors William and Nicholas Stathas

2300 North Mayfair Road
Suite 345
Wauwatosa, Wisconsin 53226
414-456-9020 (voice)
414-456-9021 (fax)

Practice type: General
Office size: 3 Operatories, 1 hygiene only
Building type: High rise
Vacuum system type: Wet
Vacuum system location: Utility closet
Source of supplies: Patterson

Amalgam Separator

Manufacturer: Solmetex
Model: Hg5
Purchase price: $695
Power required: No
Treatment chemicals required: No
Size: 30 inches tall, 14 inches wide, 10 inches deep
Primary reason for selecting model: Ease of installation

Separator Installation

Time between ordering and delivery: 2 weeks
Plumbing contractor: Protel
Installation date: June 3, 2003
Time needed: 1 hour
Installation cost: $250
Problems encountered during installation: None

Amalgam Recycler

Mercury Waste Solutions
21211 Durand Avenue
Union Grove, Wisconsin 53182

Shipper

Fed Ex
Expected frequency of shipments: Every 4 months

2 Northridge Dental Center

Doctors John A. Fitch, Eric P. Tesch, and Dale R. Roznik
Dick Quinlan, Office Manager
7906 North 76th Street
Milwaukee, Wisconsin 53223
414-354-9020 (voice)
414-354-4420 (fax)
dentalq@msn.com

Practice type: General
Office size: 7 Operatories, 4 hygiene only
Building type: Two tenant commercial building
Vacuum system type: Wet, dual pump
Vacuum system location: Utility room
Source of supplies: Sullivan-Schein

Amalgam Separator

Manufacturer: Solmetex
Model: Hg5
Purchase price: $649
Power required: No
Treatment chemicals required: No
Size: 26 inches tall, 10 inches wide, 8 inches deep
Primary reason for selecting model: Ease of installation, ease of filter replacement, adaptable to dual pump vacuum system
Warranty: 2 years

Separator Installation

Time between ordering and delivery: 6 days
Plumbing contractor: Protel
Installation date: January 30, 2004
Time needed: 2.5 hours
Installation cost: $368
Problems during installation: Connecting the separator to the dual vacuum pumps required re-routing of the vacuum lines and water hoses

Amalgam Recycler

Mercury Waste Solutions
21211 Durand Avenue
Union Grove, Wisconsin 53182

Shipper

Fed Ex
Expected frequency of shipments: Every 4 to 6 months

Before

After

For Solmetex separators, recycling cost, including freight, are included in the cost of new filters. With the purchase of a new filter, Solmetex provides pre-addressed, freight-paid containers for the old filter. Replacement filters are $250.

3 East Towne Dental Associates

Doctors Vali Kiaie, Jerome Gildner, and Jenny Barry
11501 North Port Washington Road
Mequon, Wisconsin 53092
262-241-8880 (voice)
262-241-5250 (fax)

Practice type: General
Office size: 8 Operatories, 3 hygiene only
Building type: Multi-tenant professional
Vacuum system type: Dry
Vacuum system location: Basement
Source of supplies: Sullivan-Shein

Amalgam Separator

Manufacturer: Air Techniques
Model: A/T A1047
Purchase price: $1,500
Power required: No
Treatment chemicals required: No
Size: 6 inches x 12 inches x 8 inches
Primary reason for selecting model: Small size fits available space and compatibility with existing equipment
Warranty: 1 year

Separator Installation

Time between ordering and delivery: 3 weeks
Installation date: January 14, 2004
Time needed: 1 hour
Installation cost: $200
Problems encountered during installation: None

Amalgam Recycler

Bethlehem Apparatus Company
890 Front Street
Hellertown, Pennsylvania 18055

Shipper

Fed Ex
Expected frequency of shipments: Every 9 to 12 months

The cost of shipping and recycling the first collection container is included in the purchase price. Air Techniques provides shipping containers with replacement collection containers.

4 Office of Doctors Thomas E. Raimann and Richard A. Mueller

11801 West Janesville Road
Hales Corners, Wisconsin 53130
414-425-1510 (voice)
414-425-7810 (fax)

Practice type: General
Office size: 5 Operatories, 2 hygiene only
Building type: Multi-tenant commercial building
Vacuum system type: Wet
Vacuum system location: Basement
Source of supplies: Patterson or Holt

Amalgam Separator

Manufacturer: Solmetex
Model: Hg5
Purchase price: $695
Power required: No
Treatment chemicals required: No
Size: 30 inches tall, 14 inches wide, 10 inches deep
Primary reason for selecting model: Ease of installation, Low cost
Warranty: Two years

Separator Installation

Time between ordering and delivery: 1 week
Plumbing contractor: JM Plumbing
Installation date: March 1, 2004
Time needed: 2 hours
Installation cost: $289
Problems encountered during installation: None

Amalgam Recycler

Mercury Waste Solutions
21211 Durand Avenue, Union Grove, Wisconsin 53182

Shipper

Fed Ex

Although the manufacturer expected the filter replacement frequency to be every 4 months, the first filter filled in only 1 month. The cause was a new line cleaner that removed large amounts of residual solids. A subsequent problem was the constant filling of the upper chamber with water. Increasing the air flow through the separator eventually solved this problem. In response to these problems, Solmetex agreed to supply a new "high volume" Hg5 at no cost for the device. This device was installed on July 26, 2004. To further reduce the risk of problems, the lines from the hygiene operatories were redirected around the amalgam separator. A total of three filters were shipped before the installation of the new separator.


Before


After

5 Office of Chan D. Tran, DDS

Doctors Chan D. Tran and Loo T. Nguyen
2387 South 102nd Street
West Allis, Wisconsin 53227
414-329-1171 (voice)
414-329-1018 (fax)
chantran@hotmail.com

Practice type: General
Office size: 5 Operatories, 2 hygiene only
Building type: Multi-tenant professional building
Vacuum system type: Dry
Vacuum system location: Basement
Source of supplies: Dental Health Products

Amalgam Separator

Manufacturer: Solmetex
Model: Hg5
Purchase price: $625
Power required: No
Treatment chemicals required: No
Size: 30 inches x 13 inches x 10 inches
Primary reason for selecting model: Name recognition
Warranty: 2 years

Separator Installation

Time between ordering and delivery: 2 days
Plumbing contractor: IHN Plumbing
Installation date: April 9, 2004
Time needed: 3 hours
Installation cost: $305
Problems during installation: None

Amalgam Recycler

Solmetex
50 Bearfoot Road Suite 2
Northborough, Massachusetts 01532

Shipper

Fed Ex
Expected frequency of shipments: Every 6 months

Cost per shipment: $100

Before

After

6 Burleigh Dental

Doctors Monica Hebl and Mike Donohoo
7623 West Burleigh Street
Milwaukee, Wisconsin 53222
414-444-4334 (voice)
414-444-3222 (fax)
heblds@aol.com

Practice type: General
Office size: 6 Operatories, 0 hygiene only
Building type: Sole occupant
Vacuum system type: Wet
Vacuum system location: Basement
Source of supplies: Holt Dental

Amalgam Separator

Manufacturer: R&D Services
Model: The Amalgam Collector CE24
Purchase price: $1075
Power required: No
Treatment chemicals required: 8 ounces of cold sterilizing solution once per week through suction line
Size: 10 inches in diameter, 36 inches tall
Primary reason for selecting model: Can see the amount of collected amalgam. Recycling costs are reduced because only the collected waste is recycled, not a whole canister. Larger size takes longer to fill.
Warranty: 1 year

Separator Installation

Time between ordering and delivery: 1 week
Installer: Holt Dental
Installation date: April 26, 2004
Time needed: 30 minutes
Installation cost: $90
Problems during installation: None

Amalgam Recycler

DRNA
145 West 58th Street, New York, New York 10019

Shipper

UPS
Expected frequency of shipments: Yearly or less often
Cost per shipment: $125 for a one-gallon container, $400 for a 5 gallon container

The collected material is put into the same type of amalgam container as is used for other recycled amalgam.
Removing the amalgam involves closing valves, draining away the water, opening the unit, and then removing the collected waste. Although this effort is more than required by some other units, being able to see the amount of waste collected maximizes time between shipments and recycling just the waste, rather than a whole canister or cartridge, minimizes costs.

7 Del Balso Dental

Doctor James Del Balso
2300 North Mayfair Road
Suite 1040
Wauwatosa, Wisconsin 53226
414-774-4222 (voice)
414-774-5007 (fax)
delbalsodental@delbalso.com
www.delbalso.com

Practice type: General
Office size: 4 Operatories, 2 hygiene only
Building type: High rise
Vacuum system type: Wet
Vacuum system location: Utility closet
Source of supplies: Holt Dental

Amalgam Separator

Manufacturer: Rebec
Model: Catch 400
Purchase price: $985
Power required: No
Treatment chemicals required: No
Size: 14 inches by 8 inches by 8 inches
Reasons for selecting model: High quality construction, low maintenance, need to replace the collection container only once per year

Separator Installation

Time between ordering and delivery: 5 days
Plumbing contractor: J&M Plumbing
Installation date: April 27, 2004
Time needed: 40 minutes
Installation cost: $108
Work included testing the cross connection control device
Problems encountered during installation: None

Amalgam Recycler

Rebec

Shipper

UPS
Expected frequency of shipments: Once per year

Recycling cost, including freight, is included in the cost of collection containers. With the purchase of a new container, Rebec provides a pre-addressed, freight-paid container for the old container. Replacement containers are $385.

Before

After

8 James C. Morgenroth, D.D.S.

2500 North Mayfair Road
Suite 345
Wauwatosa, Wisconsin 53226
414-257-2010 (voice)
414-257-2009 (fax)
jmroth@execpc.com

Practice type: General
Office size: 3 operatories, 1 hygiene only
Building type: Professional building
Vacuum system type: Wet
Vacuum system location: Utility closet
Source of supplies: Holt Dental

Amalgam Separator

Manufacturer: Metasys Pure Water
Model: ECO II
Purchase price: $650
Power required: No
Treatment chemicals required: No
Size: 8 inches by 8 inches by 13 inches
Reasons for selecting model: Ease of installation, different from other models already installed by the case-study group

Separator Installation

Time between ordering and delivery: 1 week
Plumbing contractor: Holt Dental
Installation date: June 1, 2004
Time needed: 45 minutes
Installation cost: $140
Problems encountered during installation: None

Amalgam Recycler

Pure Water Development, Miami, Florida
Expected frequency of shipments: Annually

Recycling cost, including freight, is included in the cost of collection containers. With the purchase of a new container, a pre-addressed, freight-paid shipping box for the old container is provided. Replacement containers are $128. The cost of recycling the first container was included in the purchase price.

Before

After

9 Office of Robert G. Saur, D.D.S.

Doctors Robert G. Saur and Sam Binninger
12690 West North Avenue
Brookfield, Wisconsin 53005
262-785-1499 (voice)
262-785-0282 (fax)

Practice type: General
Office size: 4 operatories, 2 hygiene only
Building type: Multi-tenant commercial building
Vacuum system type: Dry
Vacuum system location: Basement
Source of supplies: Patterson

Amalgam Separator

Manufacturer: Rebec
Model: 400 Series
Purchase price: $900
Power required: No
Treatment chemicals required: No
Size: 14 inches wide, 18 inches high, 8 inches deep
Reasons for selecting model: Recommended by Patterson
Warranty: 2 years

Separator Installation

Time between ordering and delivery: 3 weeks
Plumbing contractor: J&M Plumbing
Installation date: June 19, 2004
Installation cost: $1,595
Problems encountered during installation: None

Amalgam Recycler

Rebec Solutions, Edmonds, Washington
Typical shipment: 1 container
Expected frequency of shipments: 10 to 12 months
Expected cost: $395

10 Downtown Dental Group

Doctor Michael Costello
161 West Wisconsin Avenue
Suite 5036
Milwaukee, Wisconsin 53203
414-278-6070 (voice)
414-278-6087 (fax)
ddg161@sbcglobal.net
www.bettersmiling.com

Practice type: General
Office size: 7 operatories, none are hygiene only
Building type: High-rise mixed use building
Vacuum system type: Wet
Vacuum system location: Utility closet in office suite
Source of supplies: Patterson

Amalgam Separator

Manufacturer: Rebec
Model: Catch Hg 1000 Series
Purchase price: $1,000
Power required: No
Treatment chemicals required: No
Size: 22 inches by 23.5 inches by 9 inches
Reasons for selecting model: Wanted to try a model different from the other case studies
Warranty: See www.rebecsolutions.com/warranty.html

Separator Installation

Time between ordering and delivery: 2 weeks
Plumbing contractor: Schoof Plumbing
Installation date: May 2004
Time needed: 4 hours
Installation cost: $350 (labor) + $50 (other) = $400
Problems encountered during installation: None

Amalgam Recycler

Envirotech Systems, Lynnwood, Washington
Typical shipment: 1 filter
Expected frequency of shipments: 10 months
Expected cost: $395
Shipment technique: UPS

Before

After

Choosing an Amalgam Separator for Your Dental Office

425.SB.0404

More and more dentists are considering purchasing amalgam separator units to decrease the amount of amalgam in the wastewater leaving their offices. Although this decision is a positive one for the environment, it is not necessarily an easy one for the dentist. These units differ in terms of capacity, physical dimensions, amalgam removal process, how captured amalgam is removed and recycled, how easily they are serviced and how often, and how much they cost to buy and operate. Without some guidance, evaluating amalgam separators can be like comparing apples and oranges. This guide was designed to help dentists identify their specific needs and the key aspects of their office systems that determine which separator unit(s) will be most suitable for their operations.

Step 1 of this guide is a decision flow sheet. By answering a series of questions relating to your office set-up, the dentist is led to an initial list of separator units that will probably work for his or her office. These questions include:

- Are your amalgam generating chairs centrally plumbed?
- Does your office have a wet ring or dry vacuum pump system?
- Is the space available for installing a separator unit at office grade or below grade?
- Do you need to install the separator ahead of or after either the wet ring or dry vacuum pump system?

The dentist's answer to each of these questions will lead him or her to an appropriate set of potential separators for evaluation. The evaluation of these options is conducted in

Step 2 of the guide is a matrix that allows a comparison of the initial list of separator units generated in Step 1, helping the dentist zero in on which unit(s) is the best for his or her dental practice. The matrix provides both qualitative and quantitative comparisons of 15 different amalgam separator units produced by 11 different companies. The units have been commercially available since early 2004. It also provides telephone and web site contact information for each manufacturer.

The evaluation criteria include:

Model Dimensions—shows the height, width and depth, indicating how much space each unit requires.

Flow Capacity—indicates the number of chairs (anywhere from 1 to 25) that can be serviced by one unit.

Ease of Maintenance—a ranking of 1 to 3 shows the relative ease of maintenance compared to other units.

Frequency of Maintenance—a ranking of 1 to 3, along with more specific information where available, indicates how often amalgam waste must be removed from the unit.

Recycling Program Included?—indicates whether the manufacturer provides for an automatic system for removing and recycling the waste amalgam captured in the unit.

Purchase Cost—provides both actual cost and a relative (1 to 3) ranking among units.

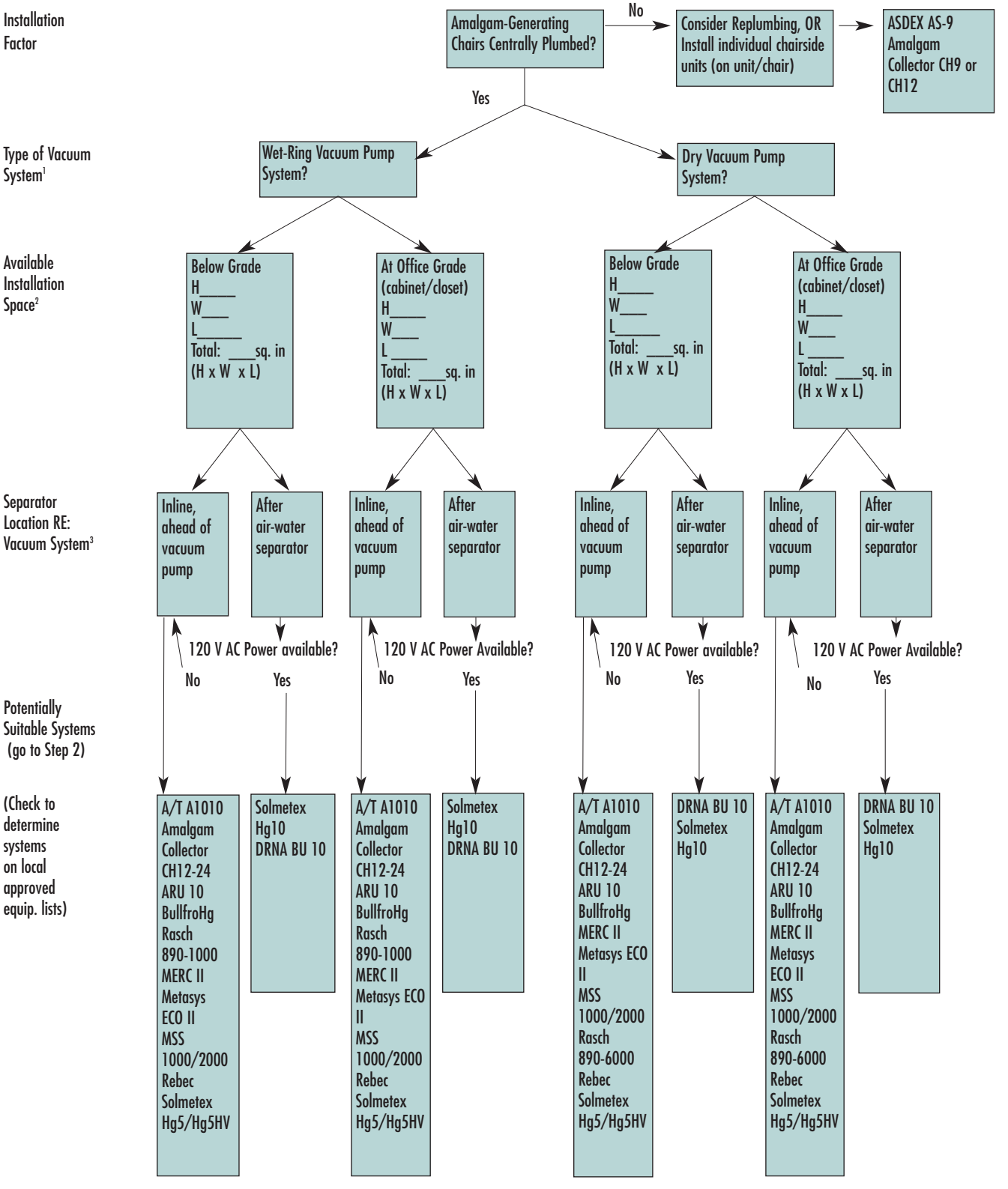
O&M Cost—provides a relative ranking of operation and maintenance costs as well as specific information where available.

Five-Year System Cost—provides both an estimated five-year cost (purchase plus O&M costs) and a relative ranking among units.

After working through the flow sheet (Step 1) and the matrix (Step 2), the dentist should have a good idea about which unit(s) is most suitable for his or her specific circumstances. Hopefully, this exercise will also result in a list of more specific questions for your dental equipment supplier or the separator manufacturer. Working together with your supplier or manufacturer's rep, you should now be sufficiently prepared to purchase an amalgam separator unit that will meet your needs and protect the environment for many years to come.

SHWEC

Step 1 - Amalgam Separator Flow Sheet



[1] Dry Systems using simple filtration units (e.g. ASDEX unit) may clog more easily; wet systems using smaller sedimentation devices (e.g. CH 9-12) may fill quickly, lose separator capacity. Wet ring vacuum pump systems generate additional wastewater that may affect performance of smaller capacity units (see capacity ratings in Step 2).

[2] Space availability will dictate which systems may be used; offices without basement or within multistory buildings typically require installation at office level/grade.

[3] Systems installed after air/water separator must have 120V AC power and/or gravity flow available.

Step 2 - Amalgam Separator Flow Decsion Matrix

	Maximum Separation Systems 1-800-799-7147 www.amalgamseparators.com		**AB Dental Trends** 1-360-354-4722 www.amalgamseparation.com		**Hygienetik** 1-866-494-3648 www.hygienitek.com	**Pure Water Systems** 1-877-638-2797 www.ecotwo.com	**Biosym Medical Corporation** 1-800-947-7550	**Rebec** 1-800-569-1088 www.rebecsolutions.com
Model	MSS 1000	MSS 2000	Rasch 890-1000	Rasch 890-6000	ARU-10	ECO II	MERC II	RME 2000-CatchHg or Catch 400
Dimensions (WxLxH in inches)	24x15x 18.5	28x18.5x 15	28.5x10.25 x12.75	5.5x9x 12.5	24x12x12	14x9x9	8x13x7	23.5x20x8
Flow Capacity (# of Chairs)	2 1-11 chairs	2 11-22 chairs	3 1-12 chairs	3 1-12 chairs	2 1-6 chairs	2 1-5 chairs	2 1-8 chairs (1-4 at max capacity)	2 1-8 chairs
Ease of Maintenance	2	2	2	2	2	2	2	2
Frequency of Maintenance	2	2	3 Tank switch 18 months	3 Tank switch 18 months	2	1	3 Annual replacement of filter	3 Annual replacement of containment collector
Recycling Program Included?	2 available	2 available	2 available	2 available	3	3	3	3
Purchase Cost: Affordable?	2 $968	2 $1395	1 $1190	2 $666	2 $689	3 $160	2 $845	1 $1895/$985
O&M Cost: Affordable?	2 annual tank replacement	2 biannual tank replacement	1 new tank required	1 new tank required	$34/month	M2 cleaner pouch needed 3/chair/year @$74.70	Annual Unit Replacement.	Annual container replacement
Estimated Five Year System Costs	2 $2368 + labor	2 $2270 + labor	2 $2680+ labor	2 $2150 + labor	2 $2739+labor	2 $3094 + labor	2 $4225 + labor	2 $3475 + labor
Total								

	A/T Amalgam SeparatorAir Techniques 1-800-AIRTECH www.airtechniques.com	**The Amalgam Collector** R&D Services 1-800-816-4995 www.theamalgamcollector.com		**Asdex** American Dental Accessories 1-800-331-7993	**DRNA** 1-800-360-1001 www.drna.com	**SolmeteX** 1-508-393-5115 www.solmetex.com	
Model	A1010	CH9 or CH12	CE18 or CE24	AS-9	BU10	Hg 5/Hg5 HV	Hg 10
Dimensions (WxDxH in inches)	6.25x10.5x7.5	6x6x9 (12)	6x6x18 8x8x24	5.5x5.5x16	8.5x8.5x20	10x13x29 18 x 23 x 28	48x48x24
Flow Capacity (# of Chairs)	2 1-8 chairs	1 1-2 chairs	3 6-12 chairs	1 1 chair	2 1-6 chairs	3 1-10 chairs	2 10-25 chairs
Ease of Maintenance	1	1	1	2	3	2	2
Frequency of Maintenance	2	2	2	1	2 annually	2	2
Recycling Program Included?	2	2 upon request	2 upon request	2 available	3included	3 (service pack included)	3 (service pack included)
Purchase Cost: Affordable?	1 $1500	2 $515	2 $715-$1120	3 $250	2 $695	2 $695	1 $7450
O&M Cost: Affordable?	2	3	3	2	1 annually switched out	2 replace filter 2x/yr	1 annually switched out
Estimated Five Year System Costs	1 $7500 + labor	3 $515+ labor	3 $715 + labor	2 $1830+ labor	2 $3475 + labor	2 $2695 + labor	1 $11,560+ labor
Total							

Note: Ranking System As Follow: 1=Fair 2=Better (provided for illustrative purposes; individual weighting of criteria can be adjusted by user)

Information current as of 2/1/04; users are encouraged to contact manufacturers to obtain up-to-date pricing, option, and reference list of dentists operating specific systems.

Milwaukee Metropolitan Sewerage District Rules

11.214 Amalgam Management at Dental Offices

(1) This section applies to any dental office that places or removes amalgam. If work in a dental office is limited to work that does not involve placing or removing amalgam, such as orthodontics, periodontics, oral and maxillo-facial surgery, endodontics, or prosthodontics, then this section does not apply.

(2) All dental offices shall implement best management practices for amalgam as established by the Wisconsin Dental Association.

(3) Within the shortest reasonable time, but not later than February 1, 2008, every vacuum system where amalgam is placed or removed shall include an amalgam separator that meets the criteria of the International Standards Organization (ISO 11143). Dental offices shall install, operate, and maintain the amalgam separator according to instructions provided by the manufacturer. The amalgam separator shall have a design and capacity appropriate for the size and type of vacuum system.

(4) On or before February 1, 2005, each dental office shall submit a report that certifies the implementation of the management practices required by sub. (2) and identifies the contractors used to remove amalgam waste within the last twelve months.

(5) On or before February 1, 2006, each dental office shall provide a schedule for the installation of the amalgam separator required by sub. (3).

(6) On or before February 1, 2007, each dental office shall provide a report providing the following information.

(a) If installation of the amalgam separator is complete, then the report shall identify the installation date, the manufacturer, and the model name.

(b) If installation of the amalgam separator is incomplete, then the report shall briefly explain the delay, provide an installation schedule, and identify the manufacturer and the model name of the amalgam separator that will be installed.

(7) If a dental office has provided a report according to sub. (6)(b), then the dental office shall notify the District of the completion of installation within five days after completion.

(8) The District shall provide forms for reporting the information required by subs. (4), (5), (6), and (7).

(9) From the contractors used to remove amalgam waste, dental offices shall obtain records for each shipment showing: the volume or mass of amalgam waste shipped; the name and address of the destination; and the name and address of the contractor. Dental offices shall maintain these records for a minimum of five years. Dental offices shall make these records available to the District for inspection and copying upon request from the District.

(10) Dental offices shall allow the District to inspect the vacuum system, amalgam separator, and amalgam waste storage areas.

(11) Inspections shall occur during the normal operating schedule of the dental office. The District shall inspect dental offices according to appointments made in advance, as long as this advanced notice does not impede enforcement of this section.

(12) If a dental office is implementing the management practices required by sub. (2) and is operating and maintaining the amalgam separator required by sub. (3), then any numerical discharge limit for mercury established in any other section of this chapter does not apply.

Before - Burleigh Dental

After - Burleigh Dental

For more information, contact:
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