

Small Projects - Grand Prize

ENTRANT: Green and Sustainable Services, LLC

ENGINEER IN CHARGE: Thomas L. Smith, Ph.D., P.E., BCEE

LOCATION: Baltimore, Maryland

Baltimore County Public Schools Water Treatment Program



Baltimore County Public Schools (BCPS) is pleased to announce that several of its elementary, middle, and high school facilities have fulfilled sustainability objectives with the help of Chem-Aqua® and Green and Sustainable Services (GSS). The Chem-Aqua/GSS team has converted the water treatment programs for the heating and/or cooling systems in 68 of BCPS' properties from a traditional liquid program to the HandiChem Solid Water Treatment System. The innovative HandiChem System provides the proven results of a high-performance liquid program, but in a form that enables comprehensive environmental benefits, including reduced chemical handling, decreased environmental discharge and landfill waste, and lower greenhouse gas emissions.

Considering the differences in water quality, heating/cooling system design, operating conditions, and maintenance practices, obtaining good results from a water treatment program is a complex task. At BCPS, the Chem-Aqua/GSS team has used the HandiChem System to offer an integrated approach to conservation objectives by delivering advanced technology that reduces water and energy use without producing adverse impacts on other environmental components (including the land and air). Using the HandiChem System has allowed BCPS to significantly reduce the amount of water and energy required to operate their heating and cooling water systems. Further-

more, the HandiChem System has also led to economic advancements, including an overall reduction in operating costs.

With the HandiChem System liquid chemicals are replaced with HandiPak® solid concentrates, which are manufactured using an advanced process that eliminates the use of hazardous sodium hydroxide required to make most liquid products. This reduces the handling and discharge of potentially hazardous chemicals associated with liquid water treatment programs. The solid concentrates are packaged in recyclable containers that are much lighter than the equivalent amount of liquid chemical. This subsequently reduces product shipping/handling costs and decreases fuel and greenhouse gas emissions associated with product delivery.

At the 68 BCPS facilities using the HandiChem System, solid chemistry is applied directly from the container to provide a less hazardous means of dispensing than with traditional liquid chemicals. The solid concentrates are dissolved as needed into a small plastic reservoir using a simple and

reliable HandiFeed™ Mixing Board. Only a small amount of dilute chemical solution is generated at a time, which greatly reduces splash and spill concerns as well as containment requirements. The HandiChem System has also helped BCPS maintain neater and cleaner mechanical rooms, thus decreasing hazards for their employees.

The HandiChem Solid Water Treatment System is innovative technology that provides an environmentally sustainable solution for preventing water related problems in HVAC Systems and insuring safe, reliable, and efficient operation. With the HandiChem System, BCPS has fulfilled sustainability objectives including conserving water, reducing wastewater, increasing energy efficiency, decreasing equipment downtime and minimizing maintenance needs, and lowering overall operating costs. BCPS acknowledges that, with the HandiChem System, Chem-Aqua/GSS has provided a quality water treatment program that is financially sound, technically advanced, and environmentally responsible.

1. Chem-Aqua® and Green and Sustainable Services (GSS) implemented the HandiChem™ Solid Water Treatment System at Baltimore County Public Schools (BCPS) to improve environmental sustainability and reduce safety concerns. The Chem-Aqua, GSS, and BCPS team includes, from left to right: Rick Koch, BCPS Facilities Inspector II; Glenn Patrick, BCPS Senior Operations Supervisor; Tom Smith, GSS CTO; Chris Hill, Chem-Aqua Sales Engineer; Charlotte Smith, GSS CEO; Paul Wingerd, BCPS Supervisor; Kevin Hild, Chem-Aqua District Manager (MD and Washington DC).

2. The HandiChem System is comprised of HandiPak® Solid Concentrate (in a one-gallon recyclable plastic bottle) that is dissolved as needed into a small plastic reservoir using a reliable HandiFeed™ Mixing Board. The HandiChem System is an innovative water treatment solution for cooling towers, closed systems, and steam boilers that provides the proven results of a high-performance liquid treatment program, but is easier to use and more environmentally responsible.