The following article EM0003 makes a number of statements about factors the writer claims affect the safety of drinking water; it is of interest statistically to identify what *data* are needed to assess these claims and then to decide what policies are needed that will accommodate both reasonable land use and the safety of drinking water.

EM0003: The Globe and Mail, May 26, 2000, page A15

WATER SAFETY

Death on tap

If we don't stop the Ontario government's backsliding on environmental protection, says consultant **Gary Gallon,** *Walkerton may be just the first of many such disasters*

The E. coli infection that has killed several people in Walkerton, Ont., and left hundreds seriously ill, may have been the result of a severe decline in environmental protection in Ontario. If more provincial government funds aren't directed to water testing and protection soon, this won't be the last disaster of this kind.

The Mike Harris government has made a conscious decision to reduce the budget and role of the Ontario Ministry of the Environment (MOE) and devolve powers to the regional and municipal governments. The MOE is responsible for protecting drinking-water supplies and ensuring that animal and human fecal pollution does not threaten water purity. I should know. From 1985 to 1990, I worked as senior policy adviser to then Ontario minister of the environment Jim Bradley.

The MOE operating budget has been slashed 42.4 per cent from $287-million in 1994/95 to $165-million for 2000/01. About 900 of the ministry's abatement, regional and enforcement staff have been cut – from 2,400 in 1994/95 to 1,500 in 2000/01.

The Ontario government is close to completing its pledge to cut environmental regulations by 50 per cent under its red-tape-cutting exercise. Ontario has handed down numerous environmental responsibilities to the regional municipalities, which don't have the staff or financial resources to absorb those new responsibilities.

Industries, including factory farming, have been assured of less environmental interference and delays in doing business in Ontario. Groups such as the Canadian Institute for Environmental Law and Policy have complained about Ontario becoming a pollution haven.

Money for monitoring and reporting on pollution has been slashed. The motto," what you don't know, won't hurt you," seems to apply. The regular provincial MOE monitoring and reporting of drinking-water contamination – the Drinking Water Surveillance Program – was discontinued. The annual provincial reporting of Ontario direct dischargers was dropped.

A February, 1999, Environment Ministry "delivery strategy" directed the ministry's dwindling staff not to enforce dozens of environmental laws and regulations. Farmers, in particular, are treated with kid gloves with an understanding that the application of livestock and waste-water regulations will be proceeded with carefully. Average fines for environmental enforcement and prosecution in Ontario were $2.6-million a year from 1988 to 1995. Under Mike Harris, the fines dropped 63 per cent to $955,860 in 1997.

The E. coli 0157:H7 that polluted Walkerton's drinking water is a known contaminant from human and animal intestines, including cattle and hogs. Dangerous forms of E. coli in drinking water and food have caused numerous deaths since E. coli 0157 was first identified in 1982.

Walkerton, in the Grey-Bruce Region, is surrounded by growing, intensive agricultural activities, including dairy and cattle farms and new factory hog operations. The question arises: How well have these operations been monitored and controlled by the Ministry of the Environment?

The problems with these kinds of operations are well known and public concerns have increased regarding what are called Concentrated Animal Feed Operations. Here are some of the concerns that regulatory agencies in the United States and Europe watch for and control. These are the concerns that Ontario's Environment Ministry should have been on top of:

- Concentrated animal-feces management, including proper lagoons and neutralization facilities;
- Spreading uncured cattle and hog feces on farmland as fertilizer in excessive amounts that result in surface-water and groundwater contamination;
- Excessive grazing and stream use by too many cattle on too little land;
- Heavy rains and storms knocking out, or flooding, feces-treatment lagoons and heavily manure-spread farmlands.

Dr. Dale Hancock from Washington State University has stated that governments "can reduce the risk of dangerous E. coli strains entering the food chain by some practical precautions on the farm."

Some officials have said that the extensive rains in the Bruce Peninsula may have carried the animal feces and E. coli to the groundwater aquifers feeding Walkerton. Normally, this should not be a problem with properly regulated farm activities and adequately run water supplies. A strong storm should not have been enough to drive contaminants like E. coli 0157 through the soil into the groundwater below. It would take a lot of rain from a major storm, like a once-in-25-years storm. If this was the case in Walkerton – as has been reported by some media – this would have alerted most MOE scientists and abatement officers within the Ontario government to the immediate possibility of flood-related E. coli contamination of surrounding waterways. In other words, the MOE should have known.

Hurricane Floyd, which swept through North Carolina, flooded many of the hog factory operations there, spreading feces and E. coli throughout the flooded area. Numerous measures were taken immediately to prevent human contact and provide alternative drinking-water supplies.

Walkerton's is one of the worst-ever, pollution-related E. coli events in North America. Why didn't the penny drop in the Ontario Ministry of the Environment? Maybe there was no penny. The resources were just not there for the ministry to respond.

The animal-feces-related cryptosporidia bacteria contamination of Collingwood's drinking-water supply in 1996 gave Ontario an early warning that the Ministry of the Environment was flagging. Special drinking-water filtration systems had to be brought in to prevent a health hazard.

It is quite possible that the pollution deaths in Walkerton could have been avoided if the Ontario Ministry of the Environment had the same powers and resources that it had in 1994, before the Harris government came to power. Standard pollution-control measures and monitoring by a proper contingent of MOE abatement officers would have resulted in major feedlots, factory farms, and large-animal operations in the area being cleaned up and ready to ride out major storms.

Proper provincial attention to the moni-

(*continued overleaf*)

toring of drinking water in Walkerton after the major storm event would have assisted the PUC in providing early detection and public warning. For example, the U.S. Environmental Protection Agency (EPA) requires that large-city, public water systems (serving millions of people) must take at least 480 samples a month. Smaller systems, such as those of Walkerton (pop. 5,000) must take at least five samples a month. And these tests must be provided to the public. Walkerton's water was being tested regularly but it appears that the public reporting mechanisms would have worked better under a fully funded environment ministry.

A public inquiry should be held into this environmental disaster. It is the first pollution in Canada that has caused so many deaths, so quickly. The inquiry should focus on the following questions:

- What was the exact source of E. coli in the Walkerton groundwater supply, how did it get there, through which process and from which producers?
- What was the effect of the major storm that occurred prior to the water contamination?
- What were the functions and activities of provincial-government agencies responsible for managing animal-intestine generated E. coli, the agricultural facilities in the region, and the protection of drinking water?
- What were the functions and activities of the regional and local public utilities commission, the public health office, and the regional inspectors?
- Why wasn't the public notified immediately when the governments began to suspect a problem?
- What impact have the cuts to the budget and staff of the Ontario Ministry of the Environment had?

If we don't stop the backsliding now on environmental protection in Ontario, Walkerton may be the first in many more serious environmental disasters to come.

• • •

Gary Gallon, president of the Canadian Institute for Business and the Environment, was senior policy adviser to Ontario environment minister Jim Bradley from 1985 to 1990. E-mail: cibe@web.net.

The article EM0003 reprinted overleaf and above is used in Chapter 1 of the STAT 231 Course Materials.