

**CUMMINGS  
RITER**  
CONSULTANTS, INC.



### Environmental

Remediation • Compliance/Permitting  
Brownfields • RCRA/CERCLA • O&M  
Voluntary Cleanup • Health & Safety

### Human Resources

### GIS/GPS

PITTSBURGH • ALTOONA, PA • EWING, NJ

## What's Happening...

### REST EASY: WORLD NOW SAFER

In September over 30 clients & staff attended our 12th annual OSHA safety training.

### FREE DECEMBER WEBINARS

- 5: Ecological Reuse of Remediated Sites
- 7: Direct Push Well Technology for Long-term Groundwater Monitoring
- 12: Risk-based Screening Values: Determination and Application

Register at [itrcweb.org](http://itrcweb.org).

### BROWNFIELD AWARD TO TROY MILLS

At the 2006 National Brownfields Conference, clients Kubal-Furr & Assoc. of Tampa, FL & Nationwide Construction of St. Johnsbury, VT were honored for the Best Community Redevelopment Project for their successful public-private partnership at Troy Blanket Mills in New Hampshire. Congrats to Jerry Kubal, Bob Hanson, Paul Langworthy, and Susanne Olson! We are proud to be working with them on this winning project. More at [www.troyblanketmills.com](http://www.troyblanketmills.com).

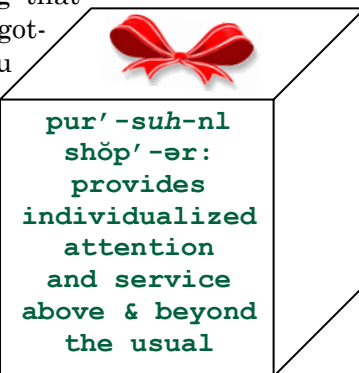
It's "The Difference" Issue!

The difference between shopping for remediation technology & fruitcake (less than you'd think)...the difference in a winning Brownfields project and in groundwater contaminants pre- and post-nanotechnology (a lot!) ...and Mr. Bird on how to make one—a difference, that is! Enjoy!

## C/R Adds Personal Shopping to Service Line

Got your shopping done yet? It's a common question this time of year, and frequently elicits a wince or a grunt. Even for those with the gritty resolve to remain merry, for those who begin the season with a bull-like scratch of the earth and a steamy snort through the nostrils as they think (in Jack Nicholson's voice, for some reason), "No one's takin' away *my* peace and joy this year"—even for them there's plenty to dread: the pressure to buy *something* but not knowing what to get, the money, the time, the nagging feeling that something's not right, that maybe you've gotten off-track. Wouldn't it be great if you could avoid all that? What if a personal shopper appeared saying, "For about what it would've cost you in gasoline and impulse buys, I can do all that for you while you enjoy eggnog by the fire." No getting cut off from your rightful parking space, no dropping bags as you grab the door to keep it from slamming on you. Pretty good deal, huh? And the same applies whether you're shopping at Macy's or at Groundwater Remediation Technology Mart. Never heard of it? Okay, technically there's no such place, but you get the drift. These purchasing situations have much in common: they involve money you could be spending elsewhere, demand more time than you have to give, and put on pressure to buy *something* but with so many variables at the site and so many choices, it's hard to know which technology to choose.

Pump & treat may satisfy the regulators, but is there a newer-but-sufficiently-proven, reasonably priced technology that'll get faster results so you can sell the asset? How much can you rely on a firm selling Technology X...when that's the only technology they know and sell? Is there a recipe book out yet for chem-ox? Client and veteran remediation manager (and witty guy) Dean Reed recently asked how much eye-of-newt was in a chem-ox recipe. Funny, yes, but it also speaks volumes about the value of practical experience when tackling this subject, which is a combination of science, art, and maybe a smid-geon of wizardry. What about the lasagna remediation process, so named for its horizontal layering of technology components, or the molasses being used to treat hexavalent chromium and PCE? Cummings/Riter can serve as your personal shopper in an ever-expanding marketplace, from P&T—sometimes still the best choice—to "technology trains" of bioremediation and chem-ox (available both with and without eye-of newt) or some other effective combination. And check out our recent success using nanoscale zero-valent iron to remediate chlorinated organics in the Project Profile (page two). We'll help you make a selection then wrap it up and send it over, but only if it's the very best choice for your project, not because the technology happens to be what we sell. Peace, joy, and eggnog by the fire for all!



## Project Profile

### NZVI Reduces VOCs

Results of a pilot study in which Cummings/Riter used nanoscale zero-valent iron (NZVI) to remediate groundwater impacted with chlorinated solvents are promising. In the three months since the initial injection, performance monitoring data show a steady decrease in the concentration of contaminants, and a reduction of up to 85 percent.

The principal constituent of concern is 1,1,1-trichloroethane and its daughter products. NZVI is nanometer- or bacteria-sized particles of zero-valent iron which is capable of destroying a range of recalcitrant contaminants, both in-situ and ex-situ, through the redox process. For chlorinated solvents, the degradation process is best described as anaerobic corrosion, with the iron acting as a reductant that donates an electron and removes a chlorine atom from the hydrocarbon.

The site lies along the margin of a valley bottom formed by the deposition of glacial outwash covered by several feet of clay till and more recent alluvium that was incised into flat-lying bedrock. Unconsolidated deposits vary from 30 to 90 feet thick. The aquifer is unconfined, with a water table at approximately 20 feet, and groundwater velocity in the shallow zone is 35 to 75 feet per year.

Before the pilot study, a bench scale study revealed NZVI dosages and indicated that significant contaminant reduction should occur within a week. The pilot study involved one injection point, and piezometers were installed to monitor groundwater quality down-gradient. Baseline concentrations ranged from 190 to 370 ppm of 1,1,1-TCA and 195 to 382 ppm total VOCs. Final sampling is scheduled for January so we'll keep all you nanotechnology-watchers posted, but if you just can't wait, call Bob Hendricks for more information.

#### *Regulatory Ch-Ch-Ch-Changes*

In August New Jersey passed a law requiring public notification for site remediation, effective next February but heads up: it also requires certain notifications to municipalities (e.g., notices every two years if the remediation lasts that long) and that part was effective immediately. You *can* be fined for administrative errors, so send your notifications. Full text of the law at [www.njleg.state.nj.us/2006/Bills/PL06/65\\_.PDF](http://www.njleg.state.nj.us/2006/Bills/PL06/65_.PDF).

**Cummings/Riter Consultants, Inc.**  
**10 Duff Road, Suite 500**  
**Pittsburgh, PA 15235**

### BIRD'S EYE VIEW: Making a Difference

Year end is a natural time to reflect and this year it seems to me that some of our staff's best contributions had little to do with environmental or HR consulting. We encourage life after 5 p.m. and like



Ken Bird, VP

many of you, our staff volunteers. In 2006, some went to the Gulf Coast as unpaid volunteers to help with Katrina recovery efforts. Making personal sacrifices to work under tough conditions, they didn't fix everything but there's no doubt they made a difference—just ask the former strangers from whose homes they removed rubble and mold. Making a difference can indeed happen one small act at a time.

In reflecting, we also recognize and give thanks for the support and confidence of our clients, partners, and vendors. You make a difference to us—we wouldn't be here without you—and we hope that we have made a difference to you. Yes, we hope to have reduced contamination or kept you in compliance, but we also hope to have been the consultant who returned your call right away, went the extra mile to get lab results, or even made you laugh. Happy holidays, and please let us know how we can make a difference to you in 2007!