

January 8, 2001

Mr. Justice Dennis O'Connor
The Walkerton Inquiry
180 Dundas Street West, 22nd floor
Toronto, Ontario
M5G 1 Z8

Dear Justice O'Connor:

**Re: Part II of the Inquiry
Designing a Safe Water System for Ontario**

In regard to Part II of your inquiry and its focus on any relevant matters considered necessary to ensure the safety of Ontario's drinking water, my experiences may be helpful to you.

Over a ten-year period I have observed the design and construction of a water supply system for a small community (population approximately 600, residential premises approximately 300) in the District Municipality of Muskoka.

Part I of your inquiry is focussing on the deadly and sudden effects of the E-coli 0157:H7 bacteria with water drawn from ground sources.

May I suggest a focus here on the insidious long-term effects of Trihalomethanes, a cancer-causing by-product of chlorine, with water drawn from surface sources. Trihalomethanes (THMs) are disinfection by-products created when chlorine reacts with organic material in the raw water supply.

In a typical water supply system using surface water, the three major components are: the water intake; the treatment plant; and the water storage tower. One could argue that the single greatest determinant in the production of safe drinking water is the quality of the source water and, therefore, the selection of the location of the water intake site. However, since all three components are interrelated, the selection of all three sites is relevant.

Since the design and construction of this particular water supply system lasted over an unusually long period of time, I was also able to observe a deteriorating Ministry of the Environment and the apparent effects of a drastically reduced staff - and a

comparison of their actions pre and post the reduction period.

The story begins in 1987 when a report on the water works for the community concluded that alternative 6B is the preferred solution, i.e., “construct a new water treatment plant at Ferndale Bay serving the community ... as well as the Lake Rosseau Club.” (The Lake Rosseau Club was a proposed new resort located on Ferndale Bay which later went bankrupt amidst fraud charges, jail terms for the principals, and front page news.)

The water storage tank for alternative 6B was proposed to be located on “high ground near Bailey and Joseph Streets” and “a concrete block building with dimensions approximately 21m by 12m in plan would be provided to house the package water treatment plant, pumping equipment and diesel generator set.” One of the sites also considered and technically acceptable was the existing water intake into the Indian River.

The next phase in the evolution of the waterworks for the community was the construction of a water storage tank. This was preceded by an Environmental Study Report (ESR) dated June 1991, which stated that the preferred solution was alternative 3C, “Construction of a new elevated storage tank east of Foreman Road area”. The location is adjacent to the (then) new golf and country club development. But since alternative 3C seemed to **suppose** that a new water intake and water treatment plant would be located at Ferndale Bay, a clarification was needed.

After prompt and timely meetings between the proponents and the Ministry of the Environment, an Addendum to the Environmental Study Report was issued, dated October 1991. The report stated that when a new intake and treatment plant would be selected in the future, three potential sites would be considered in a future Environmental Study Report. These were: Ferndale Bay; Existing Site (i.e., as per the 1987 study); and East Canoe Cut.

After these prompt interventions, the project proceeded quickly to the tendering stage and I had the opportunity to view the tender documents. To my surprise they showed a subdivision planned at the site of the proposed water storage tower. Furthermore, rumours suggested that a developer had contributed to the cost of the construction of the water storage tower. None of these facts appeared in the ESR. The location was apparently chosen on strictly technical and environment terms.

Suggestion: All financial and developmental matters, private or public, relevant to the selection of components in a water works system be included in an Environmental Study Report.

The project proceeded to construction and completion of the water storage tower in 1992.

The next phase was the selection and construction of a new water intake and water treatment plant, again preceded by an Environmental Study Report dated May 1996. The site chosen was **Adams Bay**, which was neither of the three alternative sites agreed upon in the clarifying Addendum to the ESR of 1991. (Indeed, Adams Bay was specifically rejected in the 1987 study of possible candidate sites.)

I asked for a 'bump-up (i.e., an appeal) to an Individual Environmental Assessment in a lengthy 11-page detailed letter (June 18, 1996) citing, among other matters, the previous commitment to evaluate and choose one of the three sites specified in the 1991 addendum. Furthermore, the existing site with the intake into the Indian River was not even costed.

The next series of events showed the steady deterioration - apparently by the attrition of its employees - of the Ministry of the Environment. My bump-up request (denied) was answered on December 3, 1998- two-and-one-half years later. Only one of the original Environmental Planners involved in the 1991 project remains in the Ministry. The commitment to choose one of three sites was overlooked/ignored.

In the letter to me from the Director of the Environmental Assessment and approvals Branch, he states that in constructing the water intake the ESR "calls for the use of directional boring and not blasting", and that "any major modification to the project, including the use of blasting ... would require the production of an addendum to the ESR."

On August 31, 1999 - nine months later - the Director states that "an addendum is not required" and the project proceeded to construction of an 800-metre-long intake and the underwater blasting of a rock trench through the sensitive littoral zone of Lake Rosseau (surprisingly, the environmental impact of this particular intake in the ESR is rated as "most favourable").

Suggestion: A public "Post-Approval Addendum", prepared by the proponents and explaining events occurring subsequent to approval of the ESR, might be a useful addition to the approvals process.

Going back for a moment to the May 1996 ESR, another event occurred which dramatically changed the status of this project. Later in that year the Ontario Government announced that it intended to transfer ownership of water treatment

plants to municipalities and, more significantly, to stop advancing loans and grants for their construction. The parlance within the Ministry was to stop "grant junkies".

During the Standing Committee hearings on Bill 107 - the legislation introduced in 1997 to implement the above objectives - one of the members said, "When we get up to 85% or 90% grants for a system, the responsibility on the local basis starts to slide away when they're paying such a small percentage and getting such a large plant." The new water treatment plant has a footprint of 30m x 30m, nearly four times larger than the one proposed in the 1987 study. Indeed, in a chance encounter with one of the consultants during this period and our discussing the possibility of no grants, the consultant said, "There is no way this project would proceed."

Also in the ESR, estimated costs are projected for the various alternatives. Capital costs such as water intake, low lift facilities, water treatment facilities, etc., are shown, together with an estimate for "Engineering and Contingencies." The engineering and contingencies estimate is always 20% of the capital costs, i.e., is directly proportional to the capital costs.

Suggestion: Investigate whether large grants or the methodology of fee payment influences the selection, siting, design and construction of a water system.

During the public meetings phase of the environmental assessment process, the meetings were conducted by a municipal employee and questions regarding present and possible future locations/actions were authoritatively answered. Yet the ESR is issued by the consultant, purportedly giving its own independent, strictly technical recommendations. Furthermore, a municipality is a very important customer for a consultant and it is anxious to please.

Suggestion: Clarify for the public who makes the decisions.

During the period when I had not received the answer to my bump-up request and Bill 107 was being debated, I hypothesized that the project would be dramatically changed and that a filtration facility (no one disputes this need) would simply be added to the existing water works - a very affordable and effective solution.

When Bill 107 was finally passed, the government, in August 1997, announced a Provincial Water Protection Fund, a grant program for municipalities that "recognizes that as municipalities move to assume full responsibility for the provision of water and sewage services, there may be a need for some provincial assistance to address specific infrastructure problems." There were strict criteria to be eligible and municipalities were required to "identify cost-effective solutions to fixing the

problem **including making the best possible use of existing facilities.”** The Environment Minister announced, on April 20, 1998, a grant of \$3,512,418 towards the construction of a new water intake and treatment plant for this community.

Since my bump-up request had not yet been answered, and I had assumed it was still being considered, I was unaware of these events and surprised that a grant had been awarded and that the project was proceeding in its original form. Through the Freedom of Information and Protection of Privacy Office, I obtained a copy of the August 1997 application for a grant from the Provincial Water Protection Fund (attached).

Suggestion: Applications for provincial grants for water works should be public documents which are promptly and easily accessible.

The document is an overview of the project not only financially but technically, and decisions are made based on both of these criteria.

Suggestion: The Partnership Branch and the Assessment & Approvals Branch should be more closely related, perhaps under the same direct management.

The shortage of staff again becomes apparent and the Partnership branch state that they rely on the applicants who sign the document and they simply do not have the manpower to check all of the details. With regard to the answers in the pre-qualification section, the project has not been completed by December 31, 1999 (and remains uncompleted as of this writing), nor is the land-use residential density in the “entire service area” 2.5 dwellings/gross hectare. The water system is characterized as having “an immediate health-related problem.”

The problem definition section asks to list the parameters pertinent to the requirements of Tables 1, 2 and 3 (the health-related requirements) of the ODWO (Ontario Drinking Water Objectives). Listed here are Iron and Colour which are from Table 4 (not health-related). Turbidity is correctly listed from Table 1. Not mentioned are Trihalomethane (THM) levels, also from Table 1. Trihalomethanes, which are contaminants produced by the interaction of chlorine and leafy organic matter in the water (i.e., “disinfection by-products”) are becoming of increasing concern around the world where water is drawn from surface sources (lakes and rivers). With increasing evidence of the link between THMs and cancer, governments are tightening the acceptable limits. For example, the United States' Environmental Protection Agency this year dropped its previous limit of 100 ppb (parts per billion/micrograms per litre) down to 80 ppb. Although the official acceptable limit may be 100, municipalities strive for levels much below this number. For example,

the City of Toronto treated water total THM average level for the year 1999 is only 11 ppb. Similarly, Ottawa attempts to keep its THM levels significantly below the 100 ppb acceptable limit.

Going back now to our 1996 ESR, evaluations were made of the raw water quality at the possible water intake locations for the new water works for this community. The July 4, 1995 samples show that the THM Formation Potential (THMFP) at the existing site is 230 ppb, and at the new site is 290 ppb - a significant 26% higher. (The THMFP test is a measure of the absolutely highest possible THM level achievable in a particular water.)

***Suggestion:* A maximum acceptable standard of THMFP should be established and used in the evaluation of the acceptability of a raw water source.**

Fast forwarding to the present, I have attached the first quarterly report on the water works, now required by the Province's new regulations. (It describes the existing water works, not the new.)

Reading all of the above, it is difficult to understand why a proper water treatment plant, simply and quickly added to the existing system, was not evaluated or costed. The report states that "our raw water source is the Indian River which supplies good quality water." Residents would be sooner able to benefit from safe, properly treated water. Instead, a costly long intake, pump house, large water treatment plant and new, much longer, water and sewer connections are being constructed - and still not completed. The ESR for this system was begun back in 1994.

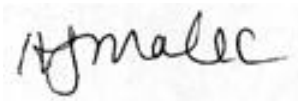
The treated water will probably be totally acceptable - even with the higher THMFP - given the treatment options available. And new regulations will allow residents to scrutinize the THM levels. But the higher capital and increased maintenance costs will impact on District and Provincial taxpayers.

Finally, may I comment on the new drinking water regulation which requires a Professional Engineer's report every three years for all municipal water works. I am aware of one instance where the consulting engineers who designed the system have now been hired to report on the system.

***Suggestion:* The Designers should not also be the Inspectors. The report should be done as a peer review by another consulting engineer.**

Thank you for the opportunity to submit my comments to your inquiry and the development of recommendations regarding a safe drinking water system for Ontario. I would be privileged to attend any public discussions regarding the matter or help in any way that you see fit.

Regards,

A handwritten signature in dark ink, appearing to read "H.J. Malec". The signature is written in a cursive, flowing style.

H.J. Malec

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