

Solid Waste UPDATE



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In This Issue . . .

Southeast Kansas Recycling, Inc......1
Waste-to-Energy Trends1
Solid Waste Tonnage Fee Revenue Continues to Drop2
Liquids Addition to Subtitle D Landfills2
Green Schools Grants3
HHW Online Training3
Top Five Solid Waste Violations4
10 Smallest LFs in Ks4
Ewaste Collection Stats.....4
Volume to Weight Conversion Factor4
Get to Know KDHE Solid Waste Staff.....5
Who is This BWM Staff Member?.....5
KOR: Understand Benefits of Recycling6
SWANA/KDHE Training6
Calendar Items.....8

Get Caught !

Southeast Kansas Recycling, Inc. Building Collection Programs for Electronic and Household Hazardous Waste

by Kris Hicks, Bureau of Waste Management

Southeast Kansas Recycling, Inc. (SEK) and manager Chuck Delp have been busy adding programs to their already impressive recycling facility. This is a program that just keeps getting better!

In operation since 1990, the Recycling group changed its name to SEK Recycling, Inc. in 2005. Prior to 2005 the name was Crawford County Citizens for Recycling (CCCR).

From 1997-2003 CCCR received \$190,000.00 from KDHE grants to expand their building and purchase a glass crusher, paper shredder, forklift, horizontal bailer, forklift, and scales. As SEK Recycling, they received a grant for \$39,000 from KDHE to purchase additional equipment for its recycling operation. They now have a paper shear to recycle books, and a bandsaw to dismantle and rebuild pallets. A cooperative agreement with a local employer - CLASS LTD allows that program to use half of one building to run a glass crushing



Crawford County Ewaste Office

operation using glass supplied by SEK Recycling. An annual book sale brings in over \$2000 and puts at least that many books back into circulation.

In the last round of competitive grants offered by KDHE Bureau of Waste Management, SEK Inc. was awarded \$214,937.24 to transform two of the old grain/fertilizer buildings north of the recycling center into an electronics waste collection center. At the same time, Crawford County was awarded a grant from the household hazardous waste program to renovate the third fertilizer building into an HHW collection center.

(continued on page 7)

New Organic Waste-to-Energy Trends in Kansas

by Ken Powell, Bureau of Waste Management

Kansas has not banned organics from landfills, yet there are many innovative programs springing up for the management of the organics produced here. For the organics that have already been disposed in landfills and those yet to be disposed in landfills, capturing the methane released during

decomposition and using it for energy should be encouraged. Tires, which contain a portion of natural rubber, have been used for energy for many years in the cement kilns in southeast Kansas.

New to the energy mix in the last couple of years is the wood waste industry. We are beginning to develop

a market for ground wood to be used as fuel. In the Abilene area, Bert and Wetta Alfalfa Mills is using wood waste from Custom Wood Products in St. Marys to dry the alfalfa before making pellets. ICM is working on a gasifier using wood waste from Harvey County and Wichita. The City of Topeka

(continued on page 3)



Save the Date

November 3-4, 2010

SWANA/KDHE Solid Waste Management Conference & Operator Training

For more details see page 6

Solid Waste Tonnage Fee Revenue Continues to Drop

by Bill Bider, Director, Bureau of Waste Management

The economic downturn continues to impact waste generation and disposal in Kansas and nationwide. Since all aspects of the state solid waste program are funded by the \$1 per ton landfill tonnage fee, less waste disposal means less revenue to administer the program.

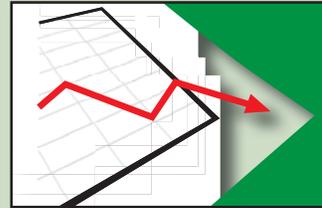
Two years ago, few people would have guessed that a recession would have such a dramatic impact on waste generation. Starting in late 2008, disposal began to decrease. During the first year into the recession, disposal dropped by about 650,000 from the preceding 12 months. Disposal continued to decrease over the next six months, even with respect to the lower generation rate of 2009. Disposal during the second year of the recession will be down by about 950,000 tons from the pre-recession rate, if the current rate continues through the summer. Therefore, the effects of a two-year recession will have resulted

in a reduction of overall waste disposal in Kansas equal to 1.4 to 1.6 million tons. This is approximately equal to 100 percent of recycled tons over that same period. In other words, the decrease is equivalent to doubling the Kansas municipal solid waste recycling rate which is presently about 25 percent.

So, from an environmental effect the recession has accomplished a great deal with respect to the conservation of energy, materials, and landfill space. However, there are negative implications as well. The loss of 1.4 to 1.6 million tonnage fee dollars impacts state support for various solid waste programs including waste reduction grants, illegal dump clean-up work, city dump repair work, and the collection of hazardous materials.

It is uncertain as to whether waste disposal will go back up when the economy improves. However, even if it does, it still is our goal to reduce landfill disposal through higher recycling and composting rates and source reduction activities. It appears that Kansas must assess the need to maintain all programs funded by the landfill tonnage fee and the adequacy of fund revenue given the effects of economic recessions and increased waste reduction efforts. If programs are valuable enough to retain,

alternative funding methods must be identified or the programs will need to be eliminated or significantly cut back. KDHE will begin studying these issues over the next year and monitor tonnage fee revenue trends to decide whether legislative action is appropriate.



Interest in Liquids Addition to Subtitle D Landfills is Growing Potential Benefits and Technical Considerations

by Sam Sunderraj, Bureau of Waste Management

A Subtitle-D MSWLF that is constructed in accordance with a good Construction Quality Assurance Plan (CQAP), and is operated in accordance with a good Facility Operation Plan (FOP) is known to be a good containment system that is protective of ground water beneath the landfill. The composite liner gives assurance that leachate carrying contaminants will not migrate down into ground water. As of November 3, 2009, KDHE has the authority to permit the addition of liquids into such landfills. Requests to process liquid additions are to be processed as variances under state solid waste regulations. Several landfills in Kansas have expressed an interest in pursuing this.

Benefits:

1. Waste that is wet will compact better, and this has the immediate benefit of using valuable airspace efficiently.
2. Liquids have the ability to enhance waste decomposition, which has several related benefits:
 - a. Decomposed waste mass has significantly less potential for environmental contamination and this could allow a reduced time of post-closure care.
 - b. Decomposed waste mass would be a reduced volume of waste mass that makes for more efficient use of the landfill airspace over the life of the landfill.
 - c. Gas generated due to decomposition is generated during a shorter time frame which would facilitate efficient capture and use of the landfill gas.
3. Management of the liquid waste stream in the fully contained composite lined landfill may be a better environmental option than some current disposal options.

(continued on page 6)



Green Schools Grants

by Maureen Ruhlman, Bureau of Waste Management

Kansas Green Schools celebrated its second year during the 2010-2011 school year. The Green Schools program represents the collaborative efforts of four Kansas Department of Health and Environment bureaus. Those bureaus are: Air (BAR), Environmental Remediation (BER), Water (BOW) and Waste Management (BWM). Each bureau has appointed a representative who participates on the KDHE Green Schools Committee charged with determining goals for the program and developing strategies to achieve those goals. This year, the BWM was pleased to offer Teaching Green, a



Centre Elementary students with Sec. of Ag. Josh Svaty and Div. of Environment Director John Mitchell

book of environmental sustainability projects for classrooms as an incentive for schools to register a team on the Green Schools website. These books are available at the elementary, middle and high school levels (visit www.greenteacher.com for more information). Over 300 schools are currently participating in the Green Schools Network.



Westar Energy staff with Green School grant recipient, Farley Elementary, Topeka

The Bureau of Waste Management has completed two Green School grant rounds. A total of \$101,296.23 was requested through applications for round #1 and \$54,210.53 was requested

(continued on page 5)

HHW Online Training Opportunities



The Bureau of Waste Management has partnered with the learning management system known as KS-TRAIN to offer on-line annual household hazardous waste training. This partnership has been advantageous for the program in a number of ways. Providing the course on-line has made it possible to offer the training statewide at no cost to participants. By having this added capacity the curriculum can be continually updated. Course users can track and add to their learning accounts at their own convenience without the expense of traveling.

KS-TRAIN is part of a national learning system serving as a premier learning resource for professionals who protect the public's health and safety.



Access to this learning management system allows individuals to customize and broaden their learning through many valuable courses, trainings, and discussions.

For more information, contact Jessica Willard at 785-296-1611 or jwillard@kdheks.gov.

Get Caught



KDHE Mission:

As the state's environmental protection and public health agency, KDHE promotes responsible choices to protect the health and environment for all Kansans.

www.kdheks.gov

Organic Waste-to-Energy Trends

(continued from page 1)

has contracted with Garick to operate their wood waste and composting facility. Garick has contracted with Frito Lay to supply ground wood for their biomass boiler currently being installed. At least four other facilities grind wood and send the wood to out of state biomass boilers.

In Southeast Kansas, at least one sawmill is exploring the possibility of using anaerobic digestion (AD) to process the sawdust and then using the biogas produced to power an electric generator. Sawmills create large amounts of sawdust and this might be a way of using the sawdust to reduce their operating costs. If the trend of finding alternative uses for wood waste continues, we may be able to develop a market for most of the wood waste (resource) generated in Kansas.

AD also has applications in agriculture. The manure from large livestock operations, especially the large dairies and swine facilities, is a good source of biogas production. The biogas can be used for electricity production, as a fuel for heating, or cleaned and added to natural gas pipelines. Solids from the AD process still contain almost all of their nutrient value and are a valuable fertilizer for crop production. The US EPA, USDA and US DOE, through the AgStar program, have just announced a coordinated effort to work with producers to increase the use of AD at livestock operations.

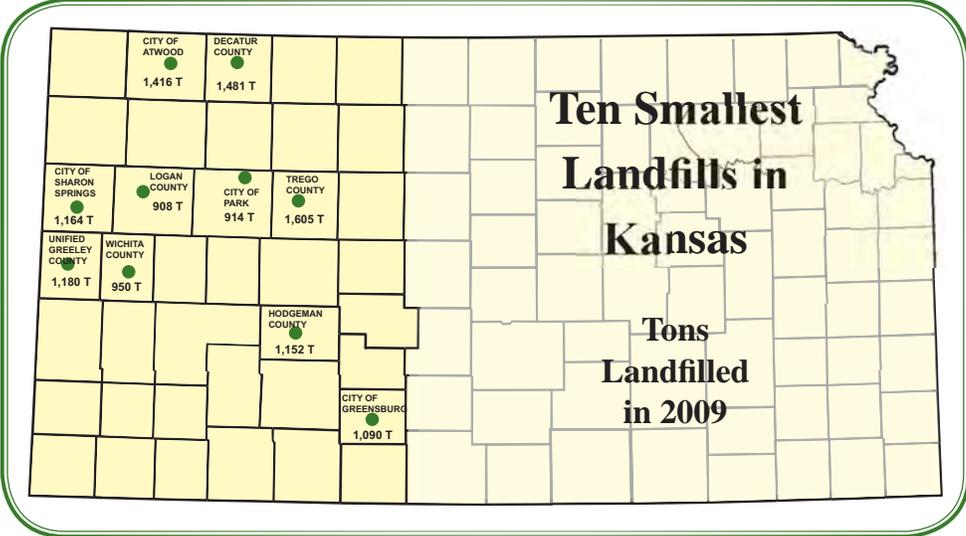
The next big step for solid waste systems will be developing a system for handling the very putrescible wastes generated by grocery stores, food manufacturers, restaurants, homeowners, and pet food manufacturers. While composting can handle these types of materials, more energy can be recovered by using AD for energy recovery and then composting the resulting solids to preserve the organic material. Currently these systems are very large and expensive, but new research is being done on smaller AD units and the corresponding energy recovery units. Europe has a large number of these facilities and the manufacturers are just beginning to look at the United States as a market.

With a well planned and coordinated promotional effort, Kansas has the opportunity to become a leader in the use of AD technology.

Top Five Solid Waste Violations at Landfills



1. Inadequate daily cover
2. Inadequate intermediate cover or failure to maintain intermediate cover
3. Inadequate run-on and/or run-off controls
4. Failure to collect litter and place in fill or secured, covered containers
5. Inadequate signage at facility entrance



Ewaste Recycled by KDHE-Funded Regional Collection Centers



| | Pounds | Shipping | Recycling Fees | Handling | Totals |
|--------------|------------------|--------------------|---------------------|---------------------|---------------------|
| Year 1 | 1,558,895 | \$29,153.99 | \$162,380.33 | \$80,902.53 | \$272,436.85 |
| Year 2 | 1,237,631 | \$28,288.57 | \$140,933.05 | \$140,017.87 | \$309,239.49 |
| Total | 2,796,526 | \$57,442.56 | \$303,313.38 | \$220,920.40 | \$581,676.34 |

New Volume to Weight Conversion Factor for C&D Waste

by Bill Bider, Director, Bureau of Waste Management

Permitted construction and demolition (C&D) waste landfills must submit reports to the Bureau of Waste Management on the tons of waste landfilled and pay the \$1 per ton state fee on all waste, except when tonnage fee exemptions are provided in law. Landfills that do not have scales may use a volume to weight conversion factor to estimate tons as provided in K.A.R. 28-29-85(d). The conversion factor in this regulation is currently set at 1,250 pounds per cubic yard. The regulation also allows landfill owners to submit data that justify an alternative conversion factor.

The bureau recognizes that the default conversion factor of 1,250 pounds per cubic yard that has been in effect for about 20 years was developed assuming a significant portion of C&D waste consists of "clean rubble" such as concrete, asphalt, brick, and soil. Since most demolition contractors segregate clean rubble from other C&D waste for recycling or disposal in non-permitted clean rubble sites, the 1,250 pounds per cubic yard conversion factor overestimates the actual tons of waste that are disposed in permitted landfills. The Bureau of Waste Management gathered information from many sources, including FEMA that has a responsibility for accurately estimating the tons of debris generated by natural disasters, and decided that a better conversion factor for mixed C&D waste entering permitted landfills would be 500 pounds per cubic yard. A separate clean rubble conversion factor was established at 1,800 pounds per cubic yard.

These alternate conversion factors have been established as state policy pending incorporation into a revised regulation which may take many months (see BWM Policy 10-02). The effect of this policy will be to lower tonnage fee payments because segregated clean rubble is exempt from the tonnage fee. This information has been shared with landfill owners for immediate implementation.

Who is this BWM Staff Member ?



Hint: He's pushing gas recovery at landfills

Photograph by William L. Bider

Look for the answer
in this issue !

Green Schools

(continued from page 3)

through applications for round #2. A third round of Green Schools grants was offered to schools through BWM for the 2010-2011 school year. A total of 39 grant applications were received for round #3; however, three schools subsequently withdrew their documentation. Of the remaining 36 applications, it is noteworthy to mention that sixteen schools are beginning new composting projects or enhancing existing composting projects. In addition to composting, the types of projects at the schools include recycling, guest speakers for school assemblies, and outreach to families of school members. Green School grants are also funded through the Bureau of Water and Air.

The second Kansas Green Schools Conference is scheduled for the end of July 2010 at Clifton Clyde High School (USD 224) in Washington County. Clifton Clyde was one of three recipients of the Green School of the Year Award for 2010. The other two recipients were Goddard High School (USD 265) in Sedgwick County and Centre Elementary in Lost Springs. The KDHE Green Schools Committee is looking forward to the 2010-2011 school year and the continuing development of the Green Schools Initiative.

Get to Know KDHE Solid Waste Staff

Tony Guy

Environmental Scientist

Compliance Assistance
& Enforcement Section



| | |
|-------------------------------------|--|
| Position in KDHE/BWM: | Special Waste Coordinator* |
| Birthplace: | Topeka, Kansas in 1967 |
| Professional/Academic: | BS Biology with minors in Chemistry and Physics Washburn University Topeka, Kansas |
| Life in Kansas: | Born and raised in Topeka. I spent my sophomore and junior years of high school in Japan at a USMC DOD School '81, '82, '83 |
| Family: | Married Yvonne in 1997. We have two daughters Savannah (11) and Brooke (9). |
| Favorite pastime activities: | Driving the girls around to soccer and softball practice/games and mowing the lawn |
| Favorite food: | Home made Mexican, steak, sea food, Japanese, Chinese, Thai, Italian, American |
| Books I recommend: | Samson and the Pirate Monks Ragamuffin Gospel Light and the Glory AMERICA's God and Country - Enc. of Quotations |
| Favorite Jack Handy quote: | As the sun sets, and the sky turns from a salmon color to a flint coal, I remember the morning that I caught a salmon, and how I had named him flint, . . . and how good he was. |

**Special waste is classified as a non-hazardous solid waste, but due to physical, chemical, or biological characteristics requires management standards for operator safety.*

Liquids Additions to Subtitle D Landfills

(continued from page 2)

Technical Considerations: The process involves research and development followed by more research and development which would result in a suitable design for the specific landfill site for the specific waste streams accepted at that site. Factors such as solid waste characterization and column height, site meteorological conditions, liquid waste stream characteristics, method of liquid addition, and data to be monitored and analyzed, necessitate site specific technical considerations. Some general technical considerations are:

1. Is the only reason the waste stream is currently excluded from disposal in a Subtitle D landfill its liquid characteristic?
2. What impact will the addition of this waste stream have to the facility's ability to:
 - a. Maintain a leachate head no greater than 12 inches on the liner?
 - b. Operate the working face with no adverse impacts to personnel or equipment?
 - c. Manage storm water and leachate in compliance with regulatory requirements?
 - d. Manage greatly enhanced landfill gas production?
3. Could the addition of this waste stream have an adverse impact on waste decomposition, and what would the long-term consequences of retarding decomposition be?



Save the Date

**November 3-4
2010**

**SWANA/KDHE
Solid Waste
Management
Conference &
Operator Training**

**Grand Prairie Hotel &
Convention Center
Hutchinson, Kansas**



KOR: Helping Kansans Understand the Benefits of Recycling

by Spencer Duncan, Executive Director, Kansas Organization of Recyclers

In high school, I remember the poster on the wall proclaiming, "Recycle: It keeps your Mother happy," with a giant photo of Earth.

Most people want to recycle. Desire is outpacing availability. Across Kansas, counties, cities, state agencies, non-profits and businesses are doing their best to keep up with demand and the Kansas Organization of Recyclers (KOR) is taking steps to help Kansans understand how beneficial recycling can be to a community.

KOR is looking at programs in schools to teach students, teachers and parents about recycling efforts. KOR is exploring how it can help cities and counties start recycling programs and utilize existing programs. KOR is working to help recycling non-profits and for-profits work with local governments and citizens to create sustainable programs. KOR is researching how we can help

event planners coordinate with local recycling initiatives. And we continue to examine unique recycling efforts - from mattresses to pharmaceuticals - and how KOR can help those programs expand or be copied.

On August 24 and 25 in Hutchinson, KOR will hold its annual conference, where these, and other issues, will be addressed. Among our topics: Big Event Recycling; Non-tradition Recycling; How not to take NO for an answer; Federal and State roundtable; reports from Keep America Beautiful and the National Recycling Coalition; Single-Stream Recycling; and more.

Conference information, along with information on how to join and help KOR, can be found on our website at www.kskor.org and I am always available to speak with anyone interested in our efforts at 785-233-3771.



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Health & Environment

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Southeast Kansas Recycling

(continued from page 1)

Free up
your space!
Recycle e-waste.

With these big changes in mind, SEK acquired the neighboring buildings and started to transform the units from a run down, eyesore in need of environmental cleanup to an attractive vibrant center of recycling activity. The new Ewaste site has the advantage of being next to the recycling center so the staff can manage both areas and use their considerable experience in processing, marketing, and shipping recyclables. SEK has found markets for textiles, wood, paper, metal, plastics, Ewaste, and glass and reported 1288.09 tons of material processed last year.

The Southeast Kansas Recycling, Inc. is working with participating counties, Bourbon, Cherokee, Crawford, Labette, Montgomery, Neosho, Wilson, and Woodson to schedule collection events this spring and fall. The chart below shows the electronics collected for recycling so far in this region.

| Ewaste Type | Number Received |
|-------------------------|-----------------|
| Whole Desktops | 304 |
| CPUs | 1,105 |
| Computer Monitors - CRT | 1,755 |
| Flat Screen Monitors | 98 |
| Televisions - CRT | 1,219 |
| Laptops | 102 |
| Keyboards/Mice | 961 |
| Printers/Faxes/Scanners | 997 |
| PDAs/Cellphones | 390 |
| VCR/DVD Players | 389 |
| Computer Peripherals | 170 |
| Other Ewaste * | 1,799 |
| TOTAL | 9,289 |

*Stereos, projectors, camcorders, speakers, radios, tape recorders, game consoles, all other phones and answering machines, microwaves, calculators, toner and ink jet cartridges, large and desktop copiers, loose circuit boards

Total reimbursements to Southeast Kansas Recycling through this program are \$55,905 or \$0.18 cents per pound in addition to the grant funding of \$214,938.24. This is less than the \$0.20 per pound average for all 8 Ewaste grantees.

Ewaste collection centers are paid a handling fee by the program which was calculated at \$0.05 per pound the first year and \$0.10 per pound the second year. In addition, their shipping expenses and recycling fees were reimbursed. Actual weight shipped for Southeast Kansas Recycling to date is 306,570, pounds (199,132 pounds year one + 107,438 (y-t-d) pounds in year two) or 153 tons overall.

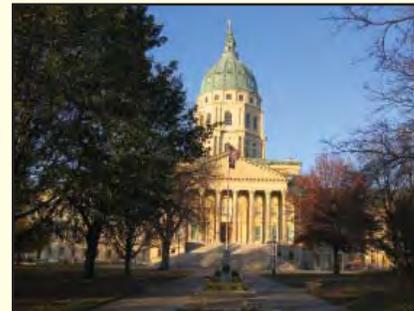
The reimbursements for shipping, recycling fees, and handling will continue through Sept. 16 of this year for SEK Recycling.

Crawford County has applied to KDHE to operate the Southeast Kansas Regional Household Hazardous Waste Facility which will be located at 503 S. Joplin, Pittsburg at the SEK Recycling, Inc. site. The HHW facility will operate as the regional host for satellite HHW facilities located at Crawford, Cherokee, Neosho, and Woodson counties. A public notice was released for comment in May.

Please call the center before bringing any material (Ewaste, HHW).



Earth Day 2010



40th Anniversary Celebration



Who is this BWM Staff Member?

Answer:

Sam Sunderraj, Chief,
Solid Waste Landfills Unit
-- participating in the
"Recycle Cycle Tour 2009"

**Kansas Department of Health & Environment
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Calendar Items

- | | |
|--------------------|---|
| August 24-25, 2010 | Kansas Organization of Recyclers (KOR) Annual Conference - Hutchinson |
| October 2010 | Kansas Landfill Association Annual Meeting (date to be determined) |
| November 3-4, 2010 | SWANA/KDHE Solid Waste Management Conference & Operator Training - Hutchinson |



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