

The Sludge Scam

by Caroline Snyder
and Helane Shields

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HELANE SHIELDS, of Alton, is recognized as the nation's foremost sludge activist. She has researched land application issues for ten years and compiled investigative reports about the adverse impacts of sludge farming on health, livestock, wildlife, soil, crops, and groundwater. [For a copy, contact her at HShields@worldpath.net] Her "Voices from the Field" was published in *New Solutions*. (www.unc.edu/courses/2005spring/epid/278/001/Shields_NS.pdf)



Sludge applied in forests can adhere to the bark of trees for a year, harming wildlife. (Photo: Michael Eggleston)

The New Hampshire Experience

"In the early morning hours in October, 1995, large trailer trucks began rolling into our quiet neighborhood in Greenland, N.H. They were depositing load after load [640 tons in all] of some smelly, mucky stuff, and piling it on a 10.6 acre hay field at the end of our road." So begins Joanne Marshall's 1999 statement before the National Press Club, as she describes the circumstances of her son's death and the illnesses she, the rest of the family, and her neighbors experienced because of a decision made thirty years ago by the United States Environmental Protection Agency (EPA) to promote municipal sewage sludge as a 'soil amendment' and 'fertilizer.'

As these Greenland residents were being exposed to the stench of treated municipal sewage sludge, they began to experience nausea, vomiting, respiratory problems, gastrointestinal symptoms, flu-like symptoms, rashes — all symptoms that far exceed any that could be described as mere nuisance problems. Their repeated attempts to get help or an explanation from local, state, and federal officials, and to have this activity investigated or curtailed, fell on deaf ears. Rob Duff

from the NH Bureau of Health Risk Assessment told Joanne that their symptoms were "symptoms of sludge exposure."

On the evening of Thanksgiving, after the sludge had been chain dragged across the field, Joanne's 26-year-old son, Shayne, was rushed to the hospital because he could not breathe. He died a few hours later. The immediate cause of his death was respiratory failure, the underlying cause, "undetermined."

Convinced that her son's death was linked to sludge-exposure, Joanne filed a lawsuit. In 2002, Synagro Technologies, the nation's largest sludge applier, settled the wrongful death suit, with a substantial cash settlement going to the family.

Evidence of Harm: 550 pages

What happened to the Marshall family and their neighbors is not an isolated incident. Hundreds of rural residents, living or working near sludged sites, have reported unbearable quality-of-life conditions as the stench of this biologically active, contaminated waste material forced them to retreat inside their homes. The symptoms they experience are similar

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to those described by Joanne and her neighbors: nausea, vomiting, burning eyes, burning throats, congestion, various infections, and serious respiratory problems.

Since 1996, Helene Shields has been collecting newspaper articles and investigative reports, dealing with human and animal deaths, illnesses, groundwater contamination, and damage to soils and crops, all linked to land applied sludges. Her compilation, currently comprising 550 pages, was discussed and referenced in the 2002 National Academy of Sciences (NAS) report, *Biosolids Applied to Land*. Other cases have been documented and published in peer reviewed medical and technical journals.

Sludge is a Pollutant, not a Fertilizer

What exactly is this 'smelly mucky stuff' that is causing such havoc in many parts of rural America? Wastewater treatment plants remove contaminants from domestic and industrial sewage. Most of these removed contaminants concentrate in the resultant sludge. Today's sludge is not just "night soil" (human waste). Sludge generated in industrialized urban centers is a highly complex unpredictable mixture of toxic metals, pathogens, surfactants, carcinogens, solvents, and thousands of other man-made chemical compounds. With the exception of nine metals, most of the contaminants are untested, unmonitored, and unregulated. The 2002 NAS report confirmed that the current sludge regulations are not based on

sound and recent science and that the risks of sludge farming cannot be reliably assessed.

Land Application is not Recycling

Why then is this unpredictable, contaminated waste (approximately 12 million tons annually) still being spread on our land? Why do companies that profit from land application still promote sludge as a safe and benign fertilizer, while the Federal Clean Water Act calls it a pollutant? Is land application really "a down to earth recycling solution" as the promoters claim? Or an "environmentally sound way of keeping New England landscapes open and growing?" Or is it a convenient way to get rid of a contaminated waste product? Can transferring thousands of industrial pollutants generated in our large cities to our fields be called 'recycling'?

For answers to these questions we need to go back thirty years when much of the country's industrial wastewater and sewage was dumped directly into rivers and lakes, causing these waterways to become seriously polluted. Fish kills were common, and many rivers and lakes had become unsuitable for swimming, boating, fishing, and other recreational activities.

Alarmed, Congress passed the Clean Water Act and appropriated tens of billions of dollars to upgrade and built new wastewater treatment plants. Eventually this helped solve one problem: rivers and lakes recuperated and became dramatically cleaner.

Cleaning the Rivers, Polluting the Land

However it created a new problem: the rapid proliferation of treatment plants resulted in huge quantities of sludge; and since the industries that used to pour their hazardous waste into rivers, were now discharging it into treatment plants, sludge became much dirtier, often qualifying as hazardous waste.

Logically, sludge should have been

regulated under the Resource Conservation and Recovery Act. However, EPA decided to exempt sludge, with its industrial waste products, from hazardous waste rules, by reclassifying these materials as 'fertilizers' and 'soil amendments' that could be spread on farms and forests. Municipalities—all too happy to get rid of their daily sludge by having it trucked away to nearby fields—joined the industry/EPA campaign to promote sludge farming as cheap, beneficial, safe, and sustainable. The nation's waterways became cleaner; but at what cost?

It was not an easy task to convince an entire nation that a complex pollutant that had damaged aquatic life in oceans and rivers, is a safe fertilizer on land. To accomplish this feat, a group of EPA and U.S. Department of Agriculture (USDA) scientists formed a partnership with municipalities, the sewerage industry, and the companies that profited from land application. This sludge partnership used tax dollars to support industry-friendly scientists and launched a massive Public Acceptance Campaign. Funds were used not to make sludge spreading safer, but to convince a skeptical public that it was safe. The sludge partnership controlled the scientific information, manipulated public opinion, and threatened opponents with litigation. It avoided documenting incidents and prevented others from doing so.

Covering up Incidents

On October 13, 1994, 11-year old Tony Behun rode his dirt bike through several inches of sludge [5,346.94 tons] that had been spread two weeks earlier on an unfenced Pennsylvania mining site near his home. He was covered from head to toe with this muck. His mother made him take off his clothes in the garage and bathe immediately. Two days later he came down with a bacterial infection

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Terragator—Surface application increases health risks and run-off. (Photo: Maureen Reilly)

SELECTED EXCERPTS
from Sierra Club Conservation Policies
- Sewage Sludge Policy -
Sierra Club Guidance on the Land Application of Sewage Sludges

Background on the Problem

Although the Sierra Club supports the use of pathogen- and pollutant-free treated human waste as fertilizer, such a practice is only possible by separating the industrial waste stream from human waste. Sewage treatment plants are not designed to separate wastes and to produce fertilizer. They were designed to remove pollutants from the waste water. Many of these pollutants concentrate in the resultant sludges. As a result the exact composition of any sludge is unknown. Urban sludges are a highly complex, unpredictable biologically active mixture of organic material and human pathogens that can contain thousands of industrial waste products, including dozens of carcinogens, hormone disrupting chemicals, toxic metals, dioxins, radionuclides and other persistent bioaccumulative poisons. The Federal Clean Water Act defines sewage sludge as a pollutant.

Guidance

There is growing agreement among scientists and environmentalists that the current US sewage sludge's management programs need serious improvements. In 1997 the Cornell Waste Management Institute concluded that current regulations governing land application do not protect human health, agricultural productivity, and the environment.

On July 13, 2000, the US House Science Committee held a hearing on the 1999 National Research Council report entitled "Strengthening Science at the US EPA". The 503 sludge rule was singled out as an example of regulation that is being driven by politics, rather than by sound science. In 2000 the CDC/NIOSH identified Class B sewage sludge as a potential hazard to workers who handle this material, and the same year the EPA Office of Inspector General also concluded that due to lack of data and lack of oversight the EPA cannot assure the public that current land application practices are protective of human health and the environment.

The Sierra Club opposes the land application of municipal sewage sludges as a fertilizer and/or soil amendment because the current policies and regulations governing this practice are not adequately protective of human health and the environment. The Sierra Club recognizes, however, that more than half of the sewage sludges generated in the US are being disposed through land application. Because this practice cannot be banned overnight, the Sierra Club has developed Guidelines for Community Activists, as well as Recommendations for Research and for the National Program.

For full text go to www.sierraclub.org/policy/conservaton/solidwaste.asp

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with headache, sore throat, furuncles on one leg and arm, breathing difficulties, and a high fever. Attempts to save his life were futile. A week later he died.

The Pennsylvania Department of

Environmental Protection (PA DEP) and the company that spread the sludge, entangled themselves in a network of false statements to cover up this incident. When first confronted with the case, PA DEP's Doug Saylor

said, "It was the boy's own fault. He was trespassing and had no right to be there in the first place." Subsequently, DEP planned to blame Tony's death on a chipmunk bite; later, on a polluted stream. Finally DEP officially announced that the child had died of a bee sting; that sludge had not been applied to the site; and that a thorough investigation had ruled out sludge as the cause of death. All of these claims were later proven to be false. Yet EPA subsequently told the National Academy of Sciences, that PA DEP had investigated the case, and that "there was no medical or scientific evidence" that linked Tony's death to sludge exposure.

In 1998, two dairy farmers sued the city of Augusta, Georgia, after experts determined that the city's sludge applied to their fields had contaminated the forage, causing a precipitous drop in milk production and hundreds of cattle fatalities. To help defend Augusta and simultaneously to defend its land application policy, EPA gave a grant to the University of Georgia (UGA) and commissioned UGA's Julia Gaskin and EPA's Bob Brobst to conduct a field study of the Augusta land application program. However, Gaskin and Brobst used fraudulent and manipulated data, so they could conclude "that the forage grown on these fields should not pose a risk to animal health."

Silencing the Critics

To keep those sludge trucks rolling, the sludge partnership tries to silence scientists who question the safety of sludge farming. EPA scientist, Bill Sanjour, was the first public official with the courage to criticize the practice. When he objected to EPA's decision to use sludge and industrial waste as a fertilizer, he was promptly removed from his position. In 1997, the Cornell Waste Management Institute released its working paper, "The Case For Caution." The paper warned that the

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INVESTIGATIVE REPORT

Toxic Waste Used As Fertilizer?

By Sheila R. Cherry

The Environmental Protection Agency allows sewer sludge to be recycled and used as fertilizer to grow food. But many say the sludge causes illness and even death.

Muddy fields are irresistible to boys, especially boys with motorcycles.

Tony Behun, whose pla-

with a bike. But the following day Tony began complaining of a sore throat and a headache. The symptoms worsened on the second day, when his mom, Brenda Behun Robertson, noticed that boils had developed on Tony's left arm and leg.

Soon the boy developed flu-like symptoms, prompting Robertson to call the family doctor, who prescribed an antibiotic. The symptoms worsened the following day and Tony began to have trouble breathing. That evening he was rushed to a hospital emergency room.

Tony's degenerating condition puzzled the doctors, who ordered him airlifted to Allegheny General Hospital, where more-extensive tests could be performed. Brenda says the doctors "did everything possible but could neither improve nor diagnose Tony's illness." The next morning — on Oct. 21, eight days after exposure to the sludge-treated ground at the reclamation site — Tony Behun was dead.

The Journal of Commerce

WEDNESDAY, JANUARY 27, 1999

'Sludge Magic' at the EPA

BY DAVID L. LEWIS

According to scientists working for the U.S. Environmental Protection Agency's Office of Research & Development, the sludge rule on land application of municipal wastes (40 CFR Part 503) promulgated in 1993 may be the most scientifically unsound action ever taken by the agency.

Rather than being protective, the rule actually threatens public health and the environment.

In brief, the EPA's sludge rule permits land application of dried urban sewage — called "sludge" — in lieu of dumping it in the ocean, which is now prohibited.

About half of the sludge from municipal waste treatment

Remarkably, the agency's position on this issue reveals a sort of environmental double-speak: Traces of pesticides, heavy metals and industrial wastes that environmental officials have long argued cause cancer and other major public health problems are now said to be completely safe for disposal on farmlands, forests, even home lawns and gardens.

The science behind the EPA's sludge rule, according to some of the agency's own scientists who reviewed it, was so bad it was popularly deemed "sludge magic."

Because sludge contains human pathogens and trace quantities of mercury, lead and other

elements that can lie dormant or proliferate in soil treated with sludge are even more disconcerting to microbiologists. Samples taken this year from land in north Kansas City contained 650,000 salmonella and E. coli bacteria per 100 grams of soil — many thousands of times higher than what is considered safe by public health officials. The source, apparently, was sludge applied in the area before 1992.

The appearance of new strains of staphylococcus, tuberculosis, E. coli and other bacteria — some of which are completely resistant to modern antibiotics — has led to a resurgence of life-threatening infections that were once easily

Golf course 'fertilizer' stirs up a stink



City's golfers given a break — but students pay the price

By DEREK ROSE
Union Leader Staff

A stinking pile of compost was dumped across from a Manchester elementary school in part because city officials did not want to disturb golfers.

The odoriferous mound had school students and staff shuttered in classrooms, with some complaining of headaches. One asthmatic teacher said it burned her nose and lungs, and there were disputed reports of students vomiting Thursday morning.

Jenna Hughes, 12, covered her face with her shirt as she walked across the McDonough School playground late yesterday.

park and recreation department, said the two truckloads of compost were stored across from the elementary school for use at the Derryfield Country Club. Keeping the pile at the club would have been disruptive, he said.

"It's just a matter of logistics," he said. "We're running an operating golf course, and we've set up temporary tees and greens for 18-hole play."

Wojniowicz said the area used was convenient; it is less than two city blocks from the golf course.

After complaints from school staff, the pile was removed late yesterday by employees of Ted Bantis Trucking, the contractor on the golf course project. Bantis said the material might be placed at the course.

Samples of media reporting on sludge issues—"Toxic Waste Used As Fertilizer?" (Insight, 5/15/00), "'Sludge Magic' at the EPA" (The Journal of Commerce, 1/27/99), "Golf Course 'Fertilizer' Stirs Up a Stink" (Manchester Union Leader, 5/24/00). In spite of such occasional coverage, the public is generally unaware of the pitfalls of sludge spreading. (Credit: Gerhard Bedding)

current sludge policies do not protect human health, agriculture, or the environment. The alliance quickly organized a smear campaign against the lead author and paid a scientist to attack the Cornell paper.

David Lewis, an EPA senior level research scientist, was subjected to an even more intensive and prolonged smear campaign, after he began investigating sludge illnesses and deaths. EPA cut off his funding, forbade him to collaborate with other EPA scientists, and have access to agency resources. Lewis finally had to abandon his sludge research, was forced to leave the agency, and is currently unemployed.

Controlling the Public Debate and the Media

Not only are scientists muzzled; so too are citizens who express their concerns. Early on, the alliance learned that the most effective way to keep those trucks rolling, is to control the media and public debate. A 1994 article in the trade journal, *Biocycle*, explains how to get officials to approve a land application project and disarm the opposition:

To minimize vulnerability in the press, a preemptive strike is usually launched to catch the opposition off guard. Countering the opposition without letting them determine the approval process, is the most impor-

tant goal of a good [sludge project] campaign manager. In the political world this is called "controlling the debate."

If public hearings about a project are required, they often turn into 'informational' sessions, chaired or organized by sludge partnership 'experts', who 'educate' public officials and stakeholders with lengthy power point presentations that tout the benefits of sludge. Virtually no time is left for audience participation. Independent experts are warned to keep their comments to three minutes or less. Often the reporters have already left, never hearing about the risks.

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Soil Degradation. Is There a Better Way?

What are the long-term effects of land application? That question has not been answered. The US has the most lenient land application regulations of any industrialized country that regulates sludge spreading. The US regulations, based on a flawed risk assessment, permit cumulative loading of sludge until there is a 50% crop reduction. Can we afford to degrade our land even to the point of a 10% crop reduction?

European countries are guided by a principle very different from that of the US. Intent to protect their land for

future generations, these countries adhere to a non-degradation policy: the amount of persistent and toxic pollutants permitted in land-applied sludge can not exceed the amounts in the receiving soil.

Several European countries and at least six US states are exploring and implementing better sludge disposal solutions that will not impact human health, agricultural productivity, or the environment.

(Part Two, in the next issue the NH Sierran, will explore some of these solutions as well as the NH situation and our options for dealing with the state's sludge and septage crisis.)