October, 2016

Biosolids Resource Recovery Monthly Report

DC Water

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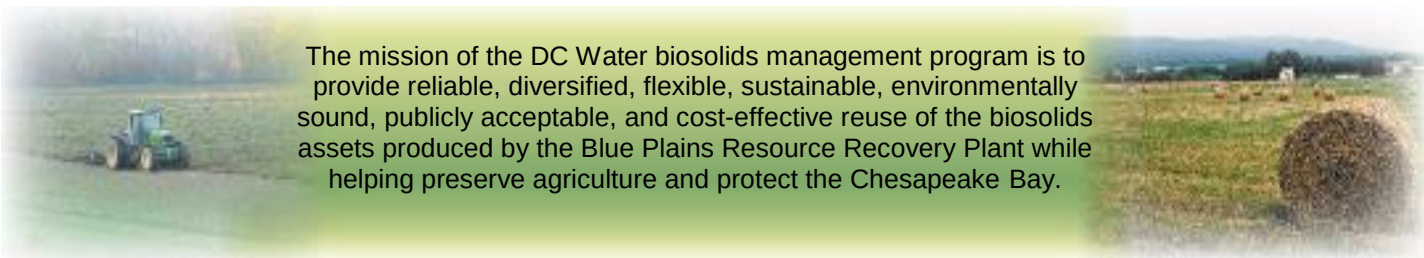
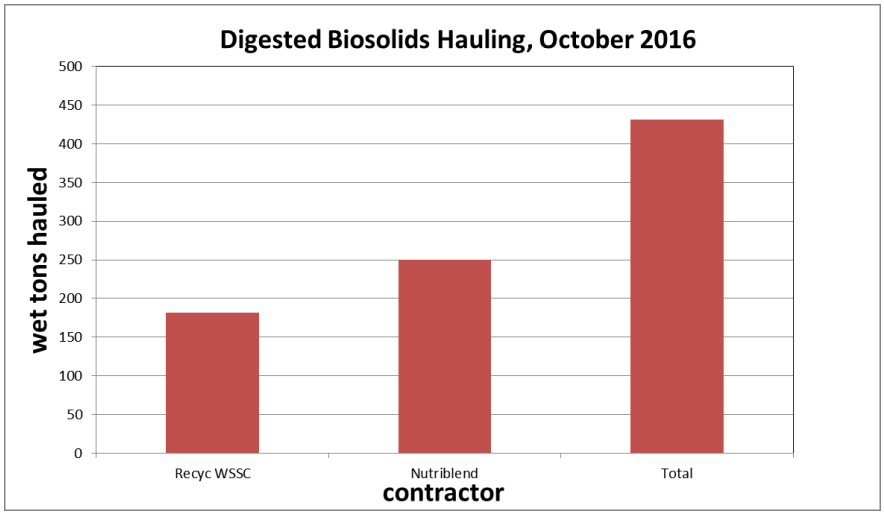
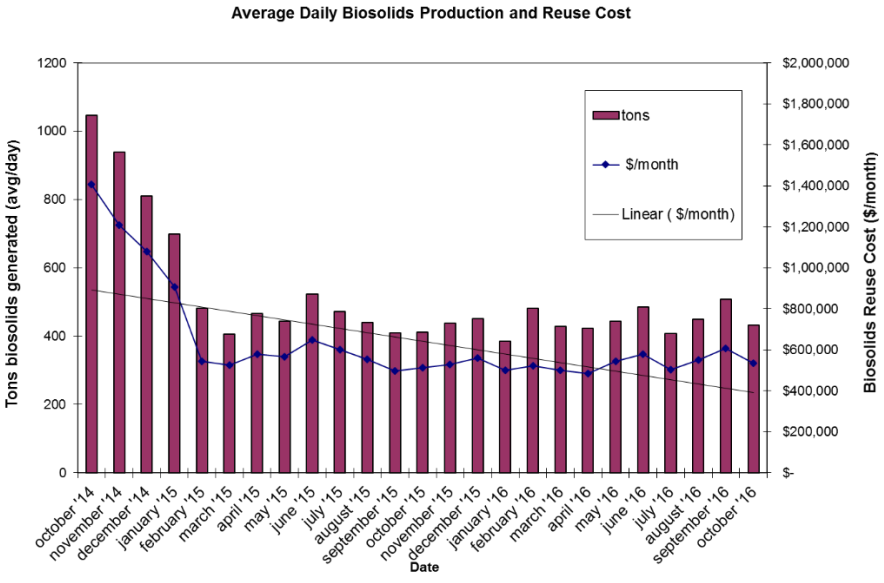


The mission of the DC Water biosolids management program is to provide reliable, diversified, flexible, sustainable, environmentally sound, publicly acceptable, and cost-effective reuse of the biosolids assets produced by the Blue Plains Resource Recovery Plant while helping preserve agriculture and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

October 2016 Resource Recovery Report

In October, biosolids hauling averaged 432 wet tons per day (wtpd). The graph below shows the total hauling by contractor for the month of October. The average percent solids for the digested material was 29.7%. At the end of October the Cumberland County storage pad had 0 tons (~25,000 tons capacity), Cedarville lagoon had zero tons of Blue Plains biosolids (~30,000 tons capacity), Goochland pad had zero tons, and Fauquier lagoon had 1107 tons (~15,000 tons capacity).

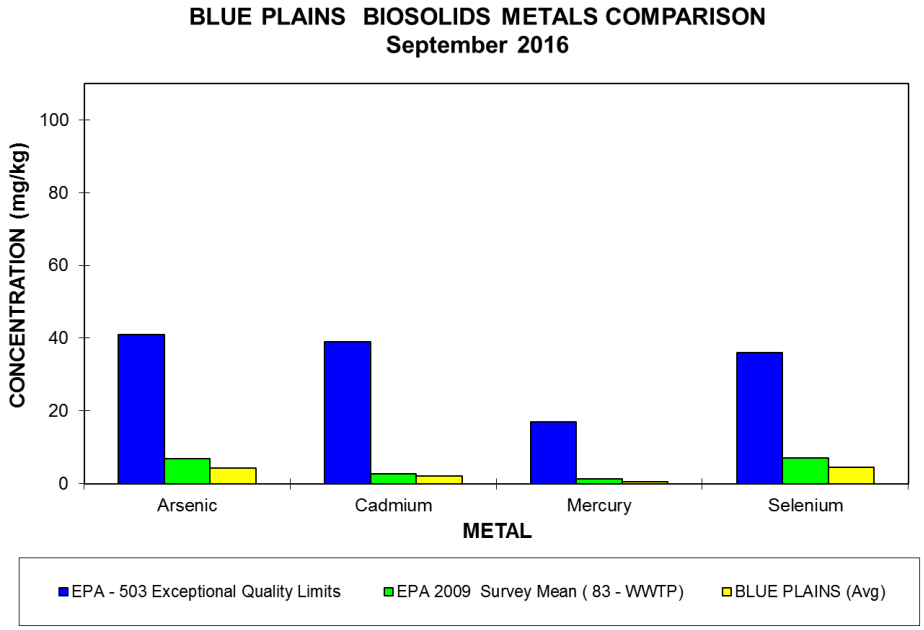


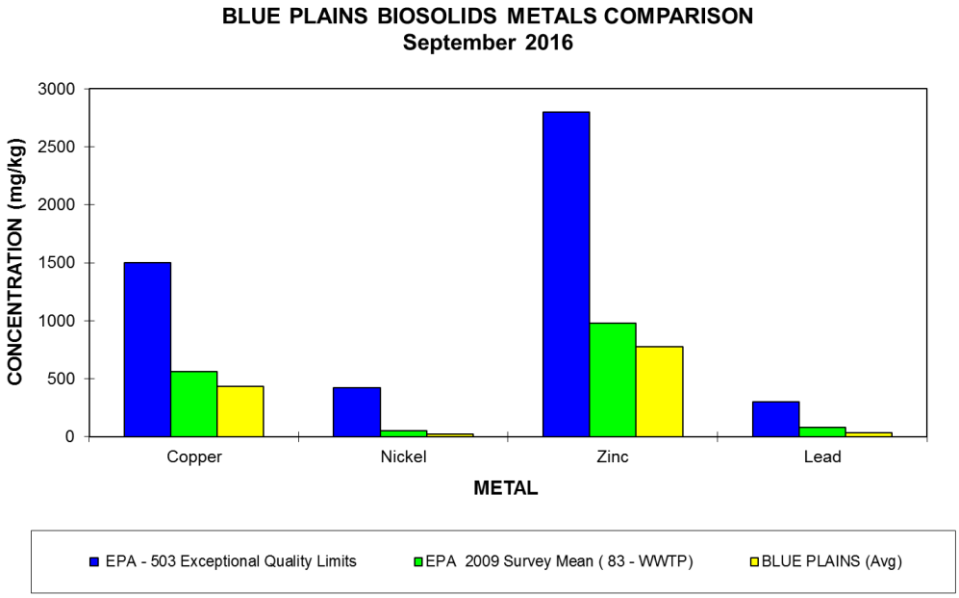


In October, diesel prices averaged $2.55/gallon and with the contractual fuel surcharge the weighted average biosolids reuse cost was $39.98wet ton.

Product Quality

The graph below show the EPA regulated heavy metals in the Blue Plains biosolids for the month of September 2016. As can be seen in the graphs, the Blue Plains levels are considerably below the regulated exceptional quality limits and the national average.





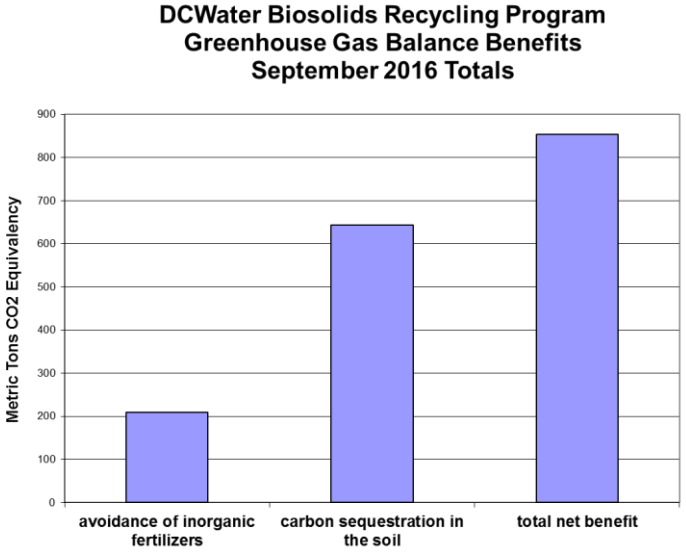
Staff would like to shed light on an interesting comparison. Six of the heavy metals commonly found in biosolids and regulated by USEPA are also essential micronutrients necessary for healthy human growth and development. These micronutrients are listed by the FDA, have a recommended daily value intake (RDV), and are contained in multivitamens we buy off the shelves of our grocery stores. While we have known for years that DC Water biosolids are considerably below the EPA limits for land application, it is interesting to note that one would have to eat a considerable amount each year just to get the necessary micronutrients one needs for healthy living. Toxicity has to do with concentration, not the mere presence of a "heavy metal". While staff is not endorsing the consumption of Bloom as a multivitamin, it is important to note that the levels of the regulated metals are so low, one would have to consume nearly 50 lbs in a year to get the RDV of zinc, nearly 40 lbs in a year to get the bodies required Selinium, etc. In all cases but that of nickel, the concentrations of these heavy metals are higher in Centrum vitamins than in the Bloom product.

Metals Concentration Comparison - Centrum Vitamins and Bloom

503 Listed Metal	Blue Plains (mg/dry kg)	Centrum Conc. (mg/wet kg)	Centrum Conc. (mg/dry kg)	Centrum vs. Blue Plains	Annual Consumption of Biosolids (lb)
Chromium	67	78	79	118%	4.6
Copper	434	1296	1322	305%	11.7
Molybdenum	15.6	49	50	318%	12.3
Nickel	24.0	3	3	14%	
Selinium	4.45	13	13	297%	39.5
Zinc	775	9717	9916	1279%	49.3

Environmental Benefits

The quantity land applied in September coming directly from the plant and from storage facilities equaled 12,937 tons. Taking into account the fuel required to transport biosolids to the field, the net benefit of the land applied material is 854 metric tons CO_2 equivalent avoided emissions. This is equivalent to taking 1,738,924 car miles off the road in the month of September (assumes 20 mpg, 19.4 lb CO_2 equivalent emissions/gallon gas – EPA estimate). The cumulative total avoided carbon emission since, January 2006 is 150,550 metric tons CO_2 equivalent.



Biosolids Applications and Agricultural $'s for September 2016