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Synopsis of Dental Unit Waterline Treatment Products and Devices (Project 09-07) (9/09)

Research has shown that microbial counts can reach as high as 200,000 CFU/mL within five days after installation of new dental unit waterlines and levels of microbial contamination as high as 10^6 CFU/mL have been documented. These counts can occur because dental unit waterline factors (e.g., system design, flow rates, materials) promote bacterial growth and the additional development of biofilm. Although no epidemiologic evidence indicates a public health problem, oral flora and pathogenic organisms have been isolated from dental water systems and the presence of substantial amounts of pathogens in dental unit waterlines generates concern because the primary goal of infection control is to eliminate or reduce exposure to microorganisms. Therefore, exposing patients or dental health-care personnel (DHCP) to water of uncertain microbiological quality, despite the lack of documented adverse health effects, is inconsistent with generally accepted infection control principles.

Standards exist for safe drinking water quality as established by the Environmental Protection Agency (EPA), the American Public Health Association (APHA), and the American Water Works Association (AWWA). These agencies have set limits for heterotrophic bacteria of ≤ 500 CFU/mL of drinking water. Thus, the number of bacteria in water used as a coolant/irrigant for nonsurgical dental procedures should be as low as reasonably achievable and, at a minimum, ≤ 500 CFU/mL.

Commercial devices and procedures designed to improve the quality of water used in dental treatment have been developed because, regardless of the source water used, untreated or unfiltered dental unit waterlines are unlikely to meet drinking water standards. Additionally, many manufacturers recommend performing a start-up procedure or periodic “shock” treatment of the dental unit waterlines to remove or reduce existing biofilm to improve their product’s performance. Common approaches to improve water quality include:

- self-contained water systems combined with chemical treatment (e.g., periodic or continuous chemical treatment protocols);
- systems designed for single chair or entire practice waterlines that purify or treat incoming water to remove or inactivate microorganisms; and
- combinations of these treatments.

Self-contained water systems or those with an independent water reservoir (e.g., bottle), when used with a chemical treatment protocol, have demonstrated safety and efficacy. This type of system isolates the unit from the municipal water supply and allows better control of the quality of source water (e.g., distilled) introduced into the system. These systems are available as original equipment on dental units or can be retrofitted to most dental units. However, use of an independent reservoir without use of a chemical treatment will have no effect on waterline quality. Therefore the primary advantage of self-contained water systems is that cleaning agents can be easily introduced into the system (either periodically or continuously). Also, this type of system helps avoid interruptions in dental care when local health authorities issue a boil-water advisory. To avoid cross-contamination, careful handling and cleaning of the water bottle and pick-up tubing is necessary.

Centralized systems designed for single chair or entire practice waterlines are becoming more popular. These systems can purify or treat incoming water to remove or inactivate microorganisms by using various methods such as nano-filtration, reverse osmosis, or ultraviolet light irradiation. It is common for these systems to use a combination of these methods as well as introducing a chemical agent to help control water quality.

Most of the products reviewed in the following synopsis can be used with municipal (i.e., tap water) water; however using water of known microbiological quality is the best way to ensure consistent delivery of high-quality dental treatment water. At a minimum, potable or drinkable water (≤ 500 CFU/mL) must always be used (Note: References to tap water in the synopsis imply potable tap water.). Other source water options commonly used include distilled water or water treated by reverse osmosis. It’s important to note that it is not enough to just use good-quality source water in the bottle; to control the contamination in the waterlines a treatment product must be added.

Depending on factors such as product claims, chemical composition, and intended use, dental unit waterline treatment products may require registration with the Environmental Protection Agency (EPA) and/or clearance by the U.S. Food and Drug Administration (FDA). State regulatory agencies may also require additional regulatory clearance. Additionally, in some cases, a regulatory agency may grant an exemption. Generally, a chemical product with antimicrobial claims should be registered with the EPA. Devices or accessories that attach to the dental unit to deliver chemical products should be cleared by the FDA. Because of the variety of products available, the variety of product claims, and the variability among state regulatory agencies, it is impossible for DECS to keep abreast of product claims or regulatory registrations. It is the responsibility of the user to verify this information at the time of purchase. The products listed on the DECS Web site are currently available for sale in the United States. If DECS becomes aware of enforcement actions by the EPA and/or FDA taken against a manufacturer (e.g., product recall, stop sale notices) every attempt will be made to disseminate this information via our Web site.

Clinical monitoring of water quality can identify problems with performance or compliance. In other words, monitoring can provide information as to whether procedures are being properly performed by individuals in the dental clinic. It can also detect how the product/equipment is functioning; however, it is not intended to validate the manufacturer's protocol. Dentists should consult with the manufacturer of their dental unit or waterline treatment product to determine the best method for maintaining acceptable water quality (i.e., ≤ 500 CFU/mL) and the recommended frequency of monitoring. In the absence of manufacturer recommendations for monitoring dental unit water quality, USAF dental clinics are required to test dental unit water from each unit monthly for three months. If the unit meets standards (i.e., ≤ 500 CFU/mL) during this period, the dental unit water can be monitored quarterly at a minimum. Generally, there are two monitoring options:




- 1) water samples can be submitted to the microbiology lab or bioenvironmental engineering and cultured using method 9215 (heterotrophic plate count) with R2A agar or
- 2) use of an in-office self-contained system that is equivalent to method 9215.

Regardless of which method is used to maintain dental unit water quality, adherence to maintenance protocols is essential. Currently, there is no universally accepted product or protocol for improving or maintaining dental water quality. It is likely that dental facilities will use a combination of approaches.

The following [synopsis](#) consists of tables of select dental unit waterline treatment products and basic product information listed alphabetically by manufacturer. This synopsis should assist the reader in selecting an approach to improve dental unit water quality.

[Click here](#) to view the waterline treatment products.

SYNOPSIS OF DENTAL UNIT WATERLINE TREATMENT PRODUCTS AND DEVICES*




Product	ICX™	Mint-A-Kleen	BioClenz™
			
Manufacturer	A-dec 2601 Crestview Dr. Newberg, OR 97132 www.a-dec.com	Anodia Systems 109 Larrimore Lane Danville, KY 40422 www.anodiasystems.com	Frontier Pharmaceutical, Inc. 10 Ponderosa Dr. Melville, NY 11747 www.frontierpharm.com
Phone/FAX Numbers	(800) 547-1883 (503) 538-7478 (503) 537-2702 FAX	(866) 246-2548 (859) 236-4778 (866) 926-8246 FAX	(800) 767-3486 (631) 367-3400 (631) 692-7642 FAX
Shelf-life	18 months	2 years	2 years
Active Ingredient(s)	Sodium percarbonate, silver nitrate and cationic surfactants	Glycerin and chlorhexidine gluconate	Activated chlorine dioxide
Application	Continuous	Periodic	Continuous and Periodic
Protocol Summary†	Add one tablet each time the water bottle is filled.	Depends on water quality—generally weekly overnight treatment with undiluted product.	Add low-concentrate solution each time the water bottle is filled; once weekly treatment with high concentrate solution.
Initial/“Shock” Treatment	If test results indicate that water does not meet water quality goals, follow initial startup product instructions for Sterilex Ultra®.	Full strength treatment each night for one week; use twice weekly for next four weeks.	High concentrate flush.
Monitoring Recommendation	Monitor water bacterial counts weekly or at other appropriate intervals based on established results.	After using the product for 2 months check water with a commercial laboratory and perform follow-up testing every 6 months.	Monthly.
Source Water Recommendation	No	Yes: tap, distilled, or other water with < 200 CFU/mL per ADA or < 500 CFU/mL per CDC recommendations.	No
Price	\$1270.00 [¶] (0.7L bottle) Retail \$688.20 [¶] (0.7L bottle) Govt	\$99.95 Retail \$64.97 Govt	\$174.00 Retail \$115.00 Govt
Package Contents	Case of 36 boxes with 50 individually foil wrapped tablets each.	10 16-oz bottles.	Two gallon set (one gallon of Part A and one gallon of Part B).

* The manufacturers provided data in this table. The listing or omission of a product in this table does not imply endorsement, approval, or disapproval by DECS.

† For complete protocol and product claims refer to manufacturer’s instructions.

¶ Pricing of tablets for use in 2.0 L bottle: \$1,910.00 (retail)/\$1,035.40 (govt).

SYNOPSIS OF DENTAL UNIT WATERLINE TREATMENT PRODUCTS AND DEVICES*

Product	H ₂ Pro™	Lines™	DentaPure® DP365 Cartridge
			
Manufacturer	Garrison Dental Solutions 150 DeWitt Lane Spring Lake, MI 49456 www.garrisdental.com	Micrylium Professional Disinfection 3309 Filmore Street Ste A San Francisco, CA 94123 www.micrylium.com	MRLB International, Inc. 2450 College Way Fergus Falls, MN 56537 www.dentapure.com
Phone/FAX Numbers	(888) 437-0032 (616) 842-2244 (616) 842-2430 FAX	(800) 489-8868 (800) 871-6506 FAX	(800) 972-3543 (218) 739-2222 (218) 736-3241 FAX
Shelf-life	1 year	2 years	5 years
Active Ingredient(s)	Hydrogen peroxide (shock) colloidal silver	Ethanol and chlorhexidine	Elemental iodine
Application	Continuous	Periodic	Continuous
Protocol Summary†	Dilute maintenance treatment 32:1 with distilled water in the provided dispenser. Fill chair water bottle from dispenser. Refill as needed.	Weekly overnight (weekend) treatment with undiluted product.	Install near junction box of dental units connected to municipal water systems (lasts for 240 working days, 240 L of water, or until iodine falls below 0.5 ppm). Note: Self-contained water reservoir not required.
Initial/"Shock" Treatment	Empty Clean Start bottle A and bottle B into an empty chair water bottle. Attach water bottle to chair and activate unit until red "shock" treatment is seen exiting all lines. Leave overnight; replace with maintenance treatment.	Overnight weekend treatment. If unit not previously treated with Lines™, use full strength product daily for three weeks.	Not required to meet 500 CFU/mL requirement.
Monitoring Recommendation	Test quality every 6 months or sooner if "odor" or "debris" is noticed in the water.	Six-month intervals with Micrylium test kit.	Not required when used according to labeling.
Source Water Recommendation	Yes: distilled or reverse osmosis treated water.	No	No
Price	\$55.00 ^{††} Retail \$46.75 ^{††} Govt	\$99.95 Retail \$59.99 Govt	\$674.95 Retail \$214.99 Govt
Package Contents	Maintenance refill contains 10 refills and lasts approximately 10 weeks.	Case of ten 500 mL bottles. (Lines™ 6L "bag-in-box" for \$99.99 retail/\$59.99 government).	One cartridge and installation hardware.

* The manufacturers provided data in this table. The listing or omission of a product in this table does not imply endorsement, approval, or disapproval by DECS.

† For complete protocol and product claims refer to manufacturer's instructions.

†† Starter Kit: \$85.00 (retail)/\$72.25 (govt) contains: dispenser/storage container, shock treatment and 10 maintenance refills.

SYNOPSIS OF DENTAL UNIT WATERLINE TREATMENT PRODUCTS AND DEVICES*




Product	DentaPure® DP40 Cartridge 	BluTab™ Waterline Maintenance Tablets** 	MicroCLEAR™ 
Manufacturer	MRLB International, Inc. 2450 College Way Fergus Falls, MN 56537 www.dentapure.com	ProEdge Dental Products 7348 South Alton Unit D Centennial, CO 80112 www.proledgedental.com	Rowpar Pharmaceuticals, Inc. 16100 N. Greenway Hayden Loop F-400 Scottsdale, AZ 85260 www.rowpar.com
Phone/FAX Numbers	(800) 972-3543 (218) 739-2222 (218) 736-3241 FAX	(888) 843-3343 (303) 962-8820 (303) 962-8841 FAX	(800) 643-3337 (480) 948-6997 (480) 948-5918 FAX
Shelf-life	5 years	2 years	2 years
Active Ingredient(s)	Elemental iodine	Silver dihydrogen citrate at 1 ppm	Chlorine dioxide
Application	Continuous	Continuous	Continuous
Protocol Summary†	Attaches to pick-up tubing in water bottle (lasts for 40 L of water usage; 40 working days, or until iodine drops below 0.5 ppm).	Add one tablet each time the water bottle is filled.	Add 1:10 dilution each time the water bottle is filled.
Initial/"Shock" Treatment	Not required to meet 500 CFU/mL requirement.	Use a commercially-available "shock" product according to manufacturer instructions or use 1:10 dilution of sodium hypochlorite introduced to all lines for 10 minutes.	Full strength overnight treatment.
Monitoring Recommendation	Not required when used according to labeling.	After using the product for 8 weeks since the product instructions recommend "shocking" the lines every 8 weeks.	No recommendation.
Source Water Recommendation	No	No	No
Price	\$79.95 Retail \$24.99 Govt	\$27.95** (stdn tablet) Retail \$21.83** (stdn tablet) Govt	\$38.00 Retail \$30.40 Govt
Package Contents	One cartridge and installation hardware.	Box of 50 tablets.**	Two gallons of MicroCLEAR™ and pumps.

* The manufacturers provided data in this table. The listing or omission of a product in this table does not imply endorsement, approval, or disapproval by DECS.

† For complete protocol and product claims refer to manufacturer's instructions.

** Standard (stdn) tablet is used with a 700-750 mL bottle. Pricing of tablets for use in 2.0 L bottle: \$39.95 (retail) and \$30.80 (govt). Note: Product information for BluTab™ updated 10/11.

SYNOPSIS OF DENTAL UNIT WATERLINE TREATMENT PRODUCTS AND DEVICES*




Product	Sterilex® Liquid Ultra 	Sterilex® Ultra Powder 	Sterisil System™ 
Manufacturer	Sterilex Corporation 11409 Cronhill Drive Ste L Owings Mills, MD 21117 www.sterilex.com	Sterilex Corporation 11409 Cronhill Drive Ste L Owings Mills, MD 21117 www.sterilex.com	Sterisil, Inc. 835 S. Highway 105 Ste D Palmer Lake, CO 80133 www.sterisil.com
Phone/FAX Numbers	(800) 511-1659 (410) 581-8860 (410) 581-8864 FAX	(800) 511-1659 (410) 581-8860 (410) 581-8864 FAX	(877) 755-7873 (719) 622-7200 (888) 342-4919 FAX
Shelf-life	1 year	2 years	1 year
Active Ingredient(s)	Alkaline proxygen with phase transfer catalyst	Alkaline proxygen with phase transfer catalyst	Silver
Application	Periodic	Periodic	Continuous
Protocol Summary[†]	Weekly overnight treatment with undiluted product.	Weekly overnight treatment with diluted product.	Water purification system (reverse osmosis hyperfiltration, deionization, UV irradiation with residual disinfectant); fill water bottles from central system or plumb directly to operatories. Filter cartridge changes based on volume and quality of water used.
Initial/"Shock" Treatment	Overnight treatment for 3 consecutive nights.	Overnight treatment for 3 consecutive nights.	Use Sterisil "Citrisil Shock™ Tablet" for self-contained systems; contact Sterisil for direct plumb shock options.
Monitoring Recommendation	No recommendation.	No recommendation.	After start-up test at 1 week, then quarterly for one year, then as needed.
Source Water Recommendation	No	No	Yes: tap water.
Price	\$71.00 Retail \$39.00 Govt	\$56.60 Retail \$31.00 Govt	\$4,775.00 ^{§§} Retail \$3,103.75 ^{§§} Govt
Package Contents	1 carton of 10 sets (each bottle set can treat 2-3 operatories).	20 packets (each packet can treat 2-4 operatories).	Sterisil System™ with electronic monitoring, two bladder tanks, two faucets. Standard cartridge package with BF1 – 1,000 L volume.

* The manufacturers provided data in this table. The listing or omission of a product in this table does not imply endorsement, approval, or disapproval by DECS.

[†] For complete protocol and product claims refer to manufacturer's instructions.

^{§§} Filter cartridge replacement based on volume and quality of water used: Annual Kit (Stage 1-3 + UV [Hyperfiltration + Ultraviolet Irradiation]): \$495.00 (retail)/\$321.75 (govt). DI Kit: (Stage 4) (Deionization Cartridges for Autoclave water): \$190.00 (retail)/\$123.50 (govt); Microbiological Residual Disinfectant Cartridges (Stage 5): BF1 (1,000 L): \$495.00 (retail)/\$321.75 (govt); BF3 (3,000 L): \$995.00 (retail)/\$646.75 (govt); BF7 (7,000 L): \$1,995.00 (retail)/\$1,296.75 (govt); BF10 (10,000 L): \$2,395.00 (retail)/\$1,556.75 (govt).

SYNOPSIS OF DENTAL UNIT WATERLINE TREATMENT PRODUCTS AND DEVICES*




Product	CitriSil™	Sterisil Cartridge™	Sterisil Straw™
			
Manufacturer	Sterisil, Inc. 835 S. Highway 105 Ste D Palmer Lake, CO 80133 www.sterisil.com	Sterisil, Inc. 835 S. Highway 105 Ste D Palmer Lake, CO 80133 www.sterisil.com	Sterisil, Inc. 835 S. Highway 105 Ste D Palmer Lake, CO 80133 www.sterisil.com
Phone/FAX Numbers	(877) 755-7873 (719) 622-7200 (888) 342-4919 FAX	(877) 755-7873 (719) 622-7200 (888) 342-4919 FAX	(877) 755-7873 (719) 622-7200 (888) 342-4919 FAX
Shelf-life	1 year	Indefinite	Indefinite
Active Ingredient(s)	Silver/citric acid	Silver	Ionized silver resin
Application	Continuous	Continuous	Continuous
Protocol Summary†	Add one tablet each time the water bottle is filled.	Point -of-use water purification device to eliminate tap water total dissolved solids (lasts approx 6 months to 1 year, depending on the volume and quality of the municipal water). Note: Self-contained water reservoir not required.	Attaches to pick-up tubing in water bottle (lasts for one year when used with distilled water).
Initial/“Shock” Treatment	Use orange Citrisil Shock™ tablet in lines overnight.	Automatically produces 4 ounces of “blue” shock solution upon initial use.	Automatically produces 4 ounces of “blue” shock solution upon initial use. Quarterly shock treatment with activator also included.
Monitoring Recommendation	After start-up test at 1 week, then quarterly.	After start-up test at 1 week, then quarterly for 1 yr, then as needed.	After start-up test at 1 week, then quarterly for one year, then as needed.
Source Water Recommendation	Distilled water preferred, however tap water can be used.	Yes: tap water.	Yes: distilled or deionized water. (Sterisil Straw™ municipal water version is available for use with tap water.)
Price	\$597.50 Retail \$323.50 Govt	\$99.00 ^{¶¶} Retail \$65.35 ^{¶¶} Govt	\$125.00 Retail \$81.25 Govt
Package Contents	One case of 50 boxes (20 maintenance tablets and one enhanced cleaner tablet included in each box).	One Sterisil Cartridge™.	One Sterisil Straw™.

* The manufacturers provided data in this table. The listing or omission of a product in this table does not imply endorsement, approval, or disapproval by DECS.

† For complete protocol and product claims refer to manufacturer’s instructions.

¶¶ Pricing listed is for Sterisil Cartridge™ 10 (removes 150 grains of hardness). Sterisil Cartridge™ 20 removes 300 grains of hardness and is available for \$129.00 (retail)/\$83.85 (govt). Initial setup kit: \$48.00 (retail)/\$31.20 (govt). Sterisil Cartridge™ 9i Inline Version available via special order—contact Sterisil for additional information.



SYNOPSIS OF DENTAL UNIT WATERLINE TREATMENT PRODUCTS AND DEVICES*

Product	Team Vista™ Dental Waterline Cleaner by Hu-Friedy 	VistaClean™ Irrigant Solution Concentrate by Hu-Friedy 	VistaTab™ Dental Waterline Cleaner Tablets by Hu-Friedy 
Manufacturer	Vista Research Group, LLC Distributed by: Hu-Friedy Mfg. Co., Inc. 3232 N. Rockwell St. Chicago, IL 60618 www.hu-friedy.com	Vista Research Group, LLC Distributed by: Hu-Friedy Mfg. Co., Inc. 3232 N. Rockwell St. Chicago, IL 60618 www.hu-friedy.com	Vista Research Group, LLC Distributed by: Hu-Friedy Mfg. Co., Inc. 3232 N. Rockwell St. Chicago, IL 60618 www.hu-friedy.com
Phone/FAX Numbers	(800) 483-7433 (773) 975-6100 (800) 729-1299 (FAX)	(800) 483-7433 (773) 975-6100 (800) 729-1299 (FAX)	(800) 483-7433 (773) 975-6100 (800) 729-1299 (FAX)
Shelf-life	6 Years (VistaClean™ irrigant) 2 Years (VistaTab™ cleaner)	6 Years	2 Years
Active Ingredient(s)	Organic Citrus Botanicals (VistaClean™) Stabilized Chlorine Dioxide (VistaTab™)	Organic Citrus Botanicals	Stabilized Chlorine Dioxide
Application	Continuous (VistaClean™ irrigant) and Periodic (VistaTab™ cleaner)	Continuous and Periodic	Periodic
Protocol Summary†	Add one or more VistaClean™ drops each time the water bottle is filled as irrigant. Every week or as needed (usually monthly) add one VistaTab™ tablet to 750 mL of potable water and follow treatment instructions.	Add one or more drops each time the water bottle is filled as irrigant—generally 1 drop for 700 mL bottle; 2 drops for 2L bottle.	Every week or as needed (usually monthly) add one tablet to 750 mL potable water. Run 1/2 of the amount through waterlines, wait five minutes then run balance through lines, and rinse with 500 mL fresh water.
Initial/“Shock” Treatment	Two consecutive treatments using two VistaTab™ tablets.	Use VistaTab™ or other EPA-registered antimicrobial cleaner.	Two consecutive treatments using two VistaTab™ tablets.
Monitoring Recommendation	Monitor lines in each operatory at least quarterly, preferably monthly. If counts >500 CFU/mL, perform line cleaning per product instructions.	Monitor lines in each operatory at least quarterly, preferably monthly. If counts >500 CFU/mL follow product instructions.	Monitor lines in each operatory at least quarterly, preferably monthly. If counts >500 CFU/mL, perform line cleaning per product instructions.
Source Water Recommendation	Yes: tap water.	Yes: tap water.	Yes: tap water.
Price	\$199.00 Retail \$119.40 Govt	\$82.00 Retail \$49.20 Govt	\$129.00 Retail \$77.40 Govt
Package Contents	One box containing one 1-ounce bottle VistaClean™ concentrate and 5-1.7 gram VistaTab™ tablets.	One 1-ounce bottle of concentrate with dropper tip and cap.	One box containing 15-1.7 gram tablets.

* The manufacturers provided data in this table. The listing or omission of a product in this table does not imply endorsement, approval, or disapproval by DECS.

† For complete protocol and product claims refer to manufacturer’s instructions.

SYNOPSIS OF DENTAL UNIT WATERLINE TREATMENT PRODUCTS AND DEVICES*

Product	VistaClear™ Dental Waterline Treatment System– Model 1000-47-C 	VistaClear™ Dental Waterline Treatment System– Model 1000 
Manufacturer	Vista Research Group, LLC 1554 Township Road 805 Ashland, OH 44805 www.VistaResearchGroup.com	Vista Research Group, LLC 1554 Township Road 805 Ashland, OH 44805 www.VistaResearchGroup.com
Phone/FAX Numbers	(866) 559-2837 (419) 281-3927 (419) 281-7380 FAX	(866) 559-2837 (419) 281-3927 (419) 281-7380 FAX
Shelf-life	Indefinite	Indefinite
Active Ingredient(s)	Multi-Stage Biochemical Filters	Multi-Stage Biochemical Filter
Application	Continuous Filtration	Continuous Filtration
Protocol Summary[†]	Filters all water sent to the dental unit from municipal water supply. Central models designed for multiple operatories. Maintenance involves a 15 second weekly protocol and quarterly line cleansing. Filters should be changed every 12 to 18 months.	Filters all water sent to the dental unit from municipal water supply. Model 1000 is designed for a single operator. Maintenance involves a 15 second weekly protocol and quarterly line cleansing. Filter should be changed every 12 to 18 months.
Initial/“Shock” Treatment	Line cleansing required upon installation. Hydraulic and pneumatic purge and clean using VistaClean™ and/or VistaTabs™.	Line cleansing required upon installation. Hydraulic and pneumatic purge and clean using VistaClean™ and/or VistaTabs™.
Monitoring Recommendation	Monitor lines in each operatory at least quarterly, preferably monthly. If counts >500 CFU/mL follow product instructions.	Monitor lines in each operatory at least quarterly, preferably monthly. If counts >500 CFU/mL follow product instructions.
Source Water Recommendation	Yes: tap water.	Yes: tap water.
Price	Pricing for 1000-23-C (3 ops) \$2,895.00 [#] Retail \$1,592.25 [#] Govt	\$995.00 ^{oo} Retail \$547.25 ^{oo} Govt
Package Contents	Complete system including air and water regulators, gauges, airgap drain fitting, VistaCheck backflow preventers, syringe, VistaClean™ concentrate, colored tubing and fittings.	Complete system (1 op) including VistaClean™ concentrate, tubing, syringe and fittings.

* The manufacturers provided data in this table. The listing or omission of a product in this table does not imply endorsement, approval, or disapproval by DECS.

[†] For complete protocol and product claims refer to manufacturer’s instructions.

[#] 1000-34-C (4 ops): \$3,750.00 (retail)/\$2,062.50 (govt); 1000-46-C (6 ops): \$5,150.00 (retail)/\$2,832.50 (govt); 1000-47-C (7 ops): \$5,750.00 (retail)/ \$3,162.50 (govt). Replacement Filter (R5450) \$195.00 (retail)/\$107.25 (govt); 1000-34-C requires three filters and the 1000-46-C and 1000-47-C require four filters.

^{oo} Replacement Filter (R5450) \$195.00 (retail)/\$107.25 (govt).