

zephyr®

# Currents

a quarterly publication of zephyr environmental corporation

## Environmentalism: Dead or Alive?

Most people are on the world, not in it—have no conscious sympathy or relationship to anything about them—undiffused, separate, and rigidly alone like marbles of polished stone, touching but separate.

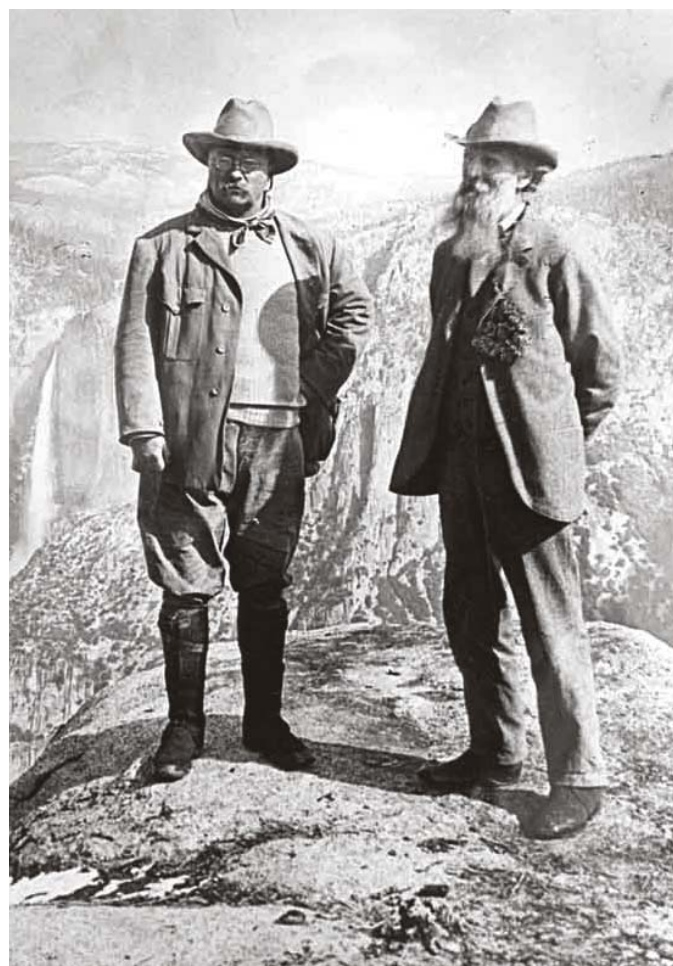
—John Muir

In the late 19th century the Industrial Revolution was in full swing; smoke-belching factories were regarded as signs of progress, and it was not uncommon for rivers in industrial areas to literally catch fire. In the midst of this era of national confidence in the power of technology, a tragedy befell a young man in Manhattan—his wife and his mother had died in the same house on the same day, just two days after his first child was born. Overcome with grief, Theodore Roosevelt left his little girl in the care of his sister and escaped from the “real world” to the wilds of present-day North Dakota.

Over the next few years the man who would become the 26th President of the United States was struck by the grandeur of the Badlands. Those impressions would help shape his presidency. Not only did he help establish the U.S. Forest Service and the National Park Service, but he also dedicated more land as National Parks than any other President.

Perhaps most pivotal in the development of President Roosevelt’s environmental awareness was his visit to the Yosemite Valley in 1903. During that trip he ventured deep into the backcountry with John Muir. Muir had been in the Yosemite area since 1868 and would spend much of the rest of his days becoming one of the nation’s first preservationists. In fact, Muir founded the Sierra Club in 1892—the first environmental group in the United States.

Building on the foundations laid by Theodore Roosevelt and John Muir, the environmental



movement expanded through the middle of the 20th century. During that time a series of events more sharply focused public attention on environmental issues, giving rise to modern “environmentalism”:

1952—A deadly mix of fog and emissions from widespread burning of coal in homes and industries kills thousands, ultimately leading to the passage of the first Clean Air Act in the United Kingdom.

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# FROM THE TRENCHES

## Tales from Tried and Tested Zephyr Experts

In the world we live in today, it's an unfortunate fact that even the most responsible people and corporations can find themselves embroiled in some type of legal proceeding—whether it's a contested hearing on the merits of issuing a permit to construct a new facility, an administrative hearing for a violation of environmental, health and safety (EHS) laws, or a personal injury suit.

Whether you are an EHS manager at an industrial facility, an attorney, or a technical expert, such legal proceedings are frequently grueling, time-consuming, and emotionally draining. In fact, the time and expense of such proceedings is usually a very unwelcome surprise. That said, the world of lawyers and experts can sometimes provide an entertaining moment or two!

For this month's "In the Trenches" contribution, three Zephyr principals compare the experience and the perspectives they've gained providing expert engineering support in litigation matters involving their clients.

**David Cabe:** I've been providing expert witness services, off and on since the late 1970s, and I've found that the key to being an effective expert is preparation, preparation, preparation. As an expert witness, if you don't have complete mastery of all the facts and all the nuances of the technical arguments, you are at risk of losing credibility in front of the judge, the jury, your client, and the client's attorney. It's a lot like preparing for a final exam—you need to start studying well in advance and not wait until the night before to "cram".

**Joe Zupan:** I'll second that. Earlier this year I was preparing for a Federal lawsuit, and I found myself working many evenings and weekends to get ready. During the business day, I found that my other duties and projects proved to be very distracting when it was necessary to really dig in and focus for an extended time on developing complex technical opinions.

**Karen Olson:** Yeah, that's all too true. For those who have lived through a litigation support relationship, you know that it is not unlike a marriage commitment: "for better or worse, in sickness or health, until death (or Supreme Court or settlement) do you part". When technical analyses, expert reports, or depositions are needed you've got to be fully committed. I'd also like to add that somehow the timing never seems to be very optimal.

**David Cabe:** (laughs) Yeah, the timing seems to be the one aspect of these things that is both arbitrary and capricious!

**Karen Olson:** I think my favorite expert witness experience was right after I had a car accident that left me with a broken foot and



significant contusions. I told the Houston attorneys that I was not going to be able to drive or negotiate airports. Well, we couldn't let that get in the way! The next thing I knew, they sent a driver to my home to gather me and all my boxes of materials and deliver me to the law firm's doorstep in time for my deposition, walker and all!

**Joe Zupan:** Ouch! I learned to my chagrin that those deposition deadlines are *important*. In a recent case, I had been deposed three years ago, apparently in the nick of time. As the case developed, the attorneys wanted to add witnesses, but because a deadline for deposing witnesses had passed, I had to serve as the sole expert for the case! No pressure, though...

**David Cabe:** I think another important thing for all parties to note is that most engineers and scientists think very differently from most attorneys.

**Joe Zupan:** Yeah, engineers are always considering, analyzing, and evaluating—a lawyer just wants "yes" or "no".

**David Cabe:** But, seriously, it's important for the client and the experts to be aware of these differences in preparing for a legal proceeding—attorneys may at times have to wait for the engineers to finish the analysis before drawing a conclusion, and engineers need to realize that attorneys are generally not as fascinated by the ideal gas law as we are! Over the years, I think I've learned how to work with the legal team to turn these differences into assets that, ultimately, help the attorneys present the best case possible.

**Karen Olson:** It's also important for us experts to remember that while our detailed technical explanations are unbelievably interesting, some attorneys are not as fascinated by them as we are. I

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## Clean Water Act Jurisdiction Remains Murky

Since the Supreme Court issued a split decision in *Rapanos v. United States* in 2006, the scope of Clean Water Act (“CWA”) jurisdiction has perplexed landowners, courts, and regulators alike. Rather than establishing a uniform jurisdictional standard for wetlands and tributaries, the Court proposed two vastly different tests. The Scalia test holds that the CWA reaches only “relatively permanent, standing or continuously flowing” waters and wetlands with “a continuous surface connection” to those waters. The Kennedy test grounds jurisdiction on the presence of a “significant nexus” between wetlands and navigable waters. Faced with these competing standards, permittees now wrestle with basic questions over obtaining CWA permits for discharges to remote wetlands and streams. Unfortunately, the confusion is unlikely to end soon.

Following *Rapanos*, EPA and the Army Corps of Engineers struggled to interpret the opinion to determine CWA jurisdiction in the field. In June 2007, they issued non-binding joint guidance to memorialize their interpretation. Despite their best efforts, it was too little, too late—arriving a year after the controversy began, endorsing both *Rapanos* tests as legitimate methods for establishing CWA jurisdiction, and founded on subjective standards. Stakeholders immediately rebuffed the guidance as unworkable and pushed for a formal regulation.

So far, no regulation has been issued, but Corps officials recently threw gasoline on the fire by confirming that the guidance dramatically slows permitting of wetlands and tributaries. Much of the delay stems from evaluating whether individual features maintain a “significant nexus” with navigable waters under *Rapanos*’ Kennedy test. For this test, the guidance provides numerous factors (such as a feature’s flow characteristics, location, watershed size, and function) to determine whether a wetland or tributary has an effect that is “more than speculative or insubstantial on the chemical, physical, and biological integrity of a traditional navigable water.” Of course, analyzing objective factors to make a subjective “significant nexus” determination is not easy. Yet, this gives little solace to applicants, for whom it now takes up to ten times longer to obtain permits than before the guidance. They can only wait with bated breath as the agencies decide later this year whether to promulgate binding regulations.

The federal courts are also puzzled and have split into three camps, each adopting different views of CWA jurisdiction under *Rapanos*. Some agree with the agencies’ endorsement of both the Scalia and

Kennedy tests, while others support only Justice Kennedy’s test. Still others believe that *Rapanos* never established any law to apply and have ignored it completely or refused to rule on issues implicating the decision.

Recently, the Supreme Court has begun to reap what it sowed. Since January alone, it has received three separate petitions challenging lower court interpretations of *Rapanos*. The Justices denied the first of these petitions and likely will deny the remaining two soon—virtually guaranteeing that the turmoil will continue.

*Rapanos* has also drawn the attention of lawmakers. In 2007, the Clean Water Restoration Act (“CWRA”) was introduced in both the House and Senate to amend the CWA by replacing the term “navigable waters,” a focal point of the controversy, with the term “waters of the United States.” The amendment would define “waters of the United States” broadly to include “all interstate and intrastate waters and their tributaries . . . and all impoundments of the foregoing, to the fullest extent that these waters, or activities affecting these waters, are subject to the legislative power of Congress under the Constitution.”

Although many support a legislative fix to *Rapanos*, it is hardly surprising that this proposal is controversial. Supporters contend that the amendment simply restores the CWA to its status before *Rapanos*; critics denounce it as an attempt to rewrite the statute to reach remote waters and “activities” that never before required permits. Currently, CWRA detractors appear to have an edge, garnering the support of EPA and the Corps to narrow the amendment and clarify the categories of waters and activities subject to federal jurisdiction. At this point, however, any prediction as to the CWRA’s final form or its prospects of passing is little more than speculation.

With continuing uncertainty over CWA jurisdiction plaguing all three branches of the federal government, permittees are in an unenviable position. Anyone engaging in activities that might impact *any* wetlands or waters should exercise prudence, enlist experts to help navigate the regulatory morass, and consult with EPA and the Corps as appropriate. In the meantime, stakeholders should cross their fingers for a quick resolution to this important issue. ✨

W. Parker Moore  
Beveridge & Diamond, P.C.

# News Briefs

## national news

### **EPA Finalizes PM<sub>2.5</sub> NSR Implementation Rule**

On May 16, EPA finalized its rule for implementing the New Source Review (NSR) program for PM<sub>2.5</sub>. This rule establishes several program requirements, including defining the major source threshold and significant emissions rates and emission offset ratios for PM<sub>2.5</sub>, and provides for inter-pollutant trading for offsets. In addition, it addresses the applicability of NSR to two PM<sub>2.5</sub> precursors: SO<sub>2</sub> and NO<sub>x</sub>. Of special note, until January 1, 2011, the rule requires that only the filterable portion of PM<sub>2.5</sub> emissions be considered for NSR applicability and offset quantification assessments. Although EPA continues, for now, to allow the use of PM<sub>10</sub> as a surrogate for the PM<sub>2.5</sub> in PSD permit reviews, states will no longer be permitted to implement a nonattainment NSR program for PM<sub>10</sub> as a surrogate for the PM<sub>2.5</sub> nonattainment NSR requirements. For more information, contact Lou Corio at 410.312.7912 or [lcorio@zephyrenv.com](mailto:lcorio@zephyrenv.com).

### **ASTM and EPA Issue Vapor Intrusion Standards/Guidance**

In March, ASTM International finalized its standard practice for assessing vapor intrusion into structures on properties involved in real estate transactions. This voluntary standard provides guidance for screening the potential for a vapor intrusion in structures and identifies alternatives for further investigation. Also, in March, EPA released an on-line primer, *Vapor Intrusion Considerations for Brownfields Redevelopment*, to help parties involved in land revitalization better understand and deal with vapor intrusion issues. For more information, contact Paul Moore at 512.879.6642 or [pmoore@zephyrenv.com](mailto:pmoore@zephyrenv.com).

### **EPA's Updates Contaminated Sites Revitalization Handbook**

In May, EPA updated its handbook, *Revitalizing Contaminated Sites: Addressing Liability Concerns*. This handbook, originally developed in 1998 and revised in 2002, was updated again to address current liability issues and risks associated with the environmental cleanup of Superfund sites, brownfields, and other contaminated properties with the goal of helping promote the redevelopment of such sites. It also provides a compilation of EPA's currently available enforcement tools, guidance, and policy documents. For more information, contact Becky Luman at 281.668.7343 or [rluman@zephyrenv.com](mailto:rluman@zephyrenv.com).

### **Tougher Air Quality Standard for Lead Proposed**

On May 1, EPA proposed to revise, for the first time in 30 years, its air quality standard for lead. The proposal would dramatically reduce the current standard from 1.5 micrograms lead per cubic meter of air as a calendar quarter average to between 0.10 and 0.30 micrograms per cubic meter as either a calendar quarter average or the second-high monthly average over a three-year period. As part of the proposal, EPA is also considering whether to base the standard on total suspended particulates or particulate matter of less than 10 microns in diameter. For more information, contact Curtis Harder at 512.879.6643 or [charder@zephyrenv.com](mailto:charder@zephyrenv.com).

### **EPA Proposes to Revise Nonmetallic Mineral Processing Plant NSPS**

On April 16, EPA proposed to revise its Subpart OOO new source performance standards for nonmetallic mineral processing plants. This revision would tighten particulate matter emission and opacity limits and add new monitoring and testing requirements for affected facilities constructed, reconstructed, or modified after this date. EPA is also proposing to eliminate the stack opacity limits for dry control devices, such as baghouses, and to eliminate the "no visible emissions" requirement for wet material processing operations. In lieu of repeat performance testing, affected facilities will be subject to ongoing monitoring/inspection requirements. For more information, contact Lou Corio at 410.312.7912 or [lcorio@zephyrenv.com](mailto:lcorio@zephyrenv.com).

### **Alternate Method for Measuring In-Stack Condensable PM Considered**

In May, EPA made available for consideration by state and local agencies the dry impinger method—"Other Test Method (OTM) 28"—for measuring condensable particulate matter (CPM) emissions from stationary sources. OTM 28 is seen as an improvement to currently approved Method 202 because it has been shown to reduce vexing SO<sub>2</sub>-based artifacts and improves the collection efficiency of CPM. For more information, contact Lou Corio at 410.312.7912 or [lcorio@zephyrenv.com](mailto:lcorio@zephyrenv.com).

### **EPA Proposes Portland Cement NSPS Revisions**

On May 30, EPA proposed to change its Subpart F new source performance standards for Portland Cement plants, lowering the emissions limits for PM, NO<sub>x</sub>, and SO<sub>2</sub> to 0.86, 1.50 and 1.33 pound per ton of clinker, respectively. In addition, new, modified or reconstructed cement kilns and clinker coolers would be required to meet new monitoring

requirements for these pollutants. For more information, contact Lynne Spector at 410.312.7906 or [lspector@zephyrenv.com](mailto:lspector@zephyrenv.com).

### **Amended Refinery NSPS Rules put on Hold**

EPA Administrator Stephen Johnson has put on hold already finalized amendments to the Subparts J and Ja New Source Performance Standards in response to a June 9 letter from agency staff citing numerous inadvertent errors in the amended rules. Most of the errors revolve around new requirements in NSPS Ja for flares that resulted when EPA split out flares as a new subcategory of fuel gas combustion devices. For more information, contact Ed Fiesinger at 281.668.7353 or [efiesinger@zephyrenv.com](mailto:efiesinger@zephyrenv.com).

### **EPA Amends NESHAP for Hazardous Waste Combustors**

On April 8, EPA finalized amendments to its Subpart EEE hazardous pollutant emissions standards for hazardous waste combustors. The amendments clarify several compliance and monitoring provisions and correct omissions and typographical errors. For more information, contact Louisa Preston at 512.879.6646 or [lpreston@zephyrenv.com](mailto:lpreston@zephyrenv.com).

### **EPA Proposes Revisions to NSPS for Boilers**

On May 30, EPA proposed revisions to its new Subparts D, Da, Db, and Dc new source performance boiler standards. This action is due, in part, to reconsideration of the amendments promulgated on June 13, 2007, resulting from a petition by the Coke Oven Environmental Task Force. The action also corrects omissions, errors, and other issues that have been identified since the 2007 amendments. Portions of the standards addressed in the proposal include those related to opacity monitoring, PM performance monitoring, definitions of fuels, and allowances for fuel blending to facilitate compliance with certain rule requirements. For more information, contact Roger Brower at 410.312.7907 or [rbrower@zephyrenv.com](mailto:rbrower@zephyrenv.com).

### **EPA Revises Organic Liquids Distribution MACT**

The EPA is revising its Subpart EEEE Maximum Achievable Control Technology standards for (non-gasoline) organic liquids distribution facilities. The revisions, effective July 22, change compliance demonstration procedures for combustion devices, storage tanks, and vapor balance systems. For more information, contact Ellen Ward at 512.879.6634 or [eward@zephyrenv.com](mailto:eward@zephyrenv.com).

## **state news**

### **LDEQ Proposes Regulatory Permits**

On April 20, the Louisiana Department of Environmental Quality (LDEQ) proposed to add “regulatory permits” to its air permitting rules. These permits would be emissions authorizations “pre-issued” by the LDEQ which sources that qualify could use to begin operation without going through a more time-consuming permitting process. LDEQ proposed regulatory permits for the following

types of sources: 1) temporary separators, tanks, meters, and fluid-handling equipment used in oil and gas well testing operations, 2) unavoidable releases and flaring occurring during natural gas pipeline metering, purging, and maintenance operations, 3) stationary emergency electrical power generators, emergency firewater pumps, and emergency air compressors, and 4) portable air curtain incinerators. For more information, contact Pete Stevenson at 512.879.6619 or [pstevenson@zephyrenv.com](mailto:pstevenson@zephyrenv.com).

### **TCEQ Names New Executive Director**

Mark Vickery has been named executive director of the Texas Commission on Environmental Quality (TCEQ), replacing Glenn Shankle, who is retiring. Vickery, the deputy executive director of TCEQ since August 2004, assumed his new position on June 17. For more information, contact Ed Fiesinger at 281.668.7353 or [efiesinger@zephyrenv.com](mailto:efiesinger@zephyrenv.com).

### **Fish and Wildlife Service Proposes Critical Habitat for the Louisiana Black Bear**

The U.S. Fish and Wildlife Service (USFWS) has proposed to designate over 1.3 million acres in fifteen Louisiana Parishes as critical habitat for the threatened Louisiana black bear. The areas include bottomland and upland hardwood forests and adjacent vegetated areas within the Tensas River and Upper and Lower Atchafalaya River Basins of the Lower Mississippi River Valley. Normal forest management activities within these areas will not be affected by the designation. Currently, USFWS is preparing a draft economic analysis of the proposed critical habitat that will be released for public review and comment at a later date. For additional information, contact Brad Watson at 512.879.6624 or [bwatson@zephyrenv.com](mailto:bwatson@zephyrenv.com).

### **TCEQ Streamlines Municipal Solid Waste Permit Amendments**

To reduce the effort associated with filing municipal solid waste (MSW) permit amendments, the TCEQ has issued a new rule, effective June 12, that will allow applicants to address those affected portions of their permits in amendment applications. Further, it will limit challenges to the permit amendment to only those changes being requested in the application. The rule changes also add signage requirements for new MSW permits and major amendments. For more information, contact Tim Jones at 512.879.6652 or [tjones@zephyrenv.com](mailto:tjones@zephyrenv.com).

### **Critical Habitat Proposed for Migratory Piping Plovers**

On May 20, the USFWS proposed to re-designate critical habitat in nine Texas coastal counties to protect the wintering population of the piping plover. In 2001, USFWS designated critical habitat for piping plovers from North Carolina to Texas, but in 2006, the Texas General Land Office (TGLO) challenged 19 of the 37 critical habitat units designated in Texas. As part of the

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resulting settlement with TGLO, USFWS is proposing to redesignate approximately 150,000 acres in Cameron, Willacy, Kenedy, Kleberg, Nueces, Aransas, Calhoun, Matagorda and Brazoria Counties. USFWS will accept comments on the proposal until July 21. For additional information, contact Clay V. Fischer at 512.879.6629 or [cfischer@zephyrenv.com](mailto:cfischer@zephyrenv.com).

#### **TCEQ Approves Austin Area 8-Hour Ozone Flex Program**

On June 18, the TCEQ formally approved the 8-Hour Ozone Flex Program for the Austin, Texas metropolitan area. This program continues the voluntary ozone precursor emissions reduction measures previously agreed to by the region through both the 1-Hour Ozone Flex Program and the Early Action Compact. It also adds several new measures, including providing for a regional web-based rideshare matching program, adding ozone warning notices to the Ozone Watch System, and providing for the implementation of energy conservation and efficiency programs by local governments. For more information, contact Brett Davis at 512.879.6628 or [bdavis@zephyrenv.com](mailto:bdavis@zephyrenv.com).

#### **TCEQ Proposes Changes to Air Modeling and Effects Review Applicability Guidance Document**

In March, the TCEQ proposed changes to its *Air Quality Modeling and Effects Review Applicability (MERA) Guidance* document, including guidance on modeling emissions from planned maintenance, startup and shutdown (MSS) activities, guidance on modeling “permit wide” emissions, and the addition of particulate matter emissions from surface coating operations to the list of emissions that do not require a health effects review. For more information, contact Salil Deshpande at 512.879.6631 or [sdeshpande@zephyrenv.com](mailto:sdeshpande@zephyrenv.com).

#### **Spill Rules Adopted for Edwards Aquifer**

On March 11, the Edwards Aquifer Authority adopted rules requiring affected facilities storing at least 10,000 pounds or 1,000 gallons of regulated substances to register with the Authority and develop spill prevention and response plans. These rules also require responsible parties to notify the Authority of reportable quantity discharges within 72 hours of discovery. The deadline for existing facilities to register and develop spill response plans is within 180 days of the rule’s March 21 effective date. New facilities have until 180 days after the start of operations to develop plans. For more information, contact Paul Moore at 512.879.6642 or [pmoore@zephyrenv.com](mailto:pmoore@zephyrenv.com). ☀

**1954**—The United States tests a thermonuclear bomb in the Pacific; fallout from that explosion contaminates the Japanese fishing vessel “Lucky Dragon,” ultimately killing one of the crew and causing a “contaminated fish” scare in Japan (incidentally, this event was part of the motivation for the first *Godzilla* movie).

**1962**—Rachel Carson publishes “Silent Spring,” purporting various hazards—particularly on birds—associated with the use of the pesticide DDT. Her book leads to a nearly worldwide ban on its use.

**1969**—*Time* magazine publishes an article about the Cuyahoga River in Cleveland catching on fire, calling national attention to the pollution of our nation’s waterways.

By the 1960s and 1970s the environmental movement was off and running: the World Wildlife Fund, Friends of the Earth, and Greenpeace were established, Congress passed the Clean Water and Clean Air Acts, and EPA was born. Environmentalists had some major successes to hang their hats on.

Of course, the environmental movement has not survived without criticism. While many hail “Silent Spring” as the most articulate expression of the environmental movement’s *raison d’être*, some believe that the DDT ban has led to a resurgence in malaria, killing millions of people worldwide. And, clearly, the pressure of environmentalists to legislate away ground-level ozone has not brought the nation’s largest urban areas into attainment with progressively more stringent ozone standards.

So far, developments in environmental policy and regulation have occurred one issue at a time, starting with the “low hanging fruit” and progressing to more costly solutions with less return on investment. One hundred years ago, smoke was the public’s biggest air pollution concern and massive reductions in smoke emissions were achieved using technologies that had been available for decades. The early environmental solutions did not require people to make appreciable changes in their behavior. For example, the transition from leaded to unleaded gasoline, which has virtually eliminated public exposure to unhealthy levels of lead in the air, had little impact on the price of gasoline, allowing people to still drive cars—just with a different fuel formulation.

In spite of their early successes, environmentalists now find it more difficult to make real progress, using the last century’s tools, in solving the single most talked about environmental issue today: global warming. If, indeed, the proximate cause of recent global warming is increasing greenhouse gas emissions, it appears that it will take more than court decisions and new laws to reverse the warming trend.

In a 2004 essay entitled ““The Death of Environmentalism”, Michael Shellenberger and Ted Nordhaus make a compelling argument that the 20th century version of environmentalism is

# FROM THE PRESIDENT

## Beyond the Tipping Point

For some time now the pundits and prognosticators (including me!) have been predicting that higher oil prices would “soon” start spurring not only aggressive investment in energy-efficient and alternative-energy technologies, but would also transform consumer buying decisions and behavior.

When gasoline hit \$3.00 per gallon, American consumers griped, shook their heads, and largely continued their driving habits unchanged. At the time of this writing, the nationwide average for regular unleaded gasoline is now \$4.00 per gallon, and if you’ve ever wondered exactly what a “tipping point” is, well this is it.

In a very fast consumer response to these market conditions, it is now reported that mass transit ridership is at a 50-year high, driving is down 4 percent nationwide, and while hybrids and compacts are flying off dealer lots, sales of large trucks and SUVs are in free fall, and General Motors is wondering to whom they might be able to sell the Hummer brand.

And, in a sign that the apocalypse is truly imminent, tiny Smart Cars—previously most often seen on the streets of Paris, FRANCE—are being seen on the streets of Paris, TEXAS (and in many other communities across the U.S.).

For those of us who are old enough to remember the oil shortages and price shocks of the 70s, this is starting to have a “dèjà vu” quality. In fact, according to James Hamilton of the Department of Economics at the University of California in San Diego<sup>1</sup>, oil is now higher than it was during that era in constant 2008 dollars. In recent days, crude oil futures have passed the \$140 per barrel price level. That compares to the previous record-high price of around \$105 per barrel (in 2008 dollars) set in the late 70s.

Hamilton provides an even more jarring analysis when he evaluates the share of U.S. crude oil expenditures as a fraction of our Gross Domestic Product (GDP). According to Hamilton, starting at an average of around 2 percent of GDP earlier this decade, at \$140 per barrel America’s oil purchase now constitutes eight percent of GDP. Ouch!

The news truly isn’t all bad, however. The adapting of consumer behavior should have a moderating effect on prices. Unlike the 70s, however, American energy conservation efforts are unlikely to completely reverse the trend since the developing economies of



Photo by Allen Griffith / Eye 4 Design © 2007.

the world (e.g., China) are rapidly increasing the global demand for oil even as proven reserves seem to be hitting a plateau or are even beginning to decline.

Even the prospect of permanently higher oil prices could have a beneficial effect on some sectors of the economy. The absence of a predictable economic landscape has seriously discouraged alternative-energy and energy-efficient investment. Accordingly, throughout the 80s and 90s, investors really only dabbled around the edges of solar power, electric vehicles, and hydrogen fuel cells—at a level far below that required to obtain efficiencies of scale.

With oil prices now so high, more investors will be willing to risk more capital for developing these alternative energy technologies. At the same time, we can expect an increase in domestic oil production as more difficult extraction scenarios become more economically feasible. All of this added together should result in a more secure energy future for the United States—one less reliant on foreign oil producers. You don’t have to be an economist to know that spending 8 percent of our GDP to buy oil is neither a good idea nor sustainable for long. ✨

**Joe Zupan**  
President

<sup>1</sup> *Understanding Oil Prices*, James D. Hamilton, Department of Economics, University of California at San Diego, June 4, 2008

Zephyr is a professional services firm providing worldwide consulting, training and data systems to the industrial, commercial and public sectors. The firm’s major areas of practice are air and water quality, waste issues, worker and community safety, and incident management.

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have most enjoyed working with the attorneys that can filter through the technical jargon and see the bottom line. But it really throws me for a loop when it seems like they aren't getting the point. Then later I realize they were trying to make a somewhat different point important to the case that I just wasn't fully appreciating.

**David Cabe:** For us engineers, sometimes the histrionics and emotionalism of the trial can catch us off guard. I'll never forget the time when I delivered a somewhat bumbling answer to an opposing attorney's question because I couldn't remember when I had performed a particular analysis or submitted a certain report. The attorney slammed the table, yelled "I'm TIRED of all these LIES and MISREPRESENTATIONS!", and stormed out of the courtroom. I wasn't the only person in the room whose jaw dropped to the floor!

**Joe Zupan:** You've also got to choose your words very carefully. I was in a day-long deposition, and at one point I managed to say "the baseline water quality was kind of crappy." That five-second video clip in isolation was not, shall we say, "helpful"!

**Karen Olson:** But if the client, the attorneys, and experts are really prepared, that often means that the case will be settled . . . during the week of Christmas . . . a couple of hours before you're supposed to testify.

**David Cabe:** Been there!

**Joe Zupan:** Done that! ✨

David Cabe, Karen Olson, & Joe Zupan  
*Zephyr Principals*

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incapable of effectively combating global warming or addressing any number of environmental issues facing us today. While environmentalism once looked outwardly—on limiting human intrusion into the natural world—the authors suggest that today's solutions will hinge on the public looking inwardly—embracing lifestyles and lifestyle-supporting technologies that are compatible with a healthier environment. The ultimate success of this paradigm shift will depend on whether the public agrees that fundamental lifestyle changes are important and rewarding and doesn't expect immediate results.

All in all, environmentalists have played key roles in formulating policy, passing regulations, and reducing environmental pollution. Were it not for activists like John Muir, the network of National Parks might not exist. And were it not for outrage over burning rivers, the Clean Water Act might never have been passed. No doubt, environmentalists will continue to play a role throughout the 21st century. But, their identity as separate voices for defined interest groups on limited issues will have to blend with a broader global chorus for complex problems like global warming to be solved. ✨

Bill Jones  
*Project Manager*

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