

UNITED STATES
DEPARTMENT OF ENERGY



Award for Energy Innovation ~ 1988

Presented to

Human Endeavors

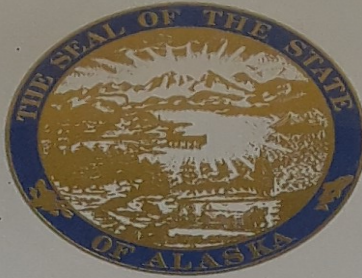
for a distinguished contribution to
our Nation's energy efficiency

John S. Amington
Secretary of Energy

October 7, 1988

Date

THE ALASKA LEGISLATURE



* HONORING *

* CLINT AND KATHY ELSTON *

* INVENTORS OF ALASCAN *

It's a rare moment when exceptional people change the way we look at our environment. Kathy and Clint Elston have shown great commitment in attempting to solve ecological problems. Alascan is a waste disposal system that uses a minimal amount of water, in an environmentally sound manner.

At a time when the problems of waste disposal confront us on the nightly news it is refreshing to learn that solutions can be found for our problems. This is not only an academic enterprise, Alascan is ready to be marketed commercially.

The U.S. Department of Energy awarded the Elston's the 1988 Energy Innovations Award with a grant of \$100,000 to begin marketing the Alascan.

Alascan is a system that is designed for the special human waste disposal needs of Alaskans. The expansion of Alascan will provide needed jobs to the people of Alaska. The example of Clint and Kathy Elston proves that Alaska is willing to do its part to find alternatives which are kind to the environment.

For their many contributions to the State of Alaska, the Legislature cites the Elston's in appreciation for all they have already accomplished and what they will accomplish in the future to make Alaska a better place to live.



Sam Carter
SPEAKER OF THE HOUSE

Tim Kelly
PRESIDENT OF THE SENATE

Date: March 8, 1990

Requested by: Senators Coghill, Rodey, Uehling,
Binkley, Fahrenkamp, Halford and Pearce
Representatives Lemans and Menard



NEWS

Afton inventor designs a self-contained home sewage treatment system



Clint Elston peers into his "bio-matter resequencing converter," containing billions of red worms eating human and household waste, in the basement of his Afton house on Wednesday September 12, 2007. The giant round tank converts the matter into rich soil, which he uses as compost for his tomatoes. 9/12/07

By **MARY DIVINE** | mdivine@pioneerpress.com | Pioneer Press

PUBLISHED: September 17, 2007 at 11:01 pm

Every time Clint and Bobbi Elston flush a toilet or turn on their tap, they make history. Clint Elston has designed what he believes is the world's first self-contained sewage treatment system in the lower level of the couple's Afton home.

The new three-part system, the Elston's say, eventually could eliminate the need for piped water and sewer and drilled wells and septic systems. It reuses all dish, shower, sink and laundry water, recycling it into drinking water.



But the most interesting feature: it collects food scraps and toilet “matter” in a large tank where thousands of small red worms live. The worms eat the waste, and out comes soil.

“We literally make s*** disappear,” Clint Elston said. “It’s all Mother Nature. We really haven’t done anything; we’ve just automated Mother Nature.”

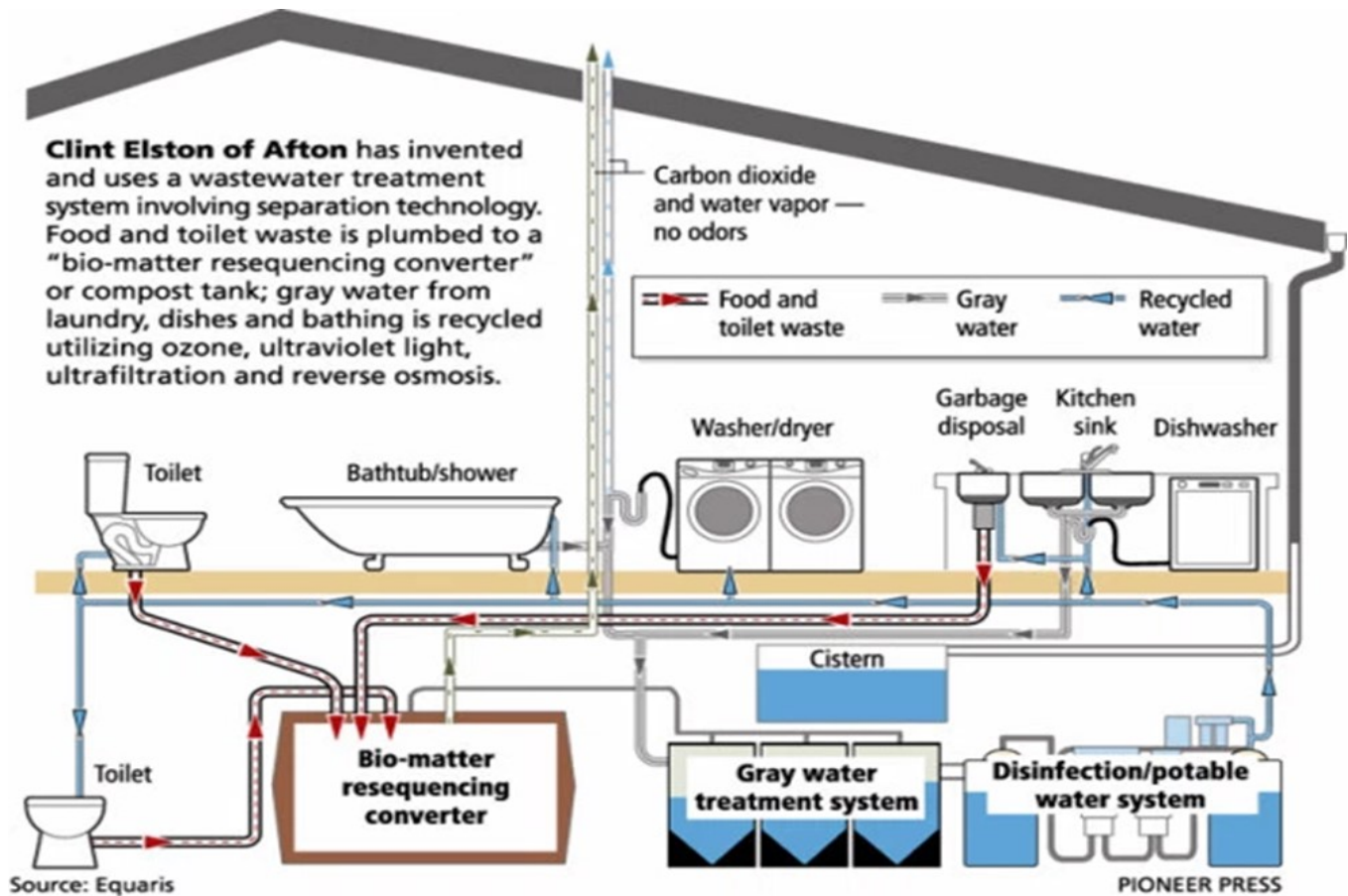


Elston named his composter the Bio-Matter Resequencing Converter after hearing the term on a “Star Trek” episode. Two agitators – picture a huge Cuisinart set on its lowest level – spin the waste and worms five to 20 minutes each day. “I came up with the idea after looking at manure spreaders,” Elston said.

The Elston’s remove about 10 gallons of soil from the tank each year and use it as compost around their ornamental shrubs. “The secret is, you’ve got to get the human waste and all the organic waste out of the wastewater,” he said.

Once that’s done, Elston said, you can recycle all the “gray water,” the dirty water that drains from your sink, bathtub, washing machine and dishwasher.





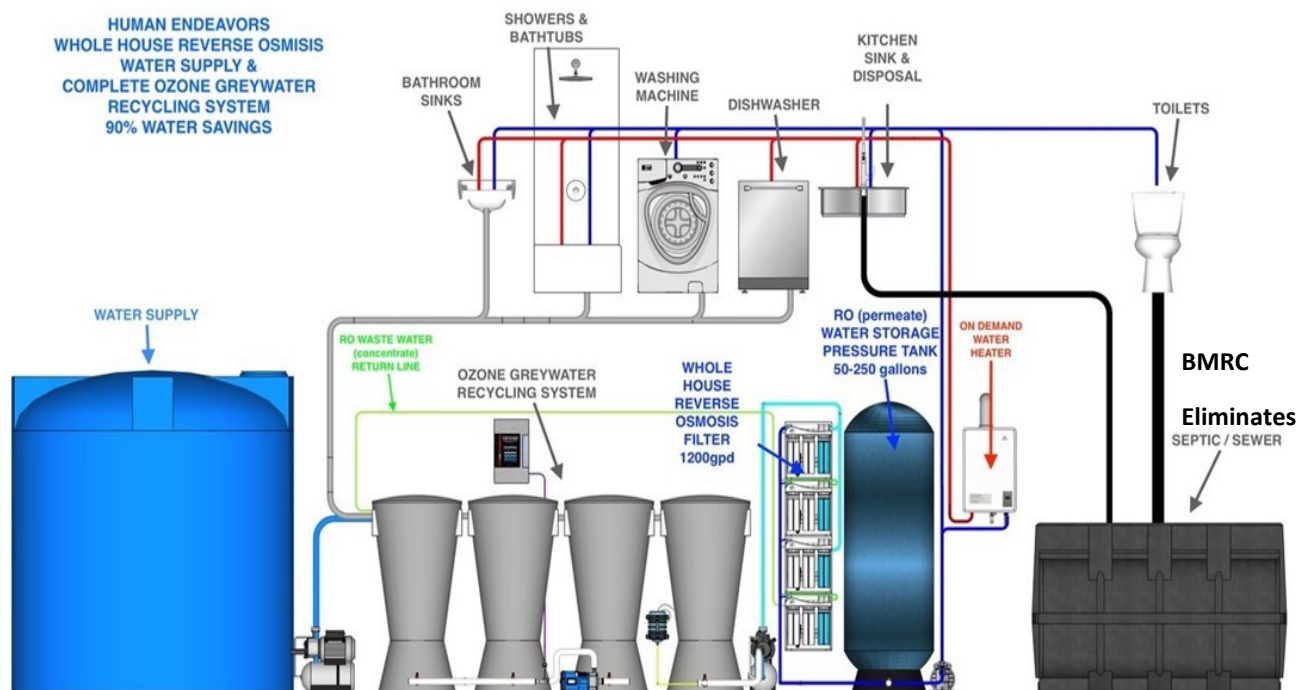
Elston's gray water-treatment system involves three huge cone-shaped water tanks where the water then goes through an extensive filtering process involving ozone, micron filters and reverse osmosis before it is stored in a large pressure tank. A computer system continually tests the water and alerts the Elston's to any problems. They can also monitor the system on the Internet, he said.

The finished product is purer than bottled water, Bobbi Elston said. "You don't have to worry about 3M chemicals," she said, referring to recent groundwater-contamination problems in south Washington County. "We're using what the Creator has given us, and it's much higher quality water."

She keeps two plastic Ziploc bags of ice cubes in the freezer. The clear ones are made from recycled gray water; the cloudy ones come from well water, she said. "There's a huge difference in quality," she said. A typical house goes through 75 gallons of water per person a day – none of it recycled. The Elston's need about three gallons of water per person a day to make up for the water they lose through flushing the toilets, evaporation and drinking.

That water comes from the sky. The Elston's use screened gutters to collect and pipe rainwater into two giant cisterns, where the water is filtered. "That's the best water in the world, because it's the softest water you can get," he said.





The three different systems that make up the self-contained, closed-loop zero-discharge sewage treatment system are sold through the Elston's company, Human Endeavors.

Dave Stark, water plan coordinator for Cook County, Minn., said there is a huge need for technologies like Human Endeavors, especially along the North Shore. Stark, whose background is in water resources, installed a Human Endeavors system in his riverfront home about 10 miles outside Duluth.

“We live on the Lester River, a very sensitive river, and so I was looking for technologies to reduce pollution and alternatives to traditional mound septic systems,” Stark said. Stark said the gray water-recycling component makes the Human Endeavors system particularly unique. “That’s the stretch. That’s the part that makes it feel like the Starship Enterprise,” he said. “It’s more unique than anything that exists in the world on a household scale.

Elston, who holds three patents on the system, became interested in green design while building geodesic domes in Colorado in the early 1970s. He said he was influenced by the writings of R. Buckminster Fuller, inventor of the geodesic dome.

He began researching septic alternatives after installing a well and septic system on difficult soils near Winter Park, Colo. He later worked on composting toilet systems in Alaska and started the AlasCan Co., the predecessor to Human Endeavors. He moved to Minnesota in 1995.

He said he hopes his technology can help solve the world’s water woes. “There are 1.1 billion people in the world who don’t have access to clean, safe water, and 2.5 billion who don’t have access to proper sanitation,” he said. “We need to get more out of the water that we already have.”





Human Endeavors" Home of Green Technologies, Afton, MN



Dometic/SeaLand Ultra-Ultra Low Flushing Toilets plumbed to the Bio-Matter Resequencing Converter—Composting Tank



Separate Kitchen Organic Resource Sink with 1hp electric disposal plumbed to the Bio-Matter Resequencing Converter—Composting Tank



Bio-Matter Resequencing Converter—Composting Tank with Composting Tea Liquid Tank as a liquid fertilizer Resource



Aerobic Greywater Treatment System with Experimental Hydroponic and Aqua Culture System



Bio-Matter Resequencing Converter, Greywater System and Enfinity Ozone and the first prototype Reverse Osmosis Disinfection and Filtration Recycling System

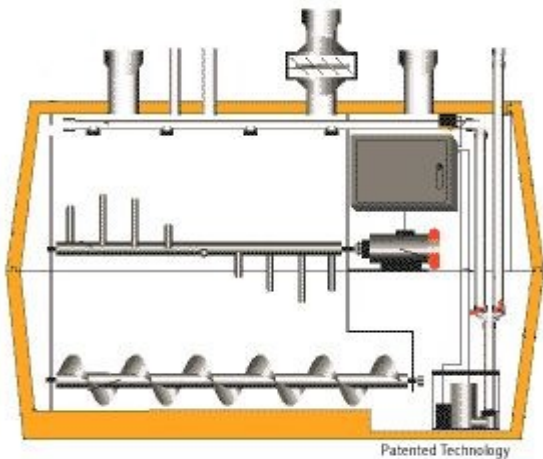


Rainwater Storage Tanks with Geothermal Ground Source Heat Pump

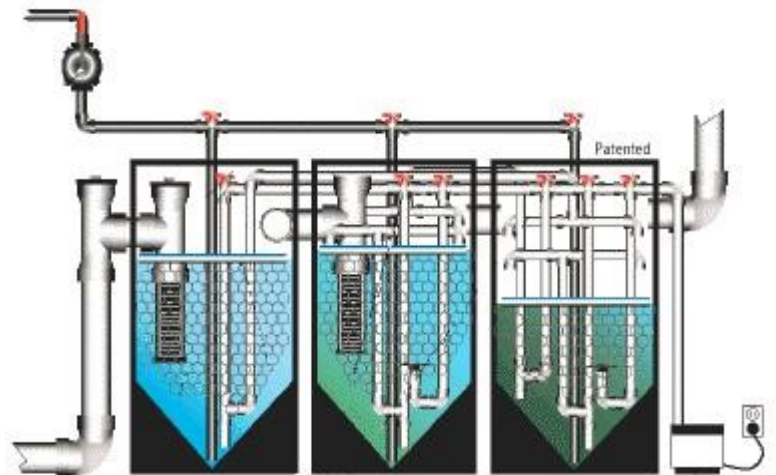


First prototype Ozone and Reverse Osmosis Disinfection and Filtration Recycling System

Human Endeavors' Achievements and Accomplishments on the Road to Development



Bio-Matter Resequencing Converter



Initial Extended Aeration Greywater Treatment System



The Very First Ultra-Violet Light Reverse Osmosis Disinfection and Filtration System



Complete Installation of all of the Human Endeavors' Technologies at a Luxury Resort on a remote island off the Coast of Belize



Bobbi and Clint Elston at the Robert Redford Natural Resources Defense Council office building, Santa Monica, CA



Two Greywater Treatment Systems installed at the Robert Redford Natural Resources Defense Council office building, Santa Monica, CA

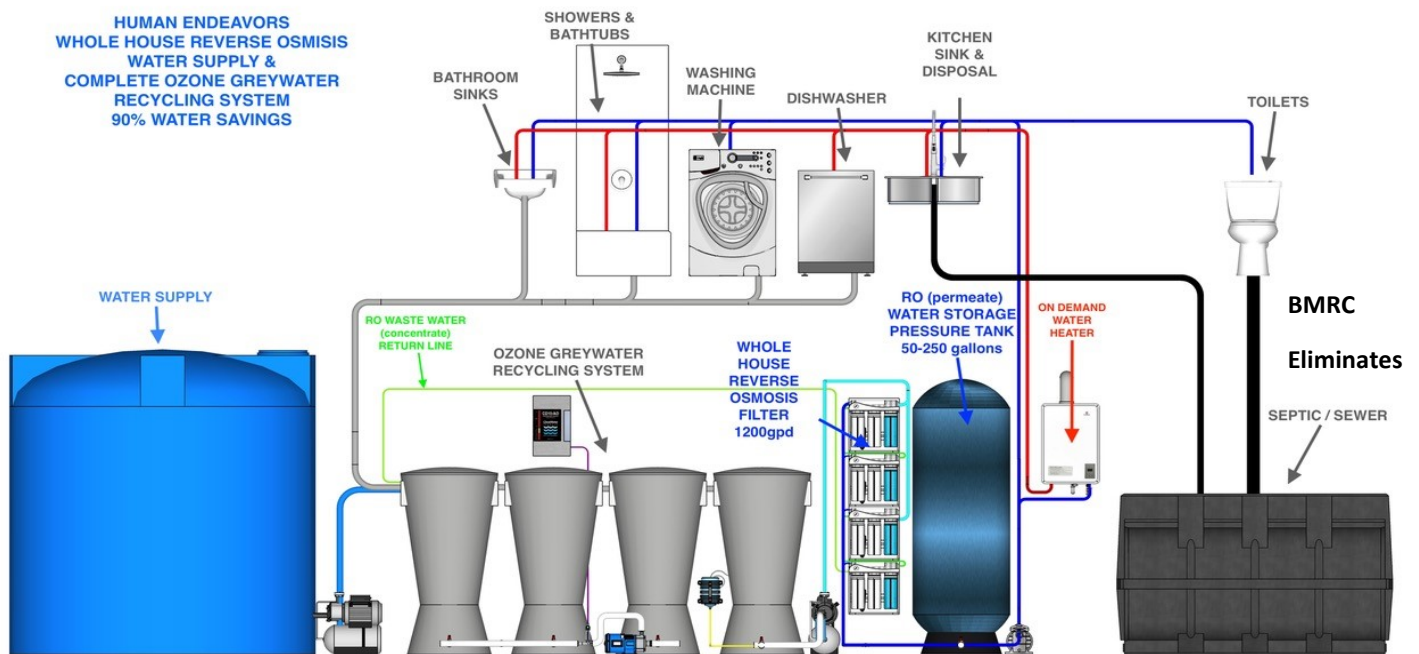
FOR YOUR HOME OR BUSINESS

Utilizing ozone purification and reverse osmosis filtration

REDUCE your need for water by 40 — 80%

AND

PRODUCE over 1,200 gallons of pure and sanitized water for



In household applications the toilet traditionally uses 40% of the residence's total water consumption.

In commercial applications the toilet traditionally uses 80% of the businesses total water consumption.

With the Human Endeavors Greywater Treatment and Recycling System (HEGTRS), all incoming water is first treated utilizing ozone/aerobic circulation and digestion technologies. That sanitized water is then filtered with four each reverse osmosis units capable of producing over 1,200 gallons of purified permeate (good) water per day. Normally discharged concentrate (bad) water is now recycled back into the HEGTRS with additional retreatment, thereby, achieving a 90% recovery of the concentrate water to permeate water qualities.

As the now "Total" household permeate water is utilized in the laundry washing machine, dishwasher, kitchen and bathroom sinks it then becomes "greywater". It is separately treated and sanitized utilizing the HEGTRS aerobic/ozone injection and circulation digestion technology. That treated, filtered and sanitized, "no longer", greywater water is then stored in any size pressure tank. It surpasses any water quality standard and provides digital and mechanical readout indicators during operation for monitoring and determining service requirements of the equipment. All plumbing fixtures, to including drinking water supplies, are supplied with the same quality, pure and safe water for all water needs.

The greywater tanks are easily maintained with valves and no filters to clog. All of the water has been thoroughly sanitized utilizing ozone oxidation and filtered with "Tap Water" reverse osmosis membrane technologies.

HEGTRS Package — Four Tank System with Ozone Generator, Air Dryer, Venturi Bypass Assembly, Circulation Pump, Piping and Fittings.

Additional reverse osmosis units, the pressure tanks and the other accessory prices are listed on the ISpring Marketing documents.

The Costa Rican Human Endeavors S.A. Corporation (HESA) has been in the Costa Rican water business since 2017. Three US Environmental Process Patents in Water and Wastewater Recycling.

Call or email us to discuss your existing or future water needs, uses and recycling potentials.

humanendeavors762@gmail.com — CR 506 8735 8343—www.youtube.co/watch?v=DMHbDodqQkg



Resume' of Clinton Ray Elston

May 30, 1947 - born and raised in Central Minnesota.

1965 - Graduated from St. Cloud Public High School with Honors, football, swimming and track athlete, Captain and state swimming freestyle relay champion. Acquired his Private Pilot's License, land and sea-plane rating at 17 years of age.

1966 - Attended Gustavus Adlophus College, St. Peter, MN.

1967 - Volunteered and graduated from the US Army Artillery Officer Candidate School (OCS), Nike Hercules Missile School, served in Frankfurt, Germany and Honorably Discharged as a 1st Lieutenant and as a 30% Disabled American Veteran in 1969.

1972 - Relocated to Winter Park, CO and began his education reading and following the philosophies of the late R. Buckminster Fuller building residential geodesic dome homes.

1973 - Interested in alternatives to septic wastewater treatment systems he became a Clivus Multrum composting toilet distributor while experimenting with his own greywater treatment system inventions.

1973 – 1975 - Spent a couple of years in Austin, TX and New Orleans, LA refining his geodesic dome, composting toilet and construction capabilities.

1982 – 1995 - Relocated to Healy, AK and secured a federal government contract designing, manufacturing, installing and servicing his own composting toilet invention in over 50 each US Army National Guard Armories scattered throughout Alaska's rural Eskimo Bush Villages, above and below the Arctic Circle.

1988 - Awarded the prestigious US Department of Energy National Award for "Energy Innovations" for the geodesic dome home he designed and constructed, featuring his composting toilet, greywater treatment system inventions and the farthest north hybrid solar/geothermal ground source radiant heating system.

1990 - Awarded Alaska's Legislative Award for his "Environmental Achievements".

1992 - Awarded a US Environmental Process Patent for his Composting Toilet and Greywater Treatment System invention. US 5256378 Apparatus for Composting Organic Waste Materials and Method, US 6299775 and 6383369B2 Waste and Wastewater Treatment and Recycling System.

1995 – 2016 - Relocated back to Minnesota and developed the World's first and only greywater treatment and recycling technology capable of producing potable/drinking water qualities.

2002 - Awarded two additional US Environmental Process Patents for his Water and Wastewater Treatment and Recycling Technology inventions.

2016 – 2017 - Relocated to Costa Rica and spent time in Manuel Antonio, Tamarindo and Esparza.

2018 - Relocated to Santa Fe, Mexico City and spent one year experimenting and inventing reverse osmosis filtration, ozone treatment and recycling technologies for the commercial laundry industry.

2019 - Moving back to Costa Rica and offering his consultation expertise in water, wastewater treatment and energy construction technology. Also, supplying his patented water and wastewater treatment and recycling technologies complimented with cost-effective PEX tubing and accessories for water supplies and radiant cooling, reverse osmosis water filtration, ozone for swimming pools, laundries and solar/geothermal hybrid geothermal air conditioning technologies for residential and commercial applications.