

## Growing Our Erosion Control Business

Many of you have asked over the years why Filtrexx was founded using composted products as our feedstock of choice. Well, like our slogan says, 'Because nature can do what man cannot®.' Compost mimics natural filtration systems the best. Compost is also available from over 4,000 locations in the U.S., so we are never far from a source.

Compost has what dead soils lack, to put it bluntly. Each teaspoon of compost has over a billion beneficial microbes, which fight soil diseases, "fix" nutrients so plants can use them, and help get rid of things like hydrocarbons by actually breaking them down.

By now you should be familiar with the four product lines emerging as key tools in our toolbox:

1. **SiltSoxx™** are *the original compost filter sock*, palletized for use in sediment control
2. **EnviroSoxx®** for *targeted pollutant removal*, such as bacteria, hydrocarbons, heavy metals, or nutrients
3. **GroSoxx®** are *vegetated "soft blocks™"*, a new term we recently coined to accurately describe them. They grow into whatever you put them on.
4. **GardenSoxx®** are *the best container for growing healthy gardens*, farms, and on roof tops.

Too often decisions about erosion control are focused on the lowest price rather than performance. Most people realize that you pay for it in the end with maintenance and repair until it works. Filtrexx calls the repair of these areas "band-aids". We recently started using GroSoxx® for the repair of rills and gullies. The interest from distributors, customers and composters has been overwhelming...so we must have done something right.



An obvious example is highway interchanges, where rills form on exit ramps near the bridges, then turn to gullies, and eventually need major expensive repair. One reason for this is that the systems used for vegetation establishment

(such as hydroseeding) do not use compost, and are not as good at establishing vegetation as compost products. These areas need band-aids as soon as damage is visible. Pressing these "vegetated soft blocks" into place is how they grow.

GroSoxx® can be planted with bare root plants or live plugs. On steep slopes, GroSoxx® can be used with grid or LockDown Netting™ to provide additional stability until the plants' roots grow through the mesh and anchor the GroSoxx® to the underlying soil.

The new GroSoxx® solution is being pushed by many of our manufacturers and distributors nationwide. I urge you to take advantage of this new product and experience for yourself how easy they are to use and predict success. Use them on slopes for repairs, in channels, ravines, steep slopes (for prevention of rock fall), and even in GreenGabions™.

**"We simply fill the right type of mesh with good quality compost mixed with seed, and...it grows in like a Chia Pet®."**

The new GroSoxx® flyer is available to describe all these applications. Use it to promote your business and solutions that work – [www.filtrexx.com/grosoxx/](http://www.filtrexx.com/grosoxx/).



GroSoxx® provide fast establishment of vegetation. The plants' roots grow through the mesh, anchoring the GroSoxx® to the underlying soil.

Keep in mind, this application is not designed to be used for filtration, but as a permanent application for vegetation establishment. However, the footprint of whatever you are repairing will obviously infiltrate and filter water much better than what is there now. If pollutants are a concern, you can add any of the

EnviroSoxx® treatment train additives for a full spectrum of options. In bioretention systems or rain gardens, this might be an attractive prefilter design option. This uses the existing site footprint to filter!

The sister product to GroSoxx® are GardenSoxx®—these are a different type of mesh with a tighter knit, so it has more containment and fewer roots growing out of the Soxx™. GardenSoxx® provide the fastest, best way to transform any space into a new growing environment, for the landscaper, contractor or homeowner. We have successfully grown over 300 varieties of vegetables in GardenSoxx®. Try ordering a kit at [www.gardensoxx.com](http://www.gardensoxx.com) and discover what you are missing in home gardening.

— **Rod Tyler**  
CEO & Founder  
Filtrexx International

## Project Profiles

### SiltSoxx™ Used to Create a New Green Stormwater Infrastructure Solution

Pocono Mountains, PA

The Hemlock Farms Community in the Pocono Mountains is a 4,600-acre development that contains 3,600 homes, 75-miles of roadway, 100-acres of lakes, and no modern stormwater management. The development was designed in the 1960s as a dense grid of ¾-acre lots. As the community approached build-out, major problems within the community developed, including localized flooding, poor water quality in the lakes, and erosion. The community leaders proactively chose to develop a Green Stormwater Infrastructure (GSI) solution to address these problems.

According to the U.S. EPA, “Green infrastructure is an approach that communities can choose to maintain healthy waters, provide multiple environmental benefits and support sustainable communities. Unlike single-purpose gray stormwater infrastructure, which uses pipes to dispose of rainwater, green infrastructure uses vegetation and soil to manage rainwater where it falls.” The Hemlock Farms project is likely the largest privately funded GSI retrofit project in the U.S.

GSI was designed to blend into the landscape and treat runoff along its entire flow path, with a primary focus on treatment at the source and the reduction of runoff volume through evapotranspiration and base flow enhancement. Kleinschmidt, an engineering firm in Strasburg, PA developed a new GSI solution to save trees, which involved using 32” SiltSoxx™ filled with GrowingMedia™ – called Retentive Grading. They worked with Hunt Ventures, in Gettysburg on the design, who brought in Ground Solutions from Waynesboro, PA on the install.

Retentive Grading is designed to mimic a natural floodplain, providing peak flow reduction and water quality, while balancing infiltration and evapotranspiration. The practice involves creating a berm perpendicular to the slope to allow the water to pond on the forested site, reducing the flow rate of stormwater. Water quality is improved when the water is allowed to settle in storage areas and slowly pass through the SiltSoxx™ for filtration. This practice also improves the plants’ uptake of the nutrients in the soil. Over time, this practice creates an upper floodplain where hardwood species thrive, and a lower floodplain, with other woodland species.

“SiltSoxx™ made designing to fit the landscape easy,” said Mark Bowen, Senior Ecological Engineer for Kleinschmidt. “We were able to reduce tree removal, soil disturbance, and the overall project footprint. It will improve water quality and reduce the flooding in the future.”

The effectiveness of Green Stormwater on reducing flooding was not initially accepted by the community because of antiquated regulations. Therefore, a new regulatory framework was developed for this project. Funding of the project required innovative solutions including a stormwater utility fee and market trading of watershed improvements to downstream developers that is based on nutrient trading principles.



Computer model 1-2 years later. Native woodland species are established in the lower floodplain.



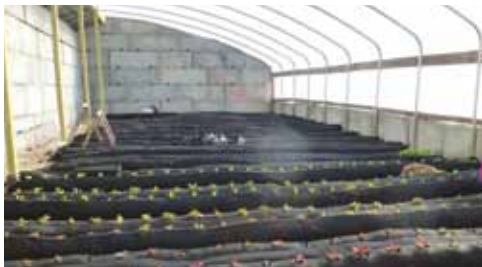
Computer model 5-10 years later. Maple trees thrive in the upper floodplain.

### Old Chinese Growing System Uses GardenSoxx® for Modern Production

Springfield, MO

In 2010 the Millsap Farm embarked on the construction of a Chinese High-Tunnel. This is not a tunnel to China, but a simple solar greenhouse designed to grow warm weather crops during the winter months without supplemental heat. The greenhouse floor is two feet below grade, where there is no soil suitable for growing. They considered using traditional raised beds or hauling in enough dirt to create a wall-to wall garden space, but both scenarios meant committing to a permanent layout and hauling in a lot of soil by hand.

Millsap Farm chose to use GardenSoxx®. Ero Co in Springfield, MO filled and installed the GardenSoxx® in January 2013. “So far we are very pleased,” said Curtis Millsap. “Between the controlled environment in the tunnel and the well-drained GardenSoxx® system, we’ve been able to plant earlier than ever before. The aeration of the roots is exceptional—and we are particularly excited about having zero weeds.”



### Ready-Mix Plant Not So Ready For Compliance Testing

Washington, D.C.

A ready mix concrete plant in Washington, D.C. was experiencing massive wastewater issues due to the high volume of concrete trucks being batched out of this small industrial site. When the District Department of the Environment and the EPA issued a compliance directive for mandatory water sampling, the company turned to EcoDepot, LLC for help. Their stormwater retention pond was turbid and had a very high amount of Total Suspended Solids. The pH was elevated, and oils and hydrocarbons were apparent on the surface of the pond.

In the major drainage channels leading to the pond EcoDepot installed seven sections of 12” DitchChexx™. After three weeks the water was so clear you could see to the bottom, the pH was reduced to a remarkable 8.69, and no oil or grease was visible. Sampling confirmed the observations—oil and grease, heavy metals, BODs and CODs were all non-detectable and the sediment load was almost non-existent.



### Large Scale Backyard Garden

Charlotte, NC

Jon Stewart had been gardening for many years, but had given up because he no longer had the will to till the soil nor the perseverance to keep the garden weed free. After being introduced to GardenSoxx®, with their easy set-up and “No Weeds” promise, he decided to try again.

Jon laid landscape fabric to create a barrier with the underlying grass in his backyard. He created an elaborate custom layout that would have taken several days and hundreds of dollars to construct using traditional wooden raised beds. Jon placed two pallets of GardenSoxx® (that’s 320 feet of row) and planted his entire garden in only one day! “We ordered the GardenSoxx® already pre-filled,” said Stewart.

For added ease, he installed the complimentary drip irrigation kit and added a hose timer that he purchased at his local hardware store. “I am one happy gardener,” Jon exclaimed! “This was so easy it almost felt like cheating!”







## Prepping for a Visit from the EPA

Winston-Salem, NC

Ferguson Waterworks of Kernersville, NC, an authorized distributor of Filtrexx® SiltSoxx™ teamed up with their regional Filtrexx representative to approach the City of Winston-Salem about SiltSoxx™ and its potential applications for the municipality. In meeting with the City's street maintenance division, they learned there was an impending visit from EPA inspectors in only one week. They wanted to button up their stormwater efforts prior to the visit and have an approved BMP in place when the EPA arrived. After learning that the EPA had a spec' for the product, they decided to use 8" Siltsoxx™ around the inlets in the maintenance yard as well as the material storage area where they stockpile salt and sand for winter maintenance.

The City has been pleased with the ease of use and performance of the SiltSoxx™. They are considering using it outside the yard, on street applications and roadway construction jobs.



## Backyard LivingWall™

Cleveland, OH

A homeowner contacted Filtrexx because a stream in their side yard, which usually runs at a trickle, had begun swelling to a three to four foot river after each rain event. Each event washed away a significant amount of land—initially just a foot or so per year. When one month's rain took five or more feet of land and brought the eroded bank within 15 feet of the home's foundation, the homeowners decided it was time to do something.

Express Ground Cover of Mayfield Heights, OH engineered a solution to accommodate the stream's highest flow, yet was still attractive during dryer months. The team used 12" Soxx™ to create stepped "flood zones" to minimize erosion, stepping up two feet and back three feet for each level. Above the flood zones they created a LivingWall™ pre-seeded with a deep root grass mix and a wildflower erosion control mix. The solution restored what had been lost to erosion over the previous 20 years.



## Sustainable Energy Infrastructure

Queensland, AU

The Australia Pacific LNG Project is a sustainable energy project on Curtis Island, Australia. One of the project's unique challenges was to re-establish banks and batters above clean water drains prior to them opening to the Gladstone Harbour, an environmentally sensitive area of the Great Barrier Reef. The solution required the capacity to deal with a 40.1mm (1.5") rain event.

McCosker, in partnership with Fulton Hogan designed a solution that combined compost blanket with Enka-mat on the faces of the batters with 450mm (18") DuraSoxx® on the benches for added slope protection at the hinge point of the batters. The Soxx™ anchored the Enka-mat and grass roots products creating a vegetated drain zone.

Soon after came Cyclone Oswald, the biggest rain event on Cutis Island in recorded history! The system withstood the massive 870mm (34.25") rain event over a four day span—22 times more than expected.





# Can Compost Save the Bay?

Leaders from all sectors of the economy gathered on March 5, 2013 at the Annapolis Maritime Museum to learn about compost-based BMPs for stormwater management, and their unique capacity to solve the stormwater problems that plague the Chesapeake Bay.

EPA Chesapeake Bay Program Deputy Director James Edwards opened the day by providing an overview of the current state of the Bay, and the program's goal to reduce the amount of sediment, nitrogen, and phosphorus flowing to the Bay in particular.

Speaking to a sold-out capacity crowd that included government officials, engineers, academicians, and conservation organizations, Filtrexx CEO Rod Tyler reviewed the basic science behind the product and the economic and ecological benefits of using nature's filtration methods. Throughout the day, the audience discovered an array of Filtrexx® Products that can be deployed upstream in the sediment-laden tributaries that lead to the Chesapeake Bay, including ravine erosion control, compost blankets, living walls, GroSoxx® Vegetated Soft Blocks™, Green Gabions™, EnviroSoxx® for targeted pollutant removal, modular options for residential use, and more.

Filtrexx Director of Research Dr. Britt Faucette provided insight on pollution prevention, runoff curve changes compared to the alternatives, and design considerations. Several Filtrexx® Certified™ Installers were on hand to present local case studies as well as to highlight some large and immediate opportunities to make a big impact.

Brenda Platt of the Institute for Local Self Reliance rounded out the event with findings from her soon-to-be-released report *The Case for Expanded Composting in Maryland: Waste Reduction, Jobs & Watershed Benefits*. The report states that, "Filtrexx® and its trained installers use approximately 2 million cubic yards of recovered organics annually." She stated that Filtrexx is directly responsible for having created 4,000 jobs.

The event was hosted by Spa Creek Conservancy, a stewardship organization focused on education, preservation, mitigation, and restoration of Spa Creek.

An important outcome of the event was the collaborative discussion about a new steep slope application designed specifically for the steep ravines of the Chesapeake Bay watershed. Tyler is currently working on the design specifications.

## Serve a Family a Garden

Since 2010 Filtrexx has helped make it possible for thousands of urban families to grow healthy, fresh produce through the support of The Family Garden Initiative (FGI). FGI is a volunteer-driven, community outreach nutrition program that serves GardenSoxx® gardens—planted—to low-income families within the community. Each family that receives a garden also gets a watering can, basic growing instructions, and a recipe book showing them how to use the produce they grow.

The Family Garden Initiative was started in 2010 with 300 gardens. In 2012 FGI gave away 750 gardens and started the process of replicating FGI nationally. This year the goal is to empower 2,500 families to feed themselves with gardens! We need your help to do it.

Each garden, with its plants, watering can and materials, costs about \$40 and yields enough produce to feed a family of four for a year! Donations of any amount are warmly appreciated, but donations in \$40 increments ensure that entire families are served gardens.

To make a tax-deductible donation to the Family Garden Initiative, visit <http://familygardeninitiative.org/donate-a-garden/>.



## Filtrexx 2013 Webinar Series

### Next Session: April 23, LEED/Green Building

Filtrexx now offers a FREE four-part webinar series on compost-based BMPs for sediment and erosion control, and targeted pollutant removal in stormwater runoff. The sessions are designed to provide an overview to Filtrexx® Products and their many, varied applications. Distributors are encouraged to invite their customers. Each session is worth one PDH credit. The four sessions include:

#### April 23: LEED/Green Building

Learn the basics of the LEED Green Building Rating and Certification program and how Filtrexx® Products are being used to maximize credit accrual. This webinar will focus on the basics of the LEED program, and how and where compost-BMPs fit into the LEED rating systems.

#### May 14: EnviroSoxx® for Targeted Pollutant Removal

Learn how compost-based BMPs can dramatically reduce sediment and targeted pollutants from stormwater. EnviroSoxx® consist of Soxx™ with one or more natural additives used to remove invisible pollutants, including hydrocarbons, heavy metals, nutrients, or bacteria.

#### June 18: LID/Post-construction Water Quality Treatment

Learn about the latest research and how to design and implement Filtrexx's products, including our EnviroSoxx®, to reduce urban and post-construction storm water pollutants.

#### July 23: Sediment Control

Review the latest performance research, technical specifications, and design criteria for sediment control applications, including perimeter control, inlet protection, check dams, sediment traps, slope interruption, and bio-filtration applications.

To register and to see the full webinar schedule, visit [www.filtrexx.com](http://www.filtrexx.com).

## Filtrexx in the News

### Erosion Control, January/February 2013

#### Clear Water Control

The article highlights the use of SiltSoxx™ at the Charlotte-Douglas International Airport expansion project. [www.erosioncontrol.com/EC/Articles/Clear\\_Water\\_Control\\_19617.aspx](http://www.erosioncontrol.com/EC/Articles/Clear_Water_Control_19617.aspx)



### GardenCenter, January 2013

#### Difference Makers

One of the most widely read publications among owners of independent garden centers celebrates the Family Garden Initiative (FGI).

<http://www.gardencentermagazine.com/digital/201302/files/10.html>

## GroExx® GreenTunnel™ Update

We built the GroExx® GreenTunnel™ at Filtrexx this winter. The turnkey growing system uses hot water heat under the row to efficiently heat only the GardenSoxx®.

We've planted a variety of plants (both seeds and plugs) including greens, tomatoes, beans, herbs, flowers, and our favorite—strawberries! See a photo album at [www.facebook.com/gardensoxx/](http://www.facebook.com/gardensoxx/).



GroExx® GreenTunnel™ Growing System one week after planting, March 11, 2013.