City of Dallas

The GreenZine

OEQ Monthly News!

Volume 2, Issue 10

October 2008

"Energy Awareness Month"

Odorless, Colorless Gold by Adam Jochelson

-Adam Jochelson is an Environmental Engineer with the Sanitation Department

Buried In Our Own Backyard

In a time with oil prices over $100 per barrel, efforts to find and develop alternative sources of energy have accelerated rapidly. Ask anyone to describe where to find alternative energy, and you will get similar responses—wind, solar, hydrogen, etc. Some more well-read respondents might even mention geo-thermal or tidal sources. Very few, however, will likely list a vast source of alternative energy already in use in Dallas's own backyard: your local landfill.

All landfills produce gas as a result of biodegradation of the waste contained within them. The majority of this landfill gas (LFG) is typically methane, the main component of natural gas—most of the rest is carbon dioxide. Early landfill operators often did not spend much time considering the fate of the LFG generated in the waste mass. Consequently, most of the gas either escaped into the environment or gathered in pockets underground. Neither situation is acceptable, the former contributing to greenhouse gas concentrations (both carbon dioxide and methane) in the atmosphere, the latter, a potential fire hazard if left unmanaged. Recognizing the dangers to the environment and public safety, the Environmental Protection Agency (EPA) included gas management provisions in Emission Guidelines of the New Source Performance Standards (NSPS/EG). Enacted in March of 1996, NSPS/EG requires landfill operators to collect LFG and, at a minimum, flare it to destroy the methane, mitigating the risk of fires. Combustion of methane, of course, releases more carbon dioxide (a greenhouse gas). However, methane is far worse, by as much as 25 times, in its potential to influence global warming in the environment. So, the trade-off seems justified. Furthermore, many landfills choose to go beyond the minimum and do more than simply burn their collected gas.

Odorless, colorless gold in that hill

Members of the waste management industry have long recognized the potential to use the energy in LFG for beneficial purposes. In fact, the advocacy group known as the Solid Waste Association of North America (SWANA) has convened an annual Landfill Gas Symposium that will celebrate its 32nd Anniversary in 2009. At this event, which most consider one of the premier conferences in the solid waste industry, interested parties from all over the world share knowledge about management of landfill gas, with a heavy focus on gas-to-energy projects. The lucrative nature of these ventures has sparked a sort of modern "Gold Rush" in the development of LFG projects.

Odorless, Colorless Gold *continued*

Most commonly, landfill operators will forge agreements to sell their gas to someone else who might use it to power industrial equipment. Also, you will often find operators feeding raw LFG into turbines that produce electricity which can then supplement the local utility's production. These are classified as "Low-BTU" projects, referring to the energy content of unprocessed LFG. Less common are so-called "High-BTU" projects, where operators employ physical and chemical processes to remove impurities from the gas, leaving a high-grade product almost exactly equivalent to natural gas from traditional sources.

Dallas Digs In

Currently, Dallas is in a contractual agreement with Dallas Clean Energy, a private company, who processes the LFG generated at McCommas Bluff Landfill, the primary repository for residential waste in Dallas, sells the high-BTU end product to the local gas utility Atmos Energy, and shares the revenues with the City.

This agreement puts the City in a position to benefit greatly from the recovery of the LFG at the landfill, while simultaneously helping to keep the environment cleaner through the use of alternative energy sources. The gas from the landfill goes to Atmos's industrial division which services their clients who use the gas to power equipment, like boilers, that would normally use coal as fuel. Substituting clean-burning natural gas for less environmentally friendly coal provides a net benefit for everyone. At current production rates, the gas processing facility delivers a little over one billion standard cubic feet (scf) of natural gas each year. That's enough to heat about 70,000 Dallas homes in a typical winter month. The progress at McCommas Bluff has already earned Dallas national recognition—in 2006, the United States Conference of Mayors presented Dallas with a City Livability Award for Outstanding Achievement among large cities.

. . . And that's just the beginning

But McCommas Bluff's future holds even more promise. The City's Livability Award application detailed the work already complete, but it also highlighted the immense potential future benefit of innovative landfill management techniques about to commence at the landfill. Historically, since landfill operators have considered gas generation to be a liability, they typically manage their facilities in a way to minimize LFG production. Known as "dry-entombment," the methodology includes efforts to prevent liquids from entering the waste mass, literally starving the microbes that produce the gases. However, recent research shows that with appropriate collection systems, accelerated gas production resulting from adding moisture to the waste can be managed safely and effectively. Dallas is poised to move forward with this new "wet-cell" technology at McCommas Bluff.

In the current and future waste disposal areas (known as cells), the Texas Commission on Environmental Quality (TCEQ) has granted Dallas permission to add moisture to the garbage, creating conditions that accelerate LFG production. An extensive gas collection system will ensure that the additional volume of gas enters Dallas Clean Energy's processing facility, resulting in increased availability of this alternative energy source. As an added bonus, implementing wet-cell operations will extend the life of the landfill as degradation of the waste reduces the volume it occupies. This could delay the need for a new landfill (or consideration of other disposal options) for at least 20 years, representing enormous savings

Drilling Gas Well *-photograph by Adam Jochelson*

Odorless, Colorless Gold *continued*

to the city budget. The City will also enjoy another long-term benefit for as much as a century or more after the landfill eventually reaches its capacity. Laws require owners to carry out post-closure care until they can demonstrate that their landfill no longer poses a threat to the environment. The minimum period is 30 years after closure, but it can extend indefinitely, i.e. as long as the TCEQ deems necessary. Accelerated waste decomposition helps the landfill reach stability sooner, potentially saving the City many decades of post-closure care expense.

Coming soon...

Late this year, landfill staff will begin injecting as much as 250,000 gallons per day of various liquids into the waste mass. They expect to reap rewards in the form of increased flow of LFG to the processing facility soon after. The amount of additional alternative energy that will be gained is not yet absolutely clear—wet cell technology is relatively new and still the subject of extensive research. McCommas Bluff is not the first landfill to develop wet cells, but it is the largest landfill to date to implement this forward-looking technology. City leaders demonstrated great foresight in developing this partnership that will have positive impacts on energy supplies and the environment. Dallas residents, as well as its neighbors throughout North Texas, can expect multi-faceted benefits, even if they don't know about this valuable buried treasure.

Garbage in Bottom, Gas out the Top!

-photograph by Adam Jochelson

Gas Processing Plant

-photograph by Adam Jochelson

Gas Well in front of the Dallas skyline at McCommas Bluff Landfill

-photograph by Adam Jochelson

Kevin's Corner: A "Green" Opinion Piece

The Power to Choose by Kevin Lefebvre

-Kevin Lefebvre works for OEQ in Sustainability.

I recently switched energy providers. Not to go green; I did that a long time ago. But rather, I did it to save money. My old provider had me under a green

100%-wind contract at a rate which was a few pennies per kilowatt hour

over the traditional gasp-and-wheeze coal rate. I was feeling pretty good about squeezing my budget so I could do the right thing.

Then, after two years of faithful patronage, something awful happened.

They got greedy.

My contract expired and I was put onto a month to month plan with a kilowatt hour rate that was a good nickel higher than my contract rate PLUS a month service charge for not being on contract. Apples to apples, one month cost me $96 bucks more than the previous month just in increased rate—not usage.

What, you may ask, drove me to choose that option? Therein lays the problem; ***I*** didn't.

According to Provider X, I was sent letters and called personally to discuss renewing my contract at a lower rate which just happens to have expired the day before I called. Amazingly, my mail was apparently stolen and my phone allegedly out of service only for those days on which they tried to reach me.

So I did my homework—I was pretty honked off. Turns out, there are a BUNCH of providers out

there now (check out **powertochoose.org**) who offer 100%-wind energy packages with great rates. Yeah, energy rates are higher than they were a year or two ago even though they promised us that wind could only go down since there was no overhead to affect pricing—hmmm—but dirty or clean, I need electricity so I'm going to choose the green option.

Jump forward a few days from that event and guess who suddenly is able to get me on the phone...Provider X. They want me to switch back. I listened to 20 minutes of excuses and lame offers, offers which came with "gotchas" she was remiss to divulge but I already knew about (and brought up, which she confirmed). She finally relented and put me down as another lost customer due to their own greed.

Listen, I'm all for a free market. I'm all for a green market. What I'm not for is green greed.

"If you are looking to go green...look around; there is more than one apple cart out there."

Just because you have a green product, that does not give you the right to emotionally blackmail us into paying a ridiculous amount while we green our lives. If you really care about the environment the way you expect us to care for it, you'll offer your green energy choice at a much more competitive rate—your competitor did and that's why I'm with them now.

So, the bottom line—if you are wanting to go green but find that going green comes with a price tag that is unreasonable or unmanageable for your budget—look around; there is more than one apple cart out there. Good luck and **thanks for doing what you can!**

Home Grown Green Energy By Meghna Tare

-Meghna Tare is an Environmental Coordinator over Outreach, Training, and Sustainability in the Office of Environmental Quality

Net Metering Encourages Alternative Energy Production

Combustion of fossil fuels continues to dominate a global energy market that is striving to meet the ever-increasing demand for heat, electricity and transport fuels. The wide range of energy sources and carriers that provide energy services need to offer long-term security of supply, be affordable and have minimal impact on the environment.

"Net metering," a policy that began experimentally in the early 1980s, offers homeowners a strong economic incentive to invest in small-scale wind, solar, and other distributed electricity generating facilities. Net metering allows retail electric customers, who generate their own electricity, generally from a renewable source such as wind, solar, or small hydro, to sell their excess electricity back into the grid. The meter runs backwards if the customer generates more electricity than the customer uses. So, when on-site production exceeds use, the customer sends surplus electricity to the grid, and when the customer's demands exceeds the customer's production, the customer uses electricity from the grid. The customer then pays the local electric provider only for the net electricity consumed.

A majority of states in the U.S including California, Washington, Oregon and Montana have some type of net metering programs. Most have some common characteristics, including a size limit for qualifying generators and a statewide limit of qualifying capacity (typically about .01% of a utility's peak load). Compensation for net excess generation (NEG) is typically at the wholesale rate that the utility pays for electricity. Section 1251 of the federal energy policy act (EPAct 2005) required states and "non-regulated" utilities to commence consideration of a net-metering standard on or before August 8, 2007, and to make a determination regarding this standard on or before August 8, 2008. Differences among states are especially significant on such issues as the following:

- Allowable technologies: Solar and wind are clear favorites, but small hydropower, wood, and other renewable also have a strong presence. At least five states (Maine, New Mexico, Pennsylvania, Rhode Island, and Vermont) also explicitly allow fuel cells in their net metering programs.

- Maximum kilowatts allowed: Limits generally are placed on the size of home generators and on the statewide production of net-metered power. Utilities do not want to face too much competition too soon.

"Net excess generation": i.e., what to do when, at the end of a billing period, the home generator has produced more power than it has consumed off the grid.

The Public Utility Commission of Texas (PUCT) has adopted limited net-metering rules. PUCT Substantive Rule § 25.242(h) requires any integrated investor-owned utility (IOU) that has not unbundled in accordance with § 39.051 of the federal Public Utility Regulatory Policy Act (PURPA) to provide specific net-metering options for customers that operate qualifying facilities (QFs) of 100 kilowatts (kW) or less that use non-renewable-energy resources, and to

Net Metering to Combat Energy Crisis *continued*

qualifying facilities of 50 kW or less that use renewable-energy resources. Less than 25% of Texas is currently served by integrated IOUs since deregulation. Since Texas began deregulating its electric industry, electric utilities now fall into two categories with regard to net metering and interconnection: (1) integrated IOUs *outside* the Electric Reliability Council of Texas (ERCOT) with *a clear regulatory obligation to interconnect and net meter*, and (2) electric cooperatives, municipal utilities and river authorities with *no obligation to interconnect and net meter.*

If we are to reduce fossil fuel dependence and improve access to energy globally, we must find solutions to maximizing the full potential of renewable energy and energy efficiency. Net-metering is one mechanism to do so. Any future energy plans in the City of Dallas should take into consideration the viability of renewable energy versus traditional fossil fuels in terms of access, longevity, cost, environmental impacts, job creation and economic impact.

References:

Global Climate Change and U.S. Law, Michael Gerrard, American Bar Association Section of Environment, Energy, and Resources

http://www.dsireusa.org/library/includes/incentive2.cfm?Incentive_Code=TX02R&state=TX&CurrentPageID=1

Conserving $ for Clean Air by Equipment Bldg. Services

Energy Savings Program

The City established the fiscal year 2008-09 budget with specific conservation goals. Equipment and Building Services (EBS) submitted a proposal to create an energy savings program during fiscal year 2008-09. Funding for the program was approved. The goal of the program is to implement cost-effective energy-efficiency measures to reduce electric consumption in existing facilities. The program will be managed jointly by the Energy Conservation Division and the East/West Equipment Building Services Divisions of EBS. The savings goal citywide is anticipated to be $850, 000 for the first year. This is equivalent to reducing 85,000 kilowatt-hours from the FY 07-08 baseline.

Since 2001, the City of Dallas has done much work to achieve a 23% consumption reduction from the baseline. In 2007 the bill was extended by the State which established Senate Bill 12 (SB12). SB12, also known as the Texas Emissions Reduction Plan (TERP), was enacted to assist the state in complying with the Federal Clean Air Act. It contains new energy-efficiency measures that are designed to decrease electricity consumption while improving air quality. The goal of SB12 is to achieve a five percent savings per year for six years, or thirty percent total through 2012. Achieving the savings is a means for the State of Texas to achieve ozone attainment goals established by the EPA.

The program consists of a "savings team" that will be working over the next year in buildings operated by the

Conserving for Clean Air *continued*

City. There will be an added emphasis to Police, Fire, Recreation Centers, Libraries and EBS multi-use facilities because these are the facilities from which we anticipate a larger return. The primary goal is to reduce an estimated $65,000 from each of these five departments' electricity costs.

The basis of the plan will be to visit the sites to determine and implement conservation opportunities to achieve these savings. Typical methods will include implementing light maintenance and an energy auditing process. The audit involves visiting each building to determine the potential opportunities to save energy. Buildings will be benchmarked and prioritized based on the highest energy per square foot. The conservation measures will be implemented in order to most benefit the cost reduction process and achieve the highest energy savings possible sooner. Typical measures include air-filter maintenance, lighting retrofits, switching incandescent lamps with compact fluorescents, installing occupancy sensors, calibrating thermostats and programming HVAC systems to set-back temperatures at nighttime.

What Each of Us Can Do

EBS can not achieve the savings goal without the contributions of City staff. An 8-10% savings can be achieved through voluntarily turning off unneeded equipment around the office. Staff is asked to use task lights instead of overhead lights when possible, to turn off lights, computer monitors, radios, fans heaters and miscellaneous electric equipment when leaving for the day. Additionally, wearing clothing in layers to be comfortable at 74 F in the cooling season and 70F in the heating season is also encouraged.

Thanks for doing your part!

Green Tip! Why Care About Energy ???

1) POWER = POLLUTION

Ever stop and think about where your electricity comes from? If you have not chosen specifically to purchase your electricity from a provider that uses alternative sources like wind, hydroelectric, solar, or natural gas, your power most likely comes from coal, a fossil fuel that when burned, puts toxic chemicals into the air we breathe and contributes to air pollution in North Texas. Furthermore, coal is solid carbon and when burned, is released into the atmosphere as the greenhouse gas carbon dioxide.

2) POLLUTION = HARM to the HEALTH of HUMANS and the ENVIRONMENT

There are two ways as an individual to make your source of power a source of peace of mind. If you want your energy use to have less impact on the air we breathe, 1) use less electricity at home through a variety of energy conservation measures or 2) choose an electricity provider that does not pollute.

3) POWER TO CHOOSE.ORG = POLLUTION FREE, HEALTH CONSCIOUS ENERGY

You have the power and right to choose the energy source used to make your electricity. To compare prices and pick the right provider for you, visit powertochoose.org!

October Environmental Training Courses

Please RSVP my emailing William Brewer at william.brewer@dallascityhall.com

All classes are for City of Dallas employees.

A class will be cancelled if there are less than 5 RSVPs.

Spill Prevention Control & Countermeasure (SPCC) Plan (TK 201) (Regulatory Class)

Date: October 2, 2008

Time: 1 – 2 pm

Location: L1FN Conference Room B

Description: This class will cover the requirements behind the SPCC plan and the regulations involved. The necessary items to be kept within the plan such as contact information in the event of a spill, employee training records, inspections of petroleum storage tanks and drums, plus actual spill training. Other items to be discussed will be structural regulations such as berms and diking, and any new changes in the regulations.

Refrigerant (SPL 101) (EMS Class)

Date: October 2, 2008

Time: 2 – 3 pm

Location: L1FN Conference Room B

Description: Refrigerant is a compound used in the heat cycle that undergoes a phase change from a gas to a liquid and back. The two main uses of refrigerants are refrigerators/freezers and air conditioners. This course covers the proper handling, storage, and disposal of refrigerant, and the necessary certifications and registrations.

Determine Generator Status (RCRA 201) (Regulatory Class)

Date: October 14, 2008

Time: 10 – 11 am

Location: L1FN Conference Room A

Description: If your operations cause hazardous waste to be generated, you must determine your generator status. The hazardous waste generator statue of a facility is determined based on the amount of hazardous waste generated in any given month of the calendar year. Hazardous waste generators are divided into three categories: conditionally exempt small quantity generators, small quantity generators, and large quantity generators. This course will cover in-depth review of determining generator status, requirements, regulations, and waste identification.

Waste Storage & Handling (RCRA 202) (Regulatory Class)

Date: October 16, 2008

Time: 2 – 3 pm

Location: L1FN Conference Room A

Description: Your hazardous chemical wastes must be stored in an area you designate as the waste storage area. The main objectives are to keep the waste separated from other chemicals, to store compatible wastes together, and to keep them isolated from the sewer system. You must also determine how to contain your Hazardous Wastes if a spill in the designated area happens so that it will not discharge into the sewer system. This class covers the proper storage and handling of hazardous, non-hazardous, and universal wastes (containers, labeling, and time requirements).

Universal Waste (RCRA 204) (Regulatory Class)

Date: October 16, 2008

Time: 3 pm - 4 pm

Location: L1FN Conference Room A

Description: Universal waste is hazardous waste that can be recycled, such as batteries, pesticides, mercury containing equipment (thermostats) and lamps (fluorescent bulbs). Class will cover state requirements for storage, labeling, and shipping this waste.

October Environmental Training Courses *continued*

Greenhouse Gas Emissions/Climate Change (SPL 109) (Stewardship Class)

Date: October 21, 2008

Time: 10 – 11 am

Location: L1FN Conference Room A

Description: Global warming refers to the increase in the Earth's temperature. The cause has been linked to the emissions of greenhouse gases like CO2 into the atmosphere as a result of the burning of fossil fuels & anthropogenic activities. This class will cover the science of global warming, its impact on our ecosystem & health, along with a wide range of impacts on plants and wildlife.

Green Roofs

Date: October 21, 2008

Time: 11 am – 12 pm

Location: L1FN Conference Room A

Description: The presentation will provide basic information about green roofs. We will talk about the economic and ecologic benefits of green roofs and how green roofs can provide LEED points, plus the different kinds of green roofs. Information will be provided about a modular green roof system called GreenGrid, and will be demonstrated about how the GreenGrid product works and shown examples of GreenGrid projects in Texas and from around the country (www.greengridroofs.com).

Mr. Roger Smith is a Corrective Action Project Manager for Weston Solutions Incorporated. He is licensed within the State of Texas as a Professional Geologist and has a B.S. degree from the University of Texas, and an M.S. degree from the University of New Mexico. His area's of expertise in addition to Green Roofs is risk based assessment and remediation, soil and groundwater remediation, plus plume management strategies.

Environmental Management System (EMS) Introduction (EMS 102) (EMS Class)

Date: October 29 & 30, 2008

Time: 8 am – 5 pm

Location: L1FN Conference Room B

Description: Introduction to EMS is for those employees who have not worked with the EMS system before. This course covers the entire system of Plan, Do, Check, and Act (all elements of ISO 14001 standard) and is tailored for new EMRs or core team members. Will view the EMS video and cover the Consent Decree and the Environmental Policy.

Sustainable Brown Bag – Geothermal Energy (Stewardship)

Speaker: Rick Horvath [rick.horvath@waterfurnace.com]

Date: October 30, 2008

Time: 12:00 – 1:00 pm

Location: L1FN Conference Room B

Description: Training will be on how to reduce your carbon footprint and utility bills by using the free and renewable energy found in your back yard. This is done with the use of a geothermal system for your heating, cooling, and hot water heater. Mr. Rick Horvath has been in the air conditioning industry for about 25 years and is one of eight certified geothermal designers in the state of Texas. He has been involved with over 10,000 houses from 1,800 sq ft to 43,000 sq ft applying our money saving geothermal systems. Mr. Horvath graduated of Florida State University.

City of Dallas
Office of Environmental Quality
1500 Marilla, L2FS
Dallas, Texas 75201

Earth Day, Every day!

Office of Environmental Quality

Phone:214-670-1200
Fax: 214-670-0134
E-mail:
Hannah.kolni@dallascityhall.com

OEQ

The Office of Environmental Quality (OEQ) was established to serve as an internal resource to City of Dallas staff on the wide range environmental issues faced every day. With a staff of dedicated environmental professionals experienced in multiple disciplines, OEQ works to raise awareness at the City level to guide Dallas toward a sustainable future and brighter tomorrow.

OEQ currently serves the City of Dallas with the following services: Environmental Management System, Compliance Auditing, Site Assessments, Inspections and Spill Response, Air Quality, Sustainability, Outreach and City of Dallas employee training.

What do you think of our GreenZine?

Take this informal survey and enter our monthly raffle to win Zoo Tickets! We want your feedback so we can continually improve!

Did you find this newsletter interesting, informative, or useful?

Is there something you would like to see in next month's newsletter?

Did you sign up for a Training class because you saw it in the GreenZine?

Did you attend any Pollution Prevention Week events Sept. 15-20th? What did you learn or enjoy?

Did you change something you do in everyday life because of something you learned in the GreenZine?

Thank you very much for your time!

Send your answers to Hannah.kolni@dallascityhall.com. The winner will be drawn by Nov. 1.