

To: K. Roberts, Ogden Publications Inc.
From: Caroline Snyder, Citizens for Sludge-Free Land (CFSL)
Re: Don Gardner's 7/5/16 Letter to *Mother Earth News* (MEN)

10/29/2016

Don Gardner's attack on Lidia Epp's meticulously researched biosolids blogs lacks all evidence, and is riddled with misinformation, distortion of facts, false allegations, and untruths. Gardner completely ignores the growing body of credible science and field reports warning that the current biosolids regulations—CFR 40: Part 503 (the 503s)-- do not protect human health, agriculture, or the environment.^{15,16,29,34,35,53}

Hundreds of rural sludge-exposed neighbors in 38 states, including VA, have reported identical respiratory, dermal, and gastro-intestinal symptoms.^{17,18,19,24,30,31,33 pp 36,46} Sometimes the symptoms disappear when the family moves, or when the sludge applications stop. Epp's blog, *Biosolids or Biohazard* describes how the entire Jordan family, formerly healthy, developed serious viral and bacterial infections after sludge was spread on a field near their home. When the putrid stench subsided, so did their symptoms, a clear indication that there was a link, and that exposure from biosolids odor is not just a nuisance. When sludge spreading resumed, their symptoms returned. They finally decided to sell their home and move to another Spotsylvania community. Here they joined an anti-sludge group, signed petitions to revoke a sludge permit in a residential Westmoreland County community, only to discover that the powerful sludge-lobby, led by Synagro, the nation's largest sludge broker, ignored their petition and did not let them express their concerns at a public hearing. They lost their battle. As is often the case, those stakeholders immediately affected by these projects are not permitted to speak at Public Hearings. Instead they are told to listen to DEQ's and the Department of Health's false safety claims.

In 2008, Barbara Rubin, a former resident of Waterford VA, submitted written testimony to the Senate Environment and Public Works Committee that was holding a hearing about the reported adverse health impacts linked to sludge-exposure. In her testimony Rubin described how in 2001, almost half of the 250 residents of the village of Waterford became sick after being exposed to land-applied sewage sludge. After she became ill, she did extensive research and discovered that the health problems she and her neighbors were experiencing were not unique, but being reported by other rural VA residents who lived near sludged sites. Their symptoms included burning eyes, nose, and throat, mild to severe respiratory problems, rashes, lesions, bloody noses, bloody stools and flu-like symptoms. She met with county, state, and government representatives to share her research. None of them could dispute her information with any scientific data, nor could any of them cite even one specific study that sludge exposure was safe. All they could offer her were vague assurances that there were "hundreds of studies." She asked for copies of those studies. They were never sent to her; because they don't exist.

Instead, the VA Department of Health and the DEQ conducted a fraudulent health investigation in Waterford, which included manipulating data, citing non-existent studies, only acknowledging three out of a total of twenty fields that had received sludge, and dismissed all health complaints attributing them to “normal winter ailments”. According to Rubin’s testimony, these misrepresentations lead to the desired pre-determined conclusion that enabled both VA agencies to claim that sludge-exposure could not be linked to any of the reported illnesses.

All of the affected residents had either lived in, or recently moved to, quiet VA neighborhoods to enjoy the peace of country life. None of them were ever sickened by the usual odors from traditional farming operations. But when sludge was spread, the putrid stench made them sick. Peer reviewed published research indicates that when sludge destabilizes it creates endotoxins and releases antibiotic resistant bacteria, which explains why many sludge-exposed neighbors suffer MRSA outbreaks, as well as serious, at times, life threatening staph infections.^{1,40,43,48,56,61.} Rubin, formerly a completely healthy person, began to suffer from rare forms of pneumonia which required many courses of antibiotics and thousands of dollars of medical expenses. Like the Jordans, Rubin and her family moved to another community, but her symptoms worsened and turned into life-long chronic diseases from which she never recovered. Ground breaking research by former EPA microbiologist, David Lewis and his team-- confirmed subsequently by other published research-- has linked sludge exposure not only to illnesses but to several deaths.^{17,24,30,31}

The health impacts linked to sludge-exposure are not imagined, but real. This should come as no surprise. Land applied sewage sludge is not humanure. It is a highly complex and unpredictable mixture of biological and chemical pollutants.^{20,49} Most of the 90,000 man-made chemical compounds in commerce today—with 1000 new ones added annually—end up in sewage, and many of those concentrate in the resulting biosolids.⁴² They include carcinogens, mutagens, neurotoxins, endocrine disrupters, solvents, pharmaceuticals, radioactive waste, leachates from landfills and superfund sites, as well as disease causing and antibiotic-resistant pathogens. Upgrading and building more treatment plants, designed to remove more pollutants from sewage, will cause the resulting sludge to become even more contaminated. Biosolids generated in our large industrialized urban centers—and 84% of biosolids originates in those centers—is very likely the most pollutant-rich waste mixture of the 21st century.^{13,42,49}

Jordan Peccia, Yale University Professor of Chemical and Environmental Engineering, is currently researching off-site movement of sludge bioaerosols and dust and how these are harming the health of a family in Oklahoma City.⁴³ Earlier research confirmed that some of the methods to further reduce pathogens for Class A biosolids are not reliable, so what is actually being spread in many communities is Class B rather than Class A sludge.^{33 p 246; 59} This matters, because Class A sludge is virtually unregulated: it can be spread anywhere, in any amounts, at any time, and requires no permits and no tracking of the regulated metals and other pollutants.

In addition to health impacts, evidence is mounting that healthy soil^{4,21,26,38} as well as unpolluted sources of potable water^{7,21,28,45,36} are seriously, even permanently, impacted by land application.

Half of the nation's sludge is being spread on grazing pastures and on sites for growing forage. Ruminants, including sheep and cattle, ingest soil with their forage. When they graze on sludged pastures, they ingest sludge. Under the 503s, there is only a 30 day grazing prohibition on newly treated sites. This is totally inadequate since sludge adheres to vegetation which rain will not immediately wash off. Milk from dairy cattle that are grazing on such pastures is particularly at risk, since many persistent, highly toxic sludge pollutants are excreted through lactation, and milk is not tested for these pollutants. Two prize winning Augusta dairy herds were destroyed when animals sickened and died after ingesting forage grown on land that had repeatedly been spread with biosolids. A judge ordered the USDA to compensate one of the affected farmers because his soil had become so poisoned that he could no longer grow cash crops. In the other case, a jury ruled that sludge caused the deaths of the animals.^{18,25,57}

Most of these incidents are not being investigated, as Gardner claims. Those who have a stake in continuing the current land application program make a point of ignoring and covering up reported incidents, or they conduct token inspections that are cursory at best, if not actually fraudulent.^{14; 33 pp 43, 82, et passim; 59.}

The most recent National Academy of Sciences (NAS) report, *Biosolids Applied to Land*, warns that the 503s are out dated and based on deeply flawed risk assessment models. In fact since sludge contains thousands of man-made chemicals, testing for a handful of pollutants using quantitative risk assessment models, does not --according to the NAS -- adequately gauge the real harm when such a complex and unpredictable waste mixture is spread on land.^{23,32} We have carefully read both the 1996 and the 2002 NAS biosolids reports, and nowhere could we find Gardner's claim that the reports found land application "acceptable". On the contrary, in 2002, EPA Deputy Administrator Paul Gilman stated on CBS Evening News that in view of the two PA deaths linked to sludge exposure, the agency could no longer claim that the practice was safe and that EPA would revisit its policy. But EPA has not revisited its policy, even though since 2002 the waste stream has become even more polluted and the regulations, instead of being tightened, have become even less stringent.

An increasing number of Canadian and US farmers who want to preserve their valuable land for future generations have researched the scientific literature and field reports and have decided to adhere to traditional farming methods and avoid using biosolids. These enlightened farmers and land owners are not duped by Gardener's claims, nor by the VA Biosolids Council, nor by the misleading promotional brochures⁵⁵ and videos the sludge lobby uses to convince farmers that biosolids is a great bargain because it is free, organic, natural and good for soil and plants. It's none of the above.

CFSL has never stated that those advocating land application are engaged in a vast "conspiracy", a term Gardner uses, but it is not our term. Conspiracy theories imply secret and illegal actions. But—with a few notable exceptions-- what is currently being done with sludge is neither secret nor illegal. Instead

we refer to sludge-promoters as an “alliance”: a group of partners who mutually benefit from a certain policy. In this case the sludge brokers benefit because they get paid for removing thousands of tons of sludge from treatment plants every day; municipalities benefit because they can continue disposing of their sludge conveniently and cheaply on the nation’s farmland; top ranking EPA and USDA managers who wrote the 503s and who are still in charge, benefit because they have staked their reputation on the adequacy of the 503s; and finally every entity connected to a sewer benefits because it can legally pipe its hazardous waste into sewage treatment plants. Once these hazardous chemicals enter the plant, the industrial discharger is no longer liable for any damage that might occur down the road.

The National Biosolids Partnership (NBP), partially financed by EPA, perfectly illustrates the corruption of this alliance: NBP is run by the Water Environment Federation, the major lobbying group for land application, a gross conflict of interest. This partnership uses our tax dollars to fund the EPA/Industry Public Acceptance Campaign and to cover-up incidents.⁶⁰ Also part of this alliance are cooperative extension services at land grant colleges that get their funding from EPA; for example, extension service personnel at VA Tech habitually discredit other VA researchers whose work does not agree with the current policy. Another alliance member is the Virginia Biosolids Council and the Arizona Water Quality Center (WQC) with lucrative ties to the waste industry. Sludge brokers who pay \$90,000 for a three-year WQC membership can design industry-friendly research that will not hurt their bottom line.

However, an increasing body of non-conflicted academic researchers and legal experts, oppose the current US policy and support much stricter regulations or a completely new approach to managing sludge: these include Jordan Peccia and David Lewis, Professor Rob Hale and his team at the Virginia Institute of Marine Science, College of William and Mary,^{11,12,13} Government Professor Celia Carroll Jones at Hampden Sydney College;²² Professor Paul Westerhoff at the School of Sustainable Engineering, Arizona State University; soil scientists at the internationally renowned Cornell Waste Management Institute; Professor Steve Wing at UNC’s Gillings School of Global Public Health;^{34,35,62} biologist John Werring, Senior Science and Policy Advisor to the David Suzuki Association; and Marilyn Cameron DVM,³ who chairs the Biosolids Caucus of the Nova Scotia Environmental Network. In addition, over a hundred health, environmental, and farm organizations, led by the Sierra Club, the Rodale Institute, the Natural Resources Defense Council, the National Farmers Union, and the Center for Food Safety oppose spreading biosolids on the land where we grow our food and forage.

To summarize: Lidia Epp’s blogs intended to fill the gap between the growing body of scientific evidence of the danger of biosolids and the public knowledge of the issue. Her blogs are a valuable addition to the ever increasing voices of stakeholders, scientists and legal experts who all warn, that the nation’s current biosolids management policies need to be changed.^{33,44}

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cc. Lidia Epp, Don Gardner, Virginia Biosolids Council.

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Snyder earned her Ph.D. from Harvard University and is emeritus professor at the Rochester Institute of Technology where she chaired the Department of Science, Technology, and Society and was one of the first faculty members nationwide to design, teach, and administer interdisciplinary Environmental Science Courses. Snyder, a charter member of the Union of Concerned Scientists, has researched the scientific basis, the laws, and the politics of the nation's sludge disposal policies and published articles in peer-reviewed journals, documenting the inadequacy of the current sludge regulations. Snyder co-chaired New Hampshire's Sludge Management Advisory Committee, and currently chairs the non-profit, Citizens for Sludge-Free Land (CFSL). CFSL advocates regulatory reform to protect public health, agriculture, and the environment, and helps communities with their sludge battles.

