



PSP® odor control duct rooftop installation at District of Columbia Water and Sewer Authority

District of Columbia Water and Sewer Authority

Fab-Tech's PSP® duct plays a critical role in the technology used to convert sewage into power and fertilizer at DC Water's Blue Plains wastewater facility.

Located at the southernmost tip of the District of Columbia and covering more than 150 acres along the Potomac River, Blue Plains is the largest advanced wastewater treatment facility in the world. DC Water provides water and sewer/wastewater treatment for more than 600,000 residents, 17.8 million annual visitors and over 700,000 people who are employed on any given work day in the District of Columbia. Blue Plains also treats wastewater from counties in neighboring Maryland and Virginia for an additional 1.6 million people. The plant has a treatment capacity of 370 million gallons per day and an impressive peak capacity of more than one billion gallons per day. Blue Plains is an "advanced" plant as it can provide the highest levels of treatment with its nitrification/denitrification and filtration process. And now, with a \$10 billion Capital Improvement Program underway, Blue Plains will dramatically raise the bar for waste water treatment facilities around the world.

Advanced Process Technology:

The latest upgrade at Blue Plains is the implementation of their Biosolids Management Program (BMP) with the goal of reducing operating costs, saving energy and producing a Class A pathogen free Biosolids product for agricultural use. This upgrade required multiple construction projects that included four thermal hydrolysis process trains, four mesophilic digesters and a final Dewatering facility. The digesters are some of the largest in the world at 3.8 million gallons each. The first American use of cutting-edge thermal hydrolysis process equipment from Norway was incorporated into the design to steam pre-treat solids for anaerobic digestion. The clean biogas generated will be used to fuel three 4.6 MW gas turbines in a new combined heat and power (CHP) facility providing steam for the thermal hydrolysis process and generating 11.8 MW of power (about 1/3 of the energy needed to run the plant) and cut greenhouse emissions by 60,000 tons per year.

Advanced Odor Control Solution:

The consensus between DC Water and the engineering teams for the Biosolids project was that it would not be constructed as a low bid, but rather as a partnership seeking the best combination of technology, benefits and cost. A team from Fab-Tech was invited to meet with the design engineering firms of Brown and Caldwell, CDM/Arcadis, CH2M Hill and DC Water engineers to present the many features of fluoropolymer coated stainless steel fume exhaust duct. Discussion of the benefits of PSP®



Aerial view of dewatering facility showing PSP[®] duct on the roof.

duct centered around: robust stainless steel construction, highly corrosion resistant fluoropolymer (Teflon-family) internal coating, "0" flame spread and low smoke generation in case of fire, impervious to UV attack, Factory Mutual (FM) approval, ease and speed of installation, and installed costs equal to or lower than fiberglass duct. DC Water engineers quickly appreciated the benefits of PSP[®] and specified its use for their Biosolids project.

Fab-Tech's PermaShield Pipe (PSP[®]) is recognized around the world as the best product for removal of corrosive and highly hazardous fumes from a variety of industrial applications. Duct lines at wastewater facilities transport not only malodorous fumes, but also a witch's-brew of potentially hazardous products making virtually every part of the wastewater system a source for objectionable odors. Airborne hydrogen sulfide is the most prevalent odorous compound present at wastewater sites with the possibility of additional organic chemicals such as methylmercaptain and dimethyldisulfide also being present. One such critical use for PSP[®] duct is in odor control applications for wastewater facilities.



Another view of Blue Plains dewatering facility odor control duct.

Waste water chemical vapors can also include: chlorine, hydrogen chloride, hydrogen sulfide, ozone, sulfuric acid, sodium hypochlorite, sodium hydroxide, methane and digester gas. All of which can be corrosive to carbon steel, galvanized steel, and even some plastics as well as being highly dangerous to humans. Plant designers and owners are challenged to employ the best materials possible for safety, yet stay within budgetary constraints. Wastewater facilities are constantly faced with the triple threat of odor, corrosion and flammability which can be easily addressed with Fab-Tech's PSP[®] duct.

Perfect Project Execution:

Several thousand feet of coated PSP[®] duct, ranging in size from 12 inch to over 60 inch diameter was manufactured and delivered to DC Water. Starting in 2011 and continuing through 2014 with more to come in the future, this extensive exhaust system was skillfully assembled and installed by PC Construction of South Burlington, VT and Corinthian Contractors, Inc. of Arlington, VA. "We were very pleased with both the quality of the product and the working relationship with Fab-Tech," commented Corinthian Vice President Declan Munslow. "Fab-Tech's diligent customer service and thorough coordination with CCI's Field and Management Staff was critical in CCI's ability to meet the project completion date and deliver the customer with an exceptional final product. Fab-Tech and their committed personnel fostered a wonderful and fruitful relationship with the CCI staff, one that will ensure success in projects to come."

PSP[®]'s unique combination of features and benefits made this the best choice for DC Water and will provide this advanced facility with decades of worry free odor control exhaust service. The solution that DC Water and the Biosolids project engineers had envisioned was successful by employing a combination of superior design and cutting edge technology. For more information on high performance, cost effective PSP[®] duct, write or call Fab-Tech, Inc. today.



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