

Membrane filtration integral to nutrient removal and protecting the Chesapeake Bay Watershed

Project: Yusufi Commercial Plaza Property

Location: Stafford, Virginia

Engineer: Sanie Consulting Group

Contractor: Kaeco Contracting

Approving Agency: Stafford County, Virginia

Product: Jellyfish® Filter Catchbasin



A new commercial site with limited land space in Stafford County, VA, required a new stormwater management system to manage runoff from roofs, parking lots and other impervious surfaces.

Engineers designed a system using a combination of stormwater Best Management Practices (BMPs) in a Low Impact Development (LID) approach to achieve runoff reduction. The engineers included a stormwater filtration system prior to infiltration to meet nutrient removal requirements enacted to protect the Chesapeake Bay watershed.

After considering removal capabilities, size, and long term maintenance costs, engineers selected a Jellyfish Filter with a curb inlet configuration. The Jellyfish Filter is an advanced stormwater treatment technology that combines pretreatment and membrane filtration in a compact stand-alone solution. This combined treatment approach provide the needed water quality before sending clean, filtered water into the infiltration gallery, providing a long-term, smart approach to reduce maintenance costs and runoff volume.

The small and shallow vault is possible as a result of the high flow Jellyfish Filter membrane cartridges and superior pollutant removal performance. The Jellyfish Filter provides curb-level treatment and maintenance upstream of infiltration. Annual inspection is achieved at grade through the large hatch opening. Maintaining the 15-inch, light-weight (less than 10-pounds each) Jellyfish cartridges can be performed from grade. The cartridge tentacles can be removed, rinsed with a garden hose and re-used, reducing maintenance costs.

