

2009

**An Open Letter To Our Premier  
The Honourable Darrell Dexter**

Prior to the June, 2009 provincial election, the Nova Scotia Environmental Network “NSEN,” submitted a questionnaire entitled “25 For The Environment” to the leaders of the four political parties. Question 3 of that questionnaire “What is your party’s position on the land application of wastewater products, including biosolids, to agricultural land?” was answered on Premier Dexter’s behalf by his Chief of Staff, Dan O’Connor. It is to Mr. O’Connor’s reply that this open letter to the premier, all NDP MLAs, and other interested citizens makes reference. This document has been prepared by Fred F. Blois, a member of the NDP environmental subcommittee.

At our annual general meeting held in Halifax on March 28, 2009, the membership of the Nova Scotia NDP unanimously endorsed the adoption of the environmental subcommittee’s report “Taking Back Our Future,” an environmental policy framework for the NS NDP. This report thus became party policy. The report is based on the goal of ensuring that government protects our environment by applying the principles of sustainability, the precautionary principle and a trust in indicators such as The Genuine Progress Index, as a framework when developing all policies and platforms, so that our children will inherit a healthy and sustainable economy.

The decision of the Dexter government to support the land application of the HRM N-Viro biosolid and other treated wastewater products on agricultural land violates our party’s environmental policy framework, and in particular the precautionary principle, which states, “When an activity raises threats to human health and the environment, precautionary measures should be taken, even if some cause-and-effect relationships are not fully established scientifically. In this context the proponent of the activity, rather than the public, should bear the burden of truth that it is harmless.” {NSNDP Policy document “Taking Back Our Future” }

Since it appears that the current policy of land application is based on, or influenced by, the information supporting land application cited by Mr. Dan O’Connor on Mr. Dexter’s behalf to the NSEN’s election questionnaire, I suggest to you that the aforementioned information is a misrepresentation of the facts about both the HRM and the biosolids which were land applied at Inglewood Farm and will not bear scrutiny. Let’s look in detail at what Mr. O’Connor has to say in his reply, dated May 17, 2009.

**Mr. O’Connor’s Reply**

“The NDP knows that concerns have been raised about the use of wastewater and bio-solids in general, and treated HRM sewage sludge in particular. However, **the NDP has also heard from many farmers who see the treated material as a valuable, non-chemical source of nutrients, as well as a mildly alkaline soil amendment.**”

**Biosolids- Soil Amendment or Toxic Waste**

This statement clearly indicates that those farmers cited are not considering the true composition of biosolids. Published research attests to the fact that biosolids and other wastewater products contain a litany of chemicals and other toxins. Dr. Murray McBride, Director of Waste Management at Cornell University, “one of North America’s most respected soil scientists” states, in a July 11, 2009 letter to the editor of *The Chronicle Herald*,

“No, synthetic organic chemicals are regulated in sludge materials, despite the known presence of brominated fire retardants, plasticizers, triclosan, pharmaceuticals, detergents, etc. in the products. Some of these are persistent organic pollutants (POPs) which do not decompose to a significant degree in the wastewater treatment plant, concentrating instead in the sludge. Once applied to farmland, the POPs persist for decades to centuries, and as was learned with DDT and PCBs many years ago, are likely to concentrate into the fat tissue and milk of livestock. In fact, it is already known from published research that the brominated fire retardants accumulate in soils and soil organisms (such as earthworms) where sludges have been applied, and show little sign of decomposing in the soil. Research has also shown that these chemicals can concentrate in the fat tissue of cattle. It is only reasonable to conclude that fire retardant chemicals, and many others, will increasingly enter the human food chain as well as natural ecosystems with continued sewage sludge application on land.”

**Targeted national sewage sludge survey January, 2009,**

The United States Environmental Agency tested biosolid samples from 74 representatives publicly owned treatment works in the US for 145 analytes (“samples being analyzed”). The survey identified a cocktail of drugs, metals, chemicals, semi volatile organics, flame retardants, inorganic anions, antibiotics and their degradation products, disinfectants, and other antimicrobials, hormones and steroids in the samples. The occurrence and concentrations of analytes varied between samples.

**The HRM biosolid is not, as Mr. O’Connor says, “A mildly alkaline soil amendment”.**

The alkaline-stabilized Halifax biosolid has a very high pH (in the 11 to 12 range): this high pH actually makes some metals (such as copper, nickel and molybdenum) more soluble and potentially mobile in the soil almost immediately, increasing the risk for surface and shallow groundwater contamination. Molybdenum and sulphur can be very plant-available where alkaline sludge products are applied to forages and pastures, a concern for livestock.

**In reference to the alkaline-stabilization process**

SECTION 3.0 Item c Municipal Biosolids Stabilization contained in July 2009 Guidelines For The Land Application & Storage of Municipal Biosolids In NS states.

“Nova Scotia Department of the Environment {DOE} will only issue approvals for stabilized biosolids. In order to be considered as a stabilized municipal Biosolid which is the resultant of the alkaline stabilization process the following conditions may be met: Sufficient alkaline material has been added to the sewage sludge in order to produce a homogenous mixture with a minimum pH of 12 after 2 hours of vigorous mixing. Facilities adding supplemental alkaline material must maintain the pH of the sludge during interim sludge storage periods.”

**In reference to biosolids used by Inglewood Farm in 2004**

Dan O’Connor further states, “The Canadian Food Inspection Agency, the provincial Department of Environment, and Halifax Regional Municipality all agree the Nviro product is safe. The company requires a current nutrient management plan before the product can be used. The material is not the same as the untreated industrial sludge used by a farm in the Truro area in 2004, without regulation or monitoring.”

The material that Mr. O'Connor refers to as "untreated industrial sludge" was, in fact, 2000 tons of HRM sewage sludge which was mixed with rendering plant waste and cement kiln dust. This material was subjected to alkaline stabilization at Jeffery Cutten's Inglewood Farm, R.R. #1 Truro, under the guidance and support of the DOE to meet provincial guidelines (found under Cutten's approval # 2002-025224-A02).

The material in question was designated as a Class A Biosolid and was promoted under that designation. Representatives of Concerned Citizens of RR#1 Truro, who opposed the treatment and land application of the Cutten biosolid, met with DOE senior staff member Wayne Faulkner at his office in Truro on August 9, 2004. At that meeting we asked DOE to step in and stop the planned alkaline stabilization of the 2000 tons of HRM sewage sludge in storage at Cutten's farm. Our request was rejected. DOE reported that alkaline stabilization had been successfully accomplished and land application would begin on August 10, 2004.

Shortly after that date more than twenty residents of Kent Road and the surrounding area reported illness which they attributed to the land application. It is a matter of record that a number of these residents were interviewed by then-MP Bill Casey, Ellen Harrison, former director of Cornell University's Waste Management Institute, and a number of MLA's at the home of Barbara Rockwell on Kent Road in the fall of 2004.

The Nova Scotia Farm Practices Board decision document from the September 15, 2004 hearing in regards to the storage, treatment and land application of non-agricultural organic waste in Jeff Cutten case clearly labels the material as a biosolid. At this hearing, senior DOE staff also labeled the material as a biosolid.

### Report of the BAC

Dan O'Connor further states, "Last year the Nova Scotia Biosolids Science and Advisory Committees ("BAC") issued *Biosolids Management in Nova Scotia: Issues and Recommendations*, a joint report to the Minister of Environment. The Science Committee made recommendations for improving the generation, distribution, monitoring and testing of bio-solids. The NDP will ensure these recommendations are fully and carefully implemented." As a member of the BAC, I supported several of that committee's recommendations, but it is a matter of record that not all of the recommendations were unanimously endorsed as presented in the report.

### Current Treatment Practices by N-Viro

Dan O'Connor goes on to say, "The NDP will not permit the use of any untreated wastewater or sewage on agricultural land. The NDP currently intends to continue permitting the use of the pasteurized NViro product derived from HRM sewage."

In reply to this statement, we would ask, firstly, how the term "untreated wastewater" is to be defined.

### Alkaline Stabilization

HRM has chosen a treatment process described as "alkaline stabilization" to manufacture their sewage sludge into a biosolid. This process combines somewhat equal parts of sewage sludge and cement kiln dust (CKD) to arrive at a product labeled as a "biosolid." A thickening agent is also added to the sewage sludge prior to treatment. The chemical most frequently used is

acrylamide. All three of the components of biosolids are considered to be problematic to the environment. Let's look at each of these materials in greater detail.

### Cement Kiln Dust (CKD)

I question the wisdom of choosing CKD as the liming agent in the alkaline stabilization process. CKD is classified as an industrial waste and as such it has the potential to be contaminated with heavy metals and other toxins. Samples of CKD sourced from Lafarge's Pleasant Valley cement plant by Department of Environment and Labour (DOEL) staff in 2007, and tested by Maxxam Analytics, recorded the presence of 21 heavy metals in these samples. Of particular concern in these samples is the heavy metal thallium, which was recorded at a level of 2.3 parts per million. This level exceeds the accepted parameters for contaminated soil in landfills, and yet it is a component of biosolids that are being applied to agricultural land and subsequently becoming part of our food chain. Combining CKD with sewage sludge also multiplies the amount of material to be treated and disposed of by a factor of two.

It should be further noted that CKD is an extremely fine particulate with much of its content classified as an aerosol. As such, it is impossible to contain this particulate solely to the applied area. This may present serious health consequences not only to the person spreading the biosolids, but also to the surrounding population. Contaminated fine particulates, act like a sponge attracting toxic substances to the surfaces of their molecules and can deliver these toxins directly into the blood stream. It is a matter of record that a number of the residents in the RR#1 Truro area reported respiratory problems which they attributed to a fine grey caustic powder from the biosolids spread in their area in 2004.

### Sewage Sludge

Every day hospital waste, feces, urine, household cleaners, vomit, blood, personal care products, prescription drugs, a vast array of chemicals, heavy metals, and industrial waste are flushed into our sewer systems. This wastewater cocktail is piped from our homes, businesses and industries to sewage plants across the province. The wastewater is filtered and discharged. Most of the solid waste, called sewage sludge, that remains is treated and turned into biosolids, which are promoted as a beneficial alternative to chemical fertilizers. These biosolids are then applied to the land that grows the food we eat.

Proponents insist the biosolids are not only tested, but also meet or exceed all the present regulations surrounding the treatment and disposal of wastewater products. Furthermore, they insist that biosolids are completely safe for application to agricultural land. There is, however, ample reason to question the soundness of that opinion.

It is important to consider that current waste water treatment plant technology was not designed to remove many of the nutrients, estrogenic compounds, pharmaceuticals, and personal care products present in waste water. Therefore, current technologies may be creating risks of unknown magnitude for public health. Furthermore, present regulations do not consider the potential synergistic effects of multiple contaminants that may be contained in the biosolids. Chlorine, for example, can combine with natural organic material found in dirt and soils to create a variety of carcinogenic chlorinated hydrocarbons, including toxins like chloroform and trihalomethanes.

### Acrylamide

Health Canada recently confirmed that it has placed acrylamide onto Schedule 1 of the Canadian Environmental Protection Act of 1999 in order to minimize the public's exposure to the chemical which Health Minister Leona Aglukkaq said -may pose a risk to human health. When Acrylamide comes into contact with the herbicide Roundup, a neurotoxin is formed. which can attack the central nervous system.

### 'The Limitations of Testing'

The European Union catalogues over 100,000 chemicals in its existing inventory; risk assessments are available on less than five percent of these chemicals. It would be impossible to test biosolids for all the toxins that are flushed down the drain by both domestic and industrial users.

### Land Application: Not Recycling, But Pollution Transfer

Agricultural soils are a unique and valuable resource. Therefore, does it really make sense to spend millions of dollars to build a sewage treatment plant that removes pollutants from sewage, only to spread these same pollutant by-products on the land where they can adversely affect humans, animals, groundwater, and degrade farmland? Protecting agricultural soils requires anticipating and avoiding potential harms, since once they are contaminated with persistent pollutants, the damage problem will remain for decades or even centuries. It is thus critical to prevent this essentially permanent degradation.

A growing number of health professionals, scientists, and citizens from all walks of life are speaking out against the land application of wastewater products. I have selected the following information from Cornell University to be part of this presentation. The authors of Case For Caution Revisited: Health and Environmental Impacts of Application of Sewage Sludges to Agricultural Lands ([cwmi.css.cornell.edu/case.pdf](http://cwmi.css.cornell.edu/case.pdf)) Ellen Harrison and Dr. Murray McBride are familiar with the problems that have been associated with land application here in Nova Scotia.

Harrison and McBride both visited Nova Scotia and spoke out against the land application of biosolids in NS in no uncertain terms:

"My position is that sewage sludge products should not be applied to our agricultural lands where food crops are grown. There are far too many unknowns and uncertainties about the amounts, behaviour and toxicity of the thousands of chemicals in sewage sludge products, and the precautionary principle must be applied here. Farmlands must be protected as the irreplaceable resource that they are - we hold them in trust for future generations." (Dr. Murray McBride, Letter to the Editor of *The Chronicle Herald*, July 11, 2009)

The full text of A Case For Caution Revisited is included as an addendum to this presentation.

### Social Justice

The NDP has always supported social justice and has, latterly, declared itself supportive of the precautionary principle. Your position on the application of biosolids to farmland contravenes both stands -- social justice, in that middle class people with economic means will move further towards purchasing organic foods, abandoning even the minimal 'grow local' impetus that we now have, while biosolid produce will be the fare of those who cannot afford to choose; the precautionary principle in that biosolid application, for the reasons given in this document, flies in the face of preventative health care.

### Conclusion

Human beings have evolved to be very good at focusing on immediate problems. The disposal of our wastes is a uniquely long- range problem: its effects appear gradual on a human time scale, and the worst effects will likely be visited on people not yet alive. To solve this problem we must embrace the future of our responsibility and consider the impact of today's decisions on future generations. We need to start acting as if the future of our planet matters beyond our own short lives. **Premier Dexter and members of the Nova Scotia government, I ask you to reconsider our government's present policy on the application of biosolids to agricultural land.**

Fred F Blois Nov. 9<sup>th</sup> 2009  
1159 Black Rock Road  
Clifton NS. B6L 1C4

### About the author of this document:

Fred F. Blois is a member of the Nova Scotia NDP Environmental Committee, a board member of The NS Environmental Network, a founding member of The Concerned Citizens of RR#1 Truro, a founding member of Citizens Against The Burning Of Tires and was a member of The Nova Scotia Biosolid Advisory Committee.