

## What Do the New Air Toxics Regulations Mean for Coal-Based Power?

**"Face It, Coal is Filthy"** read the newspaper ad featuring pictures of Hollywood models with coal-smudged faces. The recent ad campaign, funded by opponents to the latest generation of coal-fired power plants, attacked the utility industry for selling a product they claimed is harmful to human health and the environment. Despite the fact that coal is a cheap, abundantly available fuel, now accounting for 40 percent of the electricity generated in the U.S., many opponents to coal would like to see coal-fired power plants stripped from America's energy portfolio.

In December 2011, EPA addressed many of the concerns of coal's opponents by finalizing its Mercury and Air Toxics Standards or "MATS". With this rule, EPA set emission limits for mercury, fine particulate matter (a surrogate for toxic non-mercury metals), and hydrochloric acid (a surrogate for all toxic acid gases). Under the rule, utilities will have little choice but to install air pollution control equipment or to switch to cleaner-burning fuels — or if neither option is feasible, to shut down generating units. For existing plants, these decisions must be made and changes implemented within 3 to 4 years.

Not surprisingly, MATS is being lauded by EPA and environmental and public health groups. EPA asserts that MATS will provide better protection of children's health and avoid thousands of cases of respiratory illnesses, missed work days, and premature deaths. EPA also estimates that compliance will annually cost utilities only \$9.6 billion, compared to health benefits of at least \$37 to \$90 billion in 2016. And EPA forecasts more jobs will be created than lost as plants invest in upgrades. The Sierra Club calls MATS "one of the most important anti-pollution measures in recent memory", and the National Resources Defense Council says MATS "ranks among the three or four



most significant environmental achievements in the EPA's history."

On the other hand, MATS has met widespread criticism, with predictions of strains on the nation's power grid, job losses, and even potential damage to public health. According to Senator Rand Paul (R-KY), "While mercury exposure is and should be taken seriously for existing regulations, the current impact of mercury emissions from U.S. sources is vastly overstated.... Mercury emissions should be controlled — but in a way that balances thoughtful science with economic realities and our energy needs. This rule does not reflect this balance and should be repealed."

Opponents to the rule have sued EPA to delay the rule, accusing the agency of not taking the necessary time to consider the real-world impacts of MATS. They contend the rule will dramatically increase the retirement of coal-fired power plants, raising unwarranted uncertainty about the reliable delivery of power in the future. Their forecast is supported by an Associated Press (AP) survey of electric utilities, reporting that 32 plants will retire, due in part to EPA

*coal-based power >>> continued on page 8*

# FROM THE TRENCHES

## Giving the Gift of Clean Water

A flat tire is usually inconvenient. A flat tire while traveling down a dirt road in rural Africa in a Jeep full of college students is a little more than inconvenient. As we piled out of the car onto the dusty dirt road to evaluate the situation along with our hired driver, a *tro tro* (a hired car similar to a minivan) full of elementary school children passed by. Our driver flagged them down and arranged for us to get a lift into town. Riding into the village for the first time along with a group of laughing, singing children was the perfect way to start our adventure in Ghana.

While I was a student at the University of Texas I was fortunate enough to serve as the leader of the student team for the Projects for Underserved Communities course. After considering several projects, we focused on providing clean water for school children in the village of Patriensa in Ghana, a country in West Africa. Patriensa is a small village of a few thousand people, 125 miles north of the capital of Accra.

The need for clean drinking water in Patriensa is great, particularly for children. Patriensa currently obtains its water via hand pumps located throughout the village. The closest source of water to the elementary school was a well 200 meters from the school, and when the students needed water for drinking or hand washing they had to leave the school grounds during instruction time.

The well is not dedicated for student use but is used by approximately 500 community members for their daily water needs. According to village etiquette, students must wait for other community members to pump first before they can draw water for their classroom's needs. This lack of adequate and convenient water availability often resulted in students being removed from their classes for up to 45 minutes at a time.

In our class at the University of Texas we considered a variety of potential solutions to this problem. After a semester of analysis, our group and our contacts in the village settled on an electric pump system that would draw water from a hand dug well and store it in an elevated tank, allowing the students to fill their buckets much more quickly than by hand pumping. Moreover, this well would be located on school grounds and dedicated primarily to school children during the day. Ultimately students would be able to get water much faster, enabling them to spend more time in the classroom.

Our student group made the long journey from Austin to Ghana in early June 2010, and by June 7th we were in Patriensa and ready to work. To our delight, the entire community became involved. One day we were awakened at 4 a.m. to the sound of the village chief's voice — he was using a megaphone to announce that



anyone able should come and assist with trench digging for the water distribution piping. Sure enough, by 7 a.m., 20 men were digging trenches, taking turns with the pick axes. Most of these men had stopped to help on their way to farms in the next district, and even a few stopped to dig in their business suits before heading to the office.

During our time in the village, we presented lessons on the importance of hand washing to students. Fortunately, the national language of Ghana is English. Unfortunately, students only learn this language in school, but speak their native language of *Twi* at home. This created some interesting improvisational moments during our lessons, particularly when we realized that the kindergarteners had not yet learned much English. Using our pre-made flash cards and drawing on the gracious translation skills of the teachers, we did our best to impart some knowledge to the children. If nothing else, they were definitely entertained watching us try to learn *Twi* basics on the fly!

The last day of our stay in Patriensa, the community organized a ceremony officially handing over the well to the school. Officials from all over the region came to witness and participate in this joyous ceremony. Given the chance to say a few words, I wanted to express how grateful we were for the support and love we received during our stay. It was common for community members to thank us for all we had given up to travel and dedicate our time to providing their children and town with a clean water source. While speaking to the attendees I told them, "We are grateful for all you have done for us and anything that we have lost or given up has been

*trenches* >>> continued on page 6

## Water Quality Credit Trading: a Tool for Compliance

**A**lmost every major watershed in the nation is impaired or has impaired segments, meaning the water fails to meet federal water quality minimum standards to be fishable or swimmable. For example, the Environmental Protection Agency (EPA) has identified the Chesapeake Bay watershed (including portions in NY, PA, MD, and VA), portions of the Colorado and the Rio Grande Rivers, nearly half of the Ohio River basin, Lake Okeechobee, and both the upper and lower Mississippi River as being impaired, just to name a few.

In response to this problem, beginning in about 2000, the EPA and states began to pass regulations and create policy to strictly limit water quality parameters such as pH, turbidity, phosphorous and nitrogen, sediment, dissolved solids, and metals from land use and treatment plant discharges to these impaired watersheds. The resulting limits are known as TMDLs, or “Total Maximum Daily Load” requirements. Established under the EPA’s National Pollutant Discharge Elimination System (NPDES) rules, TMDLs limit the annual load, amount, or quality of a pollutant that can enter the watershed. The goal of application of TMDLs is to ultimately return the quality of the watershed to a level that meets federal standards. Once the TMDL containing the limit is made final, the new stringent limit is incorporated into NPDES (discharge) permits in the watershed.

An important component of EPA’s approach to ensuring that its TMDL-based discharge limitation program works is water quality trading. Under the TMDL approach, stringent annual discharge limits have been established that are remarkably expensive, often cannot be met with current treatment technology capabilities, and in some cases restrict new land uses unless treatment to zero (of the pollutant of concern) is achieved. Buyers may need credits for a variety of other reasons, including weather disruptions to sensitive treatment, a delayed upgrade, or because it is more cost effective to purchase credits for a year or several years than it is to install additional treatment technology to meet new discharge limits. Whatever the case, water quality credit trading, authorized by the Clean Water Act, can serve as a ‘release valve’ to allow economic growth as well as redevelopment and new land uses, and can promote cost-effective compliance with discharge limits for impaired watersheds.

Under the water quality trading concept, one discharger may choose to purchase credits offered by another discharger to meet the NPDES discharge requirements. The discharger who has credits to sell may have generated the credits by ‘over treating’ its waste stream or by not having as much coming into its facility as it anticipated. In some watersheds, agricultural land uses may be the primary source of pollution. In these cases, sellers may be



farming operations that have installed streambank fencing, manure digesters, or implemented no-till or precision farming practices.

Water quality credit trading programs must have standardized rules to pass EPA muster and withstand criticism from environmental groups. In concept, water quality trading is similar to air credit trading and is a market-based system. However, to date, EPA has not created national rules or a national trading platform. Thus, multi-jurisdictional watersheds have state line impediments to trading throughout a larger watershed.

Additionally, many issues make water quality trading more complex to design and implement than the federal air emissions trading program of the 1990s. Calculation and quantification of credits is difficult when evaluating the effect of a pound of nitrogen entering a watershed hundreds of miles from the impaired area. Water chemistry and modeling capability is complex, and regulatory agencies struggle to stay current and understand the models well enough to implement effective policy and regulations.

All states in the Chesapeake Bay watershed have created water quality credit trading programs, with Pennsylvania having one of the older and more developed programs — a system introduced conceptually in 2005. Taking Pennsylvania as an example, dischargers and credit generators have faced a number of challenges in meeting the trading program requirements, but each year there have been more trades, more approval of technologies and practices that generate credits, and more entities engaging in trading. As demonstrated in practice in Pennsylvania, the prices for credits are exponentially lower than the cost of nutrient

*perspective >>> continued on page 6*

# News Briefs

## **national news**

### **EPA Issues Final Utility MACT Rule**

Meeting its court-ordered deadline, on December 16, EPA issued final standards for air toxics emitted by coal-fired and oil-fired power plants. Named the Mercury and Air Toxics Standards (the “MATS”), these rules, coming after years of research and analysis, rule proposals and issuances, litigation, court vacatur, and settlement agreements, set emissions limits for mercury, particulate matter (PM) (as a surrogate for toxic non-mercury metals), and hydrogen chloride (as a surrogate for toxic acid gases). Alternative emissions limits for SO<sub>2</sub> (alternative to HCl) and for individual (or total, in some cases) non-mercury metal air toxics (alternative to PM) were also established. In addition, the rule sets work practice requirements relating to organic air toxic emissions, including dioxins/furans. Some key changes since EPA’s March 17 proposal include emission limits for filterable PM instead of total PM, and work practice standards for start-up and shut-down activities in lieu of emissions limits that apply at all times. Although utilities have up to four years to comply with the rule, compliance will be especially costly for older units without modern emissions controls and will likely involve closure of some plants. Lawsuits, as well as legislative responses, are expected because of continued controversy over this rule. For more information, contact Roger Brower at 410.312.7907 or [rbrower@zephyrenv.com](mailto:rbrower@zephyrenv.com).

### **Draft Studies Report Impacts of Hydraulic Fracturing**

On December 8, EPA released draft findings from analyses of groundwater in the Pavilion, Wyoming area indicating that petroleum constituents and synthetic compounds associated with hydraulic fracturing fluids are present in the local aquifer. Similarly, a November 10 report of the preliminary findings of a University of Texas study of shale gas development through hydraulic fracturing in Texas, Northwest Louisiana, New York, Pennsylvania, and several Appalachian states also indicates groundwater contamination. However, the results of this study suggest no link between the groundwater contamination and hydraulic fracturing of the geologic formation, but attribute the contamination to above-ground spills and other mishandling of wastewater

produced as part of the drilling operations. For more information, contact Dan Mueller at 512.579.3844 or [dmueller@zephyrenv.com](mailto:dmueller@zephyrenv.com).

### **EPA Finalizes Plan to Study Hydraulic Fracturing**

In November, EPA released its final “Plan to Study the Potential Impacts of Hydraulic Fracturing on Drinking Water Resources”. This study, the result of a Congressional directive to investigate the potential for adverse effects of hydraulic fracturing on drinking water and the public health, will encompass the complete water cycle associated with hydraulic fracturing from water acquisition, through the chemical mixing and fracturing operations, and culminating in the treatment and disposal of all waste material. The initial research results and study findings are scheduled to be released to the public in 2012. For more information, contact Dan Mueller at 512.579.3844 or [dmueller@zephyrenv.com](mailto:dmueller@zephyrenv.com).

### **EPA Re-proposes Boiler Air Toxic Emissions Rules**

On December 2, EPA Administrator Lisa Jackson signed rulemaking that re-proposes changes to the “major source” and “area source” boiler Maximum Achievable Control Technology (MACT) rules promulgated earlier this year. According to EPA’s press release, these re-proposals are the results of EPA’s “extensive analysis, review and consideration of data and input from states, environmental groups, industry, lawmakers and the public”. This new rulemaking simplifies the requirements for natural gas and refinery gas fueled systems, coal and biomass fueled systems, and liquid fuel-fired systems while providing “the vital and overdue health protection that Americans deserve”, according to an EPA spokesperson. For more information, contact Ed Fiesinger at 281.668.7353 or [efiesinger@zephyrenv.com](mailto:efiesinger@zephyrenv.com).

### **EPA Completes Lead Nonattainment Designations**

On November 8, EPA announced the results of its second round of lead National Ambient Air Quality Standard (NAAQS) attainment designations, identifying areas in Illinois, Iowa, Kansas, Michigan, and Puerto Rico as not attaining the standard and bringing the total number of nonattainment areas to 21. States and

local agencies have until June 30, 2013 to submit plans to EPA for bringing these areas into attainment of the lead NAAQS. For more information, contact Bill Jones at 410.312.7910 or [bjones@zephyrenv.com](mailto:bjones@zephyrenv.com).

### **EPA Proposes Changes to Underground Storage Tank Rules**

On November 18, EPA proposed changes to its 1988 federal underground storage tank (UST) regulations aimed at strengthening protection of human health and the environment from UST releases. These changes, which will apply to all UST owners/operators and UST manufacturers/installers, include requirements related to UST operator training, secondary containment and interstitial monitoring for new and replaced tanks and piping, under-dispenser containment for new dispenser systems, and financial responsibility for UST manufacturers and installers. EPA is also proposing to eliminate the current release detection deferral for UST systems that are used to store fuel solely for use by emergency power generators. For more information, contact Paul C. Moore at 512.879.6642 or [pmoore@zephyrenv.com](mailto:pmoore@zephyrenv.com).

### **EPA Changes, Then Court Stays Cross State Air Pollution Rule**

On October 6, EPA proposed technical fixes to its Cross State Air Pollution Rule (CSAPR) aimed at reducing the interstate transport of fine particles and ozone (see October 2011 issue of *Currents*). If adopted, the proposals would revise allowance allocations to specific units based on corrections to discrepancies in assumptions made in the modeling of sources. As a result, emissions budgets for states affected by CSAPR would generally increase; for example, the 2012 and 2014 SO<sub>2</sub> budgets for Texas would each go up by 70,000 tons. In addition, on December 15, EPA finalized a supplement to the rule that subjects five additional states — Iowa, Michigan, Missouri, Oklahoma, and Wisconsin — to the ozone season NO<sub>x</sub> program of the rule. In an expected action, on December 30, the Court of Appeals for the District of Columbia stayed the rule pending an April 2012 hearing on petitions by opponents to CSAPR. For more information, contact David Cabe at 512.879.6644 or [dcabe@zephyrenv.com](mailto:dcabe@zephyrenv.com).

### **EPA Amends Greenhouse Gas Monitoring Requirements; Extends Reporting Deadline**

On September 27, November 9, and December 2, EPA amended greenhouse gas reporting requirements for seven industrial sectors, making technical corrections and adding rule clarifications. In addition, the EPA extended the reporting deadline for data collected during 2011 for thirteen industrial sectors, including the oil and gas sector, until September 28, 2012. Facilities that must report other greenhouse gas data that are not covered by the extension must notify EPA by March 31, 2012 that they will report all greenhouse gas data by September 28, 2012. For more information, contact David Mahler at 410.312.7909 or [dmahler@zephyrenv.com](mailto:dmahler@zephyrenv.com).

### **EPA Sets Deadlines for Finalizing Regional Haze Reduction Plans**

In November, EPA and environmental groups entered into a consent decree that established firm, enforceable deadlines for action on plans to reduce regional haze pollution in 41 states, the District of Columbia, and the Virgin Islands. The decree requires the states and EPA to issue enforceable plans to reduce emissions from the nation's largest and oldest stationary sources, including power plants, cement plants, and large industrial boilers, and requires EPA to either approve a state's plan by the decree deadline (e.g., November 15, 2012 for Texas) or, if found not approvable, establish an appropriate federal implementation plan. By spring 2012 EPA intends to finalize a rule, applying to power plants, that addresses the determination that meeting the requirements in the Cross State Air Pollution Rule will fulfill the best available retrofit technology requirements under the regional haze reduction program. For more information, contact Lou Corio at 410.312.7912 or [lcorio@zephyrenv.com](mailto:lcorio@zephyrenv.com).

## **state news**

### **TCEQ Rolls Out General Permit for Pesticide Applications**

On November 2, the Texas Commission on Environmental Quality (TCEQ) issued a new general Texas Pollution Discharge Elimination System permit targeted at the application by public and private entities of pesticides in or near the waters of the U.S. The general permit, which establishes thresholds of pesticide use that can qualify for authorization by the general permit, requires the applicant to submit a Pesticide Discharge Management Plan for certain use categories and to meet specific reporting requirements. The TCEQ issued this general permit in response to a 2009 court ruling that a pollution discharge elimination system permit is required for applications of biological and chemical pesticides that leave residues in water. For more information, contact Dave Sorrells at 512.879.6626 or [dsorrells@zephyrenv.com](mailto:dsorrells@zephyrenv.com).

### **EPA to Expand List of Texas Counties Not Meeting Ozone Air Standard**

On December 9, EPA Region 6 notified the TCEQ of its intention to expand the number of counties in Texas designated as not meeting the ozone air quality standard. Contrary to TCEQ recommendations, EPA proposed to add Matagorda County to the Houston-Galveston-Brazoria ozone nonattainment area and Hood and Wise Counties to the Dallas-Fort Worth nonattainment area. With these changes, sources of emissions of nitrogen oxides and volatile organic compounds in these counties, including vehicles and both new and existing industrial sources, would potentially be subject to more stringent emissions limitations. For more information, contact David Cabe at 512.879.6644 or [dcabe@zephyrenv.com](mailto:dcabe@zephyrenv.com).

*news briefs* >>> *continued on page 6*

### **EPA Proposes to Determine that the Baltimore Area Attained Air Standard for Fine Particles**

In November, EPA proposed to determine that the Baltimore area has attained the 1997 annual air quality standard for fine particles (PM<sub>2.5</sub>) by its applicable attainment date of April 5, 2010. If EPA finalizes the proposed determination, the requirements for Maryland to submit an attainment demonstration and associated reasonably available control measures, a reasonable further progress plan, and other related plan revisions will be suspended so long as the area continues to meet the standard. EPA's finalization of the proposed action is just another key step on the road to formal redesignation of the area as attainment for PM<sub>2.5</sub>. For more information, contact Lou Corio at 410.312.7912 or [lcorio@zephyrenv.com](mailto:lcorio@zephyrenv.com).

### **TCEQ Proposes Changes to Agency Roles in Hearings**

In response to House Bill 2694, passed by the Texas Legislature in 2011, the TCEQ proposed revisions to its public hearing rules — changes that would potentially affect the roles of TCEQ staff and the public interest counsel in contested case hearings. In a first proposal, made on October 14, the rules would be revised to require the executive director (i.e., the TCEQ staff) to participate as a party in hearings and would remove the prohibition on the executive director from assisting permit applicants in meeting their burdens of proof. A second proposal, made on November 18, would require the public interest counsel to take a broader view of the public interest in its role as a party in commission proceedings, considering, in addition to its historically narrow focus on the environmental concerns of opponents to permitting actions, such factors as the significance of the interest expressed by the public, the effects of the action on the general populace (as opposed to individual private interests), and the extent to which the action promotes economic growth and judicious use of the state's natural resources. For more information, contact David Cabe at 512.879.6644 or [dcabe@zephyrenv.com](mailto:dcabe@zephyrenv.com).

### **Texas Finalizes Hydraulic Fracturing Chemical Disclosure Regulations**

On December 13, the Railroad Commission of Texas finalized regulations requiring the public disclosure of chemicals used in hydraulic fracturing operations. The regulations result from legislation passed by the Texas legislature earlier in the year and apply to hydraulically fractured wells which receive initial drilling permits on or after February 1, 2012. Reporting requirements include a brief description of each additive used in the fracturing operation, a listing of chemical ingredients included on OSHA's Material Safety Data Sheets, and a listing of all chemicals not subject to MSDS requirements. For more information, contact Dan Mueller at 512.579.3844 or [dmueller@zephyrenv.com](mailto:dmueller@zephyrenv.com).

### **Pennsylvania Issues Aggregation Policy for Oil and Gas Air Quality Permitting**

On October 12, the Pennsylvania Department of Environmental Protection issued a source aggregation policy to be used in the air quality permitting of "adjacent" oil and gas operations. As a rule of thumb, operations that belong to the same industrial grouping, are under the control of the same person, and are located within one-quarter mile will be considered a single emissions source. If aggregated emissions exceed a major source threshold, PSD, non-attainment NSR and/or Title V permitting requirements would apply to the aggregated source. For more information, contact David Mahler at 410.312.7909 or [dmahler@zephyrenv.com](mailto:dmahler@zephyrenv.com).

### **Remaining Texas MSS Applications Due in One Year**

On January 5, 2013, applications for air quality permits for Maintenance, Startup, and Shutdown (MSS) emissions will be due to the TCEQ for the "all other facilities" category, i.e., facilities which are not included under the following SIC Codes: 2911 (Petroleum Refining), 28 (Chemicals and Allied Products), 2895 (Carbon Black), 4911 (Electric Services), 1311 (Crude Petroleum and Natural Gas), 1321 (Natural Gas Liquids), 4612 (Crude Petroleum Pipelines), 4613 (Refined Petroleum Pipelines), 4922 (Natural Gas Transmission), and 4923 (Natural Gas Transmission and Distribution). Timely submittal of the MSS applications will allow companies to claim an affirmative defense from enforcement actions for unauthorized emissions or opacity events resulting from planned MSS activities until such emissions are incorporated into the companies' air permits. For more information, contact Larry Moon at 512.879.6619 or [lmoon@zephyrenv.com](mailto:lmoon@zephyrenv.com). ✨

### **trenches >>> continued from page 3**

returned to us one-hundred fold in the joy, love, experience and friendship we have gained." ✨

**Carrie Bochenek**  
Staff Engineering Associate

### **perspective >>> continued from page 4**

removal technology required to meet Chesapeake Bay limits. And, as evidenced in Pennsylvania as well as in other states in the Chesapeake Bay watershed, the availability, ease of use, and cost-effectiveness of the credit trading programs are truly easing the economic burden of meeting stringent NPDES requirements and allowing growth where the TMDL water quality regulations would otherwise prevent it. ✨

**Alexandra C. Chiaruttini**, Partner  
Chair, Environmental Practice  
Stock and Leader, York, Pennsylvania

## Can “Carbon Ranching” Save the World?

Over the past couple of years, policymakers around the world have been struggling to come to grips with the issue of carbon emissions from combustion of fossil fuels and other sources. Quantifying the cost of carbon in greenhouse gas markets and designing policy solutions during a time of global economic fragility is problematic, to say the least. A price of ~\$20+ per ton of carbon dioxide, consistent with prices in the European Union over the past couple of years, would imply that should the S&P 500 companies start to pay full value for their carbon emissions, they would have to write checks totaling \$60–\$80 billion per year. While there are technologies designed to capture and sequester carbon that are under varying stages of development, the fact that these technologies are still in the early days of development, coupled with the sheer volume of global carbon emissions, makes deploying them at a large scale difficult and expensive.

Beginning in 2013, California will begin enforcing a set of laws designed to limit the emissions of greenhouse gases from industrial facilities and eventually from all sources. California’s industrial facilities are beginning to consider options for limiting their “carbon footprint”, which might include buying new equipment. Another strategy is to look at greenhouse gas “offsets” whereby a carbon emitter might make an investment in some type of “carbon sink,” such as a forest or wetland.

The Amazon rainforest could play a major role in reducing greenhouse gas emissions that result from deforestation, reports a 2007 study published by scientists at the Woods Hole Research Center, the Instituto de Pesquisa Ambiental da Amazônia, and the Universidade Federal de Minas Gerais. At a carbon price of \$3 per ton, protecting the Amazon for its carbon value could outweigh the opportunity costs of forgoing logging, cattle ranching, and soy expansion in the region.

Closer to home, biologists in the San Joaquin Valley of California see significant potential in the region’s peat-rich prime grazing land. Drainage and pasture reclamation projects over the past 100 years have made this area a big emitter of carbon dioxide, nitrous



oxide and methane as the peat soils are exposed to oxygen. By re-flooding these historic wetlands and planting tall grasses such as tule, the process can be reversed. The flooded soils become anoxic, which prevents bacteria from releasing carbon from the soil into the atmosphere. The tule grows quickly, removes carbon from the air, and eventually sequesters it back into the peat soil.

The idea of establishing offsets is not new in U.S. environmental regulation. For example, existing regulations designed to preserve wetlands provide a mechanism for compensating for unavoidable impacts to aquatic resources permitted under Section 404 of the Clean Water Act or under a similar state or local wetland regulatory program. The theory is that if a wetland/habitat must be removed to put in an industrial facility or other infrastructure, that removal can be mitigated by establishing a protected similar wetland in another area.

Extending this logic to the idea of creating offsets to carbon generation may prove to be a cost-effective way for industrial facilities and other carbon emitters to reduce or even eliminate their carbon footprints. And who knows, it might just save the world! ✨

**Joe Zupan**  
President

Zephyr is a full-service environmental, health, and safety firm offering consulting, training, and data systems services to clients worldwide. We specialize in air and water quality, waste management and cleanup issues, incident management, natural resources, and workplace and community safety.

*Currents* is published quarterly by Zephyr Environmental Corporation, is edited by David Cabe, and designed by Allen Griffith of Eye 4 Design. Current and past issues of this newsletter are available at our website. For more information about *Currents*, or to add your name to our subscription list, please email: [currents@zephyrenv.com](mailto:currents@zephyrenv.com) or visit [www.zephyrenv.com](http://www.zephyrenv.com).



Corporate Headquarters  
2600 Via Fortuna  
Suite 450  
Austin, Texas 78746

PRSR STD  
U.S.  
POSTAGE PAID  
AUSTIN, TEXAS  
PERMIT NO.  
1718

Visit Zephyr's web sites: [www.zephyrenv.com](http://www.zephyrenv.com) and [www.HazMatAcademy.com](http://www.HazMatAcademy.com)

*coal-based power >>> continued from page 1*

regulations, and that another 36 plants in 16 states are at risk of retirement. According to the AP, the plants scheduled to retire or at risk of retirement produce enough electricity to meet the needs of more than 22 million households. In contrast, EPA estimates that only half of that power, or 14.7 gigawatts, will be retired by 2015.

The Edison Electric Institute refers to MATS as “a train wreck”, estimating the cost to utilities will be upwards of \$129 billion — a number 13 times higher than EPA estimates. And the North American Electric Reliability Corporation reports that “overlapping compliance schedules for the new air and solid waste regulations [affecting coal-fired power plants] may trigger a large influx of environmental construction projects at the same time as new replacement generating capacity is needed. Such a large construction increase could cause potential bottlenecks and delays in engineering, permitting and construction”.

Rule opponents dispute EPA's health benefit claims. In a letter to EPA Administrator Lisa Jackson, seven members of Congress, who are also medical doctors, contest EPA's claim of health benefits from controlling power plant air toxics emissions, contending that most of these forecasted benefits are attributable to co-benefits from reductions in emissions of fine particulates. Further, the doctors share a strong concern that EPA has been ‘double counting’ particulate health benefits — taking credit for particulate emissions reductions resulting from past rulemakings. Lastly, the doctors state that the additional costs to the economy may actually

damage public health and raise premature death rates. In particular, they cite research at the Harvard School for Public Health showing that the redeployment of society's resources and assets to address higher societal risks save hundreds of times more lives than the implementation of expensive and narrowly focused environmental rules like MATS.

Undisputed by the proponents and opponents of MATS is that the rule will likely cause an incremental shift away from coal as a power source. With increased reliance on natural gas, shale gas production, and renewable resources, the Department of Energy (DOE) projects that coal's share of the total generation mix will decrease by 43 percent over the next 25 years. Paradoxically, DOE also predicts that electric utility generation from coal will increase by 25 percent over the same period. In essence, the piece of the power demand pie occupied by coal will grow, but the total power demand pie will get even bigger.

The electric utility industry will be challenged by MATS, other federal rules, and competition from natural gas and renewable energy sources to make necessary retirements and retrofits. But when the dust settles, lost power generation will be replaced and coal-fired plants will continue to operate and get cleaner. The bottom line — with or without MATS, coal will continue to be part of the nation's energy portfolio and the lights will surely stay on. ✨

Celeste Wiley  
Principal