

OPEN CHANNEL NEWS

MCES Industrial Waste & Pollution Prevention

Issue #25/ May 2007

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 103 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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Metro Plant Solids Management Building has Award-Winning Performance

The state-of-the-art Solids Management Building at the Metropolitan Wastewater Treatment Plant has received several awards since its start of operation in 2005. Most recent is the MnGREAT

(Minnesota Government Reaching Environmental Achievements Together) Award, received in March. This award was preceded by the National Environmental Achievement Award from NACWA (National Association of Clean Water Agencies) and the Project of the Year Award from the Minnesota Chapter of the American Public Works Association (APWA) in 2006, and a 2005 award from the American Council of Engineering Companies. Currently, the project is being reviewed for a national award from the APWA.

"We couldn't be more pleased with the results," said Bill Moore, general manager of the Council's Environmental Services Division. The performance of the new solids management system has dramatically reduced air emissions and energy use, while also reducing costs. In its first full year running, air emissions of many pollutants were reduced by 95 percent and natural gas usage by 80 percent. Cost savings from avoided natural gas and electricity use equal over \$3 million. These reductions and savings were achieved by replacing aging multiple-hearth incinerators with new fluidized-bed incinerators and improving the solids dewatering equipment. The new incinerators burn solids in a single chamber at 1400 degrees Fahrenheit, which allows them to keep burning on the heat value contained in the solids without the addition of any external energy source. Heat is also recovered from the combustion process and powers a turbine generator that can produce up to 5 megawatts of electricity through renewable energy. This calculates to a prevention of 30 million pounds of carbon dioxide emissions annually. Said Governor Tim Pawlenty: "Congratulations for your persistence, ingenuity, and resourcefulness," and for "recognizing that preventing waste and pollution makes sense for our environment, our economy, and our region."



Two Metro Plant employees conferring at the base of one of the three fluidized-bed incinerators.

Important Dates:

June 15, 2007 – Brooklyn Park Disposal Site closes.

June 21, 2007 – Industrial Waste Customer Forum.

July 15, 2007 – Liquid Waste Hauler Reports due at MCES offices.

July 30, 2007 – All Regular and Special Discharge quarterly and semi-annual reports due at MCES offices.

Brooklyn Park Disposal Site to Close

The Brooklyn Park Disposal Site will close June 15, 2007. This site is closing due to planned Mn/DOT road construction in the area. The road construction has been delayed, however MCES is still required to close the disposal site in June. Permitted haulers that use this site can use one of the other MCES disposal sites, provided they have a Disposal Site Use Form signed by the community official. Contact the MCES engineer assigned to your permit for questions regarding this form.

Other Disposal Site Closures Delayed

MCES announced earlier that disposal sites in Coon Rapids, Forest Lake and Plymouth, were also expected to close in June. However, due to delays in the start-up of Star Environmental, a private treatment and disposal facility, closure of these three northern sites will be delayed. It has not been determined at this time how long the delay will be.

MCES understands the impact these site closures will have on our hauler permittees and will keep them informed as plans progress.

Metro Plant Disposal Site – Construction Under Way

Construction is under way for the new hauled liquid waste disposal site at the Metropolitan Wastewater Treatment Plant. This new site, when completed, will replace the current site at 3rd and Commercial Streets in St. Paul. The new site design includes an upgraded security and access system, a scale for determining load volumes, and six discharge stations. The new site will greatly improve our ability to track hauled liquid waste coming into the treatment plant and also lessen some of the congestion that occurs at 3rd and Commercial now. Construction of the site should be completed by the end of this year, with the scale electronics slated for installation early next year. We are expecting the site to be open to MCES permitted liquid waste haulers by spring 2008.



Construction of the new liquid waste disposal site at the Metropolitan Wastewater Treatment Plant.

Out With the Old, In With the New

If you have any old Industrial Waste Discharge Report (IWDR) forms, please recycle them. A revised form is available and must be used immediately. The revised form reflects changes in the way MCES applies discharge limits, requires less calculating from industrial users and allows for more efficient recording of discharge information. The new form was mailed to all permittees in April and one form will be sent with each permit renewal. If more forms are needed, please make copies or print it from our Web site at: www.metrocouncil.org/environment/IndustrialWaste. Click on forms. An IWDR Help Sheet is also available.

Communities are Responding to the Regional I/I Problem

I/I is inflow and infiltration, or clear water, getting into the sanitary sewer system and swallowing up capacity needed for future growth. To avoid an estimated \$900 million cost to expand the regional wastewater system to accommodate I/I, the Council looked to the communities to help solve the problem. And the communities are taking action. The Council adopted a program to impose a surcharge on regional wastewater bills starting in January 2007. The communities could undertake a program to reduce the I/I in lieu of the surcharge. The Council identified 49 communities with excessive I/I and notified them in July 2006 that they had until Sept. 15 to submit work plans and credits for work already completed. All 49 have either submitted a reduction plan or passed a resolution that commits them to creating a work plan and taking action in 2007. A handful of communities have already identified and eliminated the source of inflow in their wastewater systems. Due to the response, all surcharges have been deferred for one year. Therefore starting in 2008, the surcharge will apply to communities that do not eliminate excessive I/I in 2007. These communities, however, can continue to get reductions for eligible expenses until they've solved the problem. "We're getting a big problem taken care of that at one time we weren't sure was solvable," said District 1 Council Member Roger Scherer. "The program is progressing and the work is getting done."

Solving the I/I problem will reserve wastewater system capacity for what it was intended for – regional growth – and reduce the amount of costly expansions, helping us keep our rates below the national average while still providing high-quality regional wastewater services.

To read more about the I/I reduction program visit us at: <http://www.metrocouncil.org/environment/environment.htm> and click on I/I Surcharge Program



Tennant Company Wins 2006 Governor's Award

Article provided by MPCA

The vision of Tennant Company (Golden Valley), a producer of equipment to maintain indoor and outdoor surfaces, is to create a cleaner, safer world. The company has implemented numerous, diverse types of waste-reduction efforts, from a crate-less packaging system that reduces wood waste by over 1 million pounds per year, to a reduction in chemical use by more than 4,000 gallons as a result of adjustments made to washer equipment.

The company has virtually eliminated its paint-related hazardous waste by converting to a powder coating process. This extensive conversion effort—made without disrupting production—has paid off through the elimination of more than 12 tons of hazardous air pollutants. The use of low-temperature chemistries, variable-frequency drives to control motor speeds, oven-control improvements, and the repair of air compressor leaks conserves almost 3 billion BTUs of energy annually.

A new foam-scrubbing technology called FaST, a feature in recent models of Tennant cleaning machines, uses 70 percent less water use and 90 percent less detergent, while at the same time improving floor traction.

Economic and environmental benefits

Tennant saves over \$1.4 million annually by conserving energy and water and reducing solid and hazardous waste:

- 2,000 pounds of hazardous raw materials
- 3 million gallons of water
- 600 tons of raw materials
- 20 tons of solid waste
- 35,000 pounds of water pollutants

Helpful Hints

pH Meter and Maintenance

pH meters indicate the degree of acidity, neutrality or alkalinity of an aqueous solution by measuring the concentration of hydrogen ions (H⁺) as the material passes through a membrane in the pH probe. The probes can be single-junction or double-junction. A meter with a single-junction probe employs a mathematically derived curve formula to calculate pH and a meter with a double junction probe has a reference material within the probe and determines pH by means of a compare and contrast between the reference and the material being analyzed.

pH is measured on a scale of 0 to 14 standard units. The pH value of an aqueous solution is directly related to the ratio of hydrogen ion and hydroxide ion concentrations. If the hydrogen concentration is greater, the material is acidic and the pH value is less than 7. If the hydroxide concentration is greater, the material is basic and the pH value is greater than 7. Equal concentrations means the material is neutral and the pH value is 7. MCEs mandates the pH of discharges into the sanitary sewer be between 5.0 and 11.0 standard units.

To ensure your pH neutralization system is working properly, the pH probe should be cleaned and calibrated regularly. The environment the probe operates in and its susceptibility to oil coating, calcification and other acquired barriers determine the cleaning frequency. The probes may be cleaned with agents such as soap and water, vinegar or acetic acid. Scrubbing with a brush or steel wool can damage the probe and should be avoided.

The pH probe should not be installed near items that generate an electromagnetic field, such as motors that spin blending arms in pH equalization tanks, since an electromagnetic field can interfere with the proper functioning of the meter. A two-foot separation is a good rule of thumb.

There are single-point, double-point and triple-point pH meters. The triple-point meter should be calibrated with numbers 4, 7, and 10 buffer. The double-point meter should be calibrated with number 4 and 10 buffer. The single-point meter should be calibrated to a number 4 buffer if the equalization system is set to introduce a basic ingredient when the material in the tank reaches a pre-determined low pH number. Calibrate to a 10 buffer if the purpose is to introduce an acidic ingredient when the material to be adjusted reaches a pre-determined high pH number. Buffers of other pH levels are available and can be employed along these same general principles. The pH meter's thermometer should also be regularly calibrated if the material being measured is subject to unusually high or low temperatures.

This article is intended to provide general guidelines, and in all cases the manufacturer's instructions concerning operation and maintenance should be followed.

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Industrial Waste Customer Forum – June 21, 2007

The annual Industrial Waste Customer Forum is scheduled for Thursday, June 21, from 8 to 9:30 a.m. All customers holding MCES discharge permits are invited. The forum focuses on pretreatment program issues that affect you and provides an opportunity for you to voice your concerns. Leo Hermes, IWPP program manager, Keith Buttleman, assistant general manager (Environmental Quality Assurance), and Jason Willett, MCES finance director, will be presenting topics of interest and will answer your questions. The main focus of discussion will be the 2008 preliminary budget and rates, in which your feedback will be considered prior to final approval. Other agenda items include the dental mercury program results to-date, and the latest information on the septage management program.

The forum will start at 8 a.m. and be held at the MCES meeting room located at Metro 94 Business Center, 455 Etna St., Suite 32, St. Paul. Please RSVP before June 15 by calling 651-602-4711 or sending an email to jane.trosdahl@metc.state.mn.us