April, 2015

Biosolids Resource Recovery Monthly Report

DC Water

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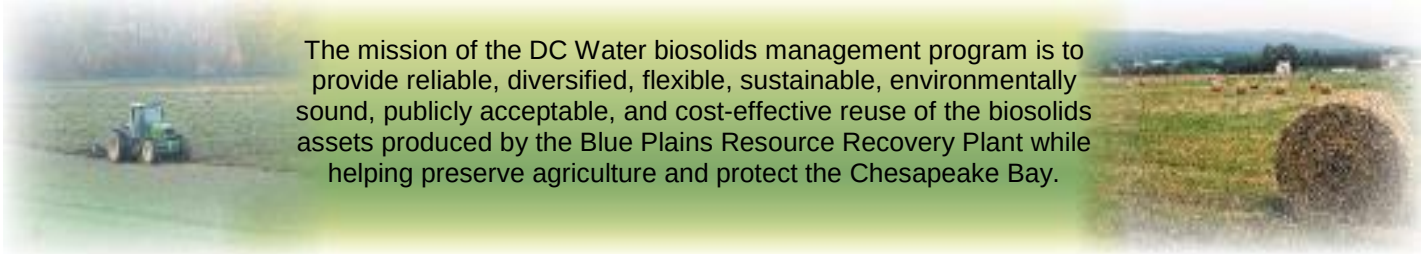
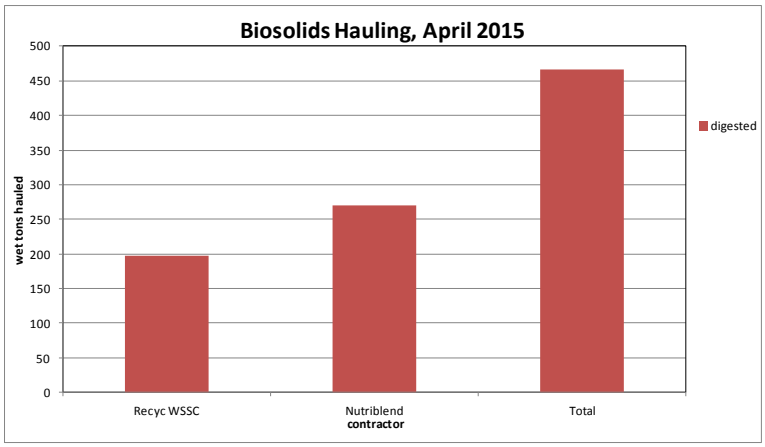


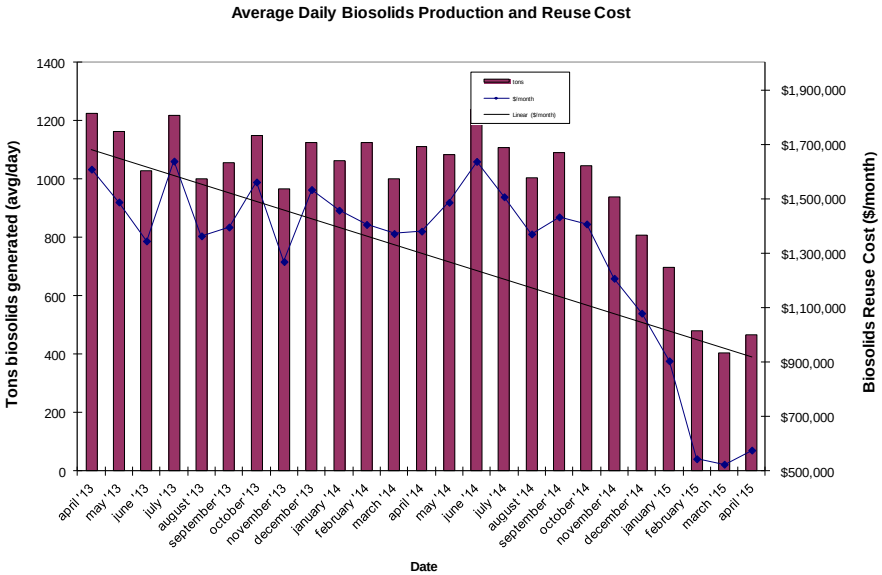
The mission of the DC Water biosolids management program is to provide reliable, diversified, flexible, sustainable, environmentally sound, publicly acceptable, and cost-effective reuse of the biosolids assets produced by the Blue Plains Resource Recovery Plant while helping preserve agriculture and protect the Chesapeake Bay.

April 2015 Resource Recovery Report

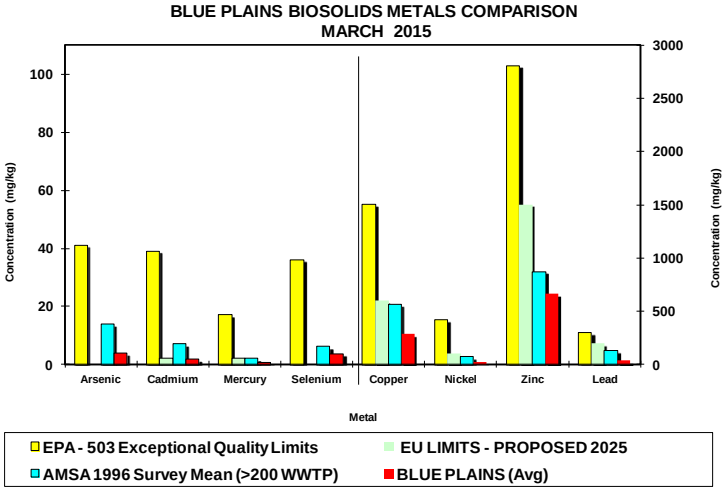
In April, biosolids hauling averaged 467 wet tons per day (wtpd). Of this total, 0 wtpd were lime stabilized Class B, and 467 wtpd (100%) were digested. This is the first month we produced 100% digested biosolids. The graph below shows the total hauling by contractor for the month of April. The average percent solids for the digested material was 31.3%. At the end of April the Cumberland County storage pad had approximately 8,000 tons (~25,000 tons capacity), Cedarville lagoon had approximately 8,000 tons of Blue Plains biosolids (~30,000 tons capacity), and Fauquier lagoon had 3000 tons (~15,000 tons capacity).



Please note the drop in biosolids management costs (second graph below, right vertical axis) due to the reduction in solids production since digesters came on line, and also due to the drop in fuel costs. In April, diesel prices averaged $3.10/gallon and with the contractual fuel surcharge the weighted average biosolids reuse cost in April for the two contracts (DC Water and WSSC) was $41.20/wet ton. For comparison, in April 2014 the average diesel price was $4.17/gal and the average contract cost was $44.25/wet ton.

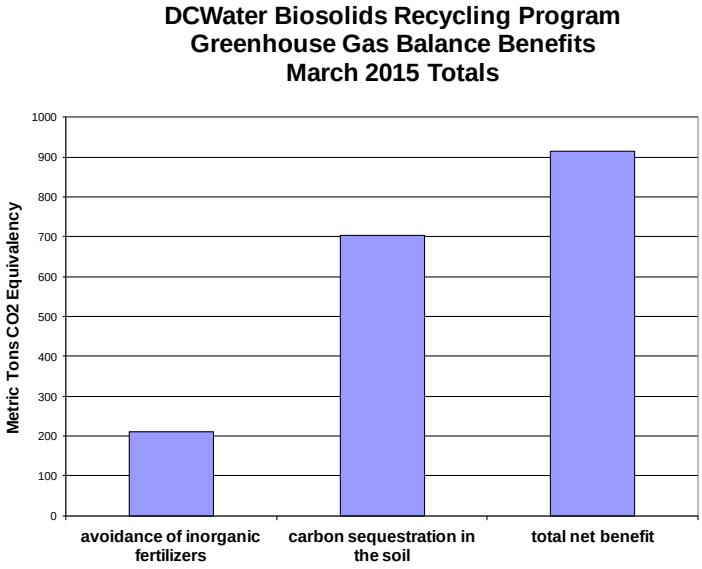


The graphs below show the EPA regulated heavy metals in the Blue Plains biosolids for the month of March 2015. As can be seen in the graphs, the Blue Plains levels are considerably below the regulated exceptional quality limits, the national average levels surveyed in 1996, and the European Union (EU) limits. The EU limits are more conservative than the USEPA limits, and Blue Plains biosolids metals content is lower than the EU standards as well.



Environmental Benefits

The quantity land applied in March coming directly from the plant and from storage facilities equaled 13,748 tons. Taking into account the fuel required to transport biosolids to the field, the net benefit of the land applied material is 915 metric tons CO_2 equivalent avoided emissions. This is equivalent to taking 1,863,707 car miles off the road in the month of March (assumes 20 mpg, 19.4 lb CO_2 equivalent emissions/gallon gas – EPA estimate). The cumulative total avoided carbon emission since December, 2006 is 139,932 metric tons CO_2 equivalent.



April Highlights

Staff made several presentations this month on the digesters and plans for future use of the solids. Laying out the history of the program and the steady improvements in product quality and community acceptance, along with the value of the biosolids asset staff showed a progression toward a market for blended soil product, made from the Class A biosolids and locally available blending feedstocks. What once was a $19M per year operational cost to recycle the biosolids asset and give it away free to farmers has been cut in half by the conversion of organic matter in the digesters to methane for power generation. Plans and mixing trials are underway to determine the best mixes for different uses, including a mix for the Clean Rivers green infrastructure projects. Staff made presentations at the annual Virginia Water Environment Association conference in Richmond, and George Washington University School of Law, and for visitors from Kent County Delaware.

Staff coordinated an informational meeting with an urban bee advocate to disseminate information about placing beneficial bees at Blue Plains. While this may seem a stretch from the core mission, it supports our efforts to engage the urban agriculture community quite nicely. While the benefits of bees in urban areas is quite well understood, and the need for increased pollinator population is clear, DC Water will also benefit by growing closer to urban gardeners, with whom we are working closely to reintroduce biosolids-based products into DC. For the past two years staff has donated hundreds of tons of biosolids compost to community gardens, sister agencies, and non-profits in the service area in anticipation of having a Class A blended biosolids product available after the digesters start up and local agencies certify the process. Part of this effort is understanding the needs of these communities, one of which is a healthy population of pollinators. This spring, staff will host a beekeeper who will house hives on the roof of the CMF building. Staff worked with Safety, Risk Management, the GM's office, and the Office of the General Counsel (among others) in determining that this is a good fit. Bees arrive in month May.

WHY BRING HONEY BEES TO BLUE PLAINS?

Pollination is essential to the environment. Pollinators—such as honey bees—are among the first to suffer from pollution, loss of green space, climate change, and new pests and pathogens. Blue Plains is located in a space with many benefits for honey bees, and the structures on site can provide safe locations for hives. DC Water is trying to support the urban agriculture community in this area—potential users of our biosolids products.

How will this program work?

This project will start under the management of the DC Beekeepers Alliance. We will begin this year, with one site housing four hives composed of two previously established colonies. DC Water will seek employees to volunteer to help maintain the hive, and if there is interest, provide 12 hours of instruction. The DC Beekeepers Alliance will continually provide technical support, mentoring and education to DC Water to grow this project. Depending on its success, DC Water may expand the project to other buildings next spring.

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Is there an increased risk of being stung?

No. At Blue Plains, the flowers honey bees will be attracted to are located at the river's edge, and in trees overhead. The hives at Blue Plains will start to be constructed in overhead locations; therefore, contact between staff and honey bees will not be likely. People are three times more likely to be stung by wasps, hornets, and yellow jackets, which already have a presence at Blue Plains. If you believe you have an allergy, consult with your physician.

Is Blue Plains safe for bees?

Industrial sites such as Blue Plains are great for honey bees! Situated between a waterway to the west, and a wooded ridge on the east, Blue Plains offers fresh water and a variety of plant and tree species to provide food. Honey bees are generalists, but their diets primarily depend on flowering Tulip Poplar and Black Locust – two species that are plentiful in nearby woods.

Will the bees produce honey?

The project will produce a relatively small harvest of honey (potentially 50-75 pounds) the first year, but should triple that in 2016. We plan on a site honey harvest sometime this summer and employees will be invited to participate.

Map of Blue Plains Biosolids Applications and Agricultural $'s for March 2015