

OPEN CHANNEL NEWS

MCES Industrial Waste & Pollution Prevention

Issue #29/ September 2008



Metropolitan Council Environmental Services

Metropolitan Council Environmental Services (MCES) is one of three divisions of the Metropolitan Council, a regional public agency working for the seven-county metropolitan area. The mission of MCES is to provide wastewater services that protect the public health and environment while supporting regional growth.

Services provided by MCES ensure that:

- (1) sufficient sewer capacity exists to serve planned development, and sufficient capital investments are made to preserve the region's water quality;
- (2) wastewater collection and treatment services are provided in a cost- and quality-competitive manner for 104 communities and nearly 800 industrial clients; and
- (3) local plans provide for adequate water supply and nonpoint source pollution prevention in the region.

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MCES Conserving Energy

Energy use is among the top environmental concerns of today. Energy costs are escalating and environmental regulations are increasing. MCES has made great efforts in reducing energy costs in the operation of its wastewater collection and treatment facilities. However, with continued pressure on our rates and a mission to provide quality, cost-effective wastewater treatment, further reductions are prudent. Bill Moore, MCES general manager, launched an energy conservation initiative in 2006 with the goal of reducing energy consumption by 15 percent by the end of 2010 and increasing the use of renewable energy.

Energy consumption baselines have been established and show that in 2006 MCES spent over \$17 million on energy, 80 percent of that being electrical costs. This puts MCES among the top five largest Xcel Energy customers in the state and qualifies MCES for energy conservation study funding, technical assistance, and substantial energy rebates from Xcel. Many studies are underway in partnership with other organizations and utility rebates are being pursued.

A few studies that were completed in 2007 are showing promising results, in particular, the investigation of our aeration system at the Metro Plant. More than half of MCES's electrical demand is for powering large compressors that pump air into the wastewater during secondary treatment. The air goes through ceramic diffuser disks in the bottom of the treatment tanks (see picture above) and comes out in very tiny bubbles. Studies at the Metro Plant showed that routine cleaning and maintenance of the diffusers and optimizing oxygen set points can achieve a 25 percent reduction in electrical use.

There are many other projects in the works that will help MCES reach its 2010 goal, such as optimizing the recovery of steam for heating buildings and powering electricity-producing turbines, lighting re-design, and re-commissioning of process systems so they are functioning properly and running efficiently. Read more about the energy conservation initiative at metro council.org and click on News+Events.

Important Dates:

October 15, 2008 - Liquid Waste Hauler Reports due at MCES offices for quarterly reporters.

October 30, 2008 - All Regular and Special Discharge quarterly reports due at MCES offices.

Mail Reports to: MCES, IWPP Section, 390 North Robert Street, St. Paul, MN 55101-1805.

New Outfall Pipe Carries Treated Wastewater to Mississippi River

After three years of construction through Dakota County farmland, the edge of a college campus, and rugged and steep river bluffs, a new 12-mile outfall pipe is now carrying treated wastewater from the Metropolitan Council's Empire Plant to the Mississippi River at Rosemount.

The outfall was part of a \$130 million project that doubled the size of the plant and in March 2008 discontinued the discharge of treated wastewater – also called effluent – to the scenic and environmentally sensitive Vermillion River. The Vermillion, a protected waterway that is clean and cool enough to support trout, empties into the Mississippi River at Hastings.

The Empire Plant, located in Empire Township just east of Farmington, treats about nine million gallons of wastewater per day from more than 100,000 residents in Apple Valley, Lakeville, and Farmington, and portions of Rosemount and Empire Township. The population of this service area is expected to surpass 200,000 by 2030, thus the increase in the plant capacity from 12 million gallons per day to 24 million gallons per day. The plant expansion also added a phosphorus removal process, which is important because phosphorus is a nutrient that contributes to excessive plant growth in waterways.

The decision to change the effluent discharge location resulted from the Council's public outreach effort with local residents, government representatives and environmental experts. After reviewing the technical data, this group agreed that the long-term increases in effluent flows would be more than the Vermillion River could handle.

The outfall consists of pipes ranging in size from 54 to 66 inches, some of which were installed in tunnels as deep as 100 feet. Large pumps push the effluent through the outfall pipe to higher ground north of the plant, then the effluent flows by gravity to the Mississippi.

The outfall also will benefit the city of Rosemount, which can use some of the reserve capacity in the pipe to periodically convey treated stormwater to the Mississippi. And to streamline MCES's operations, construction of the outfall is allowing the agency to phase out its Rosemount Plant.

The Rosemount Plant is the smallest of eight plants in the regional wastewater system and serves most of the city of Rosemount. The city's wastewater will still be collected at the plant site, but it will be pumped to the Empire Plant through a new interceptor sewer that was installed in the outfall pipe trench and will flow in the opposite direction.



Pictured from left are Keith Buttleman, Leo Hermes, and Jason Willett.

2008 Customer Forum Review

In June, we held our annual Industrial Waste Customer Forum. Keith Buttleman, assistant general manager, Environmental Quality Assurance Department, spoke about the recent performance awards received by MCES wastewater treatment plants, and provided updates on the MCES inflow and infiltration program and water supply plan. Jason Willett, director of Financial Management and Planning, detailed the proposed general 2009 budget and wastewater rates, which included capital program expenses and the effect of future reserve projections on SAC rates. Leo Hermes, IWPP Section manager, discussed the 2009 industry-specific rates and regulatory updates. He highlighted mercury reductions at our Metro Plant and provided updates on the MCES liquid waste receiving facilities. Guest speaker Brad Gehring of MCES gave a presentation on MCES's Energy Management Plan. For more information about the plan, see the front page article of this issue. You can also find a full article on the Metropolitan Council Website at <http://www.metrocouncil.org/news/index.htm>. Click on "Council newsletter" and then click on "Water" in the right column. The forum ended with a question and answer session.

SAC Credit Transfers

After receiving input from a public information meeting, the Metropolitan Council on July 23 approved a policy change to allow Service Availability Charge (SAC) credit transfers between local governments for substantial statewide economic development opportunities. The transfer must be requested by the Minnesota Department of Employment and Economic Development (DEED) and approved by both communities involved. Other requirements and criteria apply. For more information contact Dan Schueller, MCES financial analyst, at 651-602-1624, or go to www.metrocouncil.org/environment/environment, click on "Rates & Budgets" and then click on "SAC Program" in the right column.

Team at Northern Star Reduces Water Use

Article provided by MnTAP

Northern Star Company is a potato processing facility in Minneapolis. The facility processes refrigerated potato products 24 hours a day, seven days a week, for retail and food service clients. Large volumes of water are needed to wash, peel, cook, and move potatoes through the plant, and sanitize equipment and clean the facility. In anticipation of an MCES water use evaluation, Northern Star conducted an internal water assessment and determined the facility used 550,000 gallons of water per day and would be facing a seven-figure Service Availability Charge (SAC) assessment if water use and discharge levels were not reduced.

Northern Star began addressing water issues immediately and formed a water conservation team with the help of the Minnesota Technical Assistance Program (MnTAP) in January 2007. This team was formed to address all aspects of water usage, not just the SAC charge.

The team, consisting of representatives from all areas of the company including corporate management and line workers, met monthly to discuss areas of improvement, prioritize projects, and develop an implementation plan.

In less than one year, the team implemented 47 water-saving projects throughout the facility. Some of the projects required capital investments, but many involved maintenance or employee awareness. The three projects with the most significant water reduction include installing larger recycled water pumps, installing automatic level controls, and measuring water use and waste.

Northern Star installed larger recycled water pumps to increase the volume and pressure of recycled water throughout the plant. The recycled water is used instead of fresh water to keep drains clear of debris, move waste products through the system and clean potato washing areas.

Automatic level controls were installed on a number of cook, process, and holding tanks to allow only the required amount of water to keep the tanks full rather than a continuous water feed that would cause overflows when production lines stopped.



The project team worked with other employees to gather water use data and find out where reductions could be made. By measuring and being aware of where water was being wasted and how to avoid wasting it, employees began using less water.



Seven months after the water reduction team formed, the company managed to avoid a \$416,000 SAC charge. If Northern Star is able to maintain the reduction in water usage, water costs will also be reduced. Currently, daily water use has been reduced by an average of 125,000 gallons per day.

MnTap Intern Program

By next summer, your facility could be reducing costs waste. If you have a specific waste-related project that you would like investigated, but do not have the time and resources, an intern from the Minnesota Technical Assistance Program (MnTAP) may be your answer. An intern can make suggestions that improve efficiency, save money, reduce waste, or decrease regulatory compliance burden. Also, an intern has the time to research alternative equipment, procedures, chemicals, and raw materials.

Applications are currently being accepted through February 1, 2009. If you would like to discuss a potential intern project, call Krysta Larson at 612-624-4697 or 800-247-0015. Additional information is available online at www.mntap.umn.edu.

Septage Management Program Updates

Fridley Liquid Waste Receiving (LWR) Facility- MCES purchased this facility, located at 8296 Hickory Street NE in Fridley, in January 2008. Building construction and installation of equipment are complete. MCES is currently evaluating facility operation options. A startup date has not yet been established.

Metro LWR Facility - Construction of the Metro Plant disposal facility is complete and the access system and electronics for the scale have been installed. Testing of the entire system will begin in September by redirecting certain loads, beginning with MCES biosolids and then leachate, from 3rd & Commercial to this new facility. It is anticipated that loads will be slowly phased into the new facility to work out any operational problems that might occur before closing the 3rd & Commercial site.

To get up-to-date information of activities involving all MCES disposal sites, please refer to our Website at www.metrocouncil.org/environment/IndustrialWaste/announcements.htm



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2009 Rates and Fees

Rates and fees affecting industrial users for 2009 were approved at the August 13, 2008, Metropolitan Council meeting. The approved rates are:

Strength Charge rates for wastewater generated within the Council's region and discharged on site will be \$0.152 per excess pound of total suspended solids (TSS) and \$0.076 per excess pound of chemical oxygen demand (COD).

Full-cost recovery rates for treatment of industrial wastewater hauled to approved MCES disposal sites will be \$0.311 per excess pound of TSS and \$0.1555 per excess pound of COD. There is an additional \$10 per 1,000 gallon service fee for out-of-region loads.

Liquid waste haulers' standard load charges will be \$42.71 per 1,000 gallons. Holding tank wastes will be charged \$2.41 per 1,000 gallons. The Portable Toilet Waste rate will be \$55.68 per 1,000 gallons. Collar county domestic waste load charges will be \$52.71 per 1,000 gallons.

The Service Availability Charge (SAC) will be \$2,000 per unit, and the associated Add-on Service Charge rates will be \$1.00 per 1,000 gallons.

For all permittees, permit fees will range from \$525 to \$4,875, depending on permit status. General permit fees for special user groups will range from \$50 to \$500.

For more information regarding rates and fees, please contact your MCES engineer or visit: www.metrocouncil.org/environment/IndustrialWaste/news_rates.htm. The 2009 rates will be posted on this site following final 2008 billings in February 2009.