

## FREQUENTLY ASKED QUESTIONS

### Why treat stormwater?

Throughout the country, contaminated stormwater runoff is a major source of pollution for lakes, streams, rivers, estuaries, coastal waters, and even groundwater. The problem is particularly acute in the Pacific Northwest, where frequent rainfall overburdens sewers and washes pollutants untreated into our waterways. Washington Governor Christine Gregoire has characterized stormwater as “the largest single water quality problem for [her] state, and for Puget Sound.”

### What solutions does Hydrophix provide to help treat stormwater runoff?

Hydrophix is proud to offer AbTech Industries’ patented Smart Sponge® and Smart Sponge® Plus, each a unique solution to hydrocarbon and bacterial pollution. The performance of Smart Sponge® and Smart Sponge® Plus is based on innovative, patented polymer technologies that are chemically selective to hydrocarbons and can destroy harmful bacteria. Smart Sponge® fully encapsulates recovered oil, transforming the pollutants into a non-leaching, stable solid, ready for easy recycling.

Smart Sponge® Plus adds a pioneering antimicrobial agent, permanently bound to the Smart Sponge® polymer surface and capable of targeting harmful bacteria such as enterococcus, E. coli, and fecal coliforms. Unlike alternative antimicrobial technologies, the patented agent neither introduces chemicals into the treated water nor produces toxic metabolites: it destroys waterborne bacteria via its interaction with the microorganism’s cell membrane. And the antimicrobial activity neither reduces the agent’s capability nor causes its depletion, enabling long-term, effective treatment.

Smart Sponge® Plus is the **only** non-toxic, fully recyclable filtration system that destroys bacteria at the street level.

### How is the Smart Sponge® technology deployed?

Smart Sponge® and Smart Sponge® Plus have had proven success in deployments ranging from street-level curb opening and catch basin inserts to high volume end-of-pipe vaults.

### Where has the technology been deployed?

AbTech’s Smart Sponge® technology has been deployed in over 13,000 installations across 36 states, including Arizona, California, Connecticut, Massachusetts, New York, New Jersey, Rhode Island, Washington, and Texas.

### What advantages does Smart Sponge® offer over other traditional sorbents on the market?

Smart Sponge® offers a number of clear advantages over traditional adsorbents such as polypropylene. A principal benefit is its ability to fully encapsulate recovered oil, resulting in a substantially more effective

solution. Smart Sponge® safely absorbs rather than adsorbs hydrocarbons, ensuring that they will not leak or leach back into the environment. It can also remain in place until fully saturated, resulting in no wasted product; and it is suitable for several inexpensive disposal options. This cost-effectiveness makes Smart Sponge® one of the most desired products on the market.

### **Will Smart Sponge® impede the flow of water through a street-level storm drain?**

While proper maintenance is essential to the performance of any stormwater filter, Smart Sponge stands apart from the competition in its ability to handle high volumes of water. In third-party testing, a 20" x 20" Ultra-Urban® Filter demonstrated the capacity to treat 500 to 600 GPM. And when flood conditions arise, the built-in overflow ensures that excess water can bypass the filter and flow down the drain, rather than backing up into the street.

### **What high-volume treatment options are available?**

Hydrophix's Stormwater Antimicrobial Treatment ("SWAT") systems are scalable to virtually any rate of flow. SWAT systems range from small vaults housing Smart Pak filters to large structures that direct stormwater through a Smart Sponge®-filled treatment cage. Whatever the scale of your treatment needs, Hydrophix can design a solution.

### **What makes Smart Sponge® a stormwater BMP (Best Management Practice) for hydrocarbons?**

Hydrocarbons are deposited on streets, highways, parking areas, and industrial sites, and then are washed into storm drains by ordinary rainfall. Research has shown that annual stormwater runoff from one square mile of roads and parking areas can contain as much as 18,000 liters of oil and grease. This number does not include deliberate dumping and accidental releases of oil. Smart Sponge® products strategically deployed in catch basins, skimmers and vaults safely capture oil and grease before they can be discharged into our watersheds. The Ultra-Urban® Filter with Smart Sponge® is an EPA listed BMP.

### **What makes Smart Sponge® Plus a stormwater BMP for harmful bacteria?**

Stormwater regularly flushes harmful bacteria from animal waste, leaking septic tanks, and overburdened sewage treatment systems into Oregon's rivers and coast. Fishermen, surfers, boaters, swimmers, windsurfers, and other recreational users of the state's waterways risk infection when they encounter these waterborne pathogens. Smart Sponge Plus® can help: applying an ionic interaction that breaks apart the bacterial cell wall, it destroys harmful stormwater bacteria while neither introducing chemicals into the water nor generating toxic metabolites.

### **How often should the Smart Sponge® products be replaced?**

With ordinary stormwater usage, the life cycle is approximately 1 to 3 years. Proper maintenance and the use of sediment pretreatments will prolong the effectiveness of our Smart Sponge® products. Use of the Trash & Debris Guard can also extend the life of the Ultra-Urban® Filter in curb opening catch basins.

## Can Smart Sponge® be recycled?

Smart Sponge® has been proven “non-leaching” under EPA’s Toxicity Characteristic Leaching Procedure (“TCLP”). As a result, Smart Sponge® is amenable to several methods of disposal:

- **Waste-to-Energy.** Spent Smart Sponge® can be used as an alternative fuel in the production of electricity. Waste-to-Energy, or WTE, is a federally recognized renewable energy source and is a participant in the Department of Energy’s National Renewable Energy Program.
- **Cement Kilns.** The cement industry has used the spent Smart Sponge® as an alternative fuel in the production of Portland Cement. This process is considered a beneficial reuse of waste products. The BTU value of spent Smart Sponge® is consistently above the average acceptable levels for the industry.
- **Landfills.** Smart Sponge® products have been classified as a solid waste and are accepted at Subtitle D landfills.

## How much does Smart Sponge® cost?

The cost of Smart Sponge® filtration varies according to the size of the project, but it compares favorably with competing hydrocarbon and TSS removal technologies. And Smart Sponge® Plus is substantially less expensive than ozone or UV bacterial treatments. Please contact us for details.