

January, 2017

Biosolids Resource Recovery Monthly Report

NUTRIENTS and CARBON RECYCLING

FARMING



Provides carbon and nutrients valued at \$300.00 per acre.

SILVICULTURE



Increases yield and improves sustainability.

RECLAMATION



Restoring lands to their natural state and providing wildlife habitats.

URBAN RESTORATION

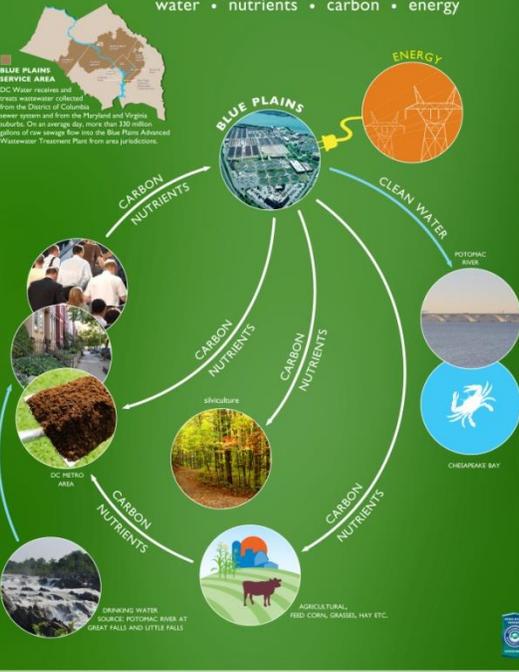


Grow trees and reduce runoff.



BLUE PLAINS ADVANCED WASTEWATER TREATMENT PLANT: A RESOURCE RECOVERY FACILITY

water • nutrients • carbon • energy



dcwater.com/biosolids

GREEN ENERGY BIORENEWABLES

POWER FROM THE PEOPLE



THERMAL HYDROLYSIS PROCESS (THP) AND DIGESTION FACILITY



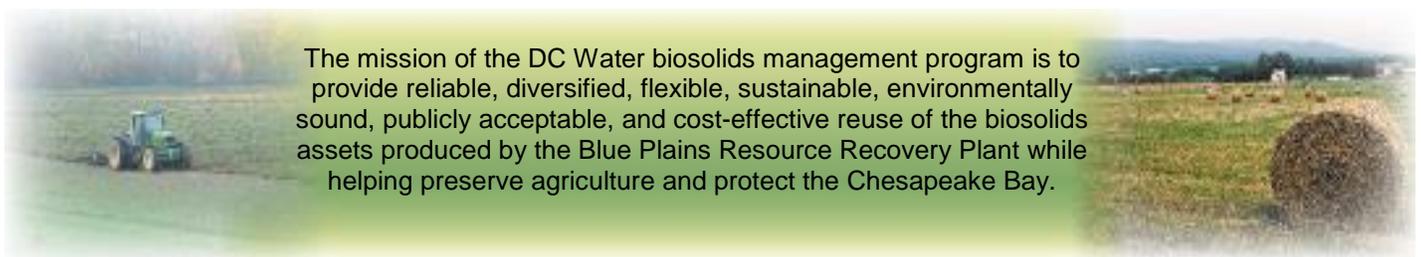
DC Water will be the first in North America to use thermal hydrolysis for wastewater treatment. When completed, this facility will be the largest plant of its kind in the world.

GREEN BENEFITS:

- Produce combined heat and power, generating 13 MW of electricity
- Save DC Water \$10 million annually cutting grid demand by a third (DC Water is the largest consumer of electricity in the District)
- Reduce carbon emissions by approximately 50,000 metric tons of CO₂e per year.
- Reduce trucking by 1.7 million miles per year.
- Save \$10 million in biosolids trucking costs
- Produce Class A biosolids to grow trees, sequester carbon and reduce runoff.

DC Water

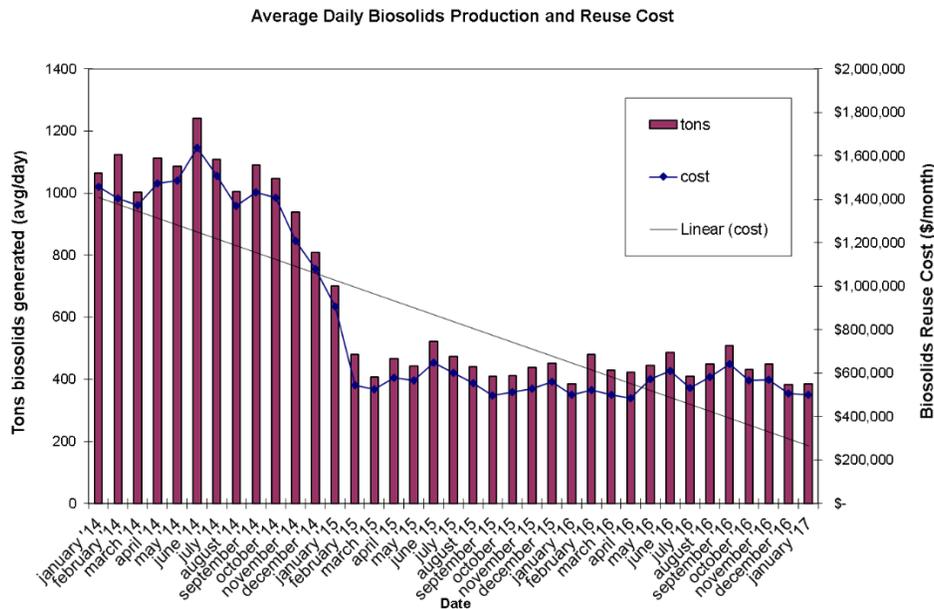
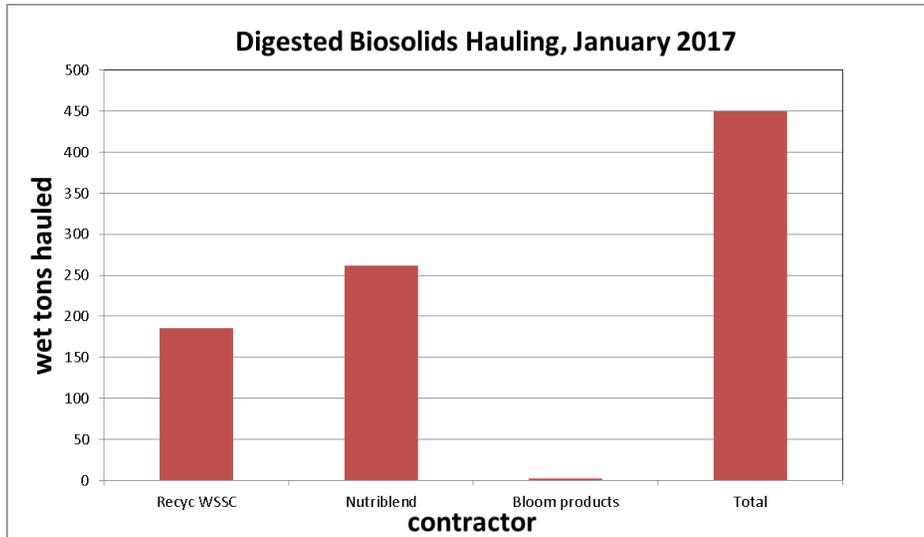
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The mission of the DC Water biosolids management program is to provide reliable, diversified, flexible, sustainable, environmentally sound, publicly acceptable, and cost-effective reuse of the biosolids assets produced by the Blue Plains Resource Recovery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

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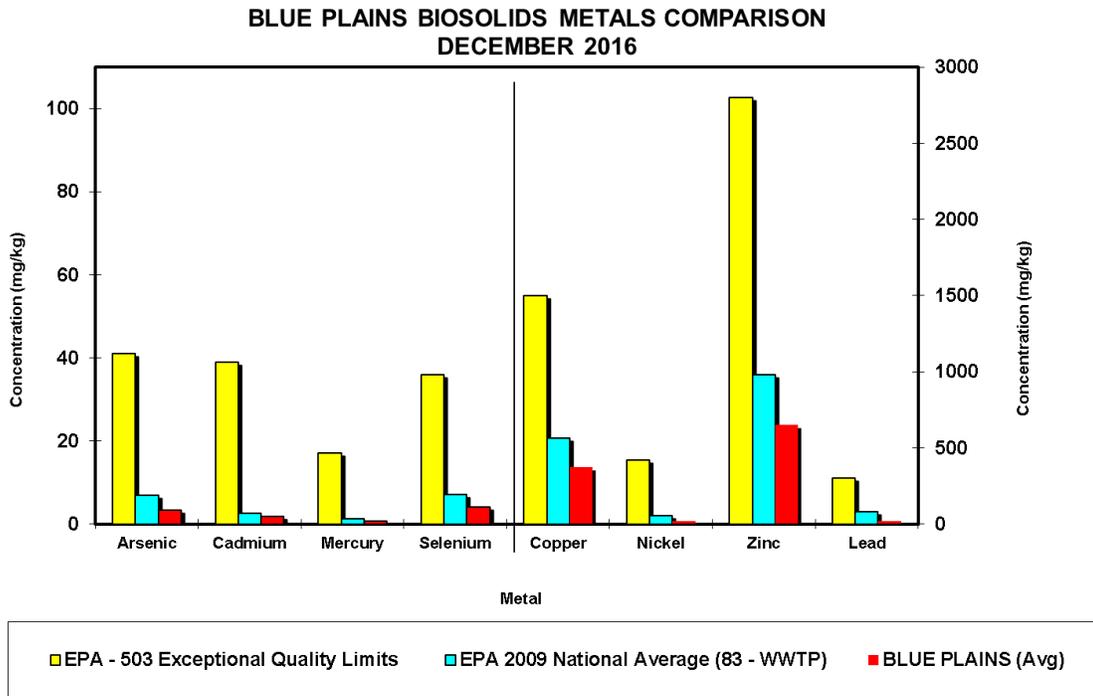
In January, biosolids hauling averaged 450 wet tons per day (wtpd). The graph below shows the total hauling by contractor for the month of January. The average percent solids for the digested material was 29.2%. At the end of January the Cumberland County storage pad had 6361 tons (~25,000 tons capacity), Cedarville lagoon had zero tons of Blue Plains biosolids (~30,000 tons capacity), Goochland pad had 791 tons, and Fauquier lagoon had 462 tons (~15,000 tons capacity).

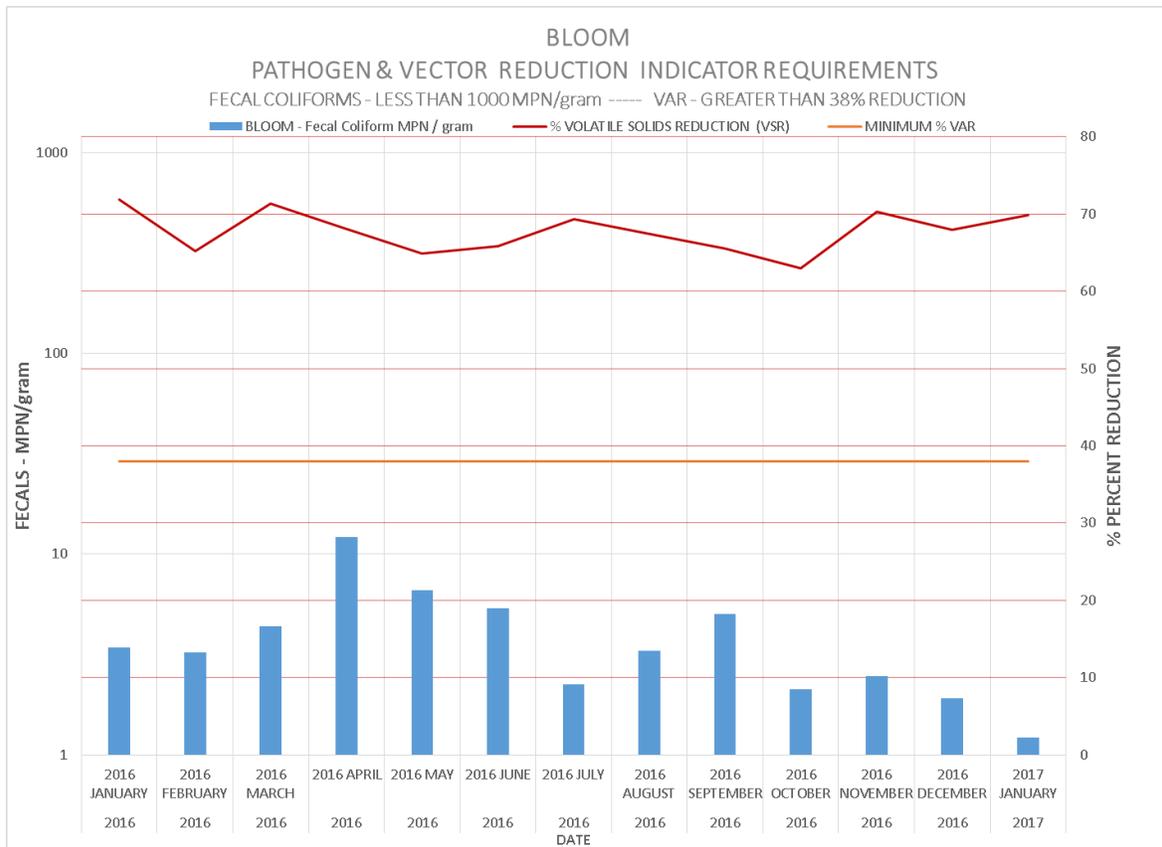


In January, diesel prices averaged \$2.65/gallon and with the contractual fuel surcharge the weighted average biosolids reuse cost was \$41.16 wet ton.

Product Quality

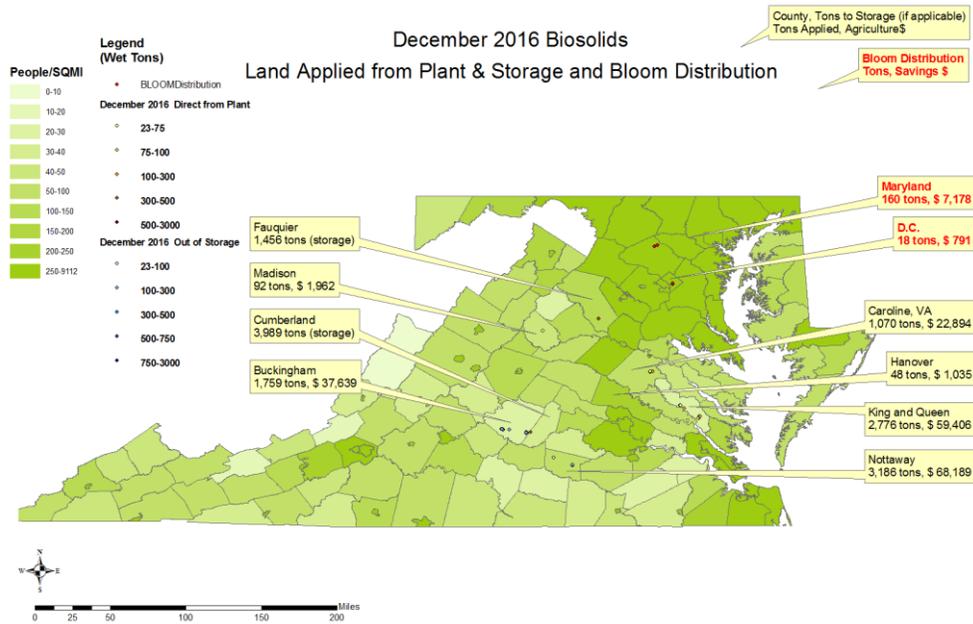
The graph below show the EPA regulated heavy metals in the Blue Plains biosolids for the month of December 2016. As can be seen in the graphs, the Blue Plains levels are considerably below the regulated exceptional quality limits and the national average. Additionally, please see below graphs showing that we well exceed the minimum volatile solids reduction requirements, and are well below the 1000 MPN/gram fecal coliform limits set by EPA.





The graph above shows both Vector Attraction Reduction (VAR) and Fecal Coliform results in the final Bloom product, both of which are required to maintain the Class A Exceptional Quality (EQ) status of the Bloom product. Volatile solids are organic compounds that may be odorous and attract nuisance vectors (i.e. flies or rodents). DC Water digesters reduce VS by 65-70%, well above the required 38% minimum. In addition, this graph shows fecal coliforms (FC) levels in DC Water's final Bloom product. Fecal coliforms are indicators of disease causing organism (pathogens), and must be below 1000 MPN/g to meet Class A standards. Bloom FC levels are 2 or 3 orders of magnitude less than the maximum allowable level.

Biosolids Applications and Agricultural \$'s for December 2016



Environmental Benefits

The quantity land applied in December coming directly from the plant and from storage facilities equaled 1002 tons. Taking into account the fuel required to transport biosolids to the field, the net benefit of the land applied material is 896 metric tons CO₂ equivalent avoided emissions. This is equivalent to taking 2,042,743 car miles off the road in the month of December (assumes 20 mpg, 19.4 lb CO₂ equivalent emissions/gallon gas – EPA estimate). The cumulative total avoided carbon emission since, January 2006 is 151,984 metric tons CO₂ equivalent.

DCWater Biosolids Recycling Program Greenhouse Gas Balance Benefits December 2016 Totals

