

## DISTRICT OF COLUMBIA WATER AND SEWER AUTHORITY

### Board of Directors

*Meeting of the  
Environmental Quality and Sewerage Services  
Committee  
5000 Overlook Avenue, SW, Room 407  
Thursday, January 19, 2017  
9:30 a.m.*

- |                    |   |                               |
|--------------------|---|-------------------------------|
|                    | <b>I. Call to Order</b>   | James Patteson<br>Chairperson |
| <b>9:30 a.m.</b>   | <b>II. AWTP Status Updates</b><br>1. <a href="#">BPAWTP Performance</a>   | Aklile Tesfaye                |
| <b>9:45 a.m.</b>   | <b>III. Action Items</b>  | John Bosley/Leonard Benson    |
| <b>Joint Use</b>   |   |                               |
|                    | 1. <a href="#">Contract No. 14-PR-DIT-07 (Contract Modification) – Network for the Future - Information Technology Professional Services</a><br>2. <a href="#">Contract No. DCFA #379 WSA – Arcadis - Raw Wastewater Pump Stations 1 and 2 Upgrades</a> |                               |
| <b>9:55 a.m.</b>   | <b>IV. <a href="#">BLOOM Marketing Plan</a></b>   | Alan Heymann/Chris Peot       |
| <b>10:15 a.m.</b>  | <b>V. Other Business/Emerging Issues</b>  |                               |
| <b>10: 20 a.m.</b> | <b>VI. Executive Session*</b>   |                               |

### Adjournment

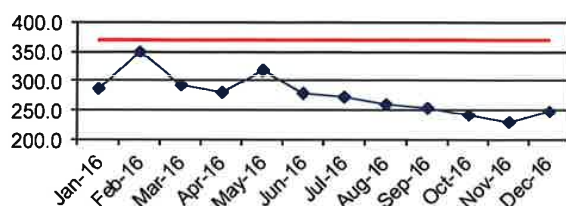
James Patteson  
Chairperson

\* The DC Water Board of Directors may go into executive session at this meeting pursuant to the District of Columbia Open Meetings Act of 2010, if such action is approved by a majority vote of the Board members who constitute a quorum to discuss: matters prohibited from public disclosure pursuant to a court order or law under D.C. Official Code § 2-575(b)(1); contract negotiations under D.C. Official Code § 2-575(b)(1); legal, confidential or privileged matters under D.C. Official Code § 2-575(b)(4); collective bargaining negotiations under D.C. Official Code § 2-575(b)(5); facility security under D.C. Official Code § 2-575(b)(8); disciplinary matters under D.C. Official Code § 2-575(b)(9); personnel matters under D.C. Official Code § 2- 575(b)(10); proprietary matters under D.C. Official Code § 2-575(b)(11); decision in an adjudication action under D.C. Official Code § 2-575(b)(13); civil or criminal matters where disclosure to the public may harm the investigation under D.C. Official Code § 2-575(b)(14), and other matters provided in the Act.

## **BLUE PLAINS ADVANCED WASTEWATER TREATMENT PLANT** **PERFORMANCE REPORT – DECEMBER 2016**

Average plant performance for the month was excellent with all effluent parameters well below the seven-day and monthly NPDES permit requirements. The monthly average influent flow was 246 MGD. There was 18 million gallons of Excess Flow during this reporting period. The following Figures compare the plant performance with the corresponding NPDES permit limits.

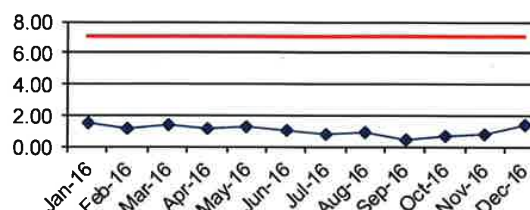
**Plant Influent Flow (mgd)**



■ Influent Flow    — Average Design Capacity

This graph illustrates the monthly average influent flow to the plant. The design average flow is 370 MGD. Blue Plains has a revised 4-hour peak flow capacity of 511 MGD through complete treatment. Flows up to 336 MGD in excess of the 511 MGD peak capacity receive primary treatment, disinfection and dechlorination.

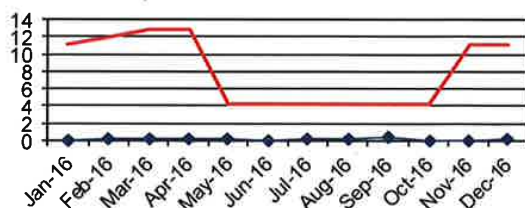
**TSS (mg/l)**



■ Effluent TSS    — Permit Limit

Effluent Total Suspended Solids (TSS) is a measure of the amount of solid material that remains suspended after treatment. The effluent TSS concentration for the month averaged 1.33 mg/L, which is below the 7.0 mg/L permit limit.

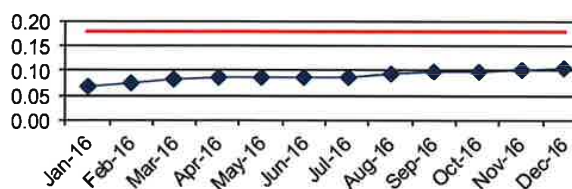
**Ammonia (mg/l)**



■ Effluent NH3    — Permit Limit

The Ammonia Nitrogen (NH<sub>3</sub>-N) is a measure of the nitrogen found in ammonia. For the month, effluent NH<sub>3</sub>-N concentration averaged 0.19 mg/L and is below the average 4.2 mg/L limit.

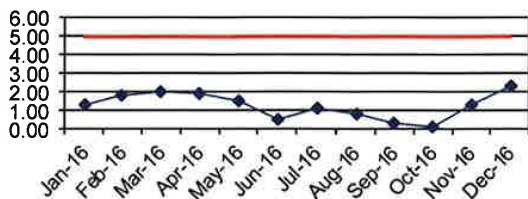
**Total Phosphorus Annual Average (mg/l)**



■ Effluent TP    — Permit Limit

The Total Phosphorus (TP) is a measure of the particulate and dissolved phosphorus in the effluent. The annual average effluent TP concentration is 0.10 mg/L, which is below the 0.18 mg/L annual average limit.

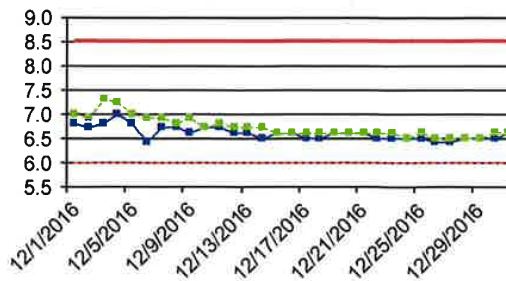
**CBOD (mg/l)**



■ Effluent CBOD — Permit Limit

Carbonaceous Biochemical Oxygen Demand (CBOD) is a measure of the amount of dissolved oxygen required for the decomposition of organic materials. The effluent CBOD concentration averaged 2.29 mg/L (partial month), which is below the 5.0 mg/L limit.

**Min and Max Instantaneous pH**

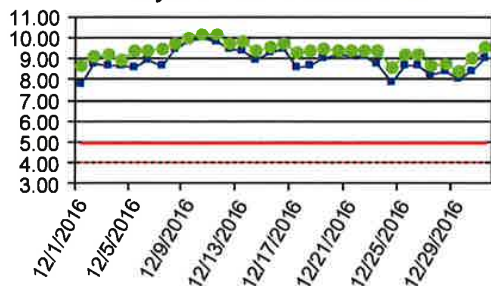


● MAX pH ■ MIN pH — Upper Limit - - Lower Limit

pH is a measure of the intensity of the alkalinity or acidity of the effluent. The minimum and maximum pH observed were 6.4 and 7.3 standard units, respectively. The pH was within the permit limits of 6.0 and 8.5 for minimum and maximum respectively.

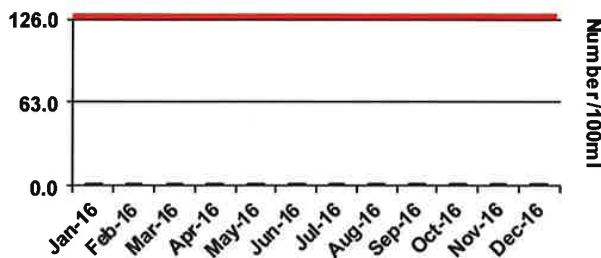
**E. coli**

**Daily and Instantaneous Min DO**



● MIN Daily Average ■ Instant MIN DO  
— MIN Daily Average Limit - - Instant MIN Limit

Dissolved Oxygen (DO) is a measure of the atmospheric oxygen dissolved in wastewater. The DO readings for the month are within the permit limits. The minimum daily average is 8.4 mg/L. The minimum instantaneous DO reading is 7.8 mg/L. The minimum permit limits are 5.0 mg/L and 4.0 mg/L respectively.

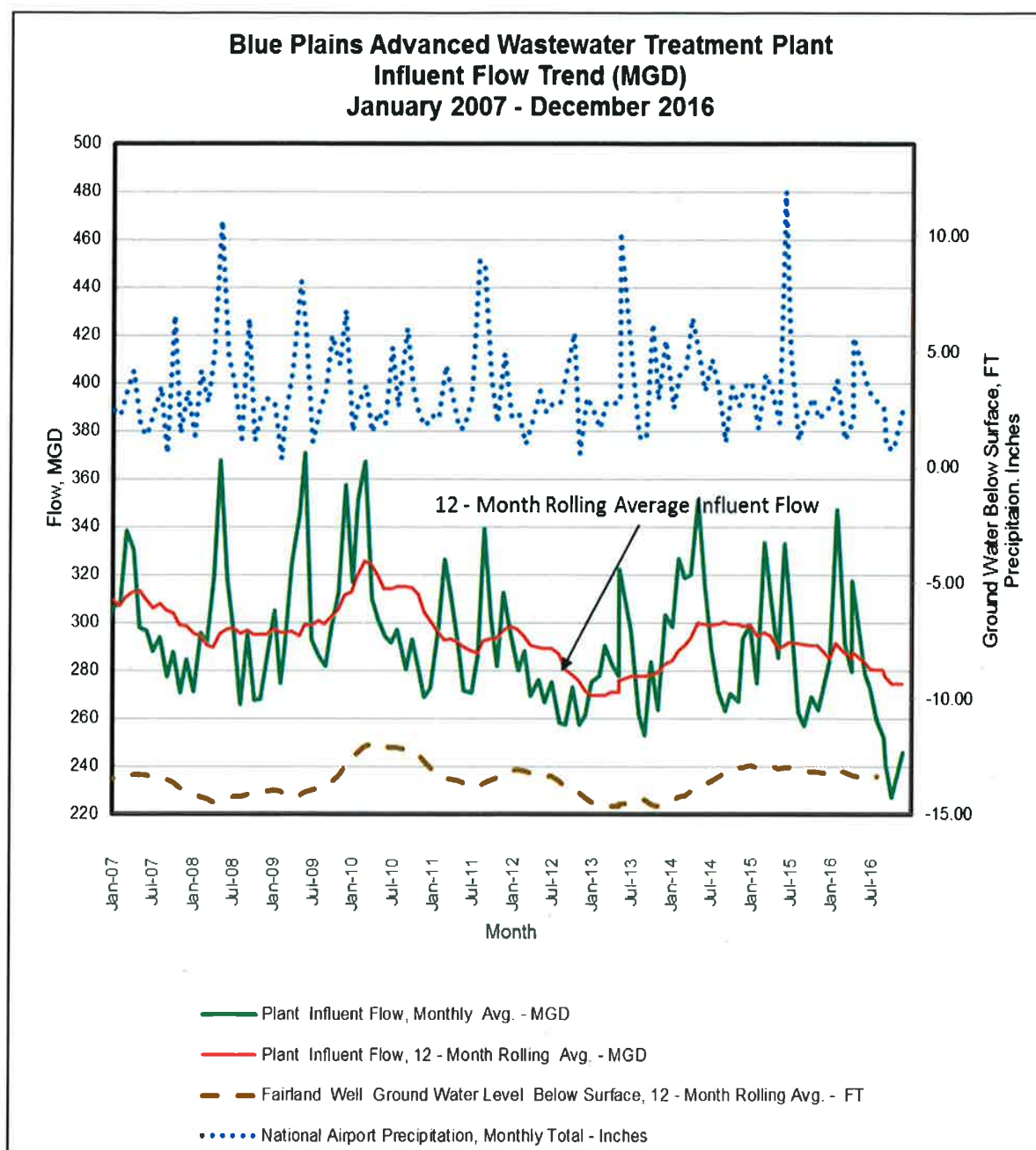


■ E. coli Geomean — Permit Limit

E.coli is an indicator of disease causing organisms (pathogens). The E.coli permit limit is 126/100mL. The E coli geometric mean is 1.3 /100mL, and well below the permit limit.

## Plant Influent Flow Trend

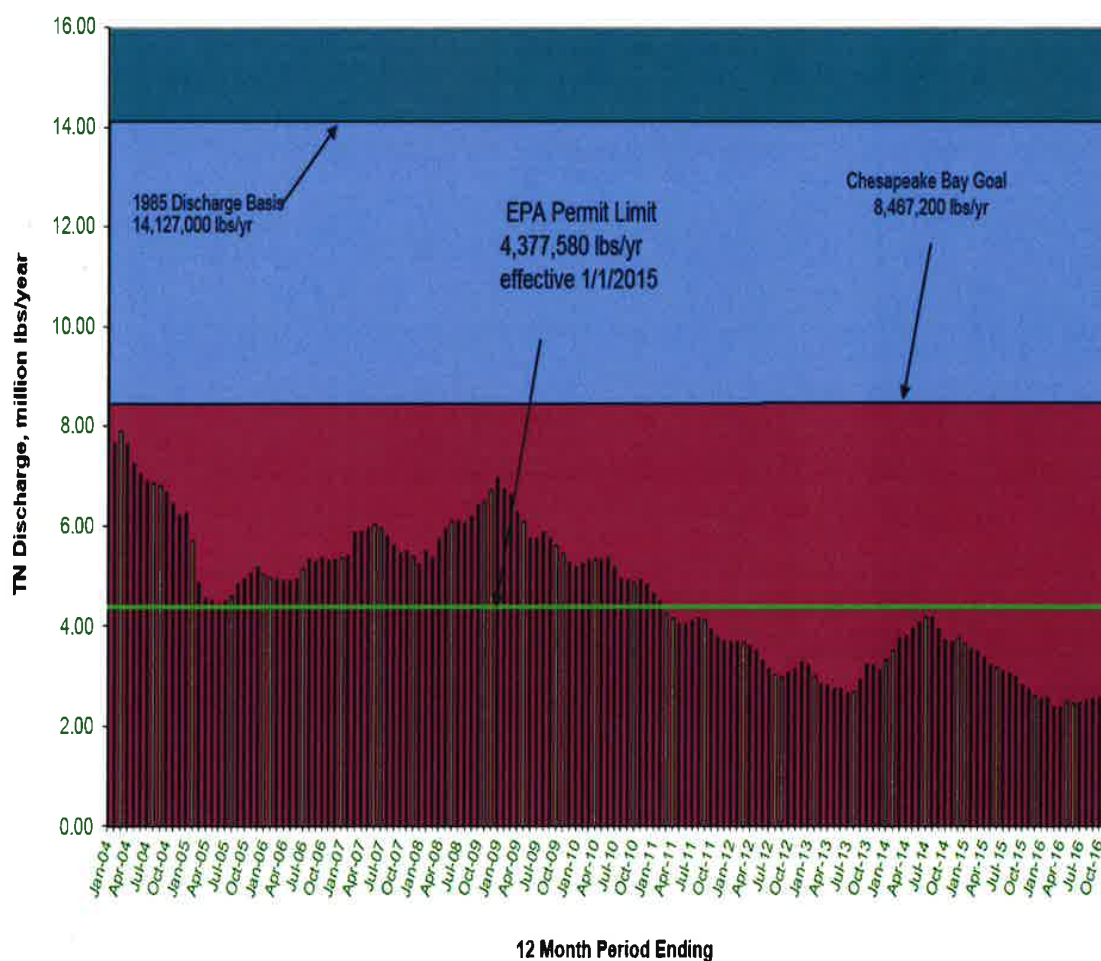
The graph below shows plant influent flow trend over a 10-year period ending December 2016. While for any given month the flow is weather dependent, the 12-month rolling average influent flow has remained at or below 300 MGD since February 2011.



## Enhance Nitrogen Removal Facility (ENRF) Performance

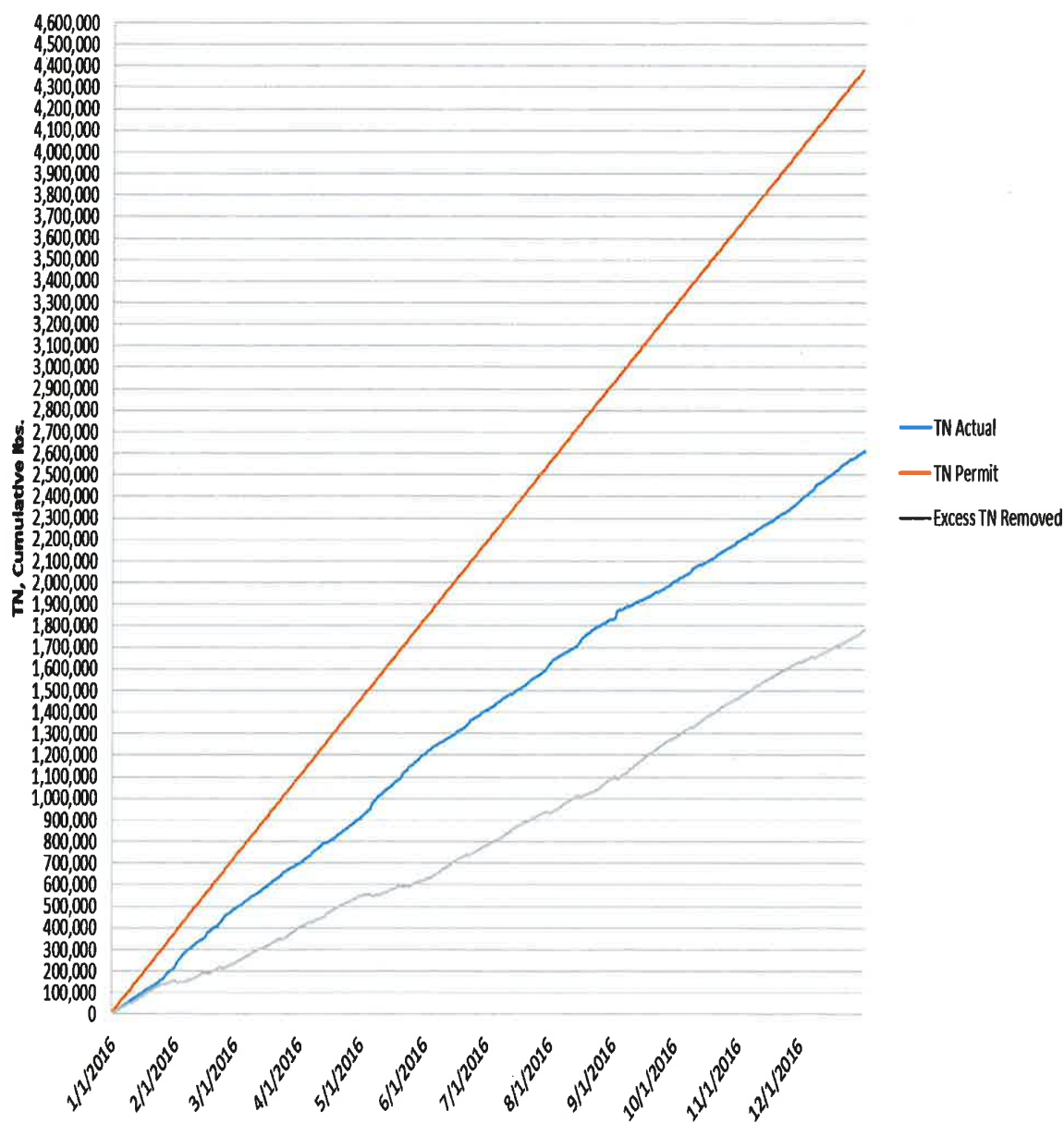
During the month, the ENRF process produced an effluent with average total nitrogen concentration of 3.47 mg/l. The figure below shows Blue Plains effluent total nitrogen (TN) since the implementation of full scale Biological Nitrogen Removal (BNR).

### Annual Total Nitrogen Load, lbs/yr



Total Nitrogen (TN) discharged during the 2016 calendar year was below the 4,377,580 lbs/year NPDES permit requirement. As shown on the graph below, the Enhanced Nitrogen Removal Facility (ENRF) has removed approximately 1,794,000 pounds of TN in excess of what is required for protection of the Chesapeake Bay.

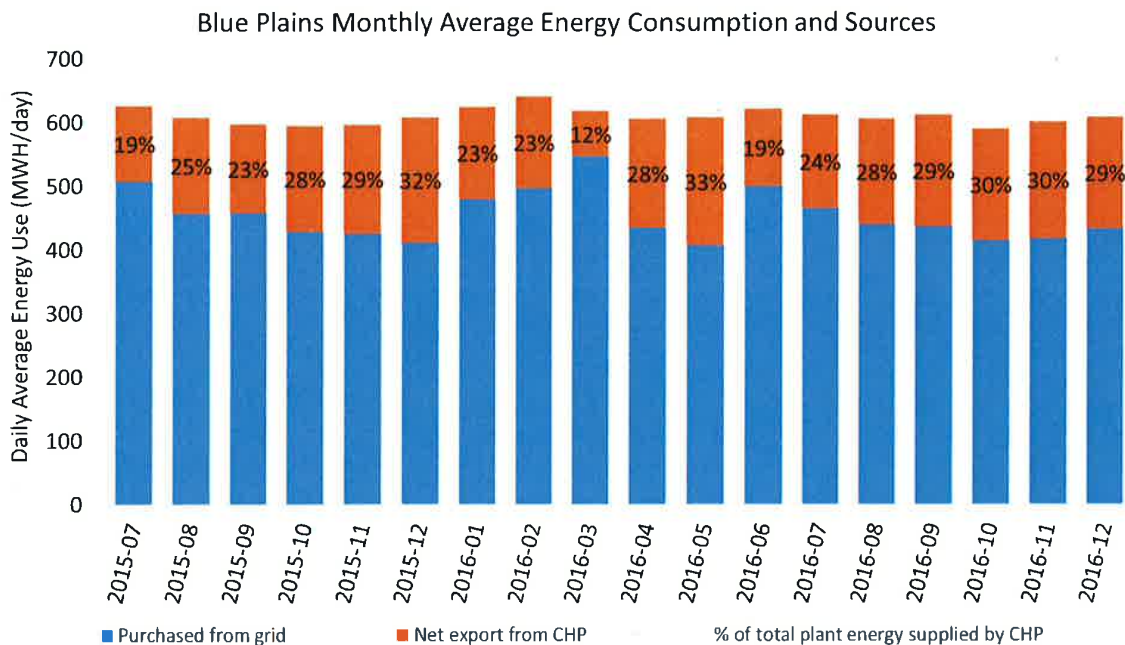
### 2016 Cumulative Nitrogen





## Blue Plains Electricity Generation and Usage

The average energy consumed at Blue Plains was 607 MWH/day for the month of December, while the average energy purchased from PEPCO was 432 MWH/day. 2.47 MWH of electricity was used per million gallon of wastewater that was fully treated. The CHP facility exported an average of 175 MWH/day, making up for 29% of total energy consumed at Blue Plains.

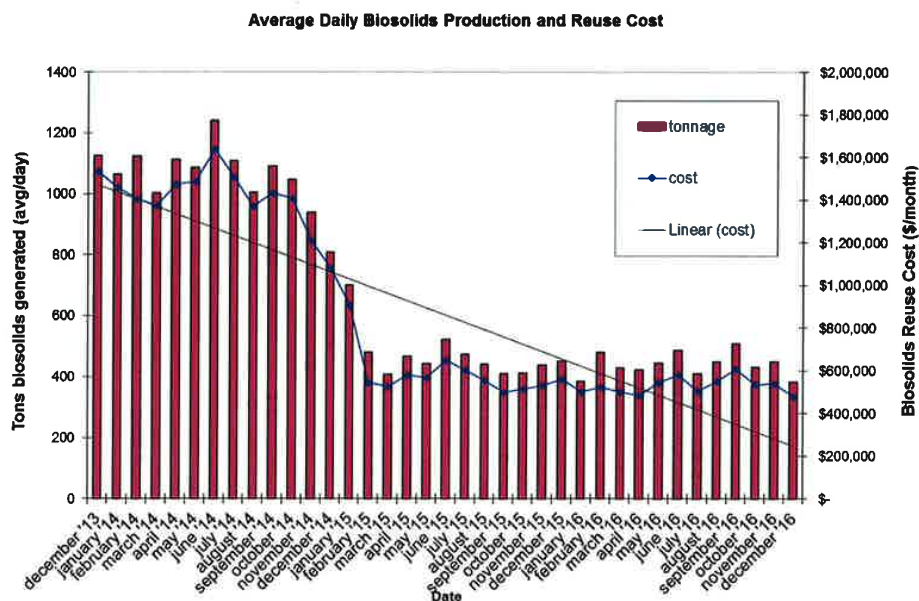
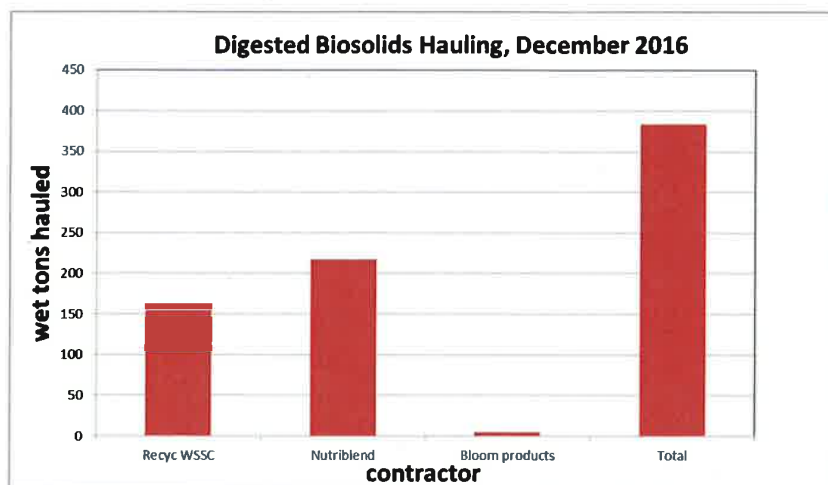


The graph above is based on power monitors installed at the Main Substation and CHP, and reflects average energy consumed at Blue Plains in MWH/day. Of the total use, the energy purchased from PEPCO and net energy supplied (exported) by CHP are indicated by the blue and orange highlights, respectively.

## RESOURCE RECOVERY REPORT

### Production

In December, biosolids hauling averaged 384 wet tons per day (wtpd). The graph below shows the total hauling by contractor for the month of December. The average percent solids for the digested material was 30.2%. At the end of December, the Cumberland County storage pad had 2,608 tons (~25,000 tons capacity), Cedarville lagoon had zero tons (~30,000 tons capacity), Goochland pad had zero tons, and Fauquier lagoon had 462 tons (~15,000 tons capacity) of Blue Plains Biosolids



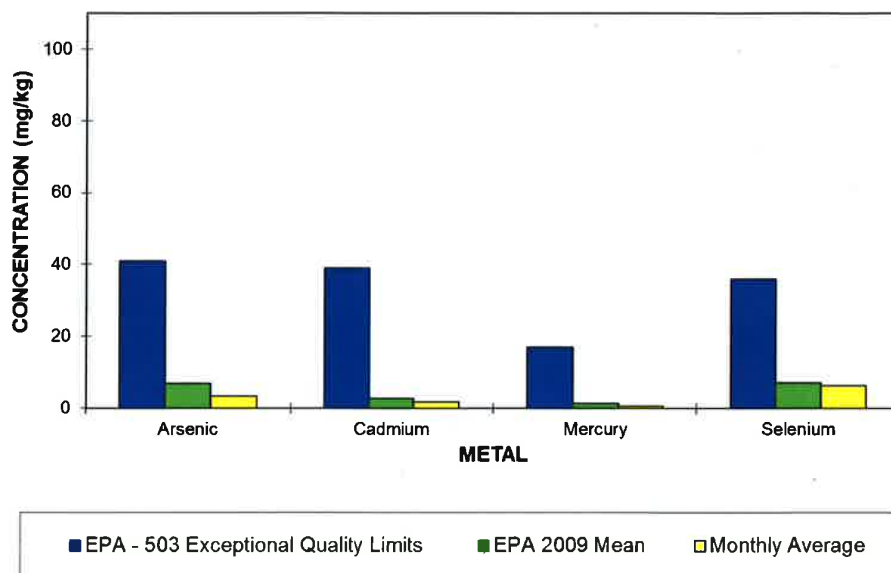
In December, diesel prices averaged \$2.65/gallon and with the contractual fuel surcharge the weighted average biosolids reuse cost was \$39.77 wet ton.



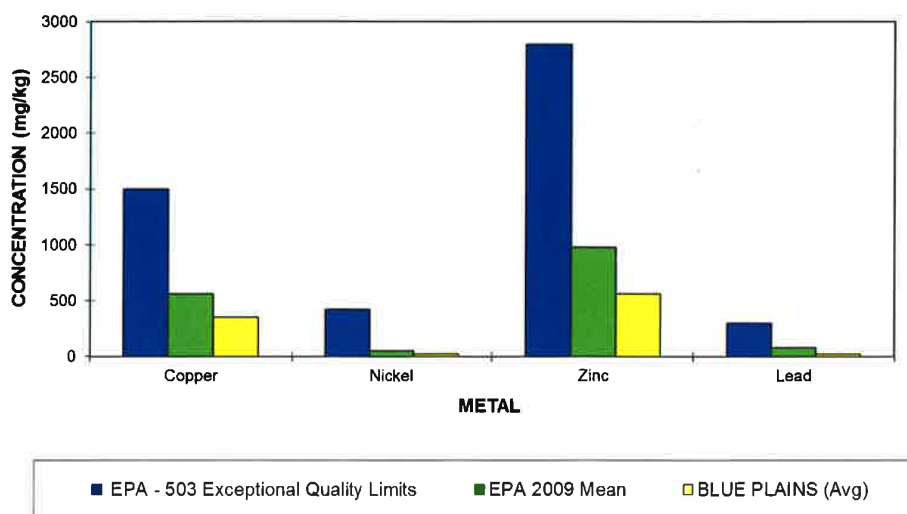
## Product Quality

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

**BLUE PLAINS BIOSOLIDS METALS COMPARISON  
NOVEMBER 2016**



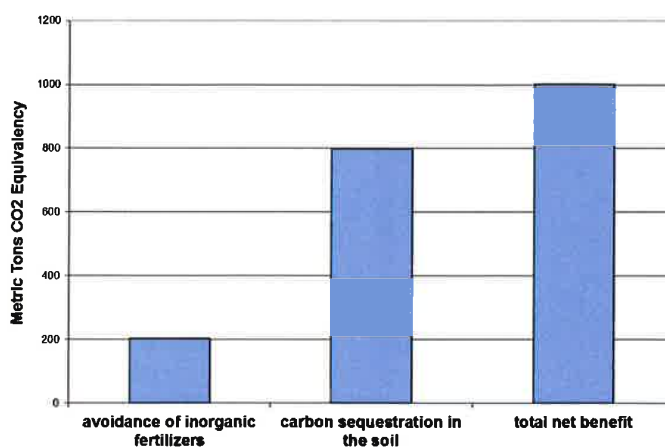
**BLUE PLAINS BIOSOLIDS METALS COMPARISON  
NOVEMBER 2016**



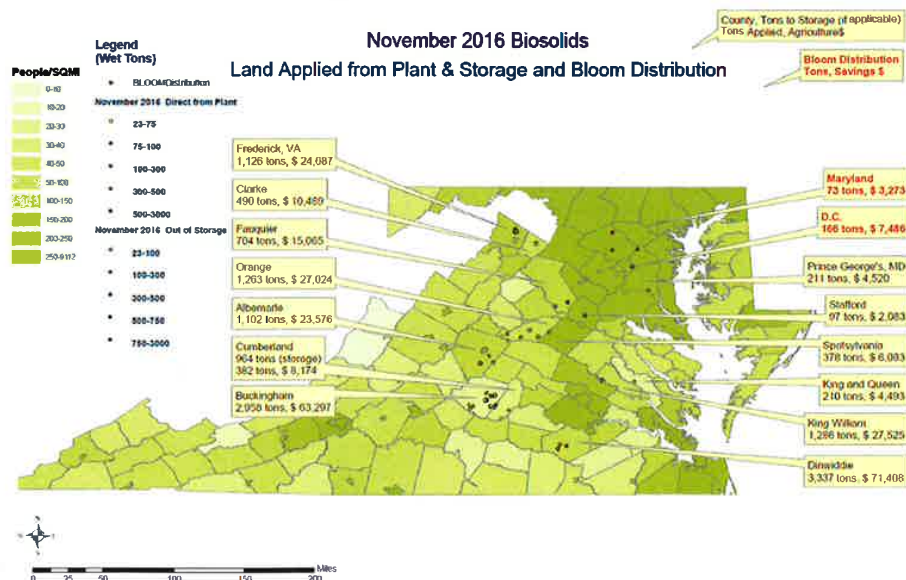
## Environmental Benefits

The quantity land applied in November 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 CO<sub>2</sub> equivalent avoided emissions. This is equivalent to taking 2,042,743 car miles off the road in the month of November (assumes 20 mpg, 19.4 lb CO<sub>2</sub> equivalent emissions/gallon gas – EPA estimate). The cumulative total avoided carbon emission since, January 2006 is 151,984 metric tons CO<sub>2</sub> equivalent.

**DCWater Biosolids Recycling Program  
Greenhouse Gas Balance Benefits  
November 2016 Totals**



## Biosolids Applications and Agricultural \$'s for November 2016



## **CLEAN WATER QUALITY AND TECHNOLOGY**

### **Blue Plains Pretreatment Program**

The Blue Plains Pretreatment Program manages the Industrial Pretreatment Program, including temporary dewatering dischargers from construction and other activities, as well as the Hauled Waste Program. Additional responsibilities include providing specialized sampling and program management support for the Blue Plains NPDES permit and facilitating the Blue Plains Storm Water Committee meetings. This month, staff developed text for a brochure to target molybdenum reductions in cooling tower discharges and made a presentation to the MWCOG Blue Plains Technical Subcommittee proposing a regional hauled waste fee structure.

#### Industrial Pretreatment Program

DC Water currently manages fourteen (14) Significant Industrial User (SIU) permits and sixteen (16) Non-Significant Industrial User (NSIU) wastewater discharge permits. One SIU permit was renewed this month for WMATA Bladensburg Division. DC Water received monthly self-compliance monitoring reports for six (6) SIUs and one NSIU. All SIUs and NSIUs are in compliance with discharge standards for the current month.

DC Water currently manages 76 Temporary Discharge Authorization (TDA) permits, primarily for construction site discharges of groundwater and/or surface runoff in the combined sewer area. Six new TDA permits were issued this month. All TDA discharges are currently in compliance with pretreatment standards.

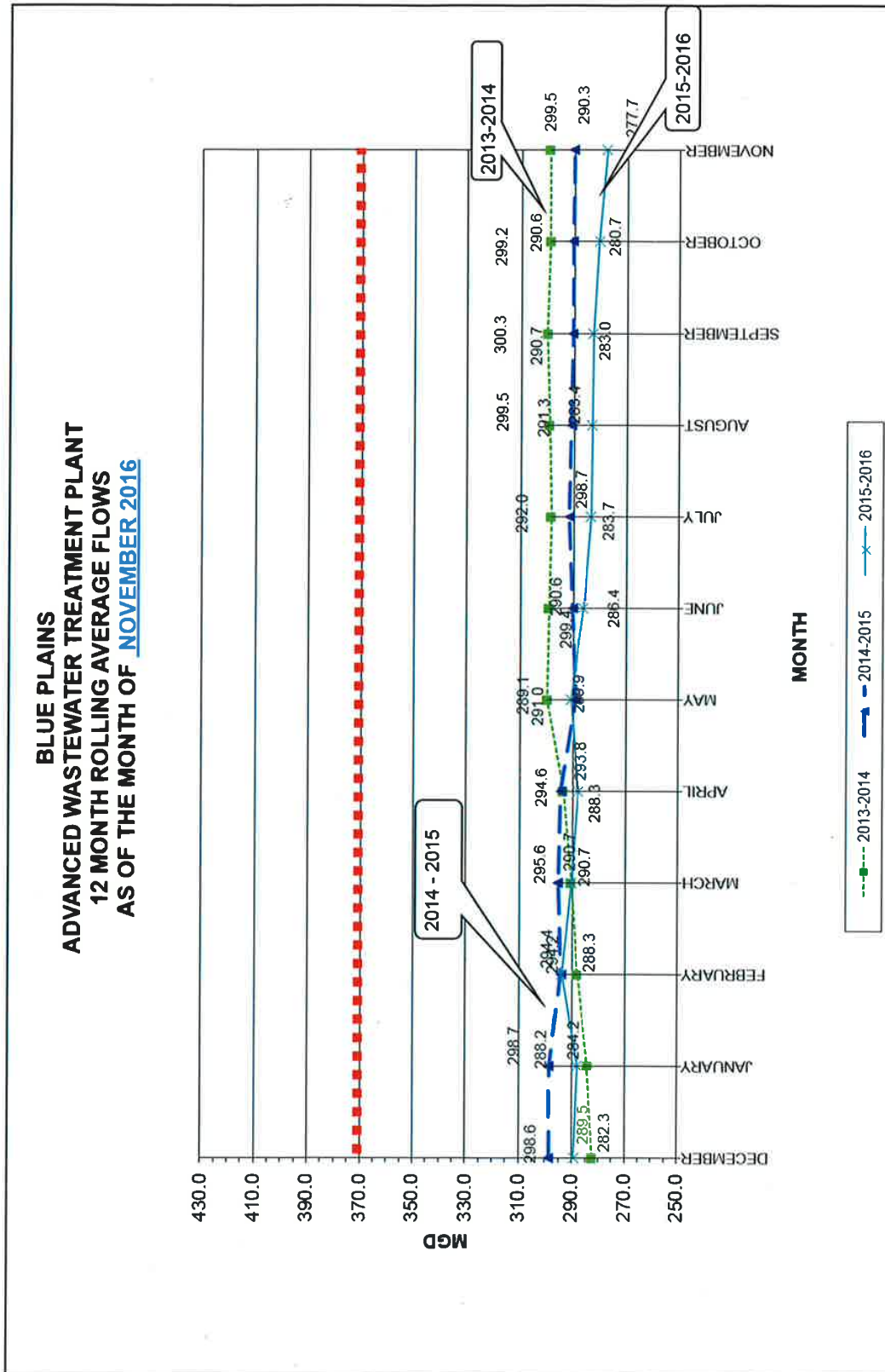
#### Hauled Waste Program

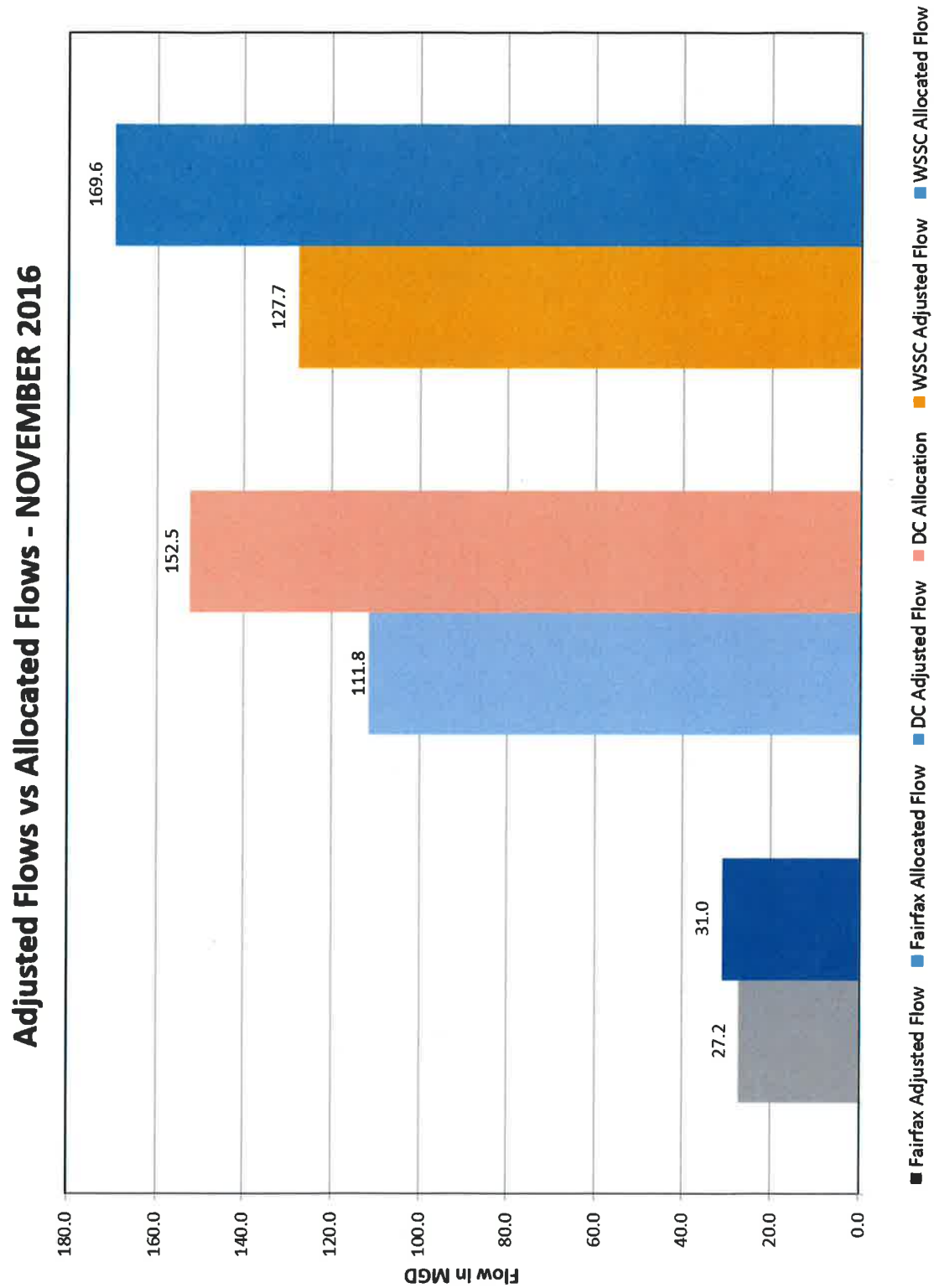
As of the end of the current month, the hauled waste program had 32 permitted haulers authorized to discharge domestic septage, portable toilet waste, grease trap waste, groundwater or surface runoff, and other types of waste, if approved in advance and have been characterized and meet pretreatment standards. DC Water collected fees from eight waste haulers this month, including those on a monthly payment plan option.

DC Water received 749 hauled waste loads (1,601,009 gallons) from permitted haulers this month. Manifest forms from each truck entering the plant are collected by the security guards and picked up daily by Pretreatment staff. Data is entered into an Excel spreadsheet to track the volume and type of loads being discharged daily and the results of sampling. Three hauled waste samples were collected this month.

#### NPDES Permit Sampling

Pretreatment staff collected quarterly plant influent, effluent, and biosolids samples this month including low level mercury samples at each influent location. Staff also collected bimonthly metals and low level mercury samples at outfall 002.





**DISTRICT OF COLUMBIA WATER AND SEWER AUTHORITY  
BOARD OF DIRECTORS CONTRACTOR FACT SHEET**

**ACTION REQUESTED**

**GOODS AND SERVICES CONTRACT MODIFICATION**

**Information Technology Professional Services  
(Joint – Use)**

Approval to execute contract modification for Information technology professional services to extend the period of performance and add funding in the amount of \$225,000.00.

**CONTRACTOR/SUB/VENDOR INFORMATION**

<b>PRIME:</b> Network for Future, Inc. 1023 15 <sup>th</sup> Street, NW, Suite 500 Washington, DC 20005 LSBE	<b>SUBS:</b> N/A	<b>PARTICIPATION:</b> N/A
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**DESCRIPTION AND PURPOSE**

Original Contract Value:	\$689,874.24
Original Contract Dates:	02-01-2014—01-31-2015
No. of Option Years in Contract:	2
Option Year 1 Value:	\$790,000.00
Option Year 1 Dates:	02-01-2015—01-31-2016
Option Year 2 Value:	\$400,000.00
Option Year 2 Dates:	02-01-2016—01-31-2017
Modification Value:	\$100,000.00
Modification Dates:	02-01-2015—01-31-2016
<b>This Modification Value:</b>	<b>\$225,000.00</b>
<b>This Modification Dates:</b>	<b>02-01-2017—04-30-2017</b>

**Purpose of the Contract:**

To contract for information technology professional services for the District of Columbia Water and Sewer Authority (DC Water) Department of Information Technology.

**Original Contract Scope:**

Network for Future is providing the following information technology professional services to date:

- Sharepoint and Oracle Support;
- Help Desk Support; and
- Project Management Support (Cisco Wireless Installation, 3<sup>rd</sup> Party Portal, AMR project).

**Reason for the Change:**

The reason for the change is to extend the period of performance to April 30, 2017 to allow sufficient time to evaluate the 42 proposals received as a result of Request for Proposal #17-PR-DIT-09 that was issued on November 4, 2016 with a closing date of December 5, 2016.

**Spending Previous Year:**

Cumulative Contract Value:	02-01-2014 to 01-31-2017: \$1,979,874.24
Cumulative Contract Spending:	02-01-2014 to 12-31-2016: \$1,866,599.27

**Contractor's Past Performance:**

According to the COTR, the Contractor's quality of products and services, timeliness of deliverables, conformance to DC Water's policies, procedures and contract terms, invoicing and all expectations and requirements were met.



**PROCUREMENT INFORMATION**

<b>Contract Type:</b>	Firm Fixed Labor Rates	<b>Award Based On:</b>	Highest Ranking Score
<b>Commodity:</b>	Services	<b>Contract Number:</b>	14-PR-DIT-07
<b>Contractor Market:</b>	Open Market with Preference Points for LBE and LSBE Participation		

**BUDGET INFORMATION**

<b>Funding:</b>	Operating and Capital	<b>Department:</b>	Information Technology
<b>Service Area:</b>	DC Water Wide	<b>Department Head:</b>	Thomas Kuczynski

**ESTIMATED USER SHARE INFORMATION**

<b>User (Operating)</b>	<b>Share %</b>	<b>Dollar Amount</b>
District of Columbia	83.65%	\$156,425.50
Washington Suburban Sanitary Commission	12.07%	\$22,570.90
Fairfax County	2.84%	\$5,310.80
Loudoun County	1.25%	\$2,337.50
Other (PI)	0.19%	\$355.30
<b>TOTAL ESTIMATED DOLLAR AMOUNT</b>	<b>100.00%</b>	<b>\$187,000.00</b>

<b>User (Capital) – EQP461002101</b>	<b>Share %</b>	<b>Dollar Amount</b>
District of Columbia	68.91%	\$13,092.90
Washington Suburban Sanitary Commission	24.14%	\$4,586.60
Fairfax County	4.51%	\$856.90
Loudoun County	2.01%	\$381.90
Other (PI)	0.43%	\$81.70
<b>TOTAL ESTIMATED DOLLAR AMOUNT</b>	<b>100.00%</b>	<b>\$19,000.00</b>

<b>User (Capital) – IV44201-GIBP</b>	<b>Share %</b>	<b>Dollar Amount</b>
District of Columbia	41.22%	\$7,831.80
Washington Suburban Sanitary Commission	45.84%	\$8,709.60
Fairfax County	8.38%	\$1,592.20
Loudoun County	3.73%	\$708.70
Other (PI)	0.83%	\$157.70
<b>TOTAL ESTIMATED DOLLAR AMOUNT</b>	<b>100.00%</b>	<b>\$19,000.00</b>

  
 Thomas Kuczynski  
 Chief Information Officer  
 Date 1/12/17

  
 Mark Kim  
 Chief Financial Officer  
 Date 1/12/17

  
 Dan Bae  
 Director of Procurement  
 Date 1/12/17

  
 George S. Hawkins  
 General Manager  
 Date

**DISTRICT OF COLUMBIA WATER AND SEWER AUTHORITY  
BOARD OF DIRECTORS CONTRACTOR FACT SHEET**

**ACTION REQUESTED**

**ENGINEERING SERVICES SUPPLEMENTAL AGREEMENT:**

**Raw Wastewater Pump Stations 1 and 2 Upgrades  
(Joint Use)**

Approval to execute Supplemental Agreement No. 9 for \$1,703,000. The modification exceeds the General Manager's approval authority.

**CONTRACTOR/SUB/VENDOR INFORMATION**

<b>PRIME:</b>	<b>SUBS:</b>	<b>PARTICIPATION:</b>
Arcadis District of Columbia, PC 2101 L Street NW Suite 200 Washington, DC 20037	Milhouse Engineering & Const., Inc. Gaithersburg, MD MBE	28.4%
	PDH Associates, Inc. Potomac, MD WBE	5.8%

**DESCRIPTION AND PURPOSE**

Original Contract Value:	\$ 365,111.00
Value of this Supplemental Agreement:	\$1,703,000.00
Cumulative SA Value, including this SA:	\$7,288,689.00
Current Contract Value, Including this SA:	\$7,653,800.00
Original Contract Time:	180 Days (0 Year, 6 Months)
Time extension, this SA:	450 Days
Total SA contract time extension:	6,098 (16 Years, 8 Months)
Contract Start Date:	05-08-2002
Contract Completion Date:	07-16-2019

**Purpose of the Contract:**

- Provide engineering services for the development of upgrades to Raw Wastewater Pump Stations 1 and 2.

**Original Contract Scope:**

- Provide preliminary design services for improvements to Raw Wastewater Pump Sta. No. 1.

**Previous Supplemental Agreement Scope:**

- Final design and construction phase professional engineering services for the Raw Wastewater Pump Station No. 1.
- Development of a concept design report for capital improvements to the Raw Wastewater Pump Station No. 2.
- Final design and construction phase professional engineering services for the Raw Wastewater Pump Station No. 2

**Current Supplemental Agreement Scope:**

- Enhanced engineering services during construction for Raw Wastewater Pump Station No. 2.

**Future Supplemental Agreement Scope:**

- Future Supplemental Agreement is not anticipated for this project.

**PROCUREMENT INFORMATION**


<b>Contract Type:</b>	Lump Sum & Cost plus Fixed Fee	<b>Award Based On:</b>	Highest Ranking Score
<b>Commodity:</b>	Engineering Design Services	<b>Contract Number:</b>	DCFA #379
<b>Contractor Market:</b>	Open Market		


**BUDGET INFORMATION**


<b>Funding:</b>	Capital	<b>Department:</b>	Wastewater Engineering
<b>Service Area:</b>	Wastewater Treatment	<b>Department Head:</b>	Diala Dandach
<b>Project:</b>	BV		

**ESTIMATED USER SHARE INFORMATION**

User	Share %	Dollar Amount
District of Columbia	41.22%	\$ 701,977.00
Washington Suburban Sanitary Commission	45.84%	\$ 780,655.00
Fairfax County	8.38%	\$ 142,711.00
Loudoun County & Potomac Interceptor	4.56%	\$ 77,657.00
<b>Total Estimated Dollar Amount</b>	<b>100.00%</b>	<b>\$1,703,000.00</b>

  
 \_\_\_\_\_, 1/12/17  
 Mark Kim Date  
 Chief Financial Officer

  
 \_\_\_\_\_, 1/12/17  
 Dan Bae Date  
 Director of Procurement

  
 \_\_\_\_\_, 1/11/17  
 Leonard R. Benson Date  
 Chief Engineer

\_\_\_\_\_,  
 George S. Hawkins Date  
 General Manager





# Bloom® Marketing Update

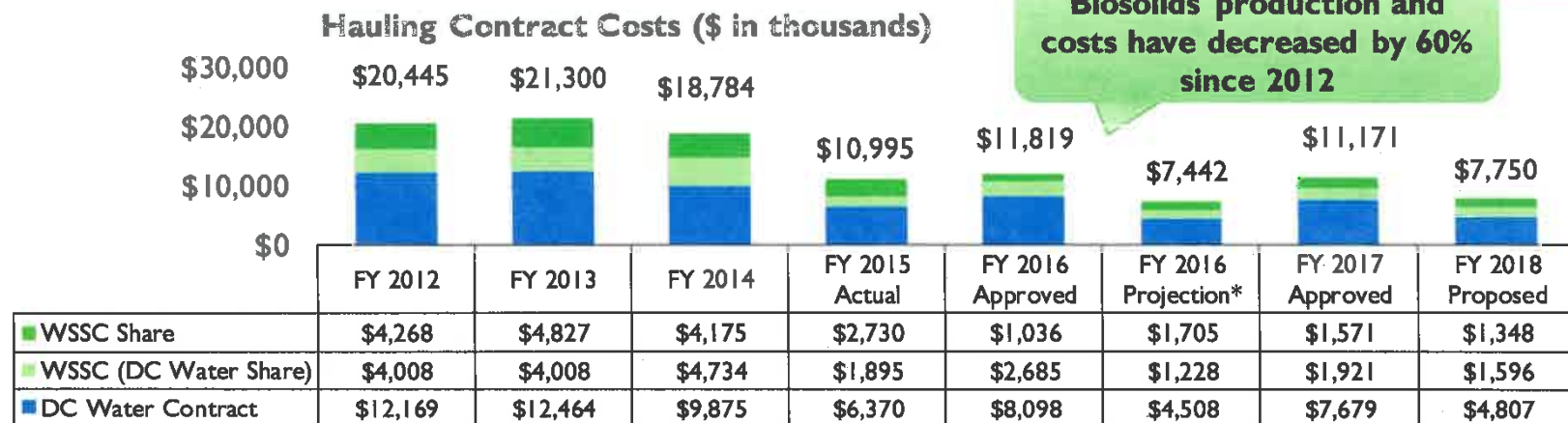
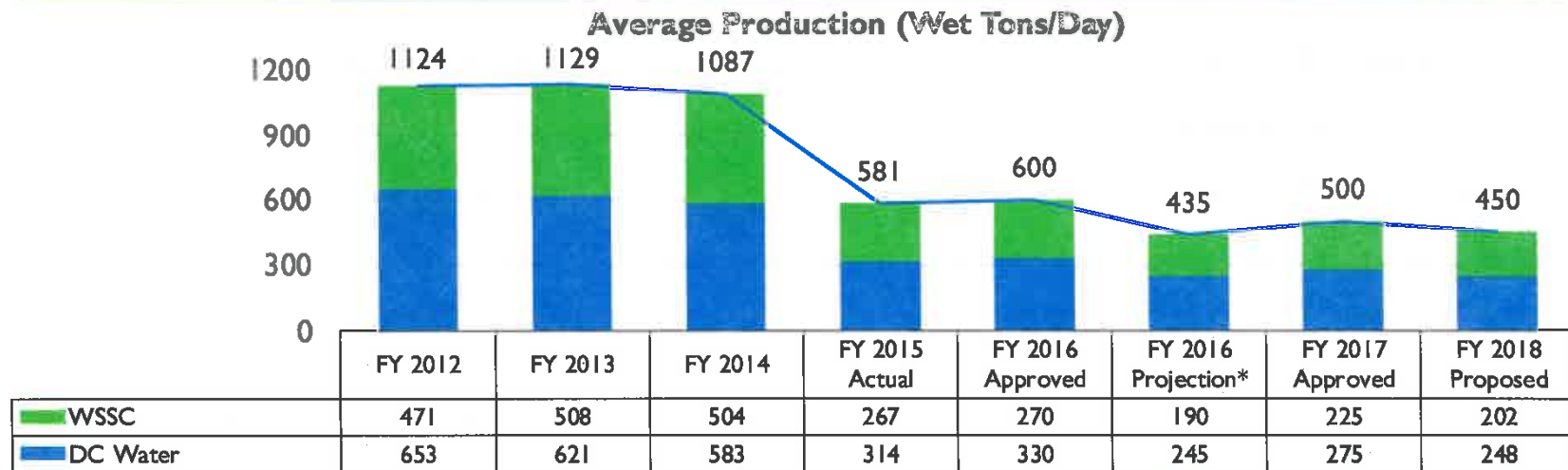
## EQSS

**District of Columbia Water And Sewer Authority**  
Alan Heymann – Chief Marketing Officer





## Context: O&M Biosolids



\* Subject to change after completion of financial statement audit





## Expectation vs. Reality

### Expectation:

Turn ~450 wet tons daily of biosolids production into a commercialized asset that provides retail and wholesale ratepayer cost relief...and **DO IT AS SOON AS POSSIBLE!**



VS.

### Reality:

No established market for Class A Exceptional Quality (EQ) biosolids cake. As a result, marketing of class A still faces a complex regulatory landscape



**Maryland**  
Department of  
the Environment





## Hurdles still to be cleared

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- 💧 VA DEQ Distribution and Marketing Permit
    - Have a draft permit in hand, but DEQ interprets the regulations in a way that limits our use
    - Met with DEQ to discuss – DC Water staff is now redrafting the permit to fit our needs and with provisions to satisfy DEQ's concerns, will send to DEQ within 2 weeks for review
  - 💧 MDE Letter of Authorization for blenders – large potential market
    - MDE requires an LOA, has never issued one. We will be the first. Engaging several blenders to get application in to MDE
      - Soil blenders, which are one of the largest target customers, face an uncertain permitting path
      - Have engaged an outside counsel (former MDE General Counsel) to help us navigate
-



## Achievements in 2016



**Established Marketing Team MANTS – January**



**Pilot Launch Event – May**



**Marketing and Distribution Permits – May**



**Onsite Curing – July**



**Bagging and Bulk Sales – August & September**



**Established Commercial Relationships – Q4**



# Marketing Plan

- **Bloom® Strategic Intent:** *Be the soil amendment of choice in the mid-Atlantic region for soil blenders, commercial landscapers and government agencies, competing as an economic alternative to compost on value, performance and environmental benefits*

- **Target Markets (MD/VA/DC)**

- Soil blenders//landscape material yards
- Commercial and residential landscapers/nurseries
- Government agencies (DOT, DOEE)
- Farms

- **Sales Targets:**

- 1,000 wet tons end of calendar year 2016
- 9,000 wet tons end of calendar year 2017
- 20,000 wet tons end of calendar year 2018
- 30,000 wet tons end of calendar year 2019

In 2016, 870 wet tons of Bloom® were distributed to commercial partners at a cost savings and revenue of \$40K to DC Water.

A large commercial customer in Maryland has already agreed to buy 8,700 wet tons in calendar year 2017.



## Outlook for 2017

- Numerous leads for spring sales through cold calling and ramped up marketing efforts
- RFK Stadium giveaway
- Inroads with regulatory landscape in MD
- Blending facility onsite
- Pending permit in PA – outreach to farmers and nurseries
- Workflow system and personnel to handle growing number of customers and orders
- Investigate offsite curing locations





# Bloom® Product Development

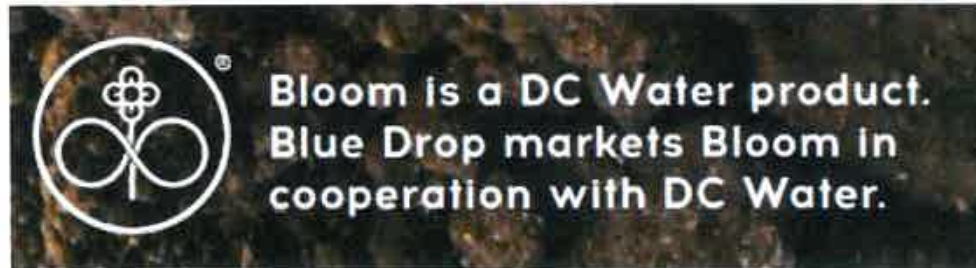
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💧 Content to be added





## Blue Drop Arrangement for Bloom®



### Example of Blue Drop Marketing Activities



**A marketing and sales agreement for Bloom® between Blue Drop and DC Water is under legal review**





# Appendix



# Community Gardens



The Washington Youth Garden

Facebook · 10K

That's right - we're trying out the highly regulated bio-solids compost from DC Water and the raised bed we're using them in is amazingly healthy! — with Anna Benfield



Like Comment Share

1

g Kristin Brewer, Emily Anne Roberts, Megan Higinbotham and 23 others like this.







## Positive feedback

**Subject:** You rock

Hey Bill!

Long time! I wanted to reach out finally and give you a big fat thank you, on behalf of the staff and students at Potomac Prep, as well as the volunteers from EdOps.



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## Blue Plains Garden & Compost Giveaway









## Bloom Product Launch





**mayor\_bowser**  
Washington, Distric...

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**mayor\_bowser** Yesterday, DC became the first city in the nation to employ thermal hydrolysis technology with the largest facility in the world. This project will allow DC Water to provide clean, green renewable power by collecting sewage for production of electric power & recoverable heat. This 'green gold' will reduce greenhouse gas emissions & save taxpayers money. Turning #pooptopower is just another way we

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## First bagged product sales





## First sale, first check

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## School purchase and delivery





## Kingman Island restoration

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**Questions?**