



Advancing *Biosolids*
Environmental Management
Systems in Local **Communities**

NACWA WEF EPA

www.biosolids.org

Week of June 22, 2009 - No. 632



To: NBP Web Site Registrants and Visitors

**From: Sam Hadeed, NBP Office: 703-684-2418 or
shadeed@wef.org**

Subject: Weekly Biosolids Update from NBP

WEF RBC 2009 Specialty Conference Meeting Minutes and Bioenergy Technology Workshop Materials; WEF 2010 Residuals and Biosolids Specialty Conference – Call for Abstracts; PA Septic Business Owner Ponders Whether Sludge Can be Used as Fertilizer; Washington Sewage Plant's Gas Helps It Move Away From the Grid; This Week in Washington from WEF.

From **Sam Hadeed**, shadeed@wef.org. **WEF RBC 2009 Specialty Conference Meeting Minutes and Bioenergy Technology Workshop Materials**. Meeting minutes from the WEF 2009 Residuals and Biosolids Specialty Conference and PDF files from the Bioenergy Workshop held during May 3-6, 2009 in Portland, OR are available for viewing. The files are available at WEF Biosolids Access Water Knowledge channel web page: <http://www.wef.org/MembershipCareers/MembershipInformation/CommitteeList/ResidualsandBiosolids.htm>. The files can be view directly by clicking on the individual links below:

2009 Residuals & Biosolids Specialty Conference Meeting Materials Wednesday, May 6, 2009

Portland Convention Center
Portland, OR

Committee/Subcommittee Minutes (May 4 - 6, 2009)

- [Residual and Biosolids Committee](#)
- [Agriculture & Industrial Byproducts Subcommittee](#)
- [Bioenergy Technology Subcommittee](#)
- [Outreach & Education Subcommittee](#)
- [Research & Development Subcommittee](#)
- [Specialty Conference Subcommittee](#)

Bioenergy Technology Workshop Presentations (May 3, 2009)

- [Brown](#)
- [Dominak](#)

- [Filmore](#)
- [Rogowski](#)
- [Scanlan](#)
- [Sheilds](#)
- [Taylor](#)
- [Welp](#)
- **Reference Documents:**
 - [Air Permitting Process Guidelines for Bioenergy Projects](#)
 - [Life Cycle Assessment Manager for Energy Recovery](#)

WEF Residuals and Biosolids 2010 Specialty Conference – Call for Abstracts

- **Leveraging Biosolids in the Energy-Climate Era**

Savannah International Trade and Convention Center
Savannah, Georgia

Conference: May 23 - 26, 2010

Exhibition: May 23 - 25, 2010

Abstract Submittal Deadline: July 31, 2009

[Call for Abstracts](#) - (PDF)

To submit an abstract, [click here](#)

[For more information](#)

[#Top of the Document](#)

From ***DuBois, PA Leader Vindicator, 6-20-09. PA Septic Business Owner Ponders Whether Sludge Can be Used as Fertilizer.*** ST. MARYS - John Buerk of Buerk's Septic is in the business of taking waste and creating a by-product. His business, started in 1989, has been land applying residential septic biosolids for four years. In 2008, Buerk's Septic land applied 195,800 gallons. "I am the only one in this area that land applies and it is a win-win situation for me," Buerk said. "People out there need to be educated. The sins of the past aren't there anymore." In 1989, when Buerk was the state's coordinator environmentalist for EDP, a powdered metal manufacturer, he had a dream. "My dream was always to do this because nobody understands the great value you can have land applying," Buerk said. "Believe me, I made more money at that plant than I'm making now, but I'm proving to people it can be done with no problem."

He is permitted to apply to four five-acre parcels, where he top applies the biosolids. He hopes, if interest grows, to purchase the equipment to start injecting the biosolids. Buerk said the permitting process took about a year and involved inspections by the Environmental Protection Agency and the Department of Environmental Protection, notification of surrounding property owners and the City of St. Marys, as well as the guidance of engineering firm Lee-Simpson Associates, Inc. During the process, the sewage is pumped through a screen box with three screens, filtering solids down to a half inch. Then, lime is added and the temperature is kept above 12 degrees Celsius for a half hour and the pH is stabilized at 12. "That kills all the vectors (any bacteria) and pathogens in that waste," Buerk said. "Nothing can live in that type of environment." Lime helps drop

the metals out of the mixture, breaks down any remaining solids, and is also beneficial to farm fields.

Visually, the process seems easy, but it requires a large amount of paperwork, documentation and formulas to figure out what each field and crop need to grow to their maximum potential. The sewage comes from residential septic tanks and private sewage treatment plants, which Buerk gets paid to take away. In turn, he pays the farmer a small fee to take it. "You can pay up to 8 to 10 cents a gallon to get rid of it, or if you're taking it to the landfill you pay \$40-some per ton," Buerk said. Before the first land application, soil samples are taken to determine what's needed on the field and how. Buerk said there is a limited amount of biosolids he can put on the land and is also restricted to land applying in the summer because of weather restrictions.

When it is applied, a spreader bar is attached to the truck and calculates how much septic waste is put on the field. The system is calibrated and the truck keeps at one steady speed so the correct amount is applied. "A lot of these fertilizer companies have a trade secret and don't have to tell what is in it, so a lot of times you don't know what they're putting on land," Buerk said. "They don't have to disclose it - I do. This is public information." Buerk said every little step matters. "The hardest part is to get a farmer to cooperate with you," Buerk said. "I'm not afraid to eat anything off a field a year later." Buerk said he isn't afraid to ask questions and calls his district's DEP representatives Regina Schweinsberg and Lyle Stainbrook by their first names, referencing them frequently as if they are old friends. He said he also learns a lot from farmers.

His knowledge of farming was limited when he started land applying and he said he is learning every day. "Every farmer should know this, and they would know this. It's the people who aren't in the farming community who don't know it," Buerk said. "Fertilizer is a must." When the biosolids are land applied it looks like white water - not sewage. He said personally his biggest complaint, is the lime smell, but in his four years of land applying he has never gotten a complaint. "Sometimes if it's muggy out, you'll have a lime smell in the air," Buerk said as he stood next to one of the fields he applies to. "I put 40,000 gallons on this field and you can't smell it."

Harvesting is a key part of the process. The nitrogen in the fertilizer which is put into the land needs to be removed. Whether it be mowing food plots or harvesting hay, the nitrogen must be taken from the soil. Buerk said a farmer has to wait 30 days before he can harvest food grown for animals. Food grown for human consumption can only be harvested one year after land application. "A lot of other farmers call me up and ask me if I can land apply, but I can't. The only way I can do this is if they have a plot plan for their farm and I go through the permitting process for their farm," Buerk said. "I would really like to see more people get involved in what I'm doing. I could go into these towns that have a small treatment plant and I can save them a lot of money to keep the sewer rates down. Right now the average sewer rate is \$55 per month."

Looking at the acres of lush green fields, Buerk nods his head and says "see the difference." He said the farmer he works with has noticed an increase in crop yield since the fields started being land applied. "You drink pop out of a can and you recycle it. You recycle plastic and cardboard - this is no different," Buerk said. "What people don't realize is years ago, all these factories were connected to the sewer lines and they could just

dump anything in there, which as of 1980 they came up with a pretreatment standard and you can't do that anymore."

[#Top of the Document](#)

From ***Kitsap, WA Sun, 6-19-09. Washington Sewage Plant's Gas Helps It Move Away From the Grid.*** PORT ORCHARD — High on the rooftop of West Sound Utility District's wastewater treatment plant, two vast caldrons of sewer sludge bubble and burp, emitting waves of malodorous vapors. Large domes riding atop the semi-liquid sludge capture the methane gas that is a natural byproduct of the wastewater treatment process. Some of the gas is drawn off to fuel the plant's boilers. About 30 percent of the methane produced currently is used as an alternative fuel source. But when the boilers are idle, the overflow is burned off through a pipe out back of the plant. "It's terrible. It's a crime," said plant manager John Poppe.

West Sound officials hope not only to make better use of the methane they have, they plan to generate more of the gas to heat buildings, run generators and possibly even produce excess energy that could be sold back to Puget Sound Energy. This week, West Sound commissioners and city of Port Orchard officials, who jointly operate the plant, heard from an engineering expert that they could triple their production of methane. Doug Berschauer of CH2M Hill, a Tacoma engineering firm, said adding a fermentation step to the treatment process would increase the activity of bacteria that literally digest the waste ... and the gas they excrete. The fermentation process, called lysing, breaks down the cell walls of the waste material making it easier for bacteria to digest it. "When you break down those cells, those organisms go, 'It's time to eat. Break out the lawn chairs!'" Poppe said.

Another enhancement would be to feed the bacteria more, Berschauer said. The potential is there to use waste grease from restaurants, lawn clippings from the plant or other sources, or possibly food scraps from the Washington veteran's home up the hill. Berschauer said Puget Sound Energy is interested in the pilot project and willing to put up around 70 percent of the cost for engineering, construction and startup. But first, the district has to collect more hard data on just how much gas could be produced and how much money could be saved in the process.

West Sound now spends \$14,000 to \$17,000 dollars per month on power. Although it will probably never be able to go entirely off the grid, the district could potentially save up to \$8,000 per month by using methane as an alternative energy source, Poppe said. The plan is to buy methane-powered turbine engines that could generate power. The district will also need to convert two idle tanks into receptacles for fermentation. Under a best-case scenario, Poppe said, the plant would from time to time have excess energy to sell back to PSE.

West Sound will seek \$200,000 in grant funding from PSE to study, design and install a methane utilization system. Another potential source is federal stimulus funding they'll apply for through Kitsap County. With funding in place, the plant could begin generating much of its own power some time in 2010, Poppe said. The methane initiative is one of a number of projects — including use of biosolids as fertilizer, water reclamation for irrigation, and hydroelectric and geothermal power generation — with which the plant is experimenting.

Other plants around the state are exploring similar technology, but one PSE official describes West Sound's drive to implement green practices as "cutting edge." "WSUD is very innovative and very action oriented," said Tom MacLean, PSE's manager of customer renewable energy programs. "They're willing and able to try new things." MacLean said PSE is not counting on West Sound to sell any energy back to them. The plant would be a small player in the grand scheme of things, he said. But lowering power consumption by \$8,000 per month would mean that much more power available for use elsewhere. Port Orchard City Councilman John Clauson said West Sound customers stand to benefit from increased methane utilization. "I think the bottom line is, no matter what we do, we're going to hold the cost of operating this plant down, and that's going to hold our rates down," he said.

[#Top of the Document](#)

From **Sam Hadeed**, shadeed@wef.org. ***This Week in Washington from WEF. This Week in Washington (TWIW)*** is a free weekly e-newsletter of the Water Environment Federation's Government Affairs Department that is published on Fridays. It provides updates on the latest legislative and regulatory developments affecting the water and wastewater communities. View the [June 19 on-line edition](#). You can also bookmark this link for future reference. To receive via email, send your request to the **Editor – Sam Hadeed** at shadeed@wef.org.

[#Top of the Document](#)