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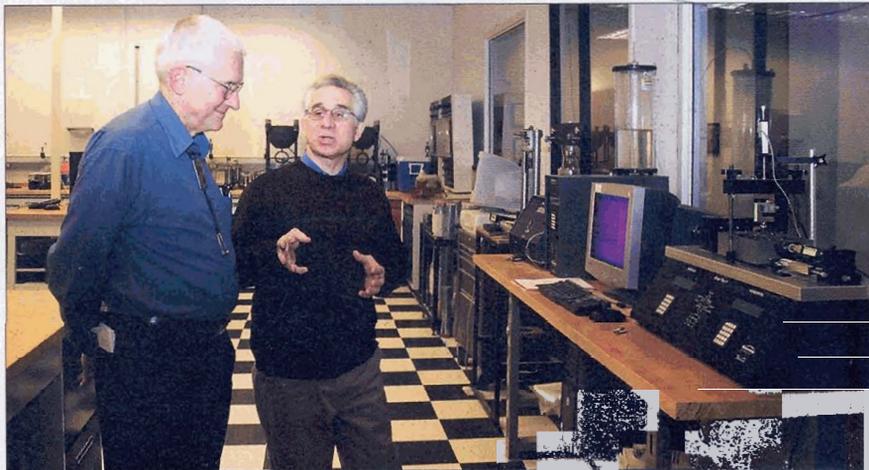
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► Award of Excellence

36 Clyde N. Baker Jr. has pushed deep-foundation engineering to a new level by applying science to a specialty that previously was based on more of a hunch.

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38 Design firms had a strong year in 2007, generating a total of \$80.62 billion in revenue. That's a 15.8% hike from 2006's total revenue of \$69.61 billion.

Cover image and right by Guy Lawrence for ENR



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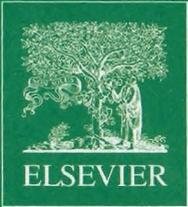
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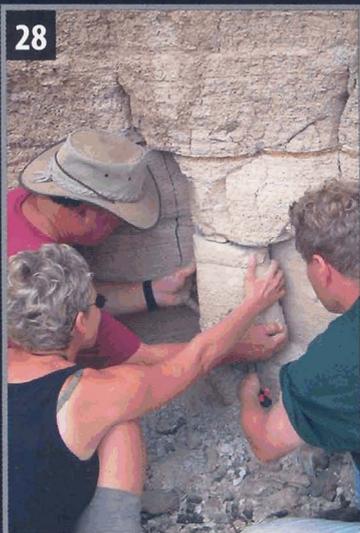
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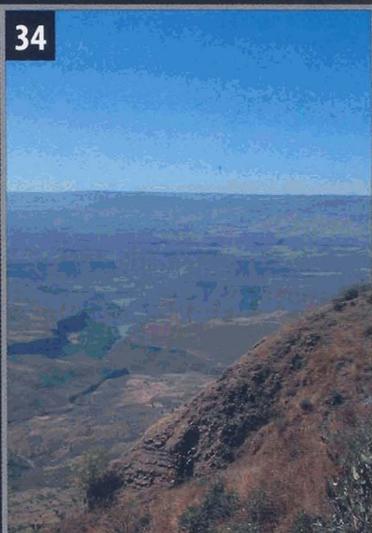
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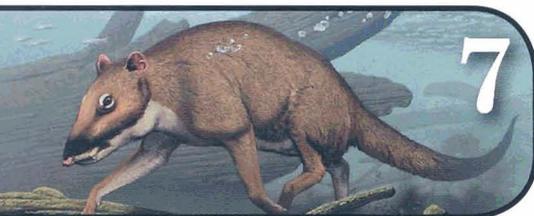
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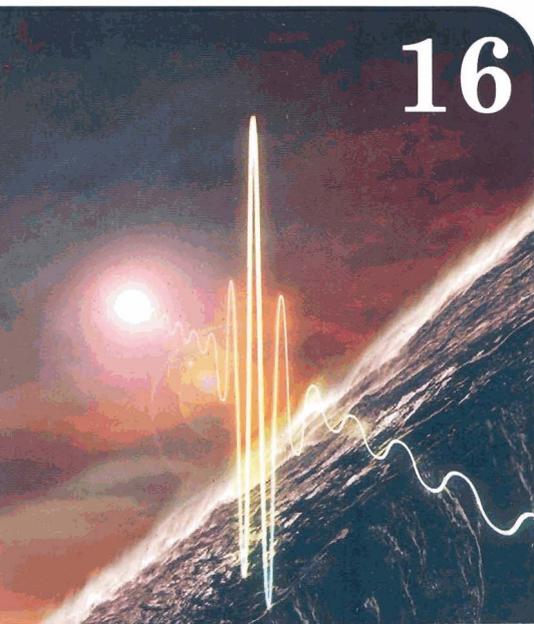
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In 2004, Libya began making moves to allow Western energy companies back into the country,



to get the struggling oil and gas industry back up and running. Read more starting on page 30. Photo is copyright Carrie Teicher.

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IMPROVING EVOLUTION EDUCATION

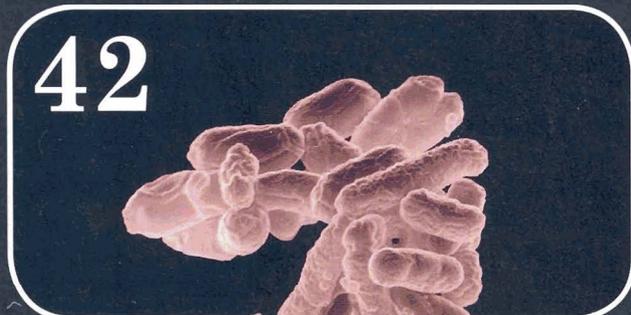
The United States leads Western nations in ignorance about evolution. One way to remedy this situation is for geologists to get more involved in writing and editing textbooks.

Kevin Padian

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ANOTHER ONE BITES THE DUST

Technology is great. But important life skills — such as spelling, doing math and now, giving directions — are being lost as computers, calculators and GPS devices take over. Beware: You may lose your sense of culture.

Lisa A. Rossbacher



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Erin Wayman
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GEO TIMES

MARCH 2008

vol. 53 ■ no. 3

FEATURE

DOWN WITH THE DAMS: UNCHAINING U.S. RIVERS

As dam permits expire and environmental considerations grow stronger, some operators are choosing to tear down the dams. Oregon's Marmot Dam serves as an experiment, showing what can happen when a large dam is removed from a river.

Jim O'Connor, Jon Majer and Gordon Grant

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FEATURE

THE IMPENDING COASTAL CRISIS

By 2050, more than half of the U.S. population will live within a day's drive of a coastline or lakeshore. But with sea-level rise and increasing storm intensity and frequency, is that development such a good idea?

Nicholas K. Coch

p. 29



FEATURE

SALINITY IN THE LANDSCAPE: A GROWING PROBLEM IN AUSTRALIA

In Australia and many other arid climates around the world, salinity is a growing problem. Whether brought about by groundwater, irrigation, land-use practices or encroaching seawater, researchers are working to help combat the problem before it's too late and farmland — and food sources — are lost.

Pichu Rengasamy

p. 34



TRENDS & INNOVATIONS

FANTASTIC FOSSILIZED FINDS FILL FARMHOUSE

An amateur paleontologist has amassed such a collection of important dinosaur footprints in his Maryland farmhouse that his floorboards are caving in.

Mary Caperton Morton

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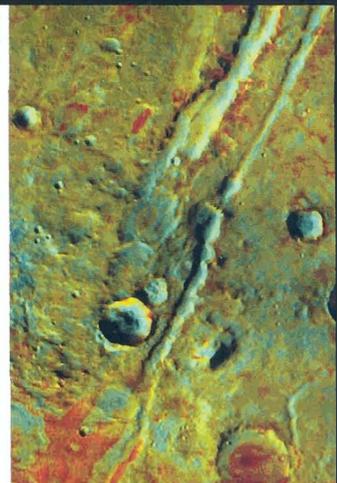
EDUCATION & OUTREACH

BRINGING THE MARS SCIENCE LABORATORY INTO THE CLASSROOM

A teacher has her students research and plan where NASA should land its next Mars rover. They picked the right sites before: Can they do it again?

Nicole Branan

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Marmot Dam was removed from the Sandy River in 2007. Photo is courtesy of Portland General Electric.

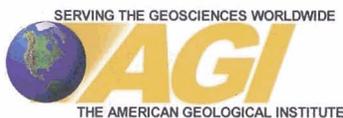
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Economics adds perspective to the discussion about whether President Bush's plan to double the capacity of the Strategic Petroleum Reserve is a good idea when oil prices are this high.
Benjamin A. Eisterhold and Michael E. Webber
- 59 **A COMMENT ON... MINING: A NEW CHALLENGE FOR THE PHILIPPINES**
The Philippines holds some \$90 million worth of minerals just waiting to be developed. However, a lot of issues remain before such development can occur.
CP David
- 60 **GEOLOGIC COLUMN: TRASH TALKING**
Several new books have the author thinking about trash — how much we produce and just where it all goes.
Fred Schwab

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Documentary filmmaker, author, population geneticist Spencer Wells

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APRIL 2008

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FEATURE

DESERT POWER: A SOLAR RENAISSANCE

Renewed interest in alternative energy technologies has brought solar power back into the spotlight. But instead of solar cells powered by sunlight, companies are turning to solar thermal technologies — and the world's deserts may soon bloom with thousands of mirrors harnessing the sun's heat.

Carolyn Gramling

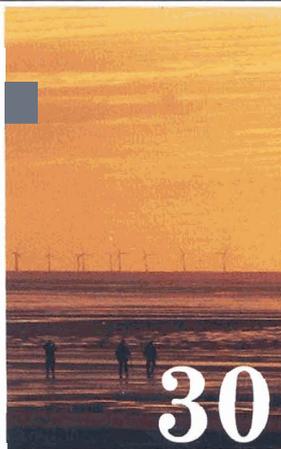


FEATURE

THE WIND OVER THE WAVES

Offshore wind has the potential to meet much of the world's electrical demand and is beginning to do so in Europe. But plans to utilize this power in the United States have been controversial. Texas is leading the way in the Gulf of Mexico, but the fate of plans in other states remains uncertain.

Erin Wayman

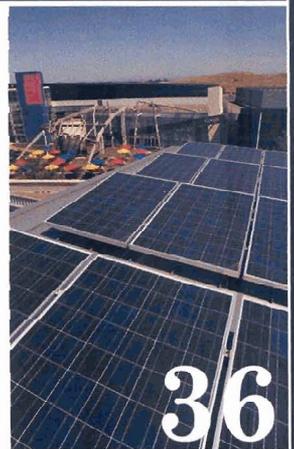


FEATURE

CHANGING THE WORLD ONE KILOWATT AT A TIME

Last fall, Google launched a new initiative to develop renewable energy that is cheaper than coal — and in less than a decade. Google is investing in companies that are working on high-altitude wind power, solar thermal and enhanced geothermal power, as well as beginning its own research and development.

Megan Sever



OFF THE BEATEN PATH

TRAVERTINE: A TIE THAT BINDS TWO GREAT STRUCTURES

What do the Roman Colosseum and the Getty Museum have in common? They're composed of travertine, a type of limestone used in many buildings around the world. The stone is never more impressive than as the setting for these two monumental structures.

David Williams



ON THE COVER: This prototype mirrored dish, which focuses the sun's energy into a receiver connected to an engine, would be one of thousands within a planned solar power station in California. Photo is courtesy of Stirling Energy Systems.

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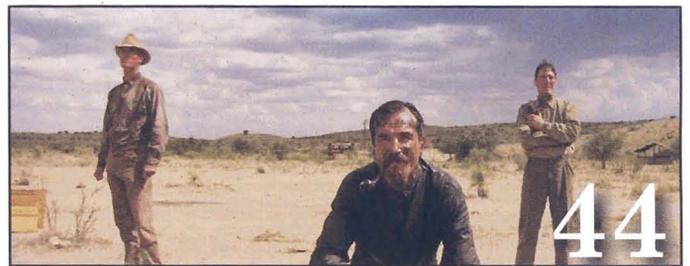


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In the 110th Congress, at least seven economy-wide cap-and-trade bills have been introduced. Why almost all climate-related legislative proposals focus on cap-and-trade is worth exploring.
Bryan K. Mignone
- 59 **A COMMENT ON... EDUCATION: PREPARING STUDENTS FOR GEOSCIENCES OF THE FUTURE**
Society faces an ever-expanding number of difficult challenges — and geoscience students can prepare to help meet them.
Cathryn A. Manduca, Heather Macdonald and Geoff Feiss
- 60 **GEOLOGIC COLUMN: A FALSE REPORT, A RUMOR, A HOAX**
Geologists take safety seriously, planning ahead for almost any scenario. Unfortunately, it's the human element that can't be planned for, as tragic events like the shooting at Northern Illinois University show.
Lisa A. Rossbacher

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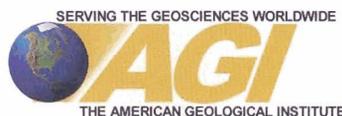


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Atmospheric scientist, engineer and president of Woods Hole Oceanographic Institution Susan Avery

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GEO TIMES

MAY 2008

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FEATURE

VENTURING TO VENUS

Scientists suspect that Earth and Venus formed from the same parent material 4.5 billion years ago. They know that the two planets are similar in size, makeup and distance from the sun. But what they don't know is why Earth developed into a planet able to support life while Venus degenerated into a scorching wasteland. New missions should help scientists get to the bottom of this mystery.

Erin Wayman

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FEATURE

DESTINATION MOON

When we last set foot on the moon in 1972, no one imagined it would be more than three decades before we would return. Plans to return humans to the moon are under way — but will the moon be a stepping stone to Mars or a destination all its own?

Carolyn Gramling



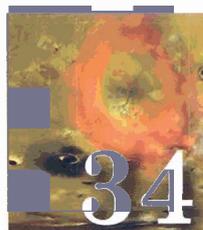
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FEATURE

SPACE TRAVELS IN GEOLOGY: IO: A DIFFERENT KIND OF HELL

With more than 400 erupting volcanoes, Jupiter's closest moon is the most geologically active body in our solar system. Despite all the hot lava, however, Io is deathly cold — not a site you would want to visit on your summer vacation.

Mary Caperton Morton



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FEATURE

ROCKS: NOT JUST FOR JOCKS ANYMORE

When the College Board asked earth and environmental scientists to help rewrite its Advanced Placement Environmental Sciences curriculum, some geoscientists saw it as an opportunity to uplift geology's profile among students.

Cassandra Willyard



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TRENDS AND INNOVATIONS

A NEW KIND OF GREEN EGGS AND HAM

Do you know where your food comes from or how much carbon dioxide was produced from getting it to you?

Tracking "food miles" has become the latest trend, but not everyone agrees the term is useful.

Cassandra Willyard



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EDUCATION AND OUTREACH

FEELING THE COSMOS

NASA recently released the latest in a series of highly visual space books that are geared toward all students — those who can see and those who cannot. Braille and written text accompany textured images that students can both see and feel.

Cassandra Willyard



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ON THE COVER: Most of Venus' surface is low volcanic plains with the occasional rise of a volcano or mountain. Image is courtesy of NASA/JPL.

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Late last year, the Environmental Protection Agency denied a request by California to adopt its own emissions standards for new automobiles. California appealed, and now the battle is back in court.
Marcy Gallo
- 59 A COMMENT ON... RESOURCE NATIONALIZATION: A SMALLER PIECE OF THE PIE
Soaring energy prices and record-breaking profits have emboldened some countries to "reconsider" their relationships with foreign oil companies operating within their borders. It's a short-term perspective.
Benjamin A. Eisterhold and Michael E. Webber
- 60 GEOLOGIC COLUMN: I'M ENDING MY AFFAIR!
After several decades of a love affair with beautiful, large, gas-guzzling cars, it's time to end the affair and get on board the efficiency wagon.
Fred Schwab

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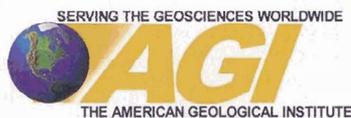
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Geologist and oil executive Don Paul

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One way to combat climate change: hire someone who must earn his own salary in energy savings.



SARAH BERRETT

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Mortgage meltdown is a problem everywhere. In some places, it's a disaster.
By Alan Greenblatt

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To cut their health care bills, states are rushing into programs aimed at keeping people physically well. But is there a fiscal payoff? *By Josh Goodman*

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Oysters aren't just good on the half shell. They're also good at cleaning up polluted water. *By Josh Goodman*

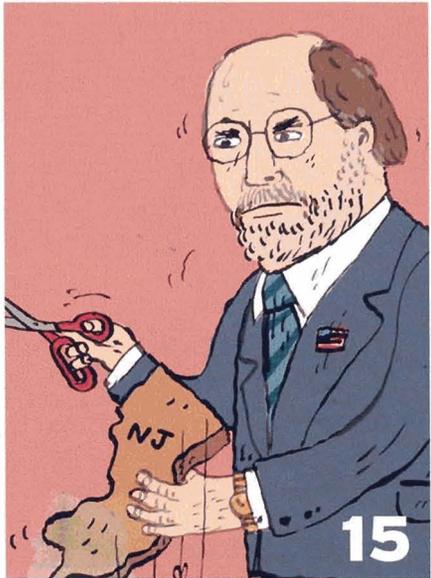
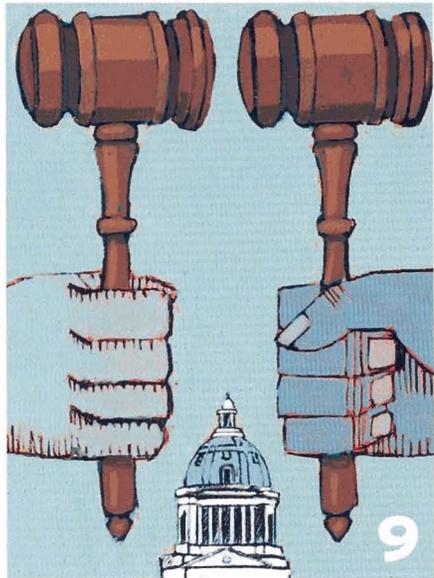
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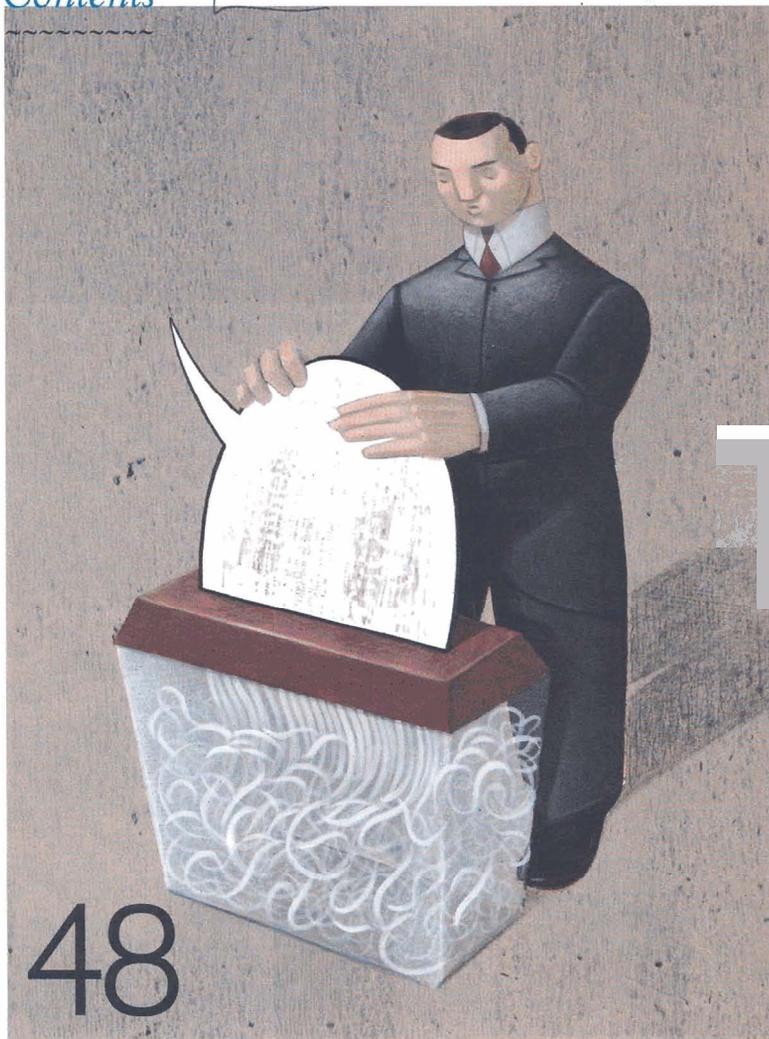
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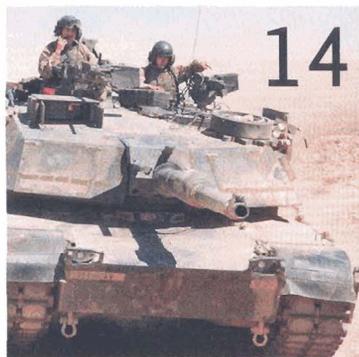


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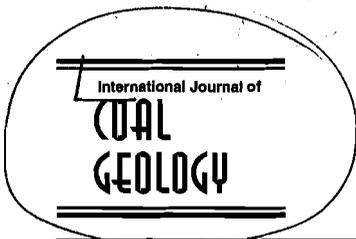
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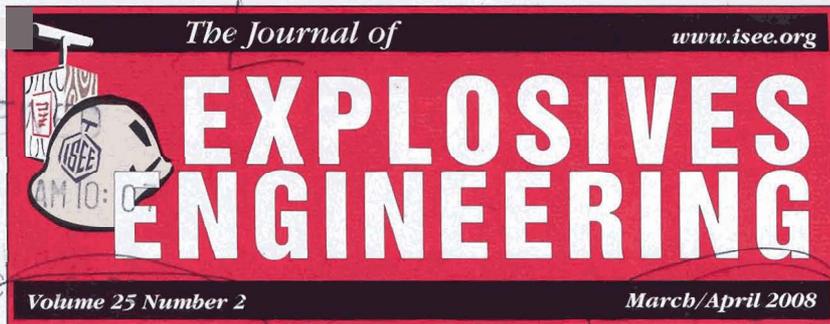


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On the Cover: A large quarry in the Midwest U.S. with and Interstate Highway in the background.

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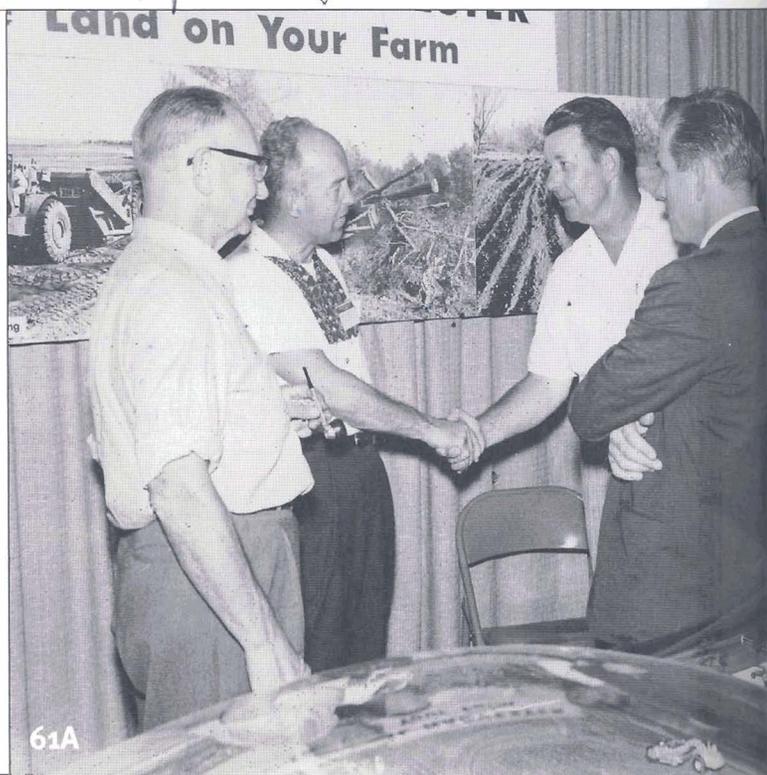
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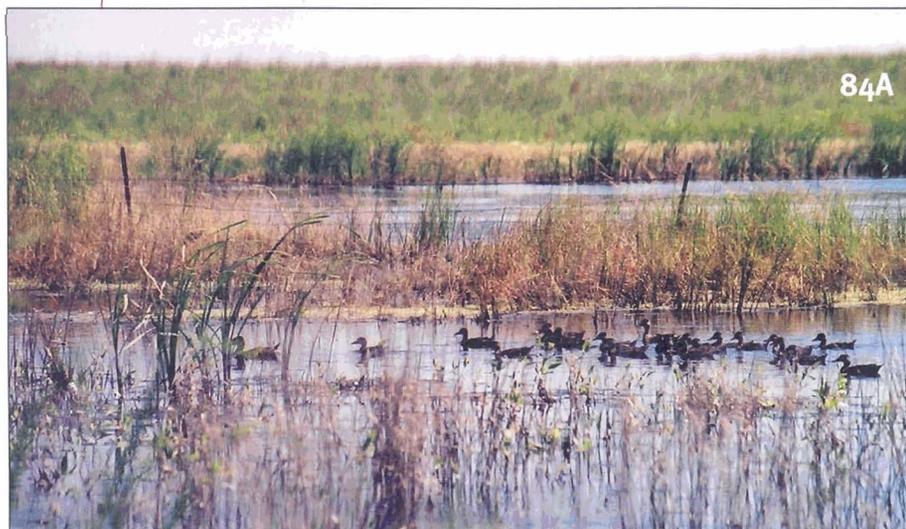
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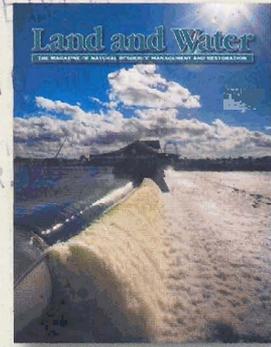
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Tempe Arizona created a 2-mile lake in the dry Salt River bed in 1999. Winter rains in January 2008 pass over the rubber dams that hold Town Lake. These rubber dams deflate enough to pass seasonal storms. Yet, even a 10-year storm event can change the lake bottom contour as was discovered in 2007. For the full story, see page 38. Photo credit: Tony Blei - SmartAz Photography.

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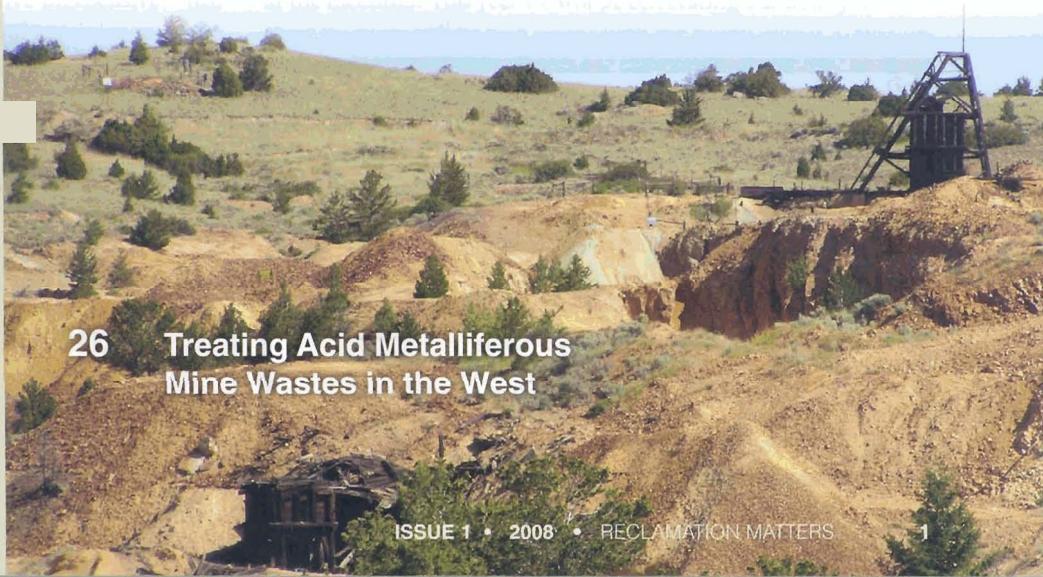
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