Rotary Club of Cambridge

Speaking Notes – Theresa McClenaghan

October 2, 2002

"What Went Wrong at Walkerton?"

- Intro, CELA
- CELA represented Concerned Walkerton Citizens in both phases of the Walkerton Inquiry (explain)
- One of the Commission's mandates was to inquire into the causes of the Walkerton tragedy

A. What Went Wrong at Walkerton? There Were Multiple Causes.

- There were multiple causes of the Walkerton tragedy, which together combined to result in the deaths of at least seven people from drinking their tap water, along with thousands of illnesses, many of them very serious.

- There was a fundamental system break-down of the drinking-water protection system in Ontario. Systematic failures and individual acts and omissions converged to cause the Walkerton tragedy.

First Cause – Pathogens entered the Aquifer

- Pathogens (E. coli 0157:H7 and campylobacter jejuni) entered the aquifer from which a substantial part of Walkerton's drinking supply was taken

- E. coli 0157:H7 can survive in soil and groundwater for prolonged periods of time, particularly in cool, wet conditions

- There were unusually heavy rainfall events in April and May 2000, likely hastening the penetration of the E. coli and campylobacter into the shallow aquifer resulting in transport to well 5 and nearby springs within days or hours

- The pathogens were DNA typed to the herd at the nearest farm to well 5. That farmer didn't even know there was a municipal well nearby.

Second Cause – Inadequate responses once surface water contamination of wells became apparent.

- All of Walkerton's wells, 5, 6 and 7 were subject to surface water influence, meaning that surface water reached the groundwater.

- One former MoE approvals employee recalled that well 5 was supposed to be a temporary solution when it was approved in 1978. In fact, the town had gone ahead with the well before getting proper approval.

- Despite evidence of surface water contamination, the well remained in service. Indications of surface water influence at the town's other two deeper wells did not trigger any official response.

Third Cause – Inadequate Treatment

- There was little or no chlorine residual in the distribution system at the time that the contamination entered the system from well 5.

- A chlorinator was being installed at one of the town's main wells and that well pumped unchlorinated water for several days. Once well 5 began to pump, the operators likely injected very little chlorine because of their historical practices. Even appropriate amounts would have been over-whelmed by the chlorine demand from the amount of contamination entering the system.

- There were no continuous turbidity monitors at the system at Walkerton; such monitors can give a warning that surface water is entering the system causing appropriate reaction such as shutting down the well. There were also no automated chlorine monitors linked to shut-down systems.

Fourth Cause – Lack of Operator Competence and Training

- Many, including the water works operators incorrectly believed that the fact that Walkerton relied on groundwater meant that their water was safe straight from the ground

- Both of the operators at Walkerton, like many others in the province, had been grandfathered into their licences

- There were no specified training requirements especially for grandfathered operators and no provincial system to assure that operators had minimal understanding of potential drinking water risks such as pathogens, or of the reasons for the treatment requirements

- When the operators at Walkerton failed to chlorinate properly, or failed to sample properly, or falsified records, they apparently had no idea of the risks that they might be imposing on the community

<u>Fifth Cause – Oversight of Drinking Water Quality was Inadequate</u>

- The Walkerton PUC Commissioners also lacked drinking water training and did not appreciate their responsibilities to the community.

- The Health Unit had not received any written adverse results from the Walkerton system since 1996 when the Ministry labs that

tested municipal drinking water were closed. This prevented them from over-seeing the potability of the Walkerton water system. On the other hand, the Health Unit failed to notice that it was receiving no written adverse reports from Walkerton.

- Prior to the Walkerton tragedy, many local health units and provincial officials in the public health and laboratories branches of the Ministry of Health were of the view that municipal drinking water oversight was not so much their responsibility as that of the MoE.

- As a result, very few resources were allocated to health units for municipal water oversight. As well, policy changes in the mandatory health unit guidelines reduced health units' roles to reliance on information from other sources and to a reactive rather than proactive approach after the public labs closed.

- By the mid 1990's, the government focused its priorities on regulatory reform and point source pollution as opposed to non point pollution controls and groundwater protection.

- MoE staff lacked the capacity to appreciate the significance of the history of adverse results from Walkerton.

- Although there were a series of inspection reports clearly identifying problems at Walkerton, the MoE policy approach was to prefer voluntary compliance rather than enforcement.

Sixth Cause – Laboratory Testing and Notification Failed

- The provincial drinking water testing labs were closed with very short notice to municipalities and without appropriate measures and a transition plan to ensure proper transition to private laboratories.

- There was confusion as to the obligations of private labs to report adverse drinking water results.

- The Ontario Drinking Water Objectives, which were guidelines, not regulations, were not clear as to the private labs' obligations to notify

officials when there were adverse results from a drinking water supply.

- There was strenuous advocacy on the part of certain government staff to provide clear requirements for notification of adverse results. In fact, the Minister of Health took the very unusual step of writing to the Minister of Environment to request that this be done.

- Testimony at the Inquiry indicated that one of the reasons for the decision not to amend the notification requirements was the "chill" for new regulatory initiatives caused by the work of the Red Tape Commission.

<u>Seventh Cause – Over-reliance by the Health Unit staff on the Operator</u>

- Once it became clear that an outbreak was occurring, health unit staff began to investigate the source

- The health unit staff relied on the operator's unverified assurances about the safety of the water supply system, and even passed those

unverified assurances on to others such as hospital and long term care staff

- Although this over-reliance would not have prevented the outbreak, earlier proactive testing of chlorine residuals and drinking water quality might have allowed an earlier boil water advisory and prevented a portion of the illnesses. Similarly, had the labs notification protocols been clear, the health unit and ministry of environment would have known about the adverse test results from the Walkerton system days earlier and possibly been able to issue a preventive boil water advisory even before they realized that an outbreak was occurring.

B. What did we learn about preventing such a tragedy again in Ontario?

- Justice O'Connor endorsed the need for a multi-barrier approach to drinking water protection.
- One witness described this as the need for "multiple pairs of eyes and multiple hands that go up at the first concern…."

- There are at least five elements to a multibarrier drinking water system:

    1. Source Protection
    2. Water Treatment
    3. Distribution system design and safeguards
    4. Monitoring
    5. Response to adverse monitoring results

- There must be adequate resources for the health units and Ministry of Environment to over-see the system, including inspections and enforcement
- There must be far better inter-agency communication and data-sharing, including built in redundancy and "fail-safe" measures to avoid a single failure going unnoticed and causing a tragedy
- There must be accountability for the drinking water system in Ontario, based on statutory responsibility
- The public has a right to know about the condition of their water works
- Waterworks must be adequately financed and governed
- There must be an adequate training regime with minimum specified curriculum

- All of the institutions that deal with drinking water oversight must learn a safety culture. This means understanding their role as independent scrutineers of the system and the information they are provided; seeking verification of information; emphasizing public health and safety; and not replace these responsibilities with mere trust in the other actors in the system.
- There must be a Safe Drinking Water Act, along with all of the other specific recommendations outlined by Justice O'Connor, including source protection.
- Thank you …